1-18-08 Letting, Item 063

INDEX OF SHEETS

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

000001-05	STANDARD SYMBOLS, ABBREVIATIONS & PATTERNS
280001-04	TEMPORARY EROSION CONTROL SYSTEMS
701901	TRAFFIC CONTROL DEVICES
B.L.R. 21-7	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS
B.L.R. 22-5	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS (TWO-LANE TWO-WAY RURAL TRAFFIC) (ROAD CLOSED TO THRU TRAFFIC)
B.L.R. 23-2	TRAFFIC BARRIER TERMINAL, TYPE 1
B.L.R. 27	TRAFFIC BARRIER TERMINAL, TYPE 5A

SUMMARY OF QUANTITIES

xC80-2A

CODE NO.	ITEM	UNIT	QUANTITY
20200100	EARTH EXCAVATION	CU YD	416.00
20300100	CHANNEL EXCAVATION	CU YD	348.00
20400800	FURNISHED EXCAVATION	CU YD	231.00
25001000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.50
28000300	TEMPORARY DITCH CHECKS	EACH	2.00
28001000	AGGREGATE (EROSION CONTROL)	TON	15.00
28100807	STONE DUMPED RIPRAP, CLASS A4	TON	63.00
28102600	STONE RIPRAP DITCH	TON	19.00
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	360.00
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1.00
50300225	CONCRETE STRUCTURES	CU YD	31.40
50300280	CONCRETE ENCASEMENT	CU YD	15.50
50400305	PRECAST PRESTRESSED CONCRETE DECK BEAMS (17" DEPTH)	SQ FT	2400.00
50800105	REINFORCEMENT BARS	POUND	4080.00
50900205	STEEL RAILING, TYPE S1	FOOT	200.00
51201400	FURNISHING STEEL PILES HP10X42	FOOT	826.00
51202305	DRIVING PILES	FOOT	826.00
51203400	TEST PILE STEEL HP10X42	EACH	1.00
51500100	NAME PLATES	EACH	1.00
* 63100075	TRAFFIC BARRIER TERMINAL, TYPE 5A	EACH	1.00
67100100	MOBILIZATION	L SUM	1.00
* LR631020	TRAFFIC BARRIER TERMINAL, TYPE 1	EACH	1.00

* SPECIALTY ITEMS

DESIGN DESIGNATION:
DESIGN SPEED: 30 MPH
HIGHWAY CLASS - LOCAL ROAD
EXISTING STRUCTURE NO.: 097-3039
PROPOSED STRUCTURE NO.: 097-3259
CURRENT A.D.T. = 25
CONTRACT NO. 99313

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 – H.B.P. PROJECT

T.R. 18 WHITE COUNTY SECTION 06–09124–00–BR

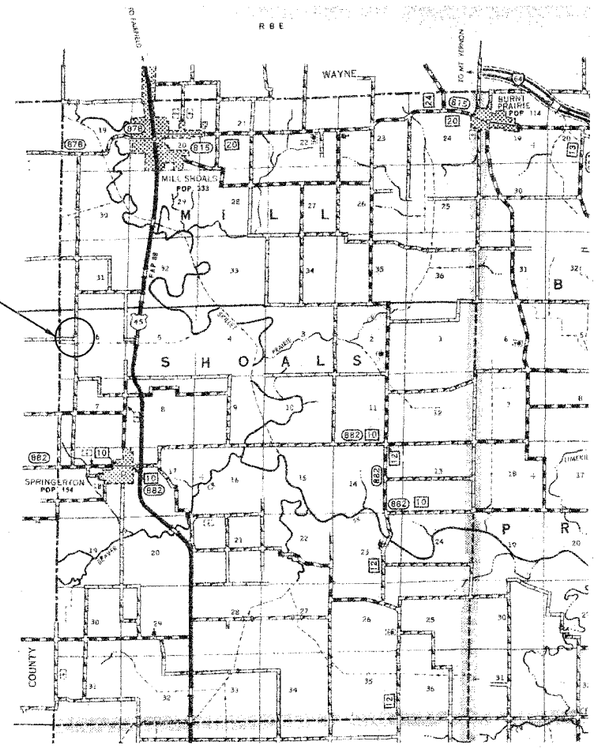
PROJECT NO. BROS–193(32) JOB NO. C–99–510–07

CONTRACT # 99313 SOUTHERN OUTLET

SECTION 06-09124-00-BR
BEGINS STATION 2+00

STATION 5+00, STRUCTURE NO. 097-3259
A 100' LONG TRIPLE SPAN PRECAST PRESTRESSED CONCRETE DECK BEAM BRIDGE (17" DEPTH), 24' ROADWAY, 0.00% GRADE, 0° SKEW.

SECTION 06-09124-00-BR
ENDS STATION 7+75

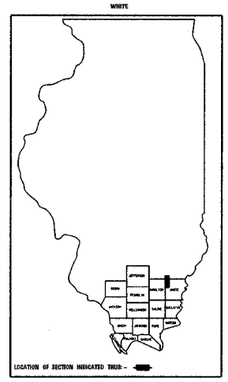


LAYOUT
APPROXIMATE SCALE 1 INCH = 1 MILE

0 1 2 3
MILES

GROSS LENGTH	575.00 FT	0.109 MILES
OMISSIONS	0.00 FT	0.000 MILES
NET LENGTH	575.00 FT	0.109 MILES

N



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'

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

APPROVED 10/16/07
Brian A. Ke
COUNTY ENGINEER

PASSED 10/22/07
Dennis W. Hilleber
ENGINEER OF LOCAL ROADS AND STREETS

RELEASING FOR BID BASED ON LIMITED REVIEW:
Mary C Lamie
10-23-07
MARY C. LAMIE, P.E.
DEPUTY DIRECTOR OF HIGHWAYS
REGION FIVE ENGINEER

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
18	06-09124-00-BR	WHITE	15	1
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT		
PROJECT# BROS-193(32)		CONTRACT# 99313		
JOB # C-99-510-07		SOUTHERN OUTLET		

LEC JOB # H061L023WH

323 W. 3RD ST.
P.O. BOX 160
MT. CARMEL, IL
62863
PHONE:
(618)-262-8651
FAX:
(618)-233-3327

405 W. STATE ST.
SUITE1
PRINCETON, IN
47670
PHONE:
(812)-386-7611
FAX:
(812)-385-2812

LAMIE ENGINEERING CO.

PROFESSIONAL DESIGN FIRM
LAND SURVEY & PROFESSIONAL ENGINEERING CORPORATION
184-000837
(62-032435)(35-002769)

AARON M. MEFFORD
56284
REGISTERED PROFESSIONAL ENGINEER
OF ILLINOIS

AARON M. MEFFORD
NAME
SIGNATURE
10-17-07
DATE
11-30-09
EXPIRES

MILL SHOALS TOWNSHIP
OVER SOUTHERN OUTLET
WHITE COUNTY, ILLINOIS

SHEET TITLE:
TITLE SHEET

SCALE:	VARIES
BY:	AMM
DATE:	10/5/07
REV:	

1 OF 15 SHEETS

SHEET NO.
1

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
18	06-09124-00-BR	WHITE	15	2
FED. ROAD DIST. NO. 9	ILLINOIS	SOUTHERN OUTLET		
PROJECT # BROS-1933(2)		CONTRACT # 99313		

LEC JOB # H0611.023WH

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

405 W. STATE ST.
SUITE1
PRINCETON, IN
47670
PHONE:
(812)-388-7611
FAX:
(812)-385-2812

LAMP ENGINEERING CO.

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

AARON M. MEFFORD
56284
REGISTERED
PROFESSIONAL
ENGINEER
OF
ILLINOIS

AARON M. MEFFORD
NAME
SIGNATURE
10-17-07
DATE
11-30-09
EXPIRES

GENERAL NOTES:

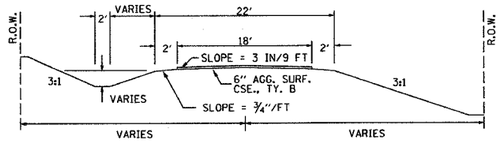
THIS SECTION SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE PLANS, SPECIAL PROVISIONS AND "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", ADOPTED JANUARY 1, 2007.

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

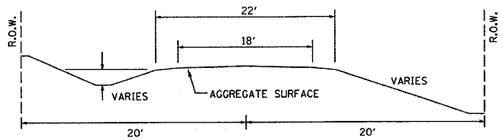
ALL ELEVATIONS ARE BASED ON U.S.G.S. MEAN SEA LEVEL DATUM.

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

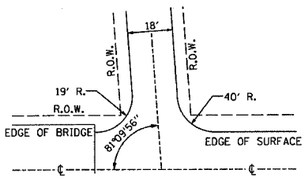
TYPICAL CROSS SECTION PROPOSED



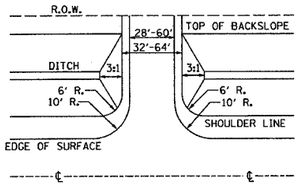
TYPICAL CROSS SECTION EXISTING



SIDEROAD DETAIL



FIELD ENTRANCE DETAIL



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

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

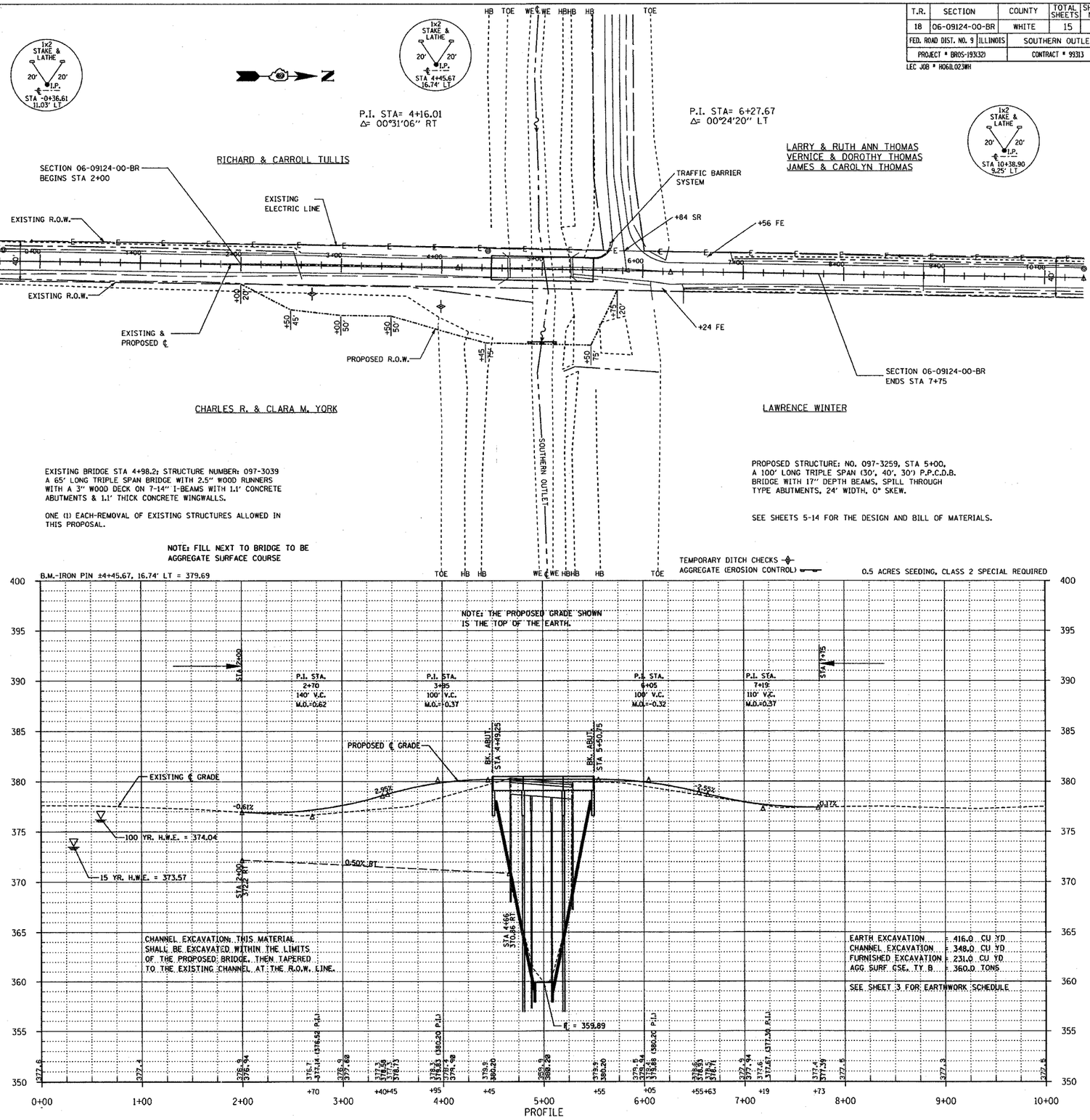
NOTE: CONSTRUCT SPECIAL DITCH

STA 2+00 TO STA 4+66 RT

NOTE: CONSTRUCT STONE RIPRAP DITCH

STA 4+36 TO STA 4+66 RT (0.62 TON/LIN FT)
19 TON STONE RIPRAP DITCH ALLOWED IN PROPOSAL.

