

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 349	01-10116-00-BR	WAYNE	13	1
CONTRACT NO. 95497		ILLINOIS	PROJECT NO.	

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
PLANS FOR PROPOSED  
HIGHWAY BRIDGE PROGRAM  
SECTION 01-10116-00-BR WAYNE COUNTY  
PROJECT BROS-191(53)  
JOB NO. C-97-031-07  
T.R. 349

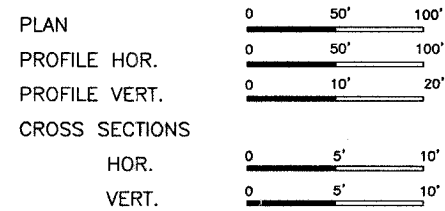
Joint Utility Locating Information for Excavators  
JULIE 1-800-892-0123

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STANDARD DRAWINGS

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STANDARD 280001-03
STANDARD 702001-06
STANDARD BLR 21-6
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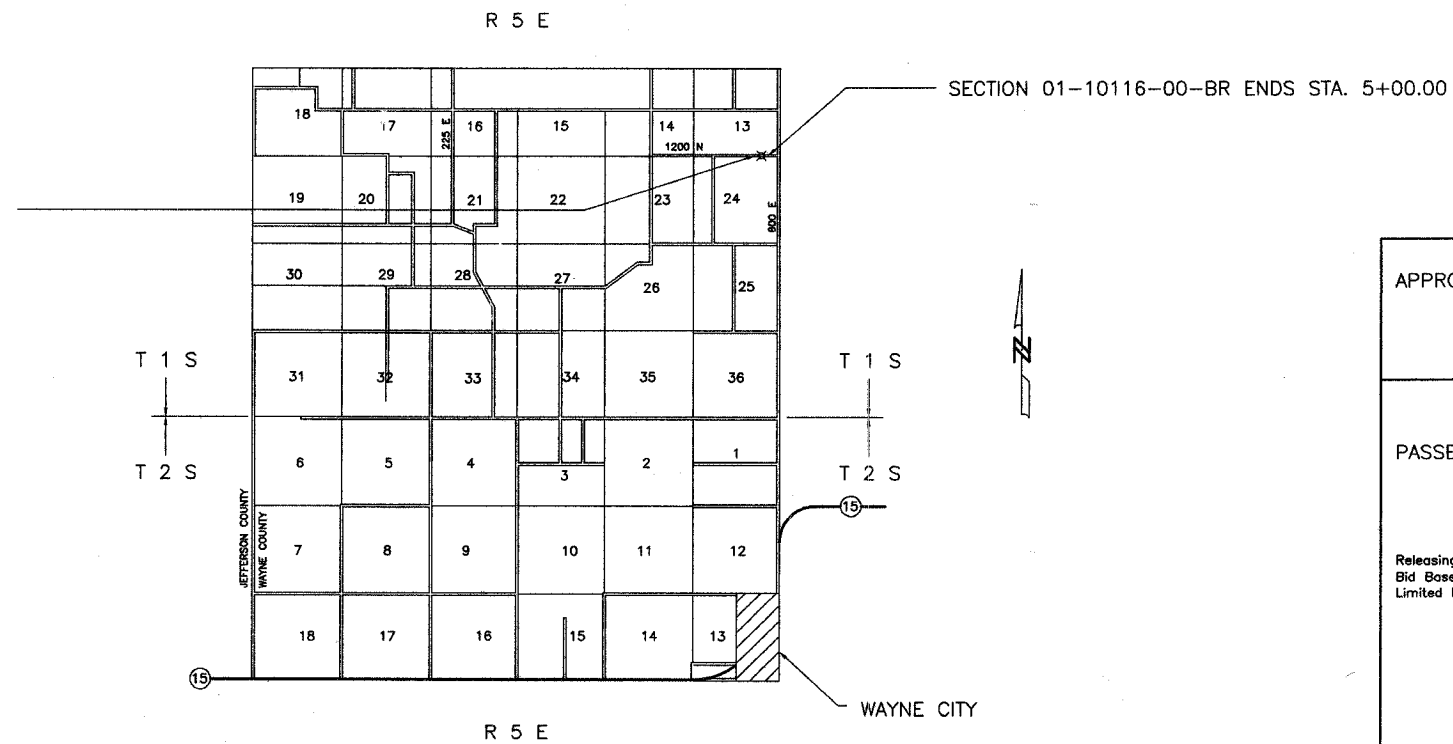


SECTION 01-10116-00-BR BEGINS STA. 0+50.00

SINGLE SPAN PRECAST PRESTRESSED CONCRETE DECK BEAM BRIDGE  
 51'-6" BK. - BK. ABUTMENTS  
 STEEL PILE / SPILLTHROUGH ABUTMENTS  
 24' DECK  
 15' SKEW LT. FORWARD  
 EXISTING STRUCTURE NO. 096-3138  
 PROPOSED STRUCTURE NO. 096-3445

CONTRACT NO. 95497

FUNCTIONAL CLASSIFICATION - LOCAL ROAD  
 ADT = 50



NET LENGTH SECTION 01-10116-00-BR = 450.00 Ft. = 0.085 Mi.

*Arvin A. Charleston*  
 Ill. Reg. Prof. Eng. #29195  
 1/19/07  
 Lic. Expires 11/30/07

CHARLESTON ENGINEERING INC.  
 105 N. KITCHELL  
 P.O. BOX 397  
 OLNEY, ILLINOIS 62450  
 PH. 618-392-0736

REGISTERED PROFESSIONAL ENGINEER OF ILLINOIS

APPROVED January 16, 2007  
*Arthur J. Roebach*  
 COUNTY ENGINEER

PASSED 3/27 2007  
*Manuel E. Castell*  
 DISTRICT SEVEN ENGINEER OF LOCAL ROADS AND STREETS

Releasing For Bid Based on Limited Review 3/27 2007  
*Christina M. Reed*  
 DEPUTY DIRECTOR OF HIGHWAYS REGION FOUR ENGINEER

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 349	01-10116-00-BR	WAYNE	13	2
CONTRACT NO. 95497		ILLINOIS	PROJECT	

**DESIGN DATA**

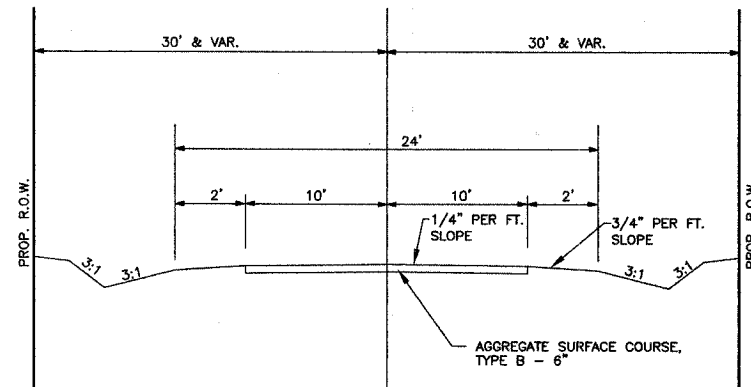
LOCAL ROAD  
ADT = 50

**GENERAL NOTES**

- SEEDING: THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE APPLICABLE PORTIONS OF SECTION 250 OF THE STANDARD SPECIFICATIONS AND SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR SEEDING CLASS 2 (SPECIAL).
  - SPRING SEEDING SHALL EXTEND FROM JANUARY 1 TO JUNE 30  
FALL SEEDING SHALL EXTEND FROM JULY 1 TO DECEMBER 31
  - FERTILIZER NUTRIENTS SHALL BE APPLIED AT THE RATE OF 100 LB/ACRE
  - MULCHING SHALL BE DONE IN ACCORDANCE WITH ARTICLE 251 OF THE STANDARD SPECIFICATIONS AND SHALL BE DONE BY METHOD 2, PROCEDURE 2 AT THE RATE OF 2 TONS PER ACRE.
- NO PAYMENT FOR OVERHAUL WILL BE MADE ON THIS SECTION.

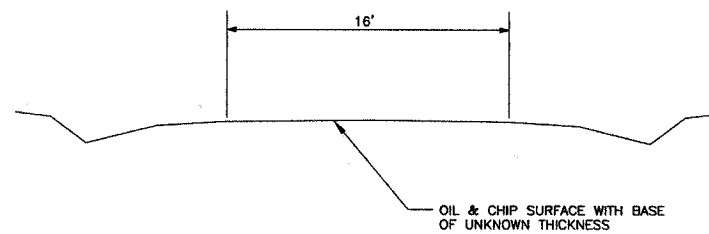
**SUMMARY OF QUANTITIES**

CODE NO.	ITEM	UNIT	QUANTITY
20100110	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	UNIT	131
20100210	TREE REMOVAL (OVER 15 UNITS DIAMETER)	UNIT	34
20200100	EARTH EXCAVATION	CU YD	245
20300100	CHANNEL EXCAVATION	CU YD	120
20400800	FURNISHED EXCAVATION	CU YD	75
25001000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.30
28000300	TEMPORARY DITCH CHECKS	EACH	4
28000900	FENCE (EROSION CONTROL)	FOOT	200
28100807	STONE DUMPED RIPRAP, CLASS A4	TON	120
28102600	STONE RIPRAP DITCH	TON	60
35101400	AGGREGATE BASE COURSE, TYPE B	TON	60
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	330
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50300225	CONCRETE STRUCTURES	CU YD	19.4
50300280	CONCRETE ENCASEMENT	CU YD	2.1
50400505	PRECAST PRESTRESSED CONCRETE DECK BEAMS (27" DEPTH)	SQ FT	1200
50800105	REINFORCEMENT BARS	POUND	2440
50900205	STEEL RAILING, TYPE S1	FOOT	100
51201400	FURNISHING STEEL PILES HP 10X42	FOOT	245
51202305	DRIVING PILES	FOOT	245
51203400	TEST PILE STEEL HP 10 X 42	EACH	1
51500100	NAME PLATES	EACH	1
54200220	PIPE CULVERTS, CLASS D, TYPE 1 15"	FOOT	48
67100100	MOBILIZATION	L. SUM	1



