

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PLANS FOR PROPOSED
FEDERAL-AID HIGHWAY BRIDGE PROGRAM
CRAWFORD COUNTY
SECTION 05-07129-00-BR
OBLONG ROAD DISTRICT
STRUCTURE NO. 017-3752
PROJECT NO. BROS-033(47)
JOB NO. C-97-045-07
TR 199

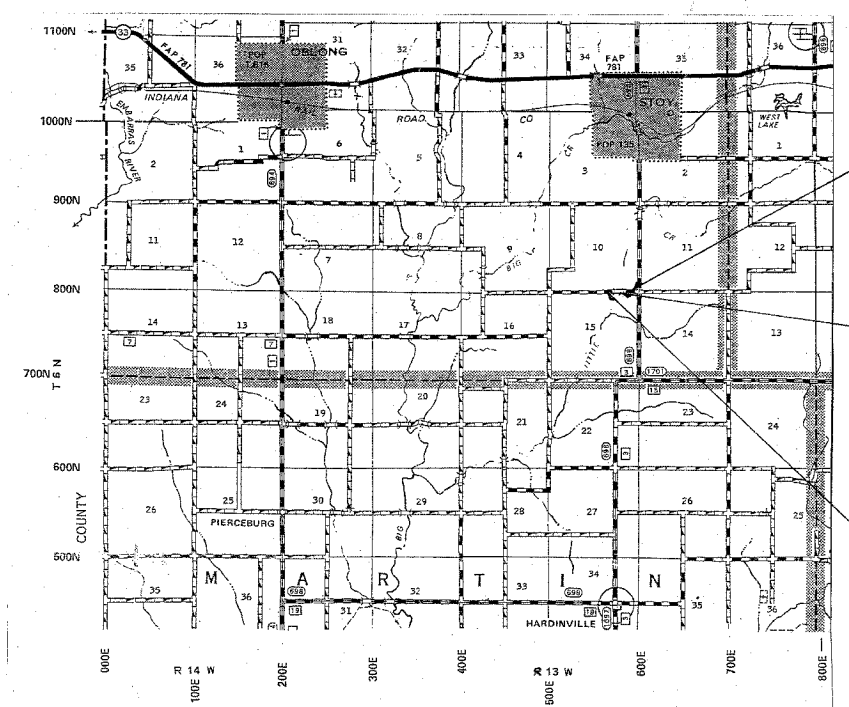
INDEX OF SHEETS

1	COVER SHEET
2	PLAN & PROFILE
3-9	BRIDGE PLANS

STANDARDS:
(SEE PROPOSAL) 702001-06 - TRAFFIC
BLR 21-6 - TRAFFIC
BLR 22-4 - TRAFFIC

QUANTITY	UNIT	SUMMARY OF QUANTITIES ITEM	CODE NO.
148	CU YD	CHANNEL EXCAVATION	20300100
90	TON	STONE DUMPED RIPRAP, CLASS A4	28100807
1	EACH	REMOVAL OF EXISTING STRUCTURES	50100100
20.6	CU YD	CONCRETE STRUCTURES	50300225
2.6	CU YD	CONCRETE ENCASMENT	50300280
1680	SQ FT	PRECAST PRESTRESSED CONCRETE DECK BEAMS (27" DEPTH)	50400505
2580	POUND	REINFORCEMENT BARS	50800105
120	FOOT	STEEL RAILING, TYPE S-1	50900205
378	FOOT	FURNISHING STEEL PILES HP 10X42	51201400
378	FOOT	DRIVING PILES	51202305
1	EACH	TEST PILE STEEL HP 10X42	51203400
1	EACH	NAME PLATES	51500100
1	L SUM	MOBILIZATION	67100100
1	L SUM	TRAFFIC CONTROL AND PROTECTION	70101700

SCALES
PLAN 1 INCH = 50 FEET
PROFILE HORZ. 1 INCH = 50 FEET
PROFILE VERT. 1 INCH = 10 FEET



SECTION 05-07129-00-BR
ENDS STA. 5+10.77

STA. 4+80 STANDARD BRIDGE DESIGN
PROPOSED PRECAST PRESTRESSED CONC.
DECK BEAM BRIDGE, 1 SPAN @ 60'
28' RDWY, SKEW= 10'
PROPOSED STR. NO. 017-3752
EXISTING STR. NO. 017-3721

SECTION 05-07129-00-BR
BEGINS STA. 4+49.23

FUNCTIONAL CLASS: RURAL LOCAL ROAD
ADT = 150
DESIGN SPEED = 30 MPH

LOCATION MAP
APPROXIMATE SCALE: 1 INCH = 1 MILE
NET LENGTH = 61.54 FT. = 0.012 MILES

CONTRACT NO. 95504

TOLL FREE JOINT UTILITY LOCATING
INFORMATION FOR EXCAVATORS (J.U.L.I.E.)
TELEPHONE NO. 1-800-992-0123

PROFESSIONAL DESIGN FIRM #184-000832

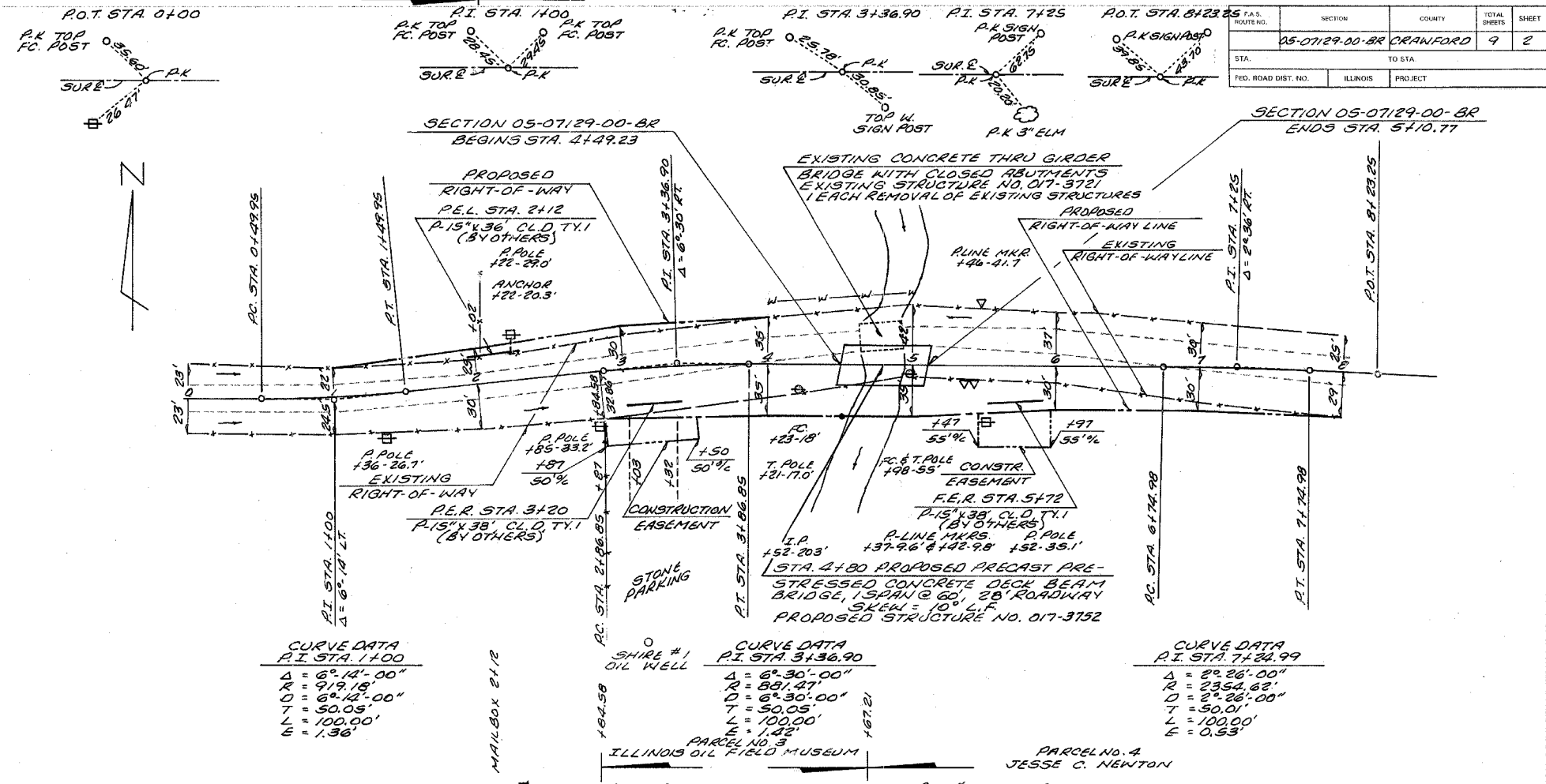
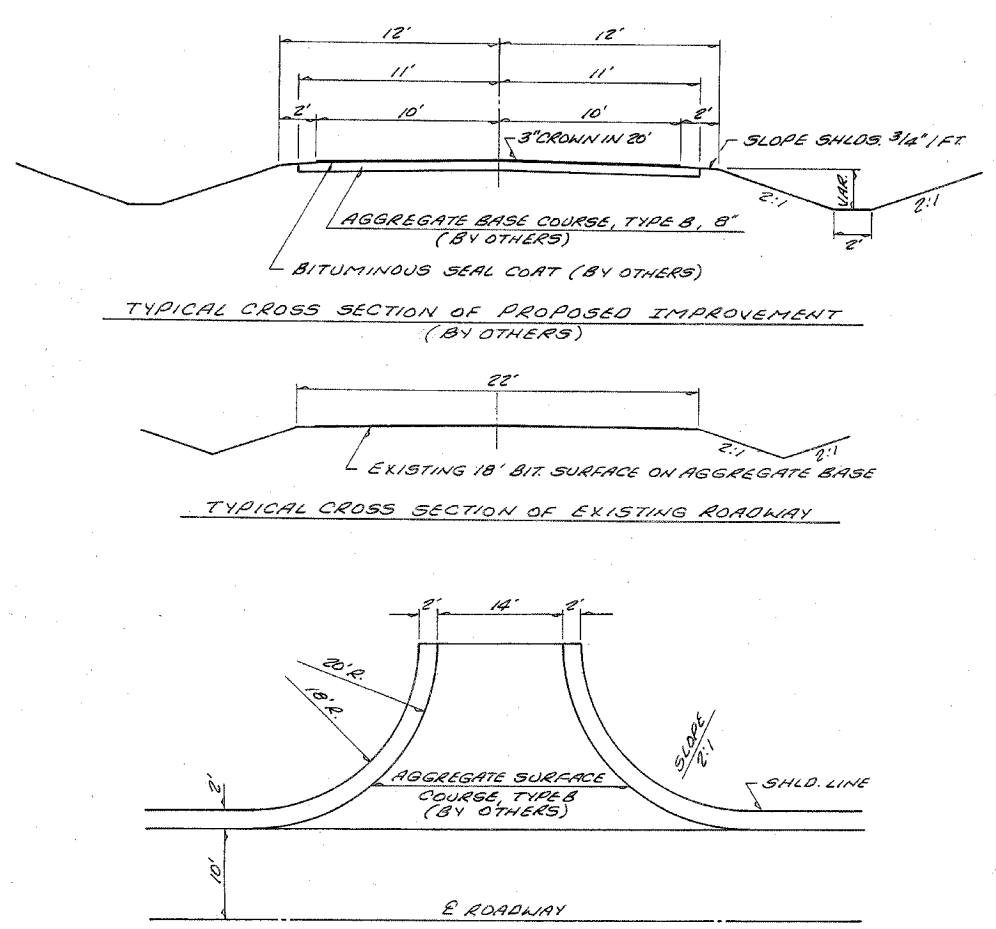
Michael Rose
REGISTERED PROFESSIONAL ENGINEER # 31350
ILLINOIS REGISTERED PROFESSIONAL ENGINEER # 31350
LICENSE EXPIRES NOVEMBER 30, 2007

