07-31-2015 LETTING ITEM 064

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
106	13-04128-00-BR	HAMILTON	12	1
FED. ROAD DIST. NO. 9	ILLINOIS	TRIB. TO BIG CREEK		
PROJECT # BROS-0065(057)		CONTRACT # 99548		

LEC JOB # H13L018M

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P.O. BOX 160
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62863
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(618)-262-8651
FAX:
(618)-263-3327

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

LAMC ENGINEERING CO.

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

AARON M. MEFFORD
56284
REGISTERED
PROFESSIONAL
ENGINEER
OF
ILLINOIS

AARON M. MEFFORD
NAME
SIGNATURE
5-5-15
DATE
11-30-15
EXPIRES

INDEX OF SHEETS

HIGHWAY STANDARDS

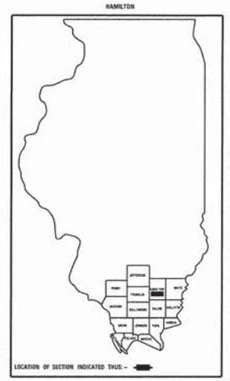
000001-06	STANDARD SYMBOLS, ABBREVIATIONS & PATTERNS (8 SHEETS)
515001-03	NAME PLATE FOR BRIDGES (2 SHEETS)
635006-03	REFLECTOR AND TERMINAL MARKER PLACEMENT
701901-04	TRAFFIC CONTROL DEVICES (3 SHEETS)
B.L.R. 21-9	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS
B.L.R. 22-7	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS (TWO-LANE TWO-WAY RURAL TRAFFIC) (ROAD CLOSED TO THRU TRAFFIC)

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED
FEDERAL AID – S.T.P. BRIDGE

T.R. 106 HAMILTON COUNTY SECTION 13-04128-00-BR

PROJECT NO. BROS-0065(057) JOB NO. C-99-516-14

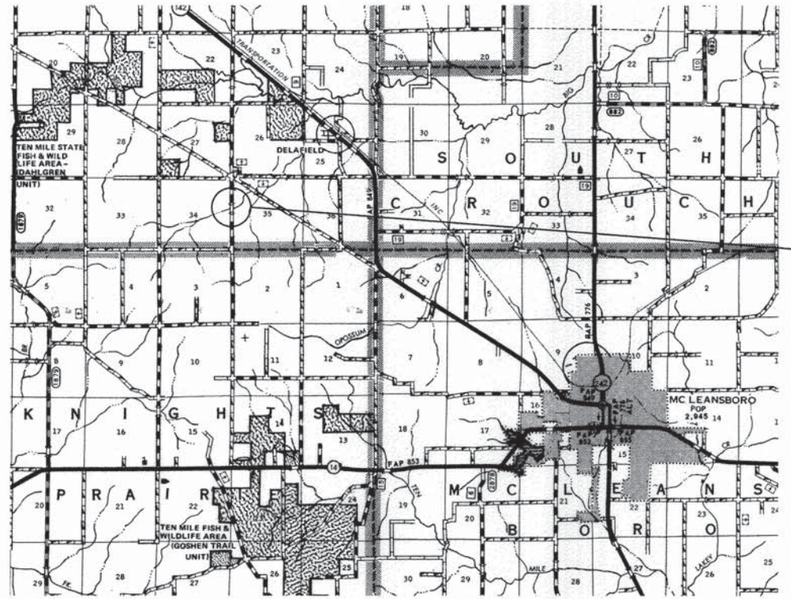
CONTRACT #99548 TRIBUTARY TO BIG CREEK



SUMMARY OF QUANTITIES

CODE NO.	ITEM	UNIT	QUANTITY
20100110	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	UNIT	15.00
20200100	EARTH EXCAVATION	CU YD	14.00
20300100	CHANNEL EXCAVATION	CU YD	95.00
20400800	FURNISHED EXCAVATION	CU YD	238.00
28100807	STONE DUMPED RIPRAP, CLASS A4	TON	225.00
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	325.00
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1.00
50300225	CONCRETE STRUCTURES	CU YD	22.80
50400405	PRECAST PRESTRESSED CONCRETE DECK BEAMS (21" DEPTH)	SQ FT	1200.00
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	2790.00
▲ 50900205	STEEL RAILING, TYPE S1	FOOT	97.00
51201400	FURNISHING STEEL PILES 10X42	FOOT	175.00
51202305	DRIVING PILES	FOOT	175.00
51203400	TEST PILE STEEL HP 10X42	EACH	1.00
51500100	NAME PLATES	EACH	1.00
54200220	PIPE CULVERTS, CLASS D, TYPE 1 15"	FOOT	30.00
58700300	CONCRETE SEALER	SQ FT	94.00
67100100	MOBILIZATION	L SUM	1.00
▲ 78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	4.00
X2501000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.20
Z0068900	STONE LINED DITCH	TON	40.00

▲ SPECIALTY ITEMS



LAYOUT
APPROXIMATE SCALE 1 INCH = 1 MILE
0 1 2 3
MILES

GROSS LENGTH	460.00 FT	0.087 MILES
OMISSIONS	0.00 FT	0.000 MILES
NET LENGTH	460.00 FT	0.087 MILES

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

SECTION 13-04128-00-BR
BEGINS STATION 2+70

STA 5+00, STRUCTURE NO. 033-3322,
A 50' LONG SINGLE SPAN P.P.C.D.B. BRIDGE WITH
21" DEPTH BEAMS, SPILL THROUGH TYPE ABUTMENTS,
24' WIDTH, 0° SKEW

SECTION 13-04128-00-BR
ENDS STATION 7+30

DESIGN DESIGNATION:
DESIGN SPEED: 30 MPH
HIGHWAY CLASS - LOCAL ROAD
EXISTING STRUCTURE NO.: 033-3044
PROPOSED STRUCTURE NO.: 033-3322
CURRENT A.D.T. = 50
CONTRACT NO. 99548

811
Know what's **below.**
Call before you dig.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

APPROVED May 5, 2015
Kevin Hillhouse
COUNTY ENGINEER

PASSED MAY 18, 2015
Dennis W. Hillhouse
ENGINEER OF LOCAL ROADS AND STREETS

RELEASING FOR BID
BASED ON LIMITED
REVIEW: MAY 18, 2015
Jeffrey L. Keirn
BY JEFFREY L. KEIRN, P.E.
DEPUTY DIRECTOR OF HIGHWAYS
REGION FIVE ENGINEER

TOWNSHIP ROUTE 106
OVER TRIB. TO BIG CREEK
HAMILTON COUNTY, ILLINOIS

SHEET TITLE:
TITLE SHEET

SCALE:	VARIES
BY:	SAA
DATE:	5015
REV:	

1 OF 12 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, 2012.

THE WORK INVOLVED ON THIS SECTION CONSISTS OF THE REMOVAL OF THE EXISTING STRUCTURE, THE CONSTRUCTION OF A 50 FOOT LONG SINGLE SPAN PRECAST, PRESTRESSED CONCRETE DECK BEAM BRIDGE, EARTH APPROACHES, AGGREGATE SURFACE COURSE AND OTHER MISCELLANEOUS ITEMS NECESSARY TO COMPLETE THIS SECTION.

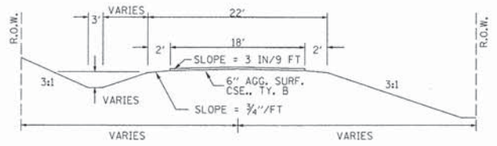
ALL ELEVATIONS ARE BASED ON U.S.G.S. MEAN SEA LEVEL DATUM.

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

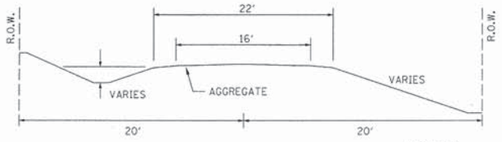
WHEN THE PLANS OR SPECIAL PROVISIONS INCLUDE INFORMATION PERTAINING TO THE LOCATION OF UNDERGROUND UTILITY FACILITIES, SUCH INFORMATION REPRESENTS ONLY THE OPINION OF THE HAMILTON COUNTY HIGHWAY DEPARTMENT AS TO THE LOCATION OF SUCH UTILITIES AND IS ONLY INCLUDED FOR THE CONVENIENCE OF THE BIDDER.

AGGREGATE SURFACE COURSE, TYPE B INCLUDES 24 TON FOR FILL NEXT TO THE BRIDGE, 15 TON FOR THE FIELD ENTRANCES AND 286 TON FOR THE ROADWAY.

TYPICAL CROSS SECTION PROPOSED



TYPICAL CROSS SECTION EXISTING



UTILITIES:

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

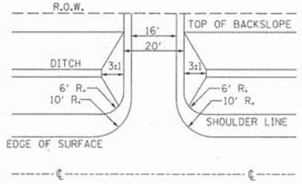
WAYNE-WHITE ELECTRIC
1-618-842-2196

HAMILTON COUNTY WATER
1-618-643-4744

HAMILTON COUNTY TELEPHONE
1-618-736-2211

FIELD ENTRANCE DETAIL

STA 5+75 LT



NOTE: CONSTRUCT SPECIAL DITCH

STA 5+23 TO STA 6+50 LT
STA 5+23 TO STA 7+00 RT

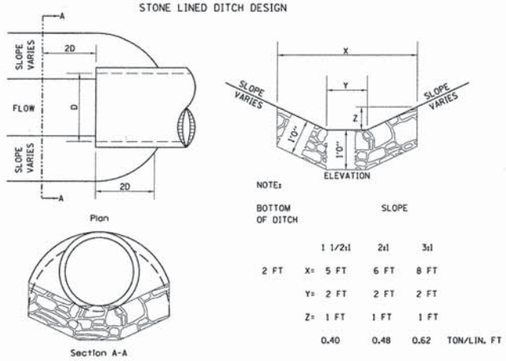
NOTE: CONSTRUCT STONE LINED DITCH

STA 5+23 TO STA 5+60 LT (0.62 TON/LIN FT)
STA 5+23 TO STA 5+50 RT (0.62 TON/LIN FT)

40 TON STONE LINED DITCH ALLOWED IN PROPOSAL.

SEE STONE LINED DITCH DETAIL.

