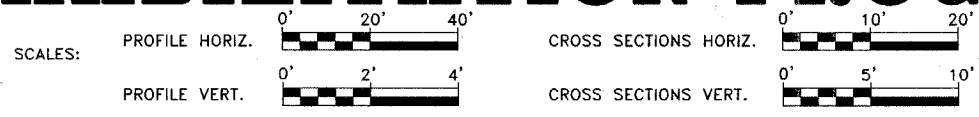
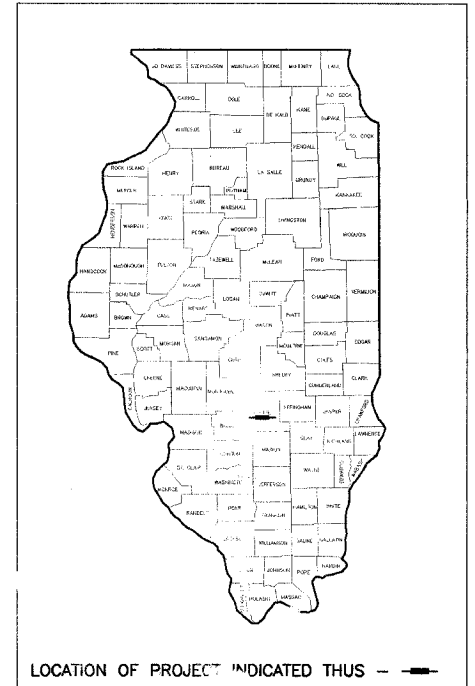


STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS PLANS FOR PROPOSED BRIDGE REPLACEMENT AND REHABILITATION PROGRAM

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 274	03-10120-00-BR 03-18116-00-BR	FAYETTE	14	1
FED. ROAD DIST. NO.	ILLINOIS	PROJECT		

CONTRACT NO. 95427



SECTION 03-10120-00-BR & 03-18116-00-BR PROJECT NO. BROS-051(70) FAYETTE COUNTY JOB NO. C-97-036-05

INDEX OF SHEETS

- 1 COVER SHEET
 - 2 TYPICAL CROSS SECTION, GENERAL NOTES AND SUMMARY OF QUANTITIES
 - 3 PLAN AND PROFILE SHEET
 - 4-13 BRIDGE PLANS
 - 14 CROSS SECTIONS
- STANDARD 000001-04 STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
- STANDARD 280001-02 TEMPORARY EROSION CONTROL SYSTEMS
- STANDARD 702001-05 TRAFFIC CONTROL DEVICES
- STANDARD B.L.R. 21-6 TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS



END SECTION 03-10120-00-BR AND 03-18116-00-BR
STA. 50+46.75

STA. 50+03.50 - CONSTRUCT THREE SPAN PRECAST PRESTRESSED CONCRETE DECK BEAM BRIDGE (86.50' BK. TO BK. ABUTMENTS) WITH SPILL THRU ABUTMENTS AND PILE BENT PIERS, 0' SKEW, 24' ROADWAY
EXISTING STRUCTURE NO. 026-3275
PROPOSED STRUCTURE NO. 026-3425

BEGIN SECTION 03-10120-00-BR AND 03-18116-00-BR
STA. 49+60.25

THE ACCEPTANCE OF THIS PROJECT IS BASED ON THE MINIMUM DESIGN CRITERIA FOR A FEDERAL-AID BRIDGE REPLACEMENT AND REHABILITATION PROGRAM

Michael R. Quandt
DISTRICT ENGINEER OF LOCAL ROADS AND STREETS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

APPROVED _____, 20__

LOCAL AGENCY REPRESENTATIVE

PASSED 4/4, 2005

Manuel Kastl
DISTRICT ENGINEER OF LOCAL ROADS AND STREETS

APPROVED 4/4, 2005

Chris McLeod
DEPUTY DIRECTOR OF HIGHWAYS
REGION FOUR ENGINEER

PLANS PREPARED BY CLARK ENGINEERS, INC.
DATE 3/1, 2005

Michael R. Quandt
MICHAEL R. QUANDT, P.E.



REVIEWED 3-4, 2005

BY *Michael A. Mab*
COUNTY ENGINEER
FAYETTE COUNTY, ILLINOIS

48 HOURS PRIOR TO EXCAVATION CALL J.U.L.I.E.: 1-800-892-0123

CLASS ROAD: LOCAL ROAD
A.D.T. = 100

LOCATION MAP

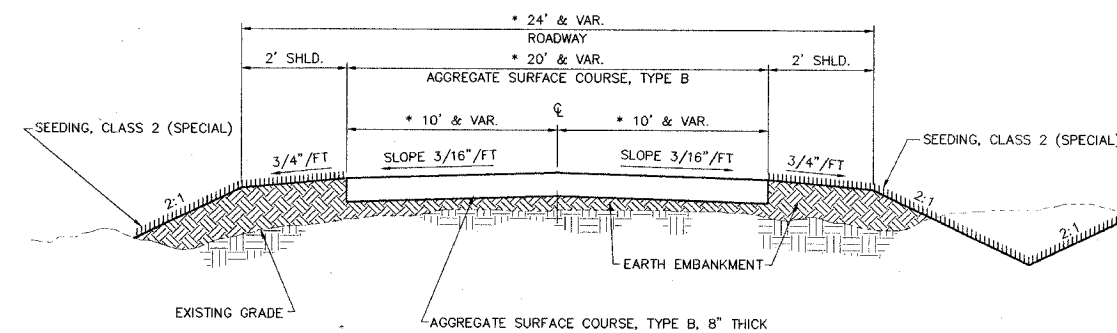
APPROXIMATE SCALE - 1" = 0.53 MILES
NET LENGTH OF IMPROVEMENTS = 86.5 FOOT = 0.016 MILE

2524 South Broadway
Salem, Illinois 62881
PH(618)548-3500
FAX(618)548-5246
IL Design Firm Registration
No. 184-00871

CE JOB NO. FAHD0029

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 274	03-10120-00-BR 03-18116-00-BR	FAYETTE	14	2
FED. ROAD DIST. NO.	ILLINOIS	PROJECT		

CONTRACT NO. 95427



TYPICAL CROSS-SECTION (TRANSITION)

- * TRANSITION FROM 12' EXISTING TO 20' PROPOSED PAVEMENT
STA. 48+60.25 TO STA. 49+60.25
- * TRANSITION FROM 20' PROPOSED TO 12' EXISTING PAVEMENT
STA. 50+46.75 TO STA. 50+96.75

GENERAL NOTES

1. THIS SECTION SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE PLANS, THE SPECIAL PROVISIONS AND THE "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" ADOPTED JANUARY 1, 2002.
2. IF SECTION OR SUBSECTION MONUMENTS ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED BEFORE SUCH MONUMENTS ARE REMOVED. THE CONTRACTOR SHALL PROTECT AND CAREFULLY PRESERVE ALL PROPERTY MARKERS AND MONUMENTS UNTIL OWNER, AN AUTHORIZED SURVEYOR OR AGENT HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATION.
3. THE SHRINKAGE FACTOR FOR EMBANKMENT IS 25%.
4. EXCEPT FOR TREE REMOVAL, ALL CLEARING AND GRUBBING IS TO BE INCLUDED IN THE UNIT PRICE BID FOR EARTH EXCAVATION.
5. BITUMINOUS SURFACE TREATMENT (A-2) WILL BE COMPLETED BY THE OWNER.

SUMMARY OF QUANTITIES

XCR0-2A

CODE NO.	ITEM	QUANTITY	UNIT
20100110	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	10	UNITS
20200100	EARTH EXCAVATION	171	CU. YD.
20300100	CHANNEL EXCAVATION	658	CU. YD.
25001000	SEEDING, CLASS 2 (SPECIAL)	0.15	ACRE
28000300	TEMPORARY DITCH CHECKS	2	EACH
28100807	STONE DUMPED RIPRAP, CLASS A4	156	TON
40200800	AGGREGATE SURFACE COURSE, TYPE B	113	TON
50100100	REMOVAL OF EXISTING STRUCTURES	1	EACH
50300225	CONCRETE STRUCTURES	28.6	CU. YD.
50400305	PRECAST PRESTRESSED CONCRETE DECK BEAMS (17" DEPTH)	2040	SQ. FT.
50800105	REINFORCEMENT BARS	3040	POUND
50900205	STEEL RAILING, TYPE S1	170	FOOT
51201400	FURNISHING STEEL PILES HP 10x42	697	FOOT
51202700	DRIVING STEEL PILES	697	FOOT
51203400	TEST PILE STEEL HP 10x42	1	EACH
51204315	CONCRETE ENCASEMENT	11.3	CU. YD.
51500100	NAME PLATES	1	EACH



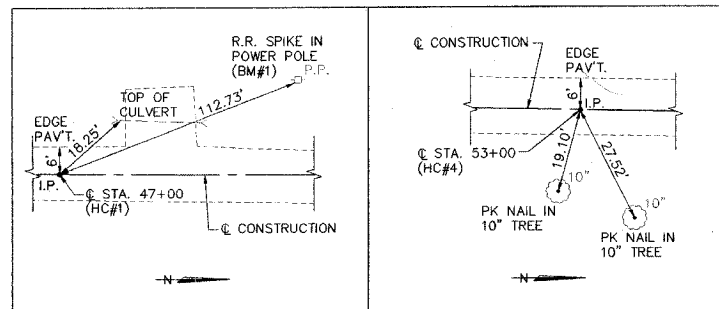
2524 South Broadway
Salem, Illinois 62881
Ph(618)548-3500
Fax(618)548-5246
IL Design Firm Registration
No. 184-00871

T.R. 274 SECTIONS 03-10120-00-BR & 03-18116-00-BR
OTEGA & VANDALIA ROAD DISTRICTS
FAYETTE COUNTY, ILLINOIS

TYPICAL CROSS SECTION,
GENERAL NOTES AND
SUMMARY OF QUANTITIES

SURVEY	JAS	CHECKED	DATE
DESIGN	MRQ	APPROVED	03/01/05
DRAWN	JSD, BLT	JOB NO.	FAH00029

LOCAL TIES



CONSTRUCT FEEDING CLASS 2 (SPECIAL)
STA. 48+60.25 TO STA. 50+96.75 = 0.15 ACRE

HORIZONTAL CONTROL COORDINATES

POINT	LOCATION	N. COOR.	E. COOR.
HC#1(IRON PIN)	© STA. 47+00	5936.65	5019.36
HC#2(IRON PIN)	12' LT., STA. 49+69	6206.27	5011.40
HC#3(IRON PIN)	9' LT., STA. 52+29	6465.84	5018.97
HC#4(IRON PIN)	© STA. 53+00	6536.57	5028.96

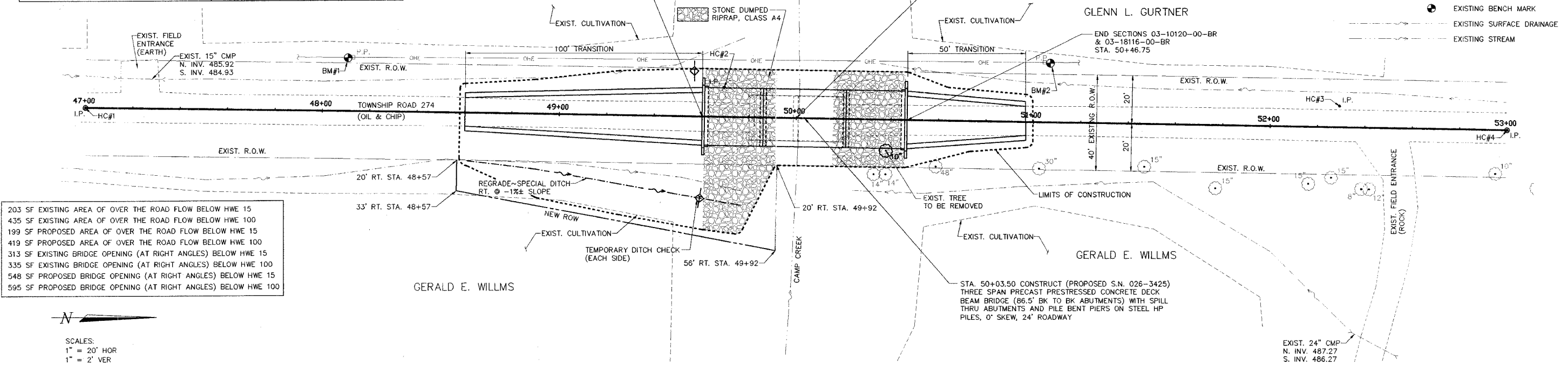
BENCH MARK COORDINATES

POINT	LOCATION	ELEV.
BM#1(R.R. SPIKE IN POWER POLE)	22' LT., STA. 48+10	488.23
BM#2(R.R. SPIKE IN POWER POLE)	25' LT., STA. 51+07	490.61

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 274	03-10120-00-BR 03-18116-00-BR	FAYETTE	14	3

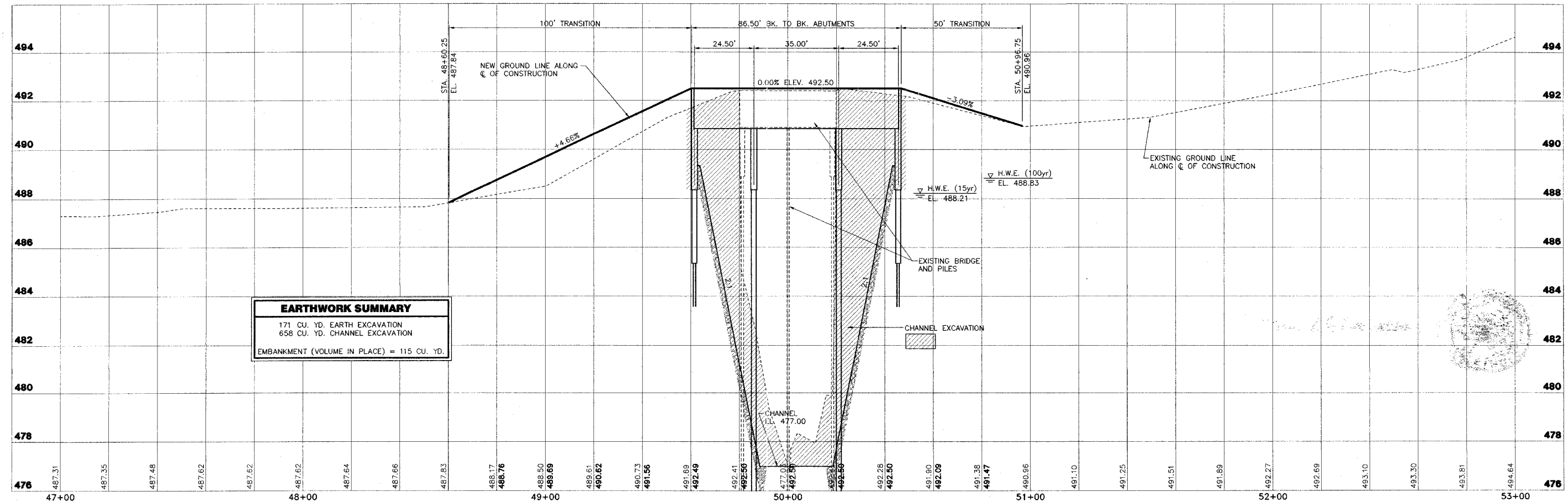
LEGEND

- P.P. © EXISTING POWER POLE
- OHE EXISTING OVERHEAD ELECTRIC LINE
- 12" EXISTING TREE
- EXISTING TREE LINE
- I.P. EXISTING IRON PIN
- EXISTING BENCH MARK
- EXISTING SURFACE DRAINAGE
- EXISTING STREAM



203 SF EXISTING AREA OF OVER THE ROAD FLOW BELOW HWE 15
435 SF EXISTING AREA OF OVER THE ROAD FLOW BELOW HWE 100
199 SF PROPOSED AREA OF OVER THE ROAD FLOW BELOW HWE 15
419 SF PROPOSED AREA OF OVER THE ROAD FLOW BELOW HWE 100
313 SF EXISTING BRIDGE OPENING (AT RIGHT ANGLES) BELOW HWE 15
335 SF EXISTING BRIDGE OPENING (AT RIGHT ANGLES) BELOW HWE 100
548 SF PROPOSED BRIDGE OPENING (AT RIGHT ANGLES) BELOW HWE 15
595 SF PROPOSED BRIDGE OPENING (AT RIGHT ANGLES) BELOW HWE 100

SCALES:
1" = 20' HOR
1" = 2' VER



EARTHWORK SUMMARY	
171 CU. YD. EARTH EXCAVATION	
658 CU. YD. CHANNEL EXCAVATION	
EMBANKMENT (VOLUME IN PLACE) = 115 CU. YD.	