APPROVED <u>January 29</u> . 2007 <i>Just R. Child</i> COUNTY ENGINEER
PASSED <u>May 30</u> . 2007 <i>Maureen Ventres</i> DISTRICT SEVEN ENGINEER OF LOCAL ROADS & STREETS
RELEASING FOR BID BASED ON LIMITED REVIEW <u>May 30</u> . 2007 <i>Richard M. Radwin</i> DEPUTY DIRECTOR OF HIGHWAYS REGION FOUR ENGINEER STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

PARCEL NO. 1
JAMIE CHIDDIX & SCOTTY K. CHIDDIX

PARCEL NO. 2
DIANA HANSON & MICHAEL HANSON

CONTRACT NO. 95504



CURVE DATA
P.I. STA. 1100

Δ = 6° 14' 00"
R = 919.18'
D = 6° 14' 00"
T = 50.05'
L = 100.00'
E = 1.36'

CURVE DATA
P.I. STA. 3136.90

Δ = 6° 30' 00"
R = 891.27'
D = 6° 30' 00"
T = 50.05'
L = 100.00'
E = 1.42'

CURVE DATA
P.I. STA. 7122.99

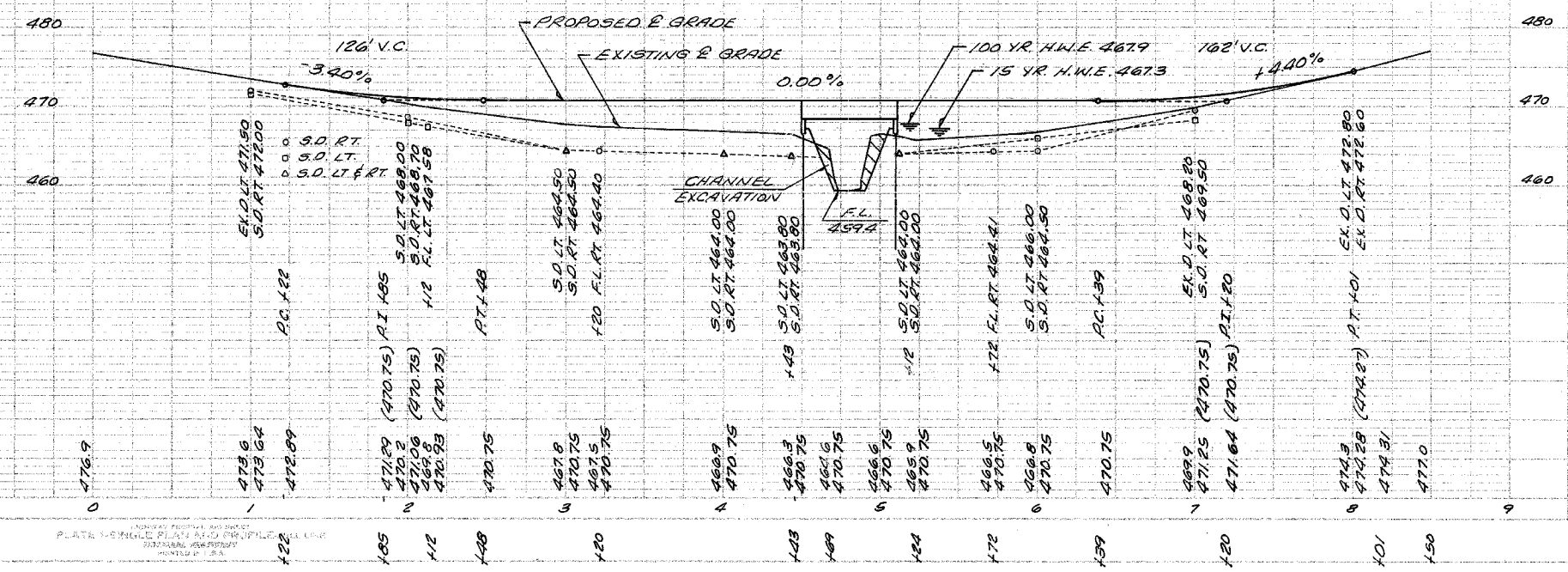
Δ = 2° 26' 00"
R = 2354.62'
D = 2° 26' 00"
T = 50.01'
L = 100.00'
E = 0.53'

CHANNEL EXCAVATION = 148 CU. YD.

B.M. #2 ELEV. 467.77
P.K. IN COR. POST
34.7' RT. STA. 2185

B.M. #1 ELEV. 466.99
P.K. IN POWER POLE
35.1' RT. STA. 5152

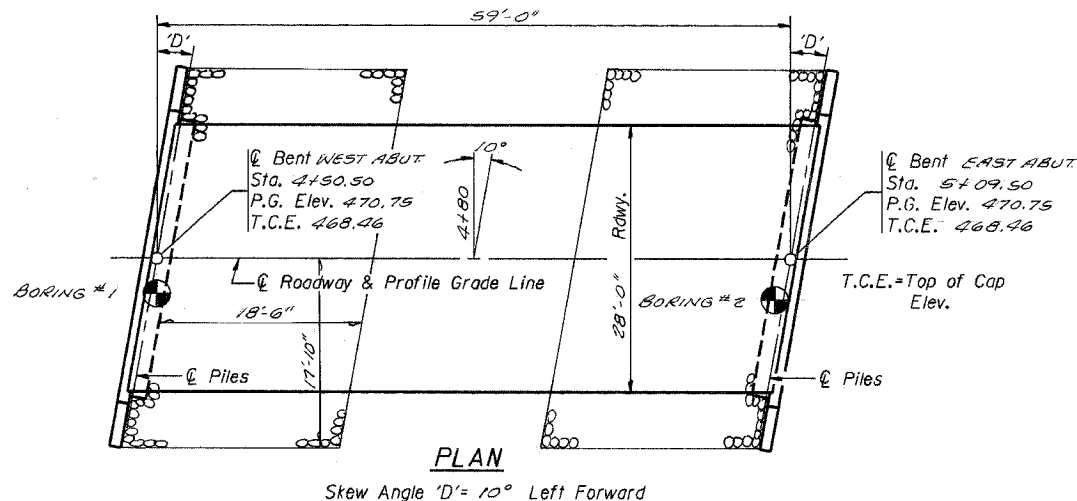
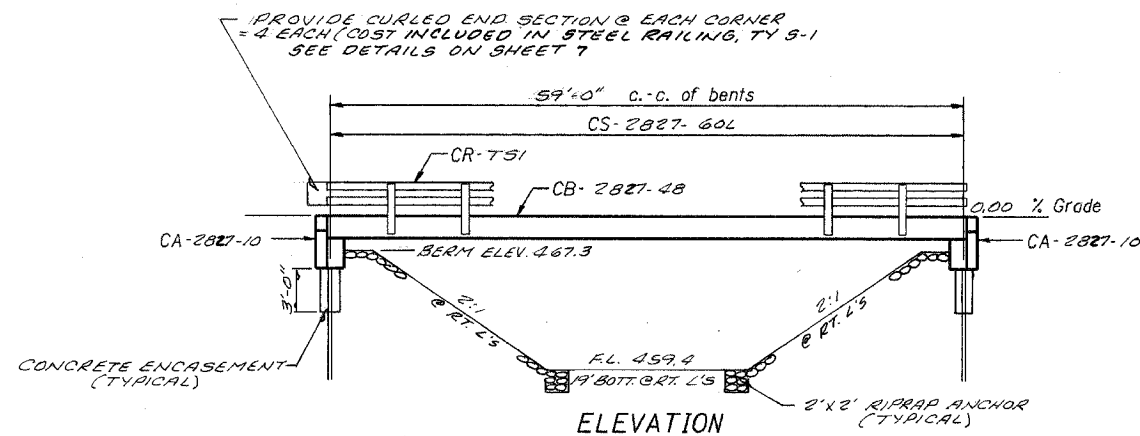
- UTILITIES:
- ELECTRIC: NORRIS ELECTRIC COOPERATIVE
618-783-8165
 - TELEPHONE: OTC COMMUNICATIONS
618-775-8222
 - WATER: HARDINVILLE WATER CO.
618-557-3556
 - PETROLEUM: PLAINS ALL AMERICAN PIPELINE
P.O. BOX 230
ROBINSON, IL 62454
618-544-9558



ROUTE NO.	SECTION	COUNTY	SHEET	TOTAL
	#	CRAWFORD	9	3
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

* 05-07129-00-8R

-D.M.-
-Existing Structure-
-Salvage-



STONE DUMPED RIPRAP CL. A4
12" MINIMUM THICKNESS = 90 TON

GENERAL NOTES

1. The Contractor shall drive 1 test piles, as specified, in a permanent location as directed by the Engineer before ordering the remaining piles.
2. See Special Provisions for boring logs.
3. A Corrosion inhibitor, as covered in the Special Provisions, shall be used in the concrete for precast prestressed concrete deck beams.

TOTAL BILL OF MATERIAL

Item	Unit	Super	Sub.		Total
			Piers	Abuts.	
Removal of Existing Structures	Each				1
Bituminous Concrete Surface Course, Superpave	Ton				
Waterproofing Membrane System	Sq. Yd.				
Concrete Structures	Cu. Yd.			20.8	20.8
Precast Prestressed Concrete Deck Beams (27" Depth)	Sq. Ft.	1680			1680
Steel Bridge Rail, Type SM	Foot				
Steel Railing, Type S-1	Foot	120			120
Reinforcement Bars	Pound			2580	2580
Furnishing STEEL PILES HP 10 X 42	Foot			378	378
Driving PILES	Foot			378	378
Test Piles STEEL HP 10 X 42	Each			1	1
Name Plates	Each			1	1
Concrete Encasement	Cu. Yd.			2.6	2.6
Portland Cement Mortar Fairing Course	Foot				
STONE DUMPED RIPRAP CL. A4	TON			90	90

DESIGN SPECIFICATIONS
2002 AASHTO Standard Specifications - 17th ed.

