7-31-09 Letting, Item 070

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 21	00-07118-00-BR	PERRY	11	1
PROJECT NO. BROS-145(35)		CONTRACT NO. 99349		

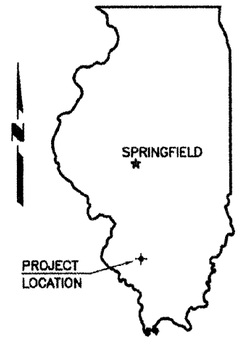
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLANS FOR PROPOSED

HIGHWAY BRIDGE PROGRAM

TOWNSHIP ROUTE 21 (SAWMILL ROAD)
SECTION 00-07118-00-BR
PROJECT NO. BROS-145(35)
JOB NO. C-99-508-09
SWANWICK CREEK

PERRY COUNTY



INDEX OF SHEETS

SUMMARY OF QUANTITIES

CODE NO.	PAY ITEM	UNIT	TOTAL
20200100	EARTH EXCAVATION	CU YD	134
20300100	CHANNEL EXCAVATION	CU YD	41
20400100	BORROW EXCAVATION	CU YD	1588
20700110	POUROUS GRANULAR EMBANKMENT	TON	33
25000200	SEEDING, CLASS 2	ACRE	0.4
25000400	NITROGEN FERTILIZER NUTRIENT	POUND	36
25000500	PHOSPHORUS FERTILIZER NUTRIENT	POUND	36
25000600	POTASSIUM FERTILIZER NUTRIENT	POUND	36
25000700	AGRICULTURAL GROUND LIMESTONE	TON	0.8
25100115	MULCH, METHOD 2	ACRE	0.4
28000400	PERIMETER EROSION BARRIER	FOOT	850
28100807	STONE DUMPED RIPRAP, CLASS A4	TON	190
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	640
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50200100	STRUCTURE EXCAVATION	CU YD	16
50300225	CONCRETE STRUCTURES	CU YD	17.6
50300280	CONCRETE ENCASEMENT	CU YD	2.1
50400505	PRECAST PRESTRESSED CONCRETE DECK BEAMS (27" DEPTH)	SQ FT	1438
50800105	REINFORCEMENT BARS	POUND	2290
Δ 50900205	STEEL RAILING, TYPE S1	FOOT	120
51200957	FURNISHING METAL PILE SHELLS 12" X 0.250"	FOOT	399
51202305	DRIVING PILES	FOOT	399
51203200	TEST PILE METAL SHELLS	EACH	1
51500100	NAME PLATES	EACH	1
54205473	PIPE CULVERTS, CLASS D, TYPE 1 EQUIVALENT ROUND-SIZE 18"	FOOT	23
67100100	MOBILIZATION	L SUM	1
* Δ 78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	4

* SEE SPECIAL PROVISIONS Δ SPECIALTY ITEMS

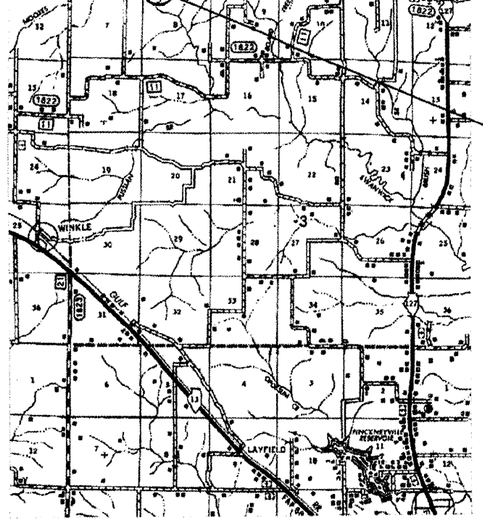
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION
J.U.L.I.E. 1-800-892-0123
CONTACT 48 HOURS BEFORE EXCAVATING

CONTRACT NO. 99349

E. MILLER ENGINEERING, INC.
CONSULTING ENGINEERS
HARRISBURG, ILLINOIS

EDWARD W. MILLER, JR. 25277 REGISTERED PROFESSIONAL ENGINEER OF ILLINOIS
01-28-09

Edward W. Miller
PROFESSIONAL ENGINEER
#062-025277
EXPIRES NOV. 30, 2009



LOCATION MAP
SCALE: 1" = 2 MILES

NET LENGTH OF IMPROVEMENT = 735.00 FT. = 0.1392 MILES

CLASSIFICATION : LOCAL ROAD (RURAL)
ADT : 10
DESIGN SPEED : 30 mph

ILLINOIS DEPARTMENT OF TRANSPORTATION

Approved 1-29-2009
Douglas E. Bishop
Perry County Engineer

Passed May 29, 2009
Richard W. Mehlsen
District 9 Engineer of Local Roads and Streets

Releasing for Bid Based on Limited Review May 29, 2009
Mary C. Lamie
Deputy Director of Highways, Region 5 Engineer

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 21	00-07118-00-BR	PERRY	11	2
PROJECT NO. BROS-145(35)		CONTRACT NO. 99349		

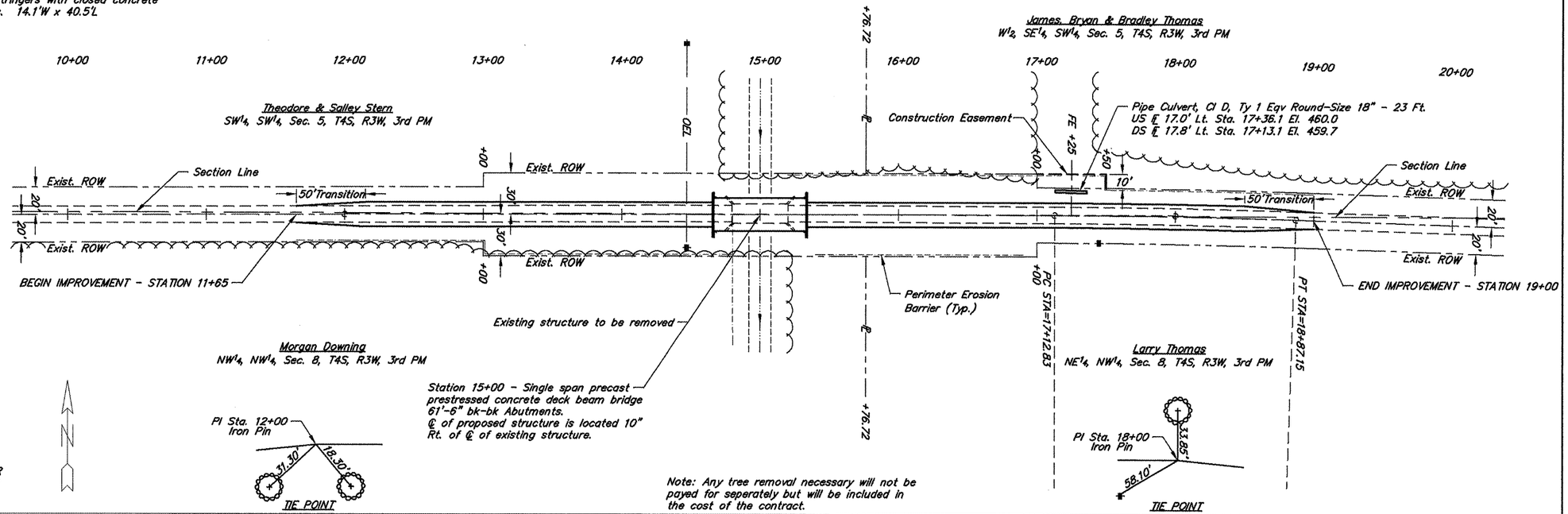
BM - Double nail in Power Pole
24' Rt. Station 14+47
Elev. 460.00

PI STA = 12+00
Δ = 0°08'30" R

Perimeter Erosion Barrier
Sta. 11+65 - Sta 14+80 Lt. 325 Ft.
Sta 15+20 - Sta 19+00 Rt. 375 Ft.
Sta 15+40 - Sta 16+90 Rt. 150 Ft.
Total 850 Ft.