CLARK ENGINEERS, INC.
2524 South Broadway
Salem, Illinois 62881
PH(618)548-3500
FAX(618)548-5246
IL Design Firm Registration
No. 184-00871

T.R. 274 SECTIONS 03-10120-00-BR & 03-18116-00-BR
OTEGA & VANDALIA ROAD DISTRICTS
FAYETTE COUNTY, ILLINOIS

PLAN AND PROFILE
STA. 47+00 TO STA. 53+00

SURVEY	JAS	CHECKED		DATE	03/01/05
DESIGN	MRQ	APPROVED		REVISED	
DRAWN	JSD, BLT			JOB NO.	FAH00029

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

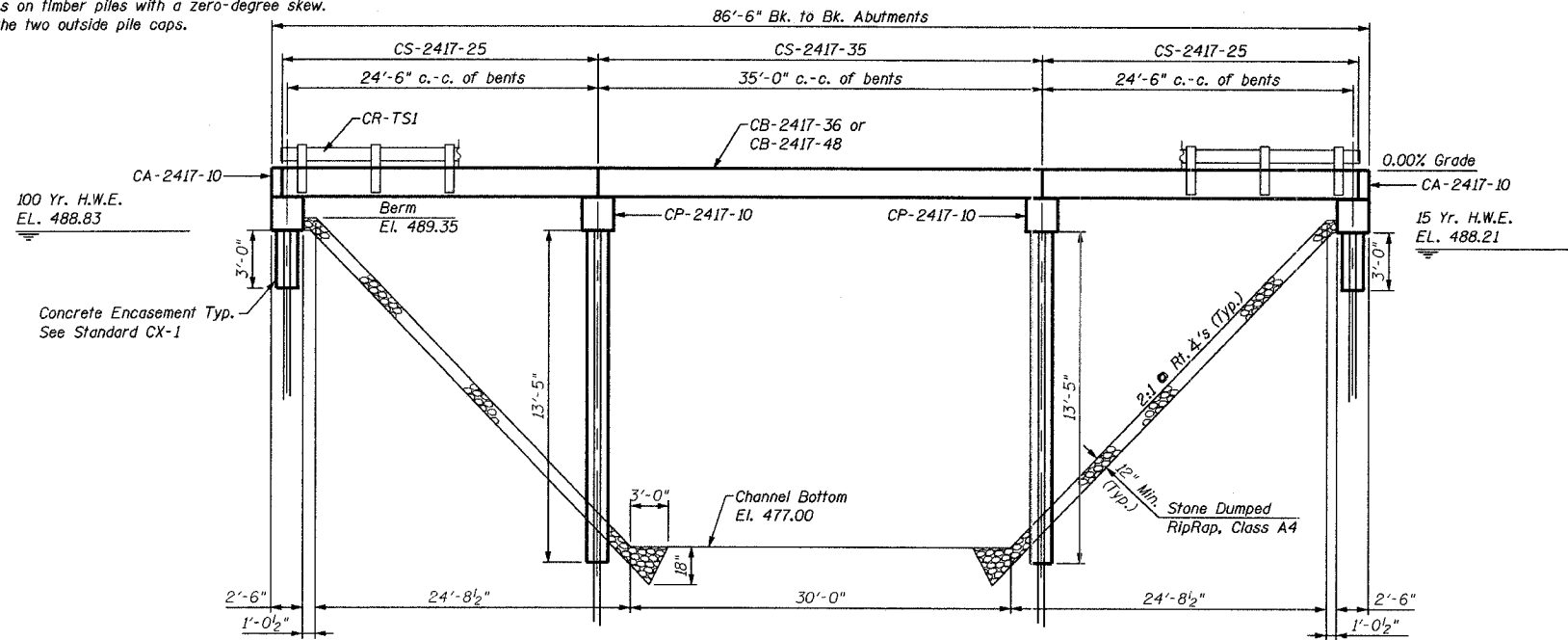
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 274	03-10120-00-BR 03-18116-00-BR	FAYETTE	14	4
FED. ROAD DIST. NO.		ILLINOIS PROJECT	Contract No. 95427	

B.M. - B.M. #1 R.R. spike in power pole, 22' Lt. Sta. 48+10, EL. 488.23
B.M. #2 R.R. spike in power pole, 25' Lt. Sta. 51+07, EL. 490.61

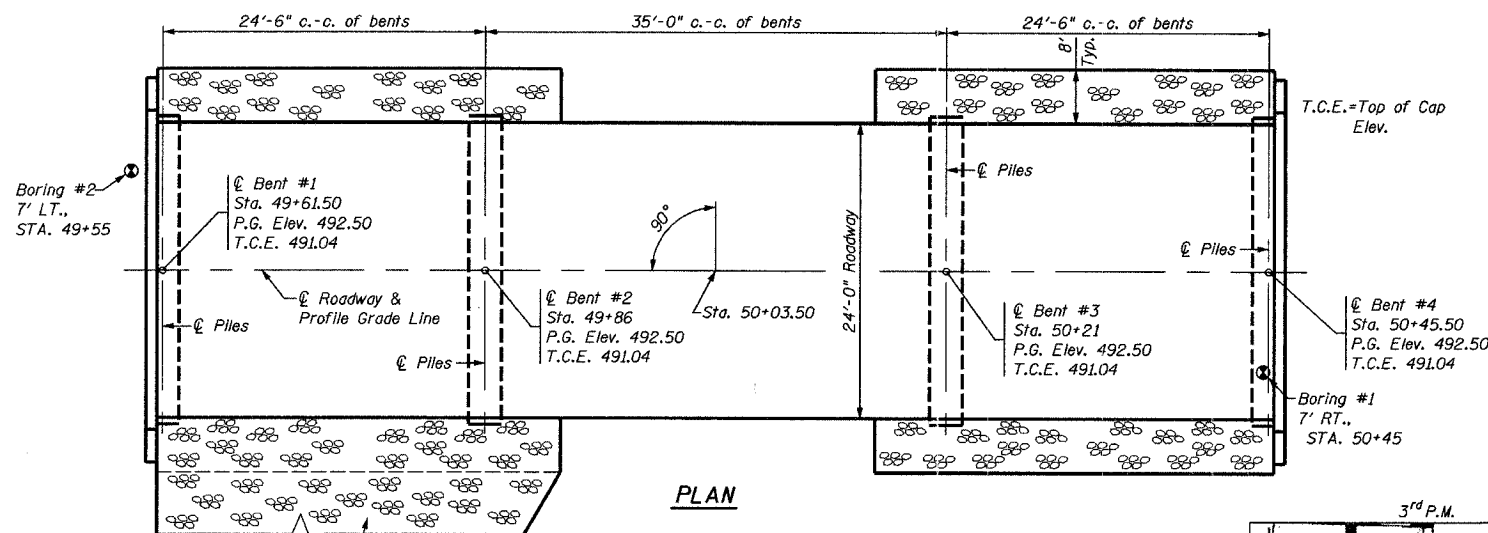
Existing Structure - The existing structure is a two span structure with a reinforced precast concrete beam superstructure. The substructure consists of three concrete pile caps on timber piles with a zero-degree skew. Timber backing exists at the two outside pile caps.

Salvage - None

Utilities - Overhead Electric



ELEVATION



PLAN

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.
- A Calcium Nitrite Corrosion inhibitor, as covered in the Special Provisions, shall be used in the concrete for precast prestressed concrete deck beams.
- The Waterproofing Membrane System and Bituminous Concrete Surface Course Shown on the Standards Shall Not be Provided.

TOTAL BILL OF MATERIAL

Item	Unit	Super	Sub.		Total
			Piers	Abuts.	
Removal of Existing Structures	Each	-	-	-	1
Concrete Structures	Cu. Yd.	-	12.0	-	28.6
Precast Prestressed Concrete Deck Beams (17" Depth)	Sq. Ft.	2040	-	-	2040
Steel Railing, Type S-1	Foot	170	-	-	170
Reinforcement Bars	Pound	-	1320	1720	3040
Furnishing Steel Piles HP10x42	Foot	-	392	305	697
Driving Steel Piles	Foot	-	392	305	697
Test Pile Steel HP10x42	Each	-	-	1	1
Name Plates	Each	-	-	1	1
Concrete Encasement	Cu. Yd.	-	9.2	2.1	11.3

INDEX OF SHEETS

- General Plan & Elevation
- Standard CS-2417-25
- Standard CS-2417-35
- Standard CB-2417-36
- Standard CB-2417-48
- Standard CA-2417-10
- Standard CP-2417-10
- Standard CR-TS1
- Standard CN
- Standard CX-1

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 contract plans should be interpreted as referring to the current edition of the Standard Specification (Adopted January 1, 2002) as shown in the "Article/Section No. Reference Table".

ARTICLE/SECTION NO.	REFERENCE TABLE
Previous No.	Current No.
504.06	504.06
505.04	505.04
706.05	1006.05
706.32	1006.32
760.07	1060.07

PILE DATA (2-ABUTS.)

Type: Steel Piles, HP10x42
Capacity: 38 Tons (Includes 150% of Max. Pile Load for H-Pile in Friction)
Estimated Length: 47 Feet Bent #1, 41 Feet Bent #4
Number Required: 8 (Includes 1 Test Pile located in Bent #1)

PILE DATA (2-PIERS)

Type: Steel Piles, HP10x42
Capacity: Drive to Refusal
Estimated Length: 49 Feet Bent #2 & Bent #3
Number Required: 8

DESIGN SPECIFICATIONS

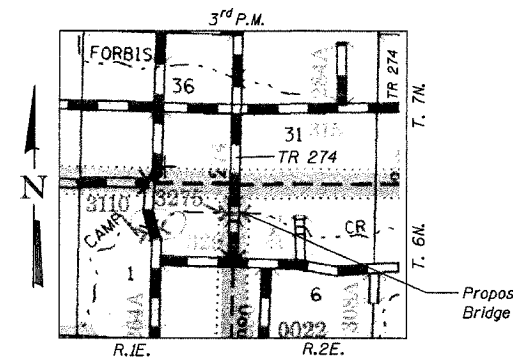
1996 AASHTO, 1997 Thru 2002 Interims
HS20-44 Loading, Load Factor Design.

Contractor shall be aware that he will experience very stiff soils prior to the location of anticipated refusal, see borings for further information.

STATION 50+03.50
CAMP CREEK
SEC. 03-10120-00-BR/03-18116-00-BR
PROJECT NO. BROS-051(67) BUILT 20...
FAYETTE COUNTY
LOADING HS20
STR. NO. 02E-3425

LETTERING FOR NAME PLATE

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



LOCATION SKETCH

WATERWAY INFORMATION

Drainage Area = 15.54 Sq. Mi.		Low Grade Elev. 487.31 @ Sta. 47+00				
Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist. Prop.	Nat. H.W.E. Ft.	Head - Ft. Exist. Prop.	Headwater Elev. - Ft. Exist. Prop.
Design	15	2761	313 548	488.21	N/A 0.52	N/A 488.73
Base	100	4430	335 595	488.83	N/A 0.51	N/A 489.34
Overlapping						
Max. Calc.	500					

These plans were prepared by me or by a full-time member of my staff working under my personal supervision.

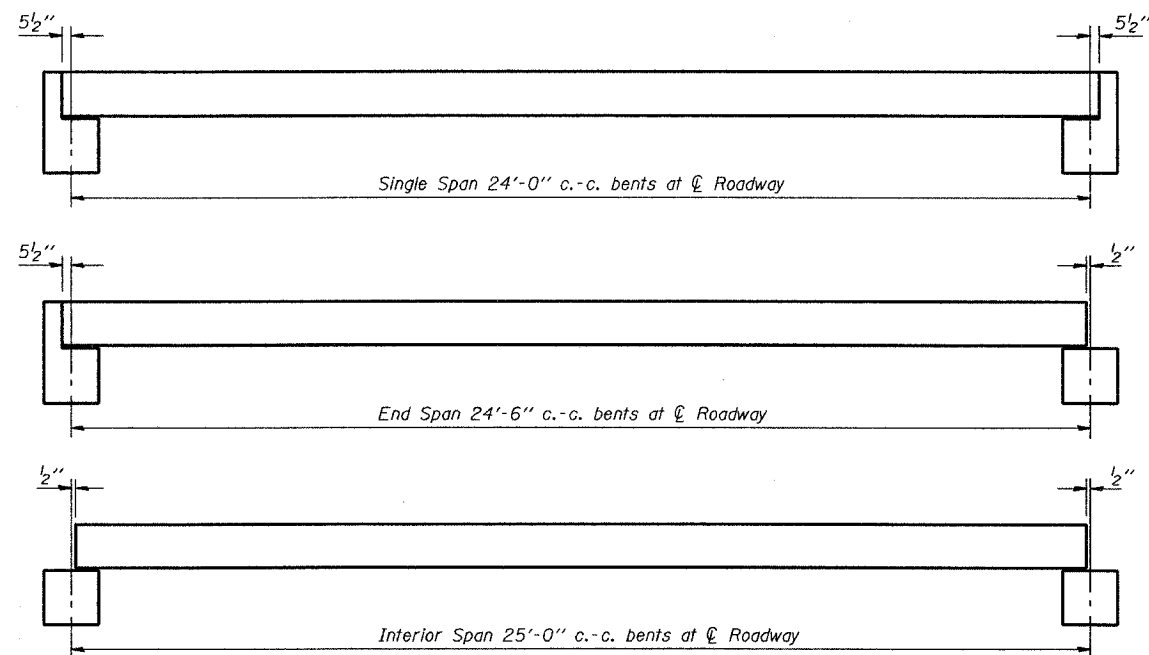
Michael R. Quandt 3/1/05
Michael R. Quandt, P.E.
Illinois Licensed Professional Engineer
License No. 062-042893
Expiration Date: 11/30/2005