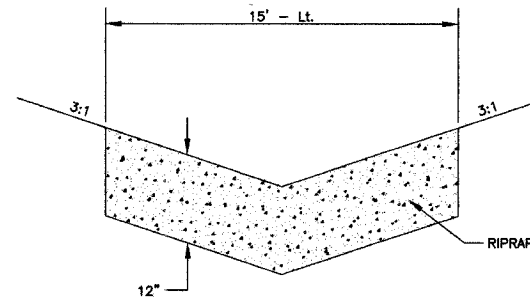
**TYPICAL SECTION**

PROPOSED



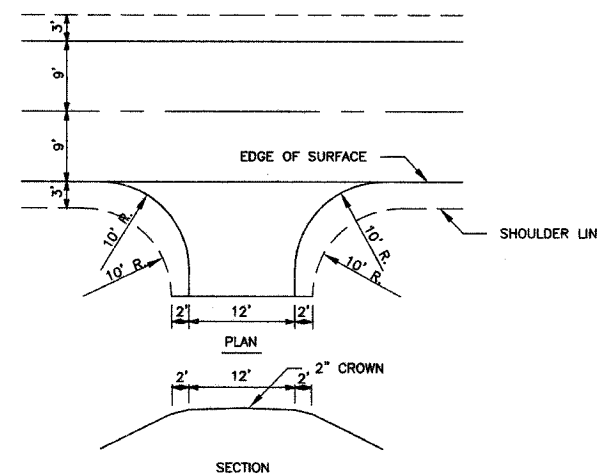
**TYPICAL SECTION**

EXISTING

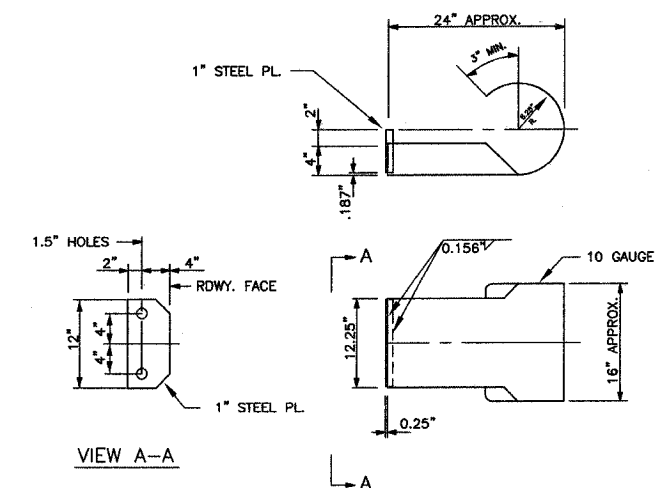


**STONE RIPRAP DITCH DETAIL**

LT. STA. 2+00 TO 2+74



**FIELD ENTRANCE DETAIL**



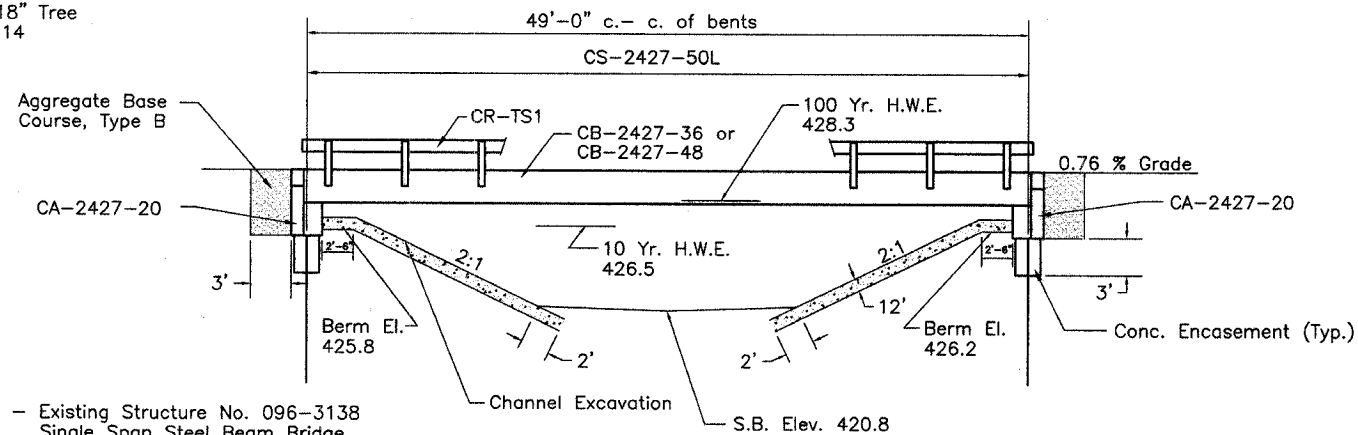
**CURLED END SECTION DETAILS**

4 REQUIRED - COST INCLUDED IN  
"STEEL RAILING, TYPE S-1"



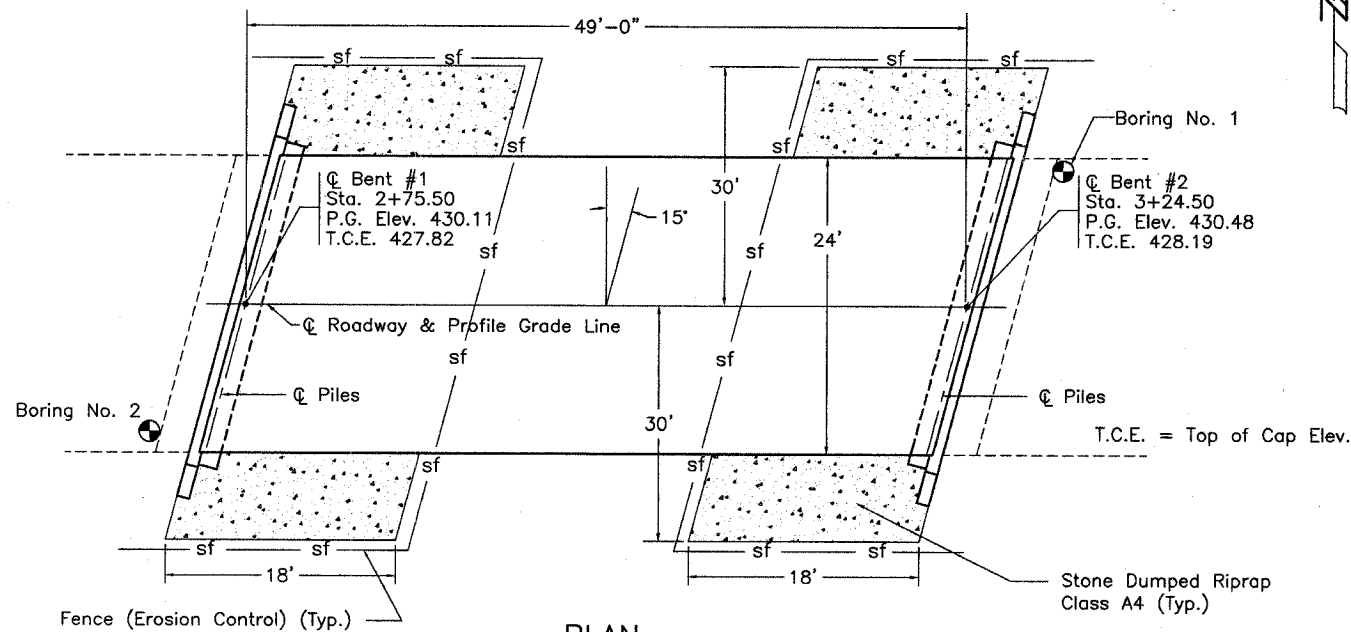
B.M. - Rt. Sta. 3+80  
Spike in 18" Tree  
Elev. 431.14

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 349	01-10116-00-BR	WAYNE	13	4
CONTRACT NO. 95497		ILLINOIS		



Existing Structure - Existing Structure No. 096-3138  
Single Span Steel Beam Bridge  
24' Bk.-Bk. Abutments  
Closed Concrete Abutments  
14' Concrete Deck

**ELEVATION**



**PLAN**

Salvage - Any material deemed salvageable by the Engineer shall be stockpiled on the R.O.W. and shall become the property of the Hickory Hill Road District Commissioner. The Contractor shall dispose of all remaining material.

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

Type HP 10 X 42  
Capacity 76 Kips  
Estimated Length 35'  
Number Required 8 (Includes 1 Test Pile located in Bent #1)  
Reo'd Beamng 228 Kips

**LOADING HS20-44**

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

**SEISMIC DATA**

Seismic Performance Category (SPC) = A  
Bedrock Acceleration Coefficient (A) = 9.3% g  
Site Coefficient (S) =

**DESIGN SPECIFICATIONS**

2002 AASHTO Standard Specifications - 17th ed.

STATION 3+00.00  
CROOKED CREEK  
SEC. 01-10116-00-BR BUILT 200  
WAYNE COUNTY  
PROJECT NO. BROS-191(53)  
LOADING HS-20  
STR. NO. 096-3445

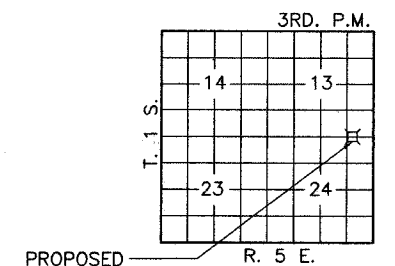
**LETTERING FOR NAME PLATE**

Locate Name Plate at S.E. corner of Bridge (See Std. CR-TS1)

**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.
- Channel Excavation: This material shall be excavated as shown within the limits of the proposed bridge then tapered to the existing channel at the Roadway R.O.W. It is estimated that 50% of the Channel Excavation will be suitable for use in the embankment. Unsuitable material shall be disposed of by the Contractor.

Item	Unit	Super	Sub.		Total
			Piers	Abuts.	
Removal of Existing Structures	Each				1
Concrete Structures	Cu.Yds.			19.4	19.4
Precast Prestressed Concrete Deck Beams (27" Depth)	Sq.Ft.	1200			1200
Steel Railing, Type S-1	Foot	100			100
Reinforcement Bars	Pound			2440	2440
Furnishing Steel Piles HP 10 X 42	Foot			245	245
Driving Piles	Foot			245	245
Test Pile Steel HP 10 X 42	Each			1	1
Name Plates	Each			1	1
Concrete Encasement	Cu.Yds.			2.1	2.1
Aggregate Base Course, Type B	Tons			60	60
Stone Dumped Riprap, Class A-4	Tons			120	120
Channel Excavation	Cu.Yds.			120	120
Fence (Erosion Control)	Foot			200	200



**LOCATION SKETCH**

**INDEX OF SHEETS**

- GENERAL PLAN & ELEVATION
- STANDARD CS-2427-50L
- STANDARD CB-2427-36
- STANDARD CB-2427-48
- STANDARD CA-2427-20
- STANDARD CR-TS1
- STANDARD CN
- STANDARD CX-1

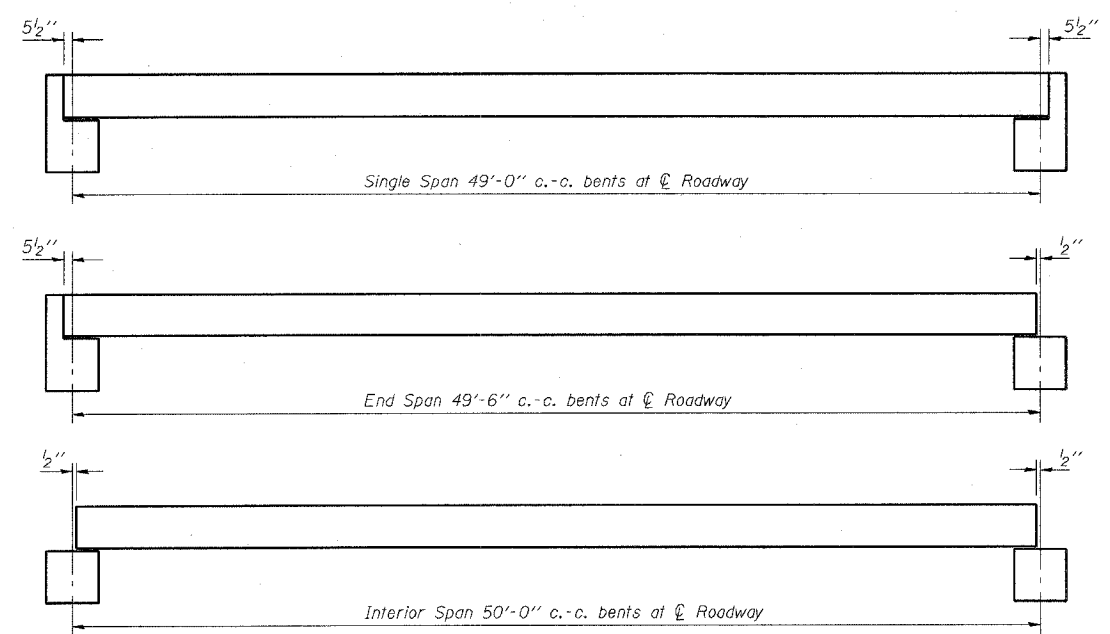
**WATERWAY INFORMATION**

Drainage Area = 2.7 Sq. Mi. Low Grade Elev. = 429.5 @ Sta. 1+50

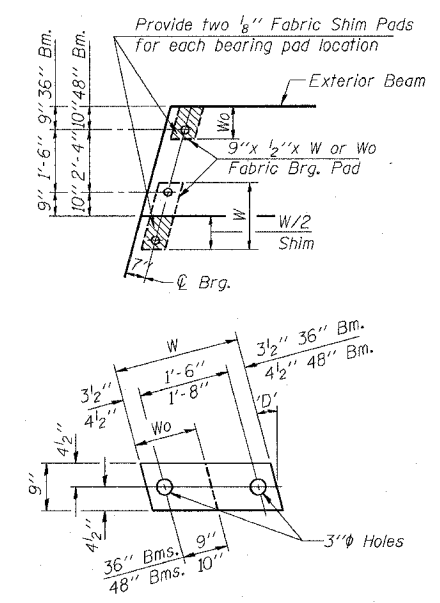
Flood	Freq. Yr.	Q ft <sup>3</sup> /s	Opening ft <sup>2</sup>		Nat. H.W.E.	Head - ft		Headwater	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	10	755	105	162	426.5	0.1	0.1	426.6	426.6
Base	100	1345	145	224	428.3	0.9	0.2	429.2	428.5
Overtopping									
Max. Calc.	500								

