

INDEX OF SHEETS

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2	PLAN & PROFILE, TYPICAL SECTIONS & GENERAL NOTES
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13	CURLED END SECTIONS & STONE RIPRAP DITCH DESIGN

THE FOLLOWING STANDARDS ARE A PART OF THESE PLANS AND ARE INCLUDED AFTER SHEET NO. 13

000001-04	STANDARD SYMBOLS, ABBREVIATIONS & PATTERNS (6 SHEETS)
280001-02	TEMPORARY EROSION CONTROL SYSTEMS (2 SHEETS)
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

QUANTITY	UNIT	ITEM	CODE NO.
157.00	CU YD	EARTH EXCAVATION	20200100
341.00	CU YD	CHANNEL EXCAVATION	20300100
771.00	CU YD	FURNISHED EXCAVATION	20400800
0.27	ACRE	SEEDING, CLASS 2 (SPECIAL)	25001000
3.00	EACH	TEMPORARY DITCH CHECKS	28000300
16.00	TON	AGGREGATE (EROSION CONTROL)	28001000
285.00	TON	STONE DUMPED RIPRAP, CLASS A4	28100807
24.00	TON	STONE RIPRAP DITCH	28102600
320.00	TON	AGGREGATE SURFACE COURSE, TYPE B	40200800
1.00	EACH	REMOVAL OF EXISTING STRUCTURES	50100100
21.40	CU YD	CONCRETE STRUCTURES	50300225
1440.00	SQ FT	PRECAST PRESTRESSED CONCRETE DECK BEAMS (27" DEPTH)	50400505
2620.00	POUND	REINFORCEMENT BARS	50800105
120.00	FOOT	STEEL RAILING, TYPE S1	50900205
210.00	FOOT	FURNISHING STEEL PILES HP10X42	51201400
210.00	FOOT	DRIVING STEEL PILES	51202700
1.00	EACH	TEST PILE STEEL HP10X42	51203400
2.10	CU YD	CONCRETE ENCASEMENT	51204315
1.00	EACH	NAME PLATES	51500100
1.00	L SUM	MOBILIZATION	67100100

DESIGN DESIGNATION:
 DESIGN SPEED: 30 MPH
 HIGHWAY CLASS - LOCAL ROAD
 EXISTING STRUCTURE NO.: 024-3088
 PROPOSED STRUCTURE NO.: 024-3132
 CURRENT A.D.T. = 50
 CONTRACT NO. 95459

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

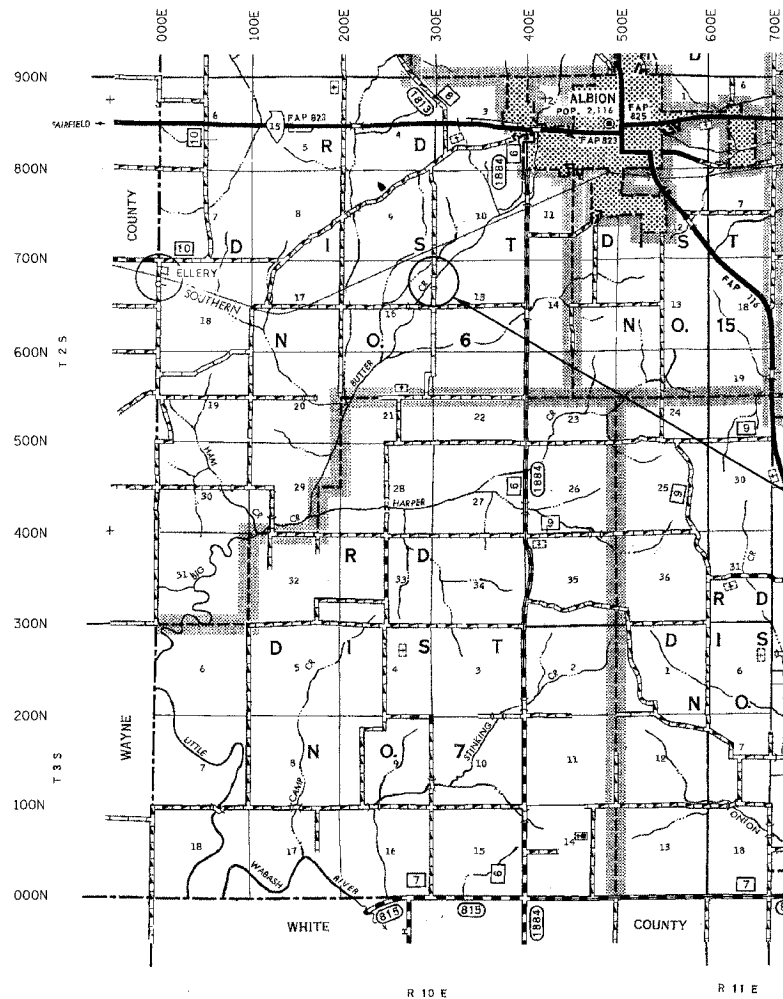
STATE OF ILLINOIS

DEPARTMENT OF TRANSPORTATION

PLANS FOR PROPOSED FEDERAL AID - B.R.R.P. PROJECT

T.R. 56 EDWARDS COUNTY SECTION 03-06114-00-BR

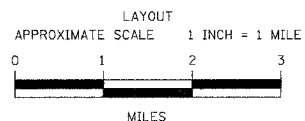
PROJECT NO. BROS-047(25) JOB NO. C-97-048-06



SECTION 03-06114-00-BR BEGINS STATION 2+00

STATION 5+00, STRUCTURE NO. 024-3132
 A 60' SINGLE SPAN PRECAST PRESTRESSED CONCRETE DECK BEAM BRIDGE (27" DEPTH), 24' ROADWAY, 0.00% GRADE, 30° RT FORWARD SKEW.

SECTION 03-06114-00-BR ENDS STATION 8+00



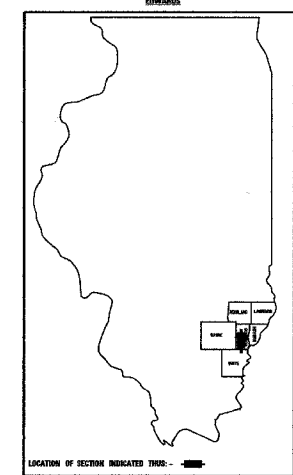
GROSS LENGTH	590.00 FT	0.11 MILES
OMISSIONS	0.00 FT	0.00 MILES
NET LENGTH	590.00 FT	0.11 MILES

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
56	03-06114-00-BR	EDWARDS	13	1

FED. ROAD DIST. NO. 7 ILLINOIS
 PROJECT# BROS-047(25)
 JOB NO. C-97-048-06
 LEC JOB # R03L0106D

FED. AID PROJECT
 CONTRACT# 95459
 BUTTER CREEK TRIBUTARY

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



PROFESSIONAL DESIGN FIRM
 LAND SURVEY & PROFESSIONAL ENGINEERING CORPORATION
 184-000887
 (62-032435)(95-002769)



AARON M. MEFFORD
 NAME
 SIGNATURE
 DATE: 1-18-06
 EXPIRES: 11-30-07

PLAN	1" = 50'	0 50' 100'
PROFILE	1" = 50'	0 50' 100'
PROFILE VERT.	1" = 5'	0 5' 10'
CROSS SECTION	1" = 5'	0 5' 10'

TOWNSHIP ROUTE 56
 BUTTER CREEK TRIBUTARY
 EDWARDS COUNTY, ILLINOIS

APPROVED: *[Signature]* 2/18/06
 COUNTY ENGINEER

PASSED: *[Signature]* 2/23/06
 DISTRICT SEVEN ENGINEER OF LOCAL ROADS & STREETS

Releasing For Bid Based on Limited Review: *[Signature]* 2/23/06
 DEPUTY DIRECTOR OF HIGHWAYS, REGION FOUR ENGINEER
 STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

SHEET TITLE:
 TITLE SHEET

SCALE: VRRS
 BY: AMM
 DATE: 1/9/06
 REV:

1 OF 13 SHEETS

SHEET NO. 1

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
56	03-06114-00-BR	EDWARDS	13	2
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	
PROJECT# BROS-047(25)		CONTRACT# 95459		
JOB NO. C-97-048-06		BUTTER CREEK TRIBUTARY		
LEC JOB # W031010ED				

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
47170
PHONE:
(812)-386-7611
FAX:
(812)-385-2812



PROFESSIONAL DESIGN FIRM
LAND SURVEY & PROFESSIONAL ENGINEERING CORPORATION
184-000887
(62-032435)(35-002769)



AARON M. MEFFORD
NAME
Signature
2-8-06
DATE
11-30-07
EXPIRES

TOWNSHIP ROUTE 56
BUTTER CREEK TRIBUTARY
EDWARDS COUNTY, ILLINOIS

SHEET TITLE:
PLAN & PROFILE
SCALE: VARS
BY: AMM
DATE: 2006
REV:
2 OF 13 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, 2002.

THE WORK INVOLVED ON THIS SECTION CONSISTS OF THE REMOVAL OF THE EXISTING STRUCTURE, THE CONSTRUCTION OF A 60 FOOT LONG SINGLE SPAN PRECAST, PRESTRESSED CONCRETE DECK BEAM BRIDGE, EARTH APPROACHES, AGGREGATE SURFACE COURSE AND OTHER MISCELLANEOUS ITEMS NECESSARY TO COMPLETE THIS SECTION.

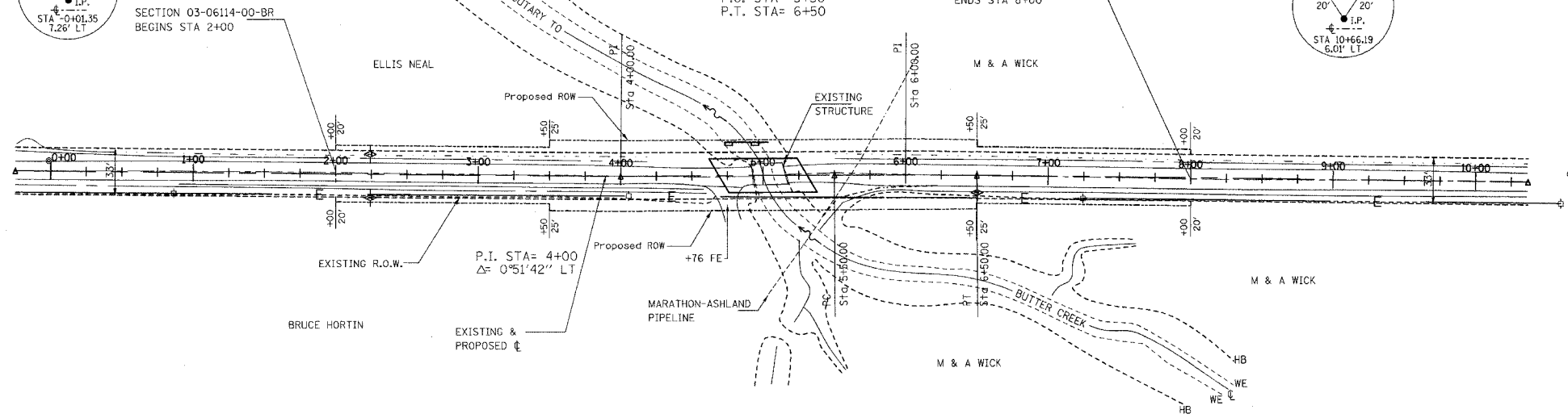
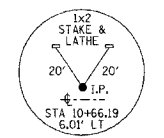
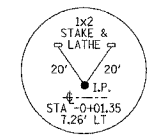
ALL ELEVATIONS ARE BASED ON U.S.G.S. MEAN SEA LEVEL DATUM.

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

THE CONTRACTOR SHALL CONTACT FRANK PAYNE AT MARATHON PIPE LINE AT LEAST 3 WORKING DAYS BEFORE PILES ARE DRIVEN OR ANY CONSTRUCTION ACTIVITIES WITHIN 50 FEET OF THE MARATHON-ASHLAND PIPELINE, SO MARATHON PIPE LINE MAY HAVE A REPRESENTATIVE AT THE WORK SITE.

NOTE: CONSTRUCTION TRANSITIONS
STA 2 + 00 TO STA 2 + 15
STA 7 + 75 TO STA 8 + 00
ALL QUANTITIES ARE INCLUDED IN THE PROPOSAL

CURVE #1
P.I. STA= 6+00
Δ= 01°02'48"
D= 01°02'48"
R= 5474.23'
T= 50'
L= 100'
E= 0.23'
T.R.=
S.E. RUN=
P.C. STA= 5+50
P.T. STA= 6+50

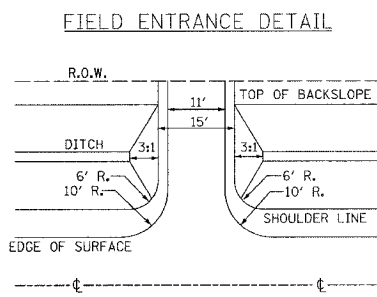
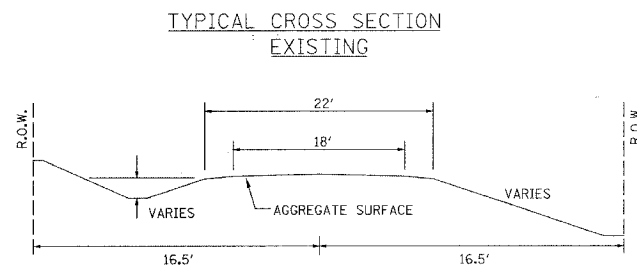
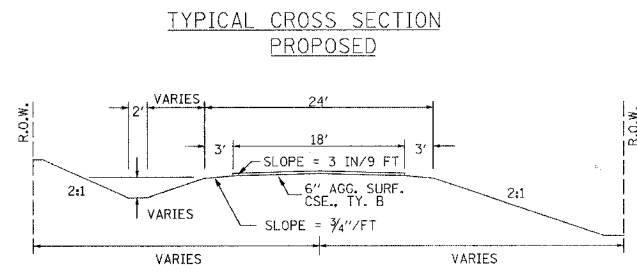


EXISTING BRIDGE STA 5+04.48; STRUCTURE NUMBER: 024-3088
A 23' LONG BRIDGE WITH A 3" THICK WOODEN DECK ON 14-3"x6" I BEAMS AND WOODEN ABUTMENTS WITH WINGWALLS.

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

PROPOSED STRUCTURE: NO. 024-3132, STA 5+00,
A 60' LONG SINGLE SPAN P.P.C.D.B. BRIDGE WITH
27" DEPTH BEAMS, SPILL THROUGH TYPE ABUTMENTS,
24' WIDTH, 30° RT FWD SKEW.

SEE SHEETS 5-12 FOR THE DESIGN AND BILL OF MATERIALS.



