

INDEX OF SHEETS

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1	TITLE SHEET & SUMMARY OF QUANTITIES
2	PLAN & PROFILE, TYPICAL SECTIONS, GENERAL NOTES & STONE RIPRAP DITCH DESIGN
3-4	ROADWAY CROSS SECTIONS
5-13	BRIDGE DESIGN

HIGHWAY STANDARDS

000001-06	STANDARD SYMBOLS, ABBREVIATIONS & PATTERNS (8 SHEETS)
280001-05	TEMPORARY EROSION CONTROL SYSTEMS (2 SHEETS)
515001-03	NAME PLATE FOR BRIDGES (2 SHEETS)
701901-01	TRAFFIC CONTROL DEVICES (3 SHEETS)
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)

SUMMARY OF QUANTITIES

QUANTITY	UNIT	ITEM	CODE NO.
121.00	UNIT	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	2010010
24.00	UNIT	TREE REMOVAL (OVER 15 UNITS DIAMETER)	2010020
67.00	CU YD	EARTH EXCAVATION	2020010
63.00	CU YD	CHANNEL EXCAVATION	2030010
336.00	CU YD	FURNISHED EXCAVATION	2040080
28.00	FOOT	TEMPORARY DITCH CHECKS	2800030
10.00	TON	AGGREGATE (EROSION CONTROL)	2800100
240.00	TON	STONE DUMPED RIPRAP, CLASS A4	2810080
295.00	TON	AGGREGATE SURFACE COURSE, TYPE B	4020080
1.00	EACH	REMOVAL OF EXISTING STRUCTURES	5010010
23.20	CU YD	CONCRETE STRUCTURES	5030025
2.80	CU YD	CONCRETE ENCASUREMENT	5030028
1080.00	SQ FT	PRECAST PRESTRESSED CONCRETE DECK BEAMS (17" DEPTH)	5040030
2470.00	POUND	REINFORCEMENT BARS	5080010
86.00	FOOT	STEEL RAILING, TYPE S1	5090020
315.00	FOOT	FURNISHING STEEL PILES HP10X42	5120140
315.00	FOOT	DRIVING PILES	5120230
1.00	EACH	TEST PILE STEEL HP10X42	5120340
1.00	EACH	NAME PLATES	5150010
30.00	FOOT	PIPE CULVERTS, CLASS D, TYPE 1 15"	5420020
1.00	L.SUM	MOBILIZATION	6710010
0.30	ACRE	SEEDING, CLASS 2 (SPECIAL)	X2501000
88.00	TON	STONE LINED DITCH	Z0068900

*SPECIALTY ITEMS



DESIGN DESIGNATION:
DESIGN SPEED: 30 MPH
HIGHWAY CLASS - LOCAL ROAD
EXISTING STRUCTURE NO.: 024-3021
PROPOSED STRUCTURE NO.: 024-3139
CURRENT A.D.T. = 125
CONTRACT NO. 95661

STATE OF ILLINOIS

DEPARTMENT OF TRANSPORTATION

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

T.R. 25 EDWARDS COUNTY SECTION 09-02117-00-BR

PROJECT NO. BROS-047(035) JOB NO. C-97-072-11

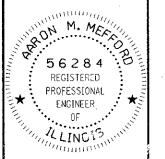
CONTRACT #95661 SUGAR CREEK

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
25	09-02117-00-BR	EDWARDS	13	1

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

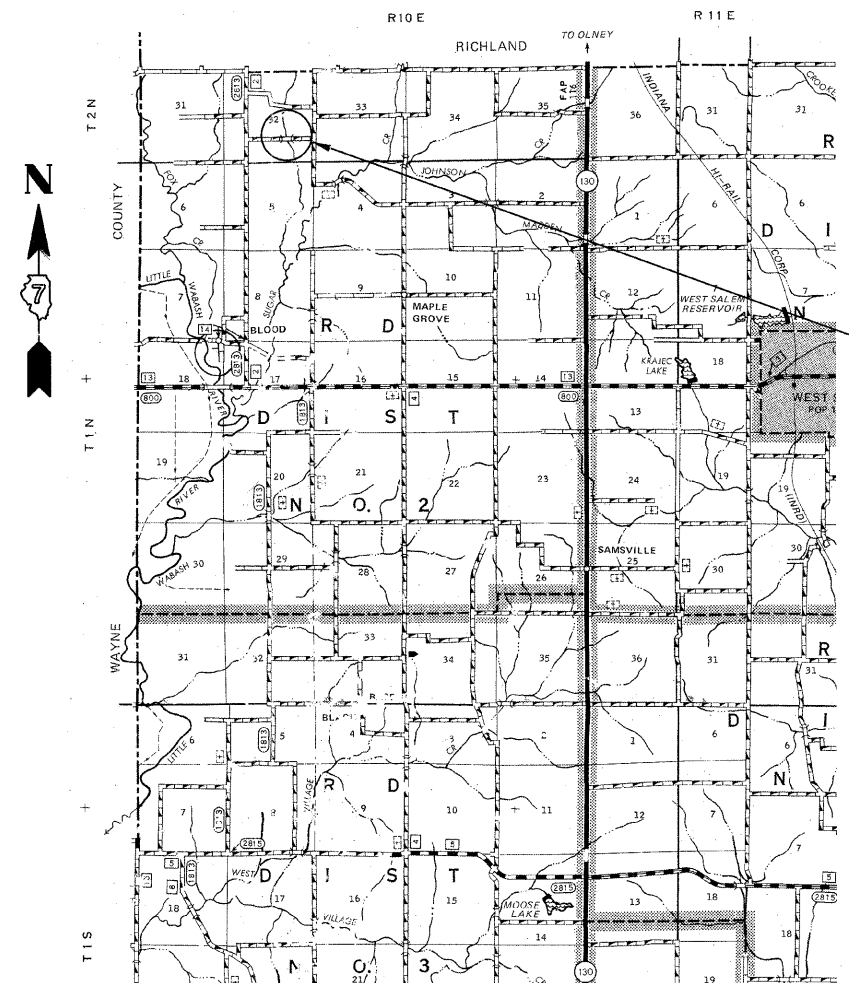
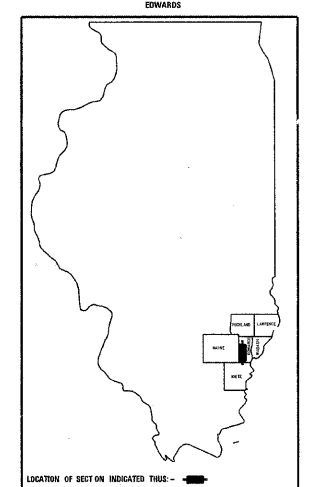


PROFESSIONAL DESIGN FIRM
LAND SURVEY & PROFESSIONAL ENGINEERING CORPORATION
184-000887
(62-032435)(35-002769)



ARON M. MEFFORD
NAME
SIGNATURE
DATE
11-30-11
EXPIRES

SUGAR CREEK
TOWNSHIP ROUTE 25
EDWARDS COUNTY, ILLINOIS

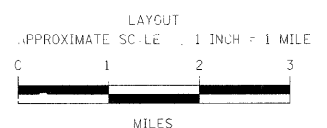


PLAN	1" = 50'	0 50' 100'
PROFILE	1" = 50'	0 50' 100'
PROFILE VERT.	1" = 5'	0 5' 10'

SECTION 09-02117-00-BR
BEGINS STATION 2+25

STATION 5+00, STRUCTURE NO. 024-3139
A 45' LONG SINGLE SPAN PRECAST
PRESTRESSED CONCRETE DECK BEAM BRIDGE
(17" DEPTH, 24' ROADWAY, 25° RT. FWD. SKEW.)

SECTION 09-02117-00-BR
ENDS STATION 7+00



GROSS LENGTH	475.00 FT	0.090 MILES
OMISSIONS	0.00 FT	0.000 MILES
NET LENGTH	475.00 FT	0.090 MILES

APPROVED May 25th 20 11

W. K. B. O.
COUNTY ENGINEER

PASSED 6/2 20 11

Maureen East
DISTRICT SEVEN ENGINEER OF LOCAL ROADS & STREETS

Releasing For Bid Based on Limited Review 6/2 20 11

Ron L. Anshelley
DEPUTY DIRECTOR OF HIGHWAYS,
REGION FOUR ENGINEER

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET TITLE:
TITLE SHEET

SCALE: VARS

BY: AMM

DATE: 9/9/11

REV:

1 OF 13 SHEETS

SHEET NO. 1

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.

NOTE: CONSTRUCTION TRANSITIONS
STA. 2+25 TO STA. 2+75
STA. 6+50 TO STA. 7+00
ALL QUANTITIES ARE INCLUDED IN THE PROPOSAL



BILL B. AND DOROTHY A. HEADLEY



ROBERT A. HEADLEY JR.



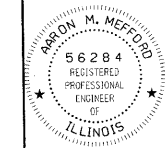
T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
25	09-02117-00-BR	EDWARDS	13	2
FED. ROAD DIST. NO. 1 ILLINOIS		SUGAR CREEK		
PROJECT * BR*, 0410351		CONTRACT * 95661		
LEC JOB * HDL006ED				

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

405 W. STATE ST
SUITE 1
PRINCETON, IN
47670
PHONE:
(812)-386-7611
FAX:
(812)-385-2812



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



AARON M. MEFFORD
NAME
Aaron Mefford
SIGNATURE
5-25-11
DATE
11-30-11
EXPIRES

SUGAR CREEK
TOWNSHIP ROUTE 25
EDWARDS COUNTY, ILLINOIS

SHEET TITLE:

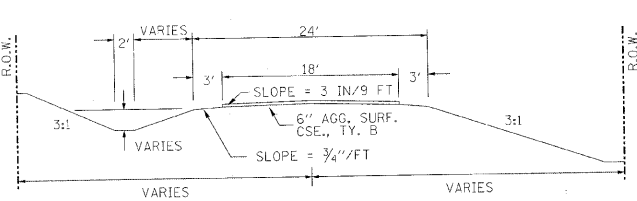
PLAN & PROFILE

SCALE: VARIES
BY: AMM
DATE: 5/25/11
REV:

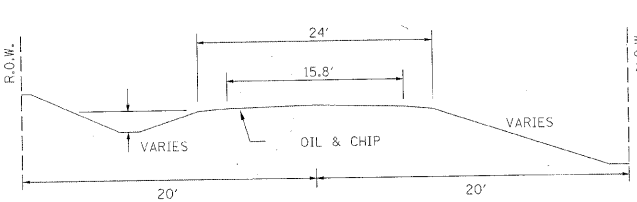
2 OF 13
SHEETS

SHEET NO.
2

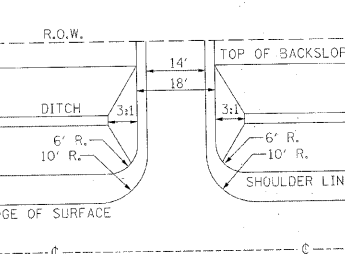
TYPICAL CROSS SECTION PROPOSED



TYPICAL CROSS SECTION EXISTING



PRIVATE ENTRANCE DETAIL



NOTE: CONSTRUCT SPECIAL DITCH

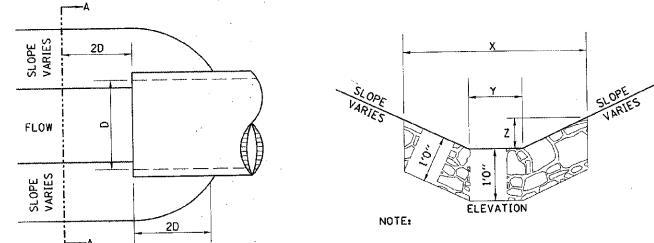
STA 2+50 TO STA 4+65 LT
STA 2+50 TO STA 4+82 RT
STA 5+20 TO STA 7+00 LT
STA 5+35 TO STA 7+00 RT

NOTE: CONSTRUCT STONE LINED DITCH

STA 4+25 TO STA 4+65 LT (0.62 TON/LIN FT)
STA 4+25 TO STA 4+82 RT (0.62 TON/LIN FT)
STA 5+20 TO STA 5+50 LT (0.62 TON/LIN FT)
STA 5+35 TO STA 5+50 RT (0.62 TON/LIN FT)
88 TON STONE LINED DITCH.

SEE STONE LINED DITCH DETAIL.

