11-4-2016 LETTING ITEM 111

INDEX OF SHEETS

HIGHWAY STANDARDS

000001-06	STANDARD SYMBOLS, ABBREVIATIONS & PATTERNS (8 SHEETS)
515001-03	NAME PLATE FOR BRIDGES (2 SHEETS)
701901-05	TRAFFIC CONTROL DEVICES (3 SHEETS)
725001	OBJECT AND TERMINAL MARKERS
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)
B.L.R. 23-4	TRAFFIC BARRIER TERMINAL TYPE 1
B.L.R. 27-1	TRAFFIC BARRIER TERMINAL TYPE 5A

SUMMARY OF QUANTITIES

CODE NO.	ITEM	UNIT	QUANTITY
20100210	TREE REMOVAL (OVER 15 UNITS DIAMETER)	UNIT	167.0
20200100	EARTH EXCAVATION	CU YD	673.0
20300100	CHANNEL EXCAVATION	CU YD	105.0
20400800	FURNISHED EXCAVATION	CU YD	474.0
28000305	TEMPORARY DITCH CHECKS	FOOT	21.0
28100807	STONE DUMPED RIPRAP, CLASS A4	TON	750.0
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	360.0
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1.0
50300225	CONCRETE STRUCTURES	CU YD	24.0
50300280	CONCRETE ENCASEMENT	CU YD	2.8
50400405	PRECAST PRESTRESSED CONCRETE DECK BEAMS (21" DEPTH)	SQ FT	1200.0
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	2720.0
Δ 50900205	STEEL RAILING, TYPE S1	FOOT	104.0
51201400	FURNISHING STEEL PILES 10X42	FOOT	320.0
51202305	DRIVING PILES	FOOT	320.0
51500100	NAME PLATES	EACH	1.0
58700300	CONCRETE SEALER	SQ FT	94.0
Δ 63100075	TRAFFIC BARRIER TERMINAL, TYPE 5A	EACH	2.0
67100100	MOBILIZATION	L SUM	1.0
Δ 72501000	TERMINAL MARKER - DIRECT APPLIED	EACH	4.0
X2501000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.5
Z0068900	STONE LINED DITCH	TON	99.0
Δ LR631020	TRAFFIC BARRIER TERMINAL, TYPE 1	EACH	2.0

Δ SPECIALTY ITEMS

DESIGN DESIGNATION:
DESIGN SPEED: 30 MPH
HIGHWAY CLASS - LOCAL ROAD
EXISTING STRUCTURE NO.: 097-3122
PROPOSED STRUCTURE NO.: 097-3298
CURRENT A.D.T. = 50
CONTRACT NO. 99573

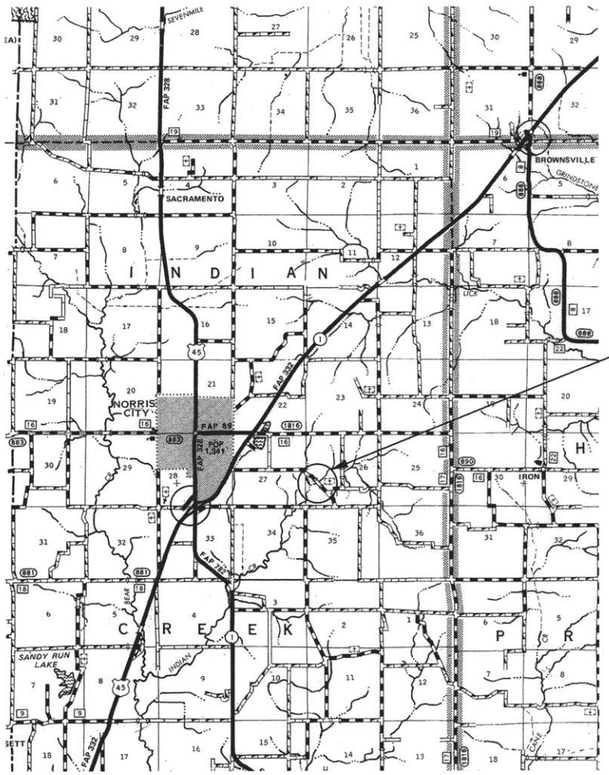
811 Know what's below. Call before you dig.

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

T.R. 335 WHITE COUNTY SECTION 07–08138–00–BR

PROJECT NO. BROS–0193(039) JOB NO. C–99–547–07

CONTRACT #99573 INDIAN CREEK



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

GROSS LENGTH	540.00 FT	0.102 MILES
OMISSIONS	0.00 FT	0.000 MILES
NET LENGTH	540.00 FT	0.102 MILES

N

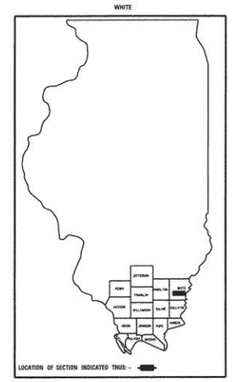
SECTION 07-08138-00-BR
BEGINS STATION 2+50

STA 5+00, STRUCTURE NO. 097-3298,
A 50' LONG SINGLE SPAN P.P.C.D.B. BRIDGE WITH
21" DEPTH BEAMS, SPILL THROUGH TYPE ABUTMENTS,
24' WIDTH, 0° SKEW.

SECTION 07-08138-00-BR
ENDS STATION 7+90

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
335	07-08138-00-BR	WHITE	13	1
FED. ROAD DIST. NO. 9	ILLINOIS	INDIAN CREEK		
PROJECT # BROS-193(039)		CONTRACT # 99573		

HLR JOB # 15.1135 LEC JOB # H141L020WH



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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

APPROVED August 5th 2016
Brian A. Ka
COUNTY ENGINEER

PASSED AUGUST 24, 2016
Dan W. Hall
ENGINEER OF LOCAL ROADS AND STREETS

RELEASING FOR BID BASED ON LIMITED REVIEW: AUG. 24, 2016
Jeffrey L. Keirn
DIR JEFFREY L. KEIRN, P.E.
REGION FIVE ENGINEER

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

ILLINOIS PROFESSIONAL DESIGN FIRM
LAND SURVEY: PROFESSIONAL ENGINEERING & STRUCTURAL ENGINEERING CORPORATION
184-000959

LAMC ENGINEERING
A division of Hampton, Lenzini and Renwick, Inc.

AARON M. MEFFORD
56284
REGISTERED PROFESSIONAL ENGINEER
OF ILLINOIS

AARON M. MEFFORD
NAME
Aaron Mefford
SIGNATURE
8-5-16
DATE
11-30-17
EXPIRES

TOWNSHIP ROUTE 335
OVER INDIAN CREEK
WHITE COUNTY, ILLINOIS

SHEET TITLE:
TITLE SHEET

SCALE:	VARIES
BY:	A.M.M.
DATE:	8/2016
REV:	

1 OF 13 SHEETS

SHEET NO. 1

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
335	07-08138-00-BR	WHITE	13	2
FED. ROAD DIST. NO. 9	ILLINOIS	INDIAN CREEK		
PROJECT * BROS-1930(039)		CONTRACT * 99573		
HLR JOB * 15.1135		LEC JOB * H141L020WH		

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OF
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AARON M. MEFFORD
NAME
SIGNATURE
8-5-16
DATE
11-30-17
EXPIRES

GENERAL NOTES:

THIS SECTION SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE PLANS, SPECIAL PROVISIONS AND "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", ADOPTED APRIL 1, 2016.

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.

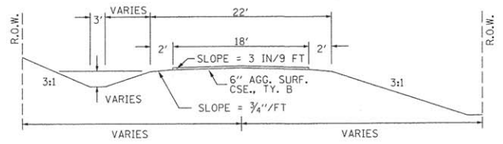
ALL ELEVATIONS ARE BASED ON U.S.G.S. MEAN SEA LEVEL DATUM.

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

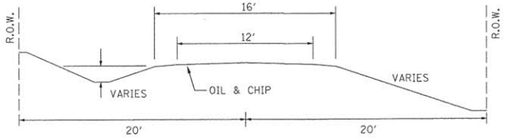
WHEN THE PLANS OR SPECIAL PROVISIONS INCLUDE INFORMATION PERTAINING TO THE LOACTION OF UNDERGROUND UTILITY FACILITIES, SUCH INFORMATION REPRESENTS ONLY THE OPINION OF THE WHITE COUNTY HIGHWAY DEPARTMENT AS TO THE LOCATION OF SUCH UTILITIES AND IS ONLY INCLUDED FOR THE CONVENIENCE OF THE BIDDER.

AGGREGATE SURFACE COURSE, TYPE B INCLUDES 50 TON FOR FILL NEXT TO THE BRIDGE, AND 310 TON FOR THE ROADWAY.

TYPICAL CROSS SECTION PROPOSED



TYPICAL CROSS SECTION EXISTING



NOTE: CONSTRUCT SPECIAL DITCH

STA 3+00 TO STA 4+78.3 LT
STA 2+50 TO STA 4+77.1 RT
STA 5+10.7 TO STA 7+00 LT
STA 5+16.2 TO STA 7+00 RT

NOTE: CONSTRUCT STONE LINED DITCH

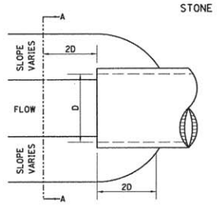
STA 4+50 TO STA 4+78.3 LT (0.62 TON/LIN FT)
STA 4+50 TO STA 4+77.1 RT (0.62 TON/LIN FT)
STA 5+16.2 TO STA 6+50 RT (0.48 TON/LIN FT)
99 TON STONE LINED DITCH ALLOWED IN PROPOSAL.

SEE STONE LINED DITCH DETAIL.

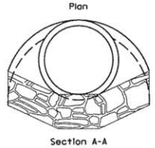
NOTE: TREE REMOVAL (OVER 15 UNITS DIAMETER)

LOCATION	SIZE
STA 3+40.5 RT	32
STA 3+71.0 RT	26
STA 3+88.5 RT	29
STA 4+11.1 RT	26
STA 5+11.0 RT	16
STA 5+45.3 RT	38
	167 UNITS

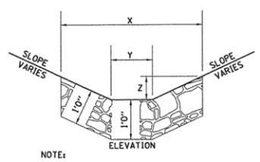
STONE LINED DITCH DESIGN



Plan



Section A-A



NOTE:

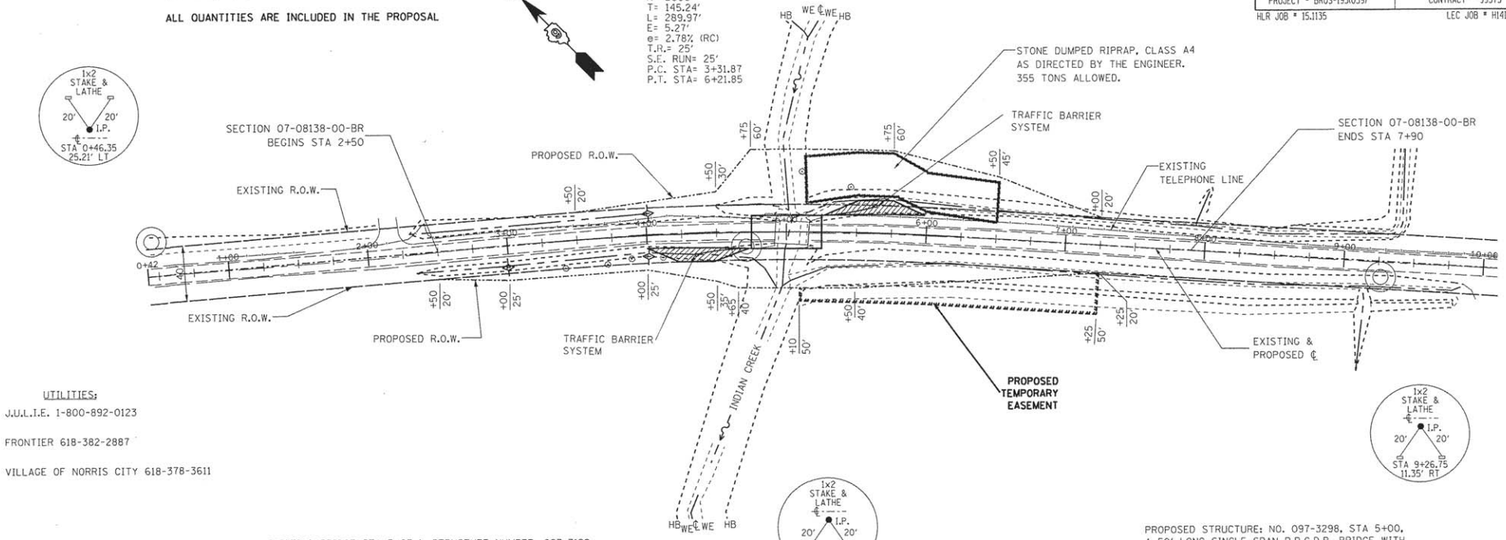
BOTTOM OF DITCH		SLOPE		
		1 1/2:1	2:1	3:1
2 FT	X=	5 FT	6 FT	8 FT
	Y=	2 FT	2 FT	2 FT
	Z=	1 FT	1 FT	1 FT
		0.40	0.48	0.62 TON/LIN. FT

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 7+40 TO STA 7+90

ALL QUANTITIES ARE INCLUDED IN THE PROPOSAL

CURVE #1
P.I. STA= 4+77.11
Δ= RT. 8°18'26"
D= 2°51'53"
R= 2000'
T= 145.24'
L= 289.97'
E= 5.27'
e= 2.78% (RC)
T.P.= 25'
S.E. RUN= 25'
P.C. STA= 3+31.87
P.T. STA= 6+21.85



UTILITIES:

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

FRONTIER 618-382-2887

VILLAGE OF NORRIS CITY 618-378-3611

EXISTING BRIDGE STA 5+03.4; STRUCTURE NUMBER: 097-3122 24' LONG PRECAST CONCRETE DECK BEAMS ON WOOD CAP ON 4-10"X10" STEEL PILES WITH WOOD MUDWALLS AND WOOD WING WALLS ON BOTH SIDES AND INCLUDES BRIDGE RAIL.