STONE LINED DITCH DESIGN



NOTE:

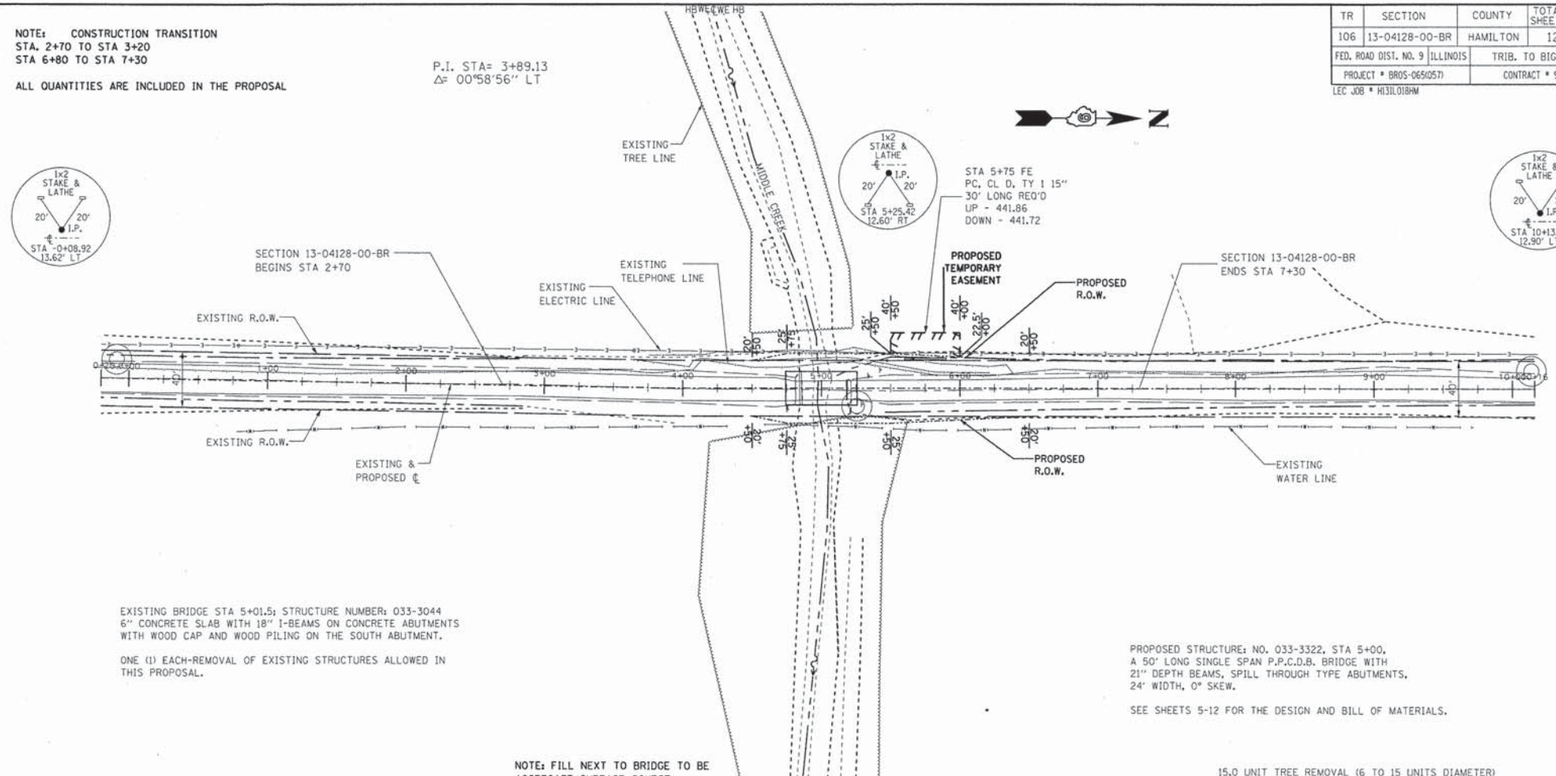
BOTTOM OF DITCH		SLOPE		
		1 1/2:1	2:1	3:1
2 FT	X=	5 FT	6 FT	8 FT
	Y=	2 FT	2 FT	2 FT
	Z=	1 FT	1 FT	1 FT
		0.40	0.48	0.62 TON/LIN. FT

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

NOTE: CONSTRUCTION TRANSITION
STA. 2+70 TO STA 3+20
STA 6+80 TO STA 7+30

ALL QUANTITIES ARE INCLUDED IN THE PROPOSAL

P.I. STA= 3+89.13
Δ= 00°58'56" LT



EXISTING BRIDGE STA 5+01.5; STRUCTURE NUMBER: 033-3044
6" CONCRETE SLAB WITH 18" I-BEAMS ON CONCRETE ABUTMENTS WITH WOOD CAP AND WOOD PILING ON THE SOUTH ABUTMENT.

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

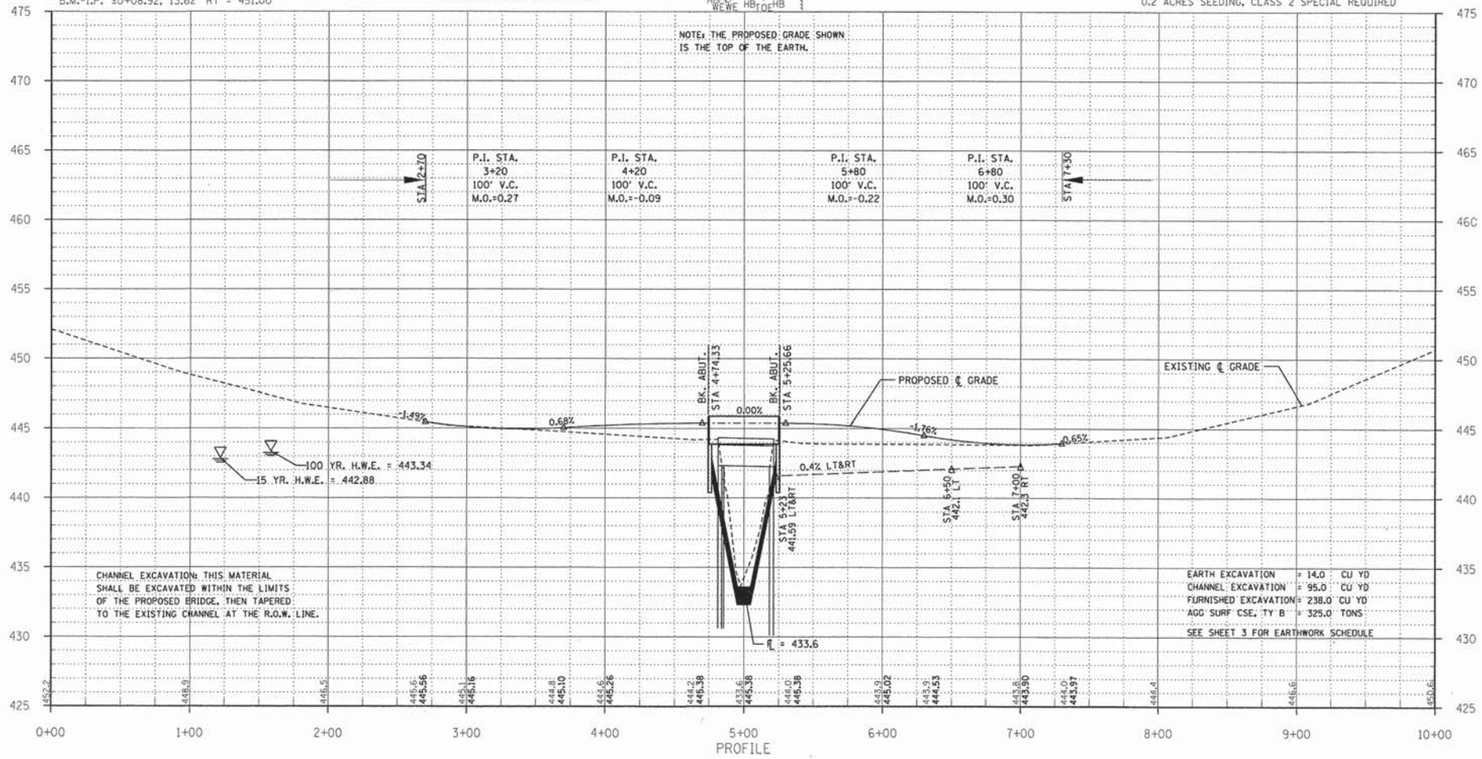
PROPOSED STRUCTURE: NO. 033-3322, STA 5+00,
A 50' LONG SINGLE SPAN P.P.C.D.B. BRIDGE WITH
21" DEPTH BEAMS, SPILL THROUGH TYPE ABUTMENTS,
24' WIDTH, 0° SKEW.

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

NOTE: FILL NEXT TO BRIDGE TO BE AGGREGATE SURFACE COURSE

15.0 UNIT TREE REMOVAL (6 TO 15 UNITS DIAMETER)
0.2 ACRES SEEDING, CLASS 2 SPECIAL REQUIRED

B.M.-I.P. ±0+08.92, 13.62' RT = 451.00



TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
106	13-04128-00-BR	HAMILTON	12	2
FED. ROAD DIST. NO. 9	ILLINOIS	TRIB. TO BIG CREEK		
PROJECT # BROS-0650(57)		CONTRACT # 99548		

LEC JOB # H13L018HM

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62863
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(618)-263-3327

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

LAMC ENGINEERING CO.