SEE SHEET NO. 15 FOR STONE RIPRAP DITCH DETAIL.



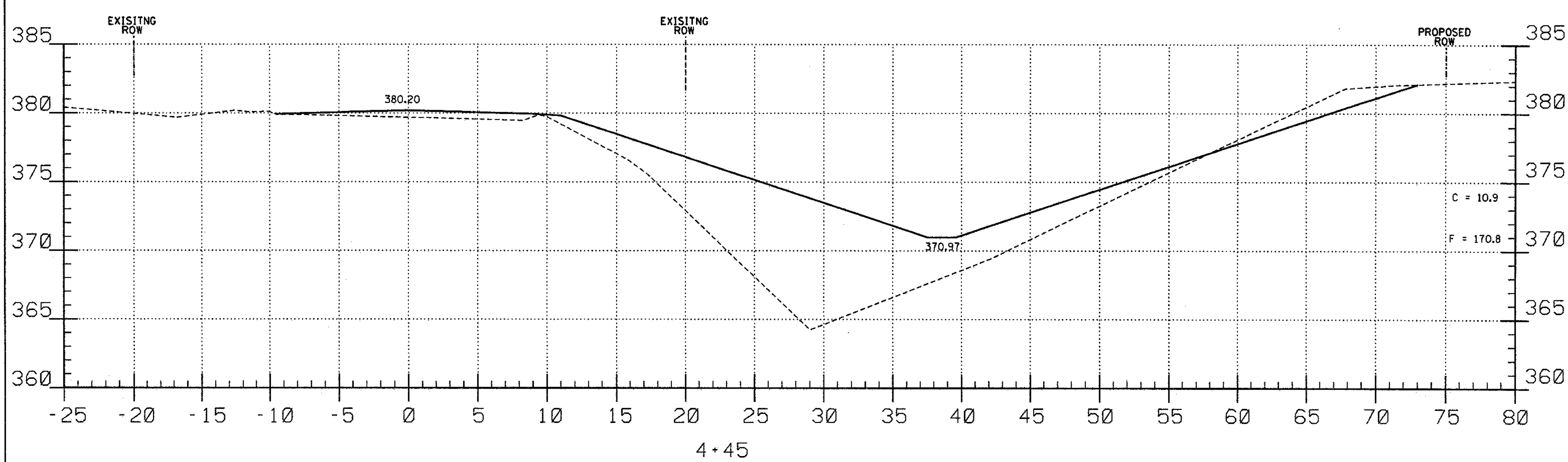
MILL SHOALS TOWNSHIP
OVER SOUTHERN OUTLET
WHITE COUNTY, ILLINOIS

SHEET TITLE:
PLAN & PROFILE

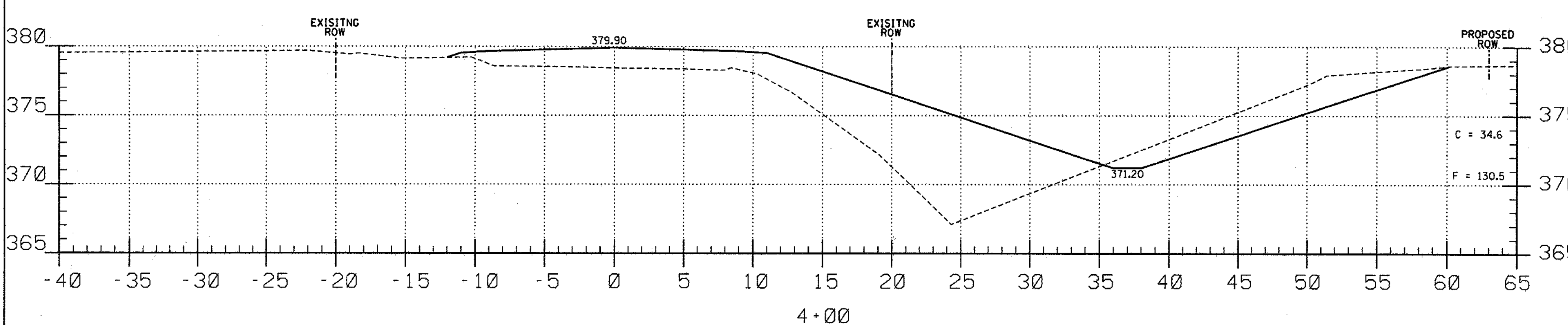
SCALE:	VARIES
BY:	AMM
DATE:	101507
REV:	

2 OF 15 SHEETS

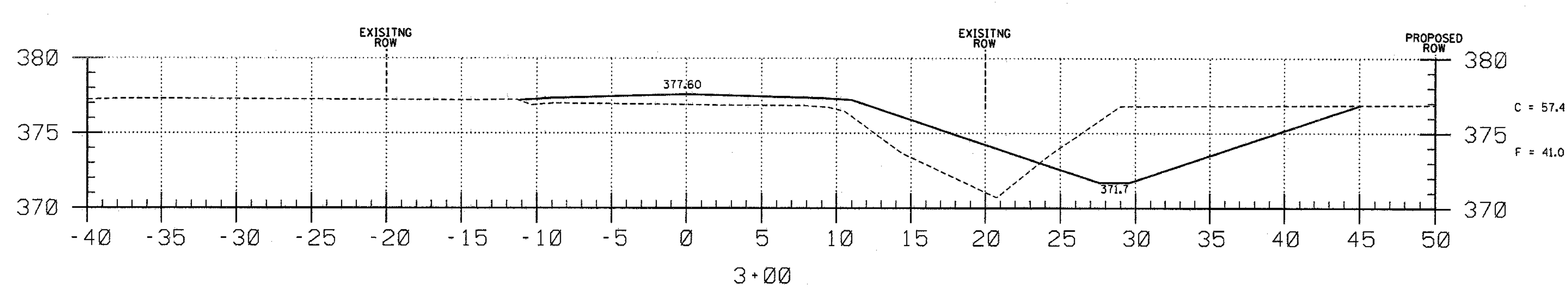
SHEET NO.
2



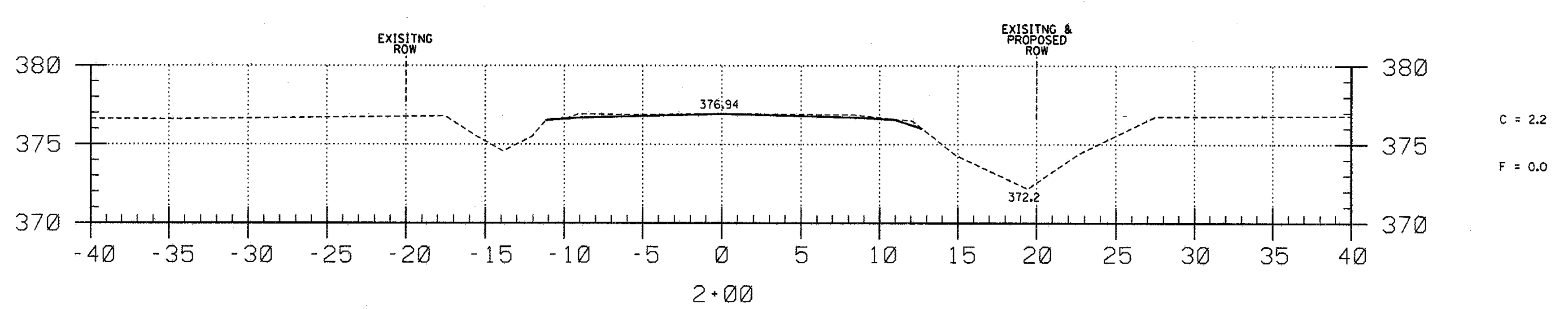
4+45



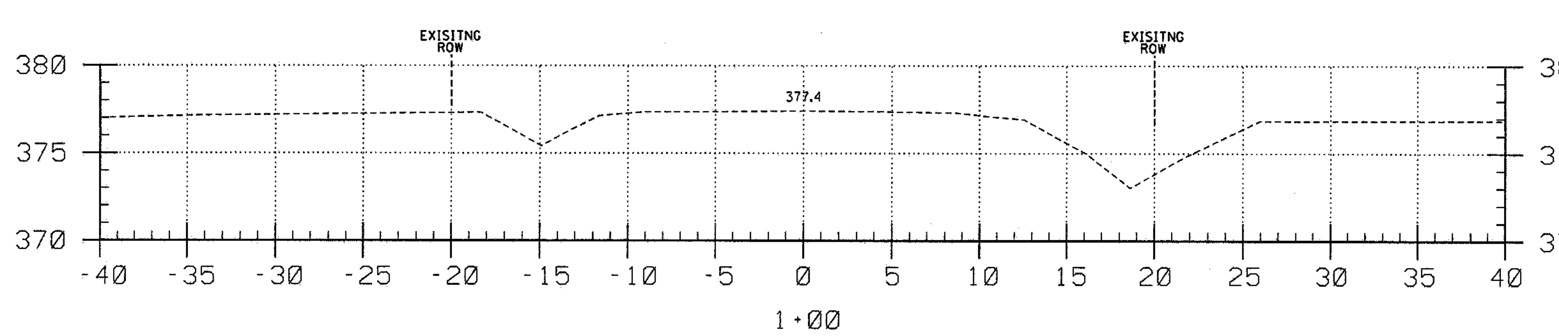
4+00



3+00



2+00



1+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
STA 0+00 TO 4+49.2	408.9	0.0	0.0	306.7	632.2	-325.5
STA 4+49.2 TO 5+50.7	0.0	348.2	174.1	130.6	0.0	130.6
STA 5+50.7 TO 10+00	3.9	0.0	0.0	2.9	37.8	-34.9
SIDEROAD	3.2	0.0	0.0	2.4	0.0	2.4
2 FIELD ENTRANCE	0.0	0.0	0.0	0.0	3.7	-3.7
TOTAL	416.0	348.2	174.1	442.6	673.7	-231.1

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
18	06-09124-00-BR	WHITE	15	3
FED. ROAD DIST. NO. 9	ILLINOIS	SOUTHERN OUTLET		
PROJECT # BROS-193(32)		CONTRACT # 99313		

LEC JOB # H06IL023WH

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

405 W. STATE ST.
SUITE1
PRINCETON, IN 47670
PHONE: (812)-386-7611
FAX: (812)-385-2812

LAMAC ENGINEERING CO.

