

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

**PLANS FOR PROPOSED
HIGHWAY BRIDGE PROGRAM**

T.R. 52 HAMILTON COUNTY SECTION 06-04126-00-BR

PROJECT NO. BROS-065(048) JOB NO. C-99-511-09

CONTRACT # 99416 SHELTON CREEK

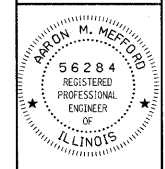
T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
52	06-04126-00-BR	HAMILTON	11	1
FED. ROAD DIST. NO. 9 ILLINOIS		FED. AID PROJECT		
PROJECT # BROS-065(048)		CONTRACT # 99416		
JOB # C-99-511-09		SHELTON CREEK		

323 W. 3RD ST.
P.O. BOX 160
MT. CARMEL, IL
62863
PHONE:
(618)-262-8651
FAX:
(618)-263-3327
LEC JOB # H091013HW

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
184-00887
(82-032435)(35-002769)



AARON M. MEFFORD
NAME
Signature
1-12-09
DATE
11-30-11
EXPIRES

TOWNSHIP ROUTE 52
OVER SHELTON CREEK
HAMILTON COUNTY, ILLINOIS

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	TITLE SHEET & SUMMARY OF QUANTITIES
2	PLAN & PROFILE, TYPICAL SECTIONS & GENERAL NOTES
3	ROADWAY CROSS SECTIONS
4-11	BRIDGE DESIGN

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

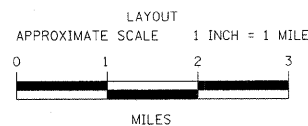
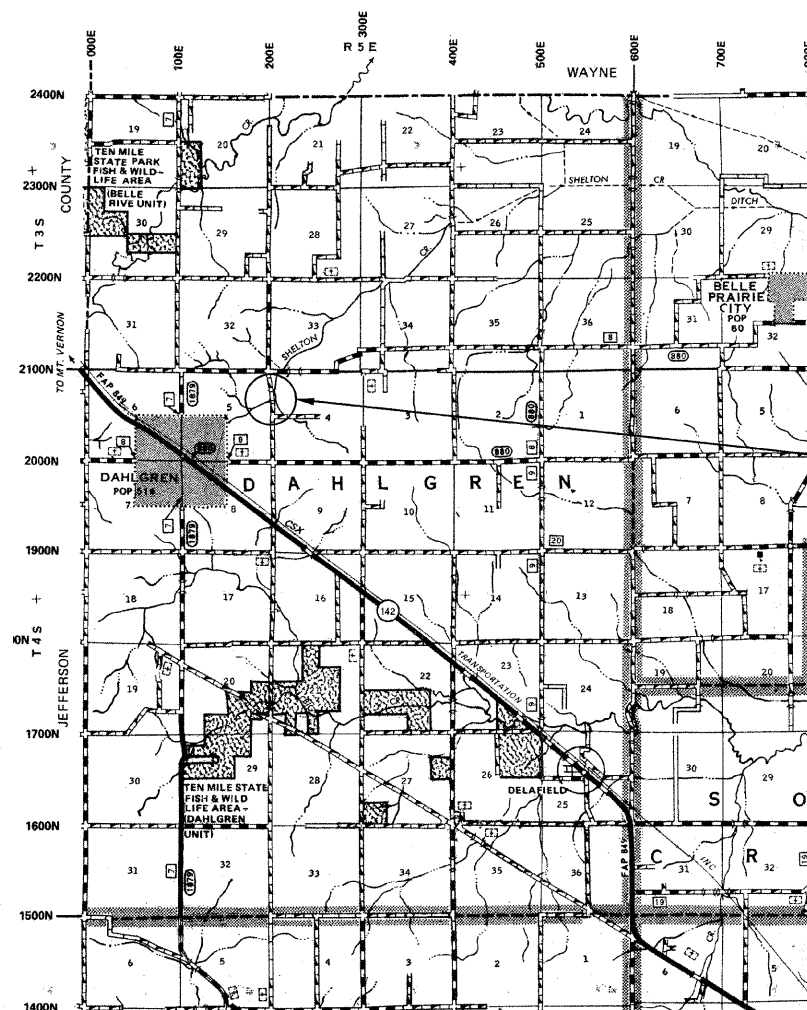
000001-05	STANDARD SYMBOLS, ABBREVIATIONS & PATTERNS
280001-05	TEMPORARY EROSION CONTROL SYSTEMS
515001-03	NAME PLATE FOR BRIDGES
701901-01	TRAFFIC CONTROL DEVICES
B.L.R. 21-8	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS
B.L.R. 22-6	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS (TWO-LANE TWO-WAY RURAL TRAFFIC) (ROAD CLOSED TO THRU TRAFFIC)
B.L.R. 23-3	TRAFFIC BARRIER TERMINAL TYPE 1
B.L.R. 27-1	TRAFFIC BARRIER TERMINAL TYPE 5A

SUMMARY OF QUANTITIES

CODE NO.	ITEM	UNIT	QUANTITY
20200100	EARTH EXCAVATION	CU YD	9.00
20300100	CHANNEL EXCAVATION	CU YD	60.00
25001000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.20
28001000	AGGREGATE (EROSION CONTROL)	TON	11.00
28100807	STONE DUMPED RIPRAP, CLASS A4	TON	495.00
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	180.00
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1.00
50300225	CONCRETE STRUCTURES	CU YD	23.60
50300280	CONCRETE ENCASEMENT	CU YD	2.80
50400405	PRECAST PRESTRESSED CONCRETE DECK BEAMS (21" DEPTH)	SQ FT	1080.00
50800105	REINFORCEMENT BARS	POUND	2560.00
* 50900205	STEEL RAILING, TYPE S1	FOOT	88.00
51201400	FURNISHING STEEL PILES HP10X42	FOOT	280.00
51202305	DRIVING PILES	FOOT	280.00
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.: 033-3193
PROPOSED STRUCTURE NO.: 033-3302
CURRENT A.D.T. = 180
CONTRACT NO. 99416



GROSS LENGTH	300.00 FT	0.057 MILES
OMISSIONS	0.00 FT	0.000 MILES
NET LENGTH	300.00 FT	0.057 MILES

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

SECTION 06-04126-00-BR
BEGINS STATION 4+50

STATION 5+00, STRUCTURE NO. 033-3302
A 45' LONG SINGLE SPAN PRECAST
PRESTRESSED CONCRETE DECK BEAM
BRIDGE (21" DEPTH), 24' ROADWAY,
0.00% GRADE, 20° RT. FWD. SKEW.

SECTION 06-04126-00-BR
ENDS STATION 7+50

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

APPROVED January 7, 2010
[Signature]
COUNTY ENGINEER

PASSED MARCH 4, 2010
[Signature]
ENGINEER OF LOCAL ROADS AND STREETS

RELEASING FOR BID
BASED ON LIMITED
REVIEW March 4, 2010
[Signature]
MARY C. LAMIE, P.E.
DEPUTY DIRECTOR OF HIGHWAYS
REGION FIVE ENGINEER

SHEET TITLE:
TITLE SHEET

SCALE: VARS
BY: AMM
DATE: 10/90
REV:

1 OF 11
SHEETS
SHEET NO.
1

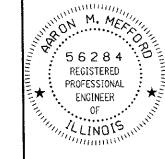
T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
52	06-04126-00-BR	HAMILTON	11	2
FED. ROAD DIST. NO. 9 ILLINOIS		FED. AID PROJECT		
PROJECT# BR05-065(048)		CONTRACT# 99416		
JOB NO. C-99-511-09		SHELTON CREEK		
LEC JOB # H09L0194M				

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



AARON M. MEFFORD
NAME
Aaron M. Mefford
SIGNATURE
1-12-09
DATE
11-30-11
EXPIRES

TOWNSHIP ROUTE 52
OVER SHELTON CREEK
HAMILTON COUNTY, ILLINOIS

SHEET TITLE:

PLAN & PROFILE

SCALE: VARIES
BY: AMM
DATE: 10/90
REV:

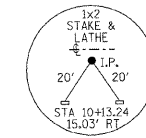
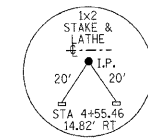
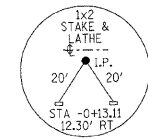
2 OF 11 SHEETS

SHEET NO. 2

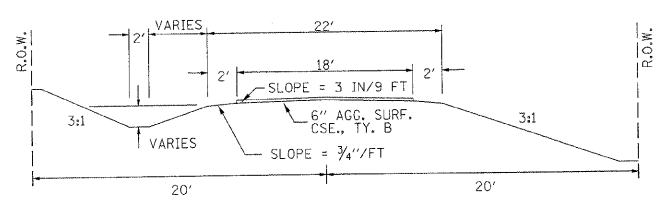
NOTE: CONSTRUCTION TRANSITION
STA. 4+50 TO STA 4+75
STA 7+00 TO STA 7+50
ALL QUANTITIES ARE INCLUDED IN THE PROPOSAL

GENERAL NOTES:

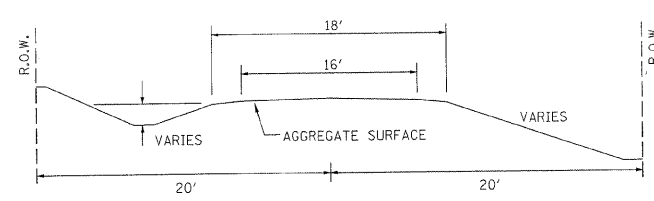
THIS SECTION SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE PLANS, SPECIAL PROVISIONS AND "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", ADOPTED JANUARY 1, 2007.
THE WORK INVOLVED ON THIS SECTION CONSISTS OF THE REMOVAL OF THE EXISTING STRUCTURE, THE CONSTRUCTION OF A 45 FOOT LONG SINGLE SPAN 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.



TYPICAL CROSS SECTION PROPOSED

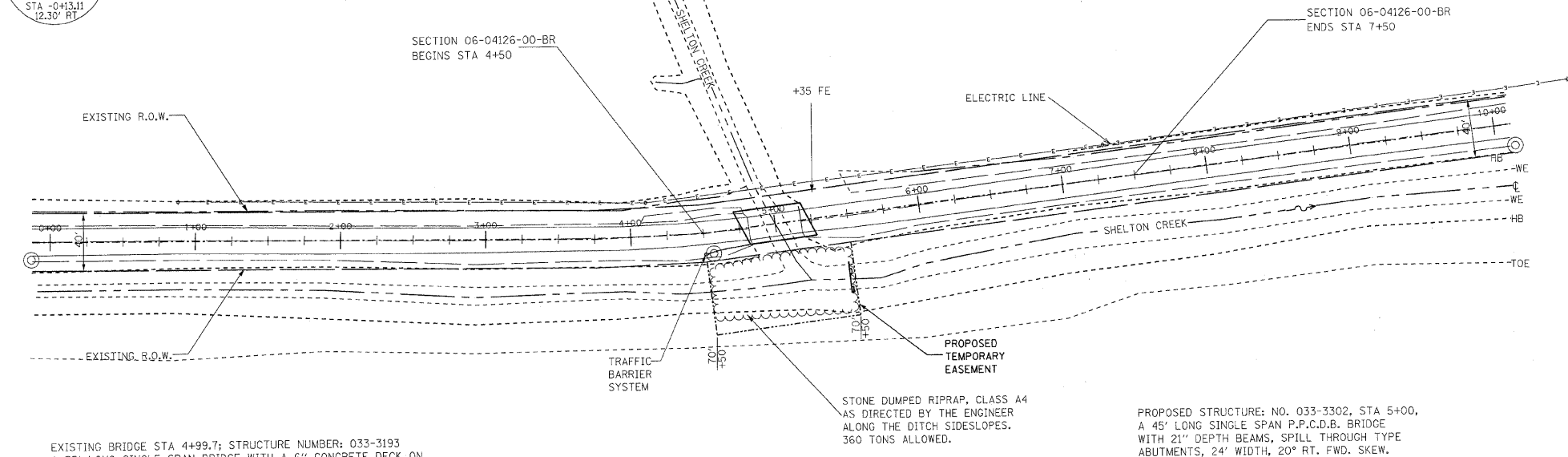
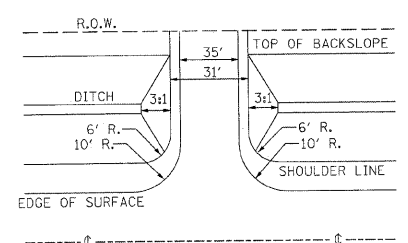