AARON M. MEFFORD
56284
REGISTERED PROFESSIONAL ENGINEER
OF
ILLINOIS

AARON M. MEFFORD
NAME
SIGNATURE
5-5-15
DATE
11-30-15
EXPIRES

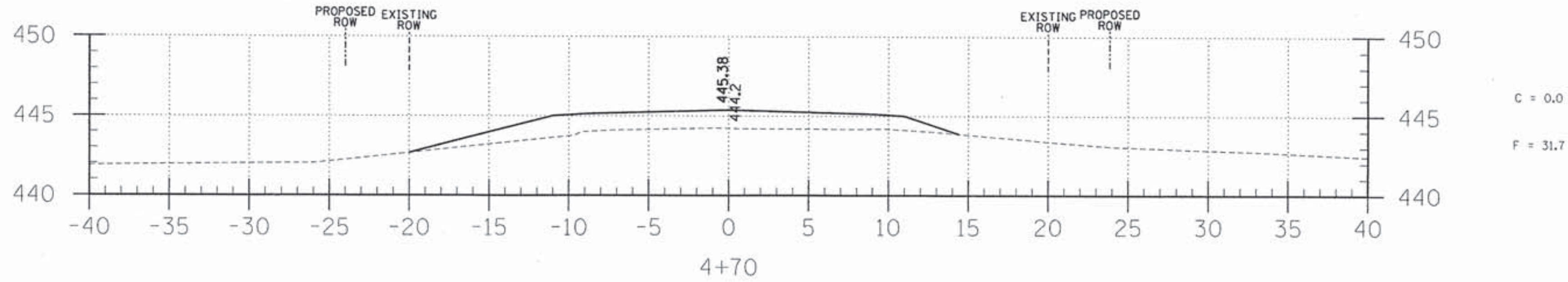
TOWNSHIP ROUTE 106
OVER TRIB. TO BIG CREEK
HAMILTON COUNTY, ILLINOIS

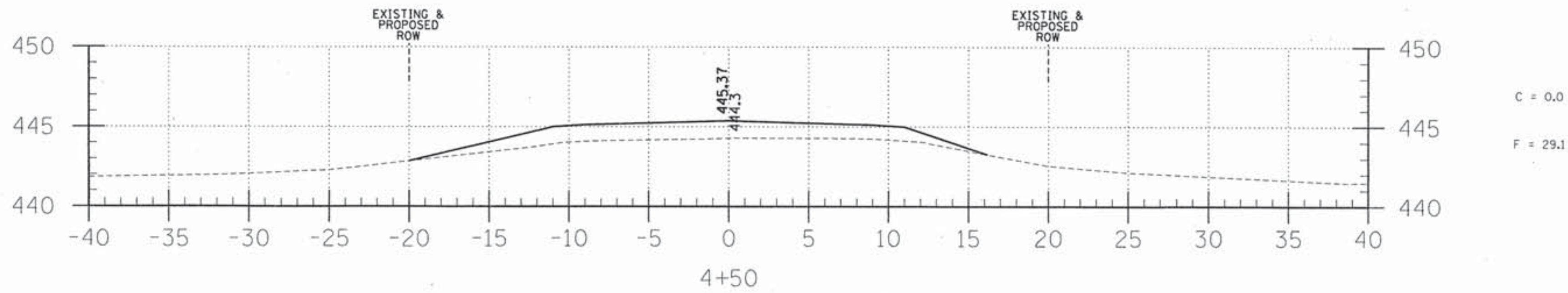
SHEET TITLE:
PLAN & PROFILE

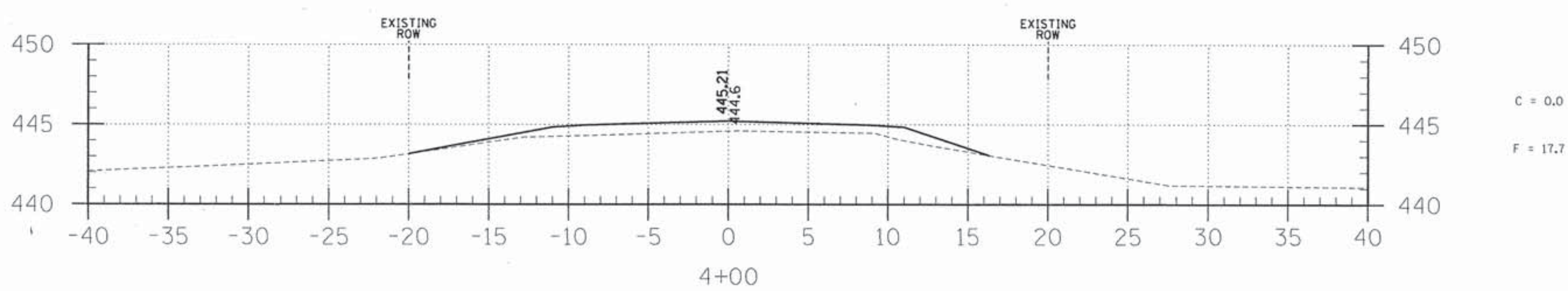
SCALE:	VARIES
BY:	SAA
DATE:	50115
REV:	

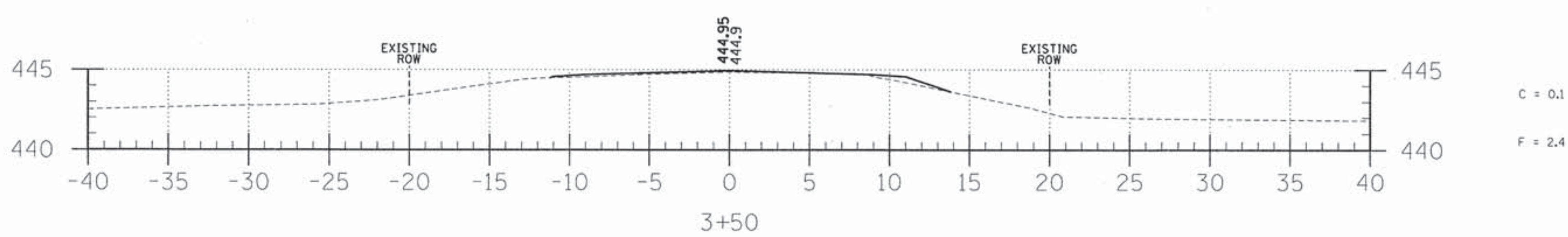
2 OF 12 SHEETS

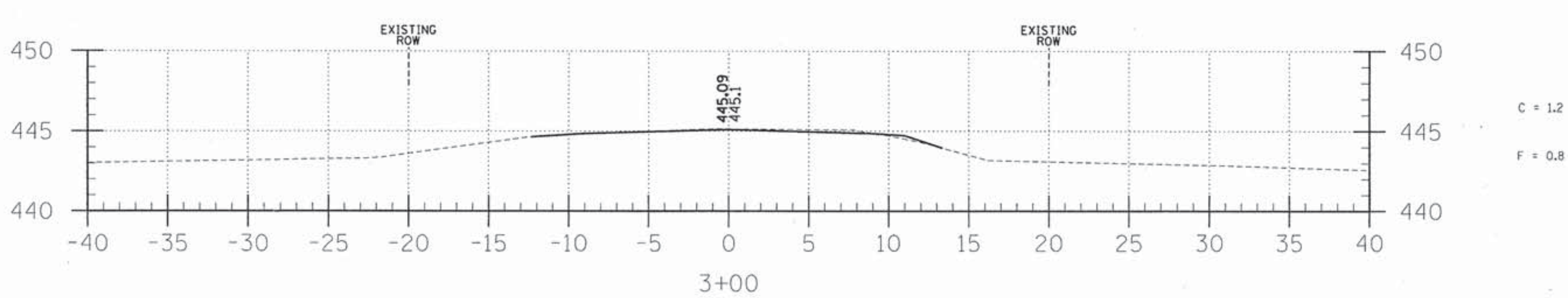
SHEET NO.
2

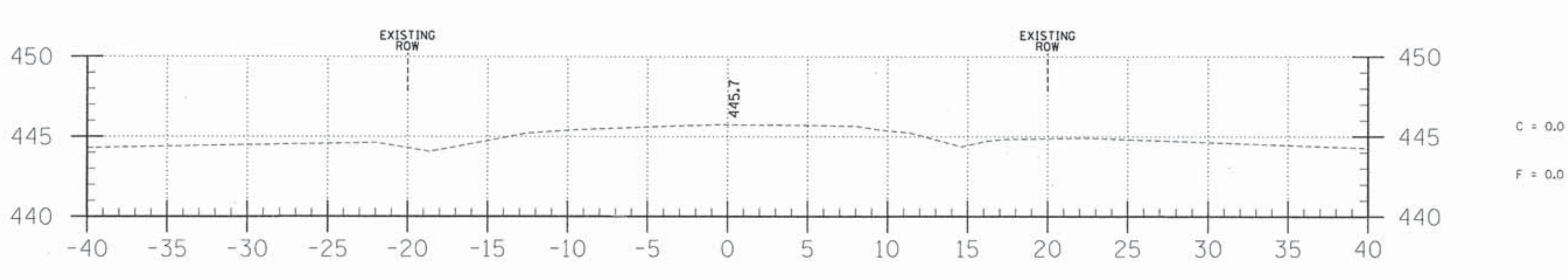












EARTHWORK SCHEDULE

LOCATION	EARTH EXCAVATION	CHANNEL EXCAVATION	ESTIMATED UNSUITABLE MATERIAL	SUITABLE MATERIAL ADJUSTED FOR SHRINKAGE	EMBANKMENT	EARTHWORK BALANCE WASTE (+) OR SHORTAGE (-)
	CUBIC YARD	CUBIC YARD	CUBIC YARD	CUBIC YARD	CUBIC YARD	CUBIC YARD
STA 0+00 TO 4+74.3	2.4	0.0	0.0	1.8	94.1	-92.3
STA 4+74.3 TO 5+25.6	0.0	95.4	47.7	35.8	0.0	35.8
STA 5+25.6 TO 10+00	11.3	0.0	0.0	8.5	166.4	-157.9
1 FIELD ENTRANCE	0.0	0.0	0.0	0.0	24.0	-24.0
TOTAL	13.7	95.4	47.7	46.1	284.5	-238.4

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
106	13-04128-00-BR	HAMILTON	12	3
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT		
PROJECT* BROS-065(057)		CONTRACT* 99548		
JOB NO. C-99-516-14		TRIB. TO BIG CREEK		

LEC JOB * H13L0I8HM

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

LAMAC ENGINEERING CO.

AARON M. MEFFORD 56284 REGISTERED PROFESSIONAL ENGINEER OF ILLINOIS

AARON M. MEFFORD
NAME
SIGNATURE
5-5-15
DATE
11-30-15
EXPIRES

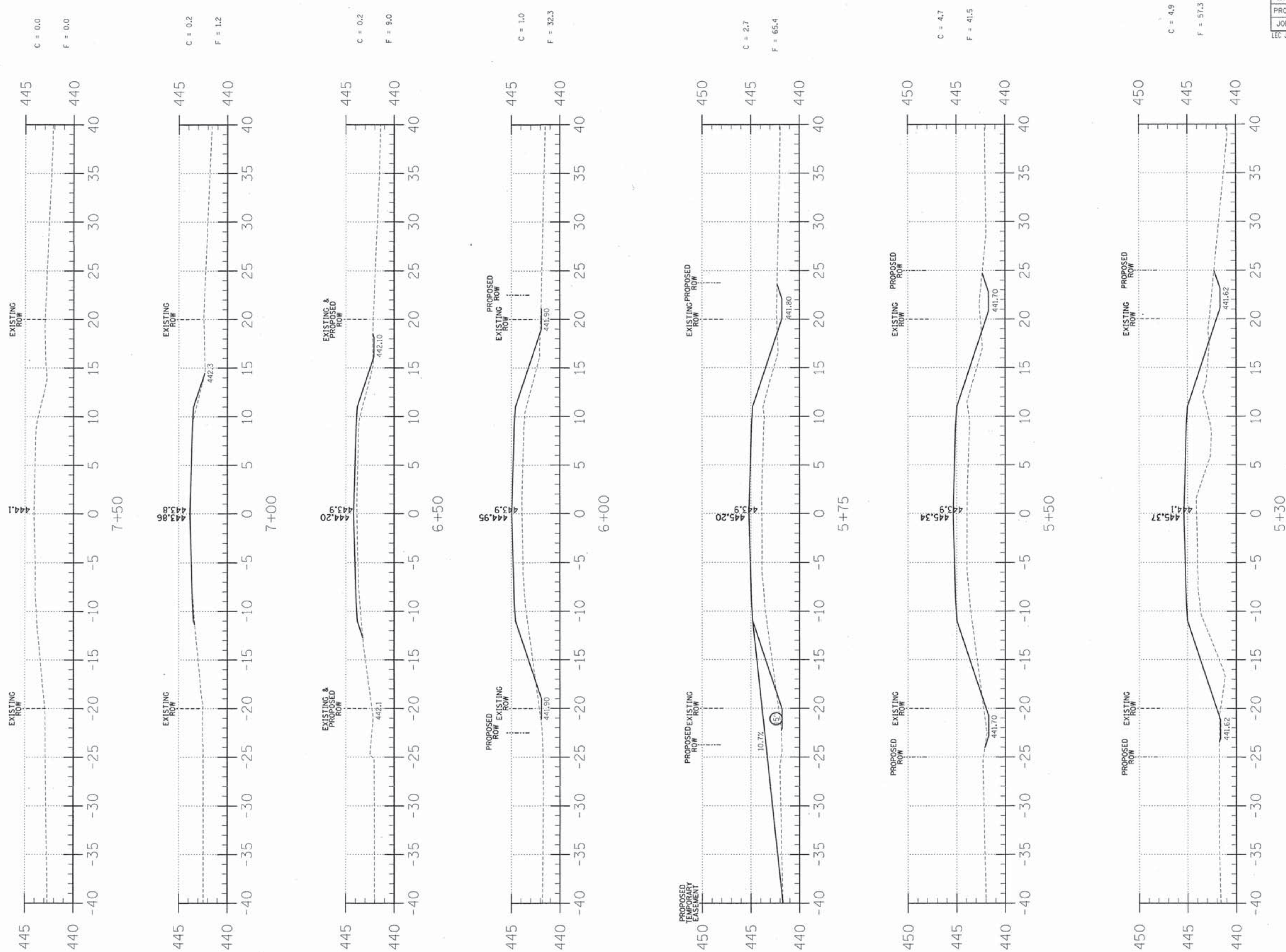
TOWNSHIP ROUTE 106
OVER TRIB. TO BIG CREEK
WHITE COUNTY, ILLINOIS

SHEET TITLE: CROSS-SECTIONS

SCALE: 1" = 5'
BY: SAA
DATE: 50915
REV:

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
106	13-04128-00-BR	HAMILTON	12	4
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT		
PROJECT# BROS-065(057)		CONTRACT# 99548		
JOB NO. C-99-516-14		TRIB. TO BIG CREEK		

LEC JOB # H13L018HM



323 W. 3RD ST.
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PHONE: (618)-262-8651
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PROFESSIONAL DESIGN FIRM
LAND SURVEY & PROFESSIONAL ENGINEERING CORPORATION
184-000887
(62-032435)(35-002769)

LAMAC ENGINEERING CO.