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

PROPOSED STRUCTURE: NO. 097-3298. 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.

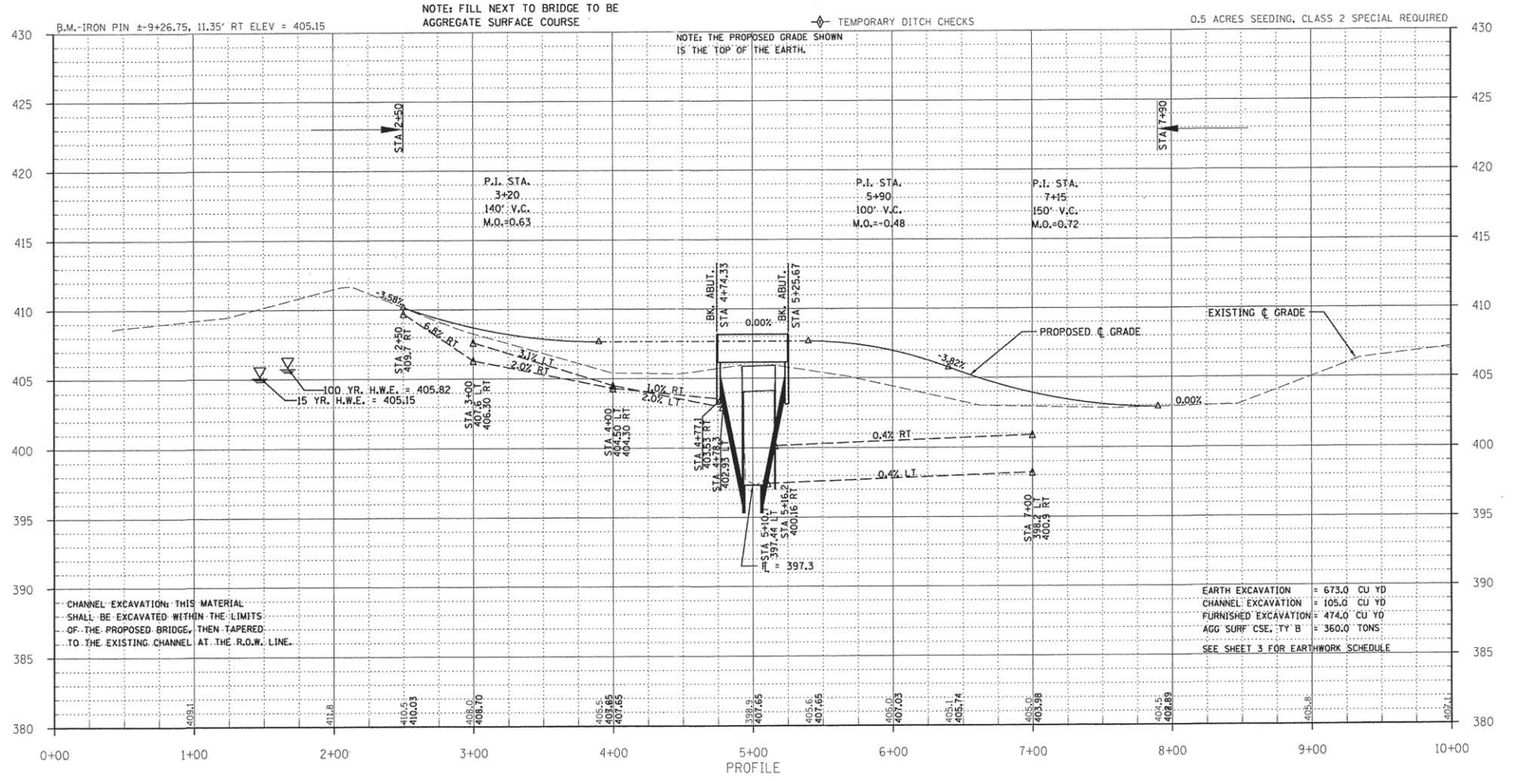
SEE SHEETS 5-13 FOR THE DESIGN AND BILL OF MATERIALS.

NOTE: FILL NEXT TO BRIDGE TO BE AGGREGATE SURFACE COURSE

B.M.-IRON PIN ±-9+26.75, 11.35' RT ELEV = 405.15

TEMPORARY DITCH CHECKS

0.5 ACRES SEEDING, CLASS 2 SPECIAL REQUIRED



PROFILE

TOWNSHIP ROUTE 335
OVER INDIAN CREEK
WHITE COUNTY, ILLINOIS

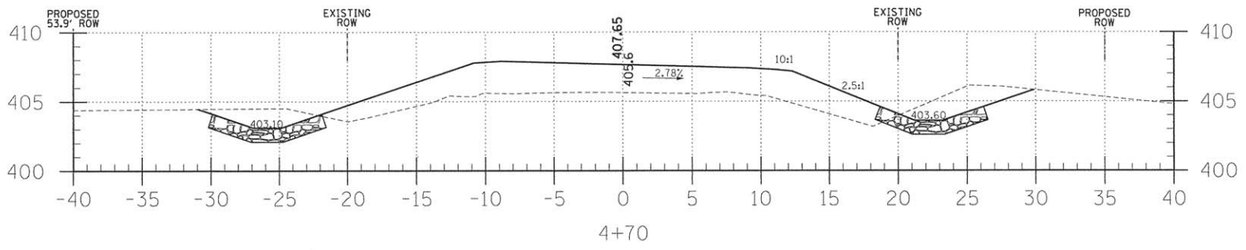
SHEET TITLE:

PLAN & PROFILE

SCALE:	VARIES
BY:	A.M.M.
DATE:	8/4/16
REV:	

2 OF 13 SHEETS

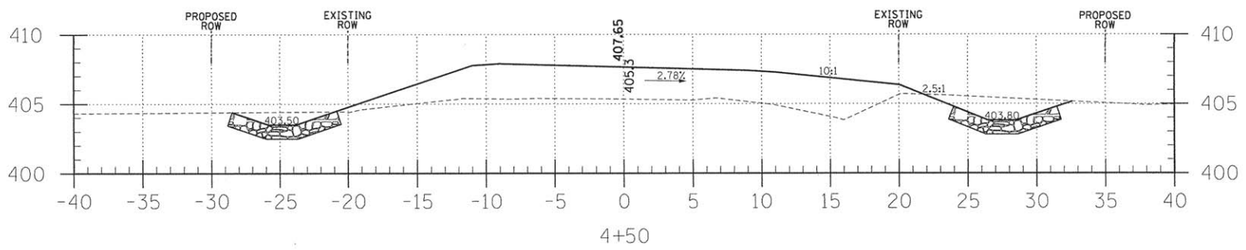
SHEET NO.
2



4+70

C = 18.9

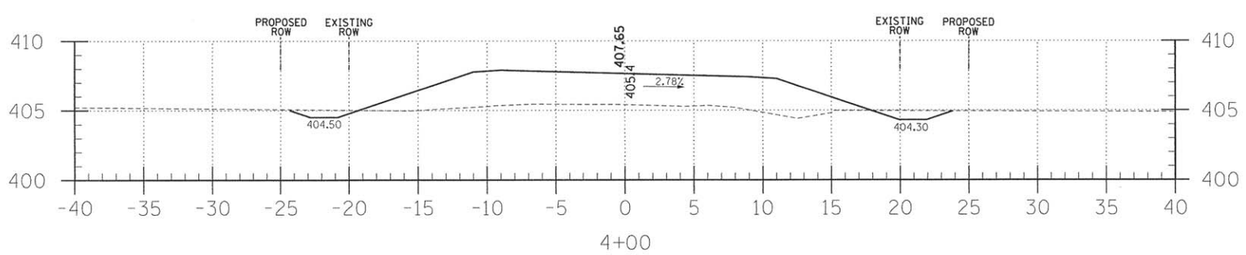
F = 77.6



4+50

C = 14.7

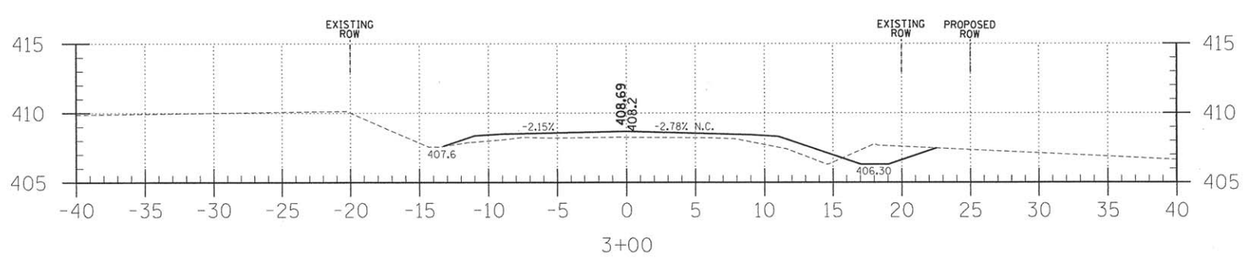
F = 84.1



4+00

C = 4.5

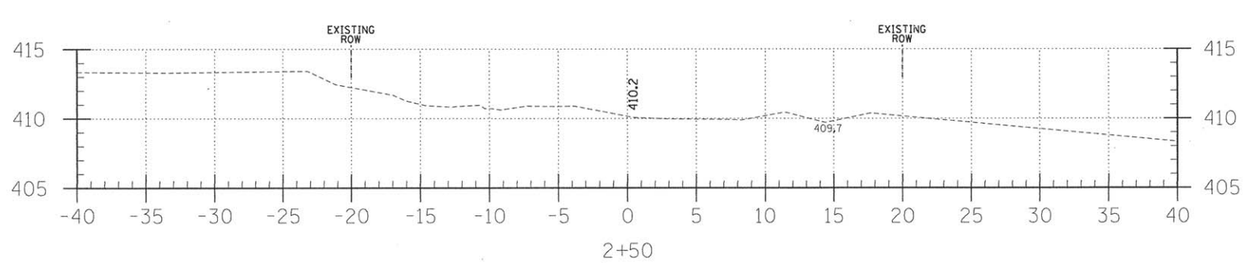
F = 72.1



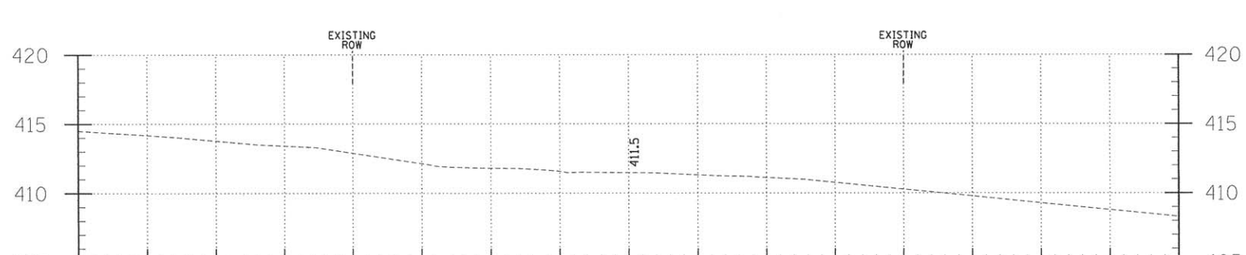
3+00

C = 5.6

F = 12.6



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+74.3	51.6	0.0	0.0	38.7	358.5	-319.8
STA 4+74.3 TO 5+25.7	0.0	105.0	52.5	39.4	0.0	+39.4
STA 5+25.7 TO 10+00	621.6	0.0	0.0	466.2	660.0	-193.8
TOTAL	673.2	105.0	52.5	544.3	1018.5	-474.2

