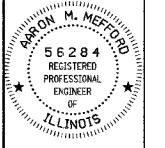


T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
318	97-12113-02-BR	HAMILTON	15	1
FED. ROAD DIST. NO. 9		ILLINOIS	FED. AID PROJECT	
PROJECT # BROS-065(036)		CONTRACT # 99280		PHONE:
JOB # C-99-525-06		CONTRARY CREEK		FAX:
LEC JOB # H051010M				(618)-262-8651
				(618)-263-3327

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CORPORATION
184-00087
(62-032435)(35-002769)



AARON M. MEFFORD
NAME
Aaron M. Mefford
SIGNATURE
12-15-06
DATE
11-30-07
EXPIRES

TWIGG TOWNSHIP
OVER CONTRARY CREEK
HAMILTON COUNTY, ILLINOIS

SHEET TITLE:

TITLE SHEET

SCALE:	VARIES
BY:	AMM
DATE:	12/06
REV:	

1 OF 15
SHEETS
SHEET NO.
1

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION PLANS FOR PROPOSED FEDERAL AID – H.B.P. PROJECT

T.R. 318 HAMILTON COUNTY SECTION 97-12113-02-BR

PROJECT NO. BROS-065(036) JOB NO. C-99-525-06

CONTRACT # 99280 CONTRARY CREEK

INDEX OF SHEETS

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

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

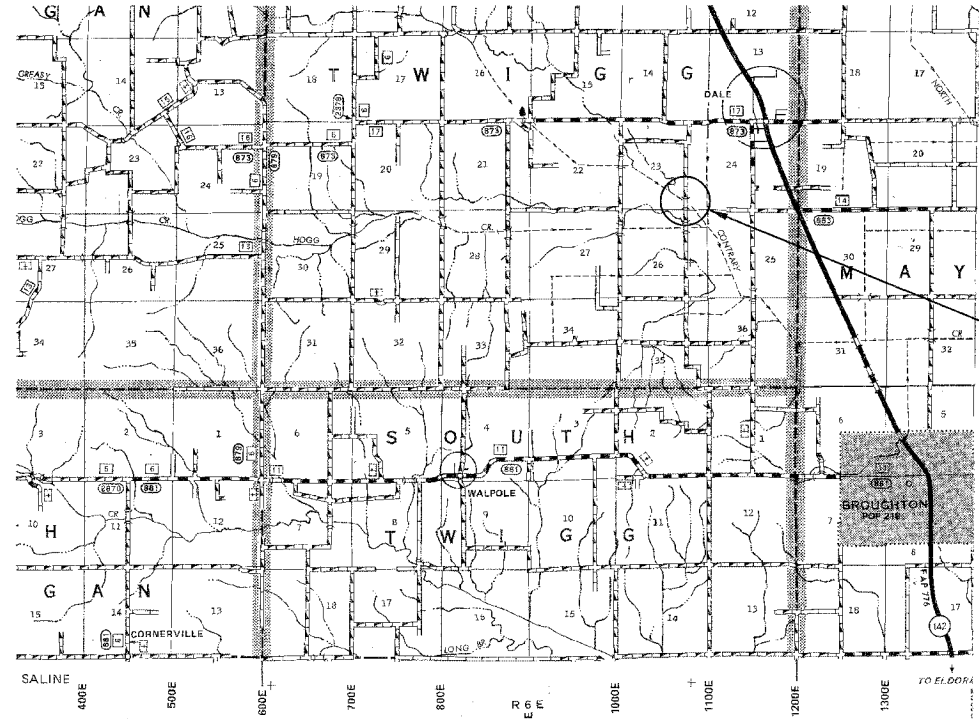
000001-04	STANDARD SYMBOLS, ABBREVIATIONS & PATTERNS
280001-03	TEMPORARY EROSION CONTROL SYSTEMS
702001-06	TRAFFIC CONTROL DEVICES
B.L.R. 21-6	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS
B.L.R. 22-4	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION 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	6.00
20100210	TREE REMOVAL (OVER 15 UNITS DIAMETER)	UNIT	32.00
20200100	EARTH EXCAVATION	CU YD	729.00
20300100	CHANNEL EXCAVATION	CU YD	601.00
20400800	FURNISHED EXCAVATION	CU YD	816.00
25001000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.48
28000300	TEMPORARY DITCH CHECKS	EACH	4.00
28001000	AGGREGATE (EROSION CONTROL)	TON	23.00
28100807	STONE DUMPED RIPRAP, CLASS A4	TON	522.00
28102600	STONE RIPRAP DITCH	TON	10.00
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	360.00
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1.00
50300225	CONCRETE STRUCTURES	CU YD	36.80
50300280	CONCRETE ENCASEMENT	CU YD	13.40
50400305	PRECAST PRESTRESSED CONCRETE DECK BEAMS (17" DEPTH)	SQ FT	2160.00
50500505	STUD SHEAR CONNECTORS	EACH	32.00
50800105	REINFORCEMENT BARS	POUND	4680.00
50900205	STEEL RAILING, TYPE S1	FOOT	180.00
51201400	FURNISHING STEEL PILES HP10X42	FOOT	1072.00
51202305	DRIVING PILES	FOOT	1072.00
51500100	NAME PLATES	EACH	1.00
54201069	PIPE CULVERTS, CLASS D, TYPE 2, 24"	FOOT	40.00
67100100	MOBILIZATION	L SUM	1.00

DESIGN DESIGNATION:
DESIGN SPEED: 30 MPH
HIGHWAY CLASS - LOCAL ROAD
EXISTING STRUCTURE NO.: 033-3105
PROPOSED STRUCTURE NO.: 033-3301
CURRENT A.D.T. = 30
CONTRACT NO. 99280

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

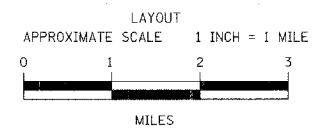


PLAN	1" = 50'	
PROFILE	1" = 50'	
PROFILE VERT.	1" = 5'	
CROSS SECTION	1" = 5'	

SECTION 97-12113-02-BR
BEGINS STATION 1+25

STATION 5+00, STRUCTURE NO. 033-3301
A 90' LONG TRIPLE SPAN PRECAST
PRESTRESSED CONCRETE DECK BEAM
BRIDGE (17" DEPTH, 24' ROADWAY, 0.00%
GRADE, 30° LT FWD SKEW.

SECTION 97-12113-02-BR
ENDS STATION 8+25



GROSS LENGTH	700.00 FT	0.13 MILES
OMISSIONS	0.00 FT	0.00 MILES
NET LENGTH	700.00 FT	0.13 MILES

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

APPROVED 12/29/06
Kenneth P. ...
COUNTY ENGINEER

PASSED Jan. 3, 2007
Dennis W. Hillman
ENGINEER OF LOCAL ROADS AND STREETS

APPROVED: 1-3-07
Mary C. Lamie
MARY C. LAMIE, P.E.
DEPUTY DIRECTOR OF HIGHWAY
REGION FIVE ENGINEER

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
318	97-12113-02-BR	HAMILTON	15	2
FED. ROAD DIST. NO. 9 ILLINOIS		CONTRARY CREEK		
PROJECT # BROS-0651036		CONTRACT # 99200		

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PROFESSIONAL
ENGINEERING CORPORATION
184-00887
(62-02435)(35-002769)



AARON M. MEFFORD
NAME
Aaron Mefford
SIGNATURE
12-15-07
DATE
11-30-07
EXPIRES

TWIGG TOWNSHIP
OVER CONTRARY CREEK
HAMILTON COUNTY, ILLINOIS

SHEET TITLE:

PLAN & PROFILE

SCALE: VARIES
BY: AMM
DATE: 12/6/07
REV:

2 of 15
SHEETS

SHEET NO.
2

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 90 FOOT LONG TRIPLE SPAN (25', 40', 25') PRECAST, PRESTRESSED CONCRETE DECK BEAM BRIDGE, EARTH APPROACHES, AGGREGATE SURFACE COURSE AND OTHER MISCELLANEOUS ITEMS NECESSARY TO COMPLETE THIS SECTION.

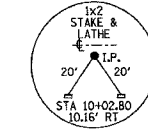
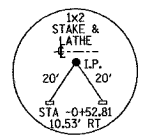
ALL ELEVATIONS ARE BASED ON U.S.G.S. MEAN SEA LEVEL DATUM.

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

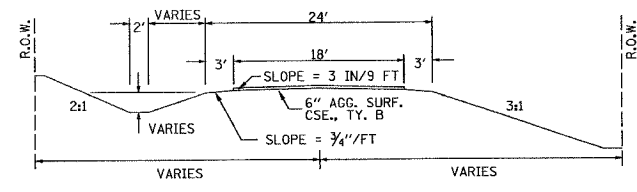
NOTE: CONSTRUCTION TRANSITIONS
STA. 1+25 TO STA 1+75
STA 7+75 TO STA 8+25
ALL QUANTITIES ARE INCLUDED IN THE PROPOSAL

CURVE #1
P.I. STA= 3+77.75
Δ= RT. 2°38'46"
D= 1°54'35"
R= 3000'
T= 69.29'
L= 138.56'
E= 0.80'
S.E. RUN= NONE
T.R.= NONE
S.E. RUN= NONE
P.C. STA= 3+08.46
P.T. STA= 4+47.01

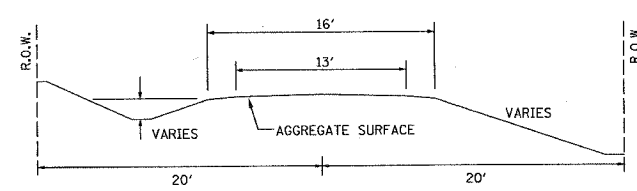
CURVE #2
P.I. STA= 7+55.44
Δ= LT. 1°41'40"
D= 1°08'45"
R= 5000'
T= 73.94'
L= 147.87'
E= 0.55'
S.E. RUN= NONE
T.R.= NONE
S.E. RUN= NONE
P.C. STA= 6+81.50
P.T. STA= 8+29.37



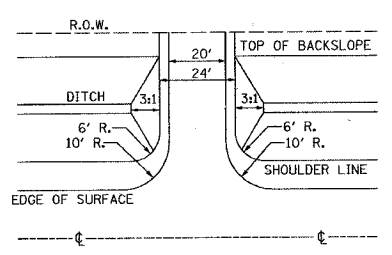
TYPICAL CROSS SECTION PROPOSED



TYPICAL CROSS SECTION EXISTING



FIELD ENTRANCE DETAIL



NOTE: CONSTRUCT SPECIAL DITCH

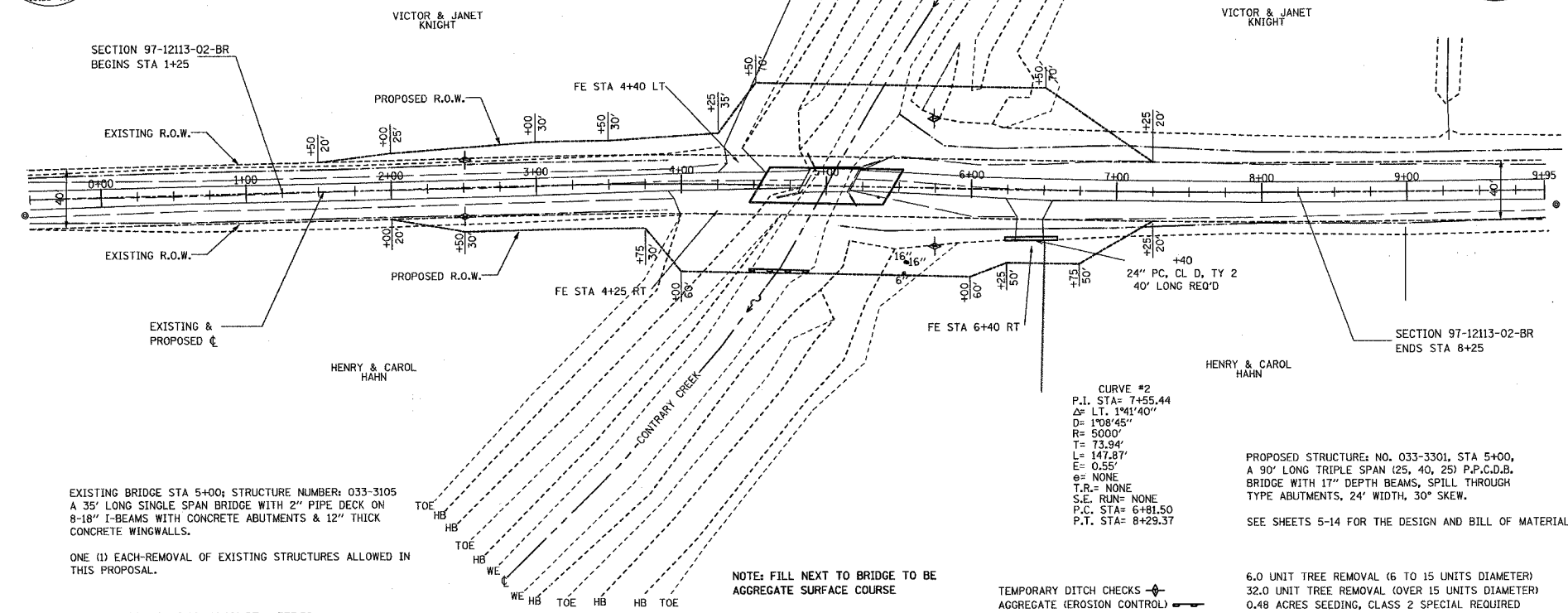
STA 1+50 TO STA 4+00 LT
STA 2+00 TO STA 3+50 RT
STA 5+60 TO STA 7+00 LT
STA 5+60 TO STA 7+00 RT

UTILITIES:
JULI.E. 1-800-892-0123

NOTE: CONSTRUCT STONE RIPRAP DITCH

STA 5+27 TO STA 5+37 RT (0.48 TON/LIN FT)
STA 5+19 TO STA 5+29 LT (0.48 TON/LIN FT)
10 TON STONE RIPRAP DITCH ALLOWED IN PROPOSAL.

SEE SHEET NO. 15 FOR STONE RIPRAP DITCH DETAIL.



EXISTING BRIDGE STA 5+00; STRUCTURE NUMBER: 033-3105
A 35' LONG SINGLE SPAN BRIDGE WITH 2" PIPE DECK ON
8-18" I-BEAMS WITH CONCRETE ABUTMENTS & 12" THICK
CONCRETE WINGWALLS.

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

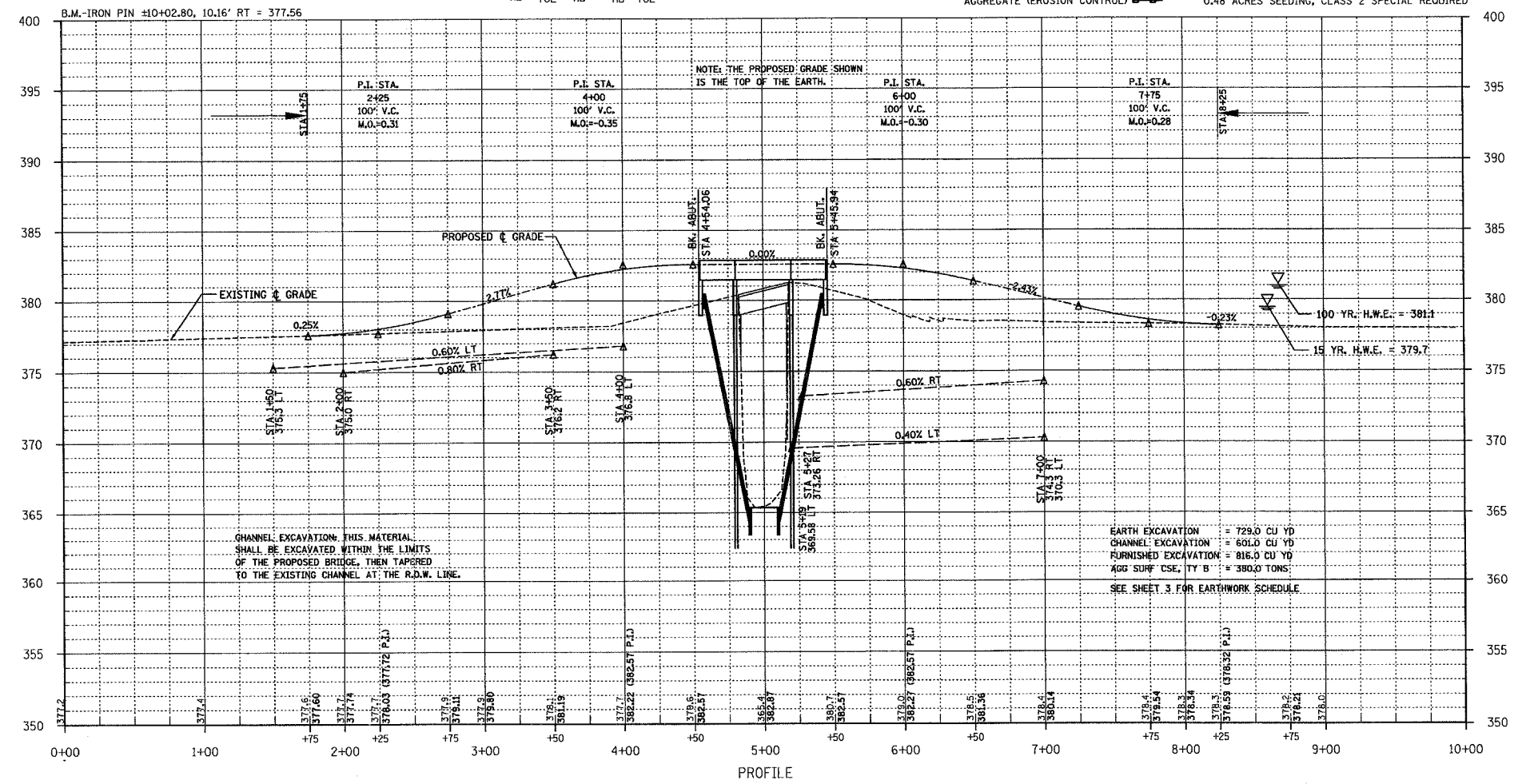
NOTE: FILL NEXT TO BRIDGE TO BE AGGREGATE SURFACE COURSE

TEMPORARY DITCH CHECKS -
AGGREGATE (EROSION CONTROL)

PROPOSED STRUCTURE: NO. 033-3301, STA 5+00,
A 90' LONG TRIPLE SPAN (25', 40', 25') P.P.C.D.B.
BRIDGE WITH 17" DEPTH BEAMS, SPILL THROUGH
TYPE ABUTMENTS, 24' WIDTH, 30° SKEW.