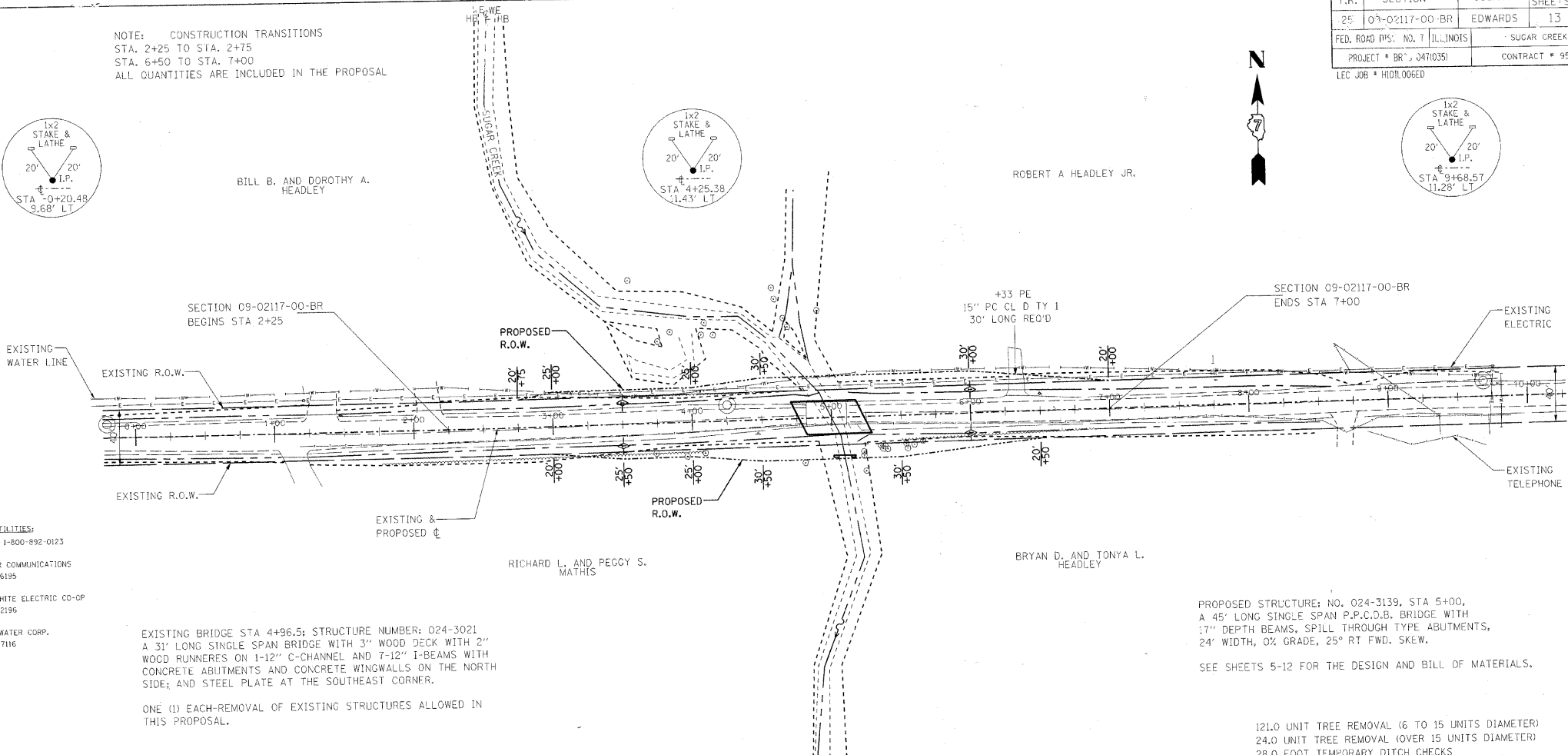
STONE LINED DITCH DESIGN



NOTE: BOTTOM OF DITCH

SLOPE	ELEVATION		
	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

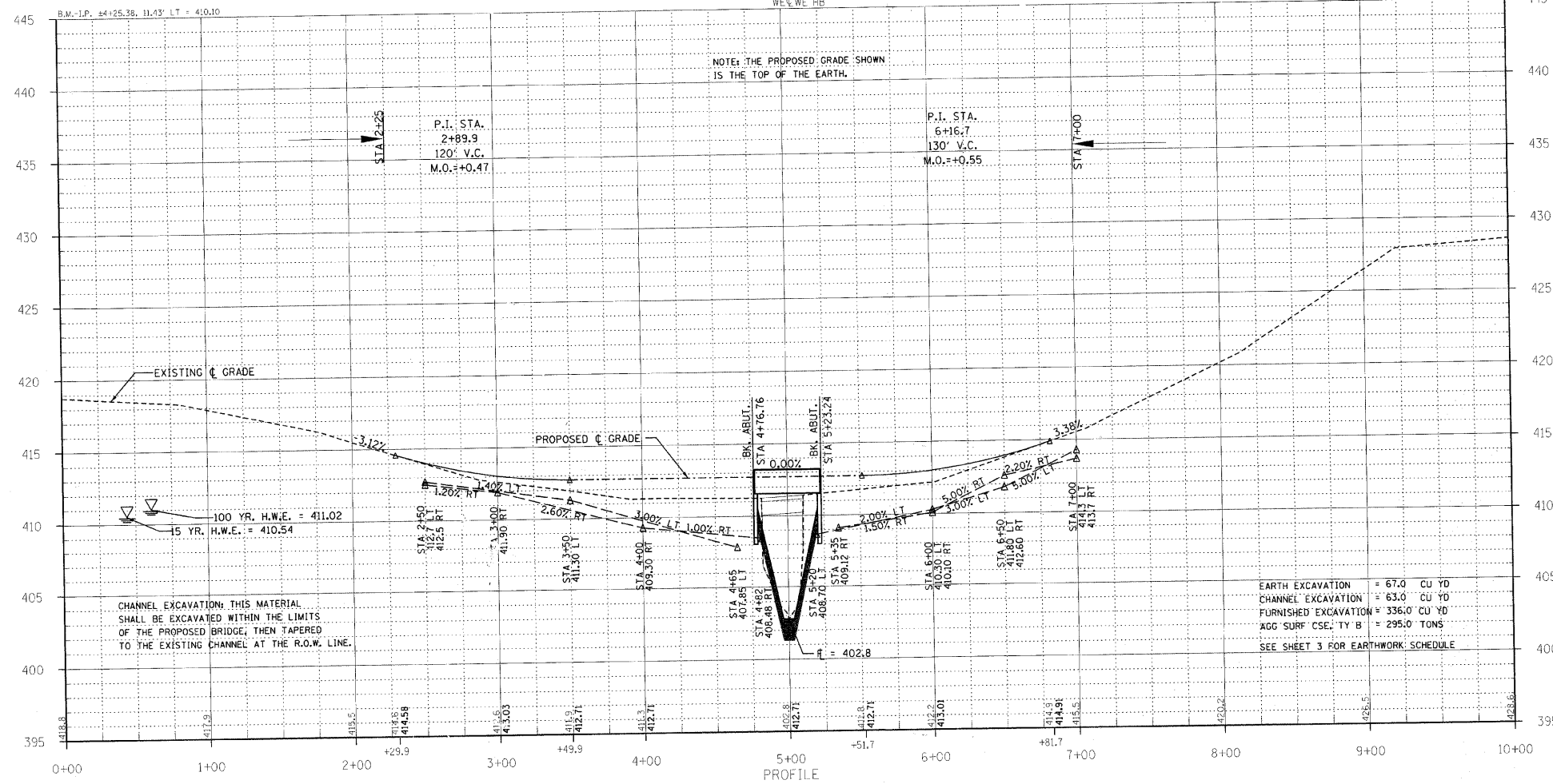
NOTE: FOR PLACEMENT, QUALITY GRADATION AND OTHER MISCELLANEOUS REQUIREMENTS FOR STONE LINED DITCH-SEE SPECIAL PROVISIONS.



EXISTING BRIDGE STA 4+96.5; STRUCTURE NUMBER: 024-3021
A 31' LONG SINGLE SPAN BRIDGE WITH 3" WOOD DECK WITH 2" WOOD RUNNERS ON 1-12" C-CHANNEL AND 7-12" I-BEAMS WITH CONCRETE ABUTMENTS AND CONCRETE WINGWALLS ON THE NORTH SIDE; AND STEEL PLATE AT THE SOUTHEAST CORNER.

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

NOTE: FILL NEXT T^m BRIDGE TO BE AGGREGATE SURFACE COURSE



2 OF 13
SHEETS

SHEET NO.
2

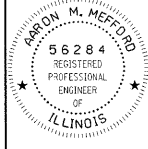
T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
25	09-02117-00-BR	EDWARDS	13	3
FED. ROAD DIST. NO. 7 ILLINOIS		SUGAR CREEK		
PROJECT # BR05-047035		CONTRACT # 95661		
LEC JOB # HDL006ED				

823 W. 3RD. ST.
P.O. BOX 160
MT. CARMEL, IL
62863
PHONE:
(618)-262-8651
FAX:
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405 W. STATE ST.
SUITE 1
PRINCETON, IN
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PHONE:
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LAND SURVEY &
PROFESSIONAL ENGINEERING CORPORATION
184-000887
(62-032435)(35-002769)



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

SUGAR CREEK
TOWNSHIP ROUTE 25
EDWARDS COUNTY, ILLINOIS

SHEET TITLE:

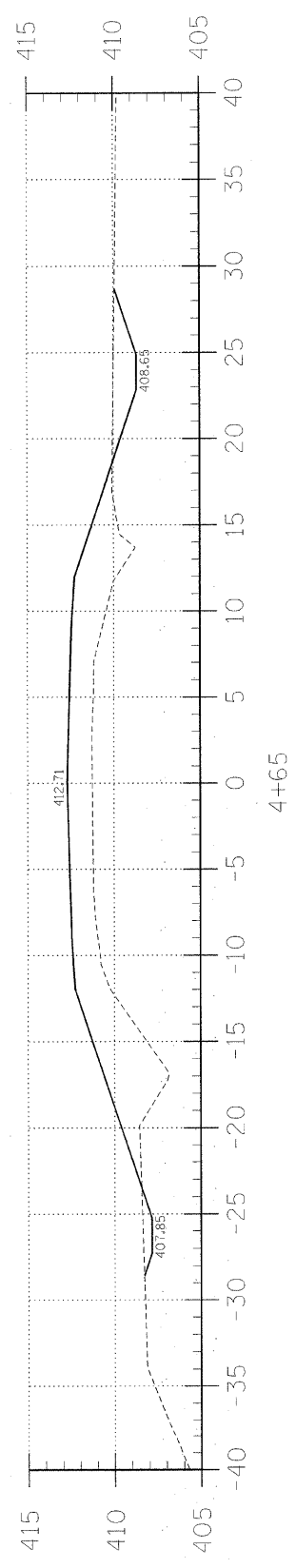
CROSS-SECTIONS

SCALE: 1" = 5'
BY: AMM
DATE: 5/25/11
REV:

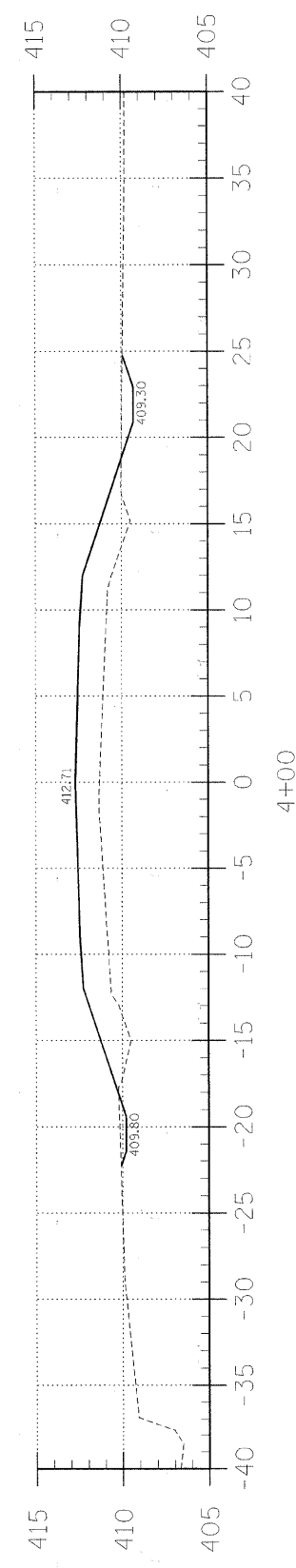
3 OF 13 SHEETS

SHEET NO. 3

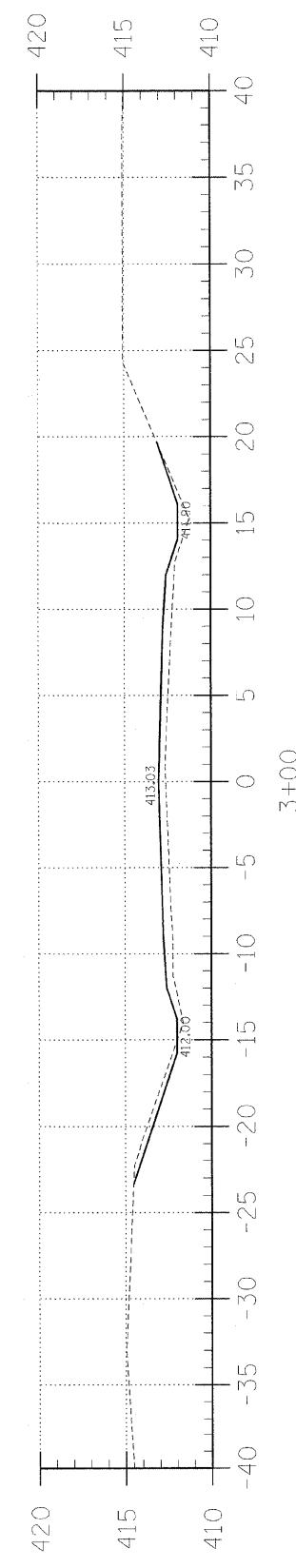
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F = 70.3



