

**INDEX OF SHEETS**

SHEET NO.	DESCRIPTION
1	TITLE SHEET & SUMMARY OF QUANTITIES
2	PLAN & PROFILE, TYPICAL SECTIONS
3-4	GENERAL NOTES & CURLED END SECTIONS
5-14	ROADWAY CROSS SECTIONS BRIDGE DESIGN

**THE FOLLOWING STANDARDS ARE A PART OF THESE PLANS AND ARE INCLUDED IN THE PROPOSAL:**

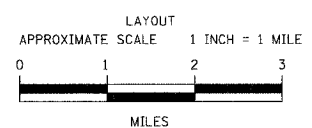
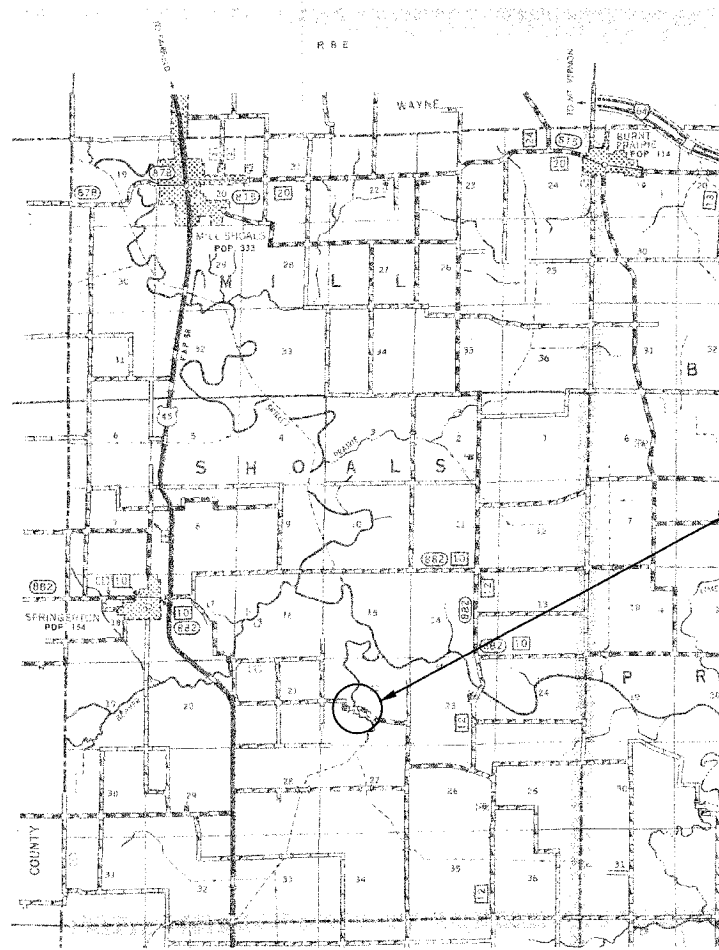
000001-05	STANDARD SYMBOLS, ABBREVIATIONS & PATTERNS
280001-04	TEMPORARY EROSION CONTROL SYSTEMS
701901	TRAFFIC CONTROL DEVICES
B.L.R. 21-7	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS
B.L.R. 22-5	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS (TWO-LANE TWO-WAY RURAL TRAFFIC) (ROAD CLOSED TO THRU TRAFFIC)

**SUMMARY OF QUANTITIES**

CODE NO.	ITEM	UNIT	QUANTITY
20100110	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	UNIT	26.00
20100210	TREE REMOVAL (OVER 15 UNITS DIAMETER)	UNIT	16.00
20200100	EARTH EXCAVATION	CU YD	10.00
20300100	CHANNEL EXCAVATION	CU YD	712.00
20400800	FURNISHED EXCAVATION	CU YD	19.00
25001000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.20
28001000	AGGREGATE (EROSION CONTROL)	TON	23.00
28100807	STONE DUMPED RIPRAP, CLASS A4	TON	360.00
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	285.00
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1.00
50300225	CONCRETE STRUCTURES	CU YD	31.40
50300280	CONCRETE ENCASEMENT	CU YD	15.60
50400305	PRECAST PRESTRESSED CONCRETE DECK BEAMS (17" DEPTH)	SQ FT	2400.00
50500505	STUD SHEAR CONNECTORS	EACH	32.00
50800105	REINFORCEMENT BARS	POUND	4080.00
50900205	STEEL RAILING, TYPE S1	FOOT	200.00
51201400	FURNISHING STEEL PILES HP10X42	FOOT	500.00
51202305	DRIVING PILES	FOOT	500.00
51500100	NAME PLATES	EACH	1.00
67100100	MOBILIZATION	L SUM	1.00

DESIGN DESIGNATION:  
 DESIGN SPEED: 30 MPH  
 HIGHWAY CLASS - LOCAL ROAD  
 EXISTING STRUCTURE NO.: 097-3056  
 PROPOSED STRUCTURE NO.: 097-3264  
 CURRENT A.D.T. = 80  
 CONTRACT NO. 99324

**J.U.L.I.E.**  
**JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION**  
**1-800-892-0123**



GROSS LENGTH	515.00 FT	0.098 MILES
OMISSIONS	0.00 FT	0.000 MILES
NET LENGTH	515.00 FT	0.098 MILES

SECTION 07-09125-00-BR  
 BEGINS STATION 2+40

STATION 5+00, STRUCTURE NO. 097-3264  
 A 100' LONG TRIPLE SPAN (30', 40', 30')  
 PRECAST PRESTRESSED CONCRETE DECK BEAM  
 BRIDGE (17" DEPTH), 24' ROADWAY, 0.00%  
 GRADE, 5° LT FWD SKEW.

SECTION 07-09125-00-BR  
 ENDS STATION 7+55

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

APPROVED 3/20/2008  
*Brian A. La...*  
 COUNTY ENGINEER

PASSED 3/25/08  
*Dennis W. Hill...*  
 ENGINEER OF LOCAL ROADS AND STREETS

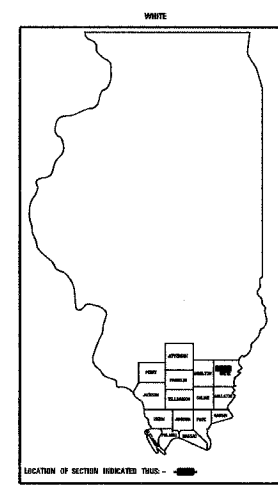
RELEASING FOR BID  
 BASED ON LIMITED  
 REVIEW 3/20/08  
*Mary C. Lamie*  
 MARY C. LAMIE, P.E.  
 DEPUTY DIRECTOR OF HIGHWAYS  
 REGION FIVE ENGINEER

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
107	07-09125-00-BR	WHITE	14	1

FED. ROAD DIST. NO. 9 ILLINOIS  
 PROJECT# BROS-193(40)  
 JOB # C-99-500-08  
 LEC JOB # HD710:4WH

FED. AID PROJECT  
 CONTRACT# 99324  
 LOST CREEK

PHONE: (818)-262-8651  
 FAX: (618)-263-3327



323 W. 3RD ST.  
 P.O. BOX 160  
 MT. CARMEL, IL  
 62863

405 W. STATE ST.  
 SUITE 1  
 PRINCETON, IN  
 47670

PHONE: (812)-386-7611  
 FAX: (812)-385-2812

**LAMIE**  
 ENGINEERING CO.

PROFESSIONAL DESIGN FIRM  
 LAND SURVEY &  
 PROFESSIONAL  
 ENGINEERING  
 CORPORATION

184-000887  
 (62-032435)(35-002769)

56284  
 REGISTERED  
 PROFESSIONAL  
 ENGINEER  
 OF  
 ILLINOIS

AARON M. MEFFORD  
 NAME  
*Aaron M. Mefford*  
 SIGNATURE  
 3-14-08  
 DATE  
 11-30-09  
 EXPIRES

MILL SHOALS TOWNSHIP  
 OVER LOST CREEK  
 WHITE COUNTY, ILLINOIS

SHEET TITLE:  
 TITLE SHEET

SCALE: VARS  
 BY: AMM  
 DATE: 3/08  
 REV:

1 OF 14  
 SHEETS  
 SHEET NO.  
 1

**GENERAL NOTES:**

THIS SECTION SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE PLANS, SPECIAL PROVISIONS AND "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", ADOPTED JANUARY 1, 2007.

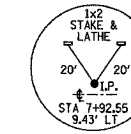
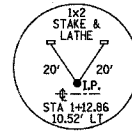
THE WORK INVOLVED ON THIS SECTION CONSISTS OF THE REMOVAL OF THE EXISTING STRUCTURE, THE CONSTRUCTION OF A 100 FOOT LONG TRIPLE SPAN PRECAST, PRESTRESSED CONCRETE DECK BEAM BRIDGE, EARTH APPROACHES, AGGREGATE SURFACE COURSE AND OTHER MISCELLANEOUS ITEMS NECESSARY TO COMPLETE THIS SECTION.

ALL ELEVATIONS ARE BASED ON U.S.G.S. MEAN SEA LEVEL DATUM.

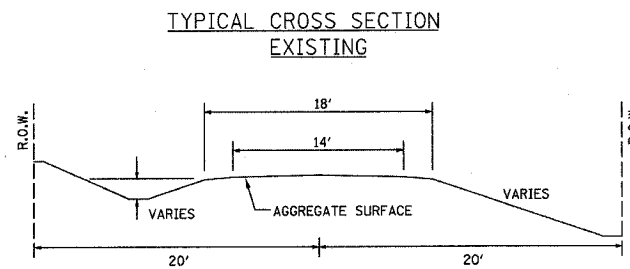
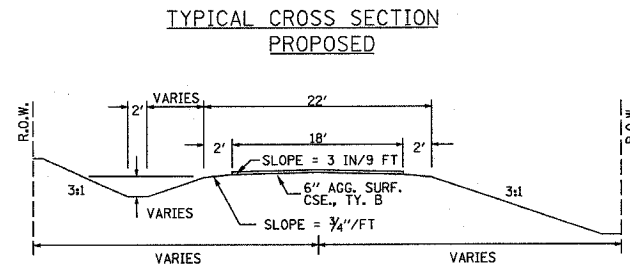
IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONTACT ALL THE UTILITIES, AFFECTING THE PROJECT, PRIOR TO CONSTRUCTION.

NOTE: CONSTRUCTION TRANSITION  
STA. 2+40 TO STA 2+90  
STA. 7+05 TO STA 7+55

ALL QUANTITIES ARE INCLUDED IN THE PROPOSAL



CURVE #1  
P.I. STA = 7+39.25  
Δ = 1°54'35"  
D = 154.35'  
R = 3000'  
T = 182.77'  
L = 365.09'  
E = 5.56'  
e = NONE  
T.R. = NONE  
S.E. RUN = NONE  
P.C. STA = 5+56.48  
P.T. STA = 9+21.57



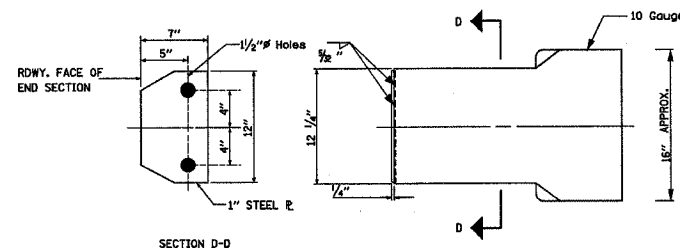
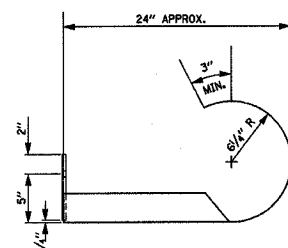
**UTILITIES:**

J.U.L.L.I.E. 1-800-892-0123

WAYNE-WHITE ELECTRIC CO-OP  
618-842-2196

ENFIELD WATER DEPARTMENT  
618-963-2222

**CURLED END SECTION DETAIL**

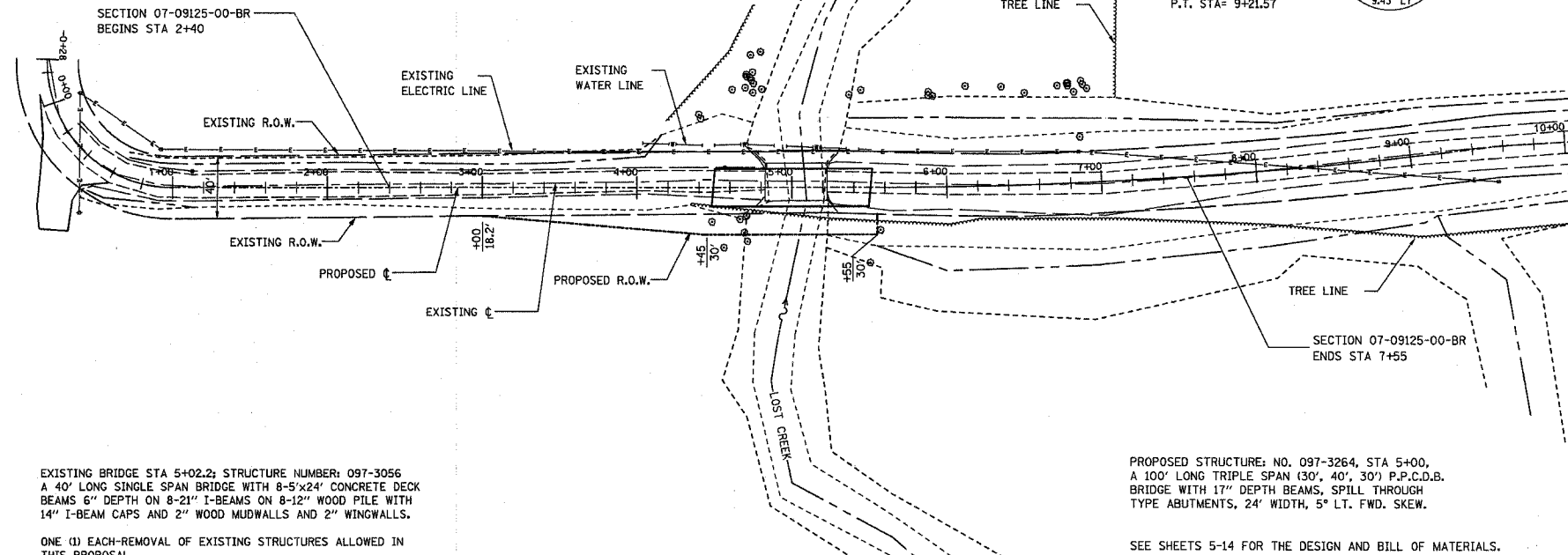


ALL OTHER STEEL SHAPES AND PLATES SHALL CONFORM TO THE REQUIREMENTS OF A.A.S.H.T.O. DESIGNATION M-183 EXCEPT POSTS AND ANGLES SHALL CONFORM TO A.A.S.H.T.O. M-223, GRADE 50.

BOLTS, CAP SCREWS, AND NUTS SHALL CONFORM TO THE REQUIREMENT OF A.S.T.M. DESIGNATION A-307 EXCEPT FOR HIGH STRENGTH BOLTS, NUTS, AND WASHERS NOTED WHICH SHALL CONFORM TO A.A.S.H.T.O. DESIGNATION M-164.

ALL BOLTS, NUTS, CAP SCREWS, WASHERS, AND LOCK WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH A.A.S.H.T.O. DESIGNATION M-232.

ALL FIELD DRILLED HOLES SHALL BE COATED WITH AN APPROVED ZINC RICH PAINT BEFORE ERECTION.



EXISTING BRIDGE STA 5+02.2; STRUCTURE NUMBER: 097-3056  
A 40' LONG SINGLE SPAN BRIDGE WITH 8-5"x24" CONCRETE DECK BEAMS 6" DEPTH ON 8-21" I-BEAMS ON 8-12" WOOD PILE WITH 14" I-BEAM CAPS AND 2" WOOD MUDWALLS AND 2" WINGWALLS.

ONE (1) EACH-REMOVAL OF EXISTING STRUCTURES ALLOWED IN THIS PROPOSAL.

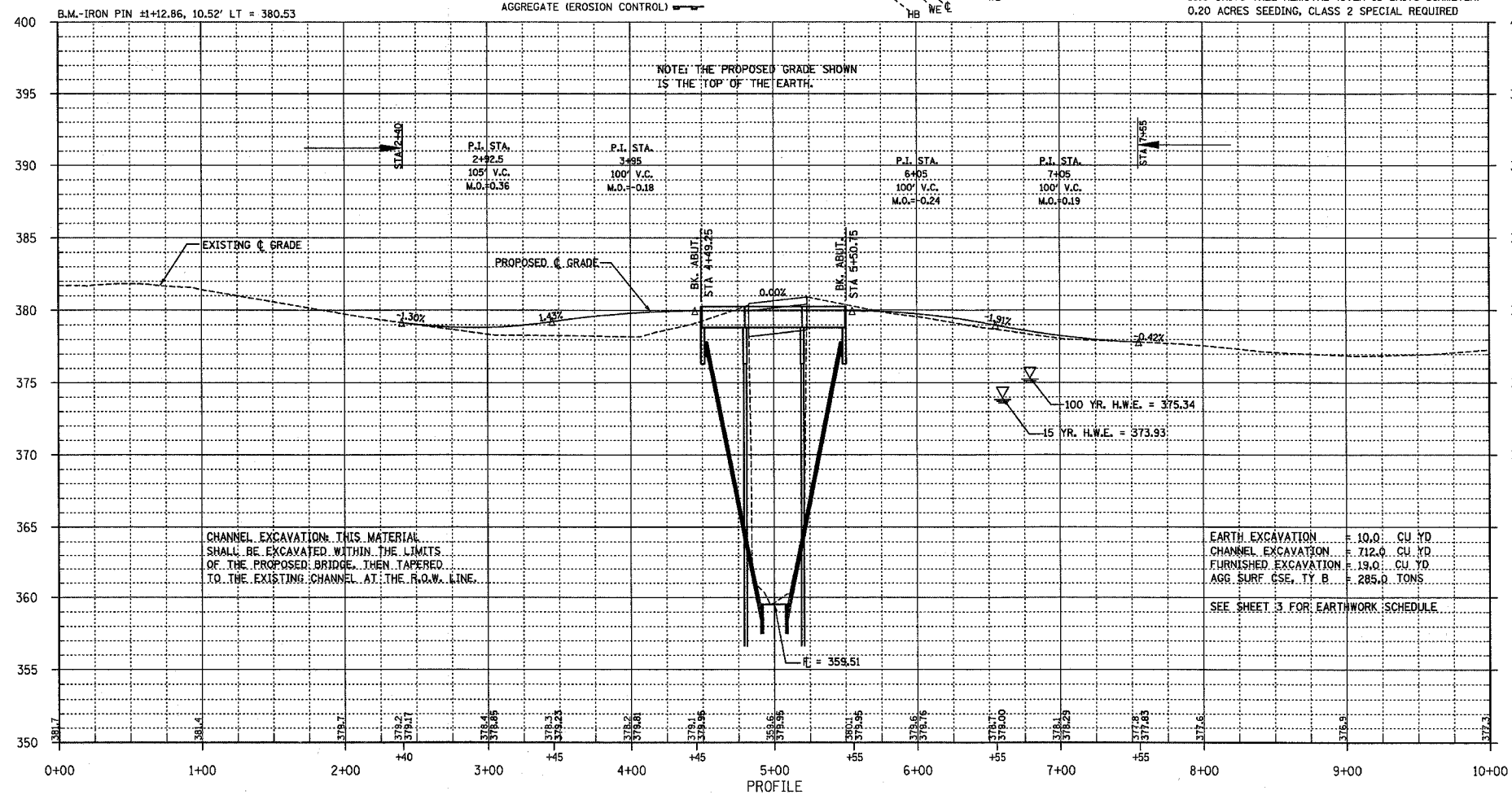
PROPOSED STRUCTURE: NO. 097-3264, STA 5+00, A 100' LONG TRIPLE SPAN (30', 40', 30') P.P.C.D.B. BRIDGE WITH 17" DEPTH BEAMS, SPILL THROUGH TYPE ABUTMENTS, 24' WIDTH, 5° LT. FWD. SKEW.