TYPICAL CROSS SECTION EXISTING



UTILITIES:
J.U.L.I.E.
1-800-892-0123
WAYNE-WHITE ELECTRIC CO-OP
1-618-842-2196

FIELD ENTRANCE DETAIL



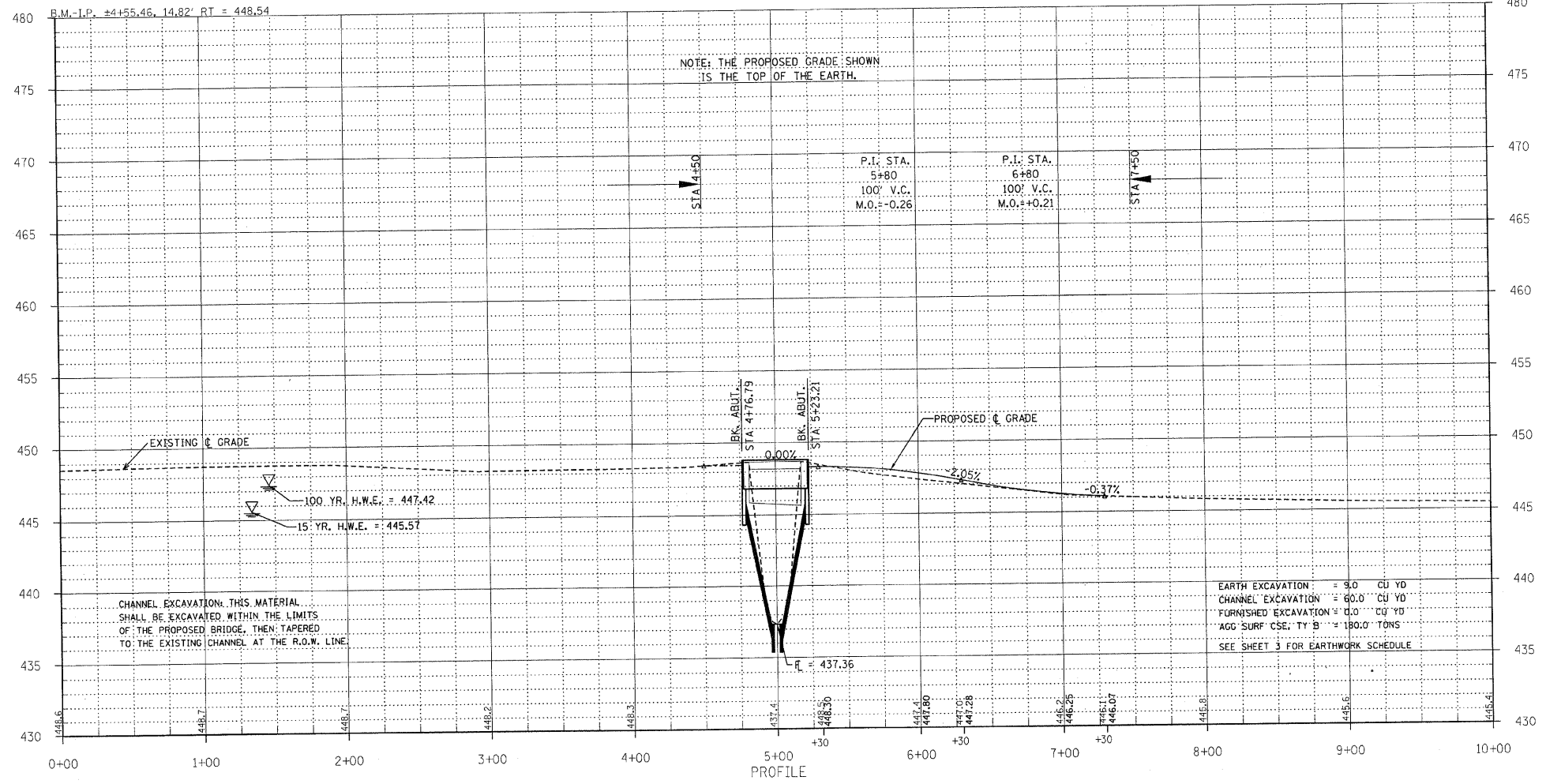
EXISTING BRIDGE STA 4+99.7; STRUCTURE NUMBER: 033-3193
A 35' LONG SINGLE SPAN BRIDGE WITH A 6" CONCRETE DECK ON 5-28" I BEAMS WITH CONCRETE ABUTMENTS.
ONE (1) EACH-REMOVAL OF EXISTING STRUCTURES ALLOWED IN THIS PROPOSAL.

STONE DUMPED RIPRAP, CLASS A4 AS DIRECTED BY THE ENGINEER ALONG THE DITCH SIDESLOPES. 360 TONS ALLOWED.

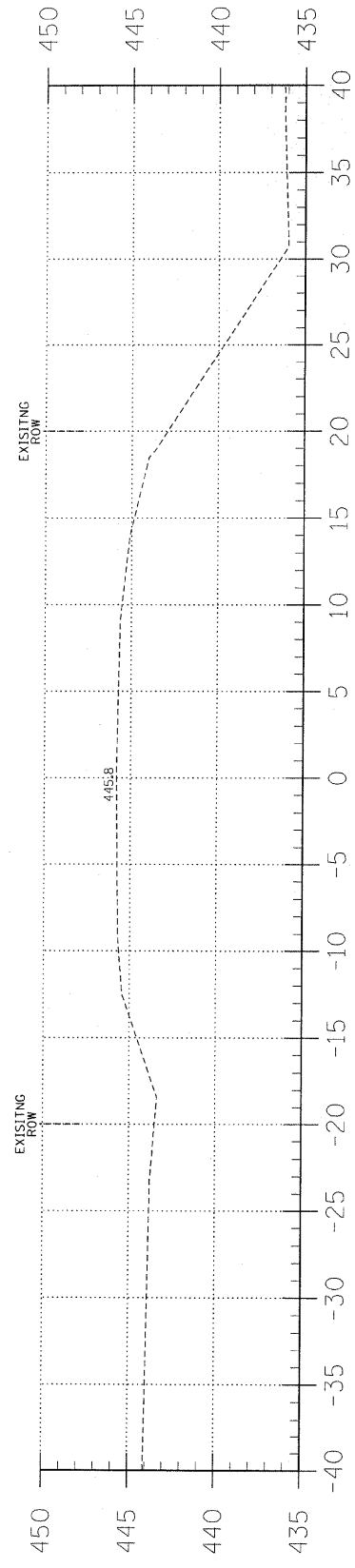
PROPOSED STRUCTURE: NO. 033-3302, STA 5+00, A 45' LONG SINGLE SPAN P.P.C.D.B. BRIDGE WITH 21" DEPTH BEAMS, SPILL THROUGH TYPE ABUTMENTS, 24' WIDTH, 20° RT. FWD. SKEW.

SEE BRIDGE PLAN SHEETS FOR THE DESIGN AND BILL OF MATERIALS.