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
335	07-00138-00-BR	WHITE	13	3
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT		
PROJECT# BROS-1930(339)		CONTRACT# 99573		
JOB NO. C-99-547-07		INDIAN CREEK		
HLR JOB # 15.135		LEC JOB # HRLD2MH		

SHEET NO. 3

SHEETS 3 OF 13

SCALE: 1" = 5'

BY: AMM

DATE: 8/4/16

REV:

CROSS-SECTIONS

SHEET TITLE:

TOWNSHIP ROUTE 335 OVER INDIAN CREEK WHITE COUNTY, ILLINOIS

MARION M. MEFFORD

NAME

SIGNATURE

DATE 11-30-17

EXPIRES

MARION M. MEFFORD 56284 REGISTERED PROFESSIONAL ENGINEER OF ILLINOIS

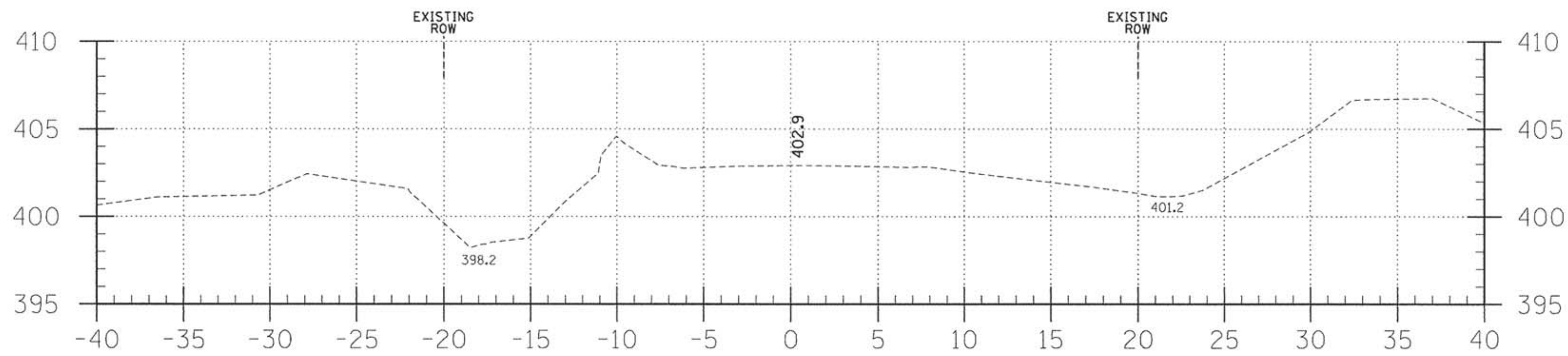
LAMAC ENGINEERING

A division of Hampton, Lenzini and Renwick, Inc.

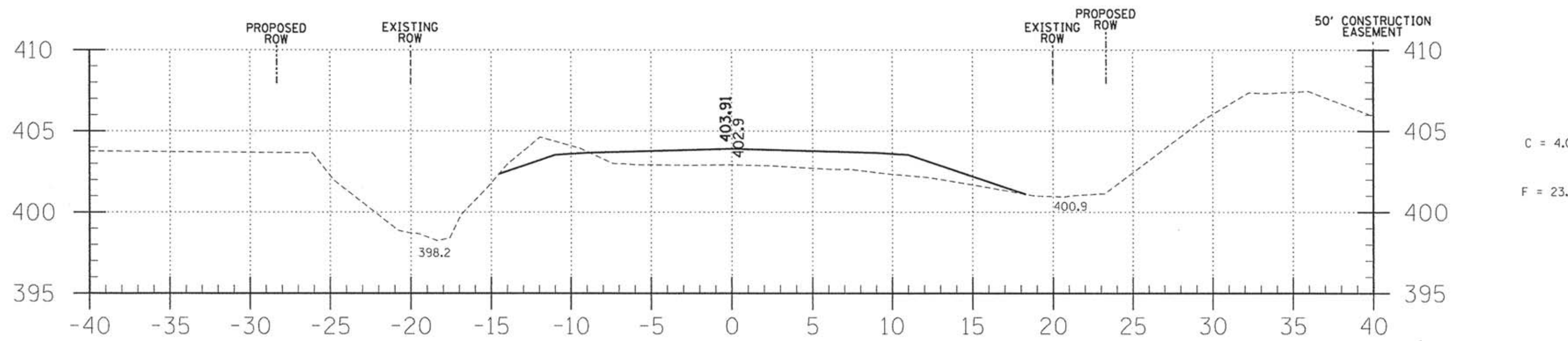
ILLINOIS PROFESSIONAL DESIGN FIRM
LAND SURVEY, PROFESSIONAL ENGINEERING & STRUCTURAL ENGINEERING CORPORATION
184-000959

523 W. 3RD ST.
P.O. BOX 100
MT. CARMEL, IL 62863

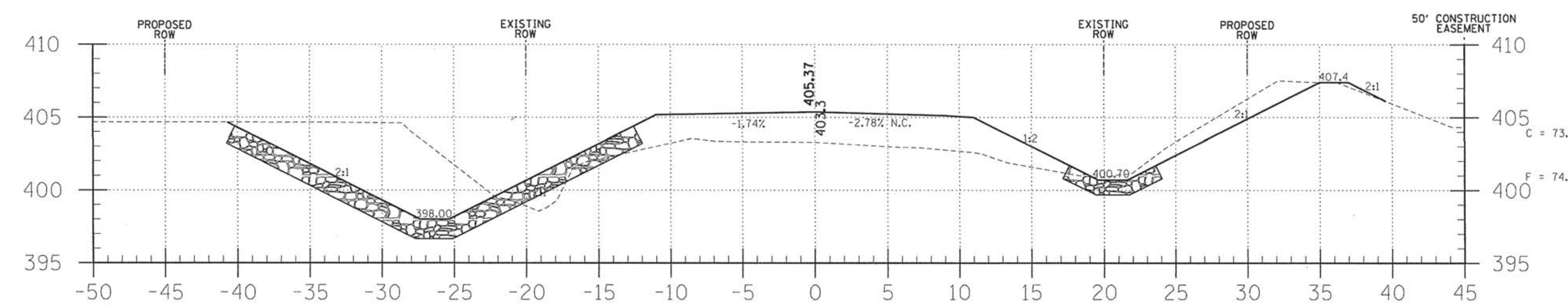
PHONE (618)-262-8851
FAX (618)-263-3327



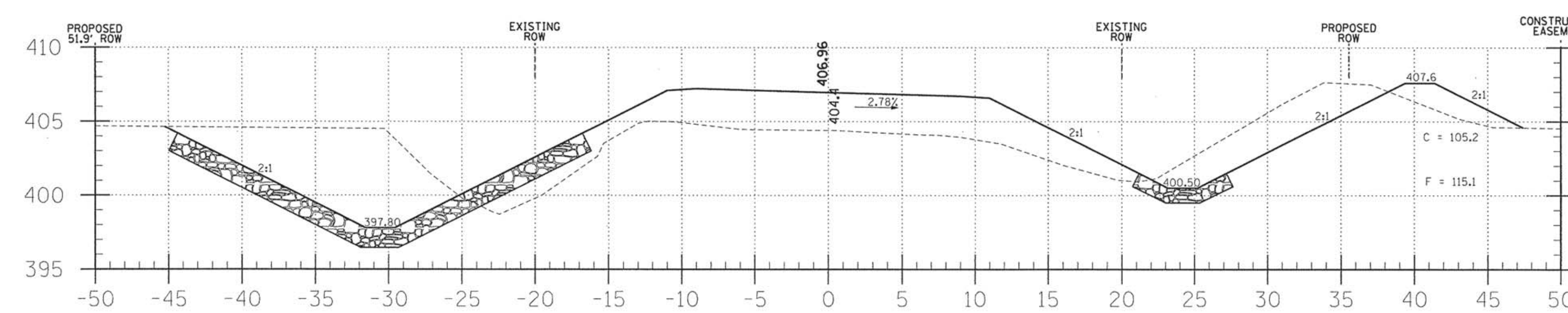
8+00



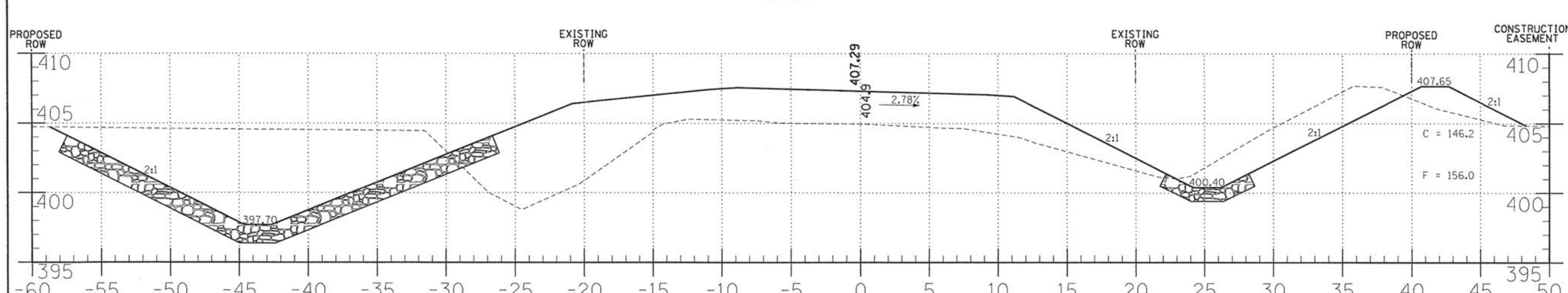
7+00



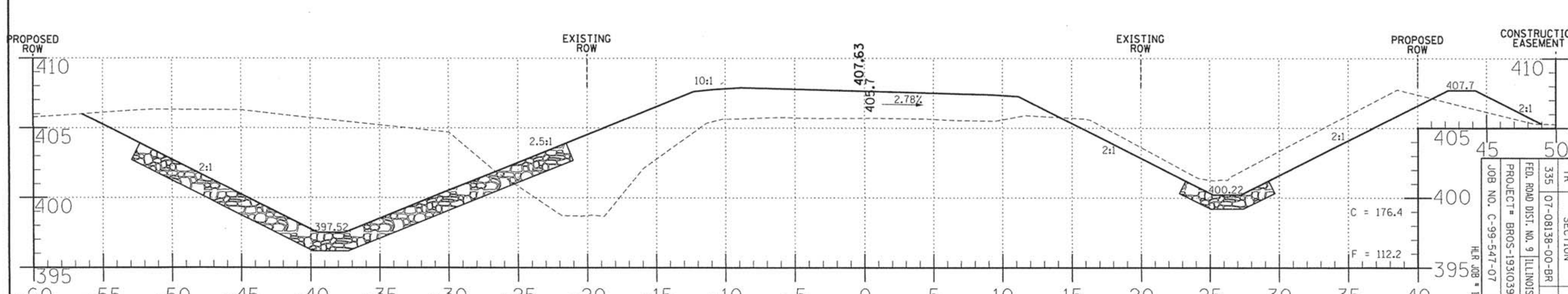
6+50



6+00



5+75



5+30

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
335	07-08138-00-BR	WHITE	13	4
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT		
PROJECT# BROS-193(039)		CONTRACT# 99573		
JOB NO. C-99-547-07		INDIAN CREEK		

HLR JOB # 15J135 LEC JOB # HI4L020WH

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MT. CARMEL, IL 62863
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FAX: (618)-263-3327