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

WAYNE-WHITE ELECTRIC CO-OP
ROUTE 45 WEST
FAIRFIELD, IL 62837
618-842-2196

MARATHON PIPE LINE
MR. FRANK PAYNE
618-432-7223, EXT. 227

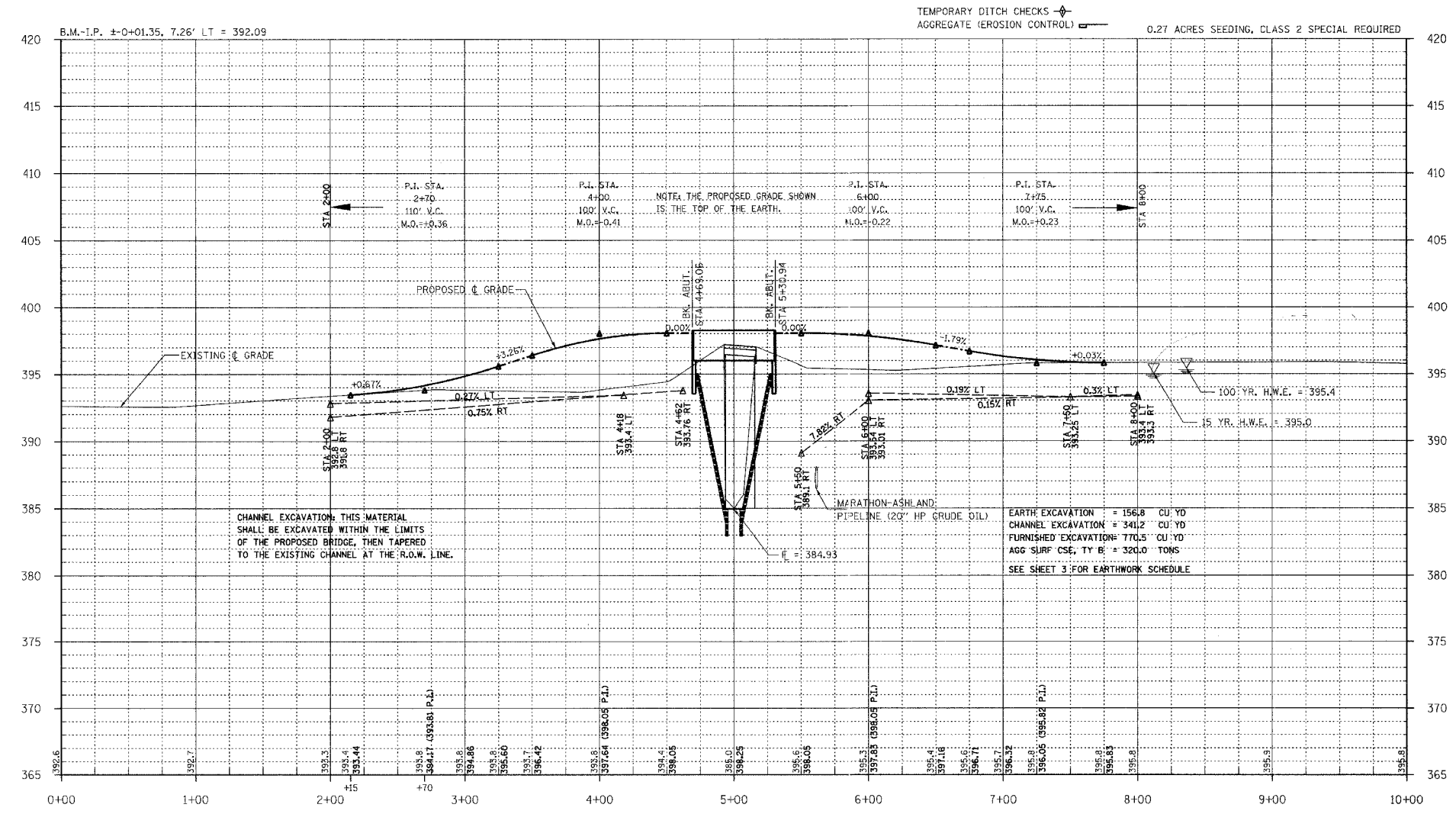
MARATHON/ASHLAND PIPE
LINE, LLC
419-421-3031

NOTE: CONSTRUCT SPECIAL DITCH

STA 2+00 TO STA 4+18 LT
STA 2+00 TO STA 4+62 RT
STA 6+00 TO STA 8+00 LT
STA 5+50 TO STA 8+00 RT

NOTE: CONSTRUCT STONE RIPRAP DITCH

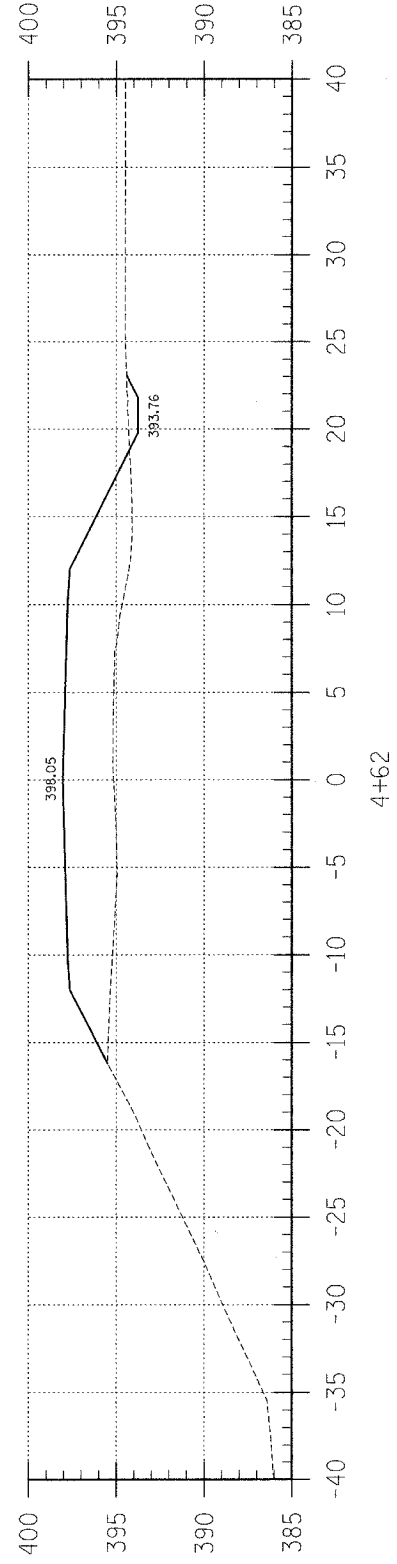
STA 5+50 TO STA 6+00 RT (0.48 TON/LIN FT)
24 TON STONE RIPRAP DITCH ALLOWED IN PROPOSAL.
SEE SHEET NO. 13 FOR STONE RIPRAP DITCH DETAIL.



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.

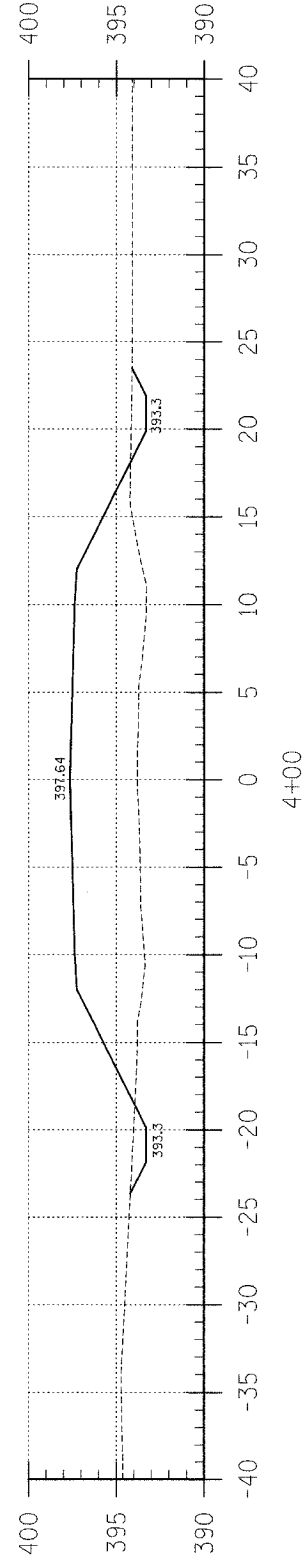
EARTH EXCAVATION = 156.8 CU YD
CHANNEL EXCAVATION = 341.2 CU YD
FURNISHED EXCAVATION = 770.5 CU YD
AGG SURF CSE, TY B = 320.0 TONS
SEE SHEET 3 FOR EARTHWORK SCHEDULE

TEMPORARY DITCH CHECKS -
AGGREGATE (EROSION CONTROL) 0.27 ACRES SEEDING, CLASS 2 SPECIAL REQUIRED



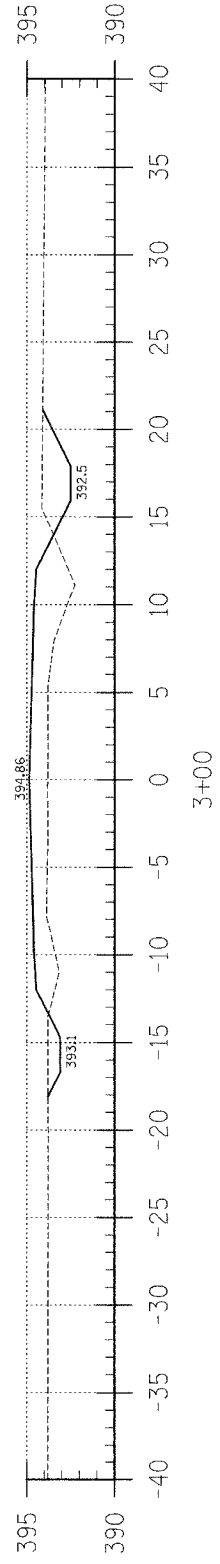
C = 1.8
F = 85.3

4+62



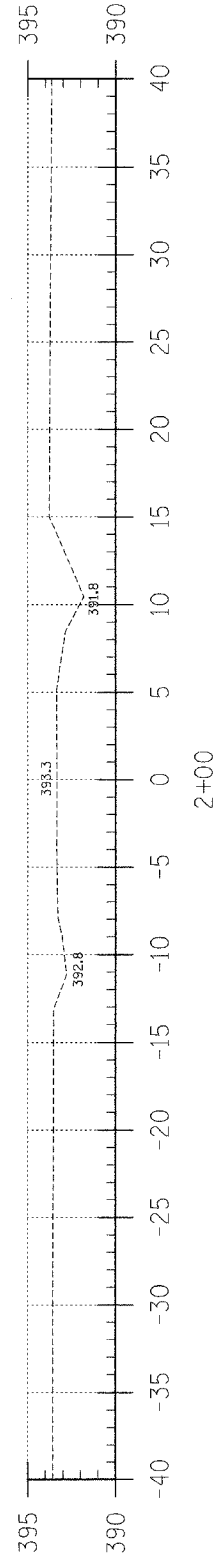
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F = 115.6

4+00

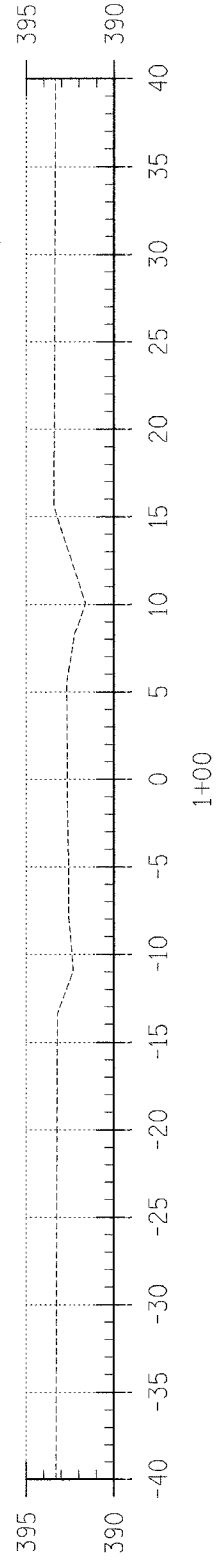


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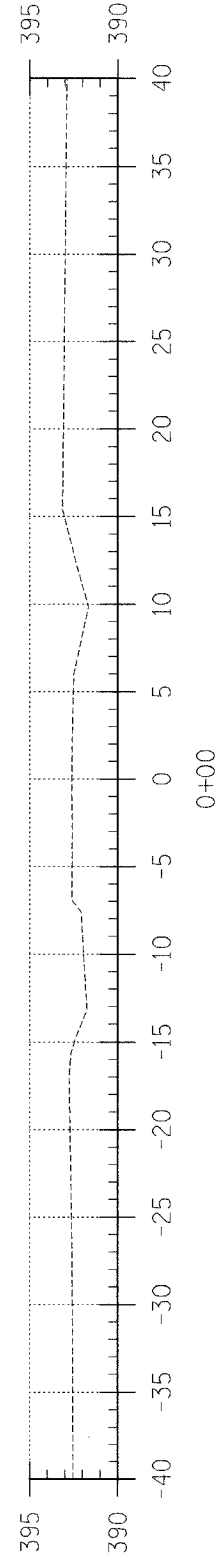
3+00



2+00



1+00



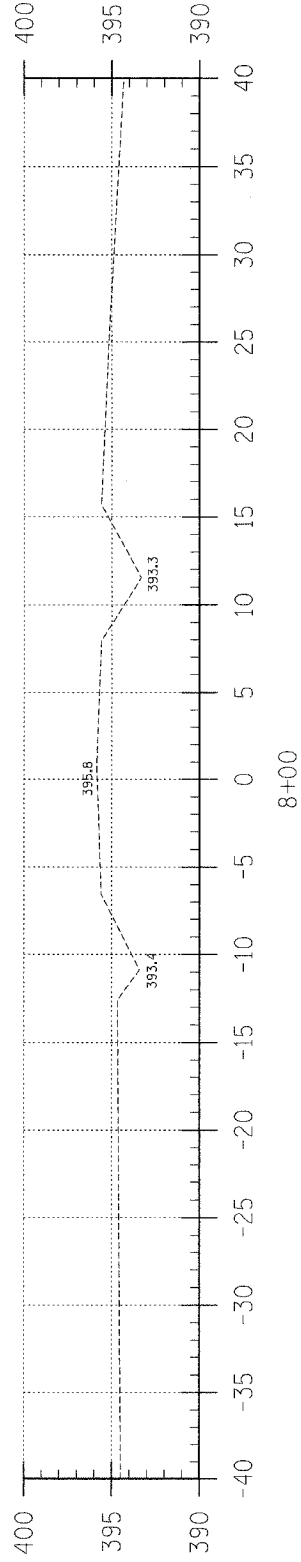
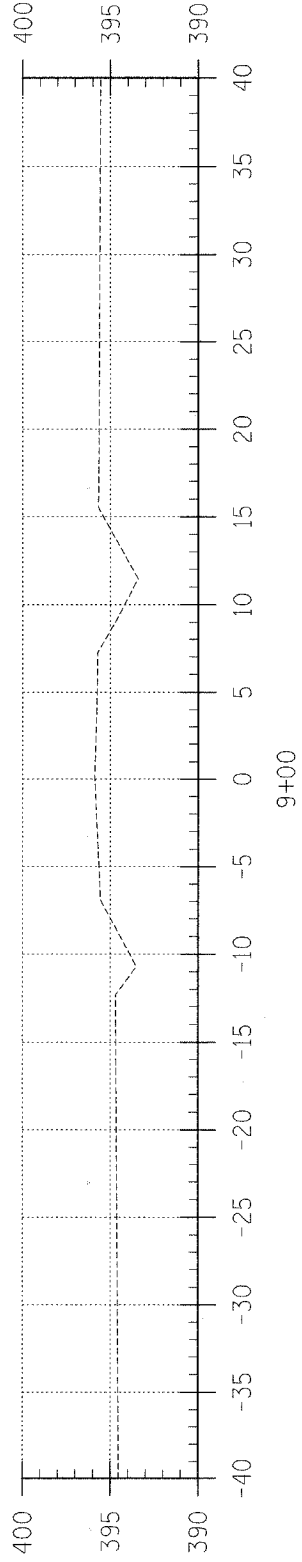
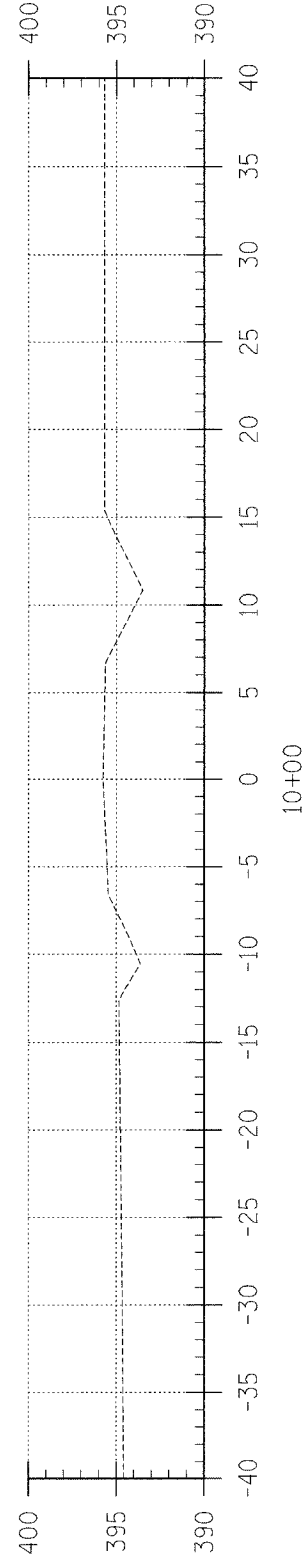
0+00