SEE SHEETS 5-14 FOR THE DESIGN AND BILL OF MATERIALS.

NOTE: FILL NEXT TO BRIDGE TO BE AGGREGATE SURFACE COURSE

TEMPORARY DITCH CHECKS -  
AGGREGATE (EROSION CONTROL)

26.0 UNITS-TREE REMOVAL (6 TO 15 UNITS DIAMETER)  
16.0 UNITS-TREE REMOVAL (OVER 15 UNITS DIAMETER)  
0.20 ACRES SEEDING, CLASS 2 SPECIAL REQUIRED



T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
107	07-09125-00-BR	WHITE	14	2	323 W. 3RD ST. P.O. BOX 160 MT. CARMEL, IL 62863
FED. ROAD DIST. NO. 9 ILLINOIS			LOST CREEK		PHONE: (618)-262-8651 FAX: (618)-263-3327
PROJECT # BR05-193(40)			CONTRACT # 99324		405 W. STATE ST. SUITE 1 PRINCETON, IN 47670
LEC JOB # H071014WH					PHONE: (312)-386-7611 FAX: (312)-386-2812

**LAMAC ENGINEERING CO.**

PROFESSIONAL DESIGN FIRM  
LAND SURVEY & PROFESSIONAL ENGINEERING CORPORATION  
184-000897  
(62-032435)(35-002769)

AARON M. MEFFORD  
REGISTERED PROFESSIONAL ENGINEER OF ILLINOIS

NAME: Aaron M. Mefford  
SIGNATURE: [Signature]  
DATE: 3-19-08  
EXPIRES: 11-30-09

MILL SHOALS TOWNSHIP  
OVER LOST CREEK  
WHITE COUNTY, ILLINOIS

SHEET TITLE:  
PLAN & PROFILE

SCALE: WHES  
BY: AMM  
DATE: 80607  
REV:

2 OF 14 SHEETS

SHEET NO. 2

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
107	07-09125-00-BR	WHITE	14	3	323 W. 3RD ST. P.O. BOX 160 MT. CARMEL, IL 62863
FED. ROAD DIST. NO. 9 ILLINOIS		LOST CREEK			PHONE: (618)-262-8661 FAX: (618)-263-3327
PROJECT * BR05-193(40)			CONTRACT * 99324		
LEC JOB * H07L014WH					

405 W. STATE ST.  
SUITE 1  
PRINCETON, IN  
47670  
PHONE:  
(812)-386-7611  
FAX:  
(812)-385-2812



PROFESSIONAL  
DESIGN FIRM  
LAND SURVEY &  
PROFESSIONAL  
ENGINEERING  
CORPORATION  
184-00087  
(62-032435)(35-002769)



AARON M. MEFFORD  
NAME  
*[Signature]*  
SIGNATURE  
DATE  
3-19-06  
EXPIRES  
11-30-09

MILL SHOALS TOWNSHIP  
OVER LOST CREEK  
WHITE COUNTY, ILLINOIS

SHEET TITLE:

CROSS-SECTIONS

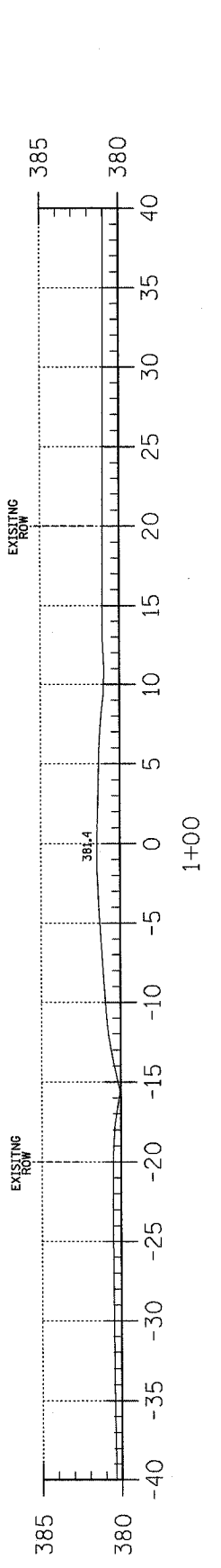
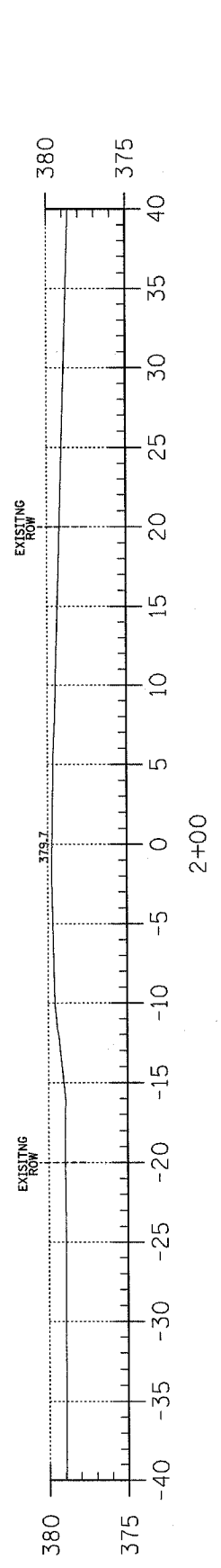
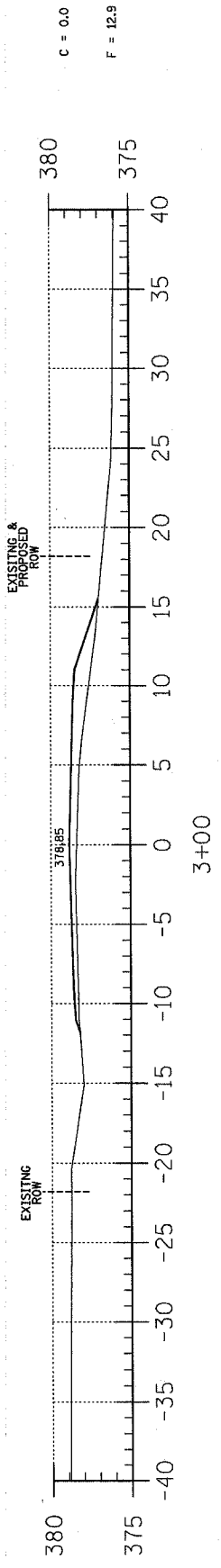
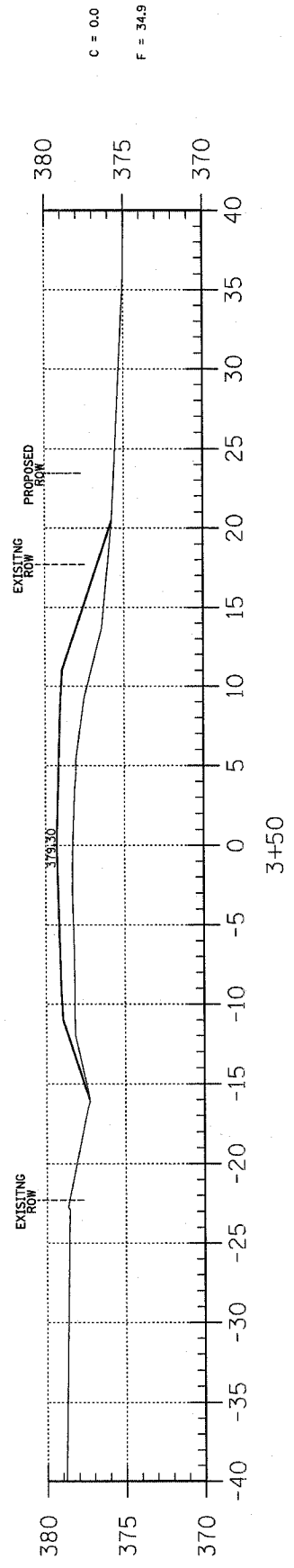
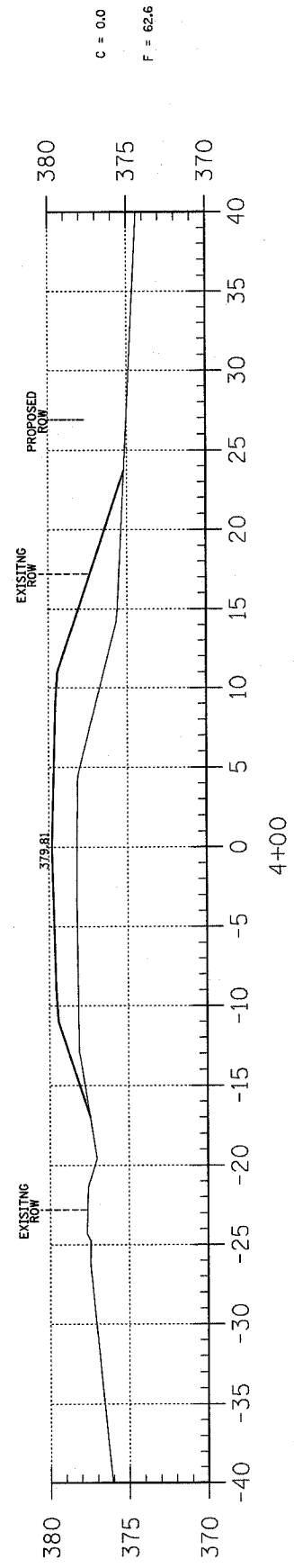
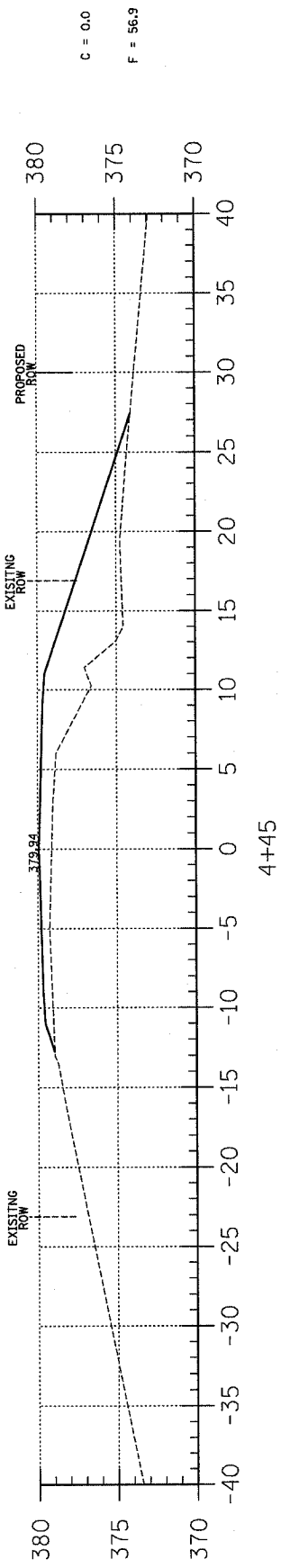
SCALE: 1" = 5'  
BY: AMM  
DATE: 11/26/07  
REV:

3 OF 14  
SHEETS

SHEET NO.  
3

EARTHWORK SCHEDULE

LOCATION	EARTH EXCAVATION		CHANNEL EXCAVATION		ESTIMATED UNSUITABLE MATERIAL		SUITABLE MATERIAL ADJUSTED FOR SHRINKAGE		EMBANKMENT		EARTHWORK BALANCE WASTE (+) OR SHORTAGE (-)	
	CUBIC YARD	CUBIC YARD	CUBIC YARD	CUBIC YARD	CUBIC YARD	CUBIC YARD	CUBIC YARD	CUBIC YARD	CUBIC YARD	CUBIC YARD	CUBIC YARD	CUBIC YARD
STA 0+00 TO 4+49.2	0.0	0.0	0.0	0.0	0.0	246.1	0.0	246.1	0.0	-246.1		
STA 4+49.2 TO 5+50.7	0.0	711.6	0.0	266.8	355.8	0.0	266.8	0.0	0.0	+266.8		
STA 5+50.7 TO 10+00	10.1	0.0	0.0	7.6	0.0	47.2	7.6	47.2	0.0	-39.6		
TOTAL	10.1	711.6	0.0	274.4	355.8	293.3	274.4	293.3	0.0	-18.9		

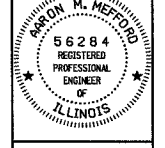


T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
107	07-09125-00-BR	WHITE	14	4
FED. ROAD DIST. NO. 9 ILLINOIS		LOST CREEK		
PROJECT * BR05-193(40)		CONTRACT * 99324		
LEC JOB # HOT1014WH				

323 W. 3RD ST.  
P.O. BOX 160  
MT. CARMEL, IL  
62863  
PHONE:  
(618)-262-8651  
FAX:  
(618)-263-3327

405 W. STATE ST.  
SUITE 1  
PRINCETON, IN  
47670  
PHONE:  
(612)-386-7611  
FAX:  
(612)-386-2612

PROFESSIONAL  
DESIGN FIRM  
LAND SURVEY &  
PROFESSIONAL  
ENGINEERING  
CORPORATION  
184-00087  
(62-032435)(35-002769)



AARON M. MEFFORD  
NAME  
*Aaron M. Mefford*  
SIGNATURE  
3-4-06  
DATE  
11-30-09  
EXPIRES