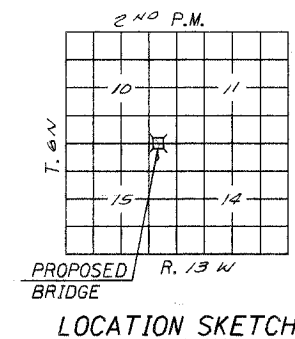
LOADING HS20-44
Allow 25#/sq. ft. for future wearing surface.

SEISMIC DATA
Seismic Performance Category (SPC) =
Bedrock Acceleration Coefficient (A) =
Site Coefficient (S) =

PILE DATA (2- ABUTS.)
Type STEEL HP 10 X 42
NOMINAL REQUIRED BEARING = 335 KIPS
Estimated Length 42 Feet
Number Required 10 (Includes 1 Test Pile located in Bent #1) W. ABUT.
ALLOWABLE RESISTANCE AVAILABLE = 112 KIPS

STATION 4+80
LITTLE CREEK
SEC. 05-07129-00-8R BUILT 20
PROJECT NO. BR05-033(A?)
CRAWFORD COUNTY
LOADING HS20
STR. NO. 017-3752

LETTERING FOR NAME PLATE
Locate Name Plate at S.W. Corner of Bridge (See Std. CN)



WATERWAY INFORMATION

Drainage Area = 7.14 SQ. MI. Low Grade Elev. = 470.75 @ Sta. 4+80

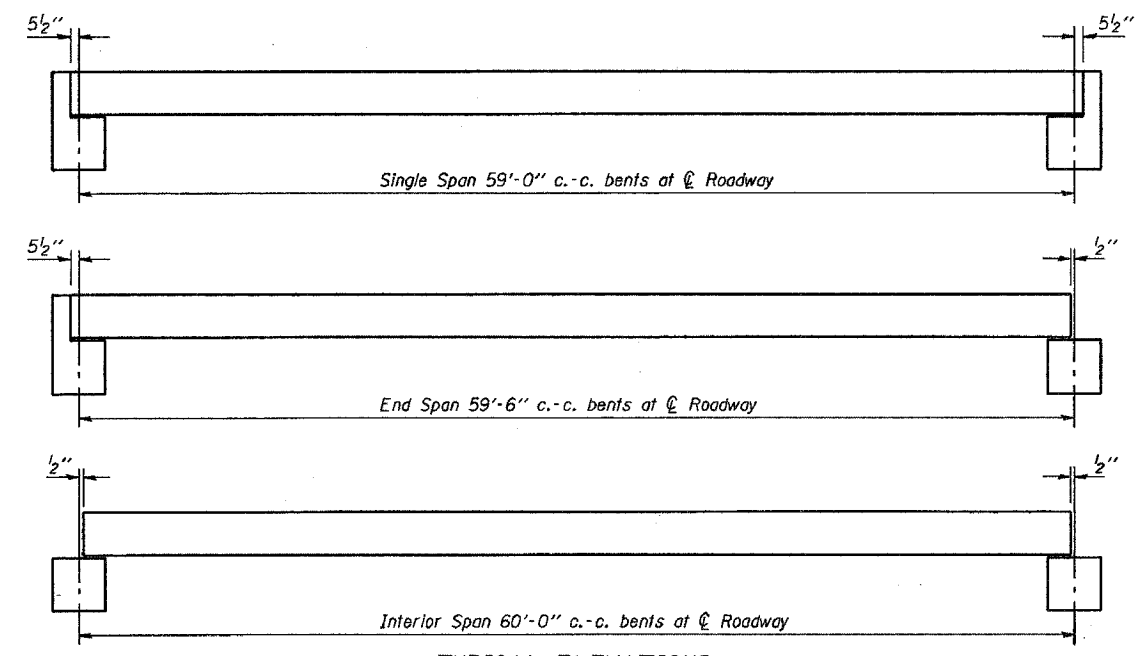
Flood	Freq. Yr.	Q		Nat. H.W.E.	Head - Ft.		Headwater EL.	
		Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	15	1134	BR 108 APP 7	467.3	0.6	0.3	467.9	467.6
Base	100	1787	BR 198 APP 113	467.9	0.6	0.7	468.5	468.6
Overtopping								
Max. Calc.	500	2310		468.3		1.2		469.5

INDEX OF SHEETS

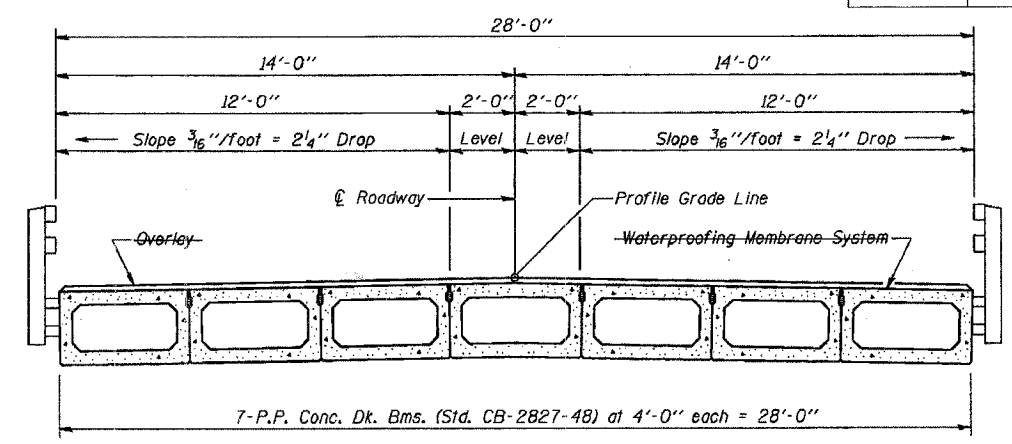
1. General Plan & Elevation
2. Standard CS - 2827 - 60L
3. Standard CB - 2827 - 48
4. Standard CA - 2827 - 10
5. Standard CR - 751
6. Standard CN
7. Standard CX - 1
8. Standard
9. Standard

GENERAL PLAN & ELEVATION
T.R. ROUTE 199
OVER LITTLE CREEK
SECTION 05-07129-00-8R
CRAWFORD COUNTY
STATION 4+80

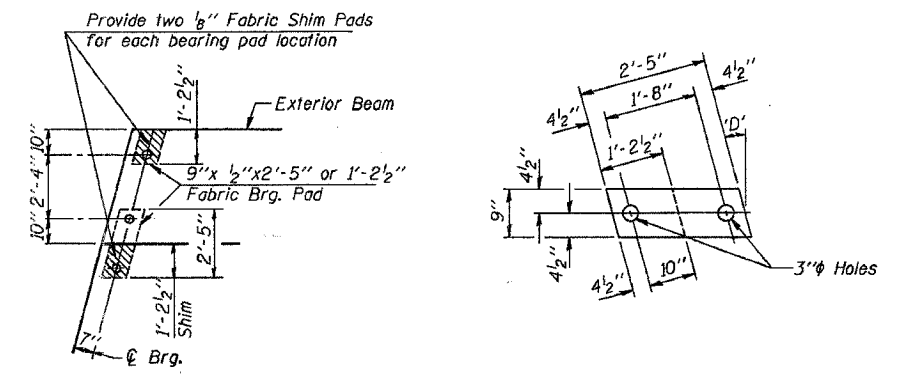
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET
05-07129-00-BP	CRAWFORD	9	1	
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	PROJECT		



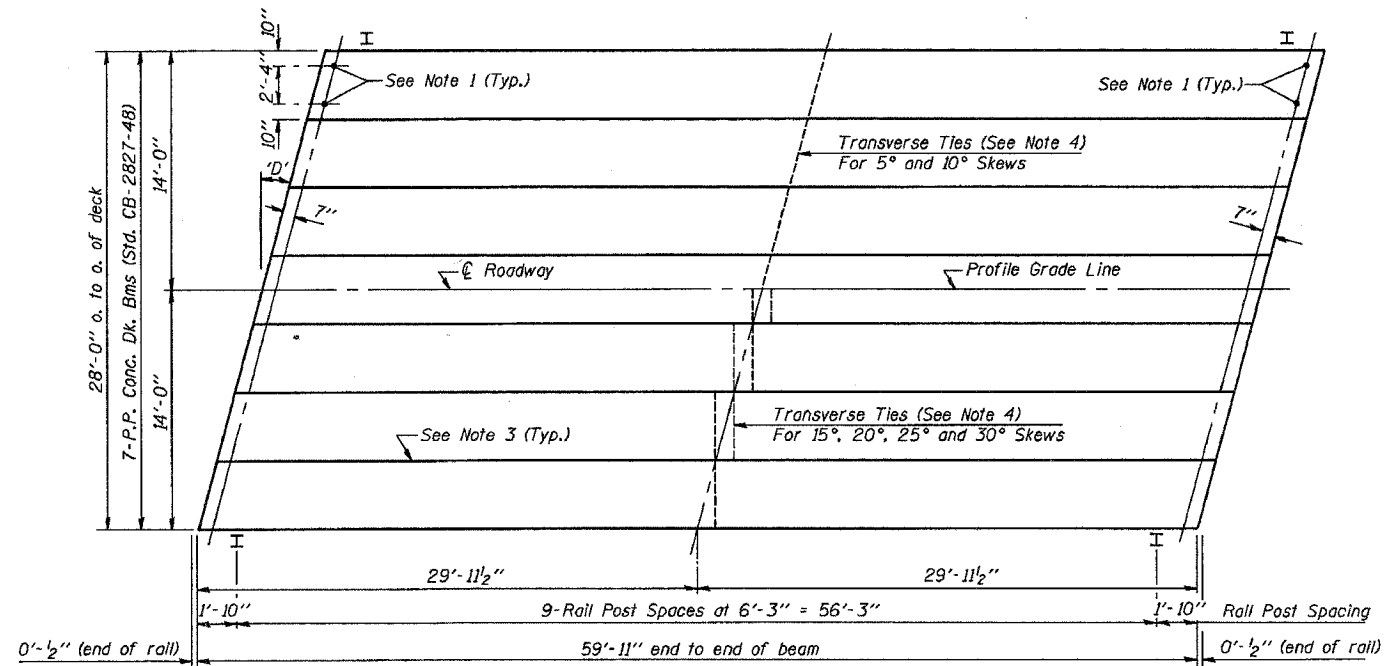
TYPICAL ELEVATIONS



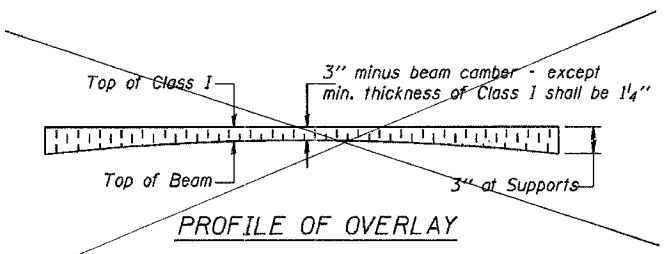
CROSS SECTION



1/2" FABRIC BRG. PAD DETAILS



PLAN
(D = Designated Skew Angle)