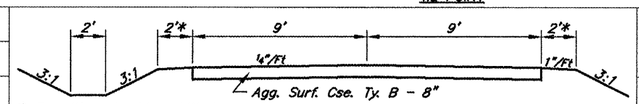
CURVE DATA
PI Sta = 18+00
Δ = 1°53'30" R T = 87.17'
D = 1°05'07" L = 174.32'
R = 5280.00' E = 0.72'
Normal Crown

Existing Structure - Single span concrete deck on steel stringers with closed concrete abutments. 14.1'W x 40.5'L



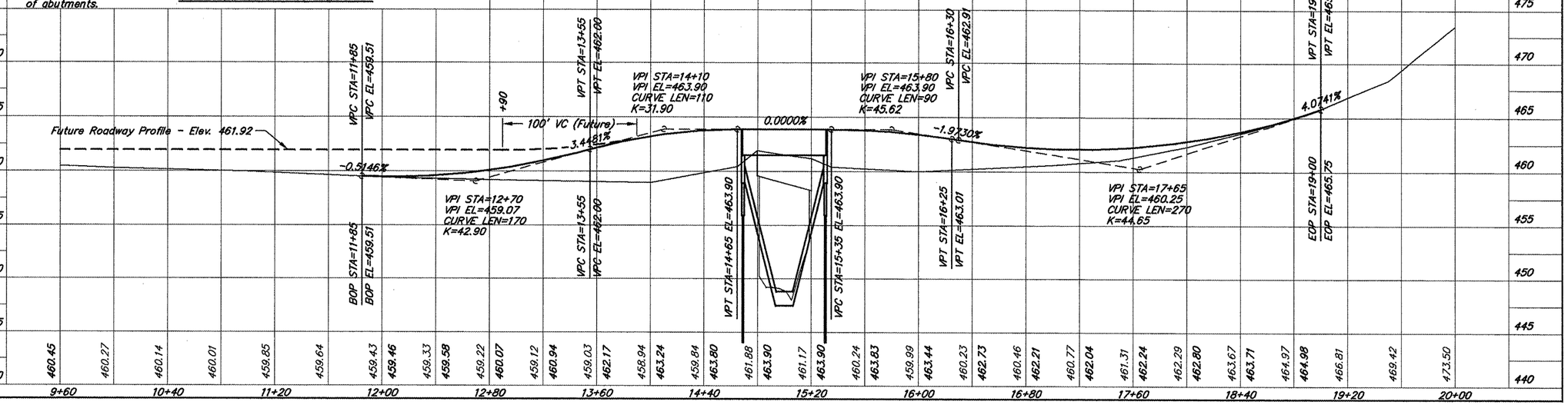
SCALES:
1" = 80' HOR
1" = 10' VER

Note: Any tree removal necessary will not be payed for seperately but will be included in the cost of the contract.



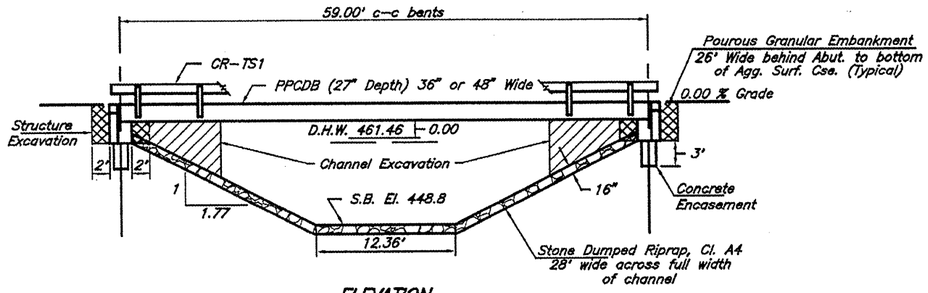
* Transition shoulder width in 50 feet to 3' wide at back of abutments.

TYPICAL ROADWAY SECTION



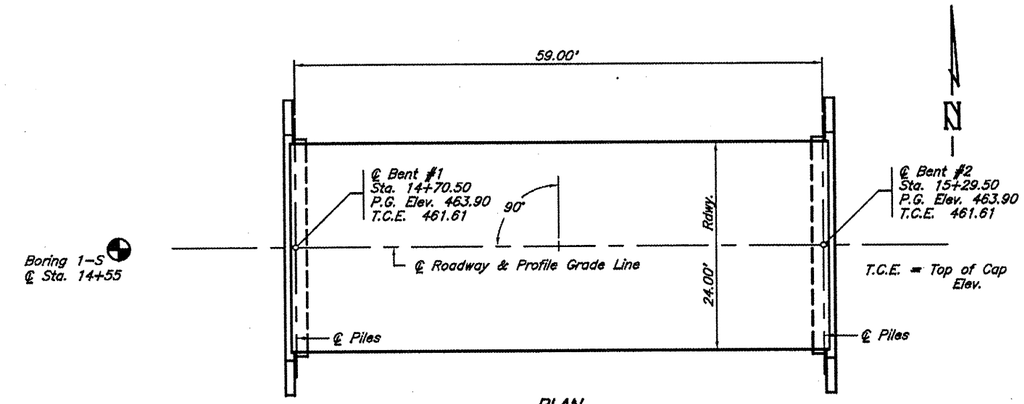
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 21	00-07118-00-BR	PERRY	11	3
PROJECT NO. BROS-145(35)		CONTRACT NO. 99349		

B.M.– Double nail in Power Pole
24' Rt. of Station 14+47
Assumed Elev. 460.00



ELEVATION

Existing Structure – Single span concrete deck on steel stringers with closed concrete abutments
40.5' L X 14.1' W



PLAN

GENERAL NOTES

1. Metal Shell piles shall meet ASTM A 252 Grade 3 specifications.
2. Test Piles shall be driven to 110% of the Nominal Required Bearing indicated in the pile data.
3. The Contractor shall drive one test pile, as specified, in a permanent location as directed by the Engineer before ordering the remaining piles.
4. See special provisions for boring logs.
5. A Corrosion inhibitor, as covered in the Standard Specifications, shall be used in the precast prestressed concrete deck beams.
6. The Bituminous Concrete Surface Course and the Waterproofing Membrane System shown on the plans shall not be provided.

TOTAL BILL OF MATERIAL

Item	Unit	Super	Sub.		Total
			Piers	Abuts.	
Removal of Existing Structures	Each				1
Concrete Structures	Cu. Yds.			17.6	17.6
P.P. Conc. Dk. Brn. 27" Dp.	Sq. Ft.	1438			1438
Steel Railing, Type S1	Foot	120			120
Reinforcement Bars	Pound			2290	2290
Furnishing Metal Shell Piles 12" X 0.250"	Foot			399	399
Driving Piles	Foot			399	399
Test Pile Metal Shells	Each			1	1
Concrete Encasement	Cu. Yds.			2.1	2.1
Name Plates	Each			1	1
Structure Excavation	Cu. Yds.			16	16
Channel Excavation	Cu. Yds.			41	41
Stone Dumped Riprap, Class A4	Tons			190	190
Pourous Granular Embankment	Tons			33	33

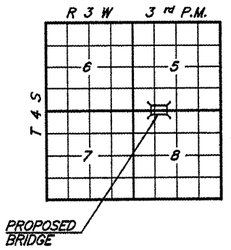
PILE DATA (2–ABUTS.)

Type & Size : Metal Shell 12" dia. x 0.25" walls
Nominal Required Bearing : 243 kips
Allowable Resistance Available : 81 kips
Estimated Length : 57 Feet
Number Required : 8 (Includes 1 Test Pile located in Bent #2)

SWANWICK CREEK
SEC. 00-07118-00-BR BUILT 20___
COUNTY UNIT ROAD DISTRICT
PERRY COUNTY
LOADING HS20
STR. NO. 073-3174

LETTERING FOR NAME PLATE

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

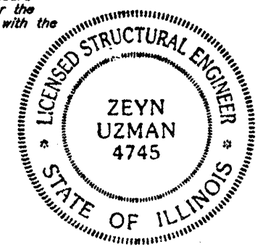


LOCATION SKETCH

I certify that to the best of my knowledge, information and belief, the revised standard detail sheets and/or special component sheets included with the standard bridge detail sheets are structurally adequate for the design loading shown on the plans and comply with the requirements of the current AASHTO Standard Specifications for Highway Bridges.

1/6/09

Zeyn B. Uzman
S.E. #81-4745
Expires Nov. 30, 2010



DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications – 17 th ed.