NOTE: FILL NEXT TO BRIDGE TO BE AGGREGATE SURFACE COURSE

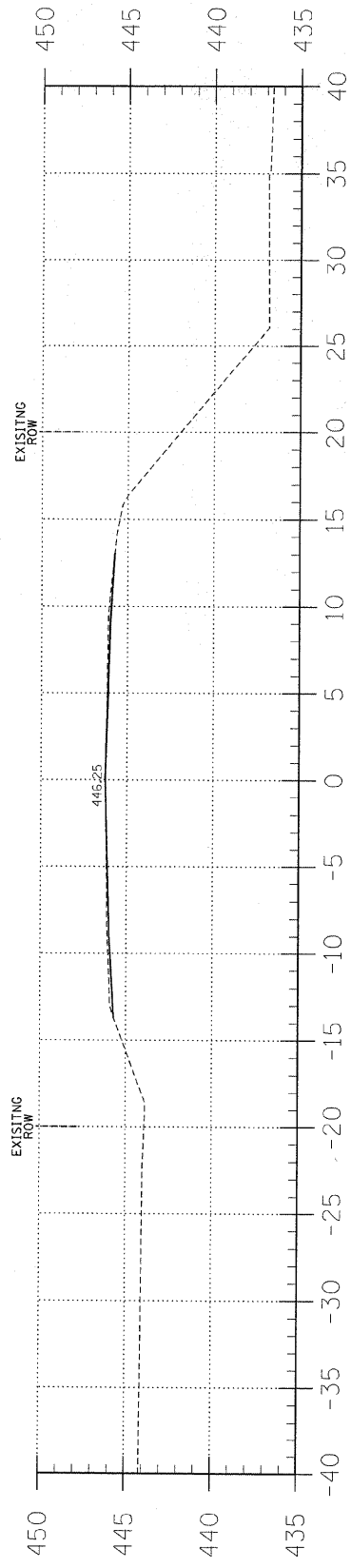


SHEET NO. 2



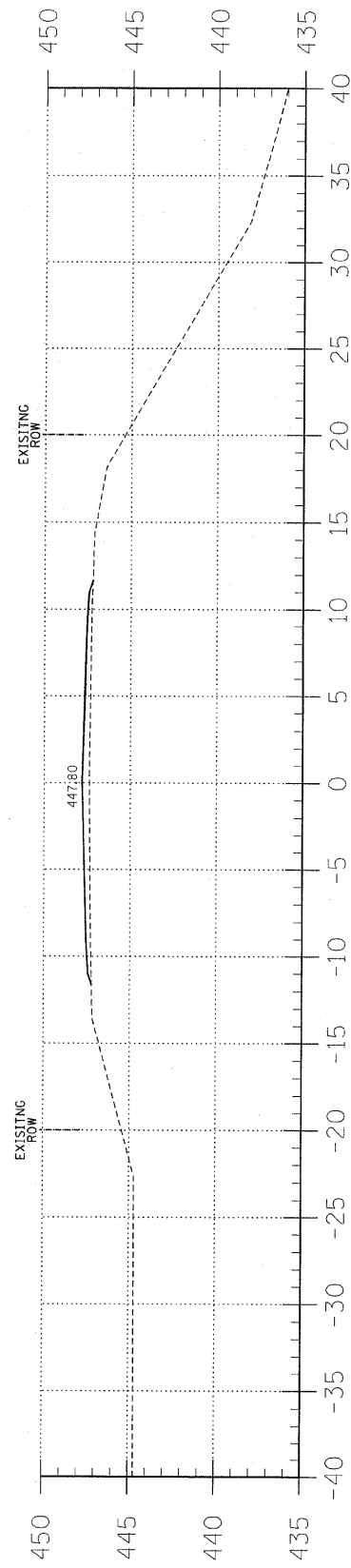
8+00

C = 1.7
F = 0.0

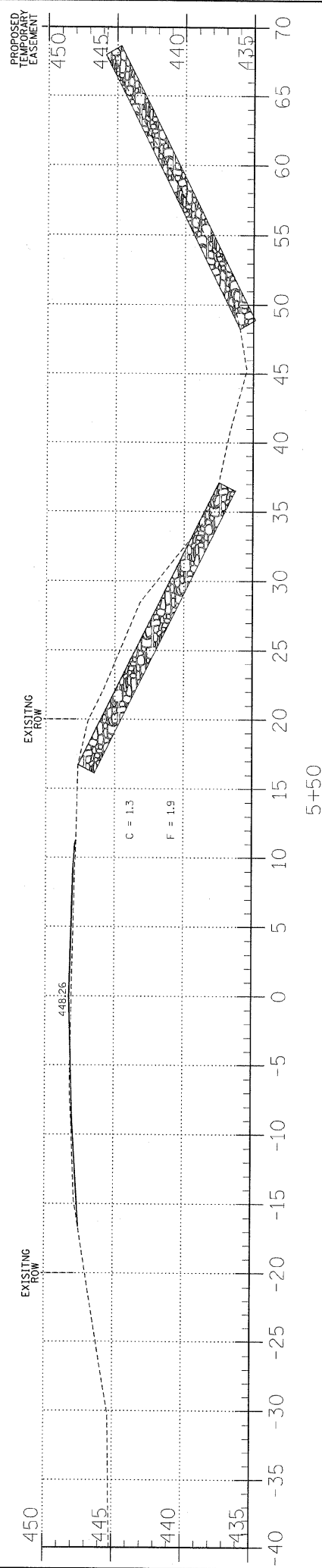


7+00

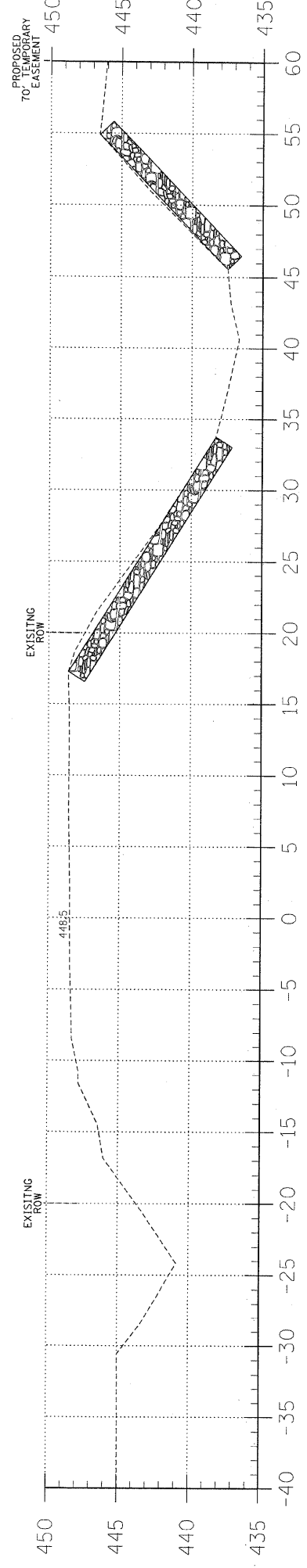
C = 0.0
F = 7.3



6+00



C = 1.3
F = 1.9



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+76.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
STA 4+76.8 TO 5+23.2	0.0	60.0	60.0	0.0	30.0	22.5	0.0	0.0	0.0	+22.5	0.0	0.0
STA 5+23.2 TO 10+00	6.1	0.0	0.0	0.0	0.0	4.6	16.7	0.0	0.0	-12.1	0.0	0.0
1 FIELD ENTRANCE	2.8	0.0	0.0	0.0	0.0	2.1	0.0	0.0	0.0	+2.1	0.0	0.0
TOTAL	8.9	60.0	60.0	0.0	30.0	29.2	16.7	0.0	0.0	+12.5	0.0	0.0

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
52	06-04126-00-BR	HAMILTON	11	3
FED. ROAD DIST. NO. 9 ILLINOIS		FED. AID PROJECT		
PROJECT# BROS-065(048)		CONTRACT# 99416		
JOB NO. C-99-511-09		SHELTON CREEK		

LEC JOB # H09IL0134M

405 W. STATE ST.
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184-000887
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AARON M. MEFFORD
NAME
SIGNATURE
DATE
1-12-09
EXPIRES

TOWNSHIP ROUTE 52
OVER SHELTON CREEK
HAMILTON COUNTY, ILLINOIS

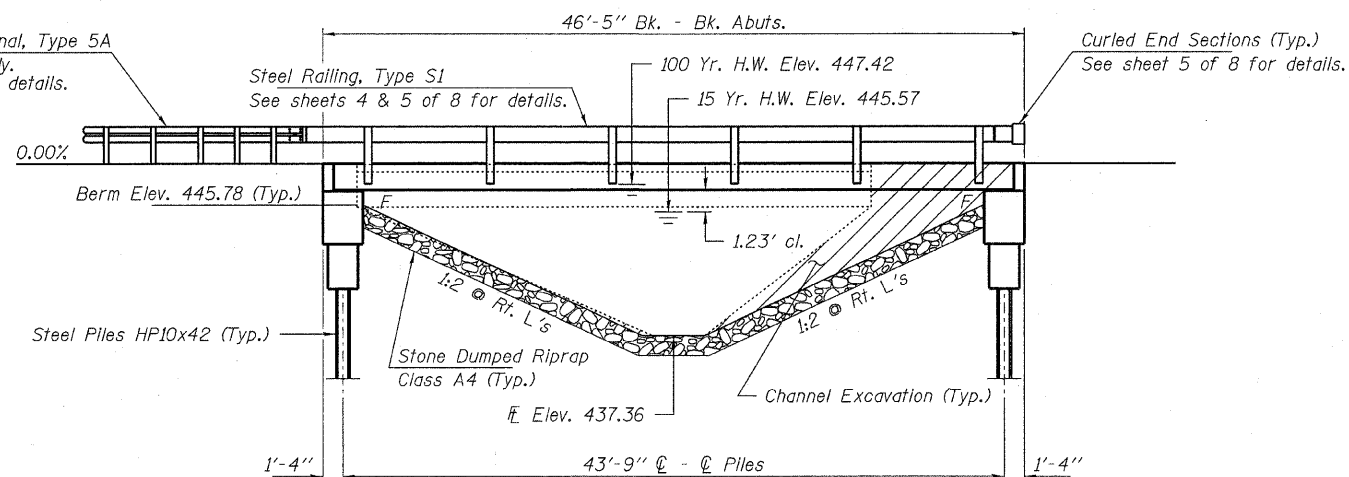
SHEET TITLE:
CROSS-SECTIONS
SCALE: 1" = 5'
BY: AMM
DATE: 10/01
REV:
3 OF 11 SHEETS
SHEET NO. 3

BENCHMARK: Iron Pin, 14.82' Rt. Sta. 4+55.46, Elev. 448.54

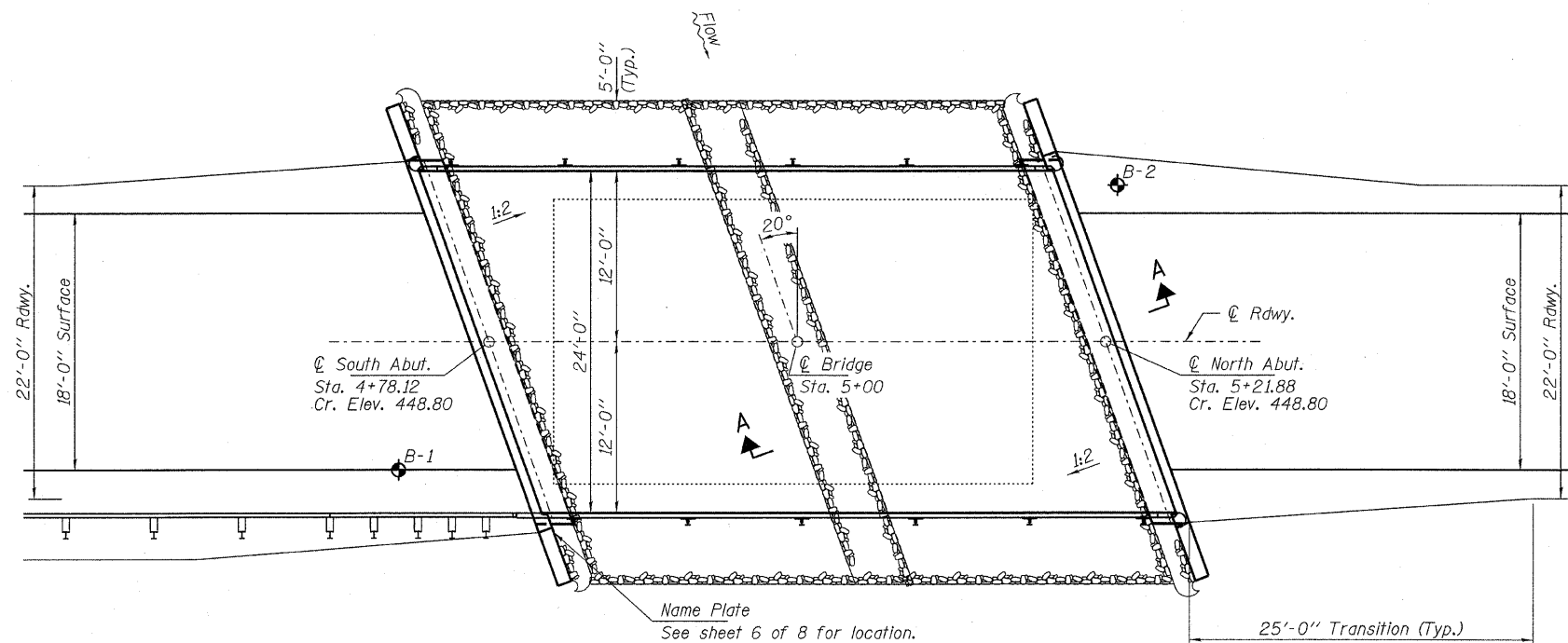
EXISTING STRUCTURE NO. 033-3193, Sta. 4+99.7, 35' long single span bridge with a 6" concrete deck on 5 - 28" I-beams with concrete abutments. Structure closed to traffic.

No Salvage

Traffic Barrier Terminal, Type 5A
South East corner only.
See sheet 4 of 8 for details.



ELEVATION



PLAN

DESIGN STRESSES

FIELD UNITS

f'c = 3,500 psi
fy = 60,000 psi (Reinf.)

PRECAST PRESTRESSED UNITS

f'c = 6,000 psi
f'ci = 5,000 psi
fpu = 270,000 psi (1/2" low lax. strands)
fpbt = 201,960 psi (1/2" low lax. strands)
fy = 60,000 psi (Reinf.)

DESIGNED - V.J.H.
CHECKED - S.W.M.
DRAWN - D.T.M.
CHECKED - D.A.B.

LOADING HL-93

Design Specifications: 2007 AASHTO LRFD with all applicable interims.
50#/Sq. Ft. included in dead load for future wearing surface.

SEISMIC DATA

Seismic Performance Zone (SPZ) = 3
Design Spectral Acceleration at 1.0 sec. (SD1) = 0.304g
Design Spectral Acceleration at 0.2 sec. (SDS) = 0.725g
Soil Site Class = D

WATERWAY INFORMATION

Drainage Area = 1.24 Sq. Mi.		Existing Low Grade Elev. 446.0 @ Sta. 7+50		Proposed Low Grade Elev. 446.0 @ Sta. 7+50		
Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist. Prop.	Natural H.W.E.	Head - Ft. Exist. Prop.	Headwater El. Exist. Prop.
Design	15	876	165.5 185.8	445.57	0.05 0.04	445.66 445.61
Base	100	1560	183.5 233.5	447.42	0.06 0.07	447.48 447.49

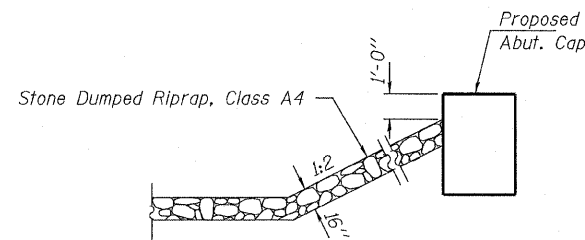
GENERAL NOTES

Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.
Excavation behind existing abutment walls shall be performed to balance front and back soil pressure before removing the existing superstructure.
Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60 (IL Modified). See Special Provisions.
Excavation required to construct the Abutments shall be included in the cost of Concrete Structures. No additional compensation will be allowed for Structure Excavation.
All proposed construction activities shall be in accordance with Nationwide Permit number 14 of the Department of the Army authorized under Section 404 of the Clean Water Act. The IEPA has issued Section 401 Water Quality Certification for this activity. See Special Provisions for conditions. See Sheets 8 of 8 for Borings.