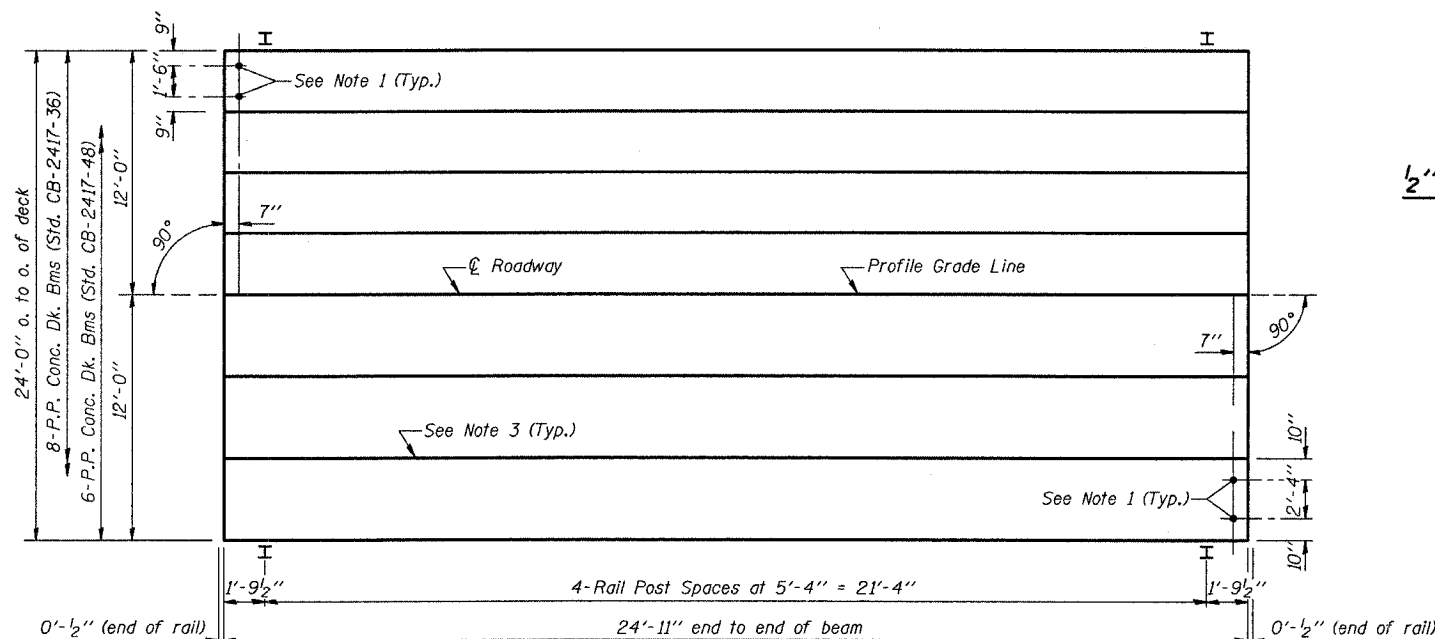
GENERAL PLAN & ELEVATION

TR 274
OVER CAMP CREEK
SECTIONS 03-10120-00-BR
AND 03-18116-00-BR
FAYETTE COUNTY
STATION 50+03.50

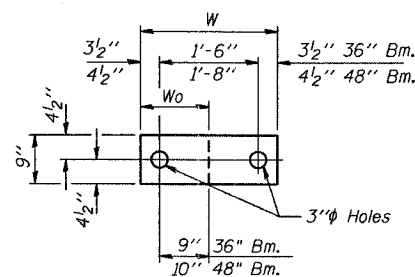
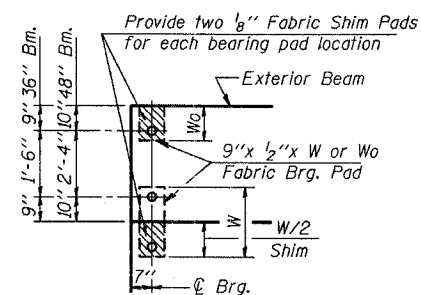
NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 274	03-10120-00-BR 03-18116-00-BR	FAYETTE	14	5
FED. ROAD DIST. NO. 7		BLDG. NO.	FED. AID PROJECT NO.	
CONTRACT No. 95427				



TYPICAL ELEVATIONS

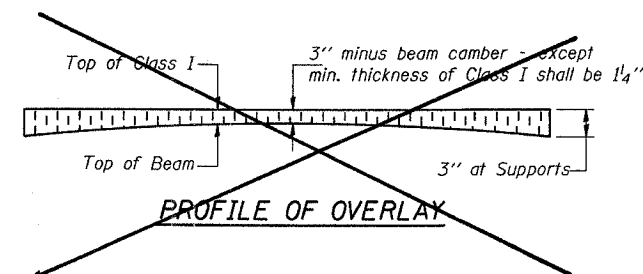


PLAN

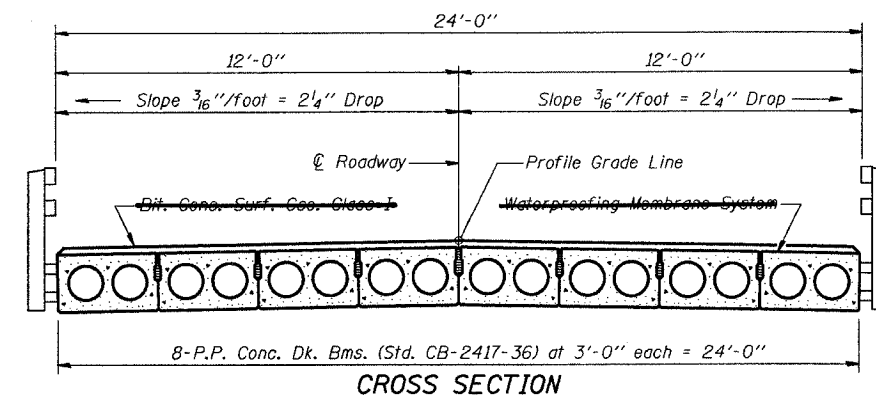


Beam	W	Wo
36"	2'-1"	1'-0 1/2"
48"	2'-5"	1'-2 1/2"

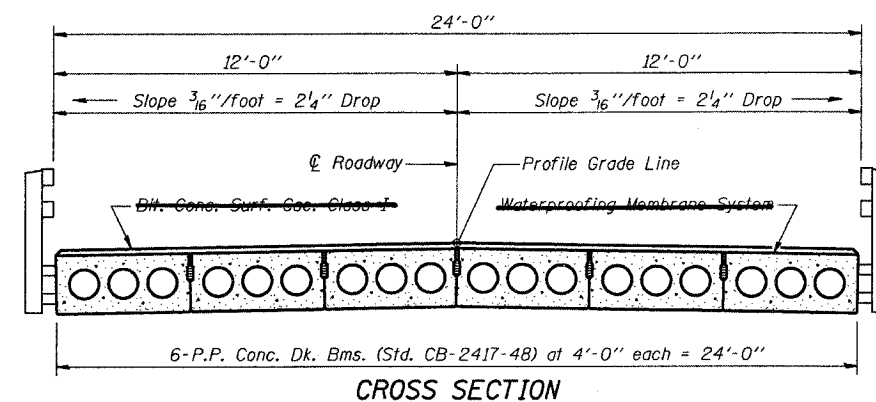
1/2" FABRIC BRG. PAD DETAILS



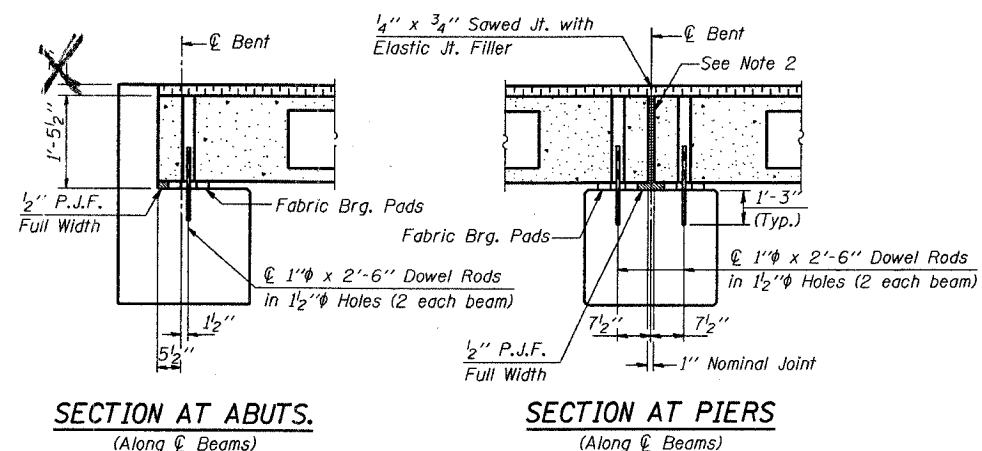
PROFILE OF OVERLAY



CROSS SECTION



CROSS SECTION



SECTION AT ABUTS.
(Along centerline Beams)

SECTION AT PIERS
(Along centerline Beams)

QUANTITIES FOR ONE SPAN

P.P. Conc. Dk. Bm. 17" Dp.	600 Sq. Ft.
Steel Railing	50 Ft.
Bit. Conc. Surf. Coat. Class I	40.6 Tons
Waterproofing Membrane System	66.7 Sq. Yds.

- 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 Pier shall be filled with non-shrink grout.
 - Longitudinal keys shall be grouted.

Illinois Department of Transportation

PASSED NOVEMBER 1, 1995

Ralph E. Anderson
Engineer of Bridge Design

APPROVED NOVEMBER 1, 1995

Ralph E. Anderson
Engineer of Bridges and Structures

ISSUED 11-81

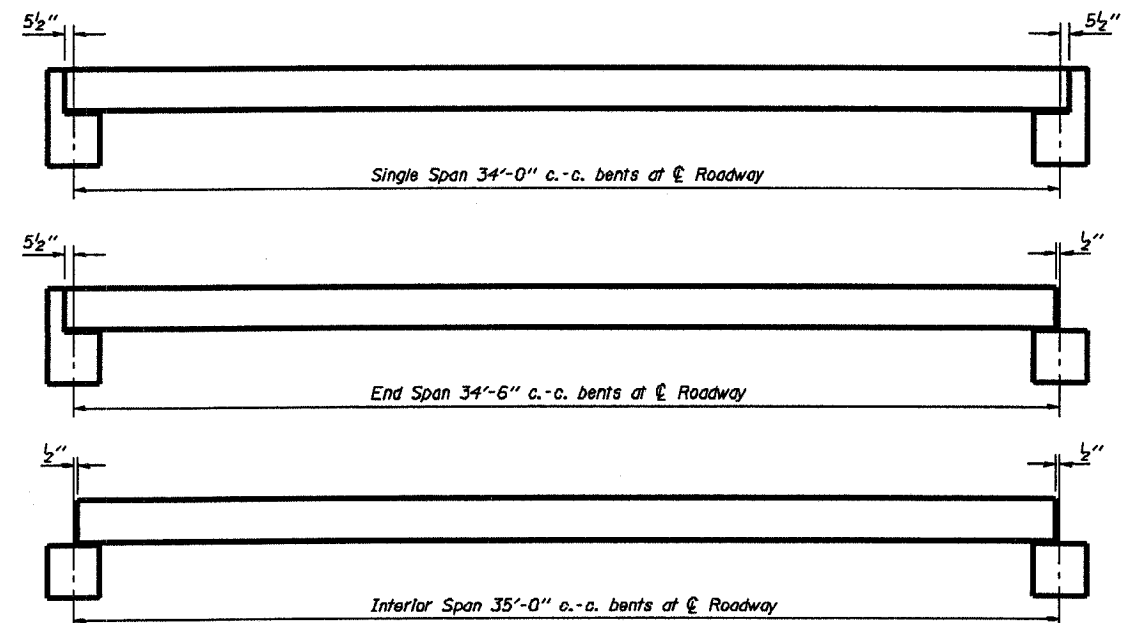
P.P.C. DECK BEAM SUPERSTRUCTURE

24' RDWY. | 17" BMS. | 25' SPAN | 0° SKEW

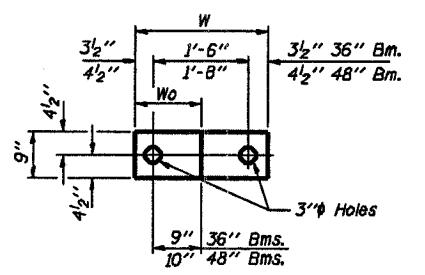
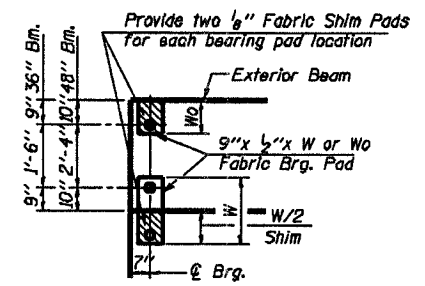
STANDARD CS-2417-25

RT.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R.	03-10120-00-BR 274	FAYETTE	14	6

CONTRACT No. 9542.7

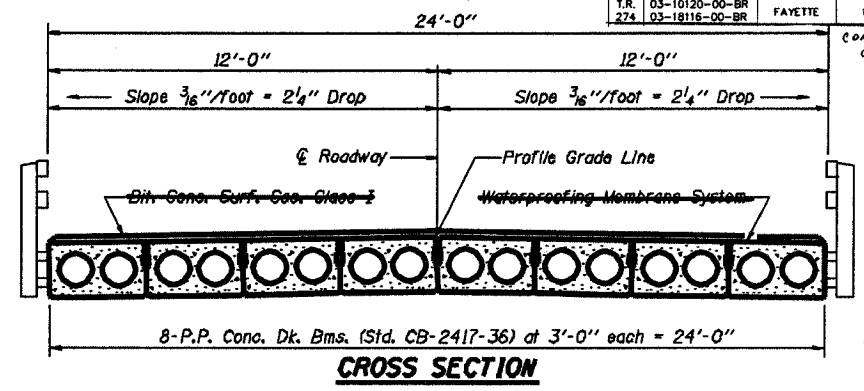


TYPICAL ELEVATIONS

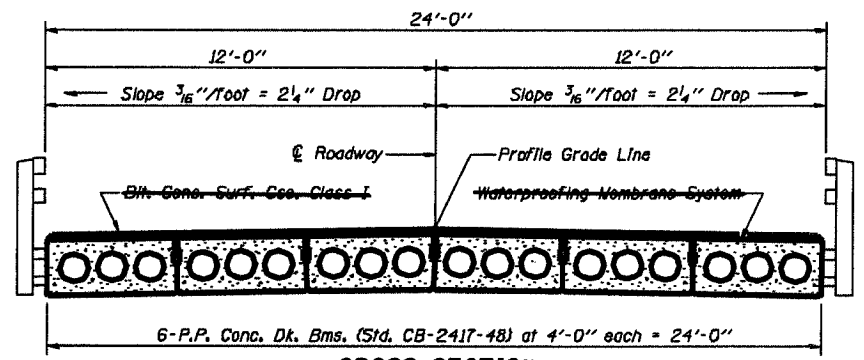


Beam	W	Wo
36"	2'-1"	1'-0 1/2"
48"	2'-5"	1'-2 1/2"

