09-19-14 LETTING ITEM 065

INDEX OF SHEETS

HIGHWAY STANDARDS

000001-06	STANDARD SYMBOLS, ABBREVIATIONS & PATTERNS
280001-07	TEMPORARY EROSION CONTROL SYSTEMS
515001-03	NAME PLATE FOR BRIDGES
701901-03	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
20100110	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	UNIT	12.00
20100210	TREE REMOVAL (OVER 15 UNITS DIAMETER)	UNIT	186.00
20200100	EARTH EXCAVATION	CU YD	81.00
20300100	CHANNEL EXCAVATION	CU YD	190.00
20400800	FURNISHED EXCAVATION	CU YD	904.00
28100807	STONE DUMPED RIPRAP, CLASS A4	TON	340.00
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	375.00
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1.00
50300225	CONCRETE STRUCTURES	CU YD	27.60
50300280	CONCRETE ENCASEMENT	CU YD	3.40
50400705	PRECAST PRESTRESSED CONCRETE DECK BEAMS (42" DEPTH)	SQ FT	2400.00
50800105	REINFORCEMENT BARS	POUND	3400.00
△ 50900205	STEEL RAILING, TYPE S1	FOOT	197.00
51201600	FURNISHING STEEL PILES 12X53	FOOT	990.00
51202305	DRIVING PILES	FOOT	990.00
51203600	TEST PILE STEEL HP12X53	EACH	1.00
51500100	NAME PLATES	EACH	1.00
67100100	MOBILIZATION	L SUM	1.00
△ 78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	4.00
X2501000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.30
Z0068900	STONE LINED DITCH	TON	86.00

△ SPECIALTY ITEMS

DESIGN DESIGNATION:
DESIGN SPEED: 30 MPH
HIGHWAY CLASS - LOCAL ROAD
EXISTING STRUCTURE NO.: 097-3092
PROPOSED STRUCTURE NO.: 097-3285
CURRENT A.D.T. = 10
CONTRACT NO. 99531

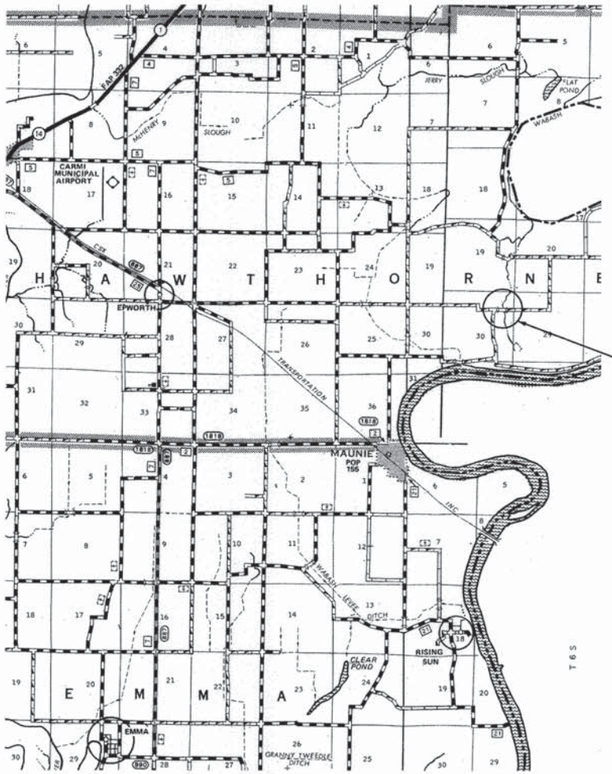
811 Know what's below. Call before you dig.

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

T.R. 221 WHITE COUNTY SECTION 11–06130–00–BR

PROJECT NO. BROS–193(065) JOB NO. C–99–532–12

CONTRACT # 99531 LOWER SANDY SLU



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

GROSS LENGTH	665.00 FT	0.126 MILES
OMISSIONS	0.00 FT	0.000 MILES
NET LENGTH	665.00 FT	0.126 MILES

SECTION 11-06130-00-BR
BEGINS STATION 1+95

STATION 5+05, STRUCTURE NO. 097-3285
A 100' LONG SINGLE SPAN PRECAST PRESTRESSED CONCRETE DECK BEAM BRIDGE (42" DEPTH), 24' ROADWAY, 0.00% GRADE, 0°SKEW.

SECTION 11-06130-00-BR
ENDS STATION 8+60

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

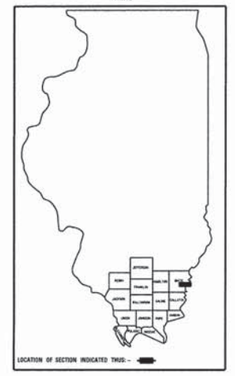
APPROVED July 10, 2014
Brian A. Ray
COUNTY ENGINEER

PASSED JULY 15, 2014
Dana W. Hillebrenner
ENGINEER OF LOCAL ROADS AND STREETS

RELEASING FOR BID BASED ON LIMITED REVIEW: July 15, 2014
Jeffrey L. Keirn
JEFFREY L. KEIRN, P.E.
ACTING DEPUTY DIRECTOR OF HIGHWAYS
REGION FIVE ENGINEER

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
221	11-06130-00-BR	WHITE	14	1
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT		
PROJECT* BROS-193(065)		CONTRACT* 99531		
JOB * C-99-532-12		LOWER SANDY SLU		

LEC JOB * H12IL005WH



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'

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

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

LAMAC ENGINEERING CO.

AARON M. MEFFORD
56284
REGISTERED PROFESSIONAL ENGINEER
OF ILLINOIS

AARON M. MEFFORD
NAME
SIGNATURE
7-9-14
DATE
11-30-15
EXPIRES

TOWNSHIP ROUTE 221
OVER LOWER SANDY SLU
WHITE COUNTY, ILLINOIS

SHEET TITLE:
TITLE SHEET

SCALE:	VARIES
BY:	AMM
DATE:	7/09/14
REV:	

1 OF 14 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.

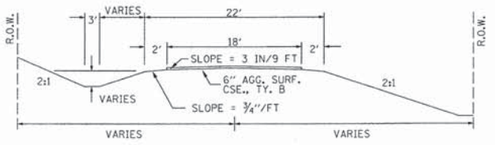
THE WORK INVOLVED ON THIS SECTION CONSISTS OF THE REMOVAL OF THE EXISTING STRUCTURE, THE CONSTRUCTION OF A 100 FOOT LONG SINGLE SPAN PRECAST, PRESTRESSED CONCRETE DECK BEAM BRIDGE, EARTH APPROACHES, AGGREGATE SURFACE COURSE AND OTHER MISCELLANEOUS ITEMS NECESSARY TO COMPLETE THIS SECTION.

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

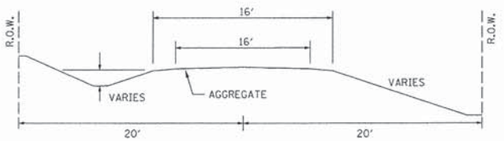
IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONTACT ALL THE UTILITIES, AFFECTING THE PROJECT, PRIOR TO CONSTRUCTION.

THE DECK BEAMS SHALL REMAIN THE PROPERTY OF THE COUNTY.

TYPICAL CROSS SECTION PROPOSED



TYPICAL CROSS SECTION EXISTING



NOTE: CONSTRUCT SPECIAL DITCH

STA 5+95 TO STA 7+75 RT

NOTE: CONSTRUCT STONE LINED DITCH

STA 5+95 TO STA 7+75 RT (0.48 TON/LIN FT)
86 TON STONE LINED DITCH ALLOWED IN PROPOSAL.

SEE STONE LINED DITCH DETAIL.

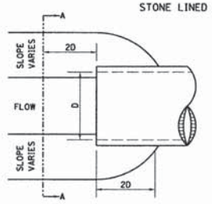
UTILITIES:
J.U.L.I.E. 1-800-892-0123

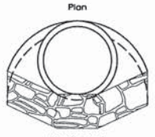
TREE REMOVAL SCHEDULE

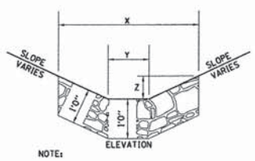
STATION	LOCATION	QUANTITY
5+60	LT	2-18
6+45	RT	12
6+64	RT	24
6+80	RT	48
7+00	RT	36
7+12	RT	42

TOTAL = 198 UNITS

STONE LINED DITCH DESIGN







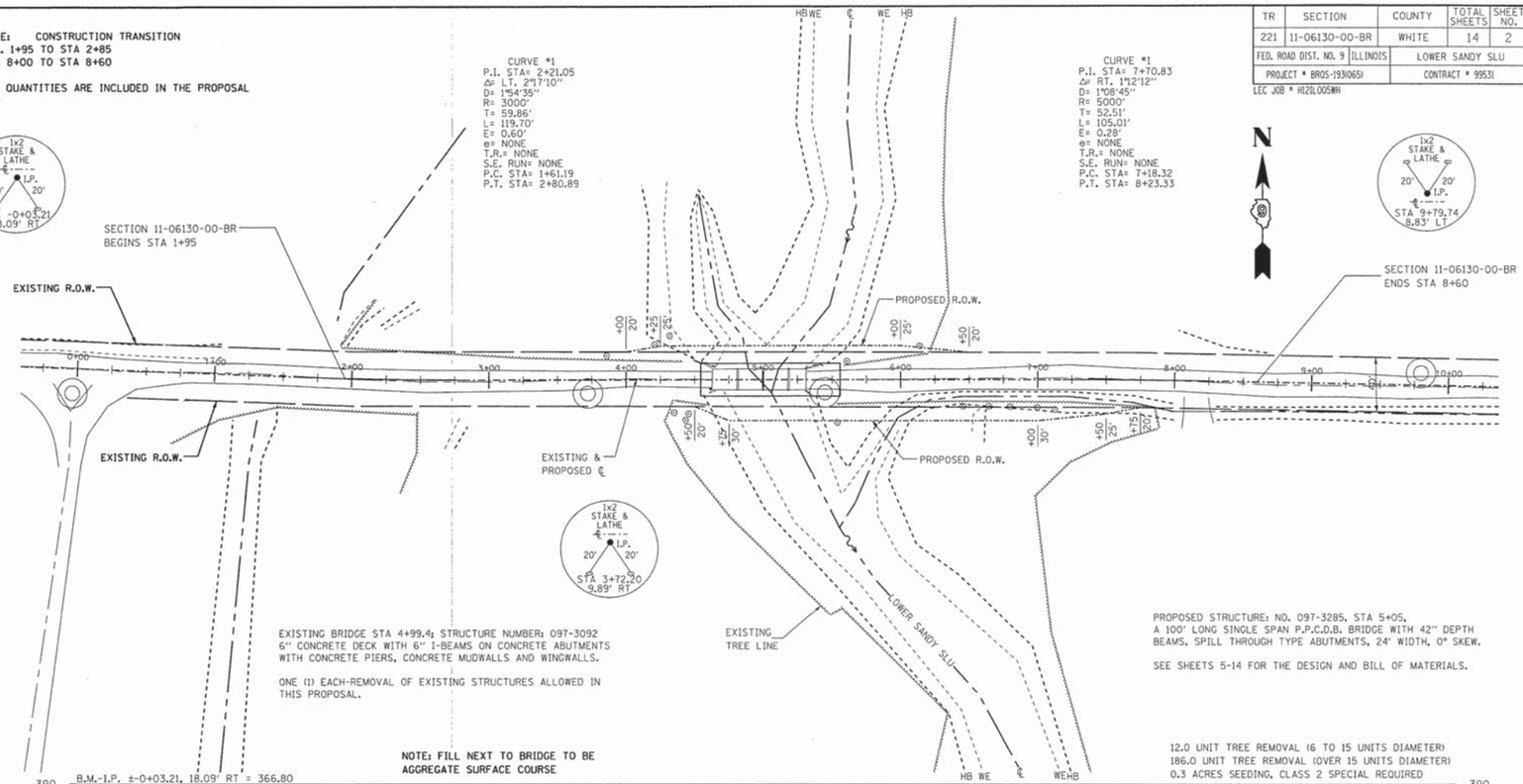
NOTE:

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

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

NOTE: CONSTRUCTION TRANSITION
STA. 1+95 TO STA 2+85
STA 8+00 TO STA 8+60

ALL QUANTITIES ARE INCLUDED IN THE PROPOSAL



TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
221	11-06130-00-BR	WHITE	14	2
FED. ROAD DIST. NO. 9	ILLINOIS	LOWER SANDY SLU		
PROJECT * BROS-1931065)		CONTRACT * 99531		

LEC JOB * H12LL005MH

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

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

LAMAC ENGINEERING CO.

