06-15-12 LETTING ITEM 188

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
107	09-09115-00-BR	HAMILTON	12	1
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT		
PROJECT# BROS-065(049)		CONTRACT# 99465		
JOB # C-99-558-09		TRIBUTARY BIG CREEK		

LEC JOB # H09L014HM

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

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

LAMAC ENGINEERING CO.

PROFESSIONAL
DESIGN FIRM
LAND SURVEY &
PROFESSIONAL
ENGINEERING
CORPORATION
184-000887
(62-032435)(35-C02769)

AARON M. MEFFORD
56284
REGISTERED
PROFESSIONAL
ENGINEER
OF
ILLINOIS

AARON M. MEFFORD
NAME
SIGNATURE
2-7-12
DATE
11-30-13
EXPIRES

INDEX OF SHEETS

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

000001-06	STANDARD SYMBOLS, ABBREVIATIONS & PATTERNS
280001-06	TEMPORARY EROSION CONTROL SYSTEMS
515001-03	NAME PLATE FOR BRIDGES
701901-02	TRAFFIC CONTROL DEVICES
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)

SUMMARY OF QUANTITIES

CODE NO.	ITEM	UNIT	QUANTITY
20200100	EARTH EXCAVATION	CU YD	212.00
20300100	CHANNEL EXCAVATION	CU YD	301.00
20400800	FURNISHED EXCAVATION	CU YD	293.00
*28000305	TEMPORARY DITCH CHECKS	FOOT	14.00
28100807	STONE DUMPED RIPRAP, CLASS A4	TON	260.00
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	315.00
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1.00
50300225	CONCRETE STRUCTURES	CU YD	22.80
50300280	CONCRETE ENCASEMENT	CU YD	2.80
50400405	PRECAST PRESTRESSED CONCRETE DECK BEAMS (21" DEPTH)	SQ FT	1320.00
50800105	REINFORCEMENT BARS	POUND	2420.00
△50900205	STEEL RAILING, TYPE S1	FOOT	109.00
51201400	FURNISHING STEEL PILES HP10X42	FOOT	240.00
51202305	DRIVING PILES	FOOT	240.00
51500100	NAME PLATES	EACH	1.00
542D0220	PIPE CULVERTS, CLASS D, TYPE 1 15"	FOOT	40.00
67100100	MOBILIZATION	L SUM	1.00
*X2501000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.40
*Z0068900	STONE LINED DITCH	TON	48.00

△ SPECIALTY ITEMS

DESIGN DESIGNATION:
DESIGN SPEED: 30 MPH
HIGHWAY CLASS - LOCAL ROAD
EXISTING STRUCTURE NO.: 033-3242
PROPOSED STRUCTURE NO.: 033-3311
CURRENT A.D.T. = 15
CONTRACT NO. 99465

WARNING

CALL U.L.I.E. TOLL FREE 1-800-892-0123

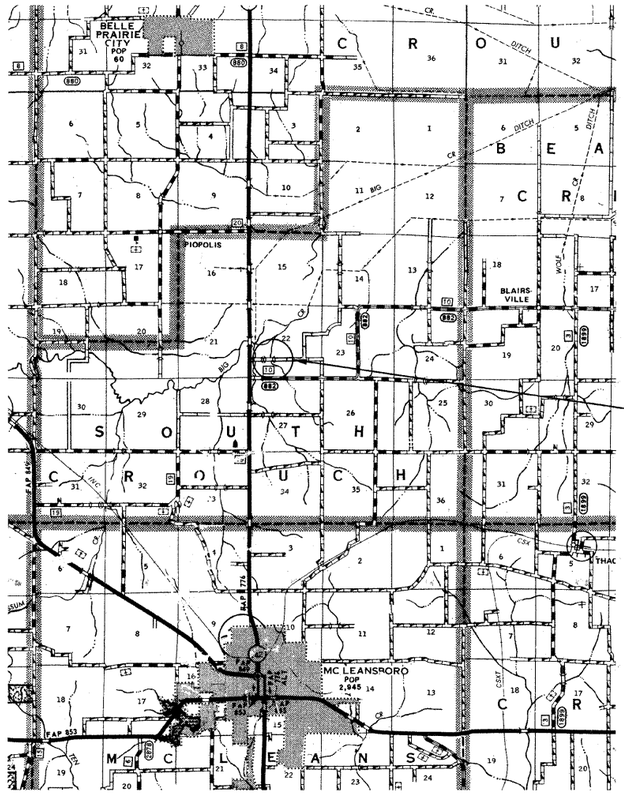
CALL 811 BEFORE YOU DIG

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PLANS FOR PROPOSED HIGHWAY BRIDGE PROGRAM

T.R. 107 HAMILTON COUNTY SECTION 09-09115-00-BR

PROJECT NO. BROS-065(049) JOB NO. C-99-558-09

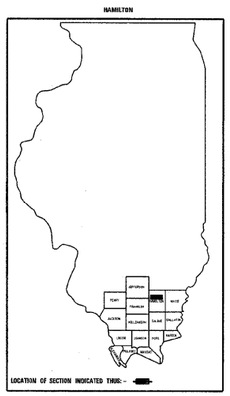
CONTRACT # 99465 TRIBUTARY BIG CREEK



LAYOUT
APPROXIMATE SCALE 1 INCH = 1 MILE

0 1 2 3
MILES

GROSS LENGTH	485.00 FT	0.092 MILES
OMISSIONS	0.00 FT	0.000 MILES
NET LENGTH	485.00 FT	0.092 MILES



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

SECTION 09-09115-00-BR
BEGINS STATION 2+50

STATION 5+00, STRUCTURE NO. 033-3311
A 55' LONG SINGLE SPAN PRECAST
PRESTRESSED CONCRETE DECK BEAM
BRIDGE (21" DEPTH), 24' ROADWAY,
0.00% GRADE, 15° RT. FWD. SKEW.

SECTION 09-09115-00-BR
ENDS STATION 7+35

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

APPROVED 2/7/2012
COUNTY ENGINEER

PASSED 4/9/2012
ENGINEER OF LOCAL ROADS AND STREETS

RELEASING FOR BID
BASED ON LIMITED
REVIEW 4/9/2012
OMER OSMAN, P.E.
ACTING DEPUTY DIRECTOR OF HIGHWAYS
REGION FIVE ENGINEER

TOWNSHIP ROUTE 107
OVER TRIBUTARY BIG CREEK
HAMILTON COUNTY, ILLINOIS

SHEET TITLE:
TITLE SHEET

SCALE:	VARIES
BY:	AMM
DATE:	2012
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.

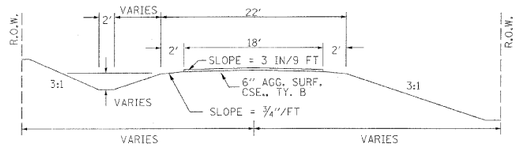
THE WORK INVOLVED ON THIS SECTION CONSISTS OF THE REMOVAL OF THE EXISTING STRUCTURE, THE CONSTRUCTION OF A 55 FOOT LONG SINGLE SPAN PRECAST, PRESTRESSED CONCRETE DECK BEAM BRIDGE, EARTH APPROACHES, AGGREGATE SURFACE COURSE AND OTHER MISCELLANEOUS ITEMS NECESSARY TO COMPLETE THIS SECTION.

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

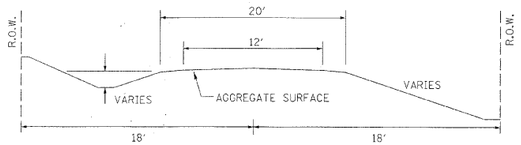
IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONTACT ALL THE UTILITIES, AFFECTING THE PROJECT, PRIOR TO CONSTRUCTION.

AGGREGATE SURFACE COURSE, TYPE B INCLUDES 24 TON FOR FILL NEXT TO THE BRIDGE, 25 TON FOR FIELD ENTRANCE, AND 266 TON FOR THE ROADWAY.

TYPICAL CROSS SECTION PROPOSED



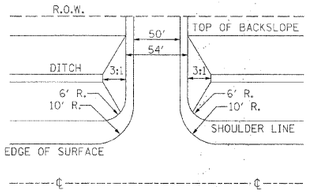
TYPICAL CROSS SECTION EXISTING



UTILITIES:

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

FIELD ENTRANCE DETAIL



NOTE: CONSTRUCT SPECIAL DITCH

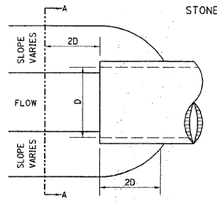
STA 3+00 TO STA 3+50 LT
STA 2+50 TO STA 4+75 RT
STA 5+25 TO STA 7+35 LT
STA 5+24 TO STA 7+35 RT

NOTE: CONSTRUCT STONE LINED DITCH

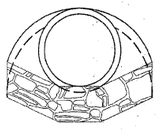
STA 4+25 TO STA 4+50 RT (0.62 TON/LIN FT)
STA 5+24 TO STA 5+50 LT & RT (0.62 TON/LIN FT)
48 TON STONE LINED DITCH.

SEE STONE LINED DITCH DESIGN.

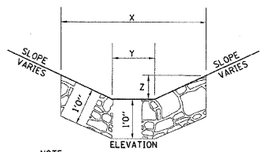
STONE LINED DITCH DESIGN



Plan



Section A-B



ELEVATION

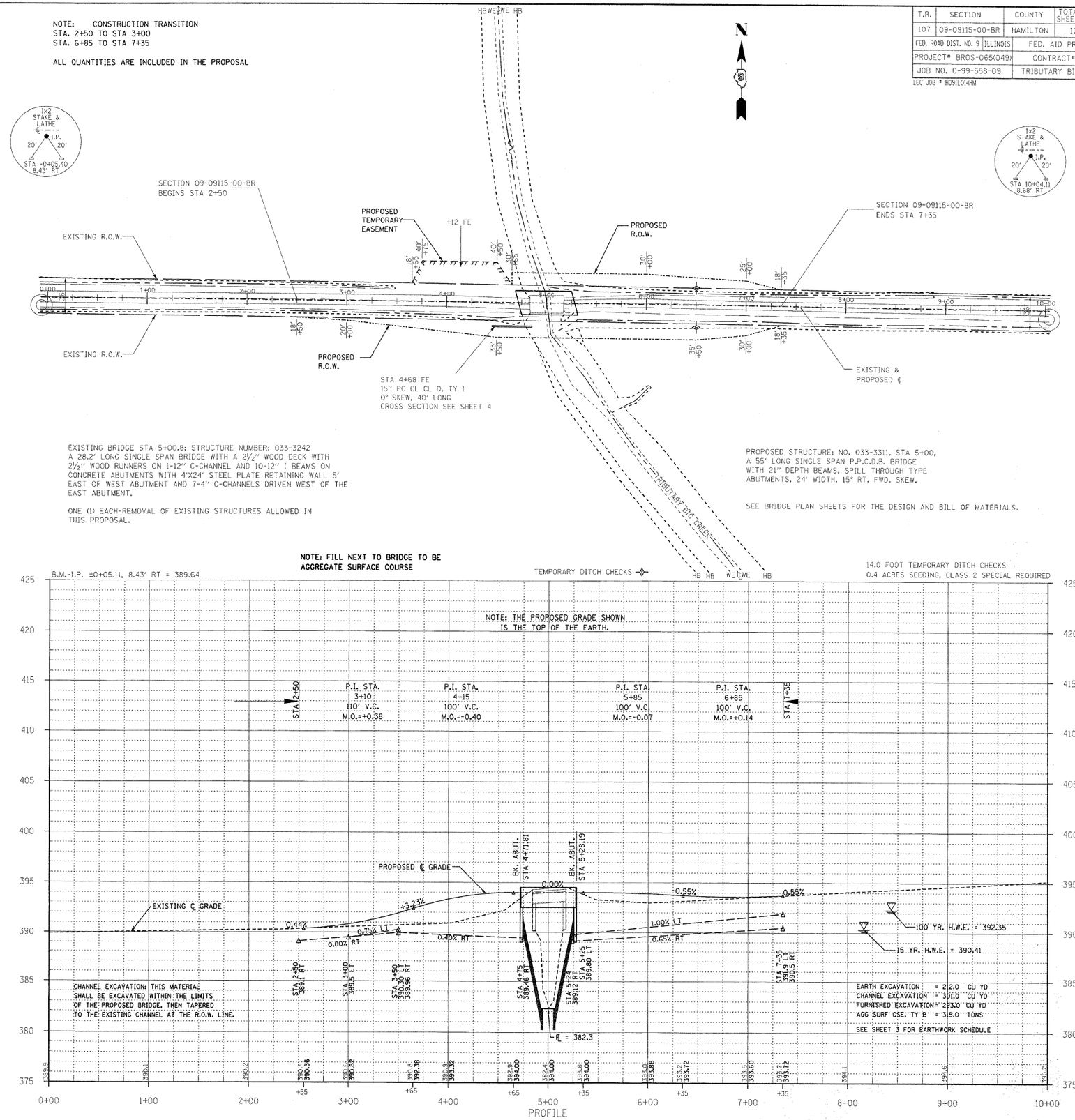
NOTE:

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+50 TO STA 3+00
STA. 6+85 TO STA 7+35

ALL QUANTITIES ARE INCLUDED IN THE PROPOSAL



EXISTING BRIDGE STA 5+00.8; STRUCTURE NUMBER: 033-3242
A 28.2' LONG SINGLE SPAN BRIDGE WITH A 2½" WOOD DECK WITH 2½" WOOD RUNNERS ON 1-12" C-CHANNEL AND 10-12" I BEAMS ON CONCRETE ABUTMENTS WITH 4'X24' STEEL PLATE RETAINING WALL 5' EAST OF WEST ABUTMENT AND 7-4" C-CHANNELS DRIVEN WEST OF THE EAST ABUTMENT.

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

PROPOSED STRUCTURE: NO. 033-3311, STA 5+00,
A 55' LONG SINGLE SPAN P.P.C.D.B. BRIDGE
WITH 21" DEPTH BEAMS, SPILL THROUGH TYPE
ABUTMENTS, 24' WIDTH, 15° RT. FWD. SKEW.

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

NOTE: FILL NEXT TO BRIDGE TO BE AGGREGATE SURFACE COURSE

B.M.-I.P. ±0+05.11, 8.43' RT = 389.64

TEMPORARY DITCH CHECKS ◇ HB HB WE ℄ WE HB

14.0 FOOT TEMPORARY DITCH CHECKS
0.4 ACRES SEEDING, CLASS 2 SPECIAL REQUIRED

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
107	09-09115-00-BR	HAMILTON	12	2
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT		
PROJECT# BROS-065(049)		CONTRACT# 99465		
JOB NO. C-99-558-09		TRIBUTARY BIG CREEK		

LEC JOB # N09L0104RM

323 W. 3RD ST.
P.O. BOX 160
MT. CARMEL, IL
62863
PHONE:
(618)-262-8651
FAX:
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SUITE1
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LAMP ENGINEERING CO.

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184-000887
(62-032435)(35-002769)

AARON M. MEFFORD
56284
REGISTERED PROFESSIONAL ENGINEER
OF
ILLINOIS

AARON M. MEFFORD
NAME
SIGNATURE
2-7-12
DATE
11-30-13
EXPIRES

TOWNSHIP ROUTE 107
OVER TRIBUTARY BIG CREEK
HAMILTON COUNTY, ILLINOIS

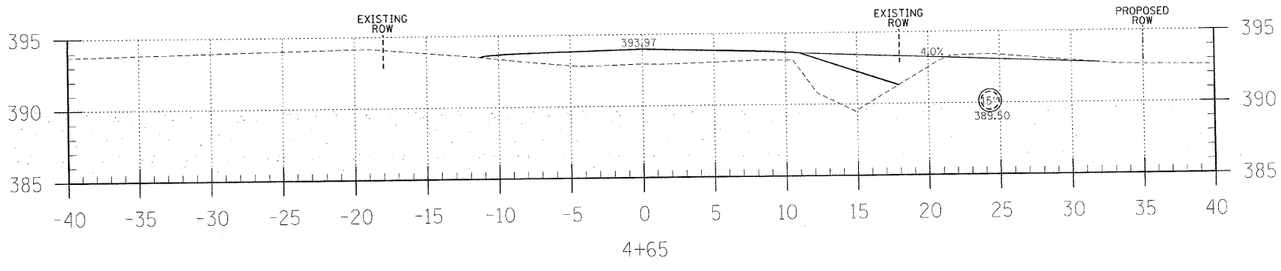
SHEET TITLE:

PLAN & PROFILE

SCALE:	VARIES
BY:	AMM
DATE:	20212
REV:	

2 OF 12
SHEETS

SHEET NO.
2



4+65

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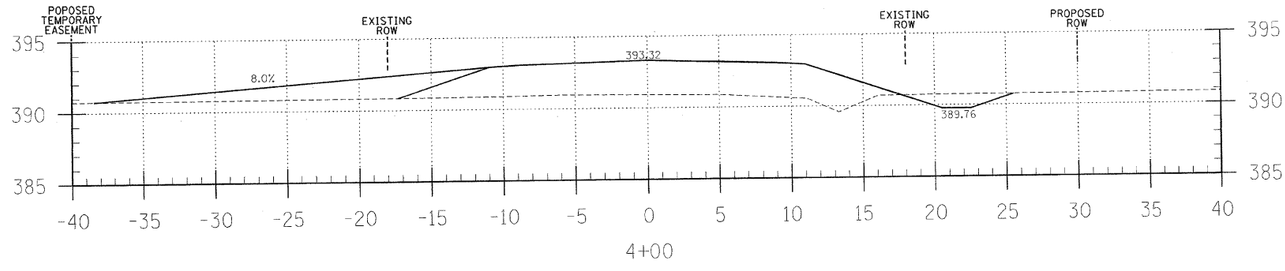
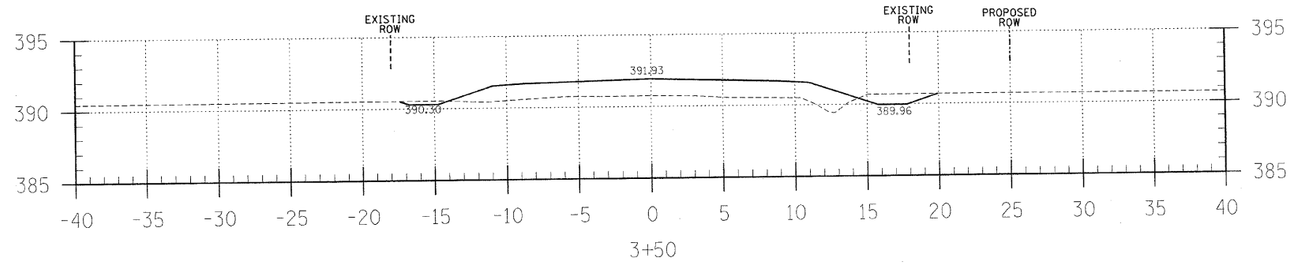
F = 31.2



4+00

C = 4.8

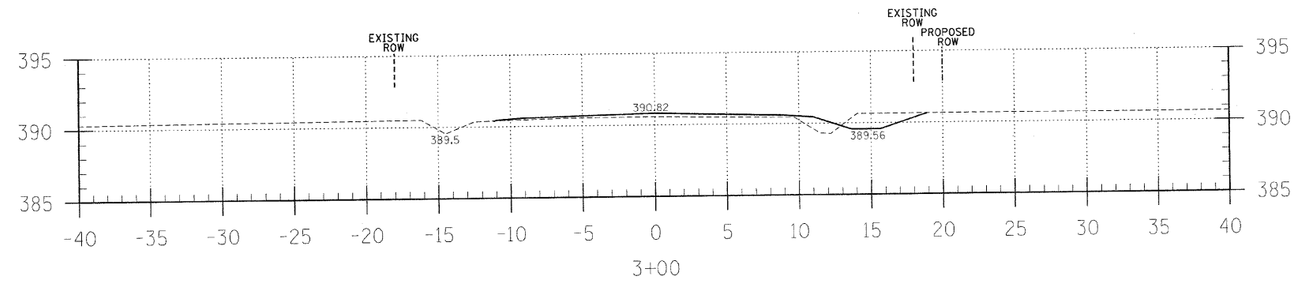
F = 67.5



3+50

C = 3.4

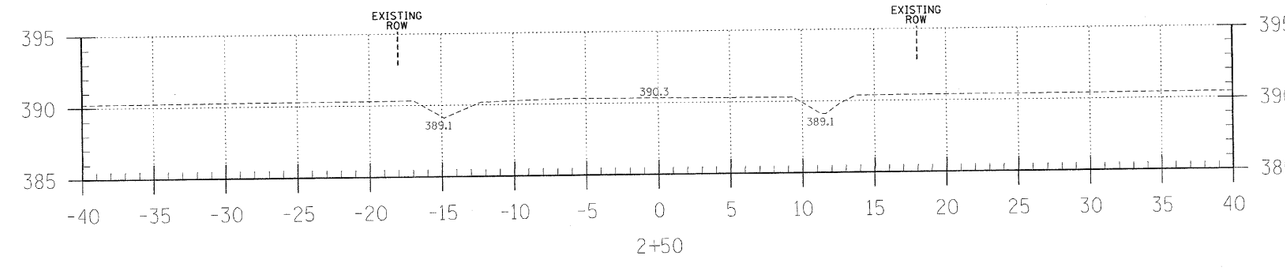
F = 30.6



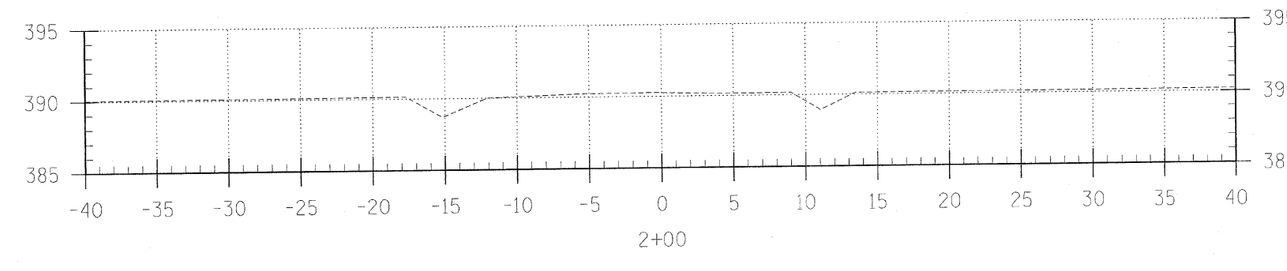
3+00

C = 4.2

F = 5.5



2+50



2+00

EARTHWORK SCHEDULE

LOCATION	EARTH EXCAVATION	CHANNEL EXCAVATION	ESTIMATED UNSUITABLE MATERIAL	SUITABLE MATERIAL ADJUSTED FOR SHRINKAGE	EMBANKMENT	EARTHWORK BALANCE WASTE (+) OR SHORTAGE (-)
	CUBIC YARD	CUBIC YARD	CUBIC YARD	CUBIC YARD	CUBIC YARD	CUBIC YARD
STA 0+00 TO 4+71.8	34.3	0.0	0.0	25.7	268.2	-242.5
STA 4+71.8 TO 5+28.2	0.0	301.0	150.6	112.9	0.0	+112.9
STA 5+28.2 TO 10+00	177.4	0.0	0.0	133.1	240.9	-107.8
2 FIELD ENTRANCES	0.0	0.0	0.0	0.0	55.4	-55.4
TOTAL	211.7	301.0	150.6	271.7	564.5	-292.8