AARON M. MEFFORD 56284 REGISTERED PROFESSIONAL ENGINEER OF ILLINOIS

AARON M. MEFFORD
NAME
SIGNATURE
5-5-15
DATE
11-30-15
EXPIRES

TOWNSHIP ROUTE 106
OVER TRIB. TO BIG CREEK
WHITE COUNTY, ILLINOIS

SHEET TITLE:
CROSS-SECTIONS

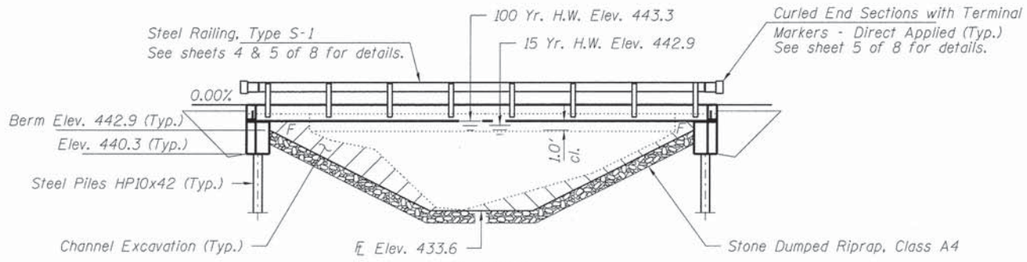
SCALE:	1" = 5'
BY:	SAA
DATE:	5/015
REV:	

4 OF 12 SHEETS

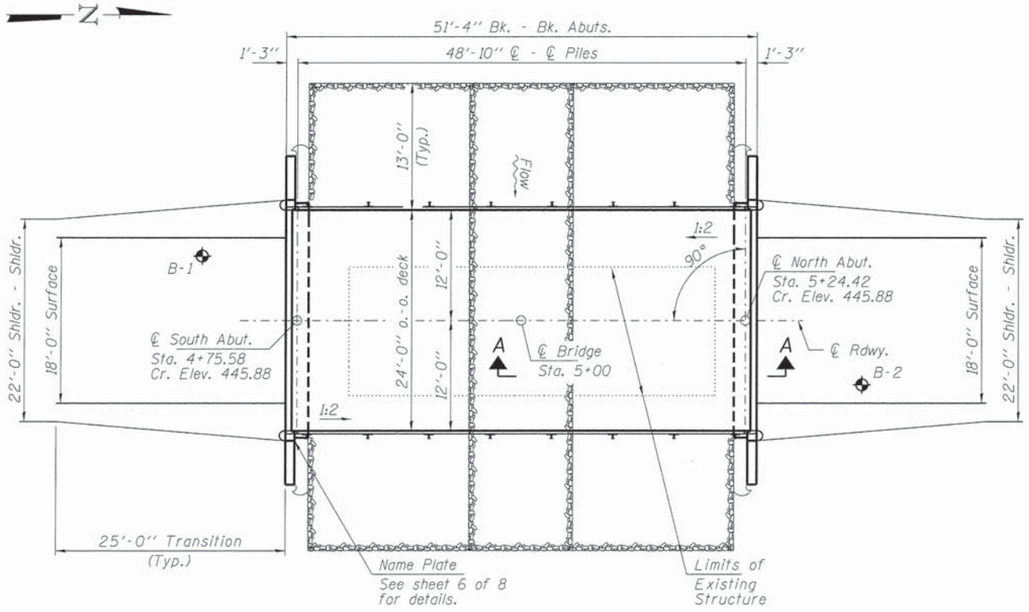
SHEET NO. 4

EXISTING STRUCTURE NO. 033-3044: Sta. 5+01.5 - A 6" concrete slab with 18" I-beams on concrete abutments with wood cap and wood piling on the South abutment.

Structure closed to traffic during construction.



ELEVATION



PLAN

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 South Abutment or approved by the Engineer before ordering the remainder of piles.

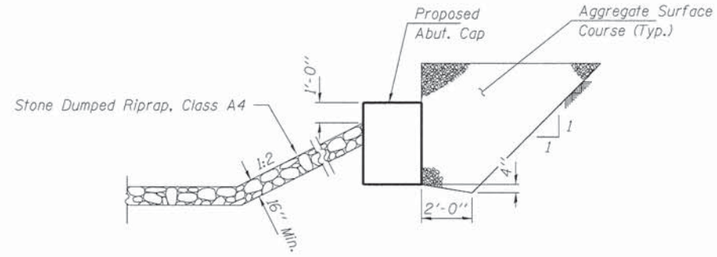
Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60.

All bars to be epoxy coated.

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.

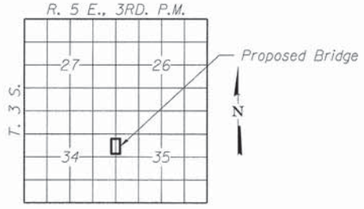
Concrete sealer shall be applied to the designated areas of the abutments.



SECTION A-A

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

INDEX OF STRUCTURE SHEETS



LOCATION SKETCH

MIDDLE CREEK
BUILT 201_ BY
HAMILTON COUNTY
SEC. 13-04128-00-BR
DAHLGREN ROAD DISTRICT
STR. NO. 033-3322
LOADING HL-93

NAME PLATE

See Std. 515001

DESIGN SPECIFICATIONS

2012 AASHTO LRFD Bridge Design Specifications, 6th Edition with 2013 interims.

LOADING HL-93

Allow 50#/sq. ft. for future wearing surface.

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 (½"ϕ low lax. strands)
fpbt = 201,960 psi (½"ϕ low lax. strands)
fy = 60,000 psi (Reinf.)

SEISMIC DATA

Seismic Performance Zone (SPZ) = 3
Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.310g
Design Spectral Acceleration at 0.2 sec. (S_{DS}) = 0.736g
Soil Site Class = D

Design Scour Elevations (ft.)		
	S. Abut.	N. Abut.
0100	439.7	439.7

WATERWAY INFORMATION

Drainage Area = 1.59 Sq. Mi.

Existing Low Grade Elev. 433.6 @ Sta. 5+00
Proposed Low Grade Elev. 433.6 @ Sta. 5+00

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Natural H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
Design	15	951	175	257	442.88				
Base	100	1680	175	278	443.34	1.86	0.53	445.2	443.87

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 05/01/2015
ILLINOIS STRUCTURAL ENGINEER NO. 081-6064

LICENSED STRUCTURAL ENGINEER
STEVEN W. MEGGINSON
081-6064
SPRINGFIELD, IL
STATE OF ILLINOIS

Expires 11-30-2016

TOTAL BILL OF MATERIAL

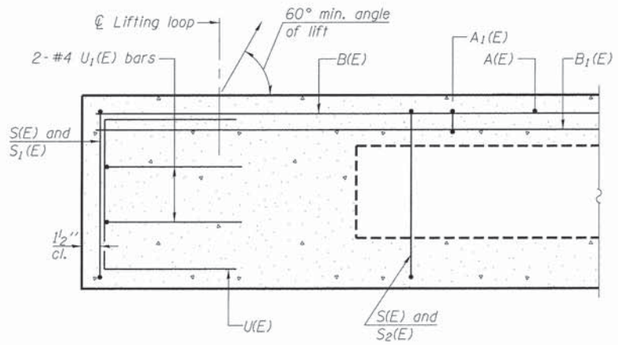
ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	Cu. Yd.			95
Stone Dumped Riprap, Class A4	Ton			225
Removal of Existing Structures	Each			1
Concrete Structures	Cu. Yd.		22.8	22.8
Precast Prestressed Concrete Deck Beams (21" Depth)	Sq. Ft.	1,200		1,200
Reinforcement Bars, Epoxy Coated	Pound		2,790	2,790
Steel Railing, Type S-1	Foot	97		97
Furnishing Steel Piles HP10x42	Foot		175	175
Driving Piles	Foot		175	175
Test Pile Steel HP10x42	Each		1	1
Name Plates	Each		1	1
Terminal Marker - Direct Applied	Each	4		4
Concrete Sealer	Sq. Ft.		94	94

FILE NAME = 140021-sht-bridge.dgn	USER NAME = $USER$	DESIGNED - J.R.T.	REVISED -
HAMPTON, LENZINI AND RENWICK, INC. 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000958		CHECKED - S.W.M.	REVISED -
	PLOT SCALE = $SCALE$	DRAWN - R.D.H.	REVISED -
	PLOT DATE = 5/1/2015	CHECKED - S.W.M.	REVISED -

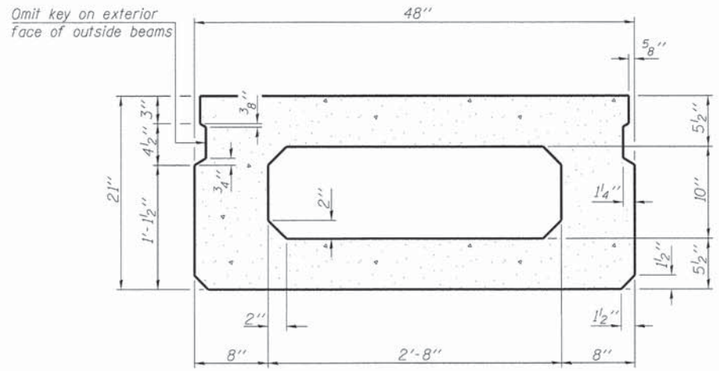
STATE OF ILLINOIS
HAMILTON COUNTY HIGHWAY DEPARTMENT

GENERAL PLAN & ELEVATION
STRUCTURE NO. 033-3322
SHEET NO. 1 OF 8 SHEETS

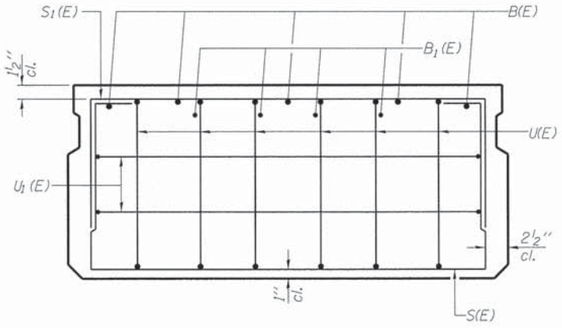
T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
106	13-04128-00-BR	HAMILTON	12	5
DAHLGREN ROAD DISTRICT		CONTRACT NO. 99548		
ILLINOIS	FED. AID PROJECT BROS-0065(057)			