AARON M. MEFFORD
56284
REGISTERED PROFESSIONAL ENGINEER
OF ILLINOIS

AARON M. MEFFORD
NAME
SIGNATURE
7-9-14
DATE
11-30-15
EXPIRES

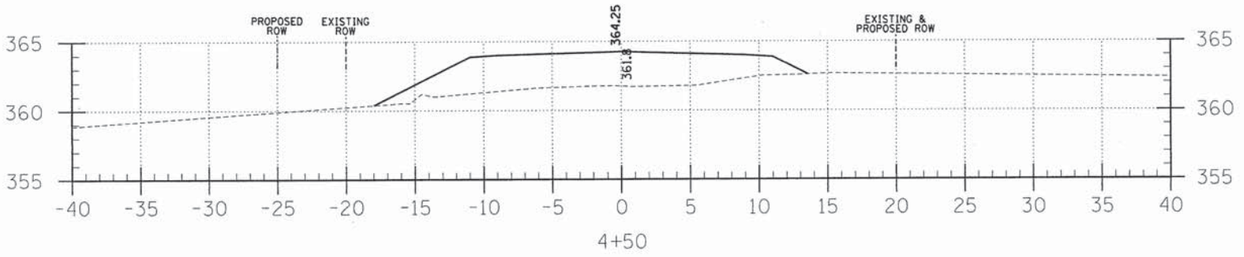
TOWNSHIP ROUTE 221
OVER LOWER SANDY SLU
WHITE COUNTY, ILLINOIS

SHEET TITLE:
PLAN & PROFILE

SCALE:	VARIES
BY:	AMM
DATE:	7/2014
REV:	

2 OF 14 SHEETS

SHEET NO.
2



4+50

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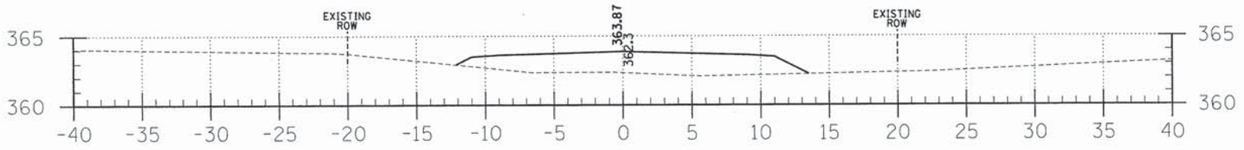
F = 61.6



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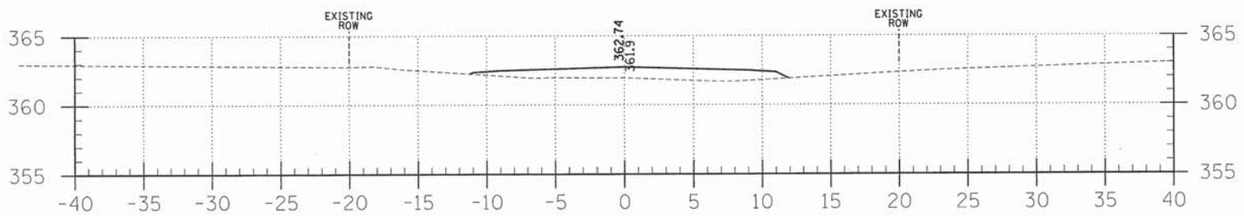

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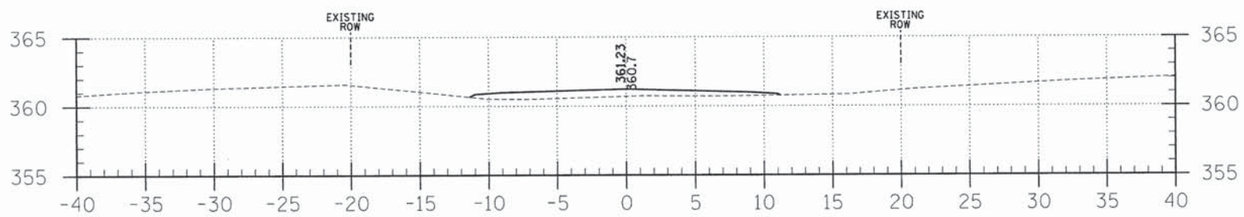

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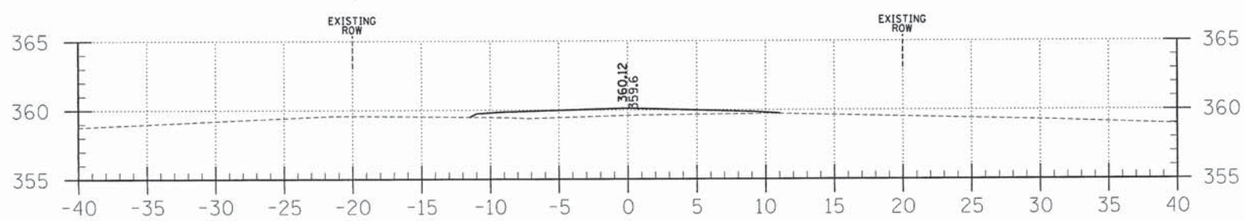

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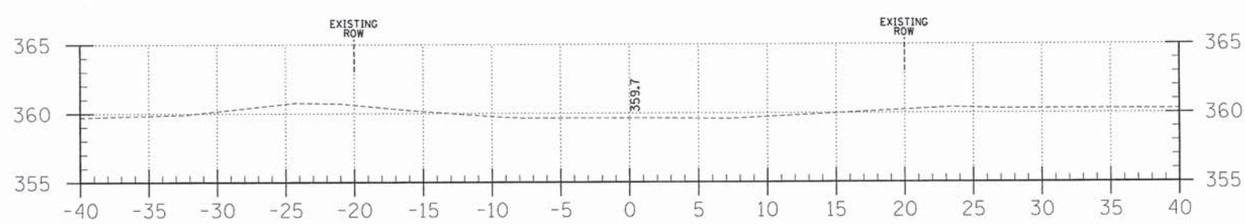
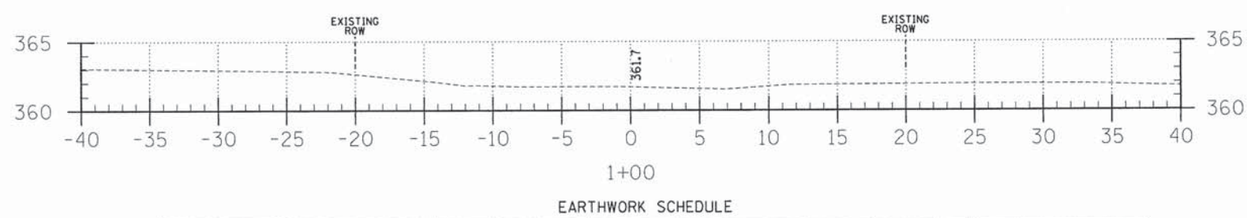


1+95



1+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+54.3	0.0	0.0	0.0	0.0	179.5	-179.5
STA 4+54.3 TO 5+55.7	0.0	190.3	95.2	71.4	0.0	+71.4
STA 5+55.7 TO 10+00	80.8	0.0	0.0	60.6	856.5	-795.9
TOTAL	80.8	190.3	95.2	132.0	1036.0	-904.0

TR	SECTION
221	11-06130-00-BR
fed. road dist. no. 9	ILLINOIS
PROJECT# BROS-1930(65)	
LIC 268 # 184.002881	

COUNTY	TOTAL SHEETS	SHEET NO.
WHITE	14	3
CONTRACT# 99531		
LOWER SANDY SLU		

SHEET NO. 3

3 OF 14 SHEETS

SCALE: 1" = 5'

BY: AMM

DATE: 7/9/14

REV:

CROSS-SECTIONS

SHEET TITLE:

TOWNSHIP ROUTE 221
OVER LOWER SANDY SLU
WHITE COUNTY, ILLINOIS

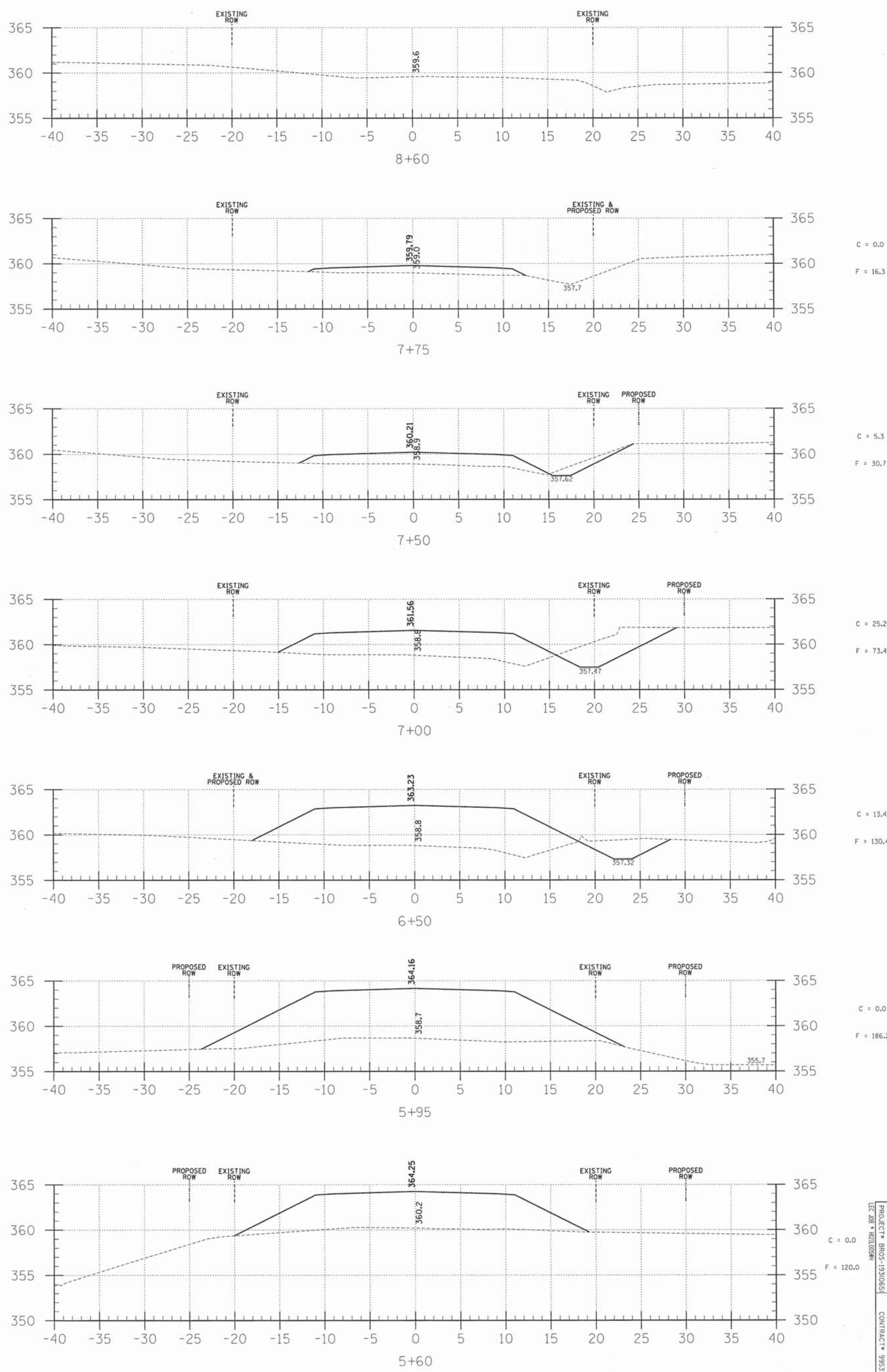
LICENSED PROFESSIONAL ENGINEER
AARON M. MEFFORD
SIGNATURE
DATE 7-14-15
EXPIRES 11-30-15

