03-04-2016 LETTING ITEM 127

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	TITLE SHEET & SUMMARY OF QUANTITIES
2	PLAN & PROFILE, TYPICAL SECTIONS, & GENERAL NOTES
3	ROADWAY CROSS SECTIONS
4-16	BRIDGE DESIGN

HIGHWAY STANDARDS

000001-06	STANDARD SYMBOLS, ABBREVIATIONS & PATTERNS
280001-07	TEMPORARY EROSION CONTROL SYSTEMS
515001-03	NAME PLATE FOR BRIDGES
635006-03	REFLECTOR AND TERMINAL MARKER PLACEMENT
701901-04	TRAFFIC CONTROL DEVICES
B.L.R. 21-9	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS
B.L.R. 23-4	TRAFFIC BARRIER TERMINAL TYPE 1
B.L.R 27-1	TRAFFIC BARRIER TERMINAL TYPE 5A

SUMMARY OF QUANTITIES

QUANTITY	UNIT	ITEM	CODE NO.
84.0	UNIT	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	20100110
90.0	UNIT	TREE REMOVAL (OVER 15 UNITS DIAMETER)	20100210
45.0	CU YD	EARTH EXCAVATION	20200100
265.0	CU YD	CHANNEL EXCAVATION	20300100
914.0	CU YD	FURNISHED EXCAVATION	20400800
14.0	FOOT	TEMPORARY DITCH CHECKS	28000305
538.0	TON	STONE DUMPED RIPRAP, CLASS A4	28100807
385.0	TON	AGGREGATE SURFACE COURSE, TYPE B	40200800
1.0	EACH	REMOVAL OF EXISTING STRUCTURES	50100100
206.0	CU YD	STRUCTURE EXCAVATION	50200100
35.6	CU YD	CONCRETE STRUCTURES	50300225
101.7	CU YD	CONCRETE SUPERSTRUCTURE	50300255
276.0	SQ YD	BRIDGE DECK GROOVING	50300260
392.0	SQ YD	PROTECTIVE COAT	50300300
1.0	L SUM	FURNISHING AND ERECTING STRUCRURAL STEEL	50500105
900.0	EACH	STUD SHEAR CONNECTORS	50500505
28110.0	POUND	REINFORCEMENT BARS, EPOXY COATED	50800205
192.0	FOOT	STEEL RAILING, TYPE S1	50900205 △
450.0	FOOT	FURNISHING STEEL PILES HP12X53	51201600
450.0	FOOT	DRIVING PILES	51202305
10.0	EACH	PILE SHOES	51204650
1.0	EACH	NAME PLATES	51500100
20.0	EACH	ANCHOR BOLTS, 1"	52100520
70.0	SQ YD	GEOCOMPOSITE WALL DRAIN	59100100
2.0	EACH	TRAFFIC BARRIER TERMINAL, TYPE 5A	63100075 △
1.0	L SUM	MOBILIZATION	67100100
4.0	EACH	TERMINAL MARKER - DIRECT APPLIED	78201000 △
2.0	EACH	TRAFFIC BARRIER TERMINAL, TYPE 1	LR631020 △
0.4	ACRE	SEEDING, CLASS 2 (SPECIAL)	X2501000
142.0	CU YD	GRANULAR BACKFILL FOR STURCTURES	X5860110
136.0	FOOT	PIPE UNDERDRAINS FOR STRUCTURES 4"	Z0046304

△ SPECIALTY ITEMS

DESIGN DESIGNATION:
DESIGN SPEED: 30 MPH
HIGHWAY CLASS - LOCAL ROAD
EXISTING STRUCTURE NO.: 093-3044
PROPOSED STRUCTURE NO.: 093-3138
CURRENT A.D.T. = 150

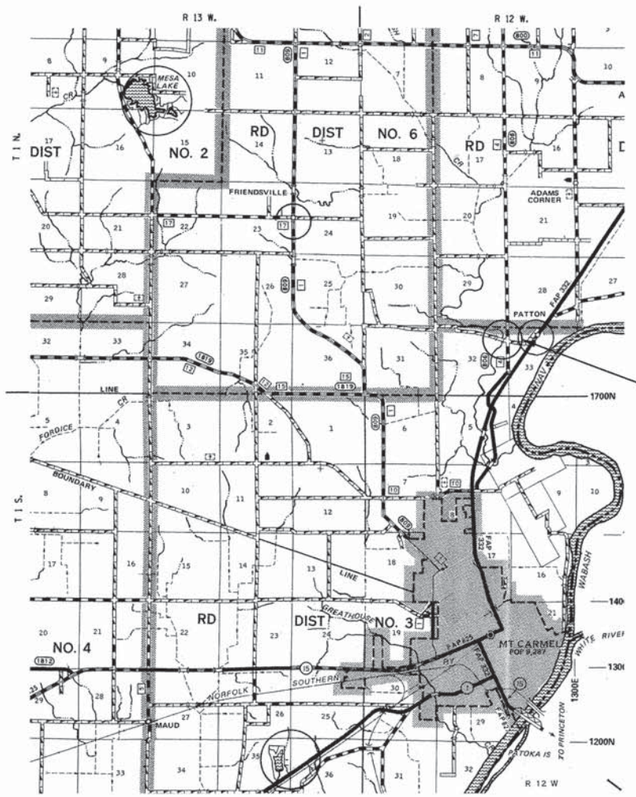
811 Know what's below. Call before you dig.

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

T.R. 95 WABASH COUNTY SECTION 14–03115–00–BR

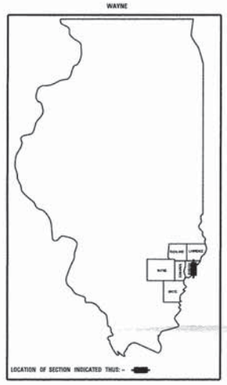
PROJECT NO. BROS–0185(037) JOB NO. C–97–058–15

CONTRACT #95771 CRAWFISH CREEK



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

GROSS LENGTH	529.00 FT	0.100 MILES
OMISSIONS	0.00 FT	0.000 MILES
NET LENGTH	529.00 FT	0.100 MILES



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

SECTION 14-03115-00-BR
BEGINS STATION 0+50

STATION 5+02, STRUCTURE NO. 093-3138
A 92' LONG SINGLE SPAN STEEL GIRDER BRIDGE
28' ROADWAY, 0.00% GRADE, 15° RIGHT FORWARD SKEW.

SECTION 14-03115-00-BR
ENDS STATION 5+79

APPROVED DECEMBER 09 20 15
COUNTY ENGINEER

PASSED 12/29 20 15
DISTRICT SEVEN ENGINEER OF LOCAL ROADS & STREETS

Releasing For Bid Based on Limited Review 12-29 20 15
DEPUTY DIRECTOR OF HIGHWAYS, REGION FOUR ENGINEER

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
95	14-03115-00-BR	WABASH	16	1
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		
PROJECT # BROS-0185(037)		CONTRACT #		
LEC JOB # H141L017WB		CRAWFISH CREEK		

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

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

AARON M. MEFFORD
56284
REGISTERED PROFESSIONAL ENGINEER
OF ILLINOIS

AARON M. MEFFORD
NAME
SIGNATURE
12-9-15
DATE
11-30-17
EXPIRES

CRAWFISH CREEK
TOWNSHIP ROUTE 95
WABASH COUNTY, ILLINOIS

SHEET TITLE:
TITLE SHEET

SCALE:	VARIES
BY:	A.M.M.
DATE:	120915
REV:	

1 OF 16 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 92 FOOT LONG SINGLE SPAN STEEL PLATE GIRDER 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.

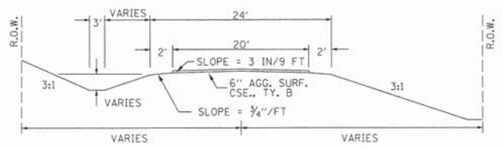
IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONTACT ALL THE UTILITIES, AFFECTING THE PROJECT, PRIOR TO CONSTRUCTION.

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

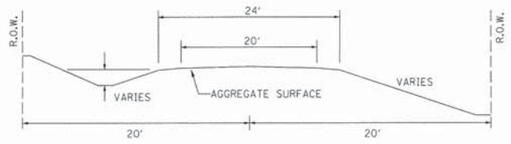
AGGREGATE SURFACE COURSE, TYPE B INCLUDES 24 TON FOR FILL NEXT TO THE BRIDGE, 75 TON FOR THE INTERSECTION, AND 286 TON FOR THE ROADWAY.

AGGREGATE SURFACE COARSE, TYPE B SHALL BE 12" THICK AT THE INTERSECTION.

TYPICAL CROSS SECTION PROPOSED



TYPICAL CROSS SECTION EXISTING



UTILITIES:

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

FRONTIER COMMUNICATIONS
1-618-382-2887

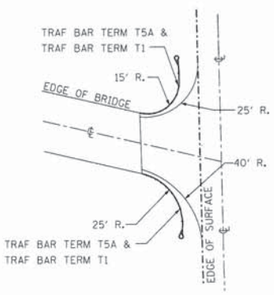
MT. CARMEL PUBLIC UTILITY CO.
1-618-262-5151

RURAL WABASH WATER DISTRICT
1-618-299-6101

NOTE: CONSTRUCT SPECIAL DITCH

STA 1+50 TO STA 3+75 RT

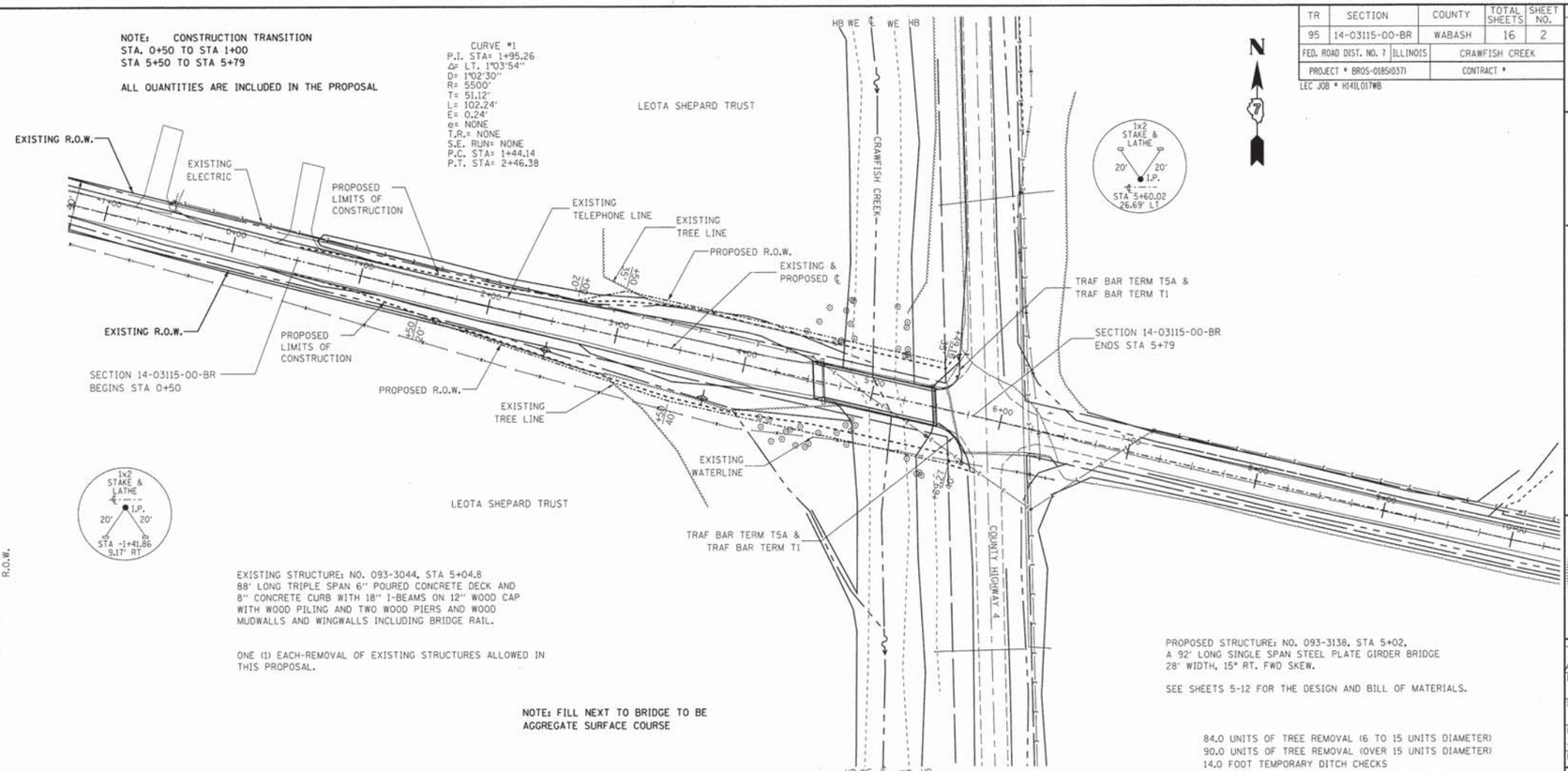
INTERSECTION DETAIL



NOTE: CONSTRUCTION TRANSITION
STA. 0+50 TO STA 1+00
STA 5+50 TO STA 5+79

ALL QUANTITIES ARE INCLUDED IN THE PROPOSAL

CURVE #1
P.I. STA= 1+95.26
Δ= LT. 1°03'54"
D= 1°02'30"
R= 5500'
T= 51.12'
L= 102.24'
E= 0.24'
e= NONE
T.R.= NONE
S.E. RUN= NONE
P.C. STA= 1+44.14
P.T. STA= 2+46.38



EXISTING STRUCTURE: NO. 093-3044, STA 5+04.8
88' LONG TRIPLE SPAN 6" POURED CONCRETE DECK AND 8" CONCRETE CURB WITH 18" I-BEAMS ON 12" WOOD CAP WITH WOOD PILING AND TWO WOOD PIERS AND WOOD MUDWALLS AND WINGWALLS INCLUDING BRIDGE RAIL.

