

ROUTE	SECTION	COUNTY	TOT. SHTS.	SHT.
T.R. 259	04-03114-00-BR	JEFFERSON	14	1
CASNER TOWNSHIP ROAD DISTRICT				

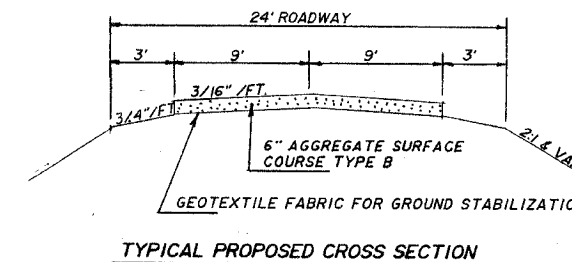
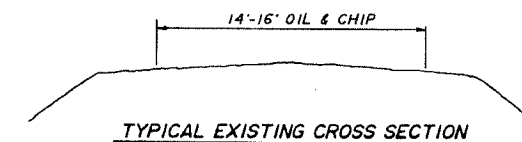
CONTRACT 95470

INDEX OF SHEETS

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- P.P.C. DECK BEAM 60' SUPERSTRUCTURE
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- P.P.C. DECK BEAM DETAILS-48"
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- P.P.C. DECK BEAM-PILE BENT PIER
- STEEL RAILING, TYPE S-1
- PILE DETAILS
- NAMEPLATE
- CROSS-SECTIONS STA. 14+93.80-STA. 18+50
- CROSS-SECTIONS STA. 19+00-STA. 23+50
- CROSS-SECTIONS STA. 24+00-STA. 28+00

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLANS FOR PROPOSED
BRIDGE REPLACEMENT AND REHABILITATION PROGRAM



SECTION 04-03114-00-BR
T.R. 259 JEFFERSON CO.
PROJECT NO. BROS-081(54)
JOB NO. C-97-065-06

STANDARDS

- 000001-04
- 515001-02
- 631026-02
- 702001-06
- B.L.R. 21-6
- B.L.R. 22-4
- B.L.R. 23-1

GENERAL NOTES

THIS SECTION SHALL BE CONSTRUCTED IN ACCORDANCE WITH PLANS, STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION ADOPTED JANUARY 1, 2002 BY THE ILLINOIS DEPARTMENT OF TRANSPORTATION, ALL APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS AND THE SPECIAL PROVISIONS FOR THIS PROJECT.

PLAN ELEVATIONS ARE U.S.G.S. DATUM AND ARE THE ELEVATIONS OF THE FINISHED SURFACES.

ANY EXCAVATION DEEMED SUITABLE FOR USE BY THE ENGINEER MAY BE USED IN THE EMBANKMENT AS DIRECTED BY THE ENGINEER.

THE EXISTING STRUCTURE SHALL REMAIN IN SERVICE AS LONG AS POSSIBLE DURING CONSTRUCTION. WHEN AGREED TO BY THE ENGINEER AND THE CONTRACTOR, IT SHALL THEN BE REMOVED ENTIRELY FROM THE SITE BY THE CONTRACTOR.

THE WORK IN THIS SECTION SHALL CONSIST OF THE CONSTRUCTION OF A THREE SPAN PRECAST PRESTRESSED CONCRETE DECK BEAM BRIDGE WITH OPEN ABUTMENTS ON CONCRETE CAPS AND ENCASED H-PILES, EARTHWORK, DRAINAGE, AND ANY INCIDENTAL WORK NECESSARY TO COMPLETE THE SECTION.

UTILITIES

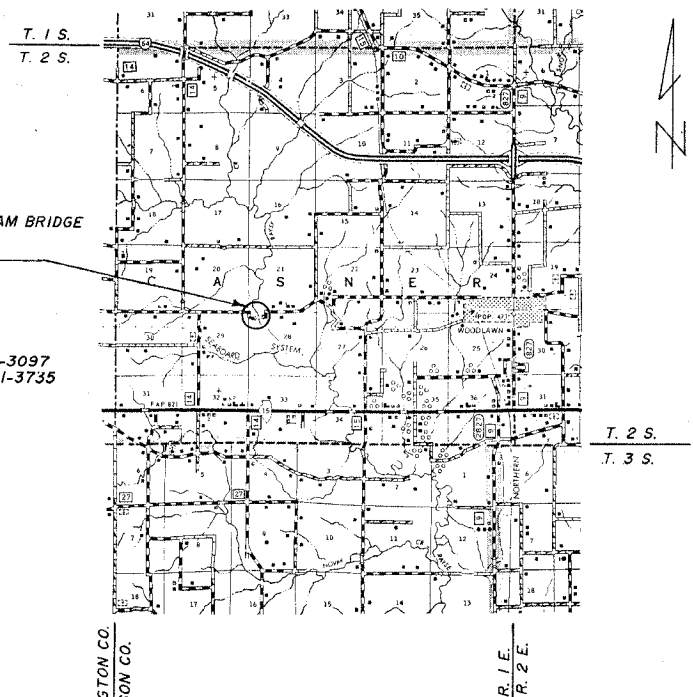
TELEPHONE-FRONTIER COMM.

SUMMARY OF QUANTITIES			
ITEM	CODE	UNIT	QUAN.
CONTROLLED LOW-STRENGTH MATERIAL	20013825	CU. YD.	19
TREE REMOVAL (6 TO 15 UNITS DIAMETER)	20100110	UNIT	858
TREE REMOVAL (OVER 15 UNITS DIAMETER)	20100210	UNIT	384
EARTH EXCAVATION	20200100	CU. YD.	1,887
CHANNEL EXCAVATION	20300100	CU. YD.	917
FURNISHED EXCAVATION	20400800	CU. YD.	2,682
SEEDING, CLASS 1	25000100	ACRE	0.94
TREES	25301500	EACH	170
STONE DUMPED RIPRAP, CLASS A4	28100807	TON	800
AGGREGATE SURFACE COURSE, TYPE B	40200800	TON	1600
REMOVAL OF EXISTING STRUCTURES	50100100	EACH	1
CONCRETE STRUCTURES	50300225	CU. YD.	30.2
PRECAST PRESTRESSED CONCRETE DECK BEAMS (27" DEPTH)	50400505	SQ. FT.	4,320
STUD SHEAR CONNECTORS	50500505	EACH	48
REINFORCEMENT BARS	50800105	POUND	3,100
STEEL RAILING, TYPE S1	50900205	FOOT	360
FURNISHING STEEL PILES HP 12X53	51201600	FOOT	275
FURNISHING STEEL PILES HP 10X42	51201400	FOOT	192
DRIVING STEEL PILES	51202700	FOOT	423
TEST PILE STEEL HP 12X53	51203600	EACH	1
CONCRETE ENCASEMENT	51204315	CU. YD.	22.2
NAME PLATES	51500100	EACH	1
PIPE CULVERTS TYPE 2 RCCP 24"	54201279	FOOT	45
TRAFFIC BARRIER TERMINAL, TYPE 1	LR631020	EACH	2
TRAFFIC BARRIER TERMINAL, TYPE 5A	63100075	EACH	2
MOBILIZATION	67100100	L. SUM	1
SETTING PILES IN ROCK	Z0665000	EACH	4

SEC. 04-03114-00-BR
3 SPAN P.P.C. DECK BEAM BRIDGE
BEGINS STA. 14+93.80
ENDS STA. 28+00.00

EXISTING STR. 041-3097
PROPOSED STR. 041-3735

LOCAL RD.
30 M.P.H.
ADT 100/150



SCALE 3/4"=1 MI.

J. U. L. I. E.
JOINT UTILITY LOCATING INFORMATION
FOR EXCAVATION
1-800-892-0123
ILLINOIS1CALL.COM

APPROVED 3-15 2006
John S. Schinke
JOHN S. SCHINKE
62-33619
REGISTERED PROFESSIONAL ENGINEER OF ILLINOIS
COUNTY ENGINEER
JEFFERSON COUNTY HIGHWAY DEPT.
750 OLD FAIRFIELD RD.
MT. VERNON, IL. 62864
PH. (618) 244-8031
LICENSE EXP. 11-30-07

PASSED 4/7 2006
Maurice J. Kest
MAURICE J. KEST
DISTRICT SEVEN ENGINEER OF LOCAL ROADS AND STREETS

Releasing for Bid based on Limited Review 4/7 2006
Christina M. Reed
CHRISTINA M. REED
DEPUTY DIRECTOR OF HIGHWAYS
REGION FOUR ENGINEER

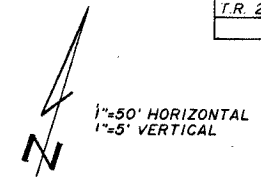
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOTAL SECTION LENGTH=1,306.20'=0.25 MI.
OMISSION=0.00'
NET SECTION LENGTH=1,306.20'=0.25 MI.

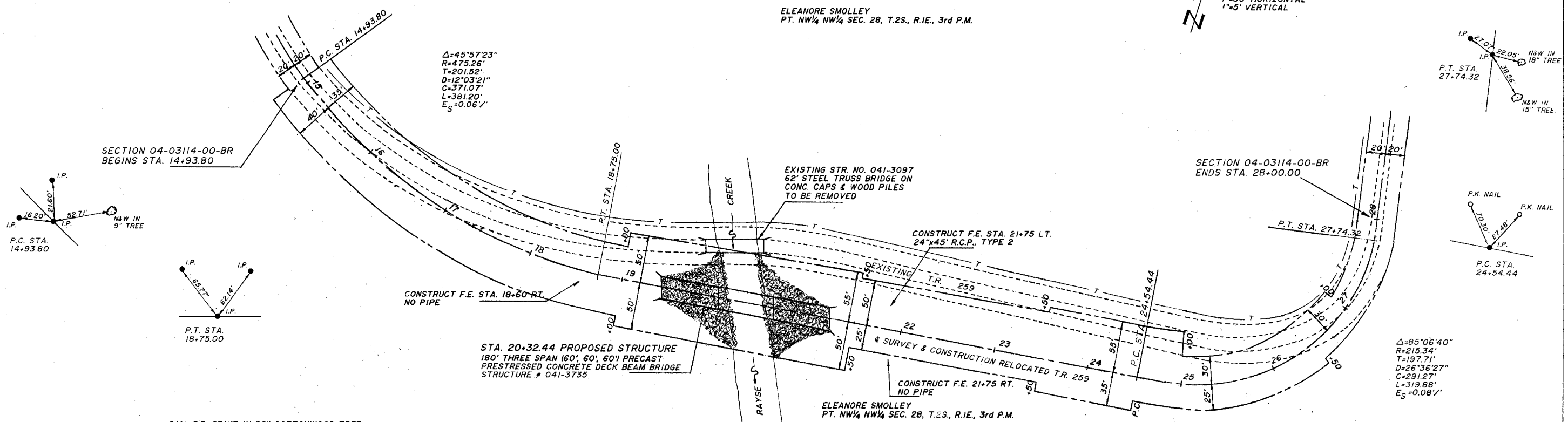
ROUTE	SECTION	COUNTY	TOT. SHTS.	SHI.
T.R. 259	04-03114-00-BR	JEFFERSON	14	2
CASNER TOWNSHIP ROAD DISTRICT				

CONTRACT 95470

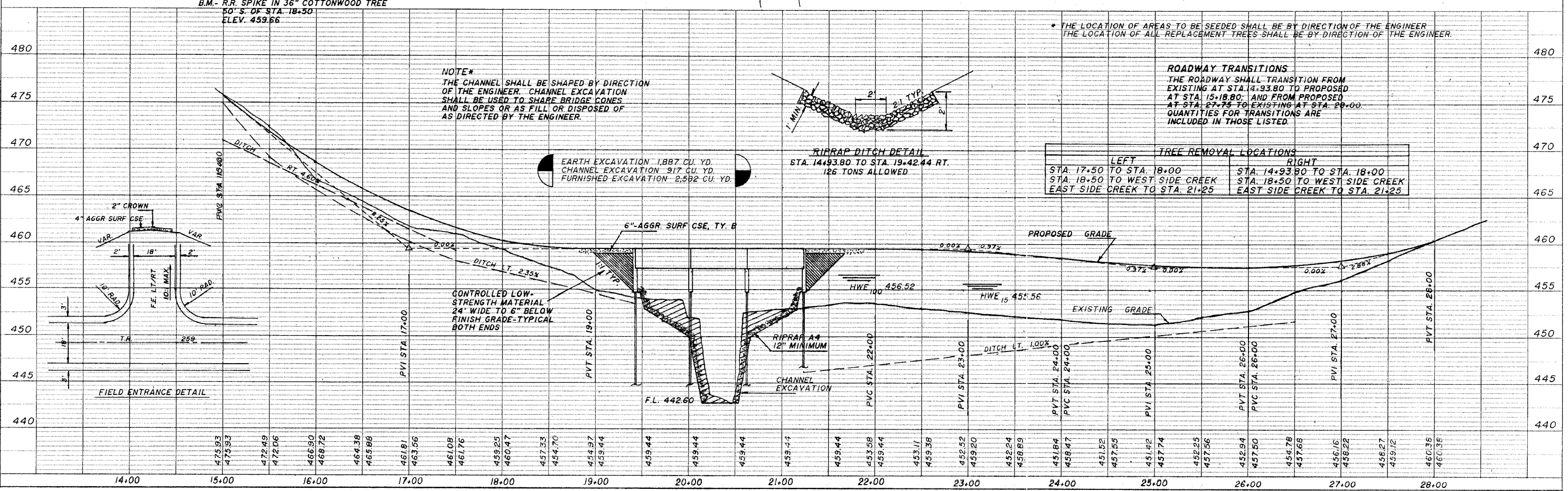
ELEANORE SMOLLEY
PT. NW¼ NW¼ SEC. 28, T.2S., R.1E., 3rd P.M.



DATE	
BY	
PLAN	SURVEYED, PLOTTED, CHECKED, REVISIONS, DATE, BY, NOTE BOOK NO.



DATE	
BY	
PROFILE	SURVEYED, PLOTTED, CHECKED, REVISIONS, DATE, BY, NOTE BOOK NO.



