04-25-14 LETTING ITEM 095

INDEX OF SHEETS

STANDARDS: 280001–07 – EROSION CONTROL
515001–03 – NAME PLATE
635006–03 – TERMINAL MARKERS
701901–03 – TRAFFIC
BLR 21–9 – TRAFFIC
BLR 22–7 – TRAFFIC

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PLANS FOR PROPOSED
SURFACE TRANSPORTATION PROGRAM – BRIDGE

JASPER COUNTY
SECTION 12–00123–00–BR
COUNTY HIGHWAY 5
STRUCTURE NO. 040–3267
PROJECT NO. BROS–0079(150)
JOB NO. C–97–014–14

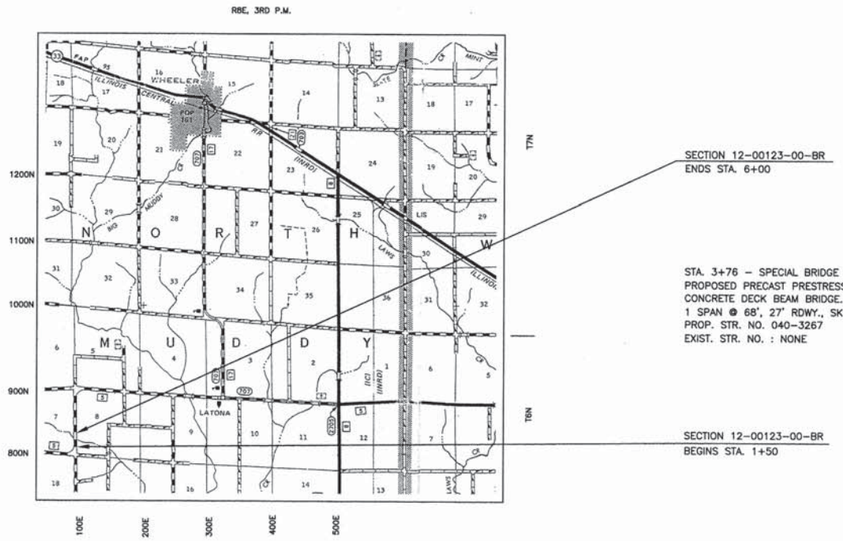
SCALES

PLAN	1 INCH = 50 FEET
PROFILE HORZ.	1 INCH = 50 FEET
PROFILE VERT.	1 INCH = 10 FEET
CROSS SECTION	1 INCH = 5 FEET

SUMMARY OF QUANTITIES

QUANTITY	UNIT	ITEM	CODE NO.
100	TON	AGGREGATE DITCH (SPECIAL)	X2830495
1	L SUM	TRAFFIC CONTROL AND PROTECTION, (SPECIAL)	X7010216
109	CU YD	EARTH EXCAVATION	20200100
600	CU YD	CHANNEL EXCAVATION	20300100
49	TON	POROUS GRANULAR EMBANKMENT	20700110
60	FOOT	PERIMETER EROSION BARRIER	28000400
300	TON	STONE DUMPED RIPRAP, CLASS A4	28100807
1	EACH	REMOVAL OF EXISTING STRUCTURES	50100100
426	TON	AGGREGATE BASE COURSE, TYPE B	35101400
27.6	CU YD	CONCRETE STRUCTURES	50300225
2.6	CU YD	CONCRETE ENCASEMENT	50300280
1836	SQ FT	PRECAST PRESTRESSED CONCRETE DECK BEAMS (27" DEPTH)	50400505
2700	POUND	REINFORCEMENT BARS	50800105
134	FOOT	STEEL RAILING, TYPE S1	50900205*
210	FOOT	FURNISHING STEEL PILES HP12X53	51201600
210	FOOT	DRIVING PILES	51202305
1	EACH	TEST PILE STEEL HP12X53	51203600
1	EACH	NAME PLATES	51500100
1	L SUM	MOBILIZATION	67100100
4	EACH	TERMINAL MARKER – DIRECT APPLIED	78201000*

*SPECIALTY ITEM



FUNCTIONAL CLASS: MINOR COLLECTOR
ADT = 150
DESIGN SPEED = 30 MPH

LOCATION MAP
APPROXIMATE SCALE: 1 INCH = 1 MILE
NET LENGTH = 450 L.F. = 0.085 MILES

TOLL FREE JOINT UTILITY LOCATING
INFORMATION FOR EXCAVATORS (J.U.L.I.E.)
TELEPHONE NO. 1–800–892–0123 OR 811

JOHN A. STONE
062-055012
LICENSED
PROFESSIONAL
ENGINEER
STATE OF ILLINOIS

01/28/2014
ILLINOIS REGISTERED PROFESSIONAL ENGINEER # 55012
LICENSE EXPIRES NOVEMBER 30, 2015
PROFESSIONAL DESIGN FIRM #184–000832

ILLINOIS DEPARTMENT OF TRANSPORTATION

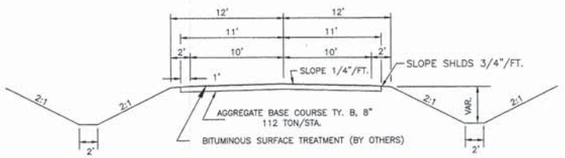
APPROVED: 1-29, 2014
Richard A Pittenger
JASPER COUNTY ENGINEER

PASSED: 2-19, 2014
Maureen L Kastl
DISTRICT SEVEN ENGINEER
OF LOCAL ROADS & STREETS

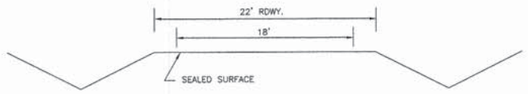
RELEASING FOR BID
BASED ON LIMITED
REVIEW 2-19, 2014
Roger L Driskell
DEPUTY DIRECTOR OF HIGHWAYS,
REGION FOUR ENGINEER

CONT NO 95728

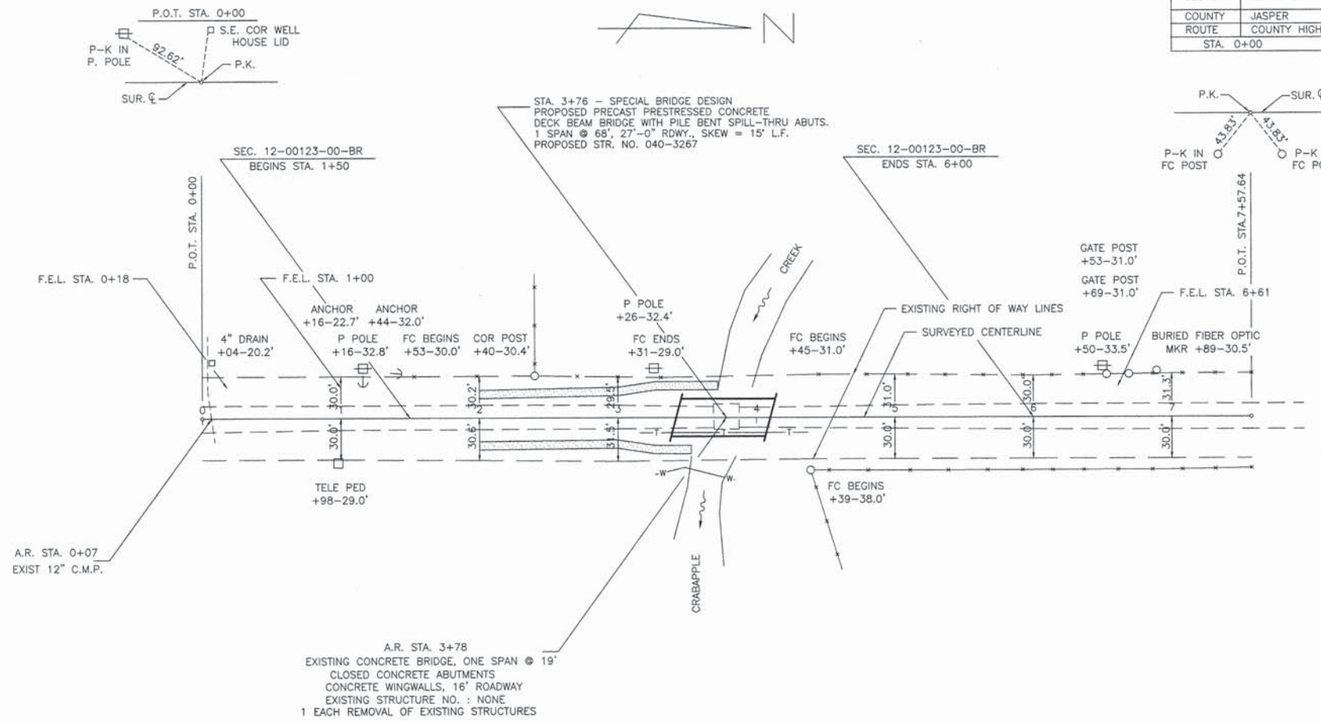
SECTION	12-00123-00-BR	TOTAL SHEETS	SHEET NO.
COUNTY	JASPER	12	2
ROUTE	COUNTY HIGHWAY 5		
STA. 0+00	TO STA. 7+57.64		