LOADING HS20-44

Allow 25#/sq. ft. for future wearing surface

SEISMIC DATA

Seismic Performance Category (SPC) = B
Bedrock Acceleration Coefficient (A) = 11.4%
Site Coefficient (S) = 1.2

WATERWAY INFORMATION

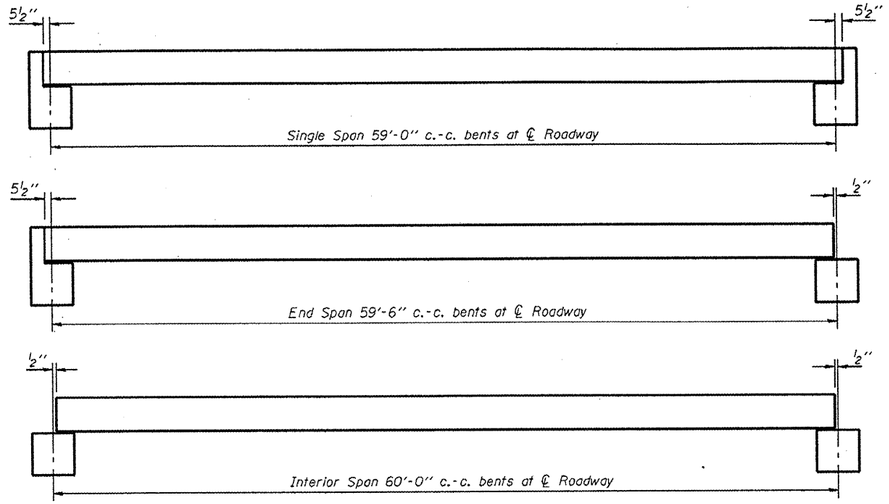
Drainage Area = 25.36 Sq. Mi. Low Grade Elev. = 459.56 At Sta. 11+86

Flood	Freq.	Q	Opening Sq. Ft.		Natural	Head–Ft.		Headwater El.	
	Yr.	C.F.S.	Exist.	Prop.	H.W.E.	Exist.	Prop.	Exist.	Prop.
Design	15	2,846	354.3#	475.4	461.46	0.00	0.39	461.46	461.85
Base	100	4,275	354.3#	475.4#	462.16	0.00	0.30	462.16	462.46
Overtopping	±16	2,880		475.4	461.48		0.44		461.92
Max. Calc.	500	5,381		475.4#	462.60		0.24		462.84

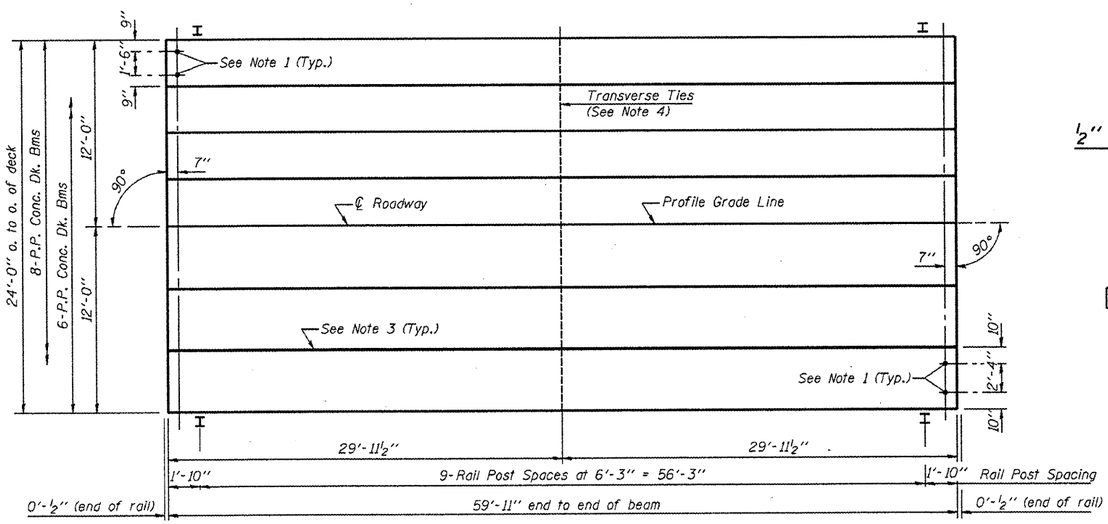
Over Road Flow (Sq Ft): Exist. $Q_{(15)}$ 1,250.1 $Q_{(100)}$ 1,930.7 Prop. $Q_{(100)}$ 1,421.0 $Q_{(500)}$ 2,547.0
Note: Proposed over road flow calculated above El. 461.92 anticipating future raising of roadway

GENERAL PLAN & ELEVATION
TOWNSHIP ROUTE 21
SWANWICK CREEK
SECTION 00-07118-00-BR
PERRY COUNTY
STATION 15+00

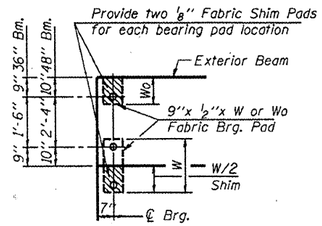
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 21	00-07118-00-BR	PERRY	11	4
PROJECT NO. BROS-145(35)		CONTRACT NO. 99349		

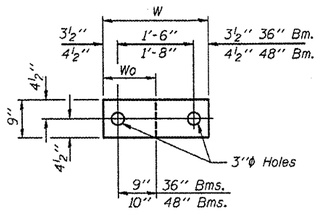


TYPICAL ELEVATIONS



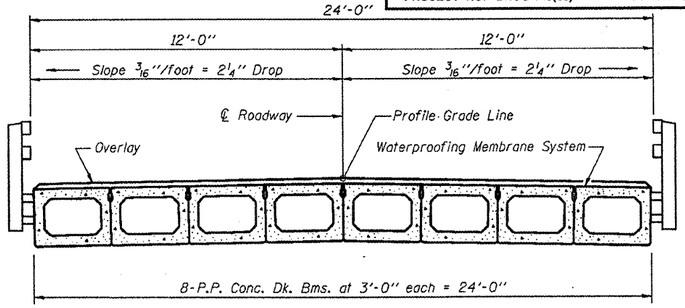
PLAN



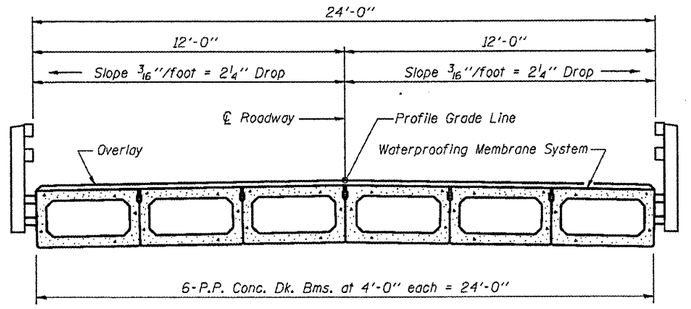


Beam	W	Wo
36"	2'-1"	1'-0½"
48"	2'-5"	1'-2½"

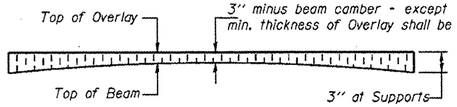
½" FABRIC BRG. PAD DETAILS



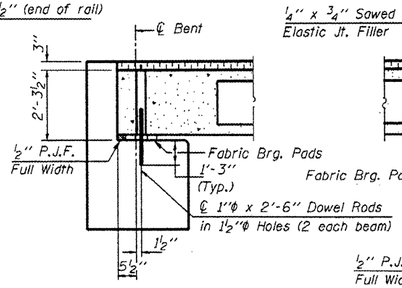
CROSS SECTION



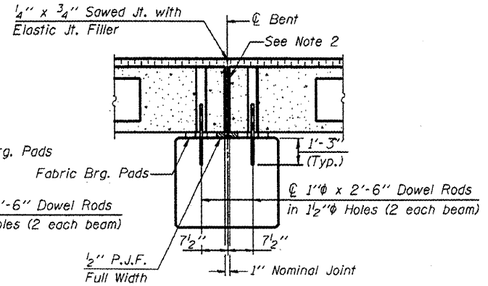
CROSS SECTION



PROFILE OF OVERLAY



SECTION AT ABUTS.
(Along ℄ Beams)



SECTION AT PIERS
(Along ℄ Beams)

NOTES

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

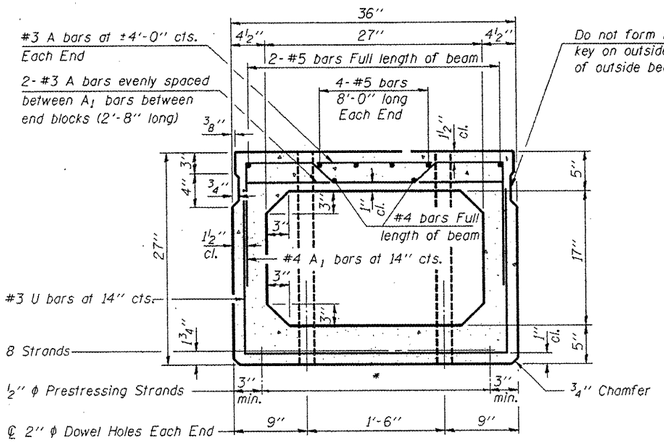
QUANTITIES FOR ONE SPAN

P.P. Conc. Dk. Bm. 27" Dp.	1438 Sq. Ft.
Steel Railing	120 Ft.