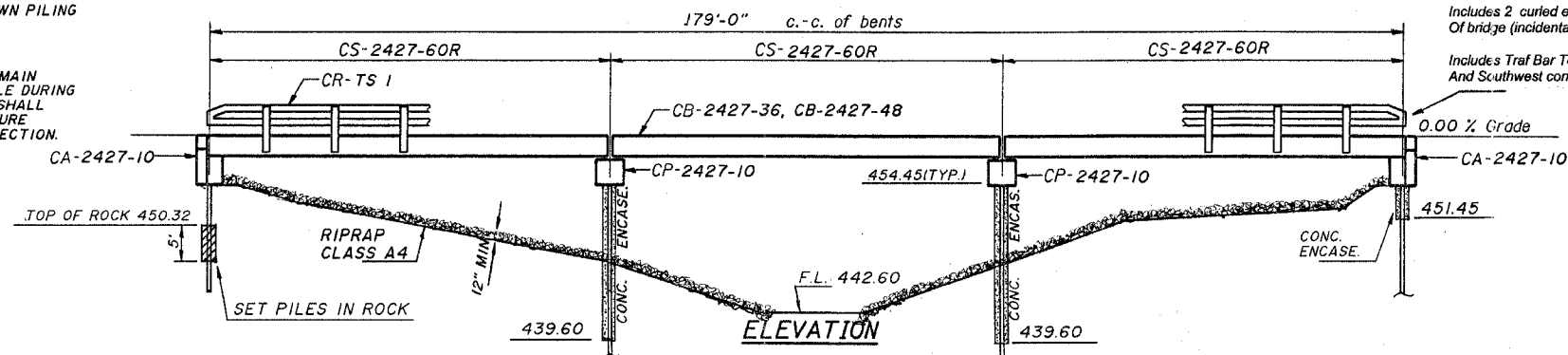
ROUTE	SECTION	COUNTY	TOT. SHTS.	SHT.
T.R. 259	04-03114-00-BR	JEFFERSON	14	3
CASNER TOWNSHIP ROAD DISTRICT				

CONTRACT 95470

B.M. SPIKE IN 18" LEANING TREE 50'
S.E. OF EXIST. TRUSS BRIDGE EL. 455.28

Existing Structure-
62' LONG STEEL TRUSS BRIDGE ON
CONCRETE ABUTMENTS, UNKNOWN PILING

Salvage-
EXISTING BRIDGE SHALL REMAIN
IN PLACE AS LONG AS POSSIBLE DURING
CONSTRUCTION. CONTRACTOR SHALL
THEN REMOVE ENTIRE STRUCTURE
FROM SITE AT ENGINEER'S DIRECTION.



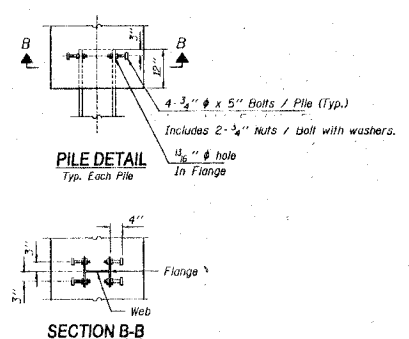
Includes 2 curled end sections at Northwest and Southeast corners
Of bridge (incidental to contract, see detail below)

Includes Traf Bar Term Ty 5A and Traf Bar Term Ty 1 at Northeast
And Southwest corners of bridge (2 each)

GENERAL NOTES

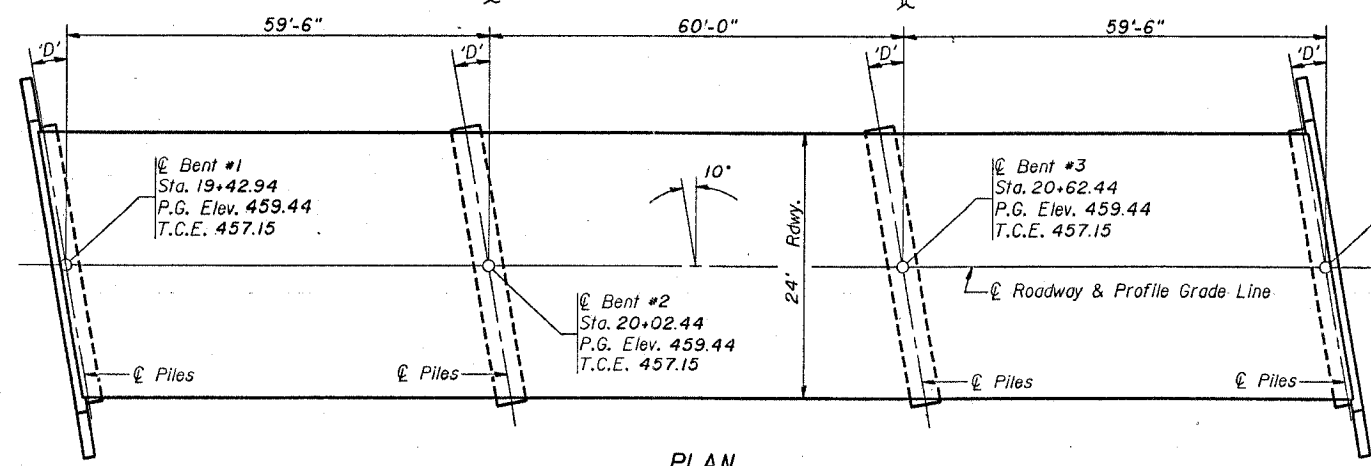
- The Contractor shall drive 1 test piles, as specified, in a permanent location as directed by the Engineer before ordering the remaining piles.
- See Special Provisions for boring logs.
- Waterproofing membrane shall not be applied.
- Layout of slope protection systems may be varied in the field to suit ground conditions as directed by the Engineer.

STUD SHEAR CONNECTORS DETAIL



TOTAL BILL OF MATERIAL

Item	Unit	Super	Sub.		Total
			Piers	Abuts.	
Removal of Existing Structures	Each	1			1
Bituminous Concrete Surface Course, Class I	Ton				
Waterproofing Membrane System	Sq. Yd.				
Concrete Structures	Cu. Yd.		12.00	18.20	30.20
Precast Prestressed Concrete Deck Beams (27" Depth)	Sq. Ft.	4,320			4,320
Steel Bridge Rail, Type SM	Foot				
Steel Railing, Type S-1	Foot	360			360
Reinforcement Bars	Pound		1,120	1,980	3,100
Furnishing Steel Piles HP 10x42	Foot			192	192
Driving Steel Piles	Foot				423
Furnishing Steel Piles HP 12x53	Foot		275		275
Test Piles Steel HP 12x53	Each		1		1
Name Plates	Each			1	1
Concrete Encasement	Cu. Yd.		20.2	2.0	22.2
Stone Dumped Riprap, Class A4	Ton				674
Setting Piles in Rock	Each			4	4
Stud Shear Connectors	Each		48		48



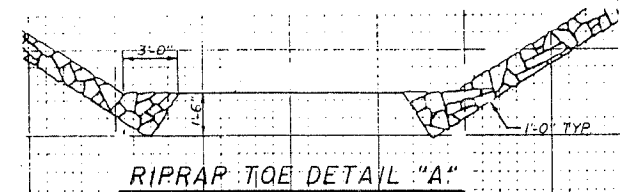
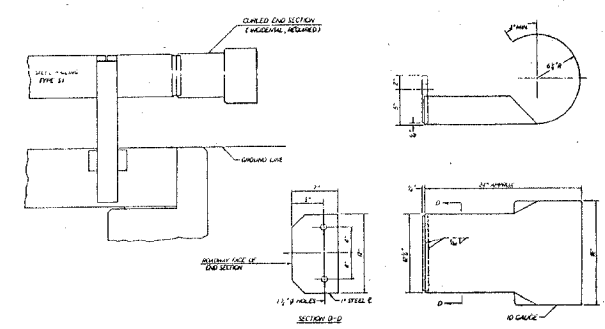
PLAN

Skew Angle 'D' = 10° Right Forward

BORING LOCATIONS

- EAST END PROPOSED BRIDGE
- 19' WEST EXISTING BRIDGE & EXIST. ROAD
- 18' EAST EXISTING BRIDGE & EXIST. ROAD

CURLLED END SECTION DETAIL



PILE DATA (2-PIERS)

Type HP 12x53
Capacity-Refusal
Estimated Length Bent 2-21.5'; Bent 3-29.2'
Number Required-12 (Includes 1 Test Pile located in Bent #3)

PILE DATA (2-ABUTS.)

Type HP 10x42
Capacity-Refusal
Estimated Length Bent 1-11'; Bent 4-37'
Number Required-8

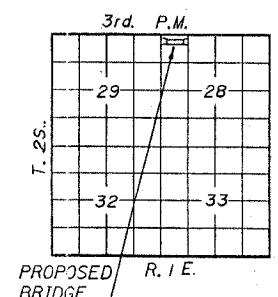
DESIGN SPECIFICATIONS

1996 AASHTO, 1997 and 1998 Interims
HS-20-44 Loading
Load Factor Design

JEFFERSON COUNTY
RAYSE CREEK
SEC. 04-03114-00-BR BUILT 2006
PROJECT NO. BROS-081(54)
LOADING HS20-44
STRUCTURE NO. 041-3735

LETTERING FOR NAME PLATE

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



LOCATION SKETCH

SEISMIC DATA

SEISMIC PERFORMANCE CATEGORY(S) PC1 B
BEDROCK ACCELERATION COEFF. (A) 0.098g
SITE COEFFICIENT(S) 1.5

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 requirements of the current "A.A.S.H.T.O. Standard Specifications For Highway Bridges".

Steven W. Magness 2-27-06
Illinois Structural Eng. NO. 6064
Exp. 11-30-06

Complies with 2002 AASHTO
Specifications for Seismic Design
of Bridges

WATERWAY INFORMATION

Drainage Area = 45.9 sq. mi.		Low Grade Elev. = 451.42 @ Sta. 25+00				
Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.	Nat. H.W.E.	Head - Ft. Exist. Prop.	Headwater El. Exist. Prop.
Design	15	4473	392	1136	455.56	
Base	100	6720	392	1266	456.52	0.05 0.16
Overtopping						
Max. Calc.	500					

CONSTRUCTION PERMITS

THE REQUIREMENTS OF THE
DIVISION OF WATER RESOURCES
HAVE BEEN FULFILLED IN ACCOR-
DANCE WITH STATEWIDE
PERMIT NO. 2.