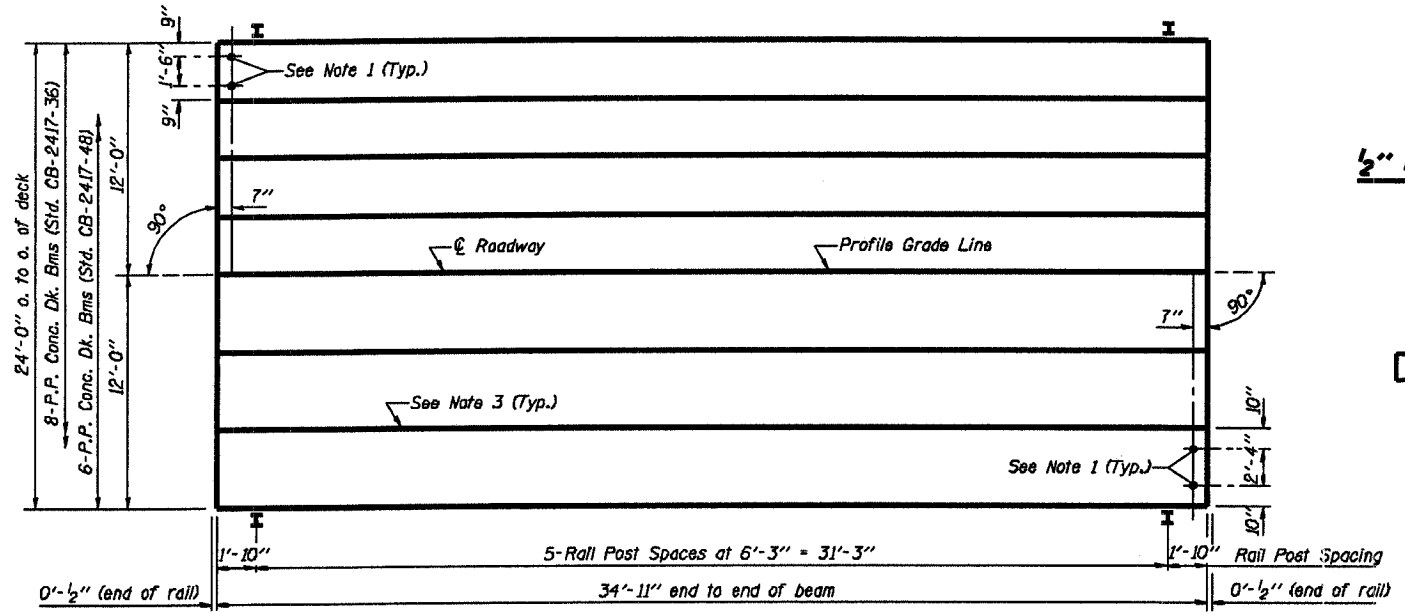
1/2" FABRIC BRG. PAD DETAILS



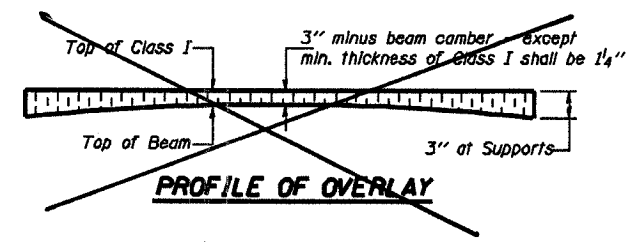
CROSS SECTION



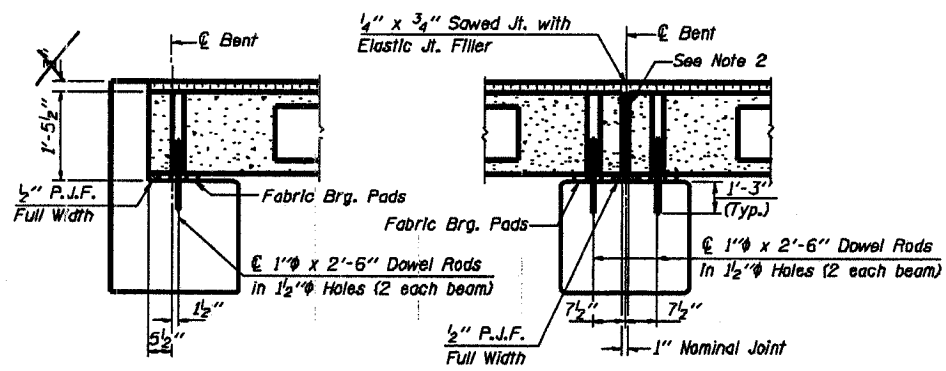
CROSS SECTION



PLAN



PROFILE OF OVERLAY



SECTION AT ABUTS.
(Along centerline of Beams)

SECTION AT PIERS
(Along centerline of Beams)

NOTES

1. After beams have been erected, holes shall be drilled into substructure and anchor dowels placed. Dowel holes shall be filled with non-shrink grout to top of beam and allowed to cure min. 24 hrs. prior to grouting the shear keys.
2. Nominal 1" joint at centerline of Pier shall be filled with non-shrink grout.
3. Longitudinal keys shall be grouted.

QUANTITIES FOR ONE SPAN

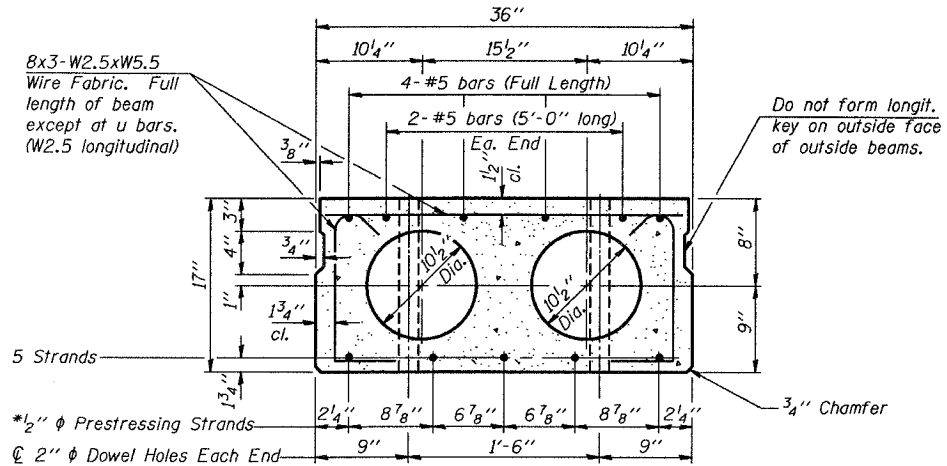
P.P. Conc. Dk. Bm. 17" Dp.	840 Sq. Ft.
Steel Railing	70 Ft.
Bit. Conc. Surf. Coe. Class I	12.7 Tons
Waterproofing Membrane System	93.3 Sq. Yds.

Mississippi Department of Transportation
 PASSED NOVEMBER 1, 1995
 Approved by: *David J. ...*
 Engineer of Bridge Design
 APPROVED NOVEMBER 1, 1995
 Approved by: *Ralph E. ...*
 Engineer of Bridges and Structures

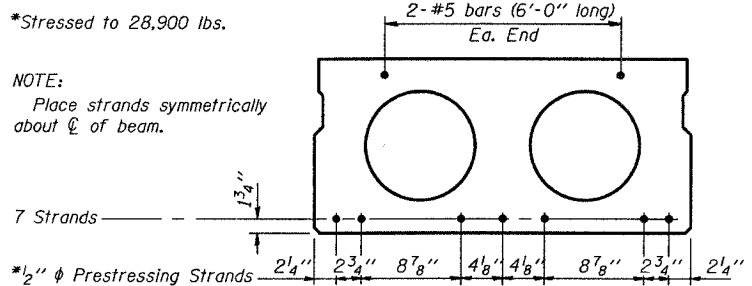
P.P.C. DECK BEAM SUPERSTRUCTURE
24' RDWY. 17" BMS. 35' SPAN 0° SKEW
STANDARD CS-2417-35

RT.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 274	03-10120-00-BR 03-18116-00-BR	FAYETTE	14	7
FED. ROAD DIST. NO.		ILLINOIS PROJECT		

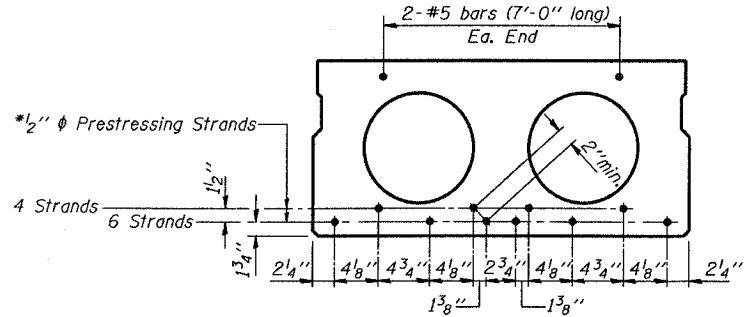
CONTRACT No. 95427



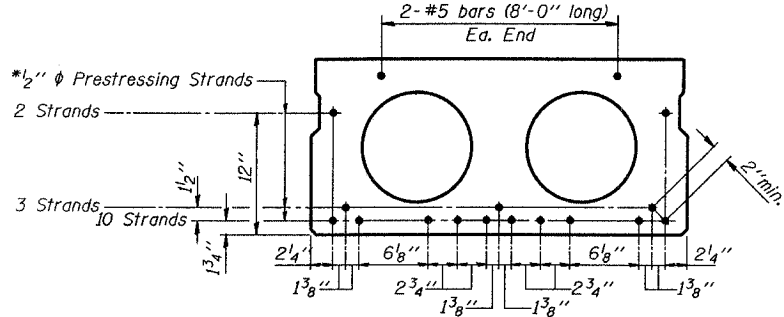
CROSS SECTION
(25' SPAN)



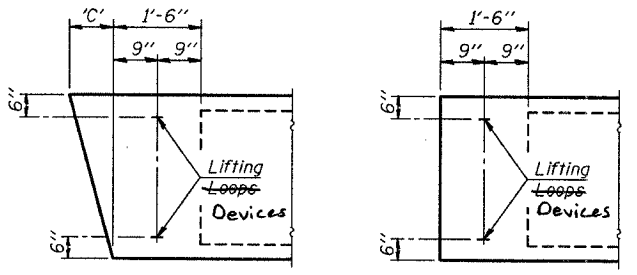
CROSS SECTION
(30' SPAN)



CROSS SECTION
(35' SPAN)



CROSS SECTION
(40' SPAN)

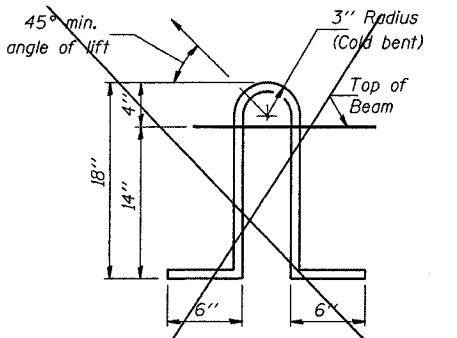


END BLOCK DETAILS

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

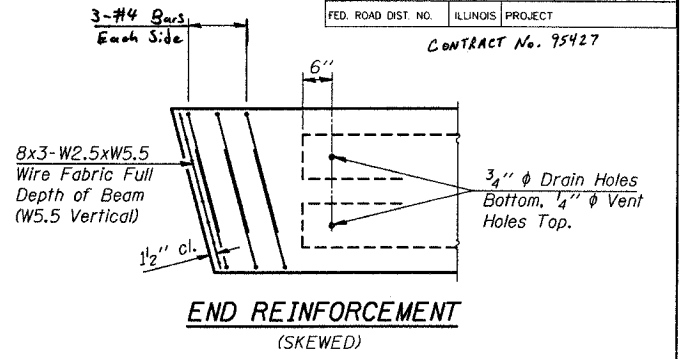
DIMENSION 'C'

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

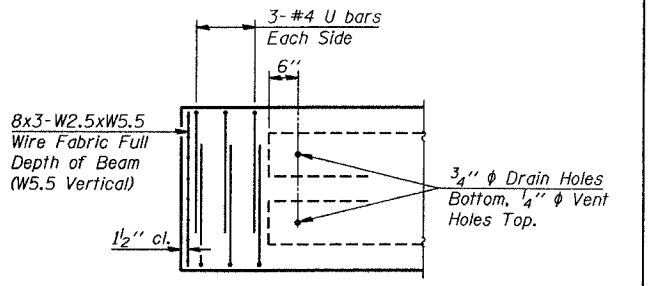


LIFTING LOOP DETAIL

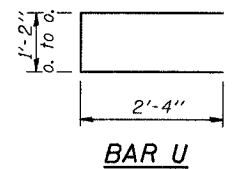
Lifting loops shall be 2 1/2 inch diameter 270 ksi strands, as shown. Alternate approved lifting devices are also acceptable. See Special Provisions.



END REINFORCEMENT
(SKEWED)



END REINFORCEMENT
(RIGHT ANGLE)



BAR U

NOTES

- Prestressing steel shall be uncoated high strength, stress relieved 7-wire strand, Grade 270.
- The nominal diameter shall be 1/2 inch and the nominal cross-sectional area shall be 0.153 square inches.
- Reinforcement bars shall conform to AASHTO M-31, M-42 or M-53, Grade 60.
- Rail Post anchor devices shall be cast into outside beam as elsewhere specified.
- When Waterproofing Membrane System is specified, the top surface of the beams shall be finished in accordance with Article 504.06 of the Standard Specifications except that the surface shall not be roughened by brooming. 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 inch.
- Low relaxation strands may be substituted for the stress relieved strands. The initial prestressing force applied to each strand shall be the same as for the stress relieved strands (28,900 lbs.).
- Keyway surfaces shall be cleaned to remove form oil or other bond breaking material prior to shipment of the beams. Clearing 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.
 $f'_{ci} =$ (See Required Release Strength Table)
 $f'_s = 270,000$ p.s.i. (1/2 inch diameter Strand)
 $f_{si} = 189,000$ p.s.i. (1/2 inch diameter Strand)
 $f_y = 60,000$ p.s.i.

