

INDEX OF SHEETS 04-25-14 LETTING ITEM 145 STATE OF ILLINOIS

SHEET NO.	DESCRIPTION
1	TITLE SHEET & SUMMARY OF QUANTITIES
2	PLAN & PROFILE, TYPICAL SECTIONS, GENERAL
3-4	NOTES & STONE RIPRAP DITCH DESIGN
5-13	ROADWAY CROSS SECTIONS BRIDGE DESIGN

HIGHWAY STANDARDS

000001-06	STANDARD SYMBOLS, ABBREVIATIONS & PATTERNS
280001-07	TEMPORARY EROSION CONTROL SYSTEMS
515001-03	NAME PLATE FOR BRIDGES
542306-02	PRECAST REINFORCED CONCRETE ELLIPTICAL FLARED END SECTION
635006-03	TRAFFIC CONTROL DEVICES
701901-03	REFLECTOR AND TERMINAL MARKER PLACEMENT
B.L.R. 21-9	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS
B.L.R. 22-7	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS (TWO-LANE TWO-WAY RURAL TRAFFIC) (ROAD CLOSED TO THRU TRAFFIC)

SUMMARY OF QUANTITIES

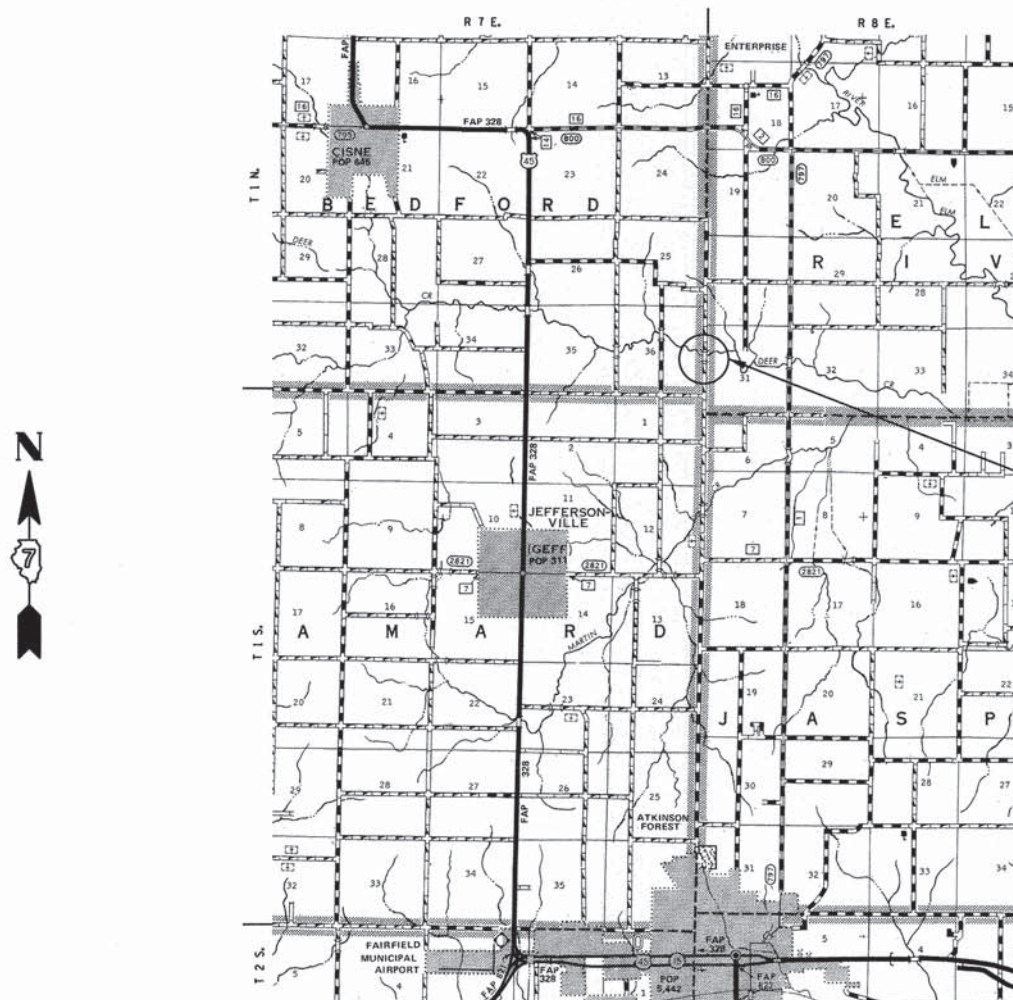
QUANTITY	UNIT	ITEM	CODE NO.
59.00	UNIT	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	20100110
230.00	UNIT	TREE REMOVAL (OVER 15 UNITS DIAMETER)	20100210
0.10	ACRE	TREE REMOVAL, ACRES	20100500
566.00	CU YD	EARTH EXCAVATION	20200100
100.00	CU YD	CHANNEL EXCAVATION	20300100
1072.00	CU YD	FURNISHED EXCAVATION	20400800
28.00	FOOT	TEMPORARY DITCH CHECKS	28000305
830.00	TON	STONE DUMPED RIPRAP, CLASS A4	28100807
365.00	TON	AGGREGATE SURFACE COURSE, TYPE B	40200800
1.00	EACH	REMOVAL OF EXISTING STRUCTURES	50100100
23.80	CU YD	CONCRETE STRUCTURES	50300225
2.80	CU YD	CONCRETE ENCASEMENT	50300280
1680.00	SQ FT	PRECAST PRESTRESSED CONCRETE DECK BEAMS (27" DEPTH)	50400505
2520.00	POUND	REINFORCEMENT BARS	50800105
136.00	FOOT	STEEL RAILING, TYPE S1	50900205 *
420.00	FOOT	FURNISHING STEEL PILES HP10X42	51201400
420.00	FOOT	DRIVING PILES	51202305
1.00	EACH	TEST PILE STEEL HP10X42	51203400
1.00	EACH	NAME PLATES	51500100
28.00	FOOT	PIPE CULVERTS, CLASS A, TYPE 1 EQUIVALENT ROUND-SIZE 42"	542A5497
2.00	EACH	PRECAST REINFORCED CONCRETE FLARED END SECTIONS, EQUIVALENT ROUND-SIZE 42"	54214527
460.00	FOOT	WOVEN WIRE FENCE, 4'	66500105 *
1.00	L SUM	MOBILIZATION	67100100
4.00	EACH	TERMINAL MARKER - DIRECT APPLIED	78201000 *
0.60	ACRE	SEEDING, CLASS 2 (SPECIAL)	X2501000
925.00	FOOT	FENCE REMOVAL	Z0022800
262.00	TON	STONE LINED DITCH	Z0068900

\* SPECIALTY ITEMS



Know what's below.  
Call before you dig.

DESIGN DESIGNATION:  
DESIGN SPEED: 30 MPH  
HIGHWAY CLASS - LOCAL ROAD  
EXISTING STRUCTURE NO.: 096-3168  
PROPOSED STRUCTURE NO.: 096-3459  
CURRENT A.D.T. = 125  
CONTRACT NO. 95724



LAYOUT  
APPROXIMATE SCALE 1 INCH = 1 MILE



GROSS LENGTH	625.00 FT	0.118 MILES
OMISSIONS	0.00 FT	0.000 MILES
NET LENGTH	625.00 FT	0.118 MILES

T.R. 426 WAYNE COUNTY SECTION 10-06119-00-BR  
PROJECT NO. BROS-0191(067) JOB NO. C-97-051-13  
CONTRACT #95724 DEER CREEK

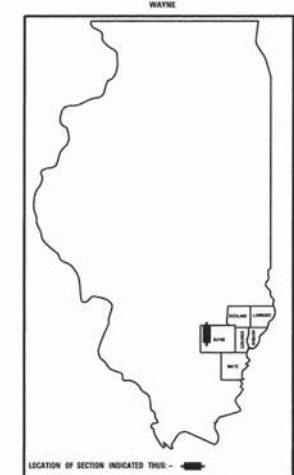
T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
426	10-06119-00-BR	WAYNE	13	1

323 W. 3RD ST.  
P.O. BOX 100  
MT. CARMEL, IL  
62863  
PHONE:  
(618)-262-8651  
FAX:  
(618)-263-3327

PROFESSIONAL  
DESIGN FIRM  
LAND SURVEY &  
PROFESSIONAL  
ENGINEERING  
CORPORATION  
184-00087  
(62-032435)(35-002769)



AARON M. MEFFORD  
NAME  
SIGNATURE  
DATE  
1-21-14  
11-30-15  
EXPIRES



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

SECTION 10-06119-00-BR  
BEGINS STATION 1+65

STATION 5+00, STRUCTURE NO. 096-3459  
A 70' LONG SINGLE SPAN PRECAST  
PRESTRESSED CONCRETE DECK BEAM BRIDGE  
(27" DEPTH), 24' ROADWAY, 10' LT FWD SKEW.

SECTION 10-06119-00-BR  
ENDS STATION 7+90

APPROVED January 21 20 14  
Debra S. Bell  
COUNTY ENGINEER

PASSED 2-18 20 14  
Maurice J. East  
DISTRICT SEVEN ENGINEER OF  
LOCAL ROADS & STREETS

Releasing For  
Bid Based on  
Limited Review 2-18 20 14  
Robert L. Duibel  
DEPUTY DIRECTOR OF HIGHWAYS,  
REGION FOUR ENGINEER

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

DEER CREEK  
TOWNSHIP ROUTE 426  
WAYNE COUNTY, ILLINOIS

SHEET TITLE:  
TITLE SHEET

SCALE: WRES  
BY: AMM  
DATE: 12/14  
REV:

1 OF 13  
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 70 FOOT LONG SINGLE SPAN PRECAST STRESSED CONCRETE DECK BEAM BRIDGE, EARTH APPROACHES, AGGREGATE SURFACE COURSE AND OTHER MISCELLANEOUS ITEMS NECESSARY TO COMPLETE THIS SECTION.

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

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

NOTE: CONSTRUCTION TRANSITIONS  
 STA. 1+65 TO STA. 2+15  
 STA. 7+40 TO STA. 7+90  
 ALL QUANTITIES ARE INCLUDED IN THE PROPOSAL

P.I. STA= 3+27.45  
 $\Delta = 00^{\circ}40'01''$  RT

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
426	10-06119-00-BR	WAYNE	13	2
FED. ROAD DIST. NO. 7		ILLINOIS	DEER CREEK	
PROJECT # BR05-0191067		CONTRACT # 95724		
LEC JOB # H2101618A				

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

PROFESSIONAL DESIGN FIRM  
 LAND SURVEY &  
 PROFESSIONAL  
 ENGINEERING CORPORATION  
 184-00087  
 (62-032435)(35-002769)

**LAMAC**  
 ENGINEERING CO.



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

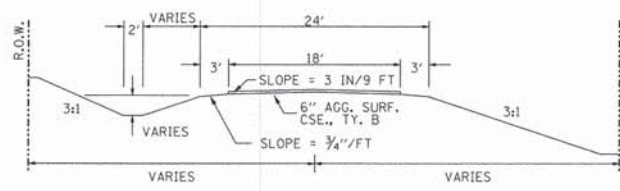
DEER CREEK  
 TOWNSHIP ROUTE 426  
 WAYNE COUNTY, ILLINOIS

SHEET TITLE:  
 PLAN & PROFILE

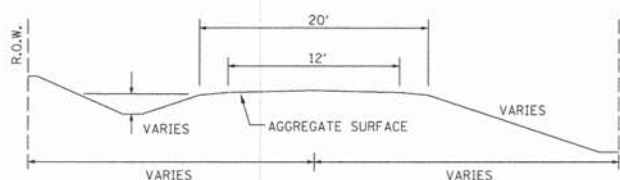
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 BY: AMM  
 DATE: 10/14  
 REV:

2 OF 13  
 SHEETS  
 SHEET NO.  
 2

**TYPICAL CROSS SECTION PROPOSED**



**TYPICAL CROSS SECTION EXISTING**



NOTE: FENCE REMOVAL

STA 1+87 TO STA 4+75 LT  
 STA 1+87 TO STA 4+04 RT  
 STA 5+30 TO STA 7+10 LT  
 STA 5+30 TO STA 7+63 RT

STATION TO	STATION	LOCATION	QUANTITY
1+87	4+75	LT	100
1+87	4+04	RT	90
5+30	7+10	LT	134
5+30	7+63	RT	136
TOTAL =			460 FEET

**TREE REMOVAL, ACRES SCHEDULE**

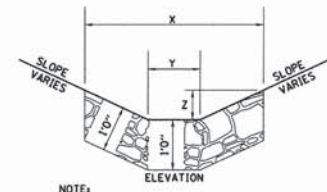
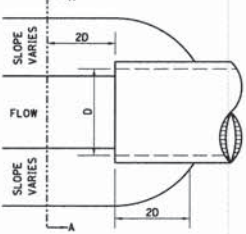
STATION	LOCATION	QUANTITY
5+29 TO 7+61	LT	0.1

**TREE REMOVAL SCHEDULE**

STATION	LOCATION	QUANTITY
2+58.4	LT	30
2+70.2	LT	18
2+91.1	LT	6
3+29.9	LT	8
3+31.1	LT	8
3+44.6	LT	8
3+51.9	LT	14
4+09.1	LT	48
4+26.6	LT	42
4+53.0	LT	36
4+53.3	LT	15
4+69.3	LT	18
4+72.8	LT	20
4+76.7	LT	18
TOTAL =		289 UNITS

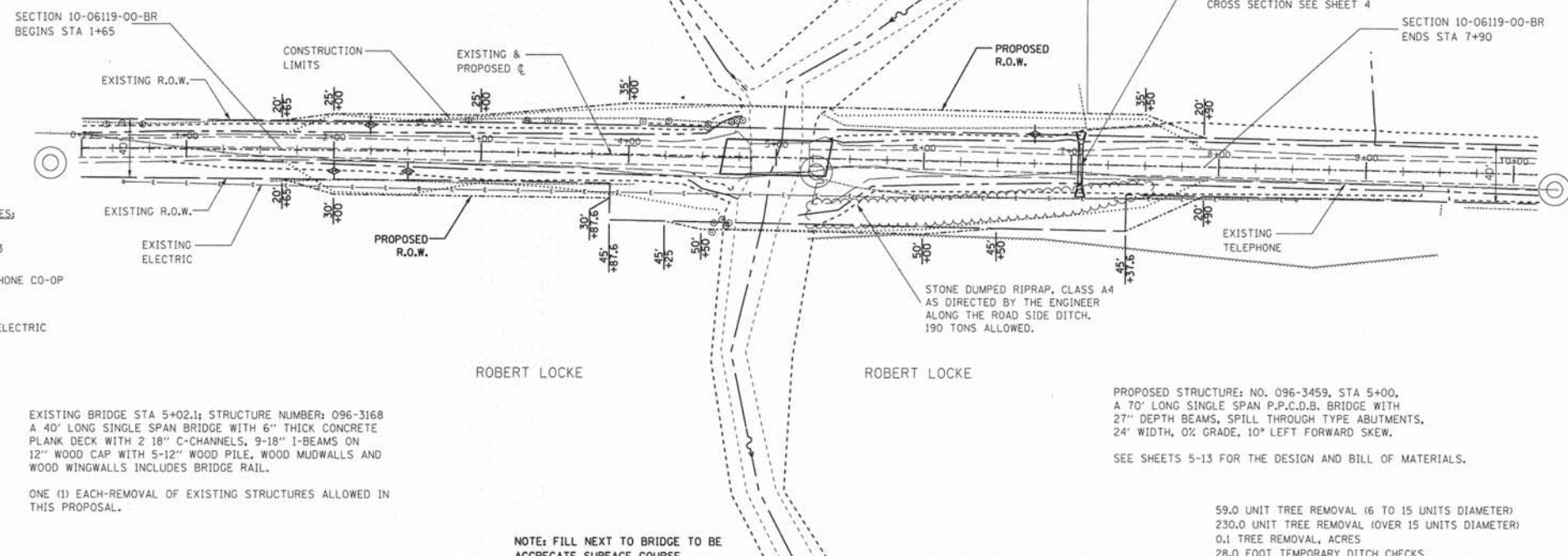
SEE STONE LINED DITCH DETAIL.