EARTHWORK SCHEDULE

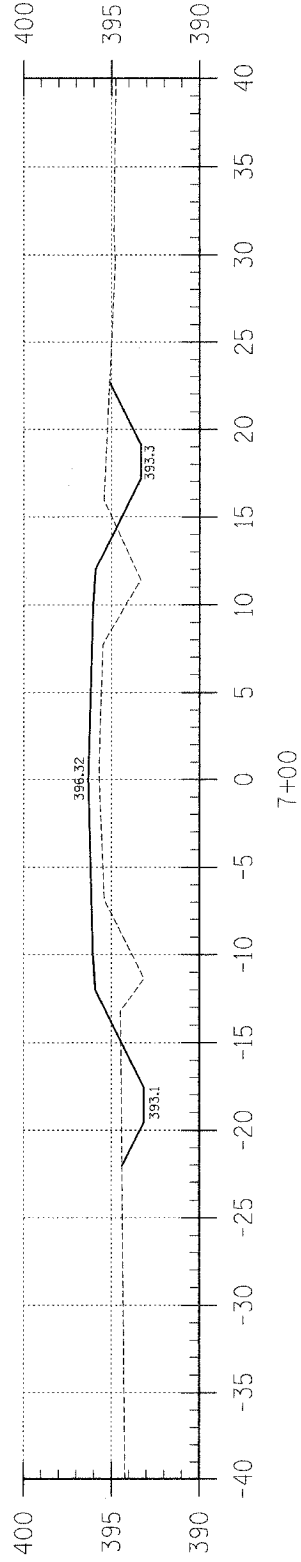
LOCATION	EARTH EXCAVATION		CHANNEL EXCAVATION		ESTIMATED UNSUITABLE MATERIAL		SUITABLE MATERIAL ADJUSTED FOR SHRINKAGE		EMBANKMENT		EARTHWORK BALANCE WASTE (+) OR SHORTAGE (-)	
	CUBIC YARD	CUBIC YARD	CUBIC YARD	CUBIC YARD	CUBIC YARD	CUBIC YARD	CUBIC YARD	CUBIC YARD	CUBIC YARD	CUBIC YARD	CUBIC YARD	CUBIC YARD
STA 0+00 TO 4+63.1	56.1	0.0	0.0	0.0	0.0	42.1	554.8	-512.7				
STA 4+63.1 TO 5+30.9	0.0	341.2	170.6	0.0	128.0	0.0	0.0	+128.0				
STA 5+30.9 TO 10+00	100.7	0.0	0.0	0.0	75.5	454.9	6.4	-379.4				
1 FIELD ENTRANCES	0.0	0.0	0.0	0.0	0.0	0.0	6.4	-6.4				
TOTAL	156.8	341.2	170.6	245.6	1016.0	-770.5						

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
56	03-06114-00-BR	EDWARDS	13	3
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	
PROJECT* BROS-047(25)		CONTRACT* 95459		PHONE:
JOB NO. C-97-048-06		BUTTER CREEK TRIBUTARY		(618)-262-8651
LEC JOB # H0310002				
405 W. STATE ST SUITE 1 PRINCETON, IN 47670				
PHONE: (812)-386-7611 FAX: (812)-385-2812				
LAMAC ENGINEERING CO.				
PROFESSIONAL DESIGN FIRM LAND SURVEY & PROFESSIONAL ENGINEERING CORPORATION 184-00087 (62-032435)(35-002769)				
AARON M. MEFFORD REGISTERED PROFESSIONAL ENGINEER ILLINOIS 56284				
NAME SIGNATURE DATE 1-19-06 11-30-07 EXPIRES				
TOWNSHIP ROUTE 56 BUTTER CREEK TRIBUTARY EDWARDS COUNTY, ILLINOIS				
SHEET TITLE:				
CROSS-SECTIONS				
SCALE: 1" = 5'				
BY: AMM				
DATE: 1986				
REV: MLG				
3 OF 13 SHEETS				
SHEET NO. 3				

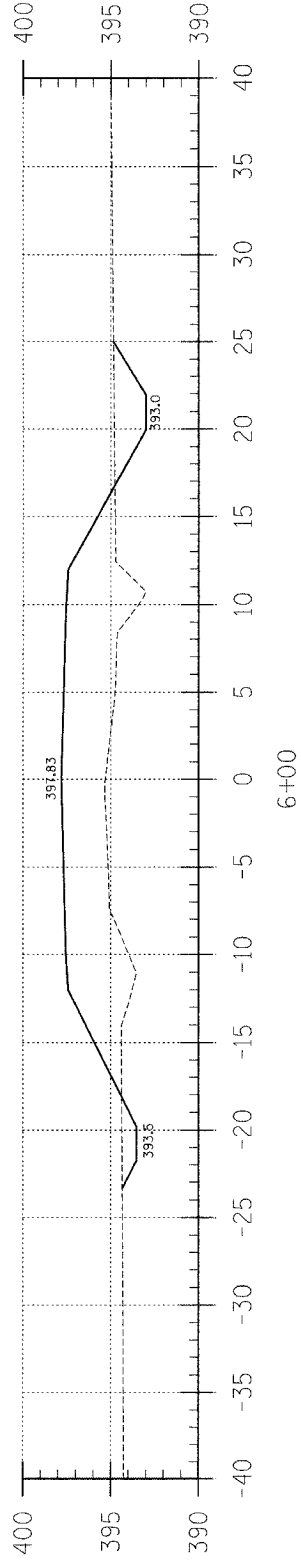
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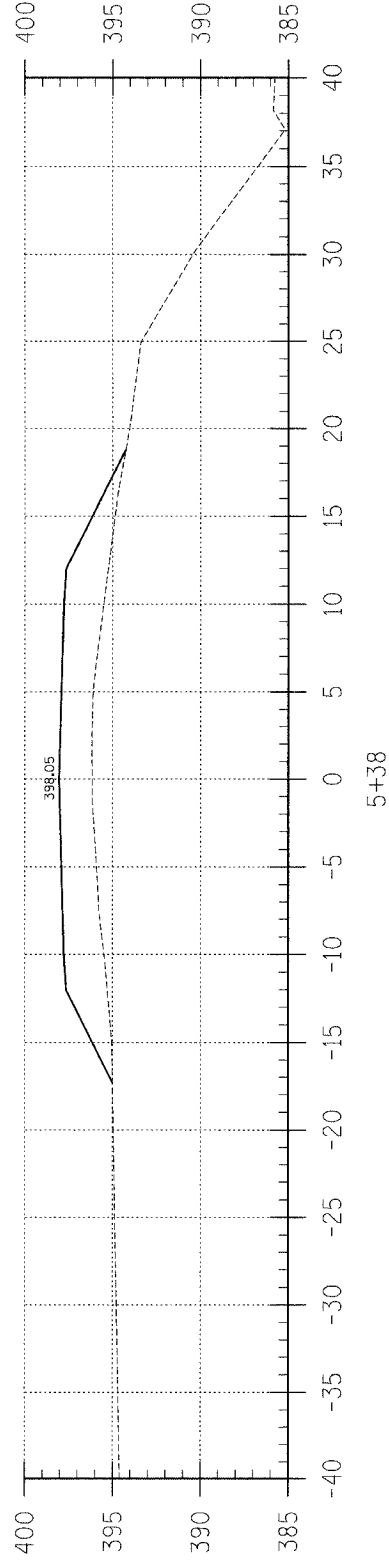
C = 16.5
F = 31.7



C = 13.2
F = 88.4



C = 0.0
F = 62.9



T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
56	03-06114-00-BR	EDWARDS	13	4
FED. ROAD DIST. NO. 7 ILLINOIS		FED. AID PROJECT		
PROJECT# BROS-047(25)		CONTRACT# 95459		
JOB NO. C-97-048-06		BUTTER CREEK TRIBUTARY		

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



PROFESSIONAL
DESIGN FIRM
LAND SURVEY &
PROFESSIONAL
ENGINEERING
CORPORATION
184-00087
(62-032435)(05-002769)



AARON M. MEFFORD
NAME
Aaron M. Mefford
SIGNATURE
1-18-06
DATE
11-30-07
EXPIRES

TOWNSHIP ROUTE 56
BUTTER CREEK TRIBUTARY
EDWARDS COUNTY, ILLINOIS

SHEET TITLE:

CROSS-SECTIONS

SCALE: 1" = 5'
BY: AMM
DATE: 1966
REV: MLG

4 OF 13
SHEETS

SHEET NO.
4

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
56	03-06114-00-BR	EDWARDS	13	5
FED. ROAD DIST. NO. 7 ILLINOIS		FED. AID PROJECT		323 W. 3RD. ST. P.O. BOX 160 MT. CARMEL, IL 62863
PROJECT# BROS-047(25)		CONTRACT# 95459		PHONE: (618)-262-8651
JOB NO. C-97-048-06		BUTTER CREEK TRIBUTARY		FAX: (618)-263-3327
LEC JOB # H01010ED				

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



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

TOWNSHIP ROUTE 56
BUTTER CREEK TRIBUTARY
EDWARDS COUNTY, ILLINOIS

SHEET TITLE:

GENERAL PLAN AND ELEVATION

SCALE: NONE

BY: AMM

DATE: 1986

REV:

5 OF 13 SHEETS

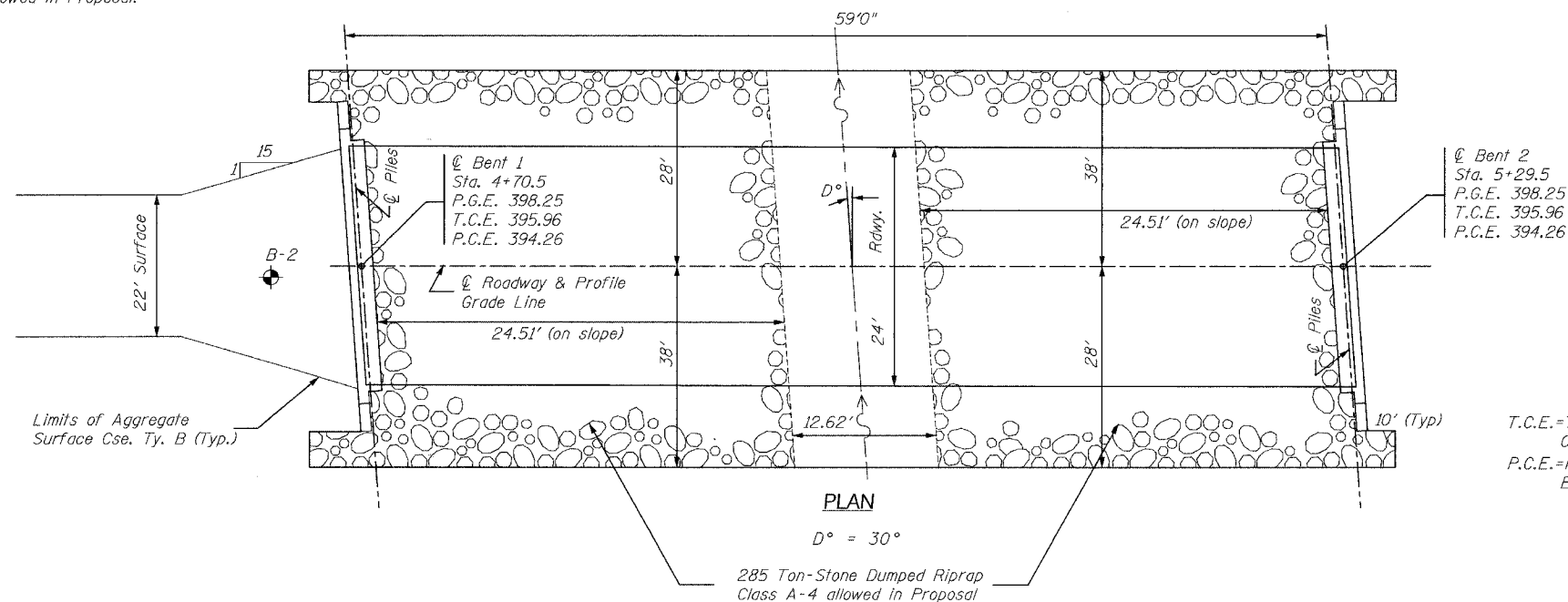
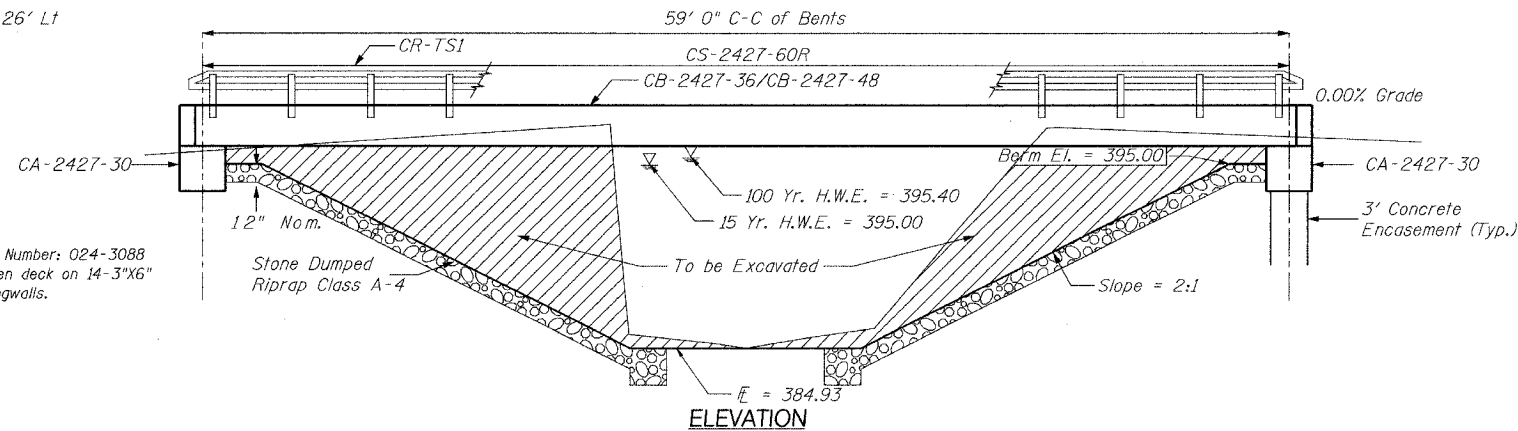
SHEET NO.