REQUIRED RELEASE STRENGTH

Span	f'_{ci} (psi)
25'	4,000
30'	4,000
35'	4,000
40'	4,000

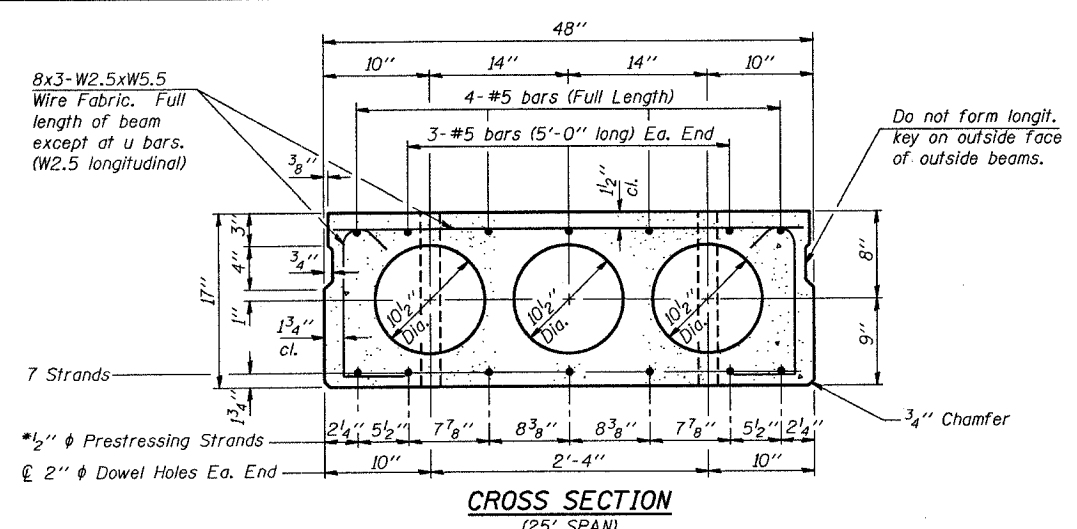
NOTE
The std. reinf. shown on the 25' span cross section is typical for all spans, except as shown.

Illinois Department of Transportation
 PASSED NOVEMBER 1, 1995
 Engineer of Bridge Design
 APPROVED NOVEMBER 1, 1995
 Engineer of Bridges and Structures

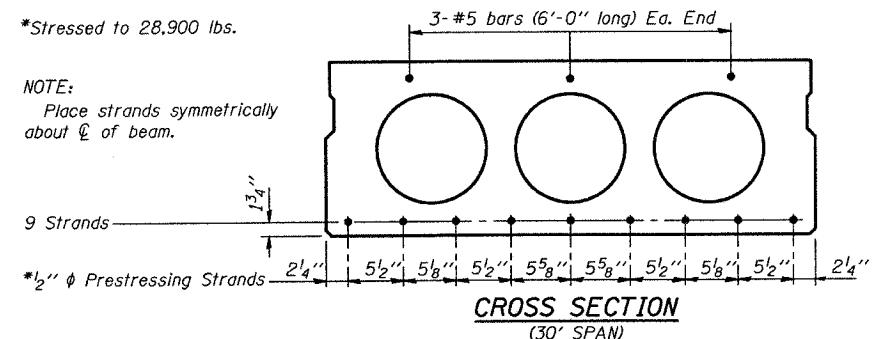
P.P.C. DECK BEAM DETAILS
 24' ROADWAY | 17" x 36" BEAMS
 STANDARD CB-2417-36

RT.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1.R. 274	03-10120-00-BR 03-18116-00-BR	FAYETTE	14	8
FED. ROAD DIST. NO.		ILLINOIS PROJECT		

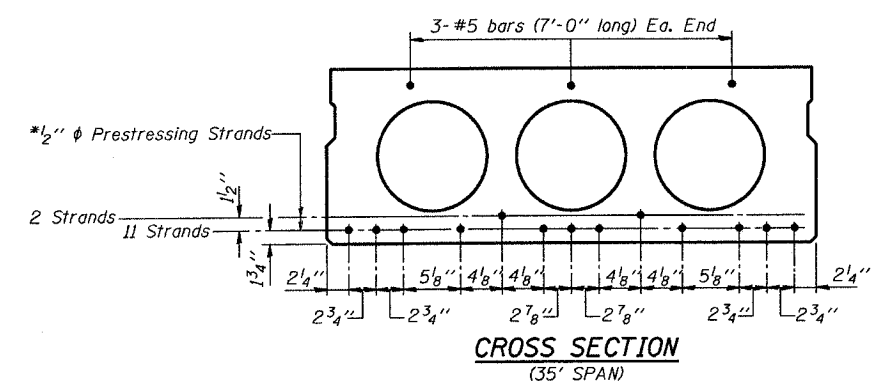
CONTRACT No. 95427



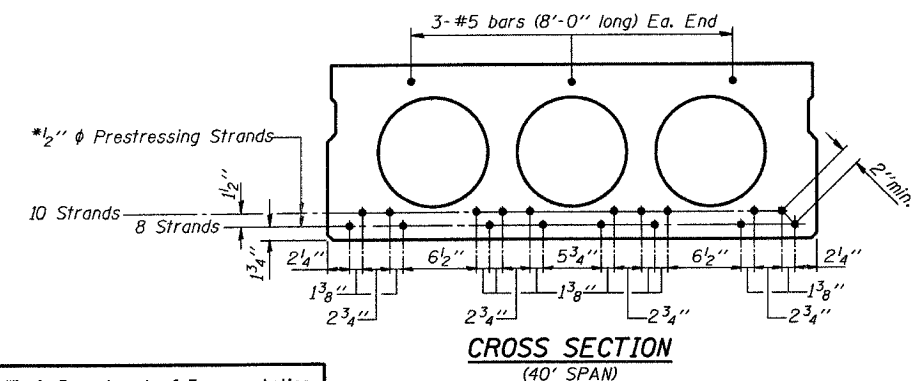
CROSS SECTION
(25' SPAN)



CROSS SECTION
(30' SPAN)

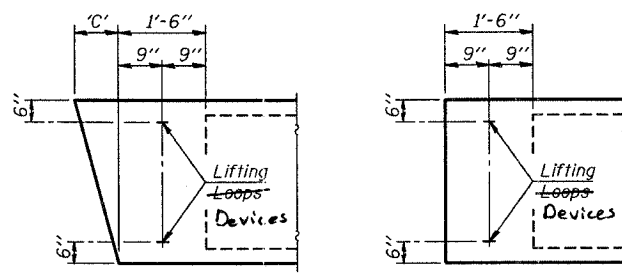


CROSS SECTION
(35' SPAN)



CROSS SECTION
(40' SPAN)

NOTE
The std. reinf. shown on the 25' span cross section is typical for all spans, except as shown.

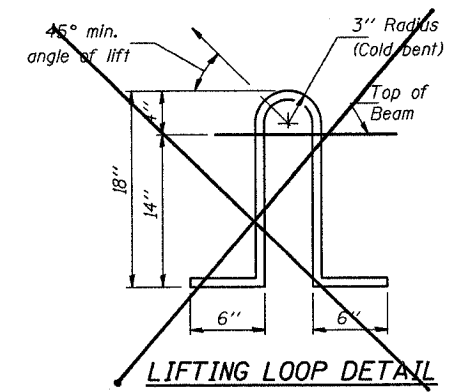


END BLOCK DETAILS

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

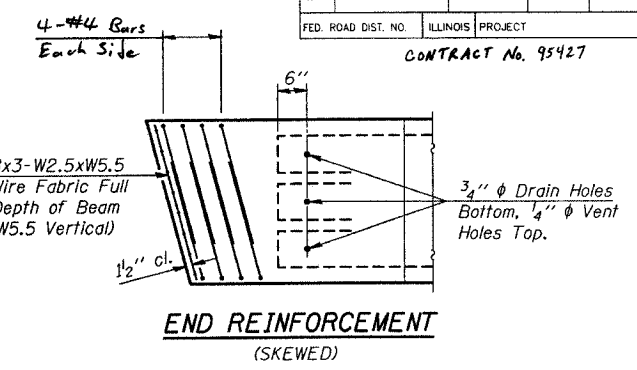
DIMENSION 'C'

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

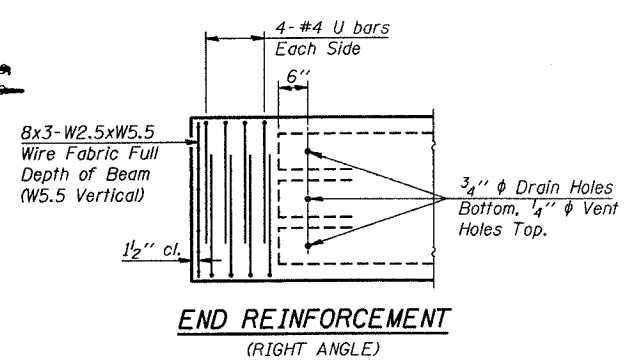


LIFTING LOOP DETAIL

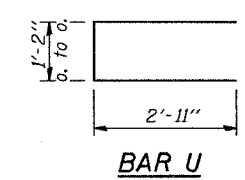
~~Lifting loops shall be 2 #4 E70 hot strands as shown. Alternate approved lifting devices are also acceptable. See Special Provisions.~~



END REINFORCEMENT
(SKEWED)



END REINFORCEMENT
(RIGHT ANGLE)



BAR U

NOTES

- Prestressing steel shall be uncoated high strength, stress relieved 7-wire strand, Grade 270.
- The nominal diameter shall be 1/2 inch and the nominal cross-sectional area shall be 0.153 square inches.
- Reinforcement bars shall conform to AASHTO M-31, M-42 or M-53, Grade 60.
- Rail Post anchor devices shall be cast into outside beam as elsewhere specified.
- When Waterproofing Membrane System is specified, the top surface of the beams shall be finished in accordance with Article 504.06 of the Standard Specifications except that the surface shall not be roughened by brooming. 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 inch.
- Low-relaxation strands may be substituted for the stress relieved strands. The initial prestressing force applied to each strand shall be the same as for the stress relieved strands (28,900 lbs.).
- 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'_{ci} = (See Required Release Strength Table)
 $f'_s = 270,000$ p.s.i. (1/2" diameter Strand)
 $f_{si} = 189,000$ p.s.i. (1/2" diameter Strand)
 $f_y = 60,000$ p.s.i.

REQUIRED RELEASE STRENGTH

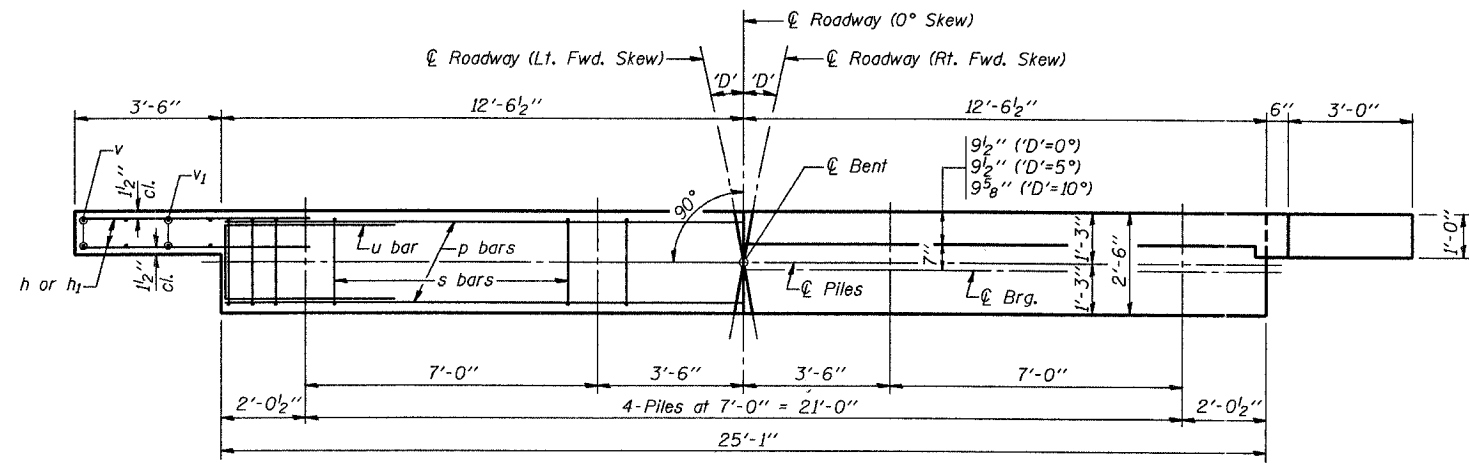
Span	f'_{ci} (psi)
25'	4,000
30'	4,000
35'	4,200
40'	4,700

Illinois Department of Transportation
 PASSED NOVEMBER 1, 1995
 Engineer of Bridge Design
 APPROVED NOVEMBER 1, 1995
 Engineer of Bridges and Structures

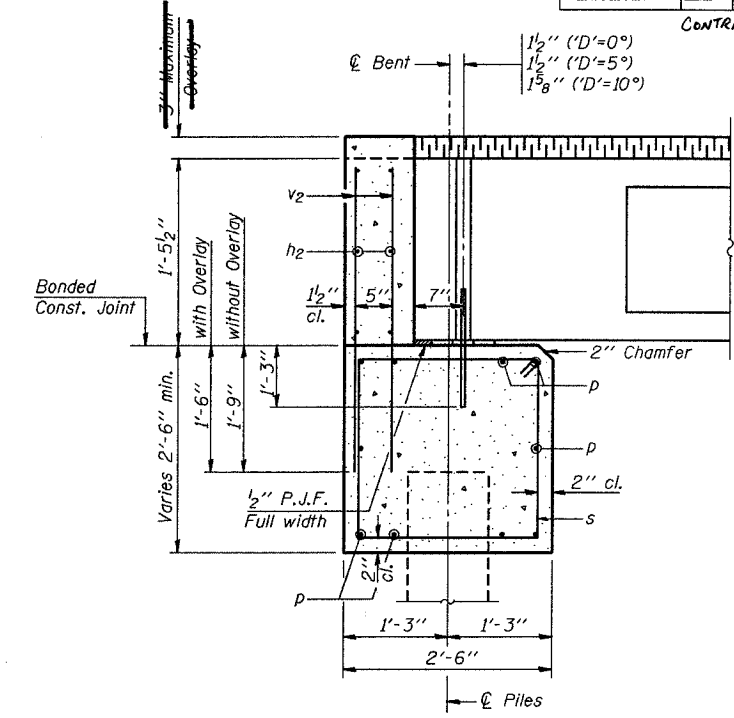
P.P.C. DECK BEAM DETAILS
 24' ROADWAY | 17" x 48" BEAMS
 STANDARD CB-2417-48

REL.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 274	03-10120-00-BR 03-18116-00-BR	FAYETTE	14	9