PROFESSIONAL DESIGN FIRM
LAND SURVEY & PROFESSIONAL ENGINEERING CORPORATION
184-000867
(62-032435)(35-002769)

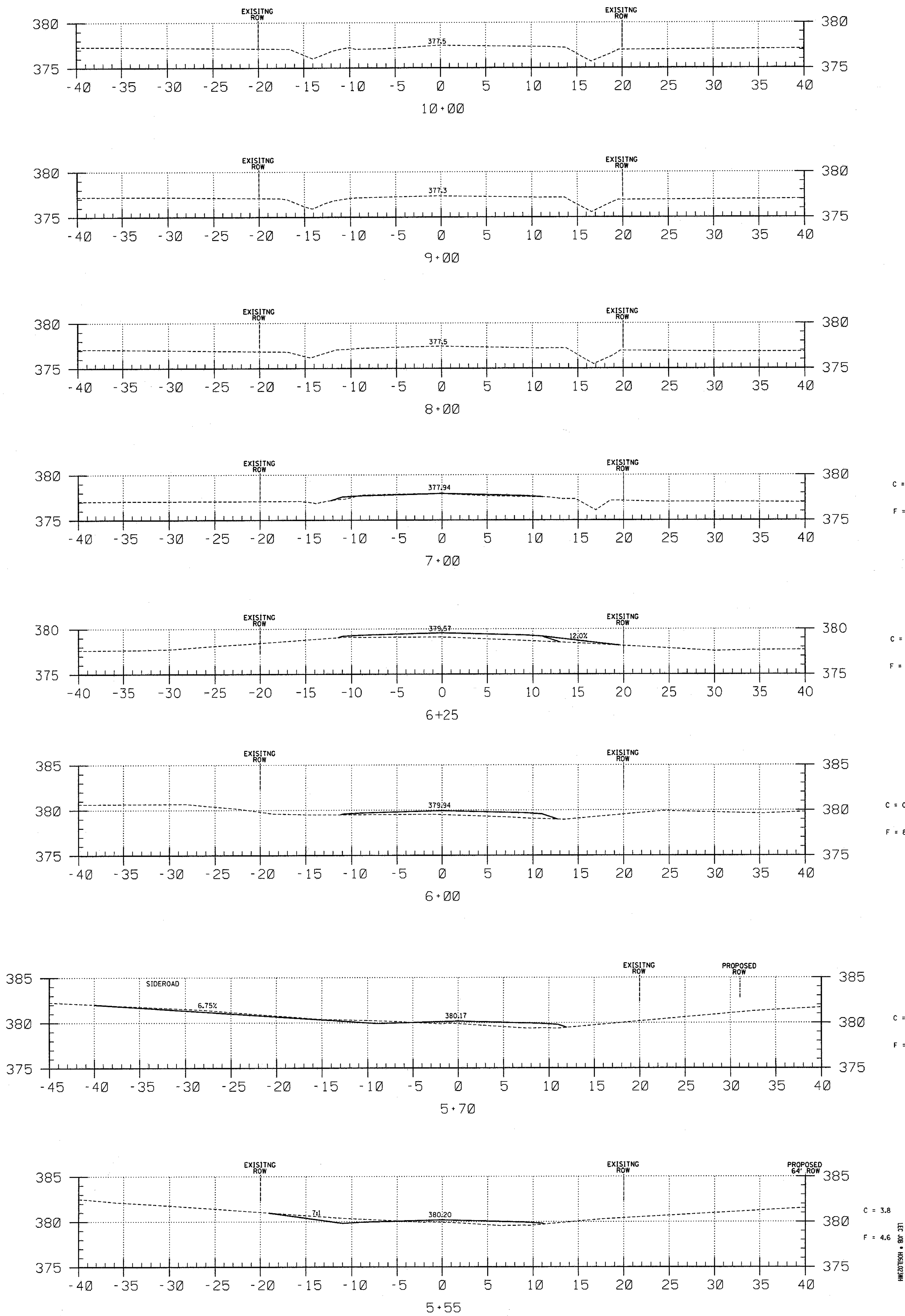
AARON M. MEFFORD 56284 REGISTERED PROFESSIONAL ENGINEER OF ILLINOIS

AARON M. MEFFORD
NAME
SIGNATURE
10-17-07
DATE
11-30-09
EXPIRES

MILL SHOALS TOWNSHIP
OVER SOUTHERN OUTLET
WHITE COUNTY, ILLINOIS

SHEET TITLE: CROSS-SECTIONS

SCALE: 1" = 5'
BY: AMM
DATE: 80607
REV:



T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
18	06-09124-00-BR	WHITE	15	4
FED. ROAD DIST. NO. 9	ILLINOIS	SOUTHERN OUTLET		
PROJECT # BROS-193(321)		CONTRACT # 99313		

LEC JOB # H06IL023WH

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

405 W. STATE ST.
SUITE1
PRINCETON, IN 47670
PHONE: (812)-386-7611
FAX: (812)-385-2812

LAMAC ENGINEERING CO.

PROFESSIONAL DESIGN FIRM
LAND SURVEY & PROFESSIONAL ENGINEERING CORPORATION
184-000837
(62-032435)(35-002769)

AARON M. MEFFORD 56284 REGISTERED PROFESSIONAL ENGINEER OF ILLINOIS

AARON M. MEFFORD
NAME
SIGNATURE
10-17-07
DATE
11-30-09
EXPIRES

MILL SHOALS TOWNSHIP OVER SOUTHERN OUTLET WHITE COUNTY, ILLINOIS

SHEET TITLE:

CROSS-SECTIONS

SCALE:	1" = 5'
BY:	AMM
DATE:	80607
REV:	

4 OF 15 SHEETS

SHEET NO.
4

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
18	06-09124-00-BR	WHITE	15	5
FED. ROAD DIST. NO. 9	ILLINOIS	SOUTHERN OUTLET		
PROJECT # BROS-193(32)		CONTRACT NO. 99313		

LEC JOB # H061L023WH

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

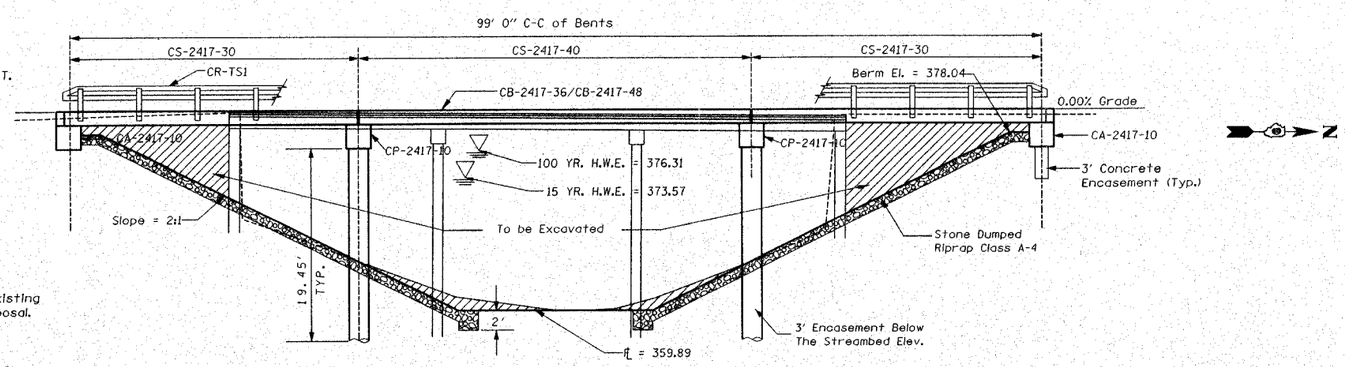
405 W. STATE ST.
SUITE1
PRINCETON, IN
47670
PHONE:
(812)-386-7611
FAX:
(812)-385-2812

LAMAC ENGINEERING CO.

PROFESSIONAL LAND SURVEYING FIRM:
184-005082
PROFESSIONAL ENGINEERING CORPORATION:
184-000887

AARON M. MEFFORD
56284
REGISTERED PROFESSIONAL ENGINEER
OF ILLINOIS

AARON M. MEFFORD
NAME
SIGNATURE
10-17-07
DATE
11-30-09
EXPIRES



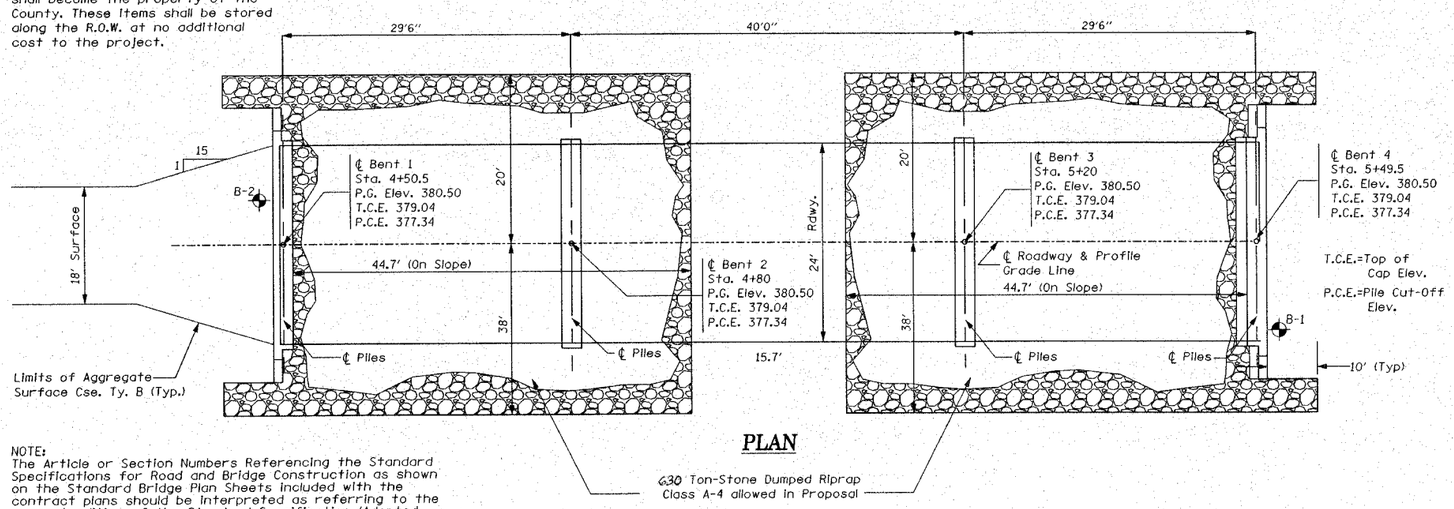
ELEVATION

B.M.- I.P. ±4+45.67, 16.74' LT.
Elev. = 379.69

Existing Bridge Sta 4+98.2:
Structure Number: 097-3039
A 65' Long Triple Span Bridge with 2.5" Wood Runners with a 3" Wood Deck on 7-14" I-Beams with Concrete Abutments & 1.1' Thick Concrete Wingwalls.

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

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



PLAN

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."

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

DESIGN SPECIFICATIONS

2002 AASHTO
HS 20-44 Loading, Load Factor Design

SEISMIC DATA

Seismic Performance Category (SPC) = B
Bedrock Acceleration Coefficient (A) = 0.10g
Site Coefficient (S) = 1.5

9-20-2007
ILLINOIS STRUCTURAL NO. 6529
Complies with 2002 AASHTO Specifications for Seismic Design of Bridges.

SCOTT M. SHOUP 081-6529 SPRINGFIELD, IL. LICENSED STRUCTURAL ENGINEER STATE OF ILLINOIS

Expires 11-30-08

PILE DATA (NORTH ABUT)

Type:	Steel Piles HP10X42
Nominal Required Bearing:	156 Kips
Allowable Resistance Available:	52 Kips
Estimated Length:	45 Feet/Pile
Number Required:	4

PILE DATA (NORTH PIER)

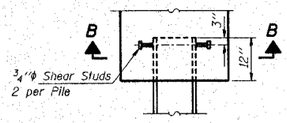
Type:	Steel Piles HP10X42
Nominal Required Bearing:	335 Kips
Allowable Resistance Available:	112 Kips
Estimated Length:	62 Feet/Pile
Number Required:	4 (Includes 1 Test Pile)

PILE DATA (SOUTH PIER)

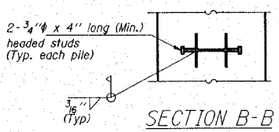
Type:	Steel Piles HP10X42
Nominal Required Bearing:	335 Kips
Allowable Resistance Available:	112 Kips
Estimated Length:	65 Feet/Pile
Number Required:	4

PILE DATA (SOUTH ABUT.)

Type:	Steel Piles HP10X42
Nominal Required Bearing:	156 Kips
Allowable Resistance Available:	52 Kips
Estimated Length:	50 Feet/Pile
Number Required:	4



PILE DETAIL
Typ. Each Pile



SECTION B-B

GENERAL NOTES

1. The Contractor shall drive one test pile, as specified, in a permanent location as directed by the Engineer before ordering the remaining piles.
2. See Special Provisions for boring logs.
3. ~~A corrosion inhibitor, as covered in the Special Provisions, shall be used in the concrete for Precast Prestressed Concrete Deck Beams.~~
4. The Hot-Mix Asphalt Surf. Cse. and the Waterproofing Membrane System shown in these Plans shall not be provided.
5. The Steel H-Piles shall be according to AASHTO M270 Grade 50.
6. 2-3/4"Ø shear studs will be required per pile which will be encased within the concrete cap.