5

B.M. - Iron Pin ± Sta. 0+01.35, 7.26' Lt
Elevation = 392.09

Existing Bridge Sta 5+04.48; Structure Number: 024-3088
A 23' long bridge with a 3" thick wooden deck on 14-3"x16" I beams and wooden abutments with wingwalls.

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



NOTE: All items deemed fit for use on other Rd. District projects shall become the property of the said Rd. 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, 2002) as shown in the "Article/Section No. Reference Table."

ARTICLE/SECTION NO. REFERENCE TABLE

Previous No.	Current No.
504.06	504.06
505.04	505.04
706.05	1006.05
706.32	1006.32
760.07	1060.07
STD 2340	STD 631026

DESIGN SPECIFICATIONS

1996 AASHTO
HS 20-44 Loading, Load Factor Design

Construction Permits - The requirements of the Division of Water Resources have been fulfilled in accordance with Nationwide Permit No. 14.

PILE DATA (2-ABUTS.)

Type: Steel Piles HP10X42
Capacity: Drive to Refusal
Estimated Length: 30 Feet
Number Required: 8 (Includes 1 Test Pile in Bent #2)

STATION 5+00
BUTTER CREEK TRIBUTARY
SEC. 03-06114-00-BR BUILT 20
EDWARDS COUNTY
LOADING HS20-44
STR. NO. 024-3132
PROJ. NO. BROS-047(25)

LETTERING FOR NAME PLATE

Locate Name Plate at the Southeast Corner of the Bridge (See Sd. CN)

WATERWAY INFORMATION

Drainage Area = 4.1 Sq. Mi. Low Grade Elev. = 392.56 At Sta. 0+84

Flood	Freq. Yr.	Q C.F.S.	Opening Sq.Ft.		Natural H.W.E.	Head-Ft.		Headwater El.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	15	1090	157*	286**	395.00	0.04	0.01	395.04	395.01
Base	100	1755	165**	305***	395.40	1.17	0.37	396.57	395.77
Overlapping									
Max. Calc.	500	2305							

* Area Over Road = 752 Sq Ft
** Area Over Road = 942 Sq Ft
*** Area Over Road = 551 Sq Ft
**** Area Over Road = 676 Sq Ft

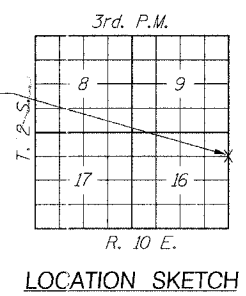
Item	Unit	Super	Sub.		Total
			Piers	Abuts.	
Removal of Existing Structures	L. Sum				1
Hit Conc. Surf. Cse. Class 1	Loas				
Waterproofing Membrane System	Sq.Yds.				
Concrete Structures	Cu.Yds.			21.4	21.4
P.P. Conc. Dk. Bm. 27" Dp.	Sq.Ft.	1440			1440
Steel Railing, Type S1	L.in.Ft.	120			120
Reinforcement Bars	Lbs.			2620	2620
Furnishing Steel Piles HP10X42	L.in.Ft.			210	210
Driving Steel Piles	L.in.Ft.			210	210
Test Pile Steel HP10X42	Each			1	1
Name Plates	Each			1	1
Concrete Encasement	Cu.Yds.			2.1	2.1

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



B-1
119.5' N of center ex. bridge

T.C.E. = Top of Cap Elev.
P.C.E. = Pile Cut-Off Elev.



INDEX OF SHEETS

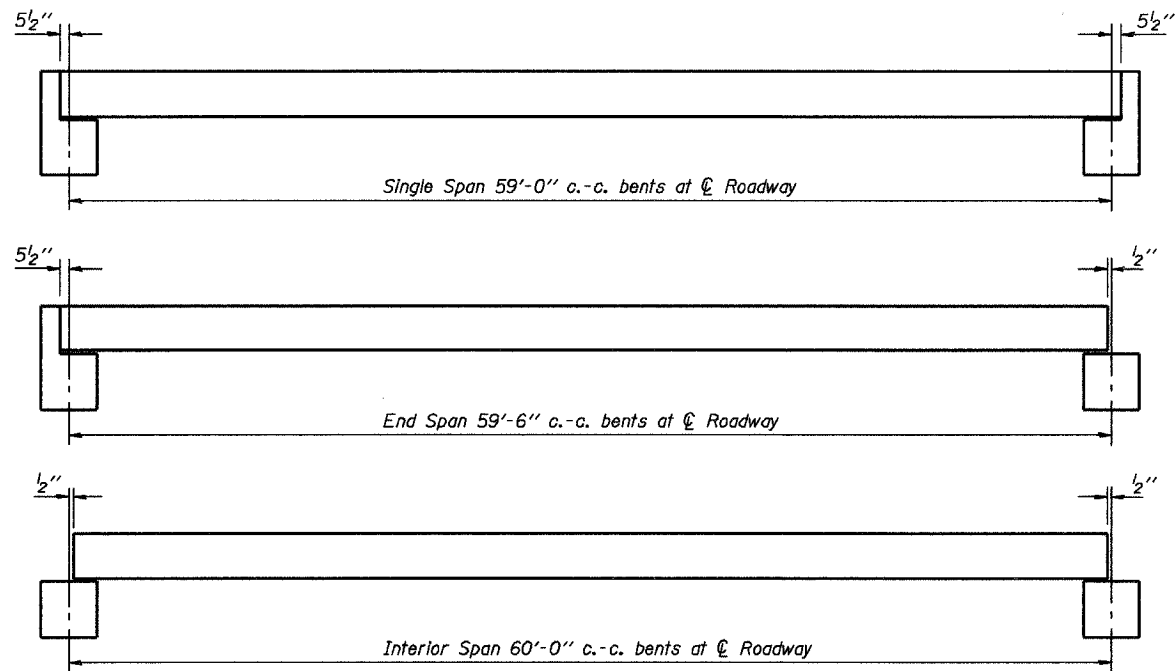
1. General Plan & Elevation
2. Standard CS-2427-60R
3. Standard CB-2427-36
4. Standard CB-2427-48
5. Standard CA-2427-30
6. Standard CR-TS1
7. Standard CN
8. Standard CX-1

GENERAL PLAN & ELEVATION

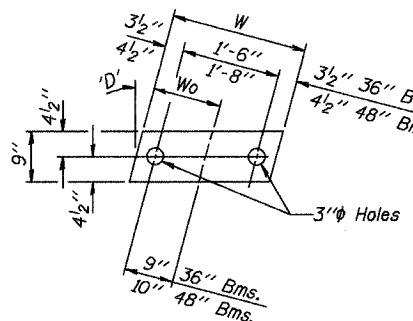
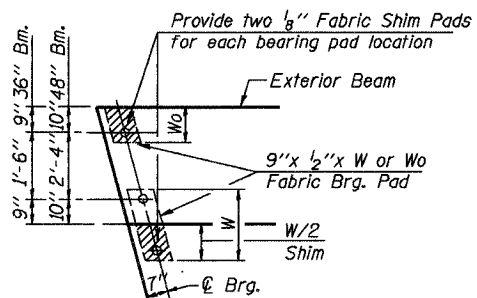
TOWNSHIP ROUTE 56
OVER BUTTER CREEK TRIBUTARY

SECTION 03-06114-00-BR
EDWARDS COUNTY

STATION 5+00

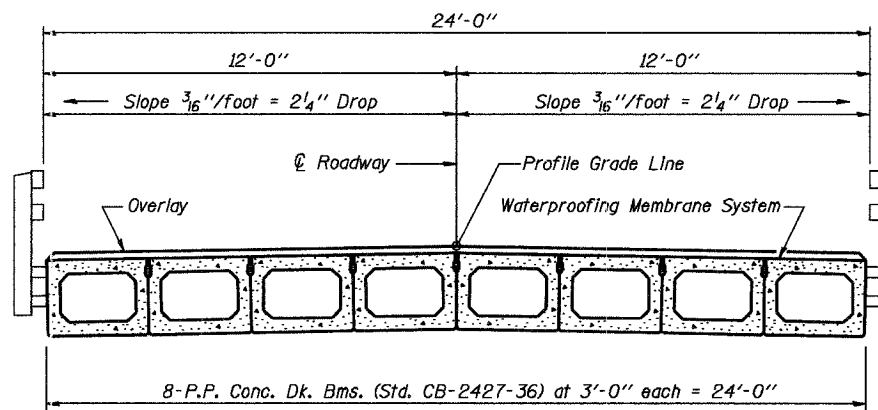


TYPICAL ELEVATIONS

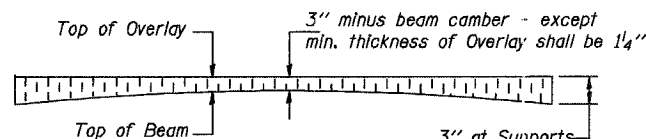
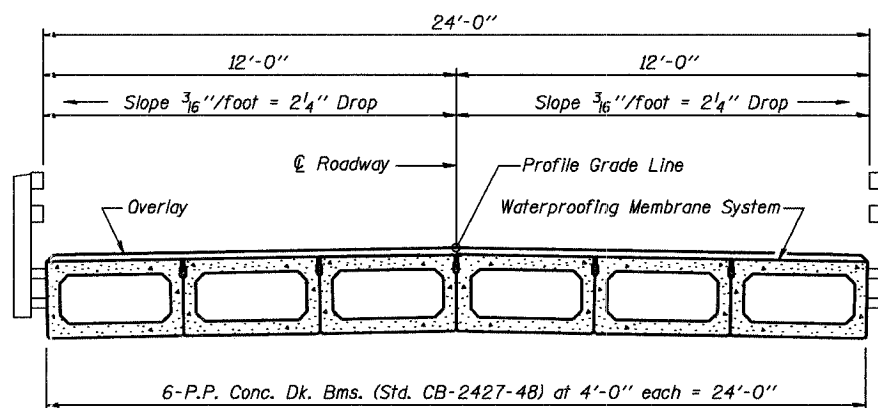


Beam	W	W0
36"	2'-1"	1'-0 1/2"
48"	2'-5"	1'-2 1/2"

1/2" FABRIC BRG. PAD DETAILS



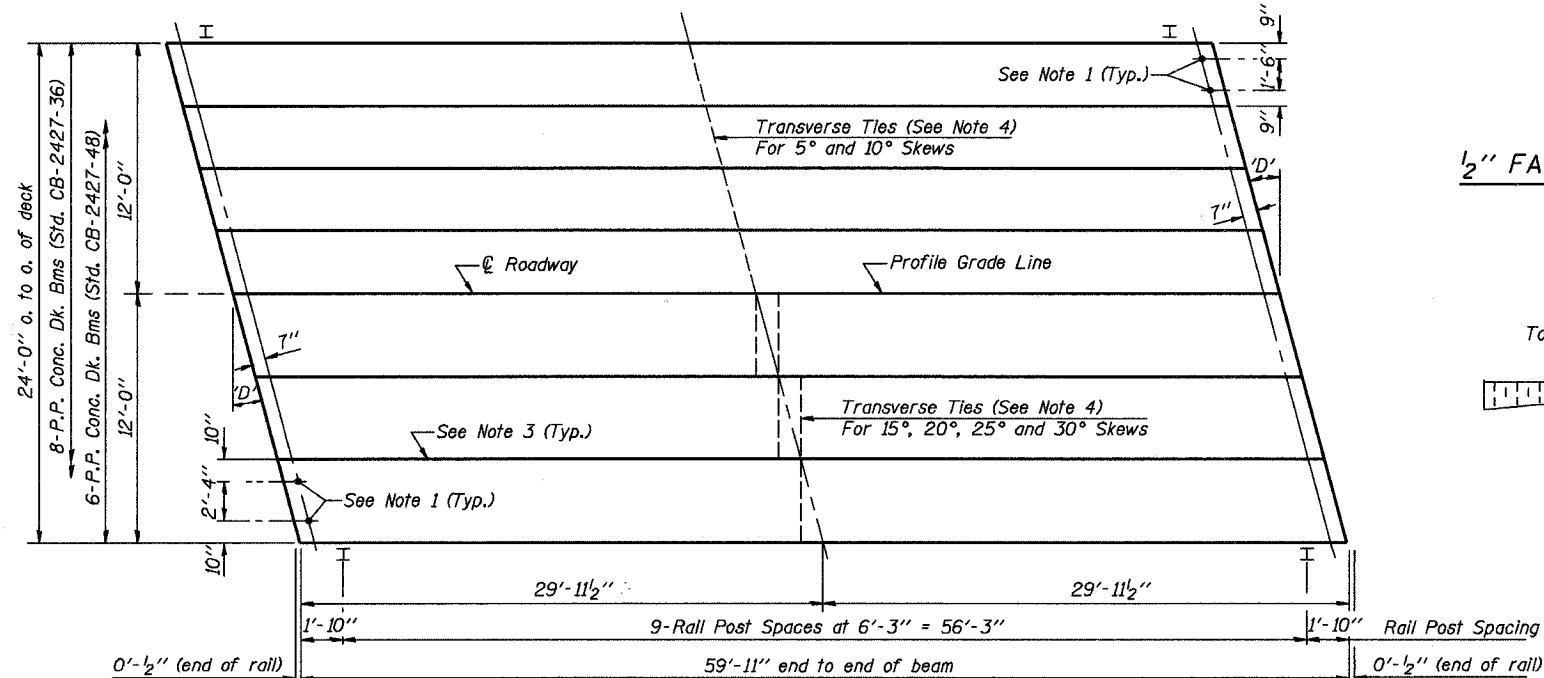
CROSS SECTION



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"

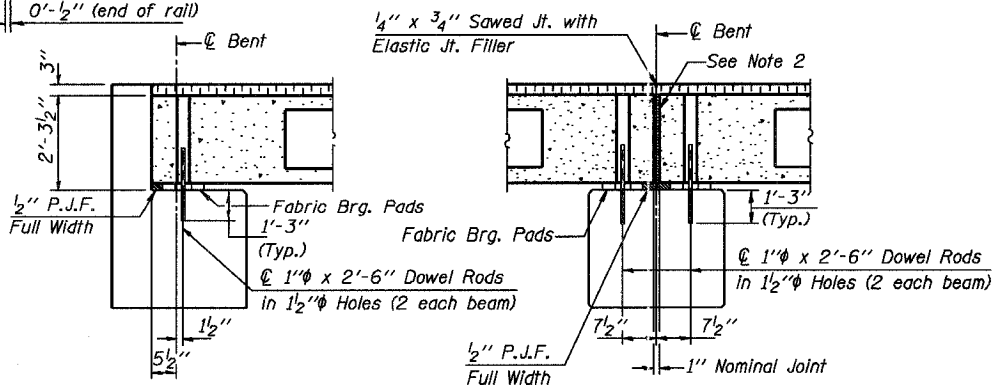


PLAN

('D' = Designated Skew Angle)

NOTES

1. After beams have been erected, holes shall be drilled into substructure and anchor dowels placed. Dowel holes shall be filled with non-shrink grout to top of beam and allowed to cure min. 24 hrs. prior to grouting the shear keys.
2. Nominal 1" joint at centerline of pier shall be filled with non-shrink grout.
3. Longitudinal keys shall be grouted.
4. The 1" diameter rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets that receive transverse tie bar outside shall be filled with grout after transverse tie assembly is in place.