AARON M. MEFFORD
062084
REGISTERED PROFESSIONAL ENGINEER
STATE OF ILLINOIS

LAMAC ENGINEERING CO.

PROFESSIONAL DESIGN FIRM
LAND SURVEYING & PROFESSIONAL ENGINEERING CORPORATION
184.002887
(62-03435)(35-00276B)

3523 W. 3RD ST.
P.O. BOX 190
MT. CARMEL, IL
62863
PHONE:
(618)-262-8651
FAX:
(618)-263-3327



TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
221	11-06130-00-BR	WHITE	14	4
FED. ROAD DIST. NO. 9	ILLINOIS	LOWER SANDY SLU		
PROJECT# BROS-193(065)		CONTRACT# 99531		

LEC JOB # H121L005WH

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

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

LAMAC ENGINEERING CO.

AARON M. MEFFORD 56284 REGISTERED PROFESSIONAL ENGINEER OF ILLINOIS

AARON M. MEFFORD
NAME
SIGNATURE
7-9-14
DATE
11-30-15
EXPIRES

TOWNSHIP ROUTE 221 OVER LOWER SANDY SLU WHITE COUNTY, ILLINOIS

SHEET TITLE: CROSS-SECTIONS

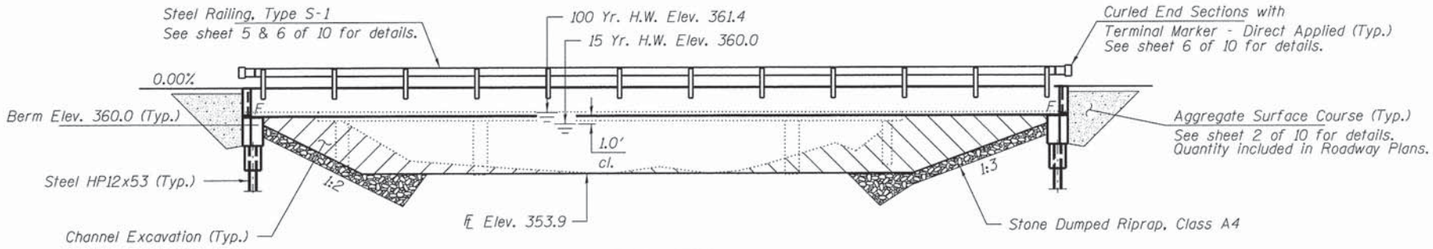
SCALE: 1" = 5'
BY: AMM
DATE: 7/6/14
REV:

4 OF 14 SHEETS

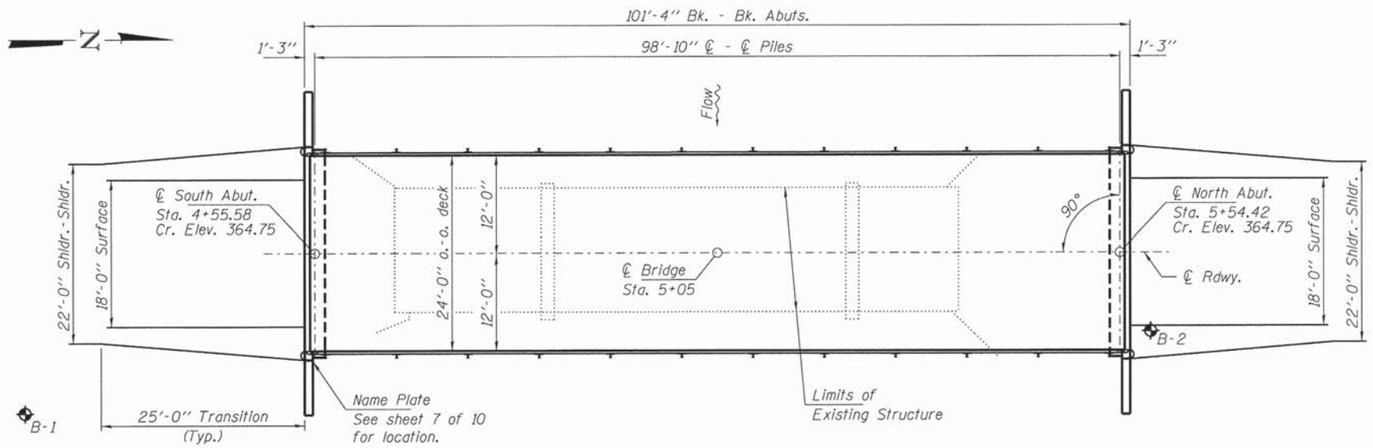
SHEET NO. 4

EXISTING STRUCTURE: Structure NO. 051-6010: 3 Span timber trestle, one-lane bridge with a timber tie deck on longitudinal timber stringers, with steel plate railing. Open concrete bent abutments on timber piles and timber pile bent piers. 34.5' Bk.-Bk. of abutment and 12' o.-o. of deck. The existing structure is to be removed and replaced.

The road will be closed to traffic during construction.



ELEVATION



PLAN

GENERAL NOTES

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

The Contractor shall drive test piles to 110% of the nominal required bearing specified in production locations at the South Abutment or approved by the Engineer before ordering the remainder of piles.

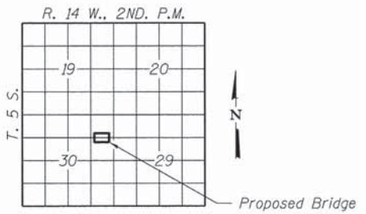
Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.

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.

The Contractor has the option to propose 36" wide beams for this structure. The alternate design will be reviewed by the ENGINEER in the contract shop drawings.

INDEX OF STRUCTURE SHEETS



LOCATION SKETCH

LOWER SANDY SLU
BUILT 201_ BY
HAWTHORNE ROAD DISTRICT
WHITE COUNTY
SEC. 11-06130-00-BR
STR. NO. 097-3285
LOADING HL-93

NAME PLATE

See Std. 515001

DESIGN SPECIFICATIONS

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

LOADING HL-93

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

DESIGN STRESSES

FIELD UNITS

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

PRECAST PRESTRESSED UNITS

f'c = 6,000 psi
f'ci = 5,000 psi
fpu = 270,000 psi (½"ϕ low lax. strands)
fpbt = 201,960 psi (½"ϕ low lax. strands)
fy = 60,000 psi (Reinf.)

SEISMIC DATA

Seismic Performance Zone (SPZ) = 2
Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.289g
Design Spectral Acceleration at 0.2 sec. (S_{DS}) = 0.680g
Soil Site Class = D

Design Scour Elevations (ft.)		
	S. Abut.	N. Abut.
0.100	357.4	357.4

WATERWAY INFORMATION

Drainage Area = 26.3 Sq. Mi.
Existing Low Grade Elev. 360.5 @ Sta. 4+99
Proposed Low Grade Elev. 361.0 @ Sta. 5+00

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Natural H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
Design	15	1280	312	509	359.98				
Base/Max. Calc.	100	1980	345	607 ①	361.44	0.17	0.07	361.61	361.51

① Approach Opening = 310 Sq. Ft.
Note: Low water approach to remain in place.

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 07/09/2014
ILLINOIS STRUCTURAL ENGINEER NO. 081-6064

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

Expires 11-30-2014

TOTAL BILL OF MATERIAL

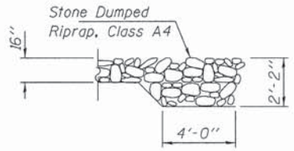
ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	Cu. Yd.			190
Stone Dumped Riprap, Class A4	Ton			340
Removal of Existing Structures	Each			1
Concrete Structures	Cu. Yd.		27.6	27.6
Concrete Encasement	Cu. Yd.		3.4	3.4
Precast Prestressed Concrete Deck Beams (42" Depth)	Sq. Ft.	2,400		2,400
Reinforcement Bars	Pound		3,400	3,400
Steel Railing, Type S-1	Foot	197		197
Furnishing Steel Piles HP12x53	Foot		990	990
Driving Piles	Foot		990	990
Test Pile Steel HP12x53	Each		1	1
Name Plates	Each		1	1
Terminal Marker - Direct Applied	Each	4		4

FILE NAME = 120125-sht-bridge.dgn	USER NAME =	DESIGNED - L.A.P.	REVISED -
HAMPTON, LENZINI AND RENWICK, INC. 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959		CHECKED - S.W.M.	REVISED -
	PLOT SCALE =	DRAWN - D.A.B.	REVISED -
	PLOT DATE = 7/9/2014	CHECKED - S.W.M.	REVISED -

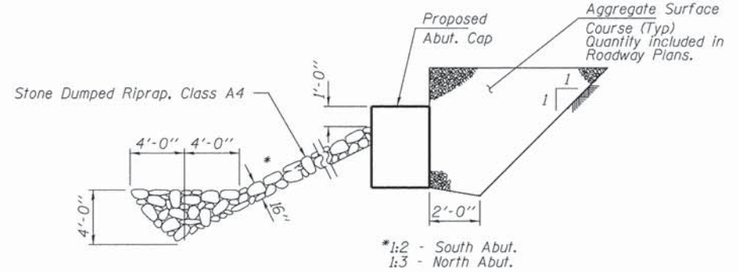
STATE OF ILLINOIS
WHITE COUNTY HIGHWAY DEPARTMENT

GENERAL PLAN & ELEVATION
STRUCTURE NO. 097-3285
SHEET NO. 1 OF 10 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
221	11-06130-00-BR	WHITE	14	5
HAWTHORNE ROAD DISTRICT		CONTRACT NO. 99531		
ILLINOIS	FED. AID PROJECT			