SHELTON CREEK
BUILT 2010 BY
HAMILTON COUNTY
SEC. 06-04126-00-BR
DAHLGREN ROAD DISTRICT
STR. NO. 033-3302
LOADING HL-93

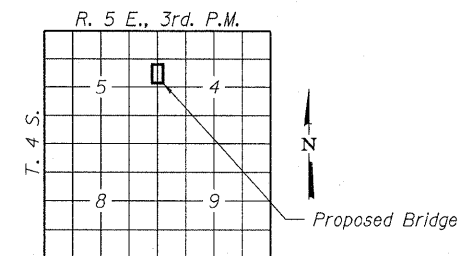
NAME PLATE

See Std. 515001



SECTION A-A

Note: See Special Provisions for Stone Dumped Riprap, Class A4

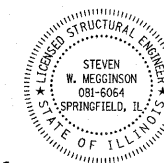


LOCATION SKETCH

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	Cu. Yd.			60
Stone Dumped Riprap, Class A4	Ton			135
Removal of Existing Structures	Each			1
Concrete Structures	Cu. Yd.		23.6	23.6
Concrete Encasement	Cu. Yd.		2.8	2.8
Precast Prestressed Concrete Deck Beams (21" Depth)	Sq. Ft.	1,080		1,080
Reinforcement Bars	Pound		2,560	2,560
Steel Railing, Type S1	Foot	88		88
Furnishing Steel Piles HP10x42	Foot		280	280
Driving Piles	Foot		280	280
Name Plates	Each		1	1

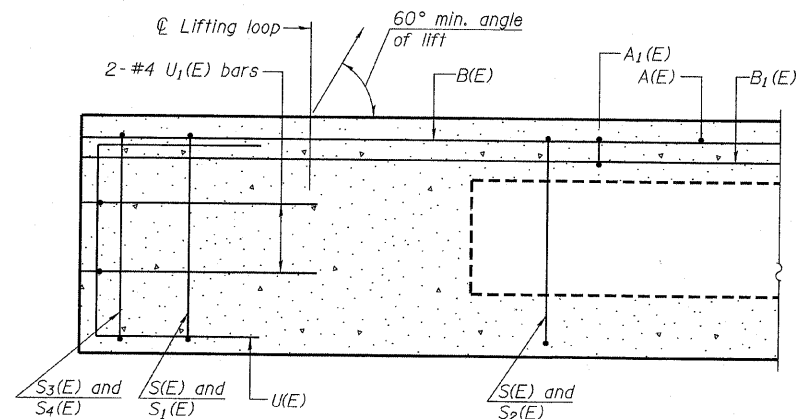
I certify that to the best of my knowledge, information and belief, this bridge design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with requirements of the current "AASHTO LRFD Specifications."



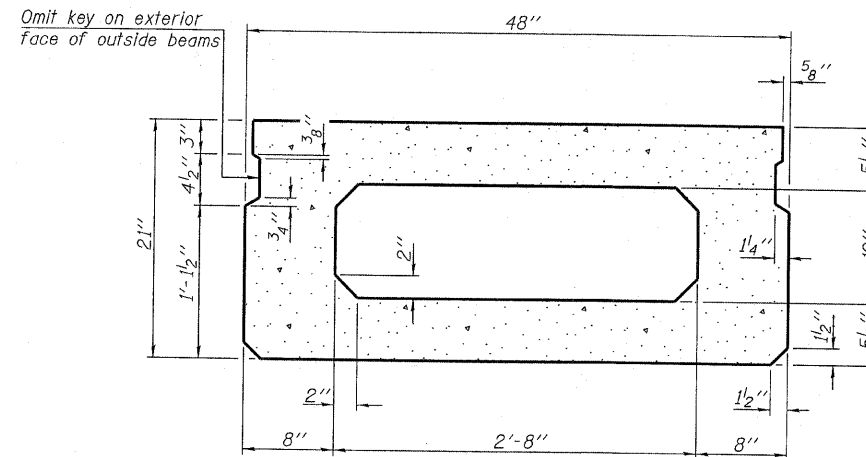
Steven W. Meggison 12/17/2009
ILLINOIS STRUCTURAL NO. 081-6064 Expires 11-30-2010

GENERAL PLAN AND ELEVATION
STRUCTURE NO. 033-3302

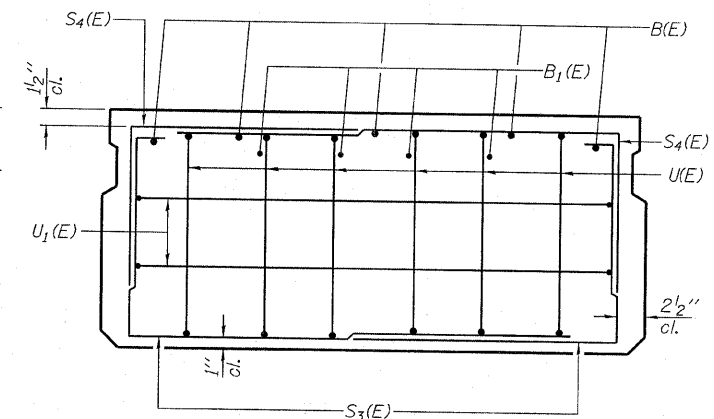
HAMPTON, LENZINI AND RENWICK, INC. CIVIL ENGINEERS - STRUCTURAL ENGINEERS - LAND SURVEYORS 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 217.546.3400 www.hlrengineering.com	SHEET NO. 1 8 SHEETS	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		52	06-04126-00-BR	HAMILTON	11	4
PROJECT NUMBER: 09.0070.130 DATE: 12/17/09		DAHLGREN ROAD DISTRICT		CONTRACT NO. 99416		
		FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT: BROS-065(048)		



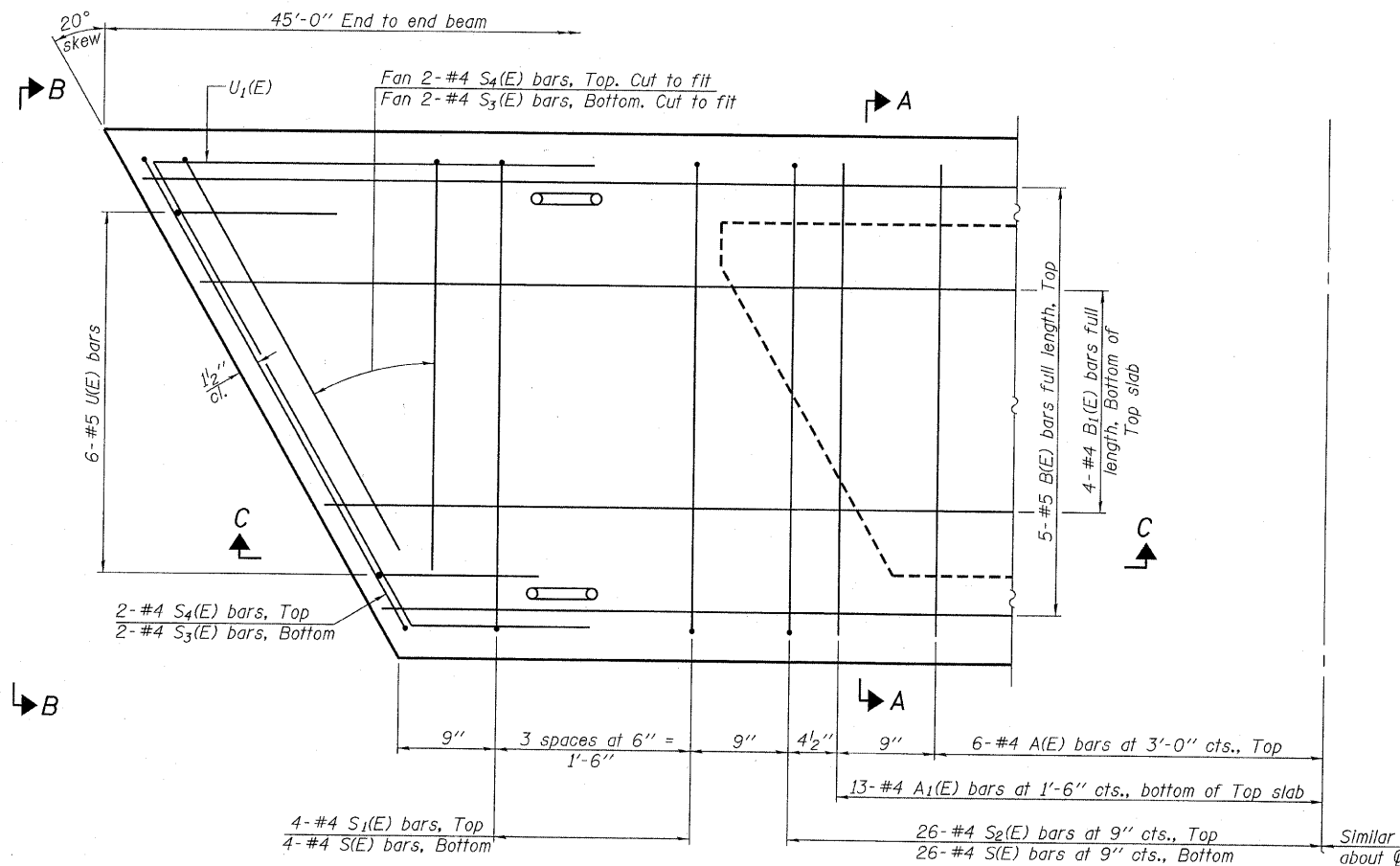
SECTION C-C



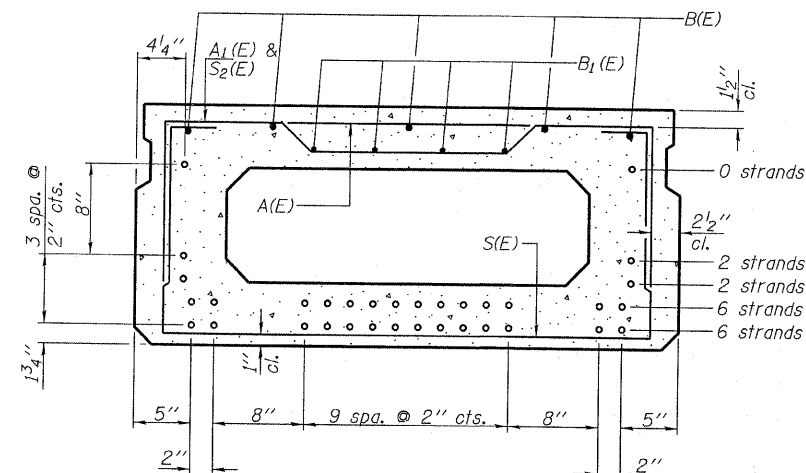
SECTION A-A
(Showing dimensions)



VIEW B-B



PLAN VIEW



SECTION A-A

(Showing reinforcement and permissible strand locations)

Note: Place the number of strands specified in each row symmetrically about the centerline of beam in the permissible strand locations shown.

BAR LIST
ONE BEAM ONLY
(For information only)

Bar	No.	Size	Length	Shape
A(E)	12	#4	3'-7"	—
A1(E)	26	#4	3'-10"	—
B(E)	5	#5	44'-8"	—
B1(E)	4	#4	44'-8"	—
S(E)	60	#4	7'-5"	U
S1(E)	8	#4	5'-11"	U
S2(E)	52	#4	6'-2"	U
S3(E)	8	#4	4'-9"	U
S4(E)	8	#4	4'-0"	U
U(E)	12	#5	4'-0"	U
U1(E)	4	#4	7'-6"	U

Note: See sheet 3 & 4 of 8 for additional details and Bill of Material.

Note: Spacing of S(E) and S2(E) bars may be adjusted up to 4" in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.

DESIGNED - V.J.H.
CHECKED - S.W.M.
DRAWN - D.T.M.
CHECKED - D.A.B.