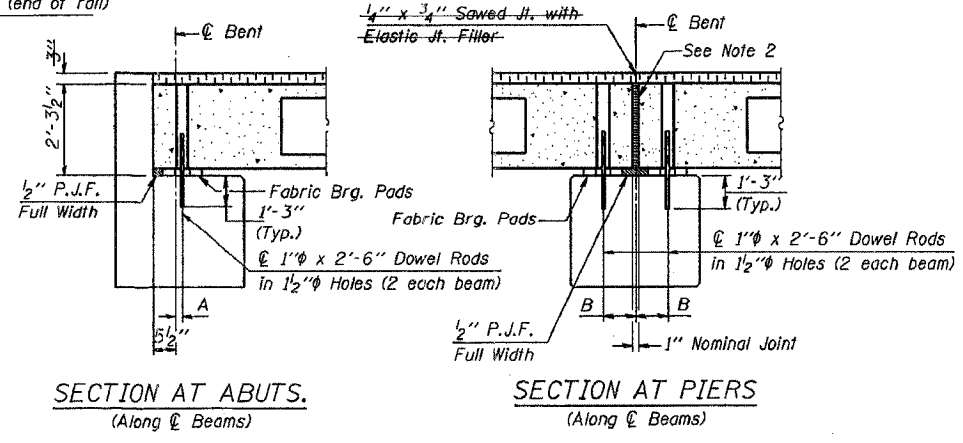


PROFILE OF OVERLAY

DIMENSIONS 'A' AND 'B'

'D'	5°	10°	15°	20°	25°	30°
A	1 1/2"	1 5/8"	1 3/4"	1 7/8"	2 1/8"	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 with non-shrink grout.
 - 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.	1680 Sq. Ft.
Steel Rolling	120 Ft.
Waterproofing Membrane System	186.7 Sq. Yds.
Portland Cement Mortar	360 Ft.
Forming Course	

Note: Quantity of overlay for one span = 21.9 Tons

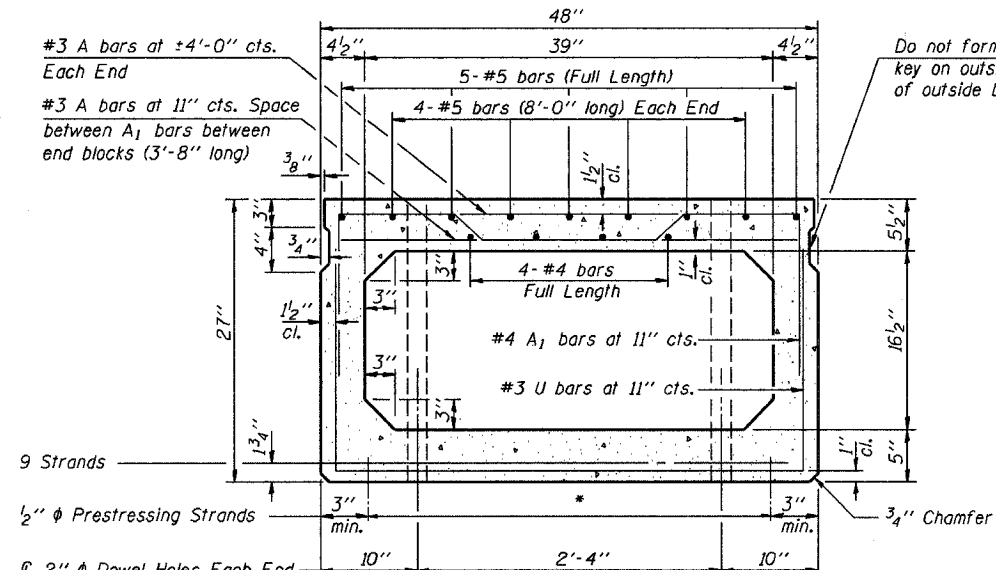
P.P.C. DECK BEAM SUPERSTRUCTURE			
28' RDWY.	27" BMS.	60' SPAN	LEFT
STANDARD CS-2827-60L			

Illinois Department of Transportation

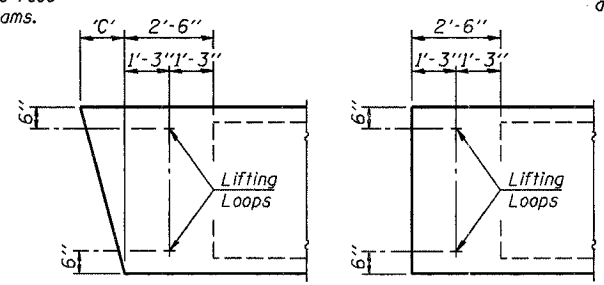
PASSED APRIL 4, 2005
 Thomas J. Deming, Jr.
 Engineer of Bridge Design

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

F.A.S. ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET
95-07129-00-BE	CRAWFORD		9	5
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	PROJECT		

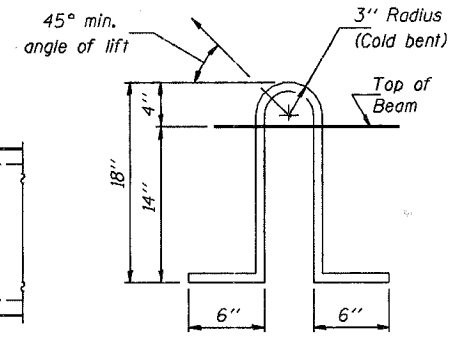


CROSS SECTION
(40' SPAN)



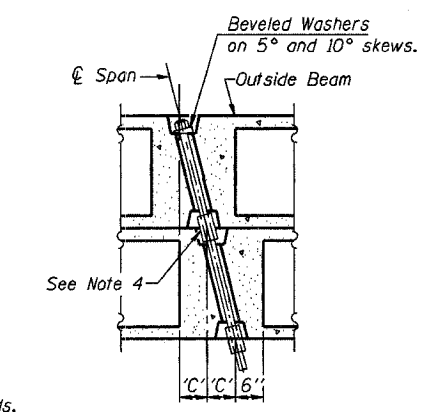
END BLOCK DETAILS

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.

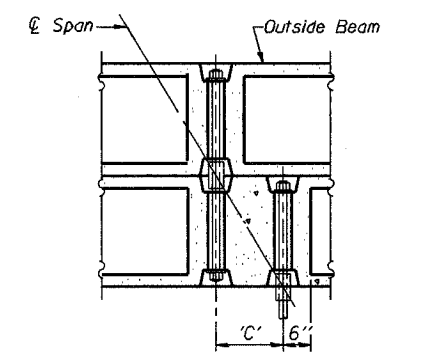


LIFTING LOOP DETAIL

Lifting loops shall be 3/2" φ 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°)

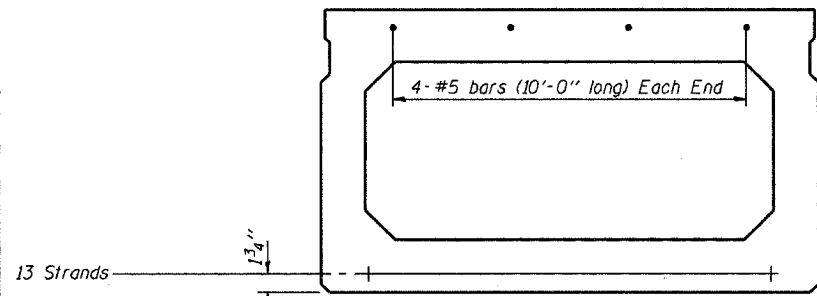
DIMENSION 'C'

Skew Angle 'D'	0°	5°	10°	15°	20°	25°	30°
Dimension 'C' (Inches)	0	4 1/4	8 1/2	12 7/8	17 1/2	22 3/8	27 3/4

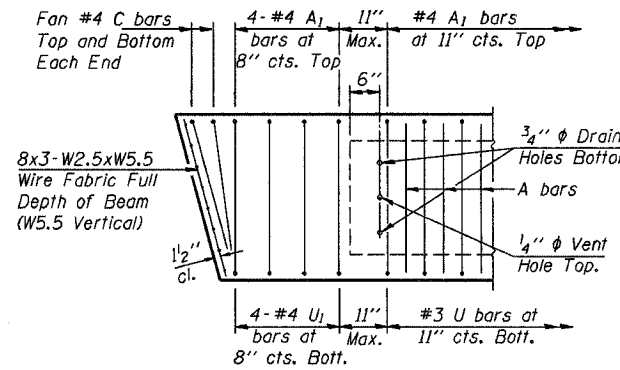
*** TRANSVERSE STRAND PLACEMENT GUIDELINES**

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".

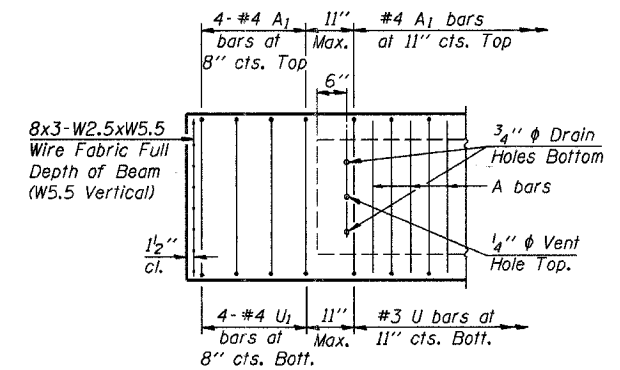
Vertical placement of strands shall not be adjusted to satisfy the above guidelines.