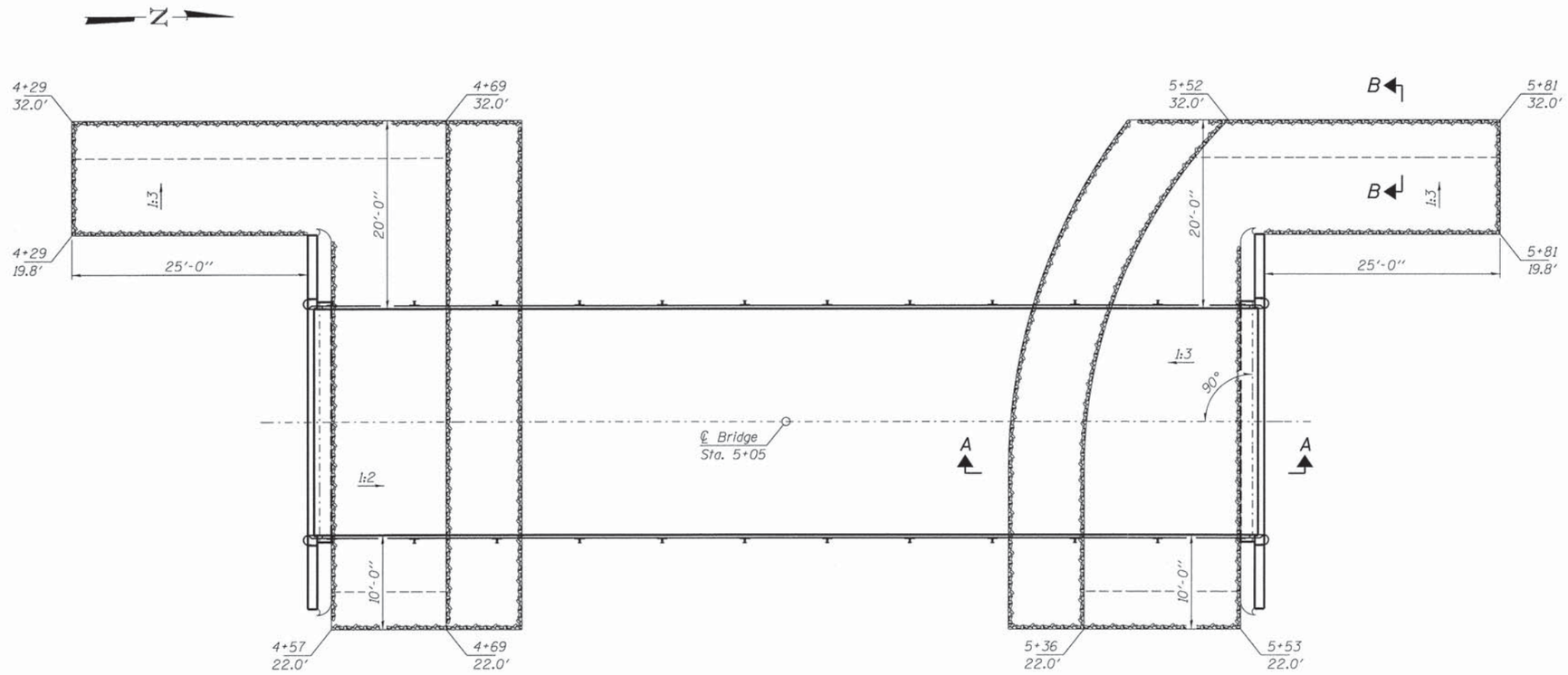


SECTION B-B



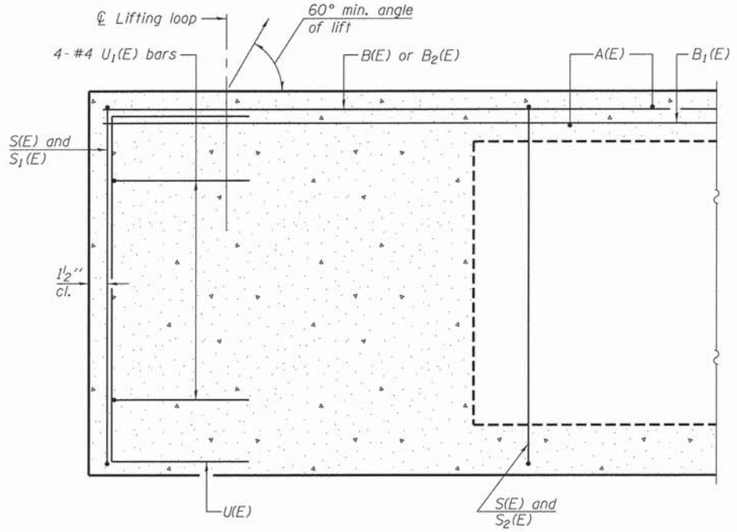
SECTION A-A

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

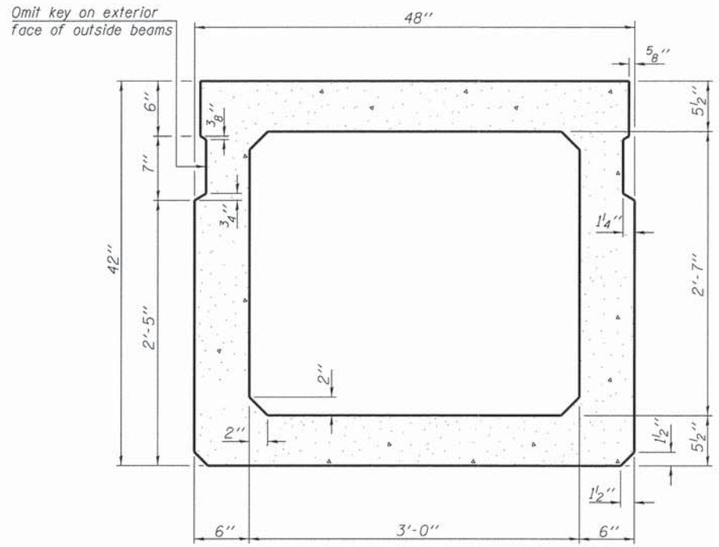


RIPRAP LAYOUT

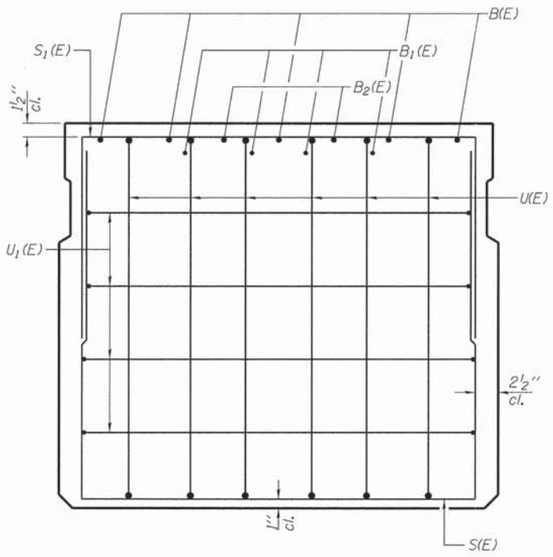
FILE NAME = 120125-sht-bridge.dgn	USER NAME =	DESIGNED - L.A.P.	REVISED -	STATE OF ILLINOIS WHITE COUNTY HIGHWAY DEPARTMENT	RIPRAP LAYOUT STRUCTURE NO. 097-3285 SHEET NO. 2 OF 10 SHEETS	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND RENWICK, INC. 3095 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959		CHECKED - S.W.M.	REVISED -			221	11-06130-00-BR	WHITE	14	6
	PLOT SCALE =	DRAWN - D.A.B.	REVISED -			HAWTHORNE ROAD DISTRICT		CONTRACT NO. 99531		
	PLOT DATE = 7/9/2014	CHECKED - S.W.M.	REVISED -			ILLINOIS FED. AID PROJECT				



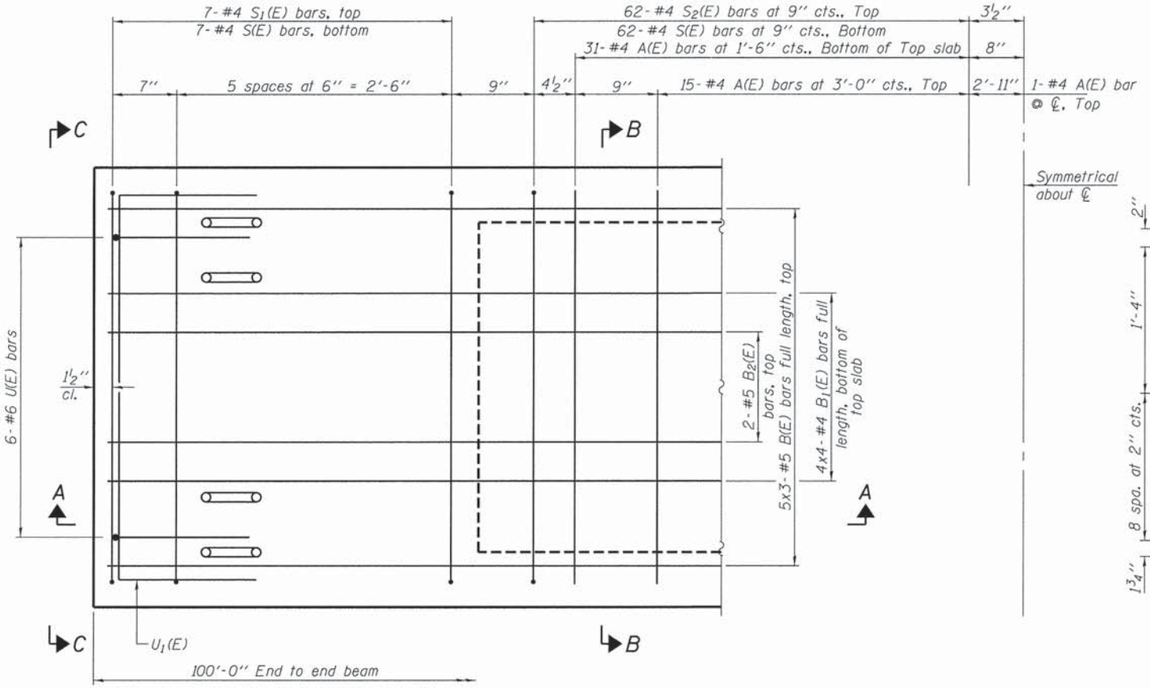
SECTION A-A



SECTION B-B
(Showing dimensions)

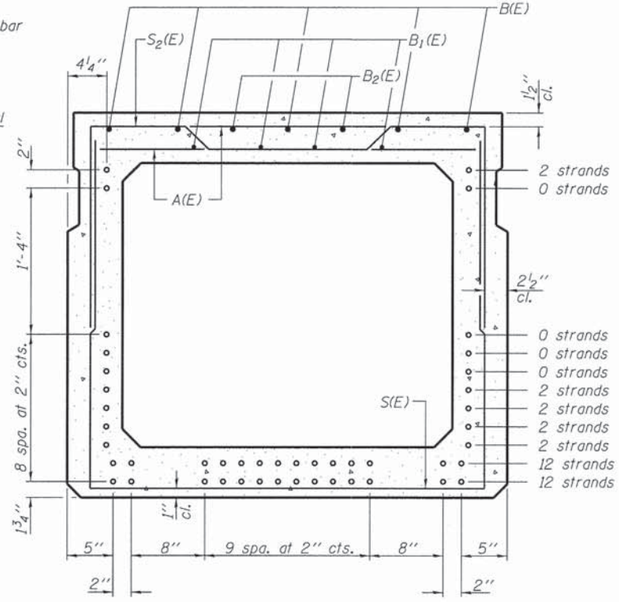


VIEW C-C



PLAN VIEW

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 5x3-#5 etc. indicates 5 lines of bars with 3 lengths per line.