GENERAL PLAN & ELEVATION

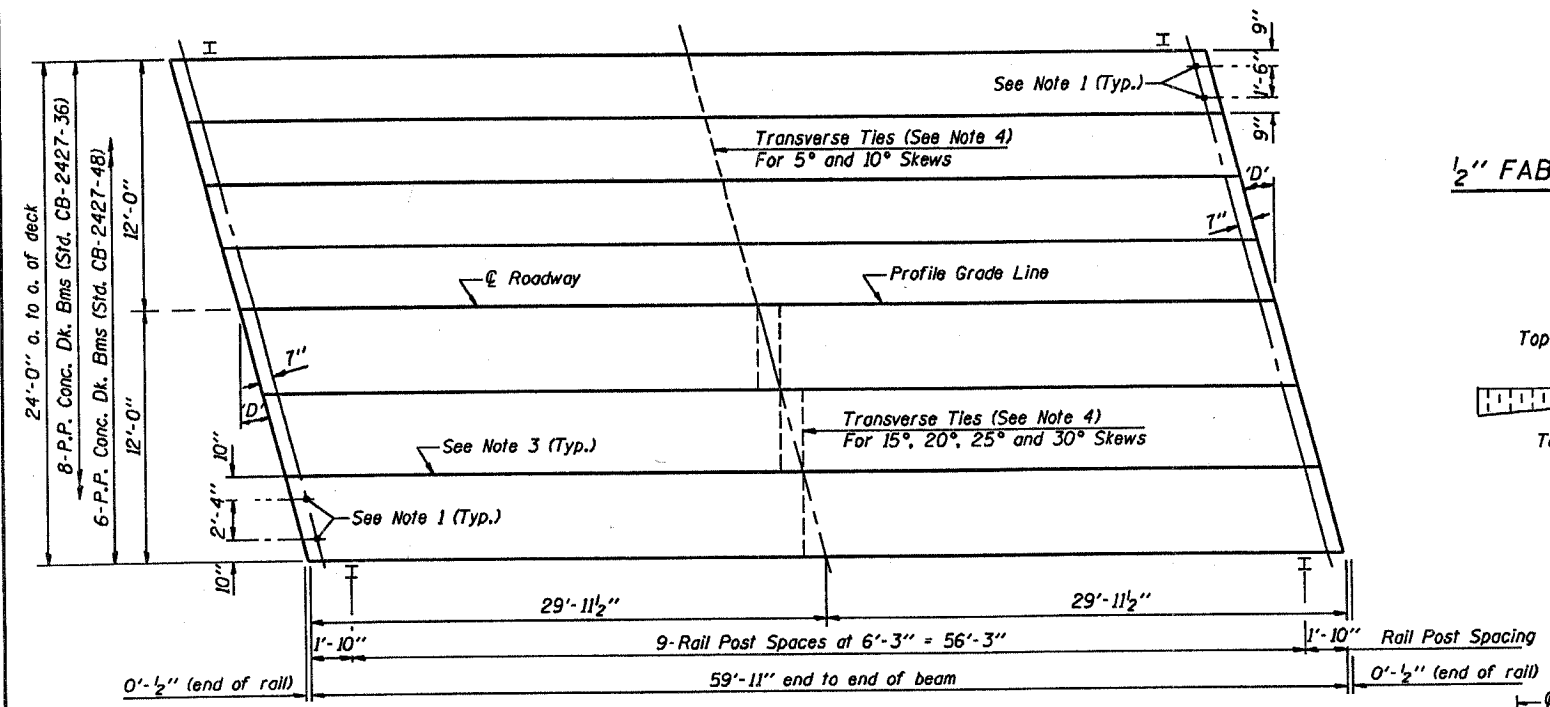
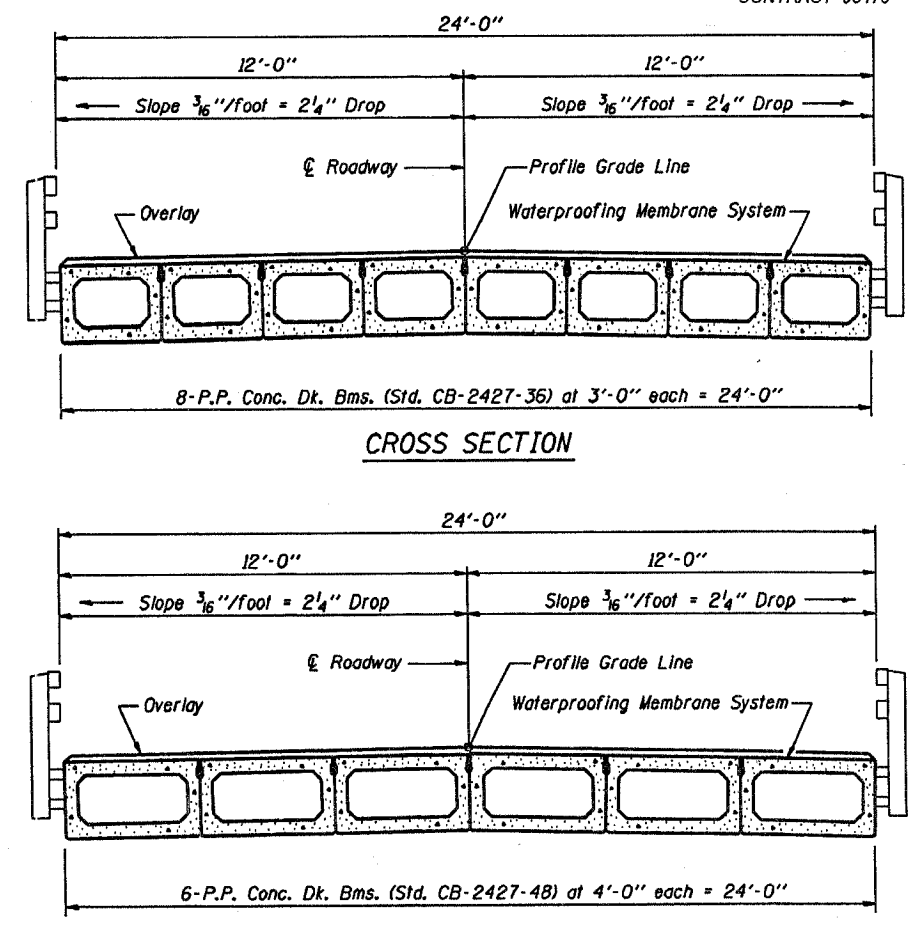
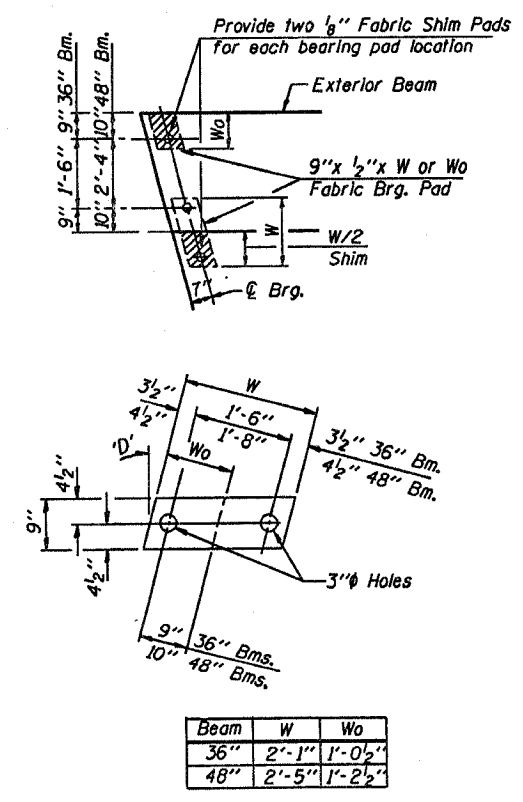
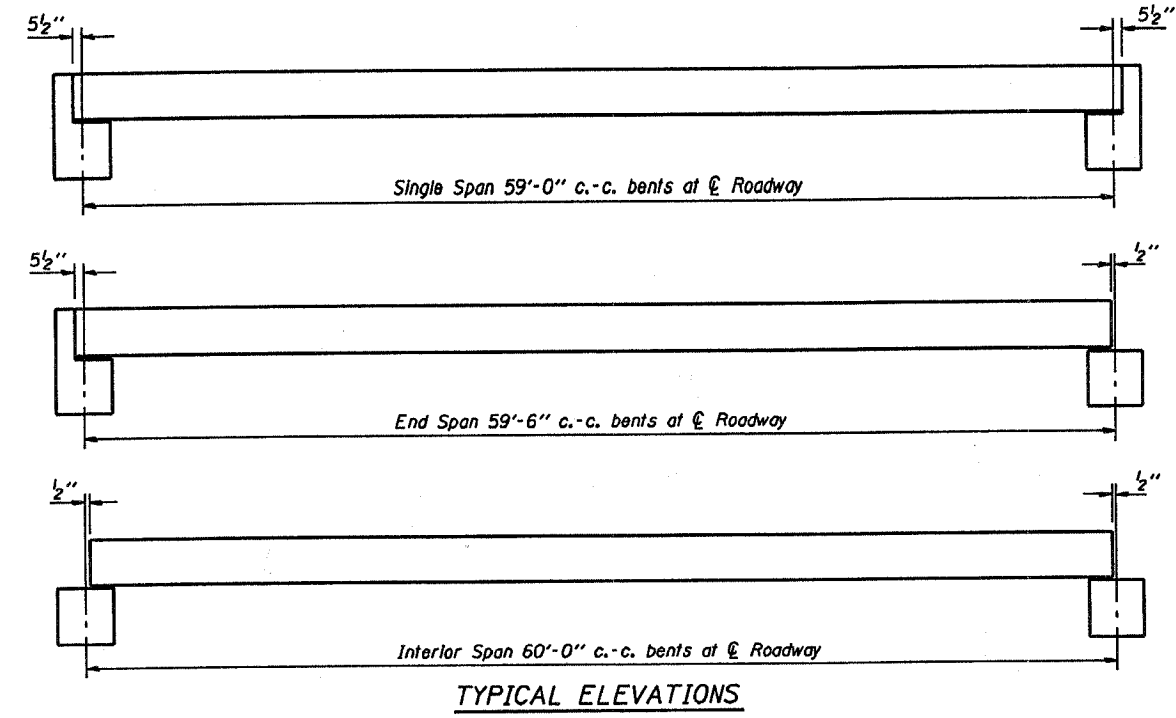
TWP. ROUTE 259
OVER RAYSE CREEK
SECTION 04-03114-00-BR
JEFFERSON COUNTY
STATION 20+32.44

NOTE
THE ARTICLE OR SECTION NUMBERS REFERENCING THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AS SHOWN ON THE STANDARD BRIDGE PLAN SHEETS INCLUDED WITH THE CONTRACT PLANS SHOULD BE INTERPRETED AS REFERRING TO THE CURRENT EDITION OF THE STANDARD SPECIFICATIONS (ADOPTED JANUARY 1, 2002) AS SHOWN IN THE "ARTICLE/SECTION NUMBER TABLE" BELOW.

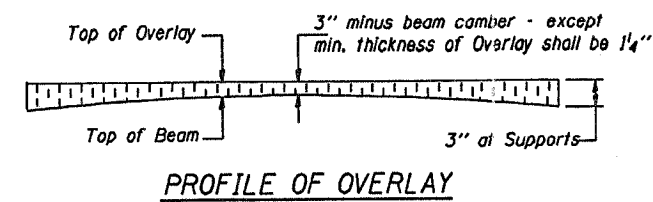
PREVIOUS NO.	CURRENT NO.
504.06	504.06
505.04	505.04
706.05	1006.05
706.32	1006.32
760.07	1060.07



CONTRACT 95470



1/2" FABRIC BRG. PAD DETAILS

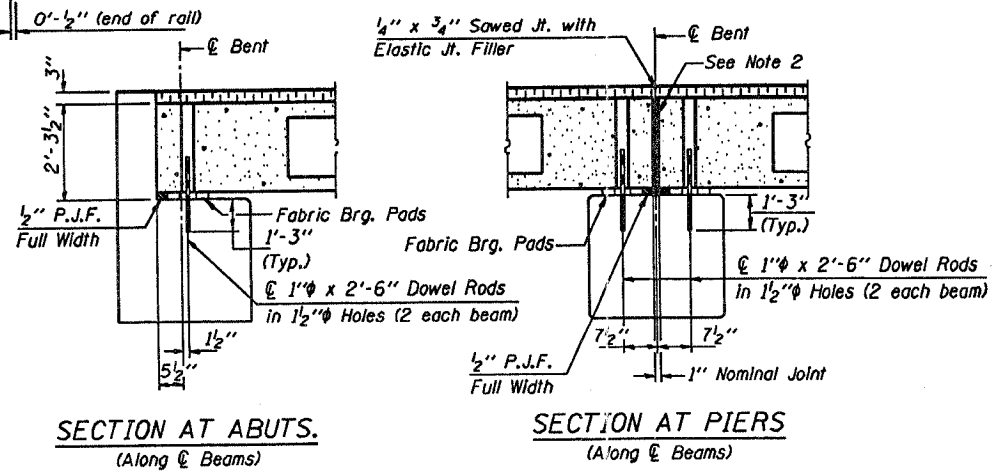


DIMENSIONS 'A' AND 'B'

'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 3/4"	7 1/2"	8"	8 1/4"	8 3/4"

PLAN
(D = Designated Skew Angle)

- 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 \bar{C} Pier shall be filled with non-shrink grout.
 - Longitudinal keys shall be grouted.
 - The 1" ϕ 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.



QUANTITIES FOR ONE SPAN

P.P. Conc. Dk. Bm. 27" Dp.	1440 Sq. Ft.
Steel Rolling	120 Ft.
Waterproofing Membrane System	160.0 Sq. Yds.
Portland Cement Mortar	420 Ft.
Fairing Course	300 Ft.

Note: Quantity of overlay for one span = 18.0 Tons

P.P.C. DECK BEAM SUPERSTRUCTURE			
24' RDWY.	27" BMS.	60' SPAN	RIGHT
STANDARD CS-2427-60R			

Illinois Department of Transportation

PASSED APRIL 4, 2005

Theresa S. Haggan

Engineer of Bridge Design

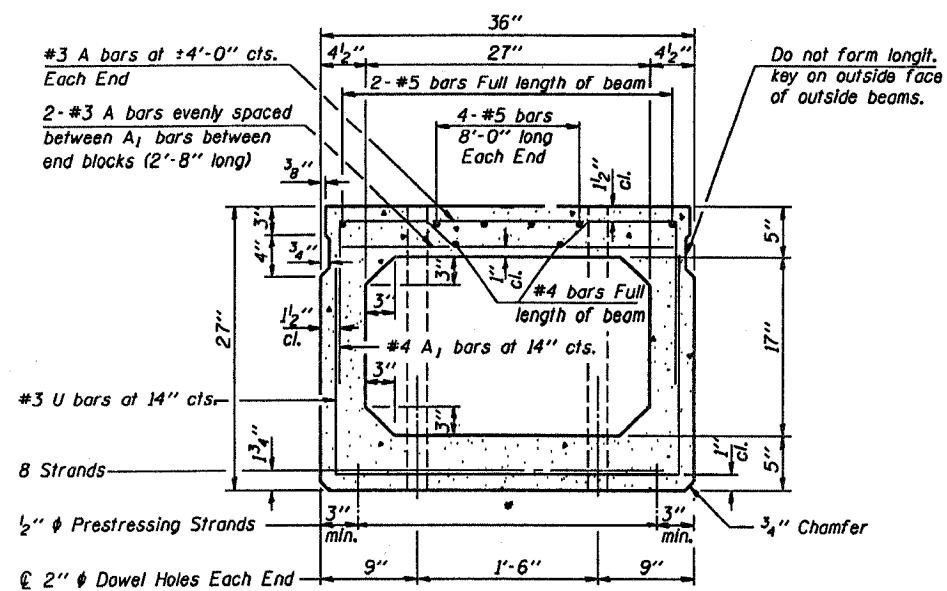
APPROVED APRIL 4, 2005

Ralph E. Anderson

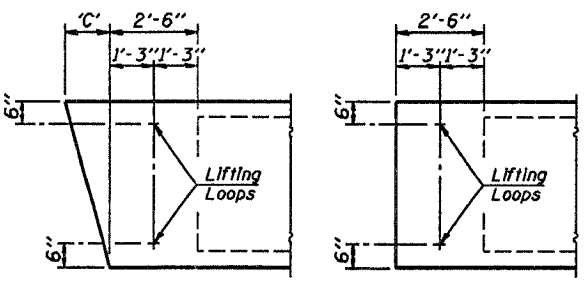
Engineer of Bridges and Structures

1084-T-1 02/05

CONTRACT 95470

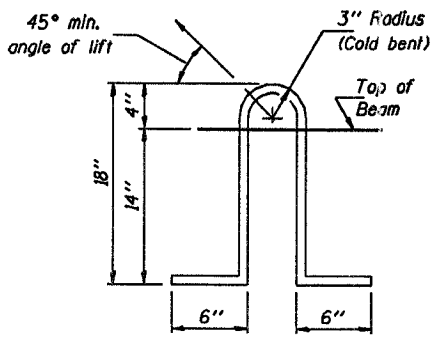


CROSS SECTION
(40' SPAN)



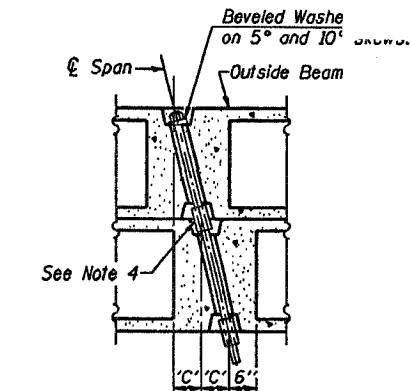
END BLOCK DETAILS

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.