**STONE LINED DITCH DESIGN**



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

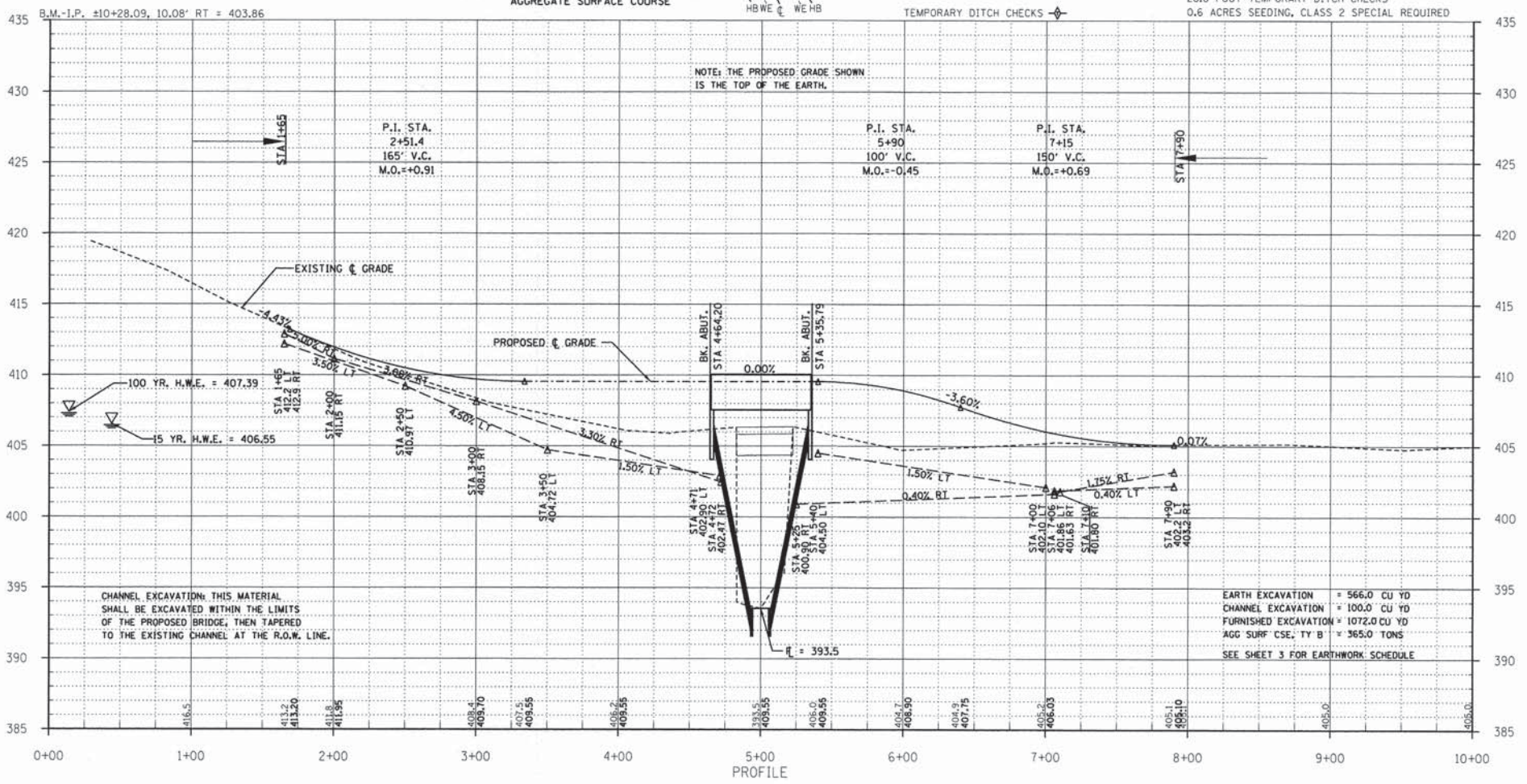
NOTE: FOR PLACEMENT, QUALITY GRADATION AND OTHER MISCELLANEOUS REQUIREMENTS FOR STONE LINED DITCH-SEE SPECIAL PROVISIONS.



EXISTING BRIDGE STA 5+02.1; STRUCTURE NUMBER: 096-3168  
 A 40' LONG SINGLE SPAN BRIDGE WITH 6" THICK CONCRETE PLANK DECK WITH 2 18" C-CHANNELS, 9-18" I-BEAMS ON 12" WOOD CAP WITH 5-12" WOOD PILE, WOOD MUDWALLS AND WOOD WINGWALLS INCLUDES BRIDGE RAIL.

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

NOTE: FILL NEXT TO BRIDGE TO BE AGGREGATE SURFACE COURSE



CHANNEL EXCAVATION: THIS MATERIAL SHALL BE EXCAVATED WITHIN THE LIMITS OF THE PROPOSED BRIDGE, THEN TAPERED TO THE EXISTING CHANNEL AT THE R.O.W. LINE.

EARTH EXCAVATION = 566.0 CU YD  
 CHANNEL EXCAVATION = 100.0 CU YD  
 FURNISHED EXCAVATION = 1072.0 CU YD  
 AGG SURF CSE, TY B = 365.0 TONS  
 SEE SHEET 3 FOR EARTHWORK SCHEDULE



T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
426	10-06119-00-BR	WAYNE	13	3
FED. ROAD DIST. NO. 7 ILLINOIS		DEER CREEK		
PROJECT • BROS-015H0671		CONTRACT • 95724		
LEC JOB • HIZILOI6WA				

323 W. 3RD ST.  
P.O. BOX 160  
MT. CARMEL, IL  
62863  
PHONE:  
(618)-262-8651  
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PROFESSIONAL DESIGN FIRM  
LAND SURVEY & PROFESSIONAL ENGINEERING CORPORATION  
184-00087  
(62-032435)(35-002769)



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

DEER CREEK  
TOWNSHIP ROUTE 426  
WAYNE COUNTY, ILLINOIS

SHEET TITLE:

CROSS-SECTIONS

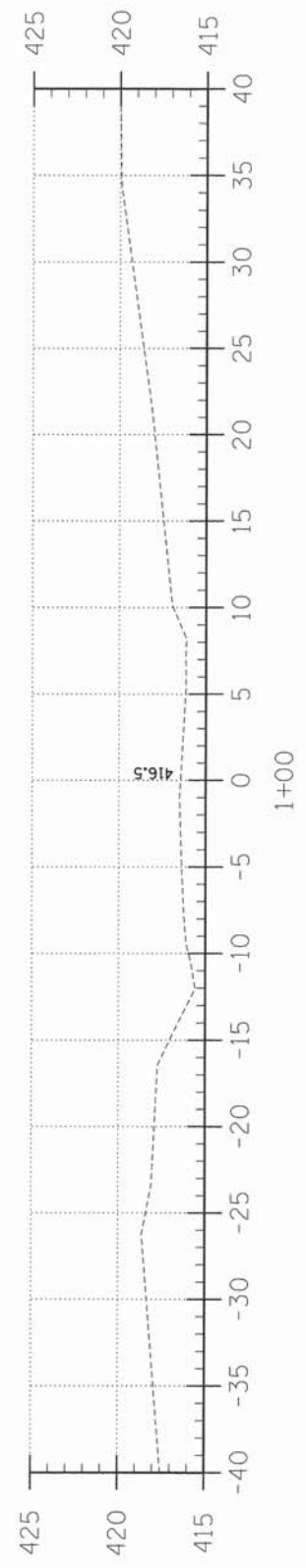
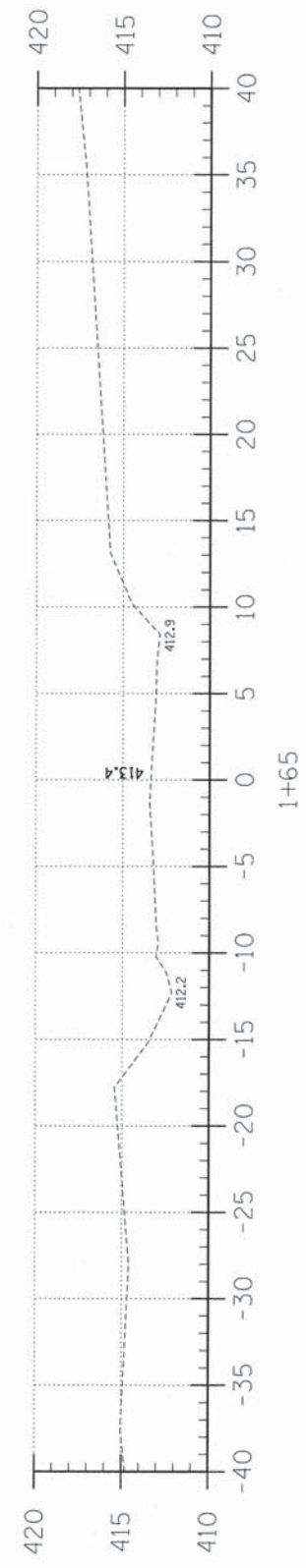
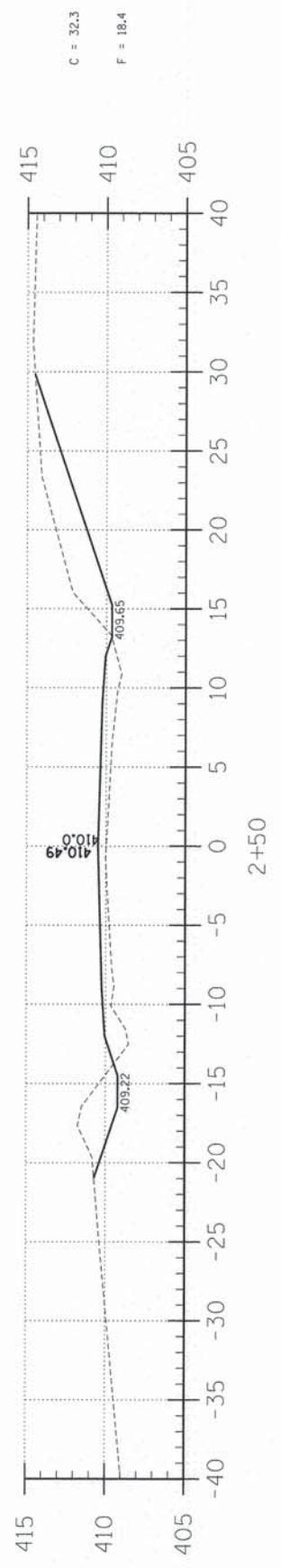
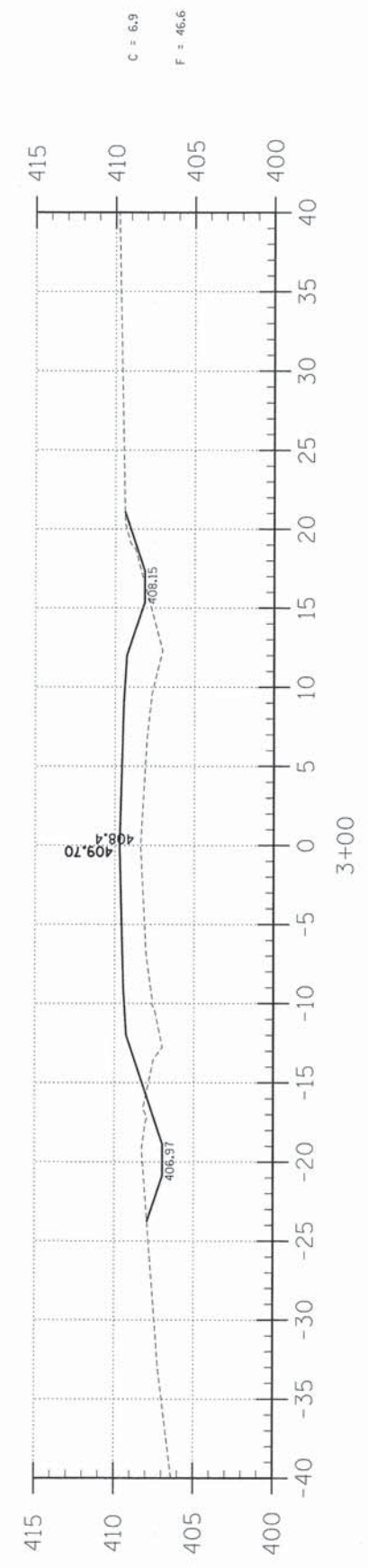
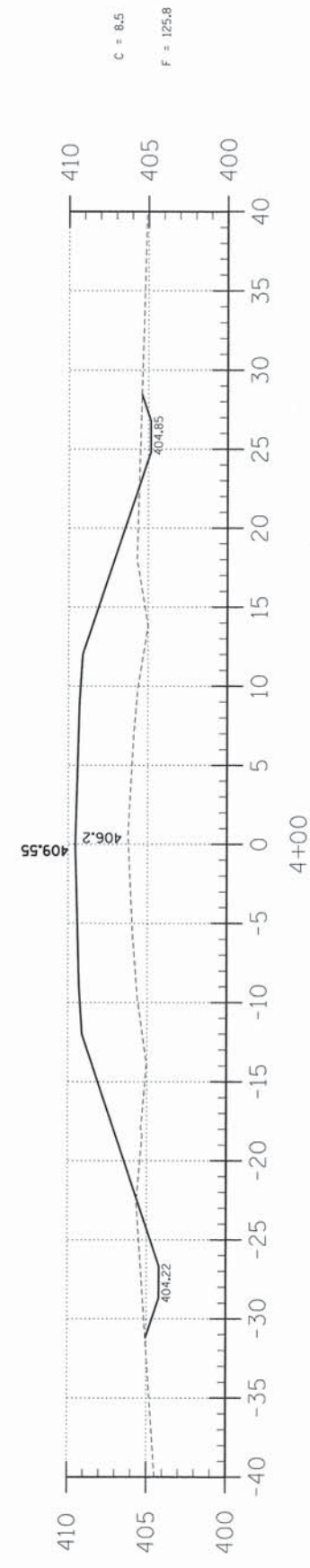
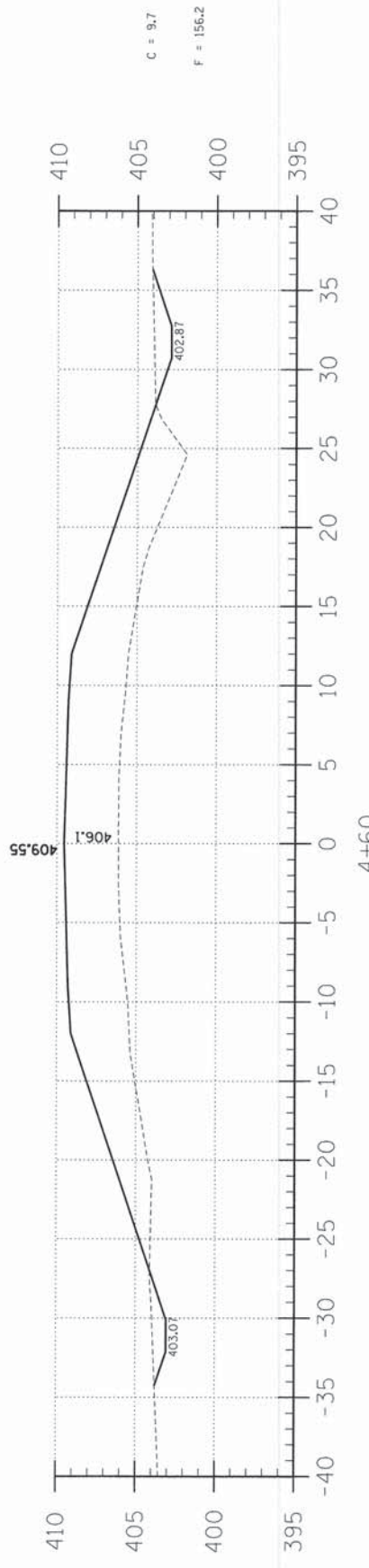
SCALE: 1" = 5'  
BY: AMM  
DATE: 10/14  
REV:

3 OF 13 SHEETS

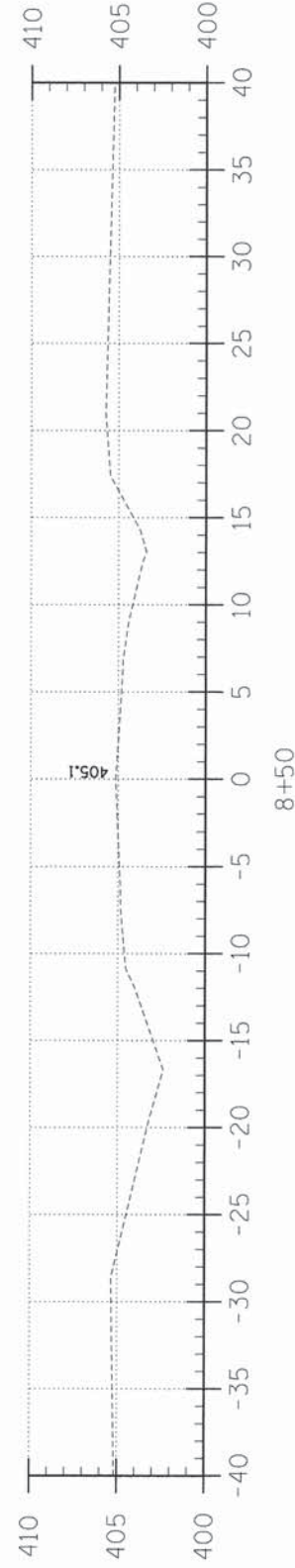
SHEET NO. 3

EARTHWORK SCHEDULE

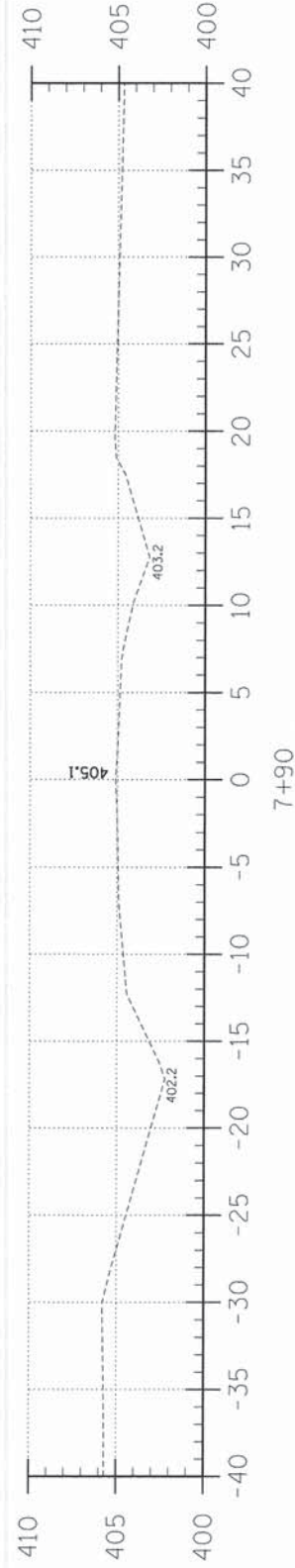
LOCATION	EARTH EXCAVATION		CHANNEL EXCAVATION		ESTIMATED UNSUITABLE MATERIAL		SUITABLE MATERIAL ADJUSTED FOR SHRINKAGE		EMBANKMENT		EARTHWORK BALANCE WASTE (+) OR SHORTAGE (-)	
	CUBIC YARD		CUBIC YARD		CUBIC YARD		CUBIC YARD		CUBIC YARD		CUBIC YARD	
STA 0+00 TO 4+64.2	194.8	0.0	0.0	0.0	0.0	146.1	714.2	-568.1				
STA 4+64.2 TO 5+35.8	0.0	100.0	0.0	50.0	37.5	278.6	819.6	37.5				
STA 5+35.8 TO 10+00	371.4	0.0	0.0	0.0	0.0	462.2	1533.8	-1071.6				
TOTAL	566.2	100.0	50.0	462.2	1533.8	-1071.6						



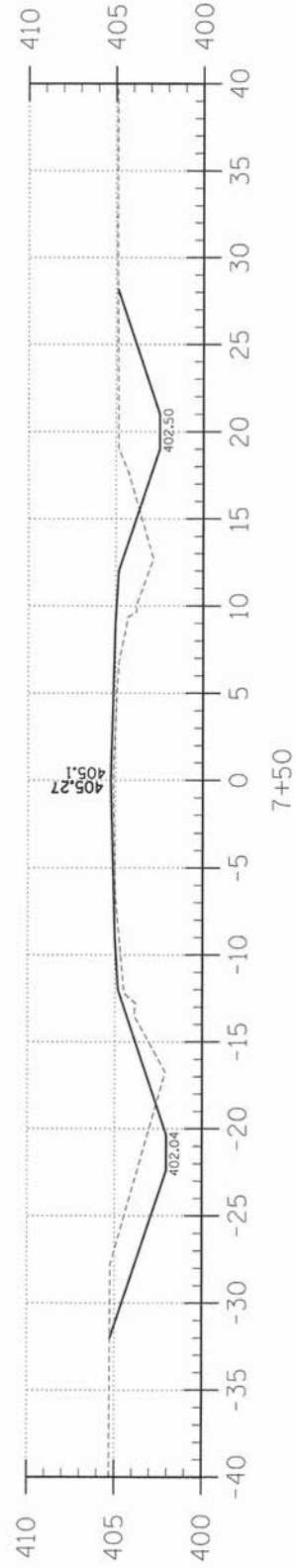




8+50

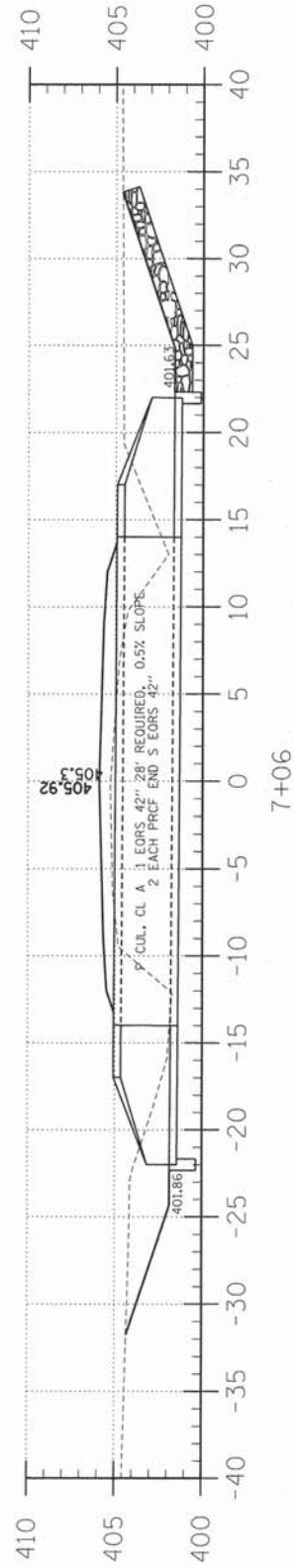


7+90

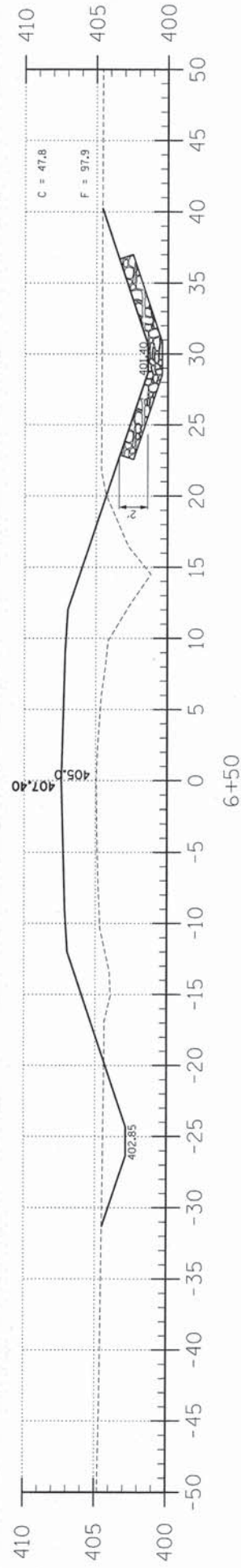


7+50

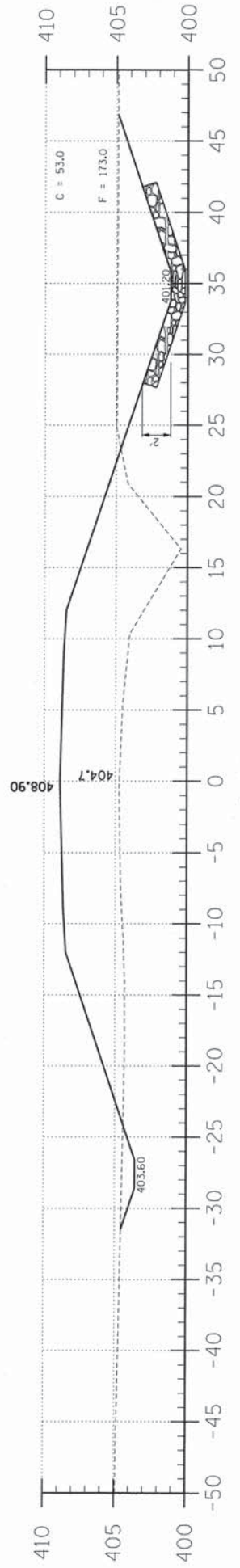
C = 32.1  
F = 16.2



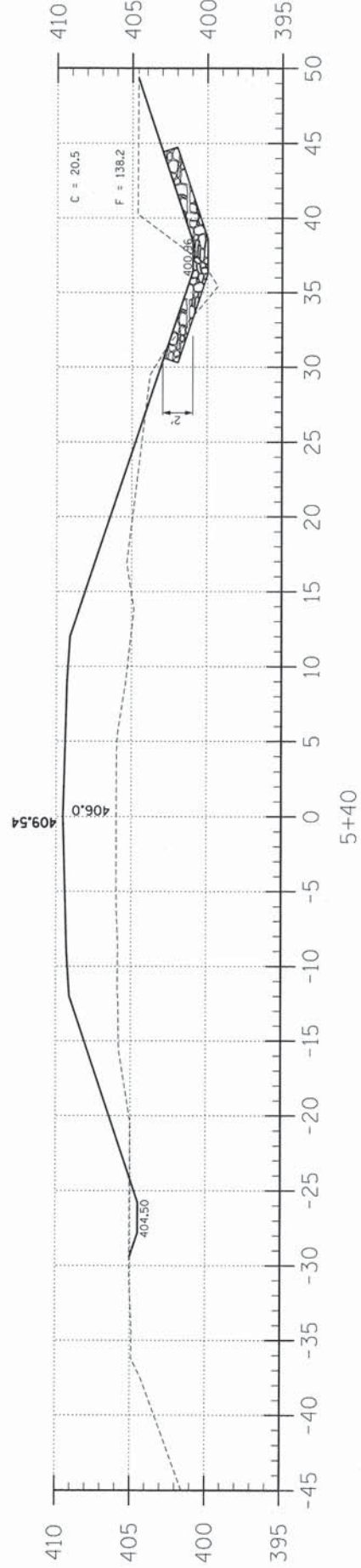
7+06



6+50



6+00



5+40

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
426	10-06119-00-BR	WAYNE	13	4
FED. ROAD DIST. NO. 7 ILLINOIS			DEER CREEK	
PROJECT # BR05-0191067			CONTRACT # 95724	
LEC JOB # H21016#A				

323 W. 3RD ST.  
P.O. BOX 160  
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62863  
PHONE:  
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FAX:  
(618)-263-3327

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



AARON M. MEFFORD  
NAME  
SIGNATURE  
DATE  
11-30-11  
EXPIRES

DEER CREEK  
TOWNSHIP ROUTE 426  
WAYNE COUNTY, ILLINOIS

SHEET TITLE:

CROSS-SECTIONS

SCALE: 1" = 5'  
BY: AMM  
DATE: 10/04  
REV:

4 OF 13  
SHEETS

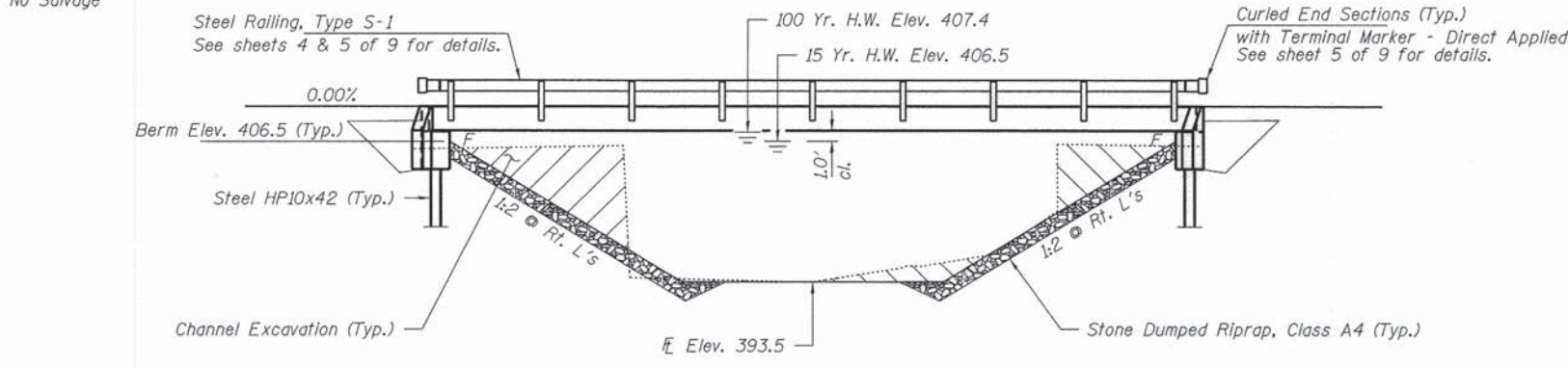
SHEET NO.  
4



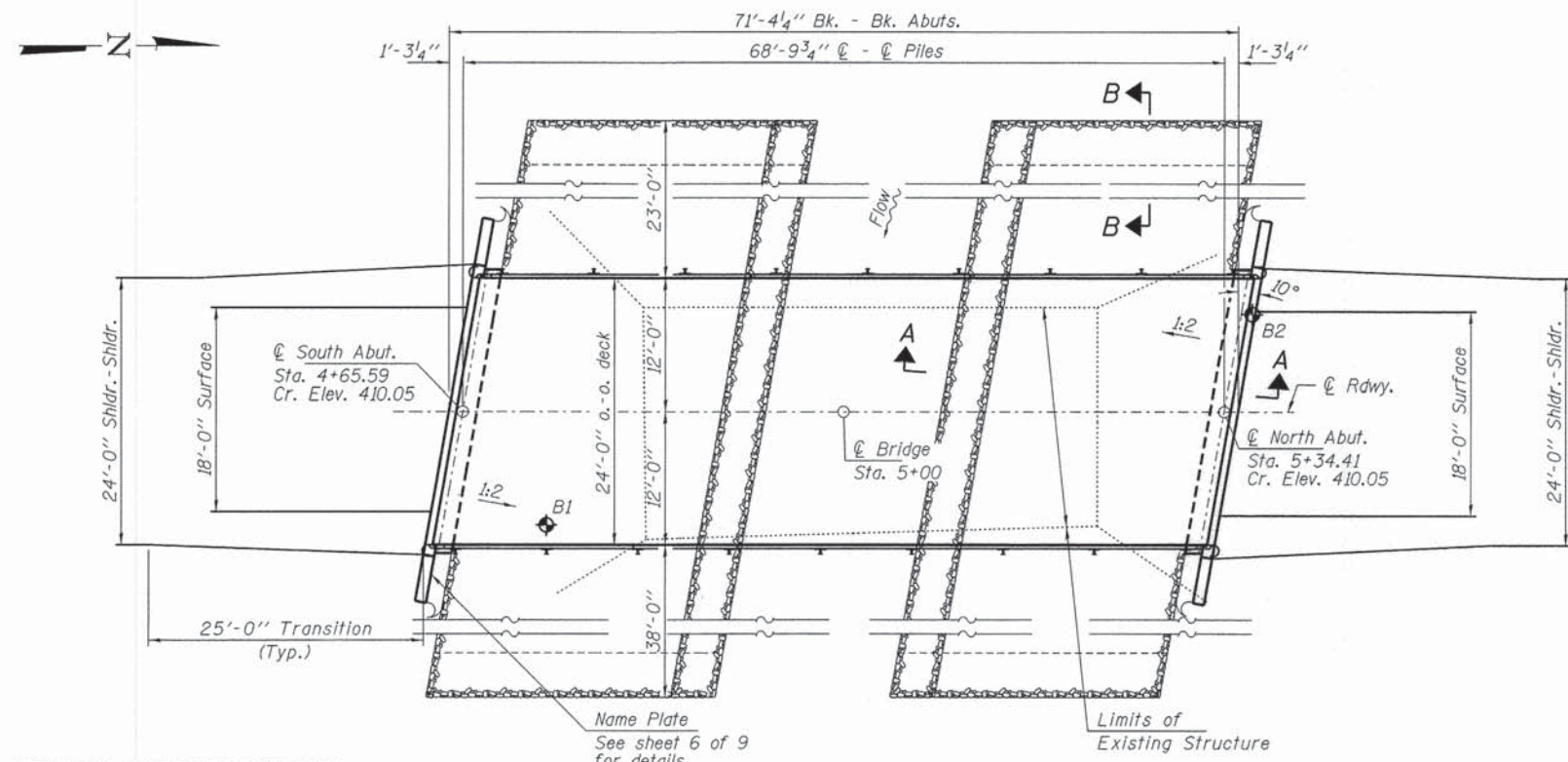
EXISTING STRUCTURE: Structure No. 096-3168; Sta. 5+02.1 - A 40' long Single Span Bridge with 6" thick Concrete Plank Deck with 2 18" C-Channels, 9-12" I-Beams on 12" Wood Cap with 5-12" Wood Piles, Wood Mudwalls and Wood Wingwalls includes Bridge rail. The existing structure is to be removed and replaced.

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 (1/2" low lax. strands)  
fpbt = 201,960 psi (1/2" low lax. strands)  
fy = 60,000 psi (Reinf.)

SEISMIC DATA

Seismic Performance Zone (SPZ) = 2  
Design Spectral Acceleration at 1.0 sec. (Sp1) = 0.274g  
Design Spectral Acceleration at 0.2 sec. (Sp5) = 0.656g  
Soil Site Class = D

Design Scour Elevations (ft.)		
	South Abut.	North Abut.
Q100	403.95	403.95

WATERWAY INFORMATION

Drainage Area = 22.3 Sq. Mi.		Existing Low Grade Elev. 406.3 @ Sta. 5+02.1		Proposed Low Grade Elev. 410.5 @ Sta. 5+00		
Flood Yr.	Freq. C.F.S.	Q	Opening Sq. Ft.	Natural H.W.E. Exist.	Head - Ft. Exist. Prop.	Headwater El. Exist. Prop.
Design	15	3220	376 520	406.55		
Base	100	5350	376 574	407.39	0.09 0.17	407.48 407.56

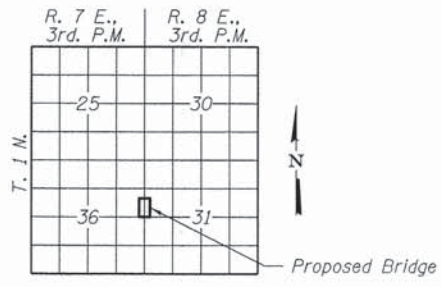
15 Year Velocity through Existing Bridge = 8.6 fps      15 Year Velocity through Proposed Bridge = 6.2 fps

I certify that to the best of my knowledge, information and belief, this bridge design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with requirements of the current "AASHTO LRFD Specifications."

Steven W. Megginson 01/14/2014  
ILLINOIS STRUCTURAL ENGINEER NO. 081-6064

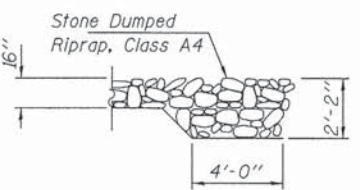


LOCATION SKETCH

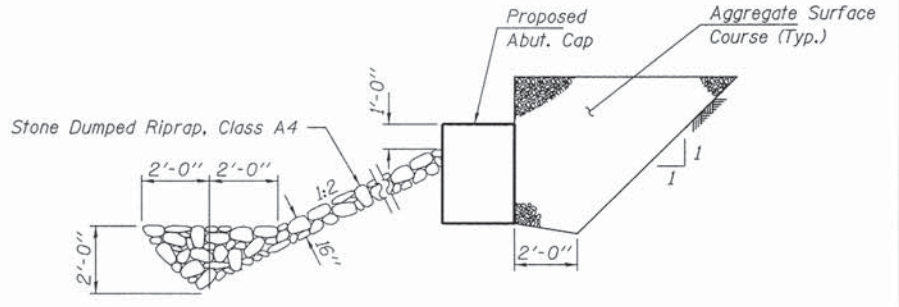


GENERAL NOTES

Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.  
The Contractor shall drive test piles to 110% of the nominal required bearing specified in production locations at the North Abutment or approved by the Engineer before ordering the remainder of piles. Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.  
Excavation required to construct the Abutments shall be included in the cost of Concrete Structures. No additional compensation will be allowed for Structure Excavation.  
All proposed construction activities shall be in accordance with Nationwide Permit number 14 of the Department of the Army authorized under Section 404 of the Clean Water Act. The IEPA has issued Section 401 Water Quality Certification for this activity. See Special Provisions for conditions.



SECTION B-B



SECTION A-A

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



PROFILE GRADE

INDEX OF STRUCTURE SHEETS

- 1. General Plan & Elevation
- 2. 27" x 48" PPC Deck Beam
- 3. 27" x 48" PPC Deck Beam Details
- 4. Superstructure Details
- 5. Steel Railing, Type S-1
- 6. Abutments
- 7. Steel HP Pile Details
- 8-9. Borings

DEER CREEK BUILT 201 BY ELM RIVER ROAD DISTRICT WAYNE COUNTY SEC. 10-06119-00-BR STATION 5+00 STR. NO. 096-3459 LOADING HL-93	
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NAME PLATE

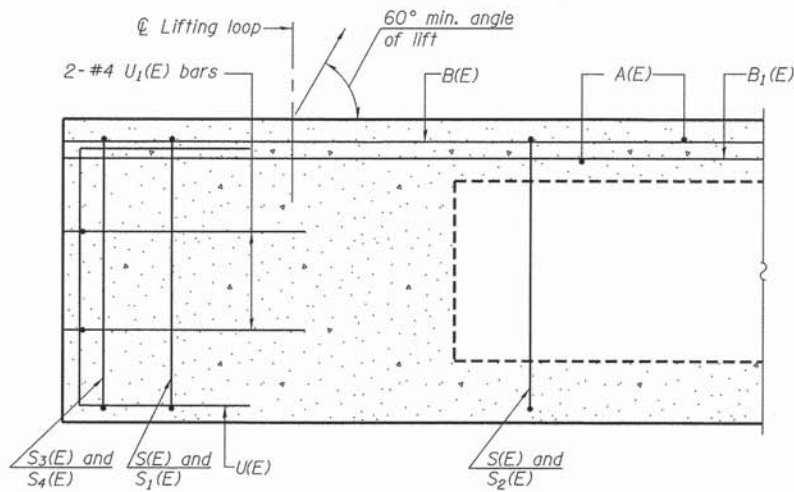
See Std. 515001

TOTAL BILL OF MATERIAL

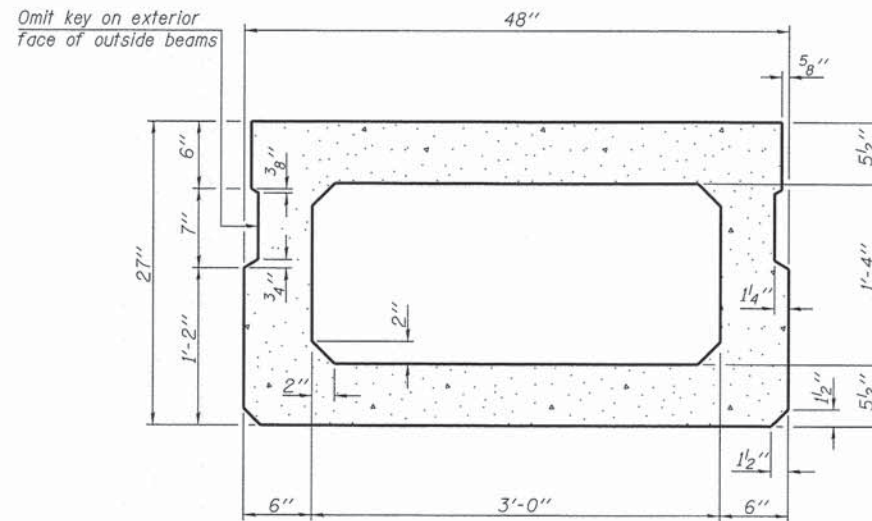
ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	Cu. Yd.			100
Stone Dumped Riprap, Class A4	Ton			640
Removal of Existing Structures	Each			1
Concrete Structures	Cu. Yd.		23.8	23.8
Concrete Encasement	Cu. Yd.		2.8	2.8
Precast Prestressed Concrete Deck Beams (27" Depth)	Sq. Ft.	1,680		1,680
Reinforcement Bars	Pound		2,520	2,520
Steel Railing, Type S-1	Foot	136		136
Furnishing Steel HP10x42	Foot		420	420
Driving Piles	Foot		420	420
Test Pile Steel HP10x42	Each		1	1
Name Plates	Each		1	1
Terminal Marker - Direct Applied	Each		4	4

FILE NAME = 128232-shl-br-bridge.dgn	USER NAME =	DESIGNED - D.W.T.	REVISED -	STATE OF ILLINOIS WAYNE COUNTY HIGHWAY DEPARTMENT	GENERAL PLAN & ELEVATION STRUCTURE NO. 096-3459 SHEET NO. 1 OF 9 SHEETS	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND RENWICK, INC. 208 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703	DESIGNED - S.W.M.	REVISED -	426			10-06119-00-BR	WAYNE	13	5	
ILLINOIS PROFESSIONAL DESIGN FIRM 15 / P6 / SE CORP. 184.002959	DRAWN - R.D.H.	REVISED -	ELM RIVER ROAD DISTRICT			CONTRACT NO. 95724				
PLOT SCALE =	CHECKED - S.W.M.	REVISED -	ILLINOIS FED. AID PROJECT							