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AARON M. MEFFORD 56284 REGISTERED PROFESSIONAL ENGINEER OF ILLINOIS

AARON M. MEFFORD
NAME
SIGNATURE
8-5-16
DATE
11-30-17
EXPIRES

TOWNSHIP ROUTE 335
OVER INDIAN CREEK
WHITE COUNTY, ILLINOIS

SHEET TITLE:
CROSS-SECTIONS

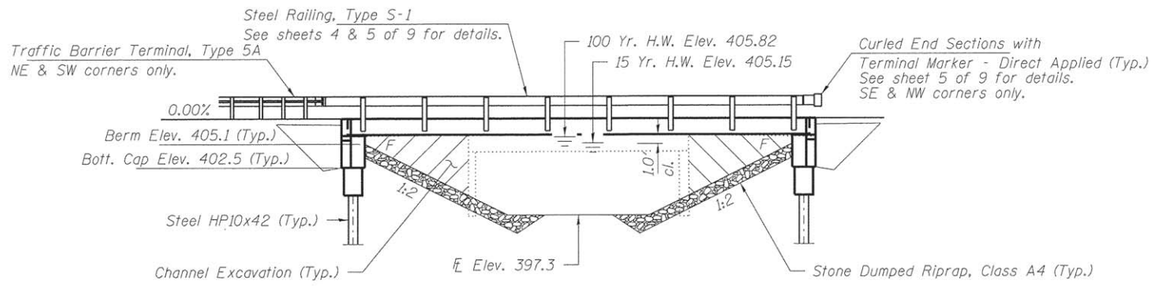
SCALE: 1" = 5'
BY: A.M.M.
DATE: 8/04/16
REV:

4 OF 13 SHEETS

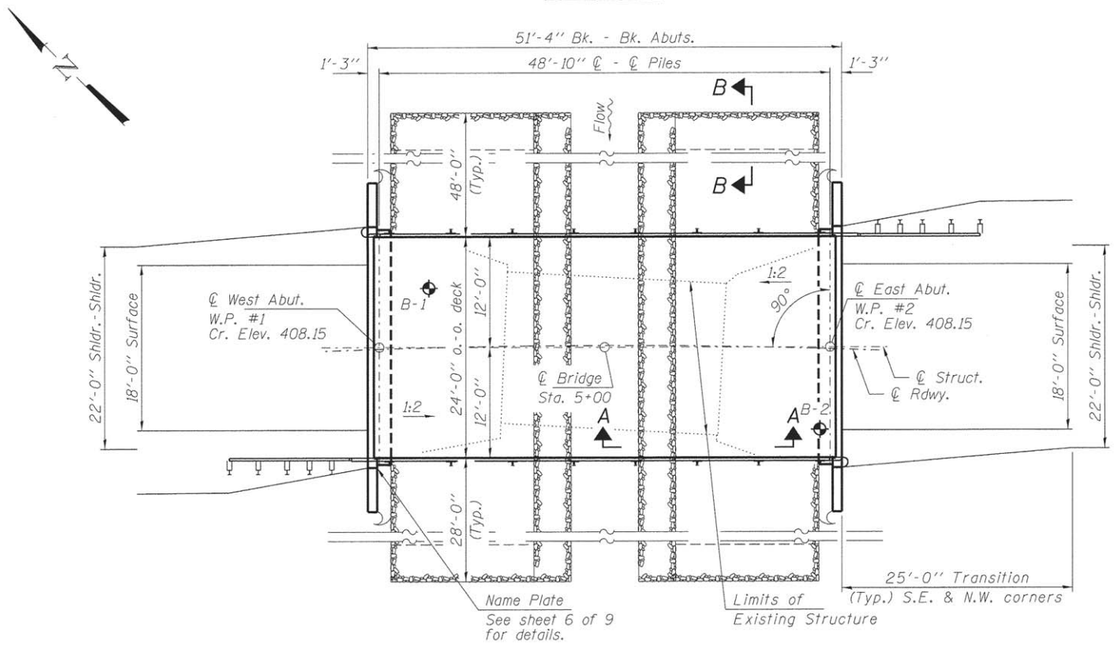
SHEET NO.
4

EXISTING STRUCTURE: Sta. 5+03.4; Structure No. 097-3122; 24' long precast concrete slab beam bridge on closed timber abutments with 4-10"x10" steel piles retrofit. 24.0' long, 18.6' o.-o. deck.

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.

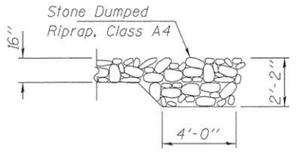
Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.

All bars to be epoxy coated.

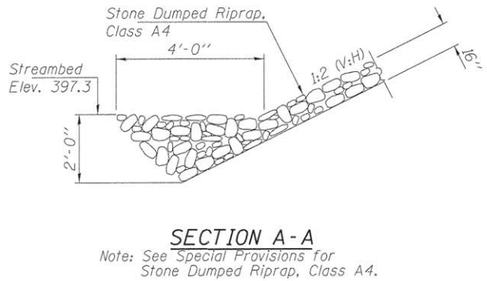
Excavation required to construct the Abutments shall be included in the cost of Concrete Structures. No additional compensation will be allowed for Structure Excavation.

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.

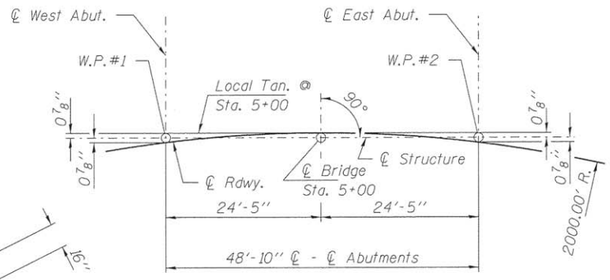


SECTION B-B



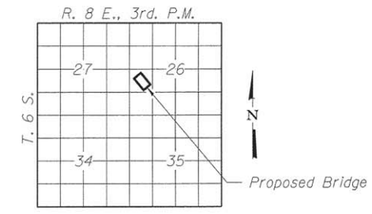
SECTION A-A

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



OFFSET SKETCH

INDEX OF STRUCTURE SHEETS



LOCATION SKETCH

INDIAN CREEK
BUILT 201_ BY
INDIAN CREEK ROAD DISTRICT
WHITE COUNTY
SEC. 07-08138-00-BR
STR. NO. 097-3298
LOADING HL-93

NAME PLATE

See Std. 515001

DESIGN SPECIFICATIONS

2014 AASHTO LRFD Bridge Design Specifications, 7th Edition with all 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 ($\frac{1}{2}$"ϕ low lax. strands)
fpbt = 201,960 psi ($\frac{1}{2}$"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

WATERWAY INFORMATION

Drainage Area = 3.28 Sq. Mi.

Existing Low Grade Elev. 402.9 @ Sta. 8+00
Proposed Low Grade Elev. 402.9 @ Sta. 8+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									
Base	15	1467	134	240	405.15			405.15	405.15
Max. Calc.	100	2560	134	271	405.82	0.63	0.33	406.45	406.15

DESIGN SCOUR ELEVATION TABLE

Event/Limit State	Design Scour Elevations (ft.) W. Abut.	Design Scour Elevations (ft.) E. Abut.	Item 113
Q100	402.5	402.5	5
Q200	402.5	402.5	
Design	402.5	402.5	
Check	402.5	402.5	

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 07/28/2016
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

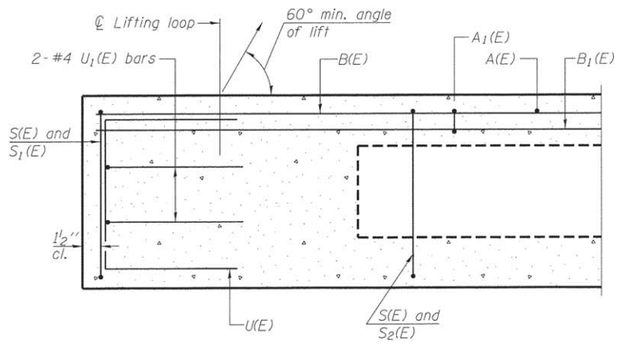
ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	Cu. Yd.			105
Stone Dumped Riprap, Class A4	Ton			395
Removal of Existing Structures	Each			1
Concrete Structures	Cu. Yd.		24.0	24.0
Concrete Encasement	Cu. Yd.		2.8	2.8
Precast Prestressed Concrete Deck Beams (21" Depth)	Sq. Ft.	1,200		1,200
Reinforcement Bars, Epoxy Coated	Pound		2,720	2,720
Steel Railing, Type S-1	Foot	104		104
Furnishing Steel Piles HP10x42	Foot		320	320
Driving Piles	Foot		320	320
Name Plates	Each		1	1
Terminal Marker - Direct Applied	Each	4		4
Concrete Sealer	Sq. Ft.		94	94

FILE NAME = 140325-sht-bridge.dgn	USER NAME = $USER$	DESIGNED - A.M.C.	REVISED -	
HAMPTON, LENZINI AND RENWICK, INC. 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LB / PE / SE CORP. 184.000969		CHECKED - S.W.M.	REVISED -	
	PLOT SCALE = $SCALE$	DRAWN - R.D.H.	REVISED -	
	PLOT DATE = 7/28/2016	CHECKED - D.A.B.	REVISED -	

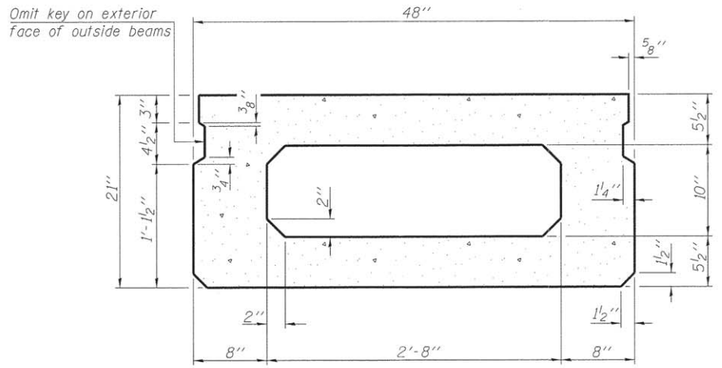
STATE OF ILLINOIS
WHITE COUNTY HIGHWAY DEPARTMENT

GENERAL PLAN & ELEVATION
STRUCTURE NO. 097-3298
SHEET NO. 1 OF 9 SHEETS

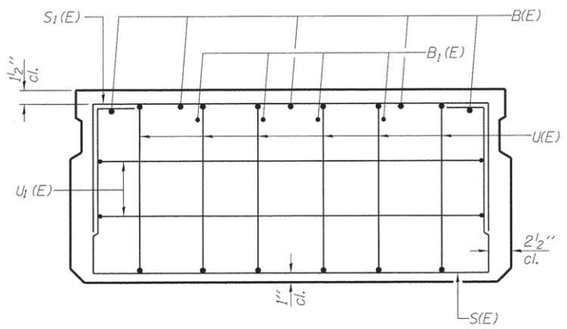
T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
335	07-08138-00-BR	WHITE	13	5
INDIAN CREEK ROAD DISTRICT		CONTRACT NO. 99573		
ILLINOIS	FED. AID PROJECT BROS-0193(039)			



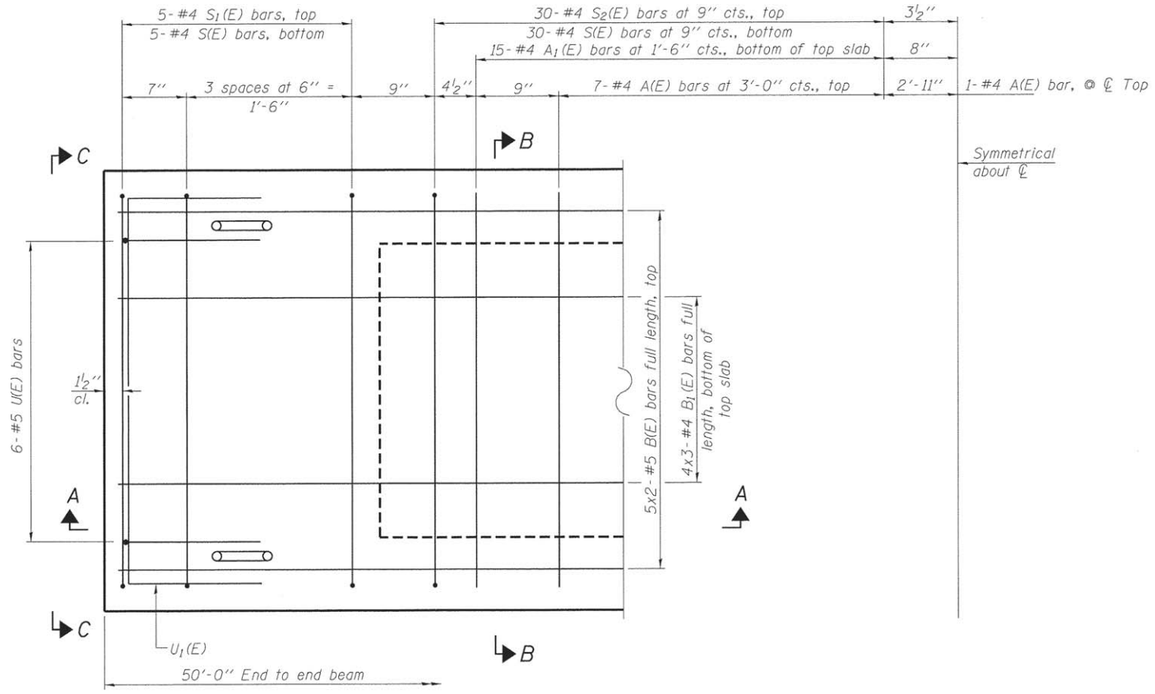
SECTION A-A



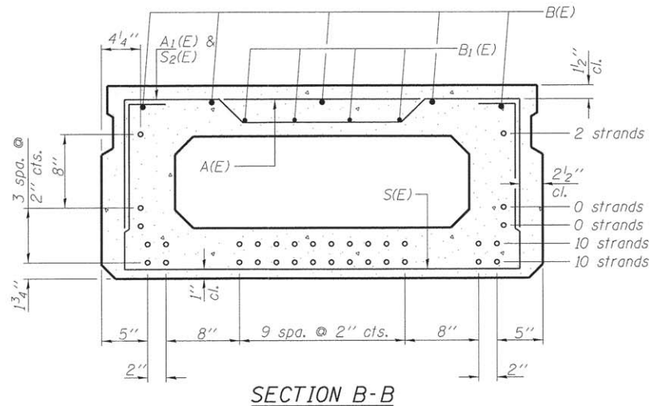
SECTION B-B
(Showing dimensions)