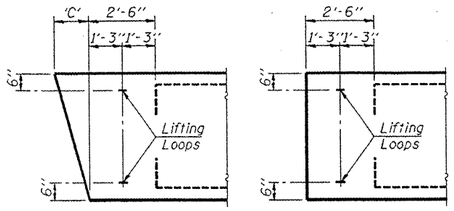
P.P.C. DECK BEAM SUPERSTRUCTURE

24' RDWY.	27" BMS.	60' SPAN	0° SKEW

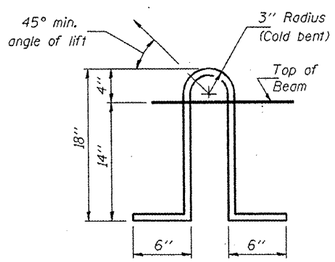
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 21	00-07118-00-BR	PERRY	11	5
PROJECT NO. BROS-145(35)		CONTRACT NO. 99349		



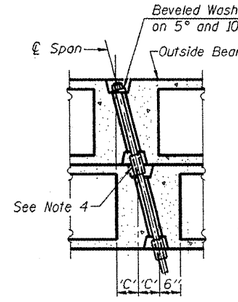
CROSS SECTION
(40' SPAN)



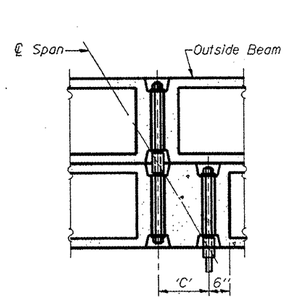
END BLOCK DETAILS
Each beam shall have four Lifting Loops. two at each end of beam cast in locations shown above. Loops shall be burned off after beams have been erected.



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



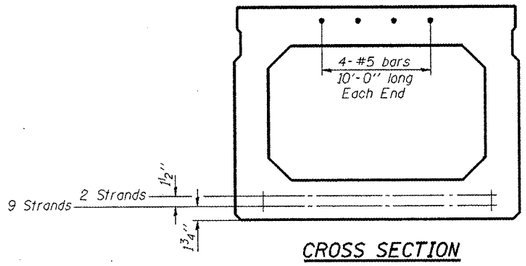
PARTIAL PLAN TRANSVERSE TIE ASSEMBLY
('D'=0°, 5° and 10°)



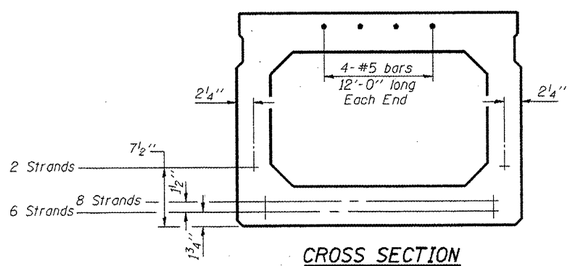
PARTIAL PLAN TRANSVERSE TIE ASSEMBLY
('D'=15°, 20°, 25° and 30°)

DIMENSION 'C'

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



CROSS SECTION
(50' SPAN)

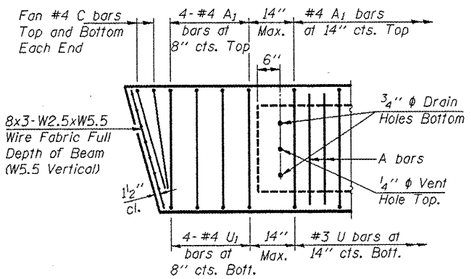


CROSS SECTION
(60' SPAN)

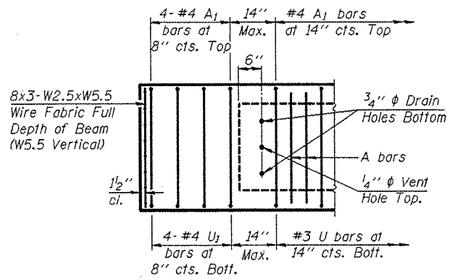
* TRANSVERSE STRAND PLACEMENT GUIDELINES

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".

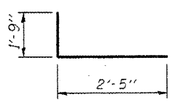
Vertical placement of strands shall not be adjusted to satisfy the above guidelines.



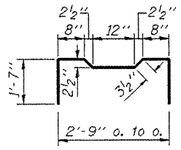
END REINFORCEMENT
(SKEWED)



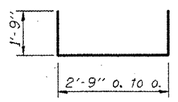
END REINFORCEMENT
(RIGHT ANGLE)



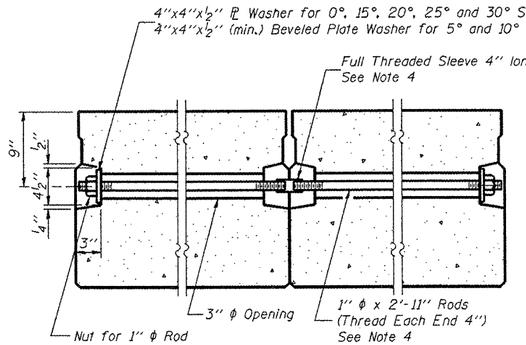
BAR C**



BAR A1



BARS U & U1



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

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. On 0°, 5° and 10° skews, alternate appoved 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 ¼".
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.

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

DESIGN STRESSES

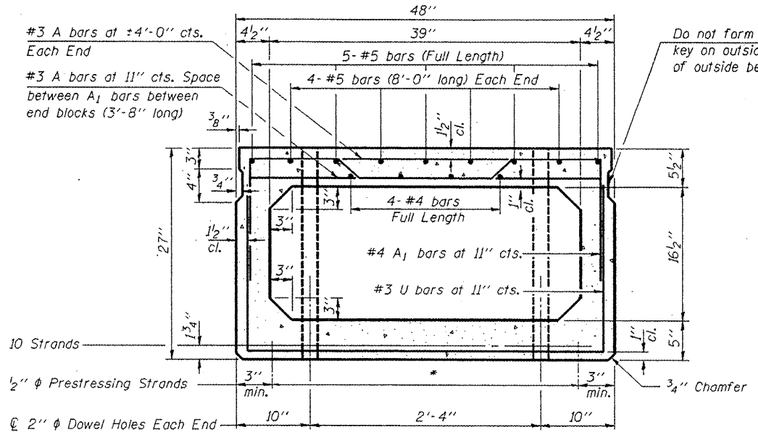
f'_c = 5,000 p.s.i.
f'_{ci} = 4,000 p.s.i.
f'_s = 270,000 p.s.i. (½" ϕ Strand)
f_{si} = 201,960 p.s.i. (½" ϕ Strand)
f_y = 60,000 p.s.i.