SECTION AT ABUTS.
(Along centerline of Beams)

SECTION AT PIERS
(Along centerline of Beams)

QUANTITIES FOR ONE SPAN

P.P. Conc. Dk. Bm. 27" Dp.	1440 Sq. Ft.
Steel Railing	120 Ft.
Waterproofing Membrane System	160.0 Sq. Yds.
Portland Cement Mortar	420 Ft. 3/8"
Finishing Course	300 Ft. 1/8"

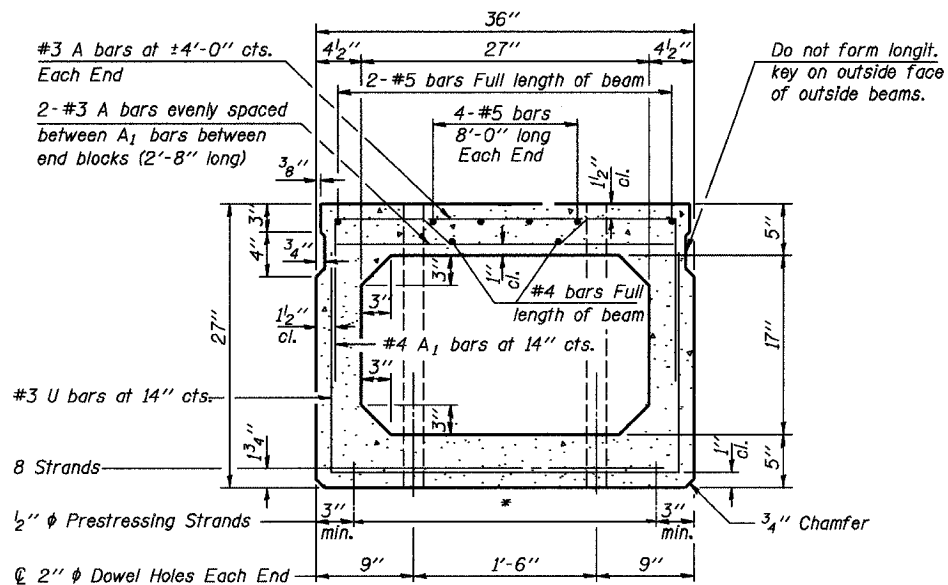
Note: Quantity of overlay for one span = 18.0 Tons
CONTRACT NO. 95459

P.P.C. DECK BEAM
SUPERSTRUCTURE

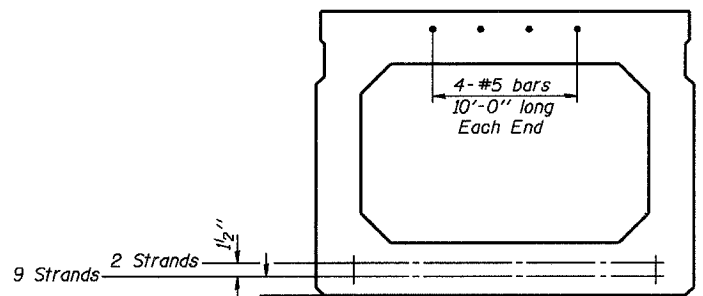
24' RDWY. 27" BMS. 60' SPAN RIGHT

STANDARD CS-2427-60R

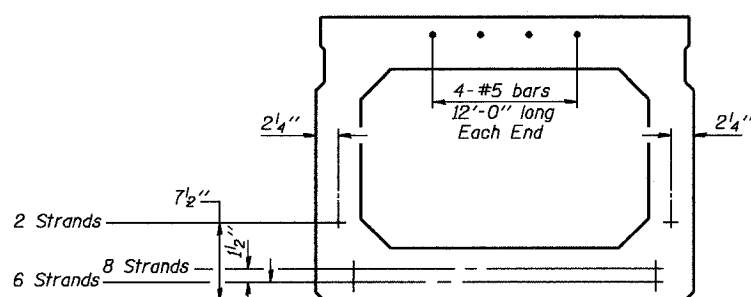
Illinois Department of Transportation
PASSED APRIL 4, 2005
Thomson Design
Engineer of Bridge Design
APPROVED APRIL 4, 2005
Ralph E. Anderson
Engineer of Bridges and Structures
1861-1-1 02/ISS1



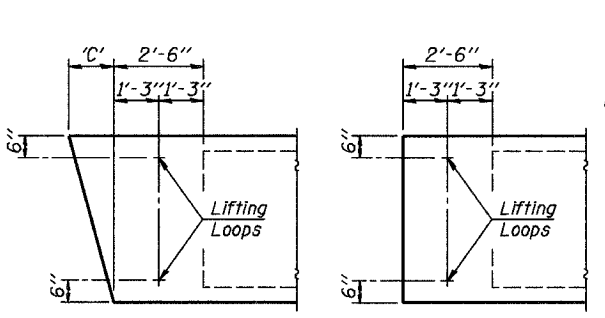
CROSS SECTION
(40' SPAN)



CROSS SECTION
(50' SPAN)

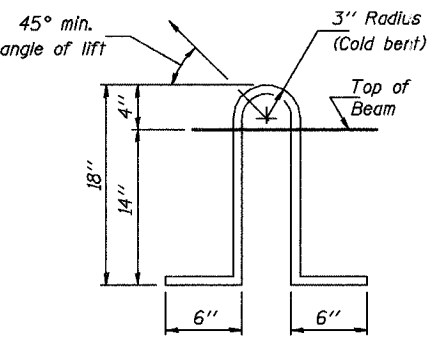


CROSS SECTION
(60' SPAN)



END BLOCK DETAILS

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



LIFTING LOOP DETAIL

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

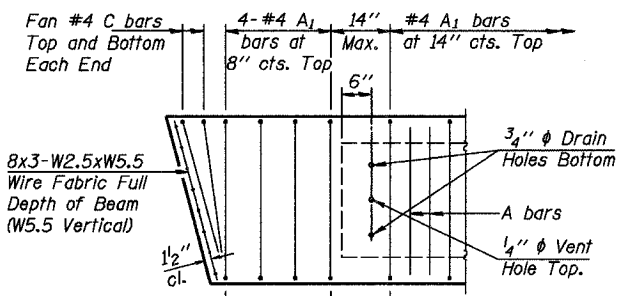
DIMENSION 'C'

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

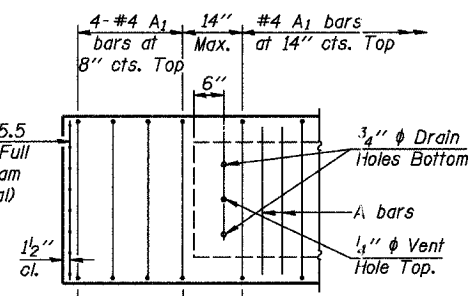
*** TRANSVERSE STRAND PLACEMENT GUIDELINES**

- 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".

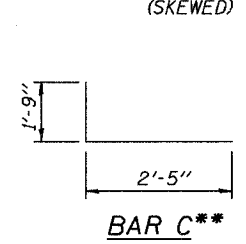
Vertical placement of strands shall not be adjusted to satisfy the above guidelines.



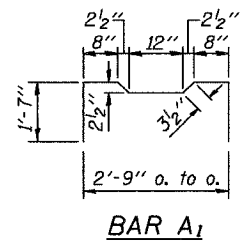
END REINFORCEMENT
(SKEWED)



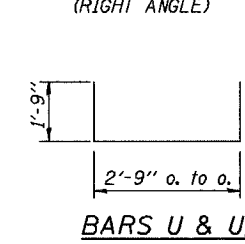
END REINFORCEMENT
(RIGHT ANGLE)



BAR C**



BAR A1



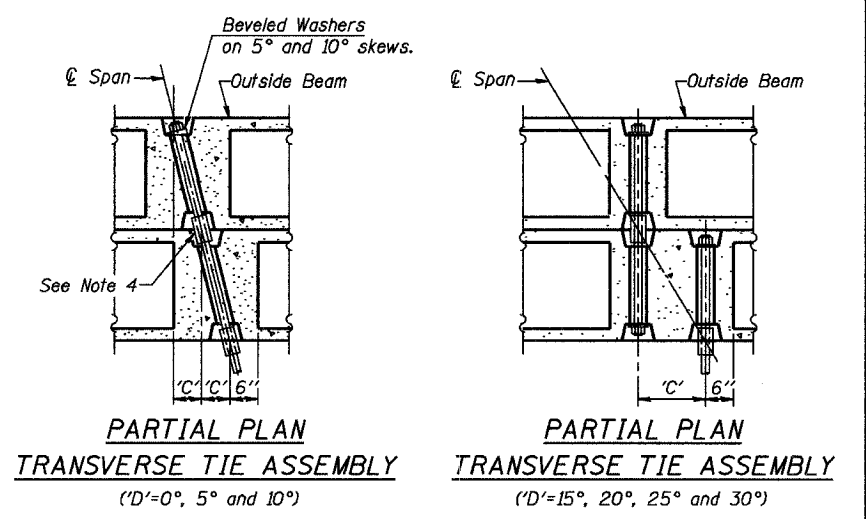
BARS U & U1

DESIGN STRESSES

- f'c = 5,000 p.s.i.
- f'ci = 4,000 p.s.i.
- f's = 270,000 p.s.i. (1/2 inch diameter Strand)
- f'si = 201,960 p.s.i. (1/2 inch diameter Strand)
- fy = 60,000 p.s.i.

MIN. BAR LAP

- #4 bars = 1'-4"
- #5 bars = 1'-8"

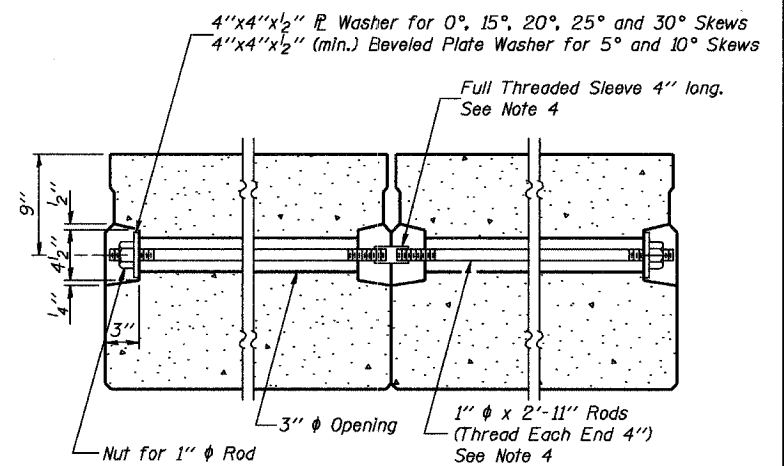


PARTIAL PLAN TRANSVERSE TIE ASSEMBLY

(D=0°, 5° and 10°)

PARTIAL PLAN TRANSVERSE TIE ASSEMBLY

(D=15°, 20°, 25° and 30°)



SECTION ALONG TRANSVERSE TIE ASSEMBLY

(REQUIRED FOR 50' & 60' SPANS ONLY)

NOTES

- Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270.
- The nominal diameter shall be 1/2 inch and the nominal cross-sectional area shall be 0.153 square inches.
- Reinforcement bars shall conform to the requirements of AASHTO M-31 or M-322, Grade 60.
- On 0°, 5° and 10° skew, alternate approved transverse tie rods of increased segmental length are acceptable.
- Rail Post anchor devices shall be cast into outside beam as elsewhere specified.
- When a Waterproofing Membrane System is specified, the top surface of the beams shall be screeded with a straightedge and finished with a hand float. The finished surface shall be free of depressions or high spots with sharp corners and the top edge of keys shall be rounded or chamfered a minimum of 1/4 inch.
- 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.

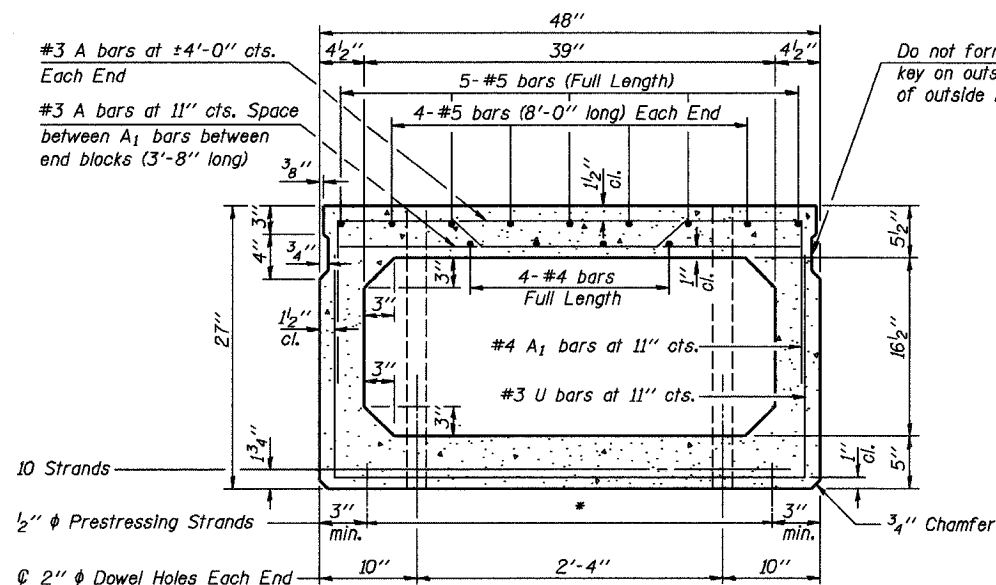
CONTRACT NO. 95459

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

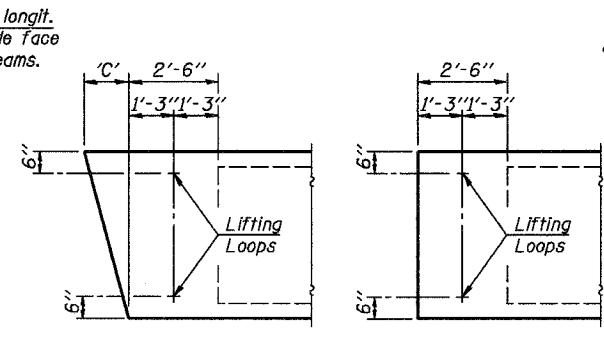
NOTE:
 The std. reinf. and dimensions shown on the 40' span cross section is typical for all spans, except as shown.

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

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

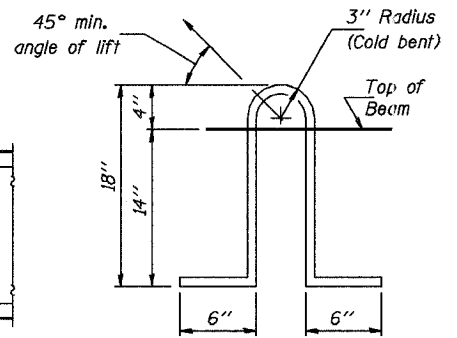


CROSS SECTION
(40' SPAN)



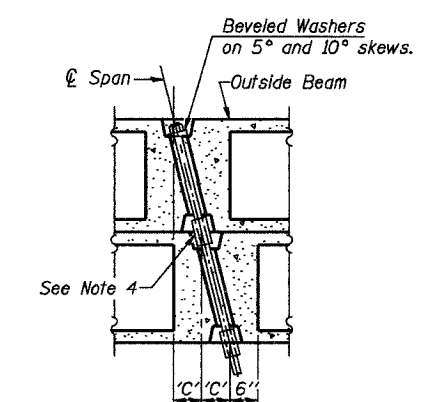
END BLOCK DETAILS

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

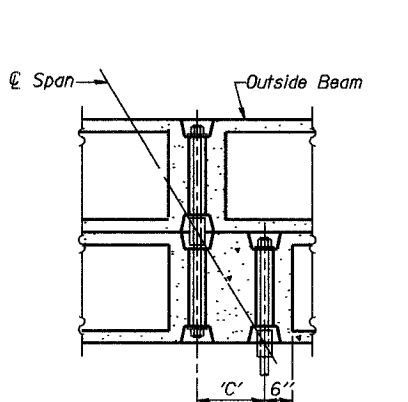


LIFTING LOOP DETAIL

Lifting loops shall be 3, 1/2" φ-270 ksi strands, as shown. Alternate approved lifting devices are also acceptable.