TYPICAL CROSS SECTION OF PROPOSED IMPROVEMENT



TYPICAL CROSS SECTION OF EXISTING ROADWAY



B.M. ELEV. 557.36
P-K NAIL IN P. POLE
32.8' LT. STA. 1+16

B.M. ELEV. 537.01
P-K NAIL IN COR. POST
38.0' RT. STA. 4+39

SEEDING BY OTHERS

AGGREGATE BASE COURSE, TYPE B
STA. 1+50 TO STA. 3+41 = 214 TON
STA. 4+11 TO STA. 6+00 = 212 TON
TOTAL = 426 TON

AGGREGATE DITCH (SPECIAL)
STA. 2+00 TO STA. 3+75 = 53 TON
STA. 2+00 TO STA. 3+55 = 47 TON
TOTAL = 100 TON

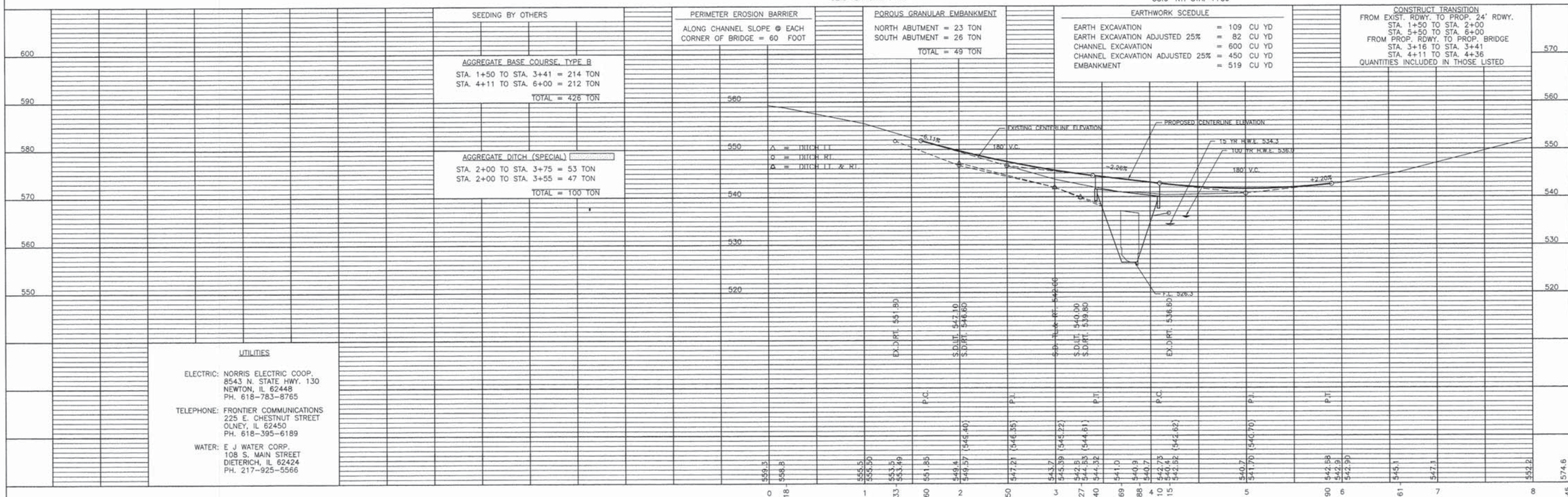
PERIMETER EROSION BARRIER
ALONG CHANNEL SLOPE @ EACH CORNER OF BRIDGE = 60 FOOT

POROUS GRANULAR EMBANKMENT
NORTH ABUTMENT = 23 TON
SOUTH ABUTMENT = 26 TON
TOTAL = 49 TON

EARTHWORK SCEDULE

EARTH EXCAVATION	=	109 CU YD
EARTH EXCAVATION ADJUSTED 25%	=	82 CU YD
CHANNEL EXCAVATION	=	600 CU YD
CHANNEL EXCAVATION ADJUSTED 25%	=	450 CU YD
EMBANKMENT	=	519 CU YD

CONSTRUCT TRANSITION
FROM EXIST. RDWY. TO PROP. 24' RDWY.
STA. 1+50 TO STA. 2+00
STA. 5+50 TO STA. 6+00
FROM PROP. RDWY. TO PROP. BRIDGE
STA. 3+16 TO STA. 3+41
STA. 4+11 TO STA. 4+36
QUANTITIES INCLUDED IN THOSE LISTED



UTILITIES

ELECTRIC: NORRIS ELECTRIC COOP.
8543 N. STATE HWY. 130
NEWTON, IL 62448
PH. 618-783-8765

TELEPHONE: FRONTIER COMMUNICATIONS
225 E. CHESTNUT STREET
OLNEY, IL 62450
PH. 618-395-6189

WATER: E J WATER CORP.
108 S. MAIN STREET
DIETERICH, IL 62424
PH. 217-925-5566

CONNOR & CONNOR, Inc.
CONSULTING ENGINEERS
210 East Locust Street
ROBINSON, ILLINOIS 62454
Phone 618-544-8623
Fax 618-544-3812
Licensed Engineers
Licensed Surveyors

DATE
SCALE 1" = 50'
DRAWN BY
PROJECT
SHEET OF

SECTION	12-00123-00-BR	TOTAL SHEETS	SHEET NO.
COUNTY	JASPER	12	3
	CONT. NO 95728		
STA. 0+00	TO	STA. 7+57.64	

545 3+00
545.39
C = 3
F = 49
S.D. 542.00
S.D. 542.00

550 2+00
549.57
C = 5
F = 4
EX.D. 547.10
S.D. 546.60

555 1+33

555 1+00 & P.E.L.

560 0+18 P.E.L.

560 0+00

545 7+00

545 6+61 F.E.L.

542.90
C = 9
F = 0

540 6+00

541.70
C = 0
F = 37
540 5+00

542.62
C = 0
F = 96
540 4+15
EX.D. 536.60

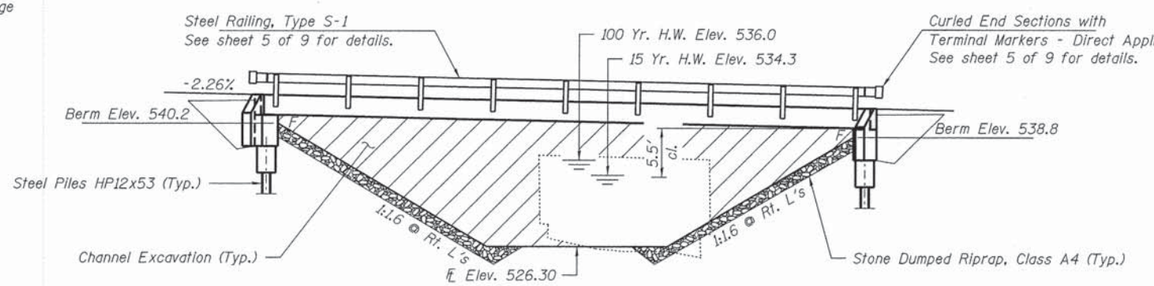
544.63
C = 6
F = 90
540 3+27
S.D. 540.00
S.D. 539.80

BENCHMARK: P-K Nail in P.P. 32.8', Lt. Sta. 1+16, Elev. 557.36

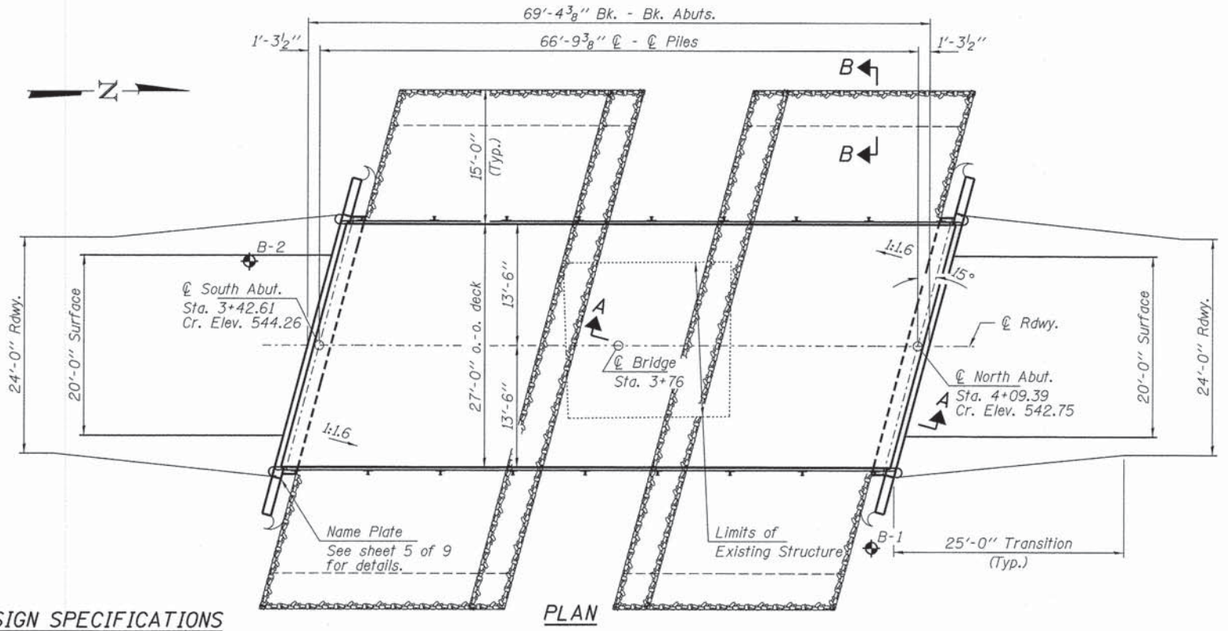
EXISTING STRUCTURE : Existing Concrete Bridge, Single span @ 19', Closed Concrete Abutments, Concrete Wingwalls, 16' Roadway

Structure closed to traffic during construction.