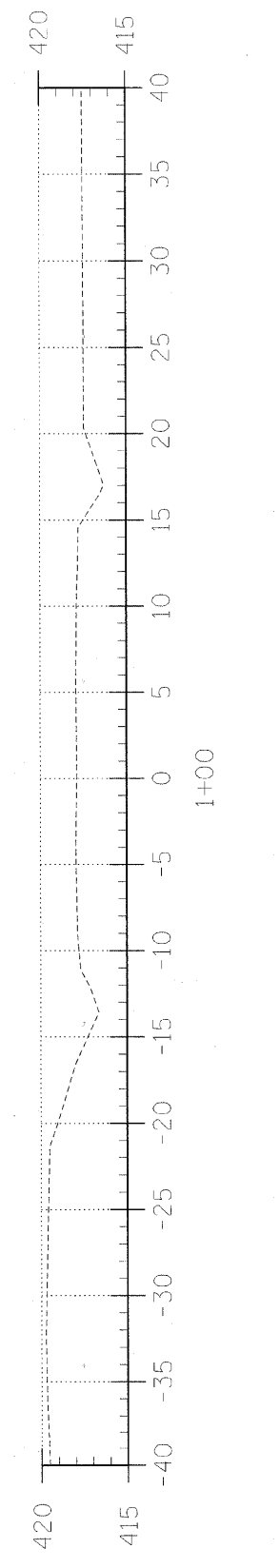
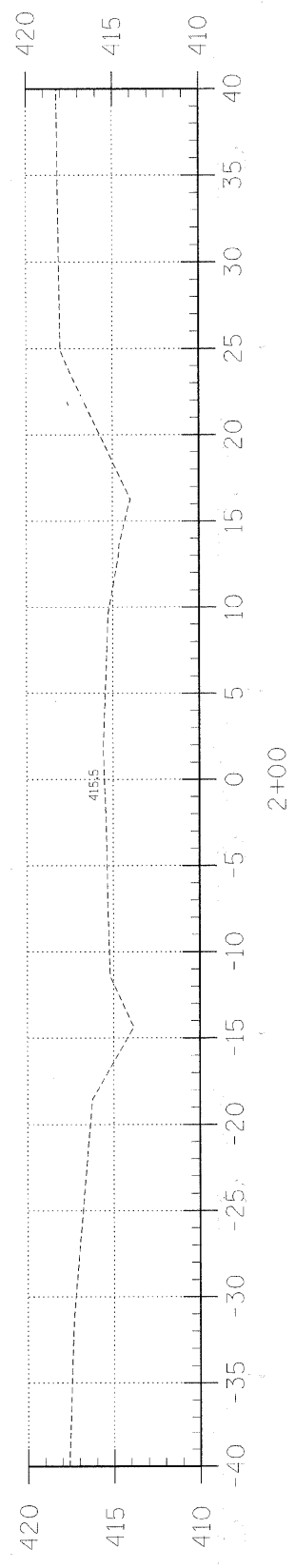
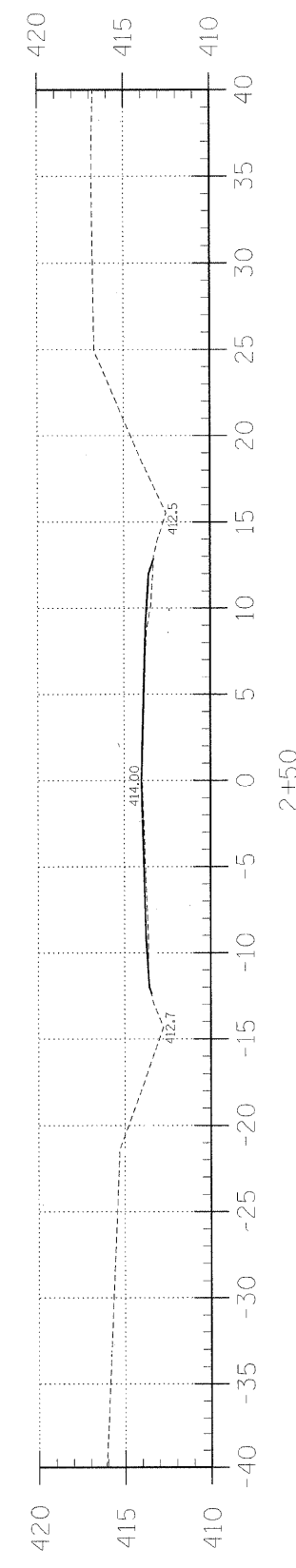
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F = 51.6



C = 2.2
F = 14.0

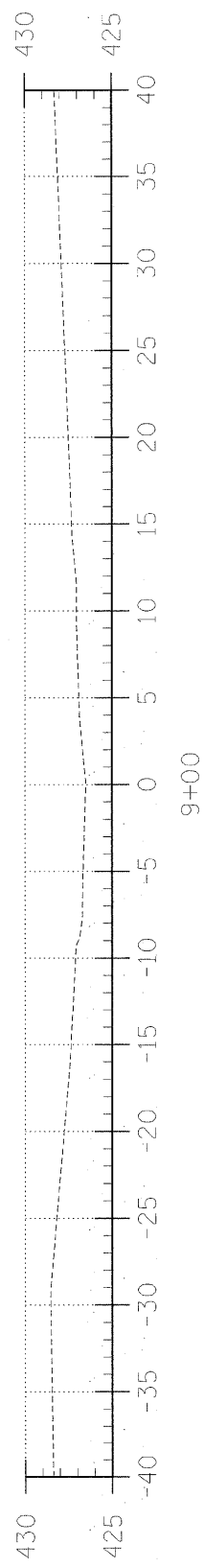


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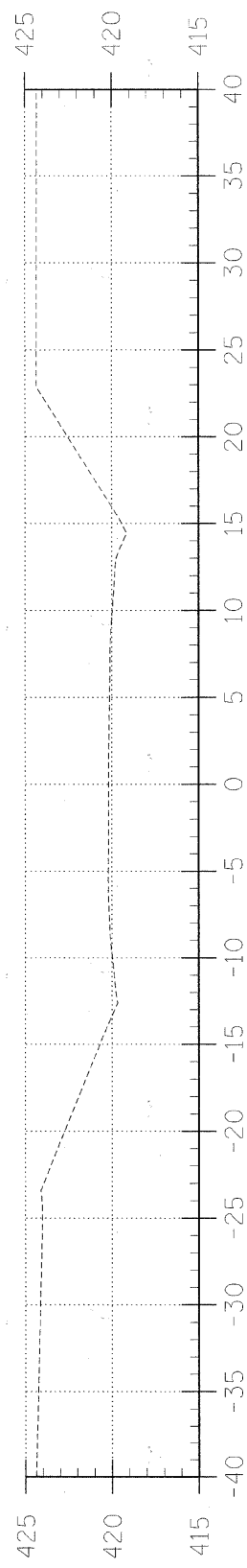


EARTHWORK SCHEDULE

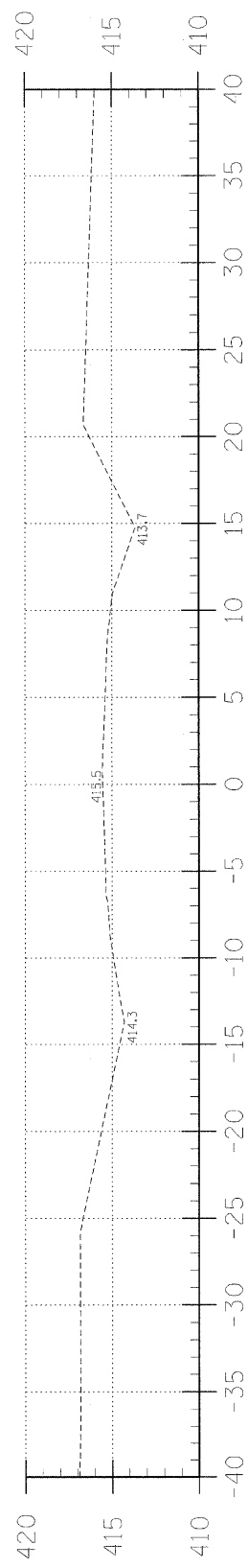
LOCATION	EARTH EXCAVATION		CHANNEL EXCAVATION		ESTIMATED UNSUITABLE MATERIAL		SUITABLE MATERIAL ADJUSTED FOR SHRINKAGE		EMBANKMENT		EARTHWORK BALANCE WASTE (+) OR SHORTAGE (-)	
	CUBIC YARD	CUBIC YARD	CUBIC YARD	CUBIC YARD	CUBIC YARD	CUBIC YARD	CUBIC YARD	CUBIC YARD	CUBIC YARD	CUBIC YARD	CUBIC YARD	CUBIC YARD
STA 0+00 TO 4+76.8	36.1	0.0	0.0	0.0	0.0	27.0	27.0	271.2	271.2	-244.2		
STA 4+76.8 TO 5+23.2	0.0	62.8	62.8	0.0	31.4	23.6	0.0	0.0	0.0	23.6		
STA 5+23.2 TO 10+00	31.4	0.0	0.0	0.0	0.0	23.6	138.6	138.6	138.6	-115.0		
I FIELD ENTRANCE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	-0.5		
TOTAL	67.5	62.8	62.8	31.4	74.2	410.3	-336.1					



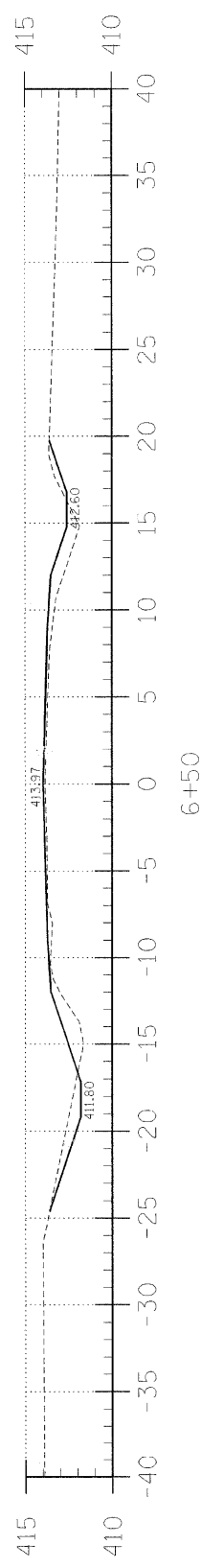
9+00



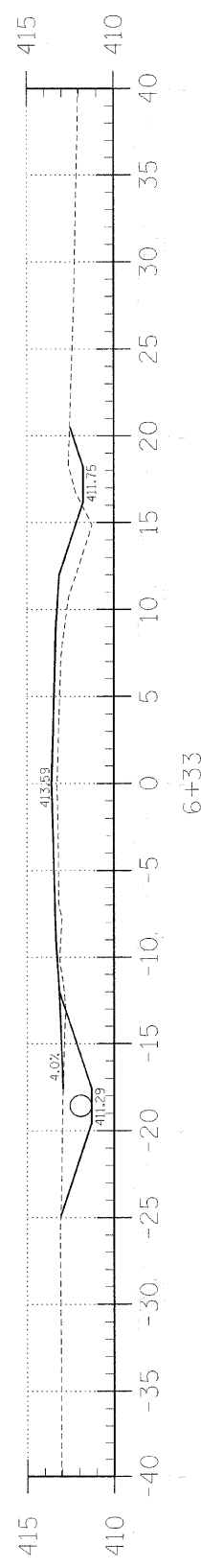
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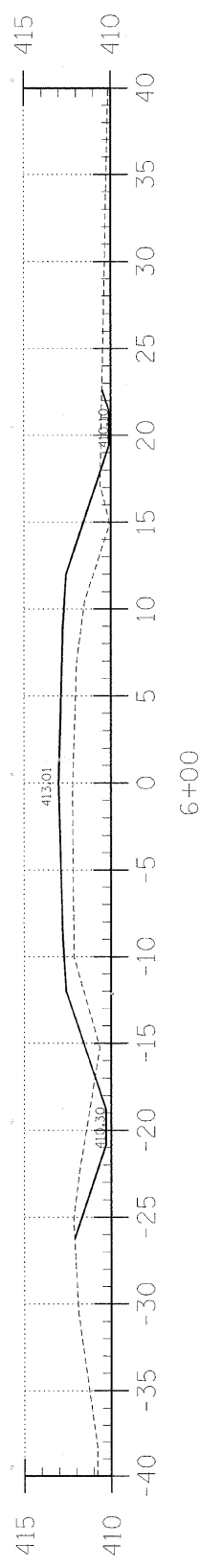
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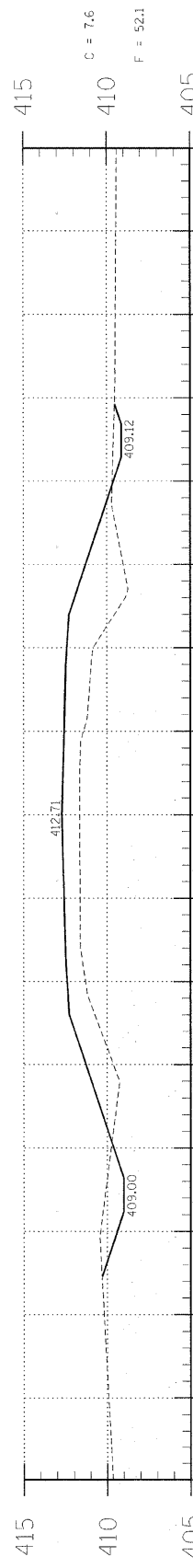
6+50



6+33



6+00



5+35

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C = 2.1
F = 11.9

C = 8.5
F = 30.5

C = 7.6
F = 52.1

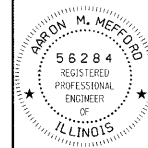
T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
25	09-02117-00-BR	EDWARDS	13	4
PROJECT * 3805-047035			CONTRACT * 95661	
LEC JOB * HI010060				

323 W. 3RD ST.
P.O. BOX 160
MT. CARMEL, IL
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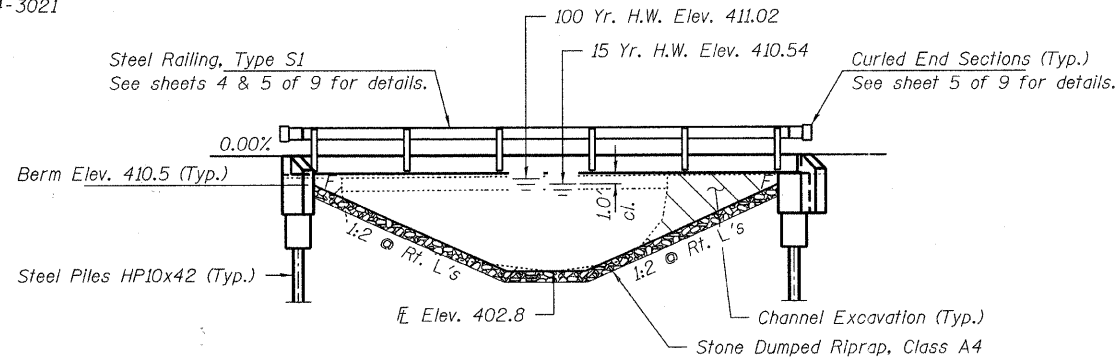
AARON M. MEFFORD
NAME
Aaron Mefford
SIGNATURE
DATE
5-25-11
11-30-11
EXPIRES