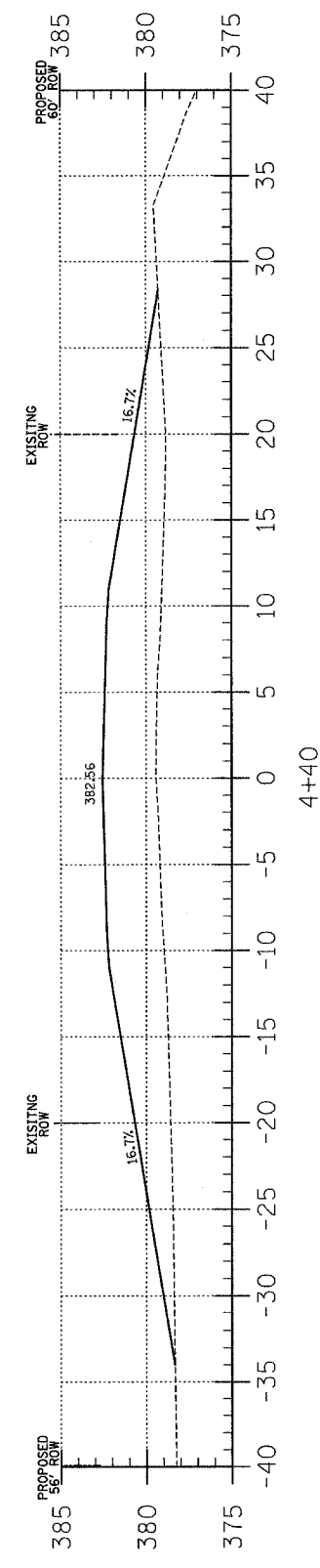
SEE SHEETS 5-14 FOR THE DESIGN AND BILL OF MATERIALS.

6.0 UNIT TREE REMOVAL (6 TO 15 UNITS DIAMETER)
32.0 UNIT TREE REMOVAL (OVER 15 UNITS DIAMETER)
0.48 ACRES SEEDING, CLASS 2 SPECTAL REQUIRED

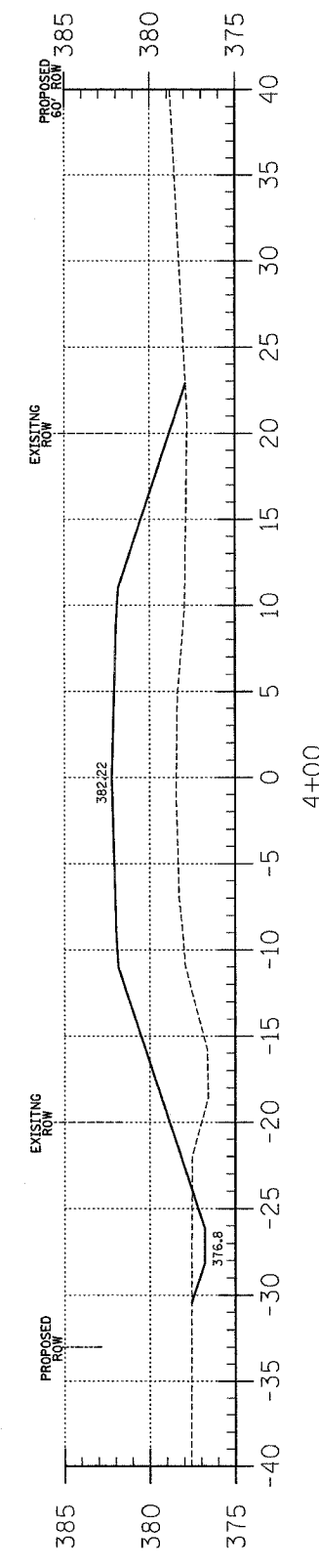


CHANNEL EXCAVATION: THIS MATERIAL SHALL BE EXCAVATED WITHIN THE LIMITS OF THE PROPOSED BRIDGE, THEN TAPERED TO THE EXISTING CHANNEL AT THE R.O.W. LINE.

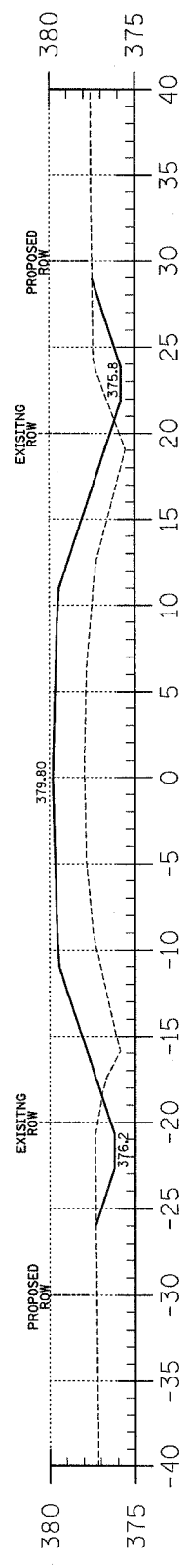
EARTH EXCAVATION = 729.0 CU YD
CHANNEL EXCAVATION = 60.0 CU YD
FURNISHED EXCAVATION = 816.0 CU YD
AGG SURF CSE, TY B = 380.0 TONS
SEE SHEET 3 FOR EARTHWORK SCHEDULE



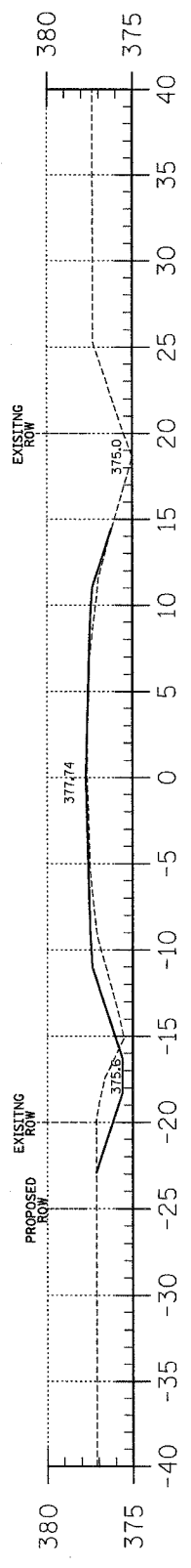
C = 0.0
F = 139.0



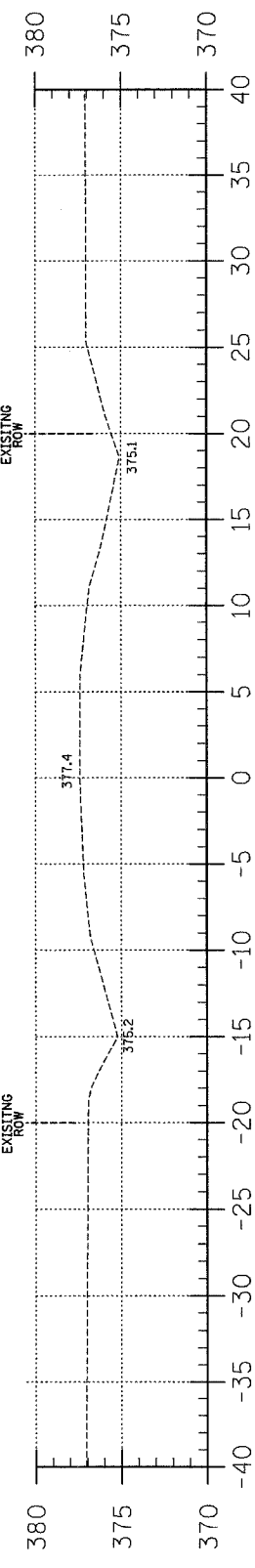
C = 3.2
F = 140.7



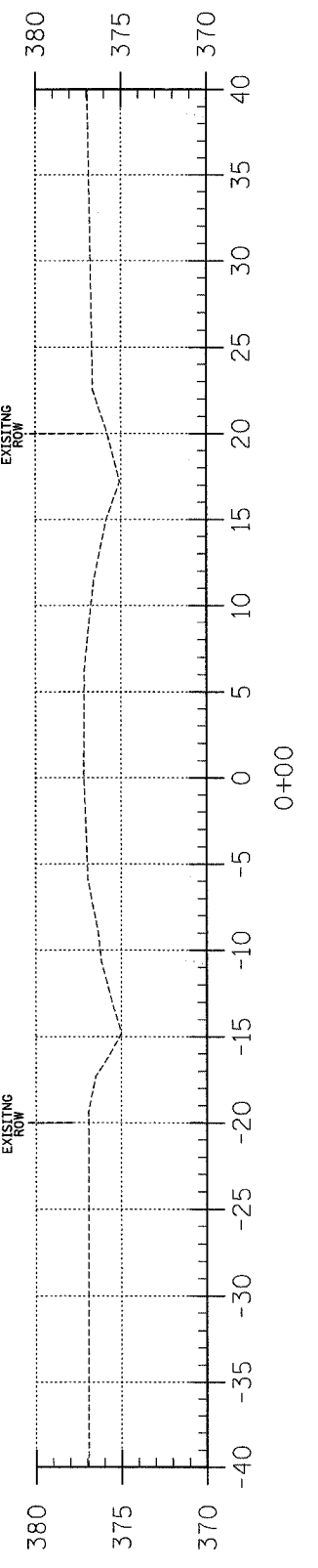
C = 12.2
F = 66.0



C = 5.4
F = 5.6



C = 5.4
F = 5.6



C = 5.4
F = 5.6

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
STA 0+00 TO 4+54.1	76.8	0.0	0.0	57.6	710.1	-652.4
STA 4+54.1 TO 5+45.9	0.0	600.9	300.5	225.4	0.0	225.4
STA 5+45.9 TO 10+00	651.7	0.0	0.0	488.8	805.0	-316.2
3 FIELD ENTRANCES	0.0	0.0	0.0	0.0	72.7	-72.7
TOTAL	728.5	600.9	300.5	771.8	1567.8	-615.9

TWIGG TOWNSHIP
OVER CONTRARY CREEK
HAMILTON COUNTY, ILLINOIS

AARON M. MEFFORD
NAME
SIGNATURE
DATE
12-15-04
EXPIRES



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T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
31B	97-12113-02-BR	HAMILTON	15	3
FED. ROAD DIST. NO. 9 ILLINOIS		CONTRARY CREEK		
PROJECT # BROS-065(036)		CONTRACT # 99280		
LEC JOB # H05L000AM				

SHEET TITLE:
CROSS-SECTIONS
SCALE: 1" = 5'
BY: AMM
DATE: 10/08/04
REV: MLG
3 OF 15 SHEETS
SHEET NO. 3

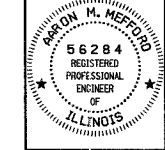
T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
31B	97-12113-02-BR	HAMILTON	15	4
FED. ROAD DIST. NO. 9 ILLINOIS		CONTRARY CREEK		
PROJECT * BR05-065036)		CONTRACT * 99280		
LEC JOB * H05L0101MM				

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184-000887
(62-032435)(35-002789)