No Salvage



ELEVATION



PLAN

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}) = 0.160g
Design Spectral Acceleration at 0.2 sec. (S_{DS}) = 0.403g
Soil Site Class = C

Design Scour Elevations (ft.)		
	S. Abut.	N. Abut.
Q100	537.6	536.1

WATERWAY INFORMATION

Drainage Area = 2.77 Sq. Mi.
Existing Low Grade Elev. 540.4 @ Sta. 5+00
Proposed Low Grade Elev. 541.7 @ 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	917	135	240	534.3		0.1		536.1
Base	100	1560	187	318	536.0	2.2	0.1	538.6	536.1

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. Meggenson 12/17/2013
ILLINOIS STRUCTURAL ENGINEER NO. 081-6064

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

Expires 11-30-2014

GENERAL NOTES

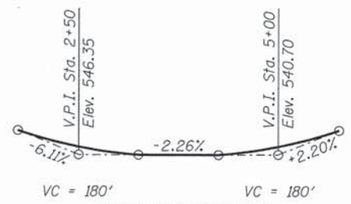
Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.

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

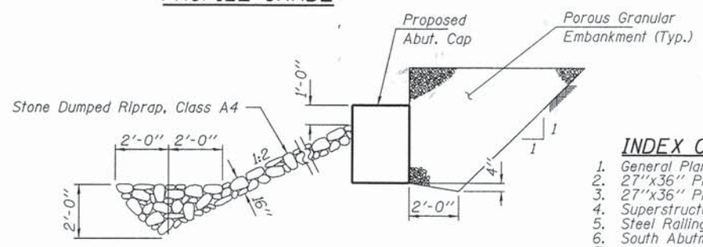
Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60.

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.



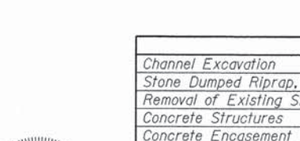
PROFILE GRADE



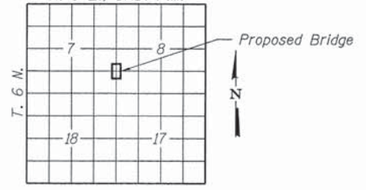
SECTION A-A

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

INDEX OF STRUCTURE SHEETS



SECTION B-B



LOCATION SKETCH

CRABAPPLE CREEK
BUILT 201_ BY
JASPER COUNTY
SEC. 12-00123-00-BR
C.H. 5
STR. NO. 040-3267
LOADING HL-93

NAME PLATE
See Std. 515001

TOTAL BILL OF MATERIAL

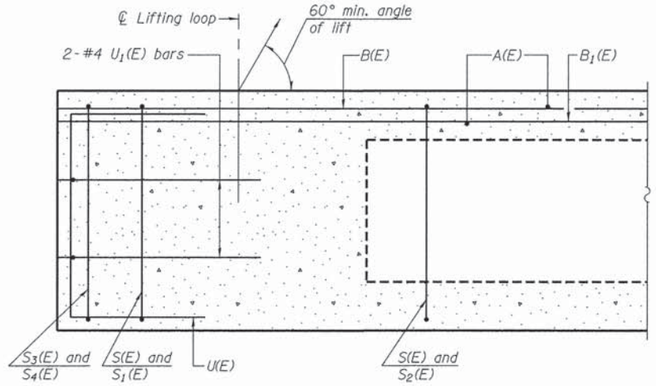
ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	Cu. Yd.			600
Stone Dumped Riprap, Class A4	Ton			300
Removal of Existing Structures	Each			1
Concrete Structures	Cu. Yd.		27.6	27.6
Concrete Encasement	Cu. Yd.		2.6	2.6
Precast Prestressed Concrete Deck Beams (27" Depth)	Sq. Ft.	1,836		1,836
Reinforcement Bars	Pound		2,700	2,700
Steel Railing, Type S-1	Foot	134		134
Furnishing Steel Piles HP12x53	Foot		210	210
Driving Piles	Foot		210	210
Test Pile HP12x53	Each		1	1
Name Plates	Each		1	1
Terminal Marker - Direct Applied	Each	4		4

FILE NAME = 130105-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. 184.000859	PLOT SCALE =	DRAWN - R.D.H.	REVISED -
	PLOT DATE = 12/17/2013	CHECKED - S.W.M.	REVISED -

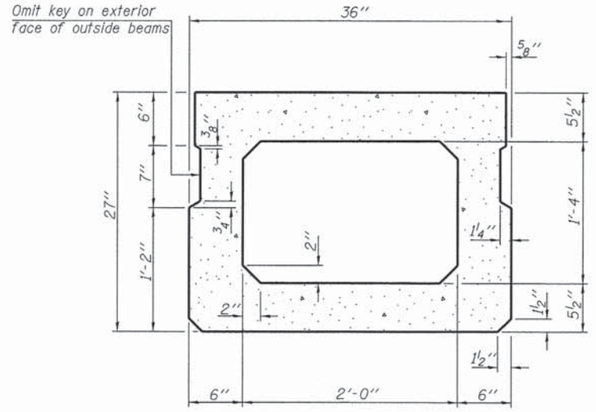
STATE OF ILLINOIS
JASPER COUNTY HIGHWAY DEPARTMENT

GENERAL PLAN & ELEVATION
STRUCTURE NO. 040-3267
SHEET NO. 1 OF 9 SHEETS

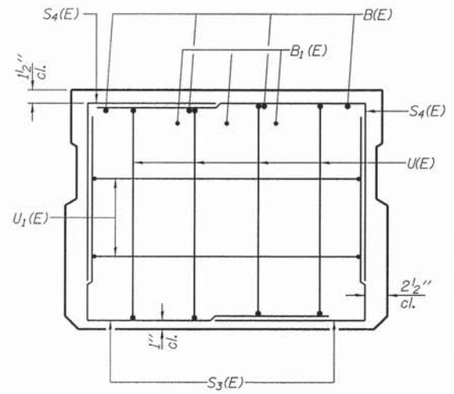
C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
5	12-00123-00-BR	JASPER	12	4
		CONTRACT NO. 95728		
	ILLINOIS	FED. AID PROJECT		



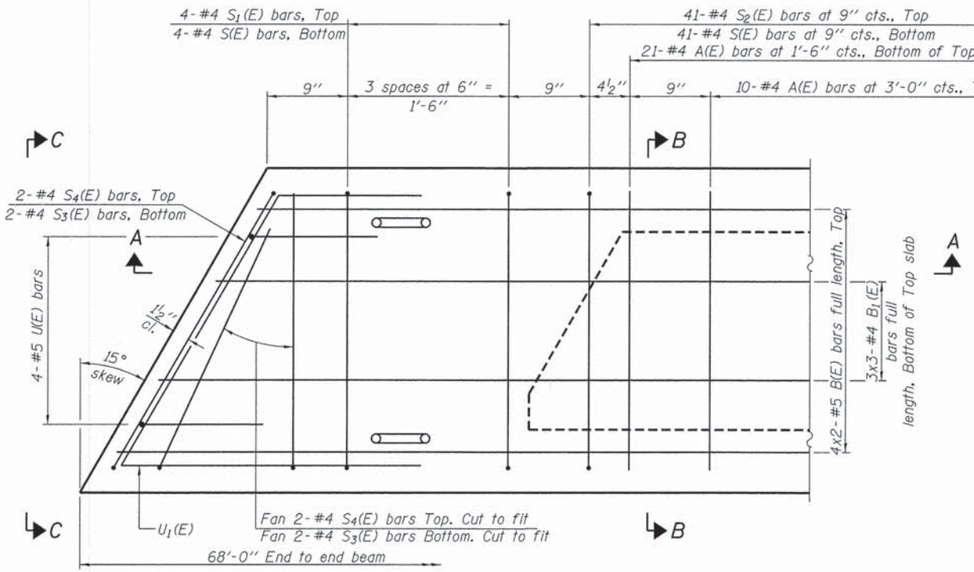
SECTION A-A



SECTION B-B
(Showing dimensions)



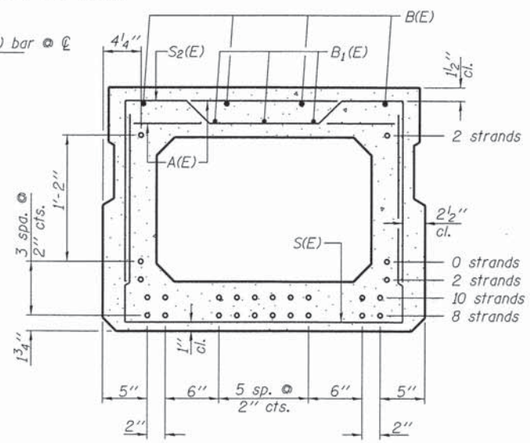
VIEW C-C



PLAN VIEW

Note: Spacing of S(E) and $S_2(E)$ bars may be adjusted up to 4″ in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.