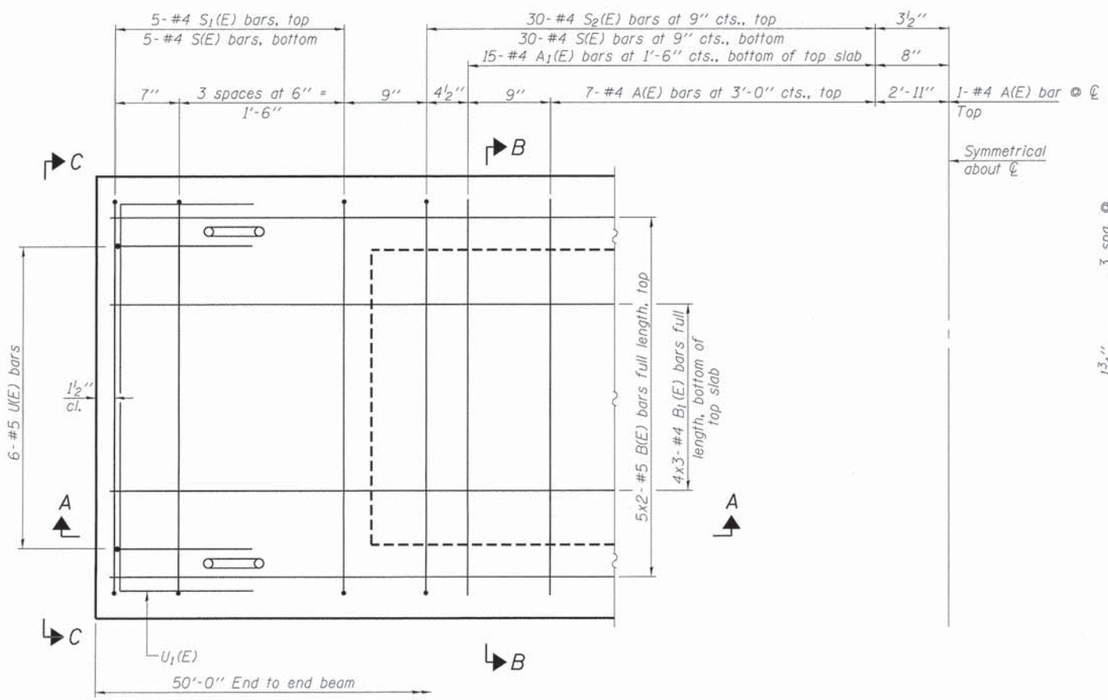
SECTION A-A



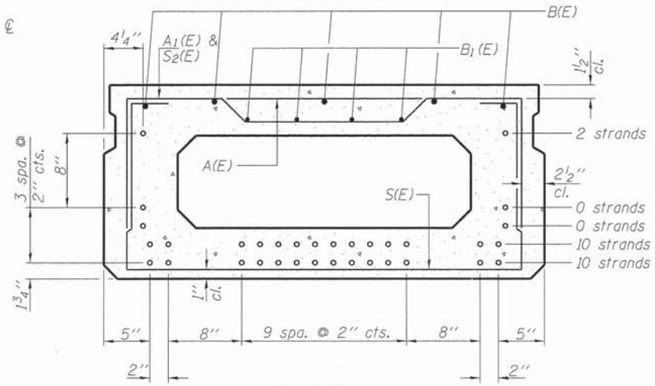
SECTION B-B
(Showing dimensions)



VIEW C-C



PLAN VIEW



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)	15	#4	3'-7"	—
A1(E)	30	#4	3'-10"	~
B(E)	10	#5	26'-2"	—
B1(E)	12	#4	17'-11"	—
S(E)	70	#4	7'-5"	⊐
S1(E)	10	#4	5'-11"	⊐
S2(E)	60	#4	6'-2"	⊐
U(E)	12	#5	4'-0"	⊔
U1(E)	4	#4	6'-0"	⊔

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

MINIMUM BAR LAP
#4 bar = 2'-0"
#5 bar = 2'-6"

Notes:
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.

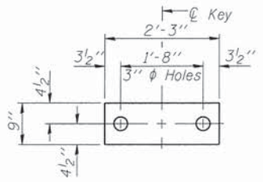
PD-2148-0 7-1-10

FILE NAME = 140021-sht-bridge.dgn	USER NAME = #USER#	DESIGNED - J.R.T.	REVISED -
HAMPTON, LENZINI AND RENWICK, INC. 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959		CHECKED - S.W.M.	REVISED -
	PLOT SCALE = #SCALE#	DRAWN - R.D.H.	REVISED -
	PLOT DATE = 5/1/2015	CHECKED - S.W.M.	REVISED -

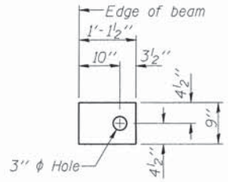
STATE OF ILLINOIS
HAMILTON COUNTY HIGHWAY DEPARTMENT

21" x 48" PPC DECK BEAM
STRUCTURE NO. 033-3322
SHEET NO. 2 OF 8 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
106	13-04128-00-BR	HAMILTON	12	6
DAHLGREN ROAD DISTRICT		CONTRACT NO. 99548		
ILLINOIS FED. AID PROJECT BROS-0065(057)				



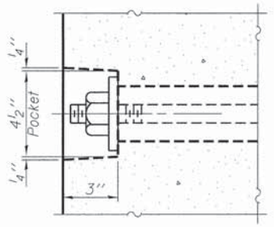
FABRIC BEARING PAD
(Interior - 10 Required)



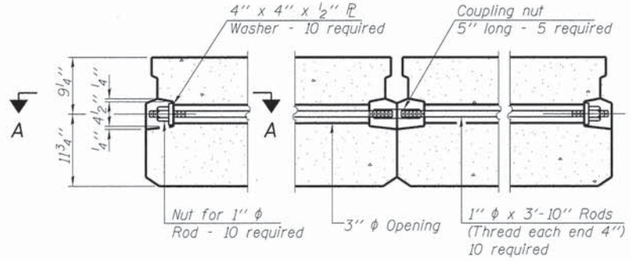
FABRIC BEARING PAD
(Exterior - 4 Required)

FIXED

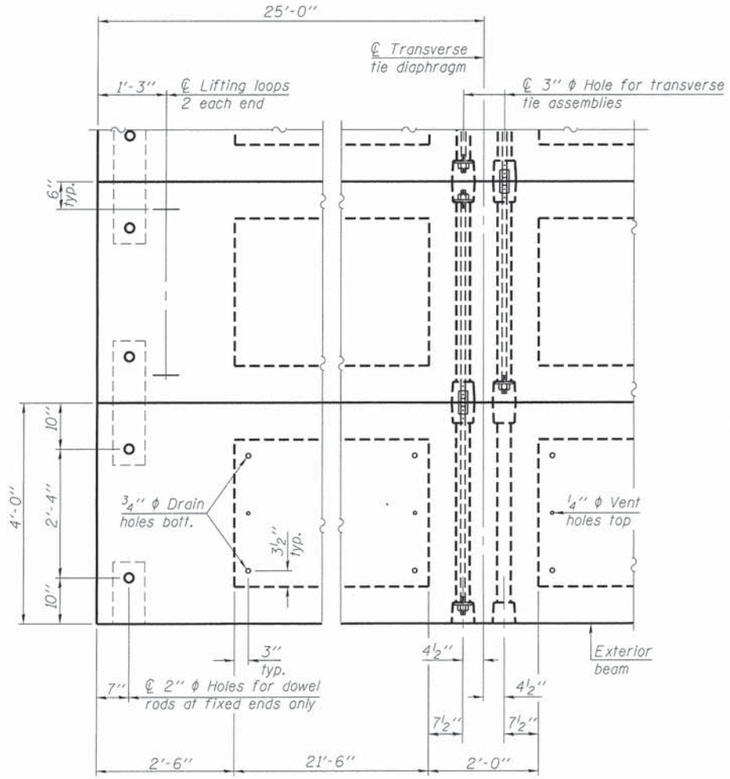
Notes:
All bearing pads shall be 1" thick.
Omit holes when using expansion bearings.
Expansion bearing pad shall be bonded to the substructure.



SECTION A-A

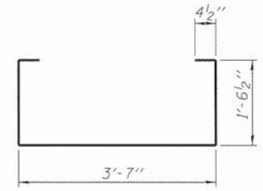


TYPICAL TRANSVERSE TIE ASSEMBLY

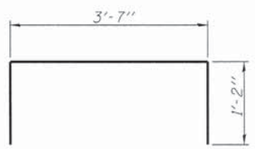


PLAN VIEW

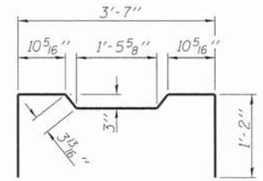
Note: Connect beams in pairs with the transverse tie configuration shown.



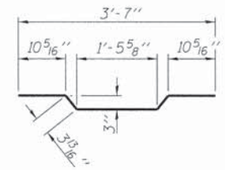
BAR S(E)



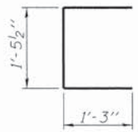
BAR S_1(E)



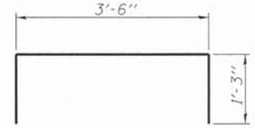
BAR S_2(E)



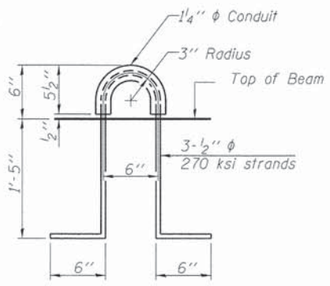
BAR A_1(E)



BAR U(E)



BAR U_1(E)



LIFTING LOOP DETAIL

NOTES

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be ½" 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 ⅛" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.

A minimum 2½" ϕ lifting pin shall be used to engage the lifting loops during handling.

Corrosion Inhibitor, per Article 1020.05(b)(12) and 1021.07 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.

Reinforcement bars designated (E) shall be epoxy coated.