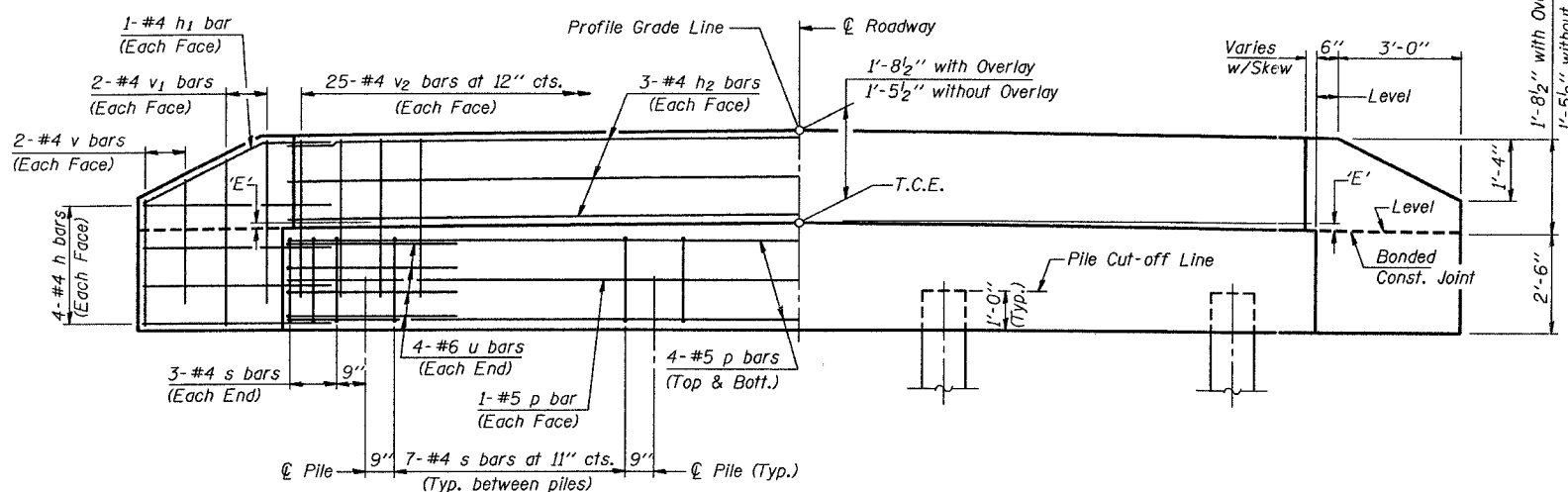
CONTRACT No. 95427



PLAN
('D' = Designated Skew Angle)



SECTION THRU ABUTMENT
(At Right Angles)



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 1/2"	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

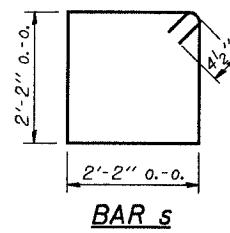
- The Backwall and the portion of the Wingwalls above the bonded construction joint shall be cast against the in-place beam.
- Reinforcement bars shall conform to A.A.S.H.T.O. M-31, M-42 or M-53, Grade 60.

MAXIMUM PILE LOADS

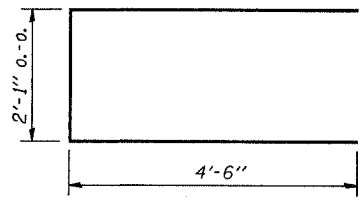
SPAN	TONS
25'	25
30'	26
35'	28
40'	30

DESIGN STRESSES

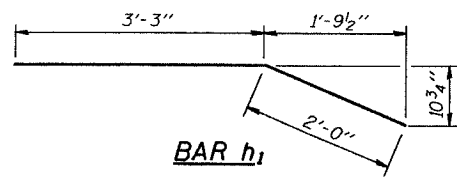
f'c = 3,500 psi
fy = 60,000 psi



BAR s



BAR u



BAR h1

BILL OF MATERIAL FOR ONE ABUTMENT

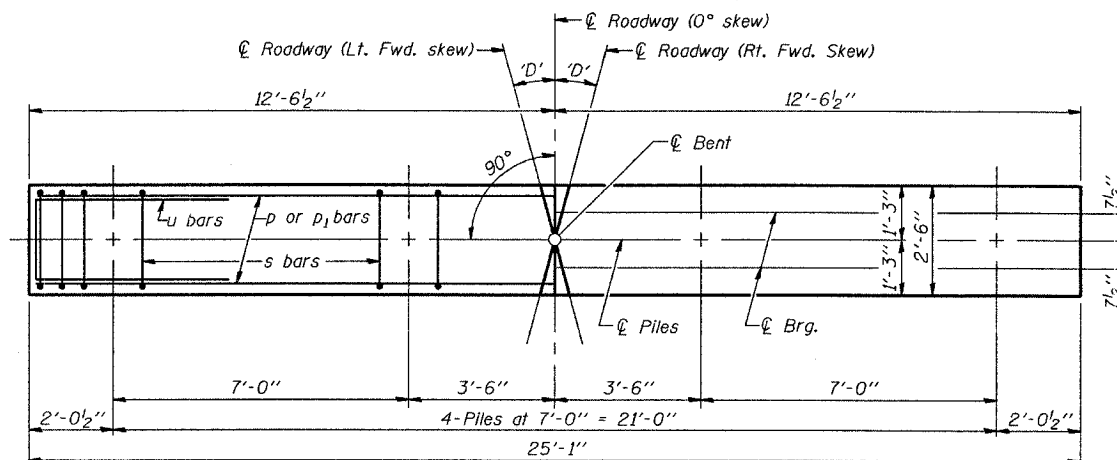
Bar	No.	Size	Length	Shape
h	16	#4	5'-0"	—
h1	4	#4	5'-3"	—
h2	6	#4	24'-9"	—
p	10	#5	24'-9"	—
s	27	#4	9'-5"	□
u	8	#6	11'-1"	□
v	8	#4	2'-6"	—
v1	8	#4	3'-5"	—
v2	50	#4	3'-1"	—
Concrete Structures			8.3 Cu. Yds.	
Reinforcement Bars			860 Lbs.	

Illinois Department of Transportation
PASSED November 1, 1995
Proj. D. Kepp
Engineer of Bridge Design
APPROVED November 1, 1995
Ralph E. Anderson
Engineer of Bridges and Structures

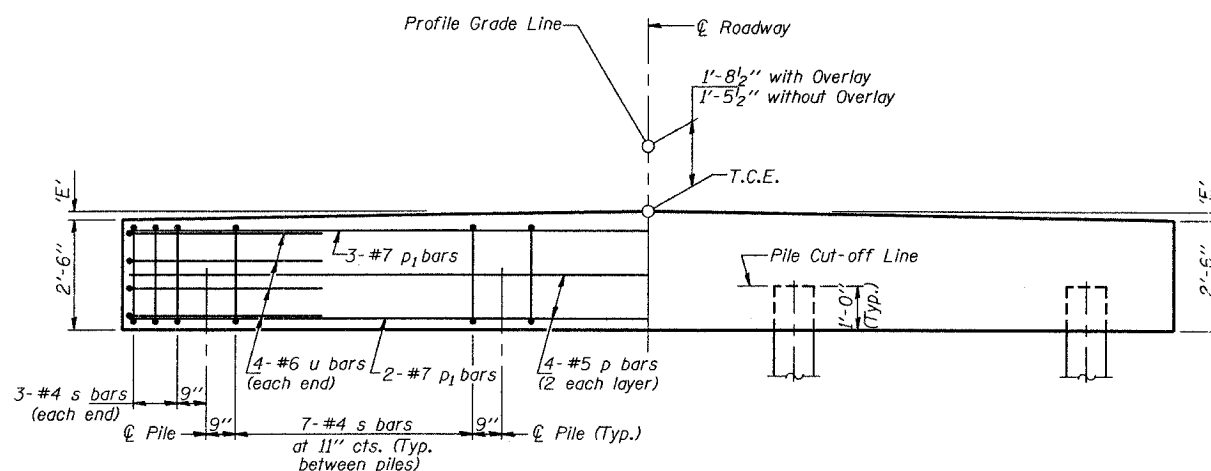
P.P.C. DECK BEAMS
PILE BENT ABUTMENT
24' RDWY. 17" BMS. 'D'=0°, 5° OR 10°
STANDARD CA-2417-10

REF.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 274	03-10120-00-BR 03-18116-00-BR	FAYETTE	14	10
FED. ROAD DIST. NO. 7	BLINDS	FED. AID PROJECT NO.		

CONTRACT No. 95427



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 1/2"	2 3/8"	2 1/2"	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"

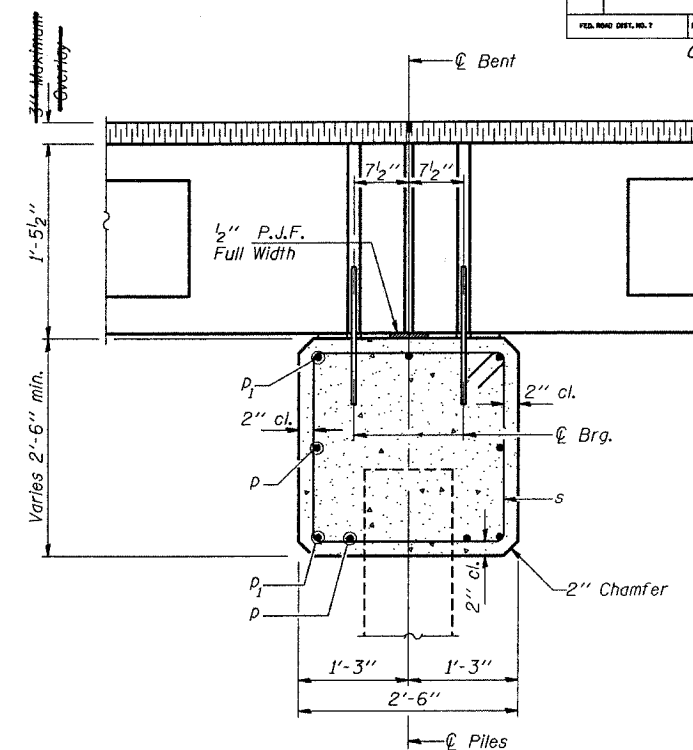
MAXIMUM PILE LOADS

SPAN	TONS
25'	53
30'	37
35'	41
40'	44

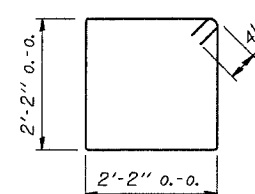
Longer of Either Span Supported by Pier

DESIGN STRESSES

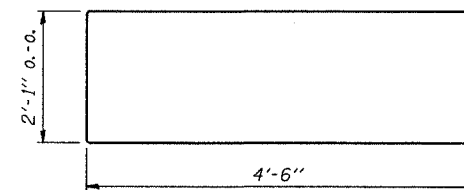
f'c = 3,500 psi
fy = 60,000 psi



SECTION THRU PIER
(At Right Angles)



Bar s



Bar u

BILL OF MATERIAL FOR ONE PIER

Bar	No.	Size	Length	Shape
p	4	#5	24'-9"	—
p1	5	#7	24'-9"	—
s	27	#4	9'-5"	□
u	8	#6	11'-1"	—
Concrete Structures			6.0	Cu. Yds.
Reinforcement Bars			660	Lbs.

NOTE

Reinforcement bars shall conform to A.A.S.H.T.O. M-31, M-42 or M-53, Grade 60.

Illinois Department of Transportation
PASSED November 1, 1995
Proj. O. Keppner
Engineer of Bridge Design
APPROVED November 1, 1995
Ralph E. Anderson
Engineer of Bridges and Structures

**P.P.C. DECK BEAMS
PILE BENT PIER**
24' RDWY. 17" BMS. 'D'=0°, 5° OR 10°
STANDARD CP-2417-10

REL.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 274	03-10120-00-BR 03-18116-00-BR	FAYETTE	14	11
FED. ROAD DIST. NO. 7	BRIDGE	FED. AID PROJECT NO.		

NOTES

Hollow structural steel tubing shall conform to the requirements of ASTM designation A-500 Grade B Structural Steel Tubing and shall meet the longitudinal CVN requirements of 15 ft.-lbs. at 0° F. Contract No. 9547

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 A-307 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 in accordance with AASHTO M-232.

All posts, railing, rail splices, anchor devices and angles shall be galvanized after shop fabrication in accordance with AASHTO M-111 and ASTM A-385. Galvanized rail shall not be painted.

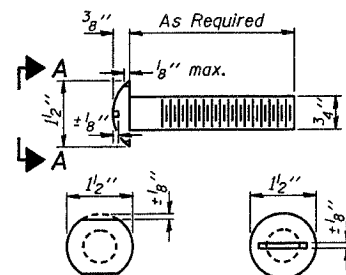
For multi-span bridges, sufficient 1/2" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost incidental to Steel Railing, Type S-1.

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

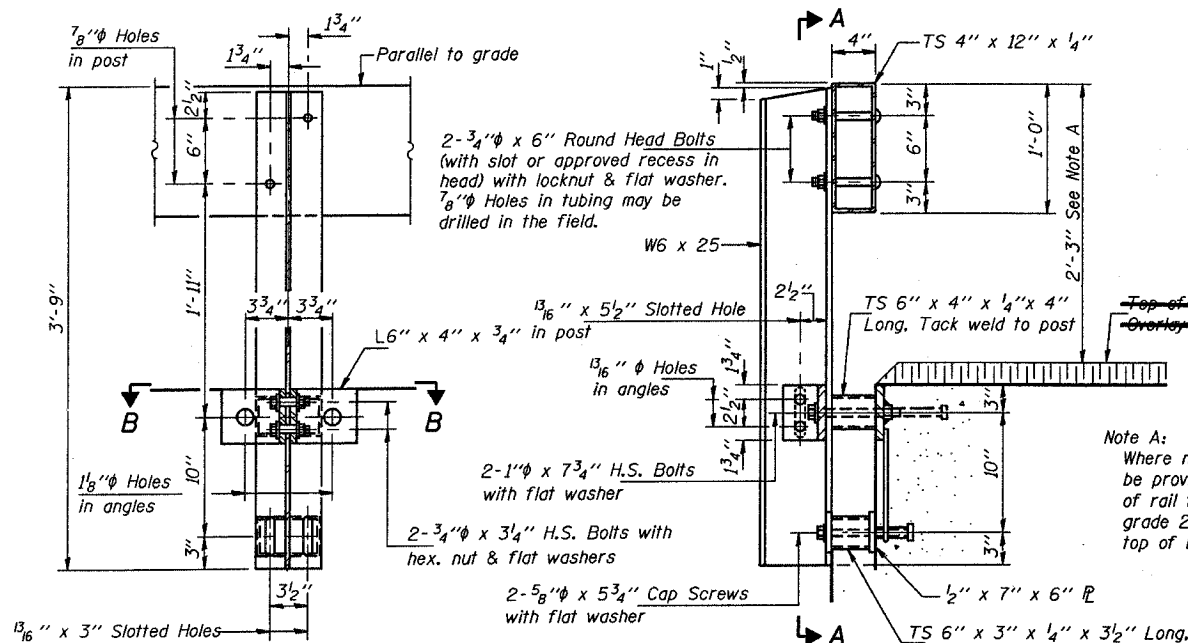
The 1/2" x 7" x 6" plates that come in contact with concrete shall receive two coats of asphalt paint conforming to Section 760.07 Type II or place 1/8" fabric bearing pads between the plates and concrete.

The 3/4" high strength bolts used to connect the 6" x 4" x 3/4" angles to the post shall be tightened in accordance with Article 505.04 (f) (3) 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.