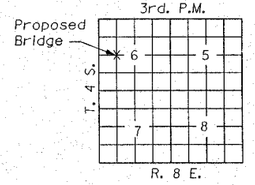
Item	Unit	Super	Sub. Piers	Sub. Abuts.	Total
Removal of Existing Structures	L Sum				1
~~Hot Mix Asphalt Surf. Cse.~~	~~Tons~~				
~~Waterproofing Membrane System~~	~~Sq.Yds.~~				
Concrete Structures	Cu.Yds.		14.8	16.6	31.4
P.P. Conc. Dk. Bm. 17" Dp.	Sq.Ft.	2400			2400
Steel Railing, Type S1	Lin.Ft.	200			200
Reinforcement Bars	Lbs.		1860	2220	4080
Furnishing Steel Piles HP10X42	Lin.Ft.		446	380	826
Driving Piles	Lin.Ft.		446	380	826
Test Pile Steel HP10X42	Each		1		1
Name Plates	Each			1	1
Concrete Encasement	Cu.Yds.		13.4	2.1	15.5
Stud Shear Connectors	Each		16	16	32

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

STATION 5+00
SOUTHERN OUTLET
SEC. 06-09124-00-BR BUILT 20
PROJECT NO. BROS-193(32)
WHITE COUNTY
LOADING HS 20-44
STR. NO. 097-3259

LETTERING FOR NAME PLATE

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



LOCATION SKETCH

INDEX OF SHEETS

WATERWAY INFORMATION

Drainage Area = 28.5 Sq. Mi. Low Grade Elev. = 376.94 At Sta. 2+00

Flood	Freq. Yr.	Q C.F.S.	Opening Sq.Ft. Exist.	Opening Sq.Ft. Prop.	Natural H.W.E.	Head-Ft. Exist.	Head-Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
Design	15	2976	603	644	373.57		0.12		373.69
Base	100	4653	768	863	376.31	0.22	0.15	376.53	376.46
Overtopping									
Max. Calc.	500	6002							

GENERAL PLAN & ELEVATION

TOWNSHIP **ROUTE** 18
OVER SOUTHERN OUTLET
SECTION 06-09124-00-BR
WHITE **COUNTY**
STATION 5+00

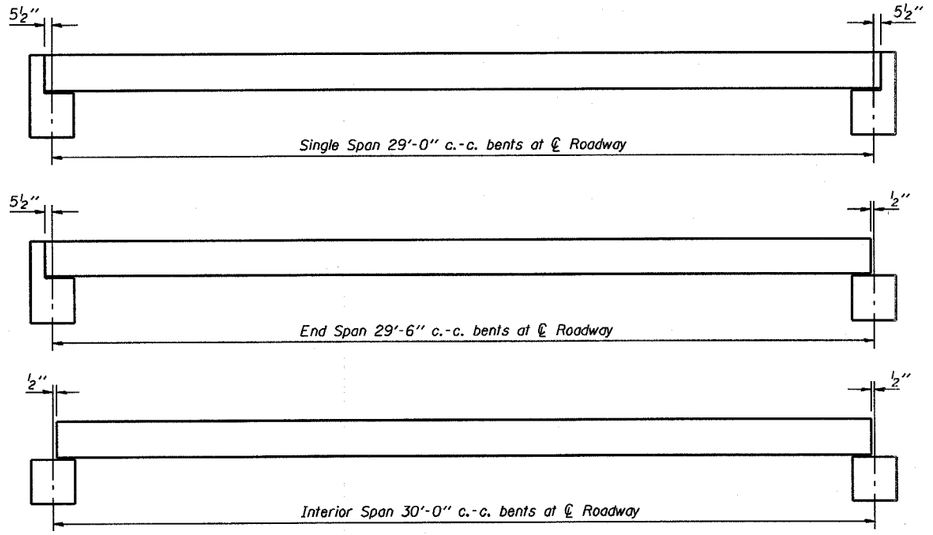
MILL SHOALS TOWNSHIP
OVER SOUTHERN OUTLET
WHITE COUNTY, ILLINOIS

SHEET TITLE:
GENERAL PLAN AND ELEVATION

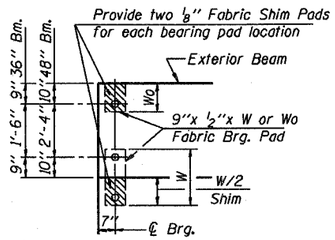
SCALE:	NONE
BY:	A.M.M.
DATE:	56807
REV:	

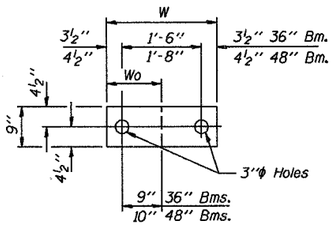
5 OF 15 SHEETS

SHEET NO. 5



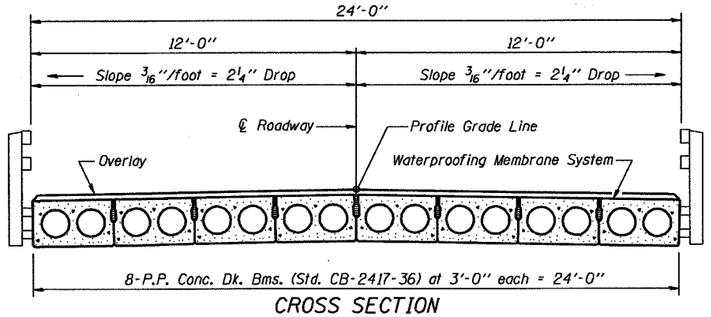
TYPICAL ELEVATIONS



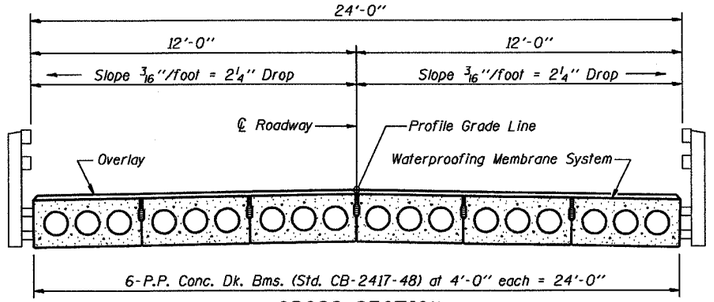


Beam	W	Wo
36"	2'-1"	1'-0½"
48"	2'-5"	1'-2½"

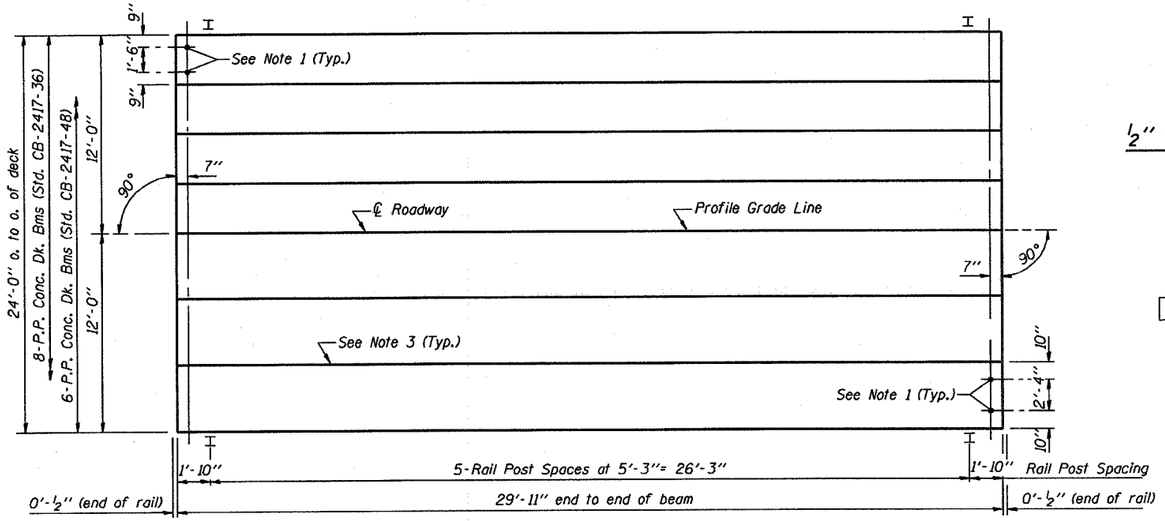
½" FABRIC BRG. PAD DETAILS



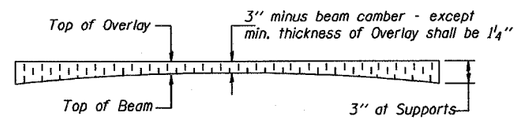
CROSS SECTION



CROSS SECTION



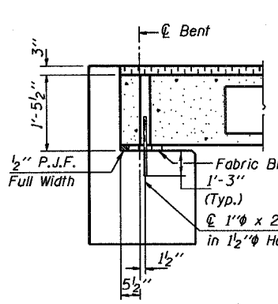
PLAN



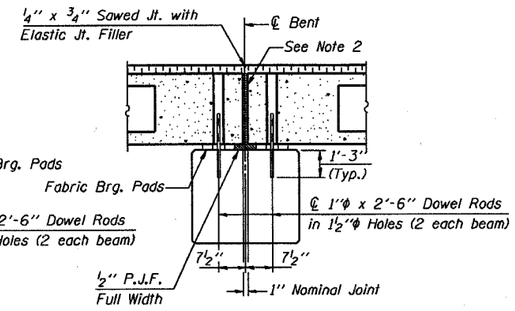
PROFILE OF OVERLAY

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



SECTION AT ABUTS.
(Along ℄ Beams)



SECTION AT PIERS
(Along ℄ Beams)

QUANTITIES FOR ONE SPAN

P.P. Conc. Dk. Bm. 17" Dp.	720 Sq. Ft.	
Steel Railing	60 Ft.	
~~Waterproofing Membrane System~~	~~80.0 Sq. Yds.~~	
Portland Cement Mortar	210 Ft.	36"
Fairing Course	150 Ft.	48"

Note: Quantity of overlay for one span = 12.0 Tons

Illinois Department of Transportation

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

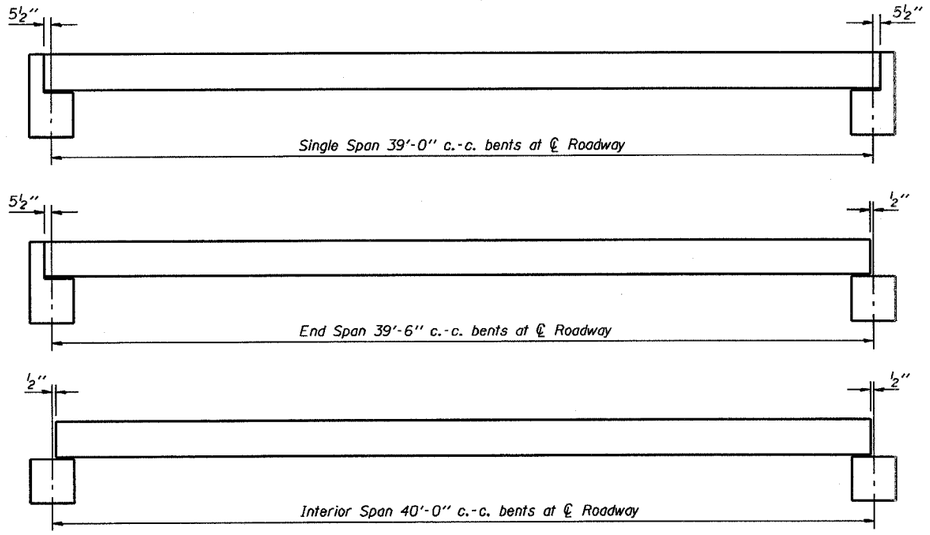
APPROVED APRIL 4, 2005
Ralph E. Anderson
Engineer of Bridges and Structures