PARTIAL PLAN TRANSVERSE TIE ASSEMBLY
(D=0°, 5° and 10°)



PARTIAL PLAN TRANSVERSE TIE ASSEMBLY
(D=15°, 20°, 25° and 30°)

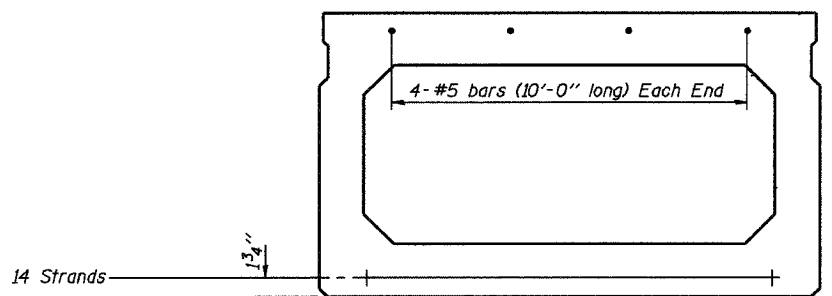
DIMENSION 'C'

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

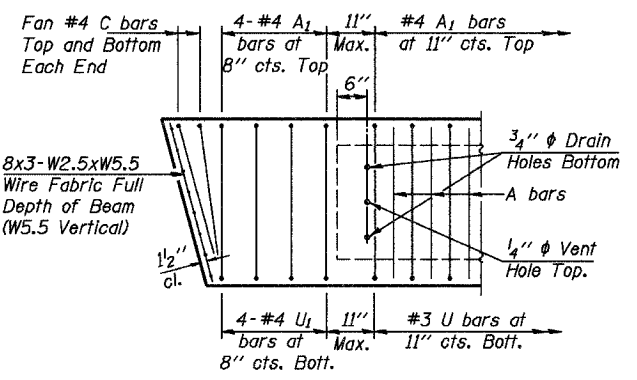
*** TRANSVERSE STRAND PLACEMENT GUIDELINES**

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

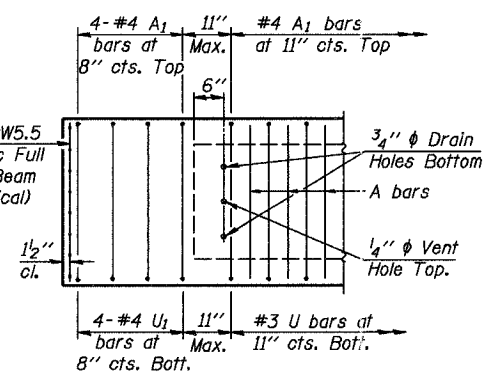
Vertical placement of strands shall not be adjusted to satisfy the above guidelines.



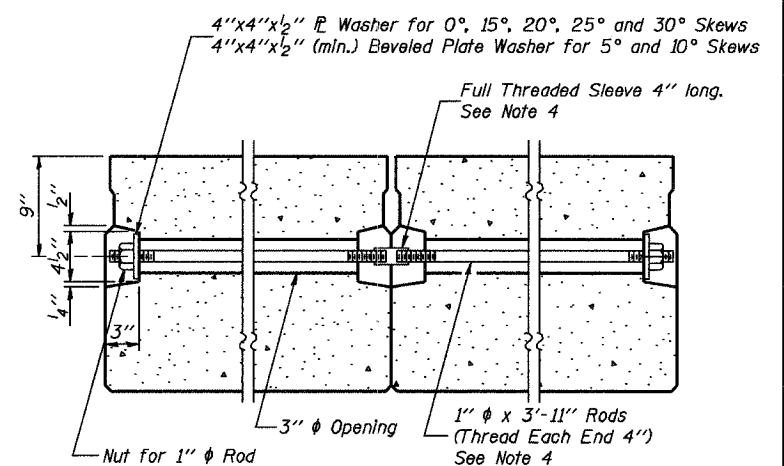
CROSS SECTION
(50' SPAN)



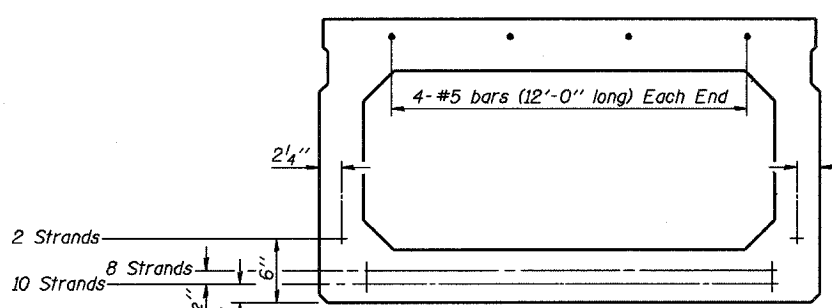
END REINFORCEMENT
(SKEWED)



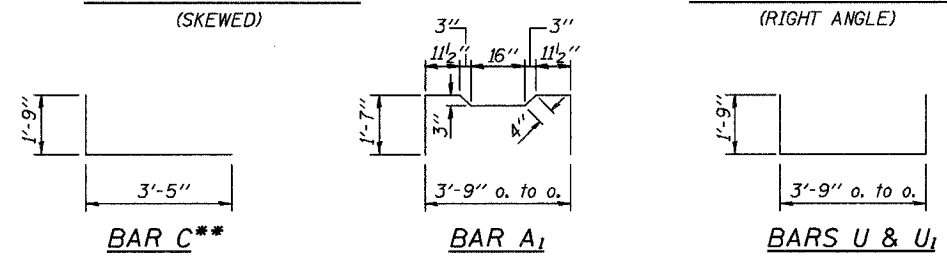
END REINFORCEMENT
(RIGHT ANGLE)



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



CROSS SECTION
(60' SPAN)



DESIGN STRESSES

MIN. BAR LAP
#4 bars = 1'-4"
#5 bars = 1'-8"

- NOTES**
1. Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270.
 2. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 square inches.
 3. Reinforcement bars shall conform to the requirements of AASHTO M-31 or M-322, Grade 60.
 4. On 0°, 5° and 10° skews, alternate approved transverse tie rods of increased segmental length are acceptable.
 5. Rail Post anchor devices shall be cast into outside beam as elsewhere specified.
 6. When a Waterproofing Membrane System is specified, the top surface of the beams shall be screeded with a straightedge and finished with a hand float. The finished surface shall be free of depressions or high spots with sharp corners and the top edge of keys shall be rounded or chamfered a minimum of 1/4".
 7. Keyway surfaces shall be cleaned to remove form oil or other bond breaking material prior to shipment of the beams. Cleaning shall be done by sandblasting the keyway areas between the top of the beam and the bottom edge of the key.

CONTRACT NO. 95459

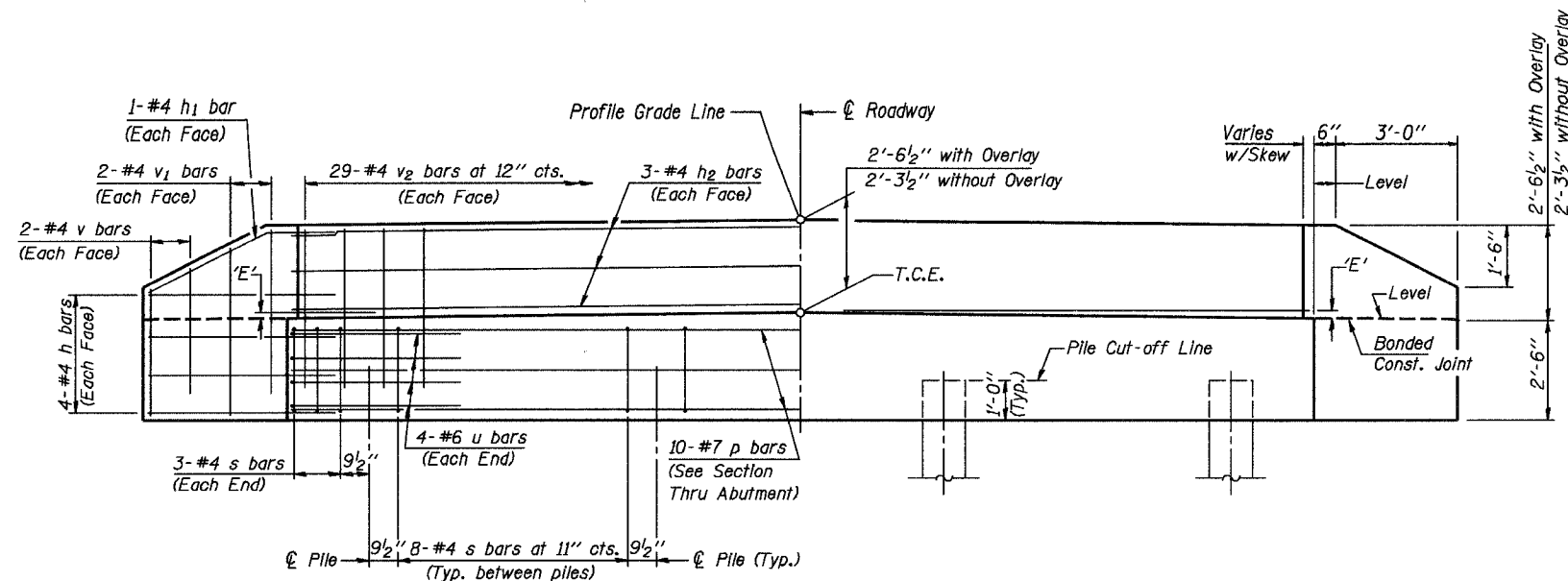
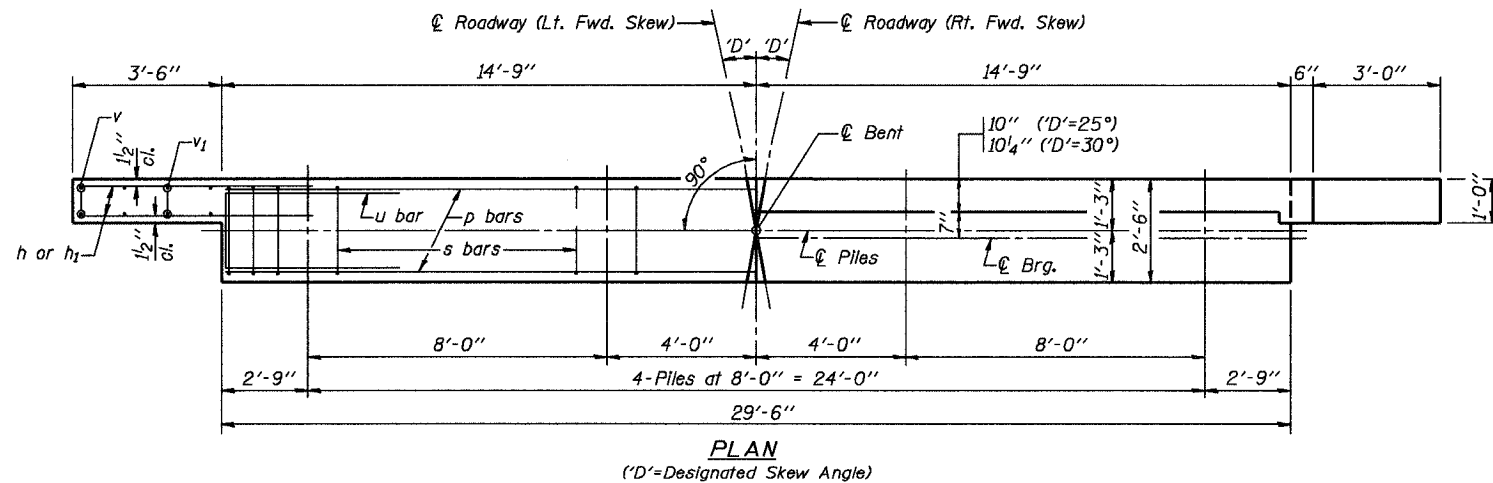
Illinois Department of Transportation
 PASSED APRIL 4, 2005
 Approved by: *Theresa S. Romagnolo*
 Engineer of Bridge Design
 APPROVED APRIL 4, 2005
 Approved by: *Ralph E. Anderson*
 Engineer of Bridges and Structures

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

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

P.P.C. DECK BEAM DETAILS

24' ROADWAY	27" x 48" BEAMS
STANDARD CB-2427-48	



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 1/8"	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

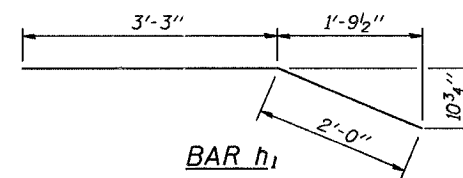
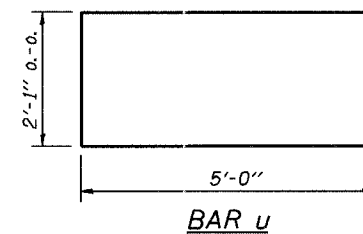
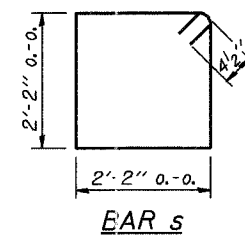
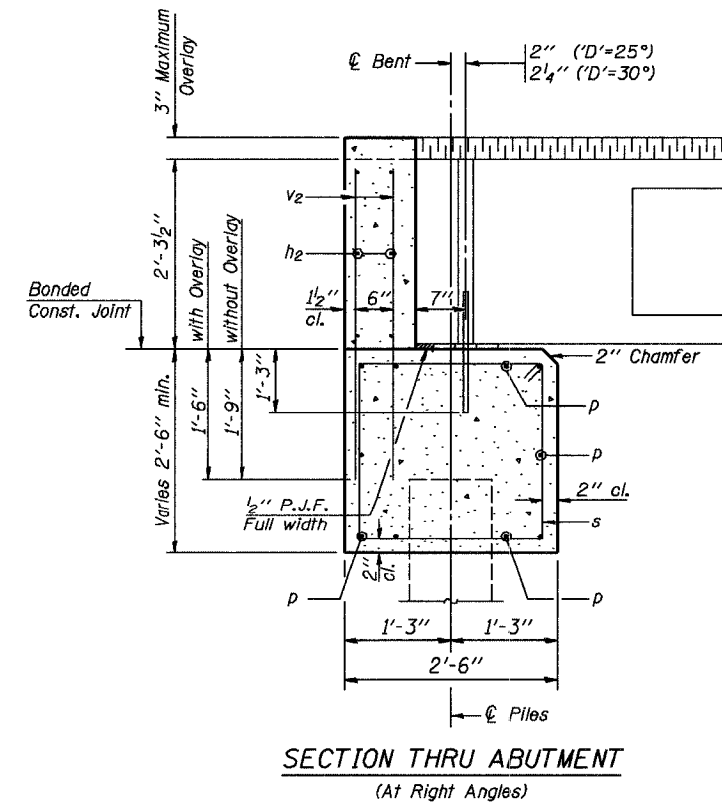
- The Backwall and the portion of the Wingwalls above the bonded construction joint shall be cast against the in-place beam.
- Reinforcement bars shall conform to the requirements of A.A.S.H.T.O. M-31 or M-322, Grade 60.
- Space reinforcement in cap to miss anchor bolts.