Bars indicated thus 4x2-#5 etc. indicates 4 lines of bars with 2 lengths per line.



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

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

MINIMUM BAR LAP
#4 bar = 2′-0″
#5 bar = 2′-6″

BAR LIST
ONE BEAM ONLY
(For information only)

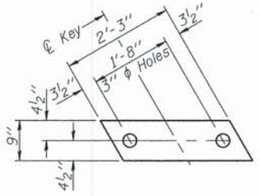
Bar	No.	Size	Length	Shape
A(E)	63	#4	2′-7″	—
B(E)	8	#5	35′-3″	—
$B_1(E)$	9	#4	23′-11″	—
S(E)	91	#4	6′-5″	⊐
$S_1(E)$	8	#4	5′-11″	⊐
$S_2(E)$	83	#4	6′-2″	⊐
$S_3(E)$	8	#4	4′-2″	⊐
$S_4(E)$	8	#4	3′-11″	⊐
U(E)	8	#5	4′-6″	⊐
$U_1(E)$	4	#4	5′-10″	⊐

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

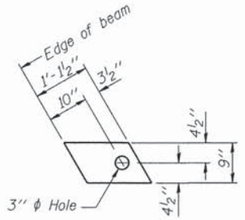
PD-2736-L 7-1-10

FILE NAME = 130105-sht-bridge.dgn	USER NAME =	DESIGNED - L.A.P.	REVISED -	STATE OF ILLINOIS JASPER COUNTY HIGHWAY DEPARTMENT	27″ x 36″ PPC DECK BEAM STRUCTURE NO. 040-3267
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 -		SHEET NO. 2 OF 9 SHEETS
	PLOT SCALE =	DRAWN - R.D.H.	REVISED -		
	PLOT DATE = 12/17/2013	CHECKED - S.W.M.	REVISED -		

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
5	12-00123-00-BR	JASPER	12	5
		CONTRACT NO. 95728		
	ILLINOIS	FED. AID PROJECT		



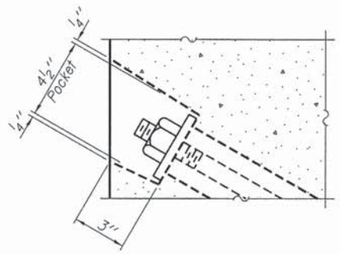
FABRIC BEARING PAD
(Interior - 16 Req'd.)



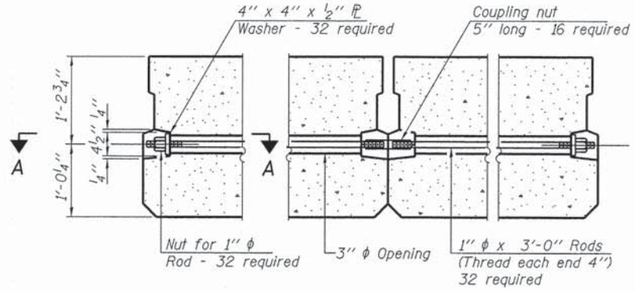
FABRIC BEARING PAD
(Exterior - 4 Req'd.)

FIXED

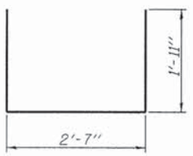
Notes:
All bearing pads shall be 1" thick.
Omit holes when using expansion bearings.
Expansion bearing pad shall be bonded to the substructure.



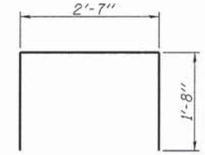
SECTION A-A



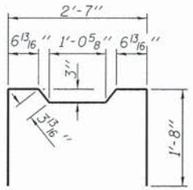
TYPICAL TRANSVERSE TIE ASSEMBLY



BAR S(E)



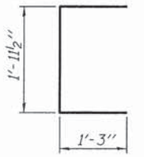
BAR S_1(E)



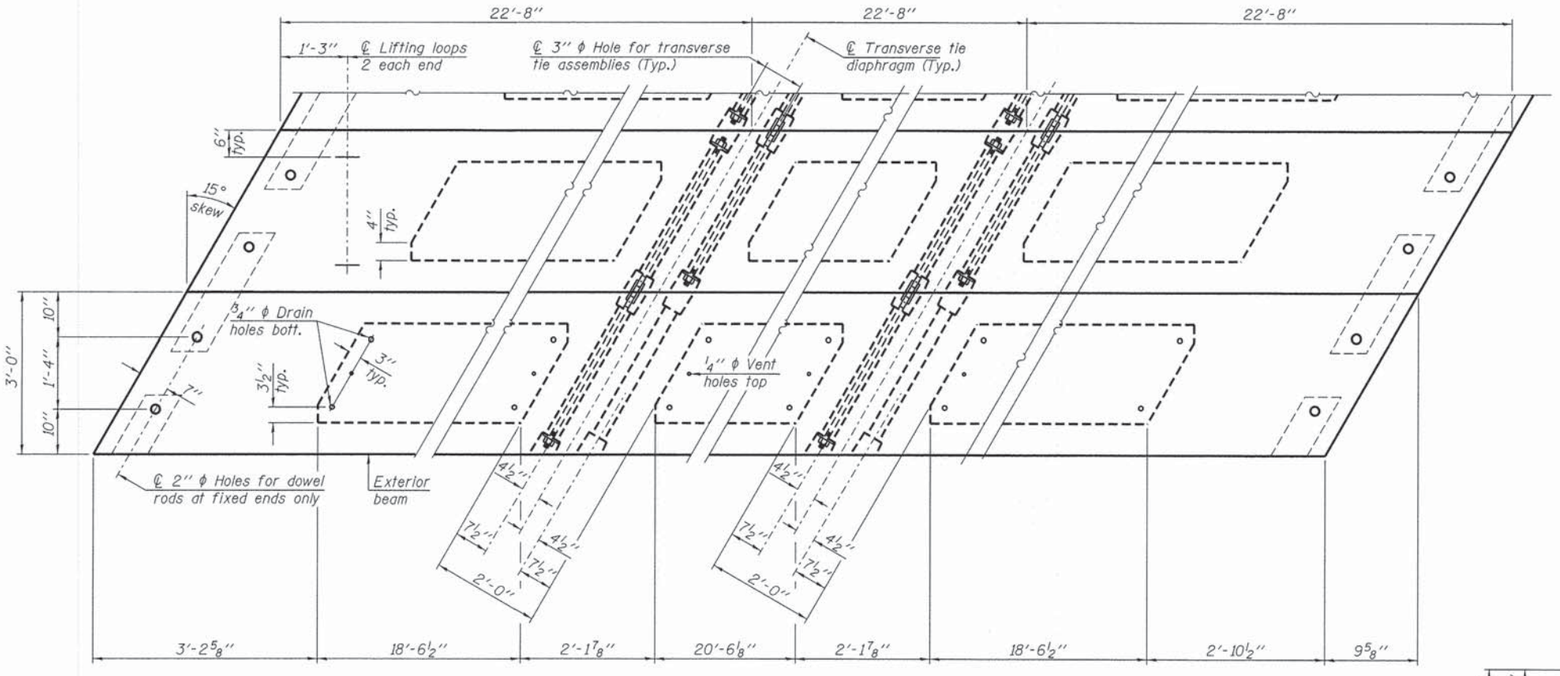
BAR S_2(E)

BAR S_3(E)

BAR S_4(E)



BAR U(E)



PLAN VIEW

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

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.

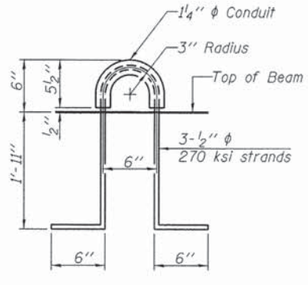
A minimum 2½" ϕ lifting pin shall be used to engage the lifting loops during handling.

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 designatd (E) shall be epoxy coated.