ISSUED 1-1-1981

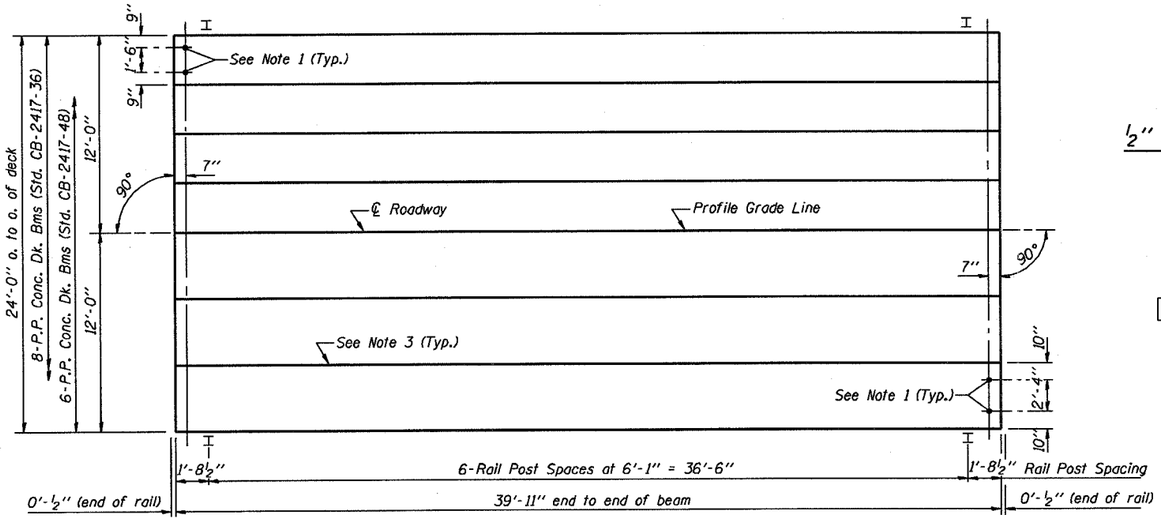
P.P.C. DECK BEAM SUPERSTRUCTURE

24' RDWY.	17" BMS.	30' SPAN	0° SKEW

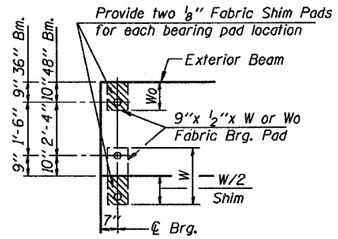
STANDARD CS-2417-30

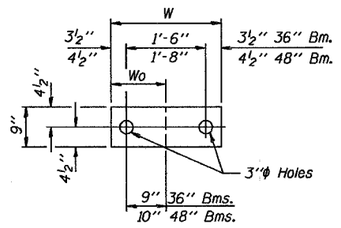


TYPICAL ELEVATIONS



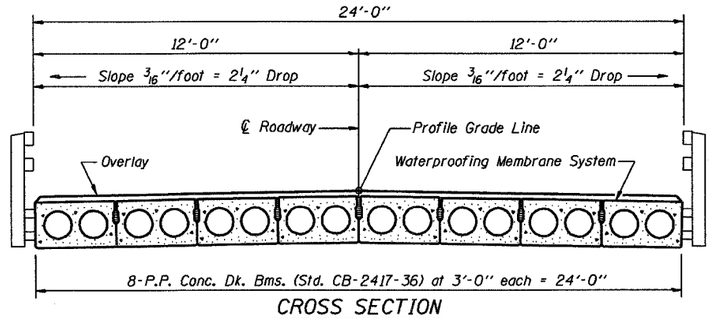
PLAN



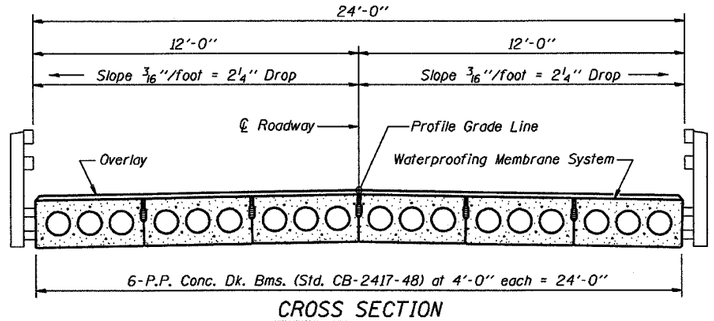


Beam	W	Wo
36"	2'-1"	1'-0½"
48"	2'-5"	1'-2½"

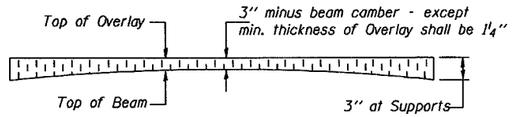
½" FABRIC BRG. PAD DETAILS



CROSS SECTION



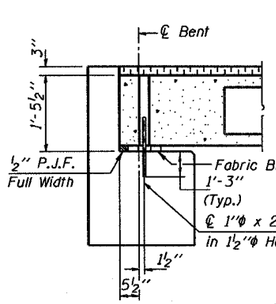
CROSS SECTION



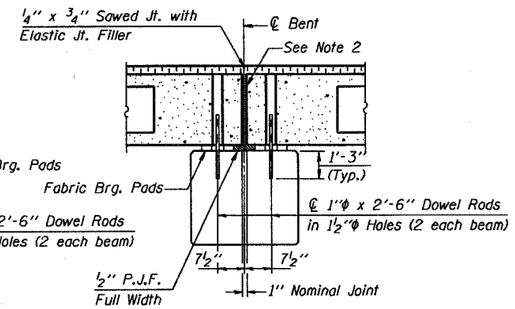
PROFILE OF OVERLAY

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



SECTION AT ABUTS.
(Along ℄ Beams)



SECTION AT PIERS
(Along ℄ Beams)

QUANTITIES FOR ONE SPAN

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

Note: Quantity of overlay for one span = 13.2 Tons

Illinois Department of Transportation

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

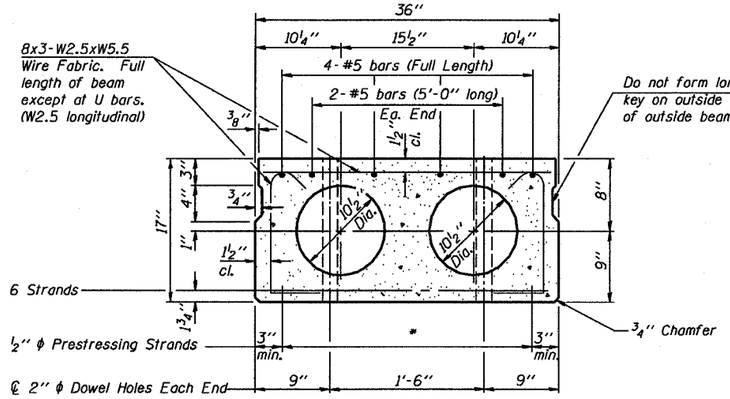
APPROVED APRIL 4, 2005
Ralph E. Anderson
Engineer of Bridges and Structures

ISSUED 1-1-1991

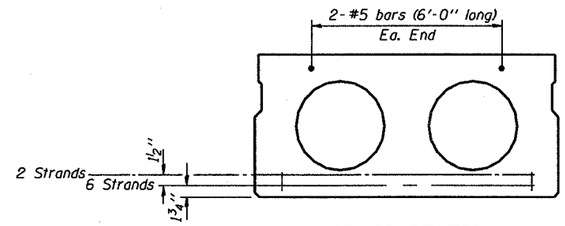
P.P.C. DECK BEAM SUPERSTRUCTURE

24' RDWY.	17" BMS.	40' SPAN	0° SKEW

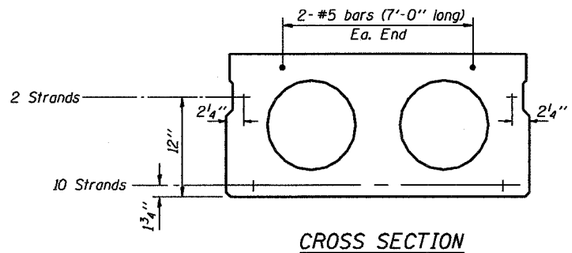
STANDARD CS-2417-40



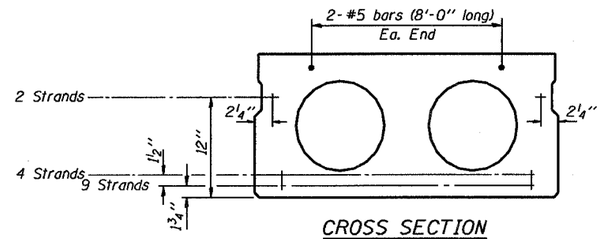
CROSS SECTION
(25' SPAN)



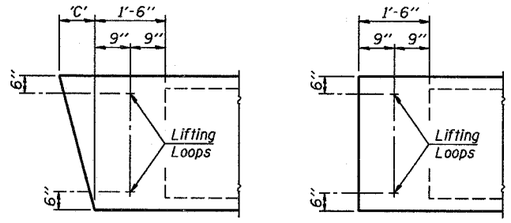
CROSS SECTION
(30' SPAN)



CROSS SECTION
(35' SPAN)

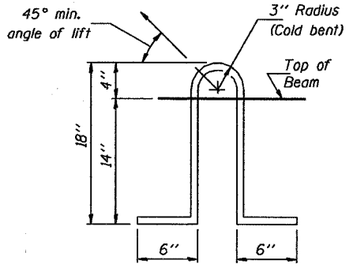


CROSS SECTION
(40' SPAN)



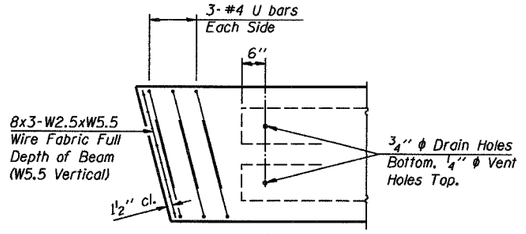
END BLOCK DETAILS

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.

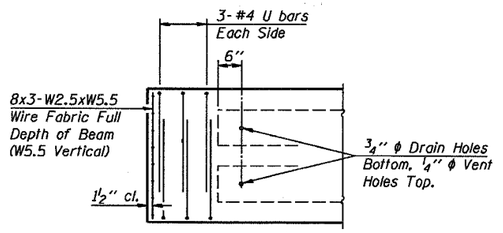


LIFTING LOOP DETAIL

Lifting loops shall be 2, ½"ϕ-270 ksi strands, as shown. Alternate approved lifting devices are also acceptable.



END REINFORCEMENT
(SKEWED)



END REINFORCEMENT
(RIGHT ANGLE)

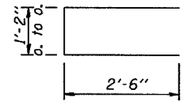
DIMENSION 'C'

Skew Angle 'D'	0°	5°	10°	15°	20°	25°	30°
Dimension 'C' (Inches)	0	3⅛	6⅜	9⅝	13⅛	16¾	20¾

* 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 ½".
4. The minimum clearance from strand to void shall be 1½".

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'_{ci} = 4,000 p.s.i.
f'_s = 270,000 p.s.i. (½" ϕ Strand)
f_{si} = 201,960 p.s.i. (½" 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 ½" 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 ¼".
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.

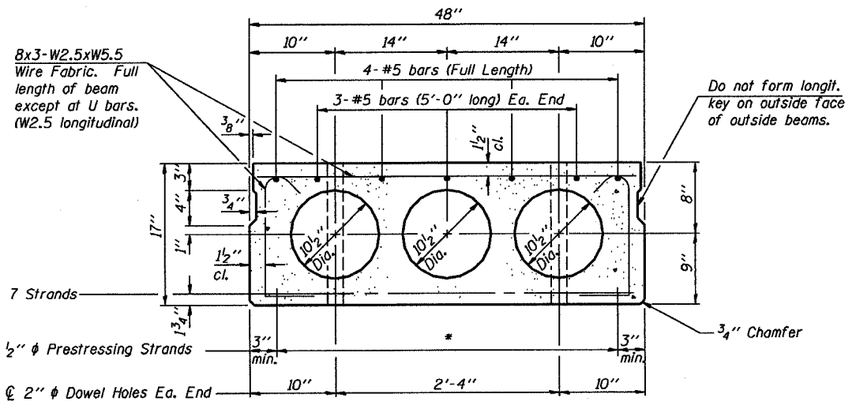
Illinois Department of Transportation

PASSED APRIL 4, 2005
Thomas J. Domagalski
Engineer of Bridge Design
APPROVED APRIL 4, 2005
Ralph E. Anderson
Engineer of Bridges and Structures

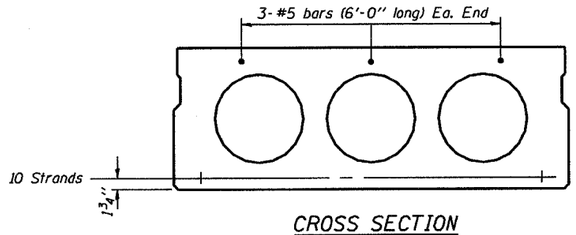
ISSUED 1-1-06

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

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

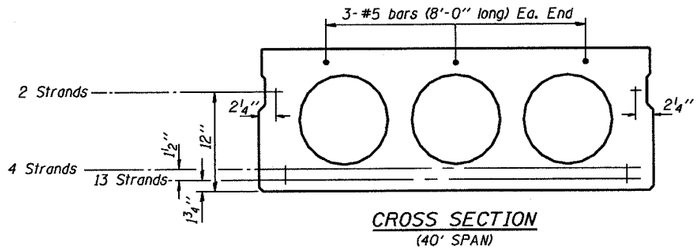


CROSS SECTION
(25' SPAN)

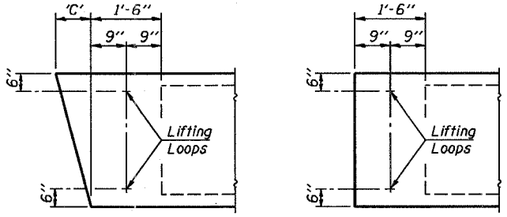


CROSS SECTION
(30' SPAN)

CROSS SECTION
(35' SPAN)

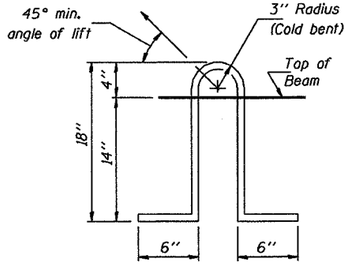


CROSS SECTION
(40' SPAN)



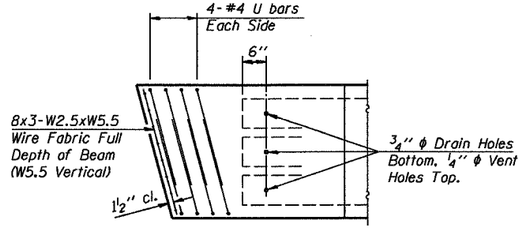
END BLOCK DETAILS

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.