MILL SHOALS TOWNSHIP  
OVER LOST CREEK  
WHITE COUNTY, ILLINOIS

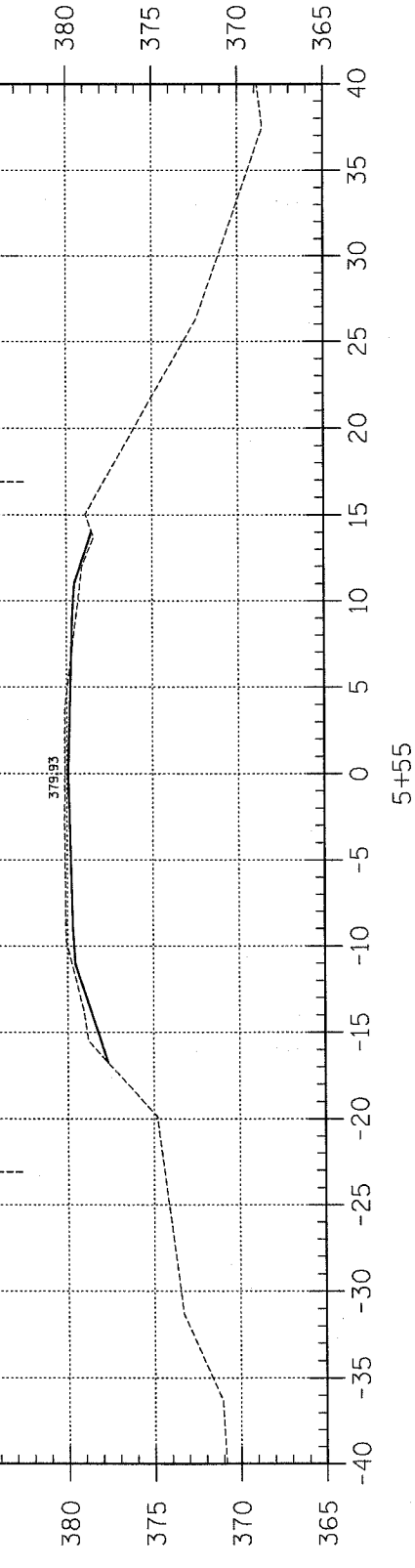
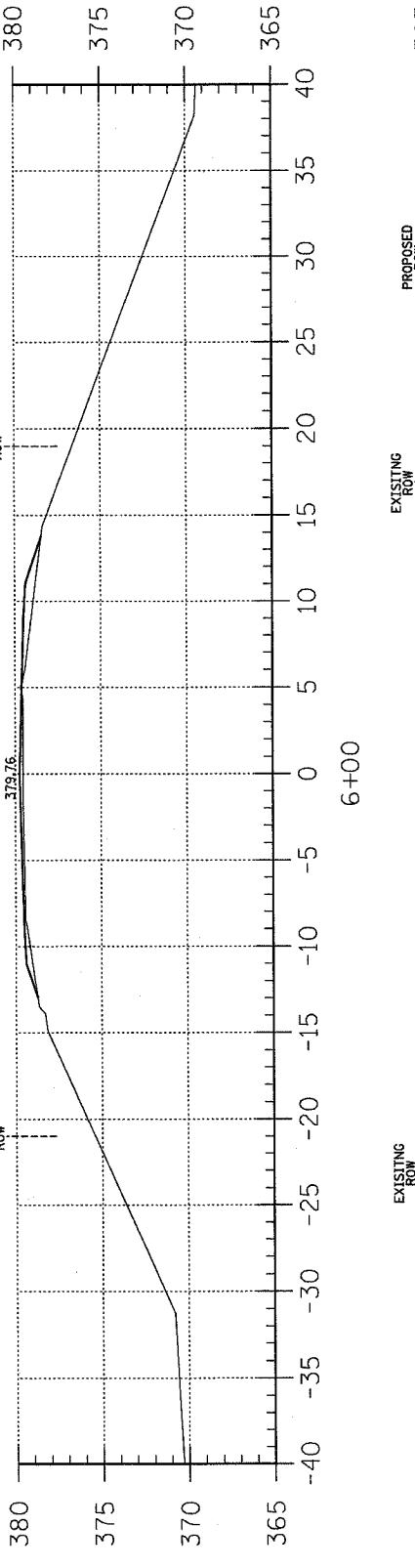
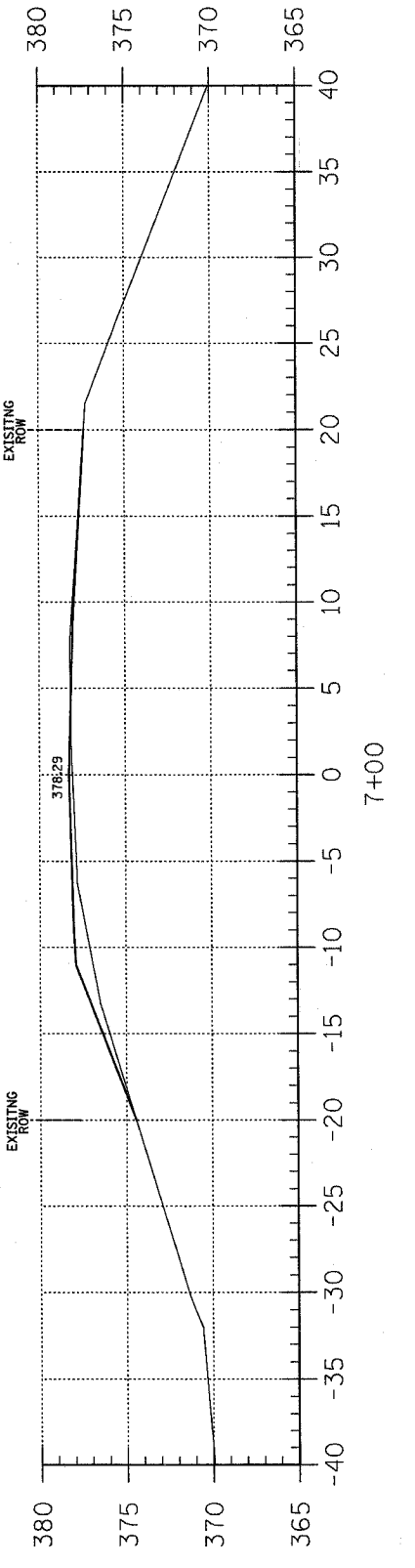
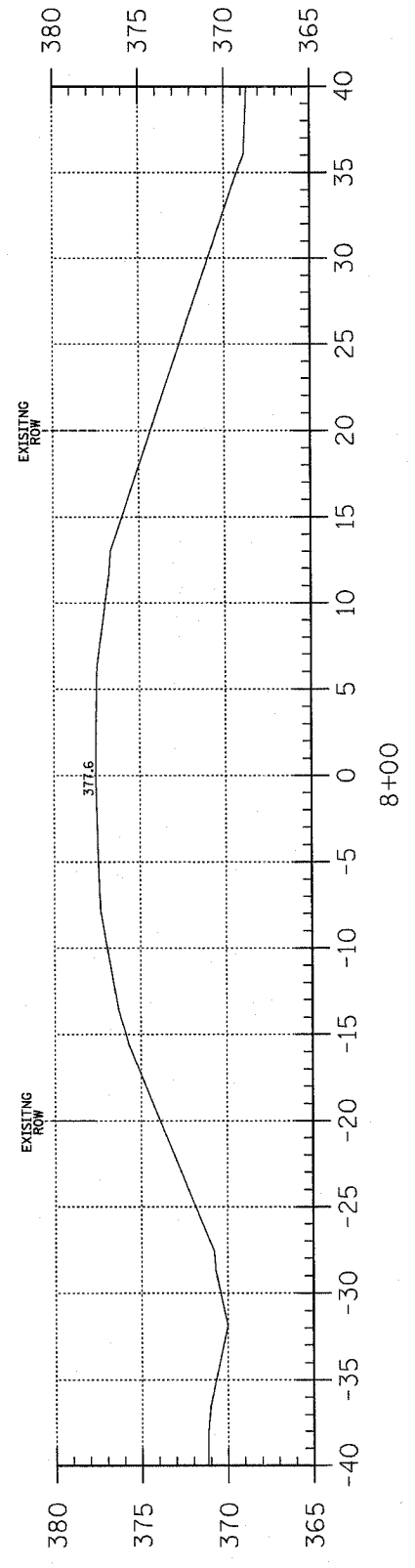
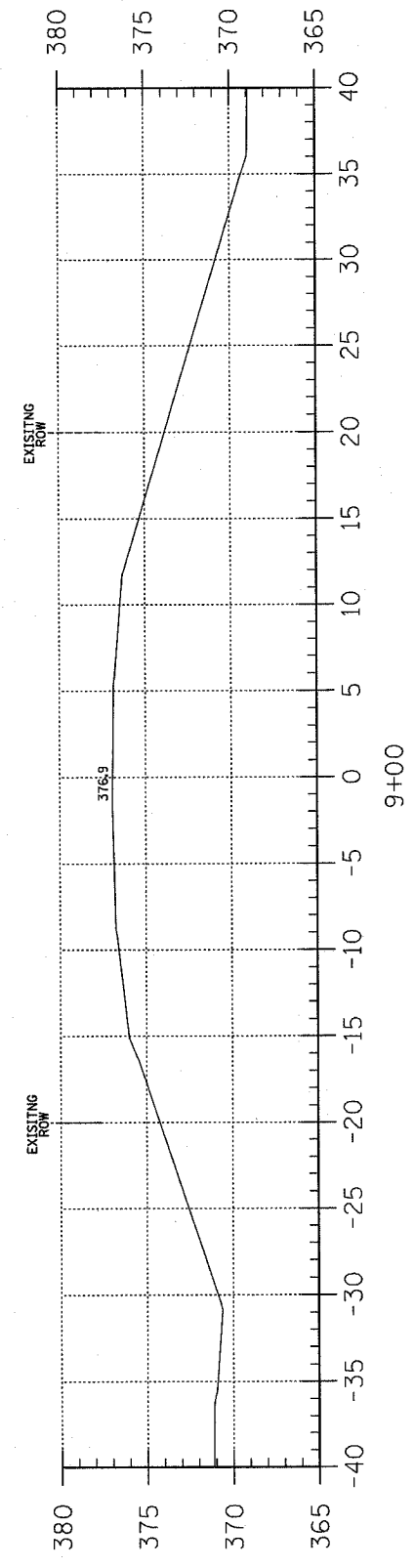
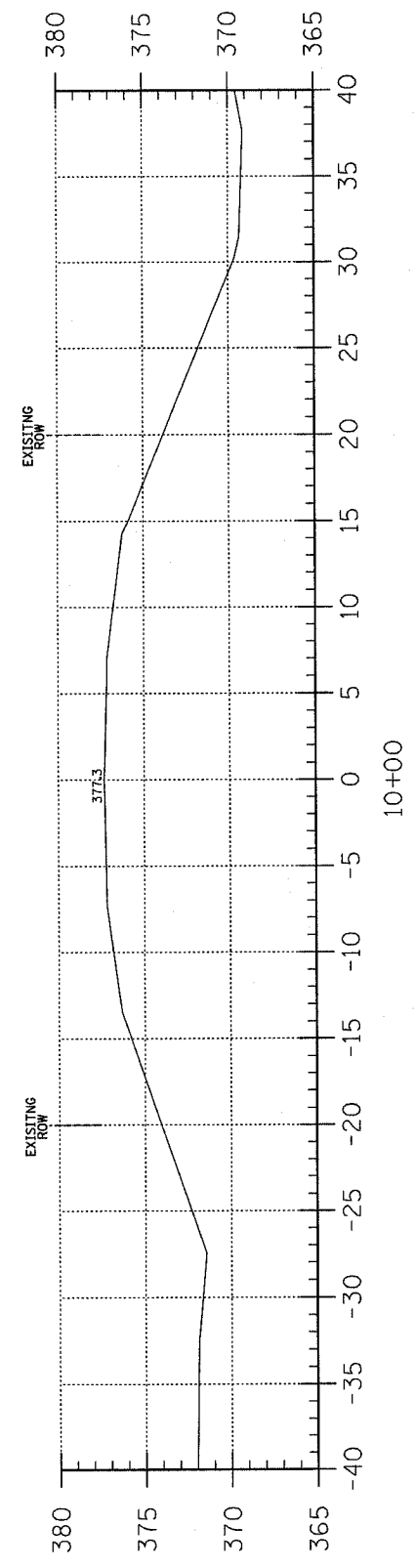
SHEET TITLE:

CROSS-SECTIONS

SCALE: 1" = 5'  
BY: AMM  
DATE: 11/29/07  
REV:

4 OF 14  
SHEETS

SHEET NO.  
4



C = 0.9  
F = 8.7

C = 0.0  
F = 5.5

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
107	07-09125-00-BR	WHITE	14	5
FED. ROAD DIST. NO. 9 ILLINOIS		LOST CREEK		
PROJECT * BR05-193(40)		CONTRACT * 99324		

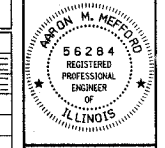
LEC JOB # HUT1014WH

388 W. 3RD ST.  
P.O. BOX 160  
MT. CARMEL, IL  
62863  
PHONE:  
(618)-262-8661  
FAX:  
(618)-263-8927

405 W. STATE ST.  
SUITE 1  
PRINCETON, IN  
47670  
PHONE:  
(812)-886-7611  
FAX:  
(812)-886-2612



PROFESSIONAL DESIGN FIRM  
LAND SURVEY & PROFESSIONAL ENGINEERING CORPORATION  
184-00887  
(82-02455)(35-002769)



AARON M. MEFFORD  
NAME  
SIGNATURE  
3-19-08  
DATE  
11-30-09  
EXPIRES

MILL SHOALS TOWNSHIP  
OVER LOST CREEK  
WHITE COUNTY, ILLINOIS

SHEET TITLE:

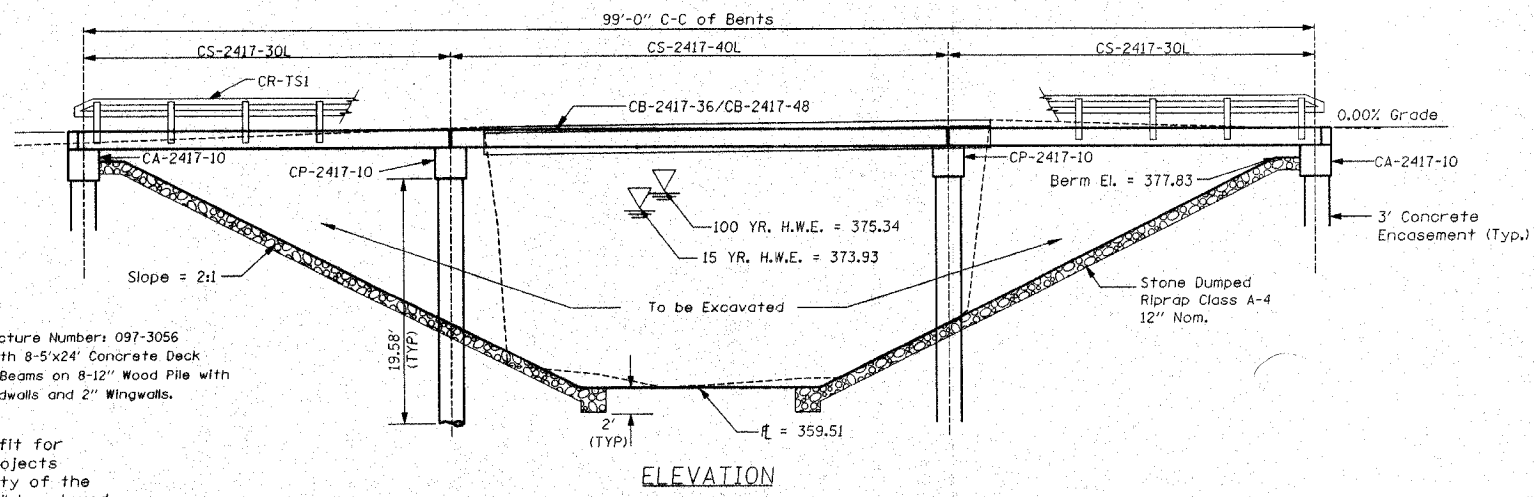
GENERAL PLAN AND ELEVATION

SCALE: NONE  
BY: A.M.M.  
DATE: 02/07  
REV:

5 OF 14 SHEETS

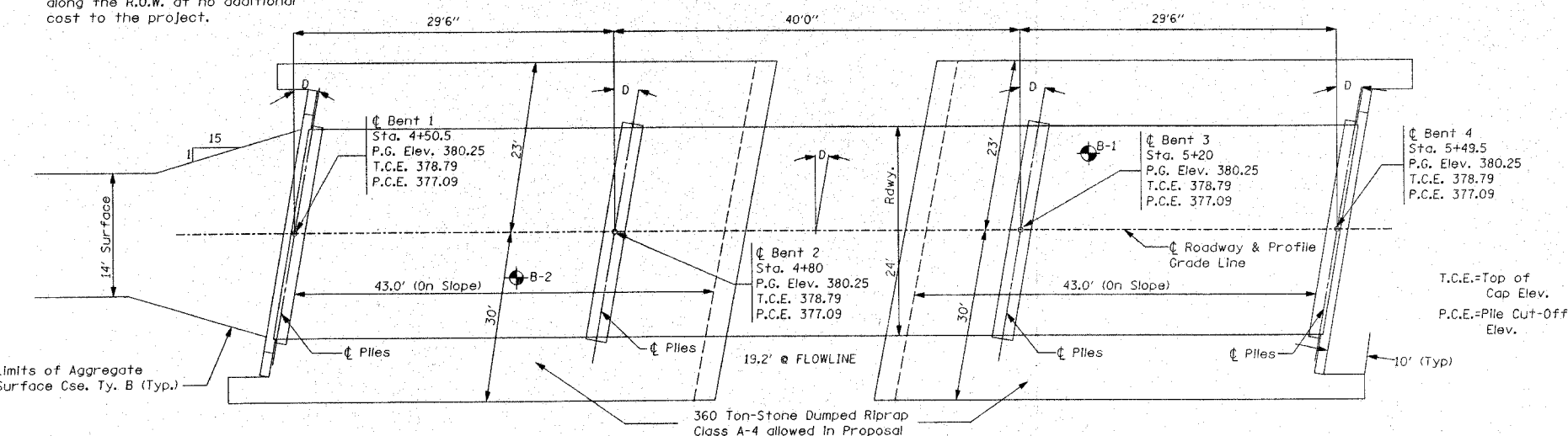
SHEET NO. 5

B.M.: I.P. ±1+12.86, 10.52' LT.  
Elev. = 380.53



Existing Bridge Sta 5+02.2; Structure Number: 097-3056  
A 40' Long Single Span Bridge with 8-5'x24" Concrete Deck Beams with 6" Depth on 8-21" I-Beams on 8-12" Wood Pile with 14" I-Beam Caps and 2" Wood Mudwalls and 2" Wingwalls.

NOTE: All Items deemed fit for use on other County projects shall become the property of the County. These items shall be stored along the R.O.W. at no additional cost to the project.



Limits of Aggregate Surface Cse. Ty. B (Typ.)

One (1) each removal of existing structures allowed in Proposal.

360 Ton-Stone Dumped Riprap Class A-4 allowed in Proposal

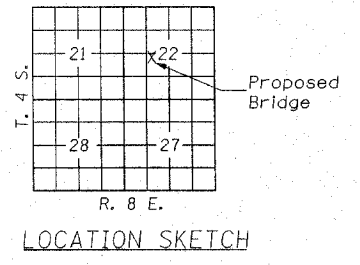
PLAN  
D = 5"

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 Specification (Adopted January 1, 2007) as shown in the "Article/Section No. Reference Table."