SUGAR CREEK
TOWNSHIP ROUTE 25
EDWARDS COUNTY, ILLINOIS

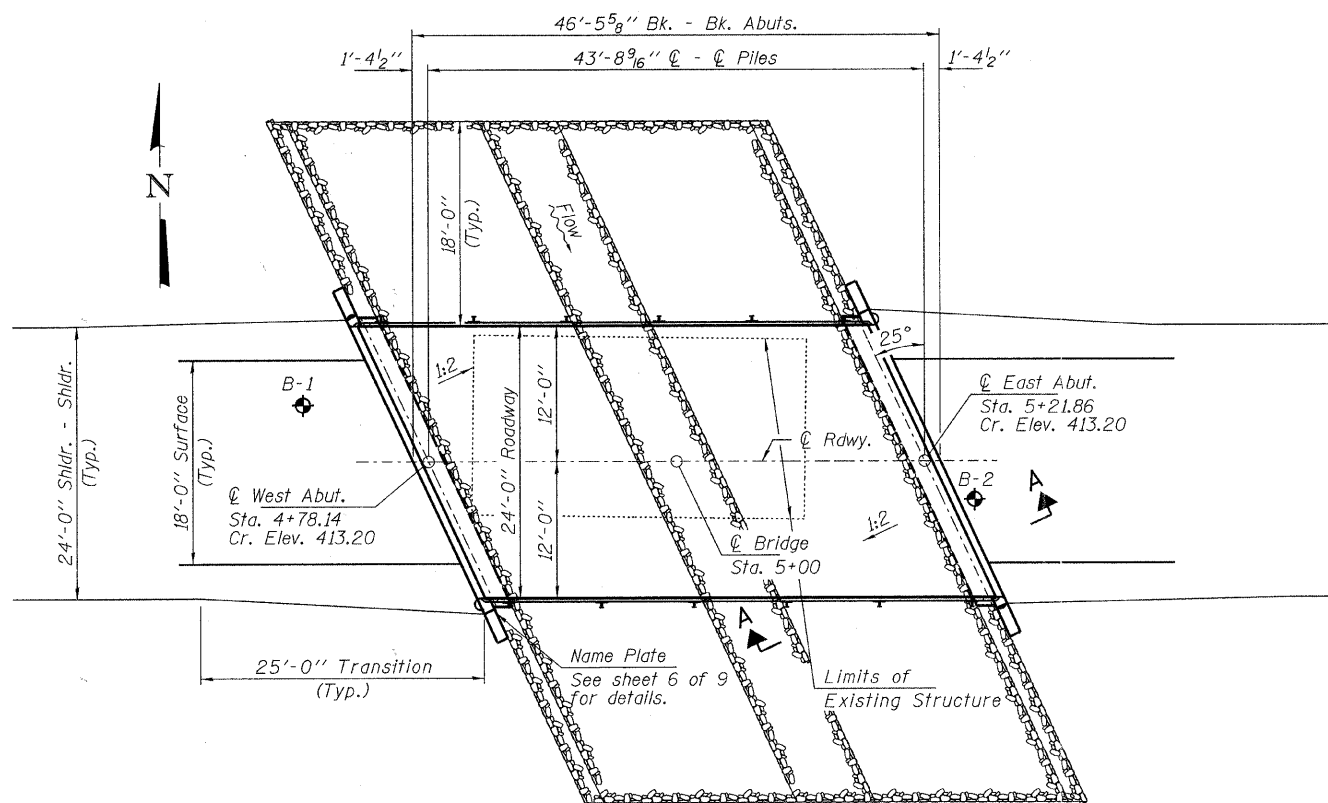
SHEET TITLE:		
CROSS-SECTIONS		
SCALE:	1" = 5'	
BY:	AMM	
DATE:	5/25/11	
REV:		
4	OF	13
SHEETS		
SHEET NO.		
4		

EXISTING STRUCTURE: Single span I-beam bridge on concrete abutments and wingwalls. 31.0' bk.-bk. abuts. Str. No. 024-3021 Structure closed to traffic.

No Salvage



ELEVATION



PLAN

DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	W. Abut.	E. Abut.
	407.9	407.9

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.)

LOADING HL-93

Design Specifications: 2010 AASHTO LRFD with all applicable Interims. 50#/Sq. Ft. included in dead load for future wearing surface.

SEISMIC DATA

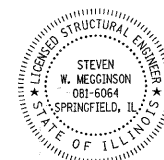
Seismic Performance Zone (SPZ) = 2
Design Spectral Acceleration at 1.0 sec. (SD1) = 0.259g
Design Spectral Acceleration at 0.2 sec. (SDS) = 0.622g
Soil Site Class = D

WATERWAY INFORMATION

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Head - Ft.		Headwater El.		
			Exist.	Prop.	Exist.	Prop.	Exist.	Prop.	
Design	15	854	160	171	410.54	-	0.15	-	410.69
Base	100	1460	160	189	411.02	1.21	0.56	412.23	411.58
Max. Calc.									

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."

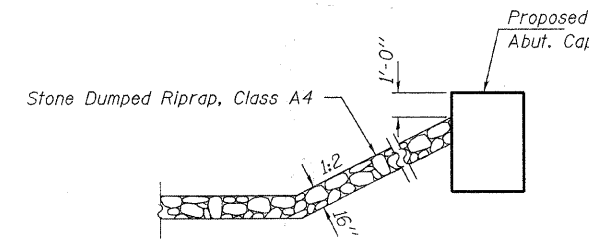
Steven W. Megginson 5/22/2011
ILLINOIS STRUCTURAL ENGINEER NO. 081-6064



Expires 11-30-2012

GENERAL NOTES

Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer. The Contractor shall drive test piles to 110% of the nominal required bearing specified in production locations at West Abutment or approved by the Engineer before ordering the remainder of piles. Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. 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.

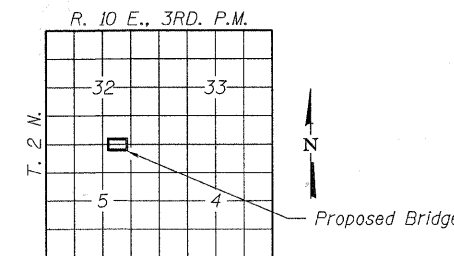


SECTION A-A

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

INDEX OF STRUCTURE SHEETS

1. General Plan & Elevation
2. 17"x48" PPC Deck Beam
3. 17"x48" PPC Deck Beam Details
4. Superstructure Details
5. Steel Railing, Type S-1
6. Abutments
7. HP Pile Details
- 8-9. Borings



LOCATION SKETCH

SUGAR CREEK
BUILT 201_ BY
EDWARDS COUNTY
SEC. 09-02117-00-BR
ROAD DISTRICT #2
STR. NO. 024-3139
LOADING HL-93

NAME PLATE

See Std. 515001

TOTAL BILL OF MATERIAL

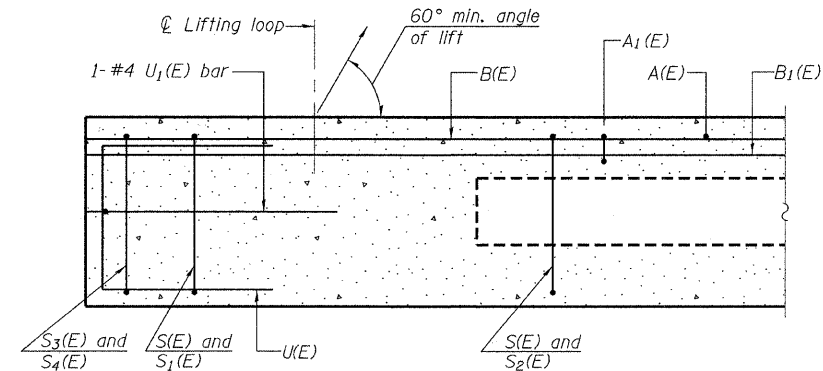
ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	Cu. Yd.			63
Stone Dumped Riprap, Class A4	Ton			240
Removal of Existing Structures	Each			1
Concrete Structures	Cu. Yd.		23.2	23.2
Concrete Encasement	Cu. Yd.		2.8	2.8
Precast Prestressed Concrete Deck Beams (17" Depth)	Sq. Ft.	1,080		1,080
Reinforcement Bars	Pound		2,470	2,470
Steel Railing, Type S1	Foot	86		86
Furnishing Steel Piles HP10x42	Foot		315	315
Driving Piles	Foot		315	315
Test Pile Steel HP10x42	Each		1	1
Name Plates	Each		1	1

FILE NAME = 102059-ah+bridge.dgn	USER NAME =	DESIGNED - D.W.T.	REVISED -
HAMPTON, LENZINI AND RENWICK, INC. 3885 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62779	PLOT SCALE =	CHECKED - S.W.M.	REVISED -
ILLINOIS PROFESSIONAL DESIGN FIRM L8 / PE / SE CORP. 104.000569	PLOT DATE = 5/23/2011	DRAWN - D.A.B.	REVISED -
		CHECKED - S.W.M.	REVISED -

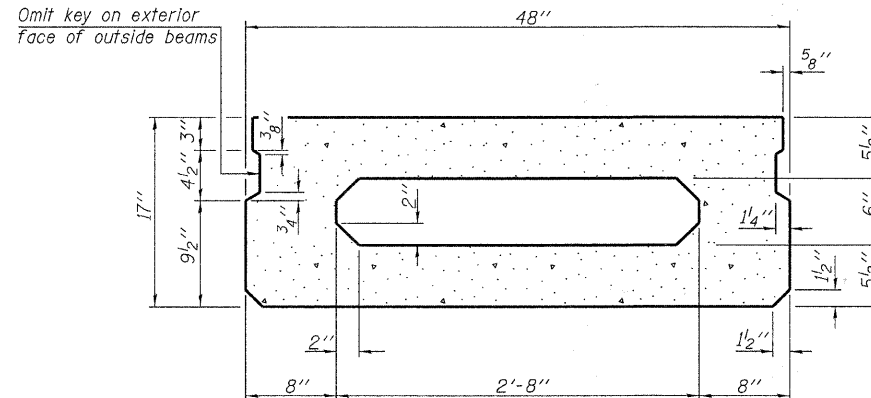
STATE OF ILLINOIS
EDWARDS COUNTY HIGHWAY DEPARTMENT

GENERAL PLAN & ELEVATION
STRUCTURE NO. 024-3139
SHEET NO. 1 OF 9 SHEETS

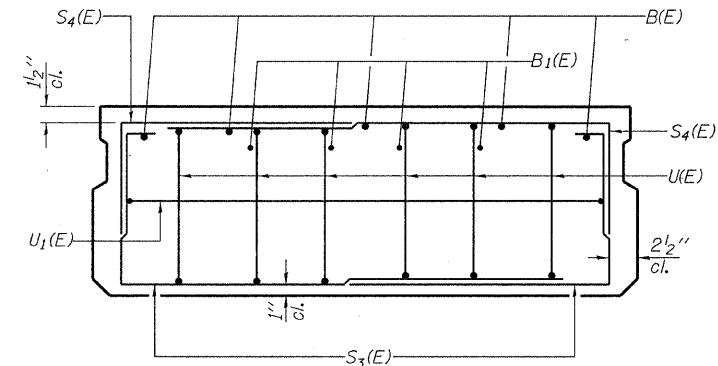
T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
25	09-02117-00-BR	EDWARDS	13	5
ROAD DISTRICT #2			CONTRACT NO. 95661	
ILLINOIS FED. AID PROJECT				



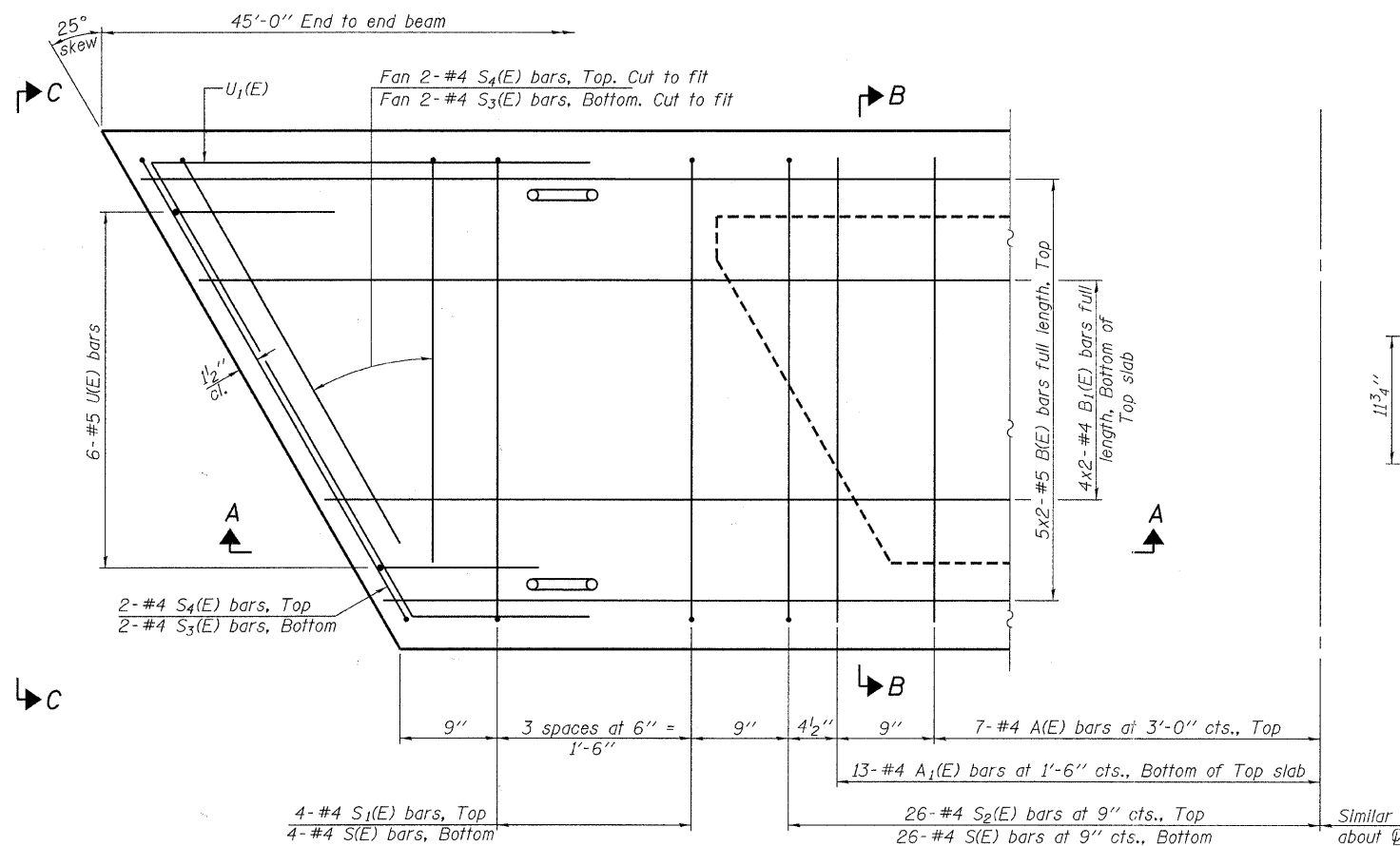
SECTION A-A



SECTION B-B
(Showing dimensions)