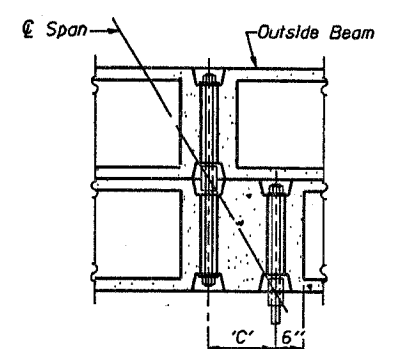


LIFTING LOOP DETAIL

Lifting loops shall be 2, 1/2" 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°)

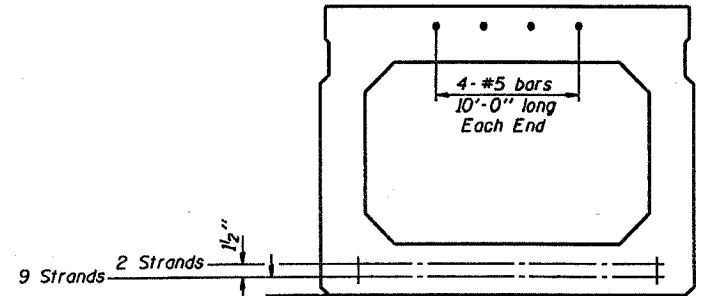
DIMENSION 'C'

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

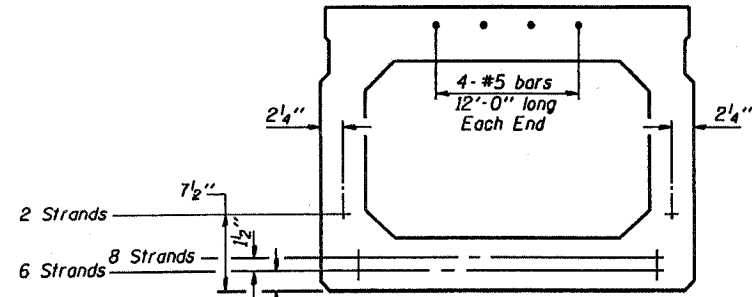
*** TRANSVERSE STRAND PLACEMENT GUIDELINES**

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".

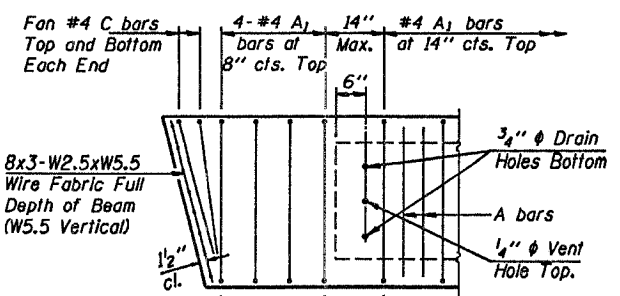
Vertical placement of strands shall not be adjusted to satisfy the above guidelines.



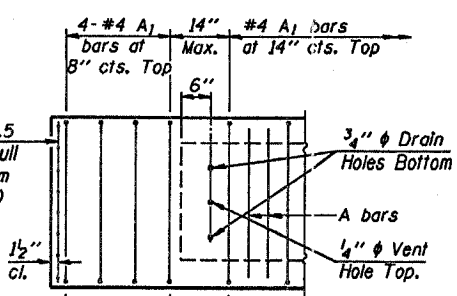
CROSS SECTION
(50' SPAN)



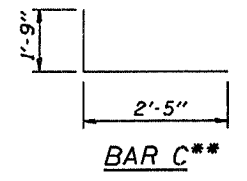
CROSS SECTION
(60' SPAN)



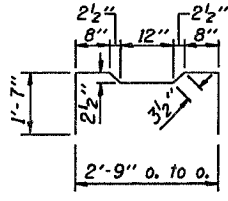
END REINFORCEMENT
(SKEWED)



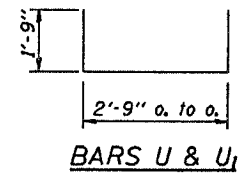
END REINFORCEMENT
(RIGHT ANGLE)



BAR C**



BAR A₁



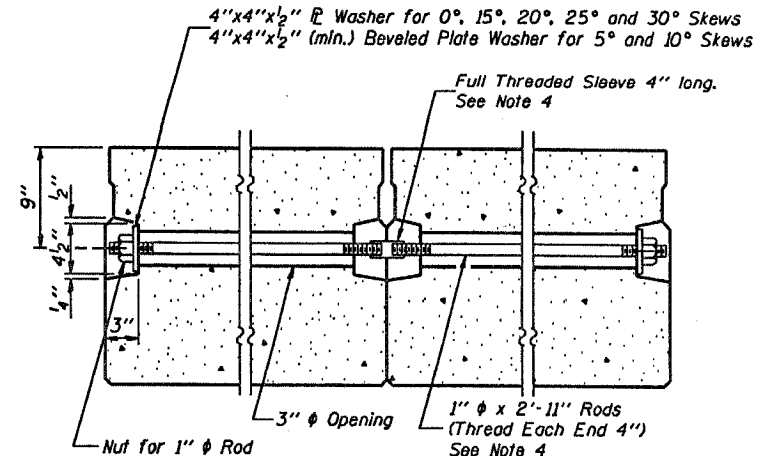
BARS U & U₁

DESIGN STRESSES

- f_c = 5,000 p.s.i.
- f_{ci} = 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"



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.

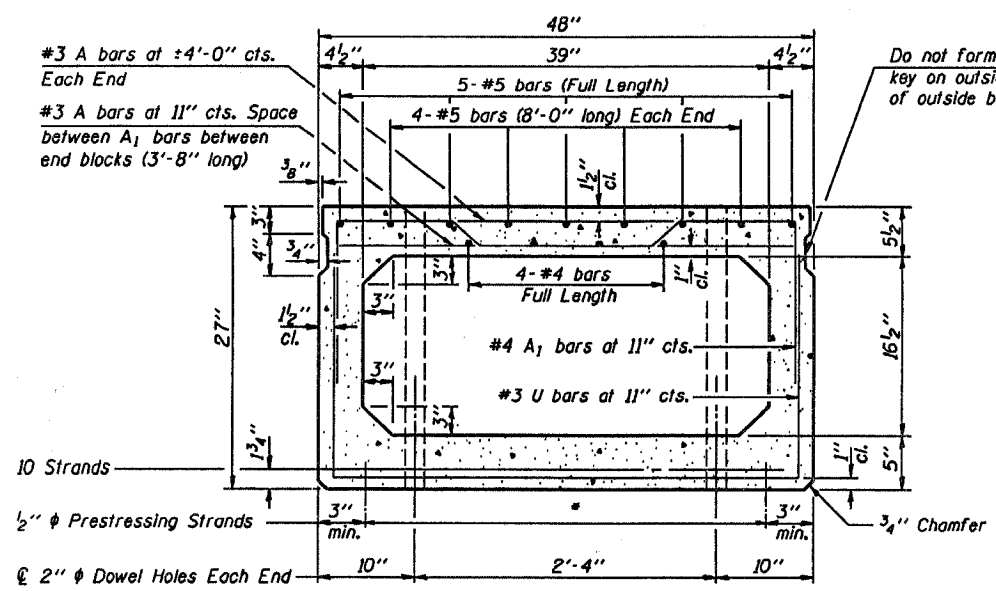
NOTE:
The std. reinf. and dimensions shown on the 40' span cross section is typical for all spans, except as shown.

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

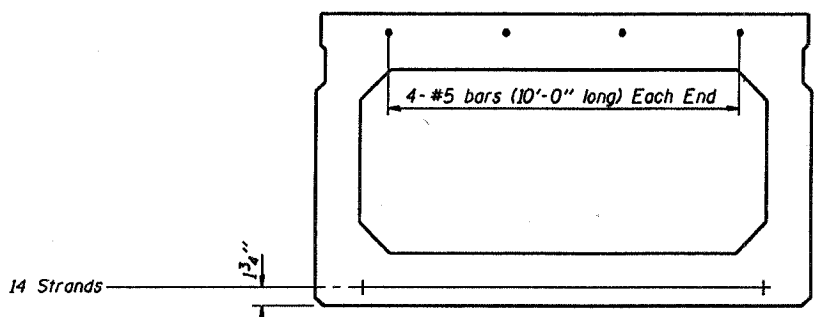
Illinois Department of Transportation
PASSED APRIL 4, 2005
Theresa J. Nungesser
Engineer of Bridge Design
APPROVED APRIL 4, 2005
Robert E. Anderson
Engineer of Bridges and Structures

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

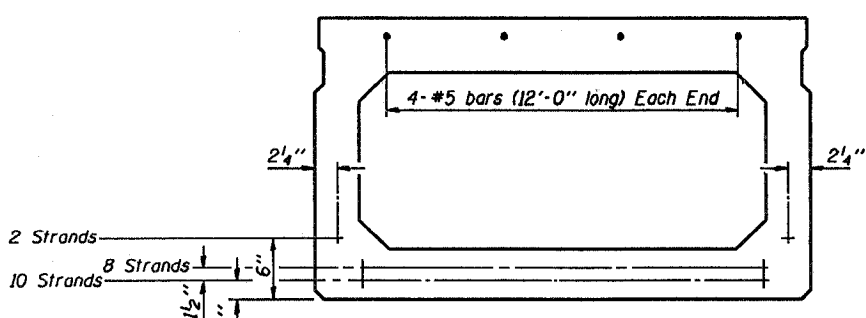
CONTRACT 95470



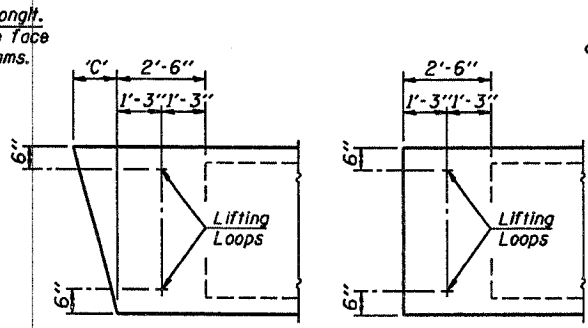
CROSS SECTION
(40' SPAN)



CROSS SECTION
(50' SPAN)

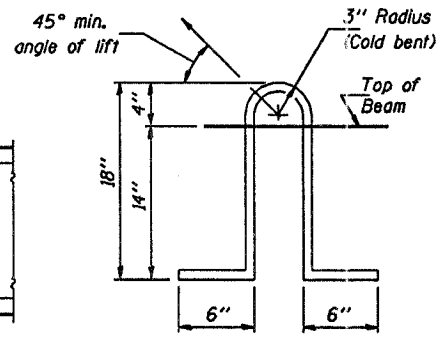


CROSS SECTION
(60' SPAN)



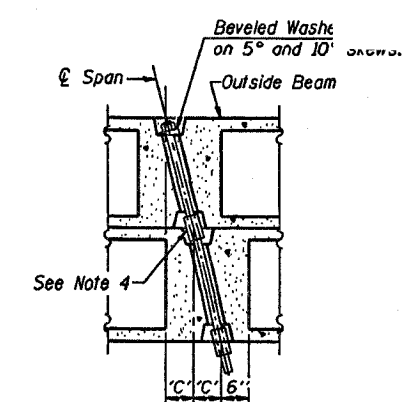
END BLOCK DETAILS

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.

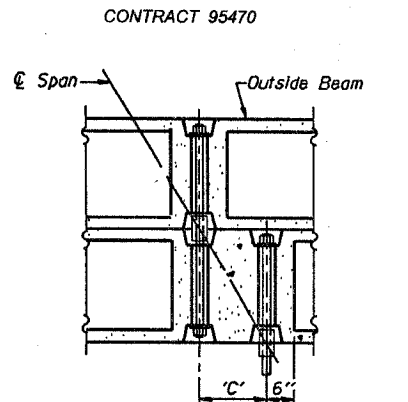


LIFTING LOOP DETAIL

Lifting loops shall be 3. 1/2" 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°)

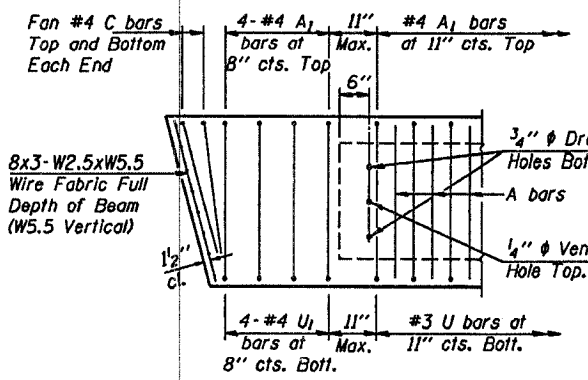
DIMENSION 'C'

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

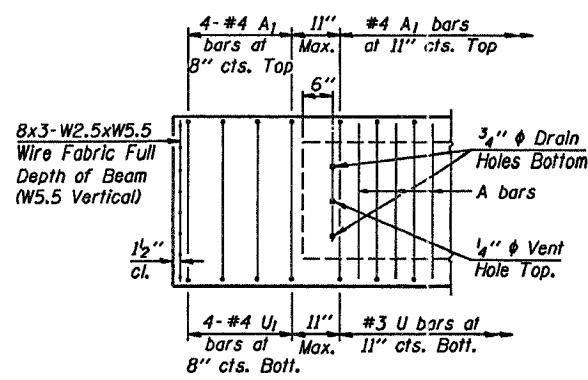
*** TRANSVERSE STRAND PLACEMENT GUIDELINES**

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

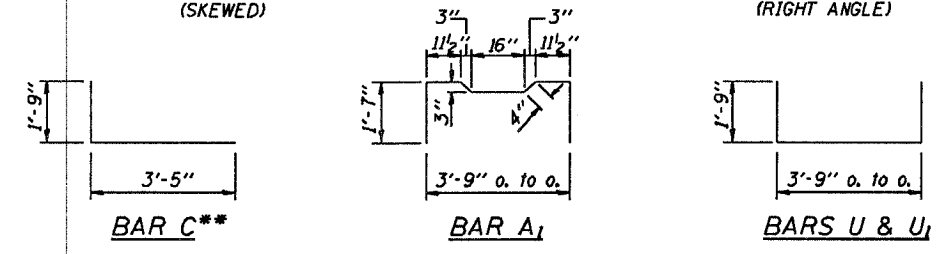
Vertical placement of strands shall not be adjusted to satisfy the above guidelines.