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"	—
$A_1(E)$	30	#4	3'-10"	⌒
B(E)	10	#5	26'-2"	—
$B_1(E)$	12	#4	17'-11"	—
S(E)	70	#4	7'-5"	⊔
$S_1(E)$	10	#4	5'-11"	⊓
$S_2(E)$	60	#4	6'-2"	⊓
U(E)	12	#5	4'-0"	⊏
$U_1(E)$	4	#4	6'-0"	⊓

Note: See sheet 3 & 4 of 9 for additional details and Bill of Material.

Notes:
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.

MINIMUM BAR LAP
#4 bar = 1'-11"
#5 bar = 2'-6"

PD-2148-0 6-8-15

FILE NAME = 140325-sht-bridge.dgn	USER NAME = $USER$	DESIGNED - A.M.C.	REVISED -
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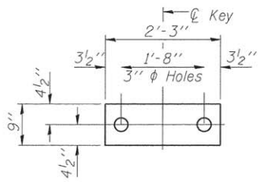
	PLOT SCALE = $SCALE$	DRAWN - R.D.H.	REVISED -
	PLOT DATE = 7/28/2016	CHECKED - D.A.B.	REVISED -

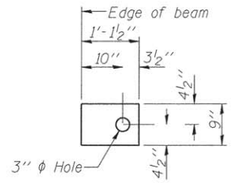
STATE OF ILLINOIS
WHITE COUNTY HIGHWAY DEPARTMENT

21" x 48" PPC DECK BEAM
STRUCTURE NO. 097-3298
SHEET NO. 2 OF 9 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
335	07-08138-00-BR	WHITE	13	6
INDIAN CREEK ROAD DISTRICT		CONTRACT NO. 99573		
	ILLINOIS FED. AID PROJECT BROS-0193(039)			



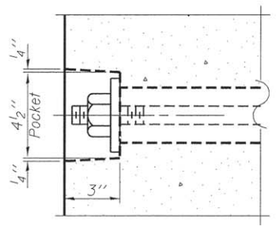
FABRIC BEARING PAD
(Interior - 10 Req'd.)



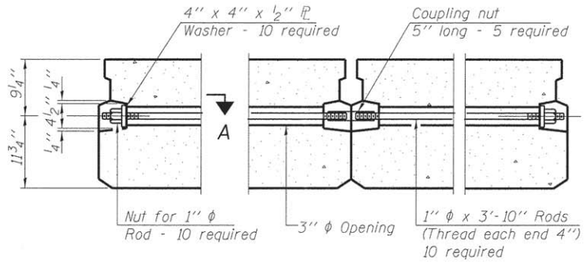
FABRIC BEARING PAD
(Exterior - 4 Req'd.)

FIXED

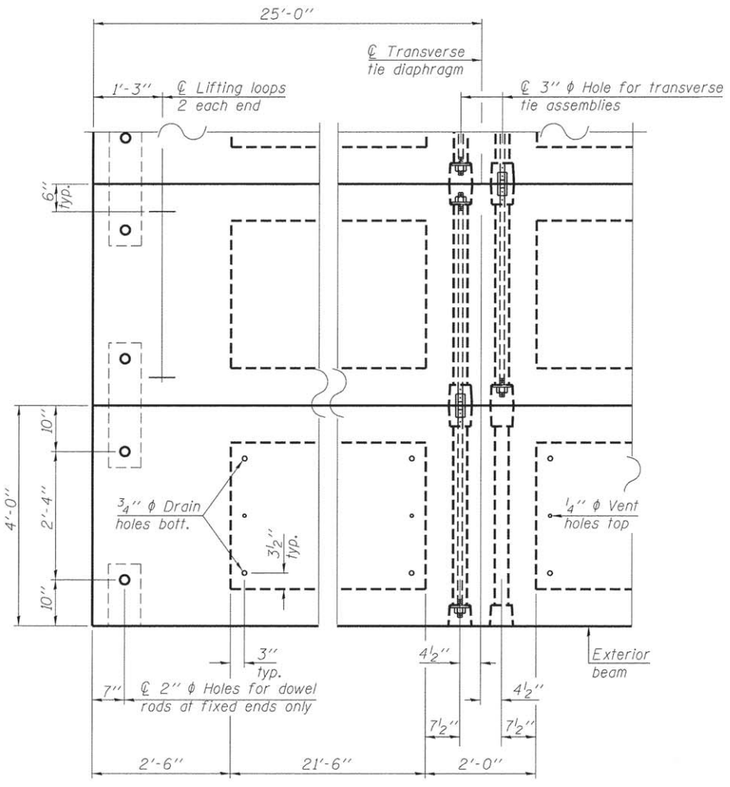
Notes:
All bearing pads shall be 1" thick.
Omit holes when using expansion bearings.
Expansion bearing pad shall be bonded to the substructure.



SECTION A-A

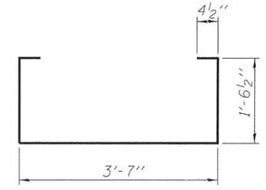


TYPICAL TRANSVERSE TIE ASSEMBLY

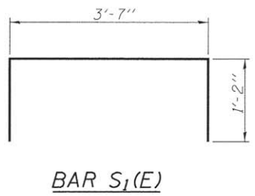


PLAN VIEW

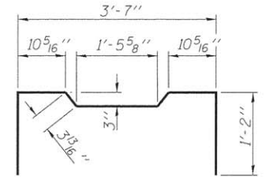
Note: Connect beams in pairs with the transverse tie configuration shown.



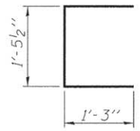
BAR S(E)



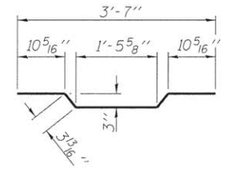
BAR S_1(E)



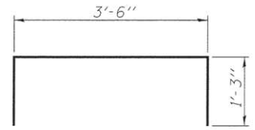
BAR S_2(E)



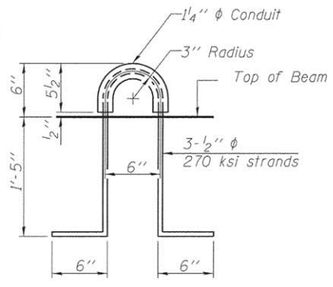
BAR U(E)



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)(10) 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.

Reinforcment bars designated (E) shall be epoxy coated.

BILL OF MATERIAL

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

PD-2148-0D 1-28-16

FILE NAME = 140325-sht-bridge.dgn	USER NAME = $USER$	DESIGNED - A.M.C.	REVISED -	
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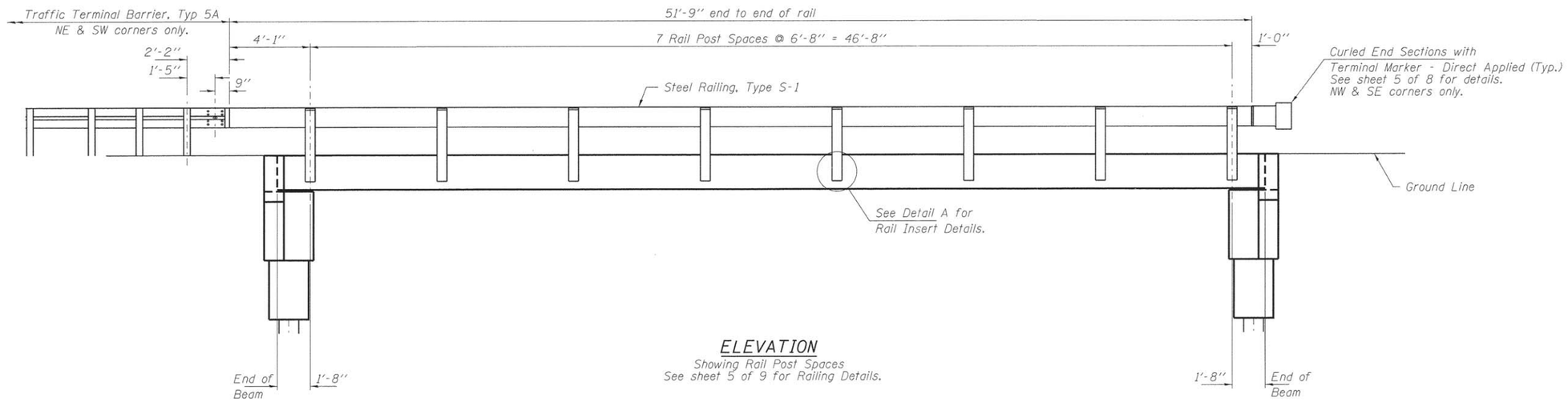
	PLOT SCALE = $SCALE$	DRAWN - R.D.H.	REVISED -	
	PLOT DATE = 7/28/2016	CHECKED - D.A.B.	REVISED -	

STATE OF ILLINOIS
WHITE COUNTY HIGHWAY DEPARTMENT

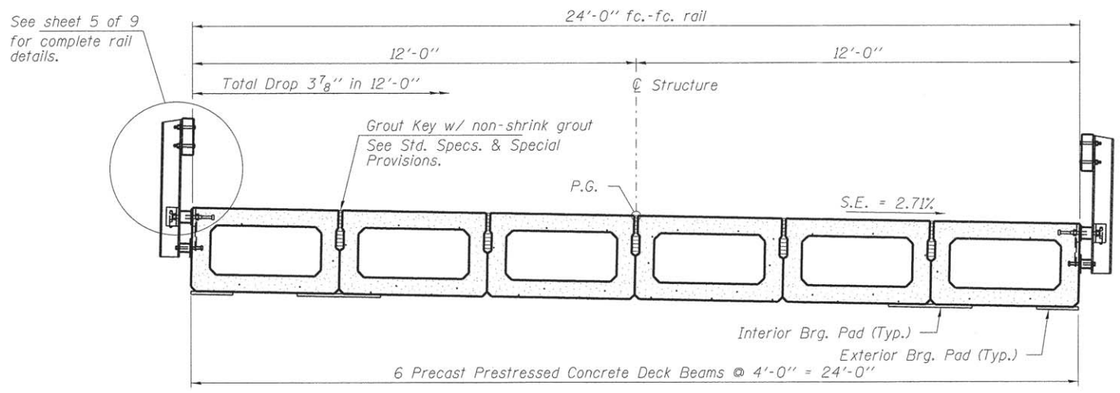
21" x 48" PPC DECK BEAM DETAILS
STRUCTURE NO. 097-3298
SHEET NO. 3 OF 9 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
335	07-08138-00-BR	WHITE	13	7
INDIAN CREEK ROAD DISTRICT		CONTRACT NO. 99573		
ILLINOIS	FED. AID PROJECT BROS-0193(039)			



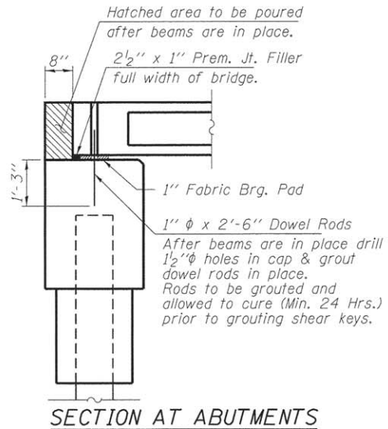
ELEVATION

Showing Rail Post Spaces
See sheet 5 of 9 for Railing Details.