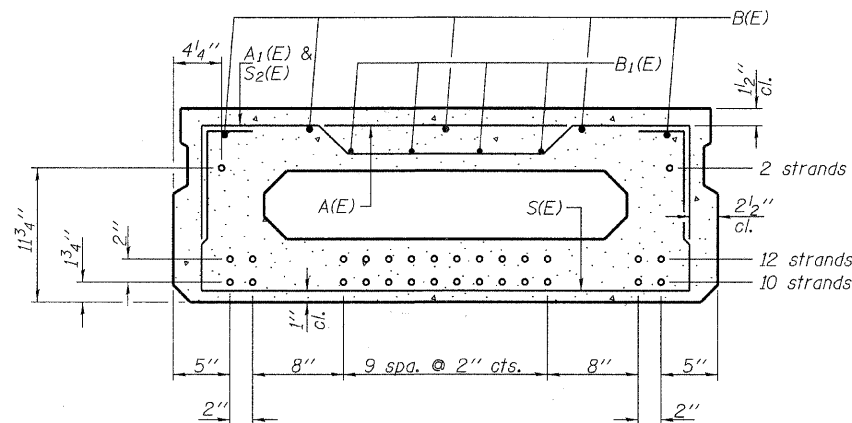


VIEW C-C



PLAN VIEW

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.
Bars indicated thus 5x2-#5 etc. indicates 5 lines of bars with 2 lengths per line.



SECTION B-B

(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)	14	#4	3'-7"	—
A1(E)	26	#4	3'-10"	—
B(E)	10	#5	23'-7"	—
B1(E)	8	#4	23'-4"	—
S(E)	60	#4	6'-9"	□
S1(E)	8	#4	5'-3"	□
S2(E)	52	#4	5'-6"	□
S3(E)	8	#4	4'-6"	□
S4(E)	8	#4	3'-9"	□
U(E)	12	#5	3'-8"	□
U1(E)	2	#4	8'-0"	□

Note: See sheets 4 & 5 of 9 for additional details and Bill of Material.

MINIMUM BAR LAP

#4 bar = 2'-0"
#5 bar = 2'-6"

PD-1748-R

7-1-10

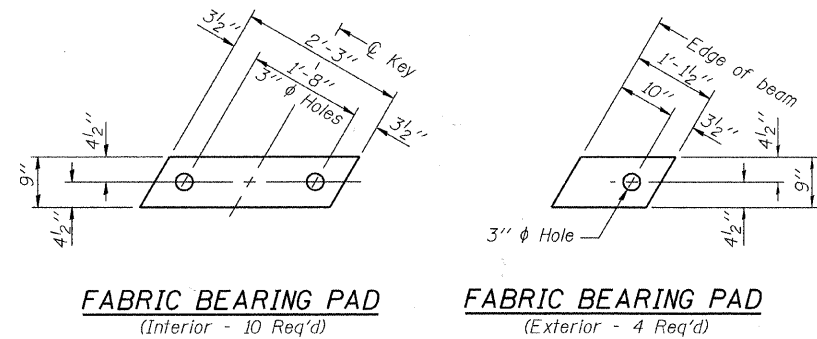
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HAMPTON, LENZINI AND RENWICK, INC. 333 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703		CHECKED - S.W.M.	REVISED -
ILLINOIS PROFESSIONAL DESIGN FIRM L61 PE / SE CORP. 184-00080	PLOT SCALE =	DRAWN - D.A.B.	REVISED -
	PLOT DATE = 5/23/2011	CHECKED - S.W.M.	REVISED -

STATE OF ILLINOIS
EDWARDS COUNTY HIGHWAY DEPARTMENT

17" x 48" PPC DECK BEAM
STRUCTURE NO. 024-3139

SHEET NO. 2 OF 9 SHEETS

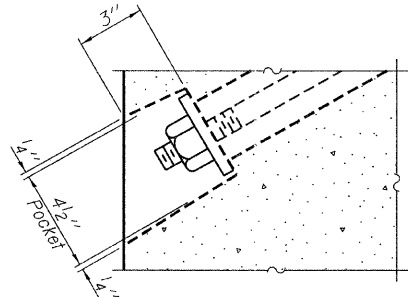
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25	09-02117-00-BR	EDWARDS	13	6
ROAD DISTRICT #2			CONTRACT NO. 95661	
ILLINOIS FED. AID PROJECT				



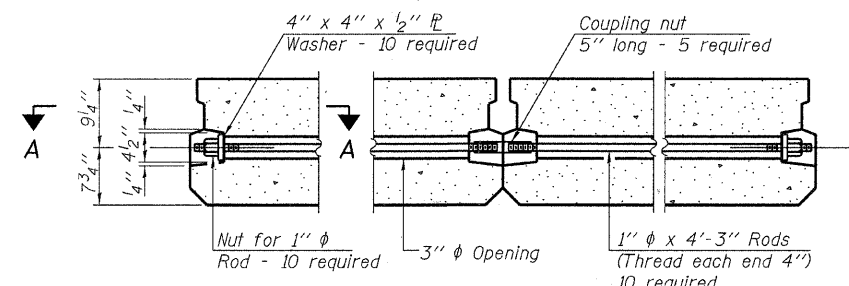
FABRIC BEARING PAD
(Interior - 10 Req'd)

FABRIC BEARING PAD
(Exterior - 4 Req'd)

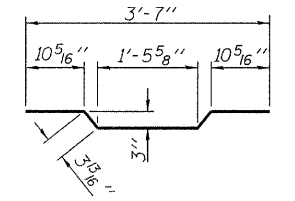
Notes:
FIXED
All bearing pads shall be 1" thick.
Omit holes when using expansion bearings.
Expansion bearing pad shall be bonded to the substructure.



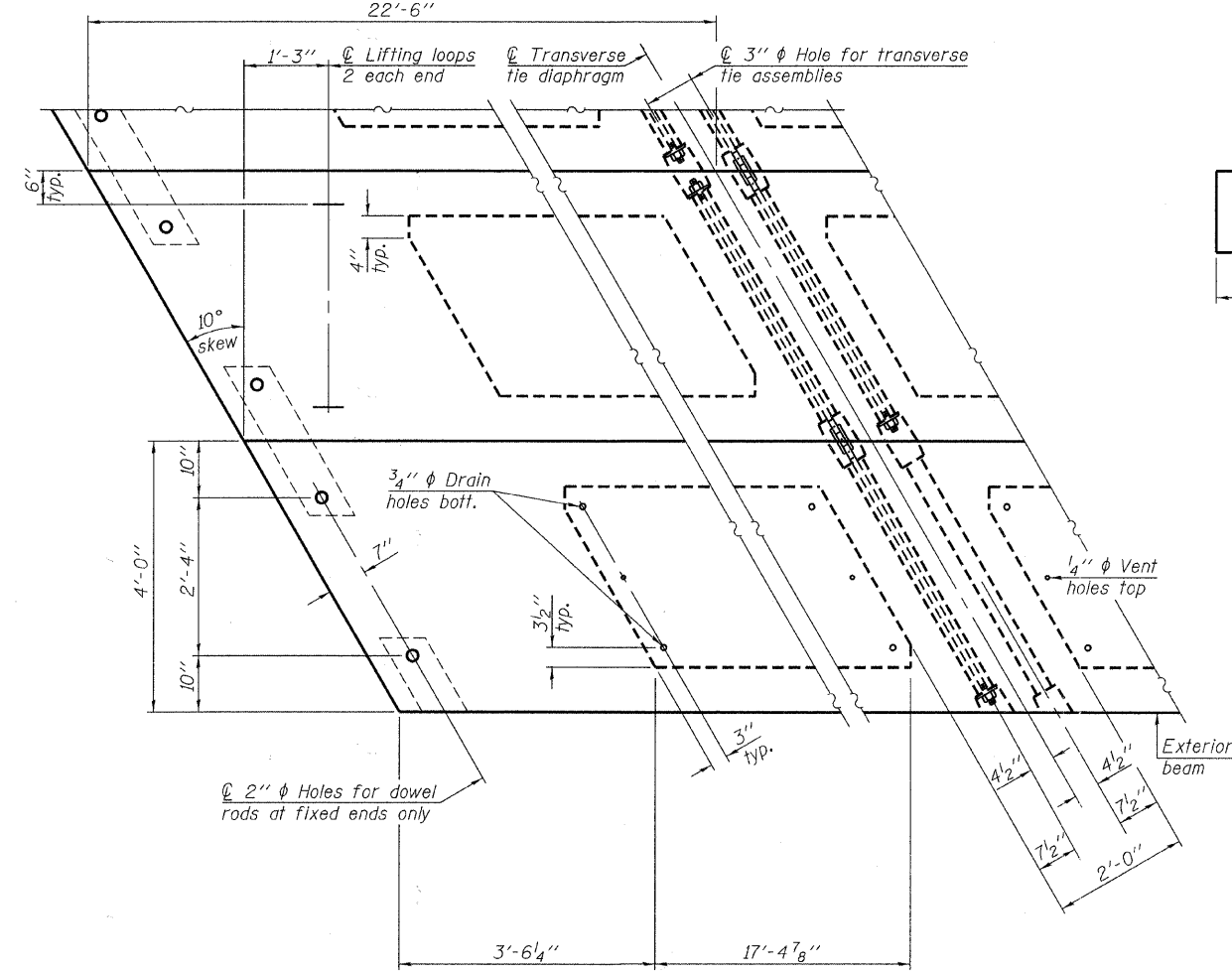
SECTION A-A



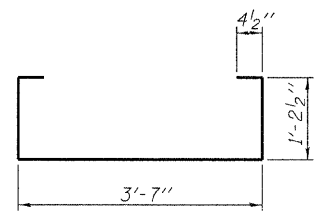
TYPICAL TRANSVERSE TIE ASSEMBLY



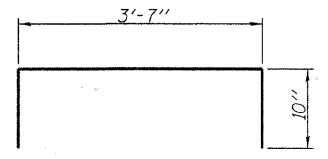
BAR A1(E)



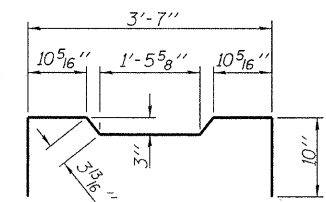
PLAN VIEW



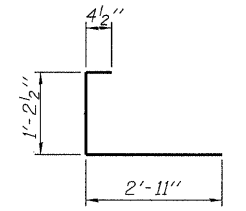
BAR S(E)



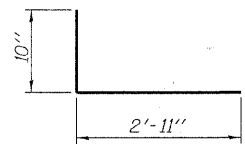
BAR S1(E)



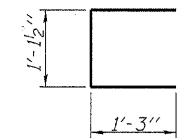
BAR S2(E)



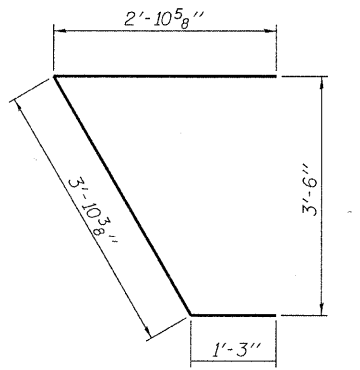
BAR S3(E)



BAR S4(E)



BAR U(E)

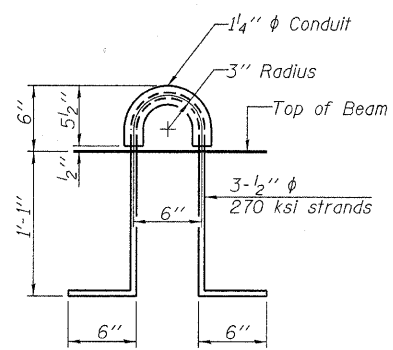


BAR U1(E)

NOTES

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in.
The 1" ϕ 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" ϕ 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, $f'ci$, shall be 5000 psi.
All reinforcement shall be epoxy coated.