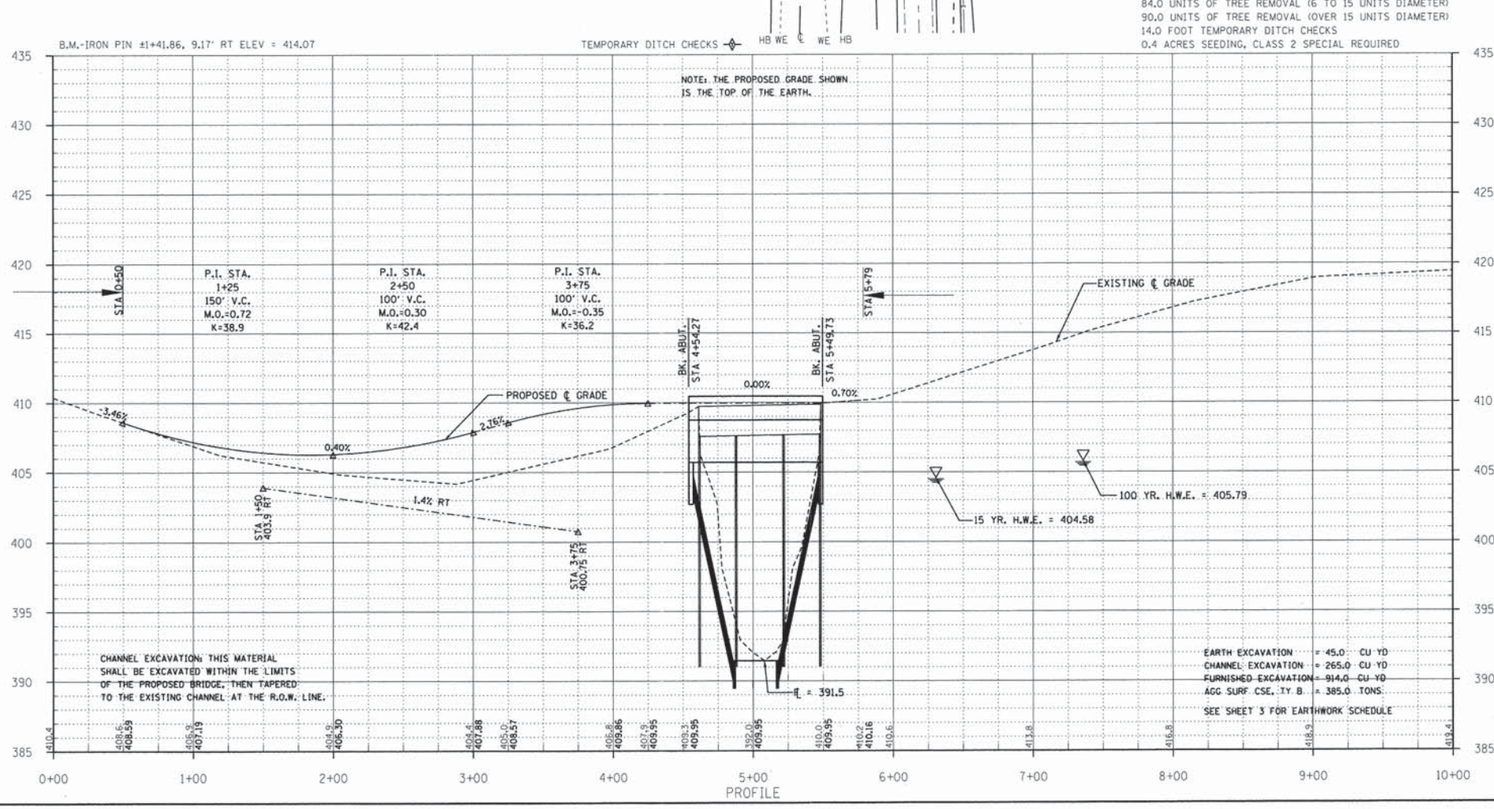
ONE (1) EACH-REMOVAL OF EXISTING STRUCTURES ALLOWED IN THIS PROPOSAL.

NOTE: FILL NEXT TO BRIDGE TO BE AGGREGATE SURFACE COURSE

PROPOSED STRUCTURE: NO. 093-3138, STA 5+02.
A 92' LONG SINGLE SPAN STEEL PLATE GIRDER BRIDGE
28' WIDTH, 15° RT. FWD SKEW.

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

84.0 UNITS OF TREE REMOVAL (6 TO 15 UNITS DIAMETER)
90.0 UNITS OF TREE REMOVAL (OVER 15 UNITS DIAMETER)
14.0 FOOT TEMPORARY DITCH CHECKS
0.4 ACRES SEEDING, CLASS 2 SPECIAL REQUIRED



TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
95	14-03115-00-BR	WABASH	16	2
FED. ROAD DIST. NO. 7	ILLINOIS	CRAWFISH CREEK		
PROJECT * BROS-0185(037)		CONTRACT *		

LEC JOB * H141L017#B

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
SIGNATURE
12-9-15
DATE
11-30-17
EXPIRES

TOWNSHIP ROUTE 95
OVER CRAWFISH CREEK
WABASH COUNTY, ILLINOIS

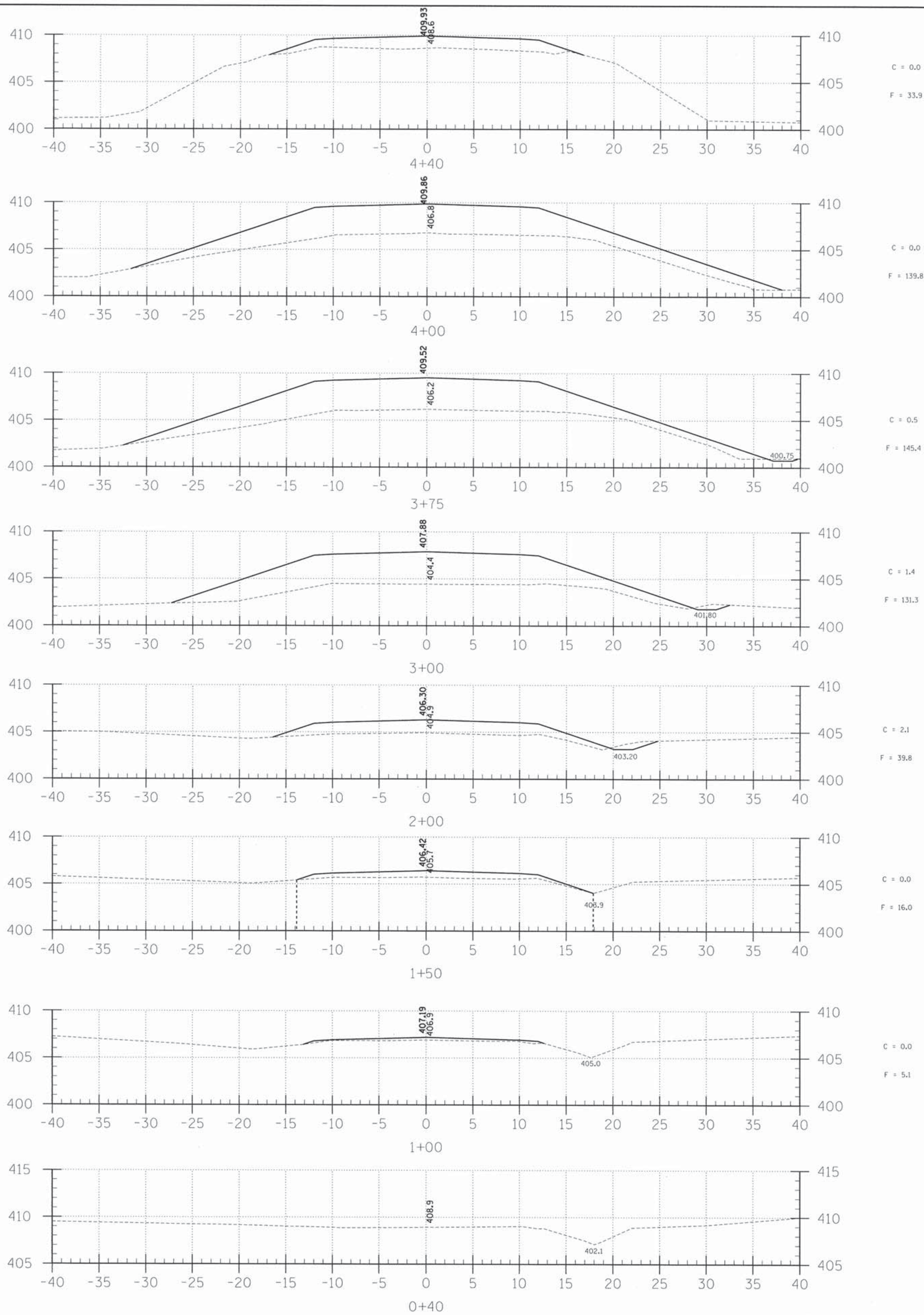
SHEET TITLE:

PLAN & PROFILE

SCALE:	VARIES
BY:	A.M.M.
DATE:	12/09/15
REV:	

2 OF 16 SHEETS

SHEET NO.
2



EARTHWORK SCHEDULE

LOCATION	EARTH EXCAVATION	CHANNEL EXCAVATION	ESTIMATED UNSUITABLE MATERIAL	SUITABLE MATERIAL ADJUSTED FOR SHRINKAGE	EMBANKMENT	EARTHWORK BALANCE WASTE (+) OR SHORTAGE (-)
	CUBIC YARD	CUBIC YARD	CUBIC YARD	CUBIC YARD	CUBIC YARD	CUBIC YARD
STA 0+00 TO 4+54.3	9.5	0.0	0.0	7.1	1046.9	-1039.8
STA 4+54.3 TO 5+49.7	0.0	265.0	132.5	99.4	0.0	99.4
STA 5+49.7 TO 10+00	35.4	0.0	0.0	26.6	0.0	26.6
TOTAL	44.9	265.0	132.5	133.1	1046.9	-913.8

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
95	14-03115-00-BR	WABASH	16	3
FED. ROAD DIST. NO. 7	ILLINOIS	CRAWFISH CREEK		
PROJECT* BROS-0185(037)		CONTRACT*		

LEC JOB * H041L01TWB

323 W. 3RD ST.
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AARON M. MEFFORD
NAME
SIGNATURE
12-9-15
DATE
11-30-17
EXPIRES

TOWNSHIP ROUTE 95
OVER CRAWFISH CREEK
WABASH COUNTY, ILLINOIS

SHEET TITLE: CROSS-SECTIONS

SCALE: 1" = 5'
BY: SAA
DATE: 120915
REV:

3 OF 16 SHEETS

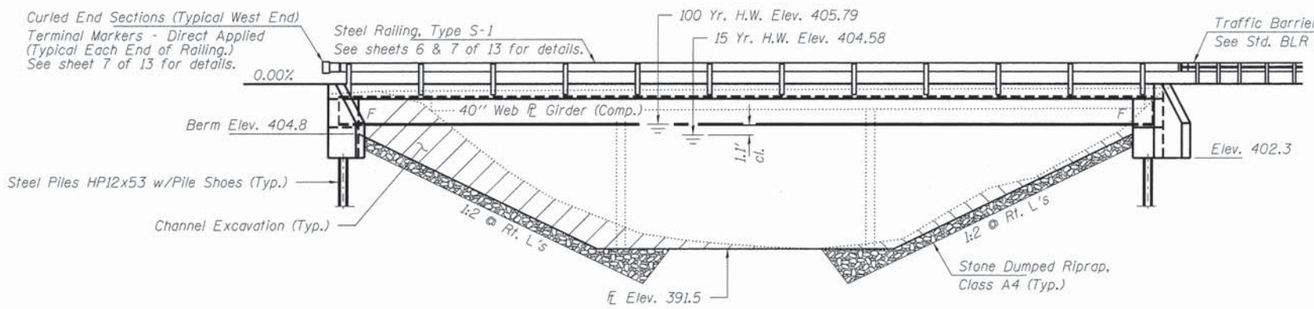
SHEET NO. 3

BENCHMARK:

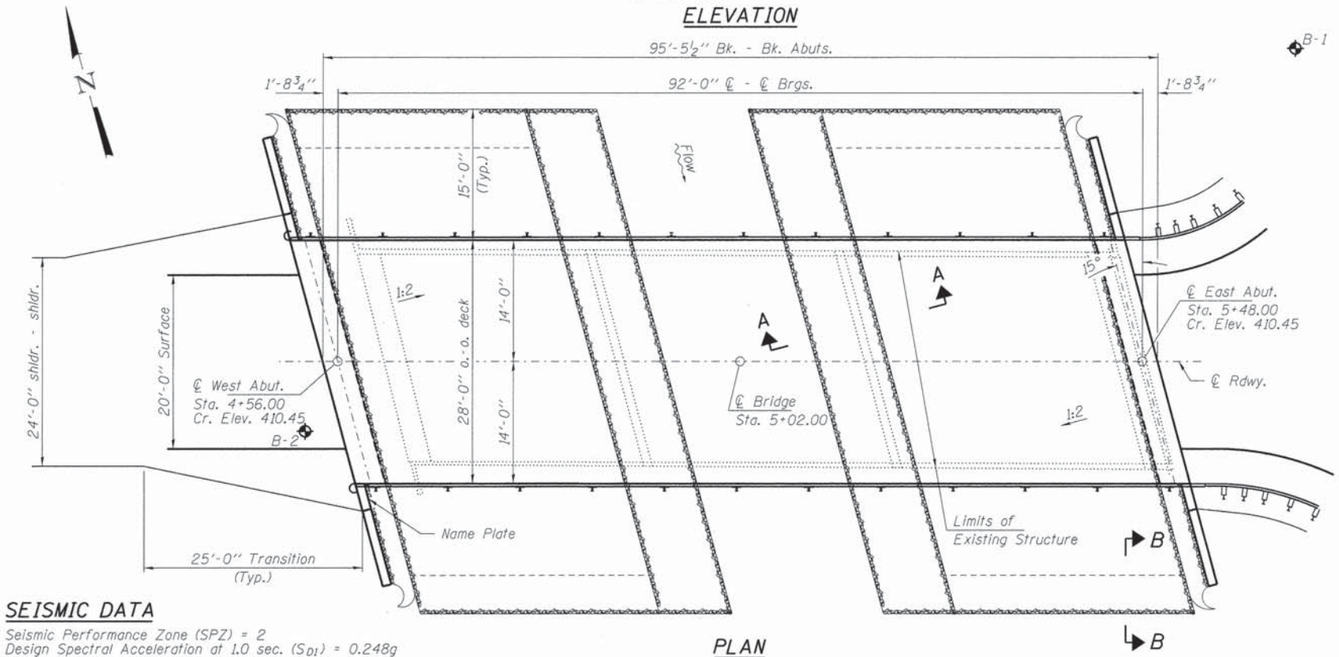
EXISTING STRUCTURE NO. 093-3044: Sta. 5+04 - Three span precast deck beam bridge with closed timber abutments and timber pile bent piers. 88.0' bk.-bk. abuts.; 25.0' o.-o. deck.

Structure will be closed to traffic during construction.

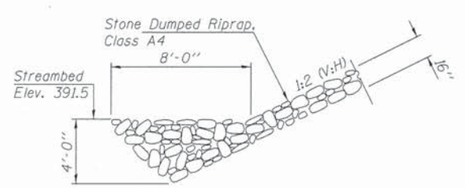
INDEX OF STRUCTURE SHEETS



ELEVATION

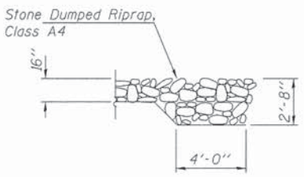


PLAN



SECTION A-A

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

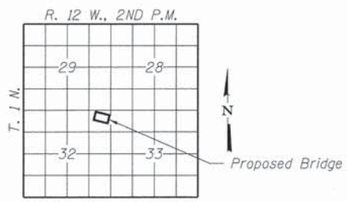


SECTION B-B

CRAWFISH CREEK
BUILT 201_ BY
WABASH COUNTY
SEC. 14-03115-00-BR
STR. NO. 093-3138
LOADING HL-93

NAME PLATE

See Std. 515001



LOCATION SKETCH

Design Scour Elevations (ft.)		
	E. Abut.	W. Abut.
Q100	402.3	402.3
Q500	402.3	402.3

WATERWAY INFORMATION

Drainage Area = 29.6 Sq. Mi.

Existing Low Grade Elev. 404.2 @ Sta. 2+85
Proposed Low Grade Elev. 406.3 @ Sta. 1+75

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.	Exist. Appr. Exist.	Exist. Appr. Prop.
Design	15	3533	620	770	404.58	-	-	-	-	150	0
Base	100	5830	713	866	405.79	0.57	0.25	406.36	406.04	193	0
Max. Calc.	500										

SEISMIC DATA

Seismic Performance Zone (SPZ) = 2
Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.248g
Design Spectral Acceleration at 0.2 sec. (S_{DS}) = 0.581g
Soil Site Class = D

DESIGN SPECIFICATIONS

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

LOADING HL-93

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

DESIGN STRESSES

FIELD UNITS

f'c = 3,500 psi
fy = 60,000 psi (Reinf.)
fy = 50,000 psi (Structural Steel) (M270 Gr. 50W)

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."

Donald W. Tempinson 12/07/2015
ILLINOIS STRUCTURAL NO. 081-7446

LICENSED STRUCTURAL ENGINEER
DONALD W. TEMPINSON
081-7446
SPRINGFIELD, IL
STATE OF ILLINOIS

Expires 11-30-2016

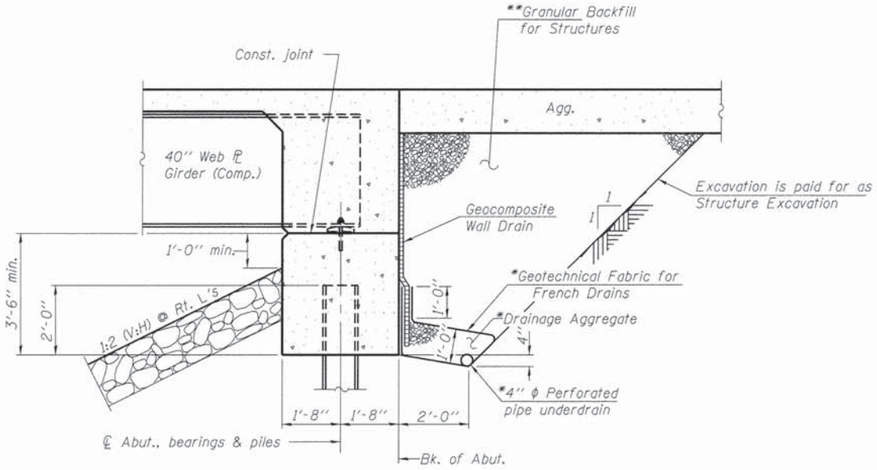
GENERAL PLAN & ELEVATION
T.R. 95
SECTION 14-03115-00-BR
WABASH COUNTY
STATION 5+02.00
STRUCTURE NO. 093-3138

FILE NAME = 140323-sht-bridge.dgn	USER NAME =	DESIGNED - T.J.A.	REVISED -
3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 217.546.3400 www.hlrengineering.com 184.000599 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORPORATION		CHECKED - D.W.T.	REVISED -
	PLOT SCALE =	DRAWN - D.A.B.	REVISED -
	PLOT DATE = 12/7/2015	CHECKED - M.D.C.	REVISED -

STATE OF ILLINOIS
WABASH COUNTY HIGHWAY DEPARTMENT

GENERAL PLAN & ELEVATION
STRUCTURE NO. 093-3138
SHEET NO. 1 OF 13 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
95	14-03115-00-BR	WABASH	16	4
		CONTRACT NO. 95771		
	ILLINOIS	FED. AID PROJECT		



SECTION THRU INTEGRAL ABUTMENT

(Horiz. dim. ℄ Rt. L's)

Note:
All drainage system components shall extend to 2'-0" from the end of each wingwall except an outlet pipe shall extend until intersecting with the side slopes. The pipes shall drain into concrete headwalls. (See Article 601.05 of the Standard Specifications and Highway Standard 601101).

*Included in the cost of Pipe Underdrains for Structures. (See Special Provisions)

**Contractor shall compact item Granular Backfill for Structures as per Article 206.04 of the Standard Specfications.

GENERAL NOTES

Fasteners shall be ASTM A325 Type 1, mechanically galvanized bolts in painted areas and ASTM A325 Type 3 in unpainted areas. Bolts $\frac{3}{4}$"ϕ, holes $\frac{15}{16}$"ϕ, unless otherwise noted.
Calculated weight of Structural Steel = 70,760 lbs.
All structural steel shall be AASHTO M 270 Grade 50W.
No field welding is permitted except as specified in the contract documents.
Reinforcement bars designated (E) shall be epoxy coated.
Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.
Structural steel shall only be painted for a distance equal to the depth of embedment into the concrete cap plus 3 inches. Painted areas shall be primed in the shop with a Department approved zinc rich primer. Field painting will not be required.
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.

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	Cu. Yd.			265
Stone Dumped Riprap, Class A4	Ton			538
Protective Coat	Sq. Yd.	358	34	392
Removal of Existing Structures	Each			1
Structure Excavation	Cu. Yd.		206.0	206.0
Concrete Structures	Cu. Yd.		35.6	35.6
Concrete Superstructure	Cu. Yd.	101.7		101.7
Bridge Deck Grooving	Sq. Yd.	276		276
Furnishing and Erecting Structural Steel	L. Sum	1		1
Stud Shear Connectors	Each	900		900
Reinforcement Bars, Epoxy Coated	Pound	19,690	8,420	28,110
Steel Railing, Type S-1	Foot	192		192
Furnishing Steel Piles HP12x53	Foot		450	450
Driving Piles	Foot		450	450
Pile Shoes	Each		10	10
Name Plates	Each		1	1
Anchor Bolts, 1"	Each		20	20
Geocomposite Wall Drain	Sq. Yd.		70	70
Terminal Marker - Direct Applied	Each		4	4
Granular Backfill for Structures	Cu. Yd.		142	142
Pipe Underdrains for Structures 4"	Foot		136	136

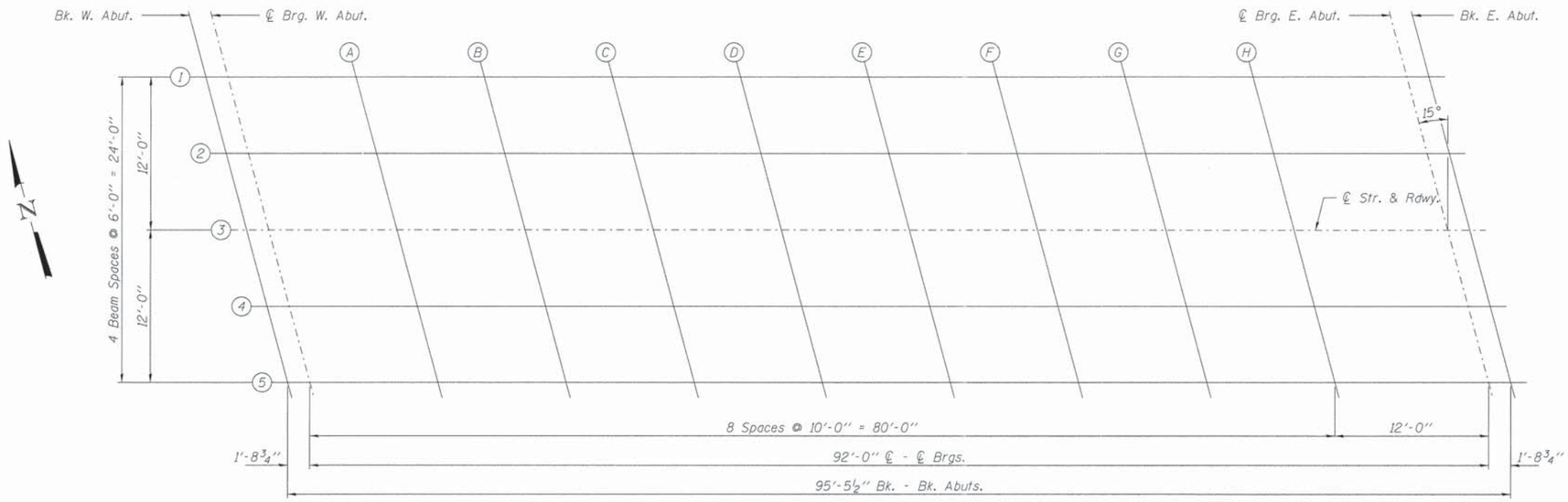
3085 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
217.546.3400 www.hlrengineering.com
184.000959
ILLINOIS PROFESSIONAL DESIGN FIRM
LS / PE / SE CORPORATION

FILE NAME = 140323-sht-bridge.dgn | USER NAME = | PLOT SCALE = | PLOT DATE = 12/7/2015
DESIGNED - T.J.A. | CHECKED - D.W.T. | DRAWN - D.A.B. | CHECKED - M.D.C.
REVISED - | REVISED - | REVISED - | REVISED -

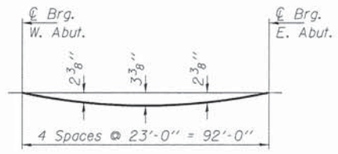
STATE OF ILLINOIS
WABASH COUNTY HIGHWAY DEPARTMENT

GENERAL DETAILS
STRUCTURE NO. 093-3138
SHEET NO. 2 OF 13 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
95	14-03115-00-BR	WABASH	16	5
		CONTRACT NO. 95771		
		ILLINOIS FED. AID PROJECT		



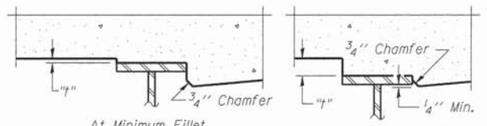
PLAN



DEAD LOAD DEFLECTION DIAGRAM

(Includes weight of concrete only.)