PD-2148-R

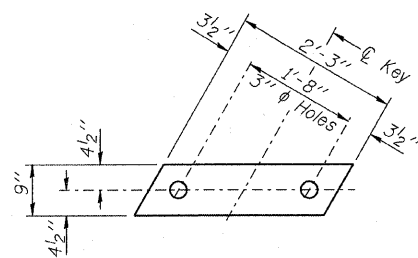
10-1-08

HAMPTON, LENZINI AND RENWICK, INC.
 CIVIL ENGINEERS - STRUCTURAL ENGINEERS - LAND SURVEYORS
 3085 STEVENSON DRIVE, SUITE 201
 SPRINGFIELD, ILLINOIS 62703
 217.546.3400 www.hlrengineering.com
 184.000959
 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORPORATION
 PROJECT NUMBER: 09.0070.130 DATE: 12/17/09

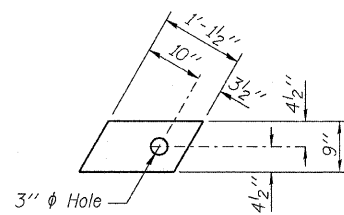
SHEET NO. 2
8 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
52	06-04126-00-BR	HAMILTON	11	5
DAHLGREN ROAD DISTRICT		CONTRACT NO. 99416		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT: BROS-065(048)		

SUPERSTRUCTURE
21" X 48" PPC DECK BEAM
STRUCTURE NO. 033-3302



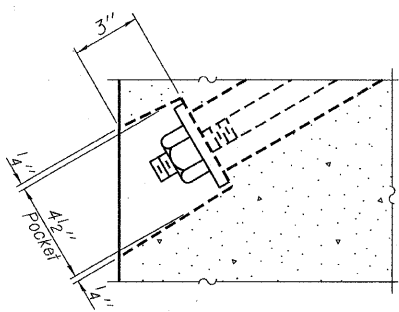
FABRIC BEARING PAD
(Interior)



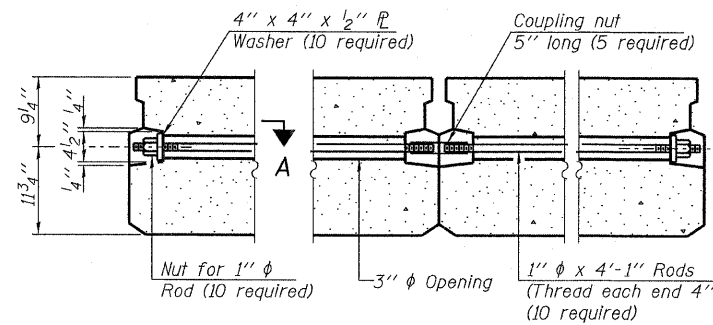
FABRIC BEARING PAD
(Exterior)

FIXED

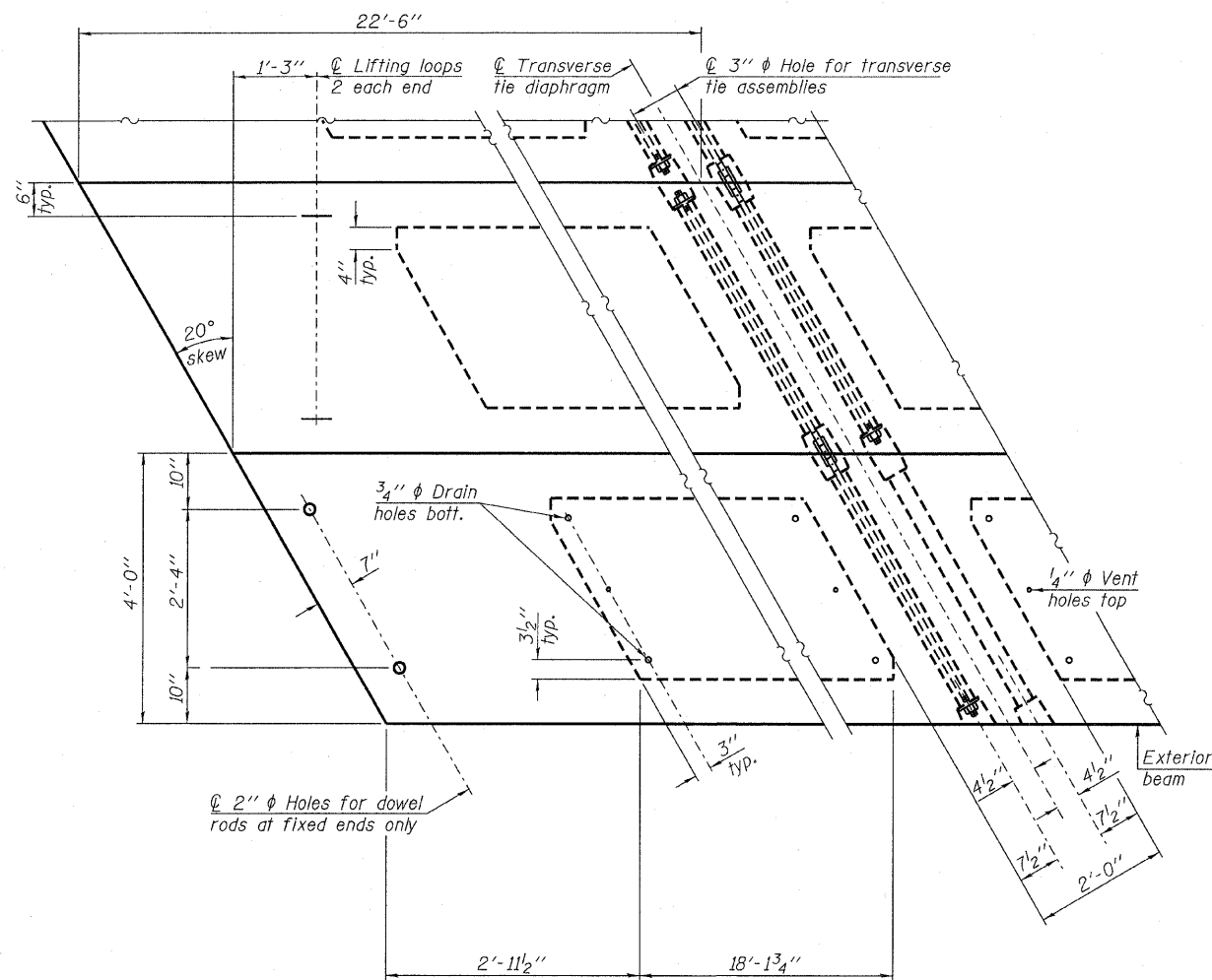
Note: Omit holes when using expansion bearings.



SECTION A-A



TYPICAL TRANSVERSE TIE ASSEMBLY



PLAN VIEW

NOTES

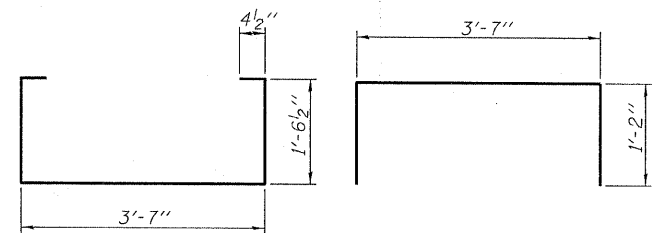
Pressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in.
 The 1" phi rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior faces of bridge shall be filled with grout after transverse tie assembly is in place.
 Reinforcement bars shall conform to ASTM A 706, Grade 60. (See Special Provisions).
 Two 1/8" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.
 A minimum 2 1/2" phi lifting pin shall be used to engage the lifting loops during handling.
 Corrosion inhibitor, per Article 1020.05(b)(12) and 1021.06 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams.
 Compressive strength of prestressed concrete, f'c, shall be 6000 psi.
 Compressive strength of prestressed concrete at release, f'cl, shall be 5000 psi.

Note: Connect beams in pairs with the transverse tie configuration shown.

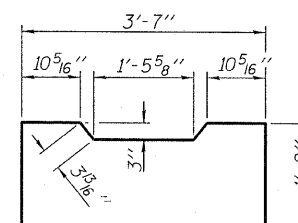
DESIGNED - V.J.H.
CHECKED - S.W.M.
DRAWN - D.T.M.
CHECKED - D.A.B.

PD-2148-RD

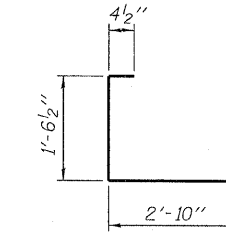
10-1-08



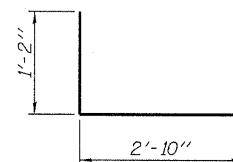
BAR S1(E)



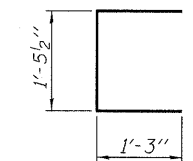
BAR S2(E)



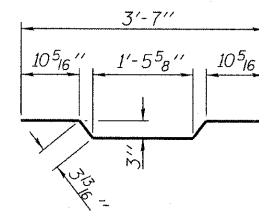
BAR S3(E)



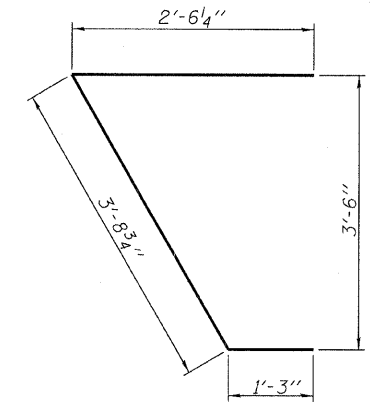
BAR S4(E)



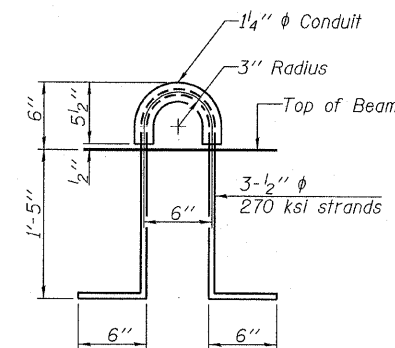
BAR U1(E)



BAR A1(E)



BAR U1(E)



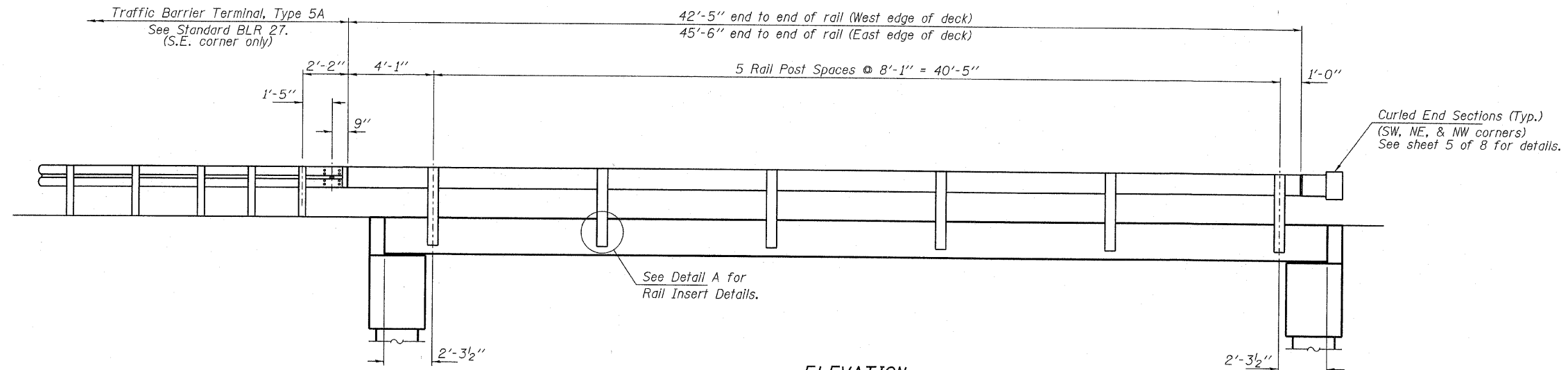
LIFTING LOOP DETAIL

BILL OF MATERIAL

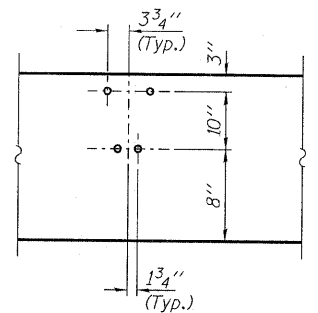
Precast Prestressed Conc. Deck Bms. (21" depth)	Sq. Ft.	1,080
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SUPERSTRUCTURE
21" X 48" PPC DECK BEAM DETAILS
STRUCTURE NO. 033-3302