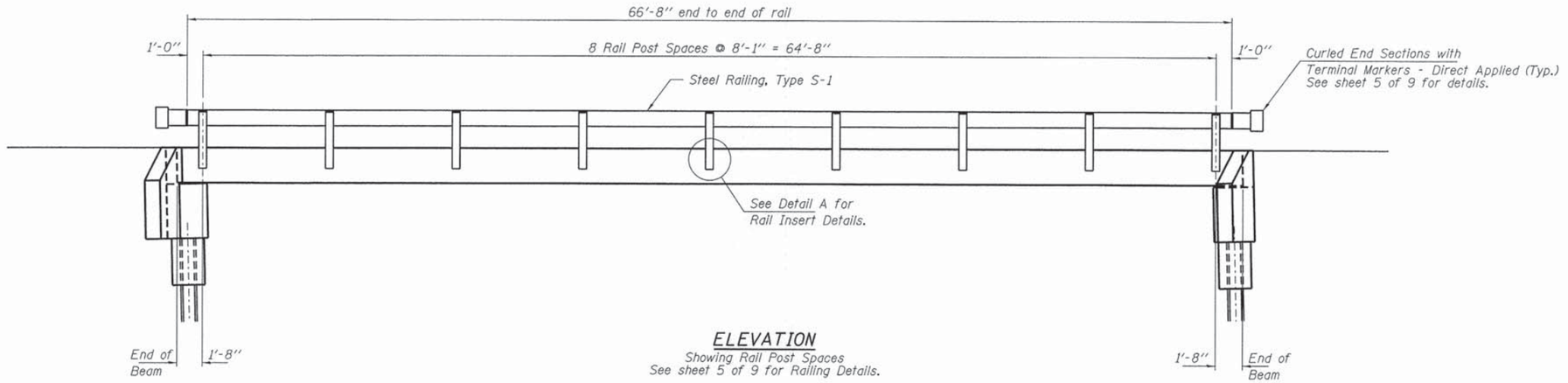
LIFTING LOOP DETAIL

BILL OF MATERIAL

Precast Prestressed Conc. Deck Bms. (27" depth)	Sq. Ft.	1,836

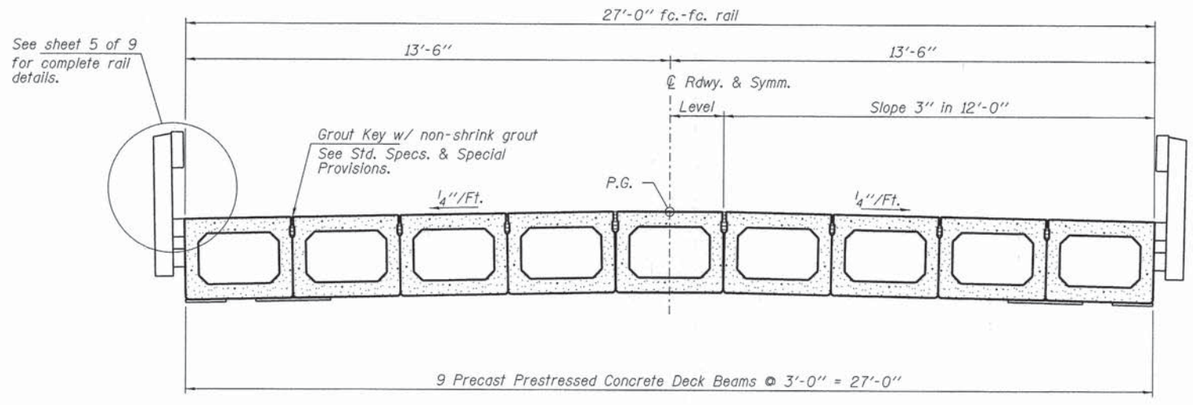
PD-2736-LD 7-1-10

FILE NAME = 130185-sht-bridge.dgn	USER NAME =	DESIGNED - L.A.P.	REVISED -	STATE OF ILLINOIS JASPER COUNTY HIGHWAY DEPARTMENT	27" x 36" PPC DECK BEAM DETAILS STRUCTURE NO. 040-3267	C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND RENWICK, INC. 3095 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703		CHECKED - S.W.M.	REVISED -			5	12-00123-00-BR	JASPER	12	6
ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000958	PLOT SCALE =	DRAWN - R.D.H.	REVISED -		SHEET NO. 3 OF 9 SHEETS				CONTRACT NO. 95728	
	PLOT DATE = 12/17/2013	CHECKED - S.W.M.	REVISED -					ILLINOIS	FED. AID PROJECT	



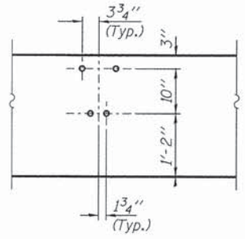
ELEVATION

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

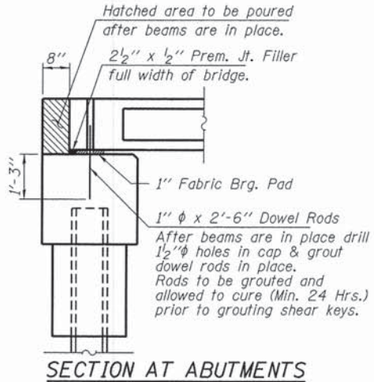


CROSS SECTION

See sheets 2 & 3 of 9 for Superstructure.



DETAIL A



SECTION AT ABUTMENTS

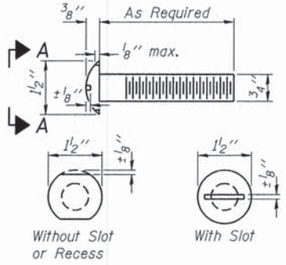
℄ Rt. L's

FILE NAME = 130105-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 -
HLR ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959	PLOT SCALE =	DRAWN - R.D.H.	REVISED -
	PLOT DATE = 12/17/2013	CHECKED - S.W.M.	REVISED -

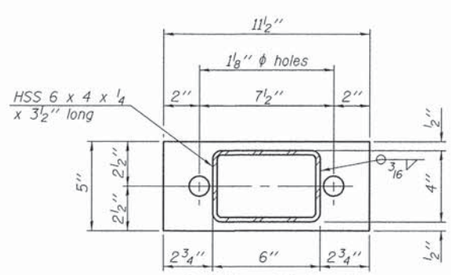
STATE OF ILLINOIS
JASPER COUNTY HIGHWAY DEPARTMENT

SUPERSTRUCTURE DETAILS
STRUCTURE NO. 040-3267
SHEET NO. 4 OF 9 SHEETS

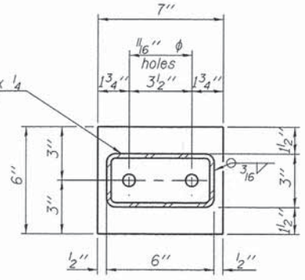
C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
5	12-00123-00-BR	JASPER	12	7
		CONTRACT NO. 95728		
	ILLINOIS	FED. AID PROJECT		



VIEW A-A
ROUND HEAD BOLT

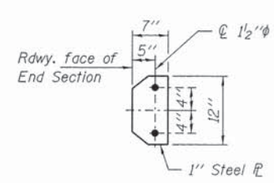


PL 1/2" x 11 1/2" x 5"

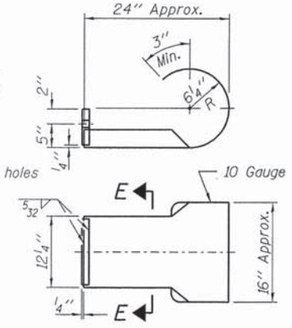


PL 1/2" x 7" x 6"

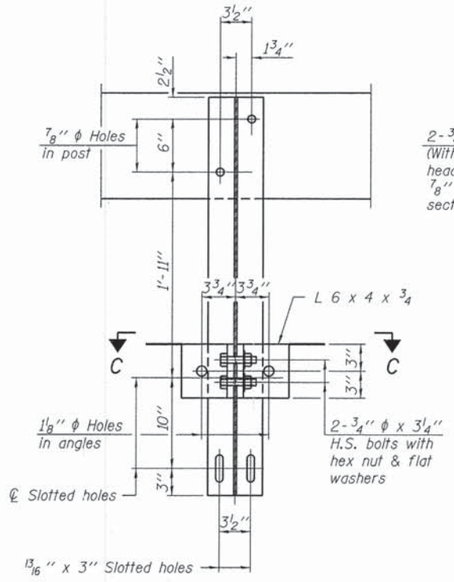
Note: Cost of curled end sections shall be included with the Steel Railing. (4 Required)



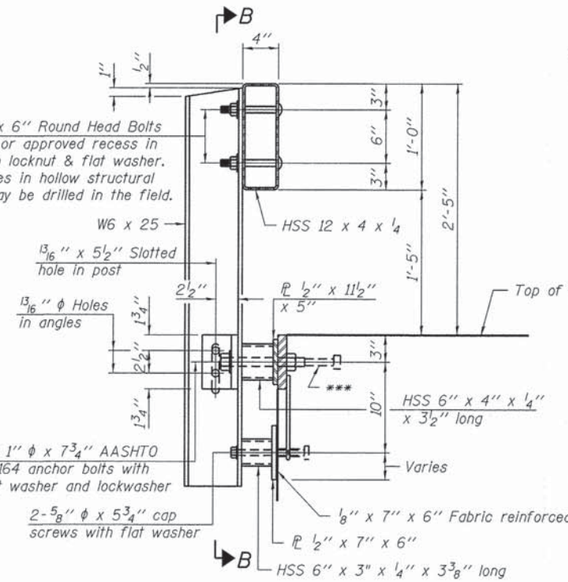
SECTION E-E



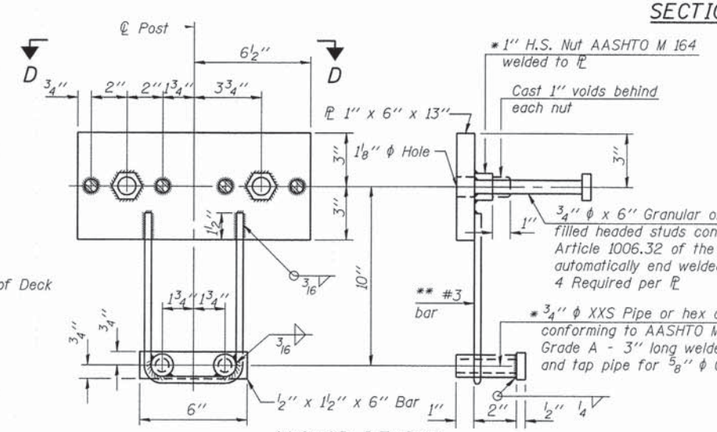
CURLED END SECTION DETAILS



SECTION B-B



SECTION AT RAILING POST



ANCHOR DEVICE

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

Notes:

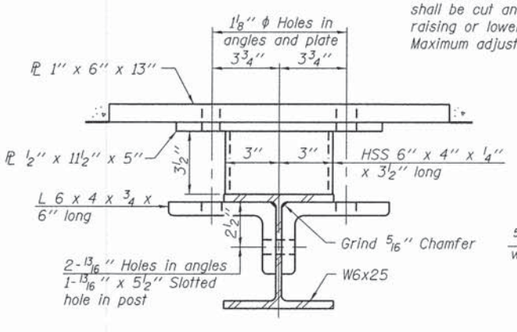
All field drilled holes shall be coated with an approved zinc rich paint before erection.