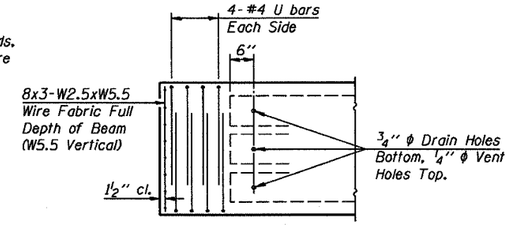


LIFTING LOOP DETAIL

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)

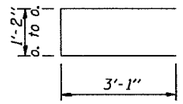
DIMENSION 'C'

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"

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.

DESIGN STRESSES

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

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

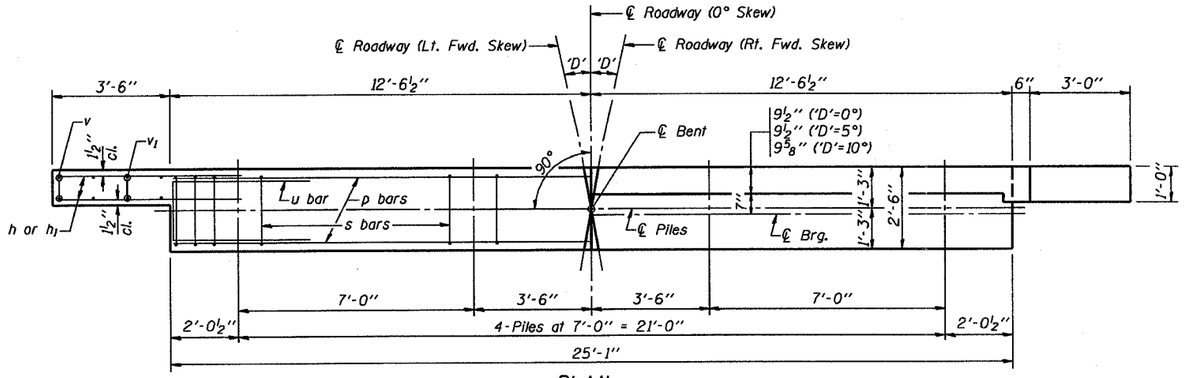
Illinois Department of Transportation

PASSED APRIL 4, 2005
Thomas J. Domagalski
Engineer of Bridge Design
APPROVED APRIL 4, 2005
Ralph E. Anderson
Engineer of Bridges and Structures

ISSUED 1-1-05

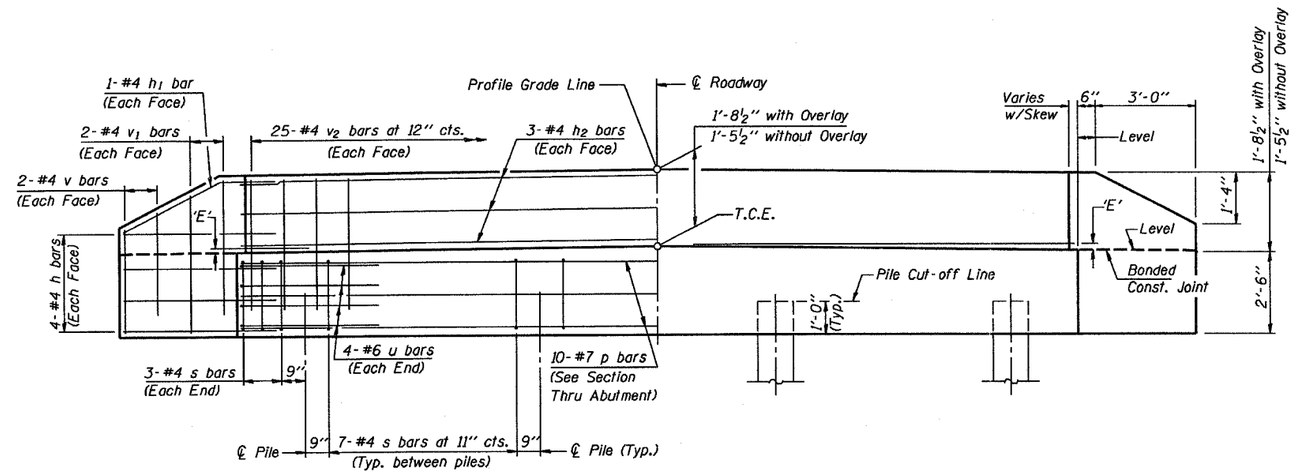
P.P.C. DECK BEAM DETAILS

24' ROADWAY	17" x 48" BEAMS
STANDARD CB-2417-48	

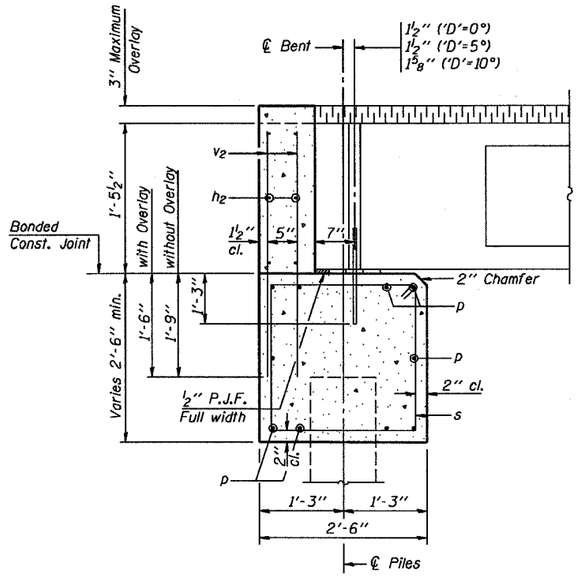


PLAN

('D'=Designated Skew Angle)



ELEVATION



SECTION THRU ABUTMENT

(At Right Angles)

DIMENSION 'E'

GRADE	'D'=0°		'D'=5°		'D'=10°	
	UPGRADE END	DOWNGRADE END	UPGRADE END	DOWNGRADE END	UPGRADE END	DOWNGRADE END
0%	2 3/8"	2 3/8"	2 3/8"	2 3/8"	2 3/8"	2 3/8"
Over 0% to 1%	2 3/8"	2 3/8"	2 1/4"	2 3/8"	2 1/8"	2 1/2"
Over 1% to 2%	2 3/8"	2 3/8"	2 1/8"	2 1/2"	1 7/8"	2 3/4"
Over 2% to 3%	2 3/8"	2 3/8"	2"	2 5/8"	1 5/8"	3"
Over 3% to 4%	2 3/8"	2 3/8"	1 7/8"	2 3/4"	1 3/8"	3 1/4"

NOTES

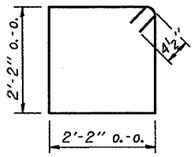
1. The Backwall and the portion of the Wingwalls above the bonded construction joint shall be cast against the in-place beam.
2. Reinforcement bars shall conform to the requirements of A.A.S.H.T.O. M-31 or M-322, Grade 60.
3. Space reinforcement in cap to miss anchor bolts.

MAXIMUM PILE LOADS

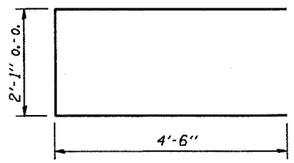
SPAN	TONS
25'	25
30'	26
35'	28
40'	30

DESIGN STRESSES

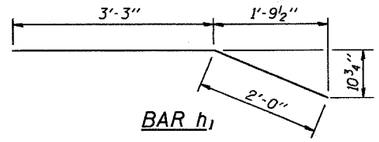
f'c = 3,500 psi
fy = 60,000 psi



BAR s



BAR u



BAR h1

BILL OF MATERIAL FOR ONE ABUTMENT

Bar	No.	Size	Length	Shape
h	16	#4	5'-0"	
h1	4	#4	5'-3"	
h2	6	#4	24'-9"	
p	10	#7	24'-9"	
s	27	#4	9'-5"	
u	8	#6	11'-1"	
v	8	#4	2'-6"	
v1	8	#4	3'-5"	
v2	50	#4	3'-1"	
Concrete Structures			8.3 Cu. Yds.	
Reinforcement Bars			1110 Lb.	

Illinois Department of Transportation

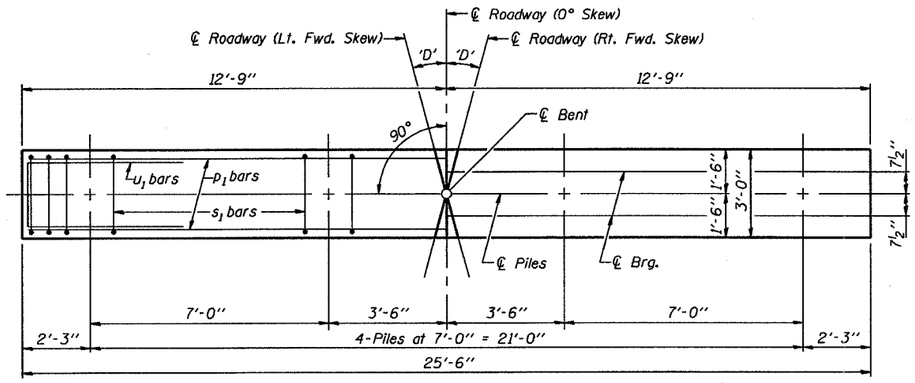
PASSED APRIL 4, 2005
Thomas J. Domagalski
Engineer of Bridge Design
APPROVED APRIL 4, 2005
Ralph E. Anderson
Engineer of Bridges and Structures

ISSUED 1-1-98

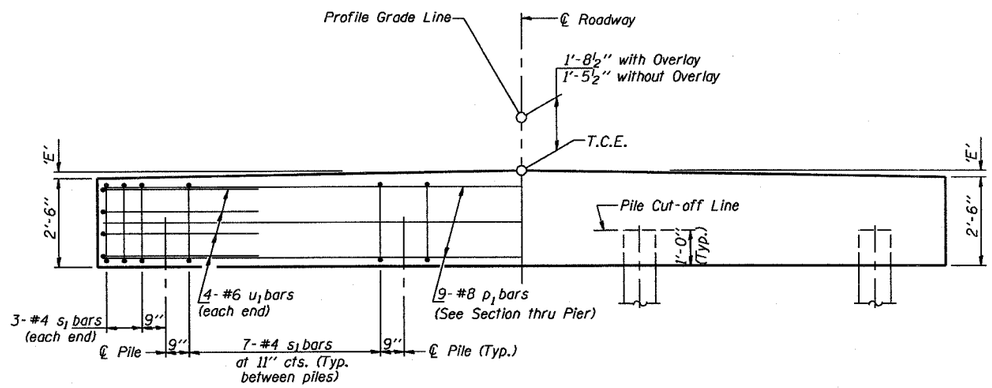
P.P.C. DECK BEAMS PILE BENT ABUTMENT

24' RDWY. | 17" BMS. | 'D'=0°, 5° OR 10°

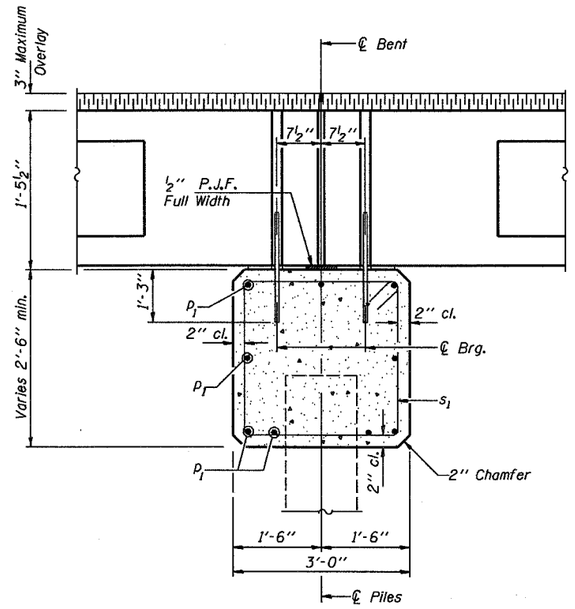
STANDARD CA-2417-10



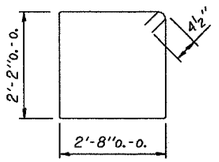
PLAN
('D'= Designated Skew Angle)



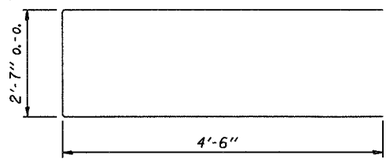
ELEVATION



SECTION THRU PIER
(At Right Angles)



BAR s_1



BAR u_1

BILL OF MATERIAL FOR ONE PIER

Bar	No.	Size	Length	Shape
p_1	9	#8	25'-2"	——
s_1	27	#4	10'-5"	□
u_1	8	#6	11'-7"	⊏
Concrete Structures			7.4	Cu. Yds.
Reinforcement Bars			930	Lb.