SECTION B-B
(Showing reinforcement and permissible strand locations)

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

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

BAR LIST
ONE BEAM ONLY
(For information only)

Bar	No.	Size	Length	Shape
A(E)	93	#4	3'-7"	—
B(E)	15	#5	34'-11"	—
$B_1(E)$	16	#4	26'-6"	—
$B_2(E)$	4	#5	10'-0"	—
S(E)	138	#4	9'-11"	⊔
$S_1(E)$	14	#4	7'-3"	⊓
$S_2(E)$	124	#4	7'-6"	⊓
U(E)	12	#6	5'-9"	⊏
$U_1(E)$	8	#4	6'-0"	⊓

Note: See sheets 3 & 4 of 10 for additional details and Bill of Material.

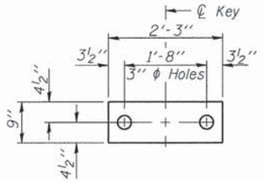
PD-4248-0 7-1-10

FILE NAME = 120125-sht-br-idge.dgn	USER NAME =	DESIGNED - L.A.P.	REVISED -	
HAMPTON, LENZINI AND RENWICK, INC. 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959		CHECKED - S.W.M.	REVISED -	
	PLOT SCALE =	DRAWN - D.A.B.	REVISED -	
	PLOT DATE = 7/9/2014	CHECKED - S.W.M.	REVISED -	

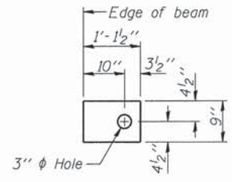
STATE OF ILLINOIS
WHITE COUNTY HIGHWAY DEPARTMENT

42" x 48" PPC DECK BEAM
STRUCTURE NO. 097-3285
SHEET NO. 3 OF 10 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
221	11-06130-00-BR	WHITE	14	7
HAWTHORNE ROAD DISTRICT		CONTRACT NO. 99531		
ILLINOIS FED. AID PROJECT				



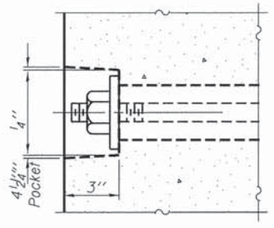
FABRIC BEARING PAD
(Interior - 10 Req'd.)



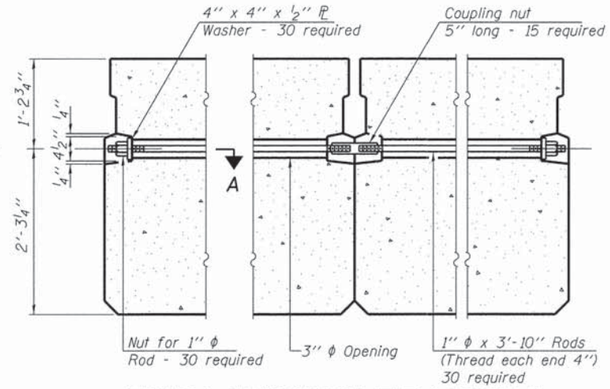
FABRIC BEARING PAD
(Exterior - 4 Req'd.)

FIXED

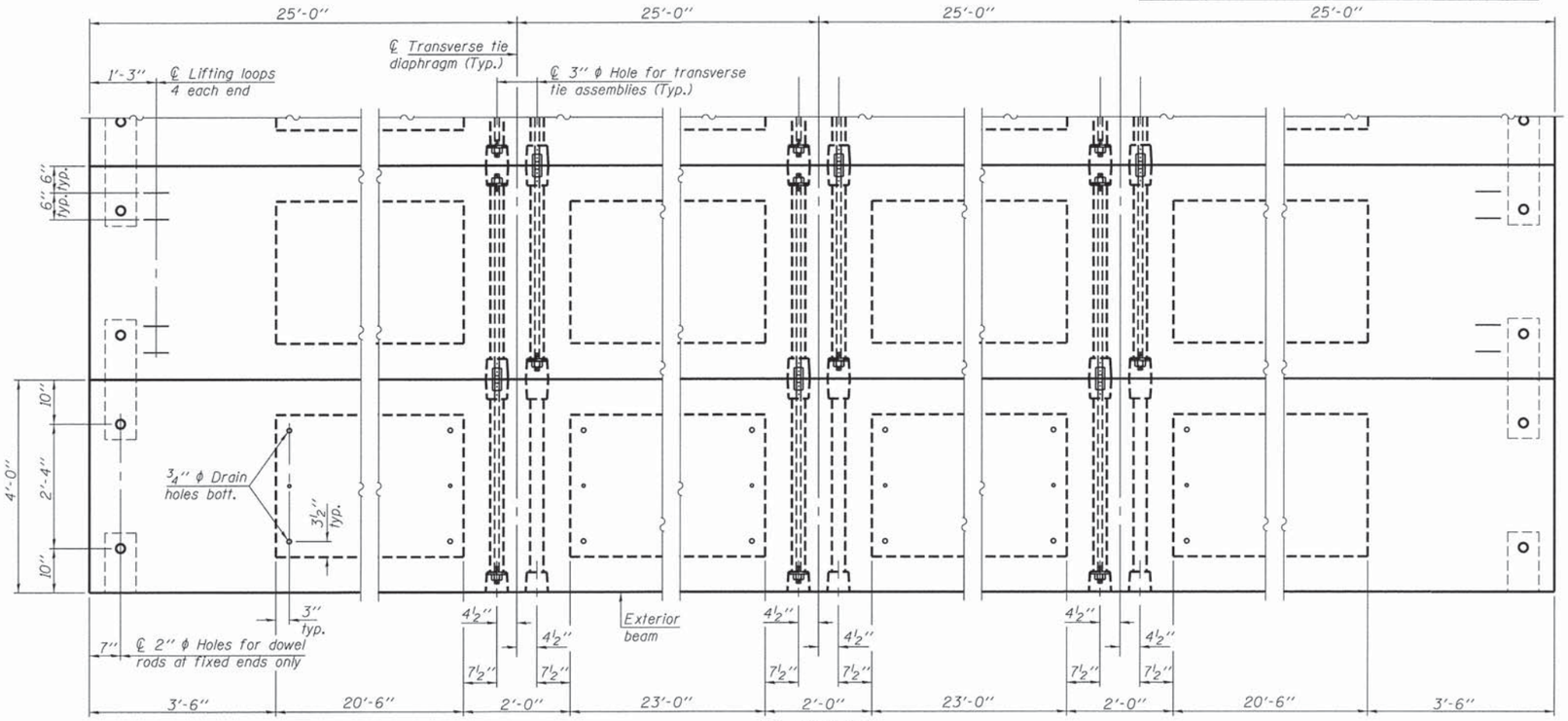
Notes:
All bearing pads shall be 1" thick.
Omit holes when using expansion bearings.
Expansion bearing pad shall be bonded to the substructure.



SECTION A-A

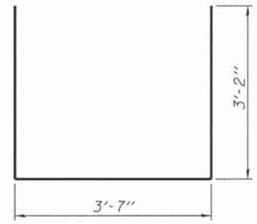


TYPICAL TRANSVERSE TIE ASSEMBLY

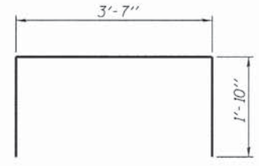


PLAN VIEW

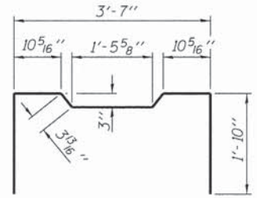
Note: Connect beams in pairs with the transverse tie configuration shown.



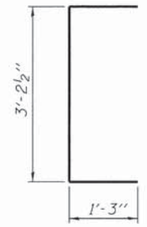
BAR S(E)



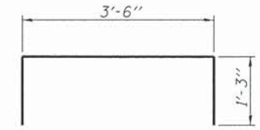
BAR S1(E)



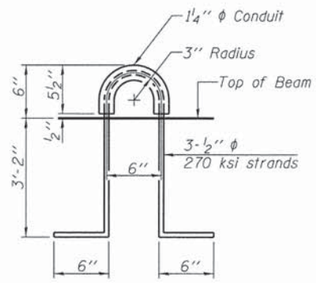
BAR S2(E)



BAR U(E)



BAR U1(E)



LIFTING LOOP DETAIL

NOTES

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be ½" and the nominal cross-sectional area shall be 0.153 sq. in.

The 1" ϕ rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior faces of bridge shall be filled with grout after transverse tie assembly is in place.

Reinforcement bars shall conform to ASTM A 706, Grade 60. (See Special Provisions).

Two ⅛" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.

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

Corrosion Inhibitor, per Article 1020.05(b)(12) and 1021.07 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams.

Compressive strength of prestressed concrete, f'c, shall be 6000 psi.

Compressive strength of prestressed concrete at release, f'ci, shall be 5000 psi.

Reinforcement bars designated (E) shall be epoxy coated.

BILL OF MATERIAL

Precast Prestressed Conc. Deck Bms. (42" depth)	Sq. Ft.	2,400

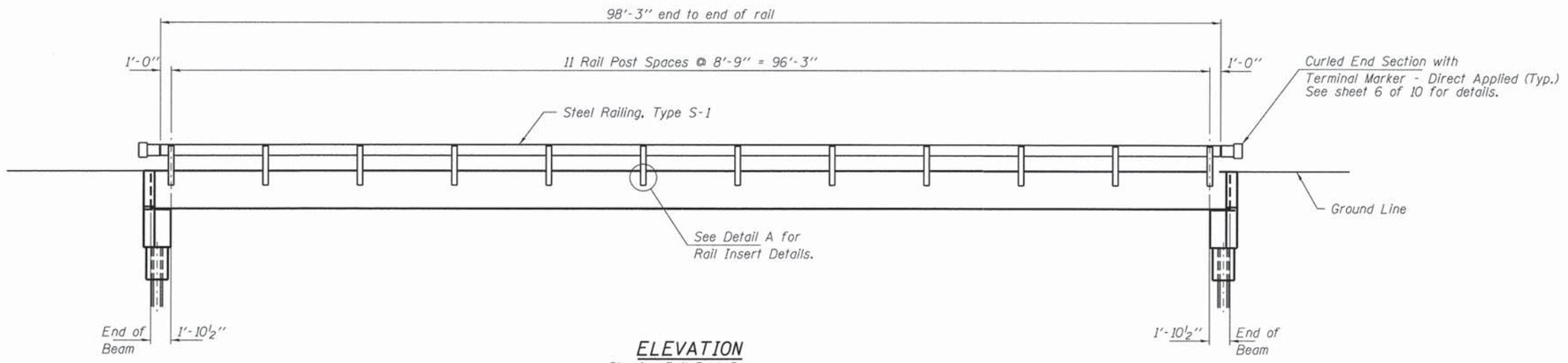
PD-4248-0D 7-1-10

FILE NAME = 120125-sht-bridge.dgn	USER NAME =	DESIGNED - L.A.P.	REVISED -	
HAMPTON, LENZINI AND RENWICK, INC. 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959		CHECKED - S.W.M.	REVISED -	
	PLOT SCALE =	DRAWN - D.A.B.	REVISED -	
	PLOT DATE = 7/9/2014	CHECKED - S.W.M.	REVISED -	