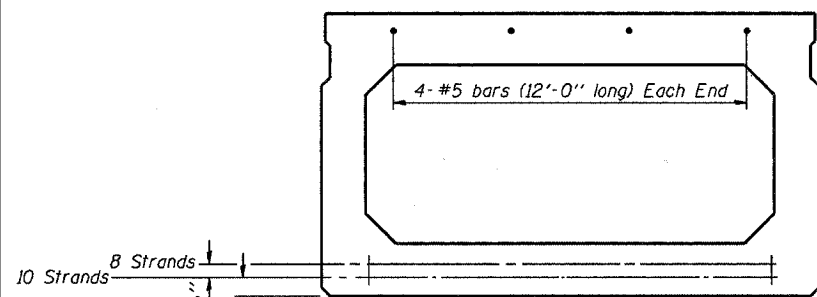
CROSS SECTION
(50' SPAN)



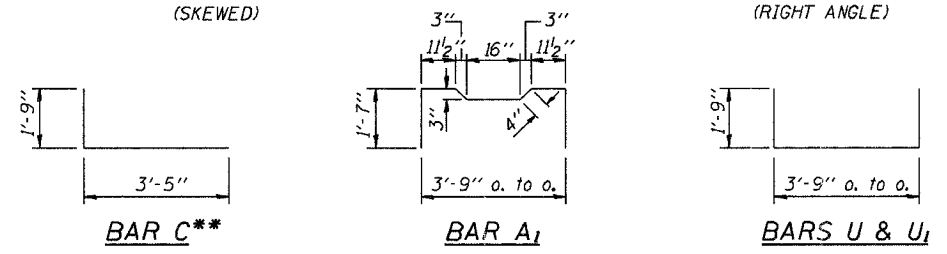
END REINFORCEMENT
(SKEWED)



END REINFORCEMENT
(RIGHT ANGLE)



CROSS SECTION
(60' SPAN)



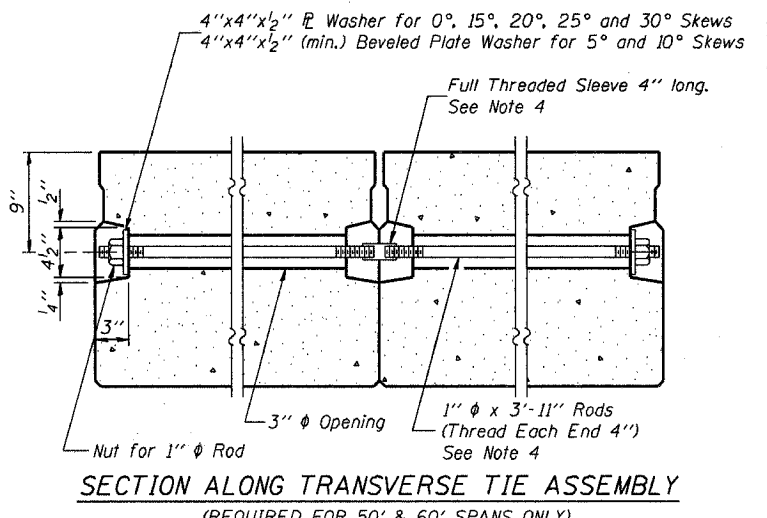
DESIGN STRESSES

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

- 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, alternate approved transverse tie rods of increased segmental length are acceptable.
 5. Rail 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.



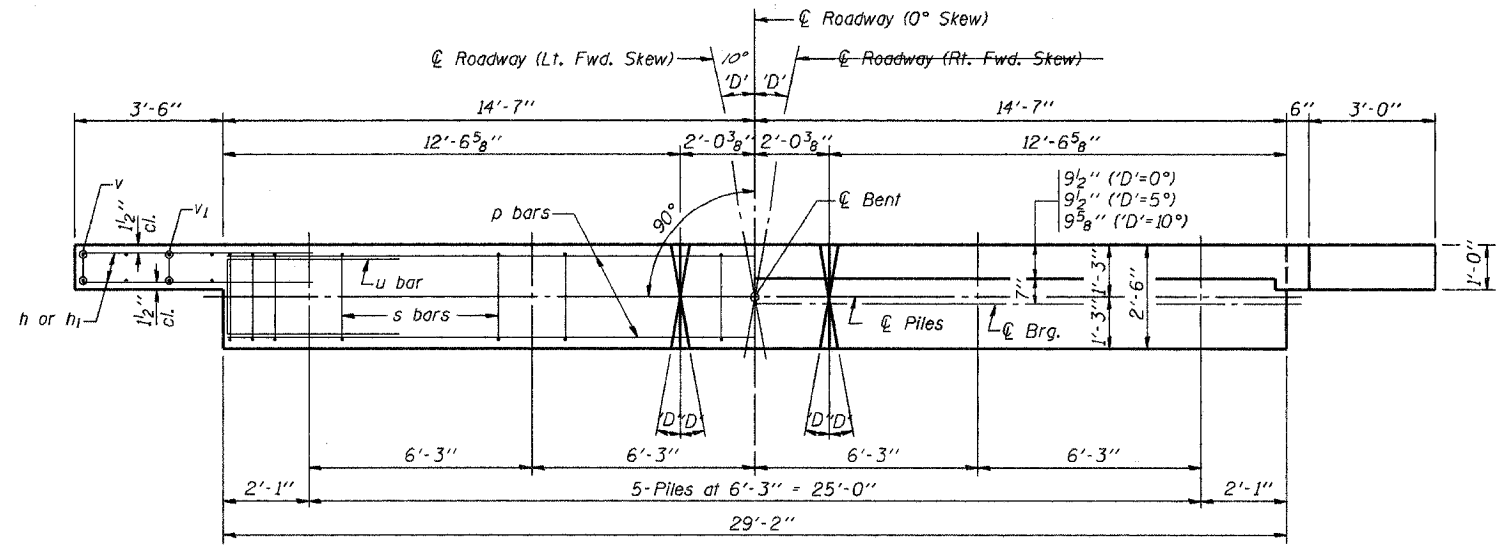
SECTION ALONG TRANSVERSE TIE ASSEMBLY
(REQUIRED FOR 50' & 60' SPANS ONLY)

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

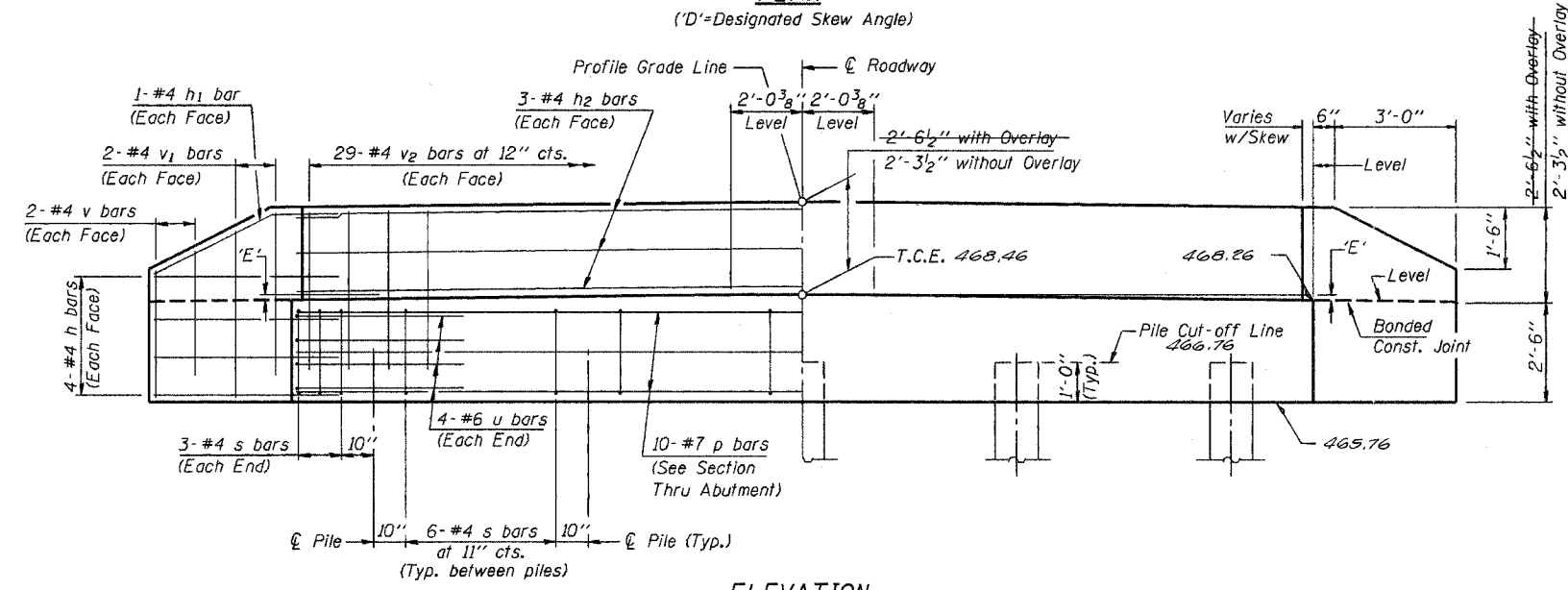
NOTE
The std. reinf. and dimensions shown on the 40' span cross section is typical for all spans, except as shown.

P.P.C. DECK BEAM DETAILS
28' ROADWAY | 27" x 48" BEAMS
STANDARD CB-2827-48

F.A.S. ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET
05-07129-00-8R	CRAWFORD		9	6
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	PROJECT		



PLAN
(D=Designated Skew Angle)



ELEVATION

DIMENSION 'E'

GRADE	'D'=0°		'D'=5°		'D'=10°	
	UPGRADE END	DOWNGRADE END	UPGRADE END	DOWNGRADE END	UPGRADE END	DOWNGRADE END
0%	2 3/8"	2 3/8"	2 3/8"	2 3/8"	2 3/8"	2 3/8"
Over 0% to 1%	2 3/8"	2 3/8"	2 1/4"	2 3/8"	2 1/8"	2 1/2"
Over 1% to 2%	2 3/8"	2 3/8"	2 1/8"	2 1/2"	1 7/8"	2 3/4"
Over 2% to 3%	2 3/8"	2 3/8"	2"	2 5/8"	1 5/8"	3"
Over 3% to 4%	2 3/8"	2 3/8"	1 7/8"	2 3/4"	1 3/8"	3 1/4"

NOTES

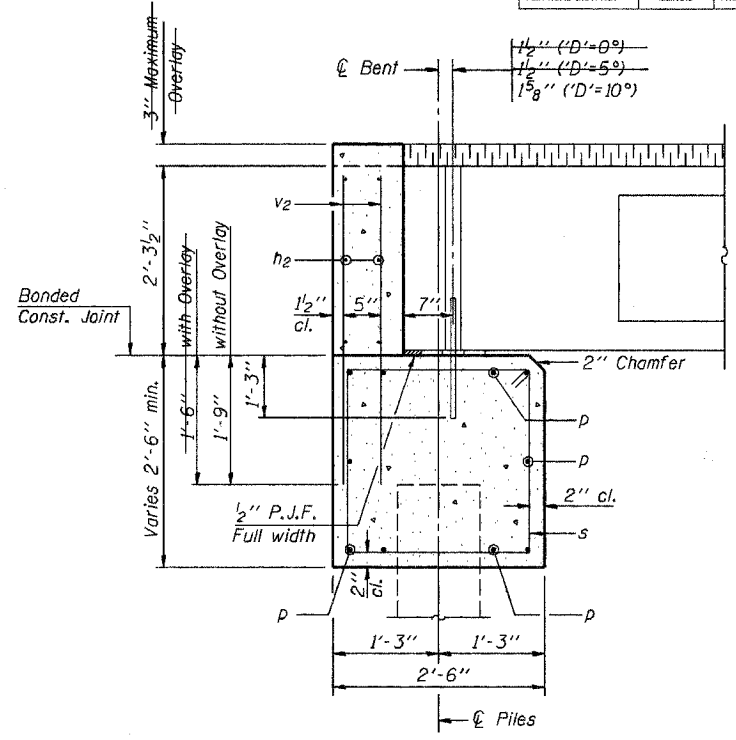
- The Backwall and the portion of the Wingwalls above the bonded construction joint shall be cast against the in-place beam.
- Reinforcement bars shall conform to the requirements of A.A.S.H.T.O. M-31 or M-322, Grade 60.
- Space reinforcement in cap to miss anchor bolts.