AARON M. MEFFORD
NAME
Aaron M. Mefford
SIGNATURE/
DATE
12-15-06
EXPIRES

TWIGG TOWNSHIP
OVER CONTRARY CREEK
HAMILTON COUNTY, ILLINOIS

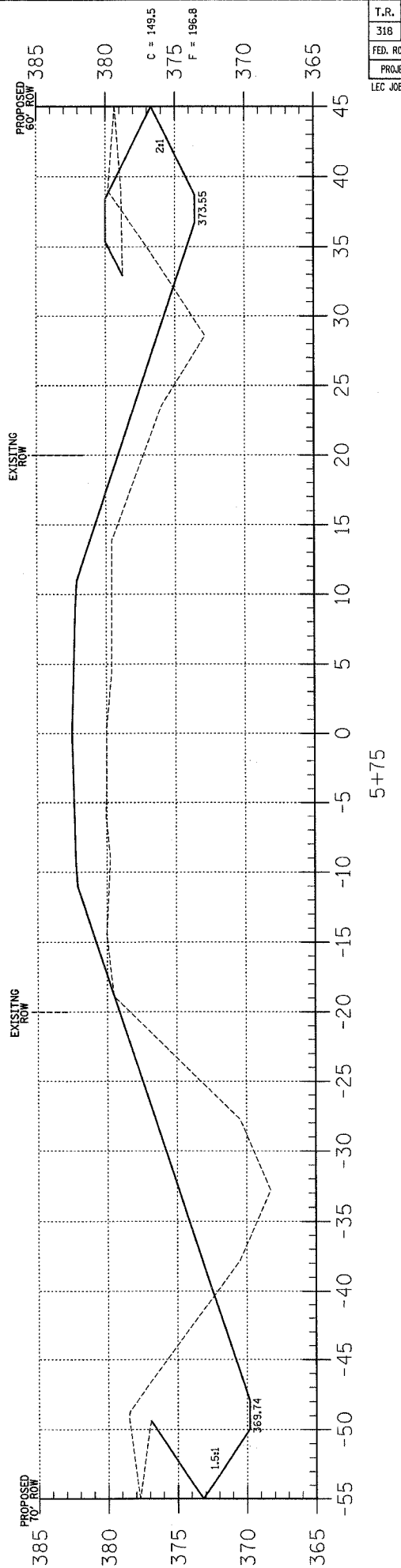
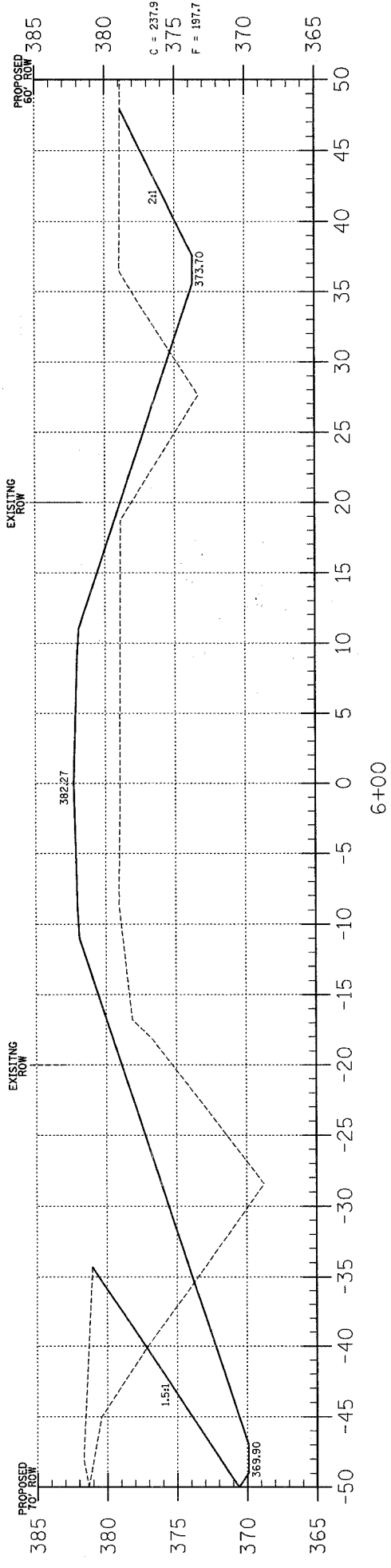
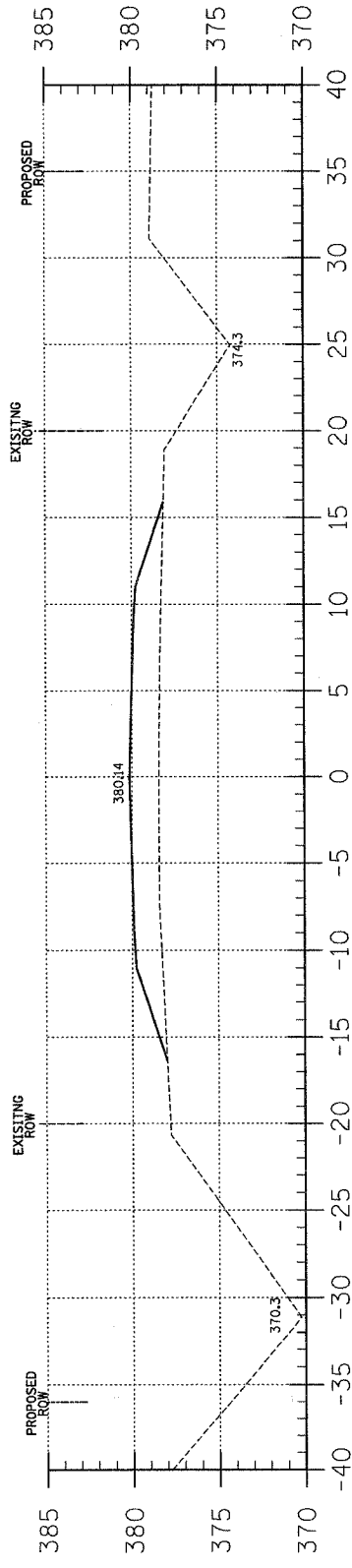
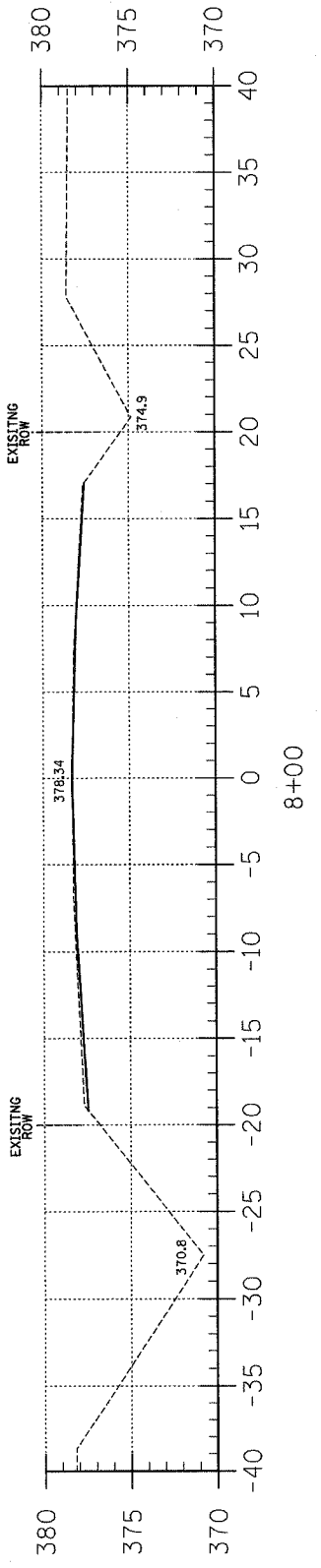
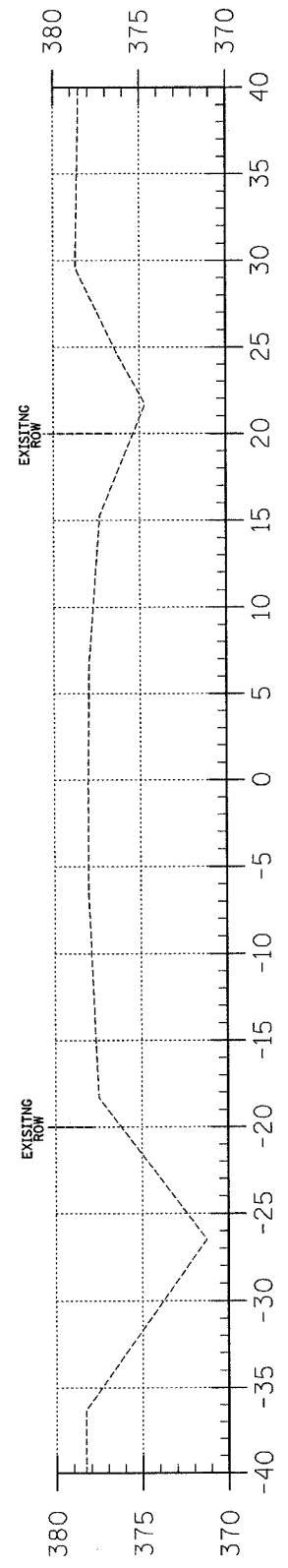
SHEET TITLE:

CROSS-SECTIONS

SCALE: 1" = 5'
BY: AMM
DATE: 10/20/06
REV: MLG

4 OF 15 SHEETS

SHEET NO. 4

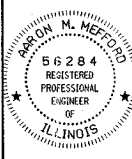


T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
318	97-12113-02-BR	HAMILTON	15	5
FED. ROAD DIST. NO. 9		ILLINOIS		CONTRARY CREEK
PROJECT BROS-065(036)		CONTRACT # 99280		

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PROFESSIONAL
ENGINEERING
CORPORATION:
184-000887



AARON M. MEFFORD
NAME
SIGNATURE
DATE
12-15-06
11-30-07
EXPIRES

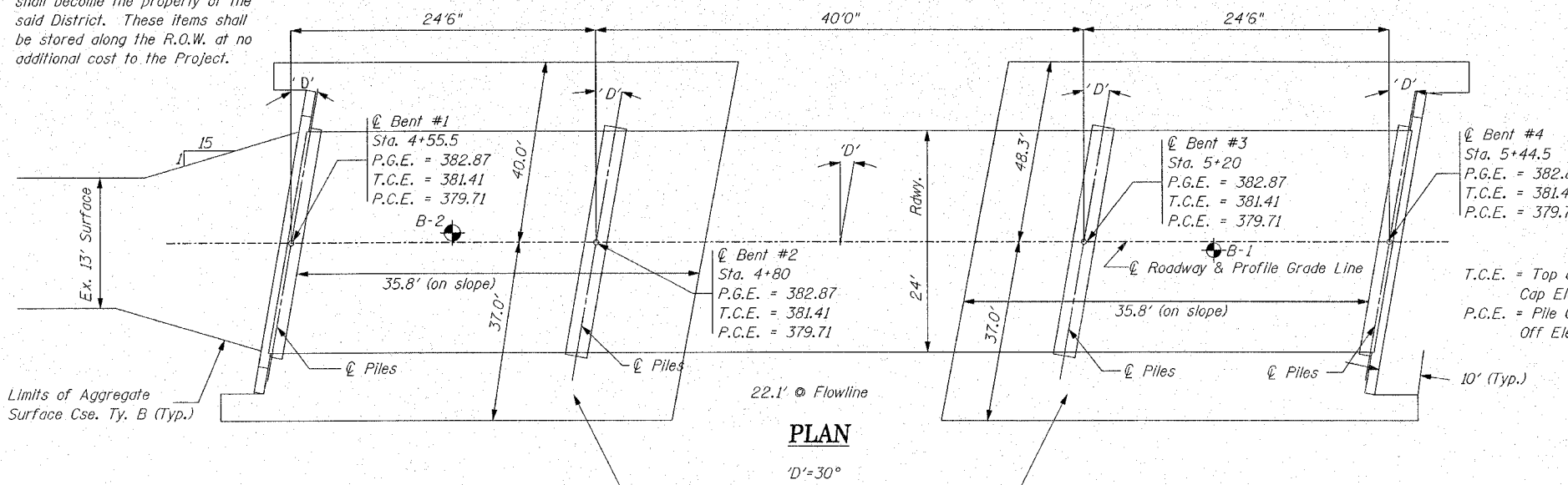
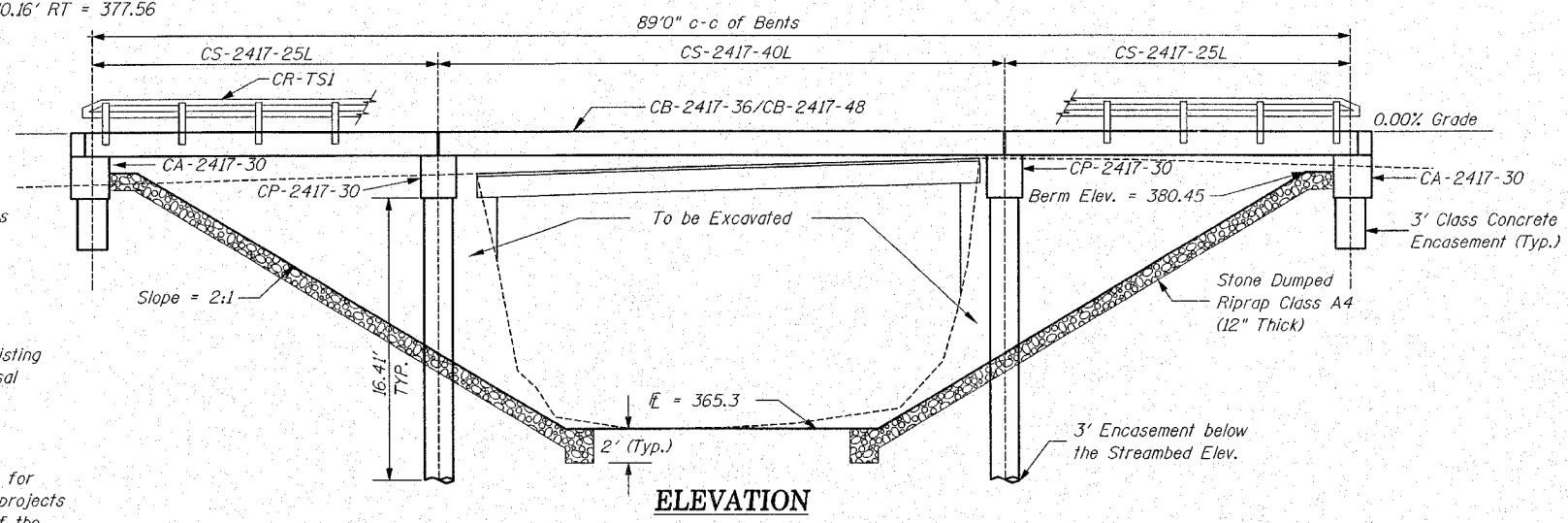
TWIGG TOWNSHIP
OVER CONTRARY CREEK
HAMILTON COUNTY, ILLINOIS

B.M.- I.P. ±10+02.80, 10.16' RT = 377.56

Existing Bridge Sta 5+00;
Structure Number 033-3105
A 35' long single span bridge
with a 2" pipe deck on 8-18"
I beams on concrete abutments
& 12" thick concrete wingwalls.

One (1) Each Removal of Existing
Structures allowed in Proposal

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

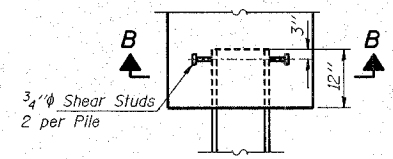


NOTE:
The Article or Section Numbers Referencing the Standard
Specifications for Road and Bridge Construction as shown
on the Standard Bridge Plan Sheets included with the
contract plans should be interpreted as referring to the
current edition of the Standard Specification (Adopted
January 1, 2007) as shown in the "Article/Section No.
Reference Table."

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

PILE DATA (2-PIERS)

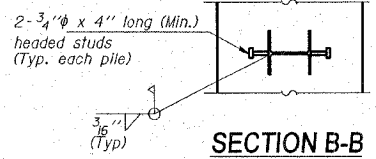
Type: Steel Piles HPI0X42
Nominal Required Bearing: 334.8 kips
Allowable Resistance Available: Drive to Refusal
Estimated Length: 76 Feet/Pile
Number Required: 8



PILE DETAIL
Typ. Each Pile

PILE DATA (2-ABUTS)

Type: Steel Piles HPI0X42
Nominal Required Bearing: 152 kips
Allowable Resistance Available: 76 kips
Estimated Length: 58 Feet/Pile
Number Required: 8



SECTION B-B

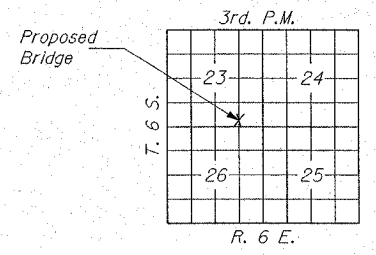
DESIGN SPECIFICATIONS

2002 AASHTO
HS 20-44 Loading. Load Factor Design.

STATION 5+00
CONTRARY CREEK
SEC. 97-12113-02-BR BUILT 20
PROJECT BROS-065(036)
HAMILTON COUNTY
LOADING HS 20-44
STR. NO. 033-3301

LETTERING FOR NAME PLATE

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



LOCATION SKETCH

WATERWAY INFORMATION

Drainage Area = 21.3 sq.mi. Low Grade Elev. = 377.2 at Sta. 0+00									
Flood	Freq. Yr.	C.F.S.	Opening Sq Ft		Natural H.W.E.	Head-Ft		Headwater El.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	15	2720	362	631	379.7	0.09	0.09	379.79	379.79
Base	100	4106	362	733	381.1	0.87	0.35	381.97	381.45
Overtopping									
Max. Calc.	500	5186							

GENERAL NOTES

- The Contractor shall drive 2 test piles, as specified, in permanent locations 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., Superpave 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
- 2-3/4" shear studs will be required per pile which will be encased within the concrete cap.
- All HP piles shall be oriented with the strong axis along the centerline of the abutment or pier.

Item	Super	Sub.		Total
		Piers	Abuts.	
Removal of Existing Structures	Each			1
Bit Conc. Surf. Cse. Superpave	Ton			
Waterproofing Membrane System	Sq.Yd.			
Concrete Structures	Cu.Yd.	17.4	19.4	36.8
P.P. Conc. Dk. Bm. 17" Dp.	Sq.Ft.	2160		2160
Steel Railing, Type S1	Foot	180		180
Reinforcement Bars	Pound	2140	2540	4680
Furnishing Steel Piles HPI0X42	Foot	608	464	1072
DRIVING PILES	Foot	608	464	1072
Test Pile Steel HPI2X54	Each	1	1	2
Name Plates	Each	1	1	2
Concrete Encasement	Cu.Yd.	11.3	2.1	13.4
Stud Shear Connectors	Each	16	16	32

NOTE: Four (4) Each Curled End Sections required. Item to be incidental to the Steel Railing.

INDEX OF SHEETS

- General Plan & Elevation
- Standard CS-2417-25L
- Standard CS-2417-40L
- Standard CB-2417-36
- Standard CB-2417-48
- Standard CA-2417-30
- Standard CP-2417-30
- Standard CR-TS1
- Standard CN
- Standard CX-1

SEISMIC DATA

Seismic Performance Category (SPC) = B
Bedrock Acceleration Coefficient (A) = 0.10g
Site Coefficient (S) = 2.0



Aaron M. Mefford 12/15/06
ILLINOIS STRUCTURAL NO. 6064
Complies with 2002 AASHTO
Specifications for Seismic Design
of Bridges.