T.R.	SECTION	COUNTY	TOTAL SHEET SHEETS NO.			
107	09-09115-00-BR	HAMILTON	12	3		
FED. RDS DIST. NO. 9 ILLINOIS		FED. AID PROJECT				
PROJECT* BRDS-0653(09)		CONTRACT* 99463				
JOB NO. C-99-558-09		TRIB. BIG CREEK				
LIC 084 * ILLINOIS						

SHEET NO. 3

SHEETS 3 OF 12

REV: | DATE: 2626 | BY: AMM | SCALE: 1" = 5'

SHEET TITLE: CROSS-SECTIONS

TOWNSHIP ROUTE 107 OVER TRIBUTARY BIG CREEK HAMILTON COUNTY, ILLINOIS

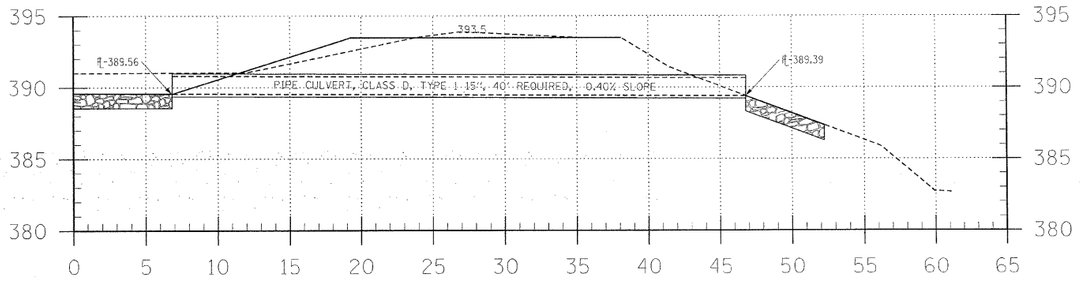
AARON M. MEFFORD
NAME
SIGNATURE
11-30-13
EXPIRES
DATE 2-7-12

PROFESSIONAL DESIGN FIRM
LAND SURVEY & PROFESSIONAL ENGINEERING CORPORATION
184-000887
(66-002435)(35-002769)

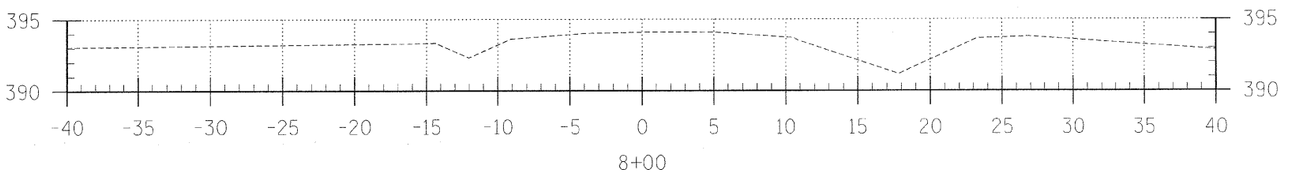
LAMAC ENGINEERING CO.

523 W. 3RD ST.
P.O. BOX 69
MT. CARMEL, IL
62863
PHONE (618)-262-8651
FAX: (618)-263-3327

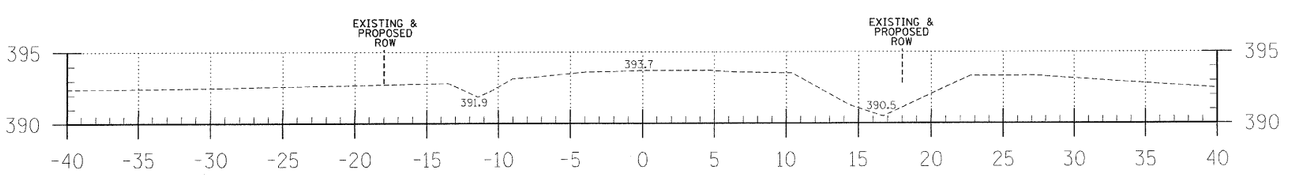
1004 W. STATE ST.
SUITE 1
PRINCETON, IN
47670
PHONE (812)-386-7611
FAX: (812)-385-2812



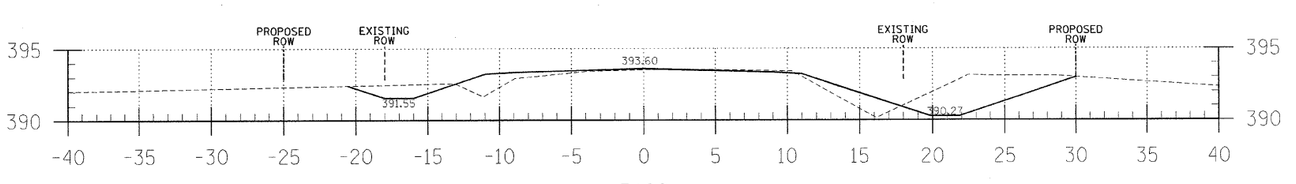
STA. 4+68 FE RT



8+00



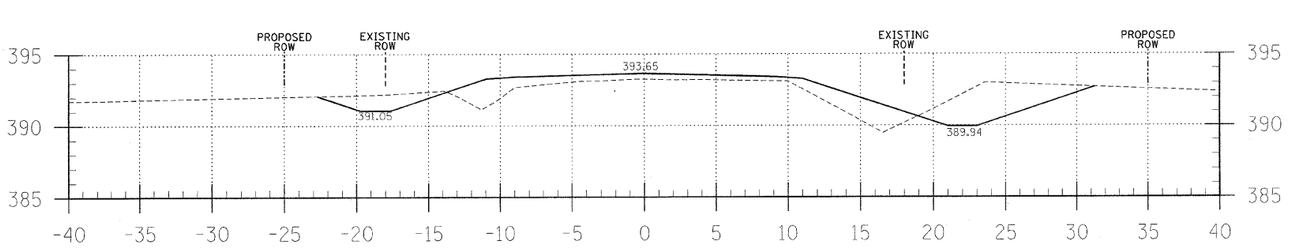
7+35



C = 22.5

F = 10.6

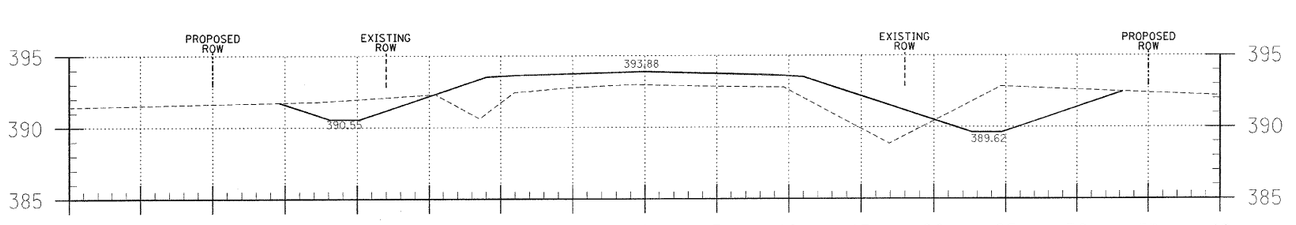
7+00



C = 25.0

F = 24.0

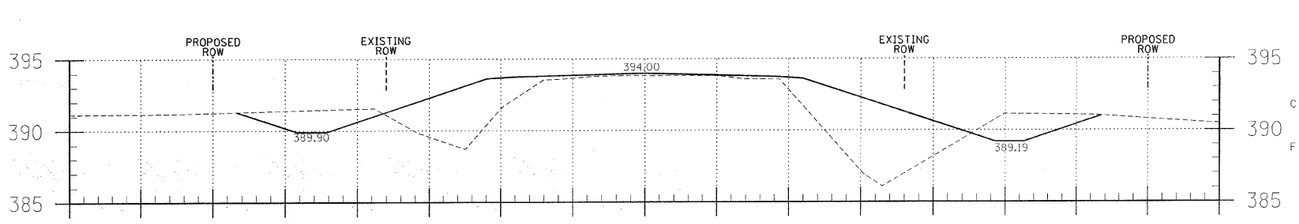
6+50



C = 30.5

F = 45.0

6+00



C = 20.3

F = 69.8

5+35

T.R. 107 | SECTION 09-09315-00-BR | COUNTY HAMILTON | TOTAL SHEET NO. 4 | SHEET NO. 4

FED. ROAD DIST. NO. 9 ILLINOIS | FED. AID PROJECT | TRIB. BIG CREEK

PROJECT# BRDS-0651(049) | CONTRACT# 99465

JOB NO. C-93-558-03

LOC. DES. = NORTHBOUND

TOWNSHIP ROUTE 107 OVER TRIBUTARY BIG CREEK HAMILTON COUNTY, ILLINOIS

SHEET TITLE: CROSS-SECTIONS

SCALE: 1" = 5'

BY: AMM

DATE: 2012

REV:

SHEET NO 4 OF 12 SHEETS

AARON M. MEFFORD
NAME
SIGNATURE
2-7-12
DATE
11-30-13
EXPIRES

AARON M. MEFFORD
056284
REGISTERED PROFESSIONAL ENGINEER
STATE OF ILLINOIS

PROFESSIONAL DESIGN FIRM
LAND SURVEY & PROFESSIONAL ENGINEERING CORPORATION
184-001887
182-002455(05-007769)

LAMAC ENGINEERING CO.