MAXIMUM PILE LOADS

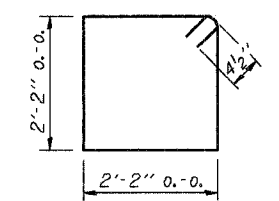
SPAN	TONS
40'	29
50'	33
60'	37

DESIGN STRESSES

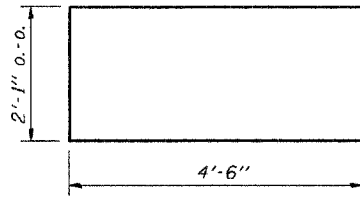
f'c = 3,500 psi
fy = 60,000 psi



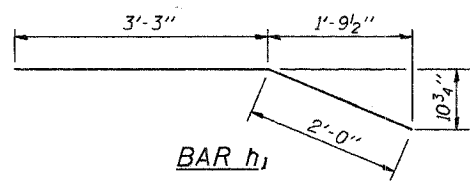
SECTION THRU ABUTMENT
(At Right Angles)



BAR s



BAR u



BAR h1

BILL OF MATERIAL FOR ONE ABUTMENT

Bar	No.	Size	Length	Shape
h	16	#4	5'-0"	—
h1	4	#4	5'-3"	—
h2	6	#4	28'-10"	—
p	10	#7	28'-10"	—
s	30	#4	9'-5"	□
u	8	#6	11'-1"	□
v	8	#4	3'-2"	—
v1	8	#4	4'-2"	—
v2	58	#4	3'-11"	—
Concrete Structures			10.4 Cu. Yds.	
Reinforcement Bars			1290 Lb.	

P.P.C. DECK BEAMS
PILE BENT ABUTMENT

28' RDWY.	27" BMS.	'D'=0°, 5° OR 10°
STANDARD CA-2827-10		

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

F.A.S. ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET
05-07/29-00-BR	CRAWFORD		9	7
STA.	TO STA.			
FED. ROAD DIST. NO.	KLINING	PROJECT		

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.

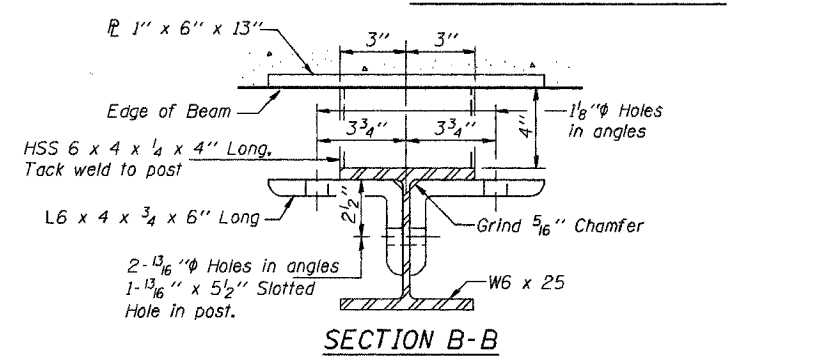
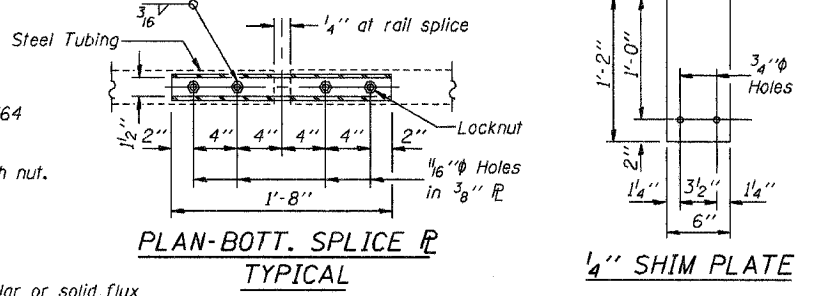
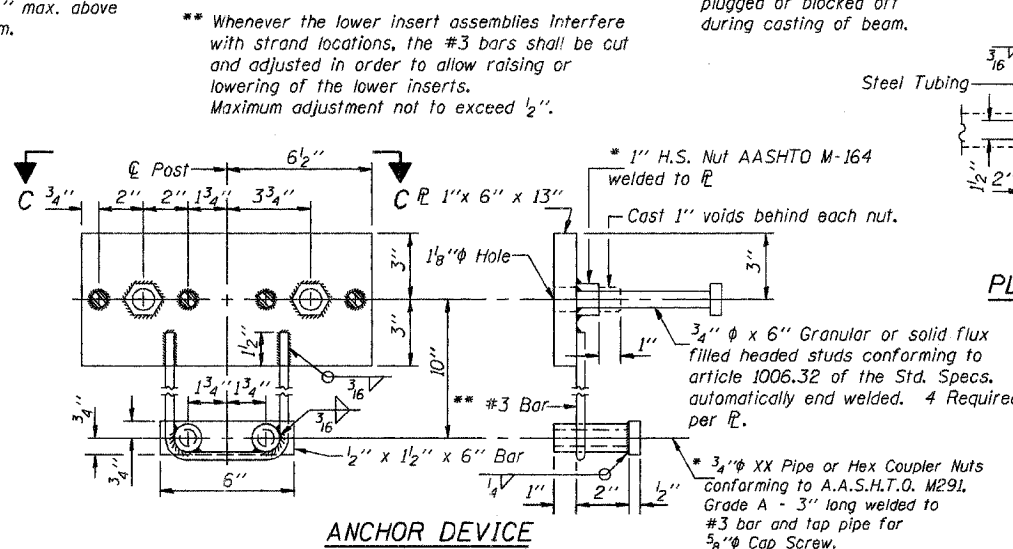
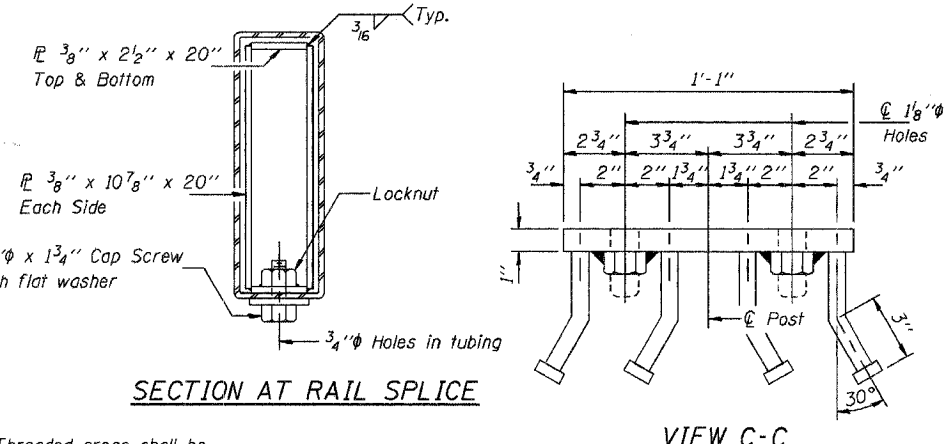
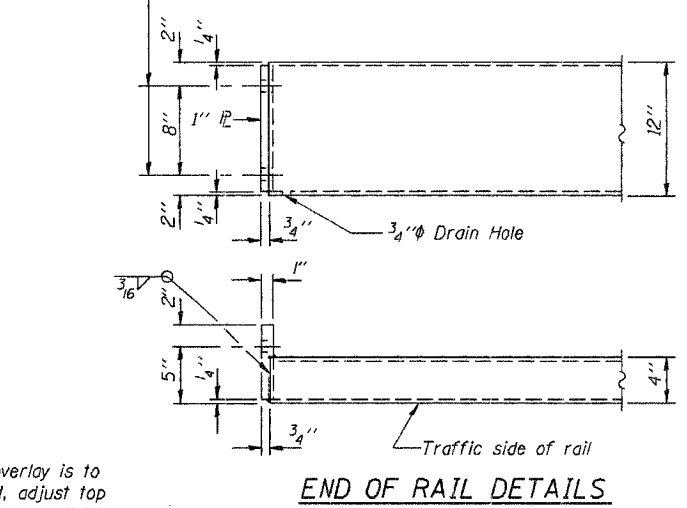
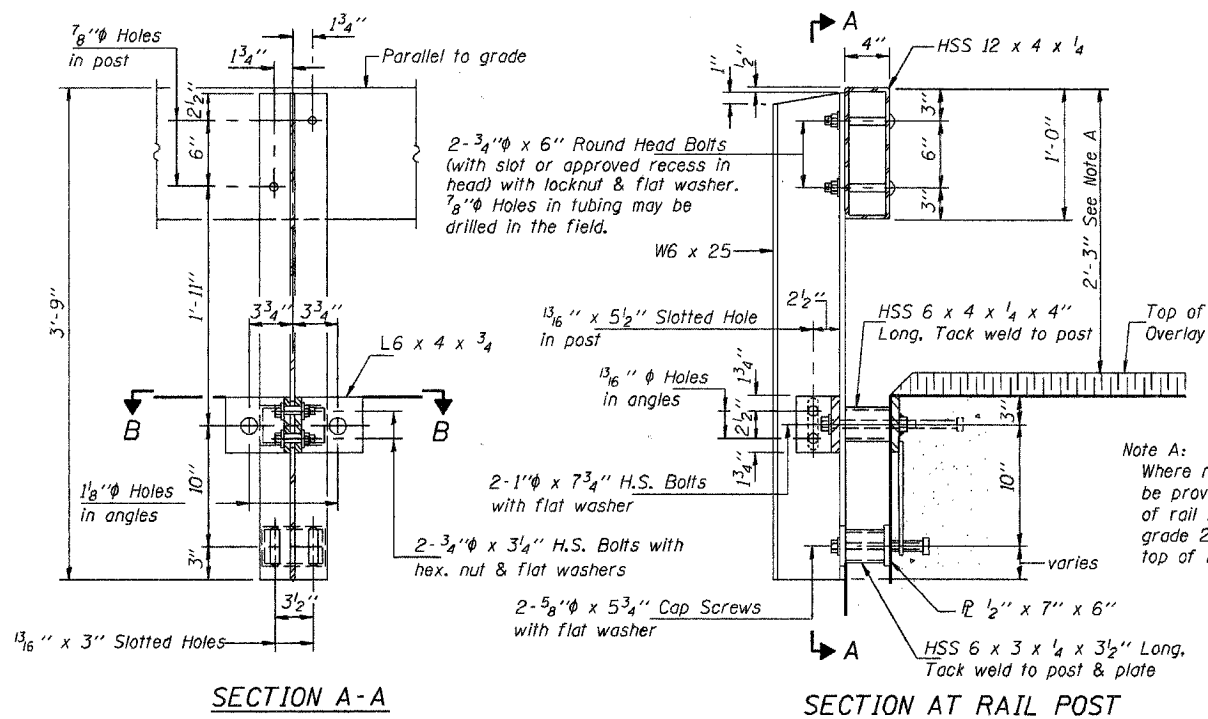
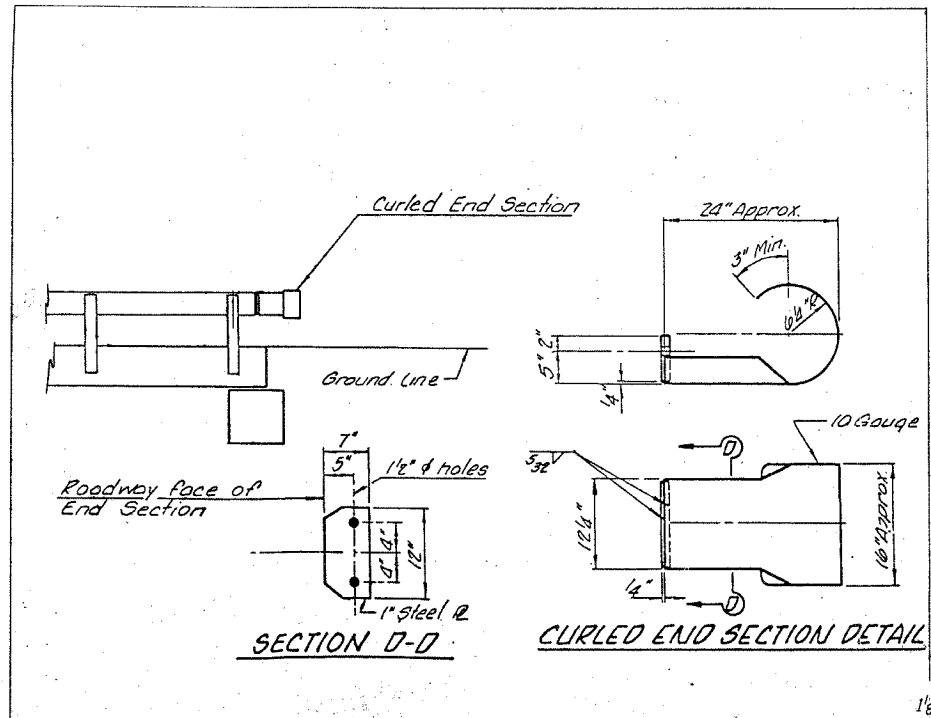
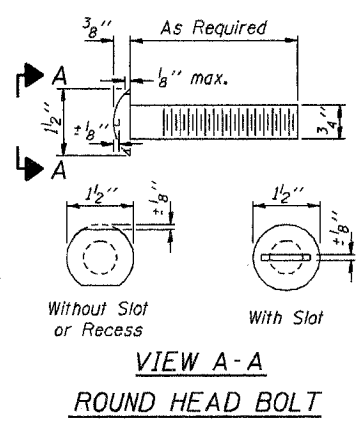
For multi-span bridges, sufficient 1/4" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with STEEL RAILING, TYPE S-1.