PILE DATA (WEST PIER)	
Type:	Steel Piles HP10X42
Nominal Required Bearing:	270 Kips
Allowable Resistance Available:	90 Kips
Estimated Length:	35 Feet/Pile
Number Required:	4
PILE DATA (WEST ABUT)	
Type:	Steel Piles HP10X42
Nominal Required Bearing:	156 Kips
Allowable Resistance Available:	52 Kips
Estimated Length:	27 Feet/Pile
Number Required:	4
PILE DATA (EAST PIER)	
Type:	Steel Piles HP10X42
Nominal Required Bearing:	270 Kips
Allowable Resistance Available:	90 Kips
Estimated Length:	33 Feet/Pile
Number Required:	4
PILE DATA (EAST ABUT)	
Type:	Steel Piles HP10X42
Nominal Required Bearing:	156 Kips
Allowable Resistance Available:	52 Kips
Estimated Length:	30 Feet/Pile
Number Required:	4

ARTICLE/SECTION NO.	REFERENCE TABLE
Previous No.	Current No.
504.06	504.06
505.04	505.04
1006.05	1006.05
1006.32	1006.32
1060.07	1060.07
STD 631026	STD 631026

STATION 5+00  
LOST CREEK  
SEC. 07-09125-00-BR BUILT 20  
PROJECT NO. BR05-193(40)  
WHITE COUNTY  
LOADING HS 20-44  
STR. NO. 097-3264



LETTERING FOR NAME PLATE  
Locate Name Plate at the Southwest Corner of the Bridge (See Sd. CN)

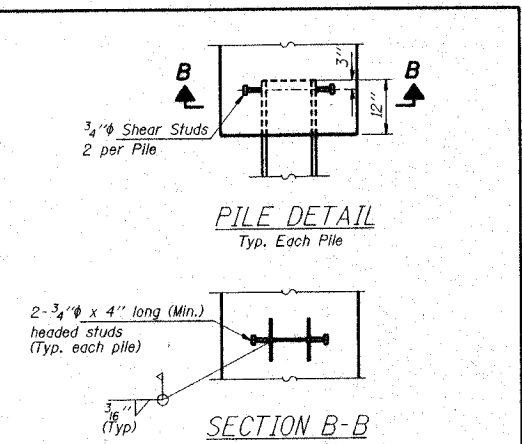
WATERWAY INFORMATION										
Drainage Area = 29.6 Sq. Mi. Low Grade Elev. = 377.83 At Sta. 7+55										
Flood	Freq. Yr.	Q C.F.S.	Opening Sq.Ft.		Natural H.W.E.		Head-Ft.		Headwater El.	
			Exist.	Prop.	Exist.	Prop.	Exist.	Prop.	Exist.	Prop.
Design	15	3582	489	690.1	373.93	0.15				374.08
Base	100	5656	544	802.1	375.34	0.98	0.38	376.32		375.72
Max. Calc.	500	7344								

GENERAL NOTES

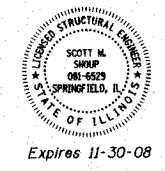
- The Contractor shall drive one test pile, as specified, in a permanent location as directed by the Engineer before ordering the remaining piles.
- See Special Provisions for boring logs.
- A Corrosion Inhibitor, as covered in the Special Provisions, shall be used in the concrete for Precast Prestressed Concrete Deck Beams.
- The Bit, Conc. Surf. Cse. and the Waterproofing Membrane System shown in these Plans shall not be provided.
- The Steel H-Piles shall be according to AASHTO M270 Grade 50.
- All HP piles shall be oriented with the strong axis along the centerline of the abutment.

Item	Unit	Super	Sub. Piers	Abuts.	Total
Removal of Existing Structures	L Sum				1
Bit, Conc. Surf. Cse.	Tons				
Waterproofing Membrane System	Sq.Yds.				
Concrete Structures	Cu.Yds.		14.8	16.6	31.4
P.P. Conc. Dk. Bm. 17" Dp.	Sq.Ft.	2400			2400
Steel Rolling, Type S1	Lin.Ft.	200			200
Reinforcement Bars	Lbs.		1860	2220	4080
Furnishing Steel Piles HP10X42	Lin.Ft.		272	228	500
Driving Piles	Lin.Ft.		272	228	500
Test Pile Steel HP10X42	Each		1	1	1
Name Plates	Each		1	1	1
Concrete Encasement	Cu.Yds.		13.5	2.1	15.6
Stud Shear Connectors	Each		16	16	32

NOTE: Four (4) Each Curled End Sections required. Item to be included in Steel Rolling.



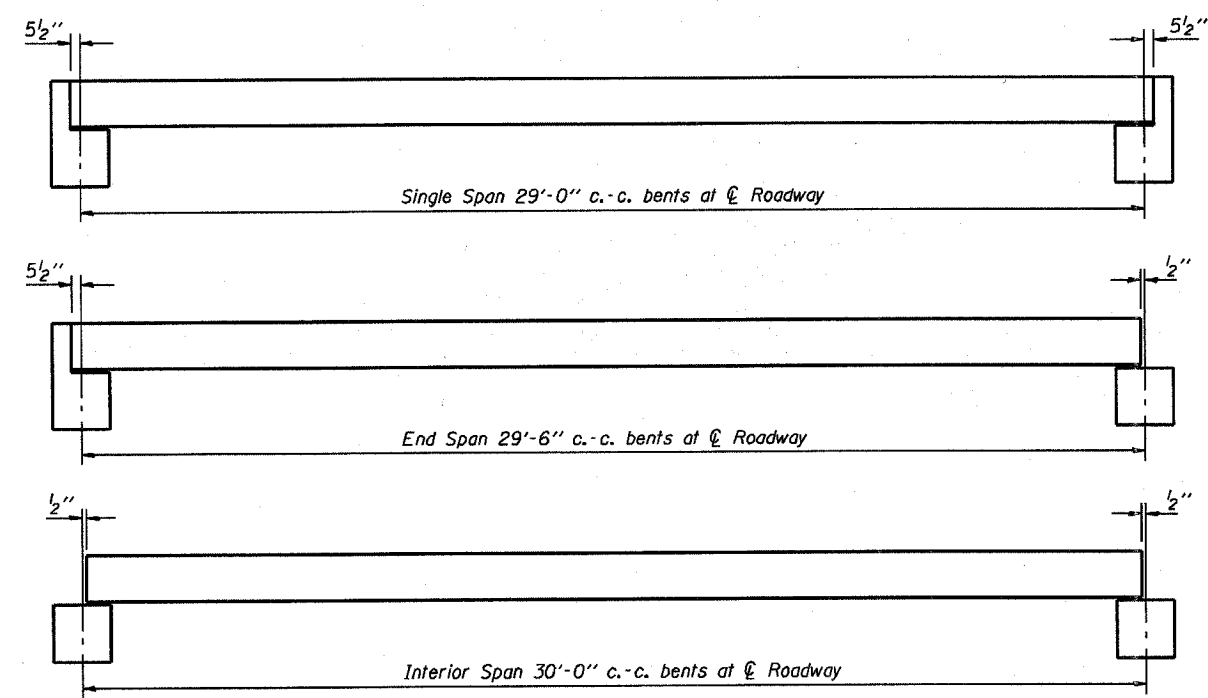
SEISMIC DATA  
Seismic Performance Category (SPC) = B  
Bedrock Acceleration Coefficient (A) = 0.10g  
Site Coefficient (S) = 1.2



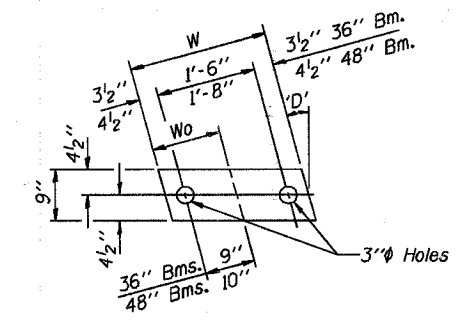
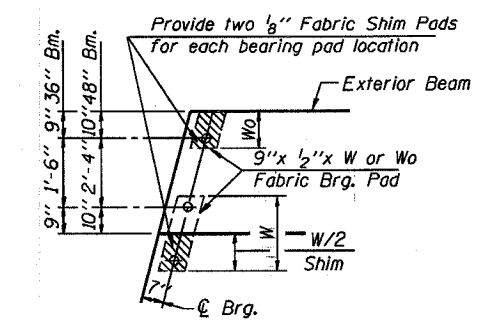
1-29-2008  
ILLINOIS/STRUCTURAL NO. 6529  
Complies with 2002 AASHTO Specifications for Seismic Design of Bridges.

DESIGN SPECIFICATIONS

2002 AASHTO  
HS 20-44 Loading, Load Factor Design

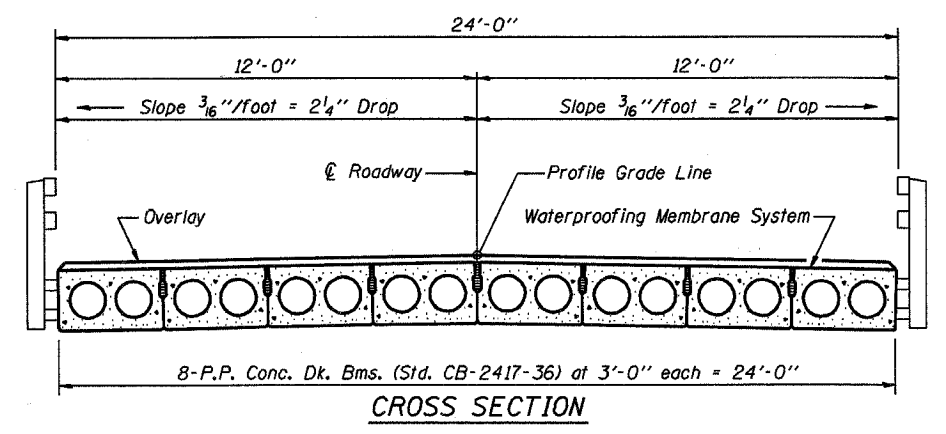


TYPICAL ELEVATIONS

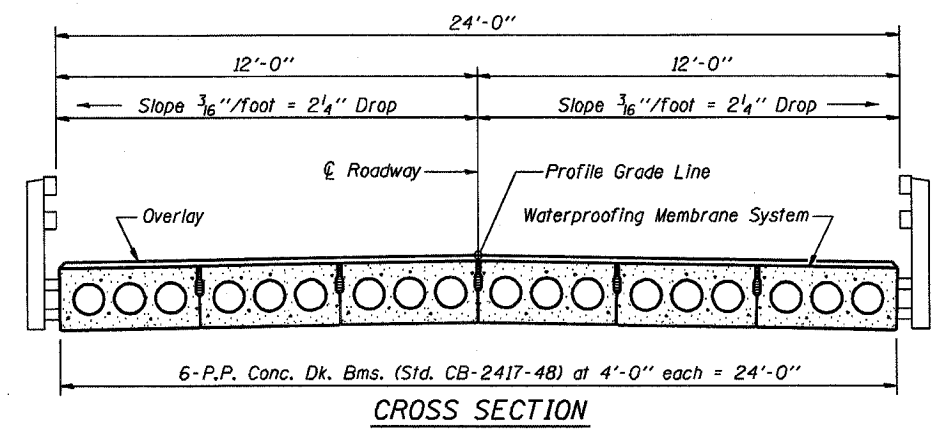


Beam	W	Wo
36"	2'-1"	1'-0 1/2"
48"	2'-5"	1'-2 1/2"

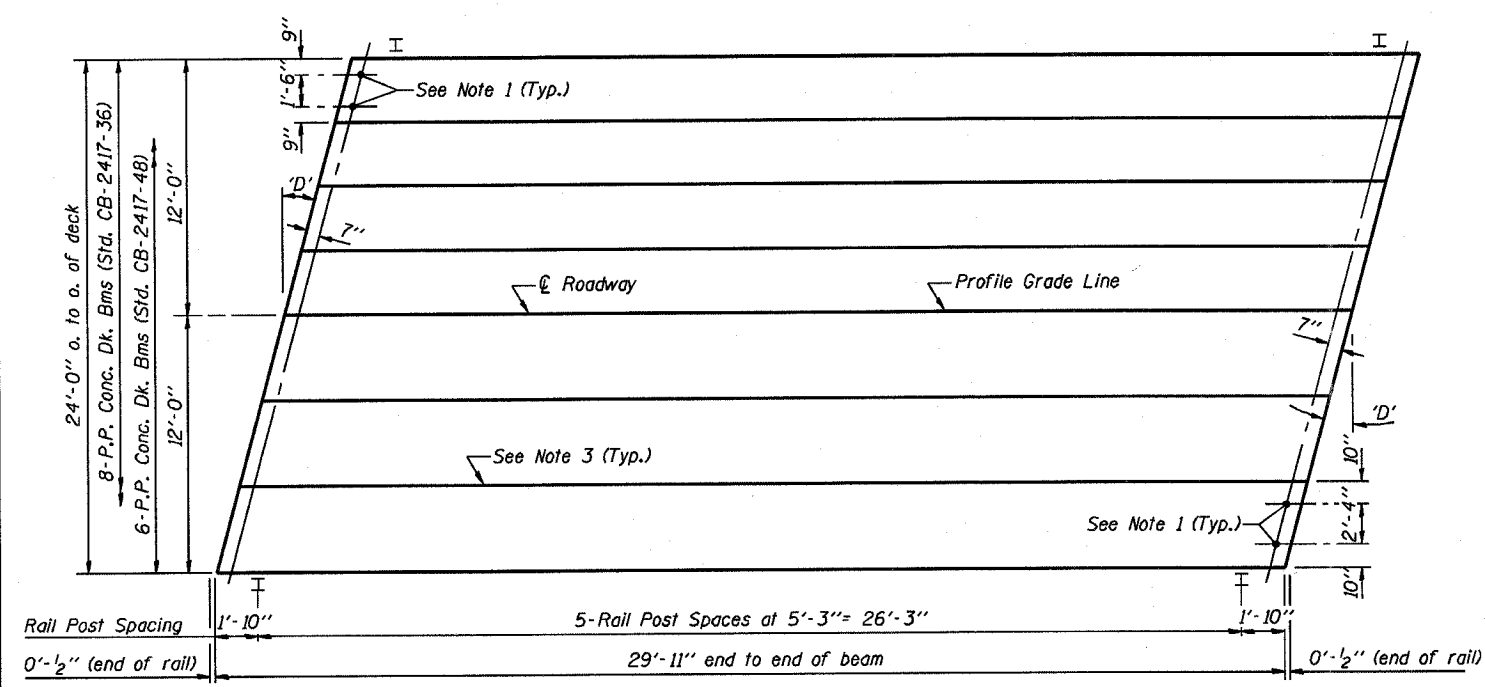
1/2" FABRIC BRG. PAD DETAILS



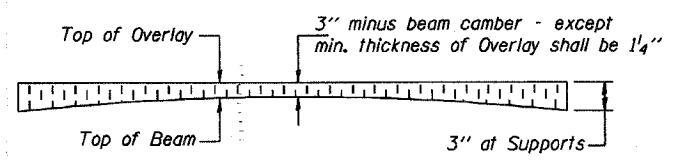
CROSS SECTION



CROSS SECTION



PLAN  
(D' = Designated Skew Angle)

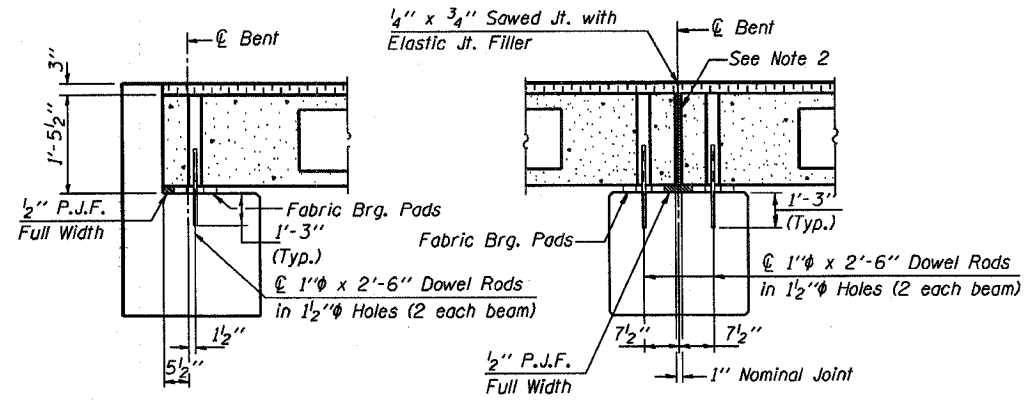


PROFILE OF OVERLAY

DIMENSIONS 'A' AND 'B'

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

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



SECTION AT ABUTS.  
(Along centerline Beams)

SECTION AT PIERS  
(Along centerline Beams)

QUANTITIES FOR ONE SPAN

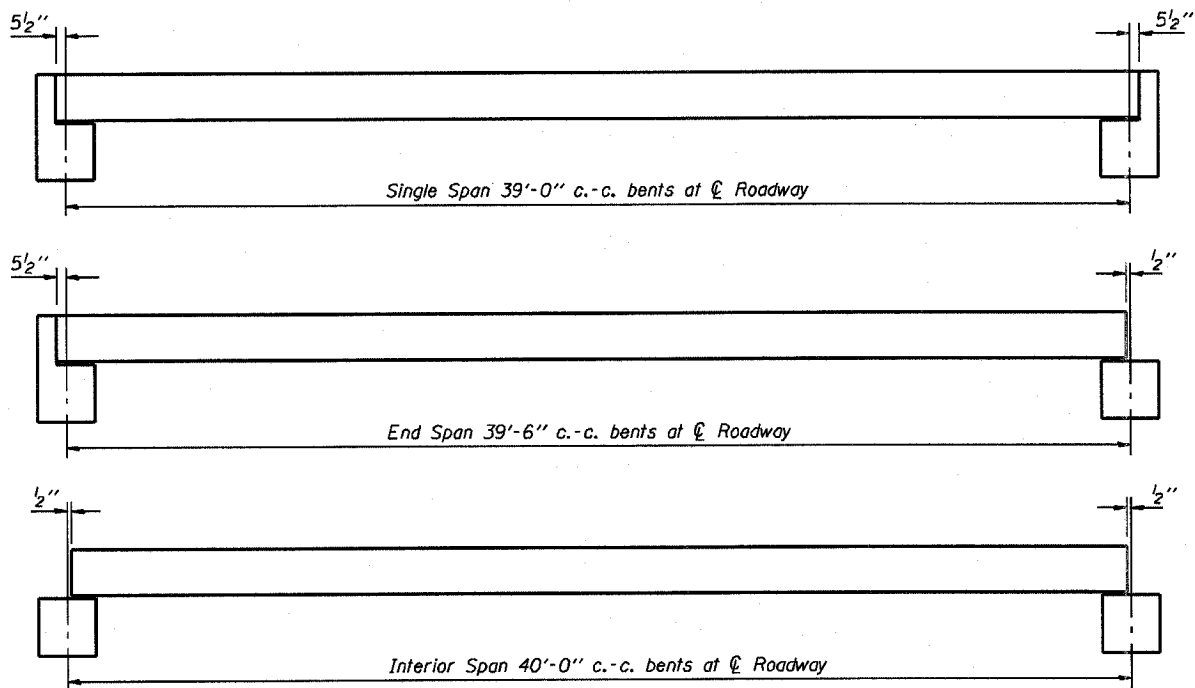
P.P. Conc. Dk. Bm. 17" Dp.	720 Sq. Ft.
Steel Railing	60 Ft.
Waterproofing Membrane System	80.0 Sq. Yds.
Portland Cement Mortar	210 Ft.
Fairing Course	150 Ft.