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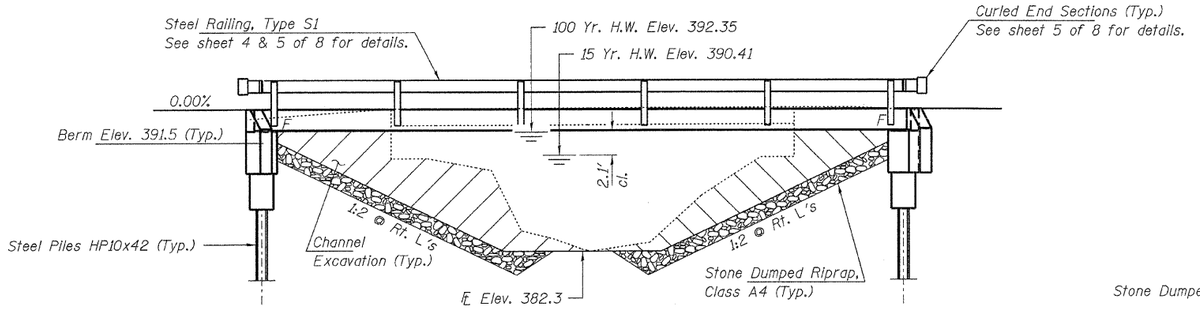
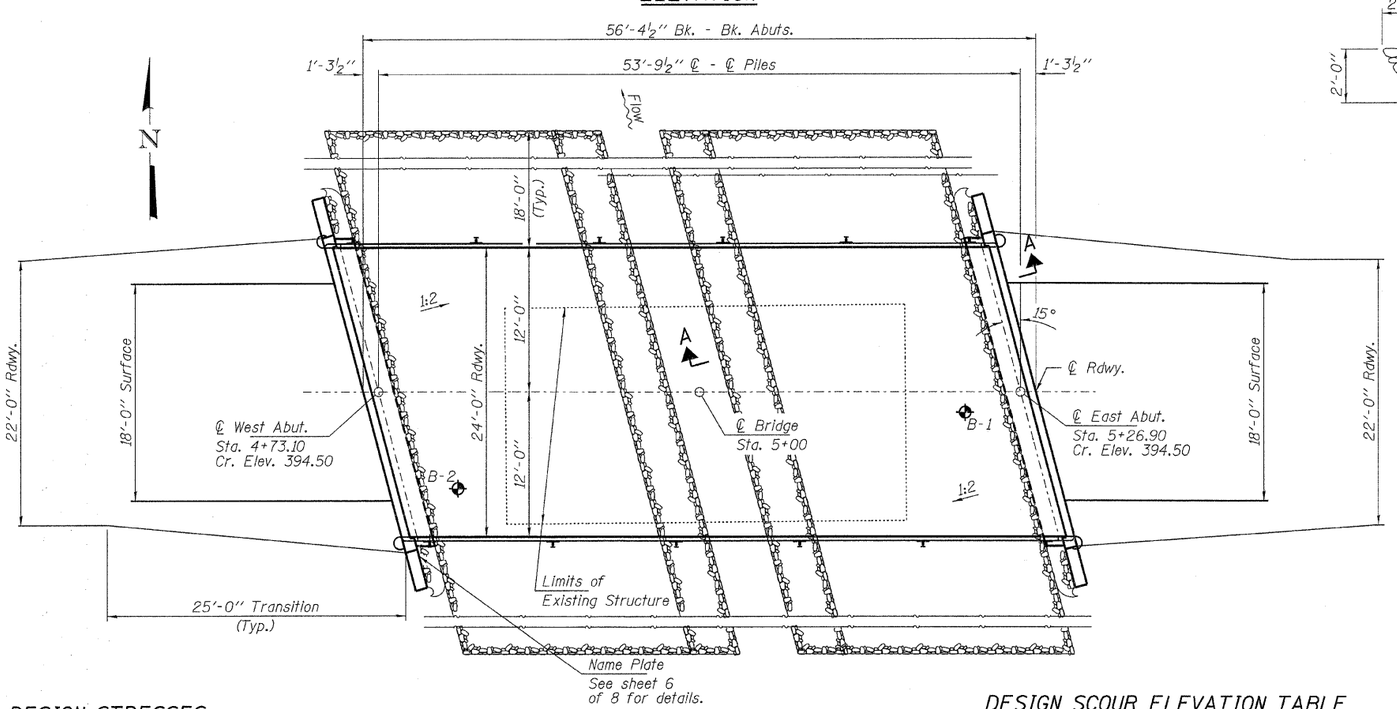
405 W. STATE ST
SUITE1
PRINCETON, IN 47670
PHONE: (812)-386-7611
FAX: (812)-385-2812

EXISTING STRUCTURE NO. 033-3242: A 28.2' long single span bridge with 2½" wood deck with 2½" wood runners on 1-12" C-channel and 10-12" I-beams on concrete abutments with 4'x24" steel plate retaining wall 5' east of the West Abutment and 7-4" C-channels driven west of the East Abutment. Structure closed to traffic during construction.

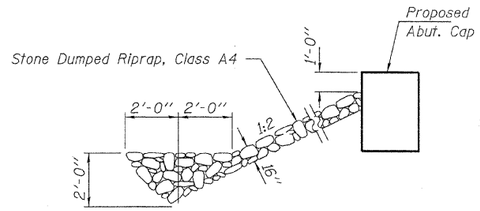
No Salvage



ELEVATION



PLAN



SECTION A-A

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

GENERAL NOTES

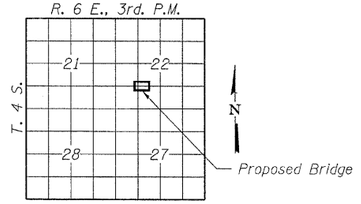
Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.

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.

INDEX OF STRUCTURE SHEETS



LOCATION SKETCH

BUILT 201_ BY
HAMILTON COUNTY
SEC. 09-09115-00-BR
SOUTH CROUCH ROAD DISTRICT
STR. NO. 033-3311
LOADING HL-93

NAME PLATE

See Std. 515001

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.)

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) = 3
Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.307g
Design Spectral Acceleration at 0.2 sec. (S_{DS}) = 0.733g
Soil Site Class = D

WATERWAY INFORMATION

Drainage Area = 1.59 Sq. Mi.
Existing Low Grade Elev. 390.2 @ Sta. 2+00
Proposed Low Grade Elev. 390.2 @ Sta. 2+00

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Natural H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
Design	15	1039	124	250	390.41	-	-	-	-
Base	100	1840	178	348	392.35	1.85	0.0	394.20	392.35
Max. Calc.	500	-	-	-	-	-	-	-	-

DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	W. Abut.	E. Abut.
	388.9	388.9

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 1/30/2012
ILLINOIS STRUCTURAL NO. 081-6064

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

Expires 11-30-2012

TOTAL BILL OF MATERIAL

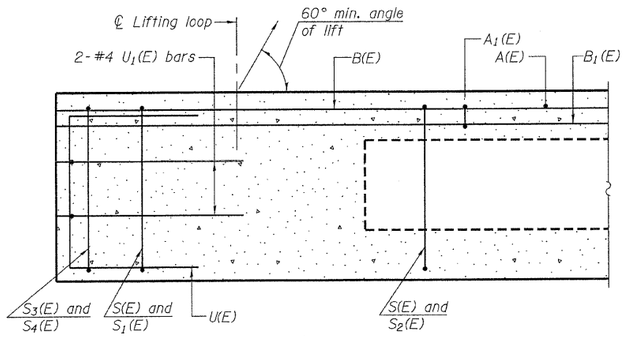
ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	Cu. Yd.			30!
Stone Dumped Riprap, Class A4	Ton			260
Removal of Existing Structures	Each			1
Concrete Structures	Cu. Yd.		22.8	22.8
Concrete Encasement	Cu. Yd.		2.8	2.8
Precast Prestressed Concrete Deck Beams (21" Depth)	Sq. Ft.	1,320		1,320
Reinforcement Bars	Pound		2,420	2,420
Steel Railing, Type S1	Foot	109		109
Furnishing Steel Piles HP10x42	Foot		240	240
Driving Piles	Foot		240	240
Name Plates	Each		1	1

FILE NAME = 898068-sht-bridge.dgn	USER NAME =	DESIGNED - A.S.L.	REVISED -	
HAMPTON, LENZINI AND RENWICK, INC. 3366 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LB / PE / SE CORP. 184.000959		CHECKED - S.W.M.	REVISED -	
	PLOT SCALE =	DRAWN - D.A.B.	REVISED -	
	PLOT DATE = 1/30/2012	CHECKED - S.W.M.	REVISED -	

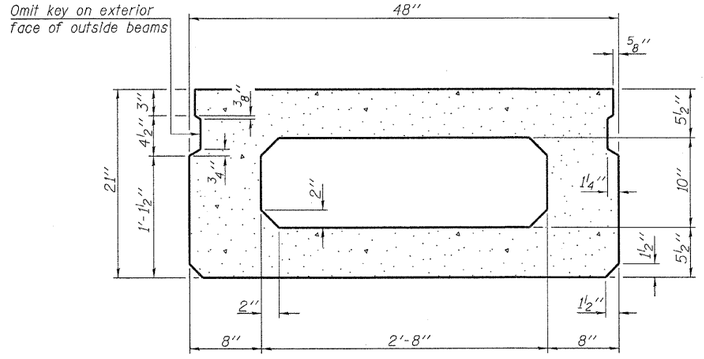
STATE OF ILLINOIS
HAMILTON COUNTY HIGHWAY DEPARTMENT

GENERAL PLAN & ELEVATION
STRUCTURE NO. 033-3311
SHEET NO. 1 OF 8 SHEETS

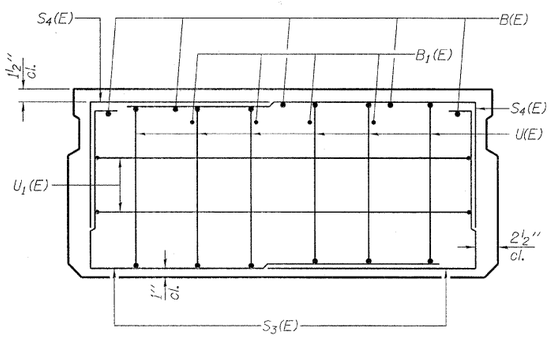
T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
107	09-09115-00-BR	HAMILTON	12	5
SOUTH CROUCH ROAD DISTRICT		CONTRACT NO. 99465		
ILLINOIS FED. AID PROJECT				