**GENERAL PLAN & ELEVATION**

T.R. ROUTE 349  
OVER CROOKED CREEK  
SECTION 01-10116-00-BR  
WAYNE COUNTY  
STATION 3+00.00

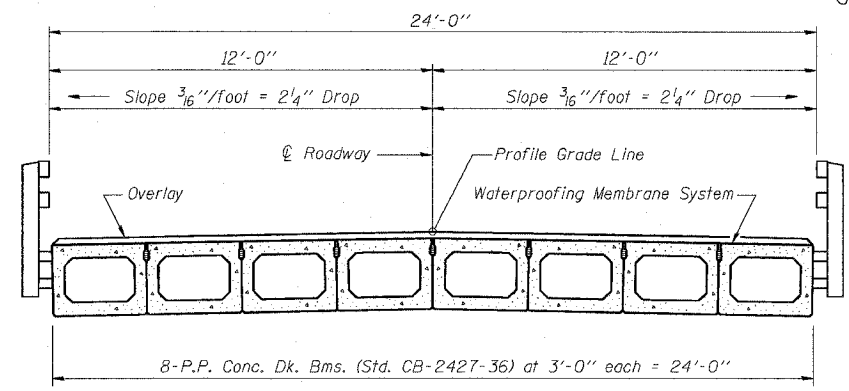


TYPICAL ELEVATIONS

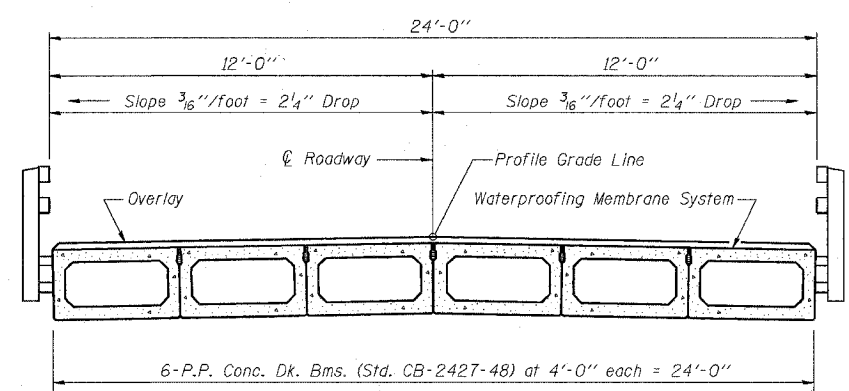


Beam	W	Wo
36"	2'-1"	1'-0 1/2"
48"	2'-5"	1'-2 1/2"

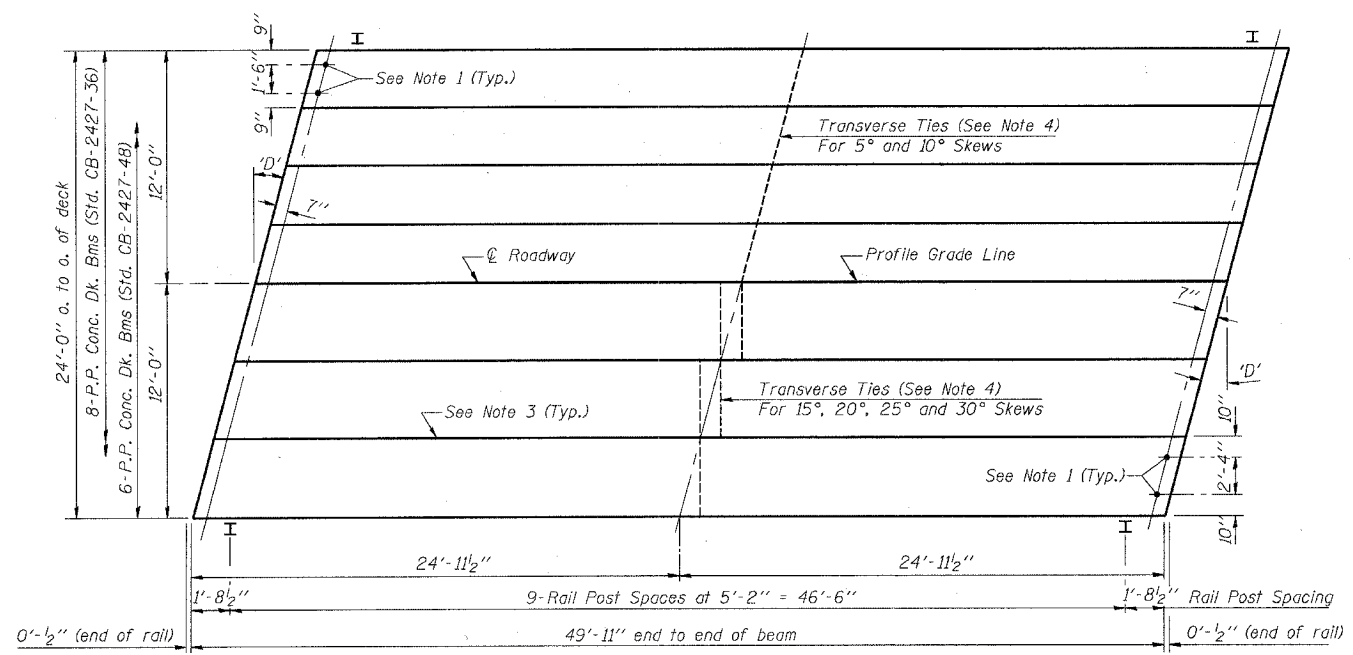
1/2" FABRIC BRG. PAD DETAILS



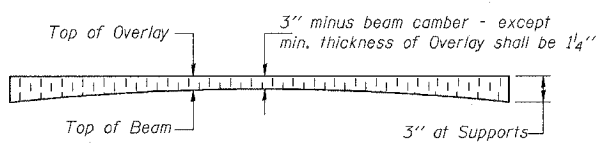
CROSS SECTION



CROSS SECTION



PLAN  
(D' = Designated Skew Angle)

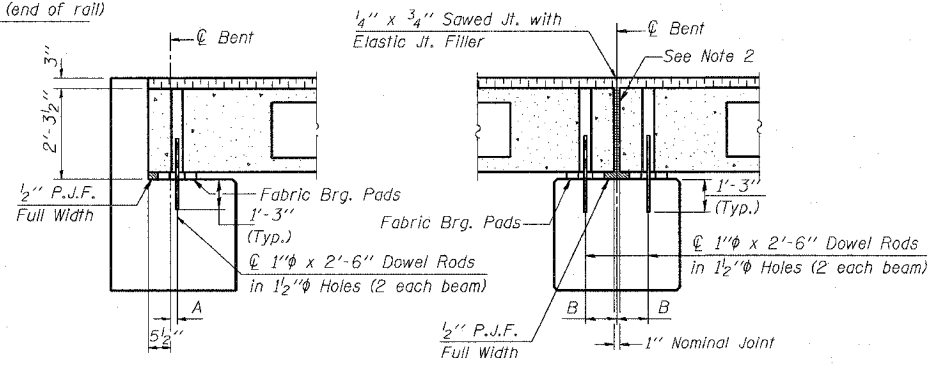


PROFILE OF OVERLAY

DIMENSIONS 'A' AND 'B'

	5°	10°	15°	20°	25°	30°
A	1 1/2"	1 5/8"	1 3/4"	1 7/8"	2 1/4"	2 5/8"
B	7 1/2"	7 5/8"	7 3/4"	8"	8 1/4"	8 5/8"

- 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.
  - Nominal 1" joint at centerline of Pier shall be filled with non-shrink grout.
  - Longitudinal keys shall be grouted.
  - 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 outside shall be filled with grout after transverse tie assembly is in place.



SECTION AT ABUTS.  
(Along centerline of Beams)

SECTION AT PIERS  
(Along centerline of Beams)

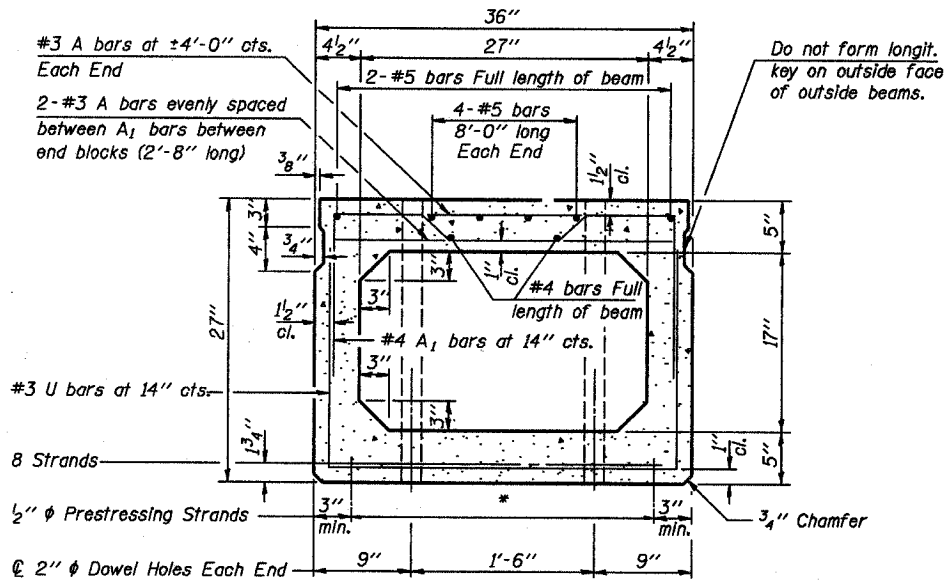
QUANTITIES FOR ONE SPAN

P.P. Conc. Dk. Bm. 27" Dp.	1200 Sq. Ft.
Steel Railing	100 Ft.
Waterproofing Membrane System	133.3 Sq. Yds.
Portland Cement Mortar	350 Ft. 3/8"
Fairing Course	250 Ft. 48"

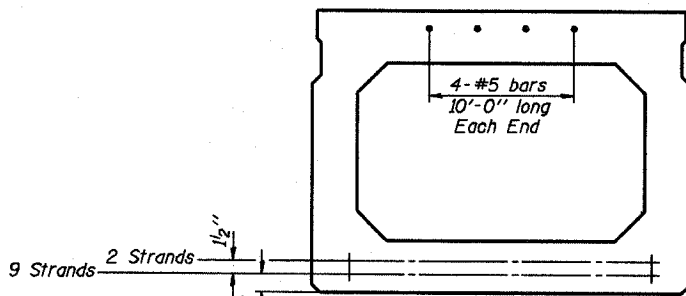
\*Note: Quantity of overlay for one span = 18.2 Tons

P.P.C. DECK BEAM SUPERSTRUCTURE			
24' RDWY.	27" BMS.	50' SPAN	LEFT
STANDARD CS-2427-50L			

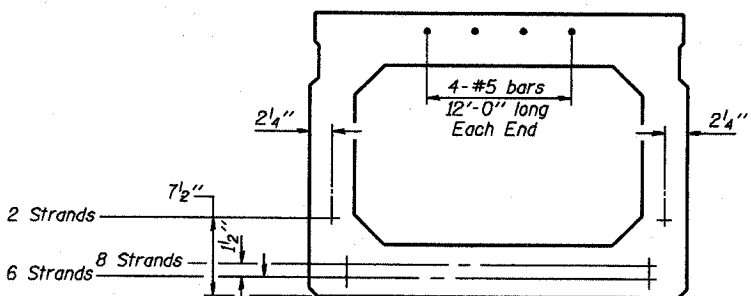
Illinois Department of Transportation  
 PASSED APRIL 4, 2005  
 Thomas J. Romagnolo  
 Engineer of Bridge Design  
 APPROVED APRIL 4, 2005  
 Ralph E. Anderson  
 Engineer of Bridges and Structures



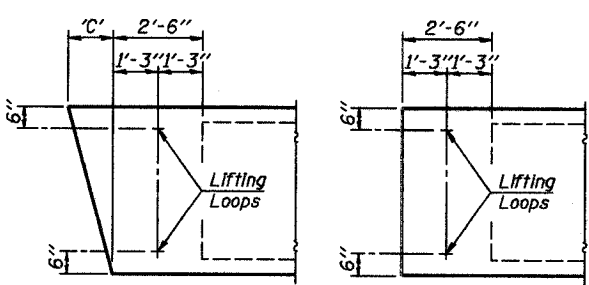
**CROSS SECTION**  
(40' SPAN)



**CROSS SECTION**  
(50' SPAN)

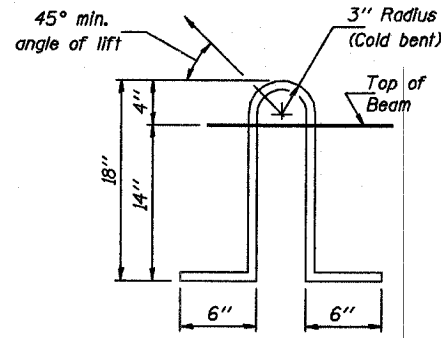


**CROSS SECTION**  
(60' SPAN)



**END BLOCK DETAILS**

Each beam shall have four Lifting Loops, two at each end of beam cast in locations shown above. Loops shall be burned off after beams have been erected.



**LIFTING LOOP DETAIL**

Lifting loops shall be 2. 1/2" φ-270 ksi strands, as shown. Alternate approved lifting devices are also acceptable.