Expires 11-30-08

GENERAL PLAN AND ELEVATION

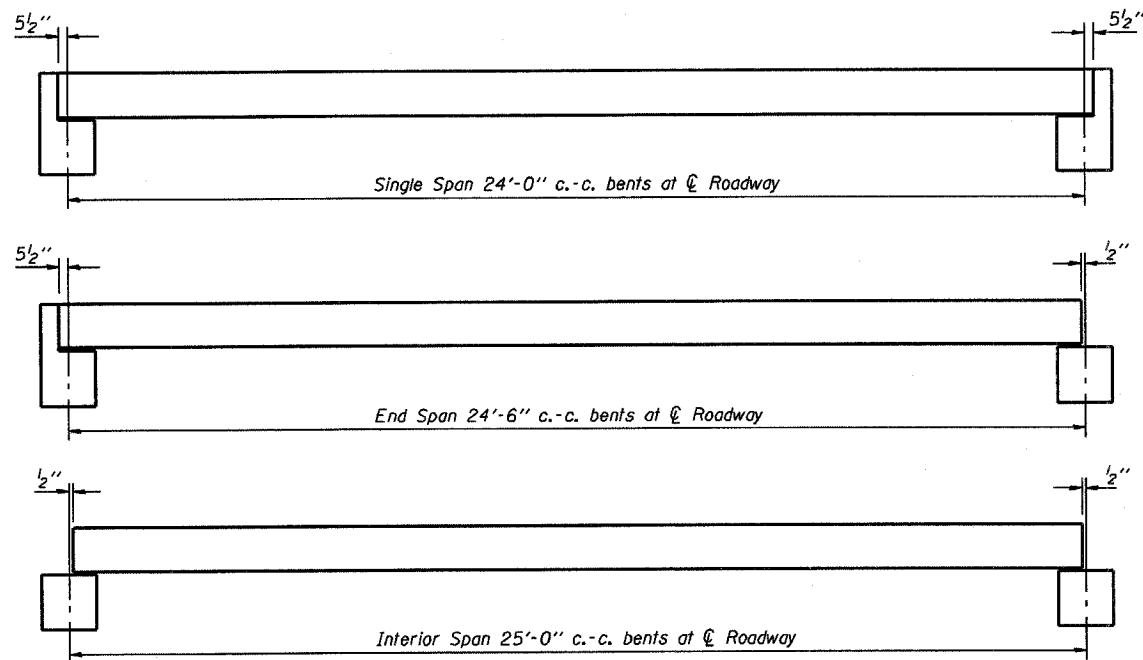
TOWNSHIP ROUTE 318
OVER CONTRARY CREEK
SECTION 97-12113-02-BR
HAMILTON COUNTY
STATION 5+00

SHEET TITLE:
GENERAL PLAN AND ELEVATION

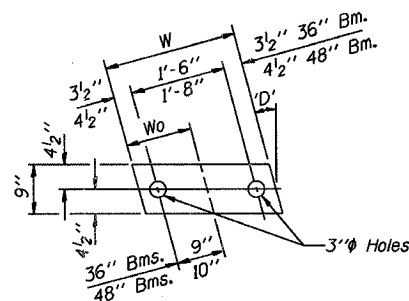
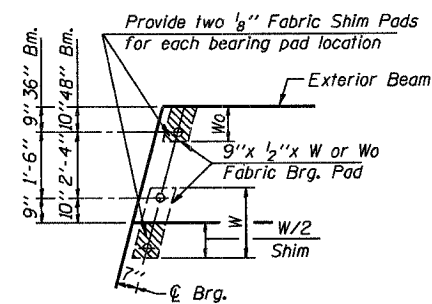
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BY: AMM
DATE: 09/23/06
REV:

5 OF 15
SHEETS

SHEET NO.
5

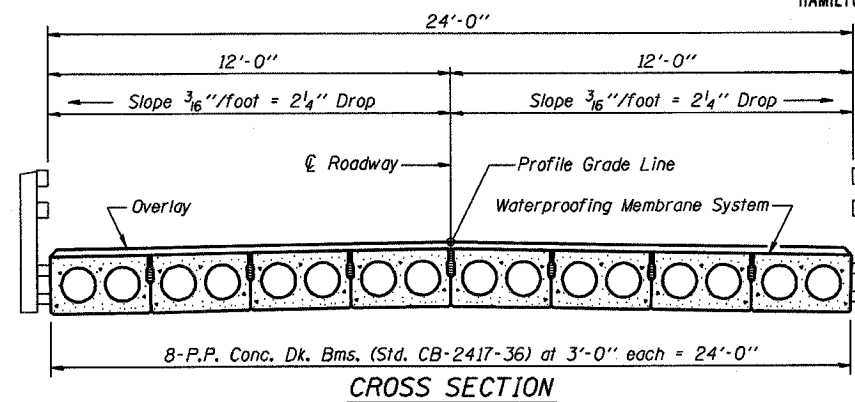


TYPICAL ELEVATIONS

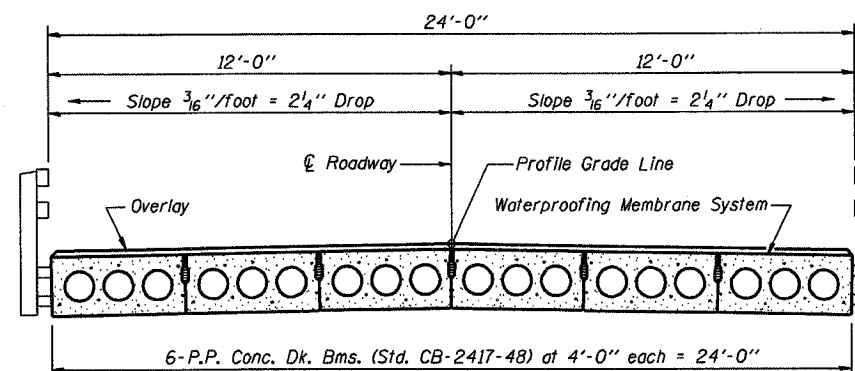


Beam	W	Wo
36"	2'-1"	1'-0 1/2"
48"	2'-5"	1'-2 1/2"

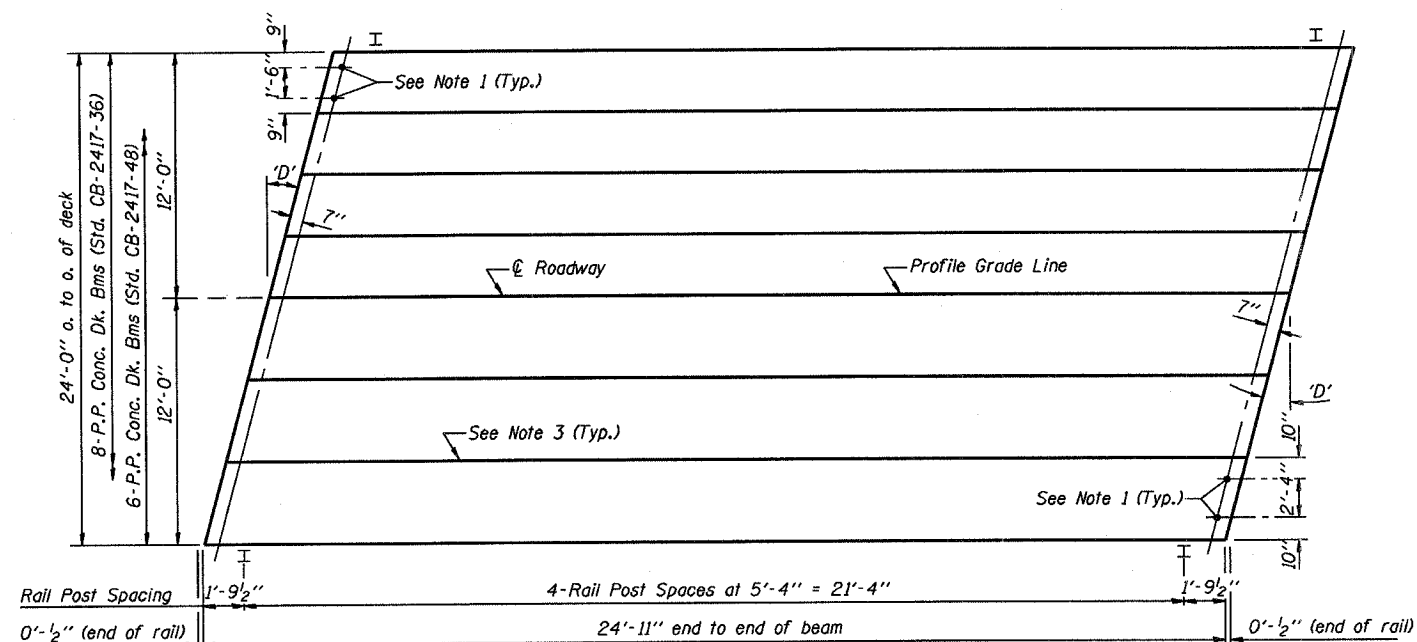
1/2" FABRIC BRG. PAD DETAILS



CROSS SECTION

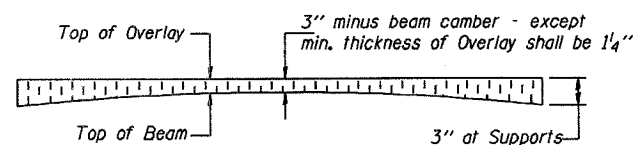


CROSS SECTION



PLAN

('D' = Designated Skew Angle)



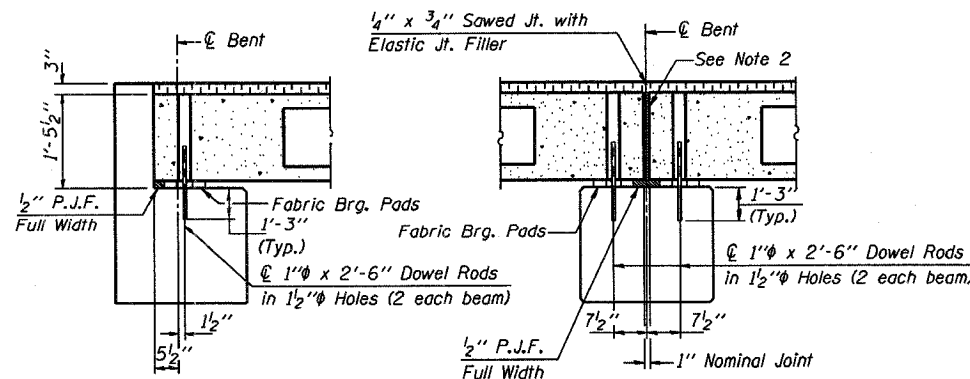
PROFILE OF OVERLAY

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

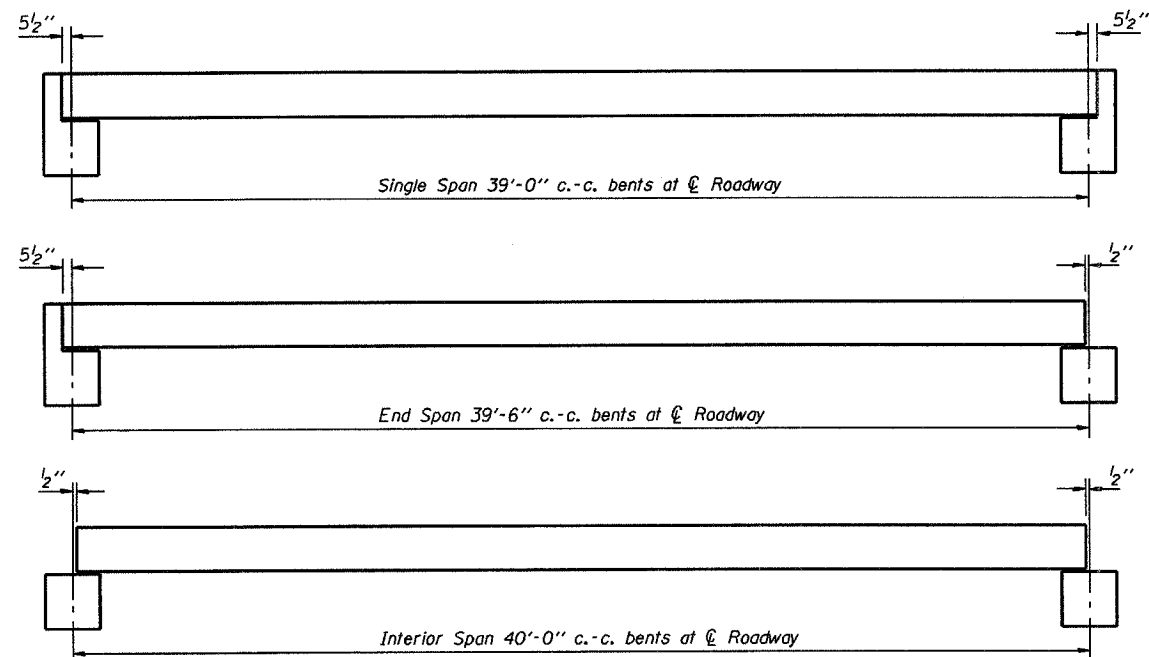
P.P. Conc. Dk. Bm. 17" Dp.	600 Sq. Ft.
Steel Railing	50 Ft.
Waterproofing Membrane System	66.7 Sq. Yds.
Portland Cement Mortar	175 Ft. 36"
Fairing Course	125 Ft. 48"

Note: Quantity of overlay for one span = 10.5 Tons

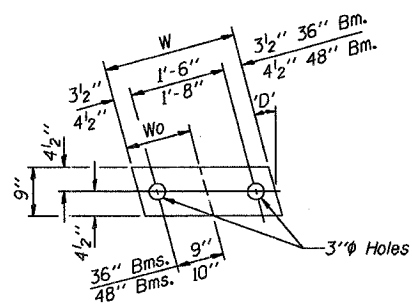
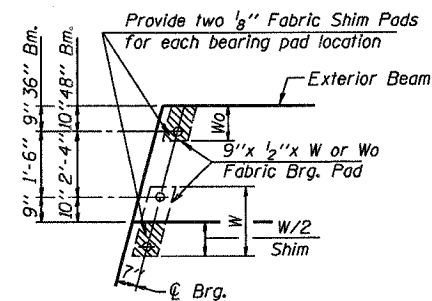
P.P.C. DECK BEAM
SUPERSTRUCTURE

24' RDWY.	17" BMS.	25' SPAN	LEFT
STANDARD CS-2417-25L			

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

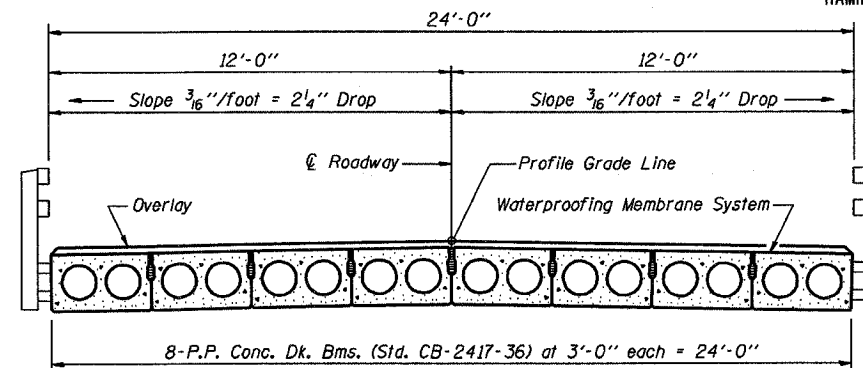


TYPICAL ELEVATIONS

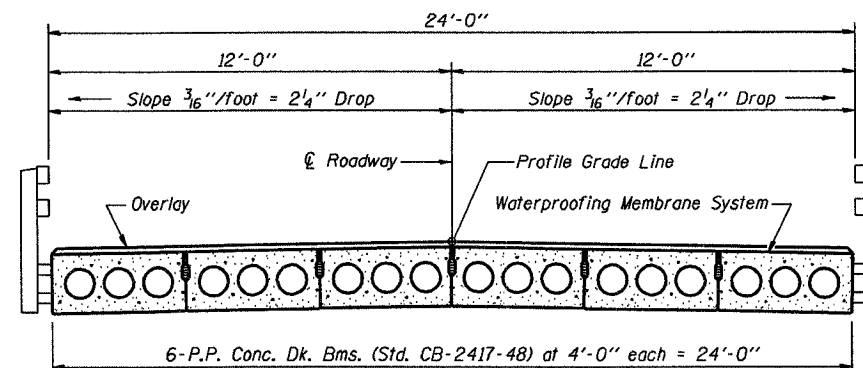


Beam	W	Wo
36"	2'-1"	1'-0 1/2"
48"	2'-5"	1'-2 1/2"

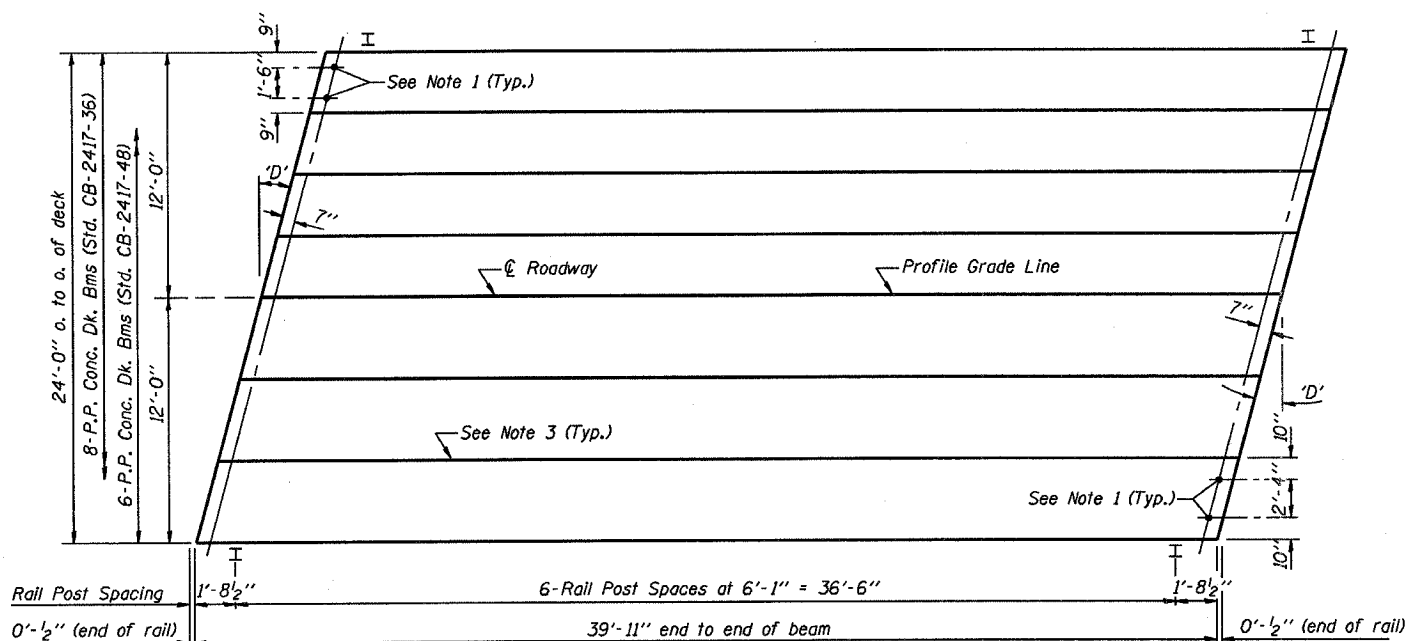
1/2" FABRIC BRG. PAD DETAILS



CROSS SECTION

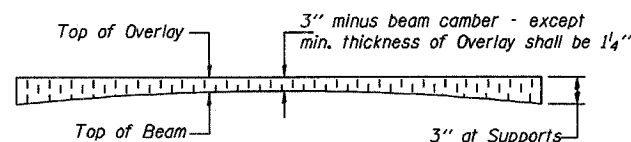


CROSS SECTION



PLAN

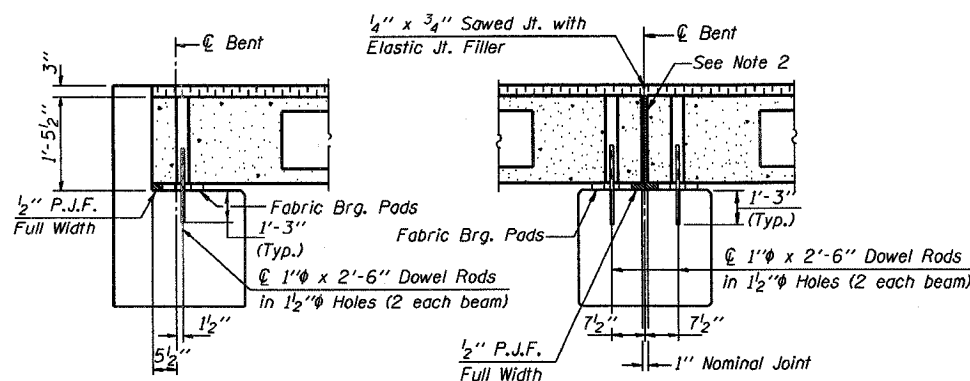
('D' = Designated Skew Angle)



PROFILE OF OVERLAY

DIMENSIONS 'A' AND 'B'

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



SECTION AT ABUTS.