END REINFORCEMENT
(SKEWED)



END REINFORCEMENT
(RIGHT ANGLE)

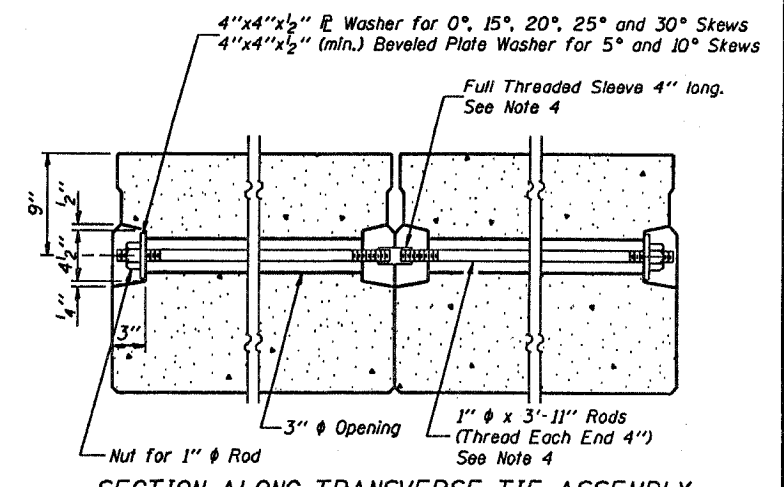


DESIGN STRESSES

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



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

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 square inches.
- Reinforcement bars shall conform to the requirements of AASHTO M-31 or M-322, Grade 60.
- On 0°, 5° and 10° skew, alternate approved transverse tie rods of increased segmental length are acceptable.
- Rail Post anchor devices shall be cast into outside beam as elsewhere specified.
- 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".
- 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.

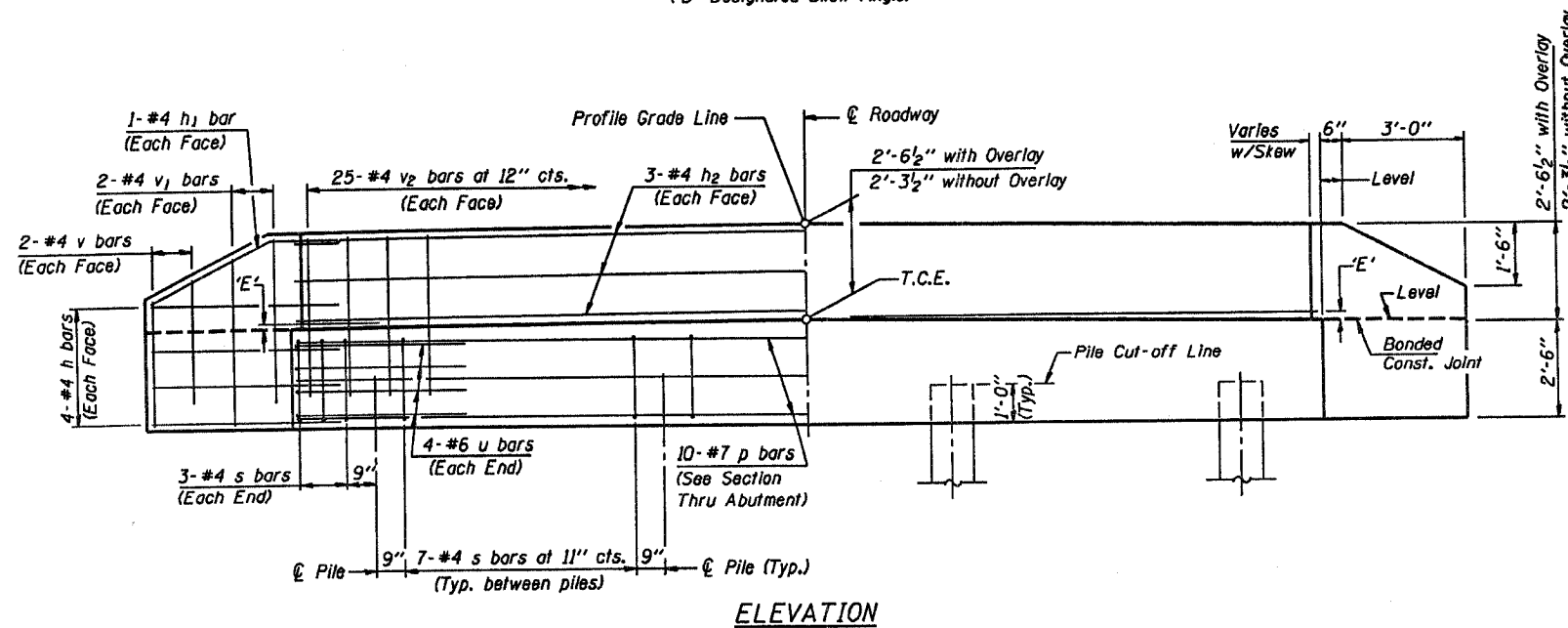
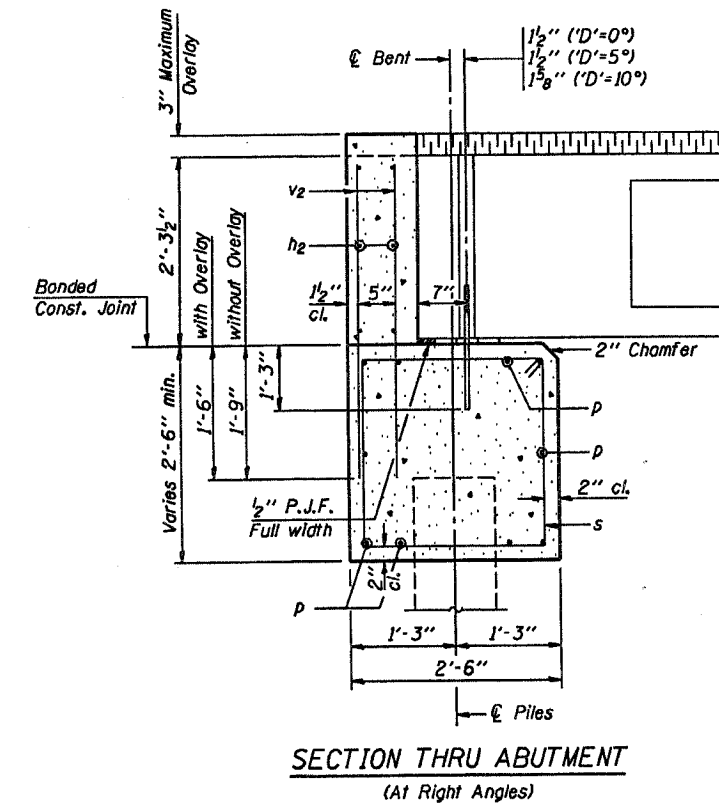
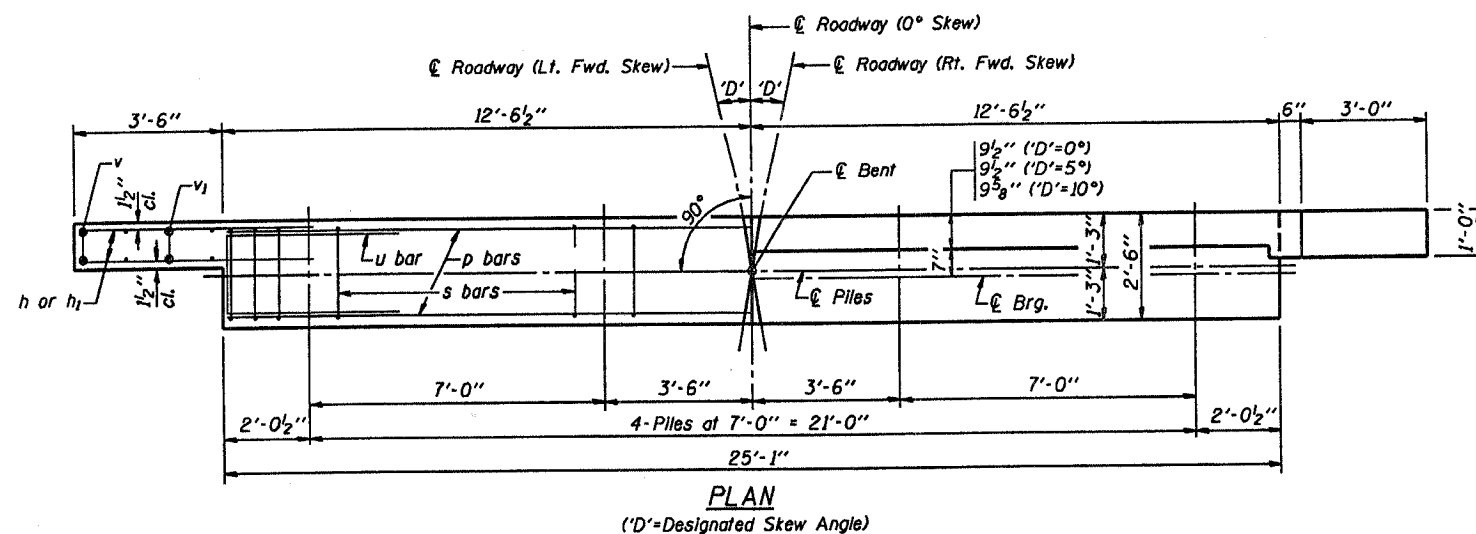
Illinois Department of Transportation
 PASSED APRIL 4, 2005
 Theras S. Namasakali
 Engineer of Bridge Design
 APPROVED APRIL 4, 2005
 Ralph E. Anderson
 Engineer of Bridges and Structures

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

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

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

CONTRACT 95470



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 3/8"	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

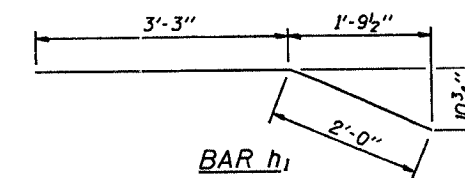
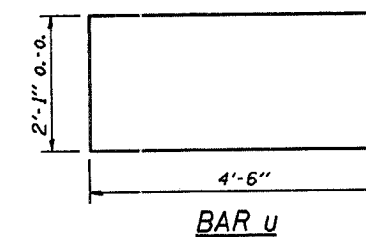
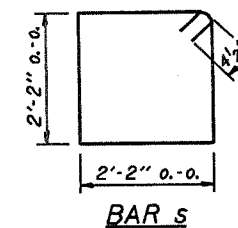
- The Backwall and the portion of the Wingwalls above the bonded construction joint shall be cast against the in-place beam.
- Reinforcement bars shall conform to the requirements of A.A.S.H.T.O. M-31 or M-322, Grade 60.
- Space reinforcement in cap to miss anchor bolts.

MAXIMUM PILE LOADS

SPAN	TONS
40'	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	24'-9"	—
p	10	#7	24'-9"	—
s	27	#4	9'-5"	□
u	8	#6	11'-1"	□
v	8	#4	3'-2"	—
v1	8	#4	4'-2"	—
v2	50	#4	3'-11"	—
Concrete Structures			9.1 Cu. Yds.	
Reinforcement Bars			1150 Lb.	

P.P.C. DECK BEAMS PILE BENT ABUTMENT		
24' RDWY.	27" BMS.	'D'=0°, 5° OR 10°
STANDARD CA-2427-10		

Illinois Department of Transportation

PASSED APRIL 4, 2005

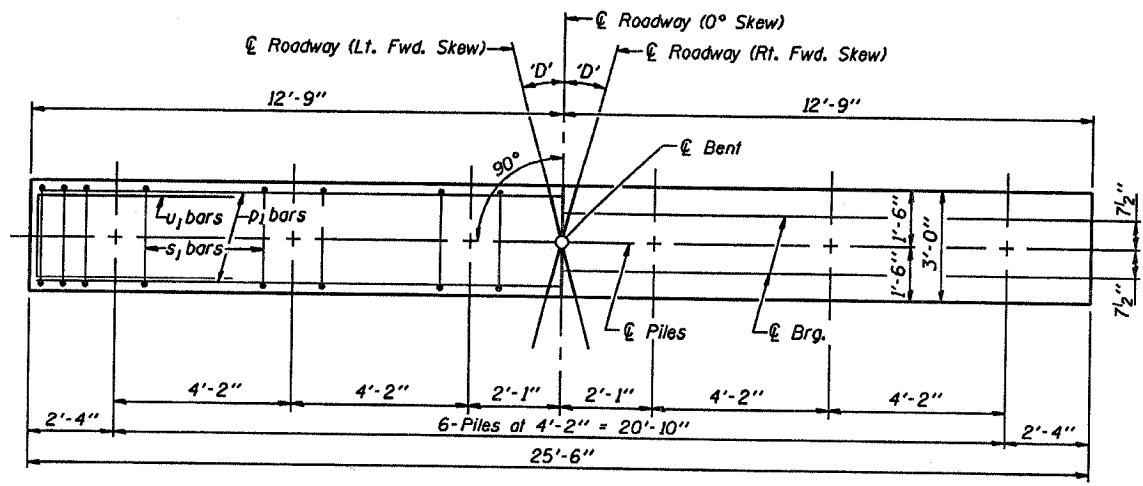
Theresa S. Nemaunski
Engineer of Bridge Design