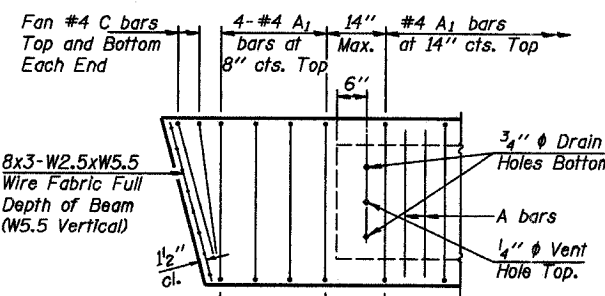
**DIMENSION 'C'**

Skew Angle 'D'	0°	5°	10°	15°	20°	25°	30°
Dimension 'C' (Inches)	0	3 3/8	6 3/8	9 5/8	13 1/8	16 3/4	20 3/4

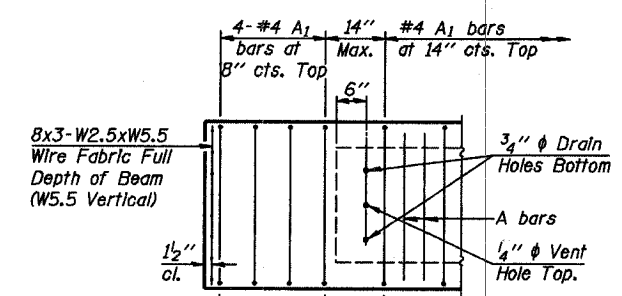
**\* TRANSVERSE STRAND PLACEMENT GUIDELINES**

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

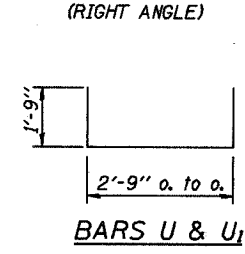
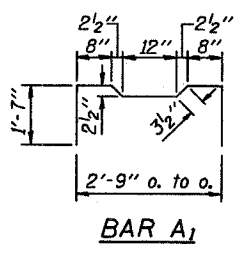
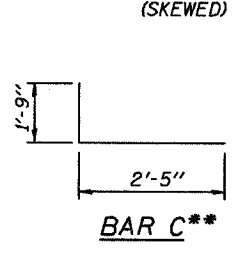
Vertical placement of strands shall not be adjusted to satisfy the above guidelines.



**END REINFORCEMENT**  
(SKEWED)



**END REINFORCEMENT**  
(RIGHT ANGLE)

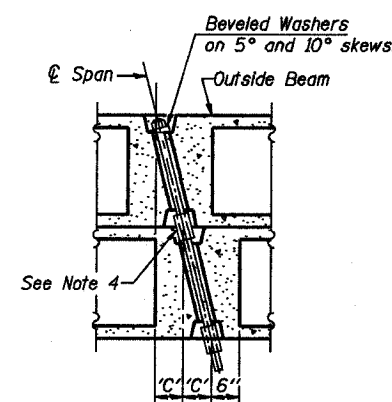


**DESIGN STRESSES**

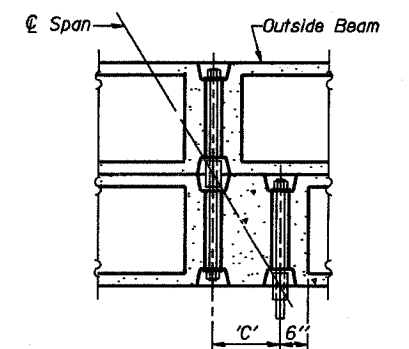
- $f'_c = 5,000$  p.s.i.
- $f'_t = 4,000$  p.s.i.
- $f'_s = 270,000$  p.s.i. (1/2" φ Strand)
- $f'_{sl} = 201,960$  p.s.i. (1/2" φ Strand)
- $f_y = 60,000$  p.s.i.

**MIN. BAR LAP**

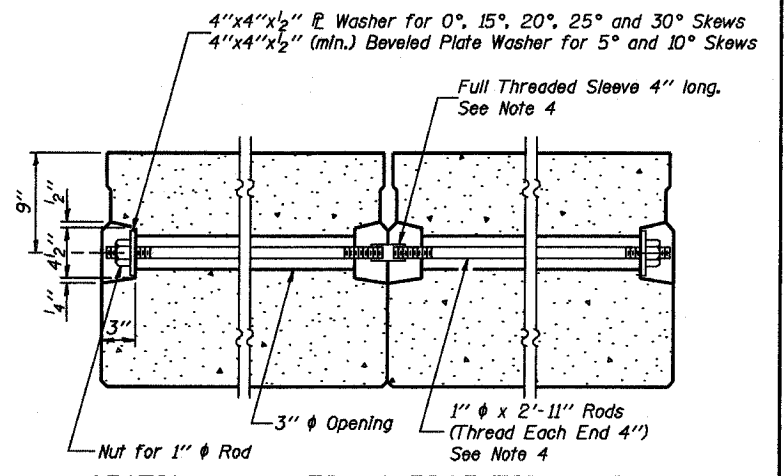
- #4 bars = 1'-4"
- #5 bars = 1'-8"



**PARTIAL PLAN**  
**TRANSVERSE TIE ASSEMBLY**  
(D=0°, 5° and 10°)



**PARTIAL PLAN**  
**TRANSVERSE TIE ASSEMBLY**  
(D=15°, 20°, 25° and 30°)



**SECTION ALONG TRANSVERSE TIE ASSEMBLY**  
(REQUIRED FOR 50' & 60' SPANS ONLY)

**NOTES**

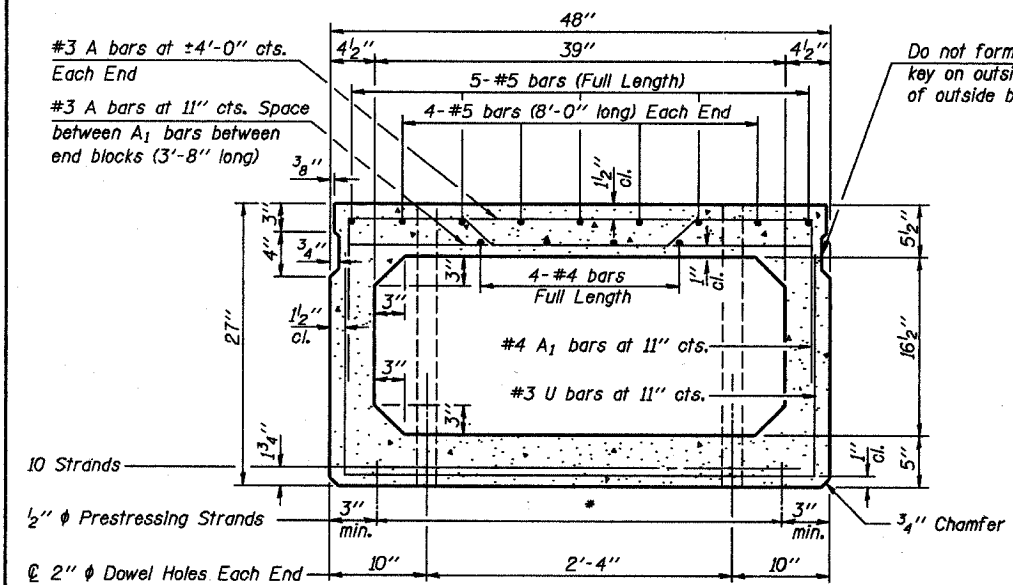
1. Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270.
2. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 square inches.
3. Reinforcement bars shall conform to the requirements of AASHTO M-31 or M-322, Grade 60.
4. On 0°, 5° and 10° skews, alternate approved transverse tie rods of increased segmental length are acceptable.
5. Roll Post anchor devices shall be cast into outside beam as elsewhere specified.
6. When a Waterproofing Membrane System is specified, the top surface of the beams shall be screeded with a straightedge and finished with a hand float. 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 1/4".
7. 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 the top of the beam and the bottom edge of the key.

**NOTE:**  
The std. reinf. and dimensions shown on the 40' span cross section is typical for all spans, except as shown.

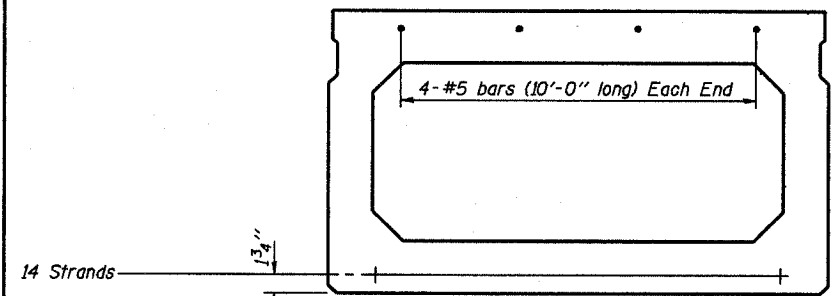
**\*\*NOTE:**  
The following number of C bars shall be used:  
Skew No.  
5° and 10° — 1  
15° and 20° — 2  
25° and 30° — 3

Illinois Department of Transportation  
PASSED APRIL 4, 2005  
Theresa S. Remington  
Engineer of Bridge Design  
APPROVED APRIL 4, 2005  
Ralph E. Anderson  
Engineer of Bridges and Structures

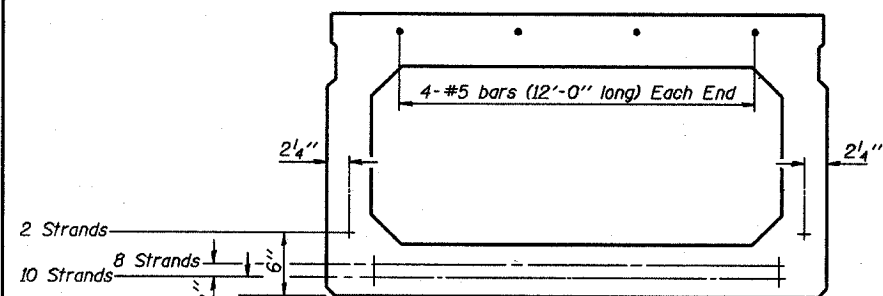
**P.P.C. DECK BEAM DETAILS**  
24' ROADWAY | 27" x 36" BEAMS  
STANDARD CB-2427-36



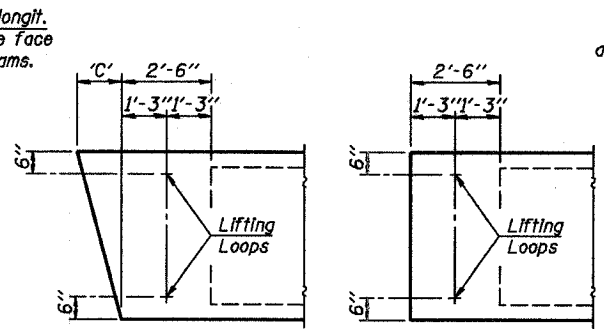
**CROSS SECTION**  
(40' SPAN)



**CROSS SECTION**  
(50' SPAN)

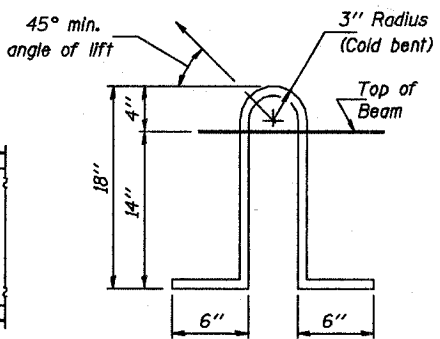


**CROSS SECTION**  
(60' SPAN)



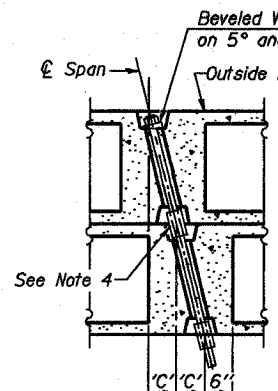
**END BLOCK DETAILS**

Each beam shall have four Lifting Loops, two at each end of beam cast in locations shown above. Loops shall be burned off after beams have been erected.

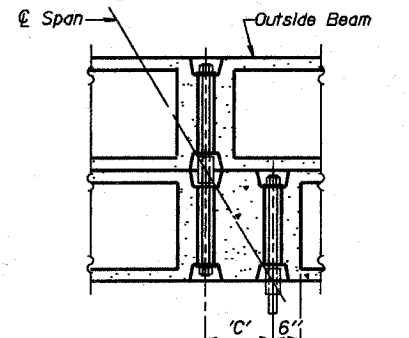


**LIFTING LOOP DETAIL**

Lifting loops shall be 3/2" diameter 270 ksi strands, as shown. Alternate approved lifting devices are also acceptable.