Note:
The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown on sheet 4 of 13.



To determine "t": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown above. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown on sheet 4 of 13, minus slab thickness, equals the fillet heights "t" above top flange of beams.

FILLET HEIGHTS

FILE NAME = 140323-sht-bridge.dgn	USER NAME =	DESIGNED - T.J.A.	REVISED -	STATE OF ILLINOIS WABASH COUNTY HIGHWAY DEPARTMENT	TOP OF SLAB ELEVATIONS STRUCTURE NO. 093-3138 SHEET NO. 3 OF 13 SHEETS
3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 217.546.3400 www.hlrengineering.com 184.000959 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORPORATION		CHECKED - D.W.T.	REVISED -		
	PLOT SCALE =	DRAWN - D.A.B.	REVISED -		
	PLOT DATE = 12/7/2015	CHECKED - M.D.C.	REVISED -		

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
95	14-03115-00-BR	WABASH	16	6
		CONTRACT NO. 95771		
		ILLINOIS FED. AID PROJECT		

BEAM 1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	4+51.06	-12.00	410.20	410.20
℄ Brg. W. Abut.	4+52.78	-12.00	410.20	410.20
A	4+62.78	-12.00	410.20	410.29
B	4+72.78	-12.00	410.20	410.38
C	4+82.78	-12.00	410.20	410.44
D	4+92.78	-12.00	410.20	410.47
E	5+02.78	-12.00	410.20	410.47
F	5+12.78	-12.00	410.20	410.43
G	5+22.78	-12.00	410.20	410.37
H	5+32.78	-12.00	410.20	410.31
℄ Brg. E. Abut.	5+44.78	-12.00	410.20	410.20
Bk. E. Abut.	5+46.51	-12.00	410.20	410.20

BEAM 2

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	4+52.67	-6.00	410.33	410.33
℄ Brg. W. Abut.	4+54.39	-6.00	410.33	410.33
A	4+64.39	-6.00	410.33	410.42
B	4+74.39	-6.00	410.33	410.50
C	4+84.39	-6.00	410.33	410.56
D	4+94.39	-6.00	410.33	410.60
E	5+04.39	-6.00	410.33	410.59
F	5+14.39	-6.00	410.33	410.55
G	5+24.39	-6.00	410.33	410.49
H	5+34.39	-6.00	410.33	410.44
℄ Brg. E. Abut.	5+46.39	-6.00	410.33	410.33
Bk. E. Abut.	5+48.12	-6.00	410.33	410.33

℄ STRUCTURE, RDWY., & BEAM 3

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	4+54.27	0.00	410.45	410.45
℄ Brg. W. Abut.	4+56.00	0.00	410.45	410.45
A	4+66.00	0.00	410.45	410.54
B	4+76.00	0.00	410.45	410.63
C	4+86.00	0.00	410.45	410.69
D	4+96.00	0.00	410.45	410.72
E	5+06.00	0.00	410.45	410.72
F	5+16.00	0.00	410.45	410.68
G	5+26.00	0.00	410.45	410.62
H	5+36.00	0.00	410.45	410.56
℄ Brg. E. Abut.	5+48.00	0.00	410.45	410.45
Bk. E. Abut.	5+49.73	0.00	410.45	410.45

BEAM 4

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	4+55.88	6.00	410.33	410.33
℄ Brg. W. Abut.	4+57.61	6.00	410.33	410.33
A	4+67.61	6.00	410.33	410.42
B	4+77.61	6.00	410.33	410.50
C	4+87.61	6.00	410.33	410.56
D	4+97.61	6.00	410.33	410.60
E	5+07.61	6.00	410.33	410.59
F	5+17.61	6.00	410.33	410.55
G	5+27.61	6.00	410.33	410.49
H	5+37.61	6.00	410.33	410.44
℄ Brg. E. Abut.	5+49.61	6.00	410.33	410.33
Bk. E. Abut.	5+51.33	6.00	410.33	410.33

BEAM 5

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	4+57.49	12.00	410.20	410.20
℄ Brg. W. Abut.	4+59.22	12.00	410.20	410.20
A	4+69.22	12.00	410.20	410.29
B	4+79.22	12.00	410.20	410.38
C	4+89.22	12.00	410.20	410.44
D	4+99.22	12.00	410.20	410.47
E	5+09.22	12.00	410.20	410.47
F	5+19.22	12.00	410.20	410.43
G	5+29.22	12.00	410.20	410.37
H	5+39.22	12.00	410.20	410.31
℄ Brg. E. Abut.	5+51.22	12.00	410.20	410.20
Bk. E. Abut.	5+52.94	12.00	410.20	410.20

3085 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
217.546.3400 www.hlrengineering.com
184.000959
ILLINOIS PROFESSIONAL DESIGN FIRM
LS / PE / SE CORPORATION

FILE NAME = 140323-sht-bridge.dgn | USER NAME = | PLOT SCALE = | PLOT DATE = 12/7/2015

DESIGNED - T.J.A. | CHECKED - D.W.T. | DRAWN - D.A.B. | CHECKED - M.D.C.

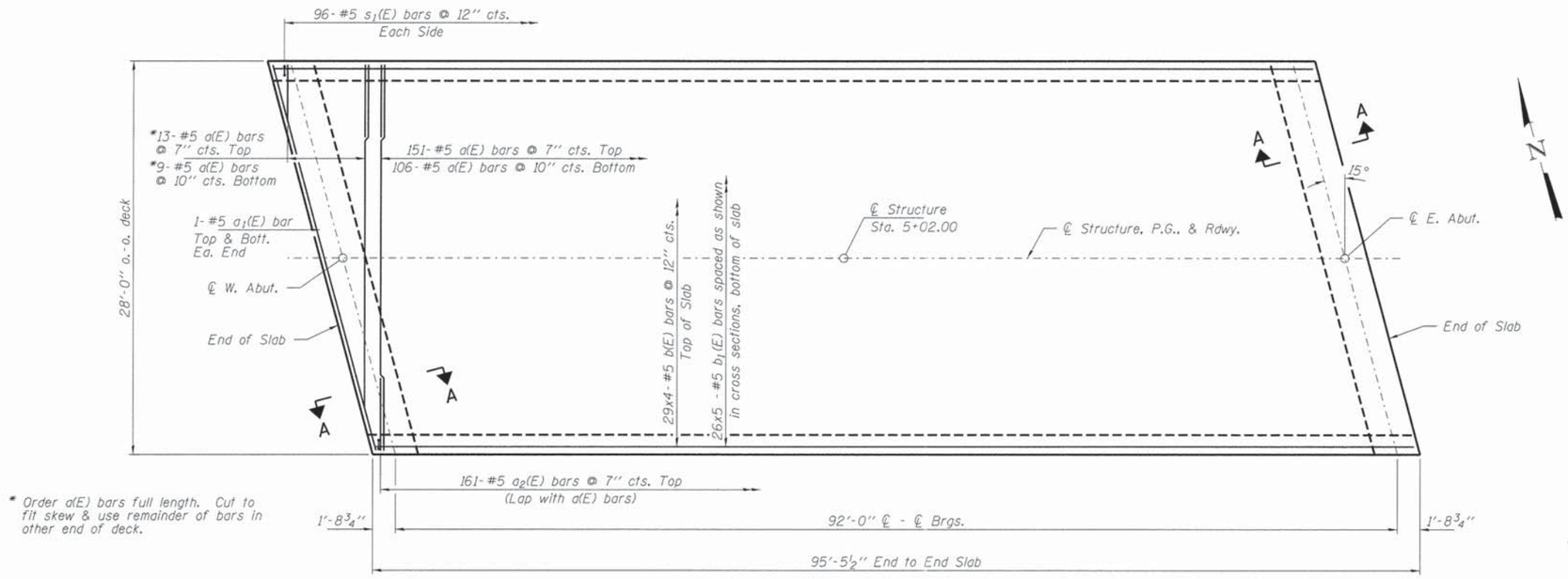
REVISED - | REVISED - | REVISED - | REVISED -

STATE OF ILLINOIS
WABASH COUNTY HIGHWAY DEPARTMENT

TOP OF SLAB ELEVATIONS
STRUCTURE NO. 093-3138
SHEET NO. 4 OF 13 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
95	14-03115-00-BR	WABASH	16	7

CONTRACT NO. 95771
ILLINOIS FED. AID PROJECT

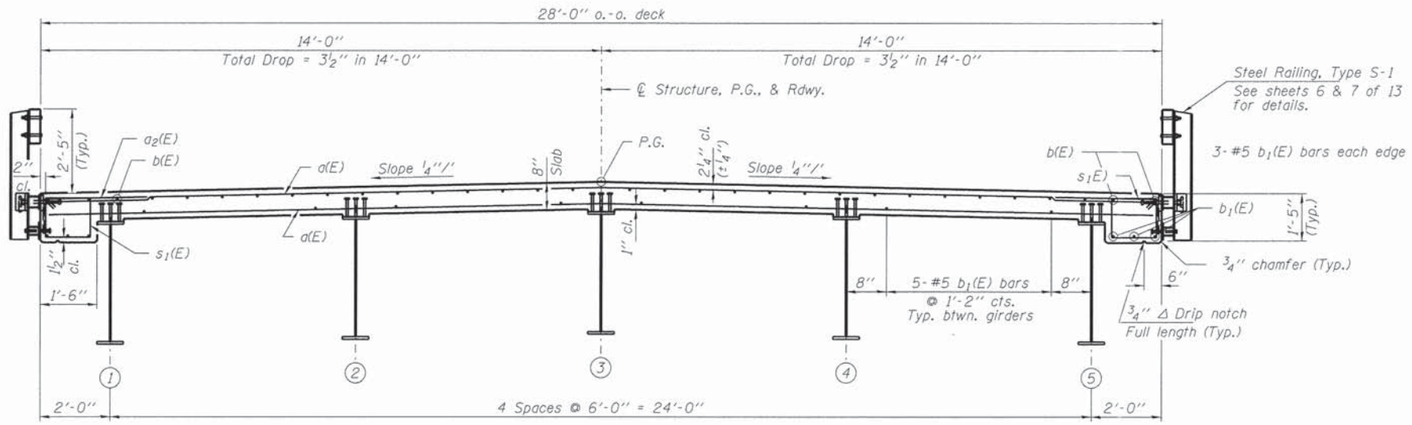


* Order a(E) bars full length. Cut to fit skew & use remainder of bars in other end of deck.

PLAN

MIN. BAR LAP
#5 bars = 2'-7"

Notes:
See sheet 6 of 13 for superstructure details.
See sheet 6 of 13 for SECTION A-A.
Bars indidcated thus 26x5-#5 etc. indicates 26 lines of bars with 5 lengths per line.