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

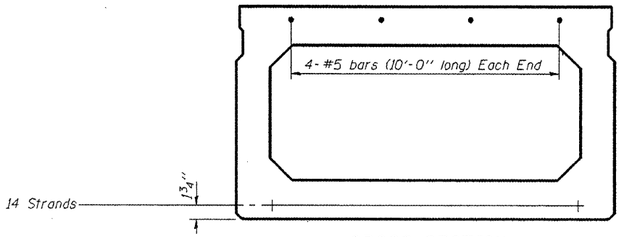
P.P.C. DECK BEAM DETAILS

24' ROADWAY	27" x 36" BEAMS

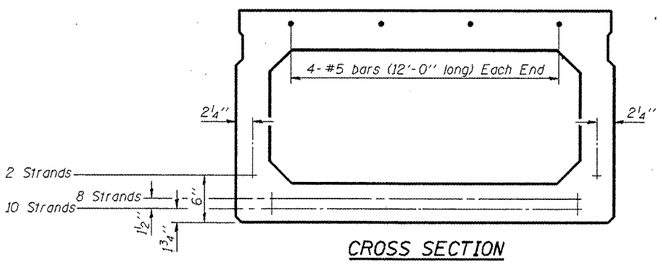
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 21	00-07118-00-BR	PERRY	11	6
PROJECT NO. BROS-145(35)		CONTRACT NO. 99349		



CROSS SECTION
(40' SPAN)

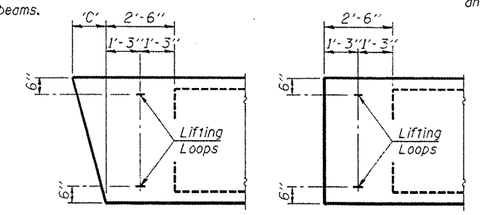


CROSS SECTION
(50' SPAN)

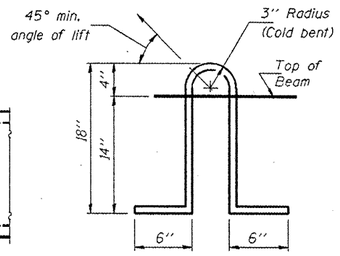


CROSS SECTION
(60' SPAN)

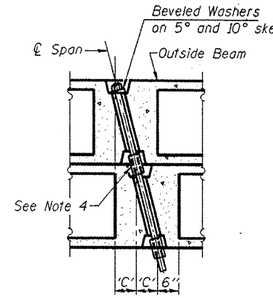
NOTE
The std. reinf. and dimensions shown on the 40' span cross section is typical for all spans, except as shown.



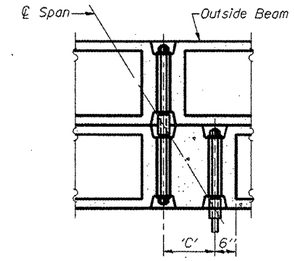
END BLOCK DETAILS
Each beam shall have four Lifting Loops, two at each end of beam cast in locations shown above. Loops shall be burned off after beams have been erected.



LIFTING LOOP DETAIL
Lifting loops shall be 3. ½"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°)

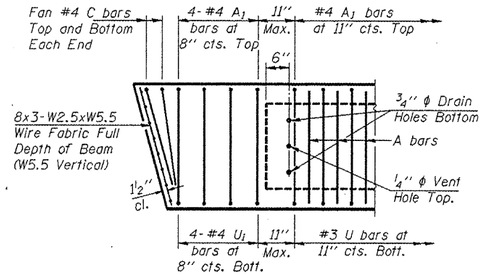
DIMENSION 'C'

Skew Angle 'D'	0°	5°	10°	15°	20°	25°	30°
Dimension 'C' (Inches)	0	4¼	8½	12⅞	17½	22⅜	27¾

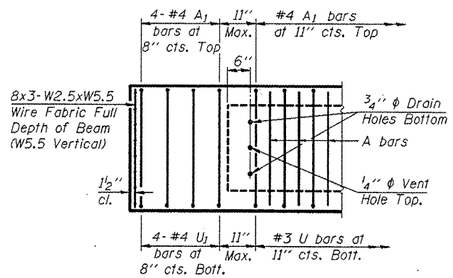
* TRANSVERSE STRAND PLACEMENT GUIDELINES

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".

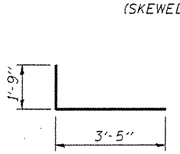
Vertical placement of strands shall not be adjusted to satisfy the above guidelines.



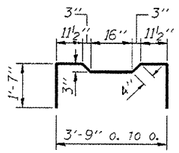
END REINFORCEMENT
(SKEWED)



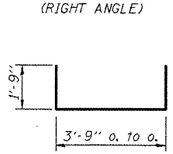
END REINFORCEMENT
(RIGHT ANGLE)



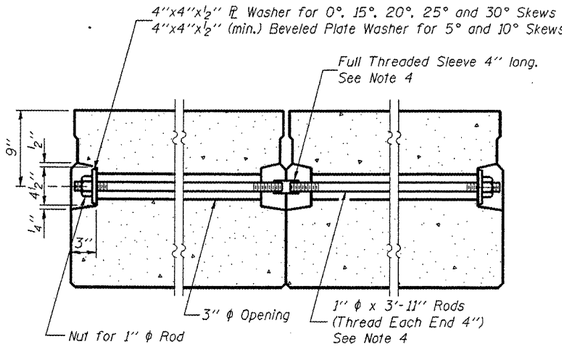
BAR C**



BAR A1



BARS U & U1



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

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. On 0°, 5° and 10° skews, alternate appoved 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 ¼".
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.

**NOTE:
The following number of C bars shall be used:

Skew	No.
5° and 10°	1
15° and 20°	2
25° and 30°	3

DESIGN STRESSES

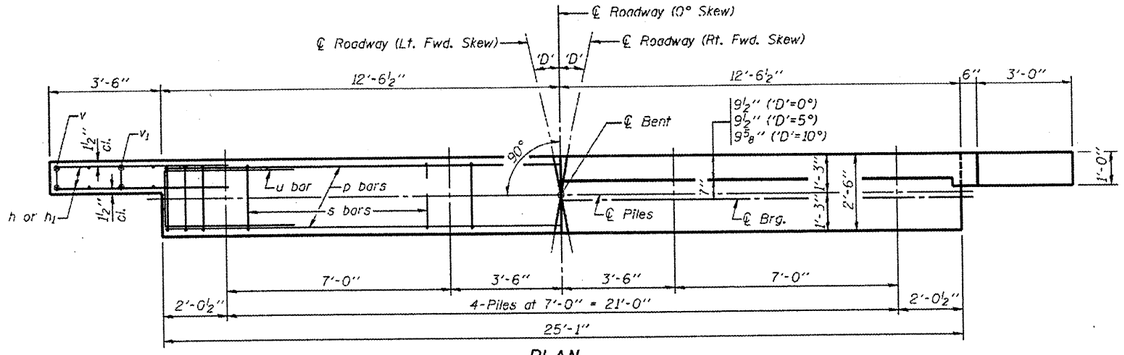
f'_c = 5.000 p.s.i.
f'_{ci} = 4.000 p.s.i.
f'_s = 270.000 p.s.i. (½" φ Strand)
f_{si} = 201.960 p.s.i. (½" φ Strand)
f_y = 60.000 p.s.i.

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

P.P.C. DECK BEAM DETAILS

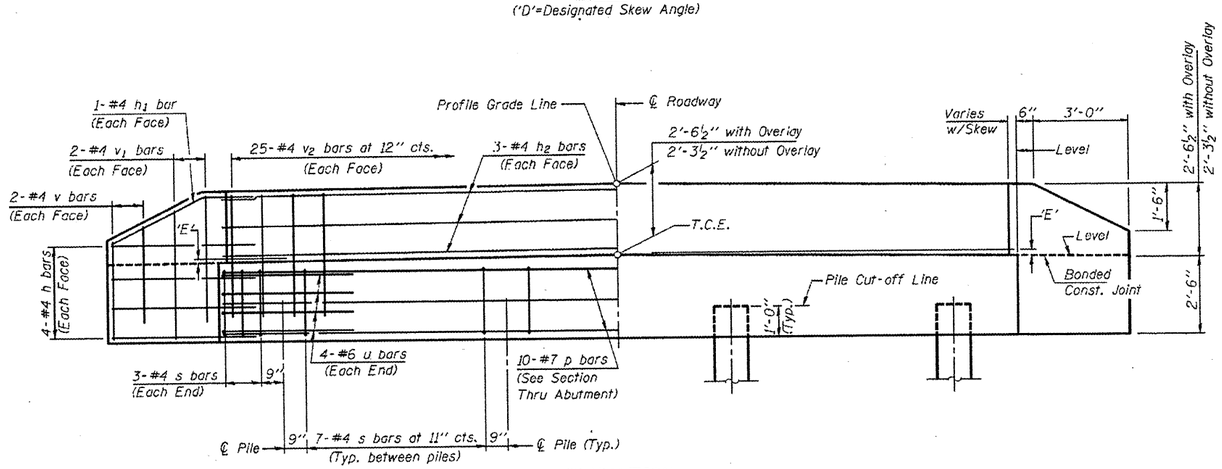
24' ROADWAY	27" x 48" BEAMS

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 21	00-07118-00-BR	PERRY	11	7
PROJECT NO. BROS-145(35)		CONTRACT NO. 99349		