(Along centerline of Beams)

SECTION AT PIERS

(Along centerline of Beams)

NOTES

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

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

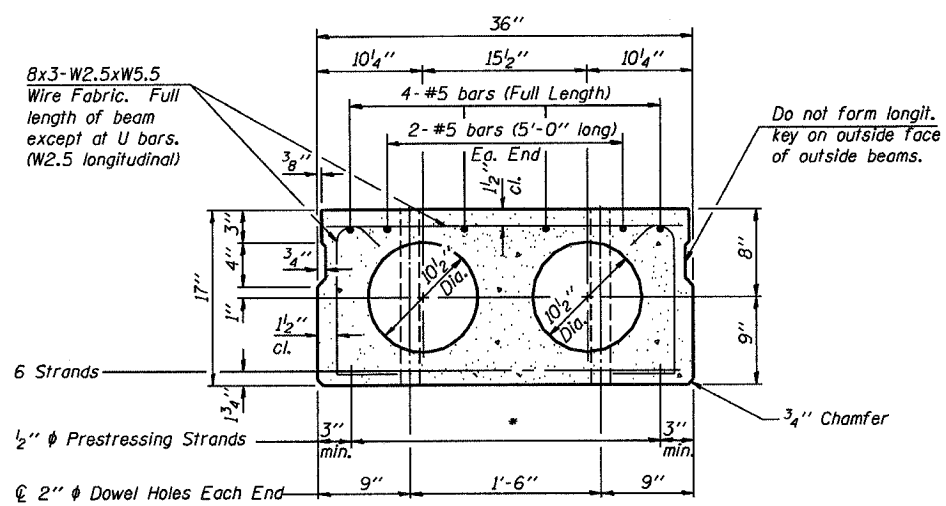
PASSED APRIL 4, 2005

Thomas S. Nemaalabi
Engineer of Bridge Design

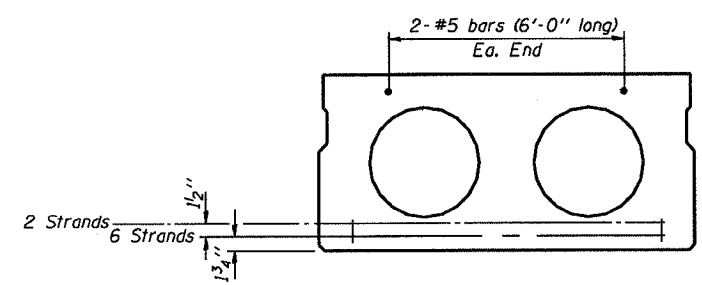
APPROVED APRIL 4, 2005

Ralph E. Anderson
Engineer of Bridges and Structures

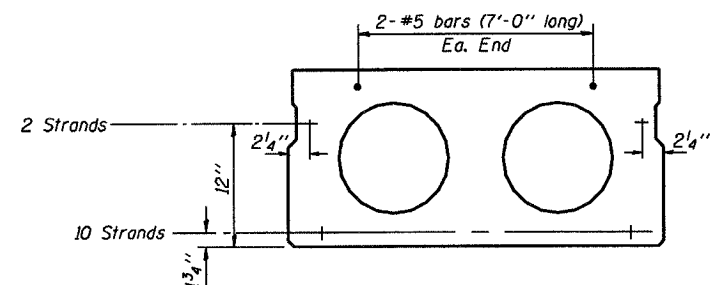
1861-1-1 03/05/01



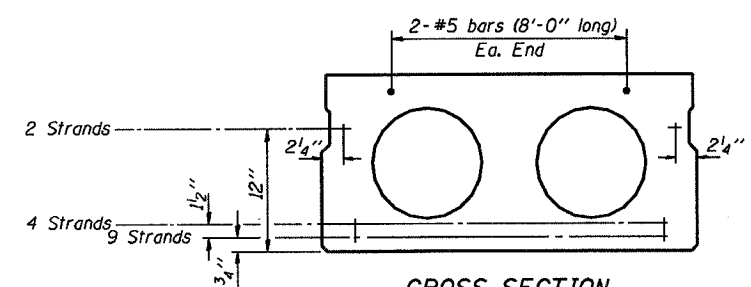
CROSS SECTION
(25' SPAN)



CROSS SECTION
(30' SPAN)

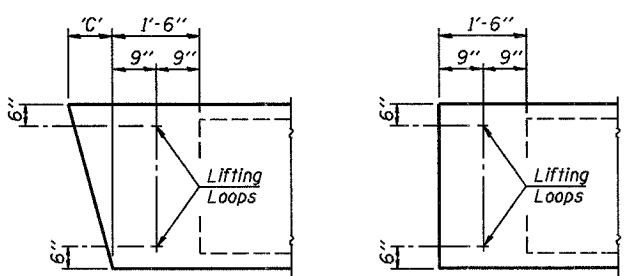


CROSS SECTION
(35' SPAN)



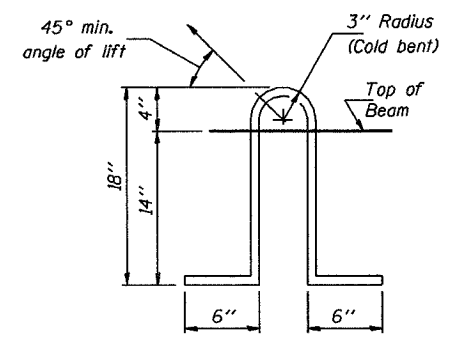
CROSS SECTION
(40' SPAN)

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.



LIFTING LOOP DETAIL

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

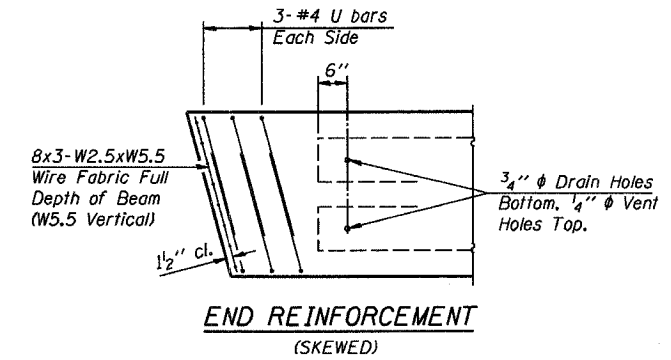
DIMENSION 'C'

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

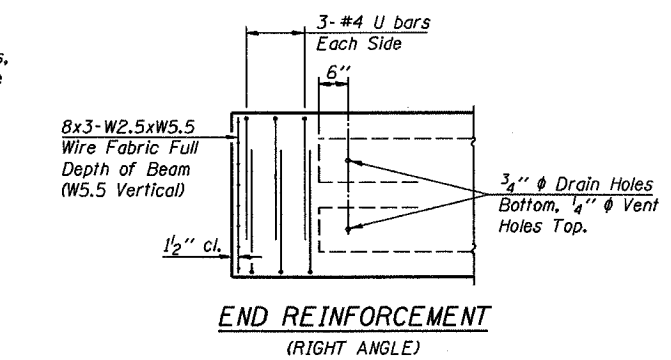
*** TRANSVERSE STRAND PLACEMENT GUIDELINES**

- 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".

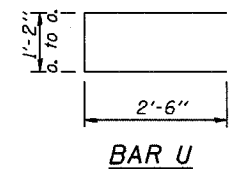
Vertical placement of strands shall not be adjusted to satisfy the above guidelines.



END REINFORCEMENT
(SKEWED)



END REINFORCEMENT
(RIGHT ANGLE)



BAR U
MIN. BAR LAP
#5 bars = 1'-8"

DESIGN STRESSES

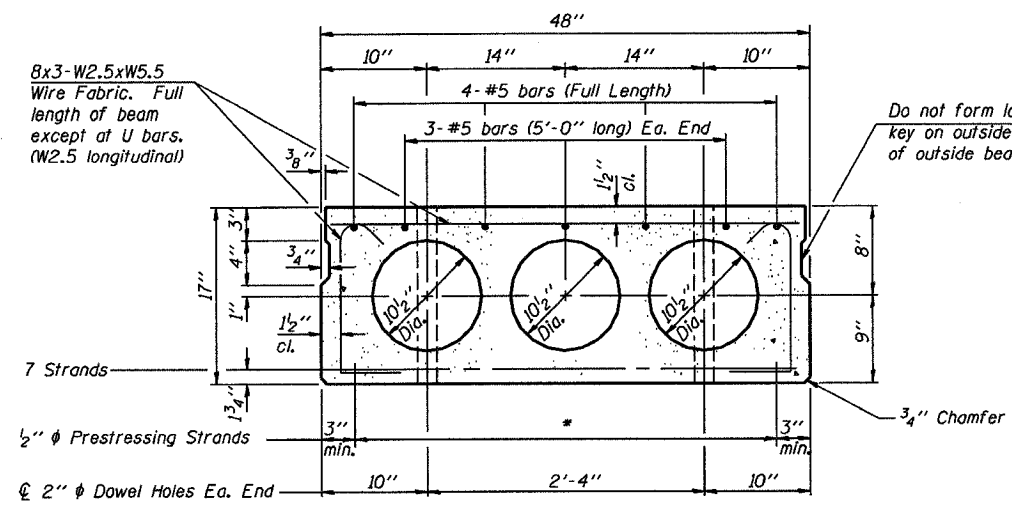
- $f'_c = 5,000$ p.s.i.
- $f'_{ci} = 4,000$ p.s.i.
- $f'_s = 270,000$ p.s.i. (1/2" ϕ Strand)
- $f_{st} = 201,960$ p.s.i. (1/2" ϕ Strand)
- $f_y = 60,000$ p.s.i.

NOTES

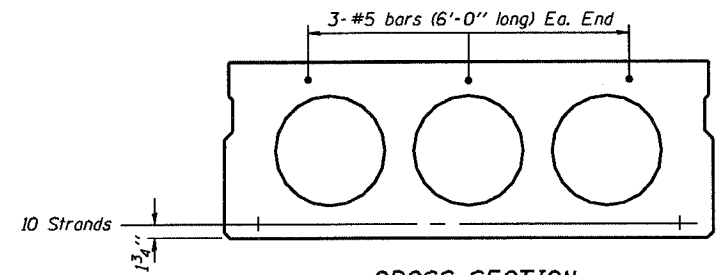
- Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270.
- The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 square inches.
- Reinforcement bars shall conform to the requirements of AASHTO M-31 or M-322, Grade 60.
- Rail Post 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
Theresa S. Nannagalli
Engineer of Bridge Design
APPROVED APRIL 4, 2005
Ralph E. Anderson
Engineer of Bridges and Structures

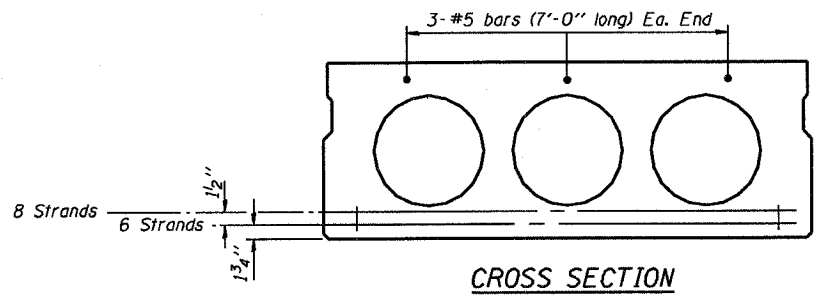
P.P.C. DECK BEAM DETAILS
24' ROADWAY | **17" x 36" BEAMS**
STANDARD CB-2417-36



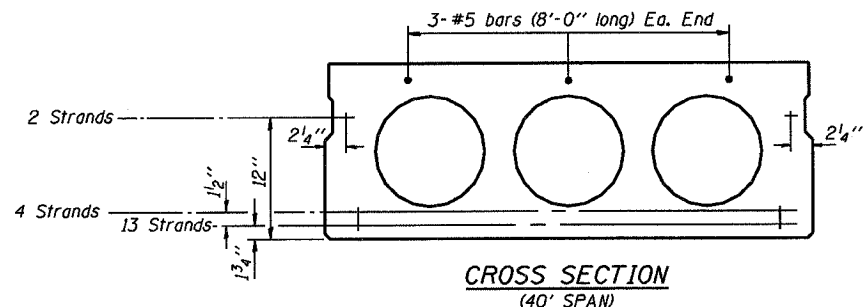
CROSS SECTION
(25' SPAN)



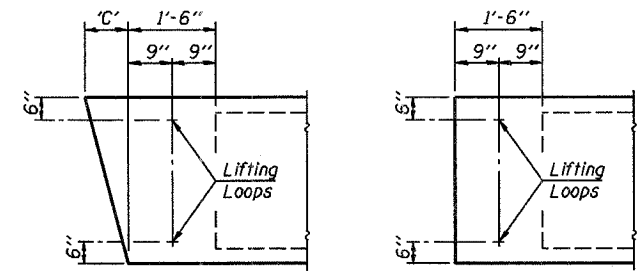
CROSS SECTION
(30' SPAN)



CROSS SECTION
(35' SPAN)

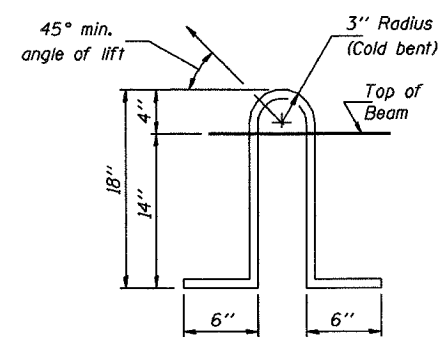


CROSS SECTION
(40' SPAN)



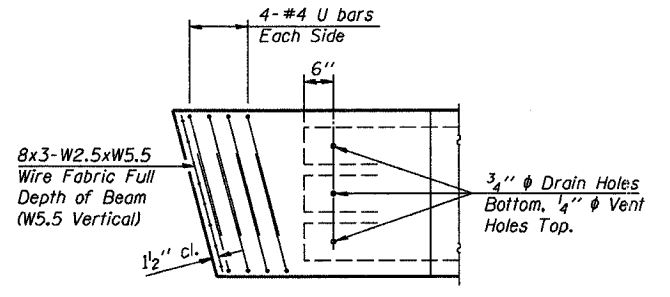
END BLOCK DETAILS

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

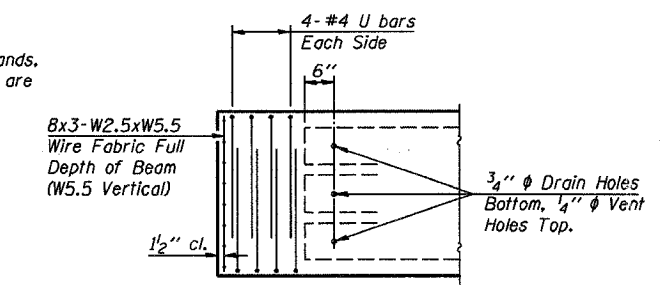


LIFTING LOOP DETAIL

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



END REINFORCEMENT
(SKEWED)



END REINFORCEMENT
(RIGHT ANGLE)

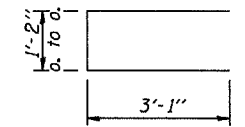
DIMENSION 'C'

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.