**PARTIAL PLAN TRANSVERSE TIE ASSEMBLY**  
(D=0°, 5° and 10°)



**PARTIAL PLAN TRANSVERSE TIE ASSEMBLY**  
(D=15°, 20°, 25° and 30°)

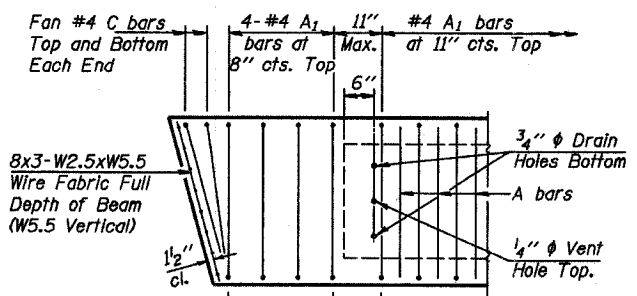
**DIMENSION 'C'**

Skew Angle 'D'	0°	5°	10°	15°	20°	25°	30°
Dimension 'C' (Inches)	0	4 1/4	8 1/2	12 1/8	17 1/2	22 3/8	27 3/4

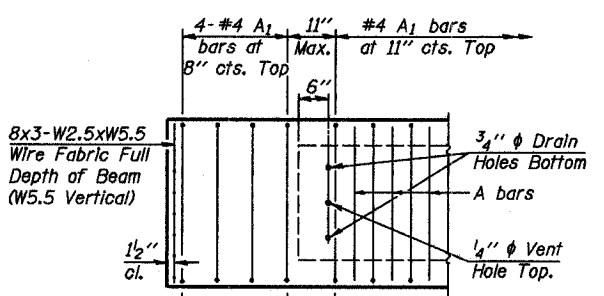
**\* TRANSVERSE STRAND PLACEMENT GUIDELINES**

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

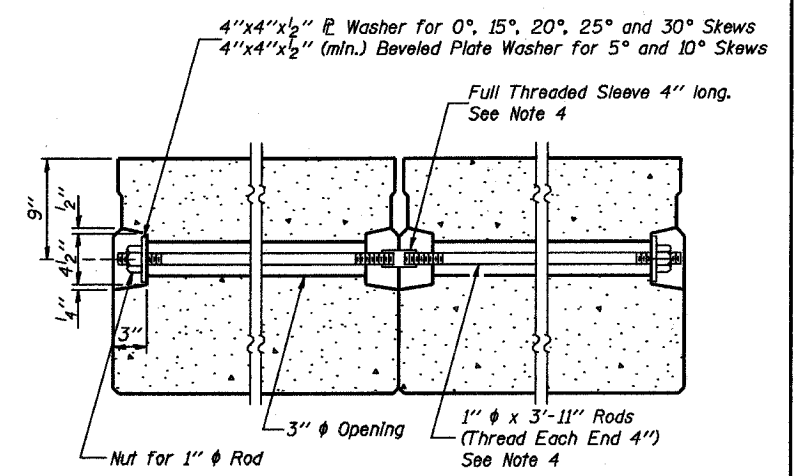
Vertical placement of strands shall not be adjusted to satisfy the above guidelines.



**END REINFORCEMENT**  
(SKEWED)



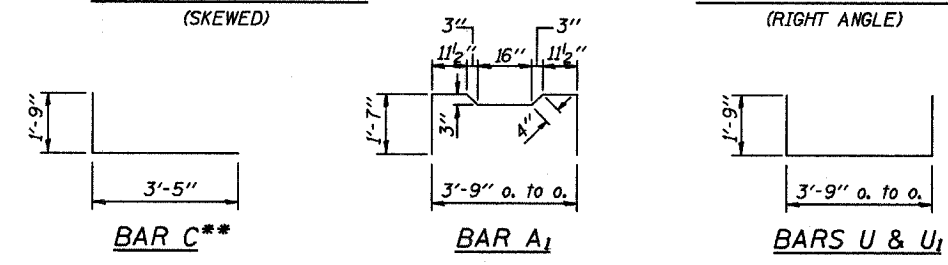
**END REINFORCEMENT**  
(RIGHT ANGLE)



**SECTION ALONG TRANSVERSE TIE ASSEMBLY**  
(REQUIRED FOR 50' & 60' SPANS ONLY)

**NOTES**

1. Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270.
2. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 square inches.
3. Reinforcement bars shall conform to the requirements of AASHTO M-31 or M-322, Grade 60.
4. On 0°, 5° and 10° skew angles, alternate approved transverse tie rods of increased segmental length are acceptable.
5. Roll Post anchor devices shall be cast into outside beam as elsewhere specified.
6. When a Waterproofing Membrane System is specified, the top surface of the beams shall be screeded with a straightedge and finished with a hand float. 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 1/4".
7. 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 the top of the beam and the bottom edge of the key.



**DESIGN STRESSES**

$f'_c = 5,000$  p.s.i.  
 $f'_t = 4,000$  p.s.i.  
 $f'_s = 270,000$  p.s.i. (1/2" diameter Strand)  
 $f'_d = 201,960$  p.s.i. (1/2" diameter Strand)  
 $f_y = 60,000$  p.s.i.

**MIN. BAR LAP**

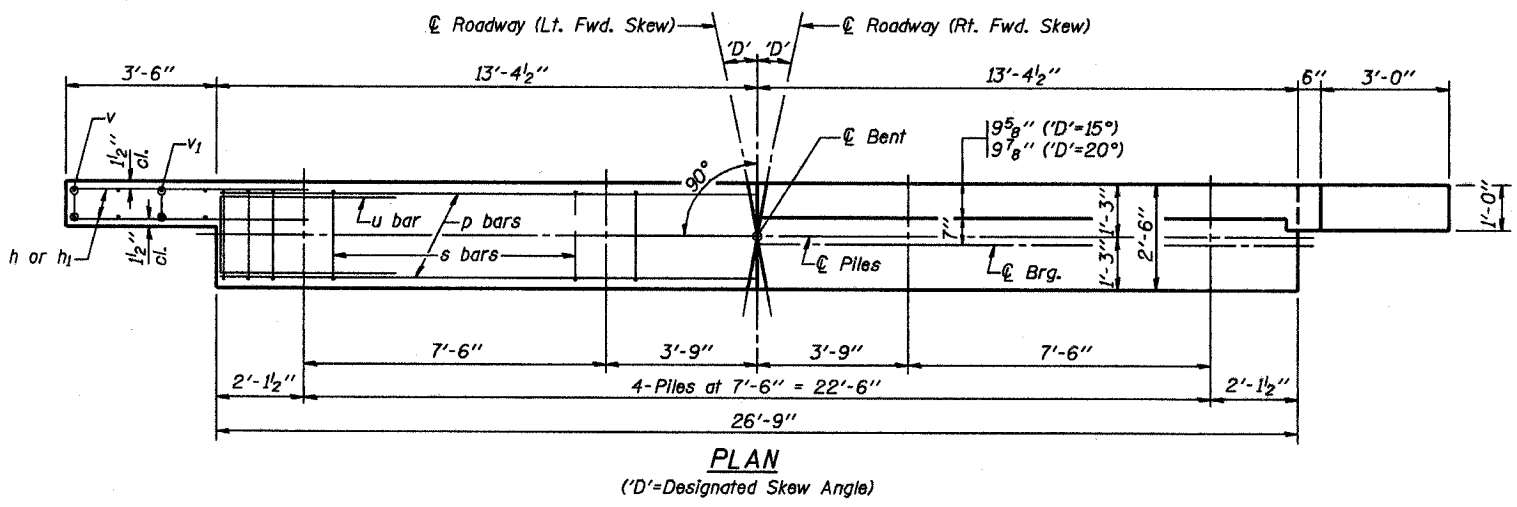
#4 bars = 1'-4"  
 #5 bars = 1'-8"

**\*\*NOTE:**  
 The following number of C bars shall be used:  
 Skew No.  
 5° and 10° — 1  
 15° and 20° — 2  
 25° and 30° — 3

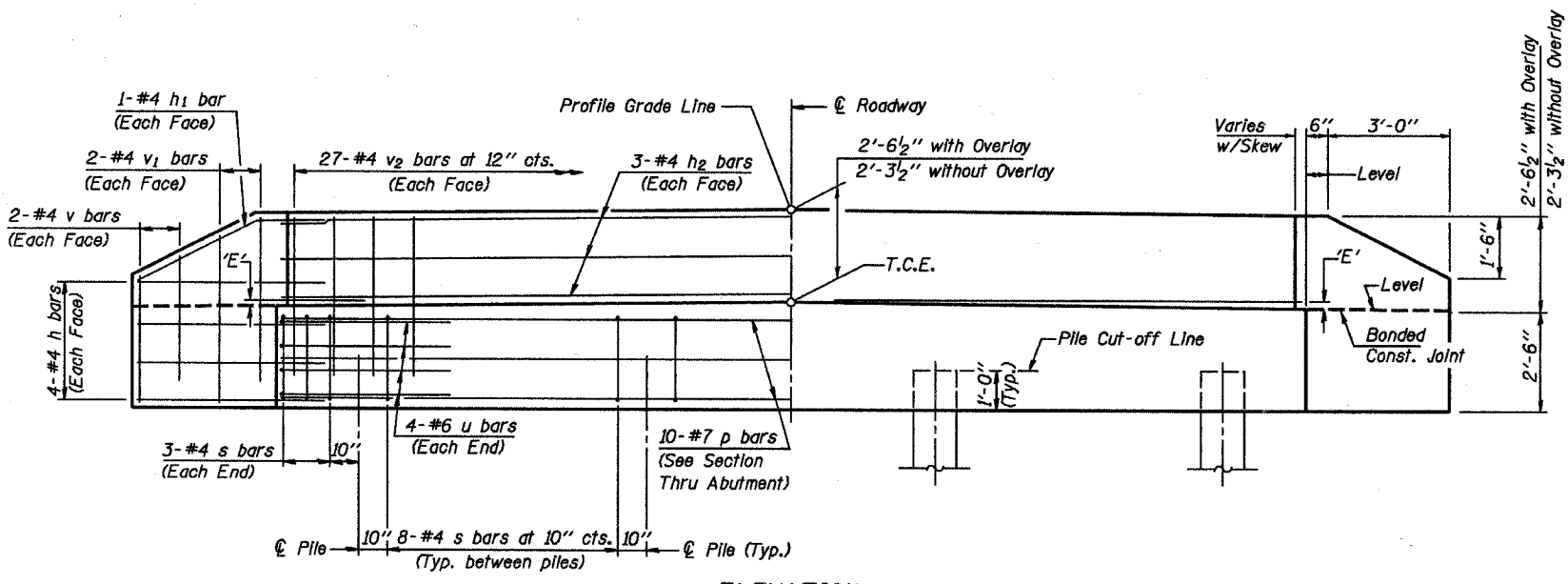
**NOTE**  
 The std. reinf. and dimensions shown on the 40' span cross section is typical for all spans, except as shown.

Illinois Department of Transportation  
 PASSED APRIL 4, 2005  
 Thomas J. Deming  
 Engineer of Bridge Design  
 APPROVED APRIL 4, 2005  
 Ralph E. Anderson  
 Engineer of Bridges and Structures

**P.P.C. DECK BEAM DETAILS**  
 24' ROADWAY | 27" x 48" BEAMS  
 STANDARD CB-2427-48



**PLAN**  
(D'=Designated Skew Angle)



**ELEVATION**

**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 1/8"	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"	3 3/4"
Over 3% to 4%	1"	3 7/8"	3/8"	4 1/4"

**NOTES**

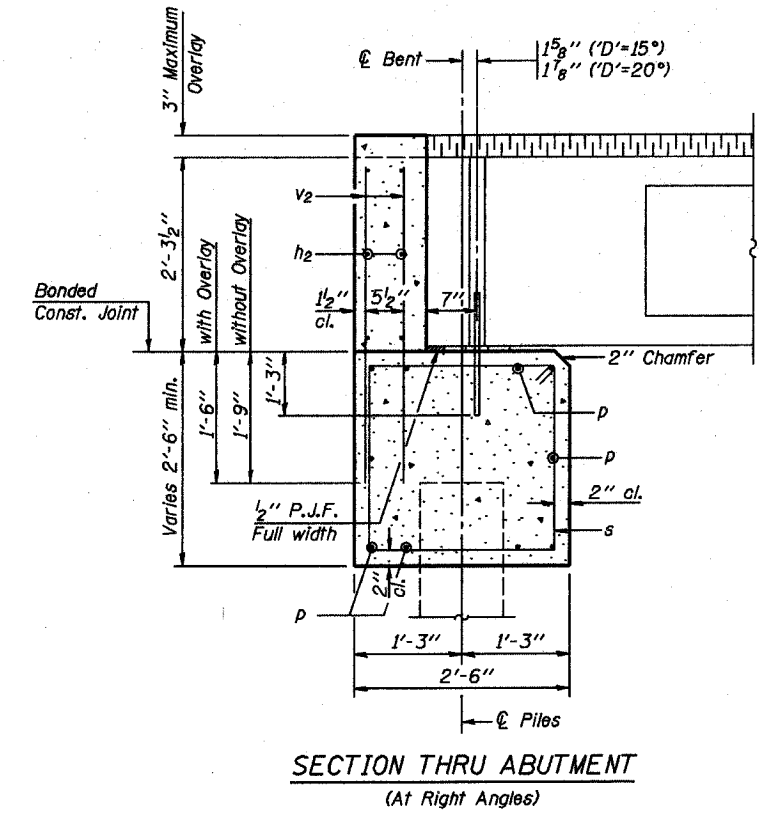
- The Backwall and the portion of the Wingwalls above the bonded construction joint shall be cast against the in-place beam.
- Reinforcement bars shall conform to the requirements of A.A.S.H.T.O. M-31 or M-322, Grade 60.
- Space reinforcement in cap to miss anchor bolts.