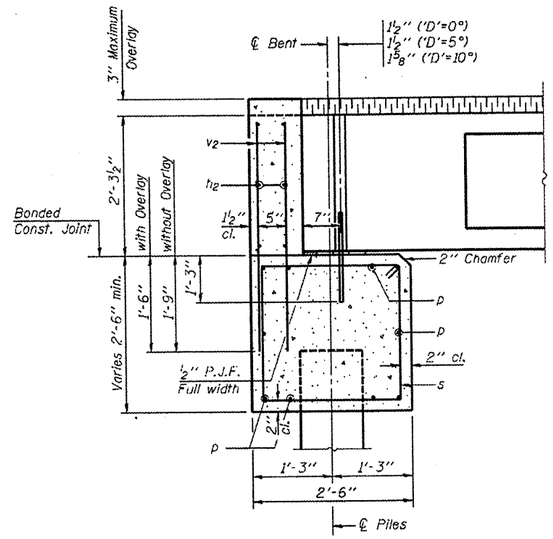


PLAN

('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

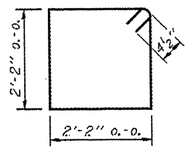
1. The Backwall and the portion of the Wingwalls above the bonded construction joint shall be cast against the in-place beam.
2. Reinforcement bars shall conform to the requirements of A.A.S.H.T.O. M-31 or M-322, Grade 60.
3. Space reinforcement in cap to miss anchor bolts.

MAXIMUM PILE LOADS

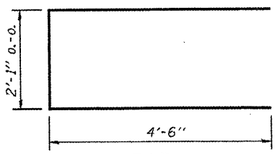
SPAN	TONS
40'	34
50'	38
60'	43

DESIGN STRESSES

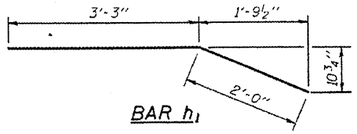
f'c = 3,500 psi
fy = 60,000 psi



BAR s



BAR u



BAR h1

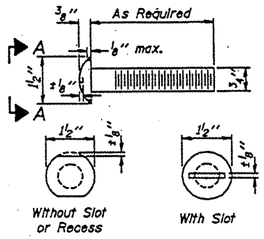
BILL OF MATERIAL FOR ONE ABUTMENT

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	3'-2"	
v1	8	#4	4'-2"	
v2	50	#4	3'-11"	
Concrete Structures			8.8 Cu. Yds.	
Reinforcement Bars			1145 Lbs.	

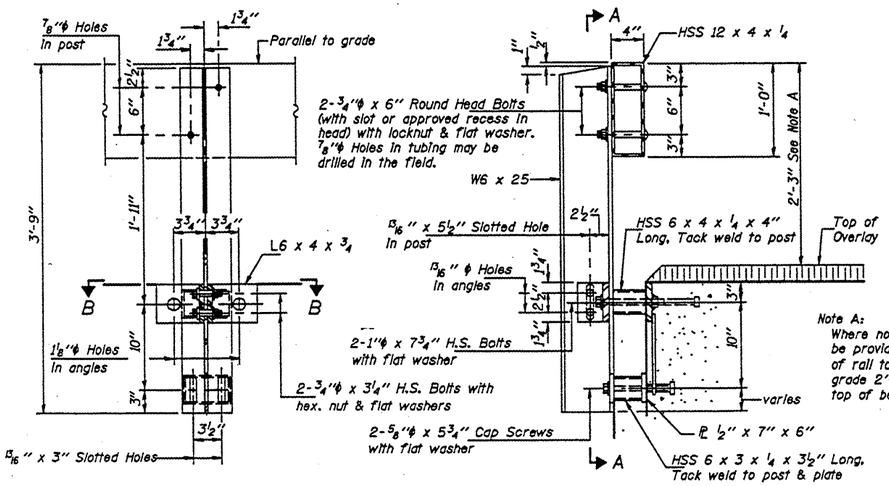
P.P.C. DECK BEAMS
PILE BENT ABUTMENT

24' RDWY.	27" BMS.	'D'=0°, 5° OR 10°

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 21	00-07118-00-BR	PERRY	11	8
PROJECT NO. BROS-145(35)		CONTRACT NO. 99349		



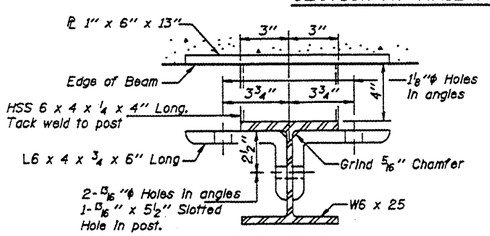
VIEW A-A
ROUND HEAD BOLT



SECTION A-A

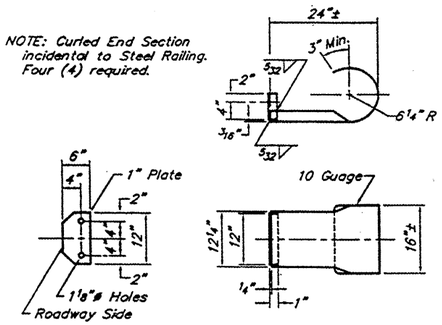
SECTION AT RAIL POST

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.

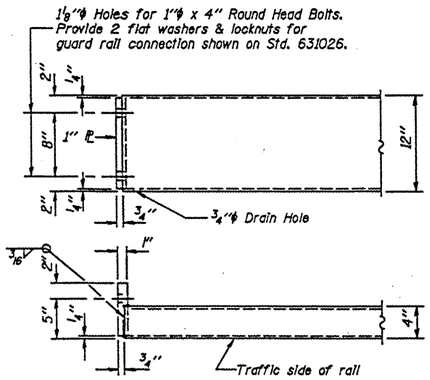


SECTION B-B

NOTE: Curled End Section incidental to Steel Railing. Four (4) required.

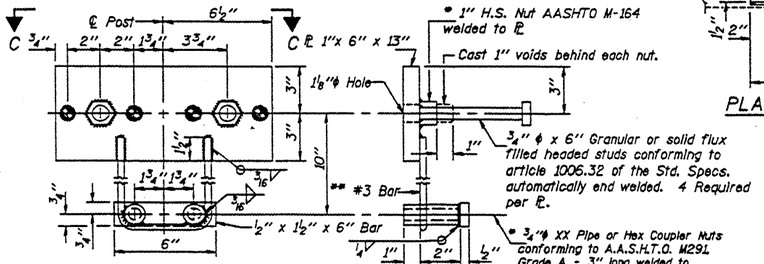


CURLED END SECTION DETAILS

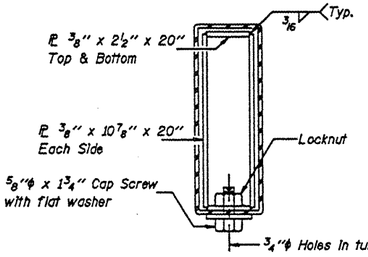


END OF RAIL DETAILS

** 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".

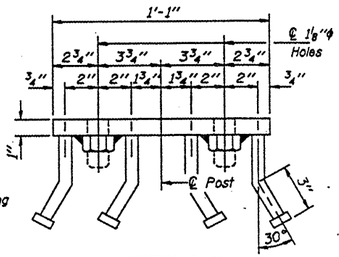


ANCHOR DEVICE

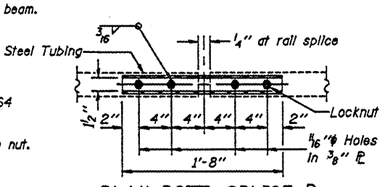


SECTION AT RAIL SPLICE

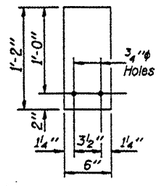
* Threaded areas shall be plugged or blocked off during casting of beam.