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.

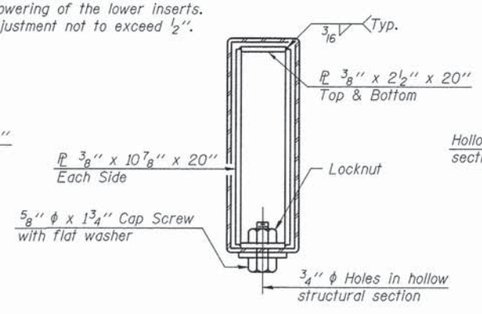
All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.

*** 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.

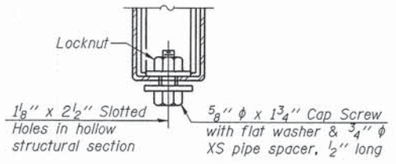
** Whenever the lower insert assemblies interfere with strand locations, the #3 bars shall be cut and adjusted in order to allow raising or lowering of the lower inserts. Maximum adjustment not to exceed 1/2".



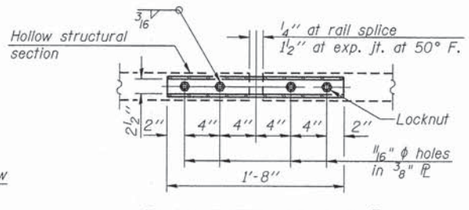
SECTION C-C



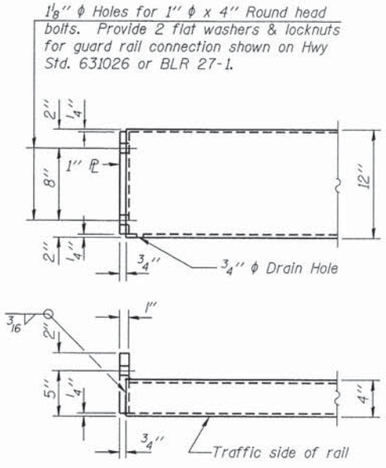
SECTIONS AT RAIL SPLICE



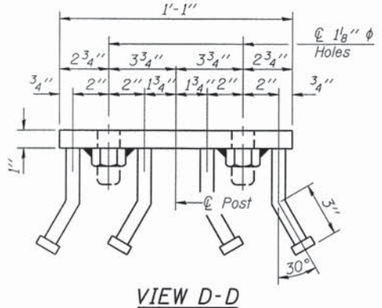
RAIL SPLICE CONNECTION AT EXPANSION JT.



PLAN-BOTT. SPLICE PL TYPICAL



END OF RAIL DETAILS



VIEW D-D

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S-1	Foot	134

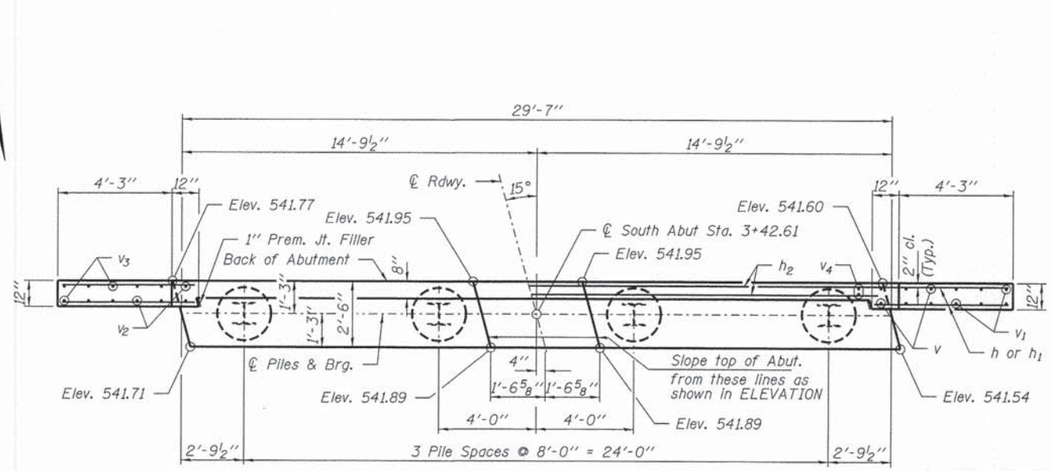
R-23A 7-1-10 (10'-9" Maximum Post Spacing)

FILE NAME = 130105-sht-bridge.dgn	USER NAME =	DESIGNED - L.A.P.	REVISED -
HAMPTON, LENZINI AND RENWICK, INC. 3055 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 - R.D.H.	REVISED -
	PLOT DATE = 12/17/2013	CHECKED - S.W.M.	REVISED -

STATE OF ILLINOIS
JASPER COUNTY HIGHWAY DEPARTMENT

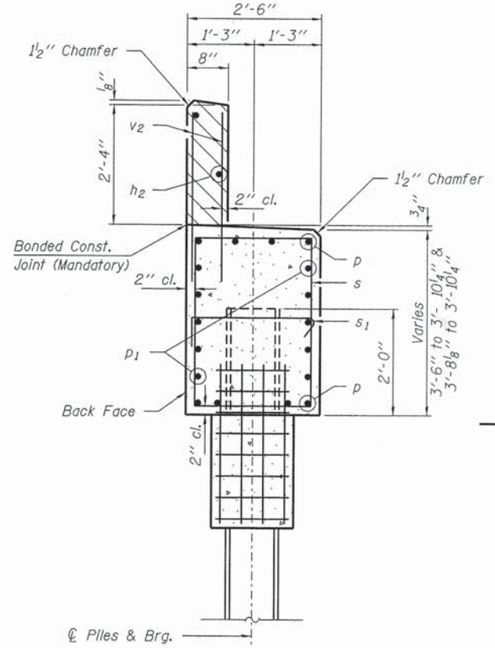
STEEL RAILING, TYPE S-1
STRUCTURE NO. 040-3267
SHEET NO. 5 OF 9 SHEETS

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
5	12-00123-00-BR	JASPER	12	8
		CONTRACT NO. 95728		
	ILLINOIS	FED. AID PROJECT		



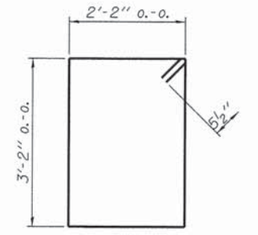
PLAN

Note: Elevations in PLAN are to top of concrete cap.

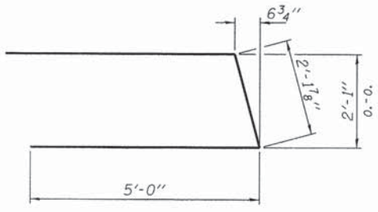


SECTION A-A

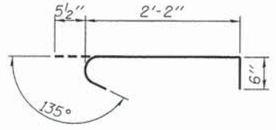
Hatched area to be poured after beams are in place.



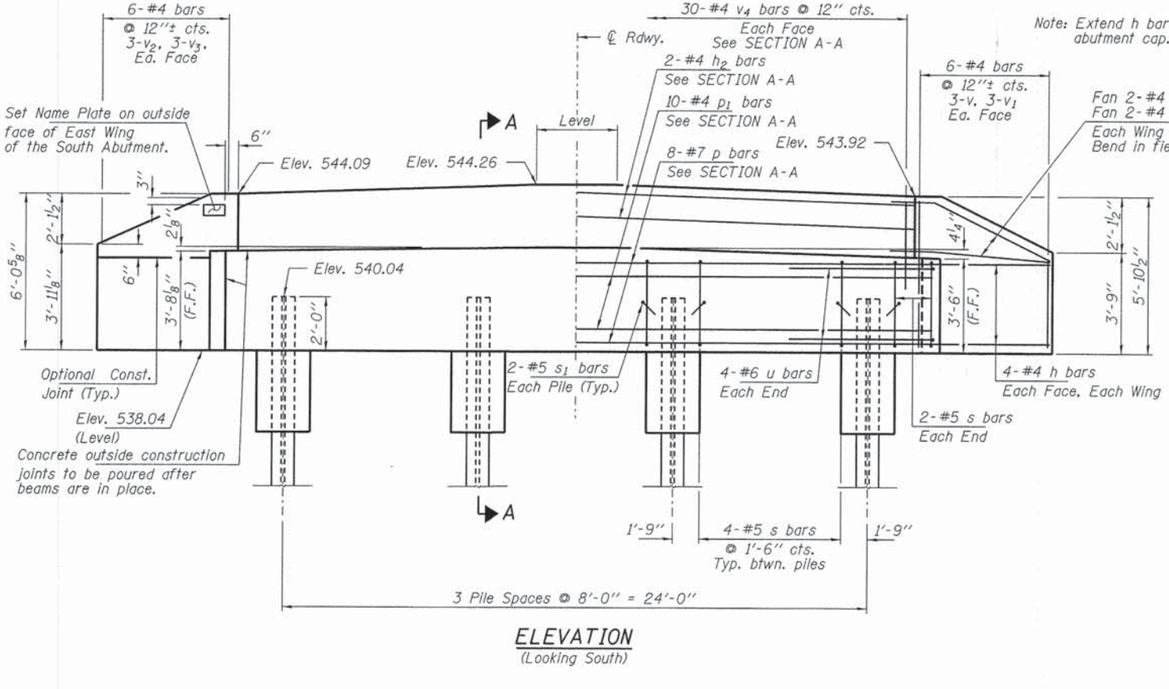
BAR s



BAR u



BAR s_1



ELEVATION

(Looking South)

Note: Extend h bars into abutment cap.