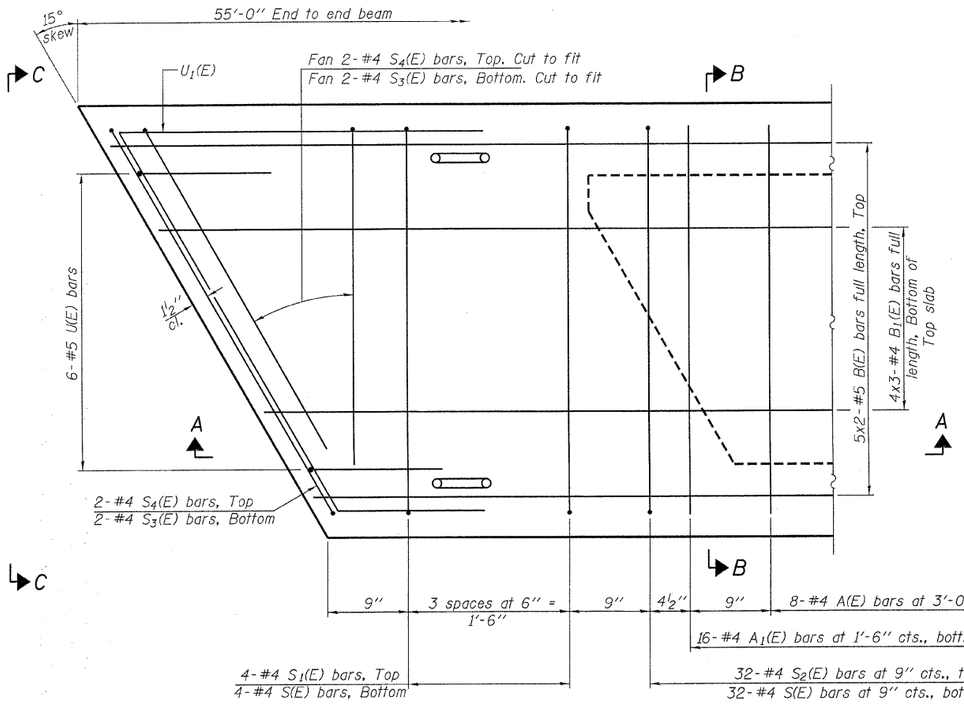
SECTION A-A



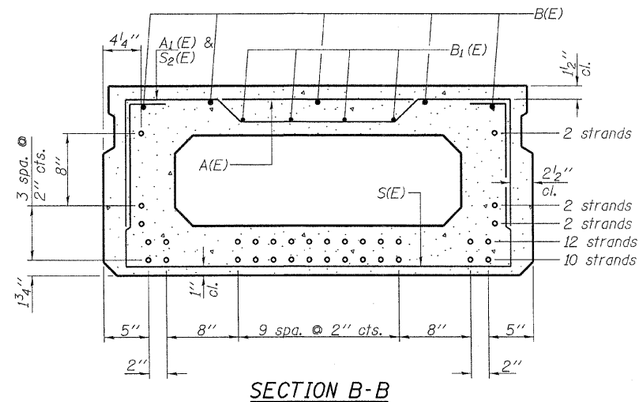
SECTION B-B
(Showing dimensions)



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)	17	#4	3′-7″	—
$A_1(E)$	33	#4	3′-10″	~
B(E)	10	#5	28′-7″	—
$B_1(E)$	12	#4	19′-7″	—
S(E)	73	#4	7′-5″	⊔
$S_1(E)$	8	#4	5′-11″	⊓
$S_2(E)$	65	#4	6′-2″	⊐
$S_3(E)$	8	#4	4′-8″	⌋
$S_4(E)$	8	#4	3′-11″	⌋
U(E)	12	#5	4′-0″	⊏
$U_1(E)$	4	#4	7′-1″	⊏

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″

Note:
Spacing of S(E) and $S_2(E)$ 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.

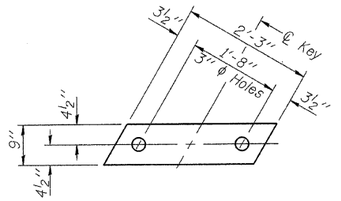
PD-2148-R 7-1-10

FILE NAME = 290868-sht-bridge.dgn	USER NAME =	DESIGNED - A.S.L.	REVISED -	
HAMPTON, LENZINI AND RENWICK, INC. 3305 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000969		CHECKED - S.W.M.	REVISED -	
	PLOT SCALE =	DRAWN - D.A.B.	REVISED -	
	PLOT DATE = 1/30/2012	CHECKED - S.W.M.	REVISED -	

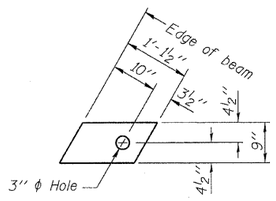
STATE OF ILLINOIS
HAMILTON COUNTY HIGHWAY DEPARTMENT

21″ x 48″ PPC DECK BEAM
STRUCTURE NO. 033-3311
SHEET NO. 2 OF 8 SHEETS

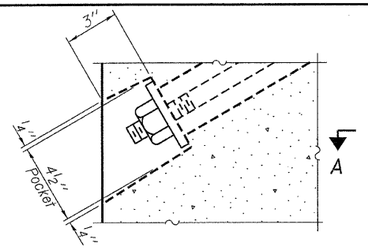
T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
107	09-09115-00-BR	HAMILTON	12	6
SOUTH CROUCH ROAD DISTRICT		CONTRACT NO. 99465		
	ILLINOIS FED. AID PROJECT			



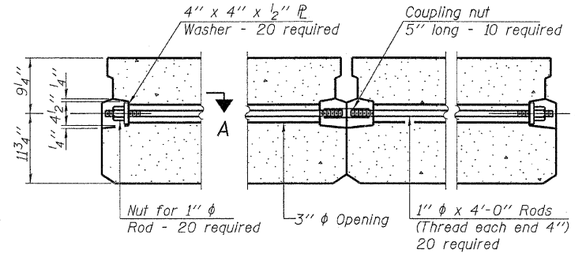
FABRIC BEARING PAD
(Interior - 10 Req'd.)



FABRIC BEARING PAD
(Exterior - 4 Req'd.)



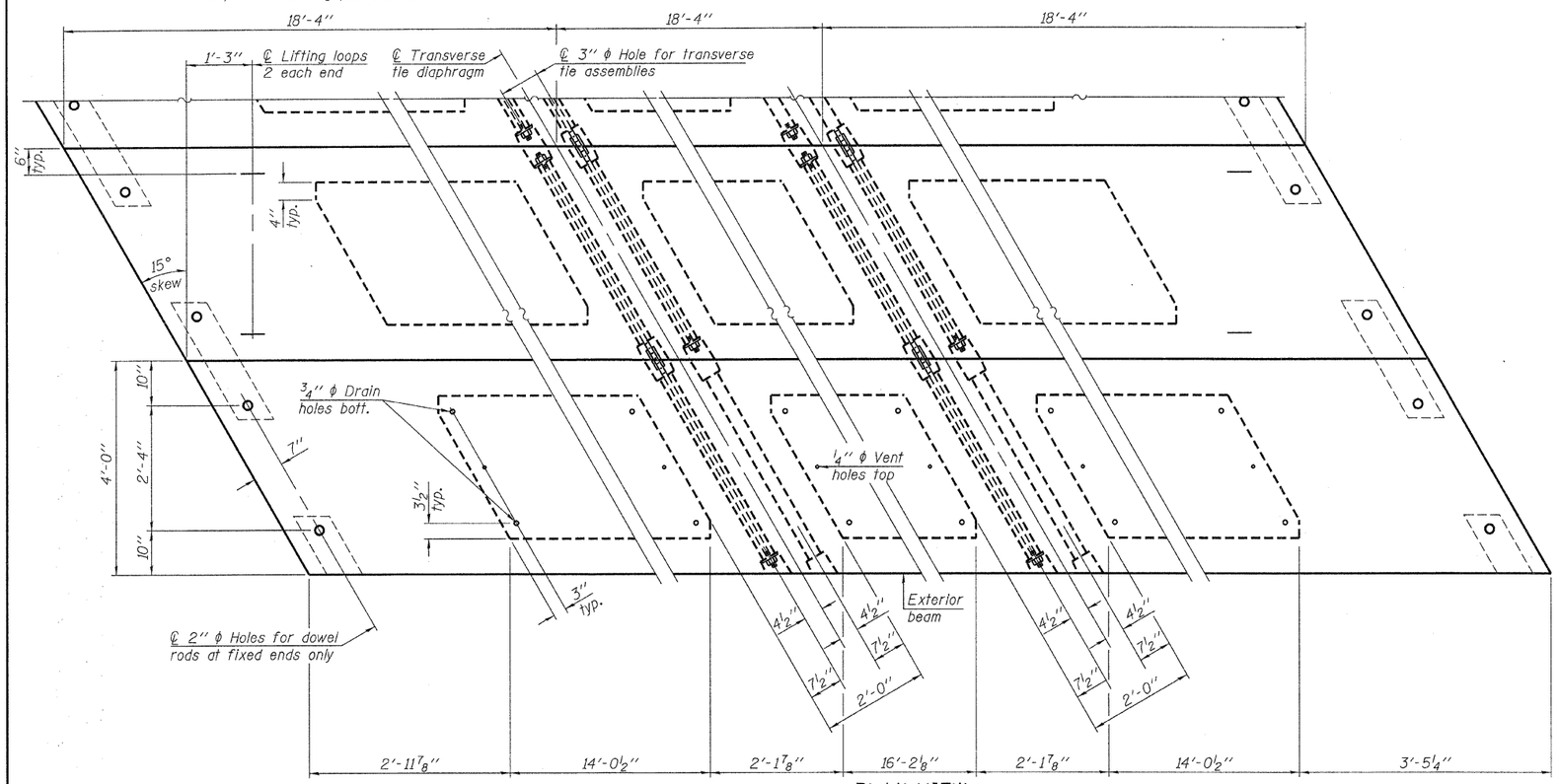
SECTION A-A



TYPICAL TRANSVERSE TIE ASSEMBLY

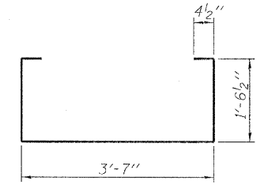
FIXED

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

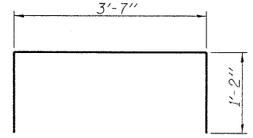


PLAN VIEW

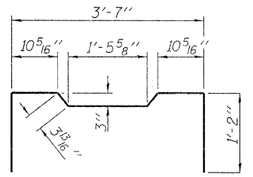
Note: Connect beams in pairs with the transverse tie configuration shown.



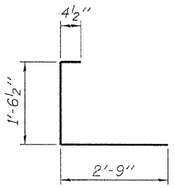
BAR S(E)



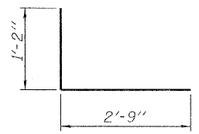
BAR S_1(E)



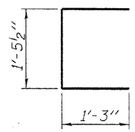
BAR S_2(E)



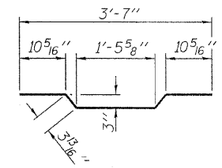
BAR S_3(E)



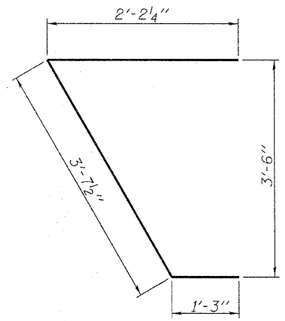
BAR S_4(E)



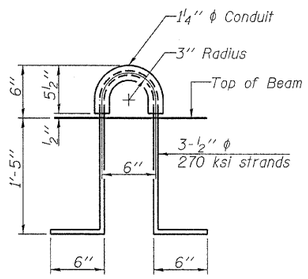
BAR U(E)



BAR A_1(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 1021.06 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.