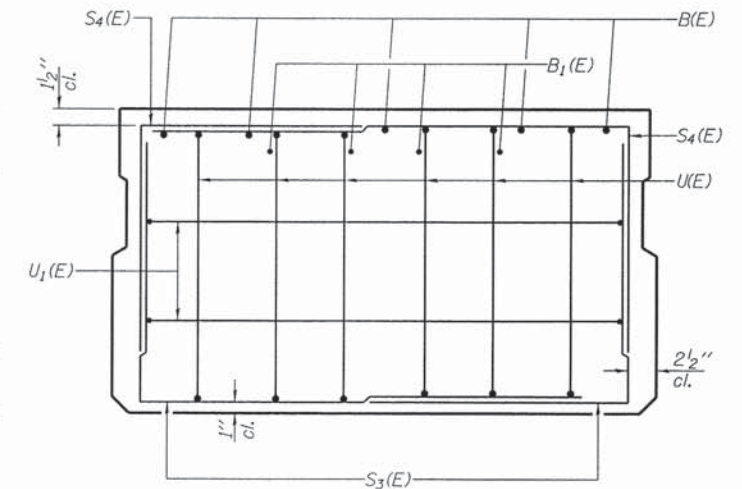




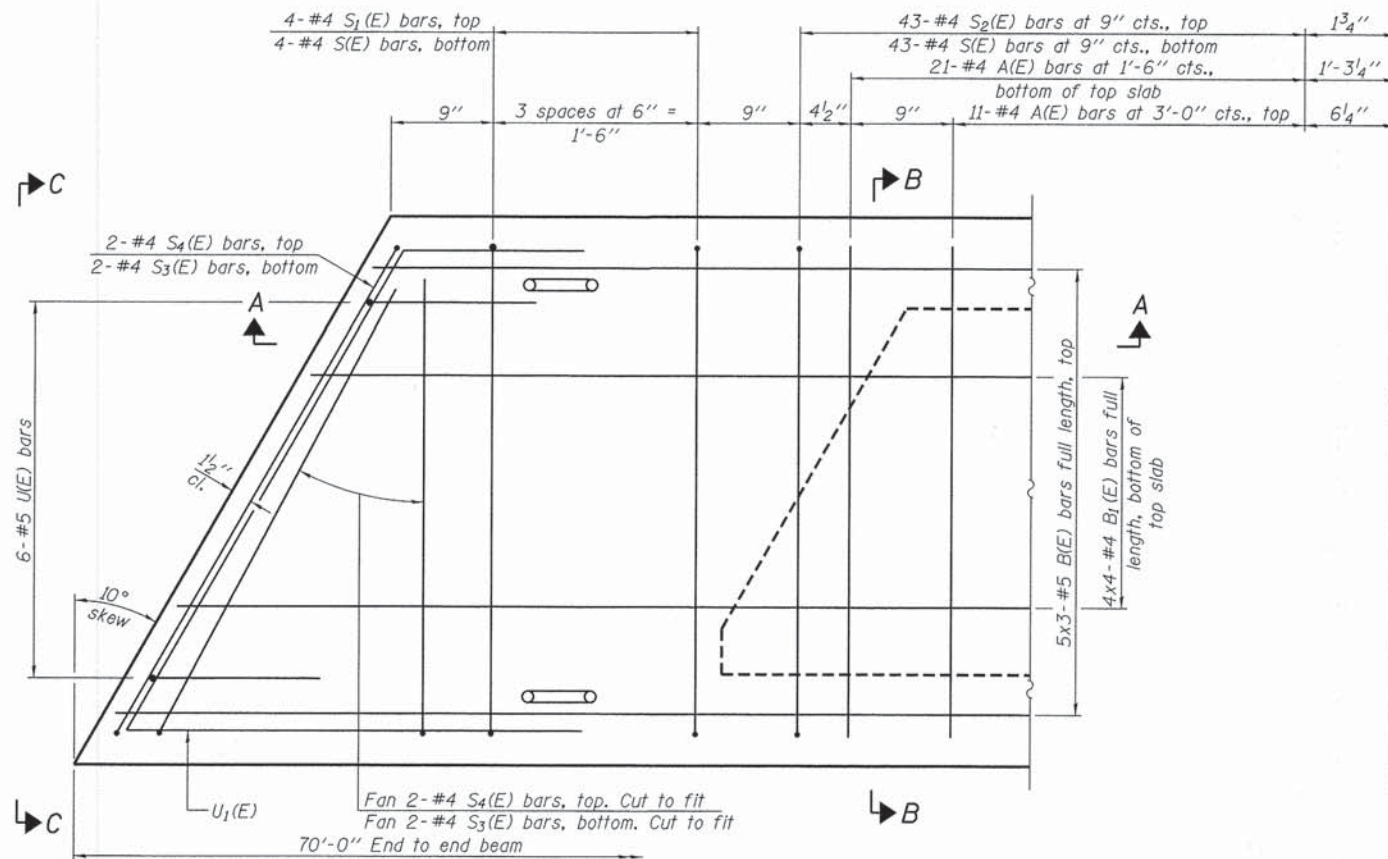
SECTION A-A



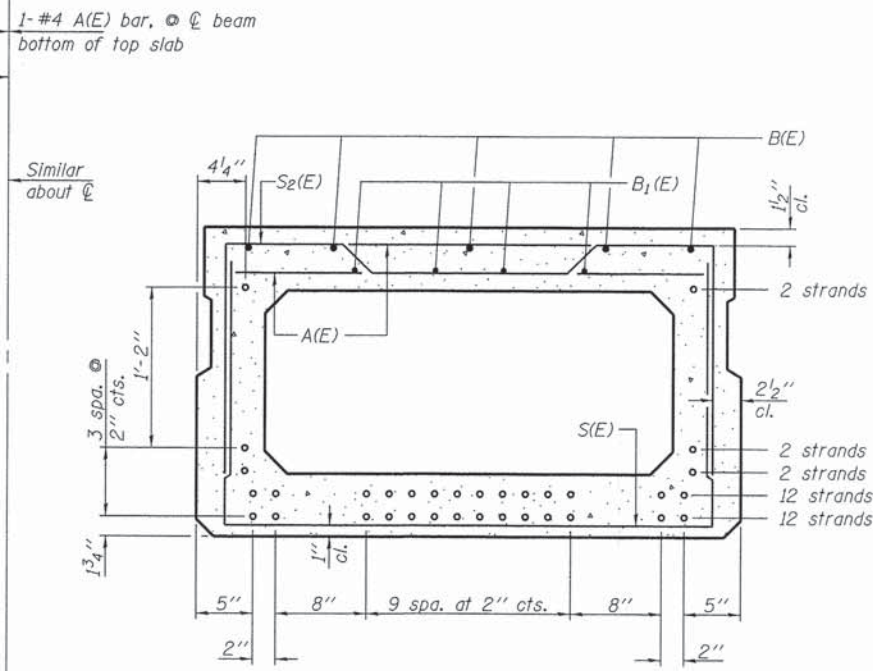
SECTION B-B  
(Showing dimensions)



VIEW C-C



PLAN VIEW



SECTION B-B

(Showing reinforcement and permissible strand locations)

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

**BAR LIST**  
**ONE BEAM ONLY**  
(For information only)

Bar	No.	Size	Length	Shape
A(E)	65	#4	3'-7"	—
B(E)	15	#5	24'-11"	—
B1(E)	16	#4	18'-11"	—
S(E)	94	#4	7'-5"	U
S1(E)	8	#4	6'-11"	U
S2(E)	86	#4	7'-2"	U
S3(E)	8	#4	4'-8"	J
S4(E)	8	#4	4'-5"	J
U(E)	12	#5	4'-6"	C
U1(E)	4	#4	6'-8"	C

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

**MINIMUM BAR LAP**

#4 bar = 2'-0"  
#5 bar = 2'-6"

Notes: Spacing of S(E) and S2(E) bars may be adjusted up to 4" in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.

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

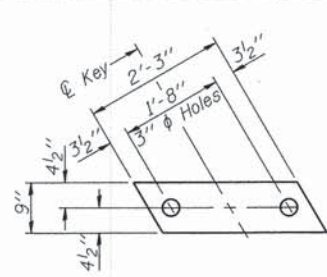
PD-2748-L

7-1-10

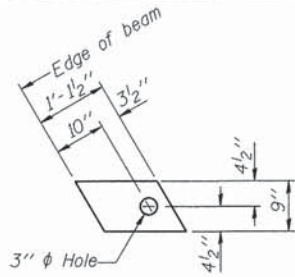
FILE NAME = 120232-shr-bridge.dgn	USER NAME =	DESIGNED - D.W.T.	REVISED -	<b>STATE OF ILLINOIS</b> <b>WAYNE COUNTY HIGHWAY DEPARTMENT</b>	<b>27" x 48" PPC DECK BEAM</b> <b>STRUCTURE NO. 096-3459</b>	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND RENWICK, INC.		CHECKED - S.W.M.	REVISED -			426	10-06119-00-BR	WAYNE	13	6
3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703	PLOT SCALE =	DRAWN - R.D.H.	REVISED -			ELM RIVER ROAD DISTRICT				CONTRACT NO. 95724
ILLINOIS PROFESSIONAL DESIGN FIRM L3 / PE / SE CORP. 184-00089	PLOT DATE = 1/14/2014	CHECKED - S.W.M.	REVISED -			SHEET NO. 2 OF 9 SHEETS				

ILLINOIS FED. AID PROJECT



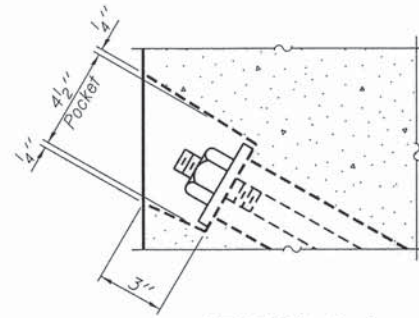


**FABRIC BEARING PAD**  
(Interior - 10 Req'd)

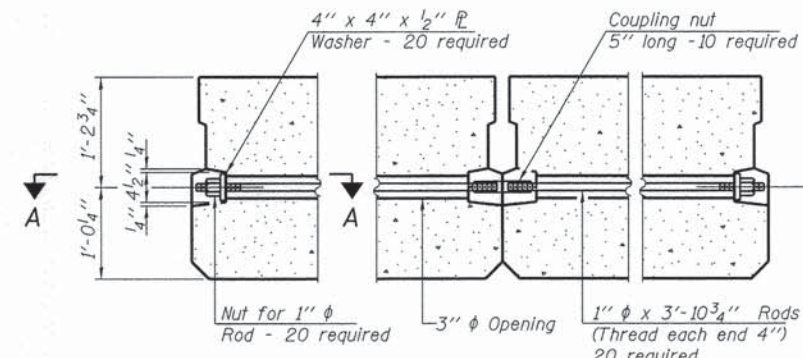


**FABRIC BEARING PAD**  
(Exterior - 4 Req'd)

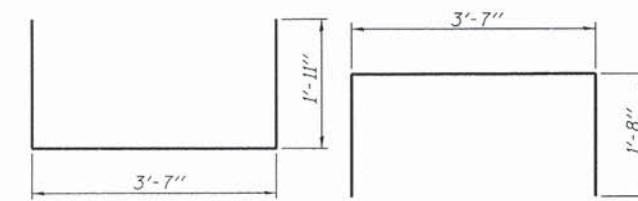
**Notes:**  
All bearing pads shall be 1" thick.  
Omit holes when using expansion bearings.  
Expansion bearing pad shall be bonded to the substructure.



**SECTION A-A**

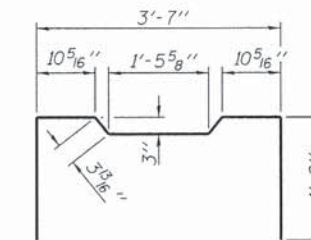


**TYPICAL TRANSVERSE TIE ASSEMBLY**



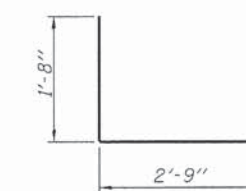
**BAR S1(E)**

**BAR S1(E)**



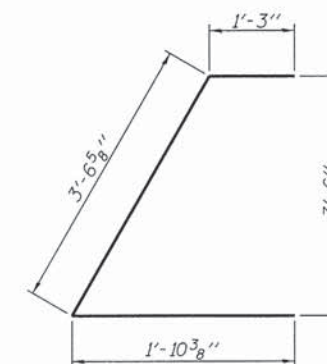
**BAR S2(E)**

**BAR S3(E)**

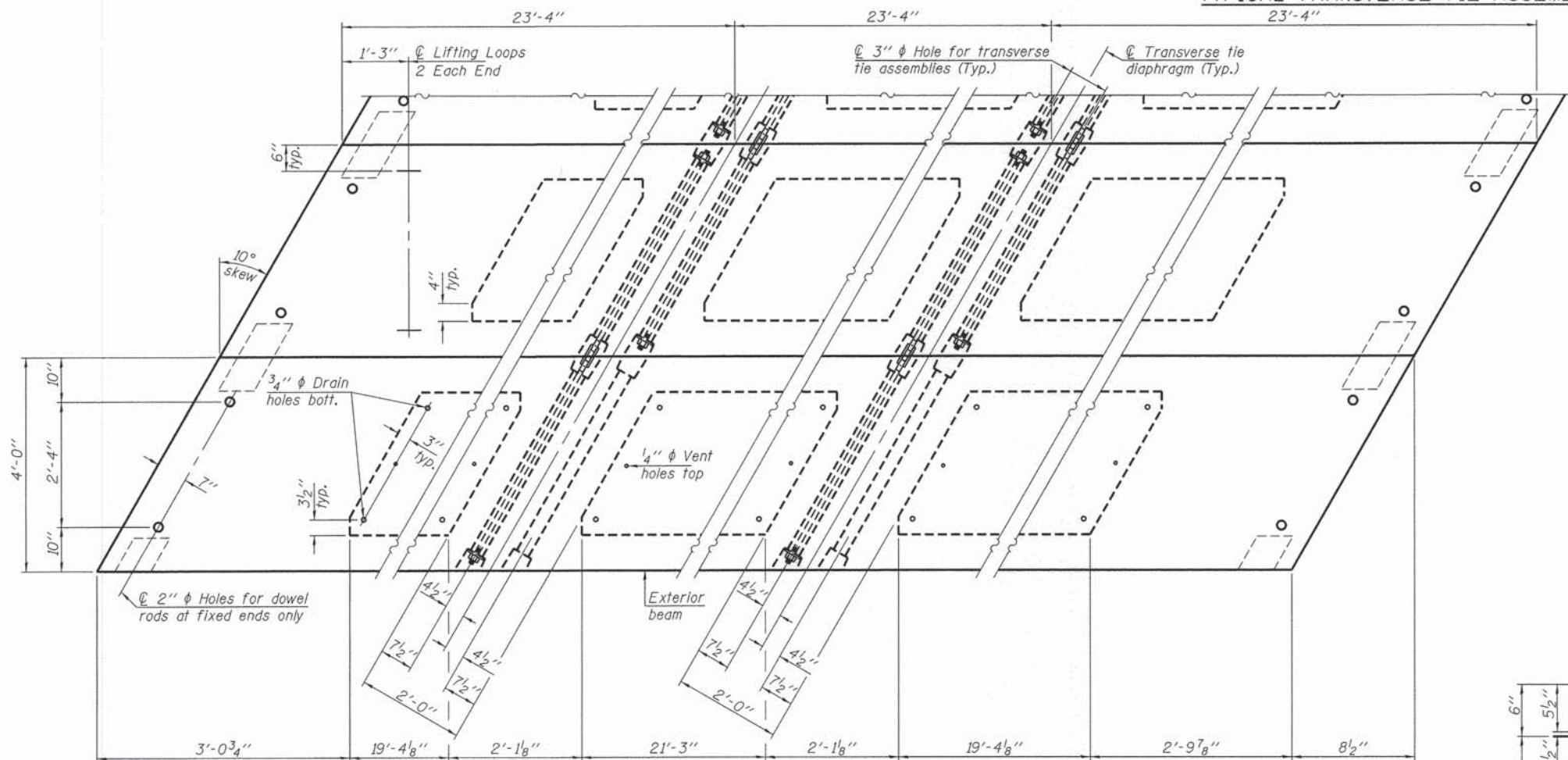


**BAR S4(E)**

**BAR UE**



**BAR U1(E)**

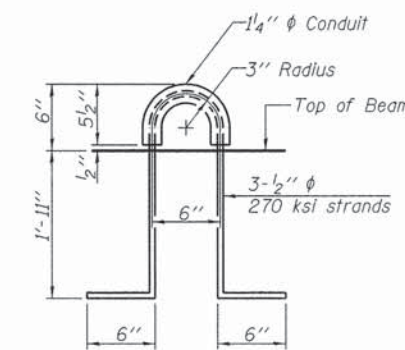


**PLAN VIEW**

**NOTES**

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in. The 1"  $\phi$  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 1/8" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.  
A minimum 2 1/2"  $\phi$  lifting pin shall be used to engage the lifting loops during handling.  
Corrosion Inhibitor, per Article 1020.05(b)(12) and 1021.07 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams.  
Compressive strength of prestressed concrete,  $f'c$ , shall be 6000 psi.  
Compressive strength of prestressed concrete at release,  $f'ci$ , shall be 5000 psi.  
Reinforcement bars designated (E) shall be epoxy coated.