PILE DATA

Type _____ Steel HP12x53
No. Req'd. (S. Abut.) _____ *4
Factored Resistance Available (Rf) _____ 230 Kips/Pile
Nominal Required Bearing (Rn) _____ 419 Kips/Pile
Est. Length _____ 30 Ft/Pile

Notes * Includes one test pile to be driven in 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 - S ABUT.

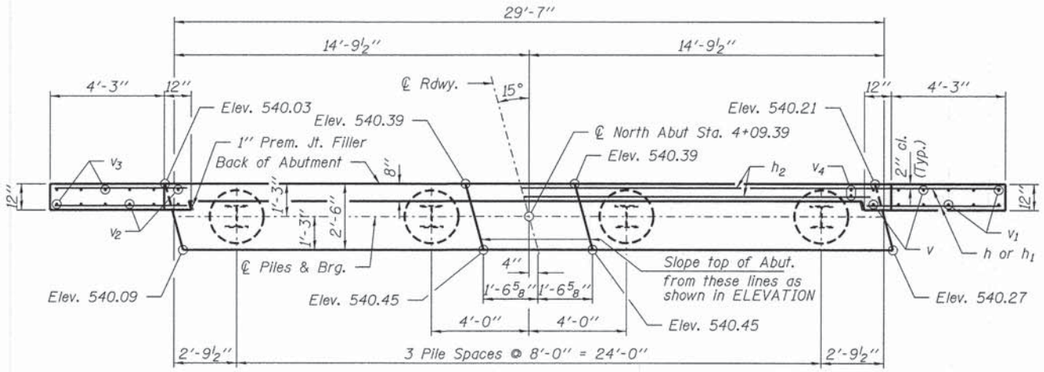
BAR	NO.	SIZE	LENGTH	SHAPE
h	20	#4	6'-6"	
h_1	4	#4	5'-0"	
h_2	2	#4	29'-3"	
p	8	#7	29'-3"	
p_1	10	#4	29'-3"	
s	16	#5	11'-7"	
s_1	8	#5	3'-2"	
u	8	#6	12'-2"	
v	6	#4	5'-0"	
v_1	6	#4	3'-6"	
v_2	6	#4	5'-2"	
v_3	6	#4	3'-8"	
v_4	60	#4	3'-2"	
Concrete Structures			Cu. Yd.	13.8
Concrete Encasement			Cu. Yd.	2.6
Reinforcement Bars			Pound	1,350
Steel Piles HP12x53			Foot	90
Test Pile HP12x53			Each	1
Name Plates			Each	1

FILE NAME = 130105-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 LS/PE/SE CORP. 184.000959	PLOT SCALE =	DRAWN - R.D.H.	REVISED -
	PLOT DATE = 12/17/2013	CHECKED - S.W.M.	REVISED -

STATE OF ILLINOIS
JASPER COUNTY HIGHWAY DEPARTMENT

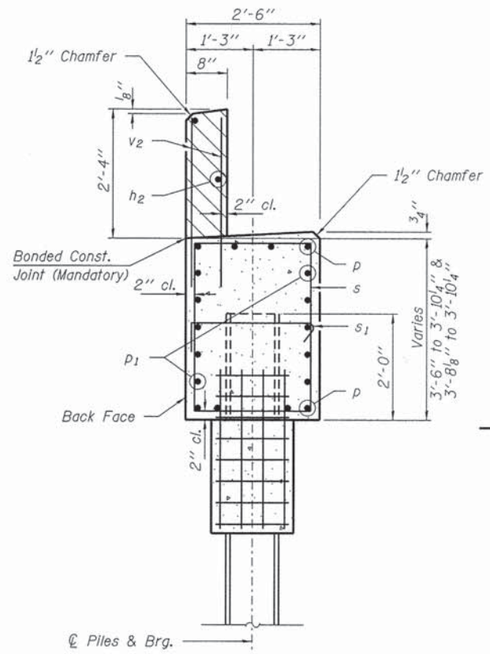
SOUTH ABUTMENT
STRUCTURE NO. 040-3267
SHEET NO. 6 OF 9 SHEETS

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
5	12-00123-00-BR	JASPER	12	9
		CONTRACT NO. 95728		
	ILLINOIS	FED. AID PROJECT		



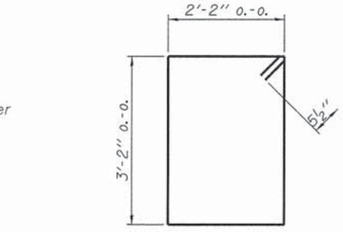
PLAN

Note: Elevations shown in Plan are to Top of Cap.

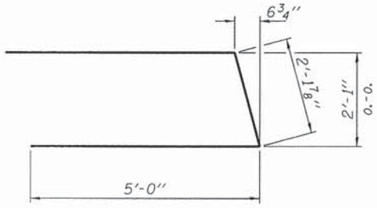


SECTION A-A

Hatched area to be poured after beams are in place.



BAR s



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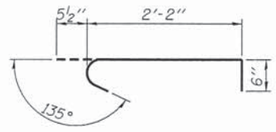
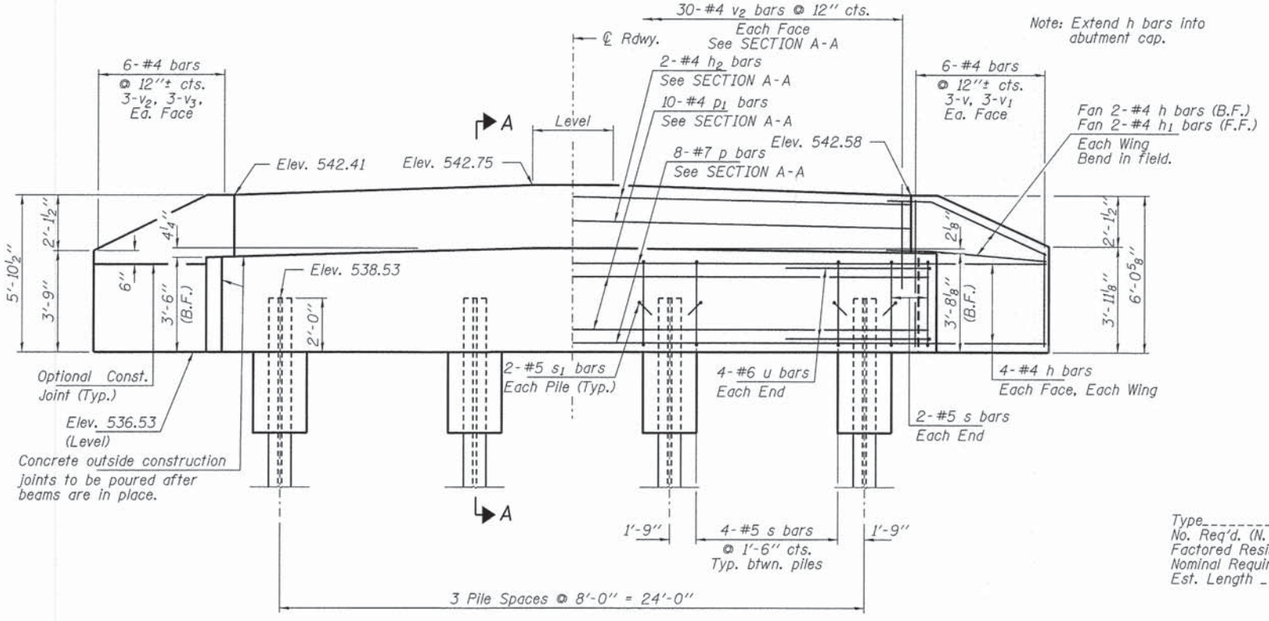


BAR s_1



ELEVATION

(Looking North)

Note: Extend h bars into abutment cap.

PILE DATA

Type _____ Steel HP12x53
No. Req'd. (N. Abut.) _____ 4
Factored Resistance Available (Rf) ___ 230 Kips/Pile
Nominal Required Bearing (Rn) _____ 419 Kips/Pile
Est. Length _____ 30 Ft/Pile

BILL OF MATERIAL - N. ABUT.