BAR U

MIN. BAR LAP

#5 bars = 1'-8"

DESIGN STRESSES

- $f'_c = 5,000$ p.s.i.
- $f'_a = 4,000$ p.s.i.
- $f_s = 270,000$ p.s.i. (1/2" φ Strand)
- $f_{st} = 201,960$ p.s.i. (1/2" φ Strand)
- $f_y = 60,000$ p.s.i.

NOTES

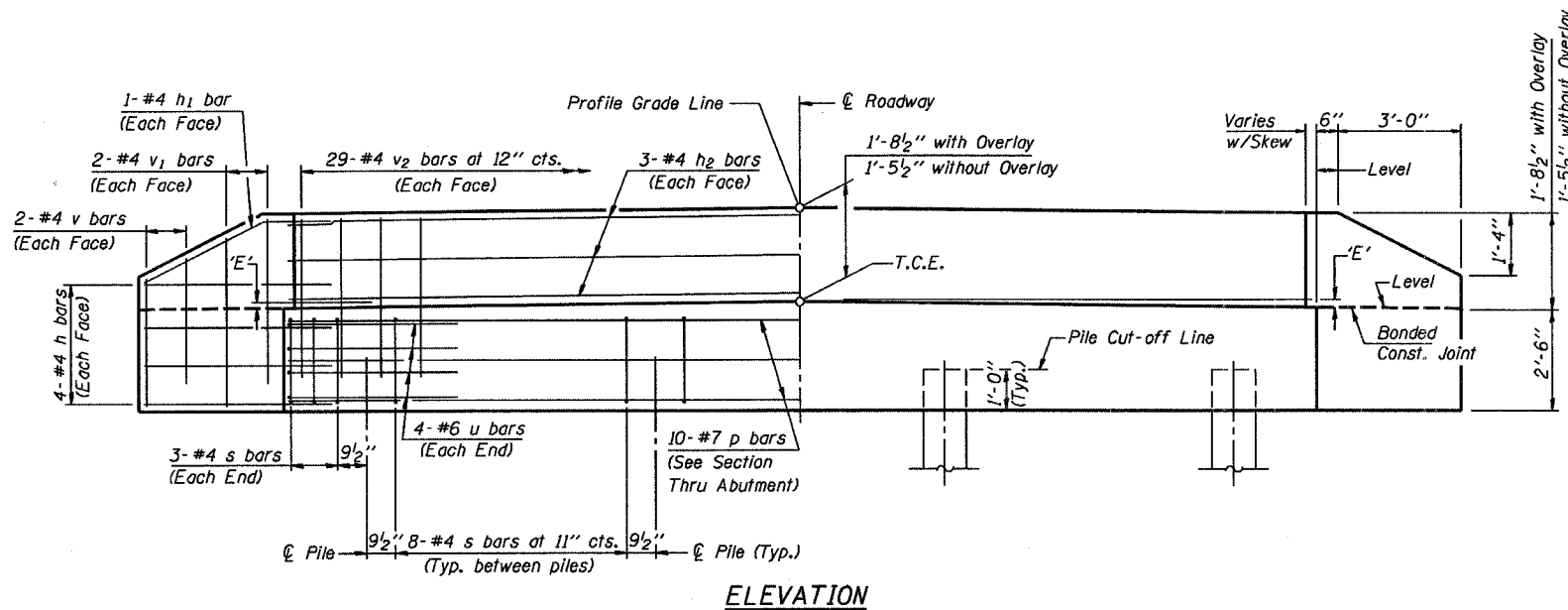
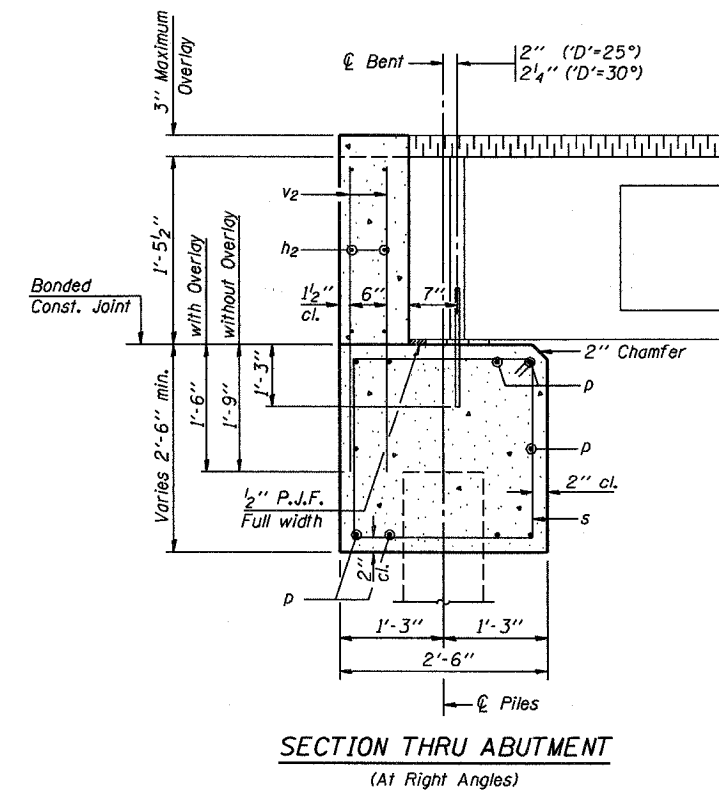
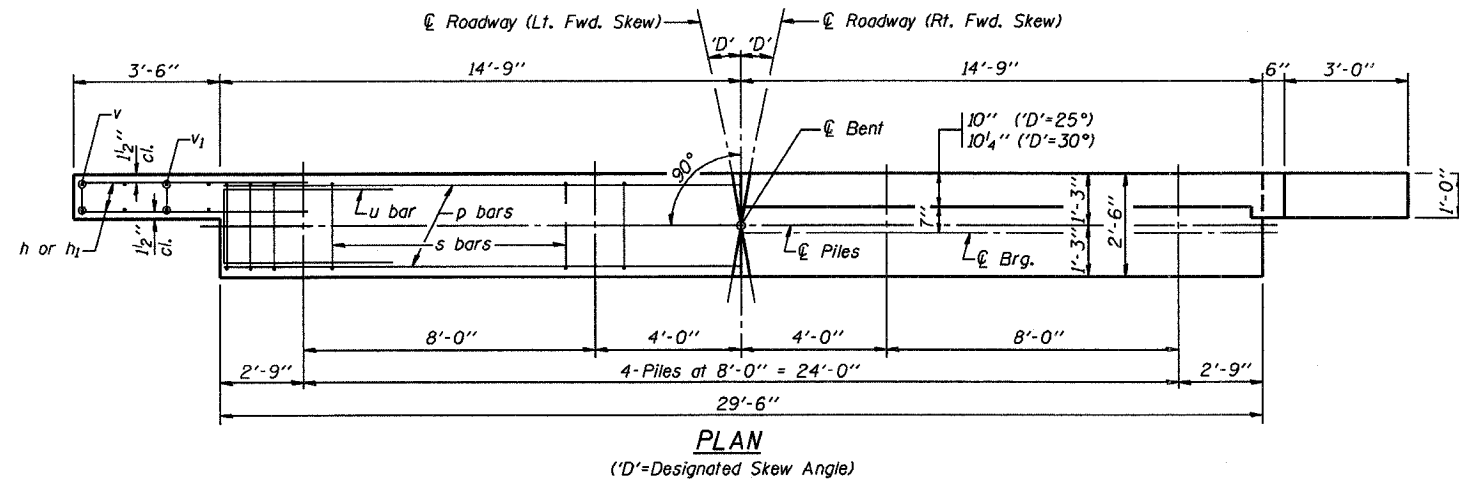
1. Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270.
2. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 square inches.
3. Reinforcement bars shall conform to the requirements of AASHTO M-31 or M-322, Grade 60.
4. Rail Post 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.

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
 Theresa S. Namaszaki
 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	<i>'D'</i> = 25°		<i>'D'</i> = 30°	
	UPGRADE END	DOWNGRADE END	UPGRADE END	DOWNGRADE END
0%	2 1/2"	2 1/2"	2 3/8"	2 3/8"
Over 0% to 1%	2 1/8"	2 7/8"	2"	2 7/8"
Over 1% to 2%	1 3/8"	3 5/8"	1"	3 3/4"
Over 2% to 3%	5/8"	4 3/8"	1/8"	4 5/8"
Over 3% to 4%	0"	5 1/8"	—	—

NOTES

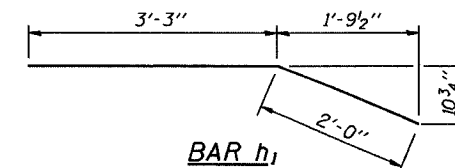
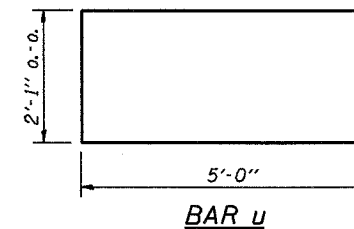
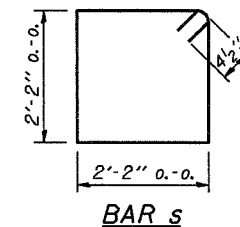
- The Backwall and the portion of the Wingwalls above the bonded construction joint shall be cast against the in-place beam.
- Reinforcement bars shall conform to the requirements of A.A.S.H.T.O. M-31 or M-322, Grade 60.
- Space reinforcement in cap to miss anchor bolts.

MAXIMUM PILE LOADS

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

DESIGN STRESSES

$f'_c = 3,500$ psi
 $f_y = 60,000$ 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	29'-2"	—
p	10	#7	29'-2"	—
s	30	#4	9'-5"	□
u	8	#6	12'-1"	□
v	8	#4	2'-6"	—
v1	8	#4	3'-5"	—
v2	58	#4	3'-1"	—
Concrete Structures				9.7 Cu. Yds.
Reinforcement Bars				1270 Lb.

**P.P.C. DECK BEAMS
PILE BENT ABUTMENT**

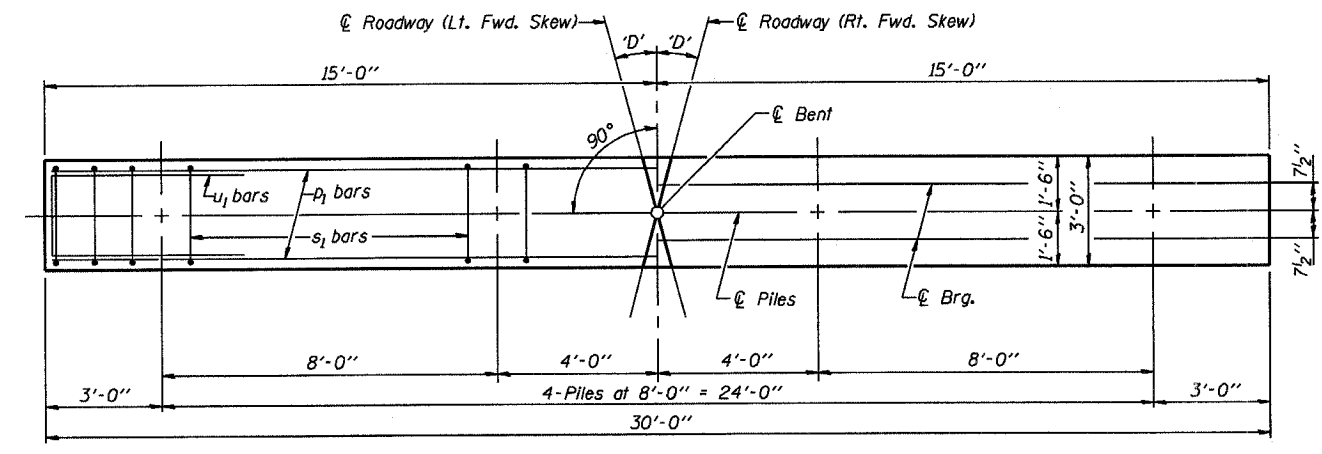
24' RDWY.	17" BMS.	<i>'D'</i> = 25° OR 30°
STANDARD CA-2417-30		

Illinois Department of Transportation

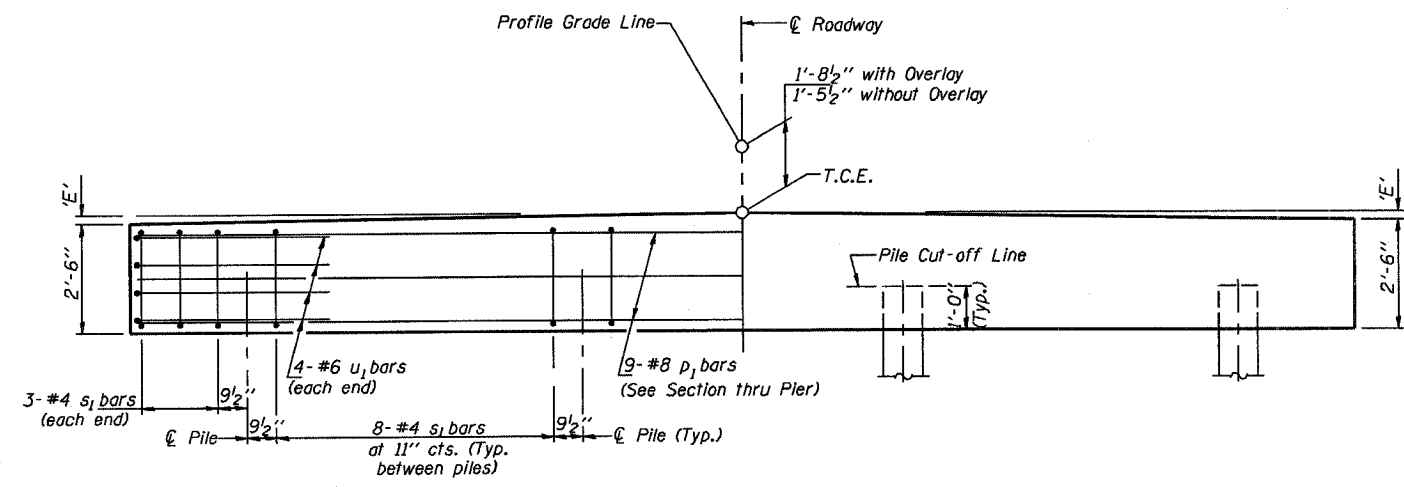
PASSED APRIL 4, 2005
Thomas S. Romagnolo
Engineer of Bridge Design

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

1568-1-1 03/01/05



PLAN
(*D*' = Designated Skew Angle)



ELEVATION

DIMENSION 'E'

GRADE	'D'=25°		'D'=30°	
	UPGRADE END	DOWNGRADE END	UPGRADE END	DOWNGRADE END
0%	2 1/2"	2 1/2"	2 3/8"	2 3/8"
Over 0% to 1%	2 1/4"	2 7/8"	2"	2 7/8"
Over 1% to 2%	1 3/8"	3 5/8"	1"	3 3/4"
Over 2% to 3%	5/8"	4 3/8"	5/8"	4 5/8"
Over 3% to 4%	0"	5 1/8"		

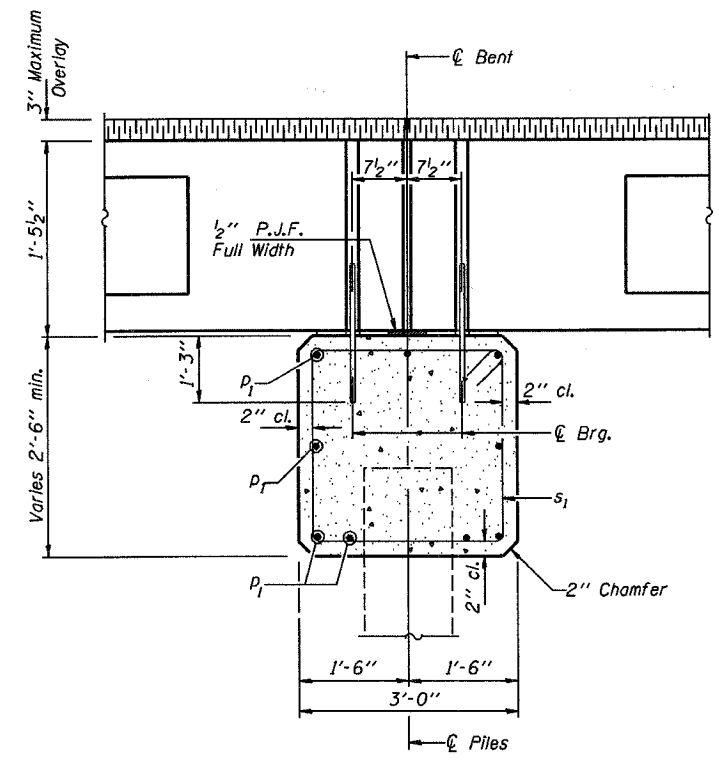
MAXIMUM PILE LOADS

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

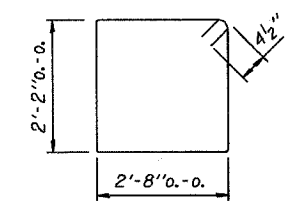
Longer of Either Span Supported by Pier.