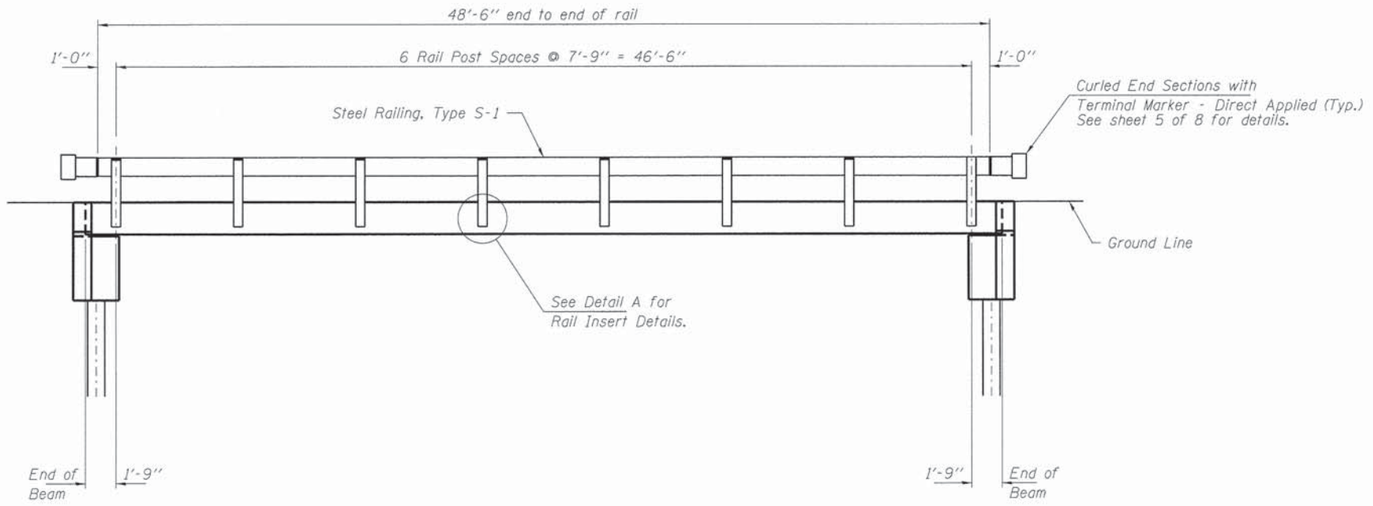
BILL OF MATERIAL

Precast Prestressed Conc. Deck Bms. (21" depth)	Sq. Ft.	1,200

PD-2148-0D 7-1-10

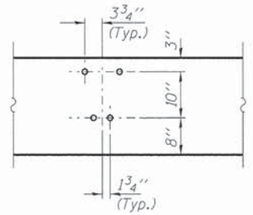
FILE NAME = 148021-sht-bridge.dgn	USER NAME = #USER#	DESIGNED - J.R.T.	REVISED -	STATE OF ILLINOIS HAMILTON COUNTY HIGHWAY DEPARTMENT	21" x 48" PPC DECK BEAM DETAILS STRUCTURE NO. 033-3322 SHEET NO. 3 OF 8 SHEETS
HAMPTON, LENZINI AND RENWICK, INC. 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703		CHECKED - S.W.M.	REVISED -		
ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959	PLOT SCALE = #SCALE#	DRAWN - R.D.H.	REVISED -		
	PLOT DATE = 5/1/2015	CHECKED - S.W.M.	REVISED -		

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
106	13-04128-00-BR	HAMILTON	12	7
DAHLGREN ROAD DISTRICT		CONTRACT NO. 99548		
ILLINOIS FED. AID PROJECT BROS-0065(057)				

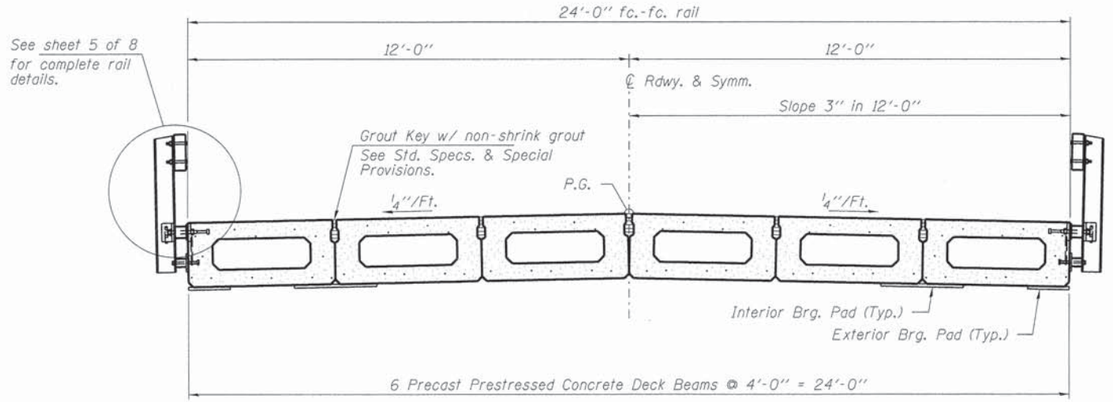


ELEVATION

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

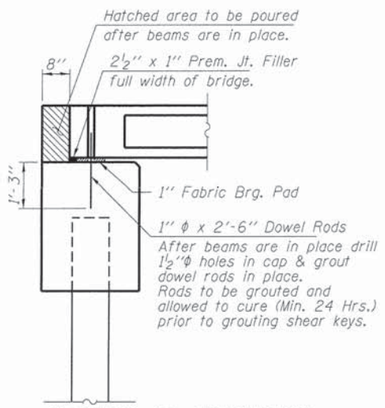


DETAIL A



CROSS SECTION

See sheets 2 & 3 of 8 for Superstructure.



SECTION AT ABUTMENTS

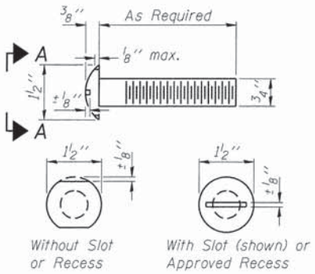
@ Rt. L's

FILE NAME = 140021-sht-bridge.dgn	USER NAME = $USER$	DESIGNED - J.R.T.	REVISED -
HAMPTON, LENZINI AND RENWICK, INC. 3095 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703		CHECKED - S.W.M.	REVISED -
ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959	PLOT SCALE = $SCALE$	DRAWN - R.D.H.	REVISED -
	PLOT DATE = 5/1/2015	CHECKED - S.W.M.	REVISED -

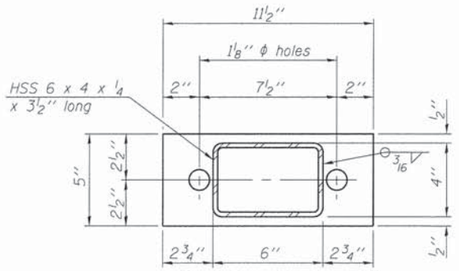
STATE OF ILLINOIS
HAMILTON COUNTY HIGHWAY DEPARTMENT

SUPERSTRUCTURE DETAILS
STRUCTURE NO. 033-3322
SHEET NO. 4 OF 8 SHEETS

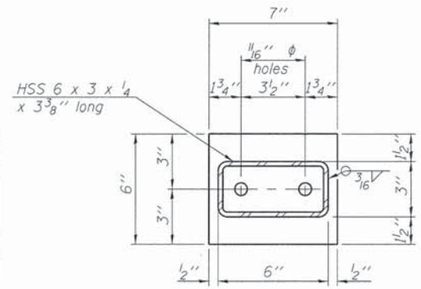
T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
106	13-04128-00-BR	HAMILTON	12	8
DAHLGREN ROAD DISTRICT		CONTRACT NO. 99548		
ILLINOIS	FED. AID PROJECT BROS-0065(057)			



VIEW A-A
ROUND HEAD BOLT

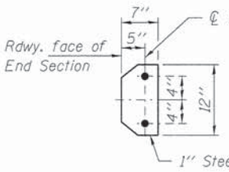


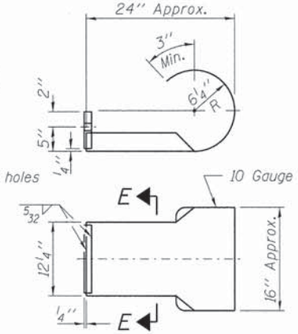
PL 1/2" x 11 1/2" x 5"



PL 1/2" x 7" x 6"

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



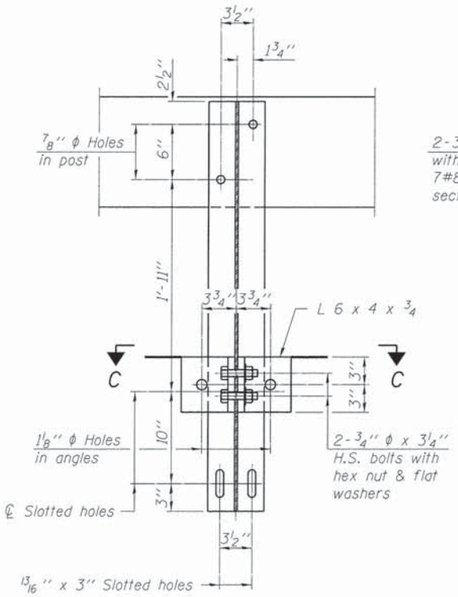


SECTION E-E

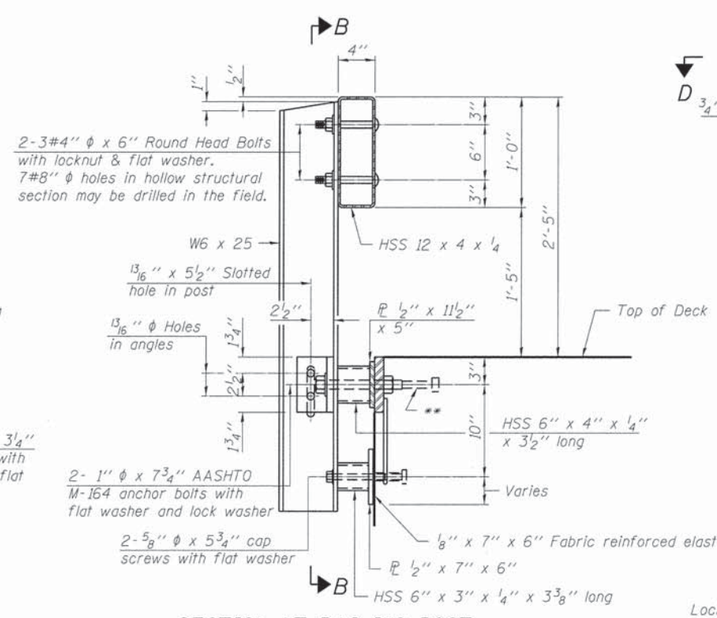
CURLED END SECTION DETAILS
SPLICE DIMENSIONS

T	D	A	B	C	E
≤4"	2 1/2"	1'-8"	2"	4"	2 1/2"
>4" ≤6 1/2"	3 3/4"	2'-0"	2 1/2"	5 1/2"	3 1/2"
>6 1/2" ≤9"	5"	2'-4"	3 1/2"	6 1/2"	9"
>9" ≤13"	7"	2'-10"	4 1/2"	8 1/2"	11"
Rail Splice	1/4"	1'-8"	2"	4"	———

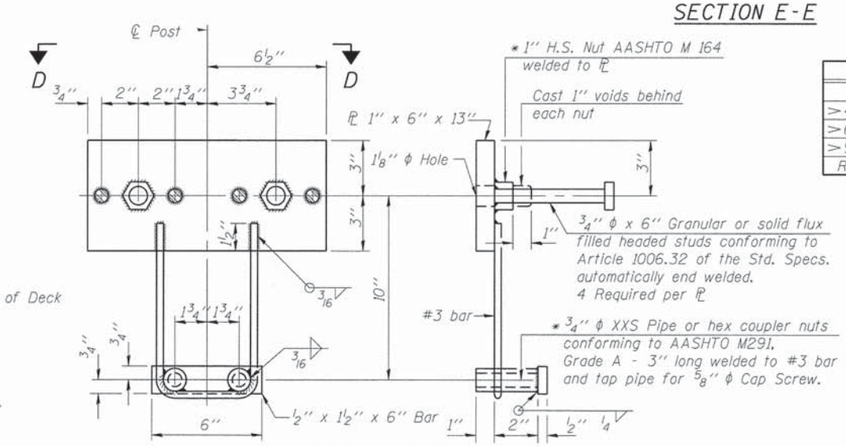
T = Total movement at expansion joint as shown on the design plans.