STATE OF ILLINOIS
WHITE COUNTY HIGHWAY DEPARTMENT

42" x 48" PPC DECK BEAM DETAILS
STRUCTURE NO. 097-3285
SHEET NO. 4 OF 10 SHEETS

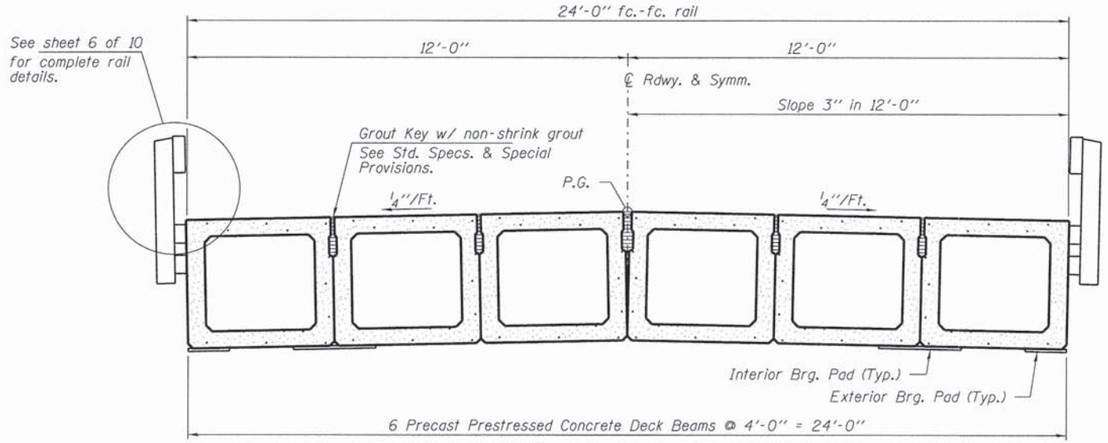
T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
221	11-06130-00-BR	WHITE	14	8
HAWTHORNE ROAD DISTRICT		CONTRACT NO. 99531		
ILLINOIS FED. AID PROJECT				



ELEVATION

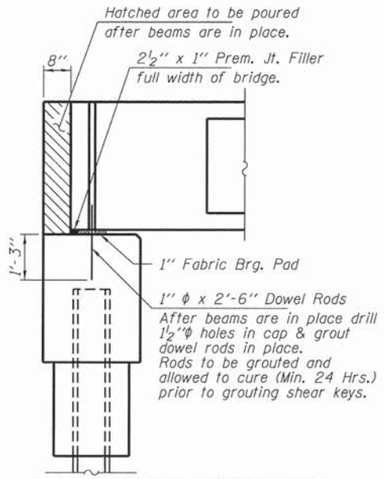
Showing Rail Post Spaces

See sheet 6 of 10 for Railing Details.



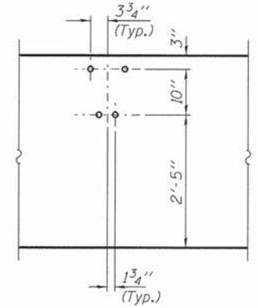
CROSS SECTION

See sheets 2 & 3 of 10 for Superstructure.



SECTION AT ABUTMENTS

@ Rt. L's



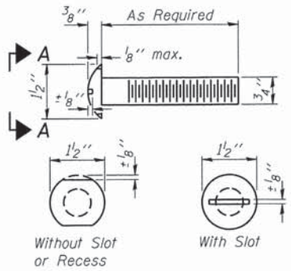
DETAIL A

FILE NAME = 120125-sht-bridge.dgn	USER NAME =	DESIGNED - L.A.P.	REVISED -	
HAMPTON, LENZINI AND RENWICK, INC. 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959		CHECKED - S.W.M.	REVISED -	
	PLOT SCALE =	DRAWN - D.A.B.	REVISED -	
	PLOT DATE = 7/9/2014	CHECKED - S.W.M.	REVISED -	

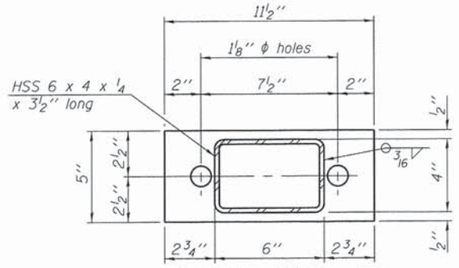
STATE OF ILLINOIS
WHITE COUNTY HIGHWAY DEPARTMENT

SUPERSTRUCTURE DETAILS
STRUCTURE NO. 097-3285
SHEET NO. 5 OF 10 SHEETS

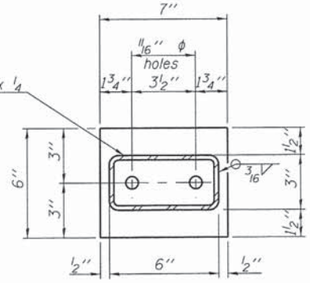
T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
221	11-06130-00-BR	WHITE	14	9
HAWTHORNE ROAD DISTRICT		CONTRACT NO. 99531		
ILLINOIS FED. AID PROJECT				



VIEW A-A
ROUND HEAD BOLT

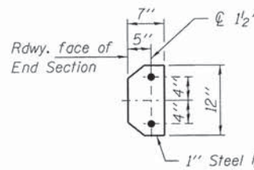


PL 1/2" x 11 1/2" x 5"

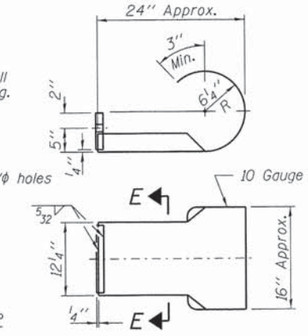


PL 1/2" x 7" x 6"

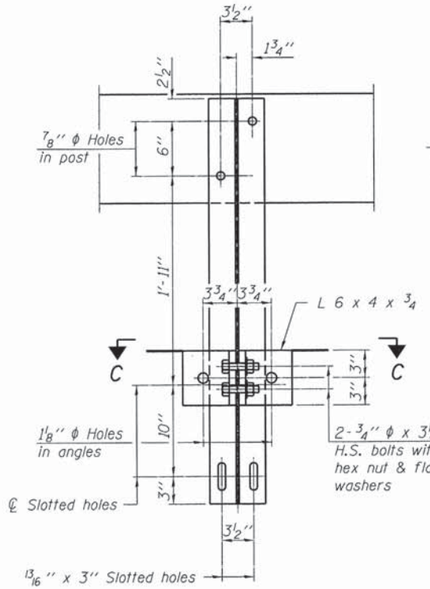
Note: Cost of curled end sections shall be included with the Steel Railing. (4 Required)



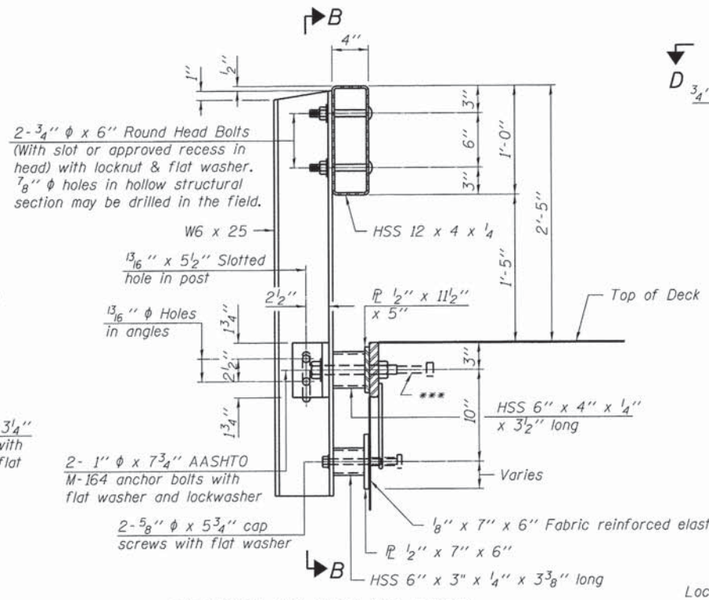
SECTION E-E



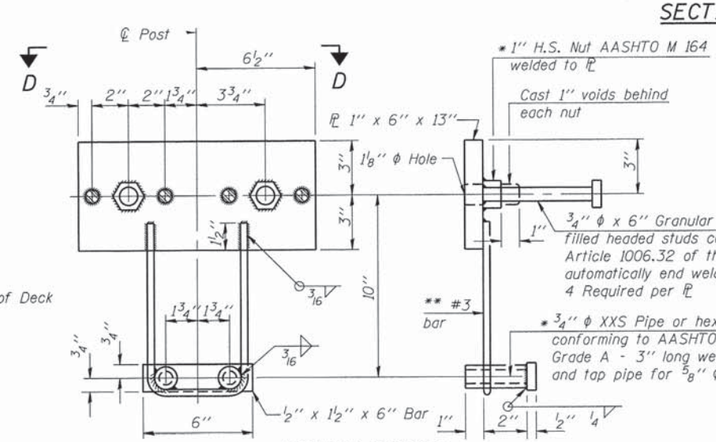
CURLED END SECTION DETAILS



SECTION B-B



SECTION AT RAILING POST



ANCHOR DEVICE

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

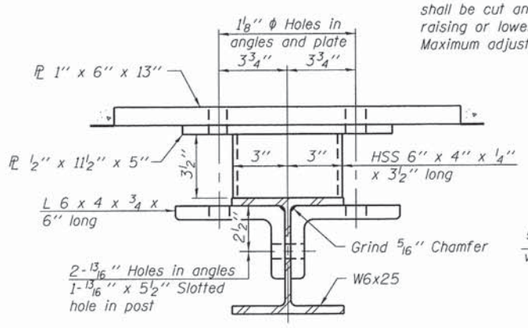
Notes:

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.

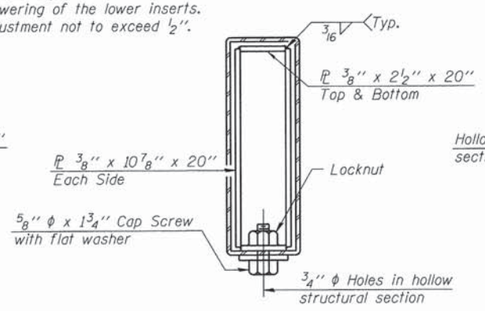
All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.