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



LIFTING LOOP DETAIL

BILL OF MATERIAL

Precast Prestressed Conc. Deck Bms. (17" depth)	Sq. Ft.	1,080
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PD-1748-RD 7-1-10

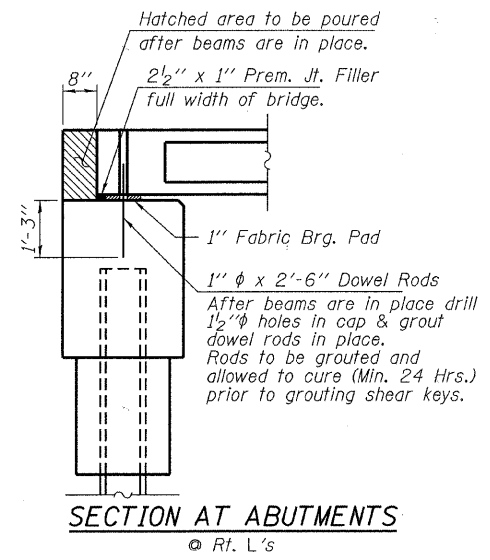
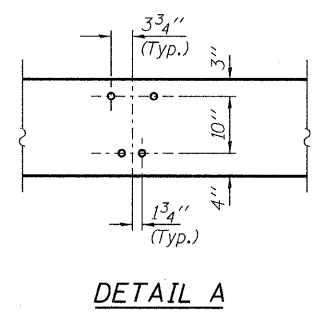
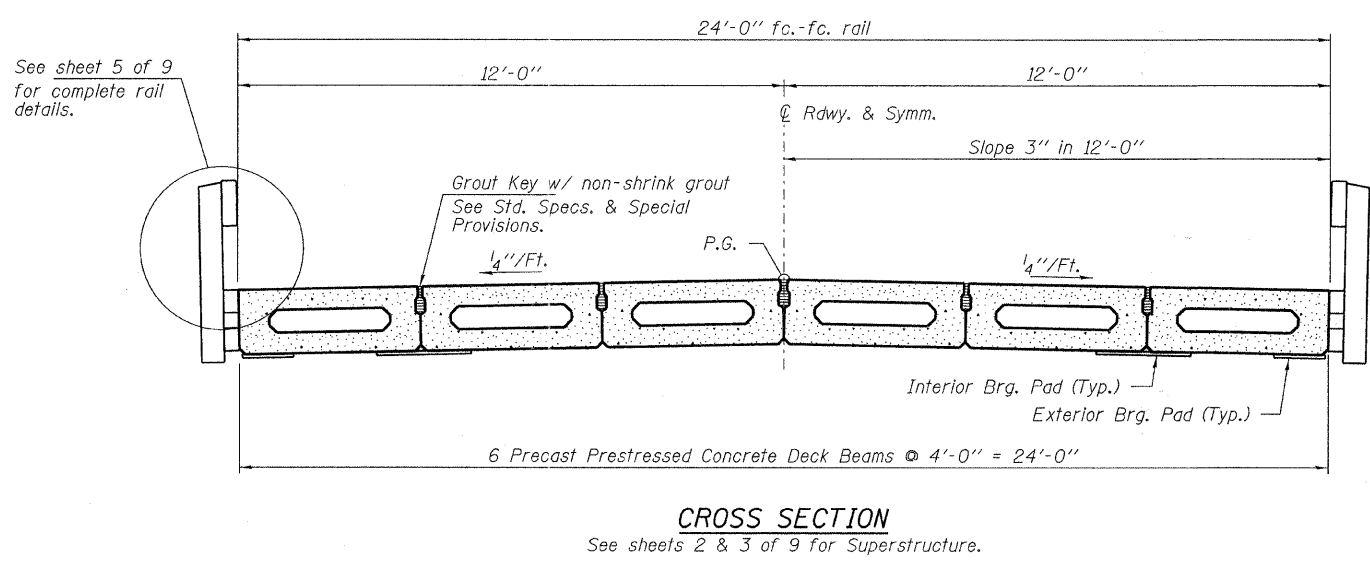
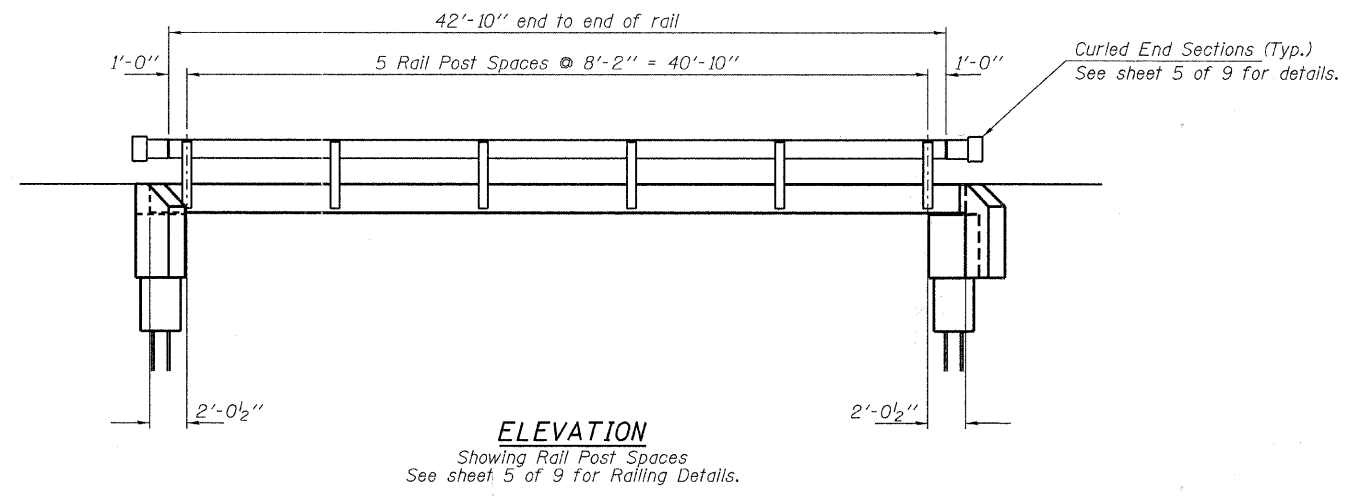
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HAMPTON, LENZINI AND RENWICK, INC. 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM L5 / PE / SE CORP. 184.000099	PLOT SCALE =	CHECKED - S.W.M.	REVISED -
	PLOT DATE = 5/23/2011	DRAWN - D.A.B.	REVISED -
		CHECKED - S.W.M.	REVISED -

STATE OF ILLINOIS
EDWARDS COUNTY HIGHWAY DEPARTMENT

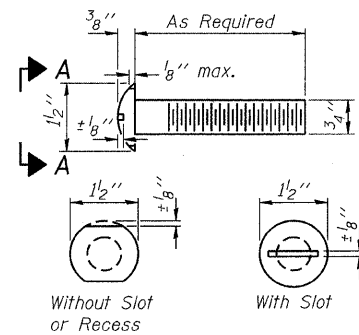
17" x 48" PPC DECK BEAM DETAILS
STRUCTURE NO. 024-3139

SHEET NO. 3 OF 9 SHEETS

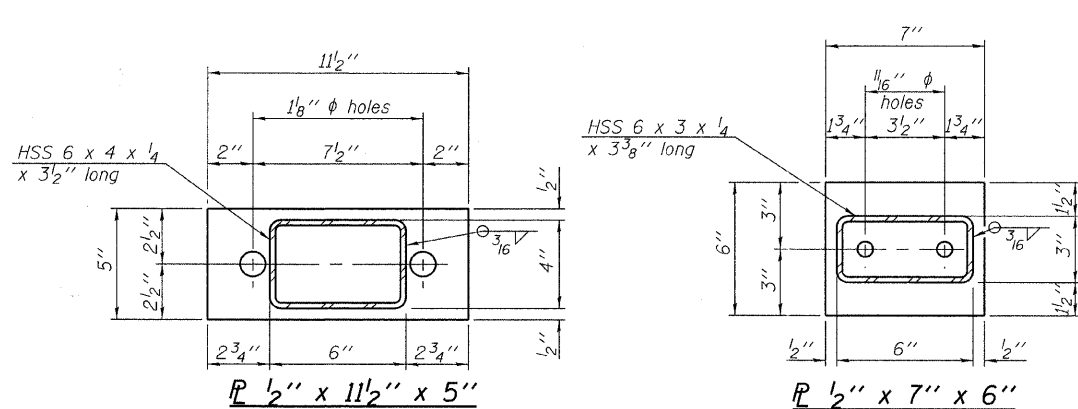
T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
25	09-02117-00-BR	EDWARDS	13	7
ROAD DISTRICT #2		CONTRACT NO. 95661		
[ILLINOIS] FED. AID PROJECT				



FILE NAME = 100059-shr-bridge.dgn	USER NAME =	DESIGNED - D.W.T.	REVISED -	STATE OF ILLINOIS EDWARDS COUNTY HIGHWAY DEPARTMENT	SUPERSTRUCTURE DETAILS STRUCTURE NO. 024-3139	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND RENWICK, INC. <small>3038 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703</small>		CHECKED - S.W.M.	REVISED -			25	09-02117-00-BR	EDWARDS	13	8
HLR <small>ILLINOIS PROFESSIONAL DESIGN FIRM L8 / PE / SE CORP. 184.000099</small>	PLOT SCALE =	DRAWN - D.A.B.	REVISED -			ROAD DISTRICT #2		CONTRACT NO. 95661		
	PLOT DATE = 5/23/2011	CHECKED - S.W.M.	REVISED -		SHEET NO. 4 OF 9 SHEETS	ILLINOIS FED. AID PROJECT				



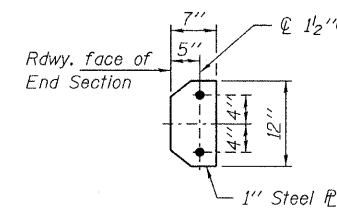
VIEW A-A
ROUND HEAD BOLT



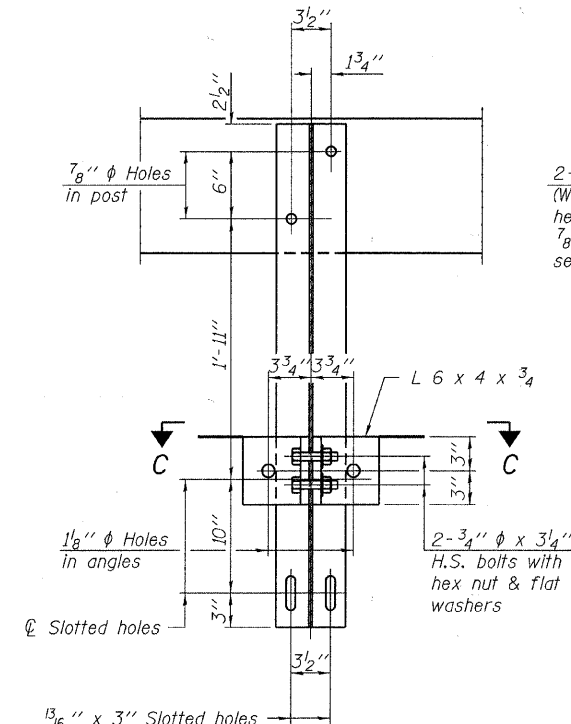
SECTION B-B
P 1/2" x 11 1/2" x 5"

SECTION AT RAILING POST
P 1/2" x 7" x 6"

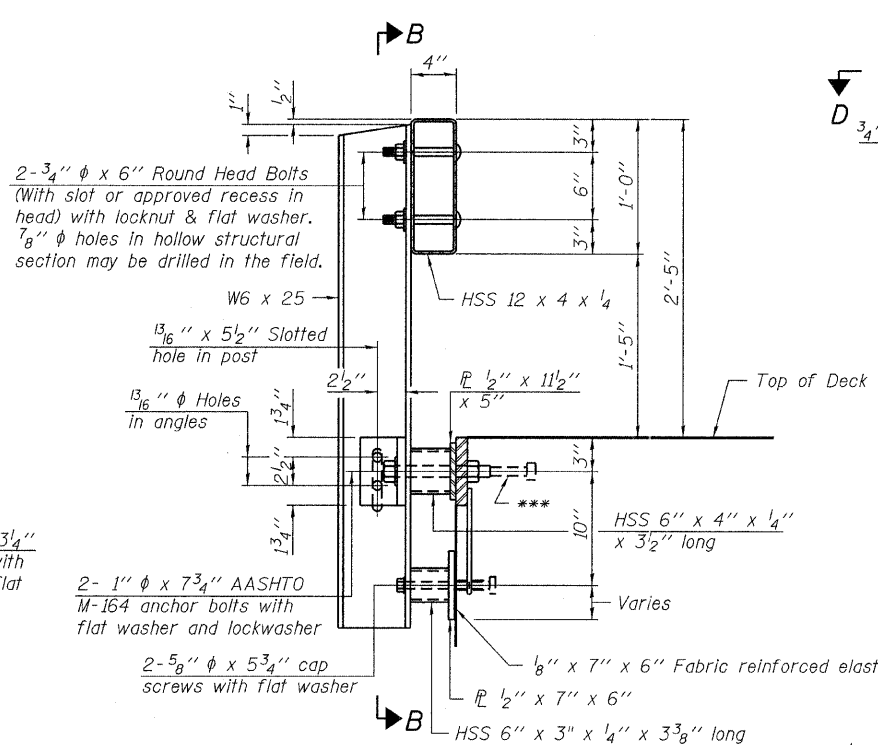
Note: Cost of curled end sections shall be included with the Steel Railing. (4 Required)