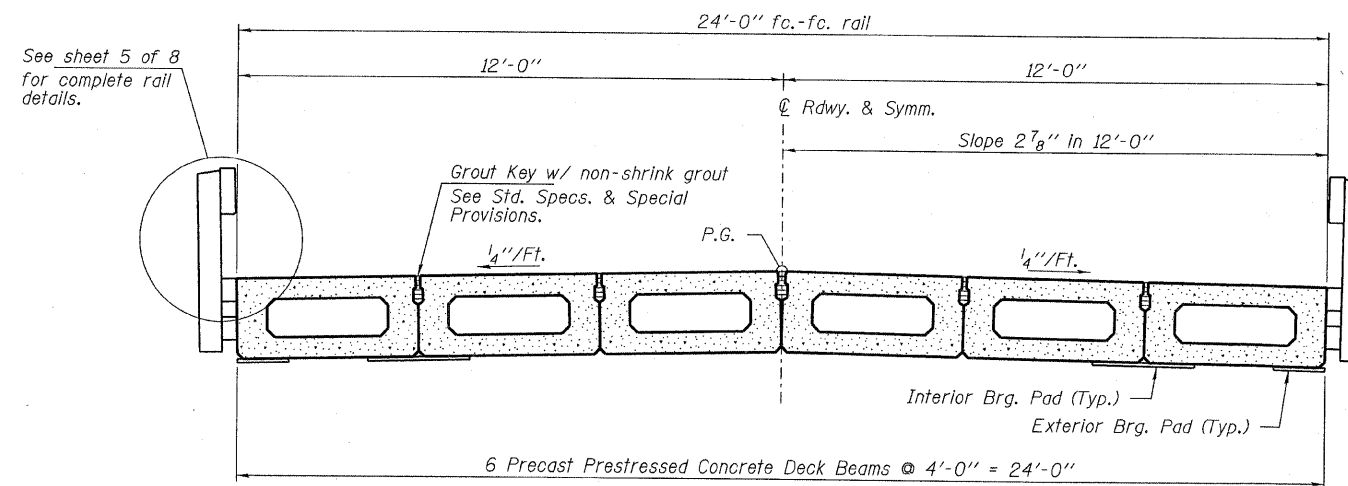
HAMPTON, LENZINI AND RENWICK, INC. CIVIL ENGINEERS - STRUCTURAL ENGINEERS - LAND SURVEYORS 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 217.546.3400 www.hlrengineering.com 184.000989 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORPORATION PROJECT NUMBER: 09.0070.130 DATE: 12/17/09	SHEET NO. 3 8 SHEETS	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		52	06-04126-00-BR	HAMILTON	11	6
DAHLGREN ROAD DISTRICT			CONTRACT NO. 99416			
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT: BROS-065(048)				



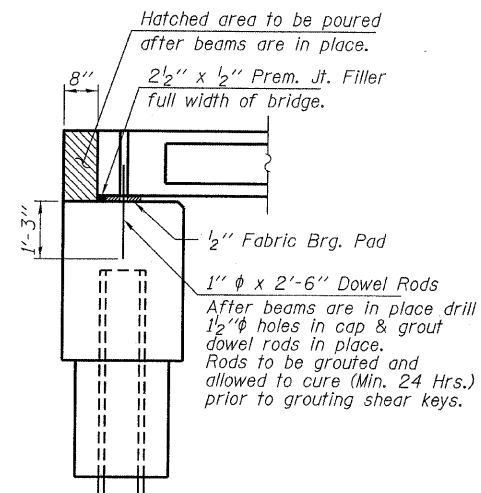
ELEVATION
Showing Rail Post Spaces
See sheet 5 of 8 for Railing Details.



DETAIL A



CROSS SECTION
See sheets 2 & 3 of 8 for Superstructure.

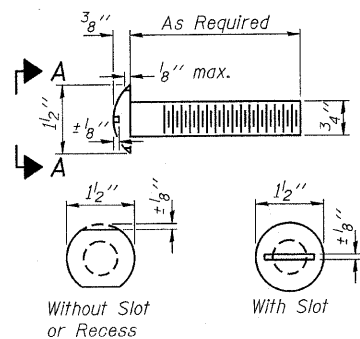


SECTION AT ABUTMENTS
© Rt. L's

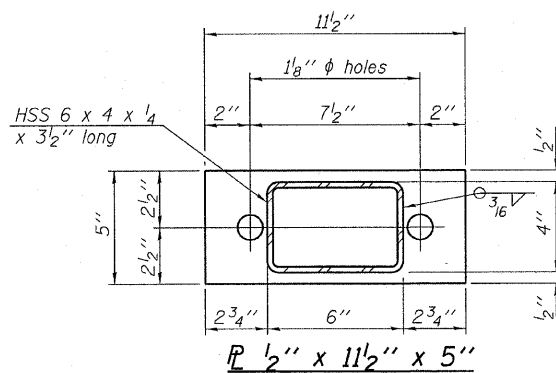
DESIGNED -	V.J.H.
CHECKED -	S.W.M.
DRAWN -	D.T.M.
CHECKED -	D.A.B.

SUPERSTRUCTURE DETAILS
STRUCTURE NO. 033-3302

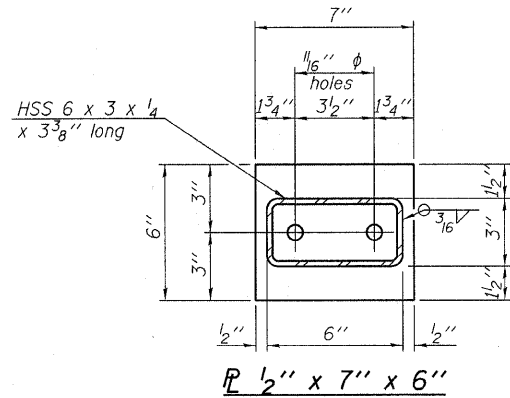
HAMPTON, LENZINI AND RENWICK, INC. CIVIL ENGINEERS • STRUCTURAL ENGINEERS • LAND SURVEYORS HLR 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 217.546.3400 www.hlrengineering.com <small>184.000559 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORPORATION</small>	SHEET NO. 4	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	8 SHEETS	52	06-04126-00-BR	HAMILTON	11	7
PROJECT NUMBER: 09.0070.130	DATE: 12/17/09	DAHLGREN ROAD DISTRICT		CONTRACT NO. 99416		
		FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT: BROS-065(048)		



**VIEW A-A
ROUND HEAD BOLT**

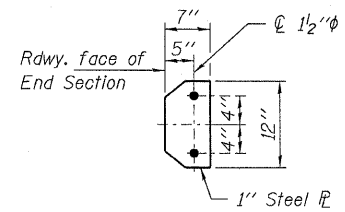


SECTION B-B

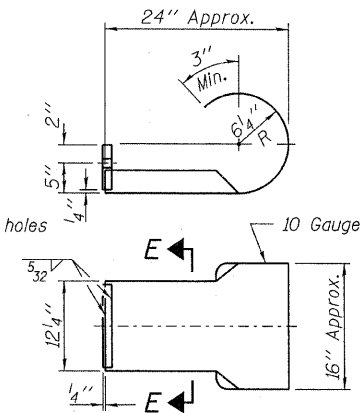


SECTION AT RAILING POST

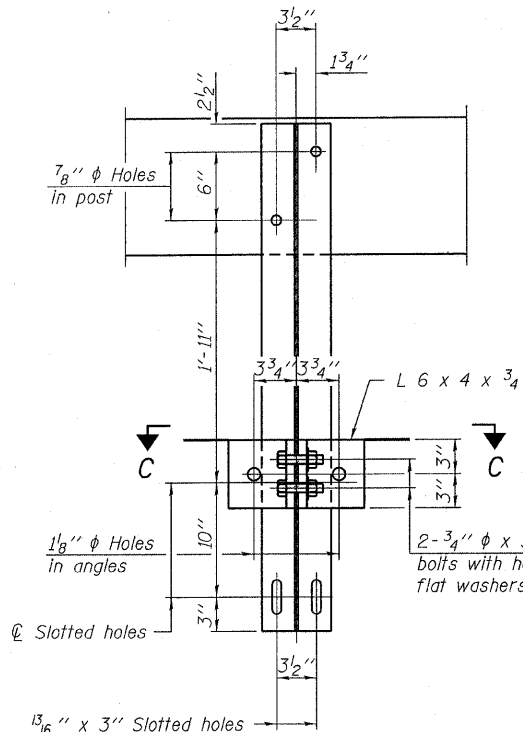
Note: Cost of curled end sections shall be included with the Steel Railing. (3 Required)