*** 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.

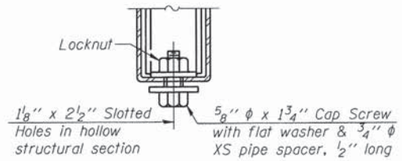


SECTION C-C

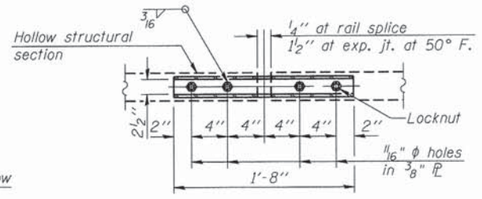
** Whenever the lower insert assemblies interfere with strand locations, the #3 bars shall be cut and adjusted in order to allow raising or lowering of the lower inserts. Maximum adjustment not to exceed 1/2".



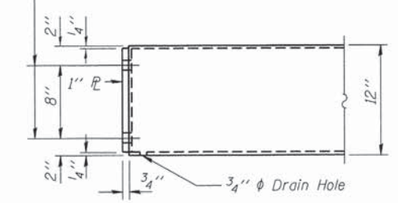
SECTIONS AT RAIL SPLICE



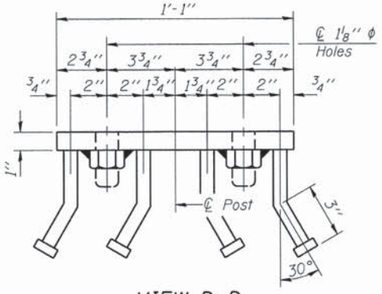
RAIL SPLICE CONNECTION AT EXPANSION JT.



PLAN-BOTT. SPLICE PL TYPICAL



END OF RAIL DETAILS



VIEW D-D

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S-1	Foot	197

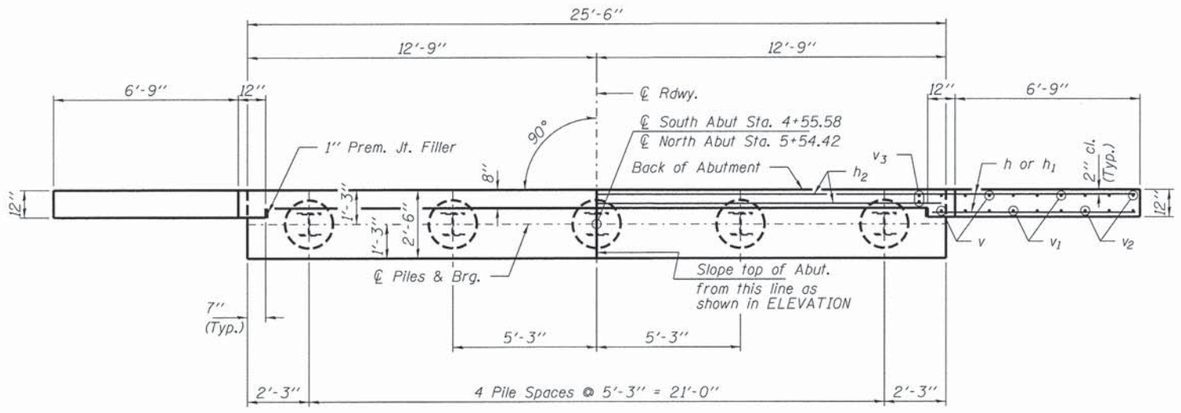
R-23A 7-1-10 (10'-9" Maximum Post Spacing)

FILE NAME = 120125-sht-bridge.dgn	USER NAME =	DESIGNED - L.A.P.	REVISED -
HAMPTON, LENZINI AND RENWICK, INC. 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703		CHECKED - S.W.M.	REVISED -
ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959	PLOT SCALE =	DRAWN - D.A.B.	REVISED -
	PLOT DATE = 7/9/2014	CHECKED - S.W.M.	REVISED -

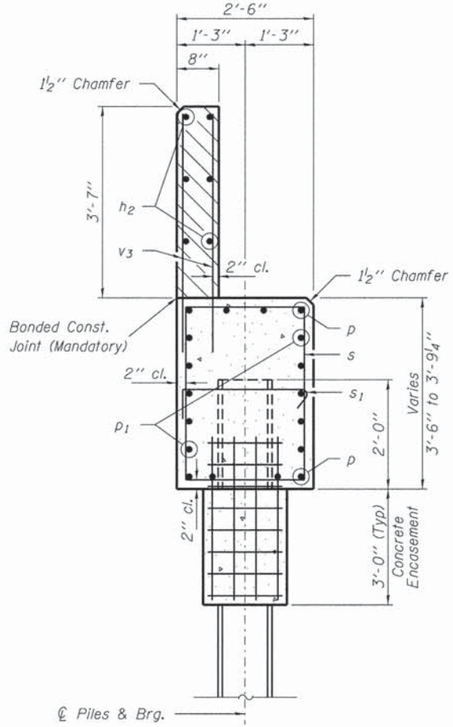
STATE OF ILLINOIS
WHITE COUNTY HIGHWAY DEPARTMENT

STEEL RAILING, TYPE S-1
STRUCTURE NO. 097-3285
SHEET NO. 6 OF 10 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
221	11-06130-00-BR	WHITE	14	10
HAWTHORNE ROAD DISTRICT		CONTRACT NO. 99531		
ILLINOIS	FED. AID PROJECT			

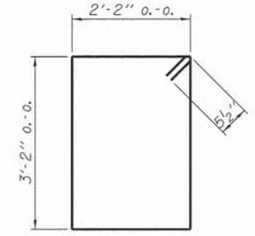


PLAN

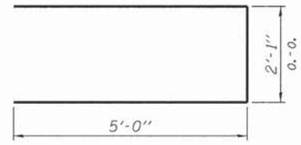


SECTION A-A

Hatched area to be poured after beams are in place.



BAR s



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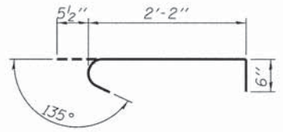
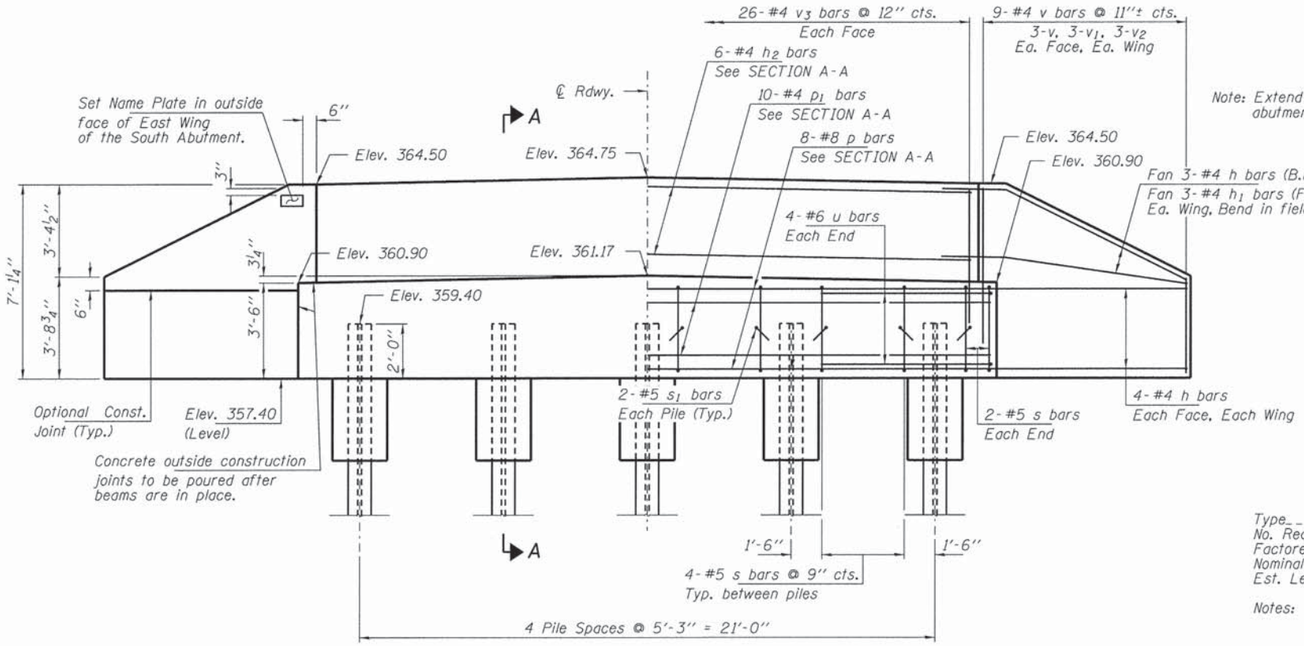


BAR s_1



ELEVATION

Note: Extend h bars into abutment cap.

PILE DATA

Type _____ Steel Piles HP12x53
No. Req'd. (2 Abuts.) _____ *10
Factored Resistance Available (Rf) _____ 208 Kips/Pile
Nominal Required Bearing (Rn) _____ 379 Kips/Pile
Est. Length _____ 110 Ft/Pile

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

The test piles shall be driven to 110 percent of the Nominal Required Bearing indicated in the pile data information.

BILL OF MATERIAL - 2 ABUTS.

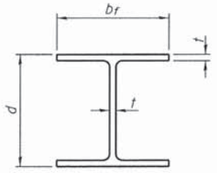
BAR	NO.	SIZE	LENGTH	SHAPE
h	44	#4	9'-0"	
h_1	12	#4	7'-6"	
h_2	12	#4	25'-2"	
p	16	#8	25'-2"	
p_1	20	#4	25'-2"	
s	40	#5	11'-7"	
s_1	20	#5	3'-2"	
u	16	#6	12'-1"	
v	24	#4	6'-3"	
v_1	24	#4	4'-10"	
v_2	24	#4	3'-6"	
v_3	104	#4	5'-7"	
Concrete Structures			Cu. Yd.	27.6
Concrete Encasement			Cu. Yd.	3.4
Reinforcement Bars			Pound	3,400
Steel Piles HP12x53			Foot	990
Test Pile Steel HP12x53			Each	1
Name Plates			Each	1

FILE NAME = 120125-sht-bridge.dgn	USER NAME =	DESIGNED - L.A.P.	REVISED -	
HAMPTON, LENZINI AND RENWICK, INC. 3065 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959		CHECKED - S.W.M.	REVISED -	
	PLOT SCALE =	DRAWN - D.A.B.	REVISED -	
	PLOT DATE = 7/9/2014	CHECKED - S.W.M.	REVISED -	

STATE OF ILLINOIS
WHITE COUNTY HIGHWAY DEPARTMENT

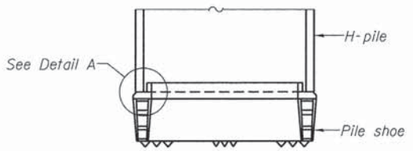
ABUTMENTS
STRUCTURE NO. 097-3285
SHEET NO. 7 OF 10 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
221	11-06130-00-BR	WHITE	14	11
HAWTHORNE ROAD DISTRICT		CONTRACT NO. 99531		
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 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"



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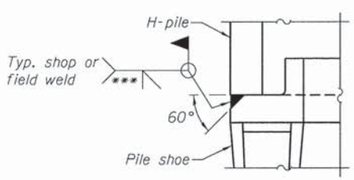
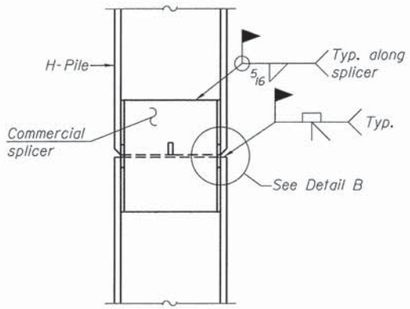