CROSS SECTION
(Looking East)

SUPERSTRUCTURE BILL OF MATERIAL

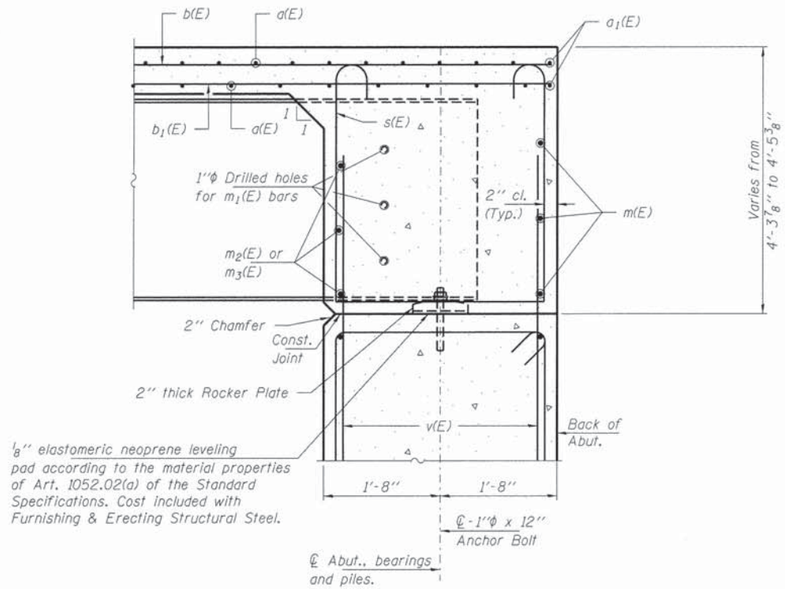
BAR	NO.	SIZE	LENGTH	SHAPE
a(E)	279	#5	27'-8"	
a_1(E)	4	#5	28'-7"	
a_2(E)	322	#6	6'-6"	
b(E)	116	#5	25'-9"	
b_1(E)	130	#5	21'-2"	
m(E)	6	#6	28'-7"	
m_1(E)	30	#5	4'-0"	
m_2(E)	24	#6	5'-8"	
m_3(E)	12	#6	1'-8"	
s(E)	60	#5	11'-6"	
s_1(E)	192	#5	5'-3"	
Concrete Superstructure		Cu. Yd.	101.7	
Bridge Deck Grooving		Sq. Yd.	276	
Protective Coat		Sq. Yd.	358	
Reinforcment Bars, Epoxy Coated		Pound	19,690	

FILE NAME = 140323-sht-bridge.dgn	USER NAME =	DESIGNED - T.J.A.	REVISED -	
3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 217.546.3400 www.hlrengineering.com 184.000969 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORPORATION		CHECKED - D.W.T.	REVISED -	
	PLOT SCALE =	DRAWN - D.A.B.	REVISED -	
	PLOT DATE = 12/7/2015	CHECKED - M.D.C.	REVISED -	

STATE OF ILLINOIS
WABASH COUNTY HIGHWAY DEPARTMENT

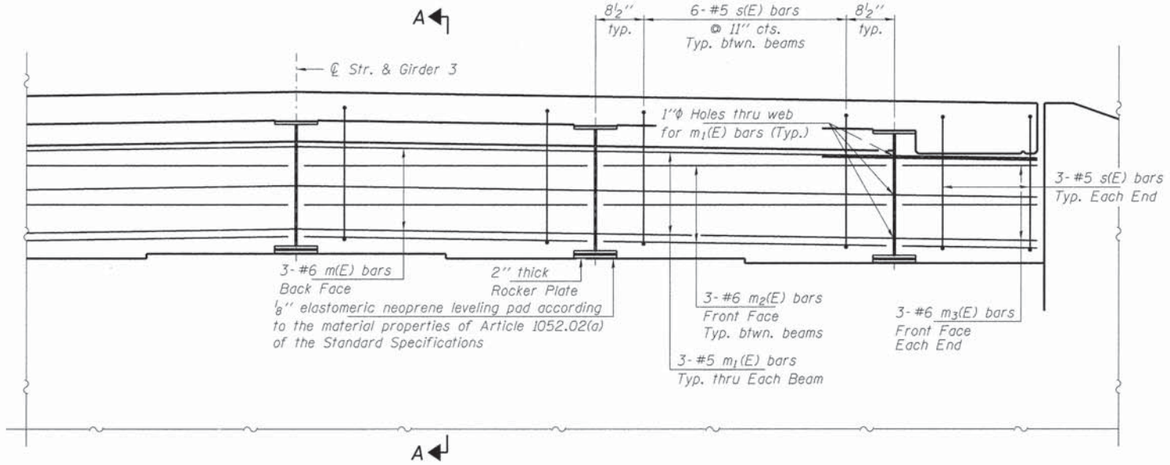
SUPERSTRUCTURE
STRUCTURE NO. 093-3138
SHEET NO. 5 OF 13 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
95	14-03115-00-BR	WABASH	16	8
		CONTRACT NO. 95771		
		ILLINOIS FED. AID PROJECT		



SECTION A-A

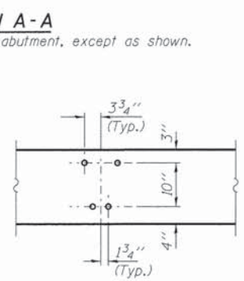
Dimensions at right angles to abutment, except as shown.



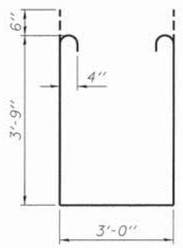
DIAPHRAGM ELEVATION AT ABUTMENT

Dimensions at right angles to beams
(West Abut. shown, East Abut. similar)

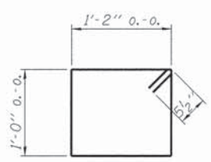
Notes:
Reinforcement bars in diaphragm are billed with Superstructure on sheet 5 of 13.
Concrete in diaphragm is included with Concrete Superstructure on sheet 5 of 13.
The s(E) bars shall be placed parallel to the beams. Spacing for these bars shall be at right angles to the beams.



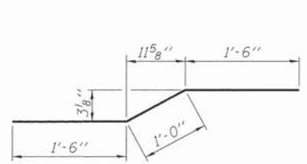
DETAIL A



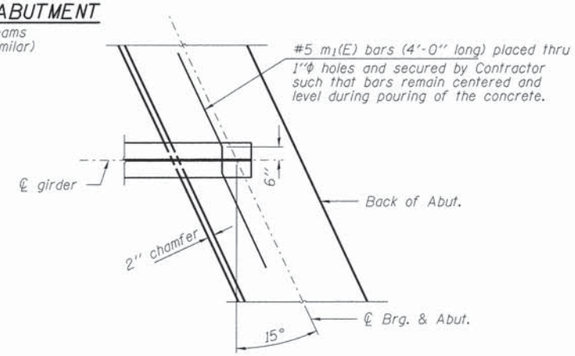
BAR s(E)



BAR s_1(E)

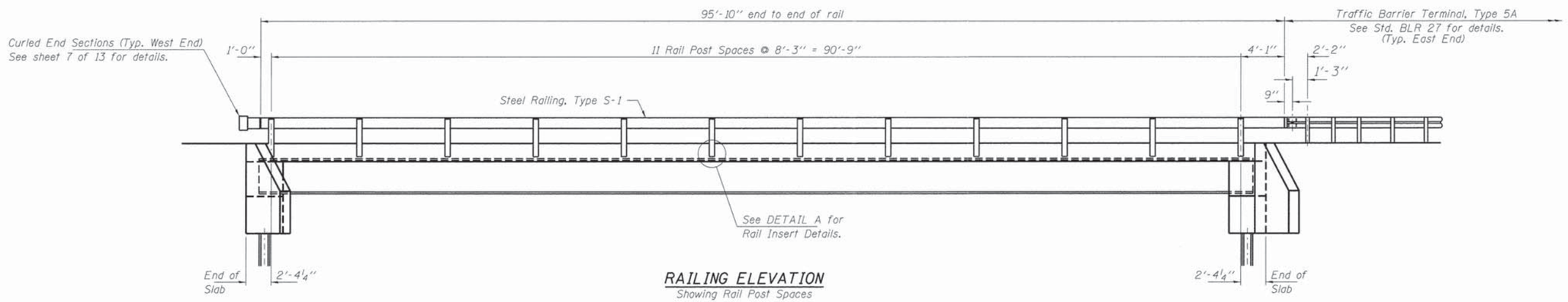


BAR m_1(E)



PLAN

(Showing bottom flange of girder)

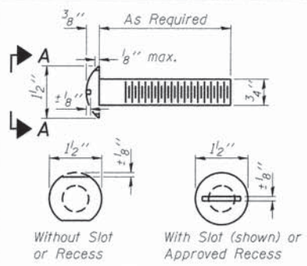


RAILING ELEVATION

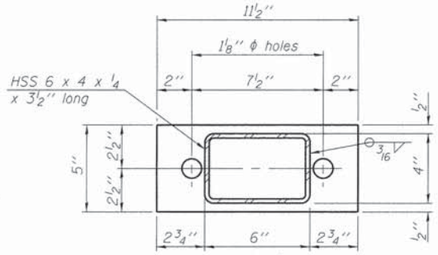
Showing Rail Post Spaces

See sheet 7 of 13 for Railing Details.

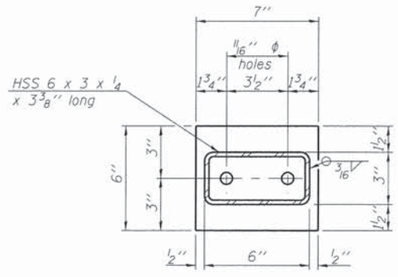
FILE NAME = 140323-sht-bridge.dgn	USER NAME =	DESIGNED - T.J.A.	REVISED -	STATE OF ILLINOIS WABASH COUNTY HIGHWAY DEPARTMENT	SUPERSTRUCTURE DETAILS STRUCTURE NO. 093-3138	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 217.546.3400 www.hlrengineering.com 184.000599 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORPORATION		CHECKED - D.W.T.	REVISED -			95	14-03115-00-BR	WABASH	16	9
	PLOT SCALE =	DRAWN - D.A.B.	REVISED -					CONTRACT NO. 95771		
	PLOT DATE = 12/7/2015	CHECKED - M.D.C.	REVISED -		SHEET NO. 6 OF 13 SHEETS			ILLINOIS FED. AID PROJECT		



VIEW A-A
ROUND HEAD BOLT

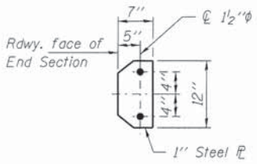


PL 1/2" x 11 1/2" x 5"

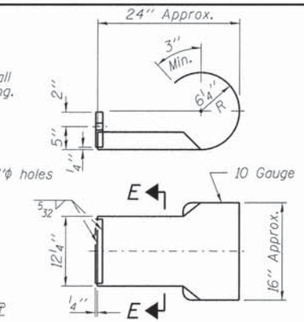


PL 1/2" x 7" x 6"

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



SECTION E-E

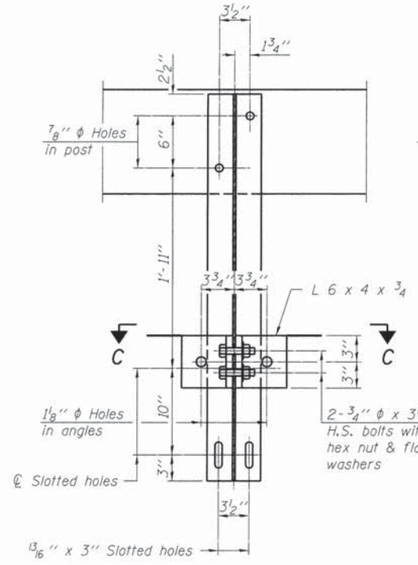


CURLED END SECTION DETAILS

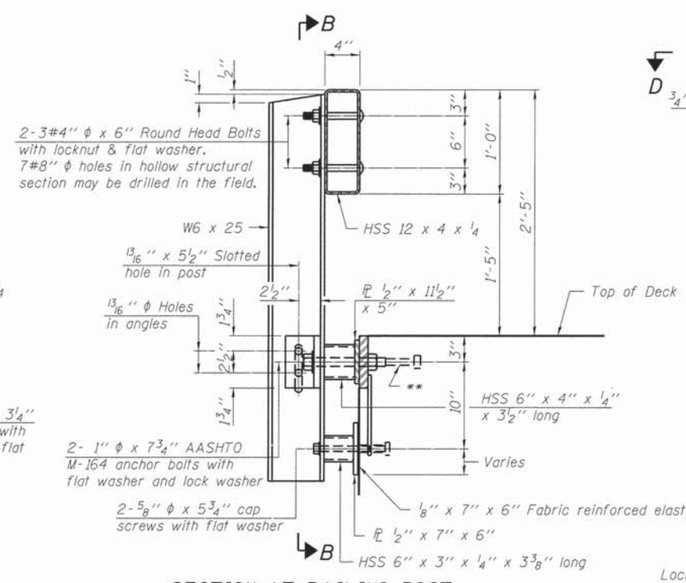
SPLICE DIMENSIONS

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

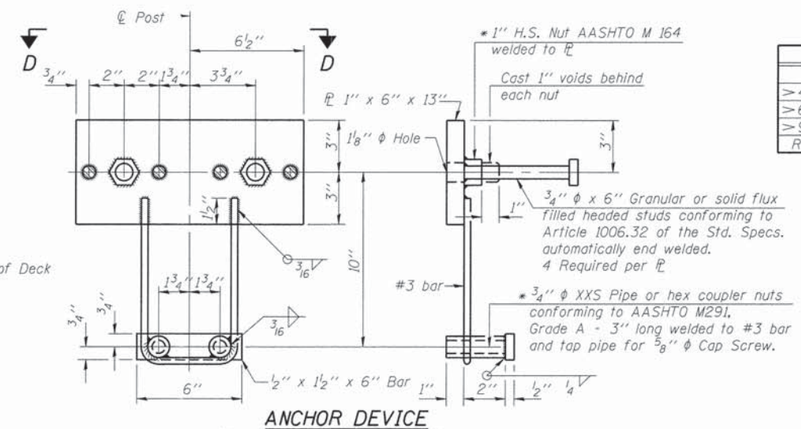
T = Total movement at expansion joint as shown on the design plans.