**MAXIMUM PILE LOADS**

SPAN	TONS
40'	34
50'	38
60'	43

**DESIGN STRESSES**

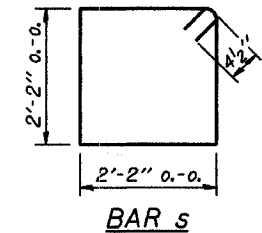
f'c = 3,500 psi  
fy = 60,000 psi



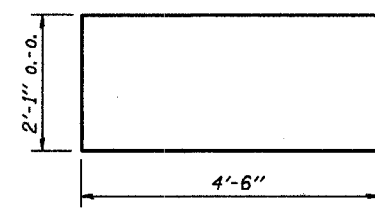
**SECTION THRU ABUTMENT**  
(At Right Angles)

**BILL OF MATERIAL FOR ONE ABUTMENT**

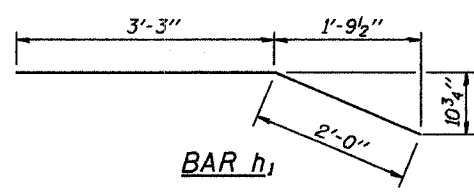
Bar	No.	Size	Length	Shape
h	16	#4	5'-0"	—
h1	4	#4	5'-3"	—
h2	6	#4	26'-5"	—
p	10	#7	26'-5"	—
s	30	#4	9'-5"	□
u	8	#6	11'-1"	□
v	8	#4	3'-2"	—
v1	8	#4	4'-2"	—
v2	54	#4	3'-11"	—
Concrete Structures			9.7 Cu. Yds.	
Reinforcement Bars			1220 Lb.	



**BAR s**



**BAR u**



**BAR h1**

P.P.C. DECK BEAMS PILE BENT ABUTMENT		
24' RDWY.	27" BMS.	'D'=15° OR 20°
STANDARD CA-2427-20		

Illinois Department of Transportation

PASSED APRIL 4, 2005

Thames S. Ramo (Signature)  
Engineer of Bridge Design

APPROVED APRIL 4, 2005

Ralph E. Anderson (Signature)  
Engineer of Bridges and Structures

ISSUED 1-1



**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.

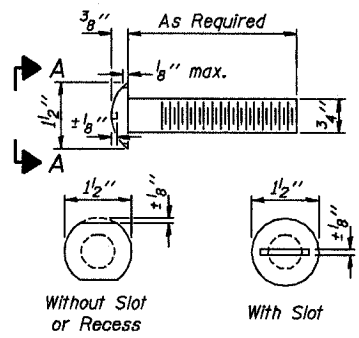
For multi-span bridges, sufficient 1/4" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with STEEL RAILING, TYPE S-1.

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

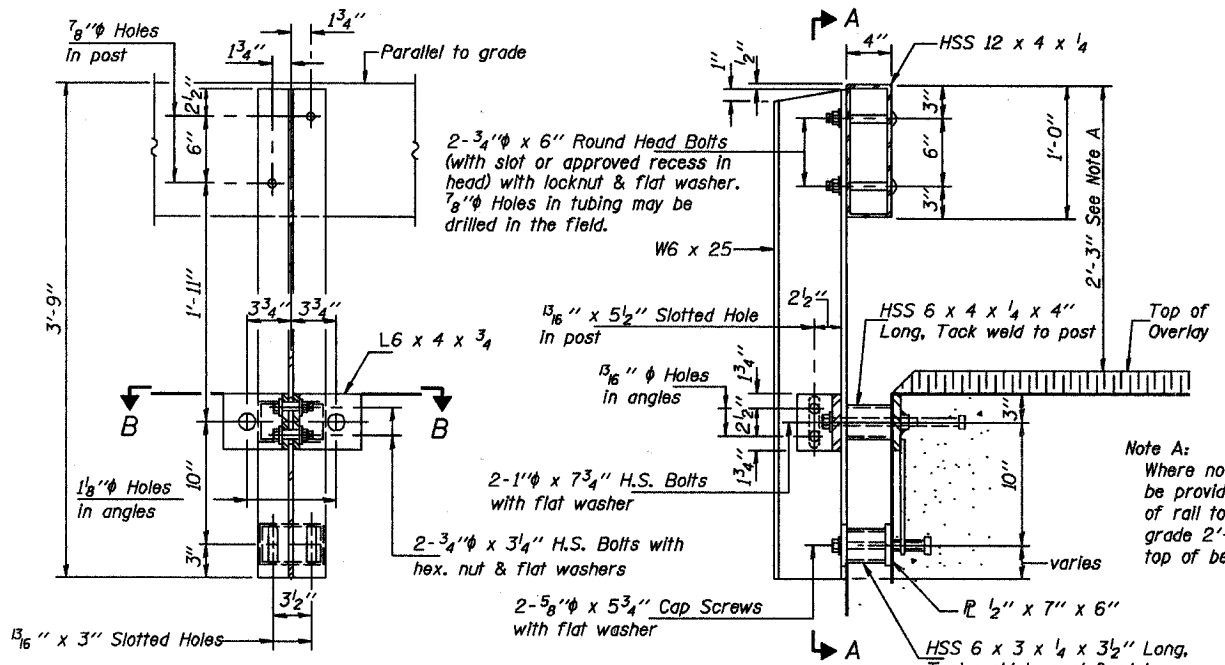
The 1/2" x 7" x 6" plates that come in contact with concrete shall either receive two coats of asphalt paint conforming to Section 1060.07 Type II, or 1/8" fabric bearing pads shall be placed between the plates and concrete.

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 (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 1/8 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.

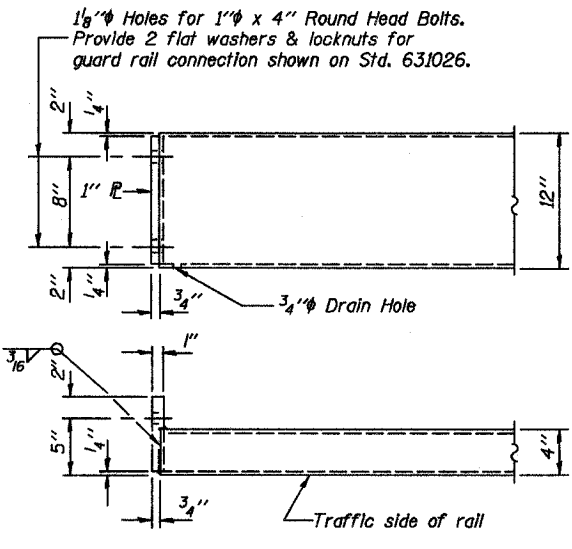


**VIEW A-A  
ROUND HEAD BOLT**

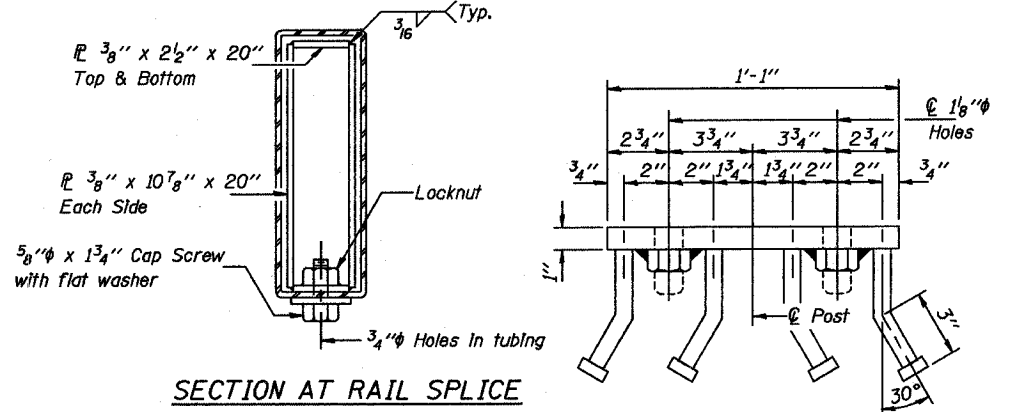


**SECTION A-A**

**SECTION AT RAIL POST**



**END OF RAIL DETAILS**



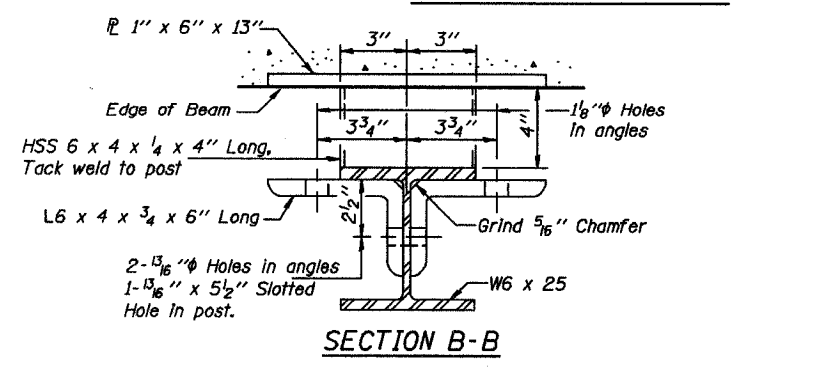
**SECTION AT RAIL SPLICE**

**VIEW C-C**

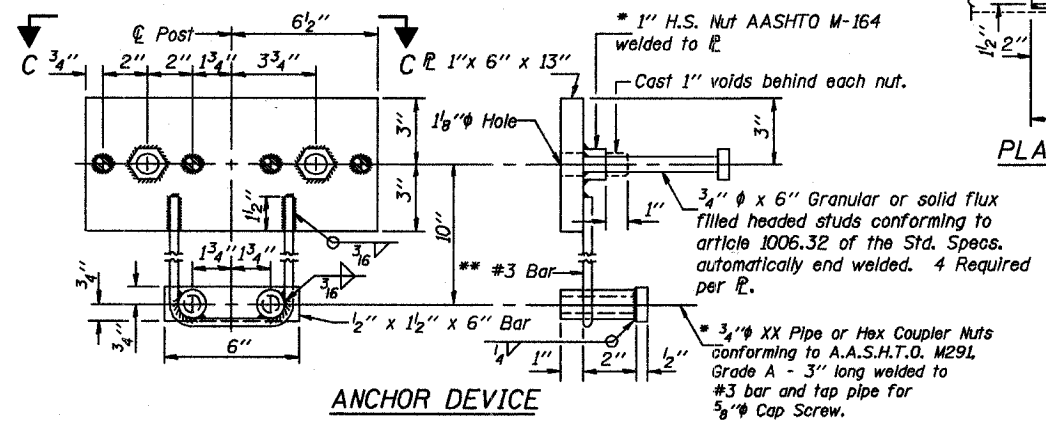
Note A:  
Where no overlay is to be provided, adjust top of rail to lay parallel to grade 2'-5" max. above top of beam.

\*\* 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".

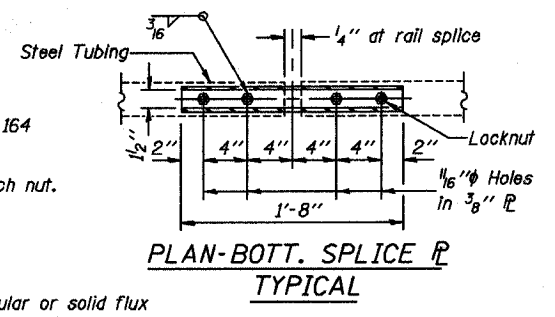
\* Threaded areas shall be plugged or blocked off during casting of beam.