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



**LIFTING LOOP DETAIL**

**BILL OF MATERIAL**

Precast Prestressed Conc. Deck Bms. (27" depth)	Sq. Ft.	1,680
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PD-2748-LD 7-1-10

FILE NAME = 128232-sh4-brIDGE.dgn	USER NAME =	DESIGNED - D.W.T.	REVISED -
HAMPTON, LENZINI AND RENWICK, INC.		CHECKED - S.W.M.	REVISED -
3063 STEVENSON DRIVE, SUITE 201		DRAWN - R.D.H.	REVISED -
SPRINGFIELD, ILLINOIS 62709	PLOT SCALE =	CHECKED - S.W.M.	REVISED -
ILLINOIS PROFESSIONAL DESIGN FIRM	PLOT DATE = 1/14/2014		
LSI/PE/EE CORP. 184.00880			

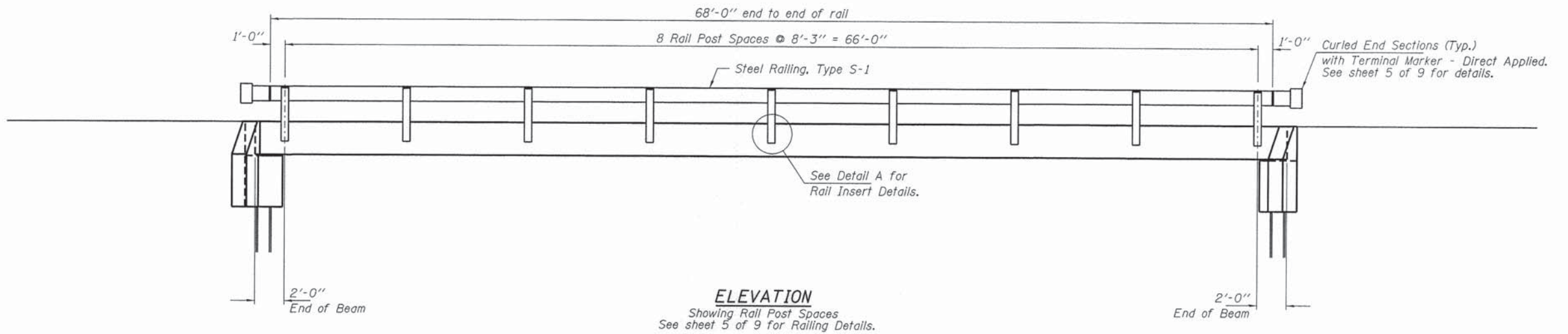
STATE OF ILLINOIS  
WAYNE COUNTY HIGHWAY DEPARTMENT

27" x 48" PPC DECK BEAM DETAILS  
STRUCTURE NO. 096-3459

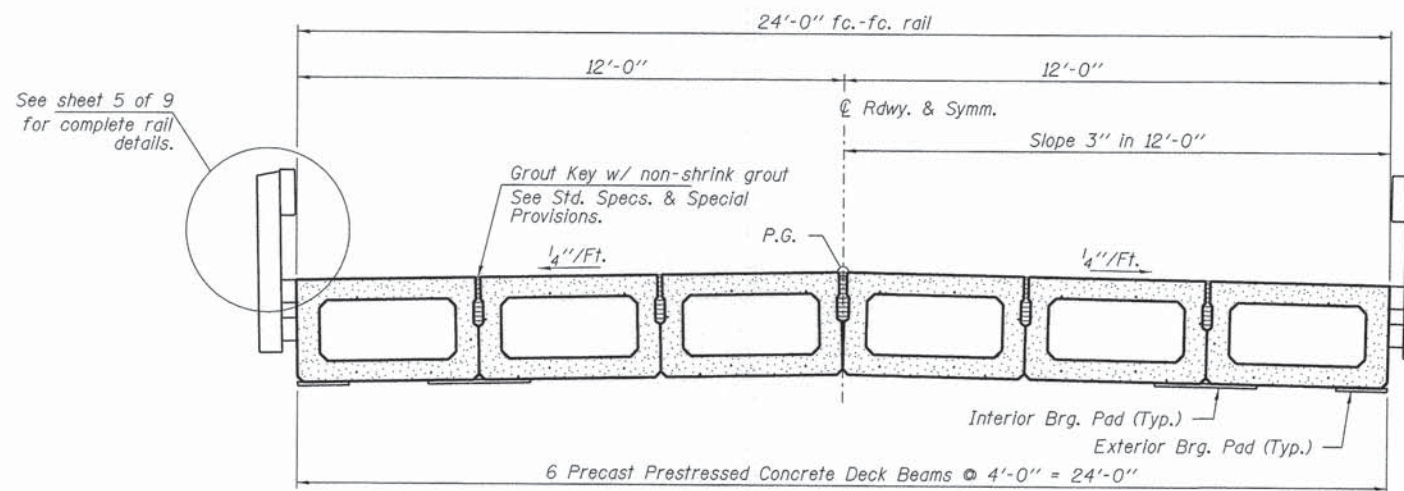
SHEET NO. 3 OF 9 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
426	10-06119-00-BR	WAYNE	13	7
ELM RIVER ROAD DISTRICT		CONTRACT NO. 95724		
ILLINOIS FED. AID PROJECT				

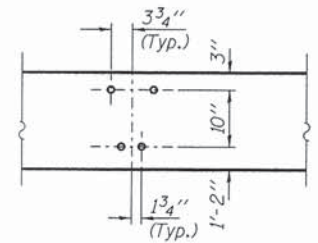




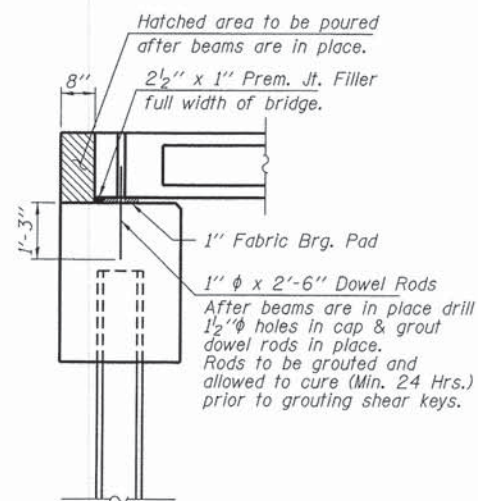
**ELEVATION**  
Showing Rail Post Spaces  
See sheet 5 of 9 for Railing Details.



**CROSS SECTION**  
See sheets 2 & 3 of 9 for Superstructure.



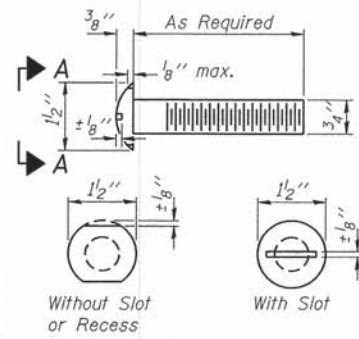
**DETAIL A**



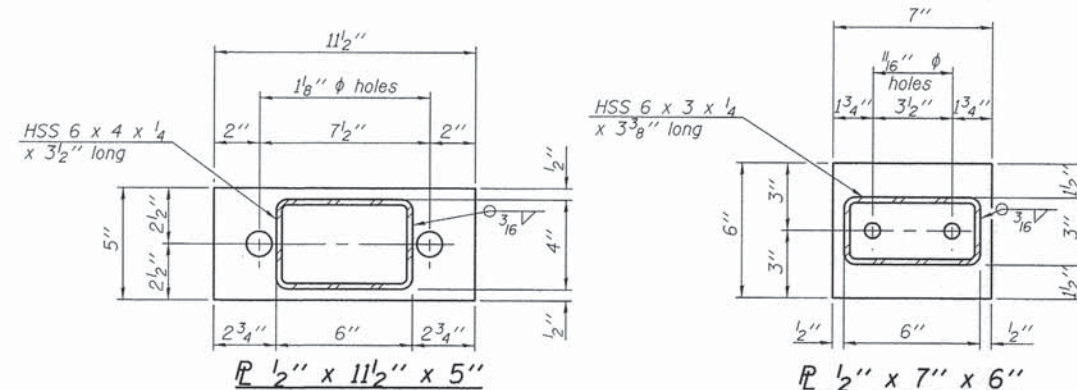
**SECTION AT ABUTMENTS**

FILE NAME = 120232-sht-bridge.dgn	USER NAME =	DESIGNED - D.W.T.	REVISED -	<b>STATE OF ILLINOIS WAYNE COUNTY HIGHWAY DEPARTMENT</b>	<b>SUPERSTRUCTURE DETAILS STRUCTURE NO. 096-3459</b>	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
<b>HAMPTON, LENZINI AND RENWICK, INC.</b> 2005 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703	PLOT SCALE =	CHECKED - S.W.M.	REVISED -			426	10-06119-00-BR	WAYNE	13	8	
<b>HLR</b> ILLINOIS PROFESSIONAL DESIGN FIRM L.L.P. / P.E. / S.E. CORP. 184-00089	PLOT DATE = 1/14/2014	DRAWN - R.D.H.	REVISED -			ELM RIVER ROAD DISTRICT CONTRACT NO. 95724					
		CHECKED - S.W.M.	REVISED -			SHEET NO. 4 OF 9 SHEETS [ILLINOIS] FED. AID PROJECT					

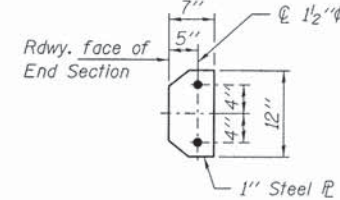




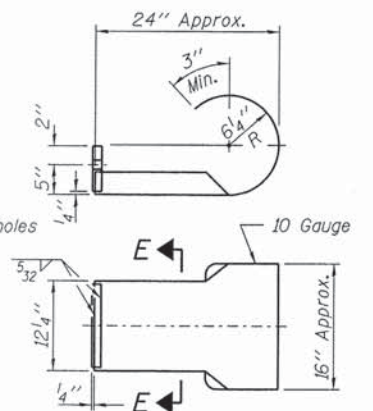
**VIEW A-A  
ROUND HEAD BOLT**



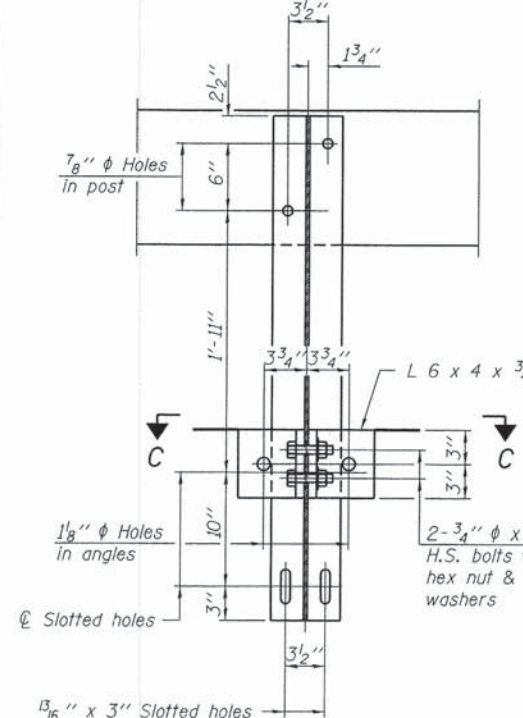
Note: Cost of curled end sections shall be included with the Steel Railing. (4 Required)