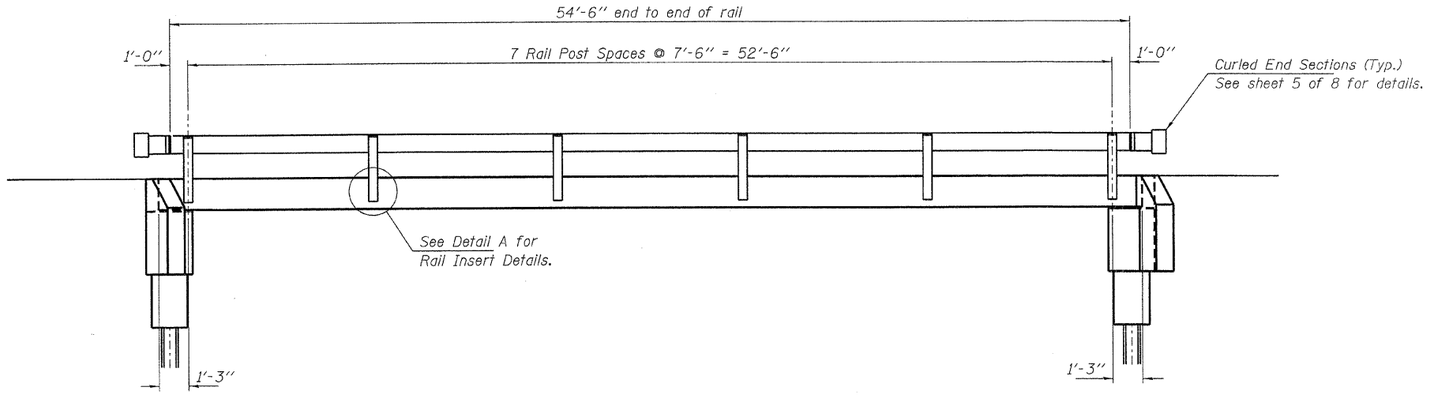
BILL OF MATERIAL

Precast Prestressed Conc. Deck Bms. (21" depth)	Sq. Ft.	1,320

PD-2148-RD 7-1-10

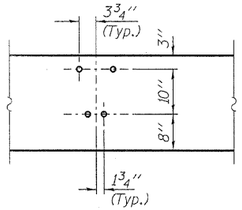
FILE NAME = 09@068-sht-bridge.dgn	USER NAME =	DESIGNED - A.S.L.	REVISED -	STATE OF ILLINOIS HAMILTON COUNTY HIGHWAY DEPARTMENT	21" x 48" PPC DECK BEAM DETAILS STRUCTURE NO. 033-3311
HAMPTON, LENZINI AND RENWICK, INC. 3365 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703		CHECKED - S.W.M.	REVISED -		SHEET NO. 3 OF 8 SHEETS
ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000969	PLOT SCALE =	DRAWN - D.A.B.	REVISED -		
	PLOT DATE = 1/30/2012	CHECKED - S.W.M.	REVISED -		

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
107	09-09115-00-BR	HAMILTON	12	7
SOUTH CROUCH ROAD DISTRICT		CONTRACT NO. 99465		
ILLINOIS	FED. AID PROJECT			

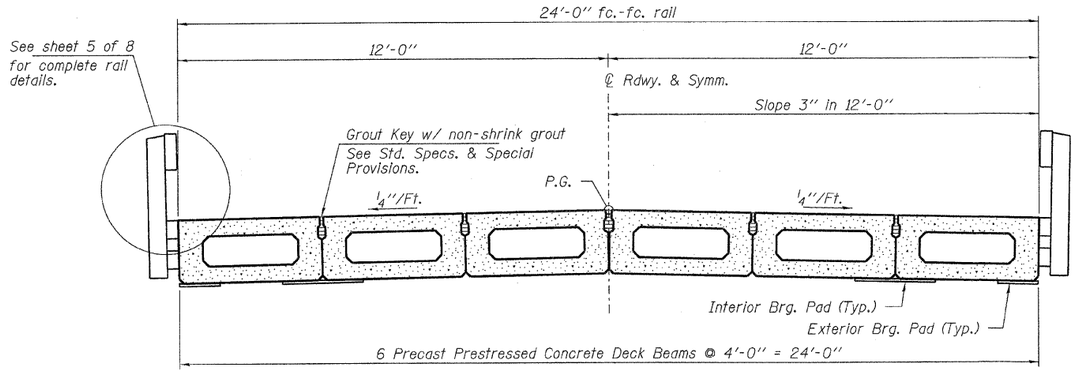


ELEVATION

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

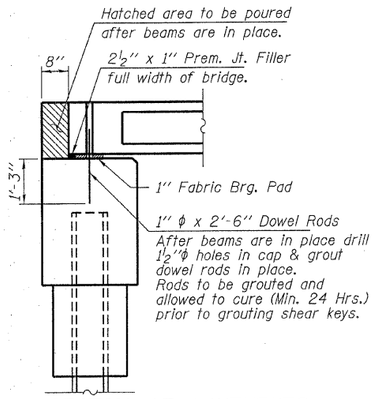


DETAIL A



CROSS SECTION

See sheets 2 & 3 of 8 for Superstructure.



SECTION AT ABUTMENTS

@ Rt. L's

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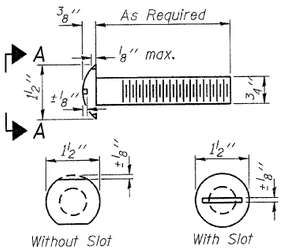
ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.005959	PLOT SCALE =	DRAWN - D.A.B.	REVISED -
	PLOT DATE = 1/30/2012	CHECKED - S.W.M.	REVISED -

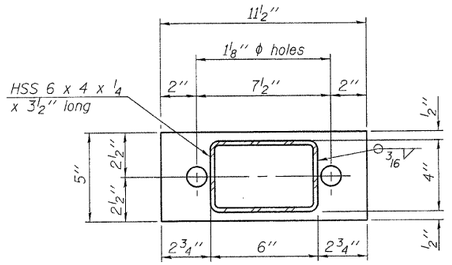
STATE OF ILLINOIS
HAMILTON COUNTY HIGHWAY DEPARTMENT

SUPERSTRUCTURE DETAILS
STRUCTURE NO. 033-3311
SHEET NO. 4 OF 8 SHEETS

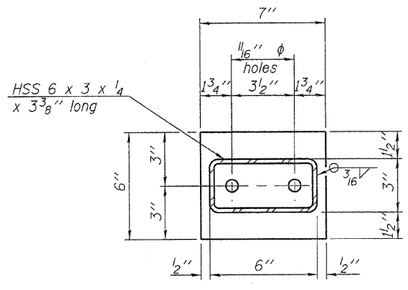
T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
107	09-09115-00-BR	HAMILTON	12	8
SOUTH CROUCH ROAD DISTRICT		CONTRACT NO. 99465		
ILLINOIS	FED. AID PROJECT			



VIEW A-A
ROUND HEAD BOLT

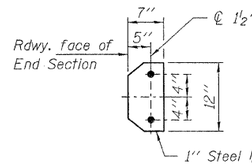


℄ 1/2" x 11 1/2" x 5"

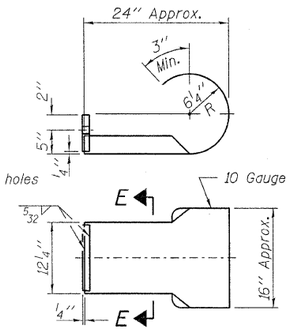


℄ 1/2" x 7" x 6"

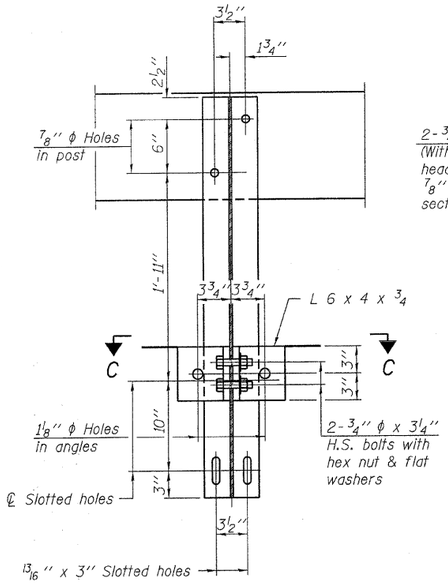
Note: Cost of curled end sections shall be included with the Steel Railing. (4 Required)



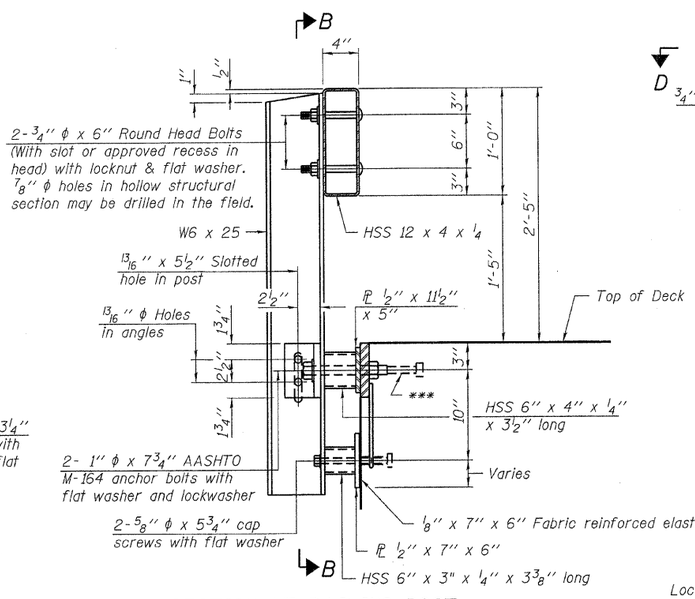
SECTION E-E



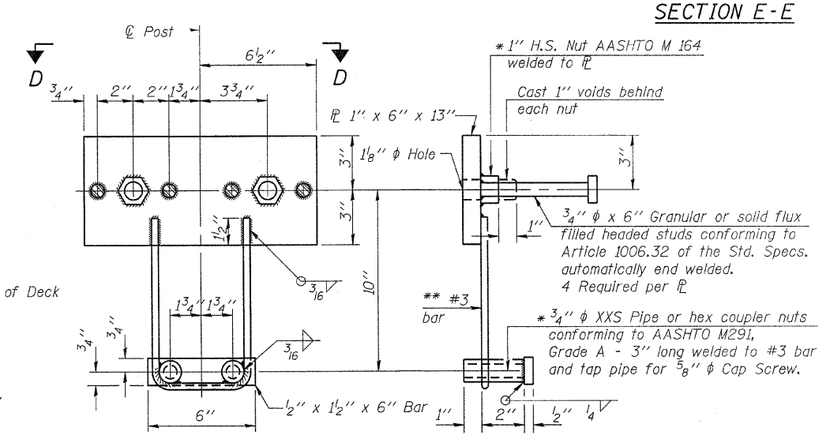
CURLED END SECTION DETAILS



SECTION B-B



SECTION AT RAILING POST



ANCHOR DEVICE

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

Notes:

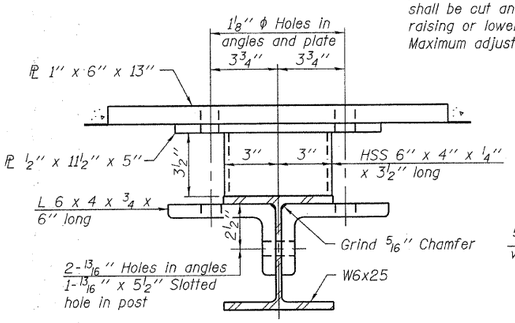
All field drilled holes shall be coated with an approved zinc rich paint before erection.

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.

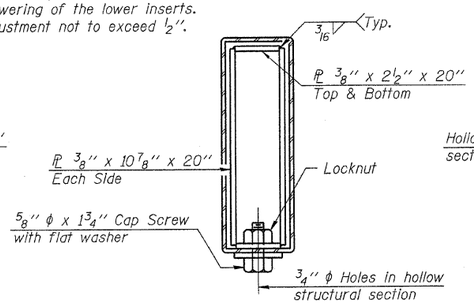
All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.