Note: Quantity of overlay for one span = 12.0 Tons

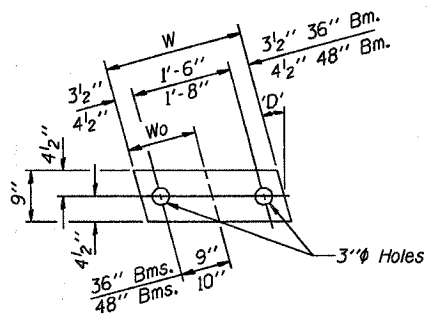
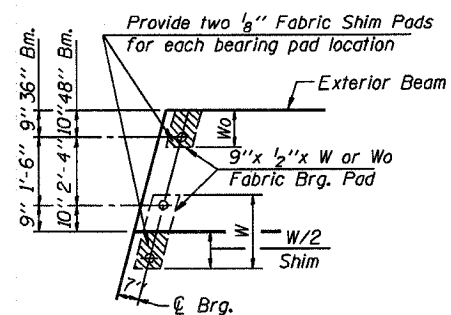
P.P.C. DECK BEAM SUPERSTRUCTURE			
24' RDWY.	17" BMS.	30' SPAN	LEFT
STANDARD CS-2417-30L			

Illinois Department of Transportation  
 PASSED APRIL 4, 2005  
 Approved by: *Thomas J. ...*  
 Engineer of Bridge Design  
 APPROVED APRIL 4, 2005  
 Approved by: *Ralph E. ...*  
 Engineer of Bridges and Structures



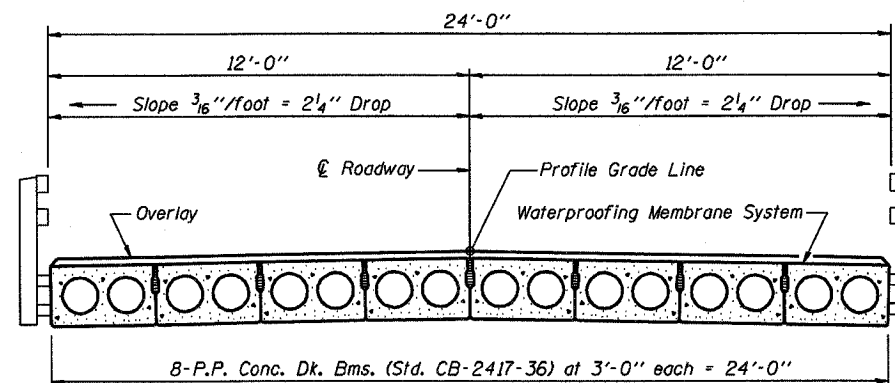


TYPICAL ELEVATIONS

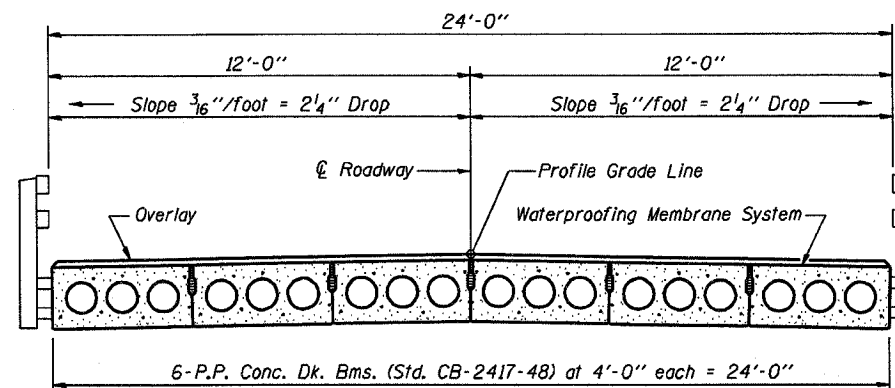


Beam	W	Wo
36"	2'-1"	1'-0 1/2"
48"	2'-5"	1'-2 1/2"

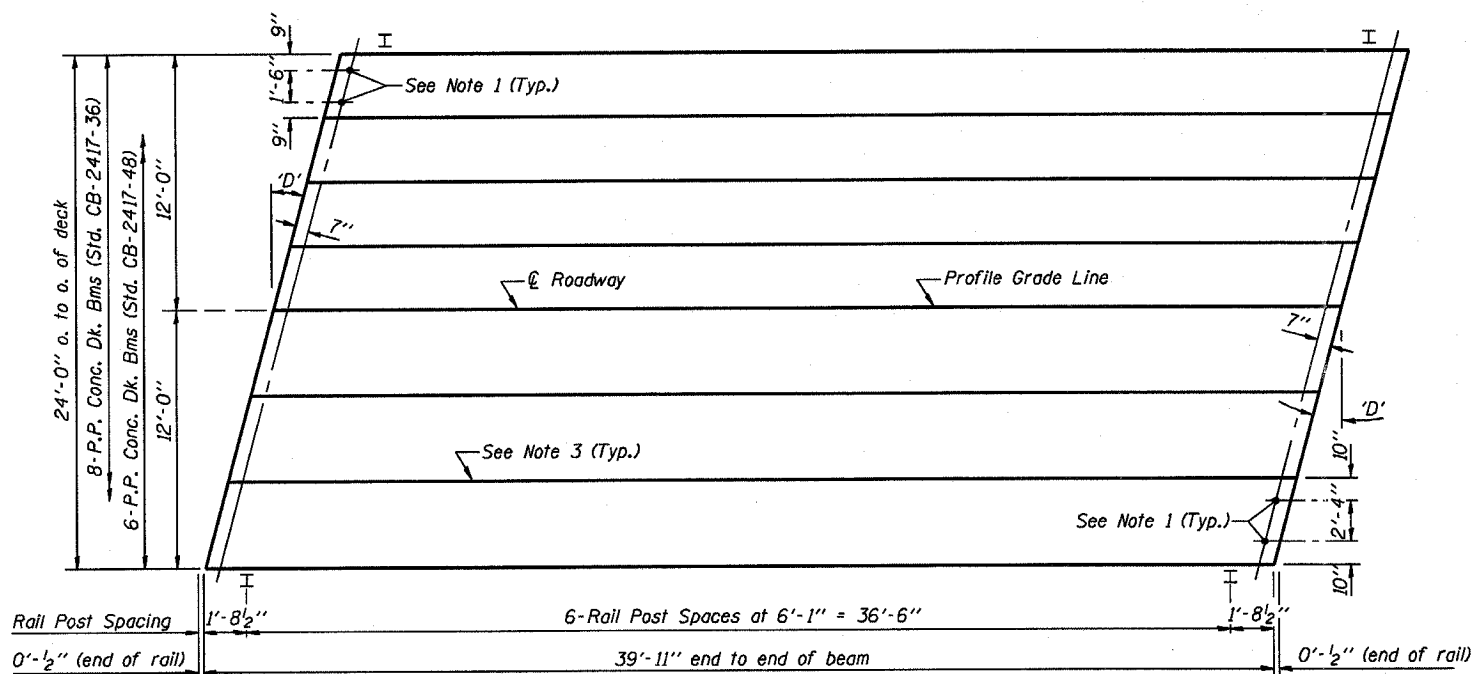
1/2" FABRIC BRG. PAD DETAILS



CROSS SECTION

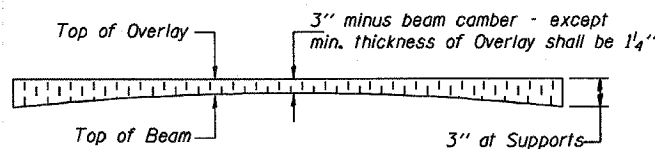


CROSS SECTION



PLAN

("D" = Designated Skew Angle)



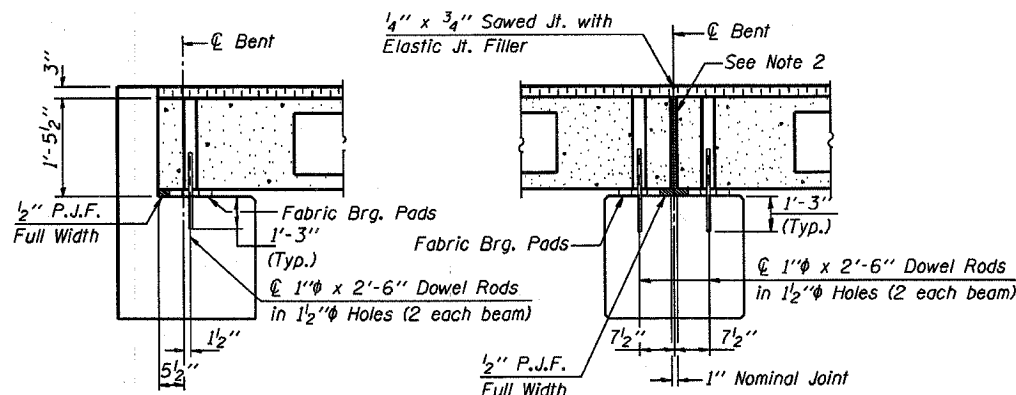
PROFILE OF OVERLAY

DIMENSIONS 'A' AND 'B'

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

NOTES

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



SECTION AT ABUTS.  
(Along centerline Beams)

SECTION AT PIERS  
(Along centerline Beams)

QUANTITIES FOR ONE SPAN

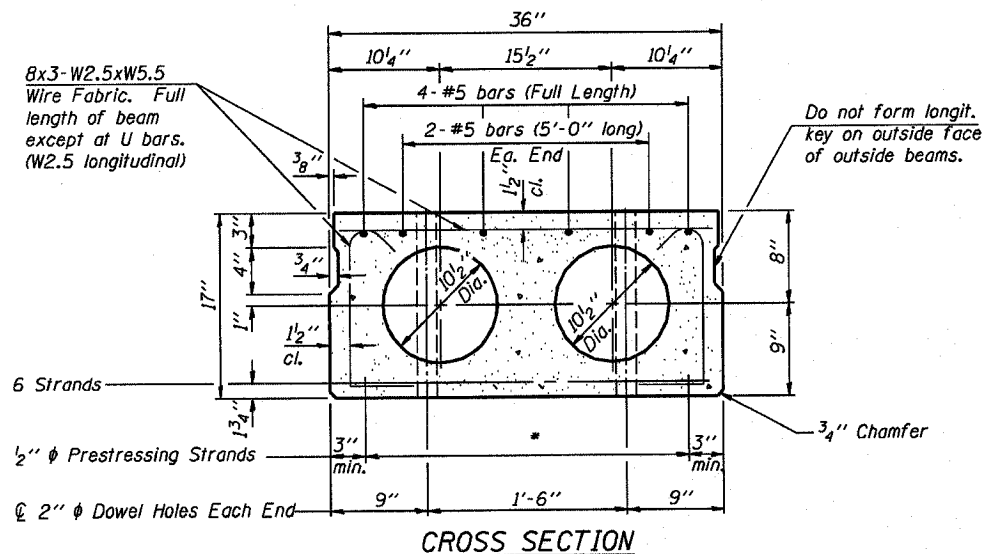
P.P. Conc. Dk. Bm. 17" Dp.	960 Sq. Ft.
Steel Railing	80 Ft.
Waterproofing Membrane System	106.7 Sq. Yds.
Portland Cement Mortar	280 Ft. 36"
Fairing Course	200 Ft. 48"

Note: Quantity of overlay for one span = 13.2 Tons

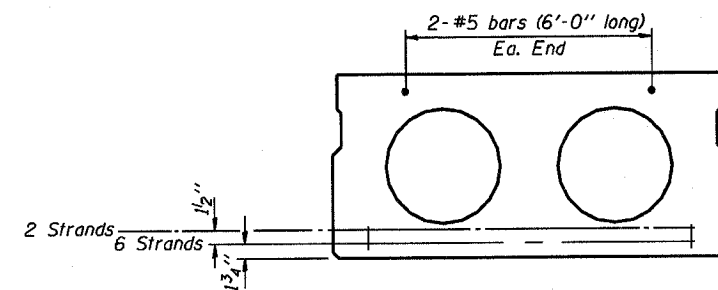
P.P.C. DECK BEAM  
SUPERSTRUCTURE

24' RDWY.	17" BMS.	40' SPAN	LEFT
STANDARD CS-2417-40L			

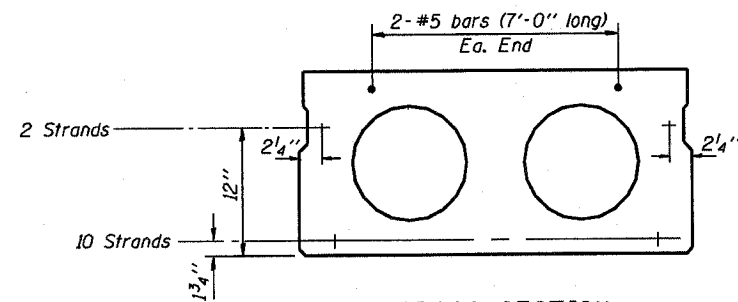
Illinois Department of Transportation  
 PASSED APRIL 4, 2005  
 Engineer of Bridge Design  
 APPROVED APRIL 4, 2005  
 Engineer of Bridges and Structures



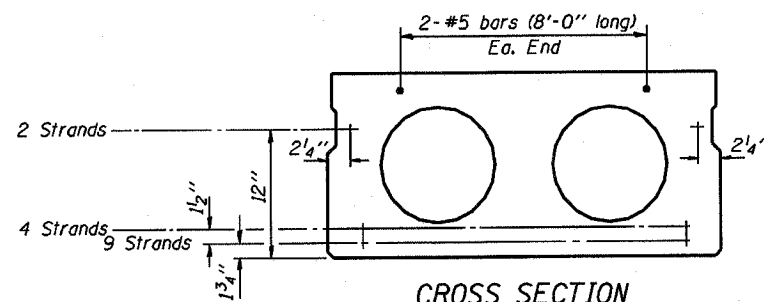
**CROSS SECTION**  
(25' SPAN)



**CROSS SECTION**  
(30' SPAN)

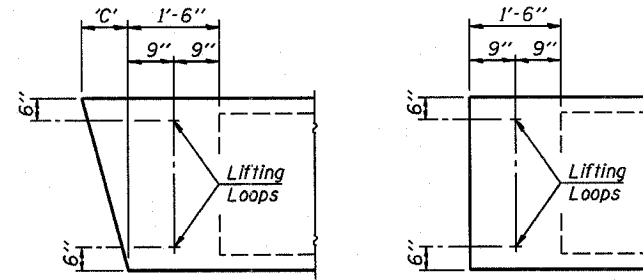


**CROSS SECTION**  
(35' SPAN)



**CROSS SECTION**  
(40' SPAN)

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



**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.

**DIMENSION 'C'**

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

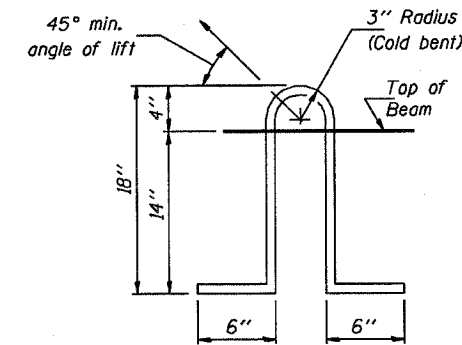
**\* TRANSVERSE STRAND PLACEMENT GUIDELINES**

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 1/2".

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

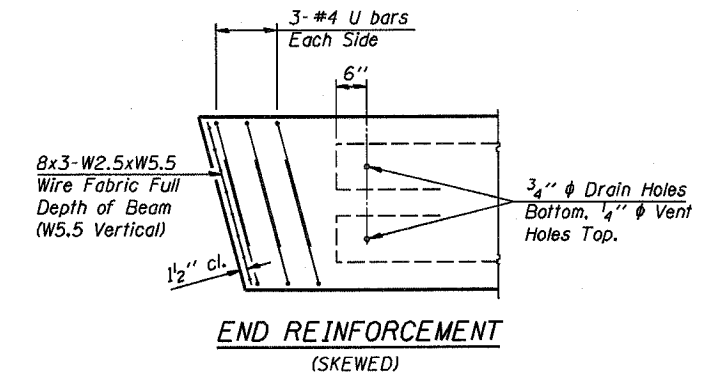
**NOTES**

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. Rail Post anchor devices shall be cast into outside beam as elsewhere specified.
5. 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".
6. 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.

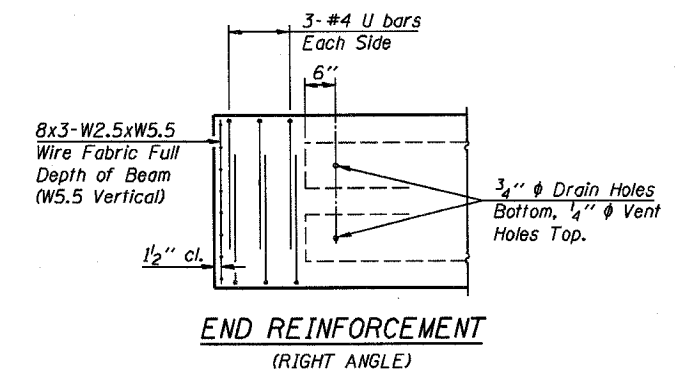


**LIFTING LOOP DETAIL**

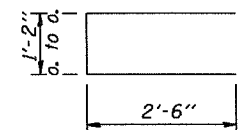
Lifting loops shall be 2 1/2" φ-270 ksi strands, as shown. Alternate approved lifting devices are also acceptable.