DESIGN STRESSES

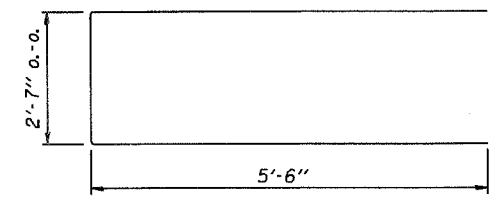
$f'_c = 3,500$ psi
 $f_y = 60,000$ psi



SECTION THRU PIER
(At Right Angles)



BAR s1



BAR u1

BILL OF MATERIAL FOR ONE PIER

Bar	No.	Size	Length	Shape
p_1	9	#8	29'-8"	—
s_1	30	#4	10'-5"	□
u_1	8	#6	12'-7"	—
Concrete Structures			8.7	Cu. Yds.
Reinforcement Bars			1070	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'=25° OR 30°
STANDARD CP-2417-30		

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

NOTES

Hollow structural steel tubing shall conform to the requirements of ASTM designation A500 Grade B Structural Steel Tubing and shall meet the longitudinal CVN requirements of 15 ft.-lbs. at 0° F.

All other steel shapes and plates shall conform to the requirements of AASHTO M 270 Grade 36 except posts and angles shall conform to AASHTO M 270 Grade 50.

Bolts, cap screws, and nuts shall conform to the requirement of ASTM designation A307 except for high strength bolts, nuts and washers noted which shall conform to AASHTO M 164.

All bolts, nuts, cap screws, washers and lock washers shall be galvanized according to AASHTO M 232.

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

Railing shall be according to Section 509 of the Standard Specifications, except as noted, and will be paid for at the contract unit price per foot for STEEL RAILING, TYPE S-1.

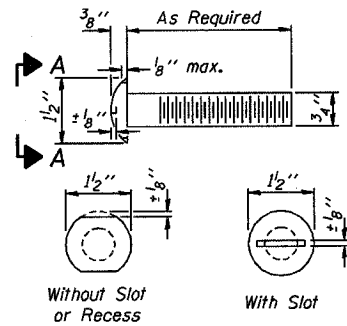
For multi-span bridges, sufficient 1/4" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with STEEL RAILING, TYPE S-1.

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

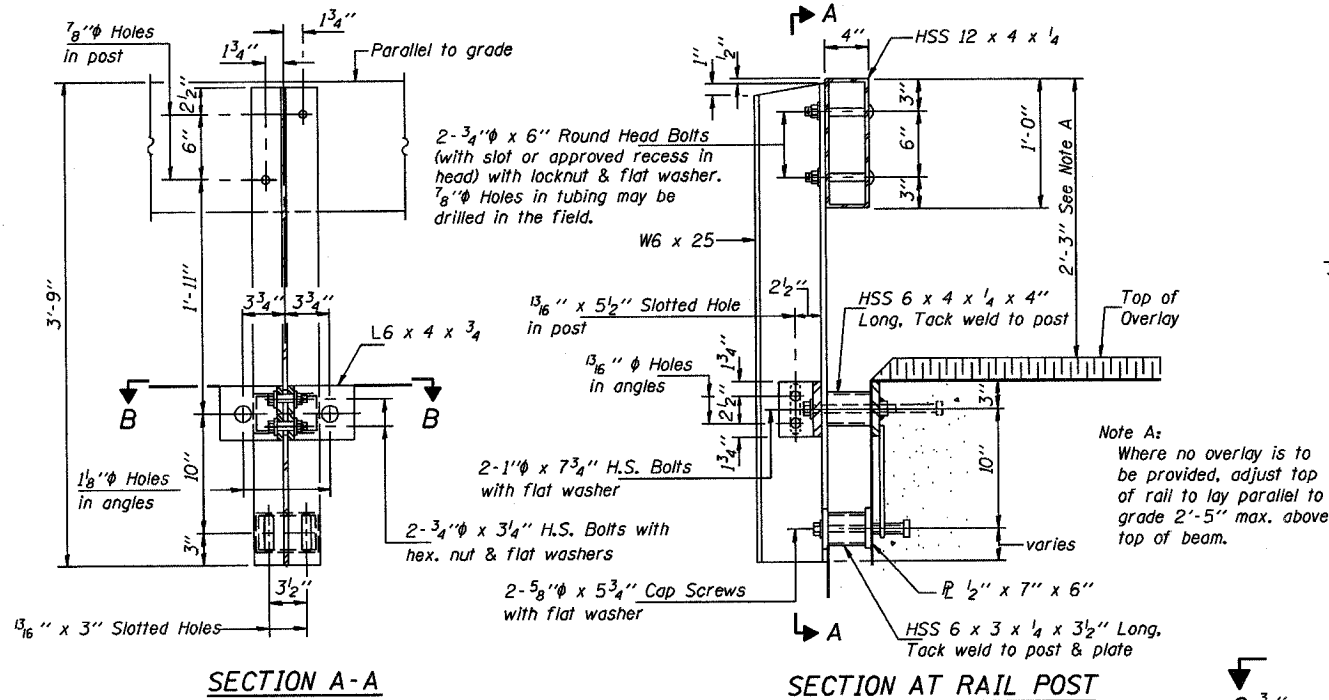
The 1/2" x 7" x 6" plates that come in contact with concrete shall either receive two coats of asphalt paint conforming to Section 1060.07 Type II, or 1/8" fabric bearing pads shall be placed between the plates and concrete.

The 3/4" high strength bolts used to connect the 6 x 4 x 3/4 angles to the post shall be tightened according to Article 505.04 (FX2) of the Standard Specifications. The 1" high strength bolts connecting the angles to the concrete shall be tightened to a snug fit and given an additional 1/8 turn. The 5/8" cap screws in bottom of posts shall be tightened to a snug fit only.

The maximum allowable rail post spacing shall be 10'-6". The rail post spacing shown elsewhere in the plans is based on the allowable spacing for another type of rail. When this type of rail is used, the number of posts may be decreased and the post spacing increased to provide equal post spaces of 10'-6" or less.

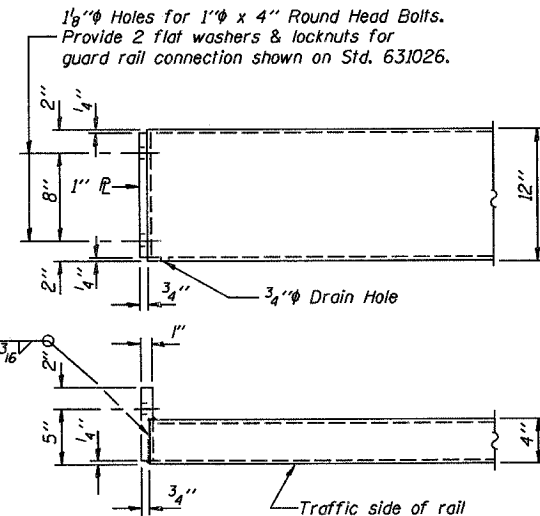


**VIEW A-A
ROUND HEAD BOLT**

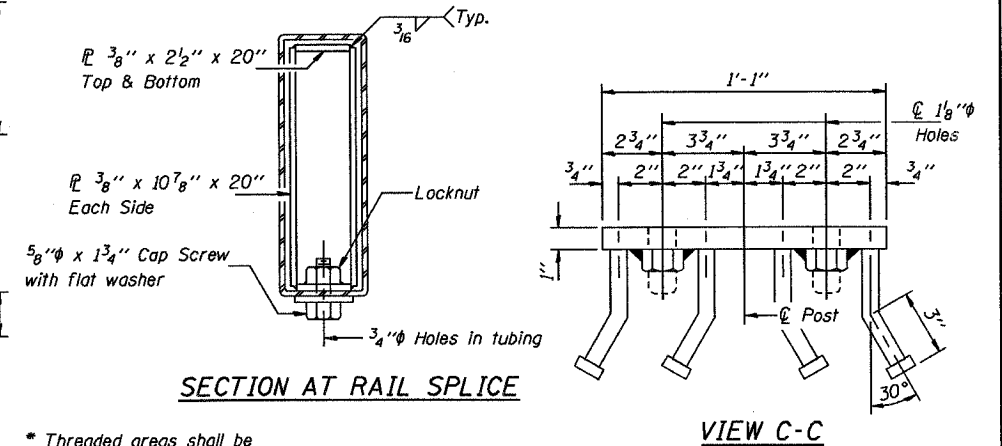


SECTION A-A

SECTION AT RAIL POST

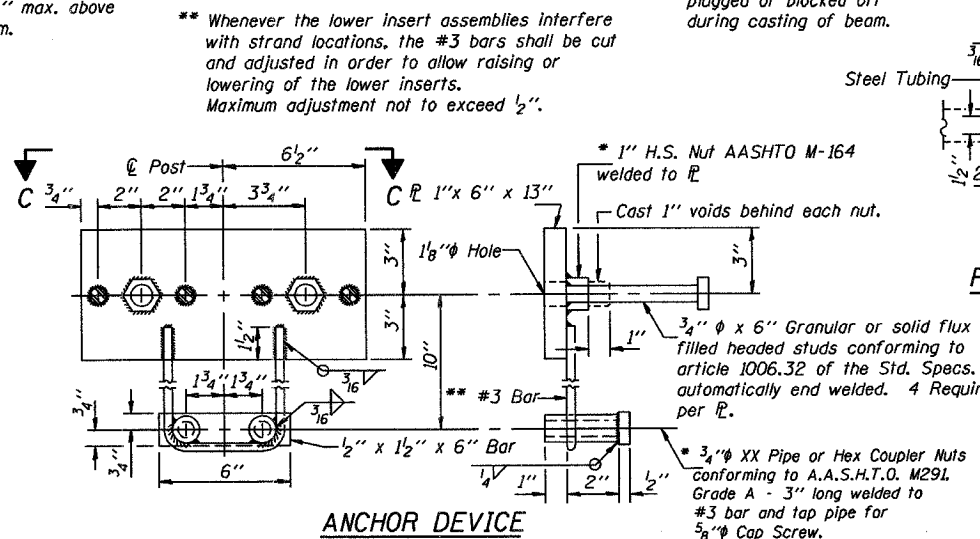


END OF RAIL DETAILS

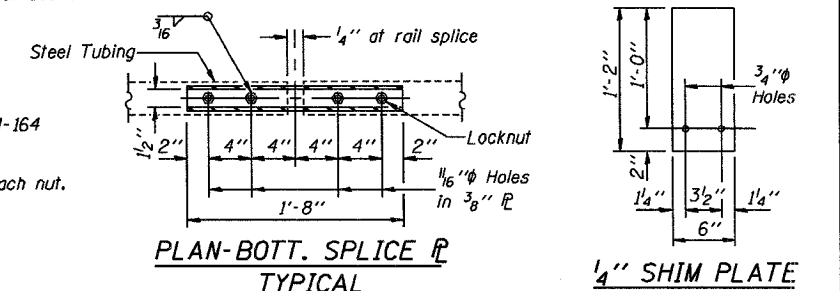


SECTION AT RAIL SPLICE

VIEW C-C



ANCHOR DEVICE

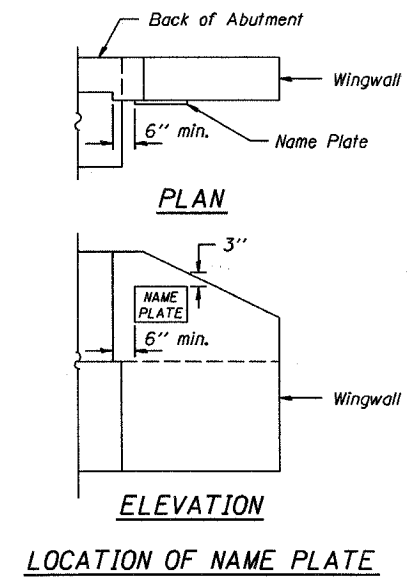
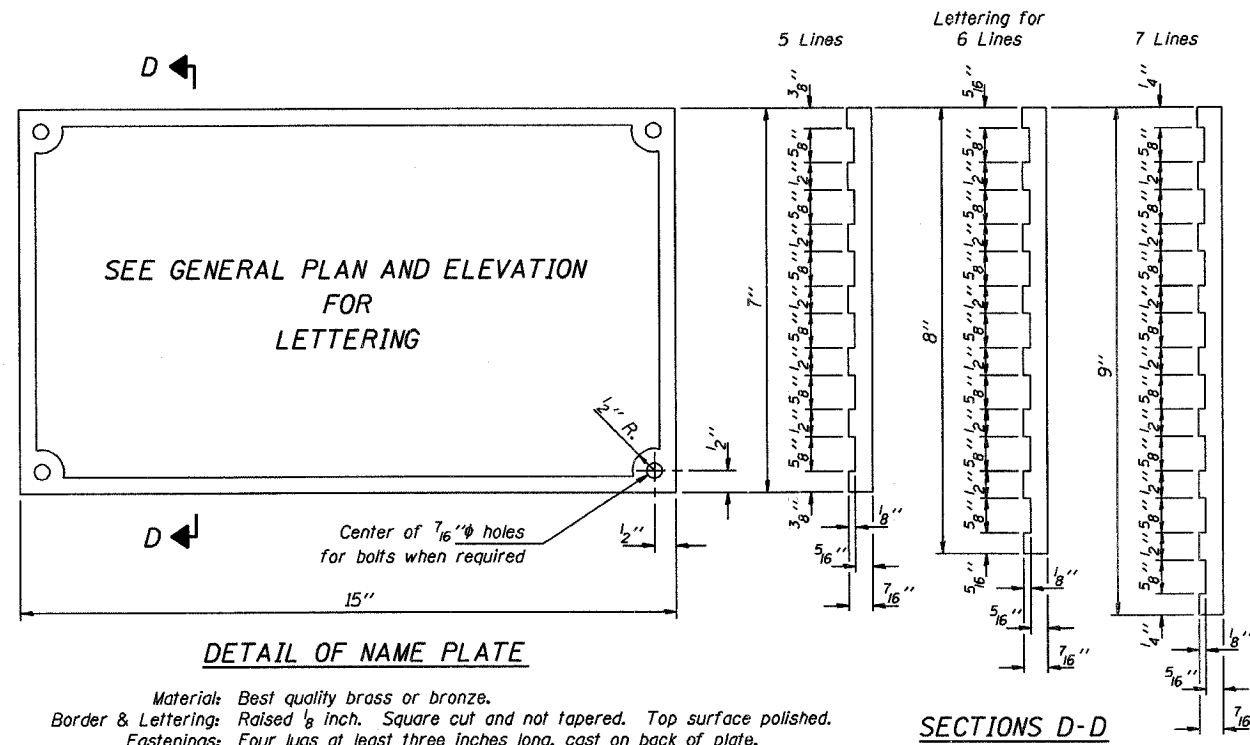