DIMENSION 'E'

GRADE	'D'=0°		'D'=5°		'D'=10°	
	UPGRADE END	DOWNGRADE END	UPGRADE END	DOWNGRADE END	UPGRADE END	DOWNGRADE END
0%	$2\frac{3}{8}$"	$2\frac{3}{8}$"	$2\frac{3}{8}$"	$2\frac{3}{8}$"	$2\frac{3}{8}$"	$2\frac{3}{8}$"
Over 0% to 1%	$2\frac{3}{8}$"	$2\frac{3}{8}$"	$2\frac{1}{4}$"	$2\frac{3}{8}$"	$2\frac{1}{8}$"	$2\frac{1}{2}$"
Over 1% to 2%	$2\frac{3}{8}$"	$2\frac{3}{8}$"	$2\frac{1}{8}$"	$2\frac{1}{2}$"	$1\frac{7}{8}$"	$2\frac{3}{4}$"
Over 2% to 3%	$2\frac{3}{8}$"	$2\frac{3}{8}$"	2"	$2\frac{5}{8}$"	$1\frac{5}{8}$"	3"
Over 3% to 4%	$2\frac{3}{8}$"	$2\frac{3}{8}$"	$1\frac{7}{8}$"	$2\frac{3}{4}$"	$1\frac{3}{8}$"	$3\frac{1}{4}$"

MAXIMUM PILE LOADS

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

Longer of Either Span Supported by Pier.

DESIGN STRESSES

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

NOTE

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

Illinois Department of Transportation

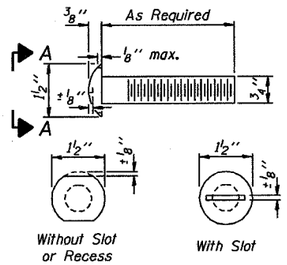
PASSED APRIL 4, 2005
Thomas S. Domagalski
Engineer of Bridge Design
APPROVED APRIL 4, 2005
Ralph E. Anderson
Engineer of Bridges and Structures

ISSUED 1-1-1981

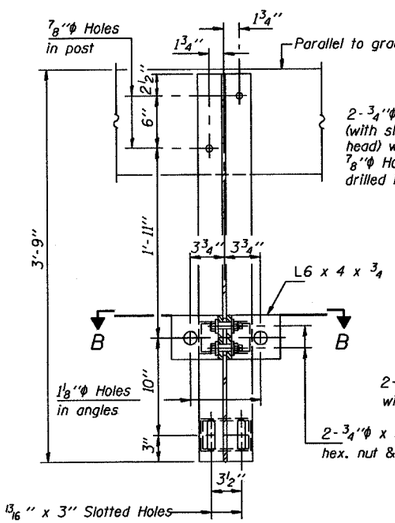
P.P.C. DECK BEAMS
PILE BENT PIER

24' RDWY.	17" BMS.	'D'=0°, 5° OR 10°

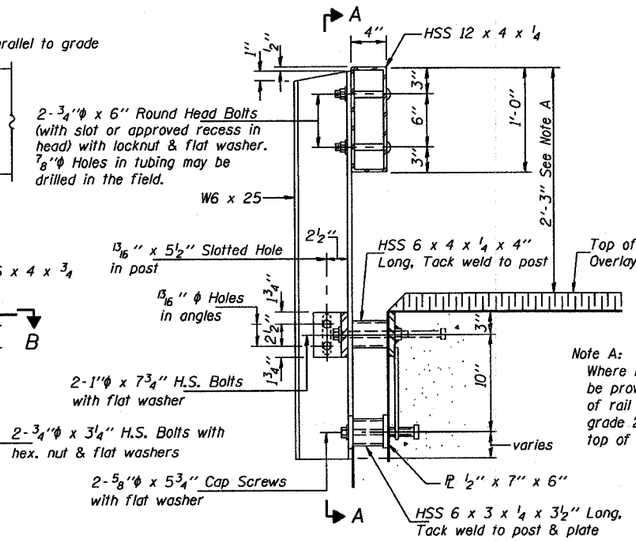
STANDARD CP-2417-10



VIEW A-A
ROUND HEAD BOLT

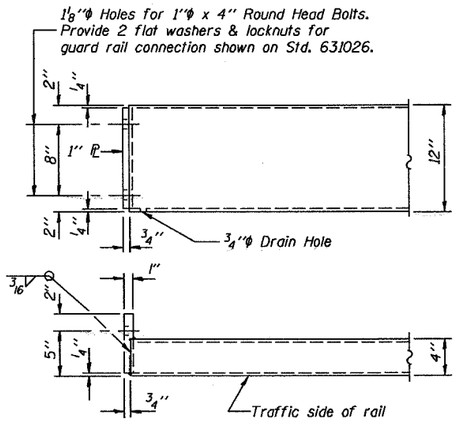


SECTION A-A



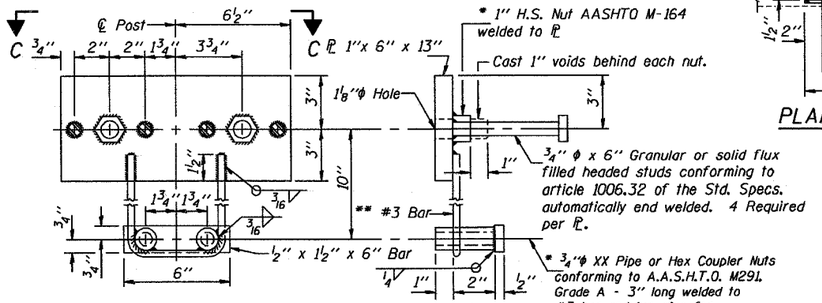
SECTION AT RAIL POST

Note A:
Where no overlay is to be provided, adjust top of rail to lay parallel to grade 2'-5" max. above top of beam.



END OF RAIL DETAILS

** Whenever the lower insert assemblies interfere with strand locations, the #3 bars shall be cut and adjusted in order to allow raising or lowering of the lower inserts. Maximum adjustment not to exceed 1/2".



ANCHOR DEVICE

SECTION B-B

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.

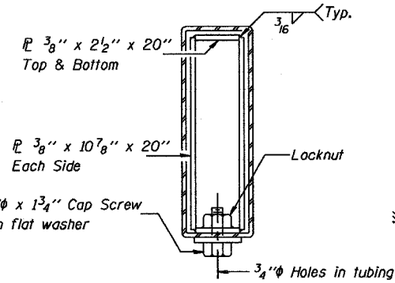
For multi-span bridges, sufficient 1/4" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with STEEL RAILING, TYPE S-1.

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.

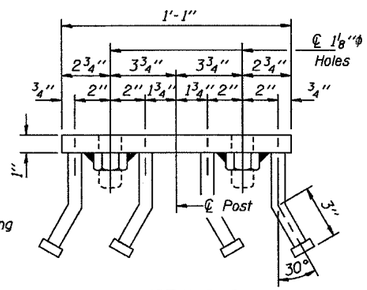
The 3/4"ϕ high strength bolts used to connect the 6 x 4 x 3/4 angles to the post shall be tightened according to Article 505.04 (f)(2) of the Standard Specifications. The 1"ϕ high strength bolts connecting the angles to the concrete shall be tightened to a snug fit and given an additional 1/8 turn. The 5/8"ϕ 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.

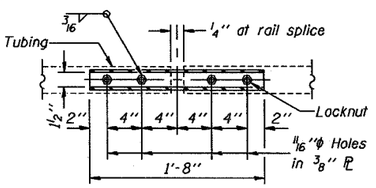


SECTION AT RAIL SPLICE

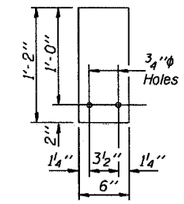
* Threaded areas shall be plugged or blocked off during casting of beam.



VIEW C-C



PLAN-BOTT. SPLICE PL
TYPICAL



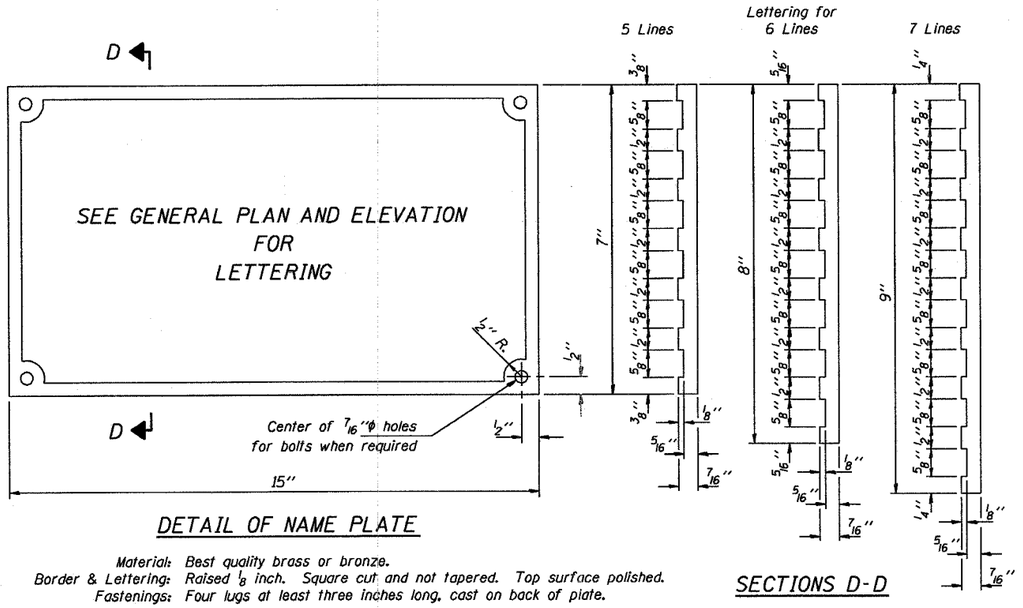
1/4" SHIM PLATE

Illinois Department of Transportation

PASSED APRIL 4, 2005
Thomas J. Domagalski
Engineer of Bridge Design
APPROVED APRIL 4, 2005
Ralph E. Anderson
Engineer of Bridges and Structures

ISSUED 1-1-1981

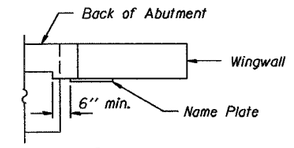
STEEL RAILING, TYPE S-1
STANDARD CR-TS1



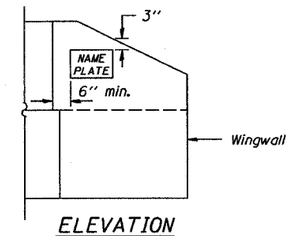
DETAIL OF NAME PLATE

SECTIONS D-D

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



PLAN



ELEVATION

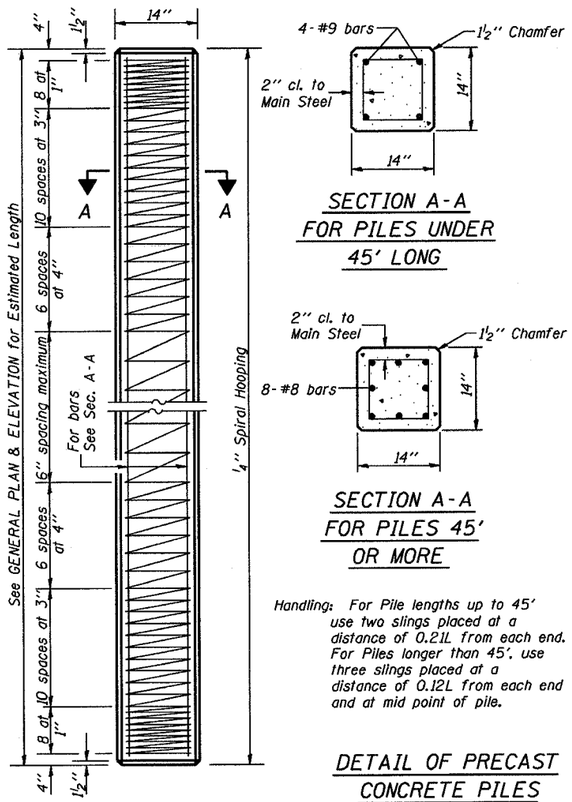
LOCATION OF NAME PLATE

Illinois Department of Transportation

PASSED APRIL 4, 2005
Thomas J. Domagalski
Engineer of Bridge Design
APPROVED APRIL 4, 2005
Ralph E. Anderson
Engineer of Bridges and Structures