SECTION B-B



SECTION AT RAILING POST



ANCHOR DEVICE

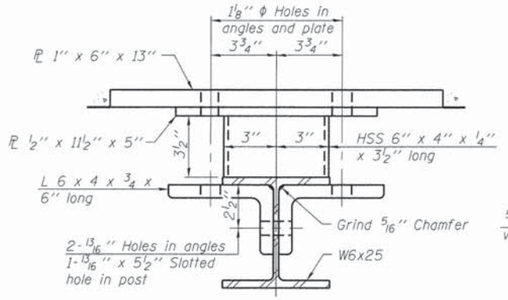
* Threaded areas shall be plugged or blocked off during casting of beam.

Notes:

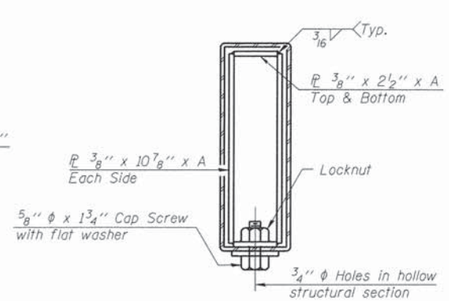
For multi-span bridges, sufficient 1/4" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with Steel Railing, Type S-1.

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

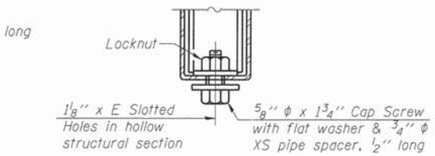
** The studs of the anchor devices shall be placed below the top reinforcement bars and the outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchor device.



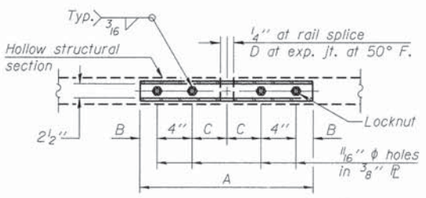
SECTION C-C



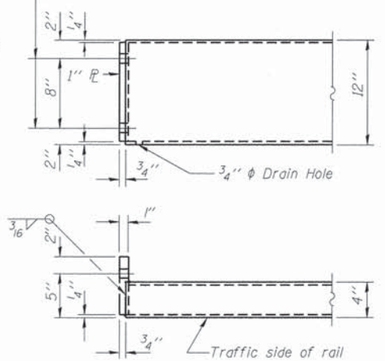
SECTIONS AT RAIL SPLICE



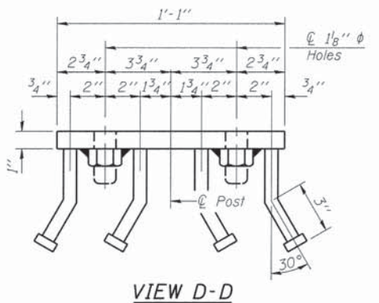
RAIL SPLICE CONNECTION AT EXPANSION JT.



PLAN-BOTT. SPLICE PL TYPICAL



END OF RAIL DETAILS



VIEW D-D

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S-1	Foot	192

R-23A

1-12-15

(10'-9" Maximum Post Spacing)

FILE NAME = 140323-sht-bridge.dgn	USER NAME =	DESIGNED - T.J.A.	REVISED -
		CHECKED - D.W.T.	REVISED -
	PLOT SCALE =	DRAWN - D.A.B.	REVISED -
	PLOT DATE = 12/7/2015	CHECKED - M.D.C.	REVISED -

3085 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
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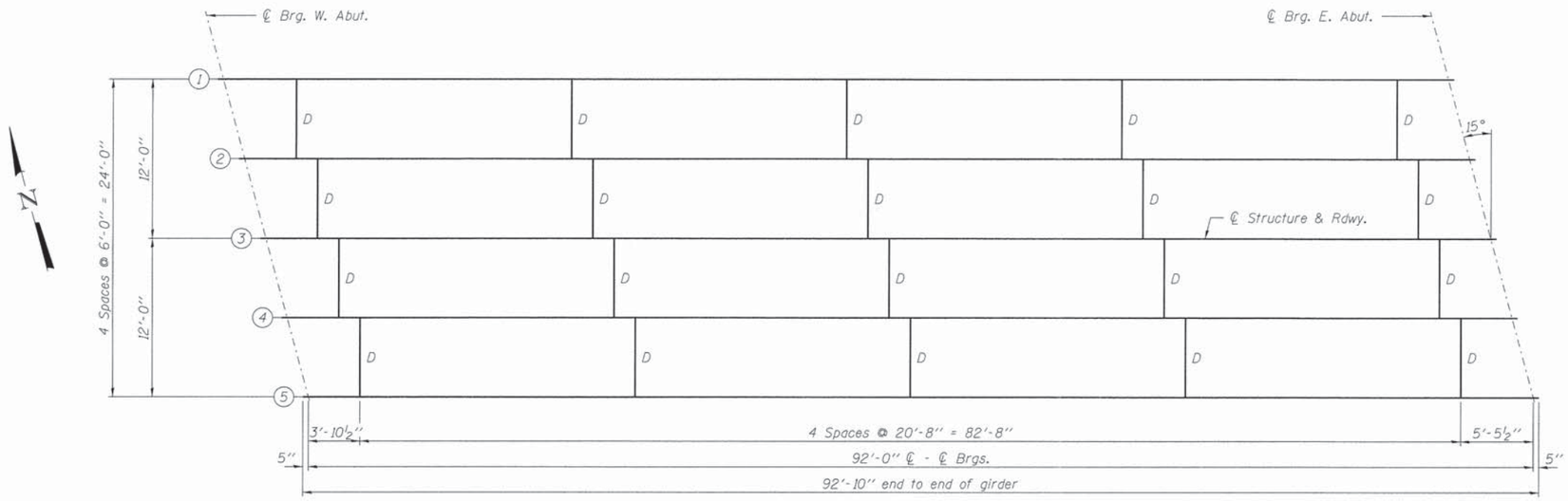
184.000669
ILLINOIS PROFESSIONAL DESIGN FIRM
LS / PE / SE CORPORATION

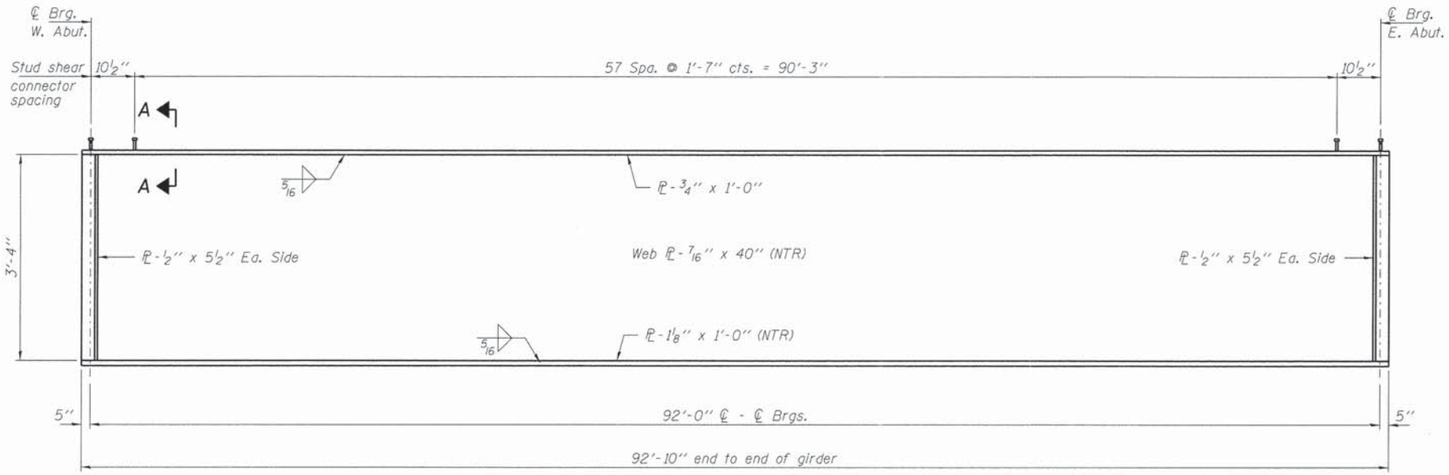
STATE OF ILLINOIS
WABASH COUNTY HIGHWAY DEPARTMENT

STEEL RAILING, TYPE S-1
STRUCTURE NO. 093-3138
SHEET NO. 7 OF 13 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
95	14-03115-00-BR	WABASH	16	10
		CONTRACT NO. 95771		
		ILLINOIS FED. AID PROJECT		



FRAMING PLAN

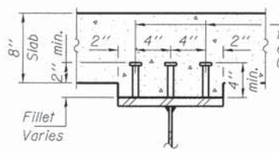


GIRDER ELEVATION

Location	℄ Brg. W. Abut.	℄ Brg. E. Abut.
BEAM 1	409.41	409.41
BEAM 2	409.53	409.53
BEAM 3	409.66	409.66
BEAM 4	409.53	409.53
BEAM 5	409.41	409.41

TOP OF WEB ELEVATIONS

(For fabrication only)
(Does not include Dead Load Deflections)



¾"ø Granular or solid flux filled headed studs, automatically end welded to flange. (900 Req'd.)

SECTION A-A

Notes:

Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.

All girders and splices, including bearing stiffeners, shall be AASHTO M270 Grade 50W.

For additional structural steel details see sheets 9 & 10 of 13.

All cross frames and diaphragms shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted. Individual cross frames or diaphragms at supports may be temporarily disconnected to install bearing anchor rods.

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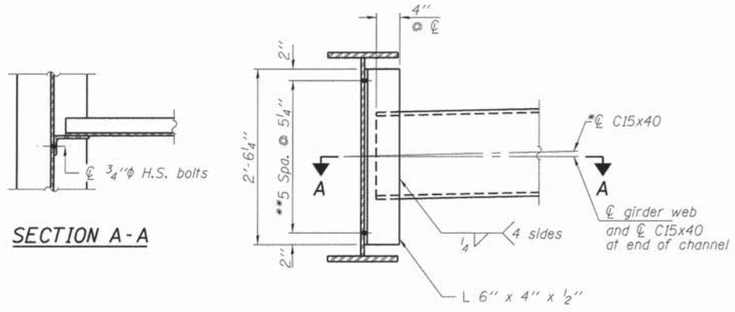
FILE NAME = 14@323-sht-bridge.dgn	USER NAME =	DESIGNED - T.J.A.	REVISED -
		CHECKED - D.W.T.	REVISED -
	PLOT SCALE =	DRAWN - D.A.B.	REVISED -
	PLOT DATE = 12/7/2015	CHECKED - M.D.C.	REVISED -

STATE OF ILLINOIS
WABASH COUNTY HIGHWAY DEPARTMENT

STRUCTURAL STEEL
STRUCTURE NO. 093-3138
SHEET NO. 8 OF 13 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
95	14-03115-00-BR	WABASH	16	11
		CONTRACT NO. 95771		
	ILLINOIS FED. AID PROJECT			



SECTION A-A

INTERIOR DIAPHRAGM D

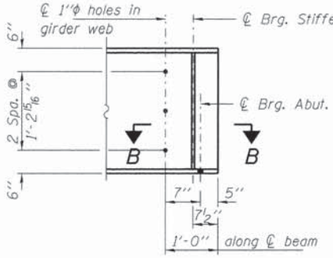
(20 required)