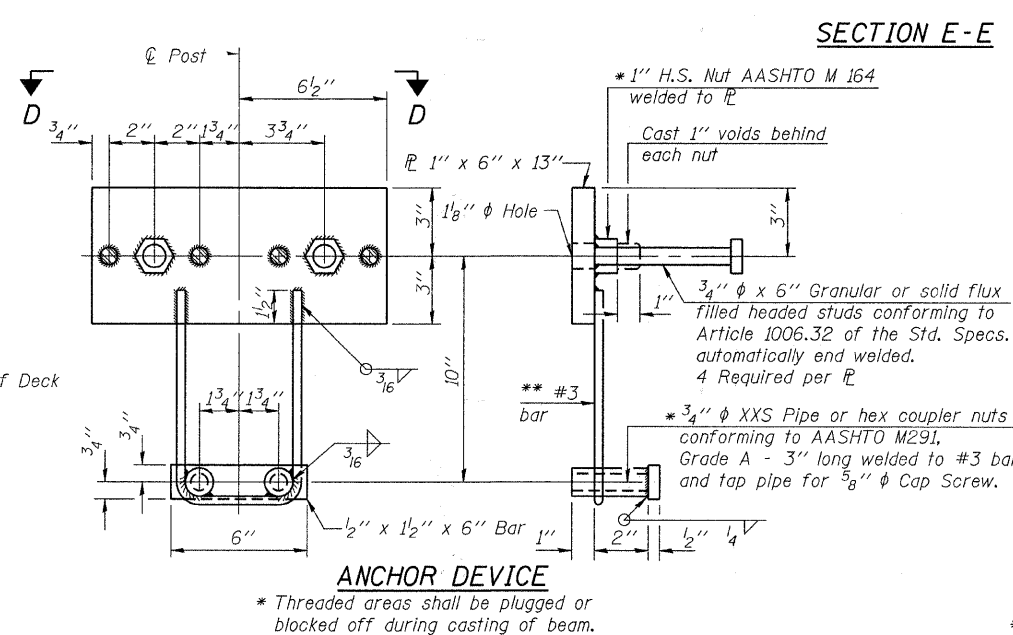
SECTION E-E
CURLLED END SECTION DETAILS



SECTION C-C

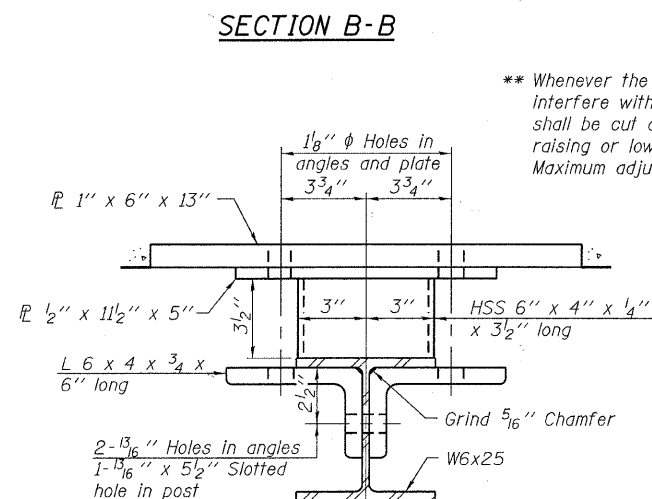


SECTION AT RAILING POST



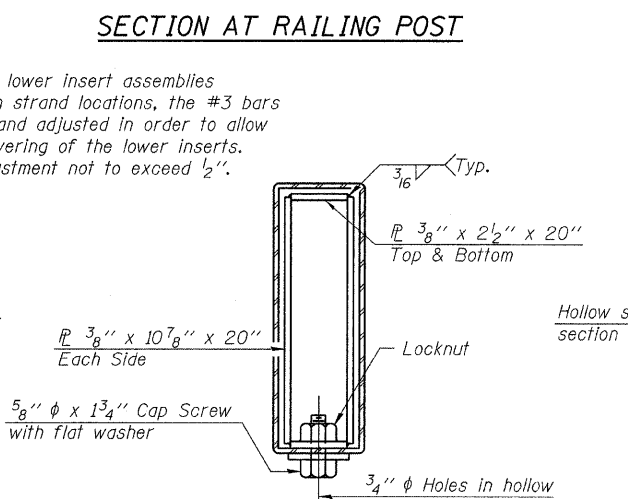
ANCHOR DEVICE

Notes:
All field drilled holes shall be coated with an approved zinc rich paint before erection.
For multi-span bridges, sufficient 1/4 inch x 6 inch x 1-2 inch 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.

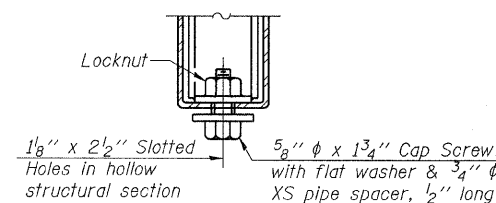


SECTION C-C

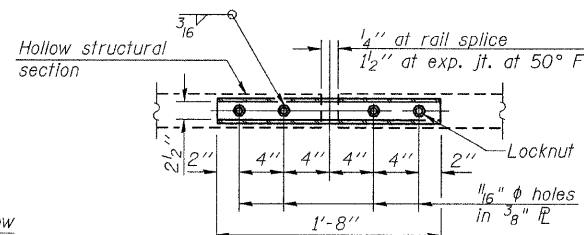
** Whenever the lower insert assemblies interfere with strand locations, the #3 bars shall be cut and adjusted in order to allow raising or lowering of the lower inserts. Maximum adjustment not to exceed 1/2 inch.



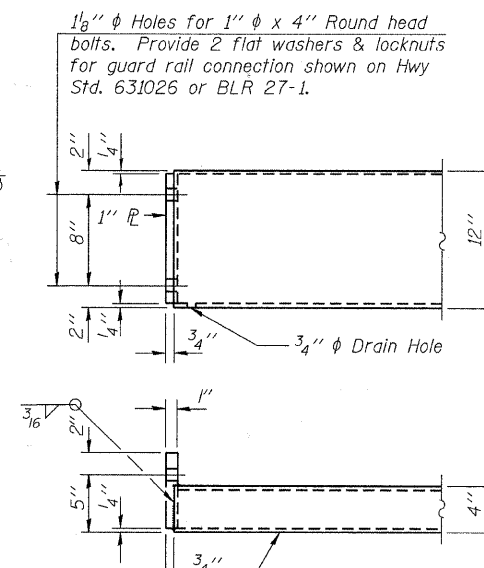
SECTIONS AT RAIL SPLICE



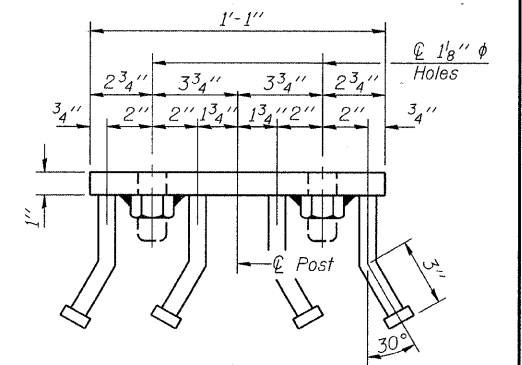
RAIL SPLICE CONNECTION
AT EXPANSION JT.



PLAN-BOTT. SPLICE P
TYPICAL



STEEL RAILING, TYPE S-1
END OF RAIL DETAILS



VIEW D-D

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S-1	Foot	86

R-23A

7-1-10

(10'-9" Maximum Post Spacing)

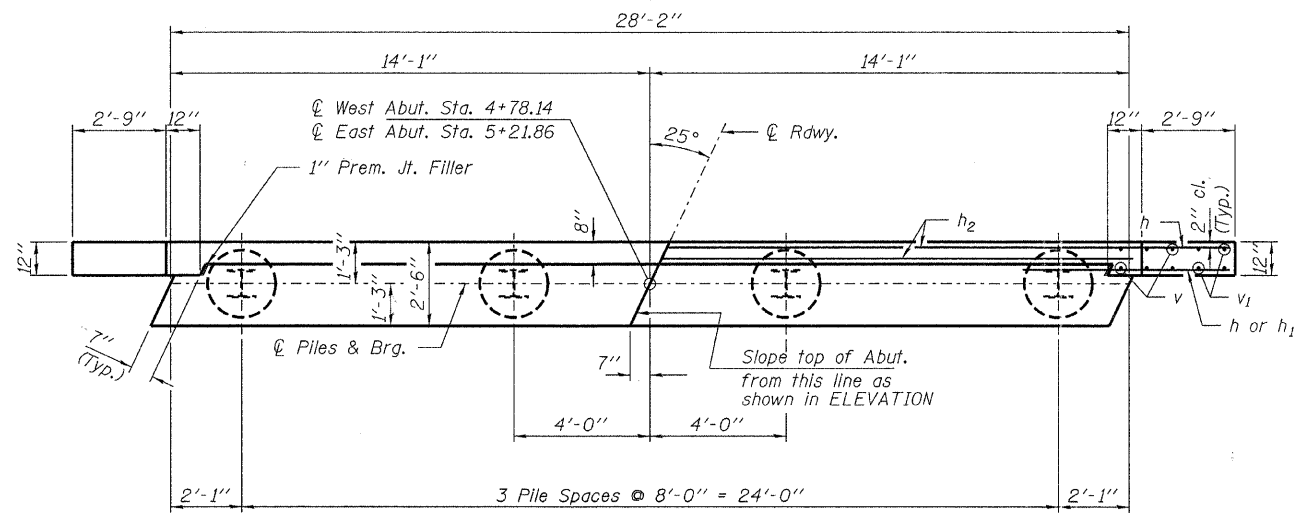
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HAMPTON, LENZINI AND RENWICK, INC.		CHECKED - S.W.M.	REVISED -
200 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703	PLOT SCALE =	DRAWN - D.A.B.	REVISED -
ILLINOIS PROFESSIONAL DESIGN FIRM L31 PE / SE CORP. 184.000669	PLOT DATE = 5/23/2011	CHECKED - S.W.M.	REVISED -

STATE OF ILLINOIS
EDWARDS COUNTY HIGHWAY DEPARTMENT

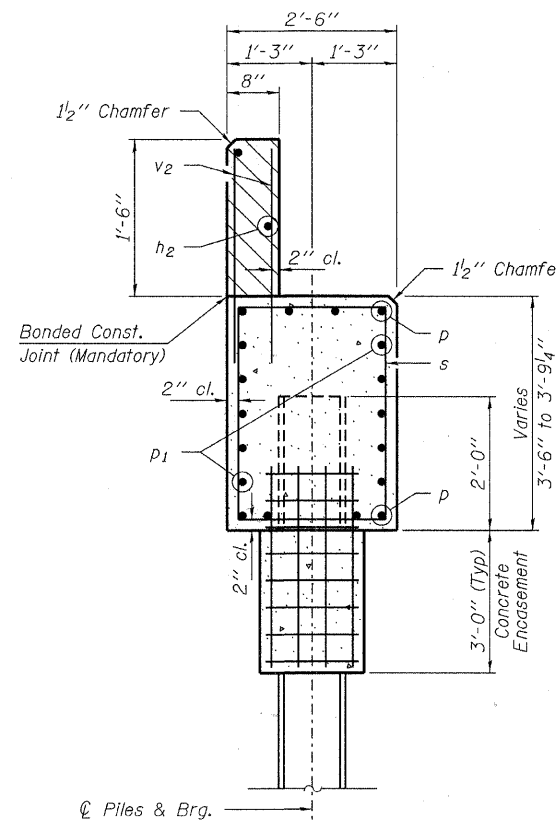
STEEL RAILING, TYPE S-1
STRUCTURE NO. 024-3139

SHEET NO. 5 OF 9 SHEETS

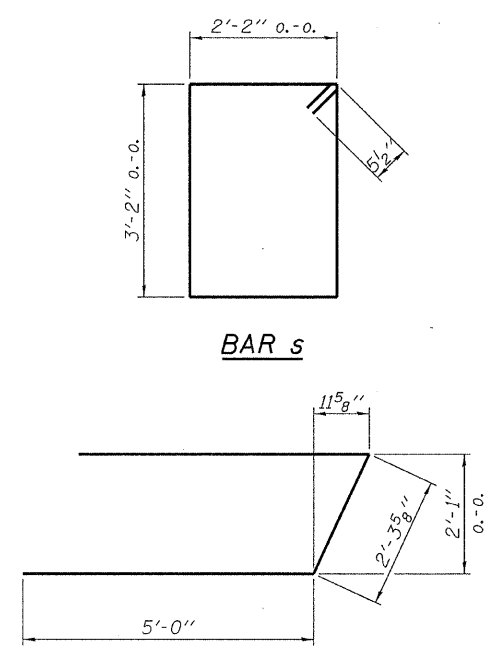
T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
25	09-02117-00-BR	EDWARDS	13	9
ROAD DISTRICT #2		CONTRACT NO. 95661		
ILLINOIS FED. AID PROJECT				



PLAN

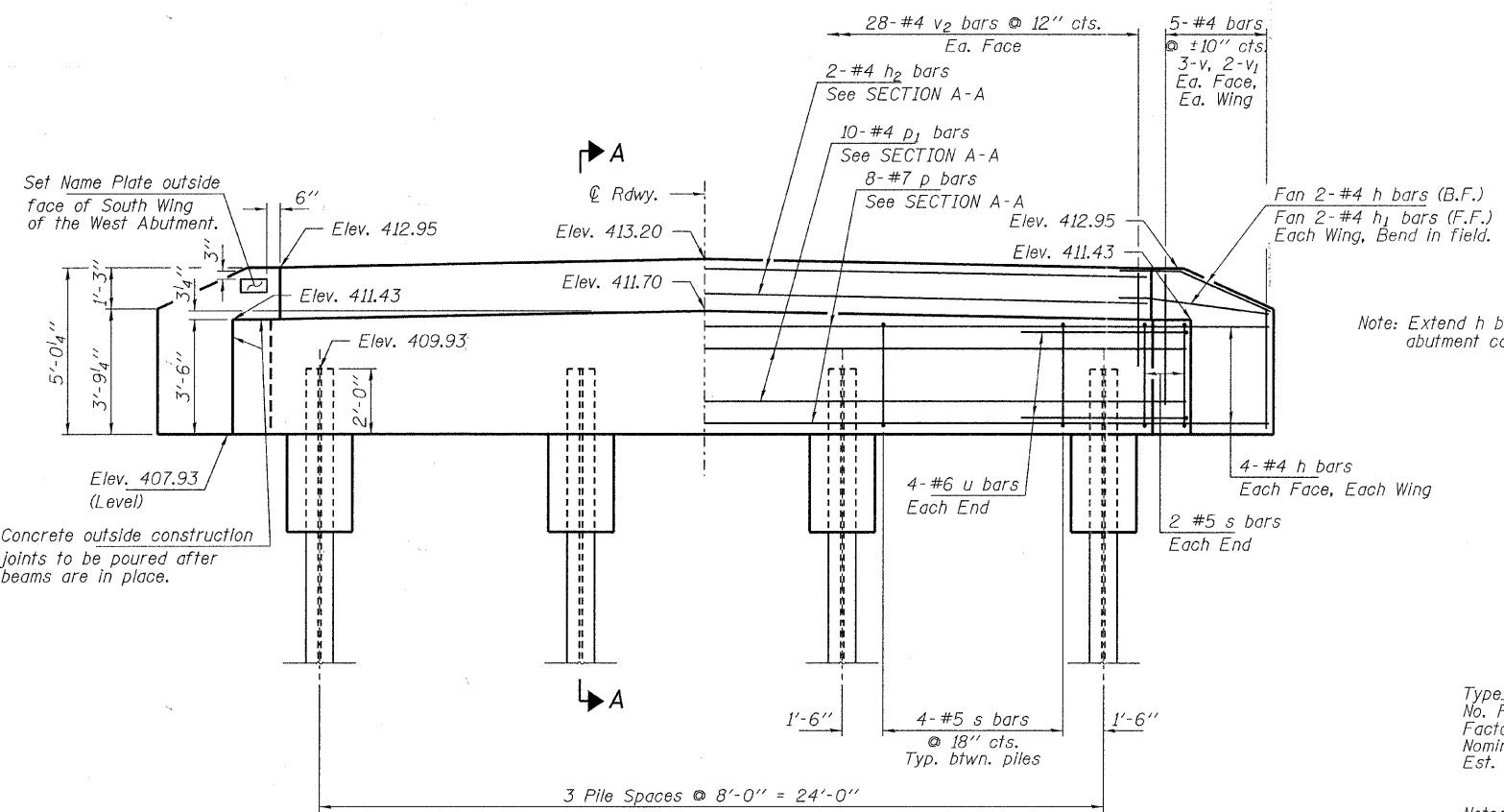


SECTION A-A



BAR s

BAR u



ELEVATION

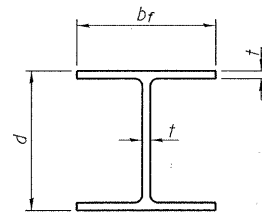
PILE DATA

Type ----- Steel HP10x42
 No. Req'd. (2 Abuts.) ----- *8
 Factored Resistance Available (Rf) ----- 138 Kips/Pile
 Nominal Required Bearing (Rn) ----- 251 Kips/Pile
 Est. Length ----- 45 Ft/Pile