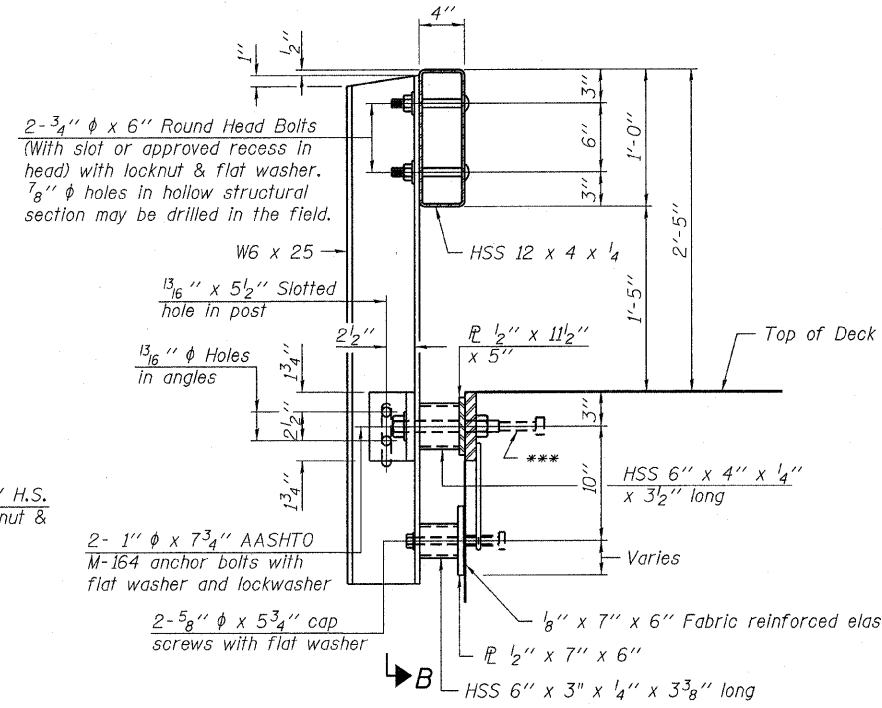
SECTION E-E



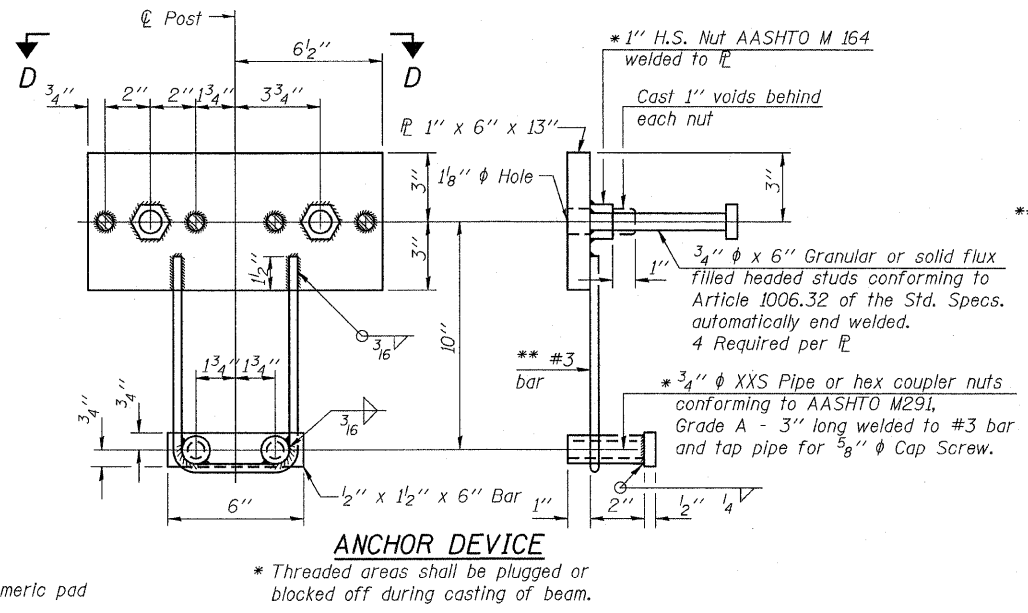
CURLLED END SECTION DETAILS



SECTION C-C

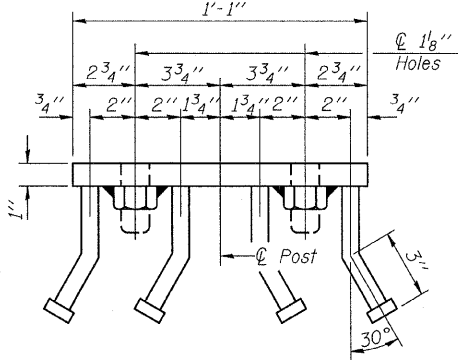


SECTION AT RAILING POST

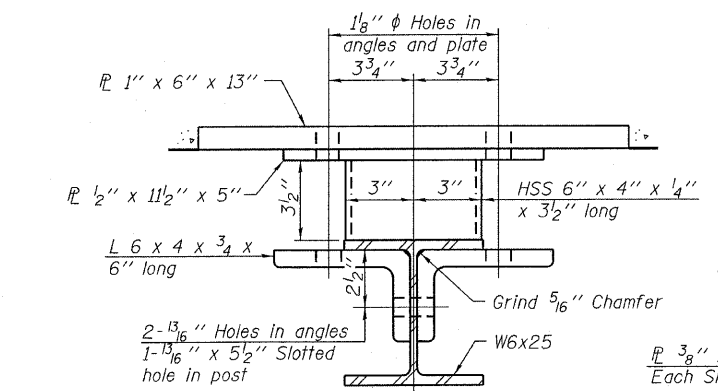


ANCHOR DEVICE

Notes:
All field drilled holes shall be coated with an approved zinc rich paint before erection.
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 steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.
*** The studs of the anchor devices shall be placed below the top reinforcement bars and the outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchor device.

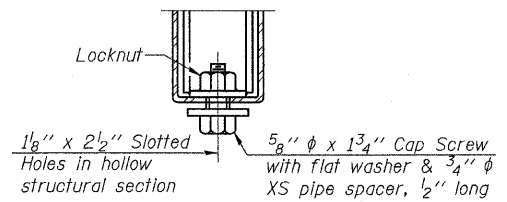


VIEW D-D

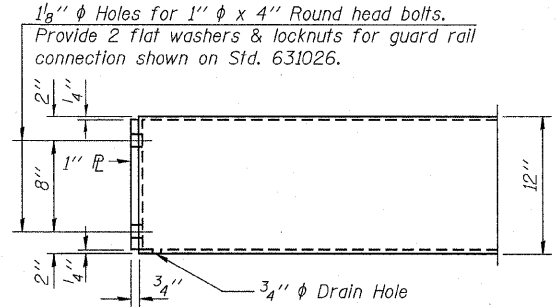


SECTION C-C

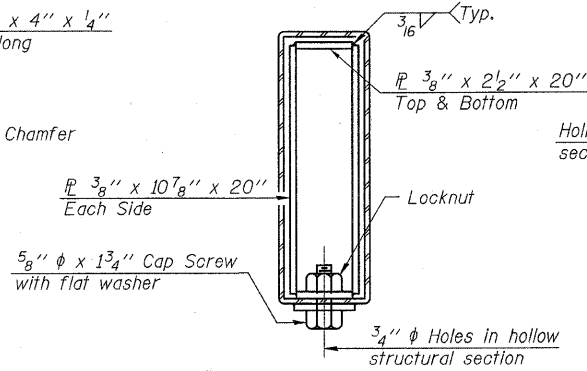
** Whenever the lower insert assemblies interfere with strand locations, the #3 bars shall be cut and adjusted in order to allow raising or lowering of the lower inserts. Maximum adjustment not to exceed 1/2".



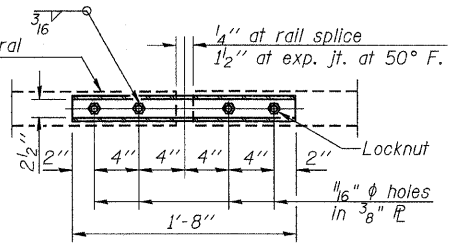
RAIL SPLICE CONNECTION AT EXPANSION JT.



END OF RAIL DETAILS



SECTIONS AT RAIL SPLICE



PLAN-BOTT. SPLICE R TYPICAL

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S-1	Foot	88

**STEEL RAILING, TYPE S-1
STRUCTURE NO. 033-3302**

DESIGNED - V.J.H.
CHECKED - S.W.M.
DRAWN - D.T.M.
CHECKED - D.A.B.

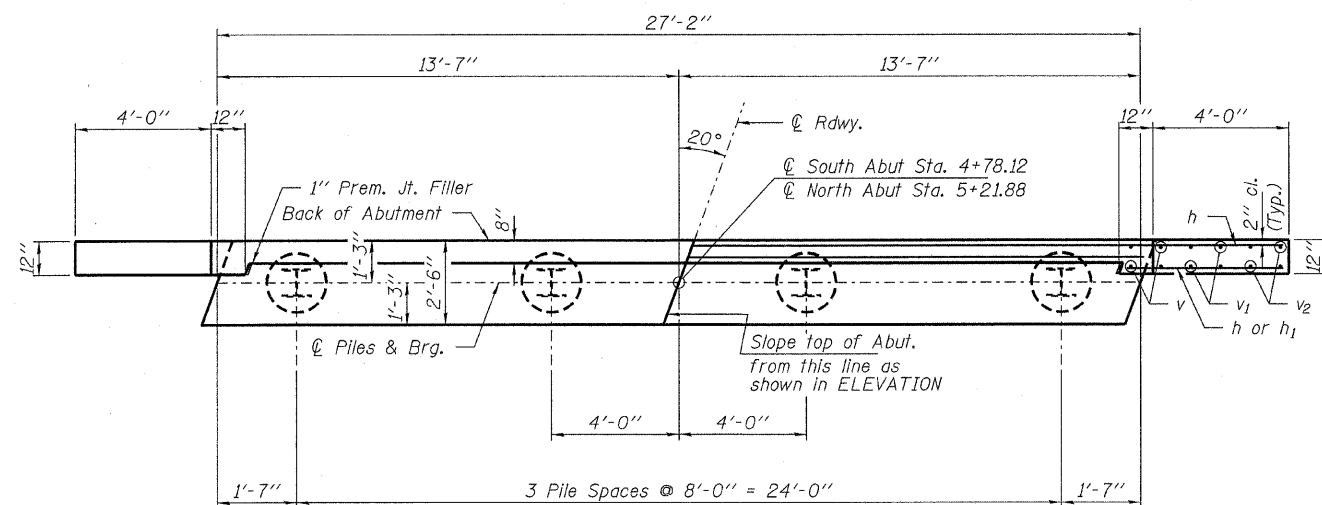
R-23A

10-1-08 (10'-9" Maximum Post Spacing)

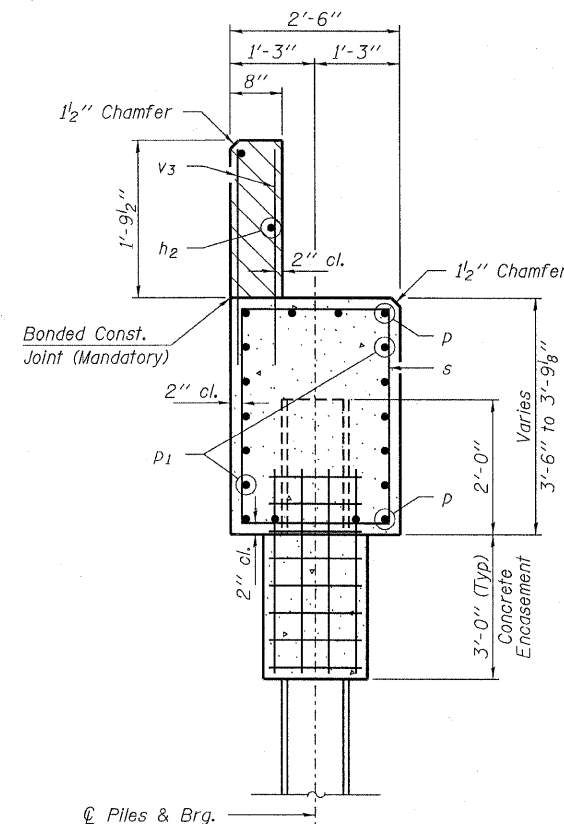
HAMPTON, LENZINI AND RENWICK, INC.
CIVIL ENGINEERS - STRUCTURAL ENGINEERS - LAND SURVEYORS
3085 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
217.546.3400 www.hlrenwicking.com

SHEET NO. 5	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	52	06-04126-00-BR	HAMILTON	11	8
8 SHEETS	DAHLGREN ROAD DISTRICT		CONTRACT NO. 99416		
	FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT: BROS-065(048)			

PROJECT NUMBER: 09.0070.130 DATE: 12/17/09

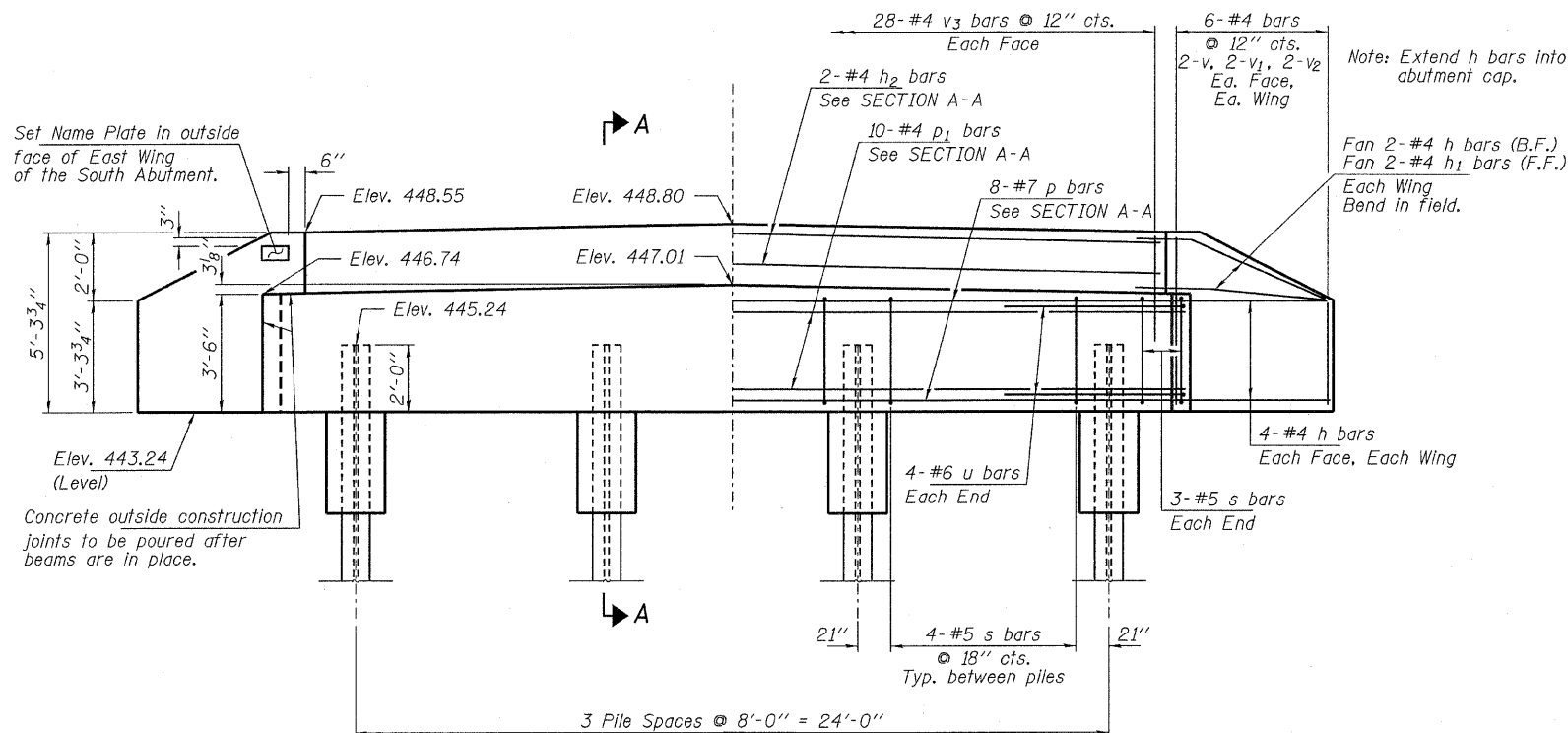
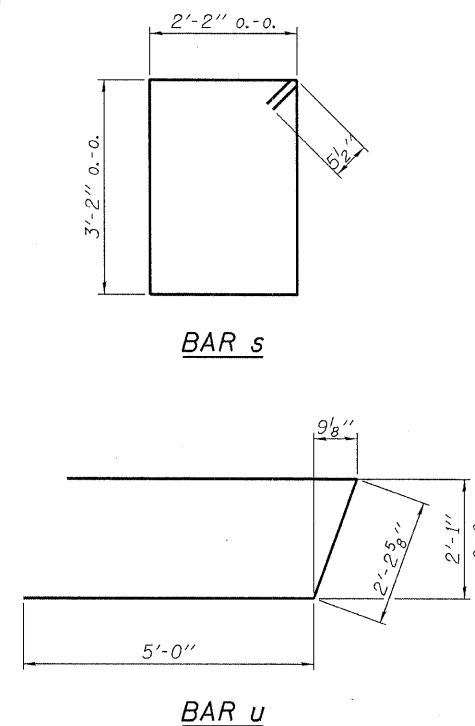


PLAN



SECTION A-A

Hatched area to be poured after beams are in place.