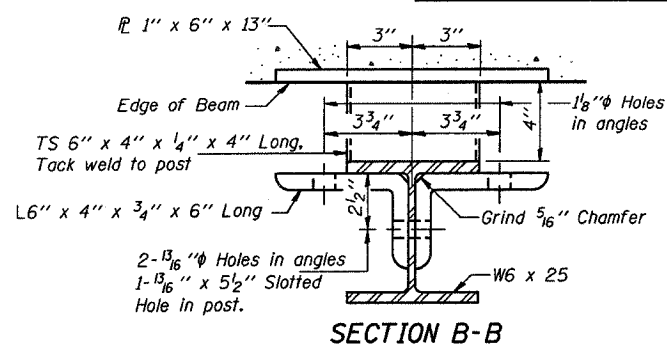


**VIEW A-A
ROUND HEAD BOLT**

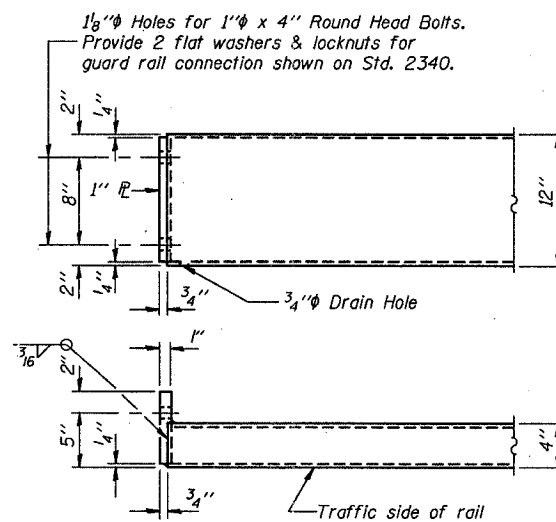


SECTION A-A

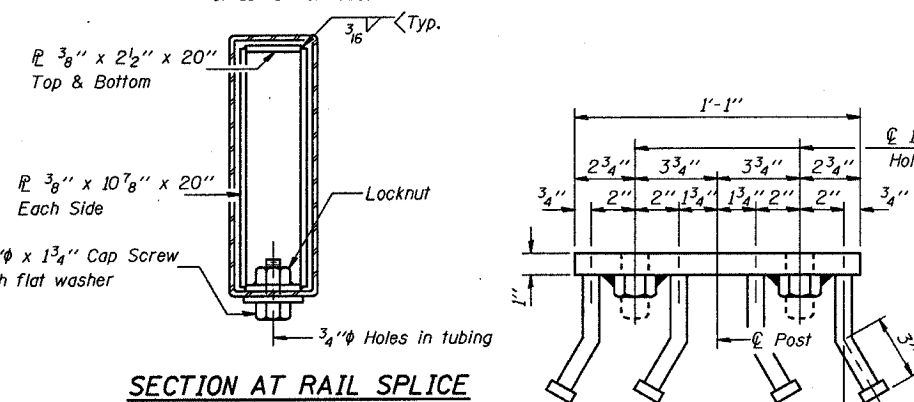
SECTION AT RAIL POST



SECTION B-B

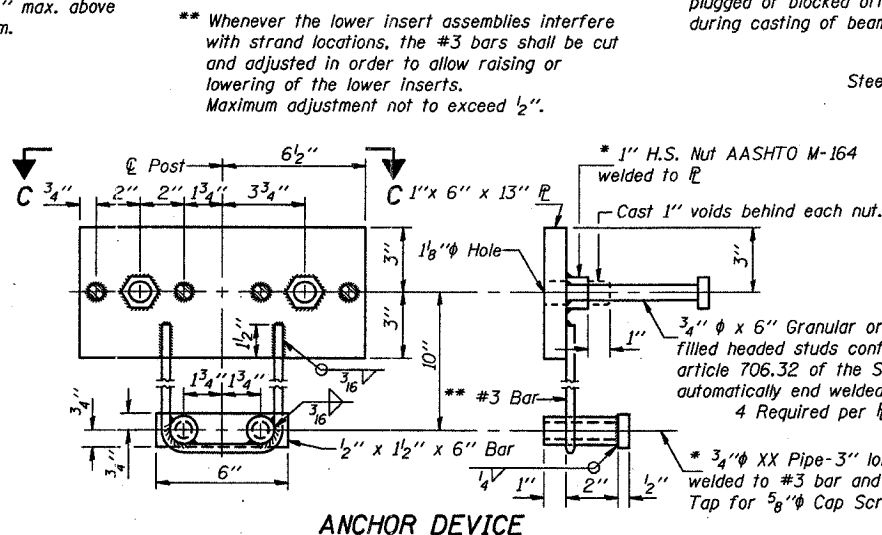


END OF RAIL DETAILS

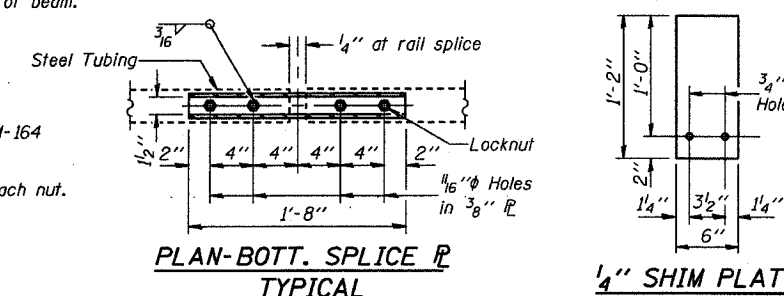


SECTION AT RAIL SPLICE

VIEW C-C



ANCHOR DEVICE



**PLAN-BOTT. SPLICE P
TYPICAL**

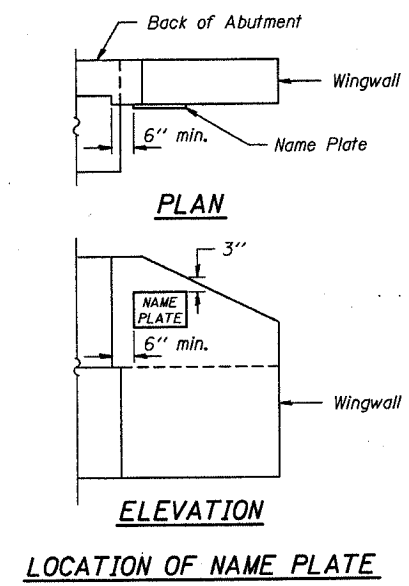
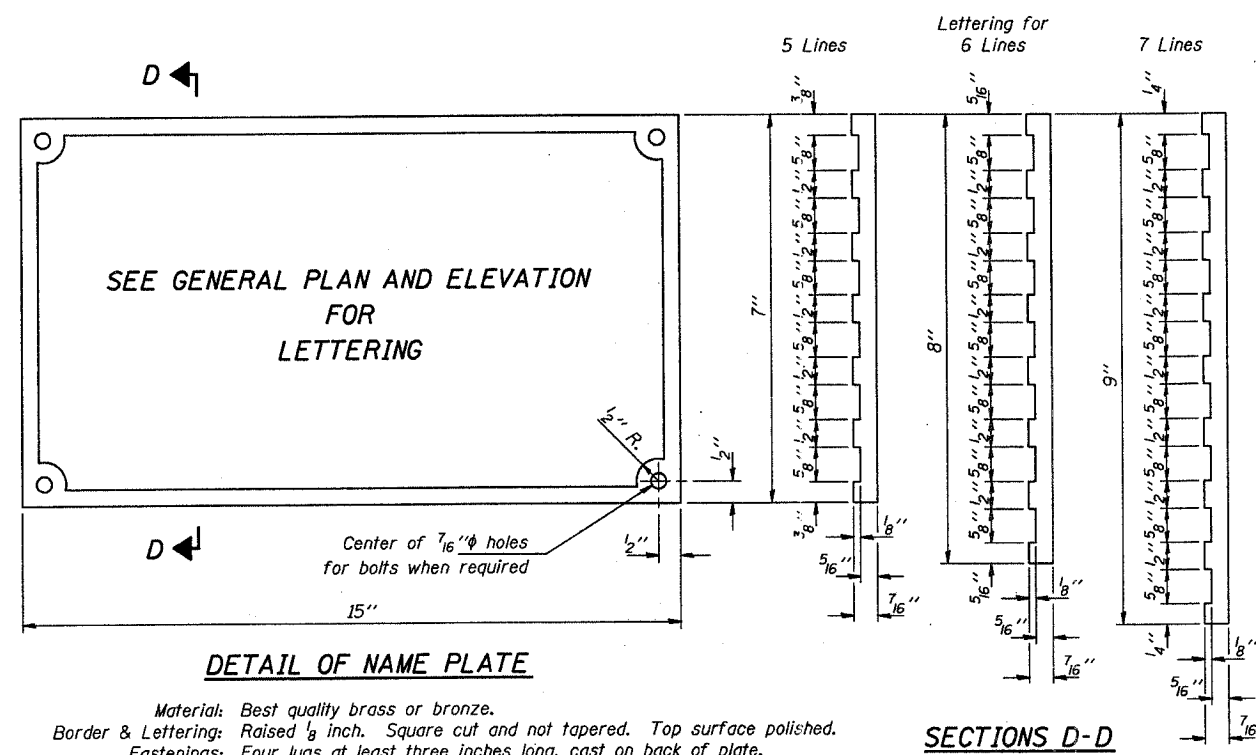
1/4 SHIM PLATE

Illinois Department of Transportation
 PASSED November 1, 1995
 Engineer of Bridge Design
 APPROVED November 1, 1995
 Engineer of Bridges and Structures

**STEEL RAILING, TYPE S-1
STANDARD CR-TS1**

FILE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 274	03-10120-00-BR 03-10116-00-BR	FAYETTE	14	12
FED. ROAD DIST. NO. 7	ALIGNMENT	FED. RD PROJECT NO.		

CONTRACT No. 95487



Illinois Department of Transportation
 PASSED November 1, 1995
Gregory D. Keppner
 Engineer of Bridge Design
 APPROVED November 1, 1995
Ralph E. Anderson
 Engineer of Bridges and Structures
 ISSUED 7-1-95

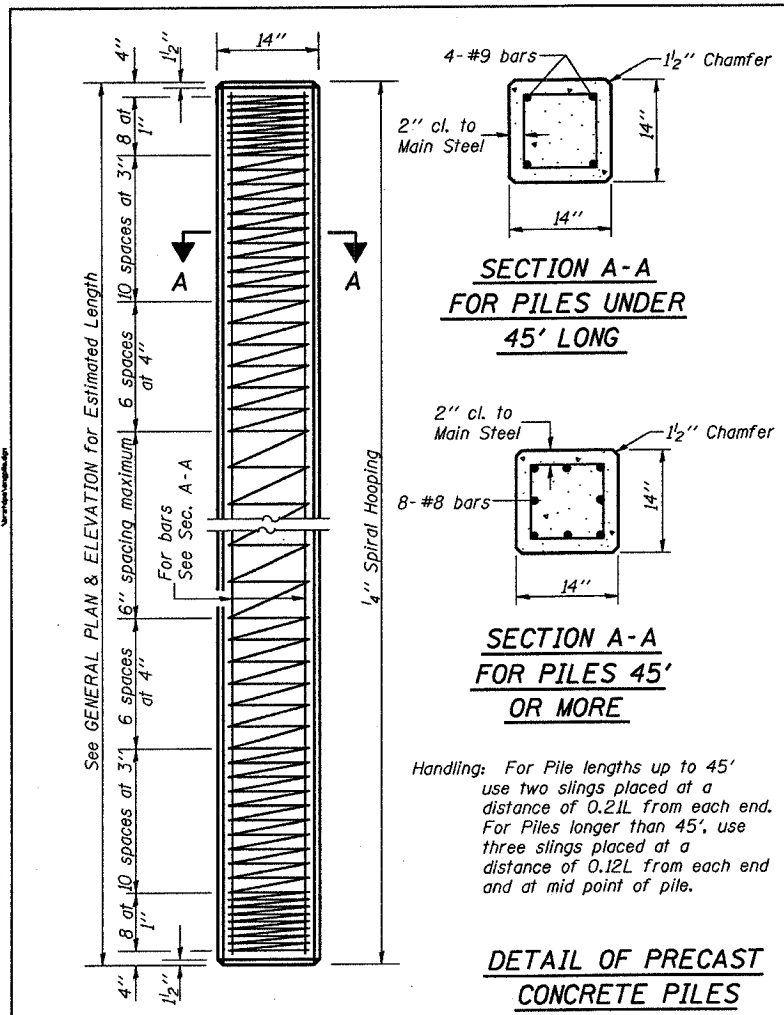
NAME PLATE
 STANDARD CN

SECTION	COUNTY	SHEET NO.	TOTAL SHEETS
03-10120-00-BR 03-18116-00-BR	FAYETTE	14	13

CONTRACT No. 95427

Reinforcement cage shall be omitted when ~~Class S1~~ Concrete Encasement is provided.

The cost of Reinforcement is incidental to the Cost of Furnishing Piles.