MAXIMUM PILE LOADS

SPAN	TONS
40'	34
50'	38
60'	43

DESIGN STRESSES

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



BILL OF MATERIAL FOR ONE ABUTMENT

Bar	No.	Size	Length	Shape
h	16	#4	5'-0"	—
h1	4	#4	5'-3"	—
h2	6	#4	29'-2"	—
p	10	#7	29'-2"	—
s	30	#4	9'-5"	□
u	8	#6	12'-1"	▭
v	8	#4	3'-2"	—
v1	8	#4	4'-2"	—
v2	58	#4	3'-11"	—
Concrete Structures			10.7 Cu. Yds.	
Reinforcement Bars			1310 Lb.	

CONTRACT NO. 95459

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

24' RDWY. 27" BMS. 'D'=25° OR 30°

STANDARD CA-2427-30

Illinois Department of Transportation

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

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

1006-1-1 02/05/01

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.

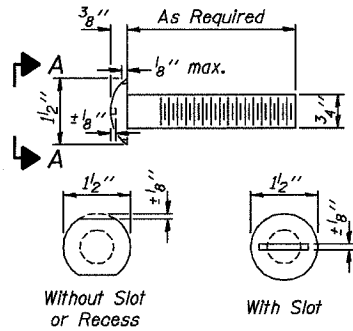
For multi-span bridges, sufficient 1/4" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with STEEL RAILING, TYPE S-1.

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

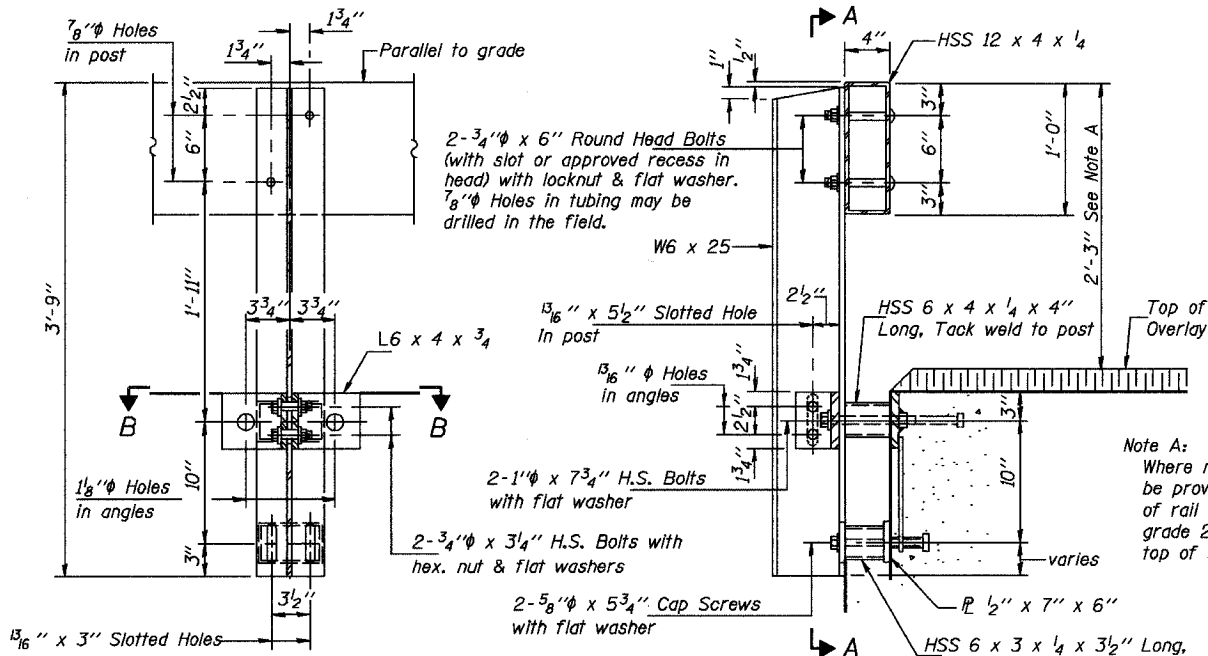
The 1/2" x 7" x 6" plates that come in contact with concrete shall either receive two coats of asphalt paint conforming to Section 1060.07 Type II, or 1/8" fabric bearing pads shall be placed between the plates and concrete.

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.

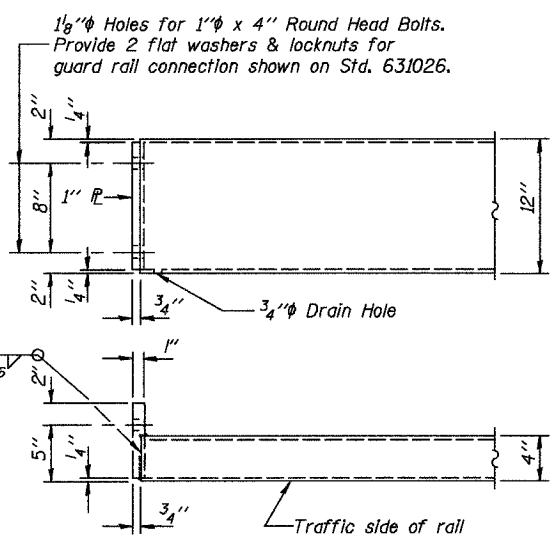


**VIEW A-A
ROUND HEAD BOLT**

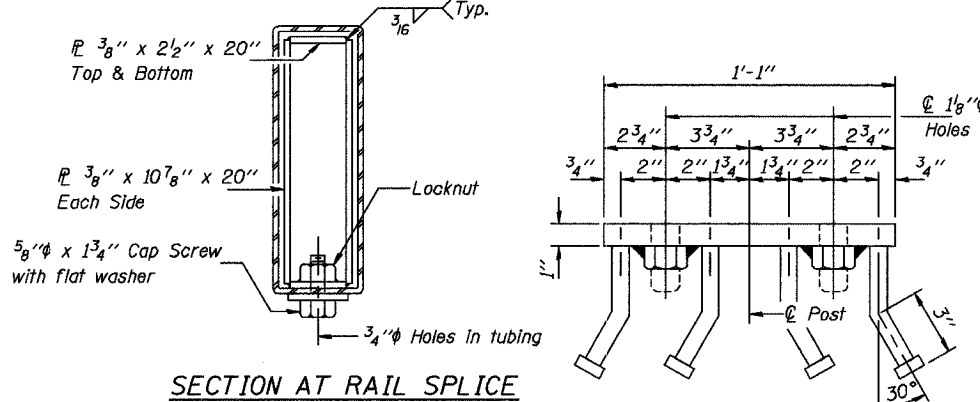


SECTION A-A

SECTION AT RAIL POST

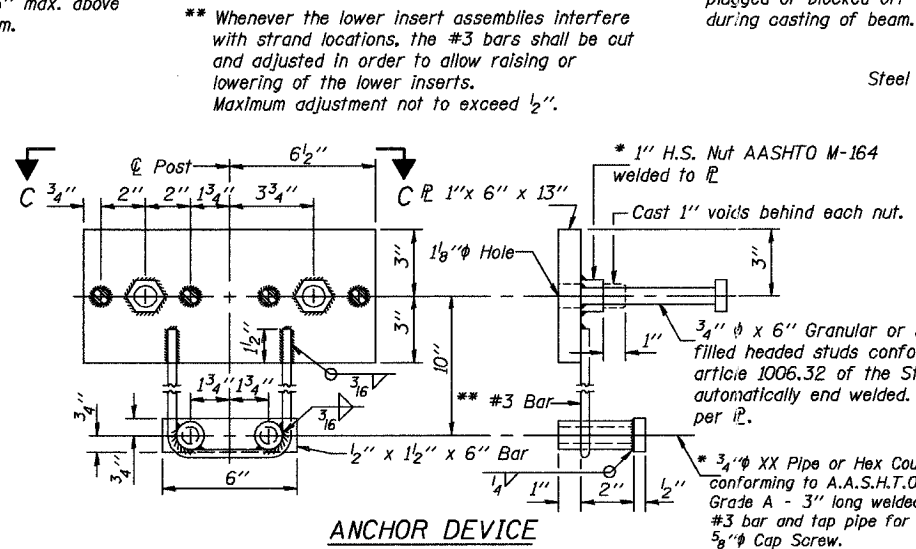


END OF RAIL DETAILS

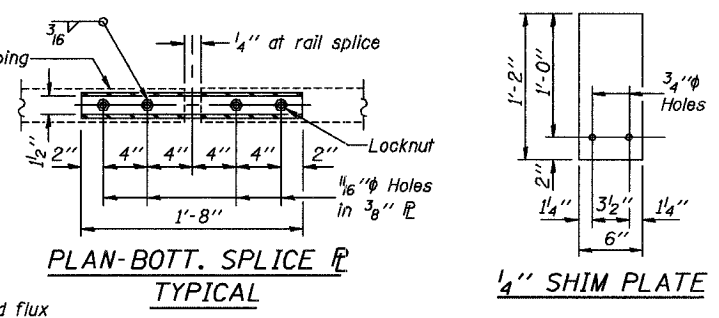


SECTION AT RAIL SPLICE

VIEW C-C



ANCHOR DEVICE

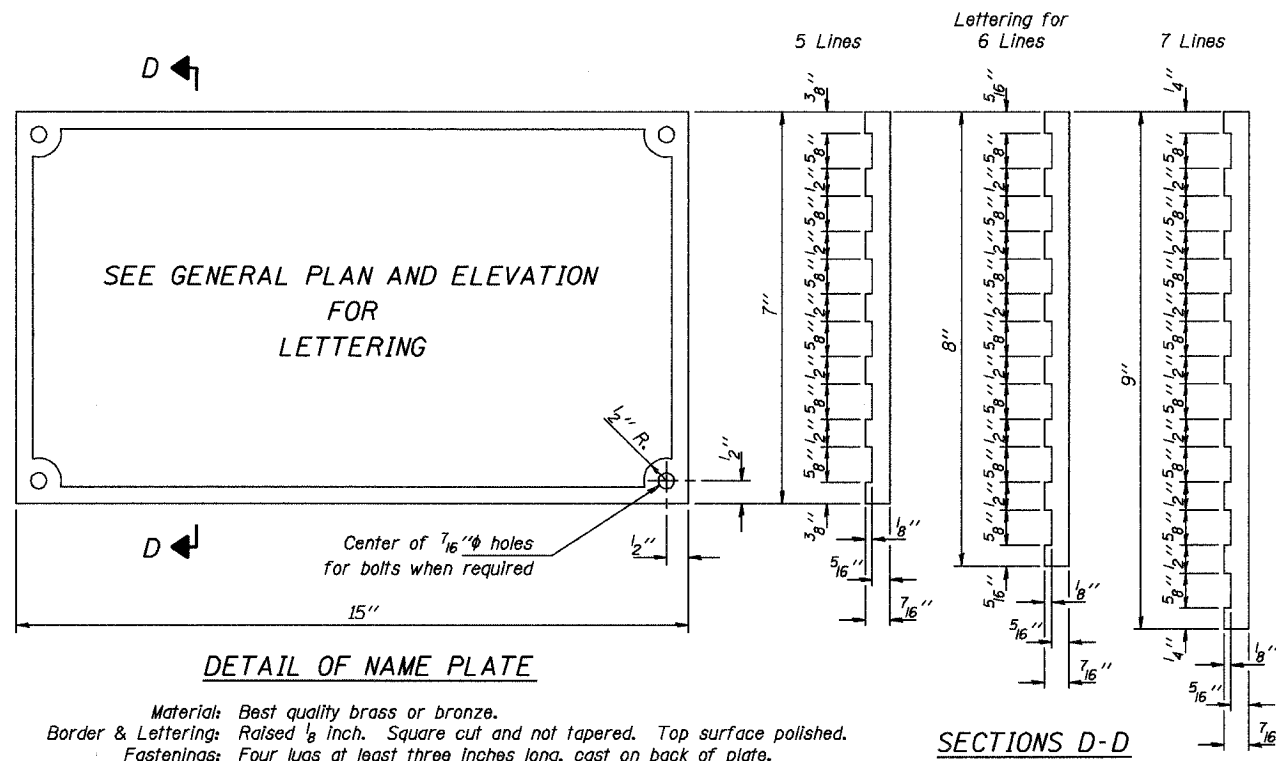


PLAN-BOTT. SPLICE TYPICAL

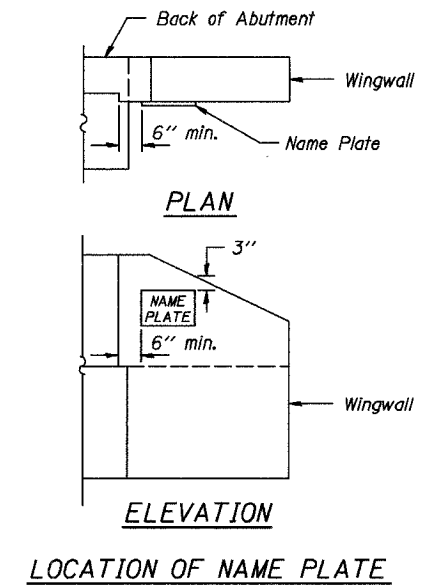
1/4 SHIM PLATE

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

CONTRACT NO. 95458
STEEL RAILING, TYPE S-1
STANDARD CR-TS1



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.