DETAIL A

H-PILE SHOE ATTACHMENT



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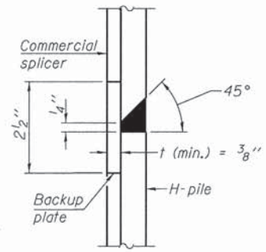
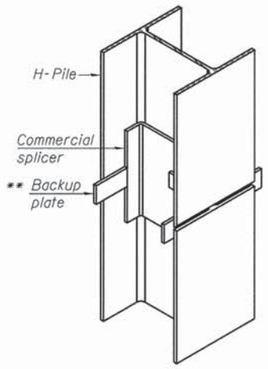
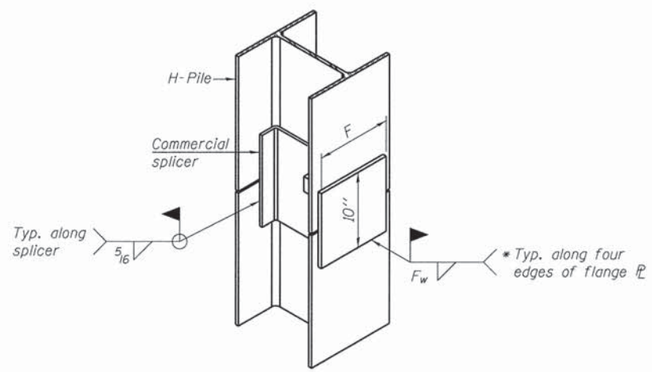


DETAIL "B"



ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE



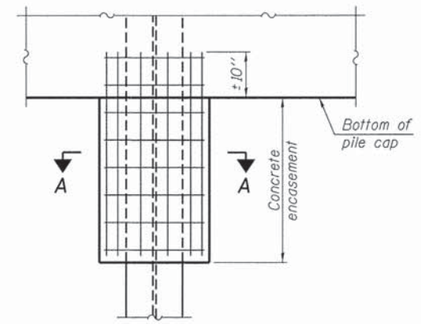
ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE ALTERNATE

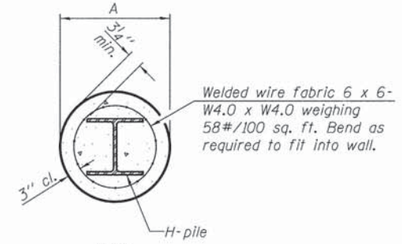
* Interrupt welds 1/4" from end of web and/or each flange.

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

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



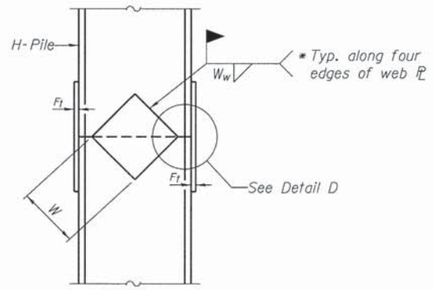
ELEVATION



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

SECTION A-A

PILE ENCASEMENT



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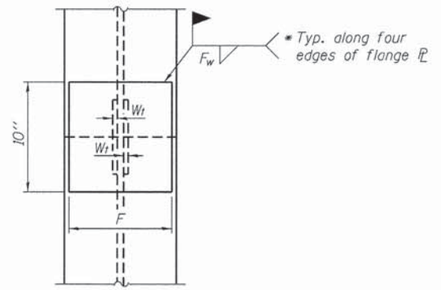
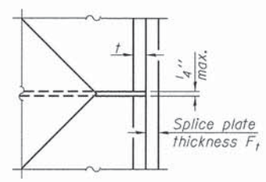


END VIEW



DETAIL D

Designation	F	F_t	F_w	W	W_f	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

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

F-HP 1-27-12

FILE NAME = 120125-sht-bridge.dgn	USER NAME =	DESIGNED - L.A.P.	REVISED -	STATE OF ILLINOIS WHITE COUNTY HIGHWAY DEPARTMENT	HP PILE DETAILS STRUCTURE NO. 097-3285
HAMPTON, LENZINI AND RENWICK, INC. 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703		CHECKED - S.W.M.	REVISED -		SHEET NO. 8 OF 10 SHEETS
ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.005959	PLOT SCALE =	DRAWN - D.A.B.	REVISED -		
	PLOT DATE = 7/9/2014	CHECKED - S.W.M.	REVISED -		

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
221	11-06130-00-BR	WHITE	14	12
HAWTHORNE ROAD DISTRICT		CONTRACT NO. 99531		
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 3

Bridge Foundation Boring Log

Project: H-12180
Section: 11-06130-00-BR
Route:
County: White
Bridge Over Tributary to Brushy Slough
Station
Date: 9-4-12
Bored by: B. Schwartz
Checked By: T. Holcomb

Boring No: 1
Station:
Offset:

Surface Water Elev.
Ground Water Elev. During Drilling 350.4
Upon Completion Plugged

Elevation	N	Qu tsf	w %
Ground Surface 361.9			
5" Topsoil			
Brown Silty CLAY (A-6)			
0			
	14	5.78	11
-5	10	2.58	12
355.9			
Brown Fine SAND (A-2-4) with clay 354.4			
	8	-	15
Brown Fine to Medium SAND (A-2-4)			
-10	18	-	4
	9	-	10
-15	18	-	13
	16	-	7
-20	16	-	8
	14	-	10
sand (continued)			
-25	21	-	12
	17	-	13
-30	17	-	10
-35	18	-	14
	19	-	19
-40	20	-	17

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

HOLCOMB FOUNDATION ENGINEERING INC.
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Carbondale, Il. 62903 618-457-8991 fax
Page 2 of 3

Bridge Foundation Boring Log

Project: H-12180
Section: 11-06130-00-BR
Route:
County: White
Bridge Over Tributary to Brushy Slough
Station
Date: 9-4-12
Bored by: B. Schwartz
Checked By: T. Holcomb

Boring No: 1
Station:
Offset:

Surface Water Elev.
Ground Water Elev. During Drilling 350.4
Upon Completion Plugged

Elevation	N	Qu tsf	w %
sand (continued)			
-45			
-50	22	-	20
308.4			
Brown Medium SAND (A-2-4)			
-55	42	-	16
-60	86	-	16
-65	20	-	11
sand (continued) 293.4			
Brown Medium SAND (A-2-4)			
-70	22	-	17
-75	18	-	15
-80	21	-	17
-85	67	-	14
	42	-	19

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
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HOLCOMB FOUNDATION ENGINEERING INC.
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Carbondale, Il. 62903 618-457-8991 fax
Page 3 of 3

Bridge Foundation Boring Log

Project: H-12180
Section: 11-06130-00-BR
Route:
County: White
Bridge Over Tributary to Brushy Slough
Station
Date: 9-4-12
Bored by: B. Schwartz
Checked By: T. Holcomb

Boring No: 1
Station:
Offset:

Surface Water Elev.
Ground Water Elev. During Drilling 350.4
Upon Completion Plugged

Elevation	N	Qu tsf	w %
sand (continued) 271.9			
-90			
End of Boring @ -90.0'			
-95			
-100			
-105			
-110			
-115			
-120			
-125			
-130			

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

FILE NAME = 120125-sht-bridge.dgn	USER NAME =	DESIGNED - L.A.P.	REVISED -	
HAMPTON, LENZINI AND RENWICK, INC. 3065 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703		CHECKED - S.W.M.	REVISED -	
ILLINOIS PROFESSIONAL DESIGN FIRM LB / PE / SE CORP. 184.000959	PLOT SCALE =	DRAWN - D.A.B.	REVISED -	
	PLOT DATE = 7/9/2014	CHECKED - S.W.M.	REVISED -	

STATE OF ILLINOIS
WHITE COUNTY HIGHWAY DEPARTMENT

BORINGS
STRUCTURE NO. 097-3285
SHEET NO. 9 OF 10 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
221	11-06130-00-BR	WHITE	14	13
HAWTHORNE ROAD DISTRICT		CONTRACT NO. 99531		
ILLINOIS FED. AID PROJECT				

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

Bridge Foundation Boring Log

Project: H-12180
Section: 11-06130-00-BR
Route:
County: White

Bridge Over Tributary to Brushy Slough
Station

Date: 9-5-12
Bored by: B. Schwartz
Checked By: T. Holcomb

Boring No: 2
Station:
Offset:

Surface Water Elev.
Ground Water Elev. During Drilling 352.9
Upon Completion Plugged

Elevation	N	Qu tsf	w %
Ground Surface 359.9			
0 5" Topsoil			
Brown Silty CLAY (A-6)			
-5	6	0.2S	10
353.9			
Gray Silty CLAY to Clayey SILT (A-6 to A-4)			
-10	1	0.6B	27
	4	0.6S	44
-15	0	0.7B	93
	0	0.5B	67
-20	1	0.4B	73
	1	0.6B	77
338.9			
Brown Fine to Medium SAND (A-2-4)			
-25	15	-	10
sand (continued)			
-30	14	-	12
	19	-	22
	18	-	15
-35	18	-	18
-40	16	-	13
	16	-	3

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

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

Bridge Foundation Boring Log

Project: H-12180
Section: 11-06130-00-BR
Route:
County: White

Bridge Over Tributary to Brushy Slough
Station

Date: 9-5-12
Bored by: B. Schwartz
Checked By: T. Holcomb

Boring No: 2
Station:
Offset:

Surface Water Elev.
Ground Water Elev. During Drilling 352.9
Upon Completion Plugged

Elevation	N	Qu tsf	w %
sand (continued)			
-45			
-50	18	-	8
306.4			
Brown Medium SAND (A-2-4)			
-55	84	-	-
-60	55	-	19
-65	25	-	13
sand (continued)			
-70	25	-	20
-75	28	-	10
-80	40	-	11
-85			
	36	-	20

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

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

Bridge Foundation Boring Log

Project: H-12180
Section: 11-06130-00-BR
Route:
County: White

Bridge Over Tributary to Brushy Slough
Station

Date: 9-5-12
Bored by: B. Schwartz
Checked By: T. Holcomb

Boring No: 2
Station:
Offset:

Surface Water Elev.
Ground Water Elev. During Drilling 352.9
Upon Completion Plugged

Elevation	N	Qu tsf	w %
sand (continued) 269.9			
-90 End of Boring @ -90.0'			
-95			
-100			
-105			
-110			
-115			
-120			
-125			
-130			

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 = 120125-sht-bridge.dgn	USER NAME =	DESIGNED - L.A.P.	REVISED -	STATE OF ILLINOIS WHITE COUNTY HIGHWAY DEPARTMENT	BORINGS STRUCTURE NO. 097-3285 SHEET NO. 10 OF 10 SHEETS
HAMPTON, LENZINI AND RENWICK, INC. 3095 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.005959		CHECKED - S.W.M.	REVISED -		
	PLOT SCALE =	DRAWN - D.A.B.	REVISED -		
	PLOT DATE = 7/9/2014	CHECKED - S.W.M.	REVISED -		

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
221	11-06130-00-BR	WHITE	14	14
HAWTHORNE ROAD DISTRICT		CONTRACT NO. 99531		
ILLINOIS FED. AID PROJECT				