ELEVATION

PILE DATA

Type: Steel HP10x42
 No. Req'd. (2 Abuts.): 8
 Factored Resistance Available (R_f): 167 Kips/Pile
 Nominal Required Bearing (R_n): 335 Kips/Pile
 Est. Length: 35 Ft/Pile

Notes: The Steel H-Piles shall be according to AASHTO M270 Grade 50.

BILL OF MATERIAL - 2 ABUTS.

BAR	NO.	SIZE	LENGTH	SHAPE	
h	40	#4	6'-3"	—	
h ₁	8	#4	4'-9"	—	
h ₂	4	#4	26'-10"	—	
p	16	#7	26'-10"	—	
p ₁	20	#4	26'-10"	—	
s	36	#5	11'-7"	□	
u	16	#6	12'-3"	—	
v	16	#4	5'-0"	—	
v ₁	16	#4	4'-0"	—	
v ₂	16	#4	3'-0"	—	
v ₃	112	#4	2'-8"	—	
Concrete Structures				Cu. Yd.	23.6
Concrete Encasement				Cu. Yd.	2.8
Reinforcement Bars				Pound	2,560
Steel Piles HP10x42				Foot	280
Name Plates				Each	1

ABUTMENTS
 STRUCTURE NO. 033-3302

DESIGNED - V.J.H.
CHECKED - S.W.M.
DRAWN - D.T.M.
CHECKED - D.A.B.

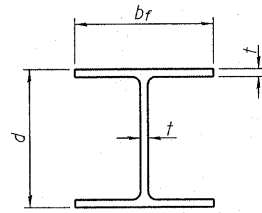
HAMPTON, LENZINI AND RENWICK, INC.
 CIVIL ENGINEERS - STRUCTURAL ENGINEERS - LAND SURVEYORS
 3085 STEVENSON DRIVE, SUITE 201
 SPRINGFIELD, ILLINOIS 62703
 217.546.3400 www.hlrengineering.com

184.000959
 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORPORATION

PROJECT NUMBER: 09.0070.130 DATE: 12/17/09

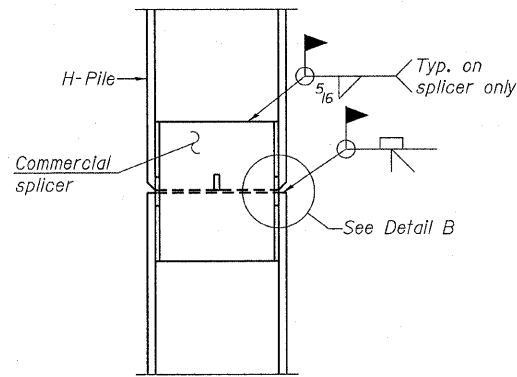
SHEET NO. 6
 8 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
52	06-04126-00-BR	HAMILTON	11	9
DAHLGREN ROAD DISTRICT		CONTRACT NO. 99416		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT: BROS-065(048)		

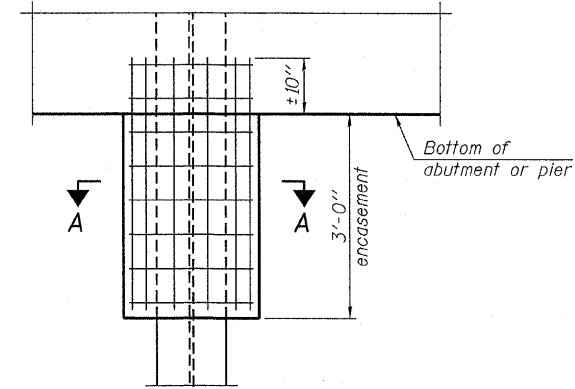


STEEL PILE TABLE

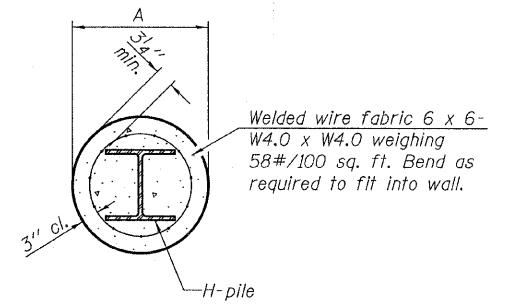
Designation	Depth d	Flange width br	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	1 3/16"	30"
x102	14"	14 3/4"	1 1/16"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 5/8"	14 5/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	1 1/16"	24"
x74	12 1/8"	12 1/4"	5/8"	24"
x63	12"	12 1/8"	1/2"	24"
x53	11 3/4"	12"	7/16"	24"
HP 10x57	10"	10 1/4"	9/16"	24"
x42	9 3/4"	10 1/8"	7/16"	24"
HP 8x36	8"	8 1/8"	7/16"	18"



ELEVATION



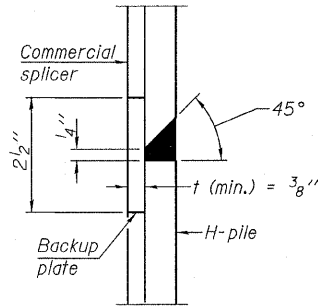
ELEVATION



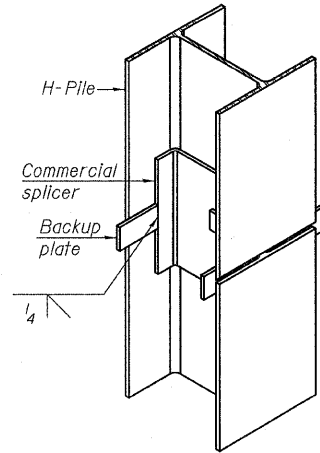
SECTION A-A

Note:
Forms for encasement may be omitted when soil conditions permit.

PILE ENCASEMENT

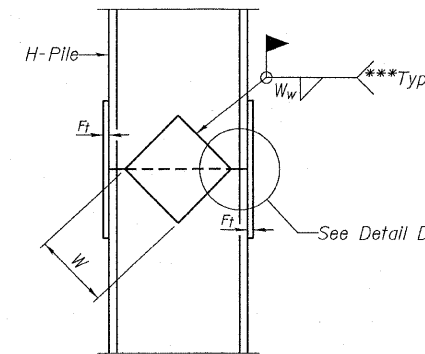


DETAIL "B"

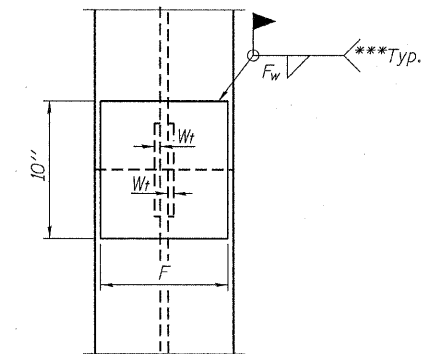


ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE



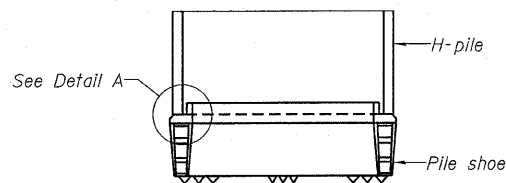
ELEVATION



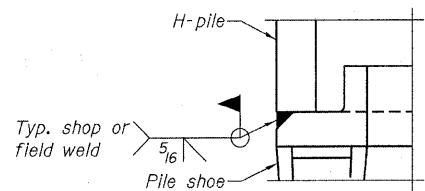
END VIEW

Designation	F	F _t	F _w	W	W _t	W _w
HP 14x117	12 1/2"	1"	7/8"	7 3/4"	5 8/8"	1/2"
x102	12 1/2"	7/8"	3/4"	7 3/4"	5 8/8"	1/2"
x89	12 1/2"	3/4"	1 1/16"	7 3/4"	5 8/8"	1/2"
x73	12 1/2"	5/8"	9/16"	7 3/4"	5 8/8"	1/2"
HP 12x84	10"	7/8"	1 1/16"	6 1/2"	5 8/8"	1/2"
x74	10"	7/8"	1 1/16"	6 1/2"	5 8/8"	1/2"
x63	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
x53	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
HP 10x57	8"	3/4"	9/16"	5 1/4"	1/2"	3/8"
x42	8"	5/8"	9/16"	5 1/4"	1/2"	3/8"
HP 8x36	7"	5/8"	7/16"	4 1/4"	1/2"	3/8"

WELDED PLATE FIELD SPLICE

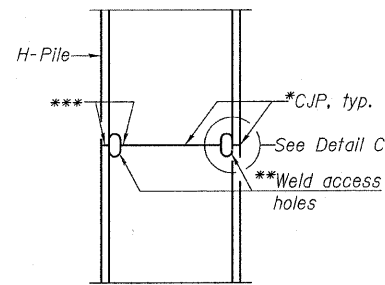


ELEVATION

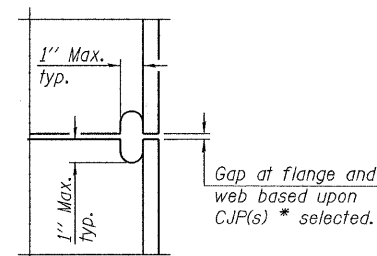


DETAIL A

H-PILE SHOE ATTACHMENT

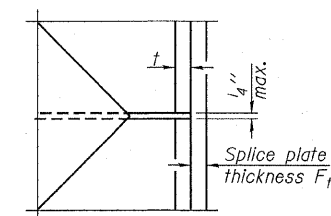


ELEVATION



DETAIL C

COMPLETE PENETRATION WELD SPLICE



DETAIL D

Note:
The steel H-piles shall be according to AASHTO M270 Grade 50.

**HP PILE DETAILS
STRUCTURE NO. 033-3302**

DESIGNED - V.J.H.
CHECKED - S.W.M.
DRAWN - D.T.M.
CHECKED - D.A.B.

F-HP

10-1-08

- * Use joint conforming to Figure 3.4 in AWS D1.1, Structure Welding Code - Steel.
- ** Preparation per Fig. 5.2 in AWS D1.1, Structure Welding Code - Steel.
- *** Interrupt welds 1/4" from end of each pile.

HAMPTON, LENZINI AND RENWICK, INC.
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 3085 STEVENSON DRIVE, SUITE 201
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 217.545.3400 www.hlrengineering.com

HLR
 184.000969
 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORPORATION
 PROJECT NUMBER: 09.0070.130 DATE: 12/17/09

SHEET NO. 7 8 SHEETS	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	52	06-04126-00-BR	HAMILTON	11	10
DAHLGREN ROAD DISTRICT			CONTRACT NO. 99416		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT: BR05-065(048)		