9-1-04 037551

NAME PLATE
STANDARD CN

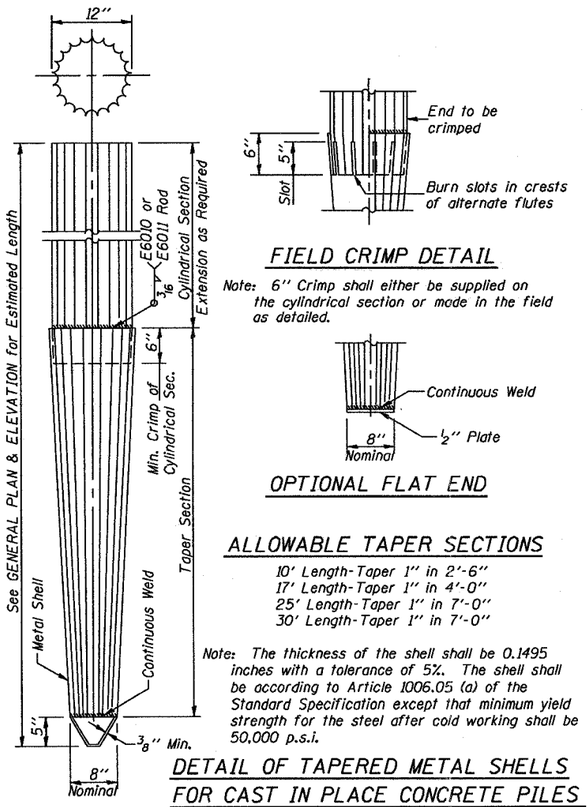


SECTION A-A
FOR PILES UNDER
45' LONG

SECTION A-A
FOR PILES 45'
OR MORE

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

DETAIL OF PRECAST
CONCRETE PILES



FIELD CRIMP DETAIL

Note: 6" Crimp shall either be supplied on the cylindrical section or made in the field as detailed.

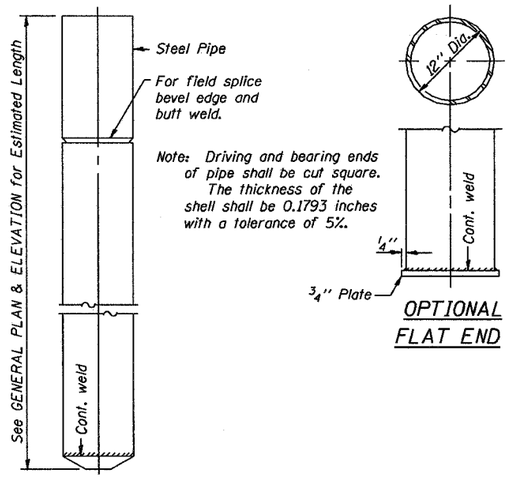
OPTIONAL FLAT END

ALLOWABLE TAPER SECTIONS

10' Length-Taper 1" in 2'-6"
17' Length-Taper 1" in 4'-0"
25' Length-Taper 1" in 7'-0"
30' Length-Taper 1" in 7'-0"

Note: The thickness of the shell shall be 0.1495 inches with a tolerance of 5%. The shell shall be according to Article 1006.05 (a) of the Standard Specification except that minimum yield strength for the steel after cold working shall be 50,000 p.s.i.

DETAIL OF TAPERED METAL SHELLS
FOR CAST IN PLACE CONCRETE PILES



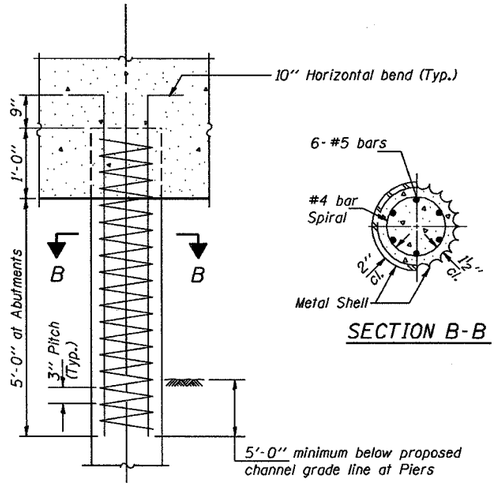
Note: Driving and bearing ends of pipe shall be cut square. The thickness of the shell shall be 0.1793 inches with a tolerance of 5%.

OPTIONAL
FLAT END

DETAIL OF CYLINDRICAL
STEEL SHELL FOR CAST IN
PLACE CONCRETE PILES

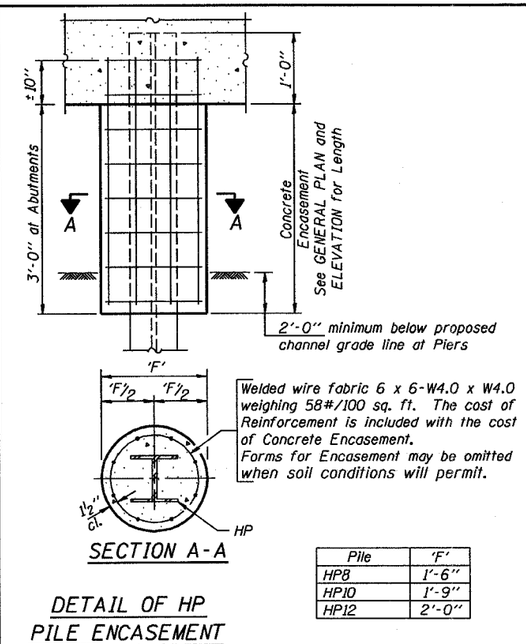
Reinforcement cage shall be omitted when Concrete Encasement is provided.

The cost of Reinforcement is included with the Cost of Furnishing Piles.



SECTION B-B

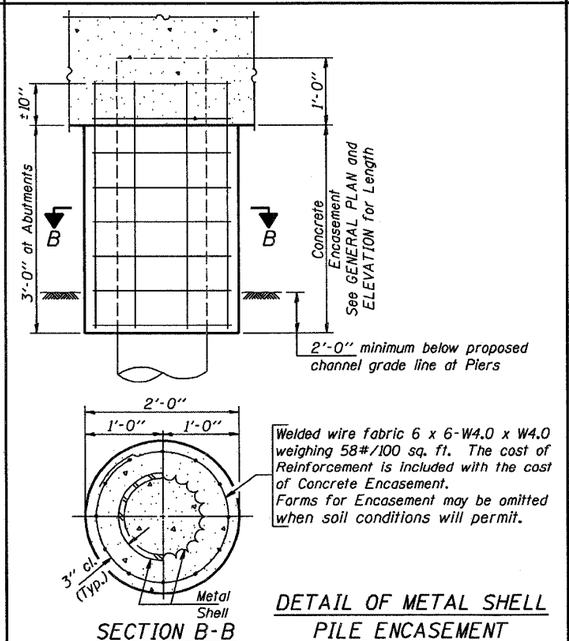
DETAIL OF REINFORCEMENT
FOR METAL SHELLS



SECTION A-A

Pile	'F'
HP8	1'-6"
HP10	1'-9"
HP12	2'-0"

DETAIL OF HP
PILE ENCASEMENT



SECTION B-B

DETAIL OF METAL SHELL
PILE ENCASEMENT

QUANTITIES/FT. OF ENCASEMENT

(STEEL PILES)

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

(METAL SHELL PILES)

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

PILE DETAILS

STANDARD CX-1

Illinois Department of Transportation

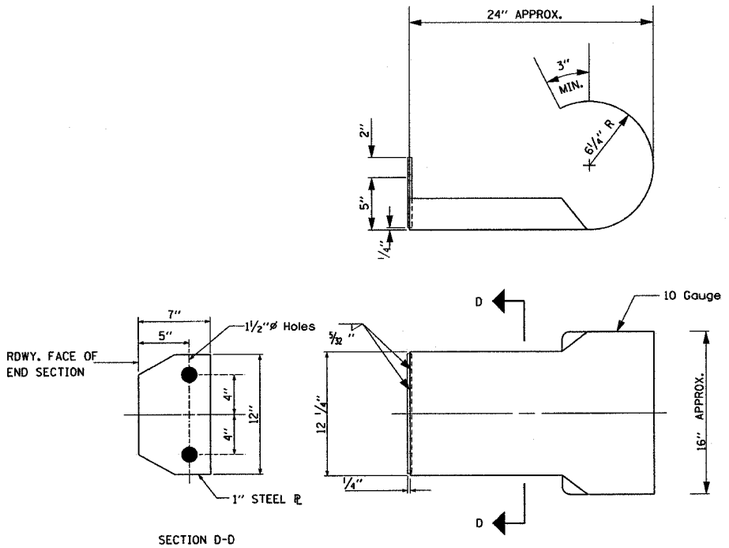
PASSED FEBRUARY 1, 2000
Thomas J. Domagalski
Engineer of Bridge Design
APPROVED FEBRUARY 1, 2000
Ralph E. Anderson
Engineer of Bridges and Structures

ISSUED 1-1-98

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
18	06-09124-00-BR	WHITE	15	15
FED. ROAD DIST. NO. 9	ILLINOIS	SOUTHERN OUTLET		
PROJECT # BROS-193(32)		CONTRACT # 99313		

LEC JOB # H06IL023WH

CURLED END SECTION DETAIL



SECTION D-D

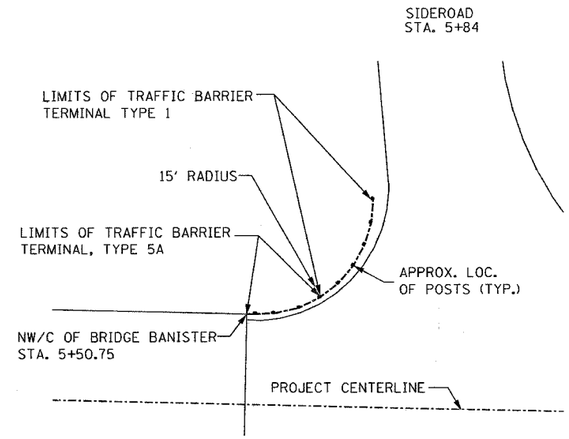
ALL OTHER STEEL SHAPES AND PLATES SHALL CONFORM TO THE REQUIREMENTS OF A.A.S.H.T.O. DESIGNATION M-183 EXCEPT POSTS AND ANGLES SHALL CONFORM TO A.A.S.H.T.O. M-223, GRADE 50.

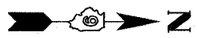
BOLTS, CAP SCREWS, AND NUTS SHALL CONFORM TO THE REQUIREMENT OF A.S.T.M. DESIGNATION A-307 EXCEPT FOR HIGH STRENGTH BOLTS, NUTS, AND WASHERS NOTED WHICH SHALL CONFORM TO A.A.S.H.T.O. DESIGNATION M-164.

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.

DETAIL TRAFFIC BARRIER TERMINAL TYPE 1; AND TRAFFIC BARRIER TERMINAL, TYPE 5A AT NW/C OF BRIDGE STATION 5+84





SCHEDULE OF TRAFFIC BARRIER TERMINALS TYPE 1

STATION	TO	STATION	LOCATION	UNIT - EACH
•		•	RT	1
			TOTAL	1

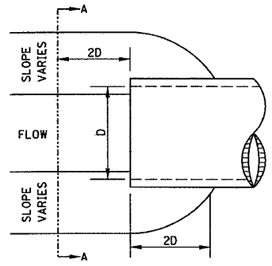
•NOTE: SEE DETAIL ABOVE.

SCHEDULE OF TRAFFIC BARRIER TERMINALS, TYPE 5A

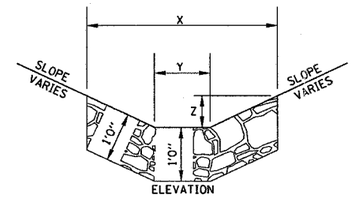
STATION	TO	STATION	LOCATION	UNIT - EACH
•		•	RT	1
			TOTAL	1

•NOTE: SEE DETAIL ABOVE.

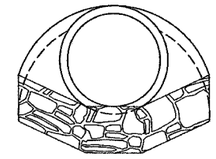
STONE RIPRAP DITCH DESIGN



Plan



ELEVATION



Section A-A

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
		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