**END REINFORCEMENT**  
(SKEWED)



**END REINFORCEMENT**  
(RIGHT ANGLE)



**BAR U**

**MIN. BAR LAP**

#5 bars = 1'-8"

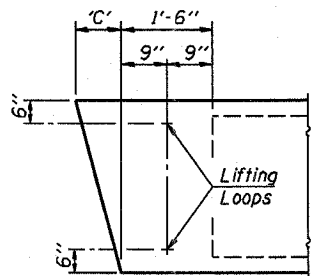
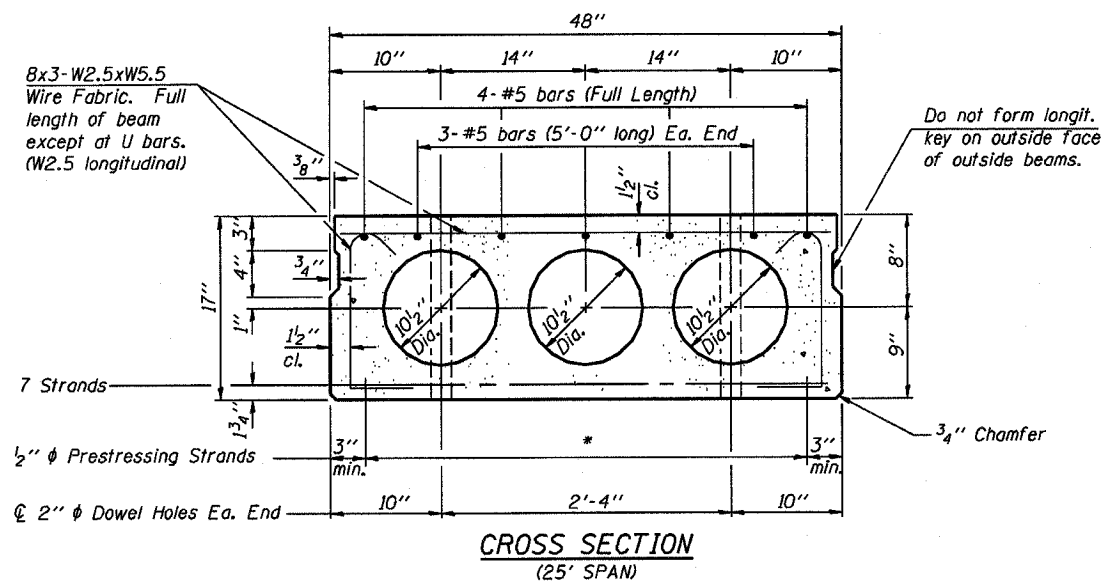
**DESIGN STRESSES**

- $f'_c = 5,000$  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.

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

<b>P.P.C. DECK BEAM DETAILS</b>	
24' ROADWAY	17" x 36" BEAMS
STANDARD CB-2417-36	





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.

**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

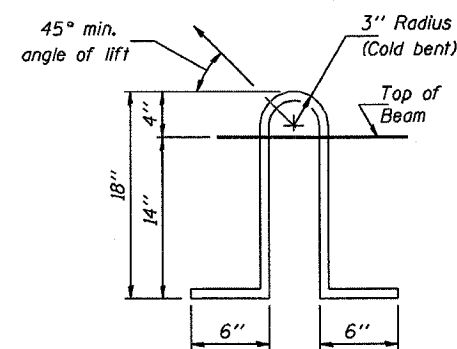
**\* TRANSVERSE STRAND PLACEMENT GUIDELINES**

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".

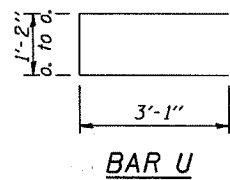
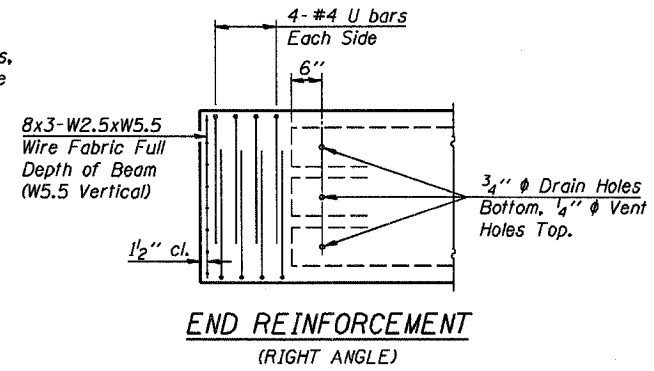
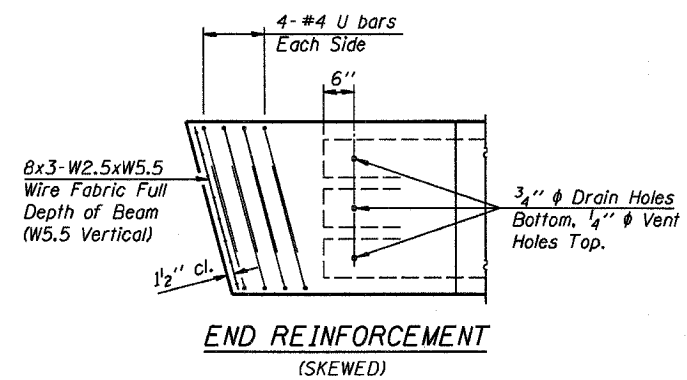
Vertical placement of strands shall not be adjusted to satisfy the above guidelines.

**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. Rail Post anchor devices shall be cast into outside beam as elsewhere specified.
5. 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".
6. 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.

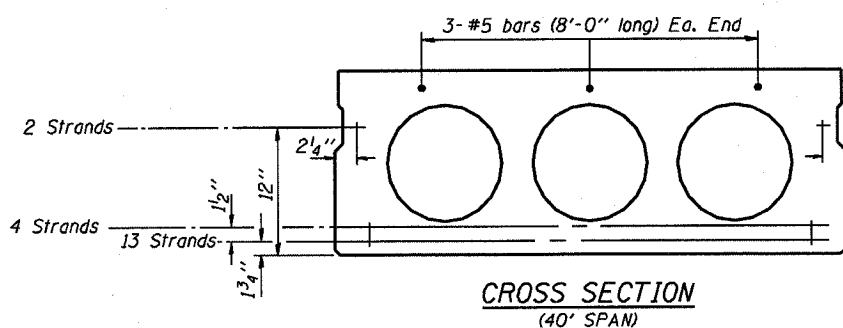
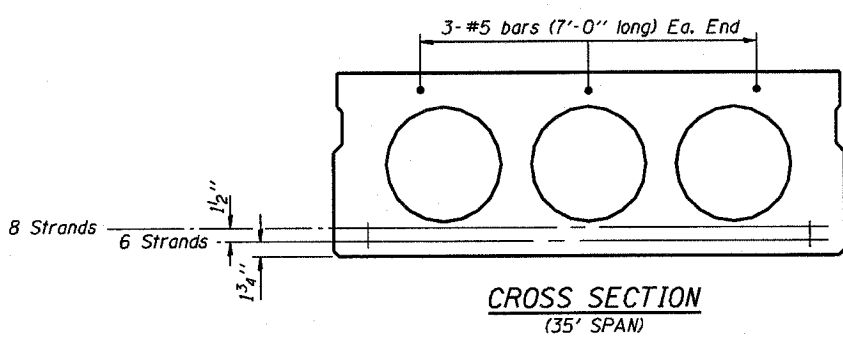
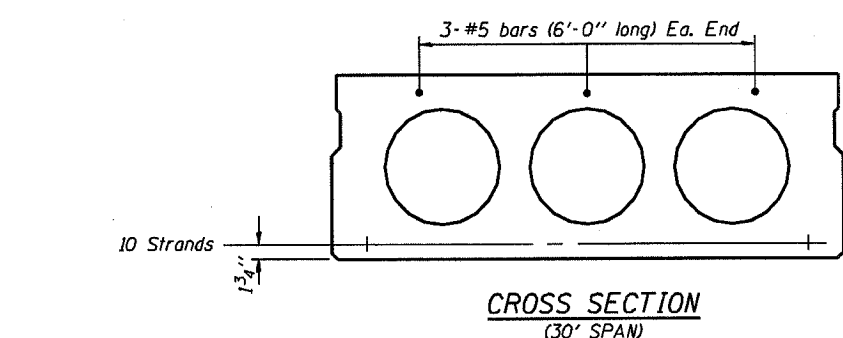


Lifting loops shall be 2 1/2" diameter 270 ksi strands, as shown. Alternate approved lifting devices are also acceptable.



**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" diameter strand)
- $f_{sl} = 201,960$  p.s.i. (1/2" diameter strand)
- $f_y = 60,000$  p.s.i.



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

Illinois Department of Transportation

PASSED APRIL 4, 2005

Thomson J. Hemminger  
Engineer of Bridge Design

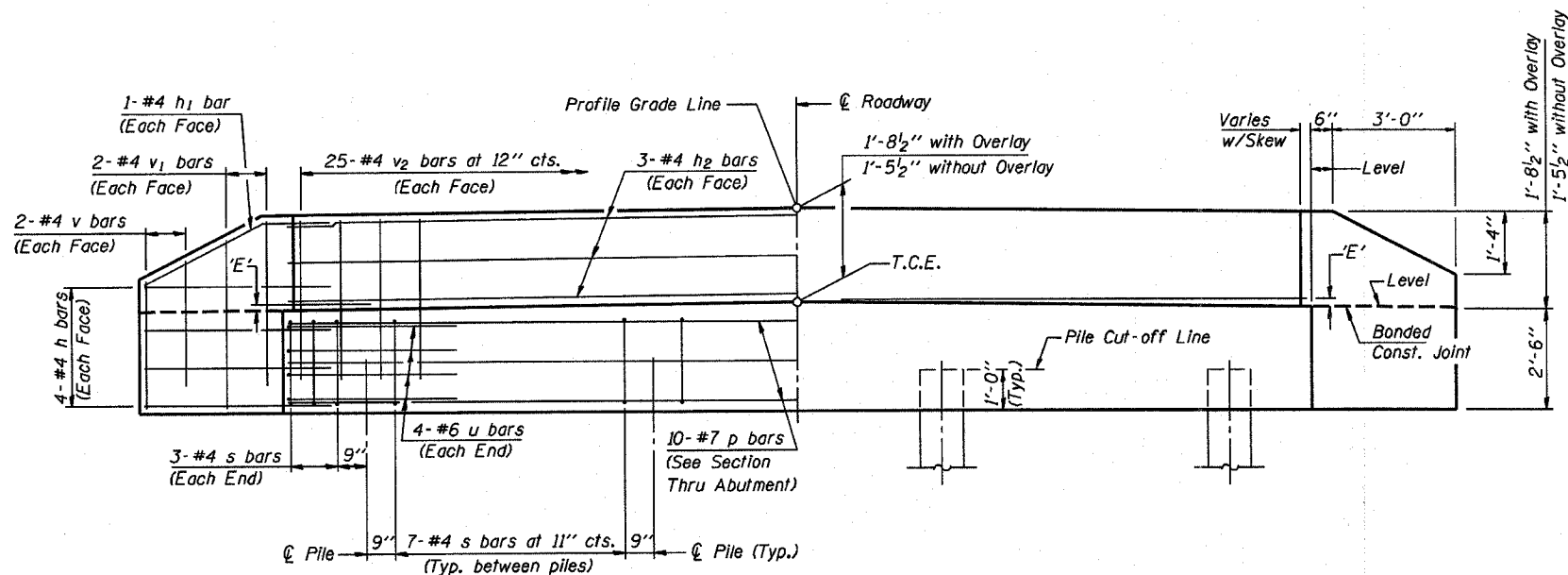
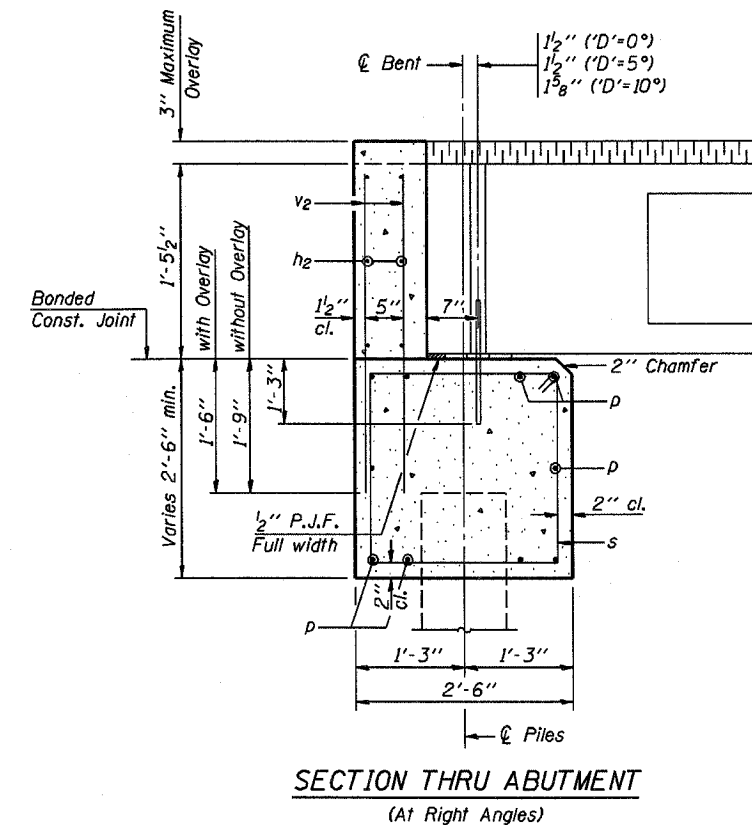
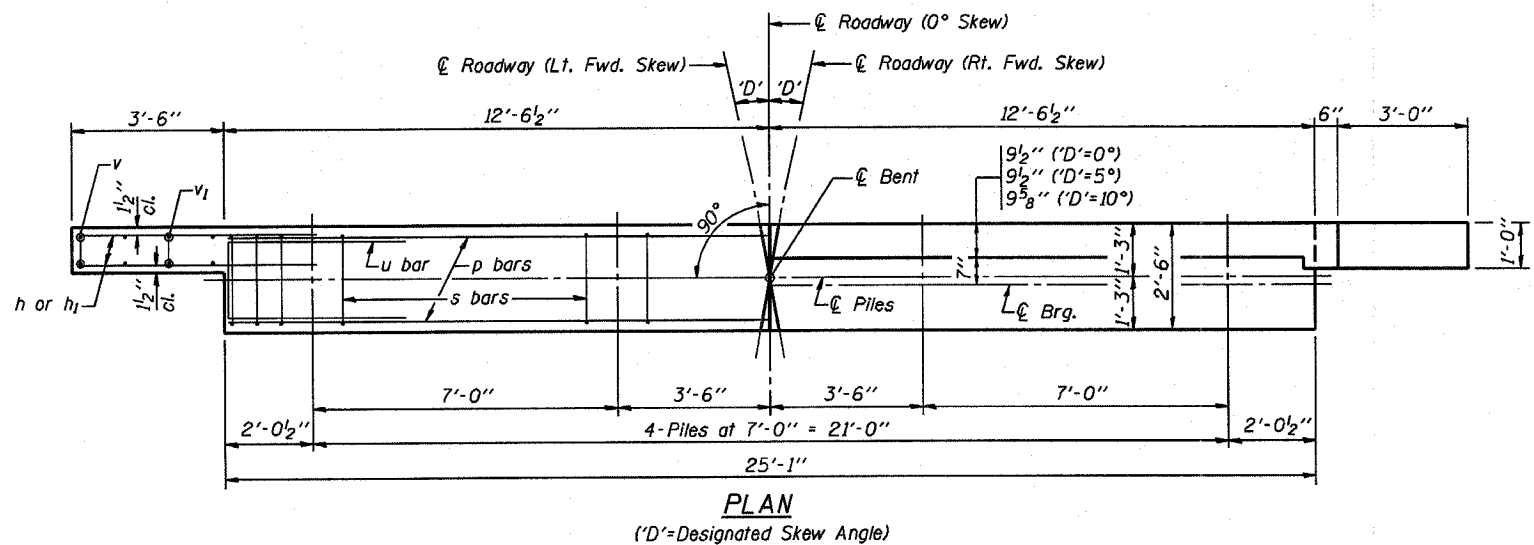
APPROVED APRIL 4, 2005

Ralph E. Anderson  
Engineer of Bridges and Structures

**P.P.C. DECK BEAM DETAILS**

24' ROADWAY | 17" x 48" BEAMS

STANDARD CB-2417-48



**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**

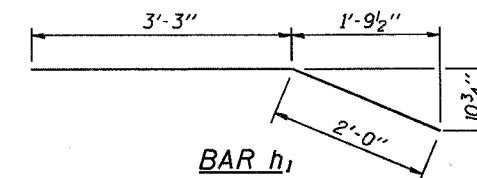
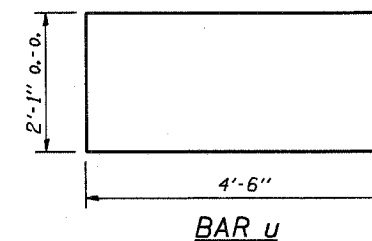
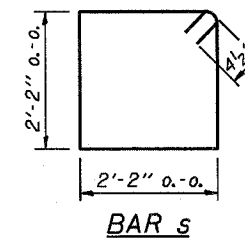
- The Backwall and the portion of the Wingwalls above the bonded construction joint shall be cast against the in-place beam.
- Reinforcement bars shall conform to the requirements of A.A.S.H.T.O. M-31 or M-322, Grade 60.
- Space reinforcement in cap to miss anchor bolts.

**MAXIMUM PILE LOADS**

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

**DESIGN STRESSES**

f'c = 3,500 psi  
fy = 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	2'-6"	—
v1	8	#4	3'-5"	—
v2	50	#4	3'-1"	—
Concrete Structures			8.3 Cu. Yds.	
Reinforcement Bars			1110 Lb.	