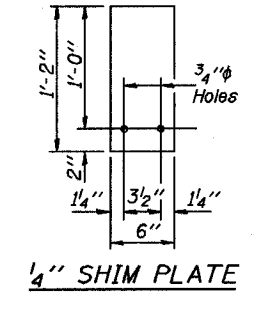
**SECTION B-B**



**ANCHOR DEVICE**



**PLAN-BOTT. SPLICE TYPICAL**



**1/4\"/>**

Illinois Department of Transportation

PASSED APRIL 4, 2005

Theresa J. ...  
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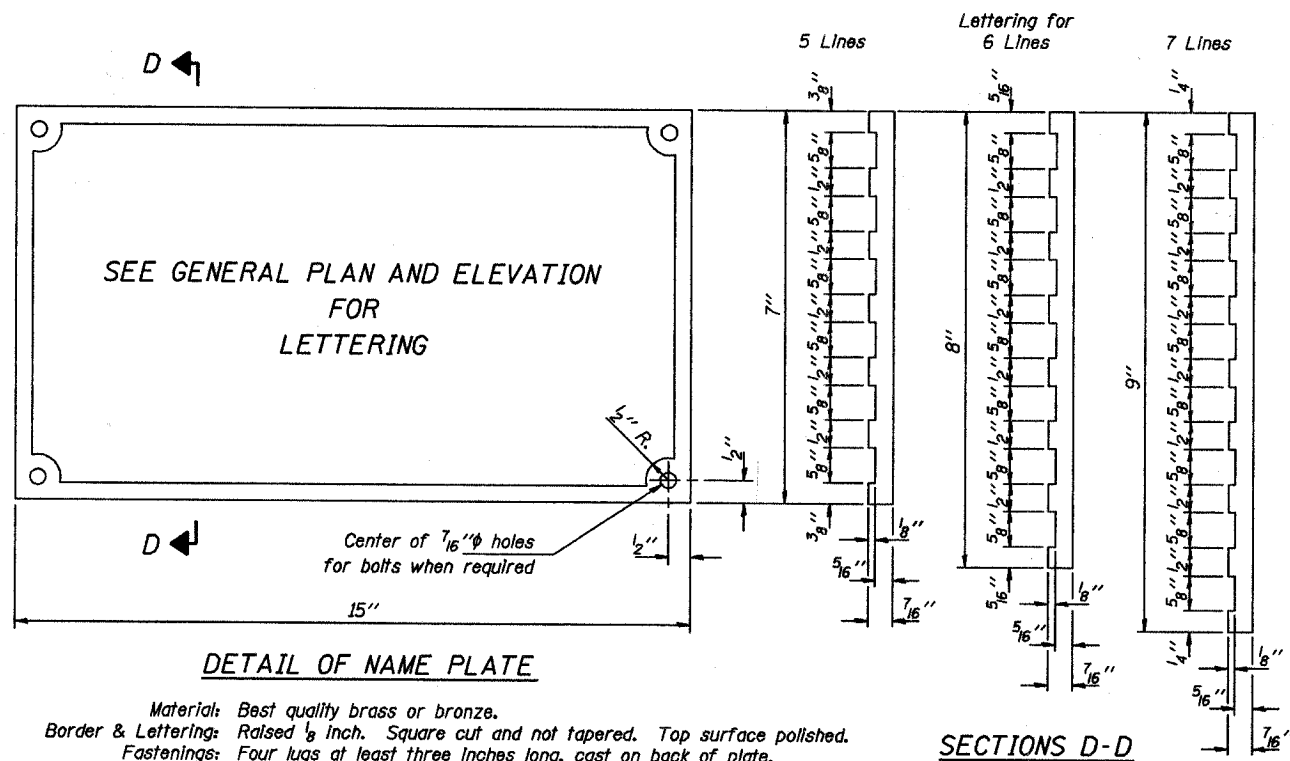
APPROVED APRIL 4, 2005