APPROVED APRIL 4, 2005

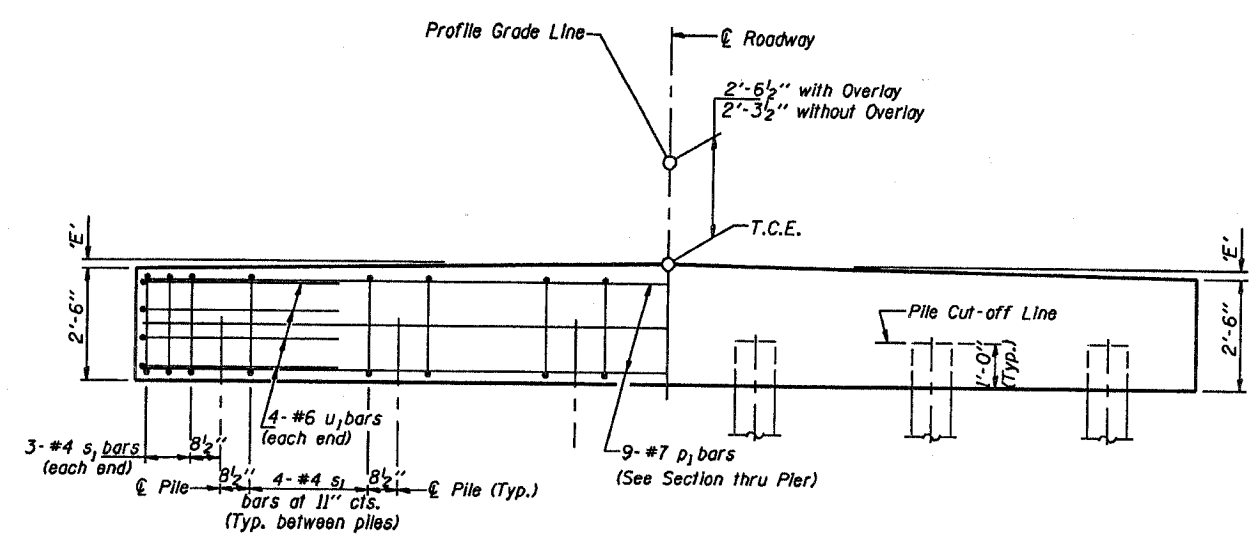
Ralph E. Anderson
Engineer of Bridges and Structures

1081-1-1 02/05

CONTRACT 95470



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"

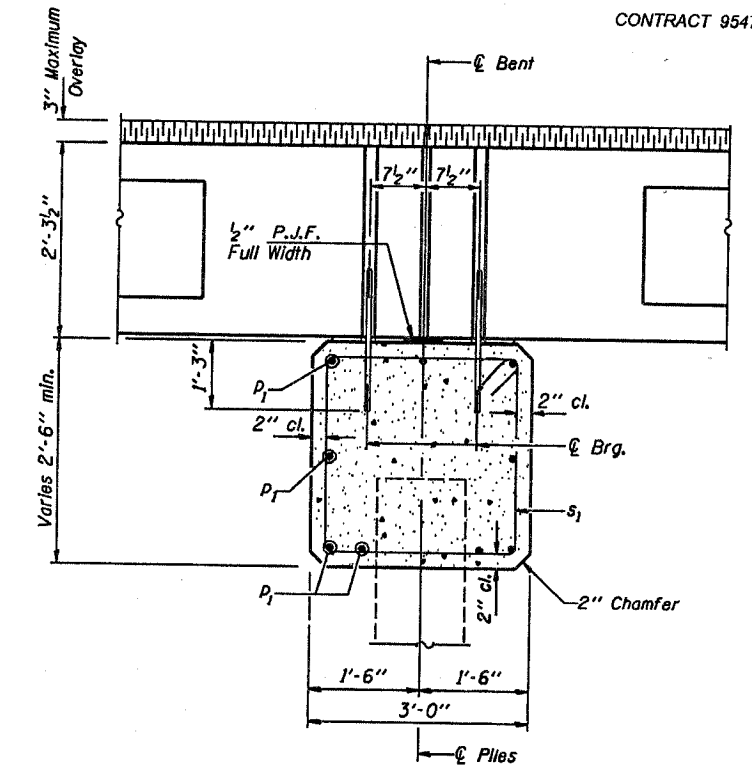
MAXIMUM PILE LOADS

SPAN	TONS
40'	35
50'	40
60'	46

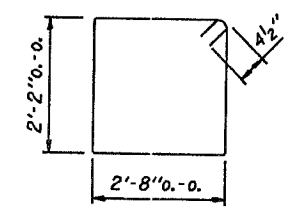
Longer of Either Span Supported by Pier.

DESIGN STRESSES

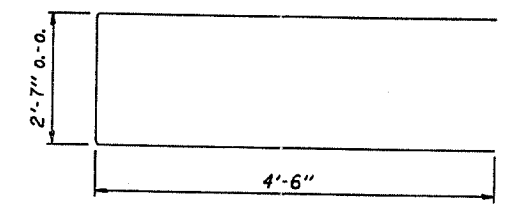
f'c = 3,500 psi
fy = 60,000 psi



SECTION THRU PIER
(At Right Angles)



BAR s1



BAR u1

BILL OF MATERIAL FOR ONE PIER

Bar	No.	Size	Length	Shape
p1	9	#7	25'-2"	—
s1	26	#4	10'-5"	□
u1	8	#6	11'-7"	—
Concrete Structures			7.4	Cu. Yds.
Reinforcement Bars			780	Lb.

NOTE

Reinforcement bars shall conform to the requirements of A.A.S.H.T.O. M-31 or M-322, Grade 60.

P.P.C. DECK BEAMS PILE BENT PIER		
24' RDWY.	27" BMS.	'D'=0°, 5° OR 10°
STANDARD CP-2427-10		

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

NOTES CONTRACT 95470

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.

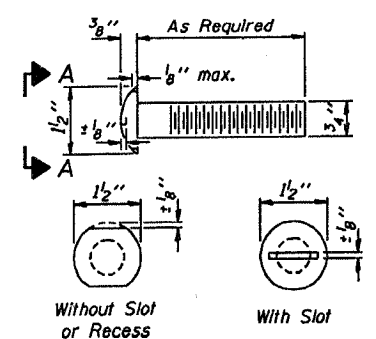
For multi-span bridges, sufficient 1/4" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with STEEL RAILING, TYPE S-1.

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

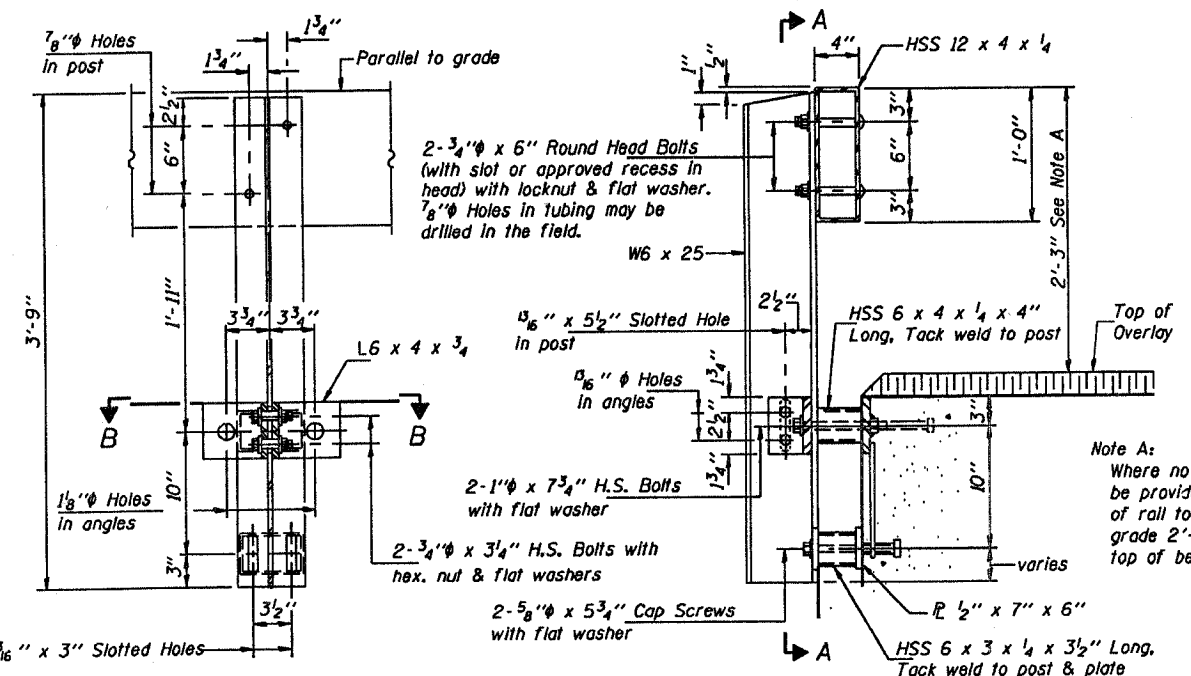
The 1/2" x 7" x 6" plates that come in contact with concrete shall either receive two coats of asphalt paint conforming to Section 1060.07 Type II, or 1/8" fabric bearing pads shall be placed between the plates and concrete.

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 1/2 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.