Notes: * Includes one test pile to be driven in permanent locations at the West Abutment.
 The Steel H-Piles shall be according to AASHTO M270 Grade 50.
 The test piles shall be driven to 110 percent of the Nominal Required Bearing Indicated in the pile data information.

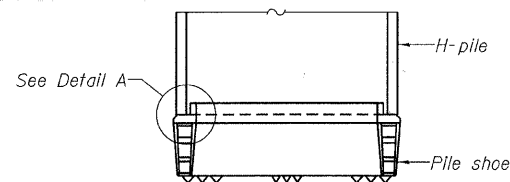
BILL OF MATERIAL - 2 ABUTS.

BAR	NO.	SIZE	LENGTH	SHAPE
h	40	#4	5'-0"	—
h1	8	#4	3'-6"	—
h2	4	#4	27'-10"	—
p	16	#7	27'-10"	—
p1	20	#4	27'-10"	—
s	32	#5	11'-7"	□
u	16	#6	12'-4"	▭
v	24	#4	4'-3"	—
v1	16	#4	3'-6"	—
v2	112	#4	2'-4"	—
Concrete Structures			Cu. Yd.	23.2
Concrete Encasement			Cu. Yd.	2.8
Reinforcement Bars			Pound	2,470
Steel Piles HP10x42			Foot	315
Test Piles Steel HP10x42			Each	1
Name Plates			Each	1

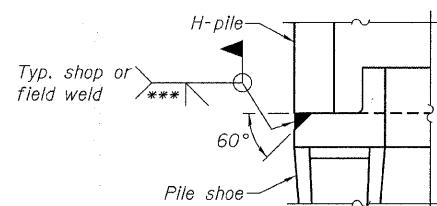


STEEL PILE TABLE

Designation	Depth d	Flange width br	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	13/16"	30"
x102	14"	14 3/4"	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"	1/16"	24"
x74	12 8/8"	12 1/4"	5/8"	24"
x63	12"	12 8/8"	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 8/8"	7/16"	18"

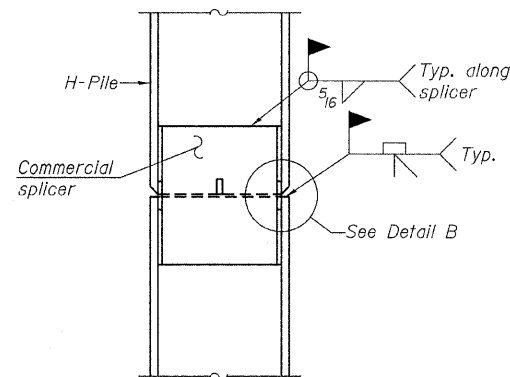


ELEVATION

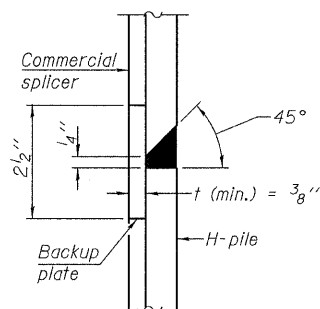


DETAIL A

H-PILE SHOE ATTACHMENT

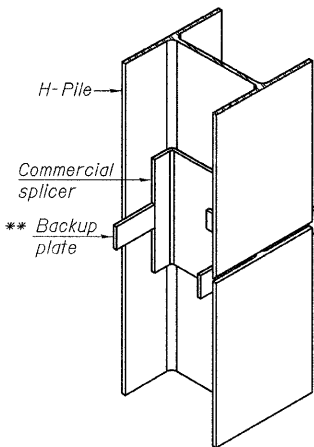


ELEVATION

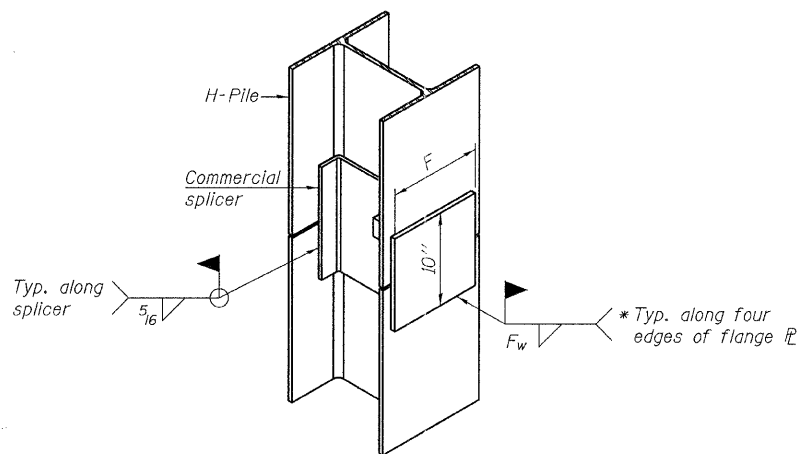


DETAIL "B"

WELDED COMMERCIAL SPLICE



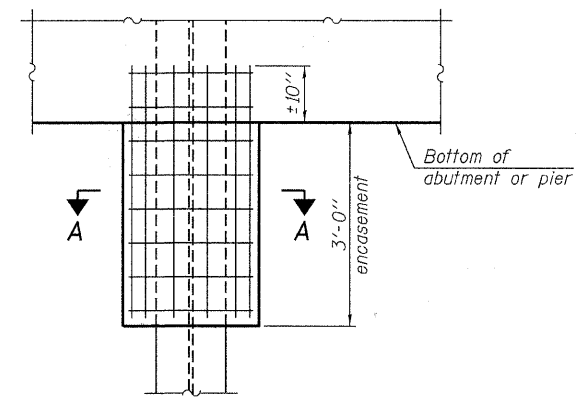
ISOMETRIC VIEW



ISOMETRIC VIEW

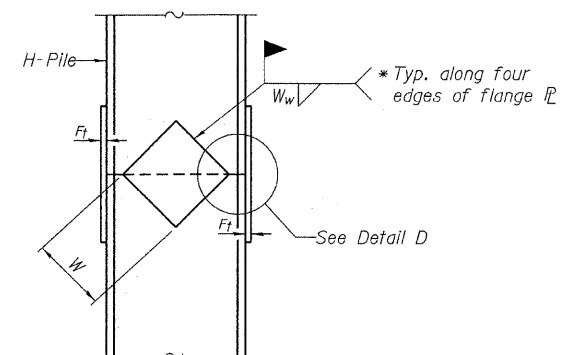
WELDED COMMERCIAL SPLICE ALTERNATE

- * Interrupt welds 1/4" from end of web and/or each flange.
- ** Remove portions of backup plates that extend outside the flanges.
- *** Weld size per pile shoe manufacturer (5/16" min.).

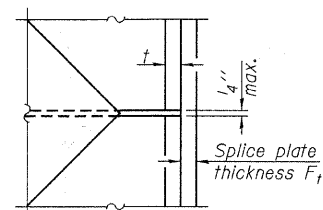


ELEVATION

PILE ENCASEMENT

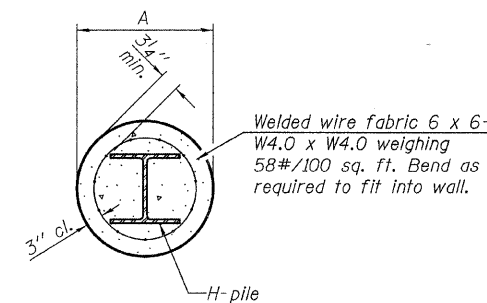


ELEVATION



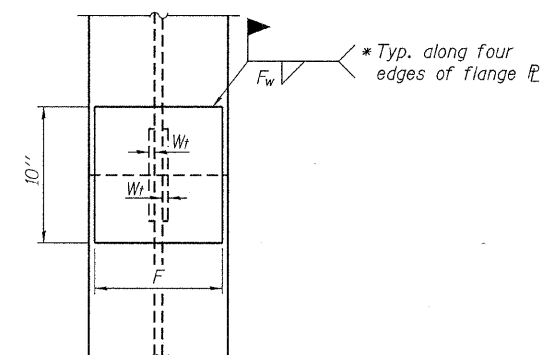
DETAIL D

WELDED PLATE FIELD SPLICE



SECTION A-A

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



END VIEW

Designation	F	Ft	Fw	W	Wt	Ww
HP 14x117	12 1/2"	1"	7/8"	7 3/4"	5/8"	1/2"
x102	12 1/2"	7/8"	3/4"	7 3/4"	5/8"	1/2"
x89	12 1/2"	3/4"	1/16"	7 3/4"	5/8"	1/2"
x73	12 1/2"	5/8"	9/16"	7 3/4"	5/8"	1/2"
HP 12x84	10"	7/8"	1/16"	6 1/2"	5/8"	1/2"
x74	10"	7/8"	1/16"	6 1/2"	5/8"	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"

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

F-HP

7-1-10

FILE NAME = 100059-shr-bridge.dgn	USER NAME =	DESIGNED - D.W.T.	REVISED -	STATE OF ILLINOIS EDWARDS COUNTY HIGHWAY DEPARTMENT	HP PILE DETAILS STRUCTURE NO. 024-3139	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND RENWICK, INC. 338 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703	DESIGNED - S.W.M.	REVISED -	25			09-02117-00-BR	EDWARDS	13	11	
ILLINOIS PROFESSIONAL DESIGN FIRM L3/P/E/SE CORP. 184-000959	DRAWN - D.A.B.	REVISED -	ROAD DISTRICT #2			CONTRACT NO. 95661				
PLOT SCALE =	CHECKED - S.W.M.	REVISED -	ILLINOIS FED. AID PROJECT							

HOLCOMB FOUNDATION ENGINEERING INC.
 P.O. Box 88 618-529-5262
 Carbondale, Il. 62903 618-457-8991 fax Page 1 of 2

Bridge Foundation Boring Log

Project: H-10064 Bridge Over Sugar Creek Date: 4/2/2010
 Section: 09-02117-00-BR Station _____ Bored by: J. Carter
 Structure: _____ Checked By: J. Holcomb
 County: Edwards

Boring No. 2	Station	Offset	Surface Water Elev.			Ground Water Elev.		
			Elevation	N	Qu	Elevation	N	Qu
						395.5		
						408.5		
Ground Surface			411.5	0				
1" A-3 Surface over 4" Gravel			411.0					
Brown Sandy CLAY (A-6) with sand				8	22			
				4	1.0S	26		
				7	2.3B	20		
Gray Silty CLAY (A-6) with sand				6	2.2B	20		
				5	1.6B	21		
Brown Clayey SAND (A-2-4) with clay seams				18		16		
				25		18		
Brown Sandy CLAY (A-6)				30	2.5S	12		
Gray Silty CLAY (A-6) with sand lenses				30	5.1B	15		

N = Standard Penetration Test Blows per foot to drive 2" O.D. Split Spoon Sampler 12" with a 140 lbs. hammer falling 30"
 Qu - Unconfined Compressive Strength in tons/sq.ft.
 w - Water Content - percentage of oven dry weight - %
 B = Bulge Failure
 S = Shear Failure
 E = Estimated Value
 P = Penetrometer

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Bridge Foundation Boring Log

Project: H-10064 Bridge Over Sugar Creek Date: 4/2/2010
 Section: 09-02117-00-BR Station _____ Bored by: J. Carter
 Structure: _____ Checked By: J. Holcomb
 County: Edwards

Boring No. 2	Station	Offset	Surface Water Elev.			Ground Water Elev.		
			Elevation	N	Qu	Elevation	N	Qu
						395.5		
						408.5		
sandy clay (continued)			45	17	3.1B	17		
				24	4.3B	17		
				25	3.7B	22		
				22	2.8B	21		
				16	3.1B	19		
Gray Mottled Brown Silty CLAY (A-6) with fine sand				6		25		

N = Standard Penetration Test Blows per foot to drive 2" O.D. Split Spoon Sampler 12" with a 140 lbs. hammer falling 30"
 Qu - Unconfined Compressive Strength in tons/sq.ft.
 w - Water Content - percentage of oven dry weight - %
 B = Bulge Failure
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BORING 2