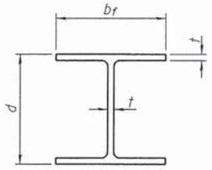
BAR	NO.	SIZE	LENGTH	SHAPE
h	20	#4	6'-6"	
h_1	4	#4	5'-0"	
h_2	2	#4	29'-3"	
p	8	#7	29'-3"	
p_1	10	#4	29'-3"	
s	18	#5	11'-7"	
s_1	8	#5	3'-2"	
u	8	#6	12'-2"	
v	6	#4	5'-0"	
v_1	6	#4	3'-6"	
v_2	6	#4	5'-2"	
v_3	6	#4	3'-8"	
v_4	60	#4	3'-2"	
Concrete Structures			Cu. Yd.	13.8
Concrete Encasement			Cu. Yd.	2.6
Reinforcement Bars			Pound	1,350
Steel Piles HP10x42			Foot	120

FILE NAME = 130125-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 - R.D.H.	REVISED -
	PLOT DATE = 12/17/2013	CHECKED - S.W.M.	REVISED -

STATE OF ILLINOIS
JASPER COUNTY HIGHWAY DEPARTMENT

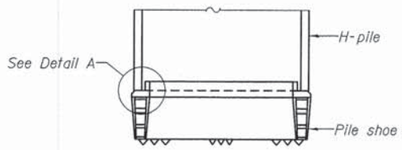
NORTH ABUTMENT
STRUCTURE NO. 040-3267
SHEET NO. 7 OF 9 SHEETS

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
5	12-00123-00-BR	JASPER	12	10
		CONTRACT NO. 95728		
	ILLINOIS	FED. AID PROJECT		

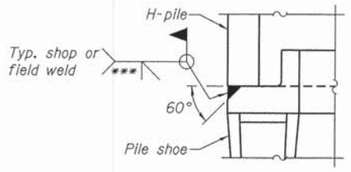


STEEL PILE TABLE

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"

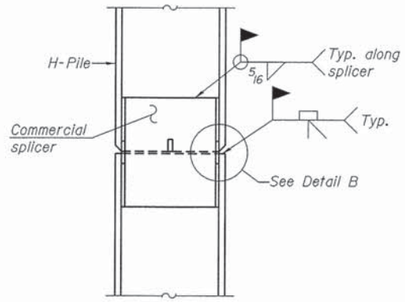


ELEVATION

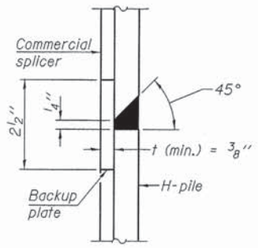


DETAIL A

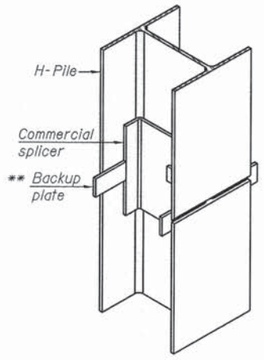
H-PILE SHOE ATTACHMENT



ELEVATION

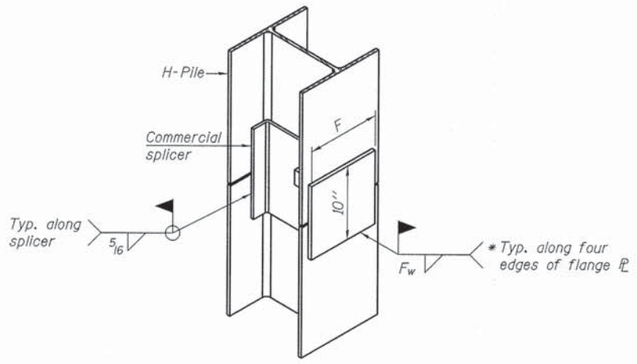


DETAIL "B"



ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE



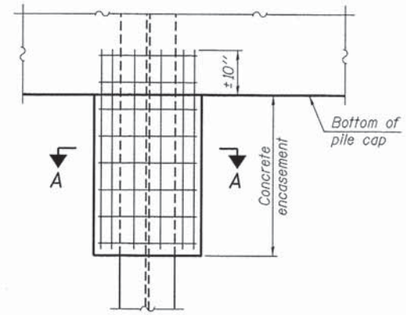
ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE ALTERNATE

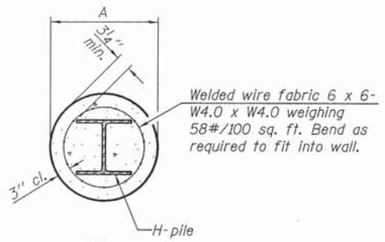
* Interrupt welds 1/4" from end of web and/or each flange.

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

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



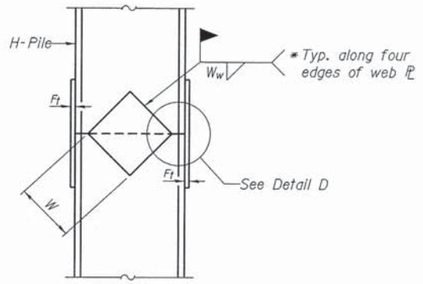
ELEVATION



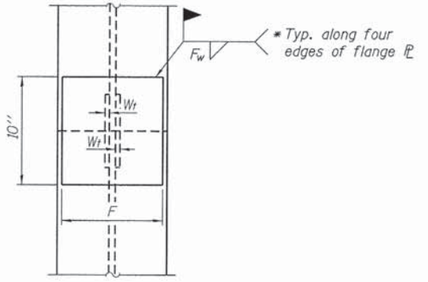
Note:
Forms for encasement may be omitted when soil conditions permit.

SECTION A-A

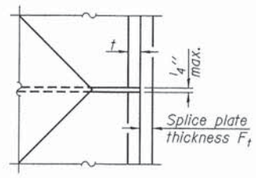
PILE ENCASEMENT



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

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

F-HP 1-27-12

FILE NAME = 130105-sht-bridge.dgn	USER NAME =	DESIGNED - L.A.P.	REVISED -	STATE OF ILLINOIS JASPER COUNTY HIGHWAY DEPARTMENT	HP PILE DETAILS STRUCTURE NO. 040-3267 SHEET NO. 8 OF 9 SHEETS	C.H. 5	SECTION 12-00123-00-BR	COUNTY JASPER	TOTAL SHEETS 12	SHEET NO. 11
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 -						CONTRACT NO. 95728	
	PLOT SCALE =	DRAWN - R.D.H.	REVISED -							
	PLOT DATE = 12/17/2013	CHECKED - S.W.M.	REVISED -					ILLINOIS	FED. AID PROJECT	

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

Bridge Foundation Boring Log

Project: H-12247 Bridge CH. 5
Section: 12-00123-00-BR Station 3+77
Structure:
County: Jasper
Date: 12-12-2012
Bored by: J. Carter
Checked By: T. Holcomb

Boring No: 1
Station: 4+03
Offset: 23' RT
Surface Water Elev.
Ground Water Elev. During Drilling: Dry
Upon Completion: Dry

Elevation	N	Qu tsf	w %	Elevation	N	Qu tsf	w %
Ground Surface 536.4 0				Gray Weathered SHALE			
10" Topsoil					70	5.5S	14
Brown Mottled Gray Sandy CLAY (A-6) to Clayey SAND (A-2-4)	3	0.6B	24	510.4			
				Gray SHALE			
	3	0.7B	20		100/5"	---	15
	4	0.1S	17		87	5.2S	17
527.4							
Gray Mottled Brown Silty CLAY (A-6) with sand	22	4.7S	14				
					100/9"	---	9
522.9							
Gray CLAY (CL) with sand and pebbles	28	4.1B	15		100/8"	---	10
				496.9			
	32	6.0B	14	End of Boring @ -39.5'	100/9"	---	9
	25	3.3S	22				
514.4							
	42	4.2S	15				

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

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-12247 Bridge CH. 5
Section: 12-00123-00-BR Station 3+77
Structure:
County: Jasper
Date: 12-12-2012
Bored by: J. Carter
Checked By: T. Holcomb

Boring No: 2
Station: 2+34
Offset: 10' LT
Surface Water Elev.
Ground Water Elev. During Drilling: --
Upon Completion: --

Elevation	N	Qu tsf	w %	Elevation	N	Qu tsf	w %
Ground Surface 541.6 0				Shale (continued)			
8" Topsoil					68	3.9S	13
Brown Sandy CLAY (A-6)							
	2	0.7B	20				
				515.6			
	0	0.4B	26	Gray SHALE			
					126	3.5S	15
	16	1.6S	15				
					100/4"	---	13
530.6							
	32	2.6S	11				
					100/3"	---	10
Brown Mottled Gray Silty CLAY (A-6) with sand and pebbles	27	8.2S	13	507.1 End of Boring @ -33.5'			
					100/5"	---	10
525.1							
Gray CLAY (CL)	29	7.6S	16				
	37	9.1S	12				
	31	7.8S	19				
520.1							
Gray Weathered SHALE	33	8.1S	14				

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 = 130105-sht-bridge.dgn	USER NAME =	DESIGNED - L.A.P.	REVISED -	STATE OF ILLINOIS JASPER COUNTY HIGHWAY DEPARTMENT	BORINGS STRUCTURE NO. 040-3267 SHEET NO. 9 OF 9 SHEETS	C.H.	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 -			5	12-00123-00-BR	JASPER	12	12
	PLOT SCALE =	DRAWN - R.D.H.	REVISED -						CONTRACT NO. 95728	
	PLOT DATE = 12/17/2013	CHECKED - S.W.M.	REVISED -				ILLINOIS	FED. AID PROJECT		