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

Illinois Department of Transportation

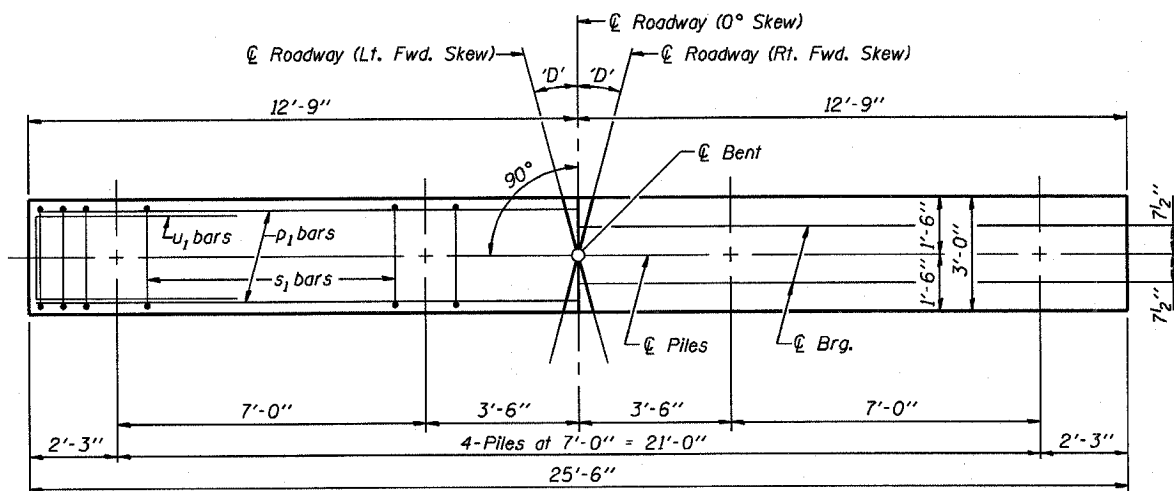
PASSED APRIL 4, 2005

Thomaz J. Tomaszewski  
Engineer of Bridge Design

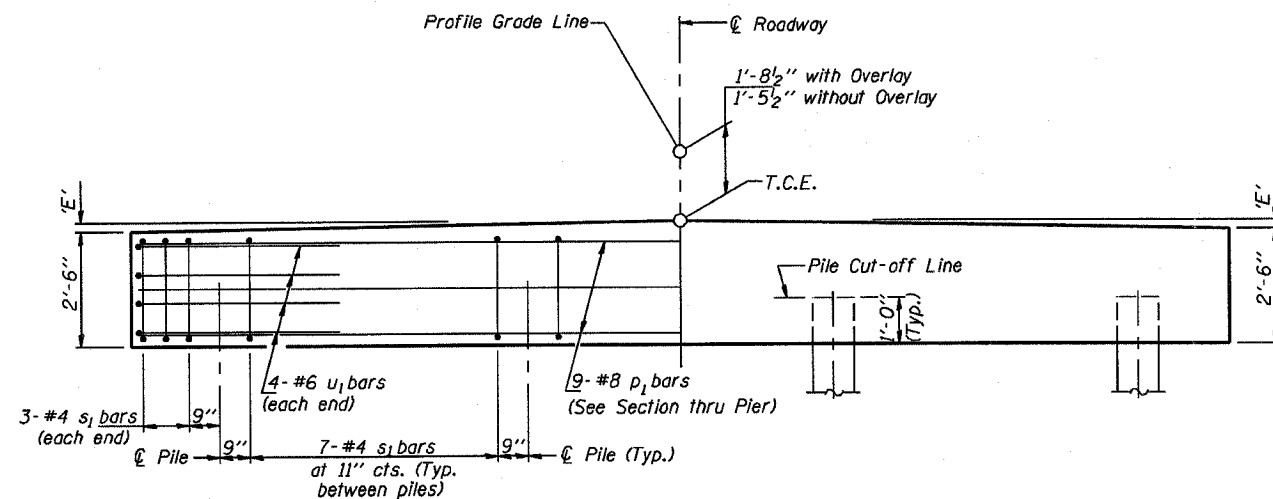
APPROVED APRIL 4, 2005

Ralph E. Anderson  
Engineer of Bridges and Structures

1881-1-1 07/05/01



**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 <sup>3</sup> / <sub>8</sub> "	2 <sup>3</sup> / <sub>8</sub> "	2 <sup>3</sup> / <sub>8</sub> "	2 <sup>3</sup> / <sub>8</sub> "	2 <sup>3</sup> / <sub>8</sub> "	2 <sup>3</sup> / <sub>8</sub> "
Over 0% to 1%	2 <sup>3</sup> / <sub>8</sub> "	2 <sup>3</sup> / <sub>8</sub> "	2 <sup>1</sup> / <sub>4</sub> "	2 <sup>3</sup> / <sub>8</sub> "	2 <sup>1</sup> / <sub>8</sub> "	2 <sup>1</sup> / <sub>2</sub> "
Over 1% to 2%	2 <sup>3</sup> / <sub>8</sub> "	2 <sup>3</sup> / <sub>8</sub> "	2 <sup>1</sup> / <sub>8</sub> "	2 <sup>1</sup> / <sub>2</sub> "	1 <sup>7</sup> / <sub>8</sub> "	2 <sup>3</sup> / <sub>4</sub> "
Over 2% to 3%	2 <sup>3</sup> / <sub>8</sub> "	2 <sup>3</sup> / <sub>8</sub> "	2"	2 <sup>5</sup> / <sub>8</sub> "	1 <sup>5</sup> / <sub>8</sub> "	3"
Over 3% to 4%	2 <sup>3</sup> / <sub>8</sub> "	2 <sup>3</sup> / <sub>8</sub> "	1 <sup>7</sup> / <sub>8</sub> "	2 <sup>3</sup> / <sub>4</sub> "	1 <sup>3</sup> / <sub>8</sub> "	3 <sup>1</sup> / <sub>4</sub> "

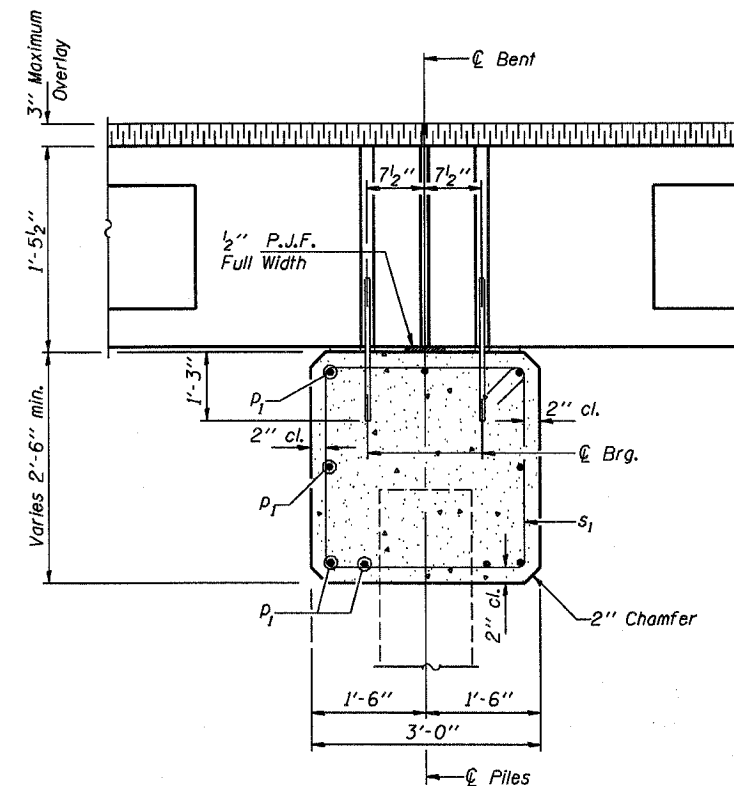
**MAXIMUM PILE LOADS**

SPAN	TONS
25'	34
30'	38
35'	42
40'	45

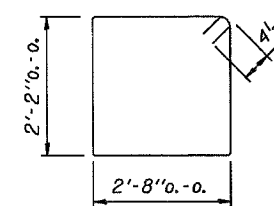
Longer of Either Span Supported by Pier.

**DESIGN STRESSES**

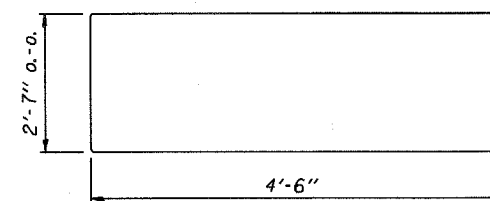
f'c = 3,500 psi  
fy = 60,000 psi



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



**BAR s<sub>1</sub>**



**BAR u<sub>1</sub>**

**BILL OF MATERIAL FOR ONE PIER**

Bar	No.	Size	Length	Shape
p <sub>1</sub>	9	#8	25'-2"	—
s <sub>1</sub>	27	#4	10'-5"	□
u <sub>1</sub>	8	#6	11'-7"	▭
Concrete Structures			7.4	Cu. Yds.
Reinforcement Bars			930	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**

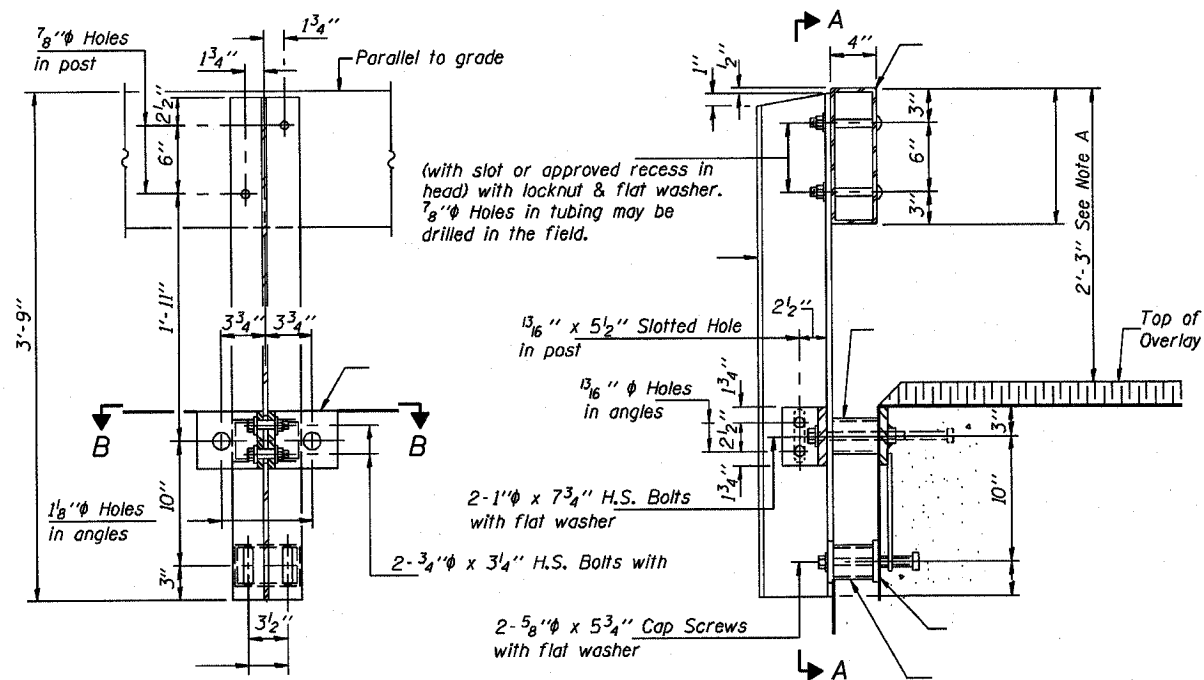
24' RDWY.	17" BMS.	'D'=0°, 5° OR 10°
STANDARD CP-2417-10		

Illinois Department of Transportation  
 PASSED APRIL 4, 2005  
 Approved by: *Thom J. Sengalala*  
 Engineer of Bridge Design  
 APPROVED APRIL 4, 2005  
 Approved by: *Ralph E. Anderson*  
 Engineer of Bridges and Structures

All other steel shapes and plates shall conform to the requirements of

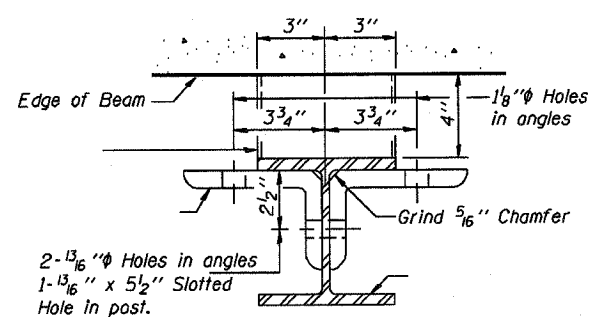
All field drilled holes shall be coated with an approved zinc rich paint before erection.

the angles to the concrete shall be tightened to a snug fit and given tightened to a snug fit only.