VIEW C-C



PLAN-BOTT. SPLICE PL
TYPICAL



1/4" SHIM PLATE

Illinois Department of Transportation

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

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

STEEL RAILING, TYPE S-1

STANDARD CR-TS1

VI-1

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 requirements 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 accordind to AASHTO M 232.

All posts, railing, rail splices and 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 shall be paid for at the contract unit price per foot for STEEL RAILING, TYPE S1.

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 S1.

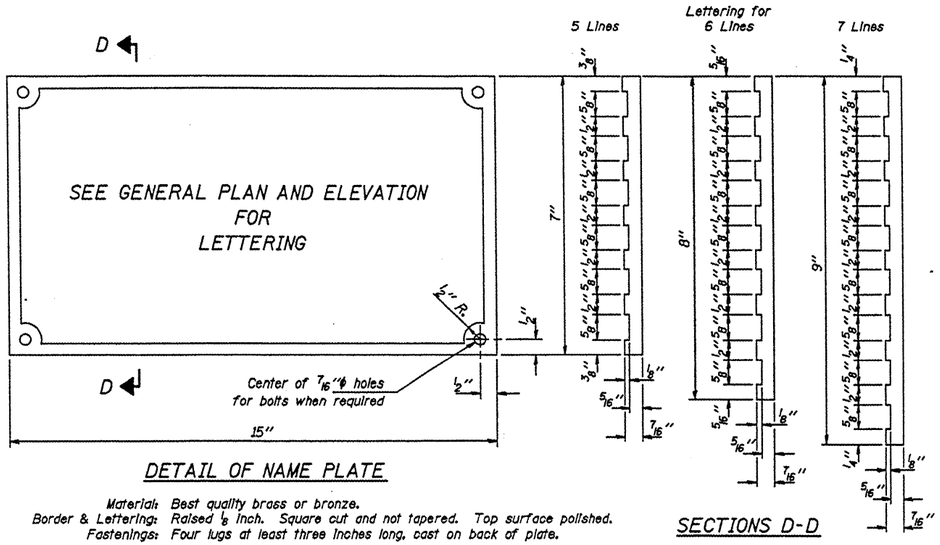
All field drilled holes shall be coated with an approved zinc rich paint before erection.

The 1/2" x 7" x 6" plates that come in contact with concrete shall eitherrecieve 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.

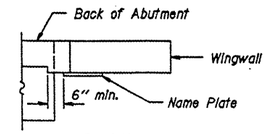
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 21	00-07118-00-BR	PERRY	11	9
PROJECT NO. BROS-145(35)		CONTRACT NO. 99349		



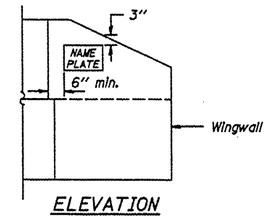
DETAIL OF NAME PLATE

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

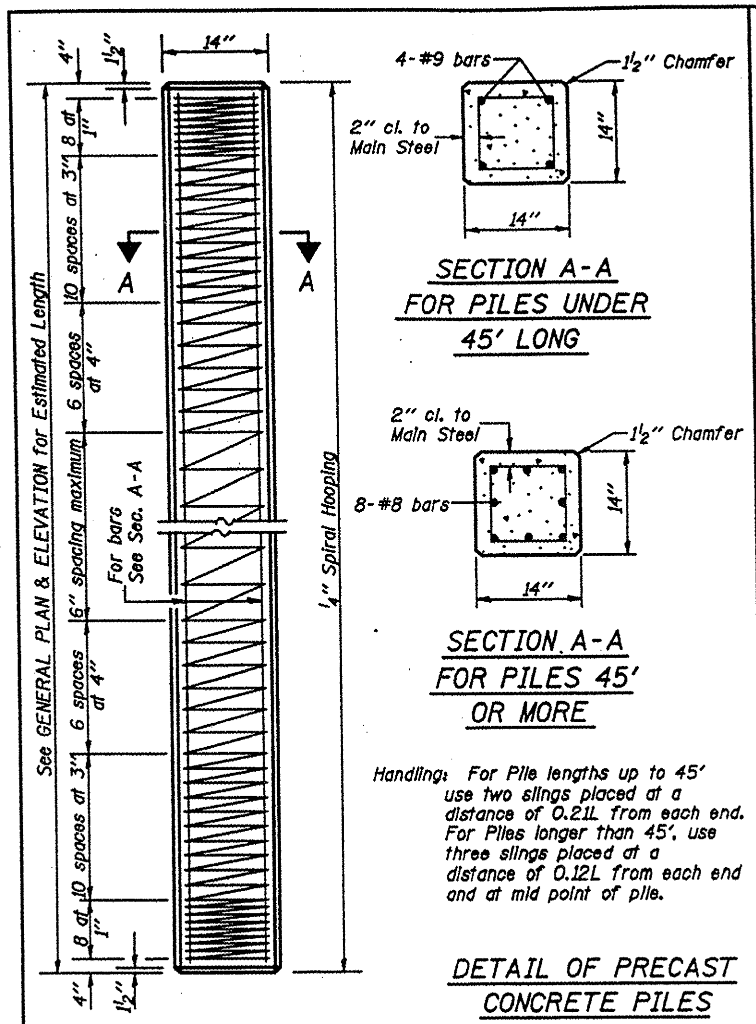
PASSED APRIL 4, 2005
Thomas S. Kennaveh
Engineer of Bridge Design
APPROVED APRIL 4, 2005
Robert E. Carlson
Engineer of Bridges and Structures

ISSUED 1-1-85

NAME PLATE
STANDARD CN

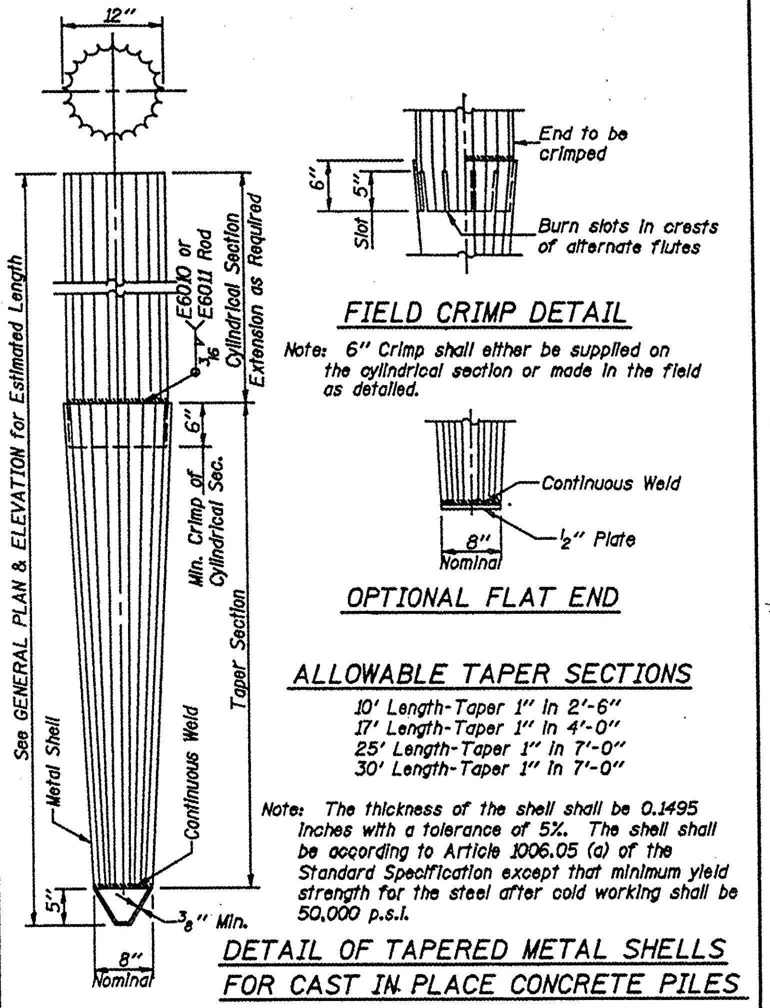
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 21	00-07118-00-BR	PERRY	11	10