*** 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.

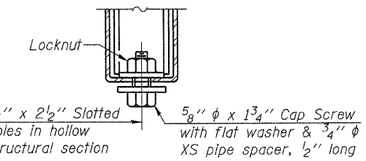
** Whenever the lower insert assemblies interfere with strand locations, the #3 bars shall be cut and adjusted in order to allow raising or lowering of the lower inserts. Maximum adjustment not to exceed 1/2".



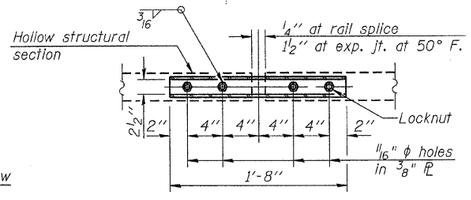
SECTION C-C



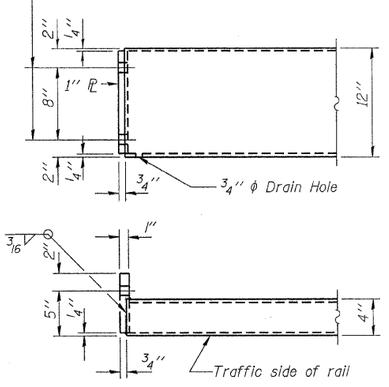
SECTIONS AT RAIL SPLICE



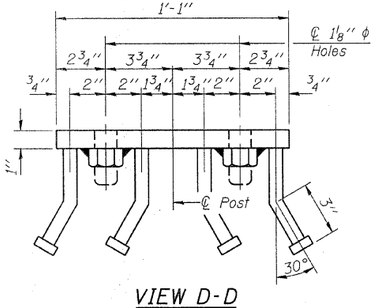
RAIL SPLICE CONNECTION
AT EXPANSION JT.



PLAN-BOTT. SPLICE ℄
TYPICAL



END OF RAIL DETAILS



VIEW D-D

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S-1	Foot	109

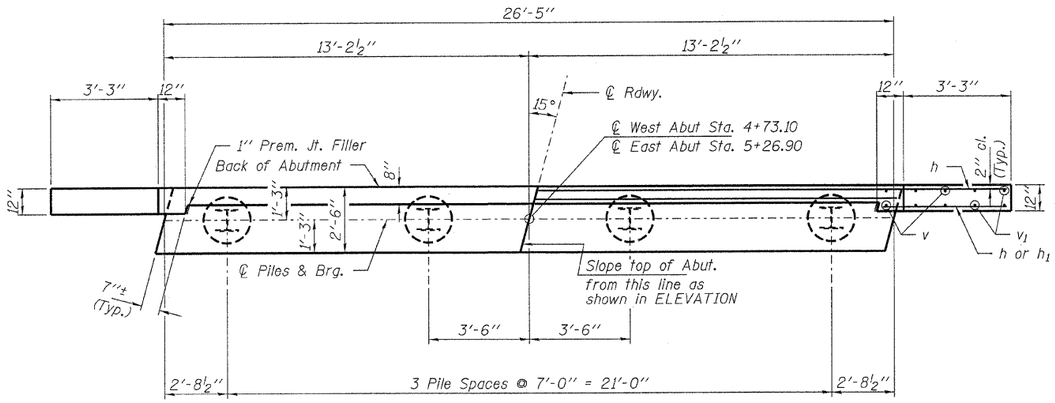
R-23A 7-1-10 (10'-9" Maximum Post Spacing)

FILE NAME = 092068-sht-bridge.dgn	USER NAME =	DESIGNED - A.S.L.	REVISED -
HAMPTON, LENZINI AND RENWICK, INC. 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LB / PE / SE CORP. 184.000939		CHECKED - S.W.M.	REVISED -
	PLOT SCALE =	DRAWN - D.A.B.	REVISED -
	PLOT DATE = 1/30/2012	CHECKED - S.W.M.	REVISED -

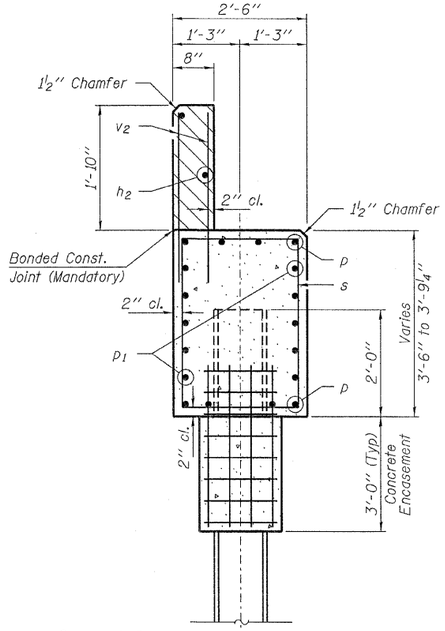
STATE OF ILLINOIS
HAMILTON COUNTY HIGHWAY DEPARTMENT

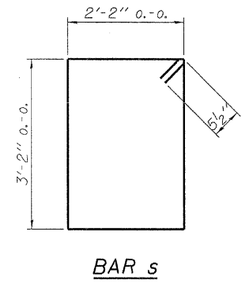
STEEL RAILING, TYPE S-1
STRUCTURE NO. 033-3311
SHEET NO. 5 OF 8 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
107	09-09115-00-BR	HAMILTON	12	9
SOUTH CROUCH ROAD DISTRICT		CONTRACT NO. 99465		
ILLINOIS FED. AID PROJECT				

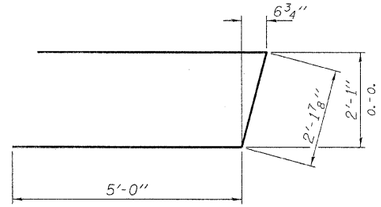


PLAN

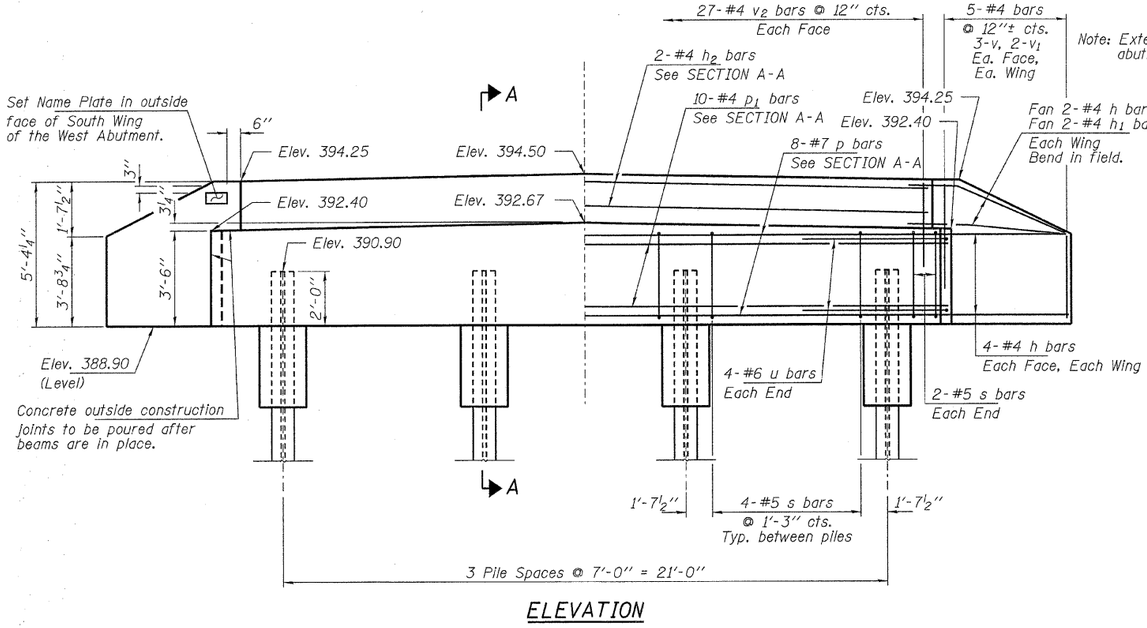




BAR s



BAR u



ELEVATION

SECTION A-A

Hatched area to be poured after beams are in place.

PILE DATA

Type	Steel HP10x42
No. Req'd. (2 Abuts.)	8
Factored Resistance Available (Rf)	184 Kips/Pile
Nominal Required Bearing (Rn)	335 Kips/Pile
Est. Length	30 Ft/Pile

BILL OF MATERIAL - 2 ABUTS.

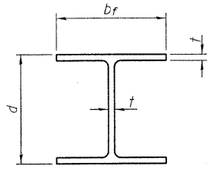
BAR	NO.	SIZE	LENGTH	SHAPE
h	40	#4	5'-6"	——
h_1	8	#4	4'-0"	——
h_2	4	#4	26'-1"	——
p	16	#7	26'-1"	——
p_1	20	#4	26'-1"	——
s	32	#5	11'-7"	□
u	16	#6	12'-2"	▱
v	24	#4	4'-5"	——
v_1	16	#4	3'-5"	——
v_2	108	#4	2'-8"	——
Concrete Structures			Cu. Yd.	22.8
Concrete Encasement			Cu. Yd.	2.8
Reinforcement Bars			Pound	2,420
Steel Piles HP10x42			Foot	240
Name Plates			Each	1

FILE NAME = 090268-sht-bridge.dgn	USER NAME =	DESIGNED - A.S.L.	REVISED -	
HAMPTON, LENZINI AND RENWICK, INC. 3065 STEVENSON DRIVE, SUITE 231 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000950		CHECKED - S.W.M.	REVISED -	
	PLOT SCALE =	DRAWN - D.A.B.	REVISED -	
	PLOT DATE = 1/30/2012	CHECKED - S.W.M.	REVISED -	

STATE OF ILLINOIS
HAMILTON COUNTY HIGHWAY DEPARTMENT

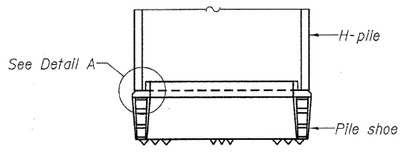
ABUTMENTS
STRUCTURE NO. 033-3311
SHEET NO. 6 OF 8 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
107	09-09115-00-BR	HAMILTON	12	10
SOUTH CROUCH ROAD DISTRICT		CONTRACT NO. 99465		
ILLINOIS FED. AID PROJECT				

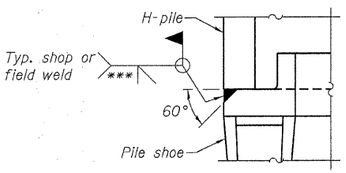


STEEL PILE TABLE

Designation	Depth d	Flange width b_f	Web and Flange thickness t	Encasement diameter A
HP 14x117	$14\frac{1}{4}''$	$14\frac{7}{8}''$	$\frac{13}{16}''$	30''
x102	14''	$14\frac{3}{4}''$	$\frac{11}{16}''$	30''
x89	$13\frac{7}{8}''$	$14\frac{3}{4}''$	$\frac{5}{8}''$	30''
x73	$13\frac{5}{8}''$	$14\frac{5}{8}''$	$\frac{1}{2}''$	30''
HP 12x84	$12\frac{1}{4}''$	$12\frac{1}{4}''$	$\frac{11}{16}''$	24''
x74	$12\frac{1}{8}''$	$12\frac{1}{4}''$	$\frac{5}{8}''$	24''
x63	12''	$12\frac{1}{8}''$	$\frac{1}{2}''$	24''
x53	$11\frac{3}{4}''$	12''	$\frac{7}{16}''$	24''
HP 10x57	10''	$10\frac{1}{4}''$	$\frac{9}{16}''$	24''
x42	$9\frac{3}{4}''$	$10\frac{1}{8}''$	$\frac{7}{16}''$	24''
HP 8x36	8''	$8\frac{1}{8}''$	$\frac{7}{16}''$	18''