Notes:
Two hardened washers required for each set of oversized holes.
*Alternate channels C15X50 are permitted to facilitate material acquisition. Calculated weight of structural steel is based on C15x40 section. The alternate, if utilized, shall be provided at no additional cost to the Department.
**¾" ϕ HS bolts, 15/16" ϕ holes

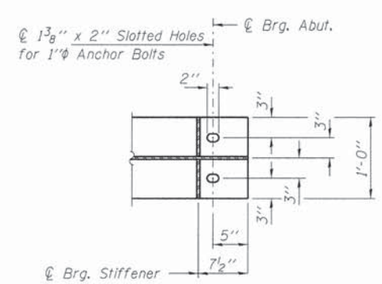
INTERIOR GIRDER MOMENT TABLE		
		0.5 Sp. 1
I_s	(in^4)	11,557
$I_c(n)$	(in^4)	31,420
$I_c(3n)$	(in^4)	22,864
$I_c(cr)$	(in^4)	13,910
S_s	(in^3)	500
$S_c(n)$	(in^3)	866
$S_c(3n)$	(in^3)	793
$S_c(cr)$	(in^3)	525
DC1	(k/')	0.84
M_{DC1}	('k)	883
DC2	(k/')	0.03
M_{DC2}	('k)	32
DW	(k/')	0.30
M_{DW}	('k)	318
$M_{℄+IM}$	('k)	1,313
M_u (Strength I)	('k)	3,919
$\phi_f M_n$	('k)	4,287
f_s DC1	(ksi)	21.2
f_s DC2	(ksi)	0.5
f_s DW	(ksi)	4.8
f_s (℄+IM)	(ksi)	18.2
f_s (Service II)	(ksi)	50.1
$0.95R_hF_{yf}$	(ksi)	47.5
f_s (Total)(Strength I)	(ksi)	-
$\phi_f F_n$	(ksi)	-
V_r	(k)	26.3

INTERIOR GIRDER REACTION TABLE		
		Abutment
R_{DC1}	(k)	38.4
R_{DC2}	(k)	1.4
R_{DW}	(k)	13.8
$R_{℄+IM}$	(k)	81.6
R_{Total}	(k)	135.2

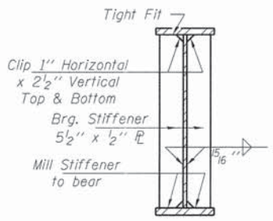
I_s, S_s: Non-composite moment of inertia and section modulus of the steel section used for computing f_s (Total-Strength I, and Service II) due to non-composite dead loads ($in.^4$ and $in.^3$).
$I_c(n)$, $S_c(n)$: Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing f_s (Total-Strength I, and Service II) in uncracked sections due to short-term composite live loads ($in.^4$ and $in.^3$).
$I_c(3n)$, $S_c(3n)$: Composite moment of inertia and section modulus of the steel and deck based upon 3 times the modular ratio, "3n", used for computing f_s (Total-Strength I, and Service II) in uncracked sections, due to long-term composite (superimposed) dead loads ($in.^4$ and $in.^3$).
$I_c(cr)$, $S_c(cr)$: Composite moment of inertia and section modulus of the steel and longitudinal deck reinforcement, used for computing f_s (Total-Strength I and Service II) in cracked sections, due to both short-term composite live loads and long-term composite (superimposed) dead loads ($in.^4$ and $in.^3$).
DC1: Un-factored non-composite dead load (kips/ft.).
M_{DC1}: Un-factored moment due to non-composite dead load (kip-ft.).
DC2: Un-factored long-term composite (superimposed excluding future wearing surface) dead load (kips/ft.).
M_{DC2}: Un-factored moment due to long-term composite (superimposed excluding future wearing surface) dead load (kip-ft.).
DW: Un-factored long-term composite (superimposed future wearing surface only) dead load (kips/ft.).
M_{DW}: Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load (kip-ft.).
$M_{℄+IM}$: Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).
M_u (Strength I): Factored design moment (kip-ft.).
$1.25\ (M_{DC1} + M_{DC2}) + 1.5\ M_{DW} + 1.75\ M_{℄+IM}$
$\phi_f M_n$: Compact composite positive moment capacity computed according to Article 6.10.7.1 or non-slender negative moment capacity according to Article A6.1.1 or A6.1.2 (kip-ft).
f_s DC1: Un-factored stress at edge of flange for controlling steel flange due to vertical non-composite dead loads as calculated below (ksi).
M_{DC1} / S_{nc}
f_s DC2: Un-factored stress at edge of flange for controlling steel flange due to vertical composite dead loads as calculated below (ksi).
$M_{DC2} / S_c(3n)$ or $M_{DC2} / S_c(cr)$ as applicable.
f_s DW: Un-factored stress at edge of flange for controlling steel flange due to vertical composite future wearing surface loads as calculated below (ksi).
$M_{DW} / S_c(3n)$ or $M_{DW} / S_c(cr)$ as applicable.
f_s (℄+IM): Un-factored stress at edge of flange for controlling steel flange due to vertical composite live load plus impact loads as calculated below (ksi).
$M_{℄+IM} / S_c(n)$ or $M_{DW} / S_c(cr)$ as applicable.
f_s (Service II): Sum of stresses as computed below (ksi).
$f_{sDC1} + f_{sDC2} + f_{sDW} + 1.3\ f_s(℄+IM)$
$0.95R_hF_{yf}$: Composite stress capacity for Service II loading according to Article 6.10.4.2 (ksi).
f_s (Total)(Strength I): Sum of stresses as computed below on non-compact section (ksi).
$1.25\ (f_{sDC1} + f_{sDC2}) + 1.5\ f_{sDW} + 1.75\ f_s(℄+IM)$
$\phi_f F_n$: Non-Compact composite positive or negative stress capacity for Strength I loading according to Article 6.10.7 or 6.10.8 (ksi).
V_r: Maximum factored shear range in span computed according to Article 6.10.10.



TYP. END OF GIRDER ELEVATION



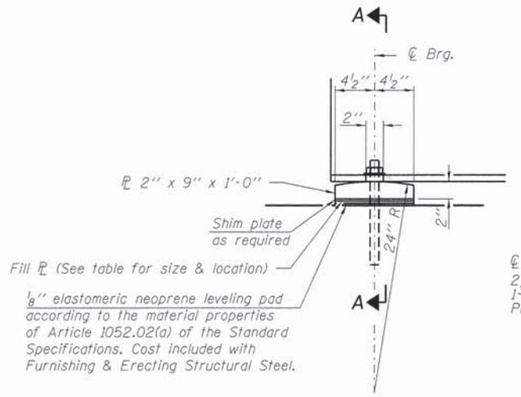
SECTION B-B



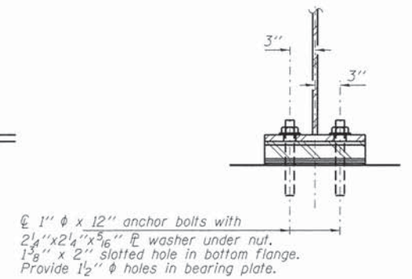
SECTION AT ABUTMENT BEARING STIFFNER ℄'S

Notes:
For additional structural steel details see sheets 8 & 10 of 13.
All diaphragms and connecting plates or angles, including stiffeners, shall be AASHTO M270, Grade 50W.

FILE NAME = 148323-sht-bridge.dgn	USER NAME =	DESIGNED - T.J.A.	REVISED -	STATE OF ILLINOIS WABASH COUNTY HIGHWAY DEPARTMENT	STRUCTURAL STEEL DETAILS STRUCTURE NO. 093-3138	T.R. 95	SECTION 14-03115-00-BR	COUNTY WABASH	TOTAL SHEETS 16	SHEET NO. 12
3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 217.546.3400 www.hlrengineering.com 184.000959 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORPORATION		CHECKED - D.W.T.	REVISED -						CONTRACT NO. 95771	
	PLOT SCALE =	DRAWN - D.A.B.	REVISED -		SHEET NO. 9 OF 13 SHEETS				ILLINOIS FED. AID PROJECT	
	PLOT DATE = 12/7/2015	CHECKED - M.D.C.	REVISED -							



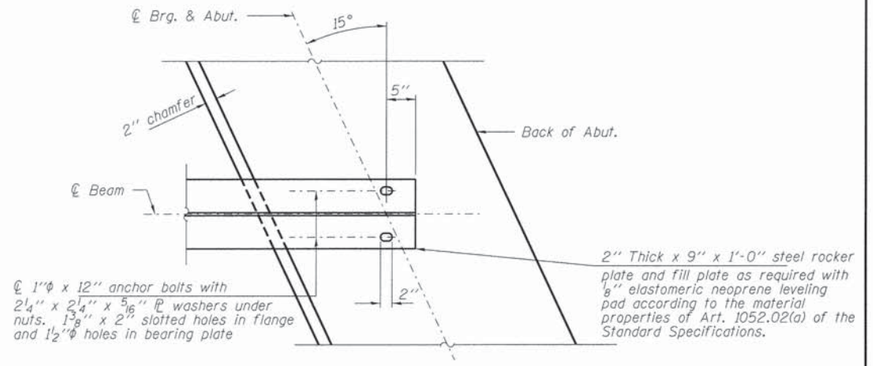
ELEVATION



SECTION A-A

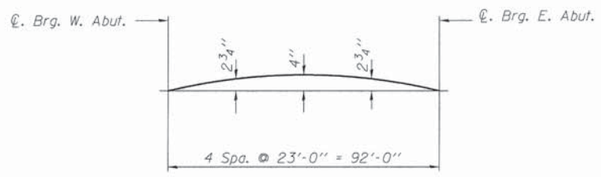
FIXED BEARING AT ABUTMENT

(10 required)



PLAN

(Showing bottom flange of steel beam at abutments)



CAMBER DIAGRAM

Notes:

Two ⅛" adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.

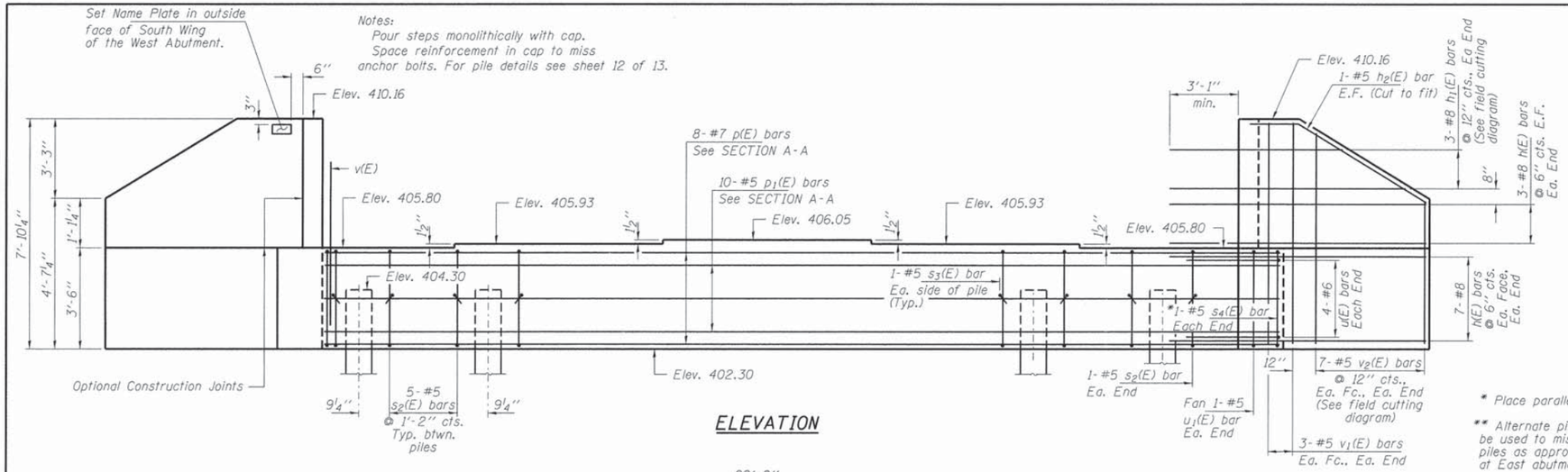
Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.

Anchor bolts at fixed bearings may be either cast in place or installed in holes drilled after the supported member is in place.

All steel plates of the bearing assembly shall be M270 Grade 50W.

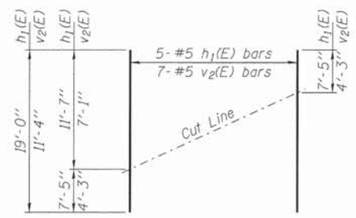
Drilled and set anchor bolts shall be installed according to Art. 521.06 of the Standard Specifications.