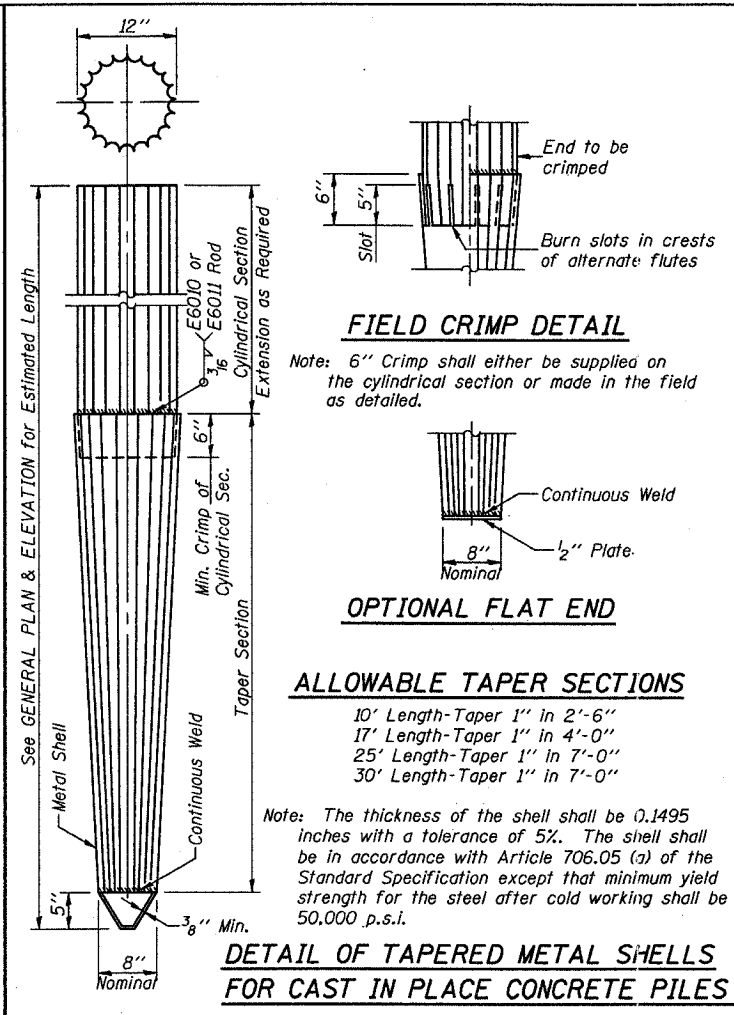


SECTION A-A FOR PILES UNDER 45' LONG

SECTION A-A FOR PILES 45' OR MORE

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



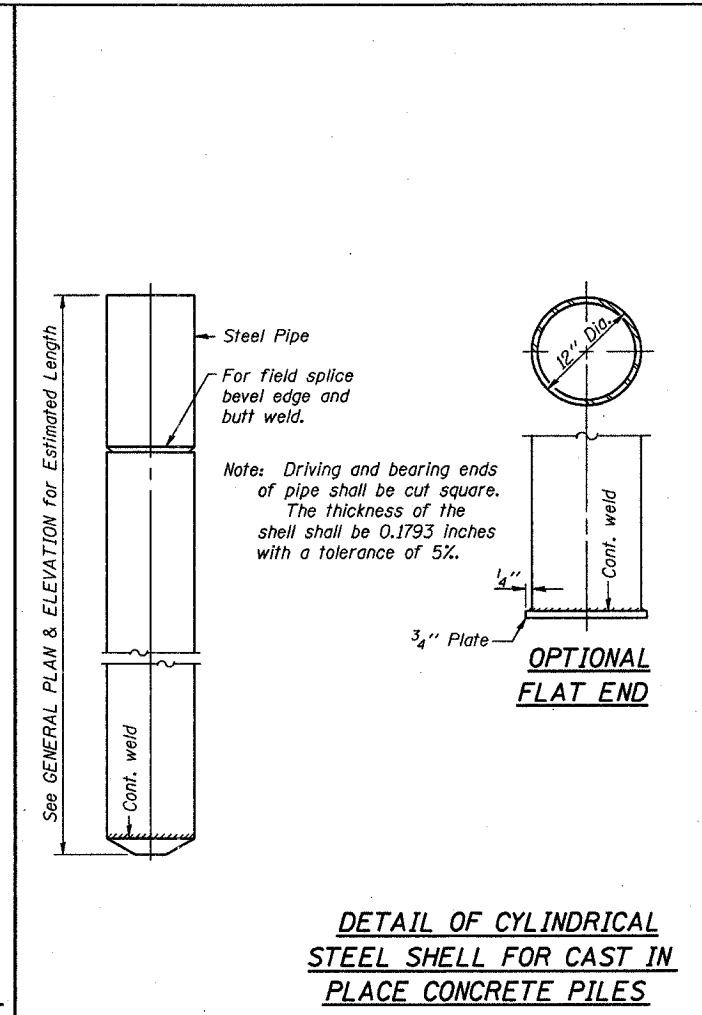
FIELD CRIMP DETAIL

OPTIONAL FLAT END

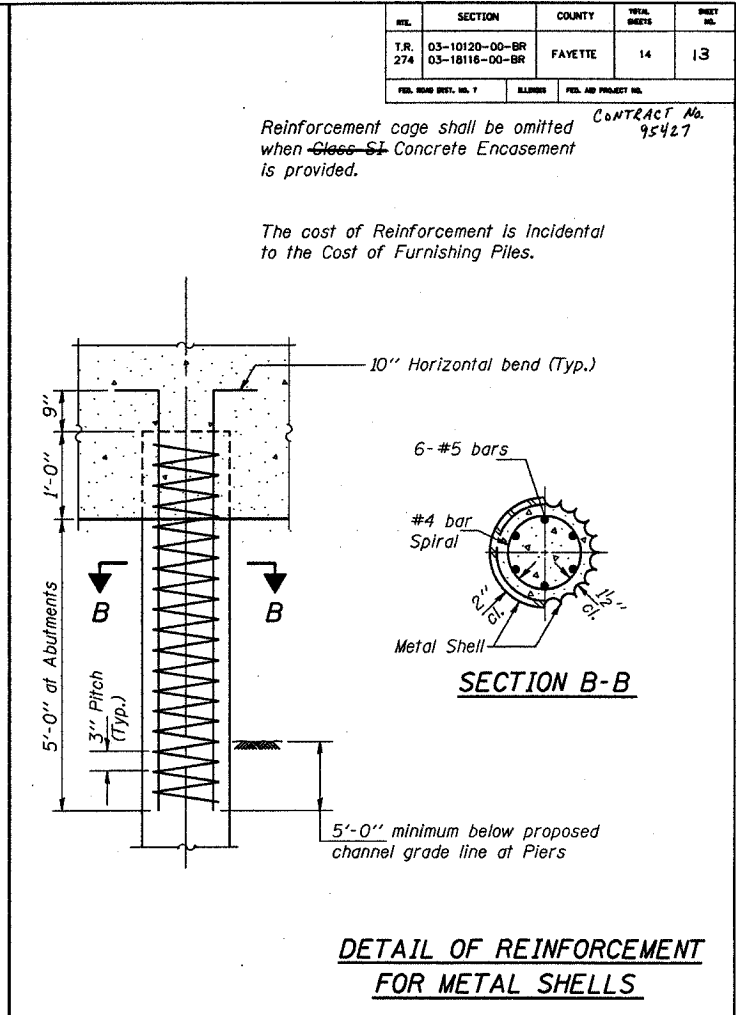
ALLOWABLE TAPER SECTIONS

Note: The thickness of the shell shall be 0.1495 inches with a tolerance of 5%. The shell shall be in accordance with Article 706.05 (a) of the Standard Specification except that minimum yield strength for the steel after cold working shall be 50,000 p.s.i.

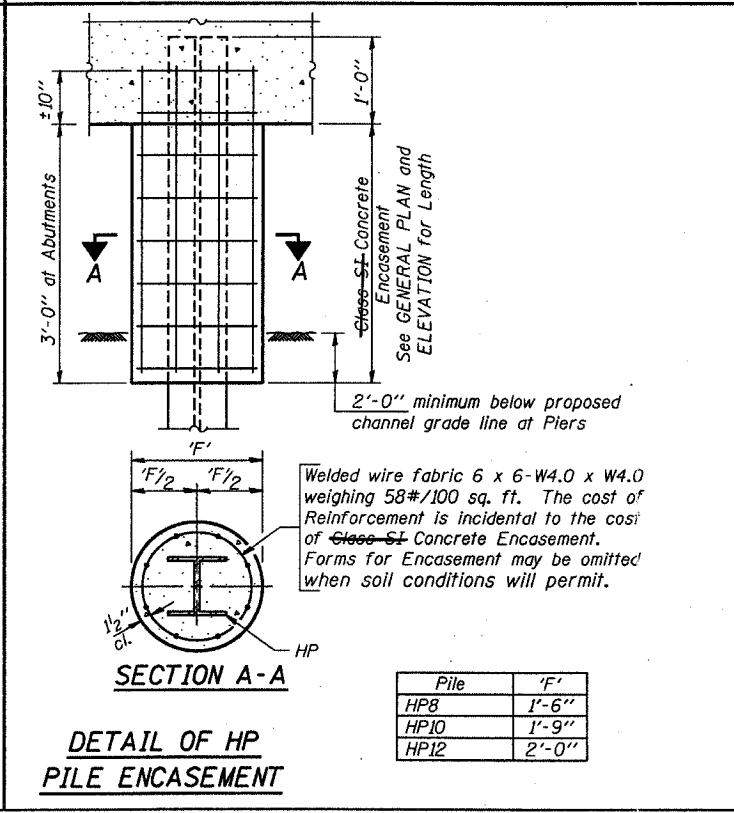
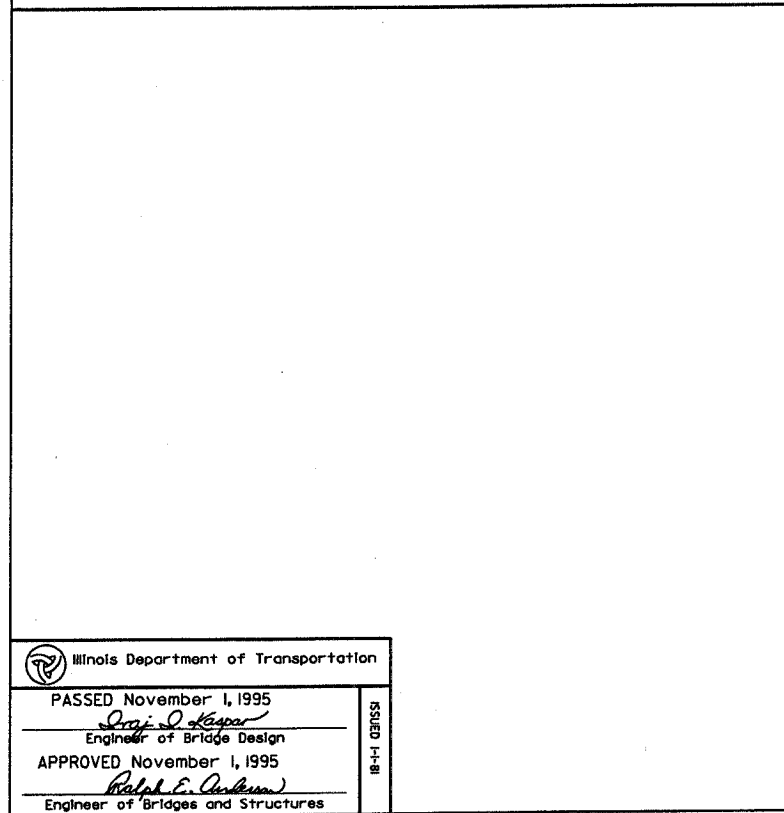
DETAIL OF TAPERED METAL SHELLS FOR CAST IN PLACE CONCRETE PILES



DETAIL OF CYLINDRICAL STEEL SHELL FOR CAST IN PLACE CONCRETE PILES



DETAIL OF REINFORCEMENT FOR METAL SHELLS



DETAIL OF HP PILE ENCASEMENT

DETAIL OF METAL SHELL PILE ENCASEMENT

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

Pile Size	Item	Quantity
HP8	Class S1 Concrete Encasement	0.063 C.Y.
HP10	Class S1 Concrete Encasement	0.086 C.Y.
HP12	Class S1 Concrete Encasement	0.112 C.Y.

(METAL SHELL PILES)

Pile Size	Item	Quantity
12" Dia.	Class S1 Concrete Encasement	0.087 C.Y.

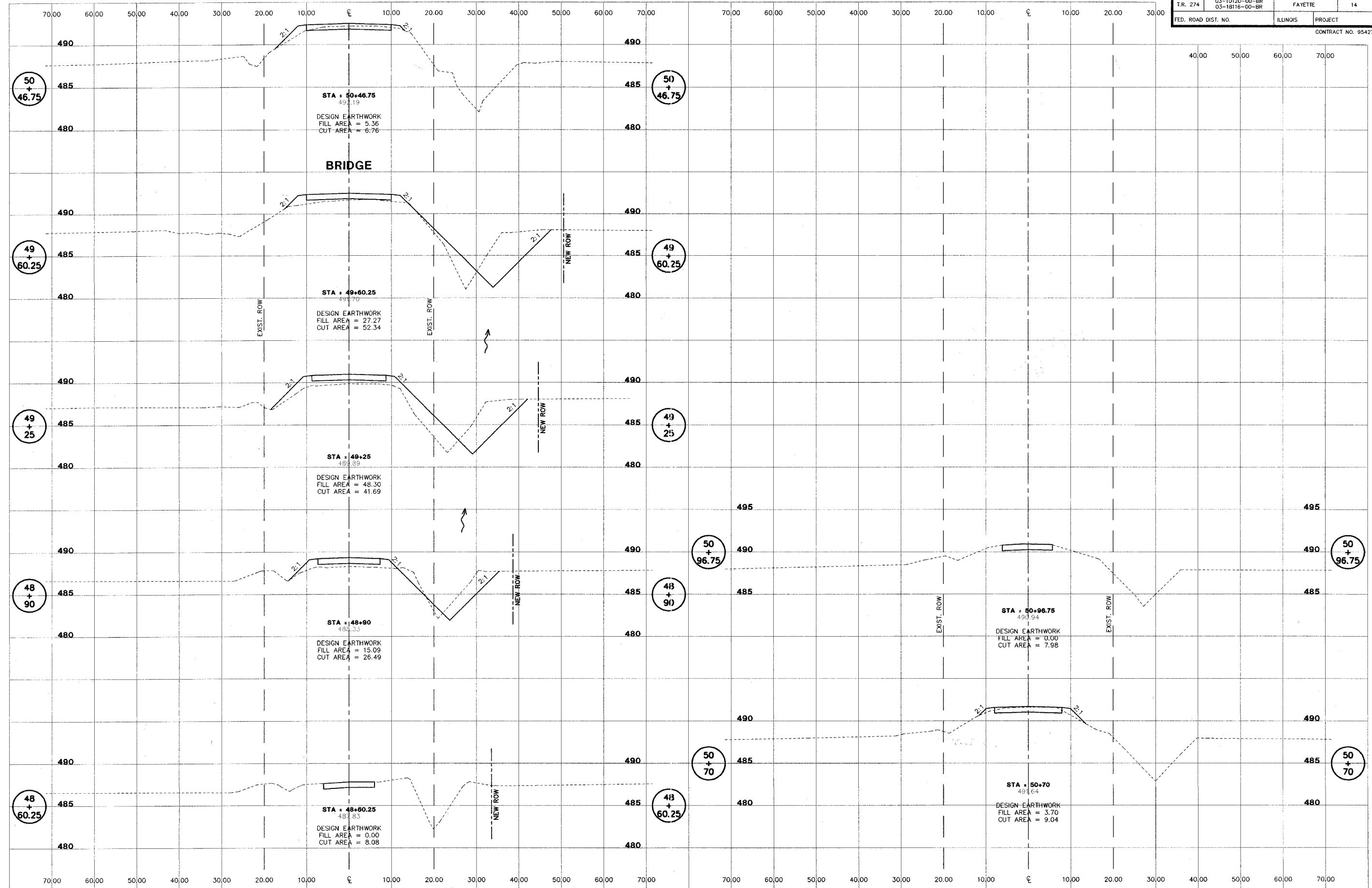
Illinois Department of Transportation
 PASSED November 1, 1995
 Approved by: [Signature]
 Engineer of Bridge Design
 APPROVED November 1, 1995
 Approved by: [Signature]
 Engineer of Bridges and Structures

PILE DETAILS

STANDARD CX-1

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 274	03-10120-00-BR 03-18116-00-BR	FAYETTE	14	14
FED. ROAD DIST. NO.	ILLINOIS	PROJECT		

CONTRACT NO. 95427



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CLARK ENGINEERS, INC.
 2524 South Broadway
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 IL Design Firm Registration
 No. 184-00871

T.R. 274 SECTIONS 03-10120-00-BR & 03-18116-00-BR
OTEGA & VANDALIA ROAD DISTRICTS
FAYETTE COUNTY, ILLINOIS

CROSS SECTIONS
STA. 48+60.25 TO
STA. 50+96.75

SURVEY	JAS	CHECKED	DATE
DESIGN	MRO	APPROVED	03/01/05
DRAWN	JSD, BLT	REVISOR	REVISED
		JOB NO.	FAHD0029