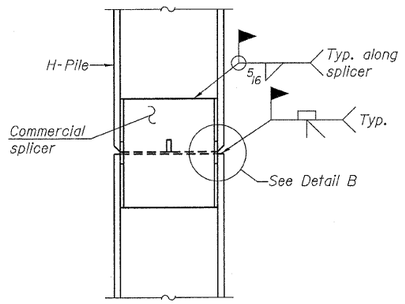


ELEVATION



DETAIL A

H-PILE SHOE ATTACHMENT



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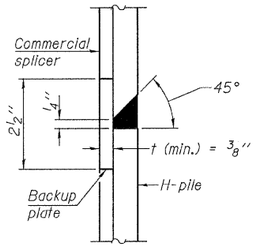
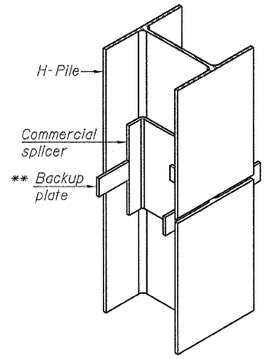
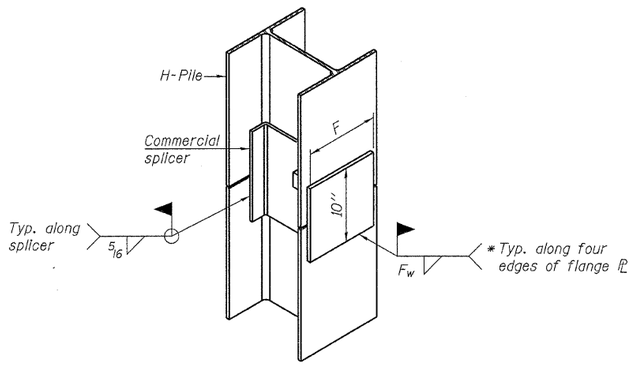


DETAIL "B"

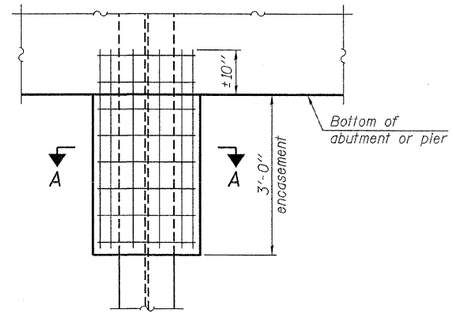


ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE



ISOMETRIC VIEW



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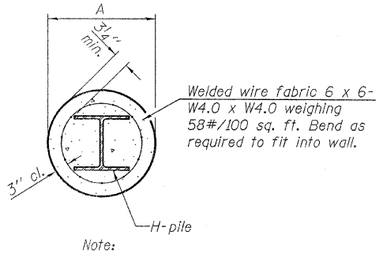
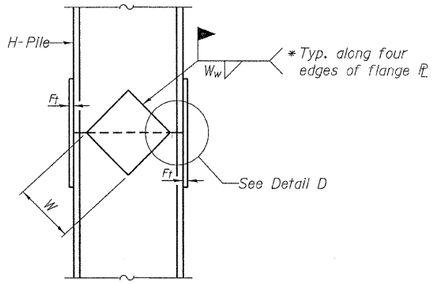


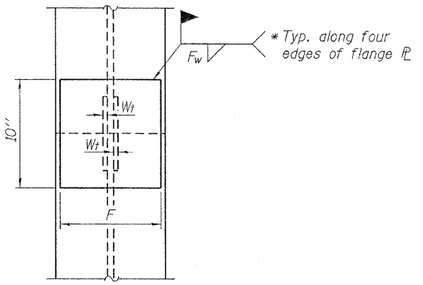
Note:
Forms for encasement may be omitted when soil conditions permit.

SECTION A-A

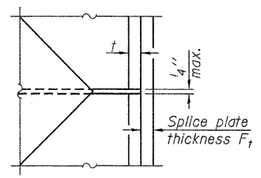
PILE ENCASEMENT



ELEVATION



END VIEW



DETAIL D

Designation	F	F_t	F_w	W	W_t	W_w
HP 14x117	$12\frac{1}{2}''$	1''	$\frac{7}{8}''$	$7\frac{3}{4}''$	$\frac{5}{8}''$	$\frac{1}{2}''$
x102	$12\frac{1}{2}''$	$\frac{7}{8}''$	$\frac{3}{4}''$	$7\frac{3}{4}''$	$\frac{5}{8}''$	$\frac{1}{2}''$
x89	$12\frac{1}{2}''$	$\frac{3}{4}''$	$\frac{11}{16}''$	$7\frac{3}{4}''$	$\frac{5}{8}''$	$\frac{1}{2}''$
x73	$12\frac{1}{2}''$	$\frac{5}{8}''$	$\frac{9}{16}''$	$7\frac{3}{4}''$	$\frac{5}{8}''$	$\frac{1}{2}''$
HP 12x84	10''	$\frac{7}{8}''$	$\frac{11}{16}''$	$6\frac{1}{2}''$	$\frac{5}{8}''$	$\frac{1}{2}''$
x74	10''	$\frac{7}{8}''$	$\frac{11}{16}''$	$6\frac{1}{2}''$	$\frac{5}{8}''$	$\frac{1}{2}''$
x63	10''	$\frac{5}{8}''$	$\frac{1}{2}''$	$6\frac{1}{2}''$	$\frac{1}{2}''$	$\frac{3}{8}''$
x53	10''	$\frac{5}{8}''$	$\frac{1}{2}''$	$6\frac{1}{2}''$	$\frac{1}{2}''$	$\frac{3}{8}''$
HP 10x57	8''	$\frac{3}{4}''$	$\frac{9}{16}''$	$5\frac{1}{4}''$	$\frac{1}{2}''$	$\frac{3}{8}''$
x42	8''	$\frac{5}{8}''$	$\frac{9}{16}''$	$5\frac{1}{4}''$	$\frac{1}{2}''$	$\frac{3}{8}''$
HP 8x36	7''	$\frac{5}{8}''$	$\frac{7}{16}''$	$4\frac{1}{4}''$	$\frac{1}{2}''$	$\frac{3}{8}''$

WELDED PLATE FIELD SPLICE

WELDED COMMERCIAL SPLICE ALTERNATE

* Interrupt welds $\frac{1}{4}''$ from end of web and/or each flange.

** Remove portions of backup plates that extend outside the flanges.

*** Weld size per pile shoe manufacturer ($\frac{5}{16}''$ min.).

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

F-HP 7-1-10

FILE NAME = 090068-sht-bridge.dgn	USER NAME =	DESIGNED - A.S.L.	REVISED -	STATE OF ILLINOIS HAMILTON COUNTY HIGHWAY DEPARTMENT	HP PILE DETAILS STRUCTURE NO. 033-3311	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND RENWICK, INC. 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000699		CHECKED - S.W.M.	REVISED -		SHEET NO. 7 OF 8 SHEETS	107	09-09115-00-BR	HAMILTON	12	11
	PLOT SCALE =	DRAWN - D.A.B.	REVISED -			SOUTH CROUCH ROAD DISTRICT		CONTRACT NO. 99465		
	PLOT DATE = 1/30/2012	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 1

Bridge Foundation Boring Log

Project: H-11057 Bridge Co Rd 1725 / Big Creek branch Date: 3/24/2011
Section: 09-09115-00-BR Station
Structure:
County: Hamilton

Bored by: D. Russell
Checked By: I. Holcomb

Boring No: 1
Station:
Offset:

Surface Water Elev.
Ground Water Elev. During Drilling 375.2
Upon Completion

Description	Elevation	N	Qu tsf	w %
Ground Surface 394.2	0			
6" Crushed Stone and CLAY Mix				
Brown Mottled Gray Silty CLAY (A-6)		7	0.6B	20
390.2				
Gray Mottled Brown Silty CLAY (A-6)	-5	4	0.6B	27
		3	0.5B	25
	-10	9	1.7B	26
382.7				
Brown Mottled Gray Sandy CLAY (A-6)		9	0.5B	22
	-15	4	0.3B	20
377.7				
Brown Mottled Gray Sandy CLAY (A-6) with pebbles		7	2.0B	19
	-20	10	1.7S	18
		39	6.1S	13
sandy clay (continued)				
370.2				
Gray Mottled Brown SHALE	-25	62	--	12
367.7		100/6"	--	7
Gray SHALE		100/4"	--	6
	-30			
362.7		100/6"	--	5
End of Boring @ -31.5'	-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-11057 Bridge Co Rd 1725 / Big Creek branch Date: 3/24/2011
Section: 09-09115-00-BR Station
Structure:
County: Hamilton

Bored by: D. Russell
Checked By: I. Holcomb

Boring No: 2
Station:
Offset:

Surface Water Elev.
Ground Water Elev. During Drilling 371.5
Upon Completion

Description	Elevation	N	Qu tsf	w %
Ground Surface 394.5	0			
6" Crushed Stone and CLAY Mix				
Brown Mottled Gray Silty CLAY (A-6)		11	1.3S	17
390.5				
Gray Mottled Brown Silty CLAY (A-6)	-5	9	1.4B	23
		7	0.8S	24
385.5				
Brown Mottled Gray Sandy CLAY (A-6) with gravel	-10	17	1.2S	17
		18	0.3S	18
380.5				
Gray Mottled Brown Sandy CLAY (A-6) with	-15	6	0.8B	19
378.0				
Brown Sandy CLAY (A-6)		5	1.3B	19
	-20	5	1.6B	16
373.0				
Gray Mottled Brown Sandy CLAY (A-6) with pebbles		11	2.8B	16
sandy clay (continued)				
370.5				
Gray Sandy CLAY (A-6) with pebbles	-25	35	6.5S	13
368.0				
Gray SHALE		63	--	8
		100/4"	--	6
	-30			
		100/4"	--	6
360.5		100/6"	--	5
End of Boring @ -34.0'	-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 = 090068-sht-bridge.dgn	USER NAME =	DESIGNED - A.S.L.	REVISED -	STATE OF ILLINOIS HAMILTON COUNTY HIGHWAY DEPARTMENT	BORINGS STRUCTURE NO. 033-3311	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND RENWICK, INC. 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000859		CHECKED - S.W.M.	REVISED -		SHEET NO. 8 OF 8 SHEETS	107	09-09115-00-BR	HAMILTON	12	12
	PLOT SCALE =	DRAWN - D.A.B.	REVISED -			SOUTH CROUCH ROAD DISTRICT		CONTRACT NO. 99465		
	PLOT DATE = 1/30/2012	CHECKED - S.W.M.	REVISED -			ILLINOIS	FED. AID PROJECT			