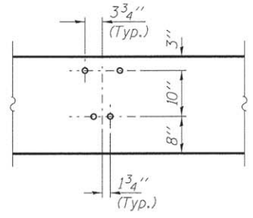
CROSS SECTION

See sheets 2 & 3 of 9 for Superstructure.
(Looking East)

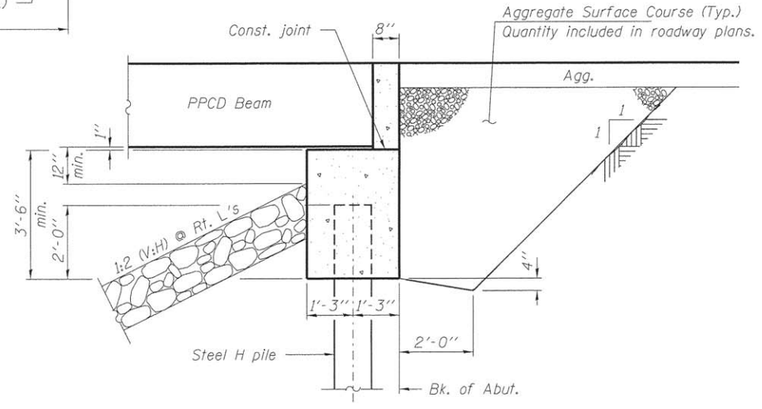


SECTION AT ABUTMENTS

@ Rt. L's



DETAIL A



SECTION THRU ABUTMENT

(Horiz. dim. @ Rt. L's)

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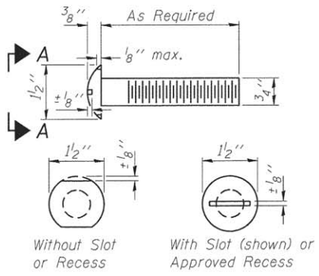
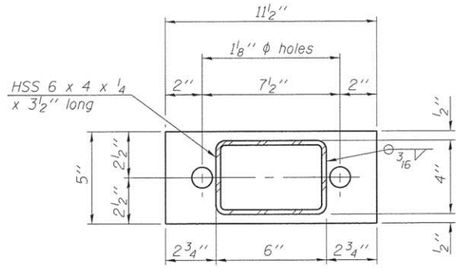
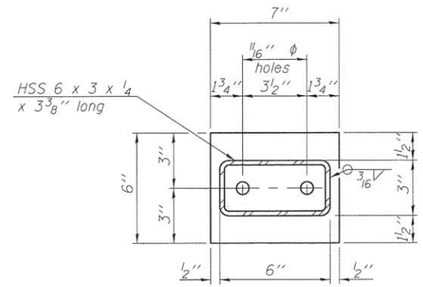
HAMPTON, LENZINI AND RENWICK, INC. 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959		CHECKED - S.W.M.	REVISED -			335	07-08138-00-BR	WHITE	13	8
	PLOT SCALE = $SCALE$	DRAWN - R.D.H.	REVISED -			INDIAN CREEK ROAD DISTRICT		CONTRACT NO. 99573		
	PLOT DATE = 7/28/2016	CHECKED - D.A.B.	REVISED -			ILLINOIS	FED. AID PROJECT BROS-0193(039)			



VIEW A-A
ROUND HEAD BOLT

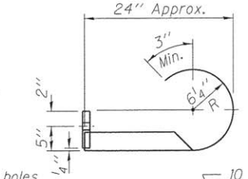


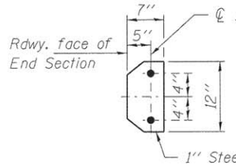
℄ 1/2" x 11 1/2" x 5"



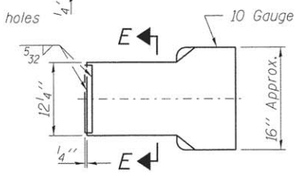
℄ 1/2" x 7" x 6"

Note: Cost of curled end sections shall be included with the Steel Railing. (2 Required) SE & NW corners.





SECTION E-E

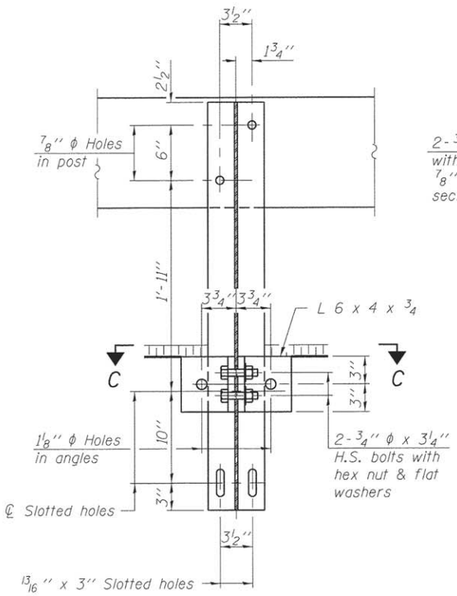


CURLED END SECTION DETAILS

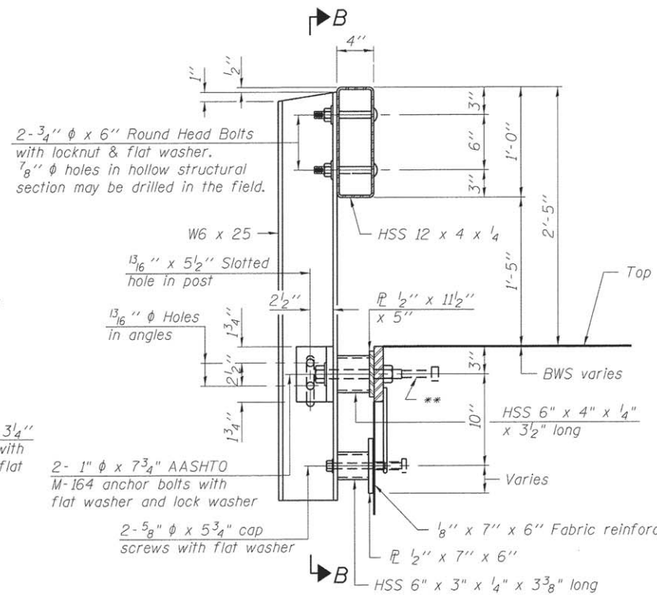
SPLICE DIMENSIONS

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"	——

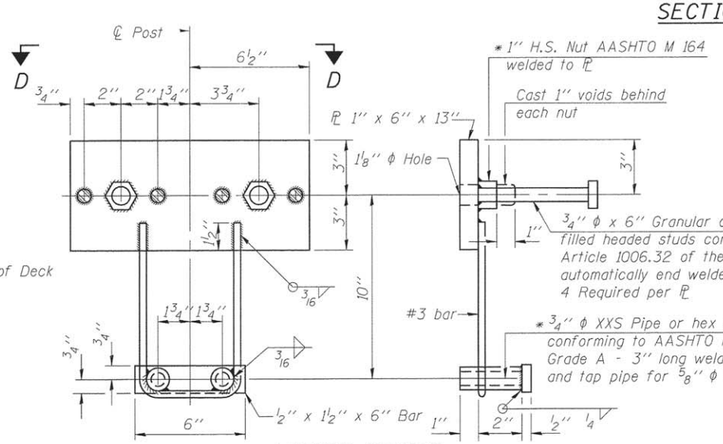
T = Total movement at expansion joint as shown on the design plans.



SECTION B-B



SECTION AT RAILING POST



ANCHOR DEVICE

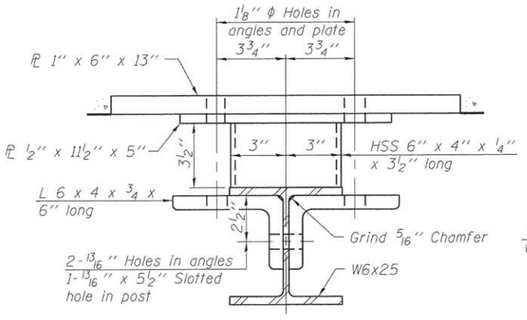
* Threaded areas shall be plugged or blocked off during casting of beam.

Notes:

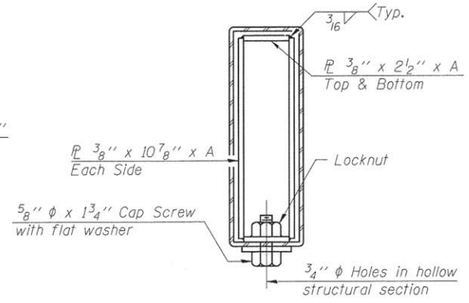
For multi-span bridges, sufficient 1/4" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with Steel Railing, Type S-1.

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

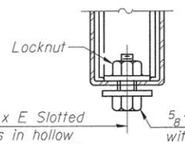
** The studs of the anchor devices shall be placed below the top reinforcement bars and the outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchor device.



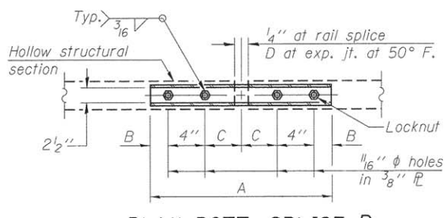
SECTION C-C



SECTIONS AT RAIL SPLICE

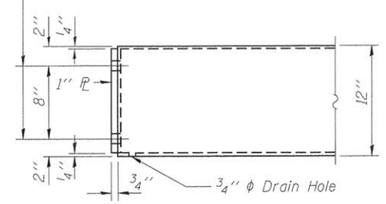


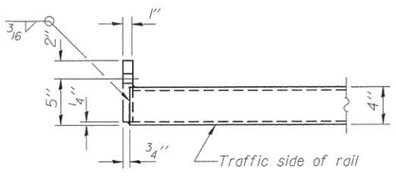
RAIL SPLICE CONNECTION AT EXPANSION JT.



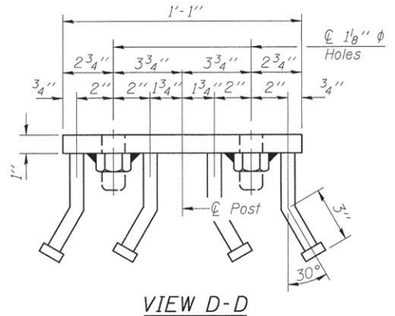
PLAN-BOTT. SPLICE ℄ TYPICAL

1 1/8" ϕ Holes for 1" ϕ x 4" Round head bolts. Provide 2 flat washers & locknuts for guard rail connection shown on Hwy Std. 631026 or BLR 27-1.





END OF RAIL DETAILS



VIEW D-D

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S-1	Foot	104

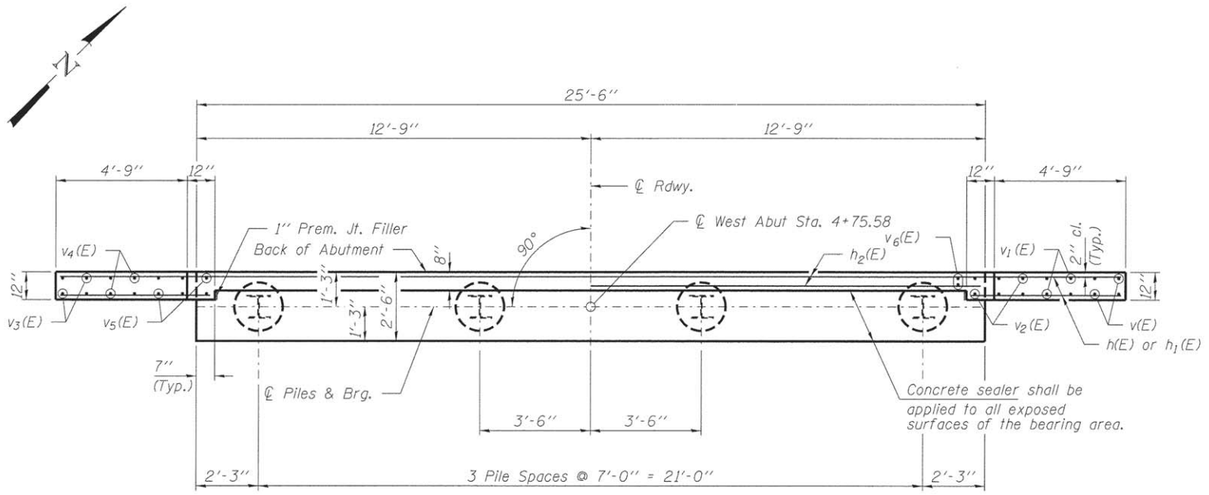
R-23A 1-12-15 (10'-9" Maximum Post Spacing)