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 (f)(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.



Illinois Department of Transportation

PASSED APRIL 4, 2005

Thomas J. Romagnolo
Engineer of Bridge Design

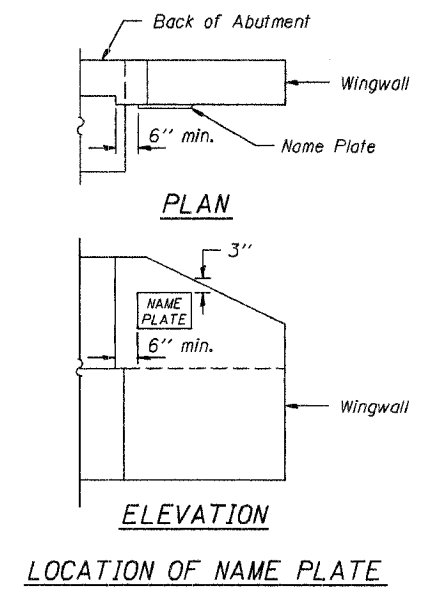
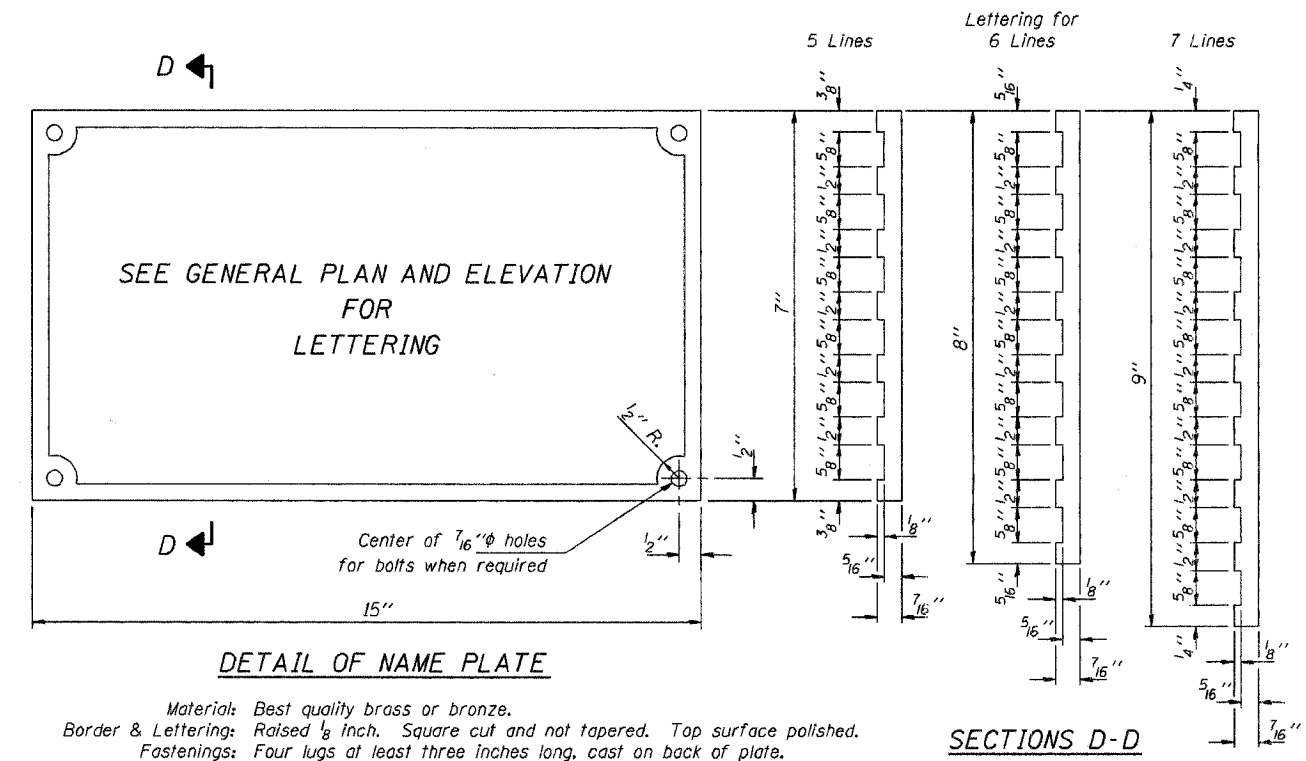
APPROVED APRIL 4, 2005

Ralph E. Anderson
Engineer of Bridges and Structures

STEEL RAILING, TYPE S-1

STANDARD CR-TS1

F.A.S. ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET
05-07129-00-BR	CRAWFORD		9	8
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	PROJECT		