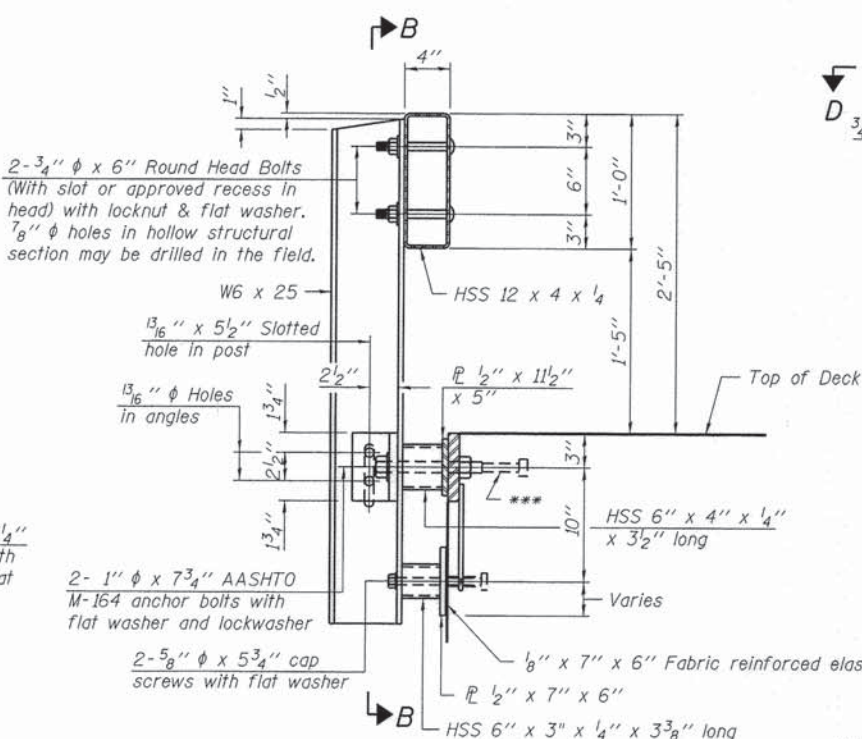
**SECTION E-E**



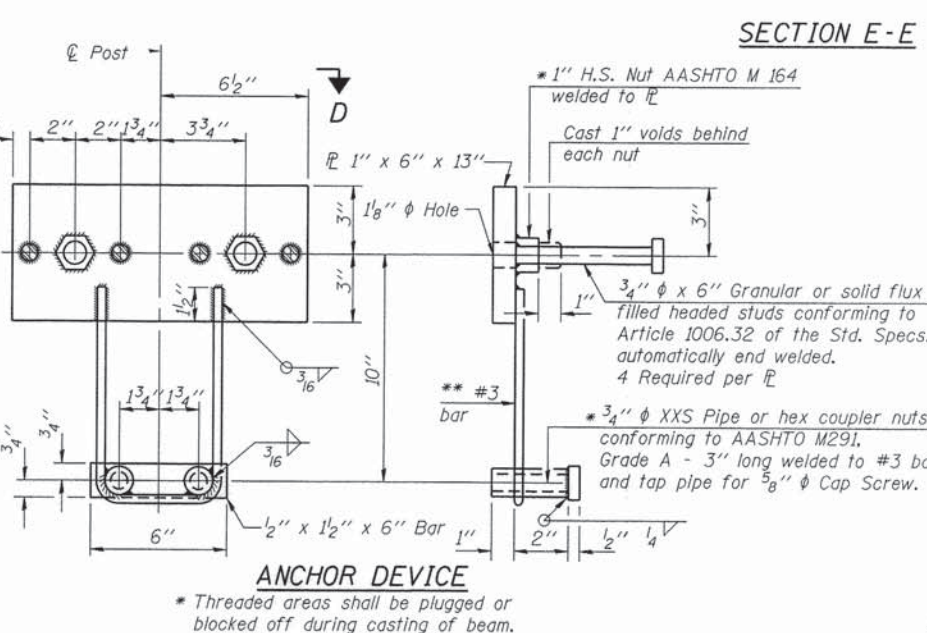
**SECTION E-E CURLED END SECTION DETAILS**



**SECTION B-B**

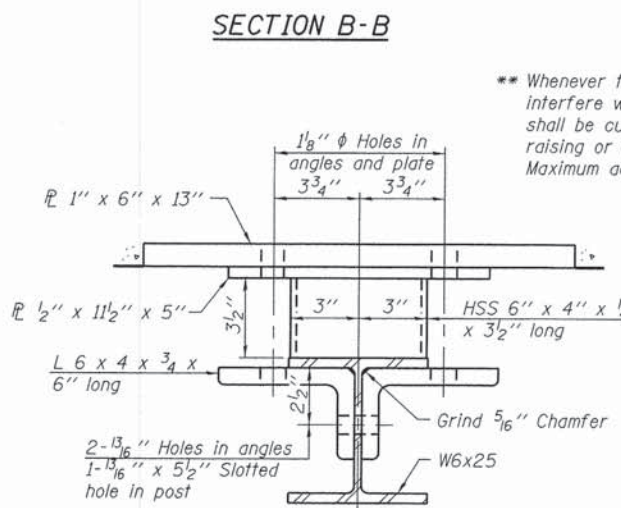


**SECTION AT RAILING POST**

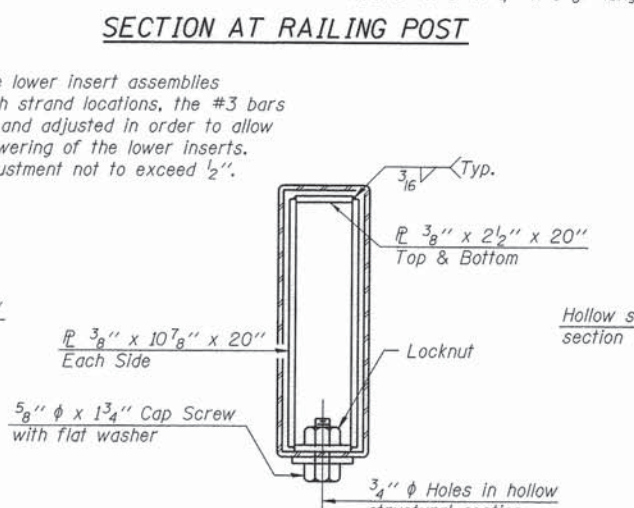


**ANCHOR DEVICE**

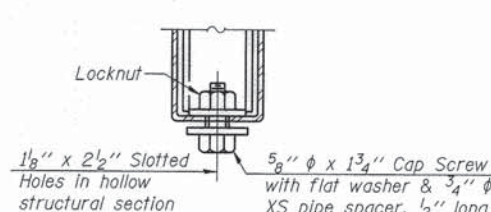
Notes:  
All field drilled holes shall be coated with an approved zinc rich paint before erection.  
For multi-span bridges, sufficient 1/4 inch x 6 inch x 1-2 inch galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with Steel Railing, Type S-1.  
All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.  
\*\*\* The studs of the anchor devices shall be placed below the top reinforcement bars and the outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchor device.



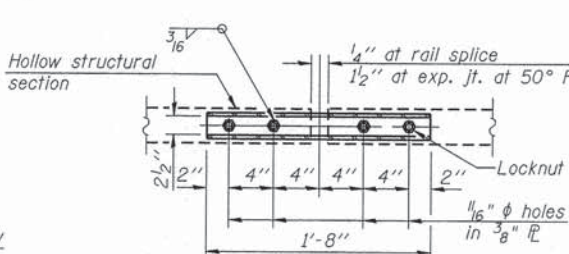
**SECTION C-C**



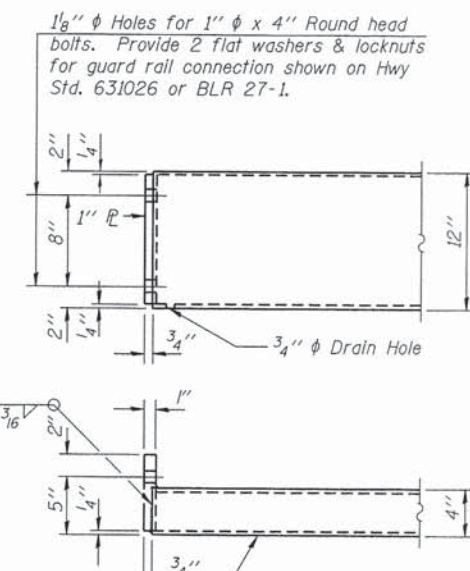
**SECTIONS AT RAIL SPLICE**



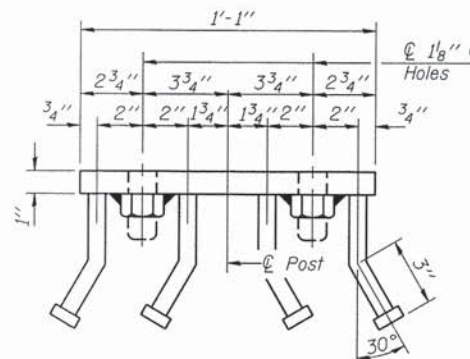
**RAIL SPLICE CONNECTION AT EXPANSION JT.**



**PLAN-BOTT. SPLICE TYPICAL**



**END OF RAIL DETAILS**



**VIEW D-D**

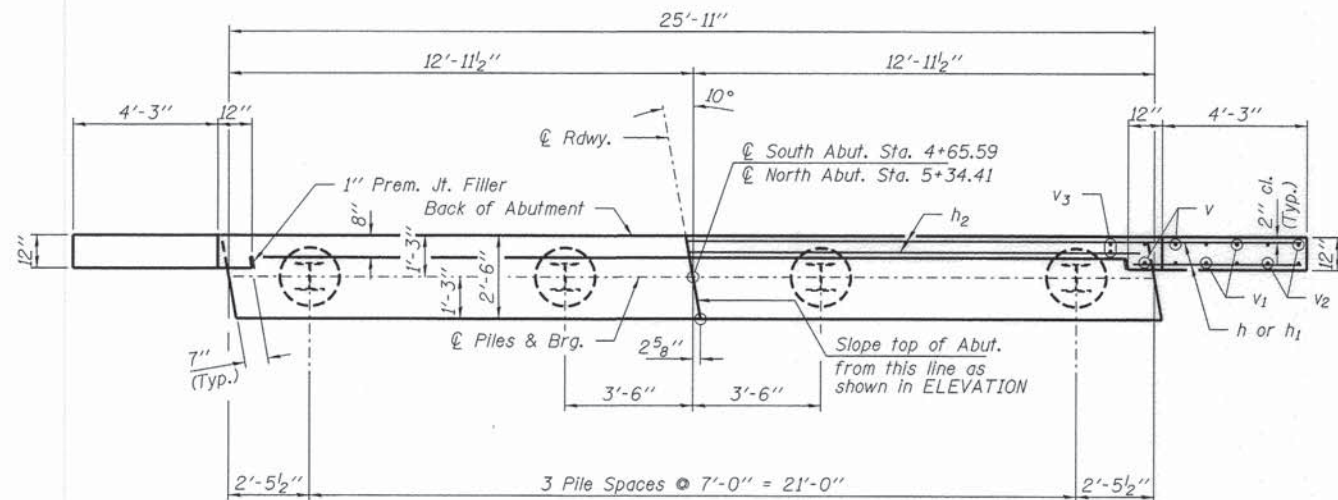
**BILL OF MATERIAL**

Item	Unit	Quantity
Steel Railing, Type S-1	Foot	136

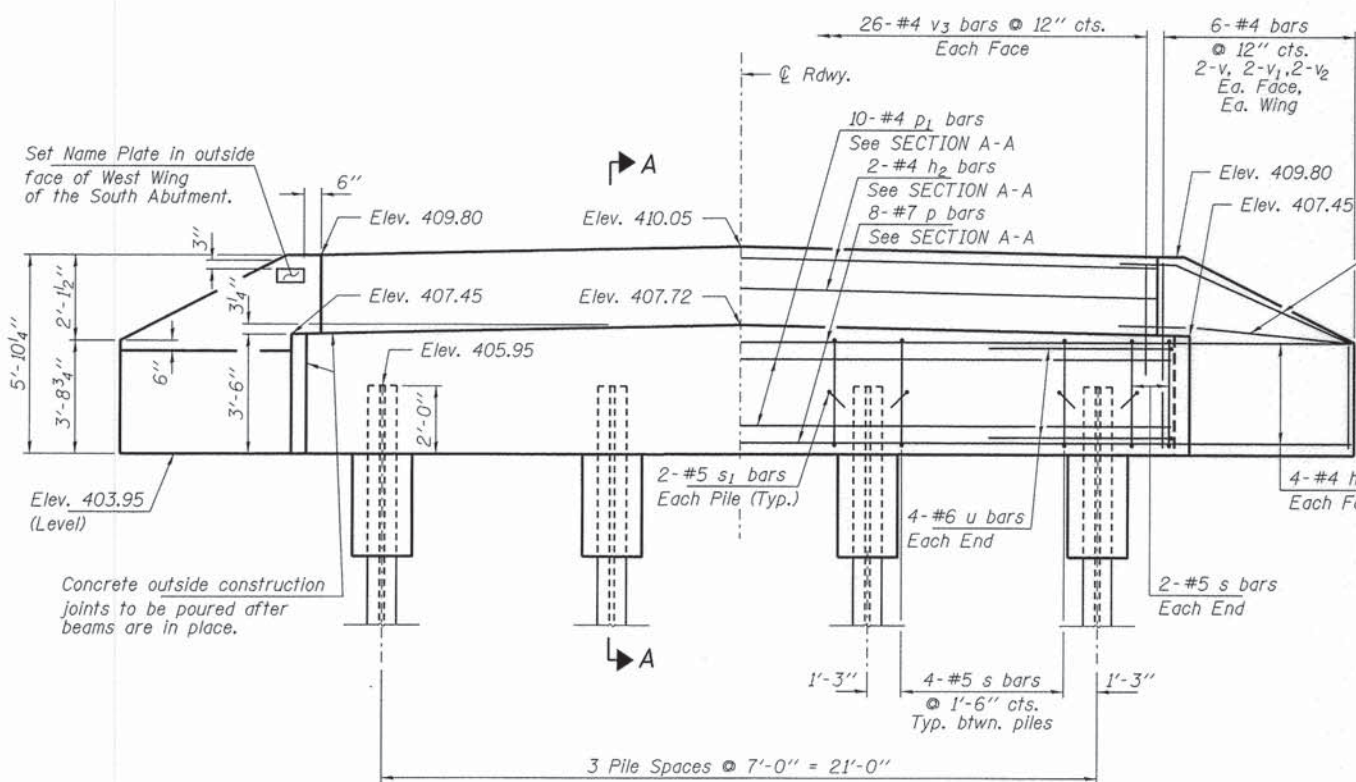
R-23A 7-1-10 (10'-9" Maximum Post Spacing)

FILE NAME = 120232-shr-bridge.dgn	USER NAME =	DESIGNED - D.W.T.	REVISED -	<b>STATE OF ILLINOIS WAYNE COUNTY HIGHWAY DEPARTMENT</b>	<b>STEEL RAILING, TYPE S-1 STRUCTURE NO. 096-3459</b>	SHEET NO. 5 OF 9 SHEETS	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND RENWICK, INC. 300 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703	PLOT SCALE =	CHECKED - S.W.M.	REVISED -				426	10-06119-00-BR	WAYNE	13	9
ILLINOIS PROFESSIONAL DESIGN FIRM L.S. #0158 0000	PLOT DATE = 1/14/2014	DRAWN - R.D.H.	REVISED -				ELM RIVER ROAD DISTRICT	CONTRACT NO. 95724			
		CHECKED - S.W.M.	REVISED -				ILLINOIS FED. AID PROJECT				