SECTION B-B



SECTION AT RAILING POST



ANCHOR DEVICE

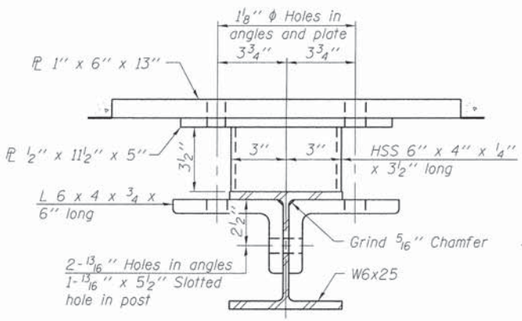
* Threaded areas shall be plugged or blocked off during casting of beam.

Notes:

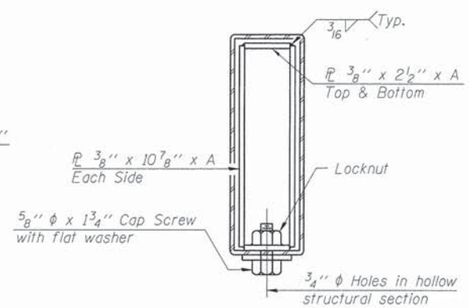
For multi-span bridges, sufficient 1/4" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with Steel Railing, Type S-1.

All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.

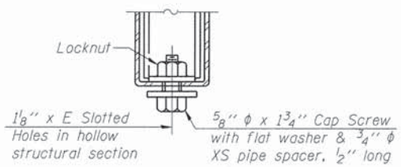
** The studs of the anchor devices shall be placed below the top reinforcement bars and the outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchor device.



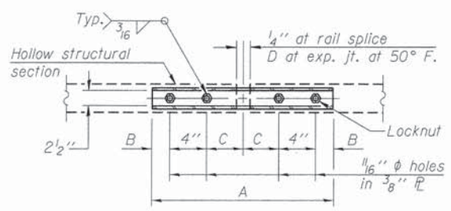
SECTION C-C



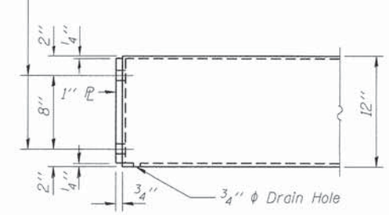
SECTIONS AT RAIL SPLICE

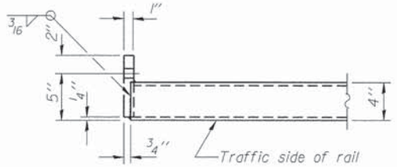


RAIL SPLICE CONNECTION AT EXPANSION JT.

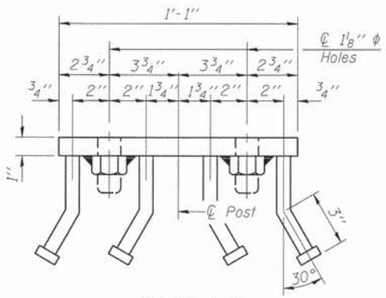


PLAN-BOTT. SPLICE PL TYPICAL





END OF RAIL DETAILS



VIEW D-D

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S-1	Foot	97

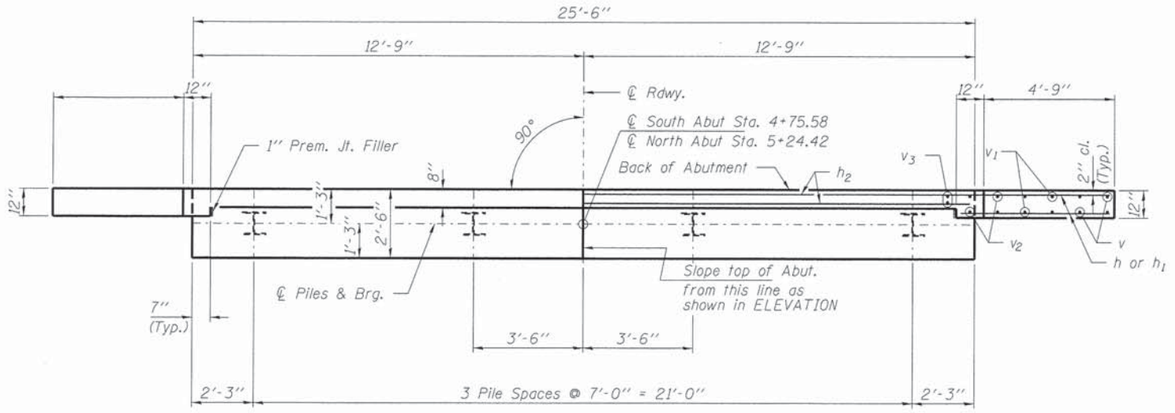
R-23A 1-12-15 (10'-9" Maximum Post Spacing)

FILE NAME = 140021-sht-bridge.dgn	USER NAME = $USER$	DESIGNED - J.R.T.	REVISED -	
HAMPTON, LENZINI AND RENWICK, INC. 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703		CHECKED - S.W.M.	REVISED -	
ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.003959	PLOT SCALE = $SCALE$	DRAWN - R.D.H.	REVISED -	
	PLOT DATE = 5/1/2015	CHECKED - S.W.M.	REVISED -	

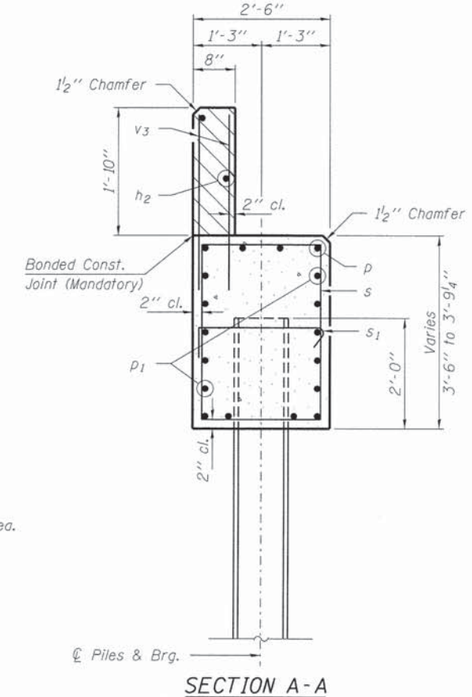
STATE OF ILLINOIS
HAMILTON COUNTY HIGHWAY DEPARTMENT

STEEL RAILING, TYPE S-1
STRUCTURE NO. 033-3322
SHEET NO. 5 OF 8 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
106	13-04128-00-BR	HAMILTON	12	9
DAHLGREN ROAD DISTRICT		CONTRACT NO. 99548		
ILLINOIS FED. AID PROJECT BROS-0065(057)				



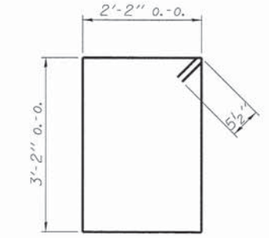
PLAN



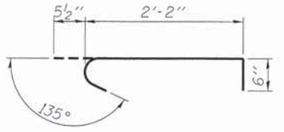
SECTION A-A

Hatched area to be poured after beams are in place.

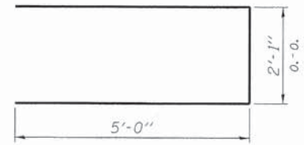
Note: Concrete sealer shall be applied to all exposed surfaces of the bearing area.



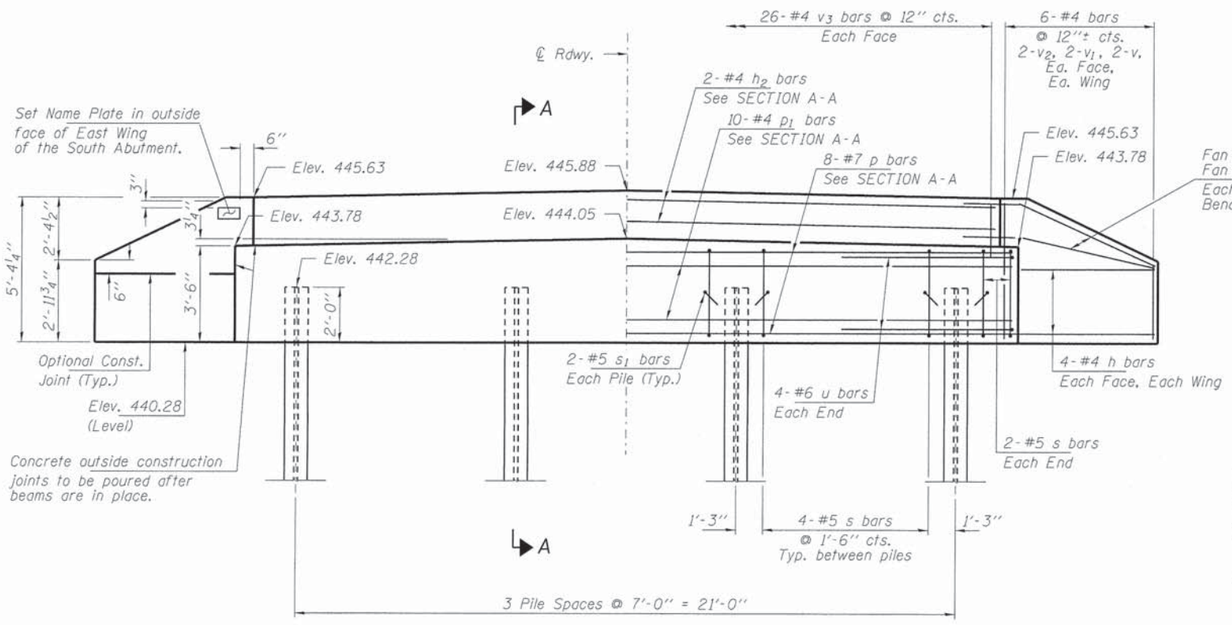
BAR s



BAR s_1



BAR u



ELEVATION

Note: Extend h bars into abutment cap.

PILE DATA

Type _____ Steel Piles HP10x42
No. Req'd. (2 Abuts.) _____ *8
Factored Resistance Available (Rf) _____ 184 Kips/Pile
Nominal Required Bearing (Rn) _____ 335 Kips/Pile
Est. Length _____ 25 Ft/Pile

Notes: * Includes one test pile to be driven in a permanent location at the South Abutment.