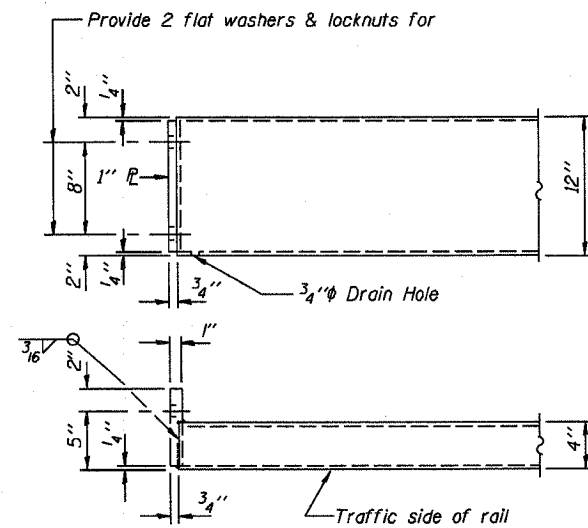


SECTION A-A

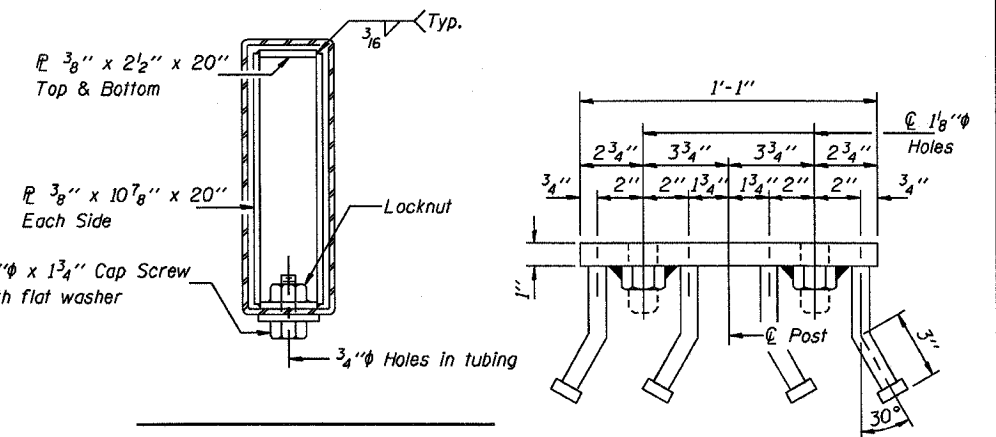
SECTION AT RAIL POST



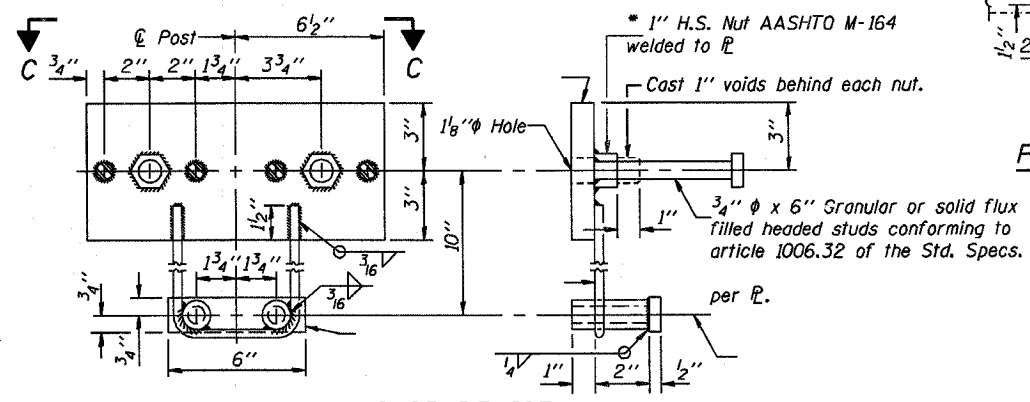
SECTION B-B



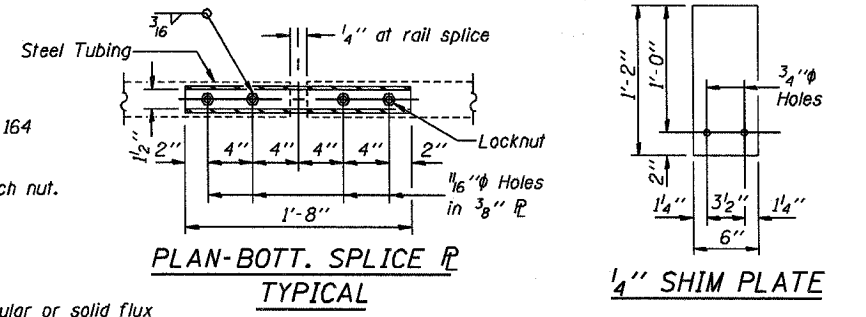
END OF RAIL DETAILS



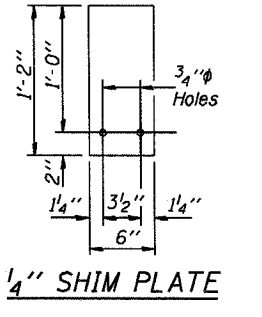
VIEW C-C



ANCHOR DEVICE

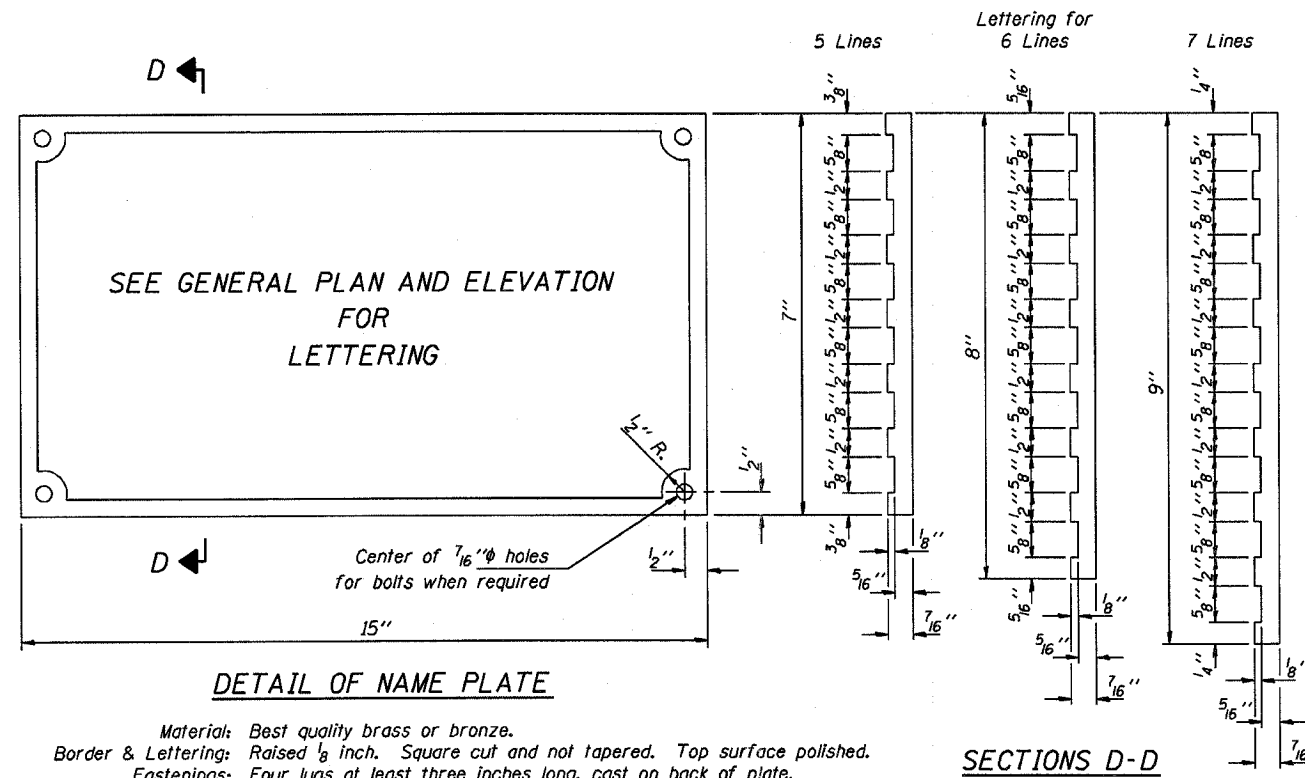


PLAN-BOTT. SPLICE TYPICAL



1/4 SHIM PLATE

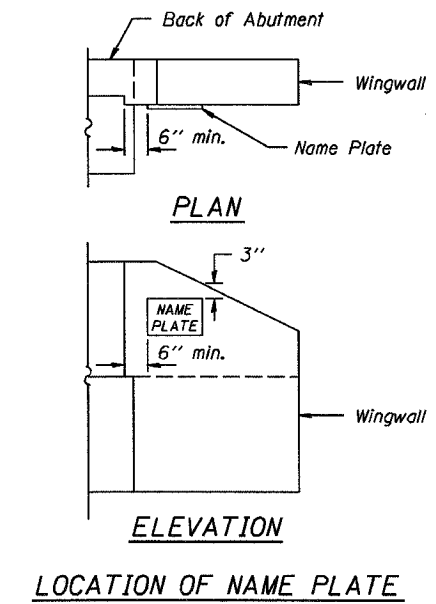
STANDARD CR-TS1



DETAIL OF NAME PLATE

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

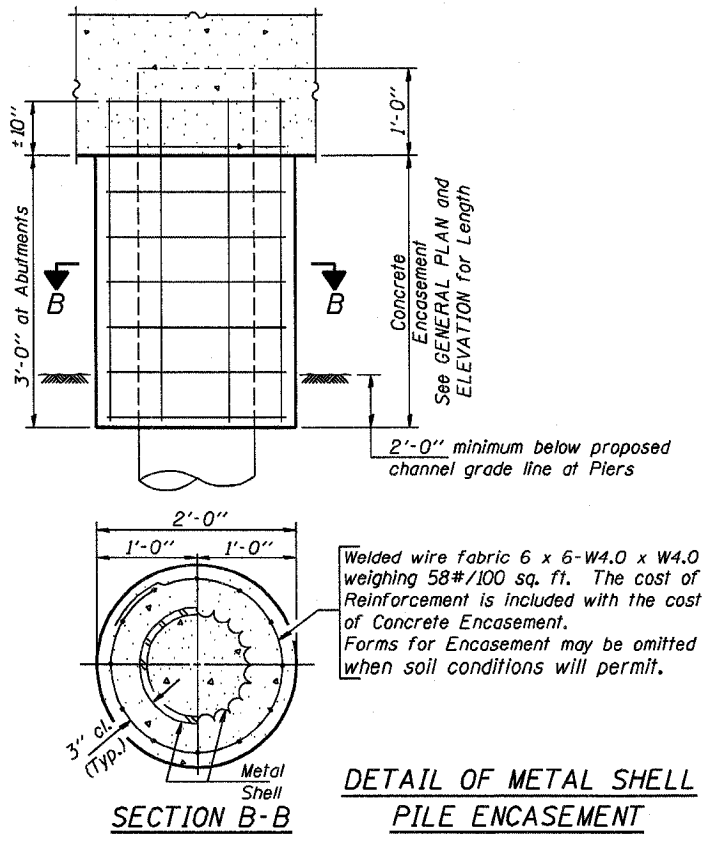
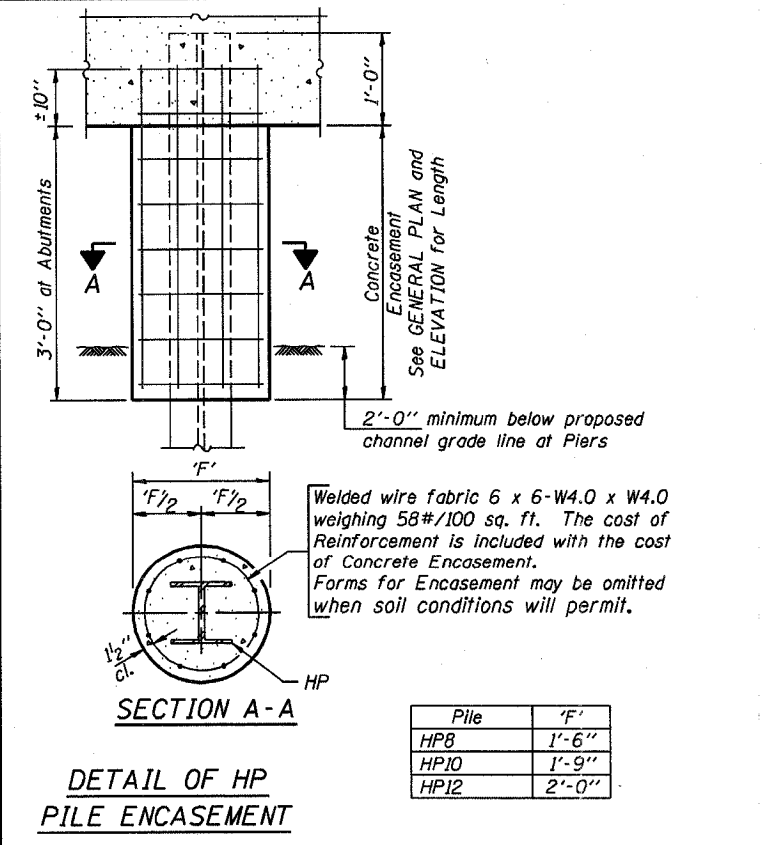
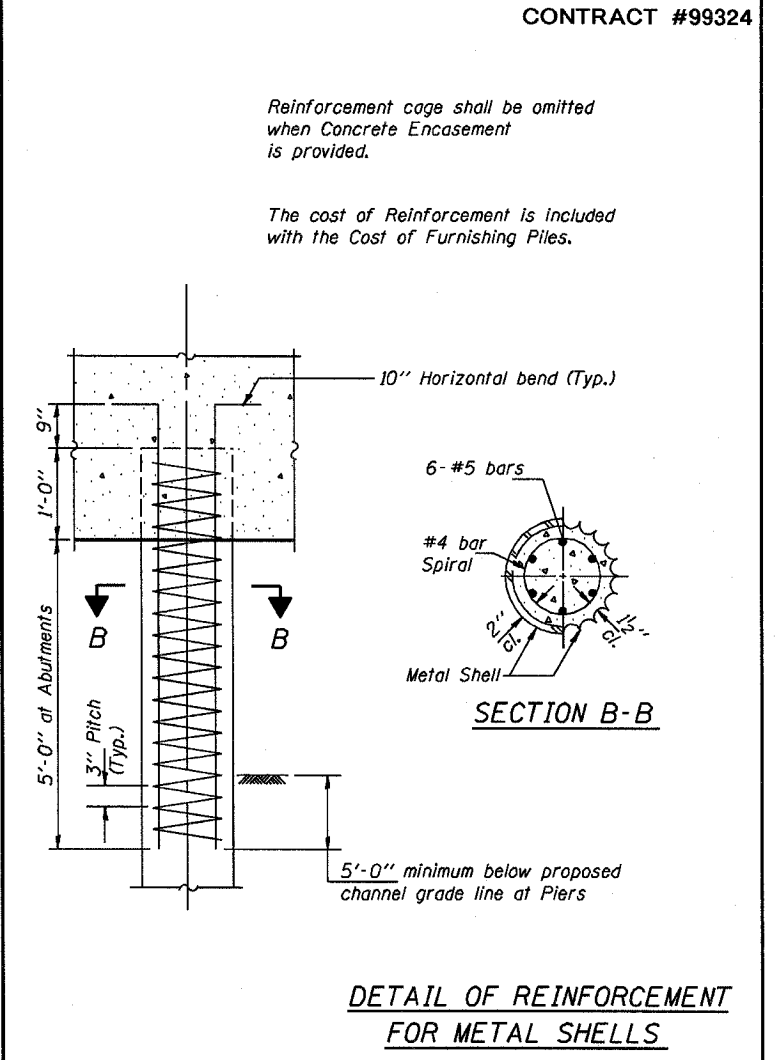
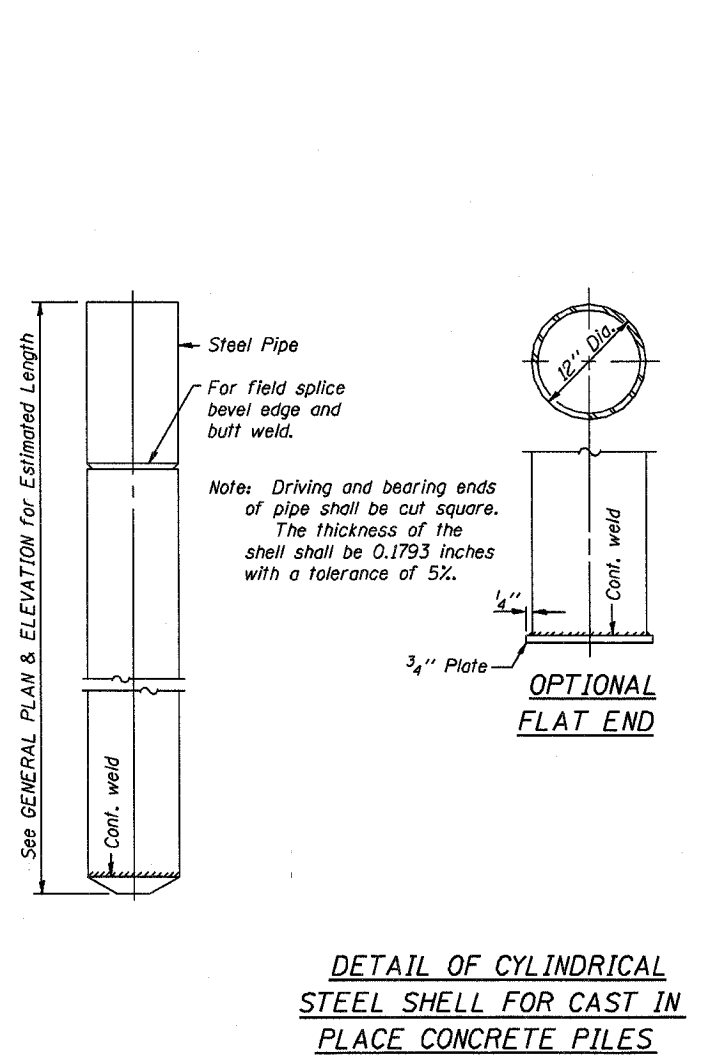
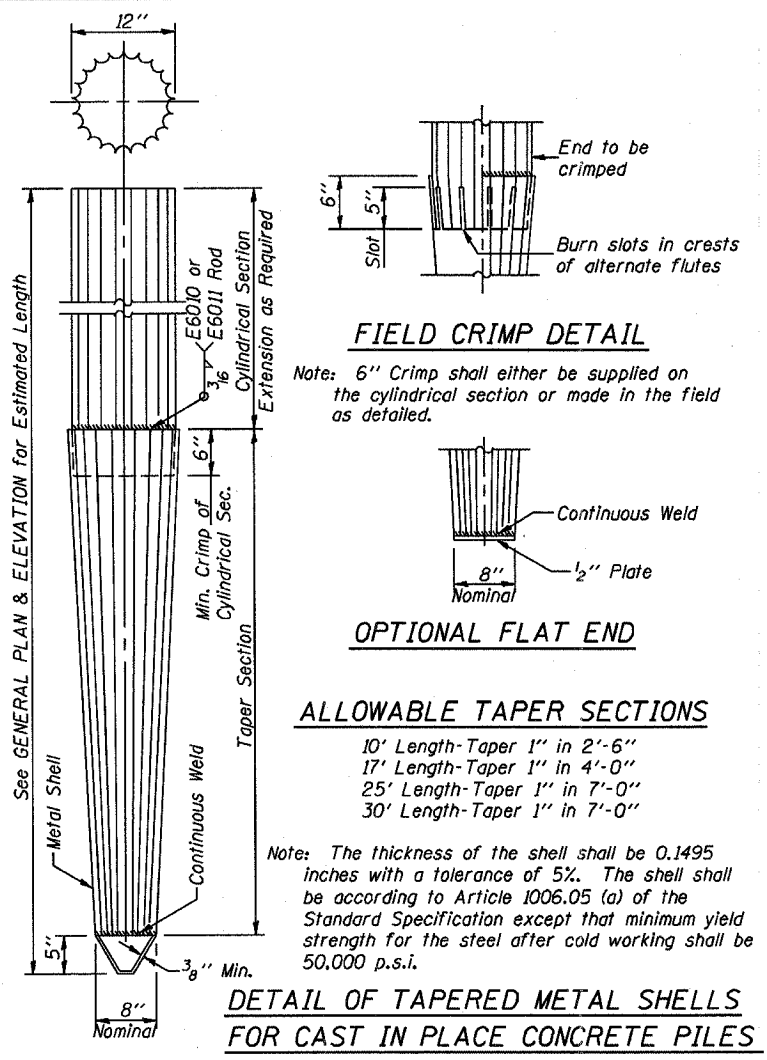
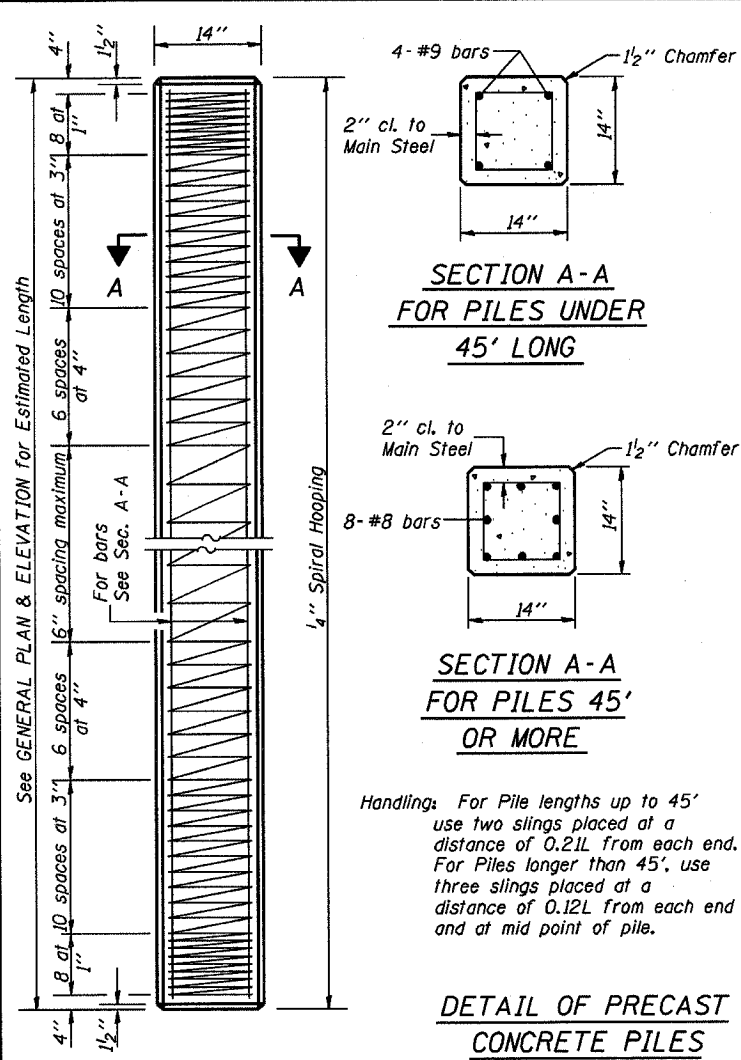
SECTIONS D-D



LOCATION OF NAME PLATE

Illinois Department of Transportation	
PASSED APRIL 4, 2005 <i>Thomas J. Demagala</i> Engineer of Bridge Design	ISSUED 7-1-1995
APPROVED APRIL 4, 2005 <i>Ralph E. Anderson</i> Engineer of Bridges and Structures	

NAME PLATE
STANDARD CN



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

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

**(METAL SHELL PILES)**

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

**PILE DETAILS**

**STANDARD CX-1**

Illinois Department of Transportation

PASSED FEBRUARY 1, 2000

Thomas J. Demagala  
Engineer of Bridge Design

APPROVED FEBRUARY 1, 2000

Ralph E. Anderson  
Engineer of Bridges and Structures

16B-H (02/01)