Ralph E. ...  
Engineer of Bridges and Structures

ISSUED 1-1-05

**STEEL RAILING, TYPE S-1**

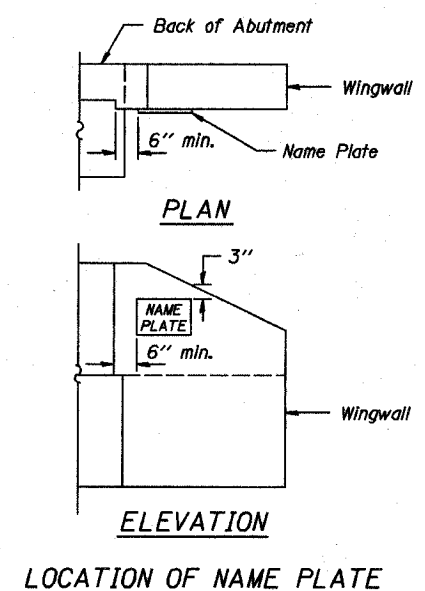
**STANDARD CR-TS1**



DETAIL OF NAME PLATE

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

SECTIONS D-D



PLAN

ELEVATION

LOCATION OF NAME PLATE

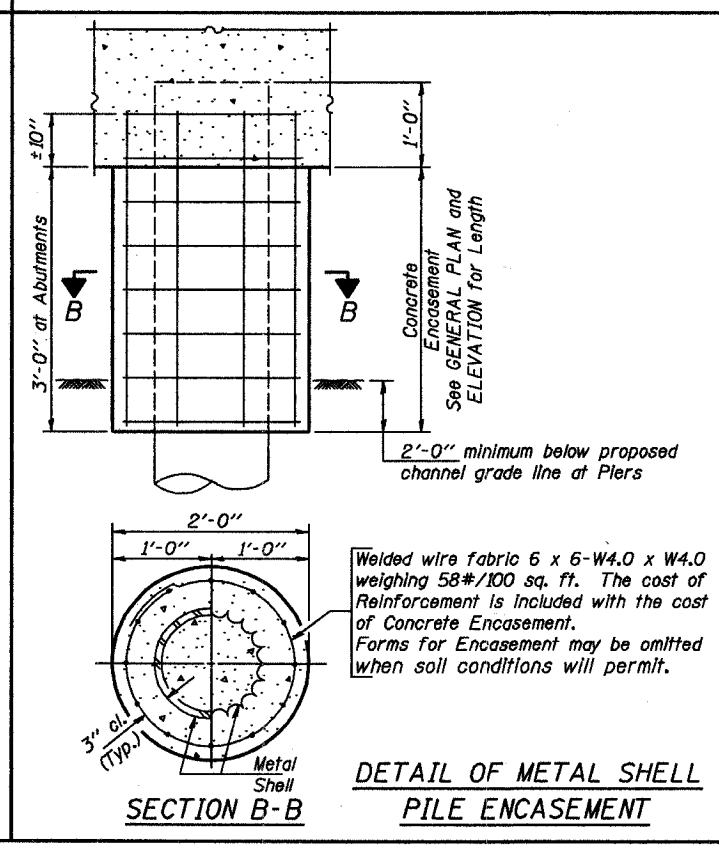
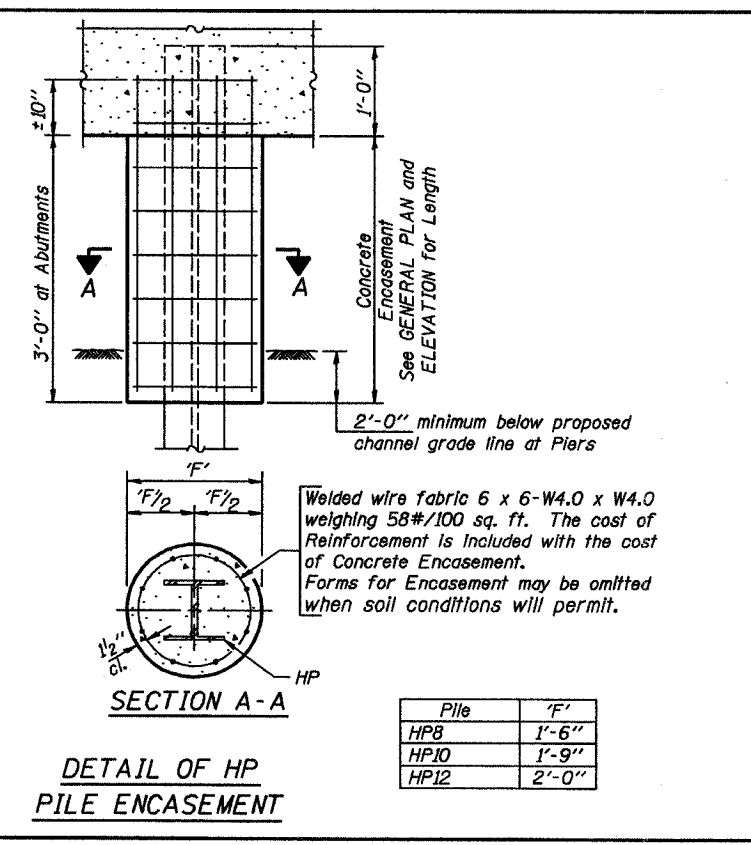
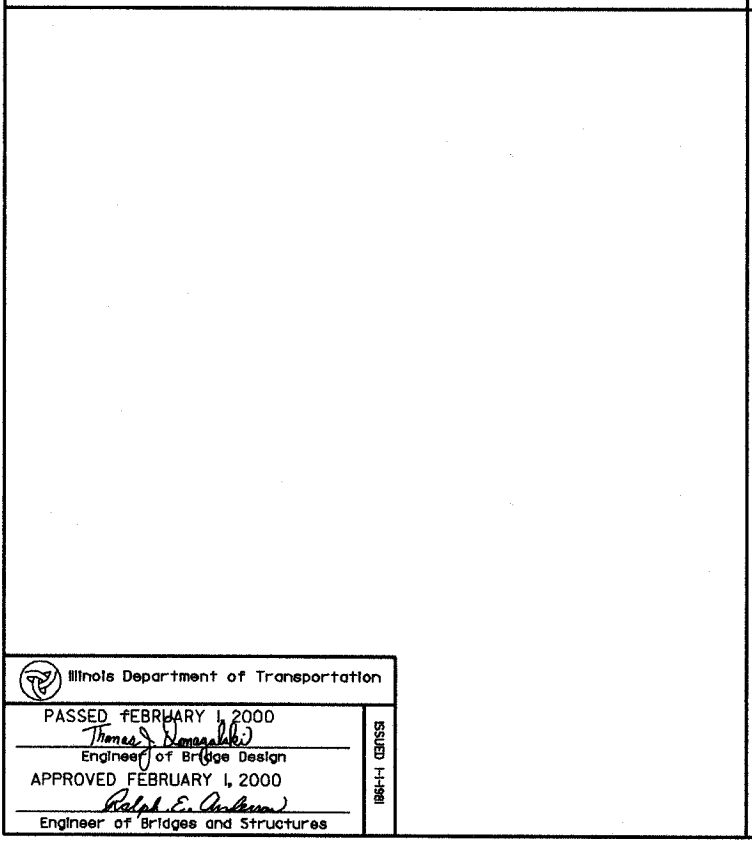
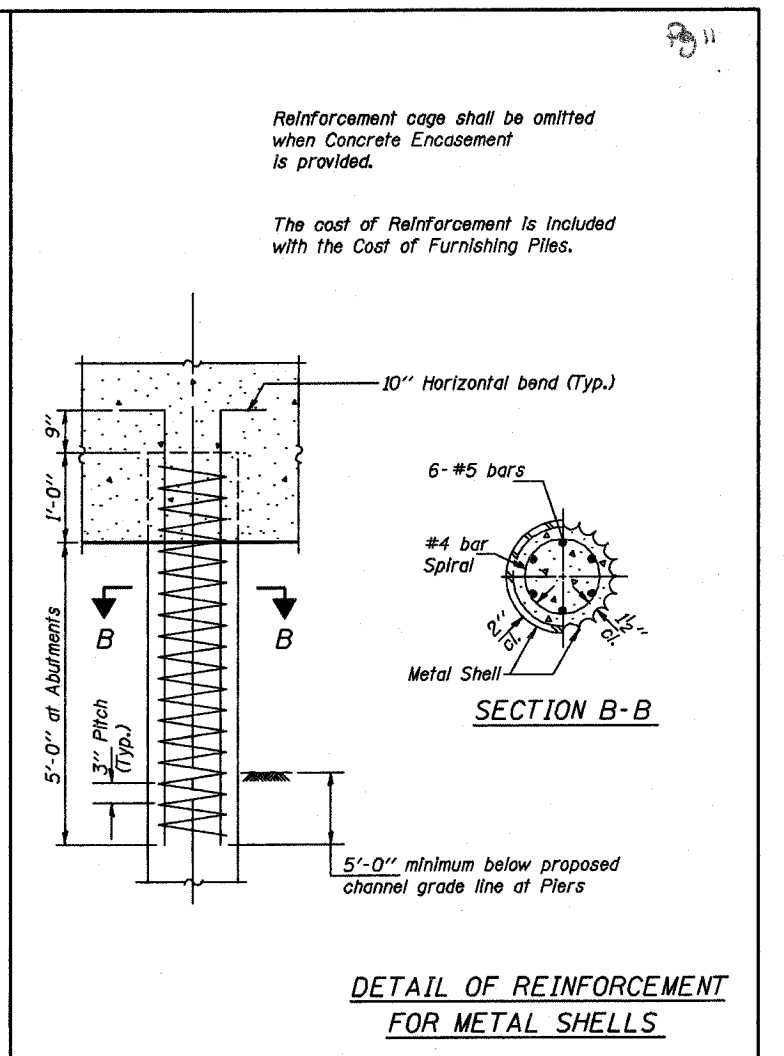
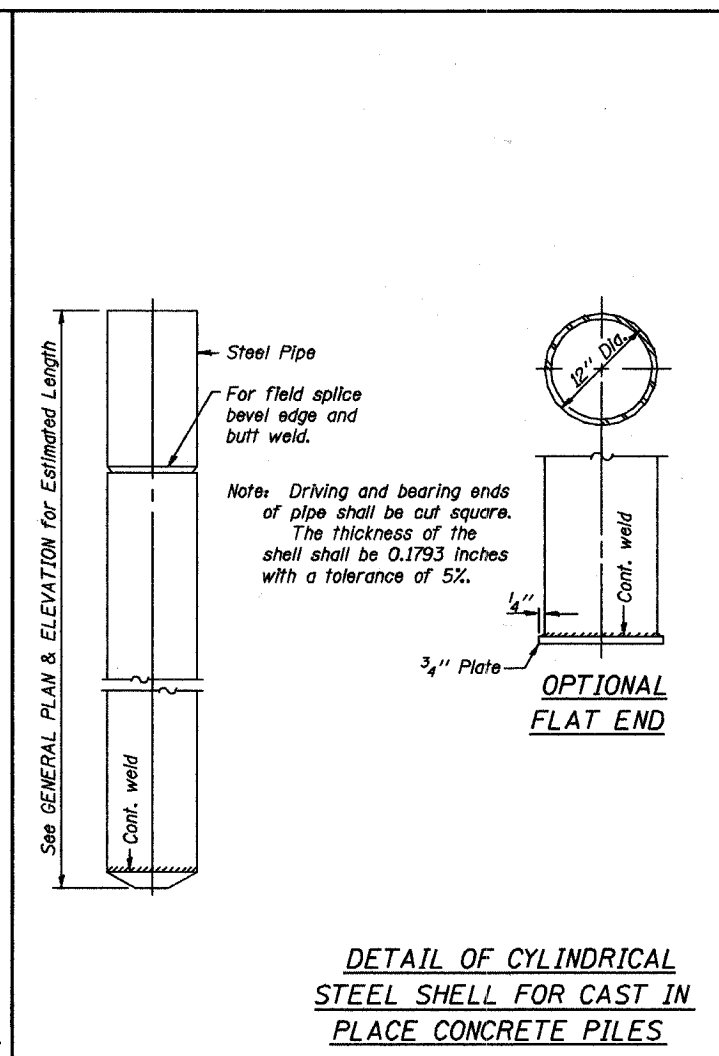
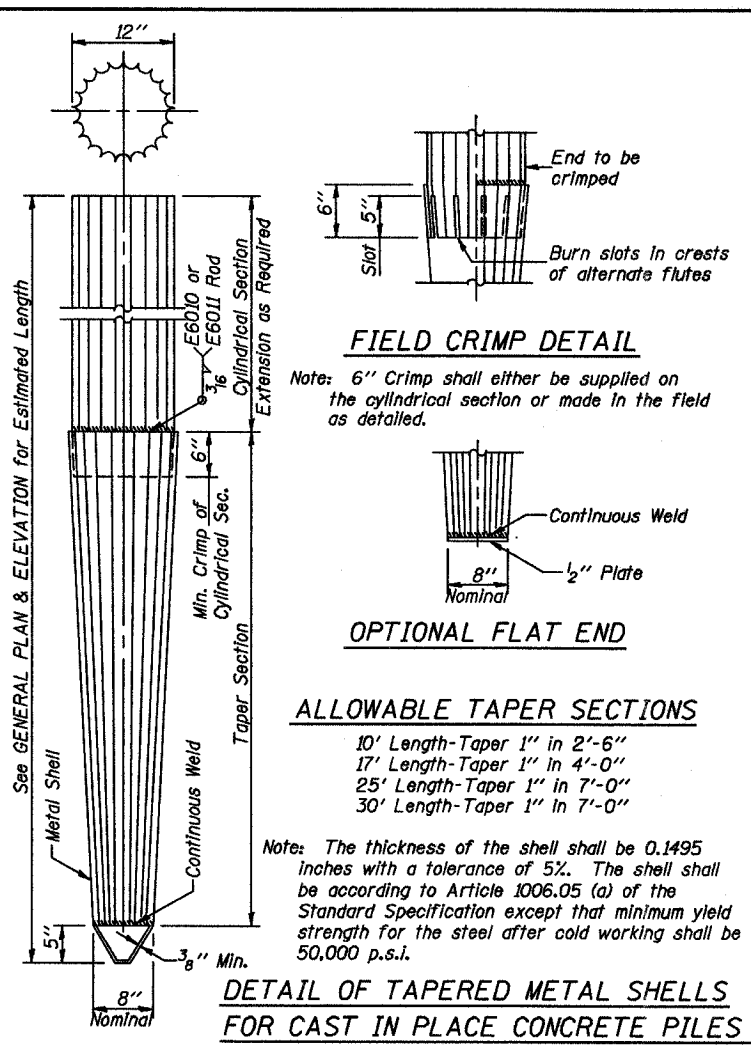
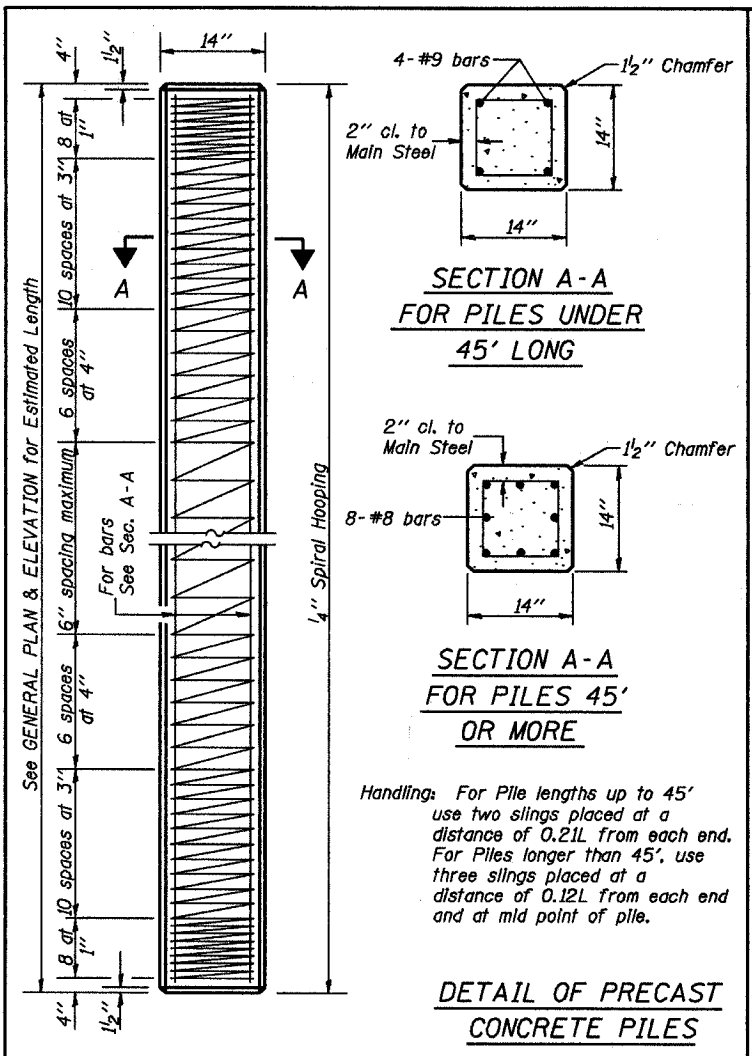
Illinois Department of Transportation

PASSED APRIL 4, 2005  
*Thomas J. Ramaglia*  
 Engineer of Bridge Design

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

ISSUED 7-1-2005

NAME PLATE  
 STANDARD CN



**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**

Illinois Department of Transportation

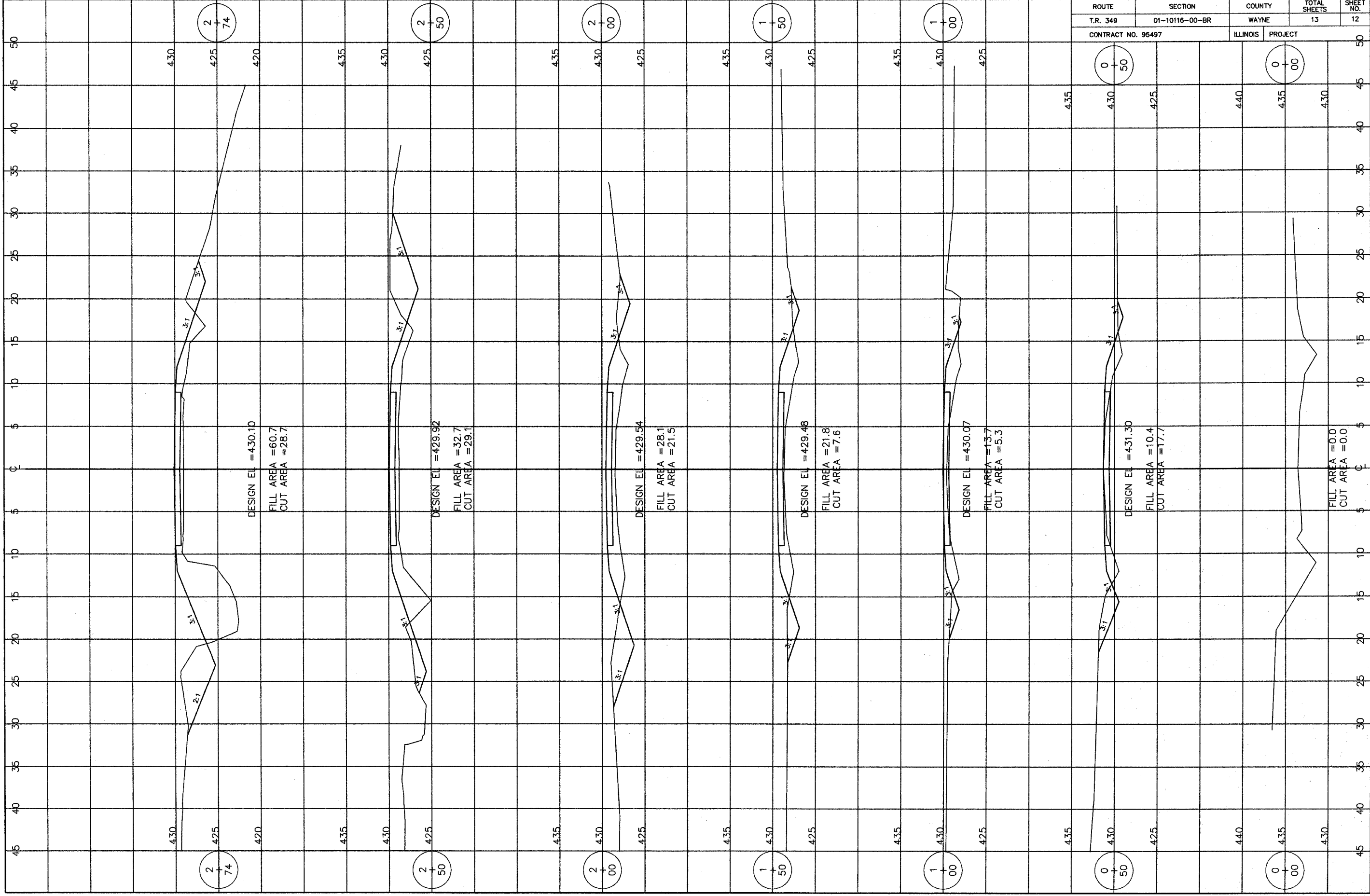
PASSED FEBRUARY 1, 2000

Theresa J. Demaree  
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APPROVED FEBRUARY 1, 2000

Ralph E. Anderson  
Engineer of Bridges and Structures

1084-H (08/98)



ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 349	01-10116-00-BR	WAYNE	13	12
CONTRACT NO. 95497		ILLINOIS	PROJECT	