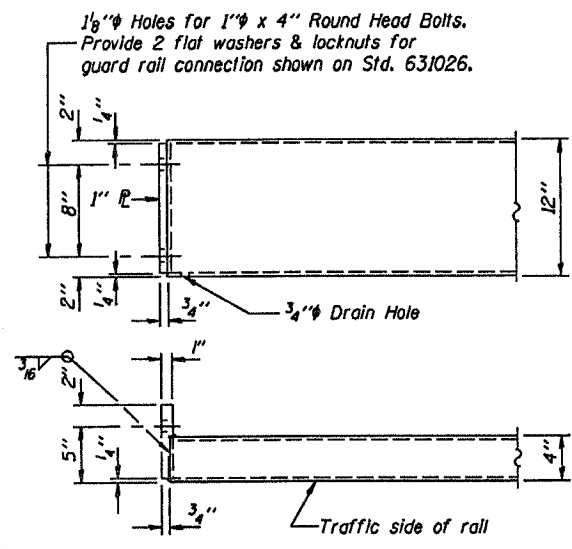


VIEW A-A
ROUND HEAD BOLT

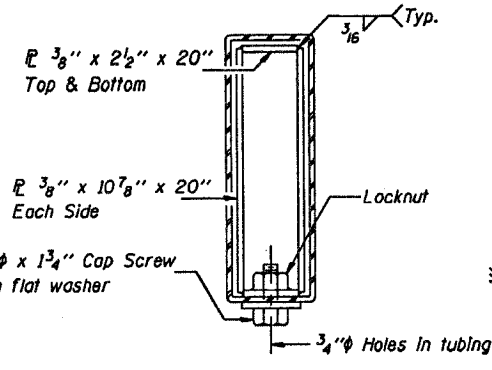


SECTION A-A

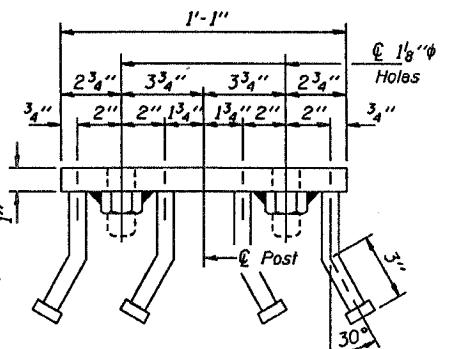
SECTION AT RAIL POST



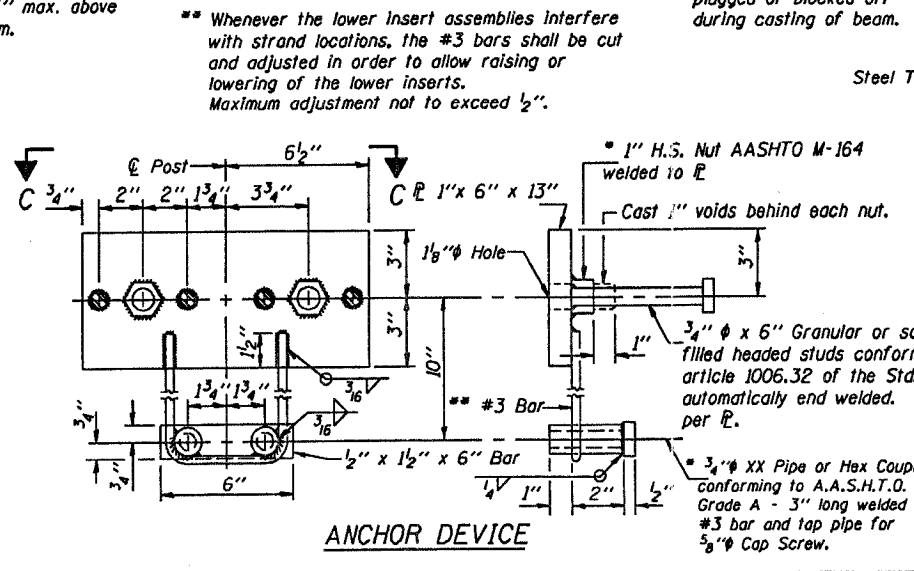
END OF RAIL DETAILS



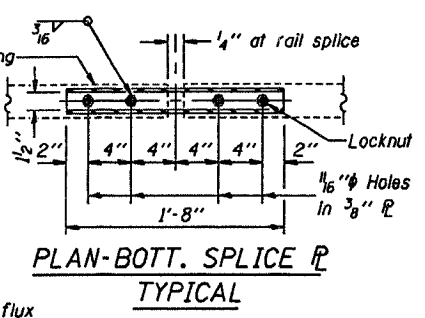
SECTION AT RAIL SPLICE



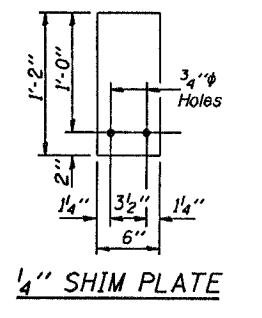
VIEW C-C



ANCHOR DEVICE



PLAN-BOTT. SPLICE P TYPICAL



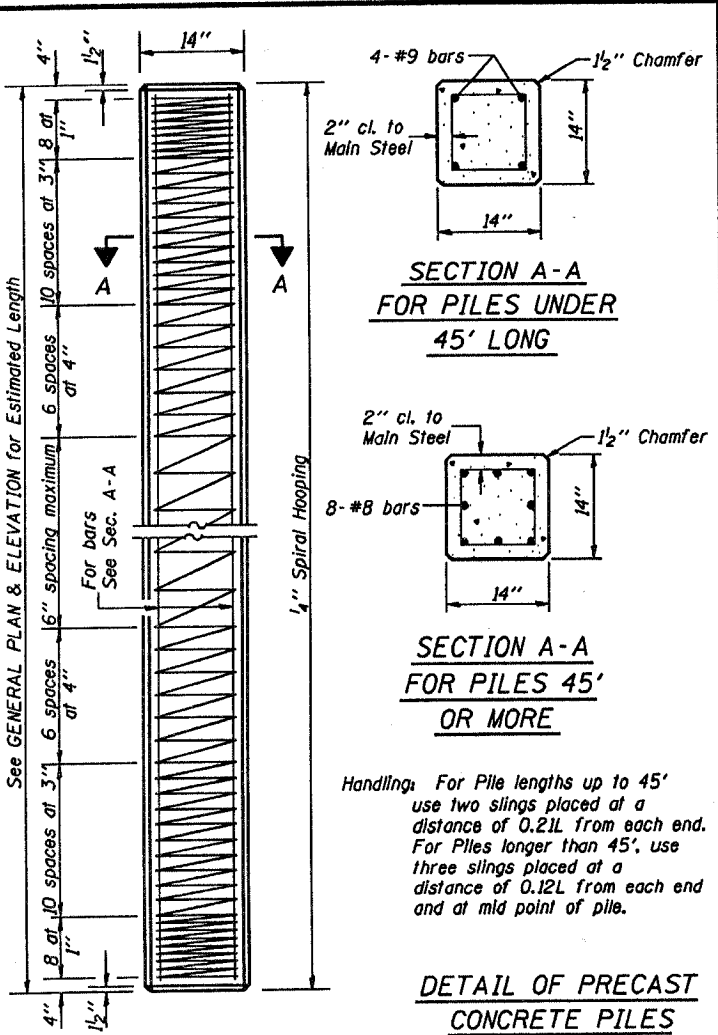
1/4\"/>

Illinois Department of Transportation
 PASSED APRIL 4, 2005
 Theresia J. Romanowski
 Engineer of Bridge Design
 APPROVED APRIL 4, 2005
 Ralph E. Anderson
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STEEL RAILING, TYPE S-1
STANDARD CR-TS1

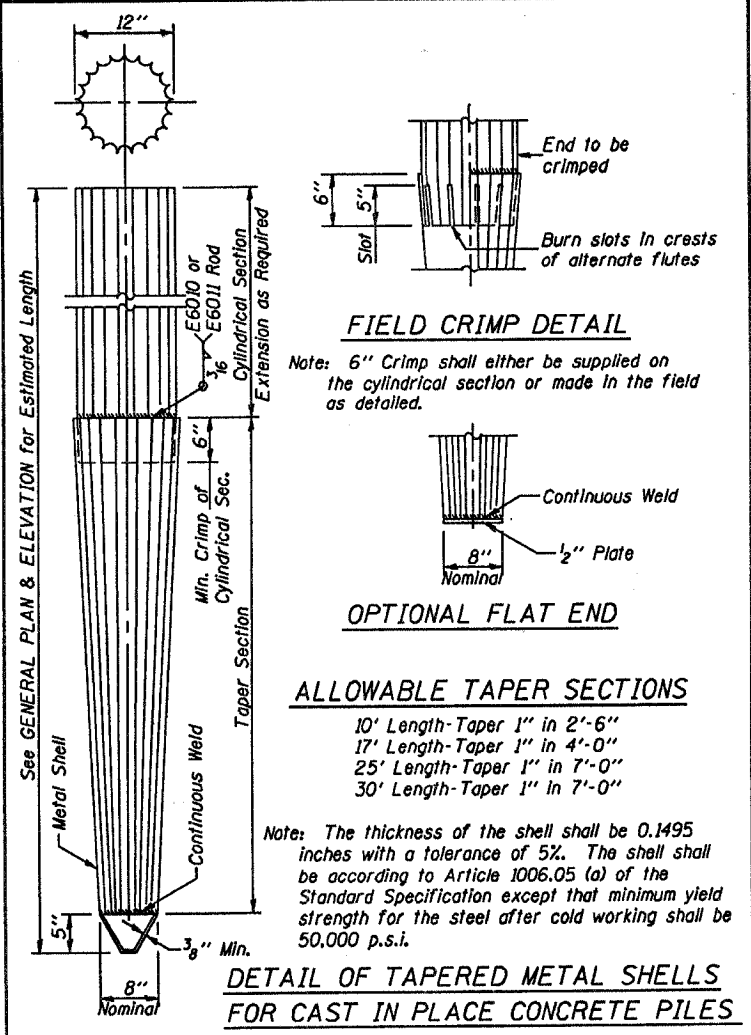
ROUTE	SECTION	COUNTY	TOT. SHTS.	SHT.
T.R. 259	04-03114-00-BR	JEFFERSON	14	10
CASNER TOWNSHIP ROAD DISTRICT				

CONTRACT 95470
 Reinforcement cage shall be omitted when Concrete Encasement is provided.
 The cost of Reinforcement is included with the Cost of Furnishing Piles.

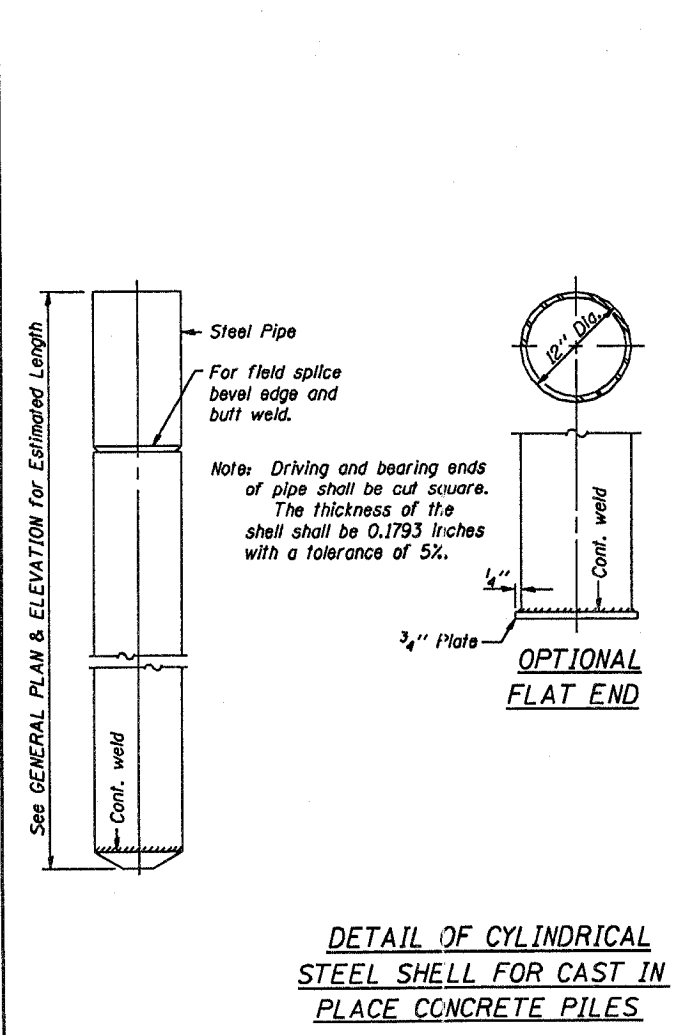


Handling: For Pile lengths up to 45' use two slings placed at a distance of 0.21L from each end. For Piles longer than 45', use three slings placed at a distance of 0.12L from each end and at mid point of pile.

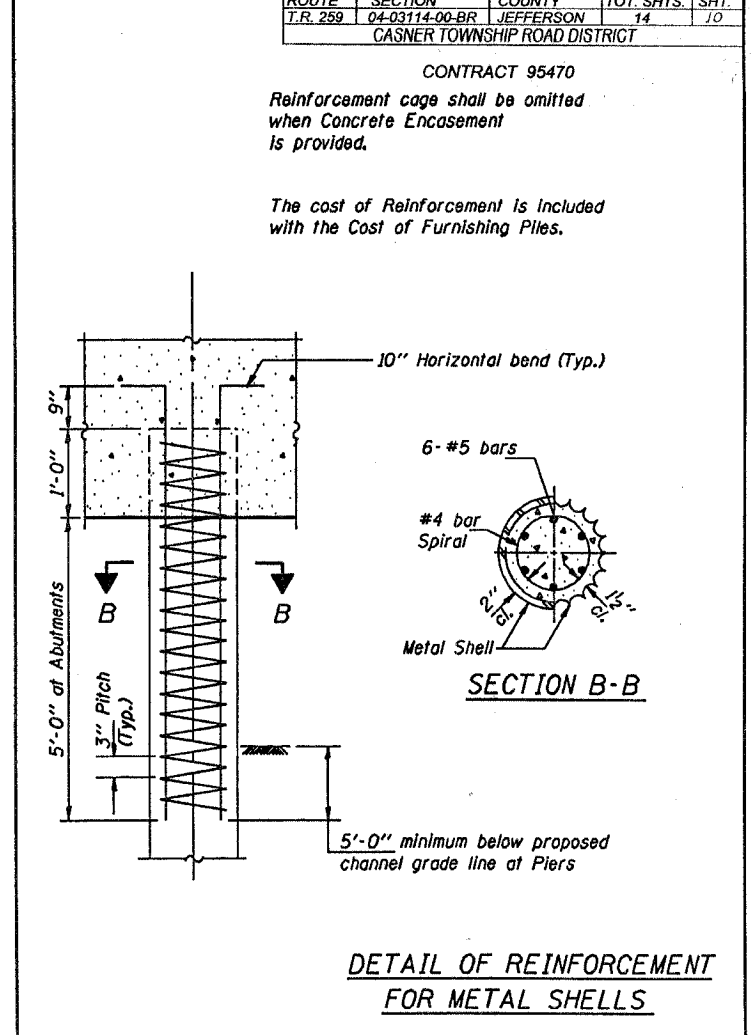
DETAIL OF PRECAST CONCRETE PILES



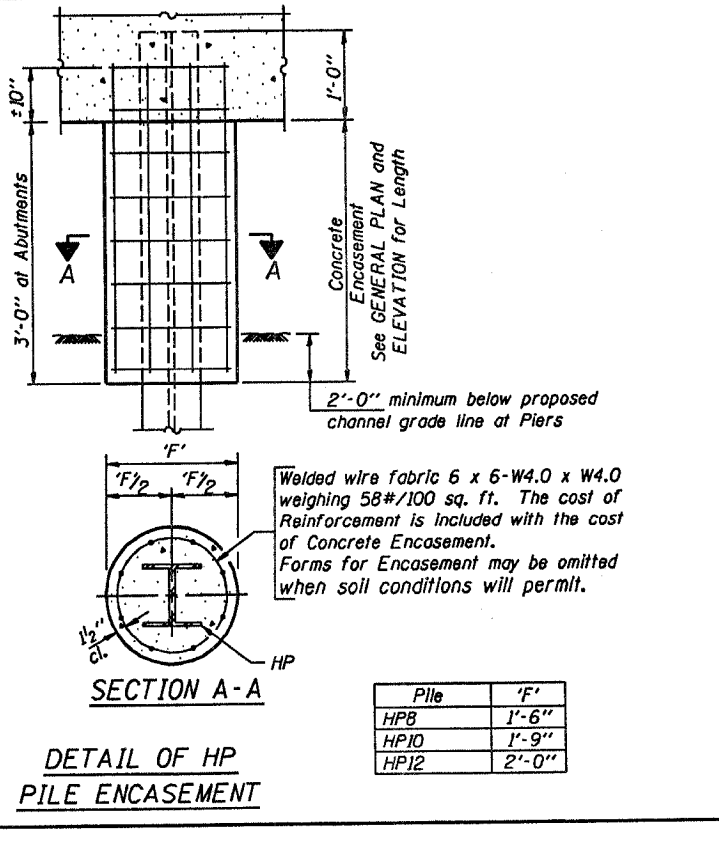
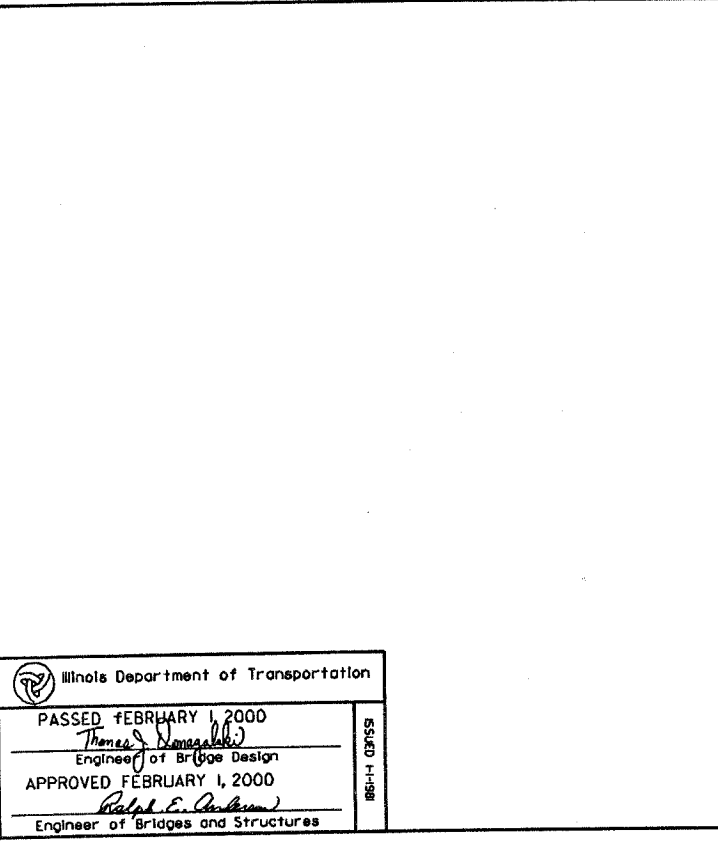
DETAIL OF TAPERED METAL SHELLS FOR CAST IN PLACE CONCRETE PILES



DETAIL OF CYLINDRICAL STEEL SHELL FOR CAST IN PLACE CONCRETE PILES



DETAIL OF REINFORCEMENT FOR METAL SHELLS



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.