Illinois Department of Transportation

PASSED APRIL 4, 2005

Thomas S. Kunguabali
 Engineer of Bridge Design

APPROVED APRIL 4, 2005

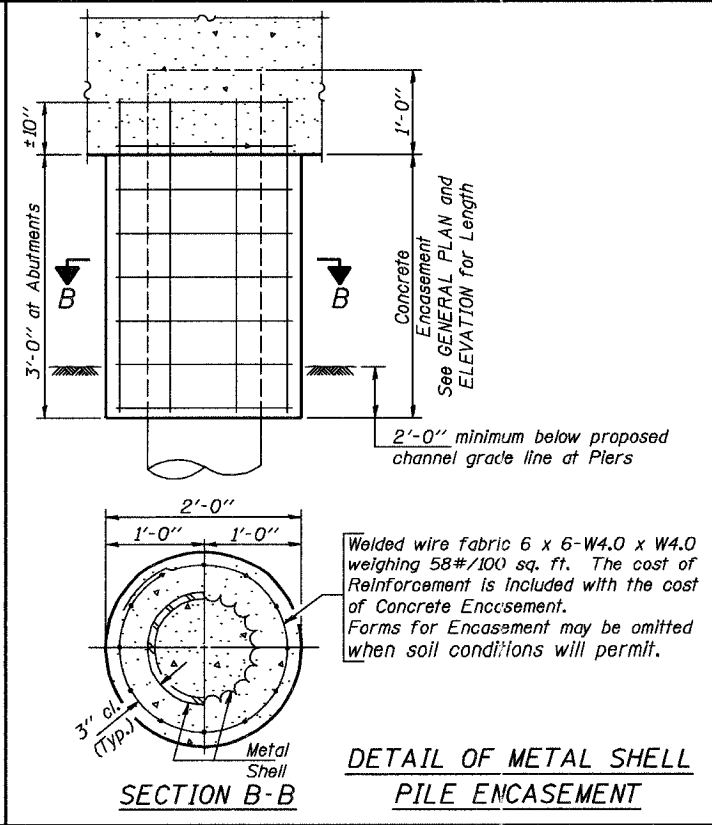
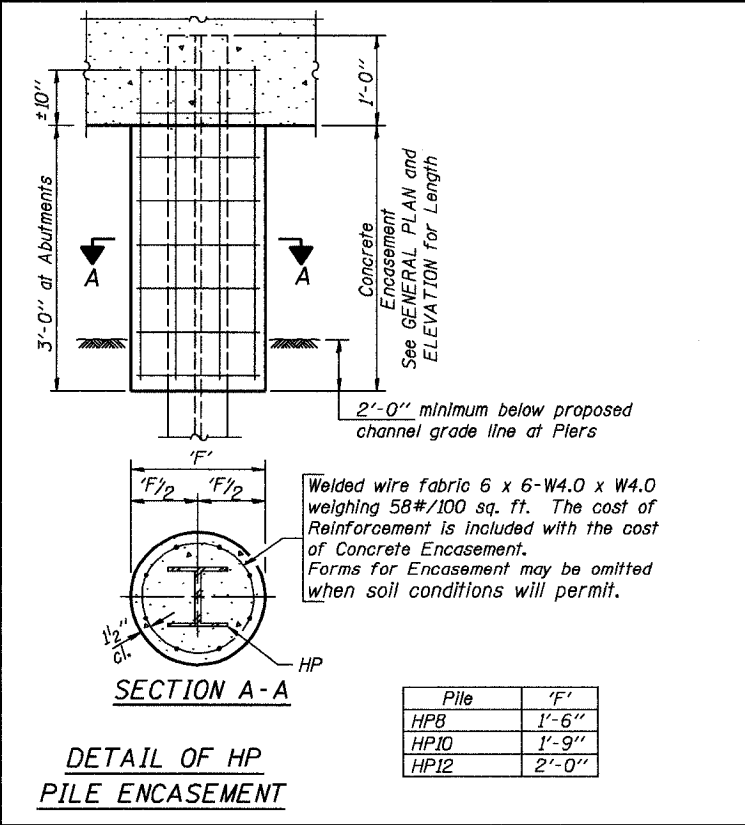
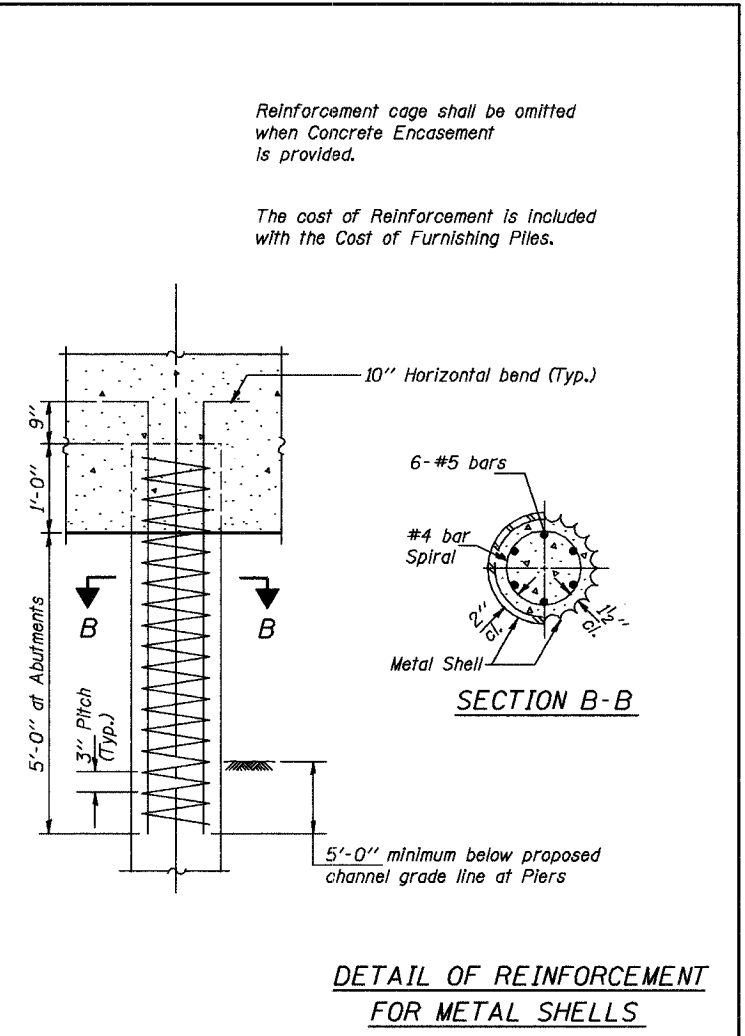
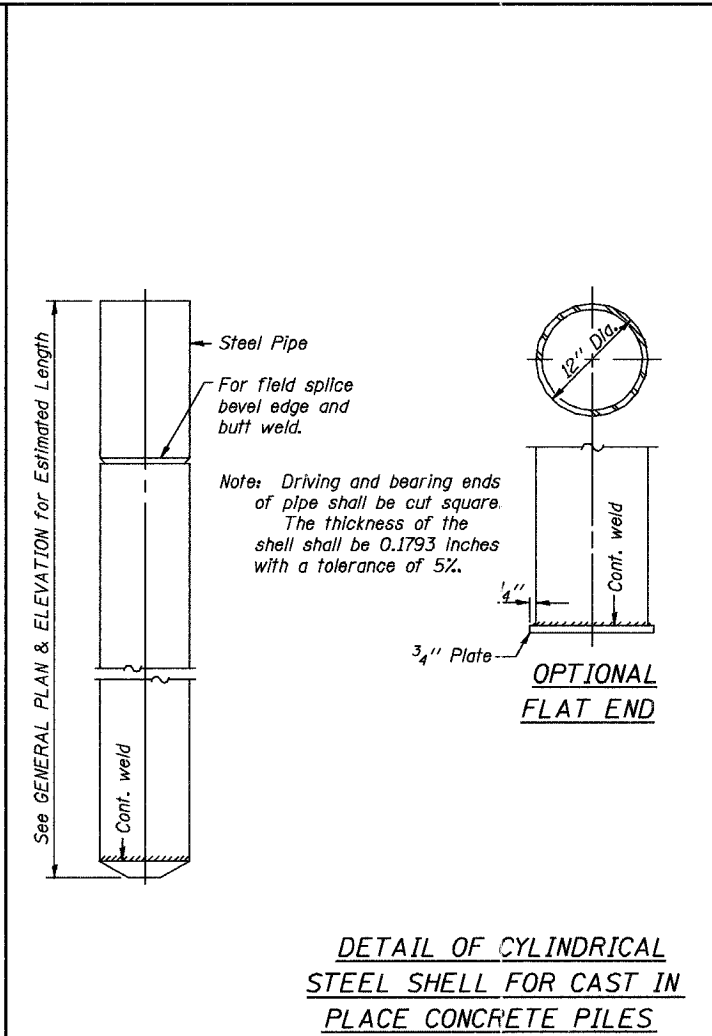
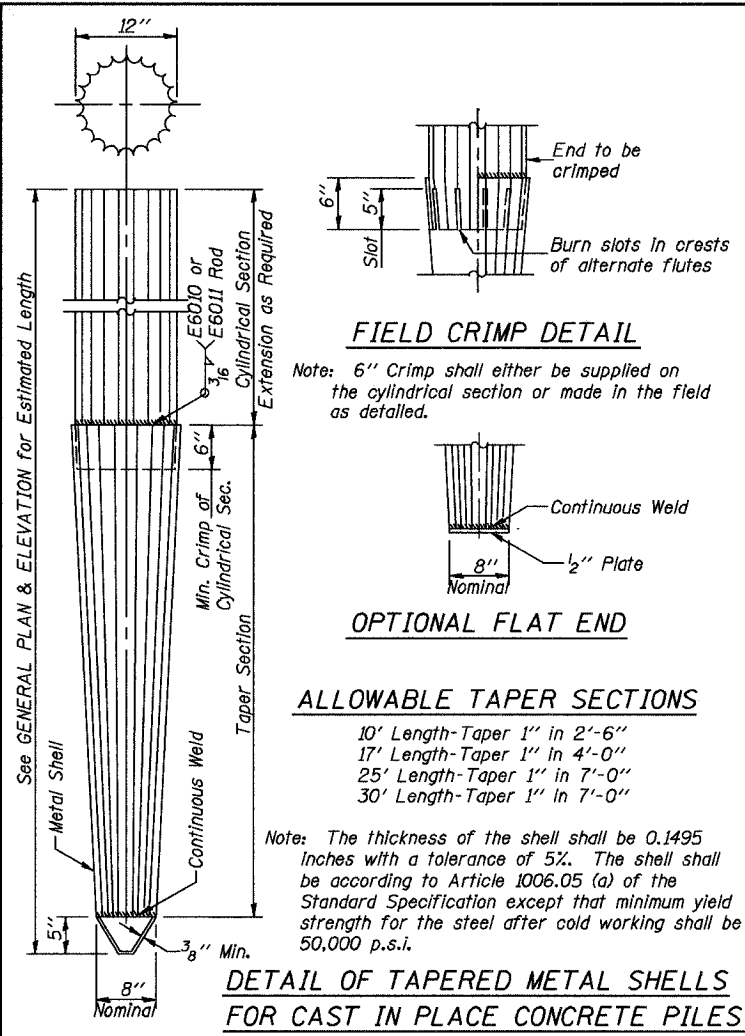
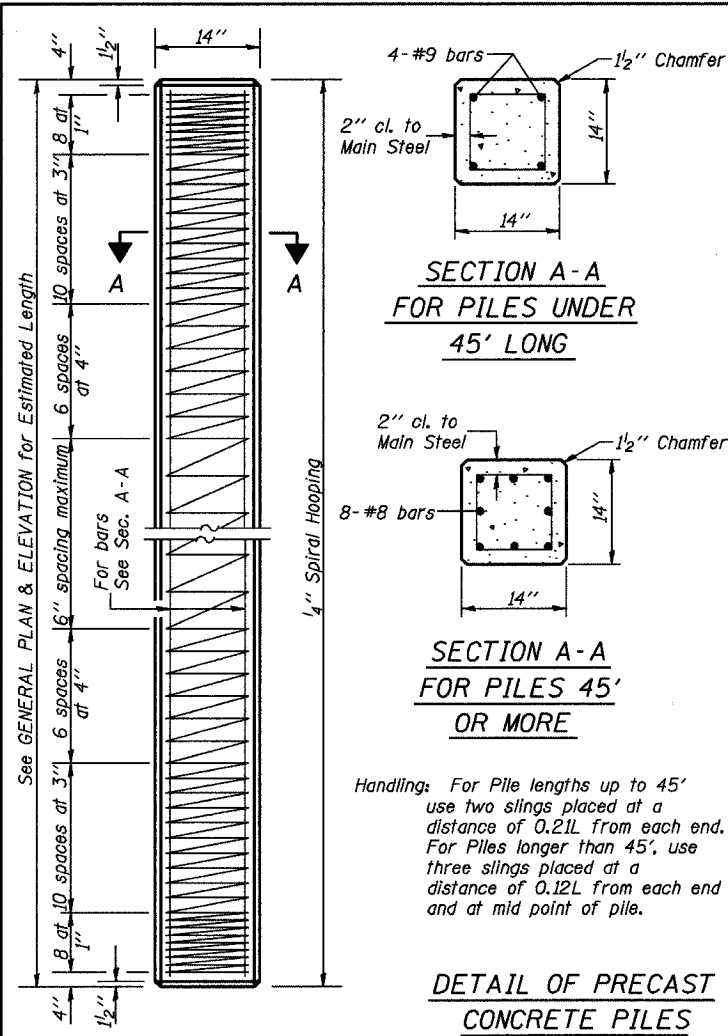
Ralph E. Anderson
 Engineer of Bridges and Structures

ISSUED 7-1-95

CONTRACT NO. 95459

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.

CONTRACT NO. 95459

PILE DETAILS

STANDARD CX-1

Illinois Department of Transportation

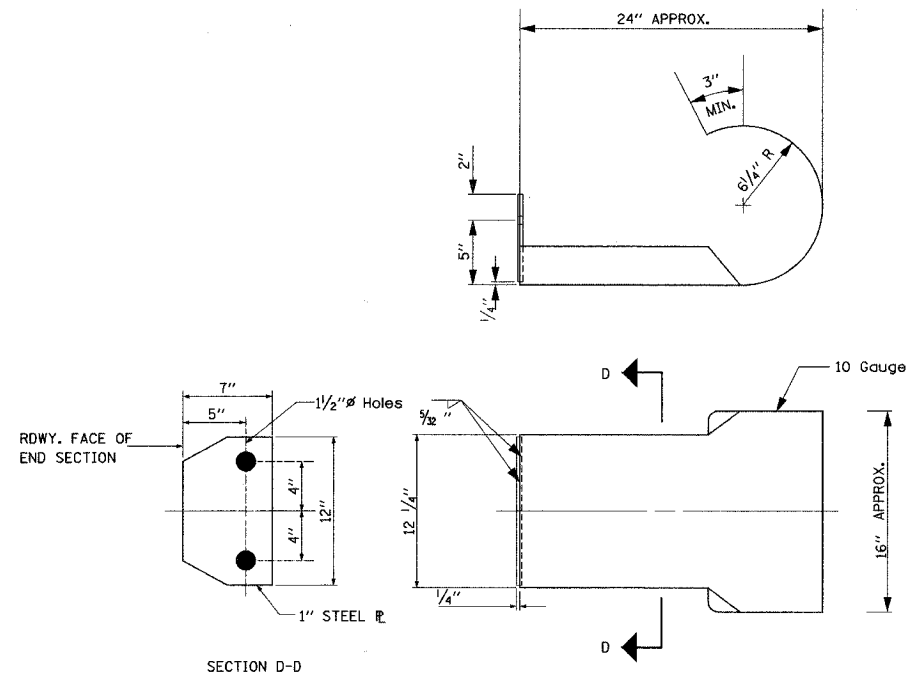
PASSED FEBRUARY 1, 2000

Engineer of Bridge Design

APPROVED FEBRUARY 1, 2000

Engineer of Bridges and Structures

CURLED END SECTION DETAIL



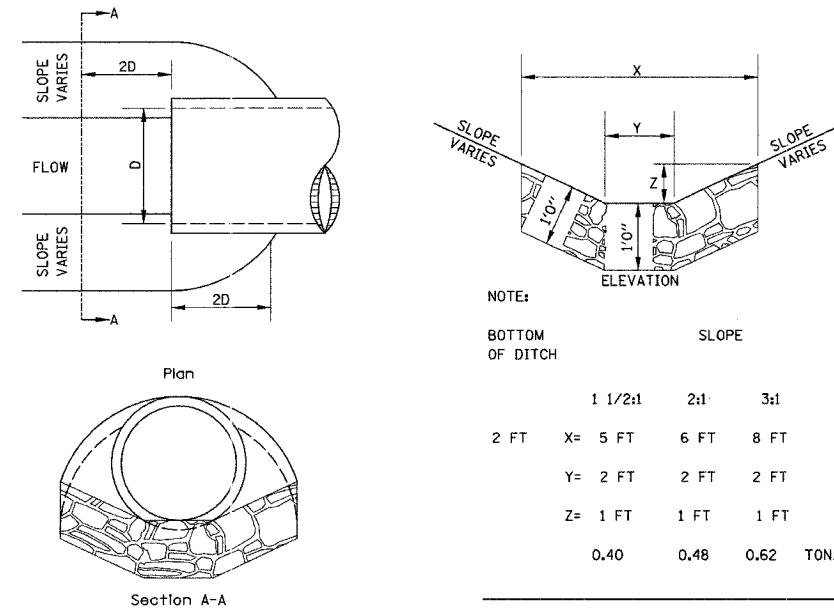
ALL OTHER STEEL SHAPES AND PLATES SHALL CONFORM TO THE REQUIREMENTS OF A.A.S.H.T.O. DESIGNATION M-183 EXCEPT POSTS AND ANGLES SHALL CONFORM TO A.A.S.H.T.O. M-223, GRADE 50.

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 GALVINIZED 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



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

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
<hr/>			
	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
<hr/>			
	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