FILE NAME = 140323-sht-bridge.dgn	USER NAME =	DESIGNED - T.J.A.	REVISED -	STATE OF ILLINOIS WABASH COUNTY HIGHWAY DEPARTMENT	STRUCTURAL STEEL DETAILS STRUCTURE NO. 093-3138	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 217.546.3400 www.hlrengineering.com 184.000930 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORPORATION		CHECKED - D.W.T.	REVISED -			95	14-03115-00-BR	WABASH	16	13
	PLOT SCALE =	DRAWN - D.A.B.	REVISED -					CONTRACT NO. 95771		
	PLOT DATE = 12/7/2015	CHECKED - M.D.C.	REVISED -		SHEET NO. 10 OF 13 SHEETS			ILLINOIS FED. AID PROJECT		



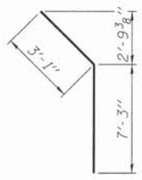
PILE DATA

Type: Steel HP12x53 /w Pile Shoes
Nominal Required Bearing: 419 Kips/pile
Factored Resistance Available: 230 Kips/pile
Est. Length: 45'
No. Production Piles: 10
No. Test Piles: 0

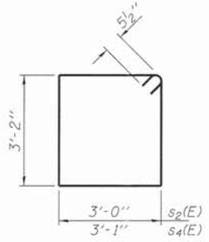


FIELD CUTTING DIAGRAM

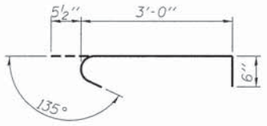
Order $h_1(E)$ and $v_2(E)$ full length. Cut as shown and use remainder of bars in opposite face.



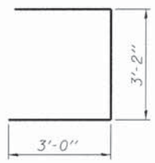
BAR $h_2(E)$



BARS $s_2(E)$ & $s_4(E)$



BAR $s_3(E)$



BARS $u_1(E)$

BILL OF MATERIAL - 2 ABUTS.

Bar	No.	Size	Length	Shape
h(E)	80	#8	13'-1"	
$h_1(E)$	12	#8	19'-0"	
$h_2(E)$	8	#5	10'-4"	
p(E)	16	#7	28'-8"	
$p_1(E)$	20	#5	28'-8"	
$s_2(E)$	44	#5	13'-3"	
$s_3(E)$	20	#5	4'-0"	
$s_4(E)$	4	#5	13'-5"	
u(E)	16	#6	10'-9"	
$u_1(E)$	4	#5	9'-2"	
v(E)	116	#8	5'-11"	
$v_1(E)$	24	#5	7'-6"	
$v_2(E)$	28	#5	11'-4"	
Protective Coat		Sq. Yd.	34	
Concrete Structures		Cu. Yd.	35.6	
Reinforcement Bars, Epoxy Coated		Pound	8,420	
Furnishing Steel Piles, HP12x53		Foot	450	
Driving Piles		Foot	450	
Pile Shoes		Each	10	

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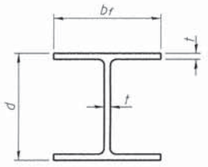
FILE NAME = 140323-sht-bridge.dgn	USER NAME =	DESIGNED - T.J.A.	REVISED -
		CHECKED - D.W.T.	REVISED -
	PLOT SCALE =	DRAWN - D.A.B.	REVISED -
	PLOT DATE = 12/7/2015	CHECKED - M.D.C.	REVISED -

STATE OF ILLINOIS
WABASH COUNTY HIGHWAY DEPARTMENT

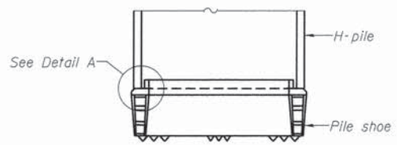
ABUTMENTS
STRUCTURE NO. 093-3138
SHEET NO. 11 OF 13 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
95	14-03115-00-BR	WABASH	16	14
		CONTRACT NO. 95771		
		ILLINOIS FED. AID PROJECT		

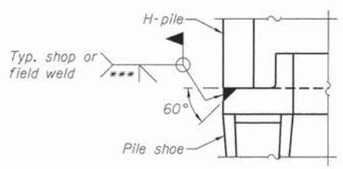


STEEL PILE TABLE

Designation	Depth d	Flange width br	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	13/16"	30"
x102	14"	14 3/4"	11/16"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 5/8"	14 5/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	11/16"	24"
x74	12 1/8"	12 1/4"	5/8"	24"
x63	12"	12 1/8"	1/2"	24"
x53	11 3/4"	12"	7/16"	24"
HP 10x57	10"	10 1/4"	9/16"	24"
x42	9 3/4"	10 1/8"	7/16"	24"
HP 8x36	8"	8 1/8"	7/16"	18"

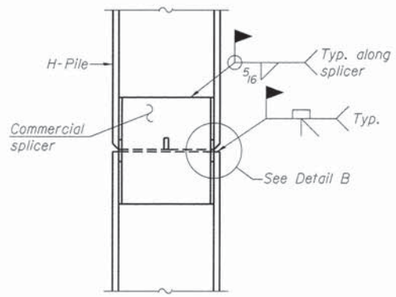


ELEVATION



DETAIL A

H-PILE SHOE ATTACHMENT



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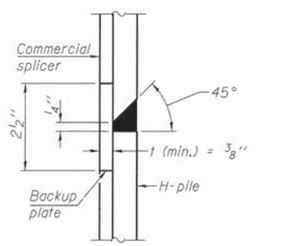
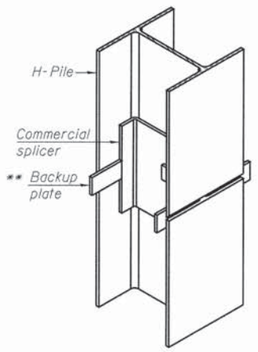
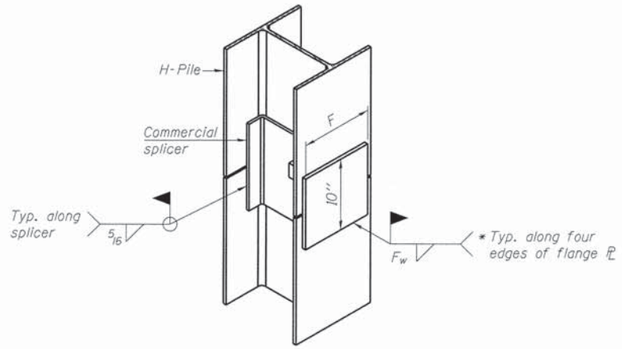


DETAIL "B"



ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE



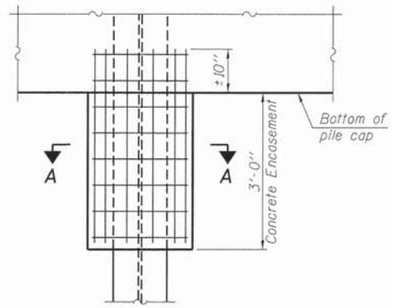
ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE ALTERNATE

* 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.).



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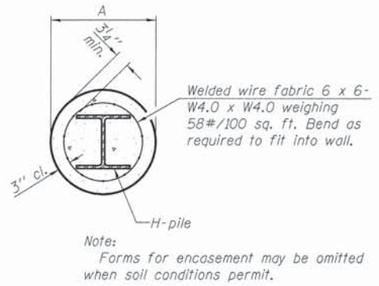
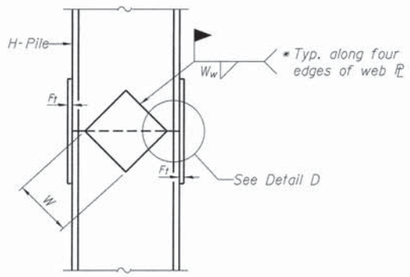


Note:
Forms for encasement may be omitted when soil conditions permit.

SECTION A-A

PILE ENCASEMENT



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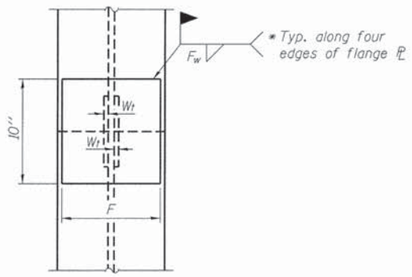
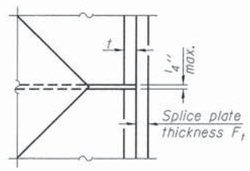


END VIEW



DETAIL D

Designation	F	Ft	Fw	W	Wt	Ww
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

3085 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
217.546.3400 www.hlrengineering.com
184.000959
ILLINOIS PROFESSIONAL DESIGN FIRM
LS / PE / SE CORPORATION

FILE NAME = 140323-sht-bridge.dgn	USER NAME =	DESIGNED - T.J.A.	REVISED -
		CHECKED - D.W.T.	REVISED -
	PLOT SCALE =	DRAWN - D.A.B.	REVISED -
	PLOT DATE = 12/7/2015	CHECKED - M.D.C.	REVISED -

STATE OF ILLINOIS
WABASH COUNTY HIGHWAY DEPARTMENT

HP PILE DETAILS
STRUCTURE NO. 093-3138
SHEET NO. 12 OF 13 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
95	14-03115-00-BR	WABASH	16	15
		CONTRACT NO. 95771		
		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 2

Bridge Foundation Boring Log

Project: H-13277 Bridge Co Rd 1800 N over Crawfish Creek Date: 1/17/2014
Section: Station
Structure: 093-3044 Bored by: B. Schwartz
County: Wabash Checked By: T. Holcomb

Boring No: 1
Station:
Offset:

Surface Water Elev.
Ground Water Elev. During Drilling 385.6 Plugged @
Upon Completion 396.1

Material	Elevation	N	Qu tsf	w %
Ground Surface	409.1	0		
4" Topsoil				
Brown Sandy CLAY (A-6)		8	1.6B	19
		4	0.4B	20
	400.6	3	0.5B	23
Gray Mottled Brown Sandy CLAY (A-6)		5	0.8B	20
	398.1			
Brown Silty CLAY (A-6)		10	2.2B	23
		10	2.7B	24
		11	3.3B	21
	390.6			
Gray Sandy CLAY (A-6)		12	0.6B	23
	365.6			
Gray Weathered SHALE	365.1	100/6"	---	10
Gray Weathered SANDSTONE				

Material	Elevation	N	Qu tsf	w %
sandy clay (continued)		21	1.5B	13
		40	5.0S	13
		33	5.9B	12
		26	4.1B	14
		25	3.5B	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 B-1

HOLCOMB FOUNDATION ENGINEERING INC.
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Page 2 of 2

Bridge Foundation Boring Log

Project: H-13277 Bridge Co Rd 1800 N over Crawfish Creek Date: 1/17/2014
Section: Station
Structure: 093-3044 Bored by: B. Schwartz
County: Wabash Checked By: T. Holcomb

Boring No: 1
Station:
Offset:

Surface Water Elev.
Ground Water Elev. During Drilling 385.6 Plugged @
Upon Completion 396.1

Material	Elevation	N	Qu tsf	w %
sandstone (continued)		100/5"	---	9
	360.1	100/5"	---	15
End of Boring @ -49.0'				

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

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Page 1 of 1

Bridge Foundation Boring Log

Project: H-13277 Bridge Co Rd 1800 N over Crawfish Creek Date: 1/17/2014
Section: Station
Structure: 093-3044 Bored by: B. Schwartz
County: Wabash Checked By: T. Holcomb

Boring No: 2
Station:
Offset:

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

Material	Elevation	N	Qu tsf	w %
Ground Surface	408.4	0		
3" Crushed Stone				
Brown Silty CLAY (A-6)		8	1.5B	22
		6	2.1B	16
	399.9	7	2.0B	21
Gray Silty CLAY to CLAY (A-6) with sand		4	1.0B	27
		3	0.7B	28
		3	0.8B	27
	389.9			
Brown Sandy CLAY (A-6)		3	0.8S	35
	387.4			
Brown Mottled Gray Sandy CLAY (A-6)		16	1.7B	13

Material	Elevation	N	Qu tsf	w %
fat clay (continued)		32	3.5B	12
	382.7			
Gray Sandy CLAY (A-6) with pebbles		29	5.5B	11
		26	5.6B	13
	369.9			
Gray Weathered SHALE		100/6"	---	7
		100/3"	---	9
	364.4	100/3"	---	11
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 B-2

FILE NAME = 140323-sht-bridge.dgn	USER NAME =	DESIGNED - T.J.A.	REVISED -	
3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 217.546.3400 www.hlrengineering.com		CHECKED - D.W.T.	REVISED -	
184.000959 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORPORATION	PLOT SCALE =	DRAWN - D.A.B.	REVISED -	
	PLOT DATE = 12/7/2015	CHECKED - M.D.C.	REVISED -	

STATE OF ILLINOIS
WABASH COUNTY HIGHWAY DEPARTMENT

BORINGS
STRUCTURE NO. 093-3138
SHEET NO. 13 OF 13 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
95	14-03115-00-BR	WABASH	16	16
		CONTRACT NO. 95771		
		ILLINOIS FED. AID PROJECT		