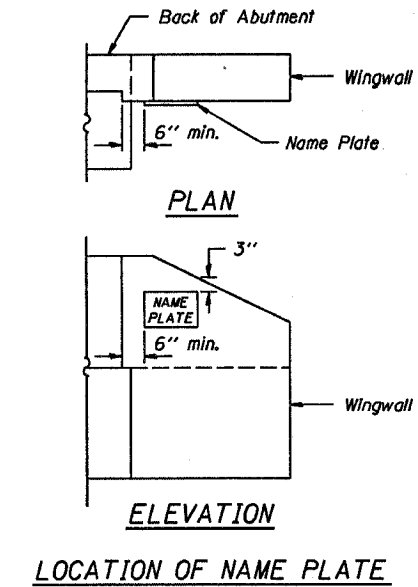
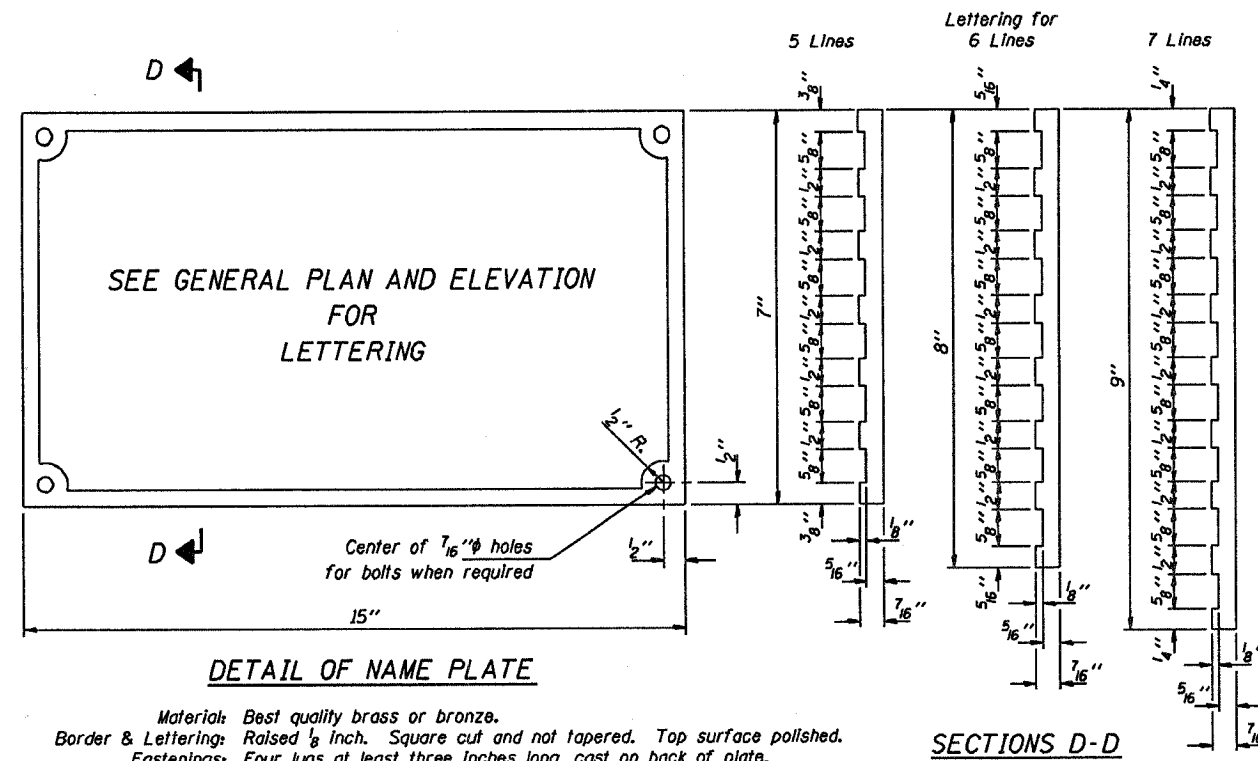
Illinois Department of Transportation
 PASSED FEBRUARY 1, 2000
 Thomas J. Donagallo
 Engineer of Bridge Design
 APPROVED FEBRUARY 1, 2000
 Ralph E. Anderson
 Engineer of Bridges and Structures

PILE DETAILS

STANDARD CX-1

ROUTE	SECTION	COUNTY	TOT. SHTS.	SHT.
T.R. 259	04-03114-00-BR	JEFFERSON	14	11
CASNER TOWNSHIP ROAD DISTRICT				

CONTRACT 95470



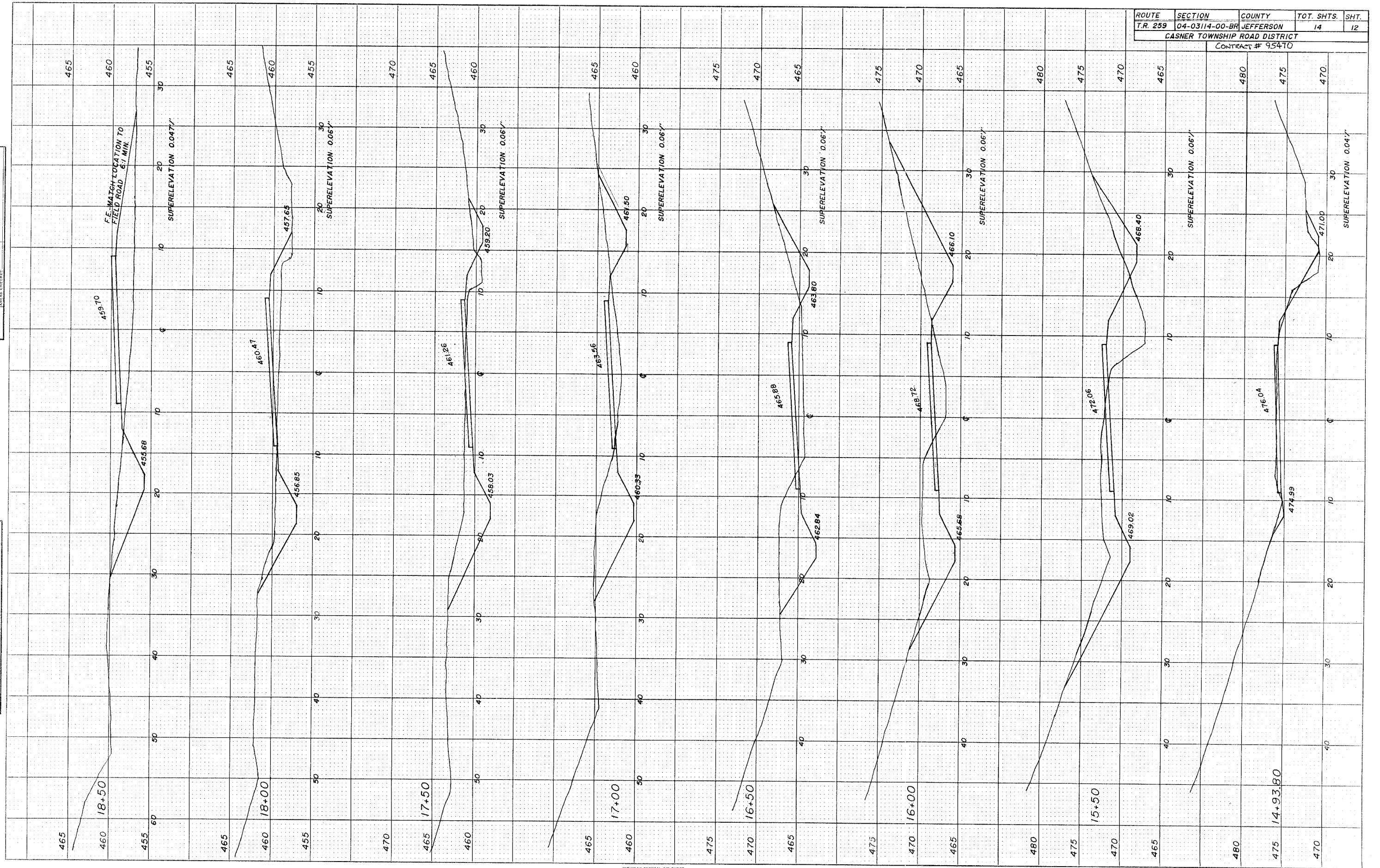
Illinois Department of Transportation	
PASSED APRIL 4, 2005	
<i>Thomas J. Demagala</i> Engineer of Bridge Design	
APPROVED APRIL 4, 2005	
<i>Ralph E. Anderson</i> Engineer of Bridges and Structures	
ISSUED 7-1-95	

NAME PLATE
STANDARD CN

ORIGINAL SURVEY
 REVISIONS: _____
 DATE: _____
 NOTE BOOK: _____
 AREA: _____
 NO. _____
 BASIS CHECKED: _____

FINAL SURVEY
 REVISIONS: _____
 DATE: _____
 NOTE BOOK: _____
 AREA: _____
 NO. _____
 BASIS CHECKED: _____

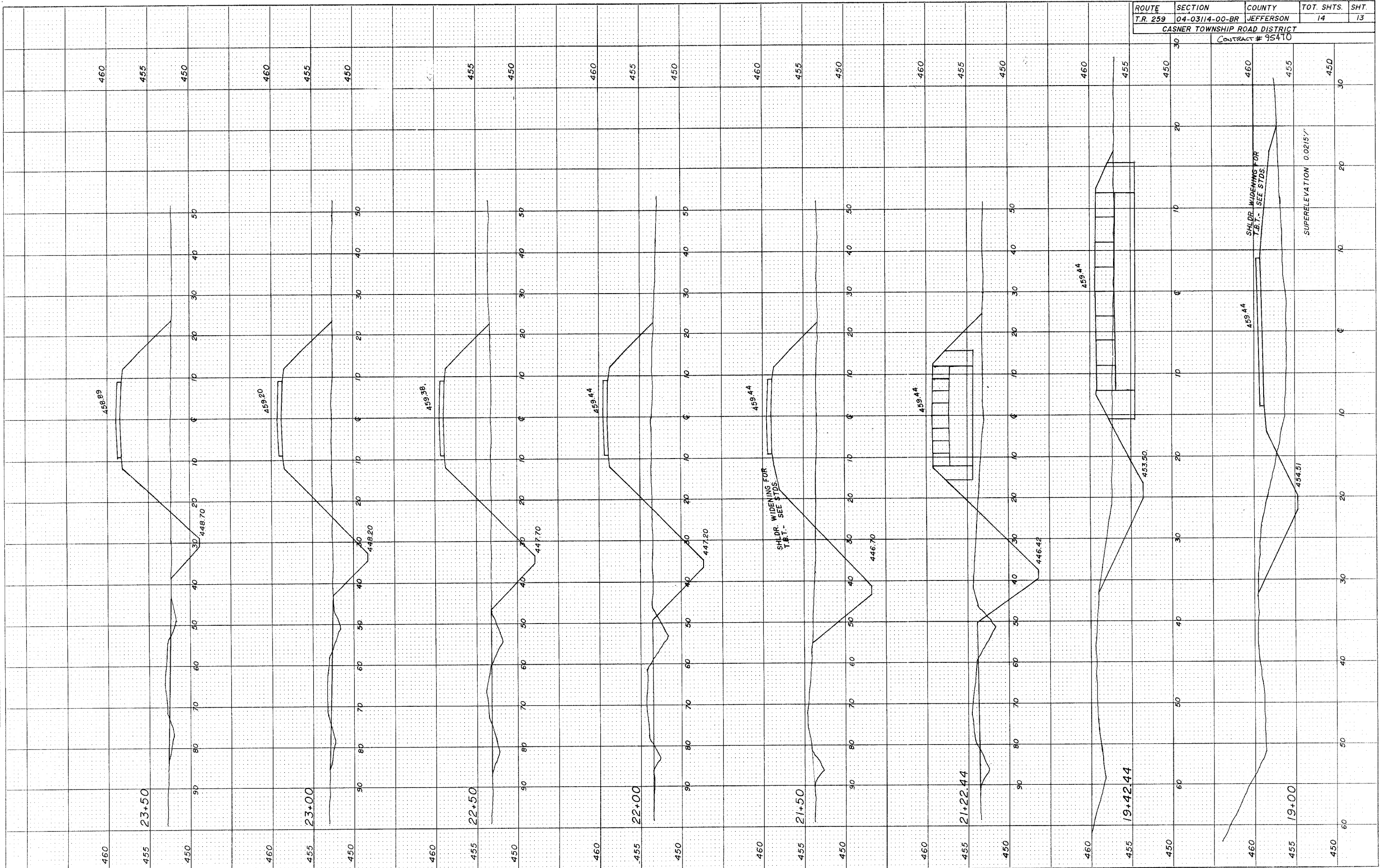
ROUTE	SECTION	COUNTY	TOT. SHTS.	SHT.
T.R. 259	04-03114-00-BR	JEFFERSON	14	12
CASNER TOWNSHIP ROAD DISTRICT				
CONTRACT # 95470				



FINAL SURVEY PLOTTED BY DATE
 NOTE BOOK TEMPLATE AREA NO. REVISIONS

ORIGINAL SURVEY PLOTTED BY DATE
 NOTE BOOK TEMPLATE AREA NO. REVISIONS

ROUTE	SECTION	COUNTY	TOT. SHTS.	SHT.
T.R. 259	04-03114-00-BR	JEFFERSON	14	13
CASNER TOWNSHIP ROAD DISTRICT				
CONTRACT # 95410				



FINAL SURVEY PLOTTED
 NOTE BOOK NO. _____
 DATE _____

ORIGINAL SURVEY PLOTTED
 NOTE BOOK NO. _____
 DATE _____

ROUTE	SECTION	COUNTY	TOT. SHTS.	SHT.
TR. 259	04-03114-00-BR	JEFFERSON	14	14
CASNER TOWNSHIP ROAD DISTRICT				
CONTRACT # 95470				