The test pile 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	7'-0"	
h_1	8	#4	5'-6"	
h_2	4	#4	25'-2"	
p	16	#7	25'-2"	
p_1	20	#4	25'-2"	
s	32	#5	11'-7"	
s_1	16	#5	3'-2"	
u	16	#6	12'-1"	
v	16	#4	2'-9"	
v_1	16	#4	3'-10"	
v_2	16	#4	4'-11"	
v_3	104	#4	2'-8"	
Concrete Structures			Cu. Yd.	22.8
Reinforcement Bars, Epoxy Coated			Pound	2,790
Furnishing Steel Piles HP10x42			Foot	175
Test Pile HP10x42			Each	1
Name Plates			Each	1
Concrete Sealer			Sq. Ft.	94

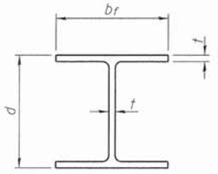
All reinforcement bars shall be epoxy coated

FILE NAME = 140021-sht-bridge.dgn	USER NAME = $USER$	DESIGNED - J.R.T.	REVISED -
HAMPTON, LENZINI AND RENWICK, INC. 3365 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP 184.000959		CHECKED - S.W.M.	REVISED -
	PLOT SCALE = $SCALE$	DRAWN - R.D.H.	REVISED -
	PLOT DATE = 5/1/2015	CHECKED - S.W.M.	REVISED -

STATE OF ILLINOIS
HAMILTON COUNTY HIGHWAY DEPARTMENT

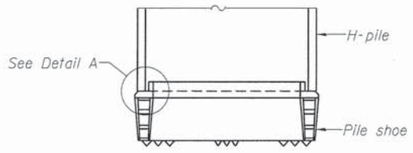
ABUTMENTS
STRUCTURE NO. 033-3322
SHEET NO. 6 OF 8 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
106	13-04128-00-BR	HAMILTON	12	10
DAHLGREN ROAD DISTRICT		CONTRACT NO. 99548		
ILLINOIS	FED. AID PROJECT BROS-0065(057)			

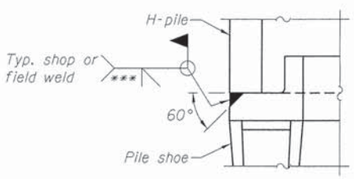


STEEL PILE TABLE

Designation	Depth d	Flange width b_f	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	13/16"	30"
x102	14"	14 3/4"	11/16"	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"	11/16"	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"

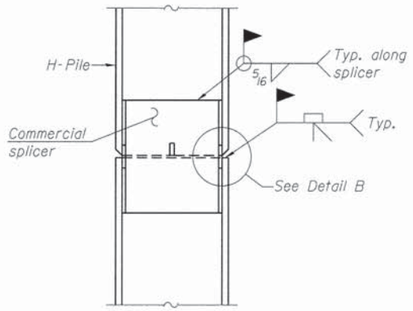


ELEVATION



DETAIL A

H-PILE SHOE ATTACHMENT



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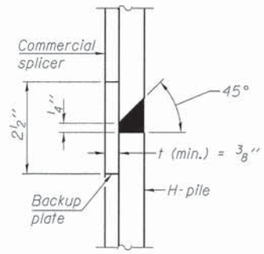
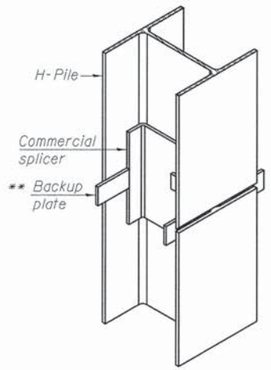
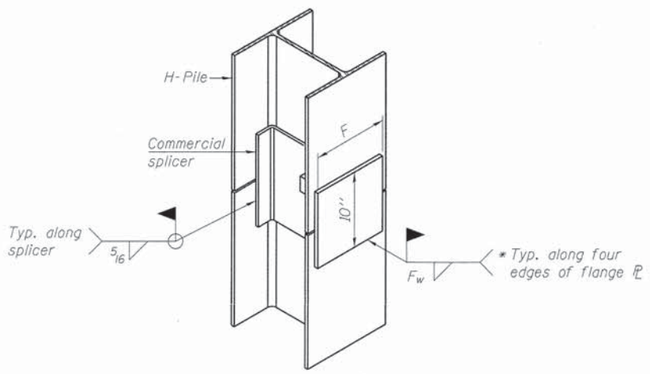


DETAIL "B"



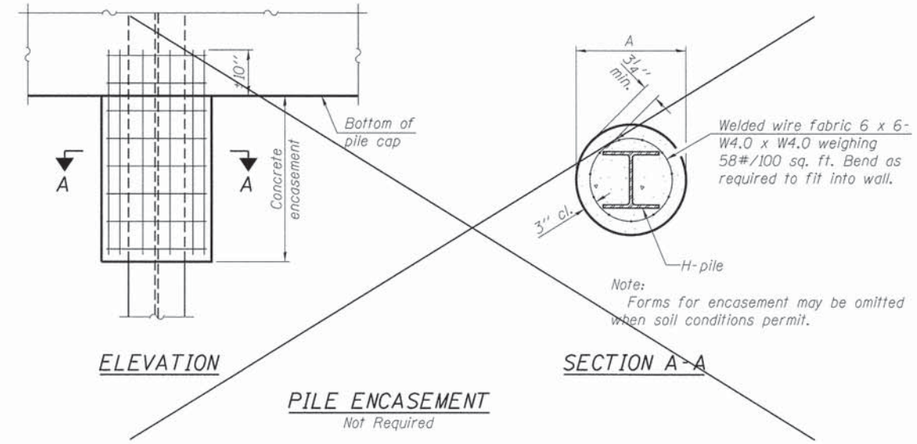
ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE



ISOMETRIC VIEW

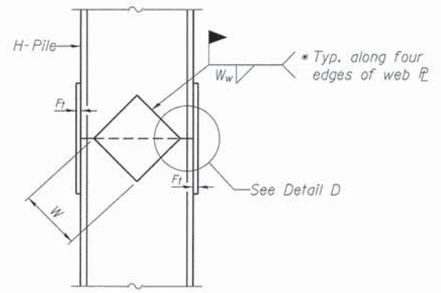
WELDED COMMERCIAL SPLICE ALTERNATE



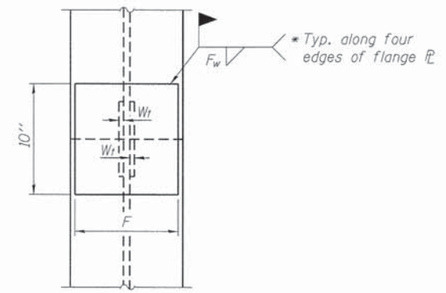
ELEVATION

SECTION A-A

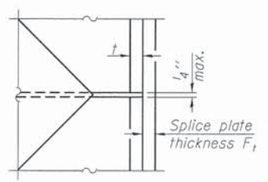
PILE ENCASEMENT
Not Required



ELEVATION



END VIEW



DETAIL D

Designation	F	F_t	F_w	W	W_t	W_w
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"	11/16"	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"	11/16"	6 1/2"	5/8"	1/2"
x74	10"	7/8"	11/16"	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"

WELDED PLATE FIELD SPLICE

* 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.).

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

F-HP 1-27-12

FILE NAME = 140021-sht-bridge.dgn	USER NAME = #USER#	DESIGNED - J.R.T.	REVISED -
HAMPTON, LENZINI AND RENWICK, INC. 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959		CHECKED - S.W.M.	REVISED -
	PLOT SCALE = #SCALE#	DRAWN - R.D.H.	REVISED -
	PLOT DATE = 5/1/2015	CHECKED - S.W.M.	REVISED -

STATE OF ILLINOIS
HAMILTON COUNTY HIGHWAY DEPARTMENT

HP PILE DETAILS
STRUCTURE NO. 033-3322
SHEET NO. 7 OF 8 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
106	13-04128-00-BR	HAMILTON	12	11
DAHLGREN ROAD DISTRICT		CONTRACT NO. 99548		
ILLINOIS	FED. AID PROJECT BROS-0065(057)			

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

Page 1 of 1

Bridge Foundation Boring Log

Project: H-14051 Bridge TR-106 over Trib Big Creek Date: 3-26-2014
Section: 13-04128-00-BR Station
Structure: 033-3044 Bored by: B. Schwartz
County: Hamilton Checked by: T. Holcomb

Boring No: 1
Station:
Offset:

Surface Water Elev.
Ground Water Elev. During Drilling 427.9
Upon Completion plugged

	Elevation	N	Qu tsf	w %
Ground Surface 443.9	0			
Brown Sandy CLAY (A-6)		4	0.8B	20
	-5	4	1.0B	26
		5	0.4B	24
	-10	10	1.2S	22
		6	0.8S	23
	-15	8	0.2S	19
427.9				
Brown Mottled Gray Silty CLAY (A-6)		8	1.3S	28
	-20	14	0.8B	25
422.9				
Gray SHALE		100/2"	--	9

shale (continued)

	Elevation	N	Qu tsf	w %
		100/2"	--	5
	-25			
417.4		100/3"	--	12
End of Boring @ -26.5'	-30			
	-35			
	-40			

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

BORING-1

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

Page 1 of 1

Bridge Foundation Boring Log

Project: H-14051 Bridge TR-106 over Trib Big Creek Date: 3-26-2014
Section: 13-04128-00-BR Station
Structure: 033-3044 Bored by: B. Schwartz
County: Hamilton Checked by: T. Holcomb

Boring No: 2
Station:
Offset:

Surface Water Elev.
Ground Water Elev. During Drilling 430.2
Upon Completion plugged

	Elevation	N	Qu tsf	w %
Ground Surface 443.7	0			
Brown Sandy CLAY (A-6)		7	-	14
	-5	4	0.7S	22
		11	1.7S	19
	-10	7	0.9B	20
		9	0.3S	20
	-15	2	0.2B	27
427.7				
Gray Sandy CLAY (A-6)		8	1.6B	16
424.7	-20			
Gray SHALE		111	--	6
		100/3"	--	6

shale (continued)

	Elevation	N	Qu tsf	w %
		100/3"	--	6
	-25			
417.2		100/2"	--	4
End of Boring @ -26.5'	-30			
	-35			
	-40			

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

BORING-2

FILE NAME = 140021-sht-bridge.dgn	USER NAME = $USER$	DESIGNED - J.R.T.	REVISED -
HAMPTON, LENZINI AND RENWICK, INC. 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959		CHECKED - S.W.M.	REVISED -
	PLOT SCALE = $SCALE$	DRAWN - R.D.H.	REVISED -
	PLOT DATE = 5/1/2015	CHECKED - S.W.M.	REVISED -

STATE OF ILLINOIS
HAMILTON COUNTY HIGHWAY DEPARTMENT

BORINGS
STRUCTURE NO. 033-3322
SHEET NO. 8 OF 8 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
106	13-04128-00-BR	HAMILTON	12	12
DAHLGREN ROAD DISTRICT		CONTRACT NO. 99548		
ILLINOIS	FED. AID PROJECT BROS-0065(057)			