Illinois Department of Transportation

PASSED APRIL 4, 2005

Thomas S. Namagala
 Engineer of Bridge Design

APPROVED APRIL 4, 2005

Ralph E. Anderson
 Engineer of Bridges and Structures

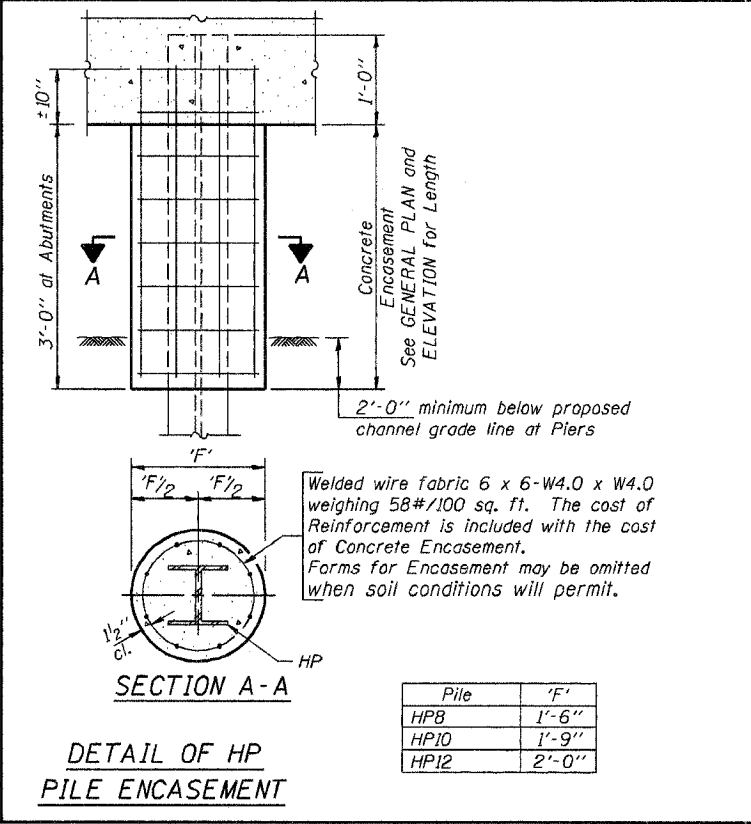
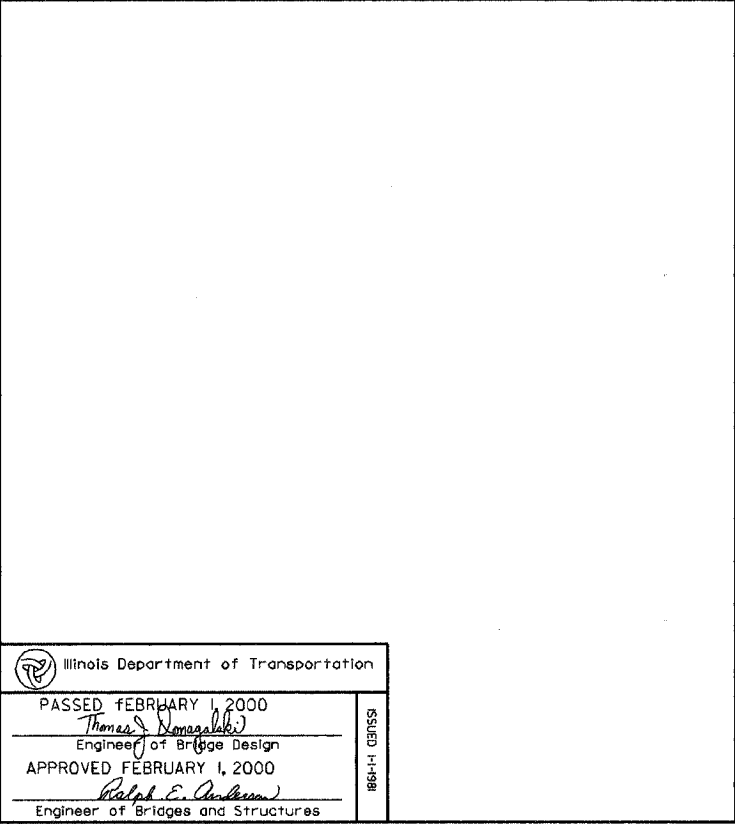
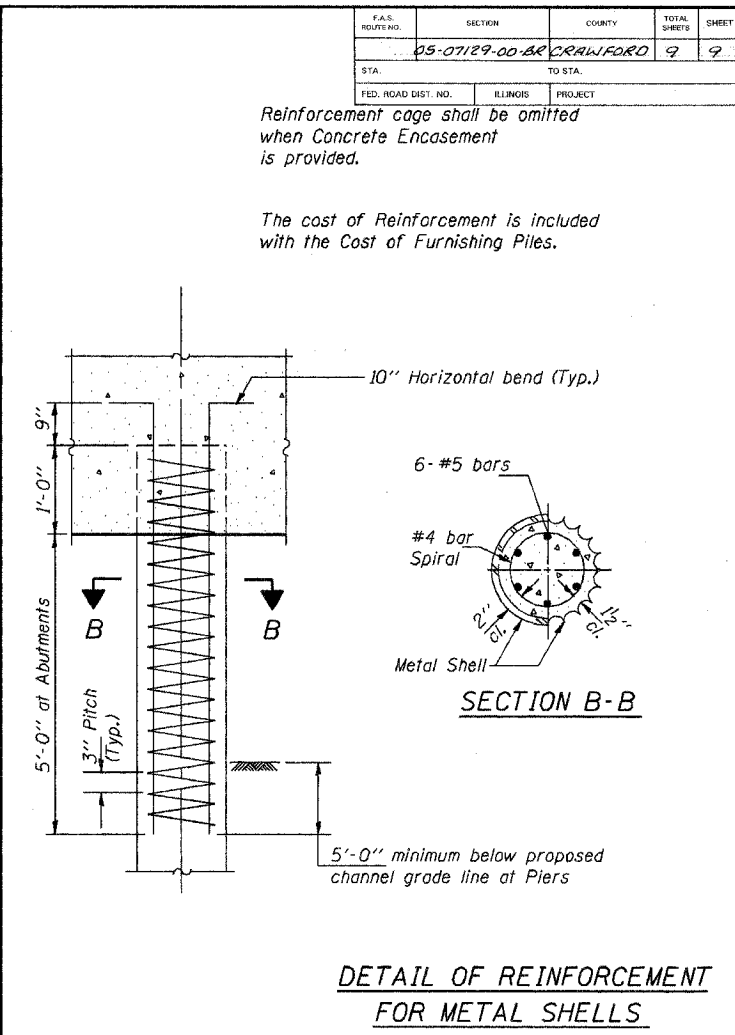
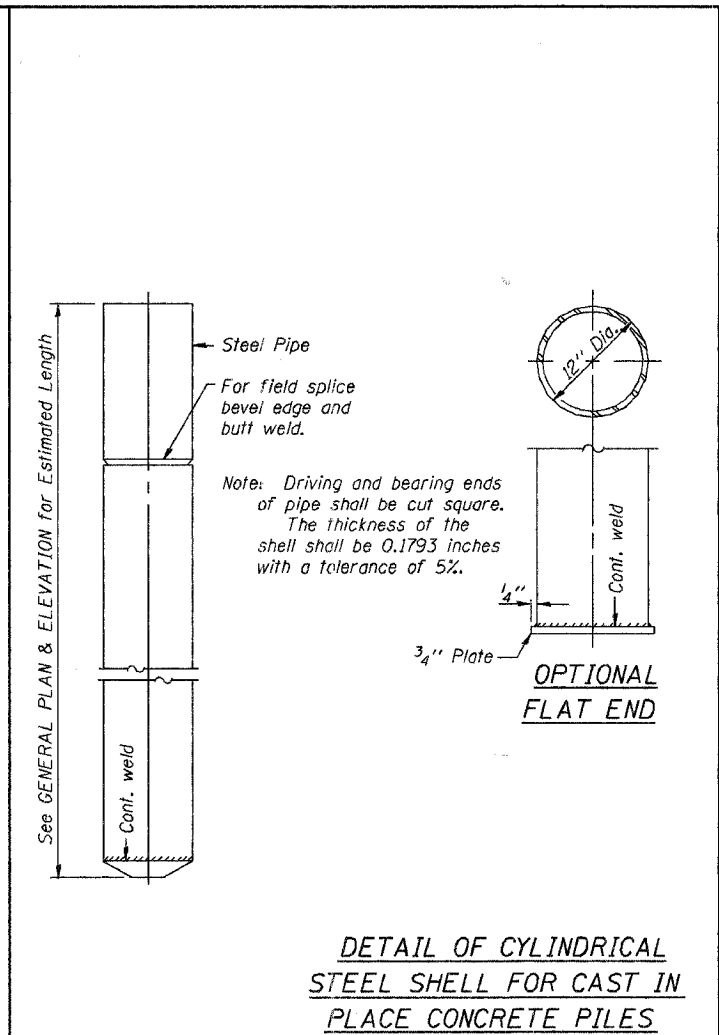
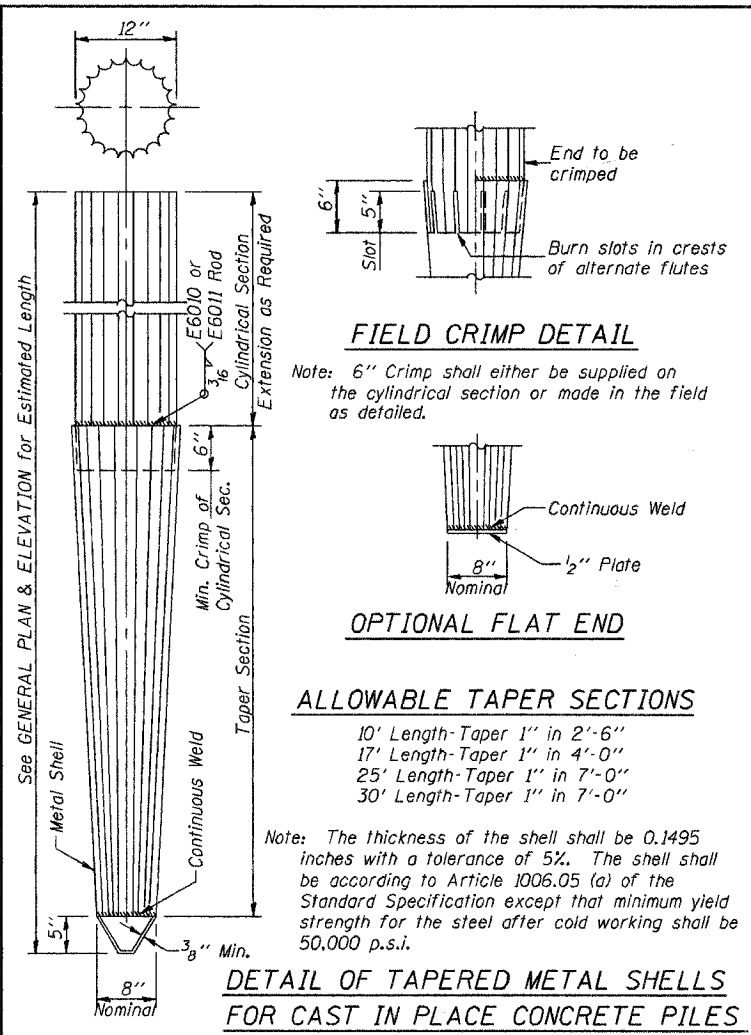
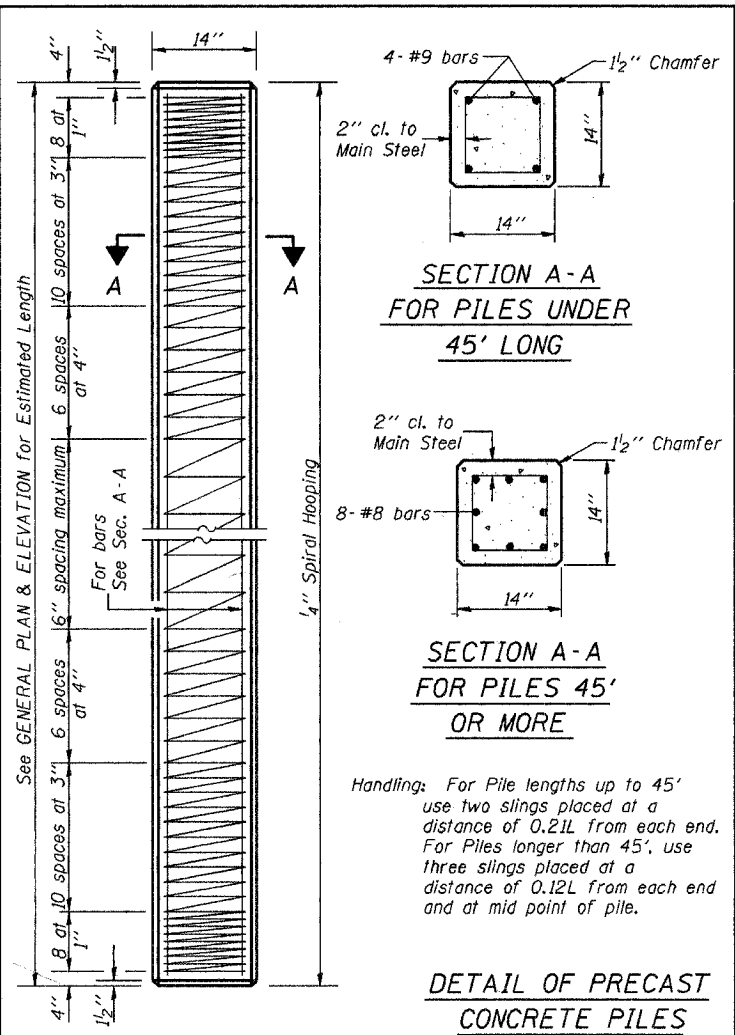
ISSUED 7-1-9939

NAME PLATE
STANDARD CN

F.A.S. ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET
05-07129-00-BR	CRAWFORD		9	9
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	PROJECT		

Reinforcement cage shall be omitted when Concrete Encasement is provided.

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



QUANTITIES/FT. OF ENCASEMENT (STEEL PILES)

Pile Size	Item	Quantity
HPB	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
 Thomas J. Nonesalaki
 Engineer of Bridge Design
 APPROVED FEBRUARY 1, 2000
 Ralph E. Anderson
 Engineer of Bridges and Structures