PLAN-BOTT. SPLICE TYPICAL

1/4 SHIM PLATE

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

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



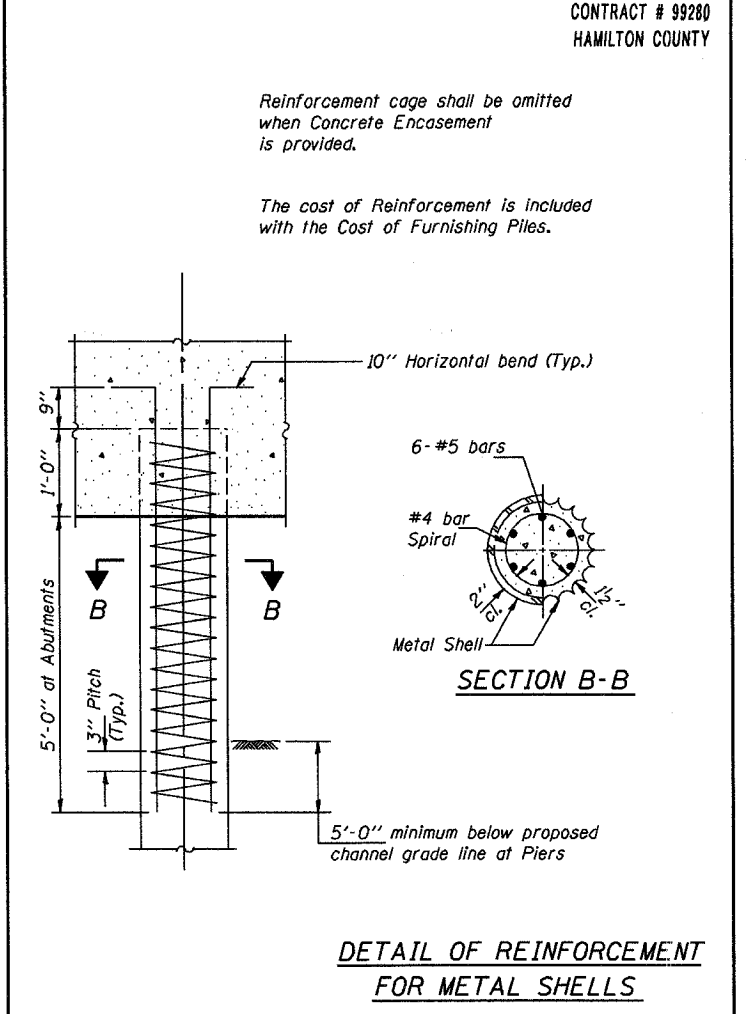
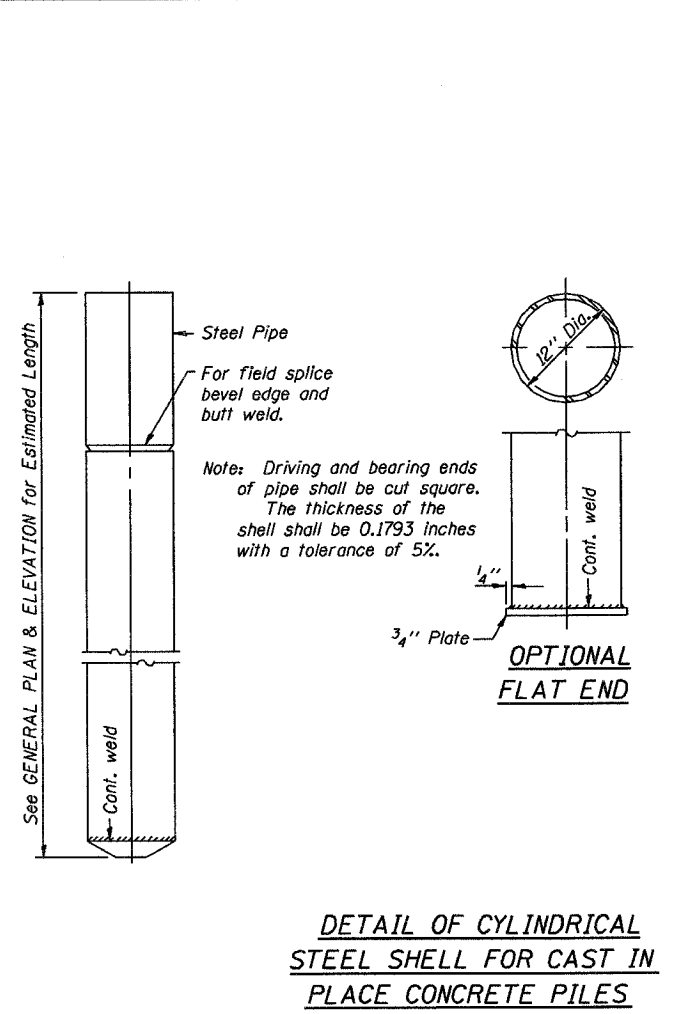
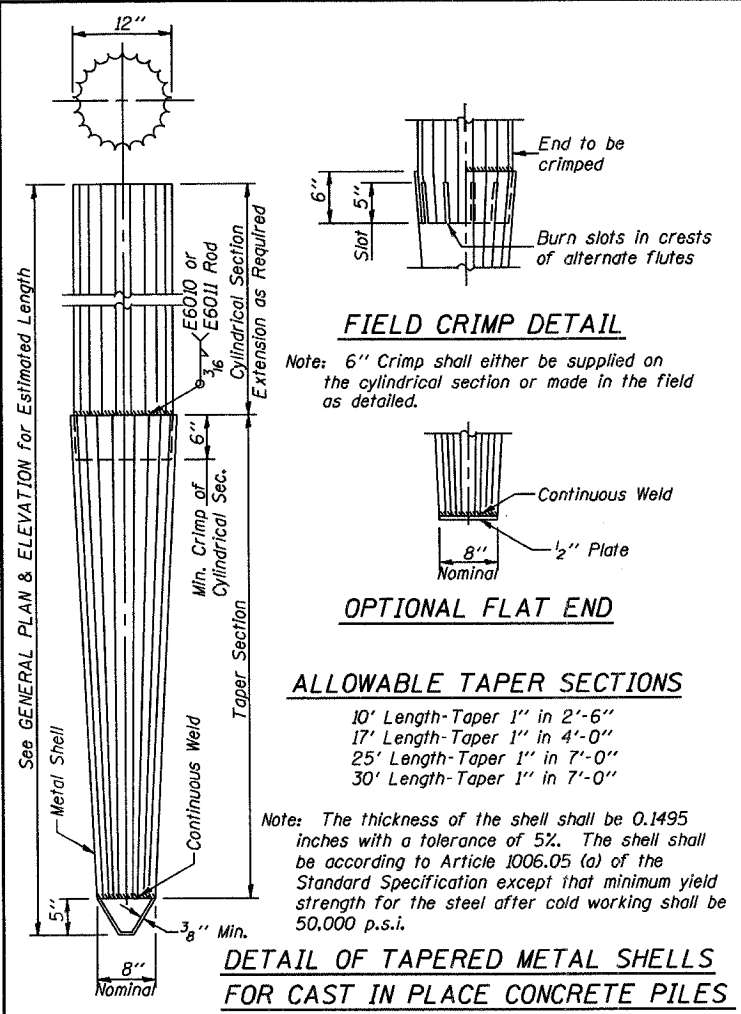
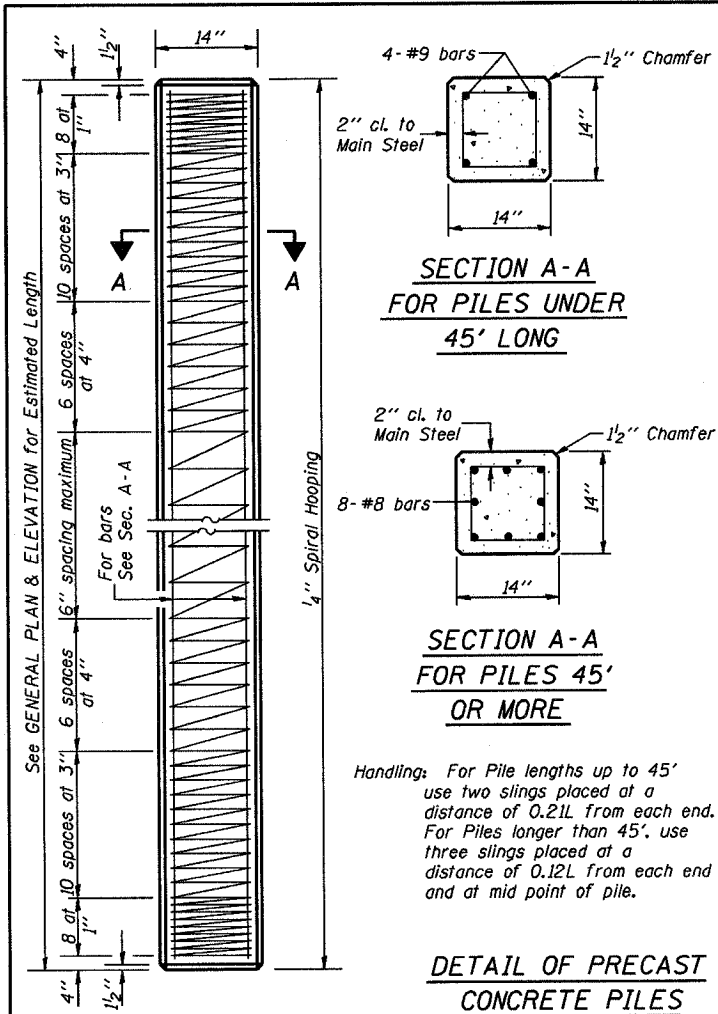
Illinois Department of Transportation

PASSED APRIL 4, 2005
Thomas J. Namasinski
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APPROVED APRIL 4, 2005
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Engineer of Bridges and Structures

ISSUED 7-1-99B

NAME PLATE
STANDARD CN

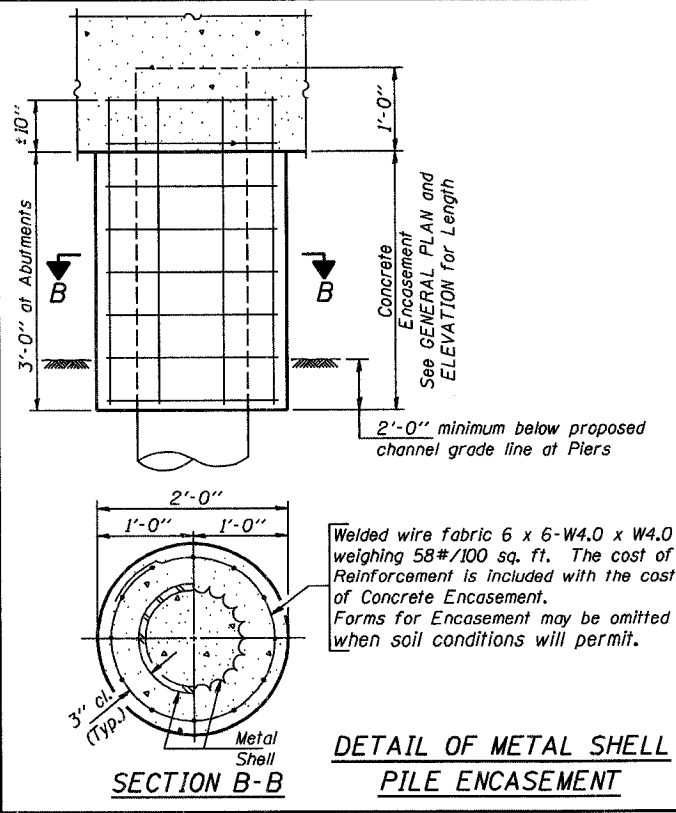
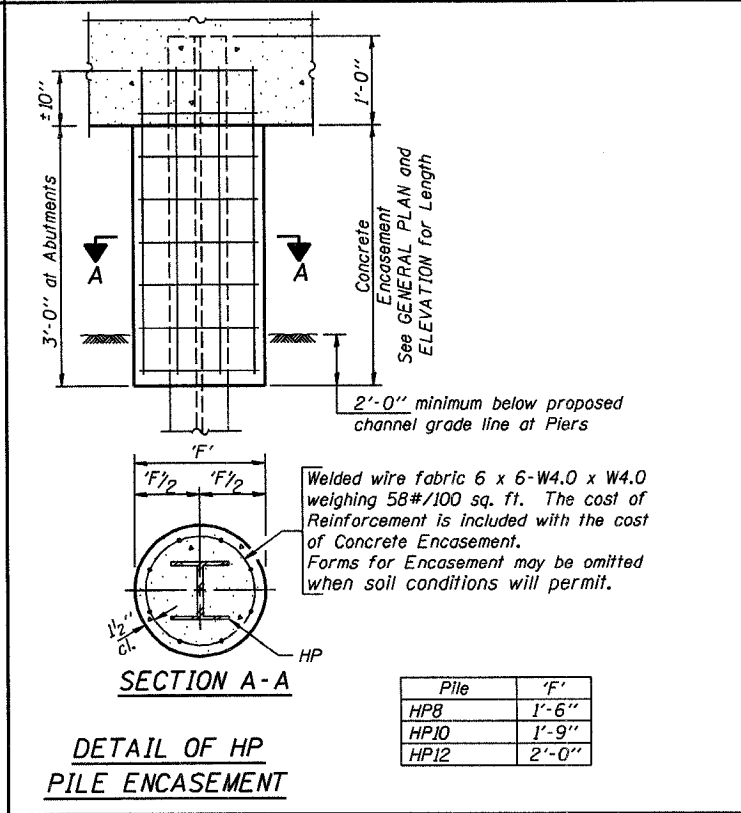


Illinois Department of Transportation

PASSED FEBRUARY 1, 2000
Thomas J. Nomanakabi
Engineer of Bridge Design

APPROVED FEBRUARY 1, 2000
Ralph E. Anderson
Engineer of Bridges and Structures

86-H-1 CONCRETE



QUANTITIES/FT. OF ENCASEMENT (STEEL PILES)

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

(METAL SHELL PILES)

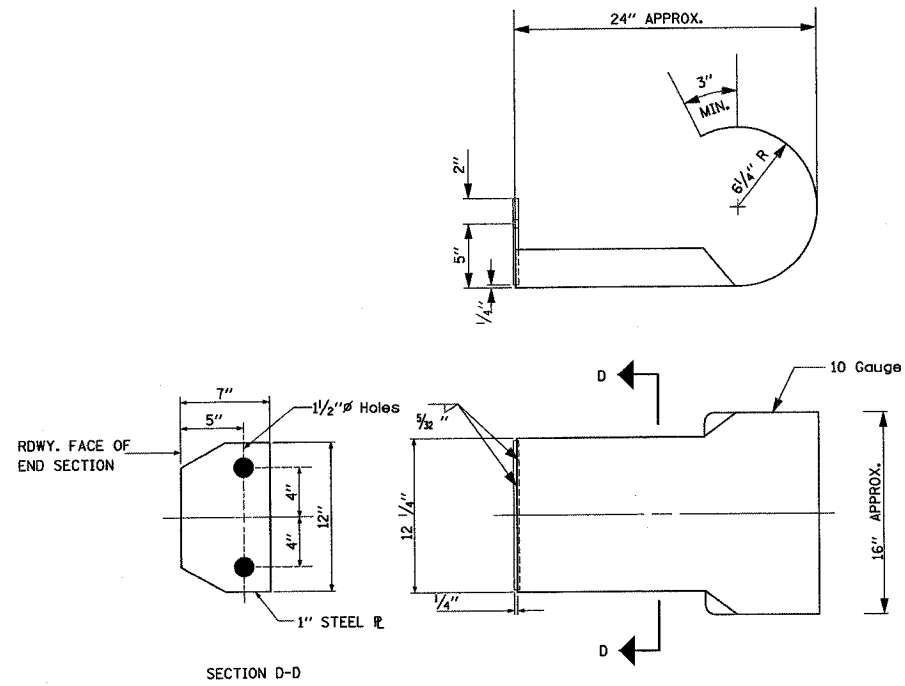
Pile Size	Item	Quantity
12" Dia.	Concrete Encasement	0.087 C.Y.

PILE DETAILS

STANDARD CX-1

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
318	97-12113-02-BR	HAMILTON	15	15
FED. ROAD DIST. NO. 9		ILLINOIS	CONTRARY CREEK	
PROJECT * BROS-065(036)			CONTRACT * 99280	
LEC JOB #H05ILO10HM				

CURLED END SECTION DETAIL



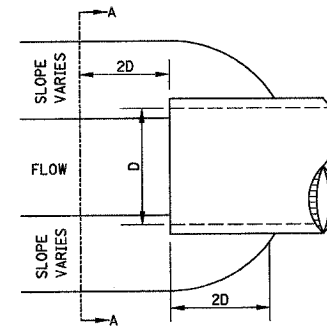
ALL OTHER STEEL SHAPES AND PLATES SHALL CONFORM TO THE REQUIREMENTS OF A.A.S.H.T.O. DESIGNATION M-183 EXCEPT POSTS AND ANGLES SHALL CONFORM TO A.A.S.H.T.O. M-223, GRADE 50.

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.

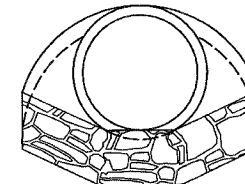
ALL BOLTS, NUTS, CAP SCREWS, WASHERS, AND LOCK WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH A.A.S.H.T.O. DESIGNATION M-232.

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

STONE RIPRAP DITCH DESIGN

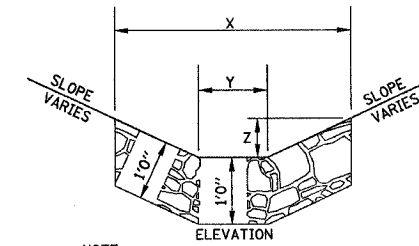


Plan



Section A-A

NOTE: FOR PLACEMENT, QUALITY GRADATION AND OTHER MISCELLANEOUS REQUIREMENTS FOR STONE RIPRAP DITCH-SEE SPECIAL PROVISIONS.



ELEVATION

NOTE:
BOTTOM OF DITCH

SLOPE

	1 1/2:1	2:1	3:1	
2 FT	X= 5 FT	6 FT	8 FT	
	Y= 2 FT	2 FT	2 FT	
	Z= 1 FT	1 FT	1 FT	
	0.40	0.48	0.62	TON/LIN. FT

	1 1/2:1	2:1	3:1	
3 FT	X= 6 FT	7 FT	9 FT	
	Y= 3 FT	3 FT	3 FT	
	Z= 1 FT	1 FT	1 FT	
	0.48	0.56	0.70	TON/LIN. FT

	1 1/2:1	2:1	3:1	
4 FT	X= 7 FT	8 FT	10 FT	
	Y= 4 FT	4 FT	4 FT	
	Z= 1 FT	1 FT	1 FT	
	0.56	0.64	0.78	TON/LIN. FT