PROJECT NO. BROS-145(35) CONTRACT NO. 99349



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



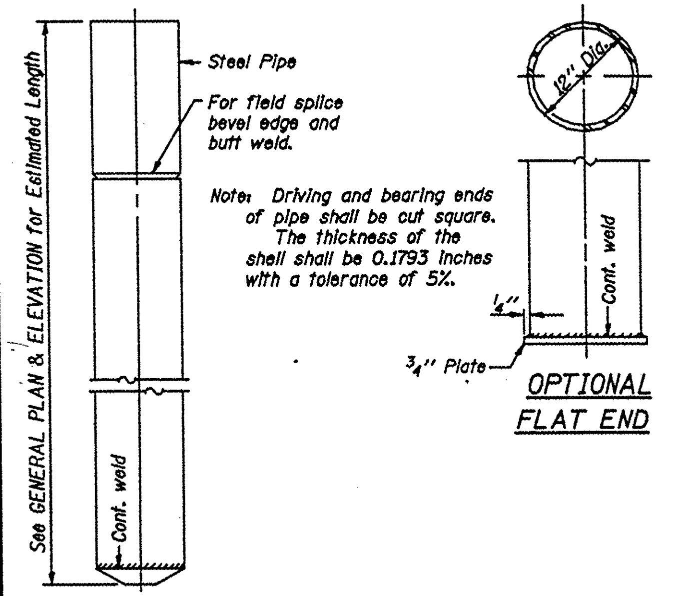
Note: 6" Crimp shall either be supplied on the cylindrical section or made in the field as detailed.

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

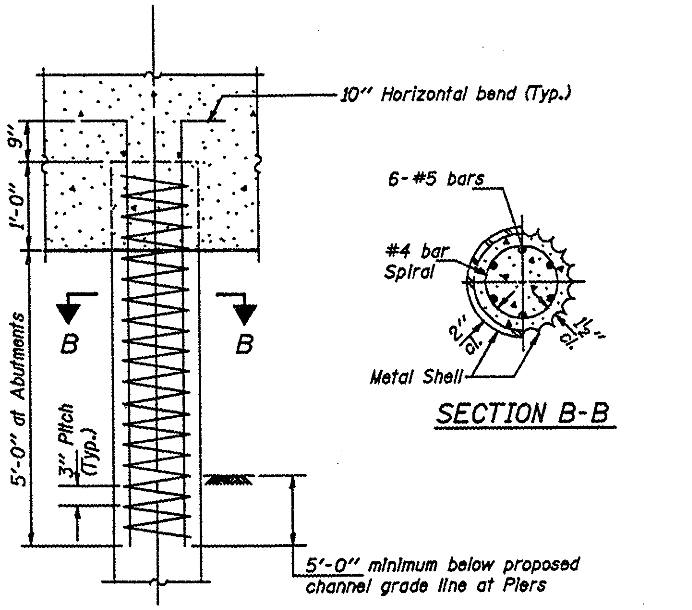


Note: Driving and bearing ends of pipe shall be cut square. The thickness of the shell shall be 0.1793 inches with a tolerance of 5%.

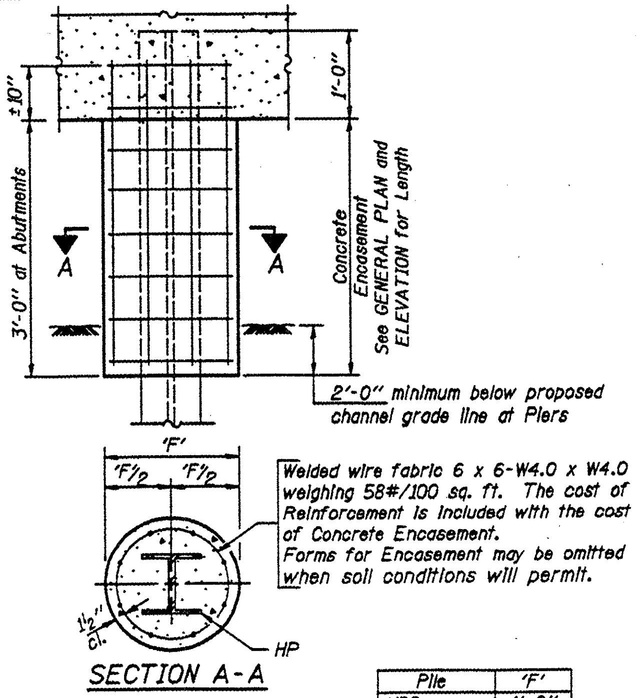
DETAIL OF CYLINDRICAL STEEL SHELL FOR CAST IN PLACE CONCRETE PILES

Reinforcement cage shall be omitted when Concrete Encasement is provided.

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



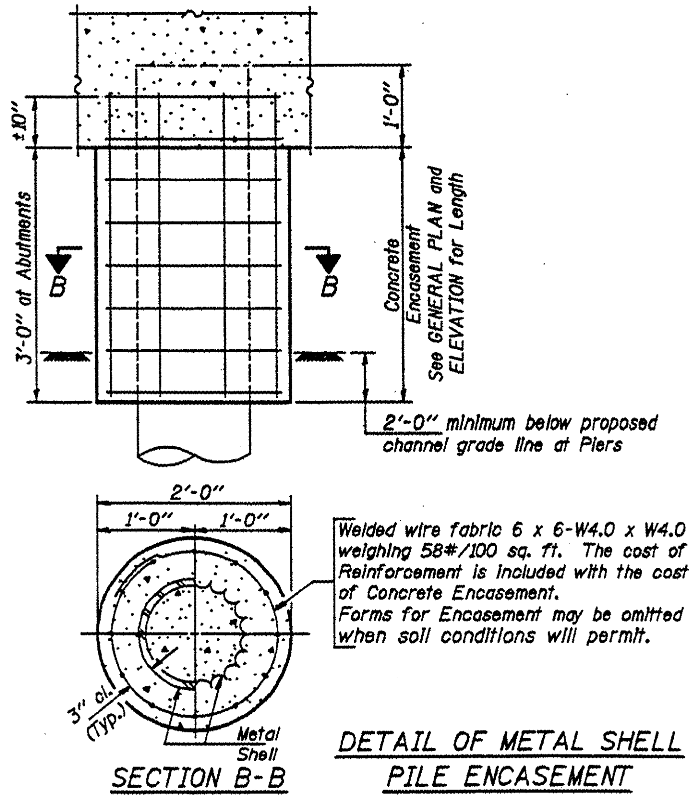
DETAIL OF REINFORCEMENT FOR METAL SHELLS



Welded wire fabric 6 x 6-W4.0 x W4.0 weighing 58#/100 sq. ft. The cost of Reinforcement is included with the cost of Concrete Encasement.
Forms for Encasement may be omitted when soil conditions will permit.

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

DETAIL OF HP PILE ENCASEMENT



Welded wire fabric 6 x 6-W4.0 x W4.0 weighing 58#/100 sq. ft. The cost of Reinforcement is included with the cost of Concrete Encasement.
Forms for Encasement may be omitted when soil conditions will permit.

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.

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

PILE DETAILS

STANDARD CX-1

PERRY COUNTY SHEET 11 OF 11
SECTION 00-07118-00-BR
PROJ NO BROS-145(35) CONT NO 99349
TOWNSHIP ROUTE 21 (SAWMILL ROAD)
SWANWICK CREEK

END IMPROVEMENT - STATION 19+00

19+00 | 18+00 | 17+00 | 16+00 | 15+35 | 14+65 | 14+00 | 13+00 | 12+00 | 11+00

Exist. ROW

Sta. 17+50

Sta. 17+00

Sta. 13+00

Construction Easement

Exist ROW

BEGIN IMPROVEMENT - STATION 11+65

	19+00	18+00	17+00	16+00	15+35	14+65	14+00	13+00	12+00	11+00
	465.75	462.80	462.08	463.44	463.90	463.90	463.24	460.46	459.46	
	C - 0	C - 4	C - 1	C - 4	C - 7	C - 4	C - 22	C - 1	C - 6	
	F - 0	F - 6	F - 38	F - 113	F - 142	F - 140	F - 133	F - 30	F - 1	
		460.9	459.6	458.8		457.7	457.9	458.2	458.5	
		3:1	3:1	3:1	3:1	2.5:1	2.5:1	3:1		
			459.4		458.8	457.7				
					2.5:1	2.5:1				