FILE NAME = 140325-sht-bridge.dgn	USER NAME = $USER$	DESIGNED - A.M.C.	REVISED -
HAMPTON, LENZINI AND RENWICK, INC. 3065 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 = 7/28/2016	CHECKED - D.A.B.	REVISED -

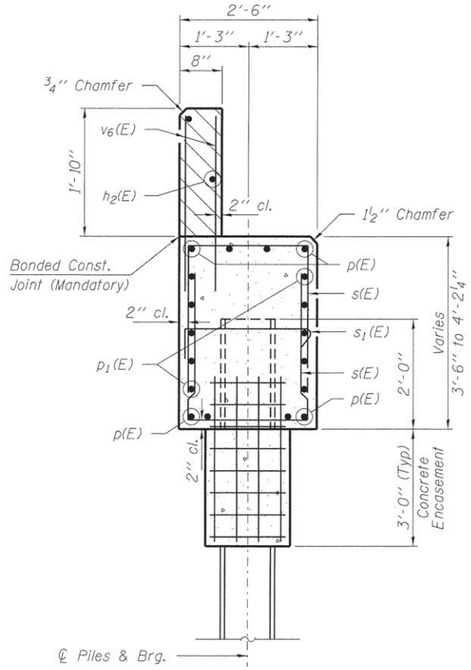
STATE OF ILLINOIS
WHITE COUNTY HIGHWAY DEPARTMENT

STEEL RAILING, TYPE S-1
STRUCTURE NO. 097-3298
SHEET NO. 5 OF 9 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
335	07-08138-00-BR	WHITE	13	9
INDIAN CREEK ROAD DISTRICT		CONTRACT NO. 99573		
ILLINOIS	FED. AID PROJECT BROS-0193(039)			

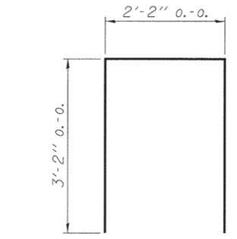


PLAN

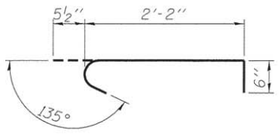


SECTION A-A

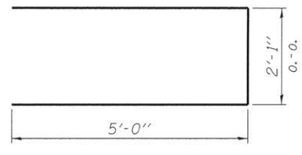
Hatched area to be poured after beams are in place.



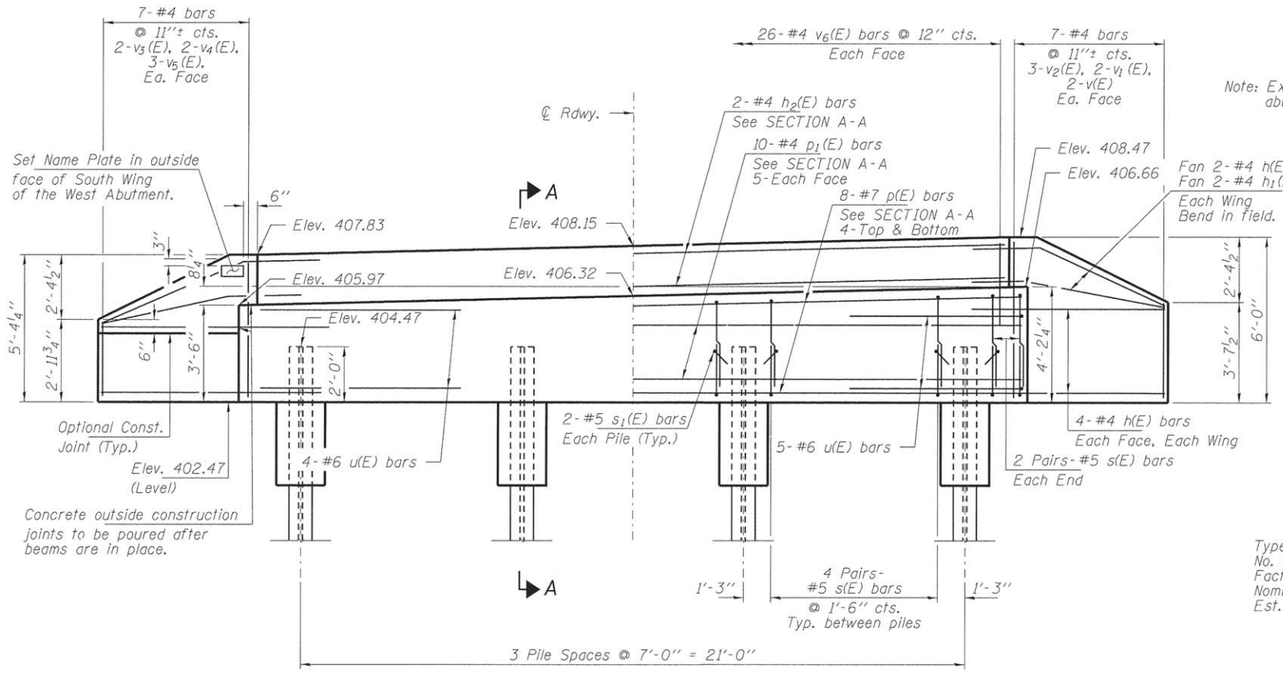
BAR s(E)



BAR $s_1(E)$



BAR u(E)



ELEVATION

(Looking West)

Note: Extend h bars into abutment cap.

PILE DATA

Type	Steel HP10x42
No. Req'd. (W. Abut.)	4
Factored Resistance Available (Rf)	184 Kips/Pile
Nominal Required Bearing (Rn)	335 Kips/Pile
Est. Length	40 Ft/Pile

BILL OF MATERIAL - W. ABUT.

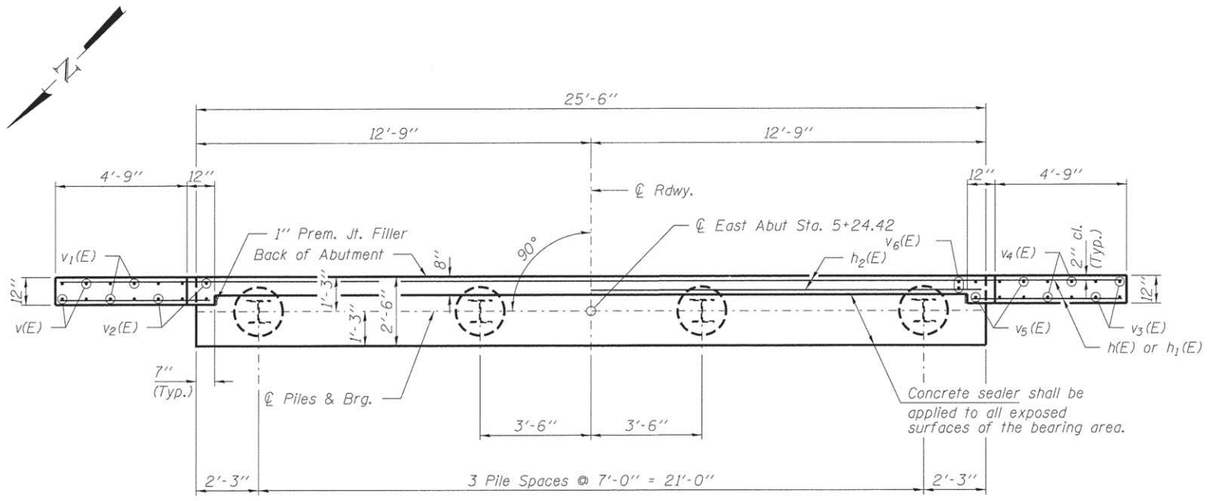
BAR	NO.	SIZE	LENGTH	SHAPE
h(E)	20	#4	7'-0"	
$h_1(E)$	4	#4	5'-6"	
$h_2(E)$	2	#4	25'-2"	
p(E)	8	#7	25'-2"	
$p_1(E)$	10	#4	25'-2"	
s(E)	32	#5	8'-6"	
$s_1(E)$	8	#5	3'-2"	
u(E)	9	#6	12'-1"	
v(E)	4	#4	3'-4"	
$v_1(E)$	4	#4	4'-3"	
$v_2(E)$	6	#4	5'-2"	
$v_3(E)$	4	#4	2'-9"	
$v_4(E)$	4	#4	3'-7"	
$v_5(E)$	6	#4	4'-6"	
$v_6(E)$	52	#4	2'-8"	
Concrete Structures			Cu. Yd.	12.0
Concrete Encasement			Cu. Yd.	1.4
Reinforcement Bars, Epoxy Coated			Pound	1,360
Steel Piles HP10x42			Foot	160
Name Plates			Each	1
Concrete Sealer			Sq. Ft.	47

FILE NAME = 140325-sht-bridge.dgn	USER NAME = $USER$	DESIGNED - A.M.C.	REVISED -
HAMPTON, LENZINI AND RENWICK, INC. 3005 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 = 7/28/2016	CHECKED - D.A.B.	REVISED -

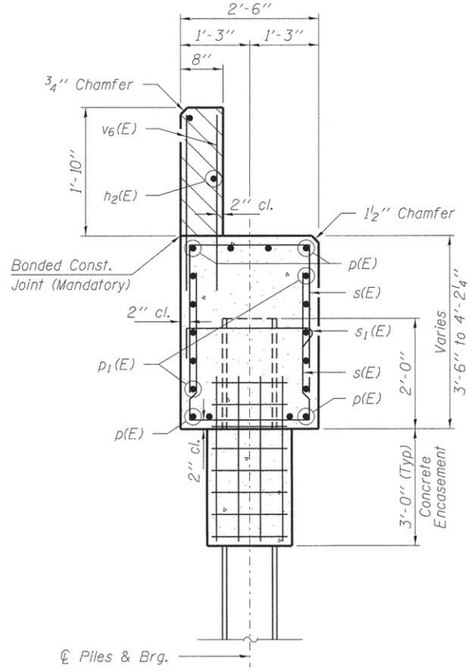
STATE OF ILLINOIS
WHITE COUNTY HIGHWAY DEPARTMENT

WEST ABUTMENT
STRUCTURE NO. 097-3298
SHEET NO. 6 OF 9 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
335	07-08138-00-BR	WHITE	13	10
INDIAN CREEK ROAD DISTRICT		CONTRACT NO. 99573		
ILLINOIS	FED. AID PROJECT BROS-0193(039)			

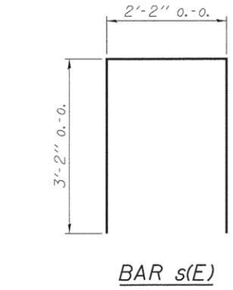


PLAN

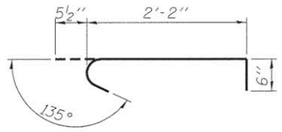


SECTION A-A

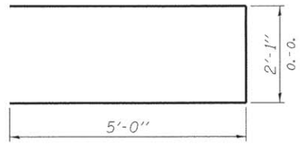
Hatched area to be poured after beams are in place.



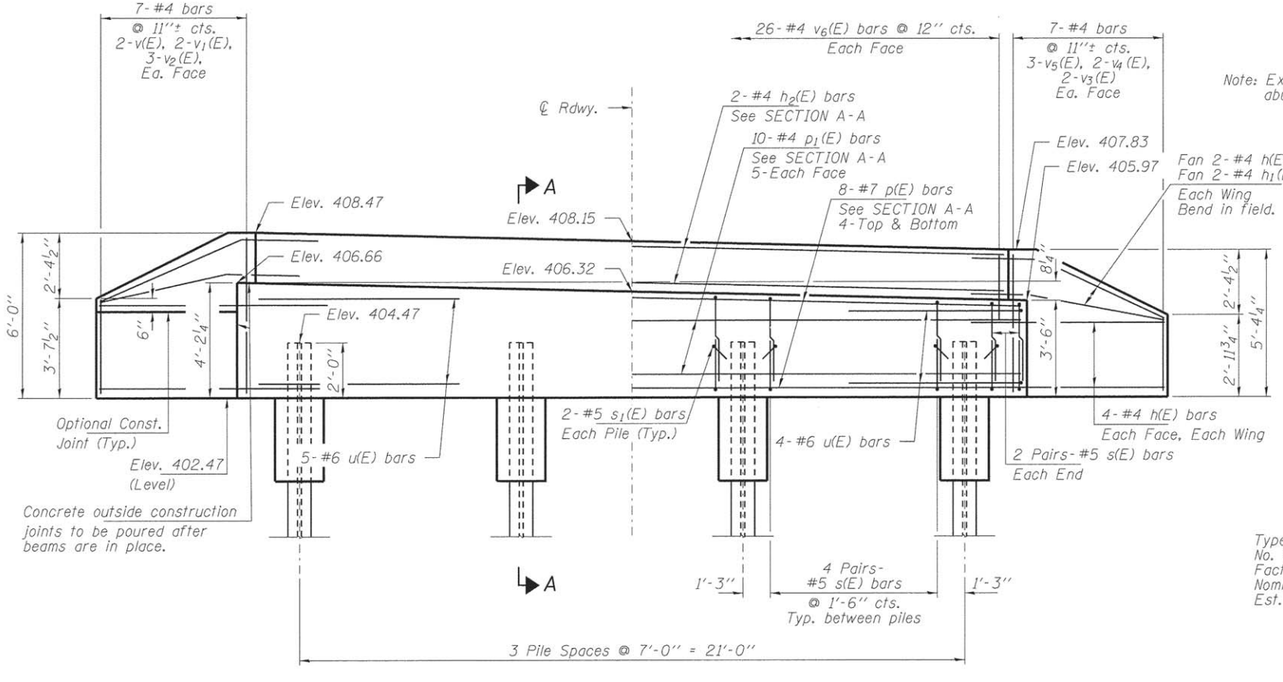
BAR s(E)



BAR s1(E)



BAR u(E)



ELEVATION

(Looking East)

Note: Extend h bars into abutment cap.

PILE DATA

Type	Steel HP10x42
No. Req'd. (E. Abut.)	4
Factored Resistance Available (Rf)	184 Kips/Pile
Nominal Required Bearing (Rn)	335 Kips/Pile
Est. Length	40 Ft/Pile

BILL OF MATERIAL - E. ABUT.

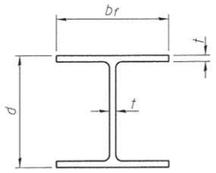
BAR	NO.	SIZE	LENGTH	SHAPE
h(E)	20	#4	7'-0"	
h_1(E)	4	#4	5'-6"	
h_2(E)	2	#4	25'-2"	
p(E)	8	#7	25'-2"	
p_1(E)	10	#4	25'-2"	
s(E)	32	#5	8'-6"	
s_1(E)	8	#5	3'-2"	
u(E)	9	#6	12'-1"	
v(E)	4	#4	3'-4"	
v_1(E)	4	#4	4'-3"	
v_2(E)	6	#4	5'-2"	
v_3(E)	4	#4	2'-9"	
v_4(E)	4	#4	3'-7"	
v_5(E)	6	#4	4'-6"	
v_6(E)	52	#4	2'-8"	
Concrete Structures			Cu. Yd.	12.0
Concrete Encasement			Cu. Yd.	1.4
Reinforcement Bars, Epoxy Coated			Pound	1,360
Steel Piles HP10x42			Foot	120
Concrete Sealer			Sq. Ft.	47

FILE NAME = 140325-sht-bridge.dgn	USER NAME = *USER*	DESIGNED - A.M.C.	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 = 7/28/2016	CHECKED - D.A.B.	REVISED -

STATE OF ILLINOIS
WHITE COUNTY HIGHWAY DEPARTMENT

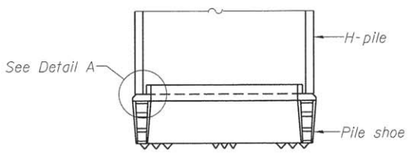
EAST ABUTMENT
STRUCTURE NO. 097-3298
SHEET NO. 7 OF 9 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
335	07-08138-00-BR	WHITE	13	11
INDIAN CREEK ROAD DISTRICT		CONTRACT NO. 99573		
ILLINOIS	FED. AID PROJECT BROS-0193(039)			

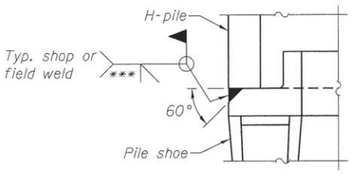


STEEL PILE TABLE

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"

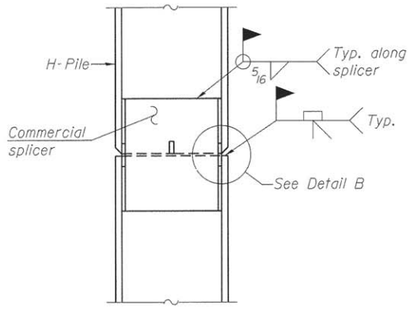


ELEVATION

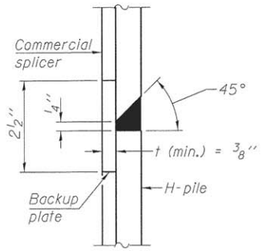


DETAIL A

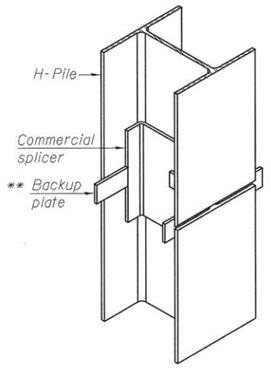
H-PILE SHOE ATTACHMENT



ELEVATION

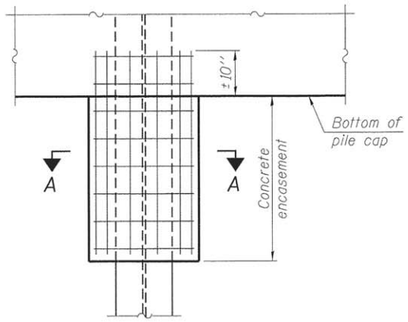


DETAIL "B"

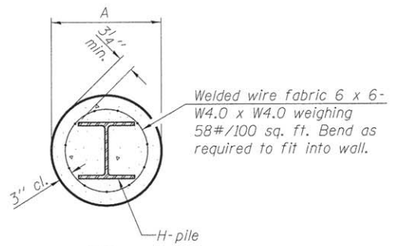


ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE



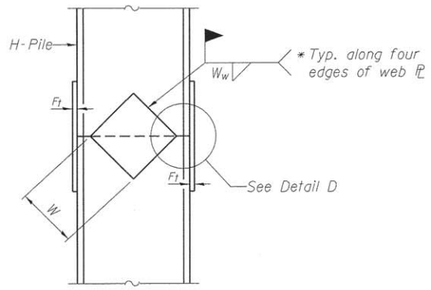
ELEVATION



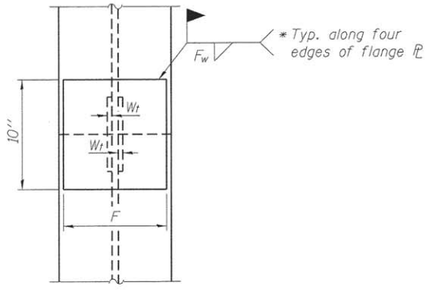
Note:
Forms for encasement may be omitted when soil conditions permit.

SECTION A-A

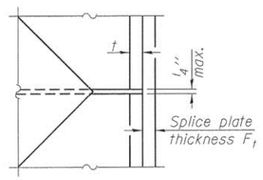
PILE ENCASEMENT



ELEVATION



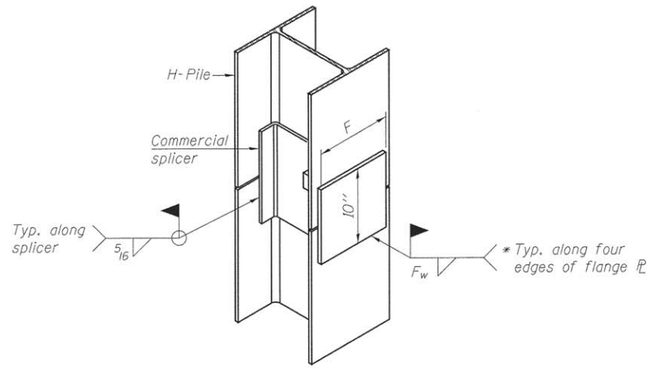
END VIEW



DETAIL D

Designation	F	F_t	F_w	W	W_t	W_w
HP 14x117	12 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



ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE ALTERNATE

* Interrupt welds 1/4" from end of web and/or each flange.

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

*** Weld size per pile shoe manufacturer (5/16" min.).

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

F-HP 1-27-12

FILE NAME = 140325-sht-bridge.dgn	USER NAME = $USER$	DESIGNED - A.M.C.	REVISED -
HAMPTON, LENZINI AND RENWICK, INC. 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.002959		CHECKED - S.W.M.	REVISED -
	PLOT SCALE = $SCALE$	DRAWN - R.D.H.	REVISED -
	PLOT DATE = 7/28/2016	CHECKED - D.A.B.	REVISED -

STATE OF ILLINOIS
WHITE COUNTY HIGHWAY DEPARTMENT

HP PILE DETAILS
STRUCTURE NO. 097-3298
SHEET NO. 8 OF 9 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
335	07-08138-00-BR	WHITE	13	12
INDIAN CREEK ROAD DISTRICT		CONTRACT NO. 99573		
ILLINOIS	FED. AID PROJECT BROS-0193(039)			

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

Bridge Foundation Boring Log

Project: H-14298 Bridge TR-335 over Indian Creek Date: 1/6/2015
Section: 07-08138-00-BR Station
Structure: 097-3122 Bored by: B. Schwartz
County: White Checked By: T. Holcomb

Boring No: 1
Station:
Offset:

Surface Water Elev.
Ground Water Elev. During Drilling 402.3
Upon Completion 388.8

Elevation		N	Qu tsf	w %
405.8	Ground Surface			
	1" A-3 Surface/7" Cr. Stone			
	Brown Mottled Gray Silty CLAY (A-6)	10	1.0S	20
402.3				
	Brown Sandy CLAY (A-6)	6	0.4S	17
399.8				
	Gray Mottled Brown Sandy CLAY (A-6)	8	1.0S	23
		8	1.0S	19
		5	--	22
391.3				
	Brown Mottled Gray Silty CLAY (A-6)	8	2.8S	22
387.3				
	Gray Mottled Brown Silty CLAY (A-6)	7	1.9B	21
384.8		8	1.5B	20
	Gray Silty CLAY (A-6)	1	0.5B	22

Elevation		N	Qu tsf	w %
	silty clay (continued)			
		20	--	20
		2	1.0B	25
		7	1.9S	19
371.8				
	Black to Brown Weathered SHALE	21	--	27
369.8				
	Gray SHALE	56	2.8S	14
		100/3"	--	6
		100/6"	--	5
361.8		100/4"	--	5
	End of Boring @ -44.0'			

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

Bridge Foundation Boring Log

Project: H-14298 Bridge TR-335 over Indian Creek Date: 1/6/2015
Section: 07-08138-00-BR Station
Structure: 097-3122 Bored by: B. Schwartz
County: White Checked By: T. Holcomb

Boring No: 2
Station:
Offset:

Surface Water Elev.
Ground Water Elev. During Drilling 402.4
Upon Completion plug

Elevation		N	Qu tsf	w %
405.7	Ground Surface			
	1" A-3 Surface/7" Cr. Stone			
	Brown Mottled Gray Silty CLAY (A-6)	8	1.2S	19
399.7				
	Gray Mottled Brown Sandy CLAY (A-6)	5	0.5S	29
		6	2.0S	22
		8	--	22
371.2				
	Black SHALE	5	0.6S	20
367.2				
	Gray SHALE	8	1.9B	20
		6	2.5B	19
361.7				
	End of Boring @ -44.0'	2	0.6B	22

Elevation		N	Qu tsf	w %
	silty clay (continued)			
		5	0.8B	20
		1	0.6B	27
		7	2.0B	21
		7	2.0S	8
		100/3"	--	4
		100/2"	--	4

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 = 140325-sht-bridge.dgn	USER NAME = $USER$	DESIGNED - A.M.C.	REVISED -	STATE OF ILLINOIS WHITE COUNTY HIGHWAY DEPARTMENT	BORINGS STRUCTURE NO. 097-3298 SHEET NO. 9 OF 9 SHEETS
HAMPTON, LENZINI AND RENWICK, INC. 3395 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.002959		CHECKED - S.W.M.	REVISED -		
	PLOT SCALE = $SCALE$	DRAWN - R.D.H.	REVISED -		
	PLOT DATE = 7/28/2016	CHECKED - D.A.B.	REVISED -		

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
335	07-08138-00-BR	WHITE	13	13
INDIAN CREEK ROAD DISTRICT		CONTRACT NO. 99573		
	ILLINOIS	FED. AID PROJECT BROS-0193(039)		