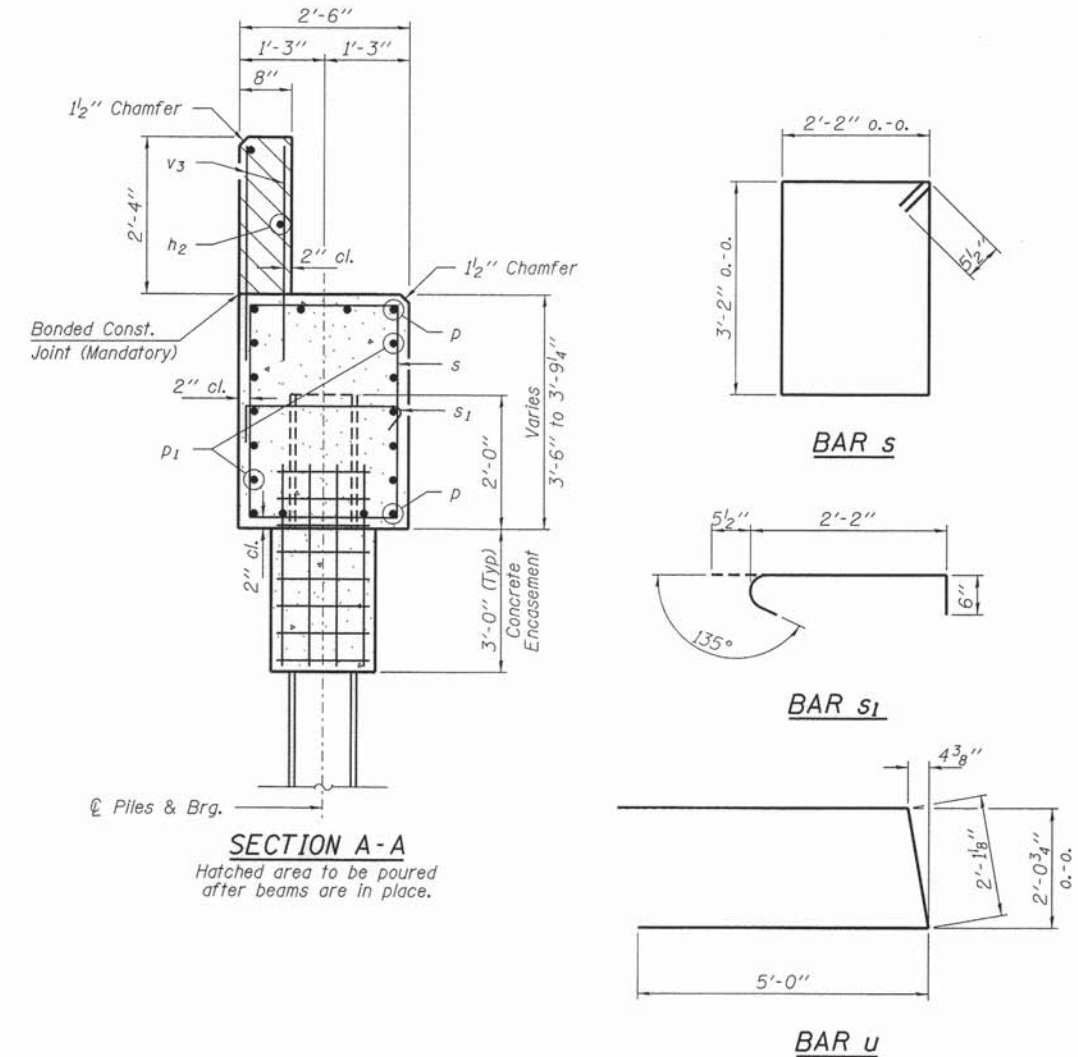




PLAN



ELEVATION



SECTION A-A

Hatched area to be poured after beams are in place.

Note: Extend h bars into abutment cap.

BILL OF MATERIAL - 2 ABUTS.

BAR	NO.	SIZE	LENGTH	SHAPE
h	40	#4	6'-6"	—
h1	8	#4	5'-0"	—
h2	4	#4	25'-7"	—
p	16	#7	25'-7"	—
p1	20	#4	25'-7"	—
s	32	#5	11'-7"	□
s1	16	#4	3'-2"	┌
u	16	#6	12'-2"	—
v	16	#4	5'-5"	—
v1	16	#4	4'-5"	—
v2	16	#4	3'-5"	—
v3	104	#4	3'-2"	—
Concrete Structures			Cu. Yd.	23.8
Concrete Encasement			Cu. Yd.	2.8
Reinforcement Bars			Pound	2,520
Steel Piles HPI0x42			Foot	420
Test Pile HPI0x42			Each	1
Name Plates			Each	1

PILE DATA

Type: Steel HPI0x42  
 No. Req'd. (2 Abuts.): 8  
 Factored Resistance Available (Rf): 184 Kips/Pile  
 Nominal Required Bearing (Rn): 334 Kips/Pile  
 Est. Length: 60 Ft/Pile

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

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

FILE NAME = 128232-sht-bridge.dgn  
 USER NAME =  
 DESIGNED - D.W.T.  
 CHECKED - S.W.M.  
 DRAWN - R.D.H.  
 CHECKED - S.W.M.  
 PLOT SCALE =  
 PLOT DATE = 1/17/2014

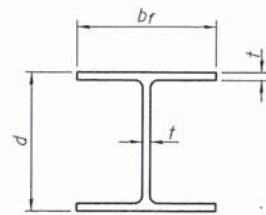
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 CHECKED - S.W.M.  
 DRAWN - R.D.H.  
 CHECKED - S.W.M.  
 REVISIONS:  
 REVISIONS:  
 REVISIONS:  
 REVISIONS:

STATE OF ILLINOIS  
 WAYNE COUNTY HIGHWAY DEPARTMENT

ABUTMENTS  
 STRUCTURE NO. 096-3459  
 SHEET NO. 6 OF 9 SHEETS

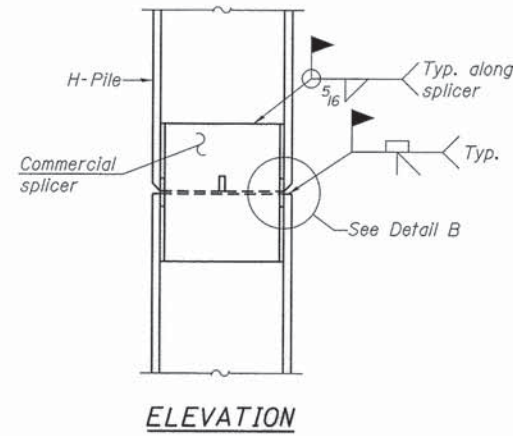
T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
426	10-06119-00-BR	WAYNE	13	10
ELM RIVER ROAD DISTRICT			CONTRACT NO. 95724	
ILLINOIS FED. AID PROJECT				



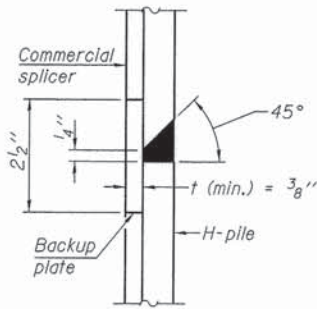


**STEEL PILE TABLE**

Designation	Depth d	Flange width br	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	1 3/16"	30"
x102	14"	14 3/4"	1 1/16"	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"	1 1/16"	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"

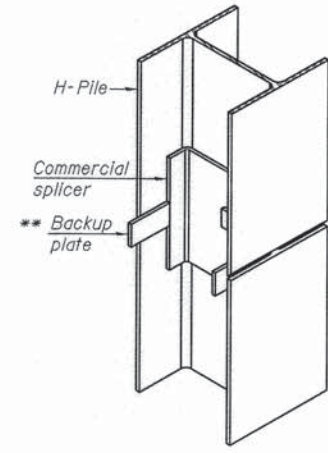


**ELEVATION**

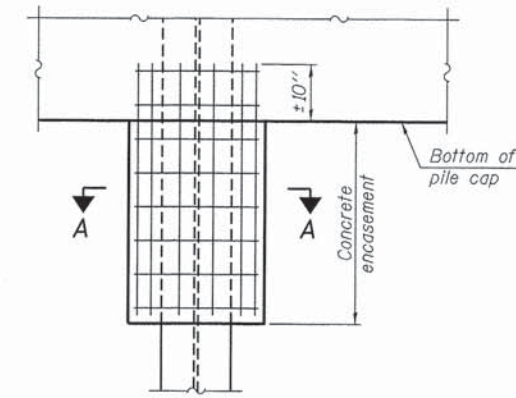


**DETAIL "B"**

**WELDED COMMERCIAL SPLICE**

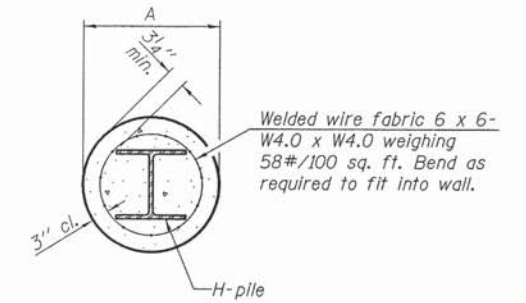


**ISOMETRIC VIEW**



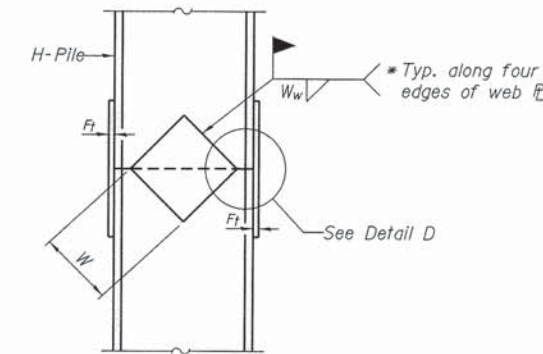
**ELEVATION**

**PILE ENCASEMENT**

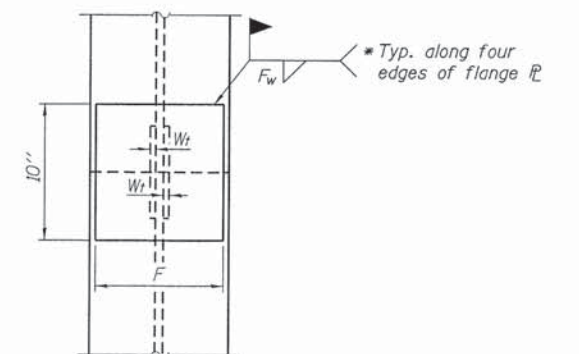


Note:  
Forms for encasement may be omitted when soil conditions permit.

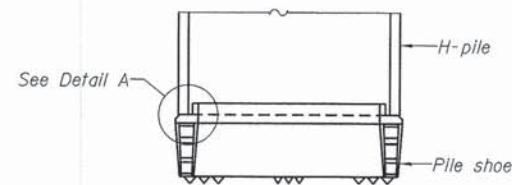
**SECTION A-A**



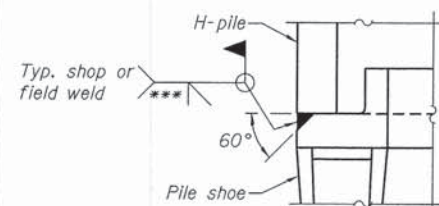
**ELEVATION**



**END VIEW**

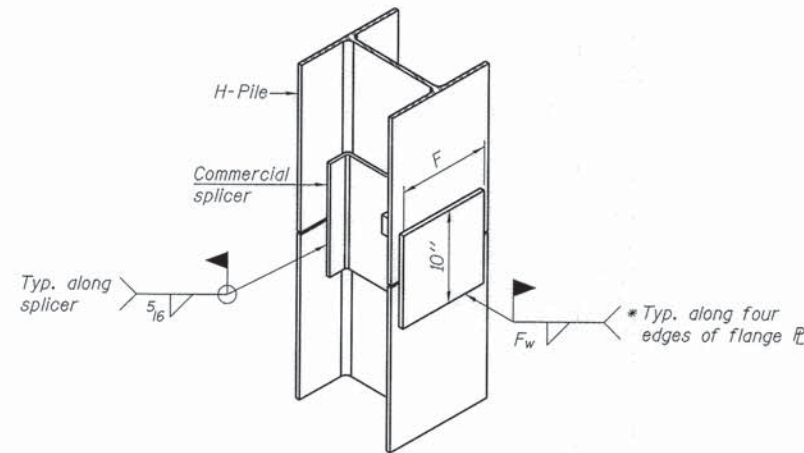


**ELEVATION**

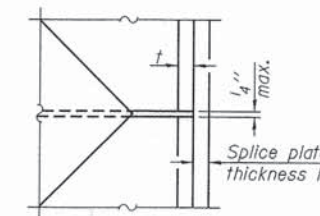


**DETAIL A**

**H-PILE SHOE ATTACHMENT**



**ISOMETRIC VIEW**



**DETAIL D**

**WELDED PLATE FIELD SPLICE**

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"	1 1/16"	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"	1 1/16"	6 1/2"	5/8"	1/2"
x74	10"	7/8"	1 1/16"	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 COMMERCIAL SPLICE ALTERNATE**

- \* Interrupt welds 1/4" from end of web and/or each flange.
- \*\* Remove portions of backup plates that extend outside the flanges.
- \*\*\* Weld size per pile shoe manufacturer (5/16" min.).

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

F-HP

1-27-12

FILE NAME = 120232-sht-bridge.dgn	USER NAME =	DESIGNED - D.W.T.	REVISED -	<b>STATE OF ILLINOIS WAYNE COUNTY HIGHWAY DEPARTMENT</b>	<b>HP PILE DETAILS STRUCTURE NO. 096-3459</b>	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
<b>HAMPTON, LENZINI AND RENWICK, INC.</b> 303 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703	PLOT SCALE =	CHECKED - S.W.M.	REVISED -			426	10-06119-00-BR	WAYNE	13	11	
<b>HLR</b> ILLINOIS PROFESSIONAL DESIGN FIRM L5 / PE / SE / CORP. 184-000005	PLOT DATE = 1/14/2014	DRAWN - R.D.H.	REVISED -			ELM RIVER ROAD DISTRICT		CONTRACT NO. 95724		ILLINOIS FED. AID PROJECT	
		CHECKED - S.W.M.	REVISED -			SHEET NO. 7 OF 9 SHEETS					



Bridge Foundation Boring Log

Project: H-12214 Bridge TR426 over Deer Creek Date: 10-31-2012  
Section: 10-03120-00-BR Station \_\_\_\_\_ Bored by: B. Schwartz  
Structure: 096-3168 Checked By: J. Holcomb  
County: Wayne

Boring No. <u>1</u> Station: _____ Offset: _____	Elevation	N	Qu tsf	w %	Surface Water Elev.		Elevation	N	Qu tsf	w %
					Ground Water Elev. During Drilling	Upon Completion				
Ground Surface	406.0	0								
3" A-3 Surface over 6" Crushed Stone										
Gray Mottled Brown Silty CLAY (A-6)		3	0.4B	25			-25	26	5.5S	12
		4	0.6B	25				35	5.2S	12
		4	0.9S	21			-30	40	3.7S	13
Brown Mottled Gray Sandy CLAY (A-6)		4	0.6B	23						
		3	0.8B	23			-35	24	2.6B	15
		4	0.7B	26						
Brown Sandy CLAY (A-6) with sandstone fragments		9	1.0B	18			-40	18	2.1B	18
		9	1.0B	17						
Gray Sandy CLAY (A-6) with pebbles		16	3.6B	13						

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

Bridge Foundation Boring Log

Project: H-12214 Bridge TR426 over Deer Creek Date: 10-31-2012  
Section: 10-03120-00-BR Station \_\_\_\_\_ Bored by: B. Schwartz  
Structure: 096-3168 Checked By: J. Holcomb  
County: Wayne

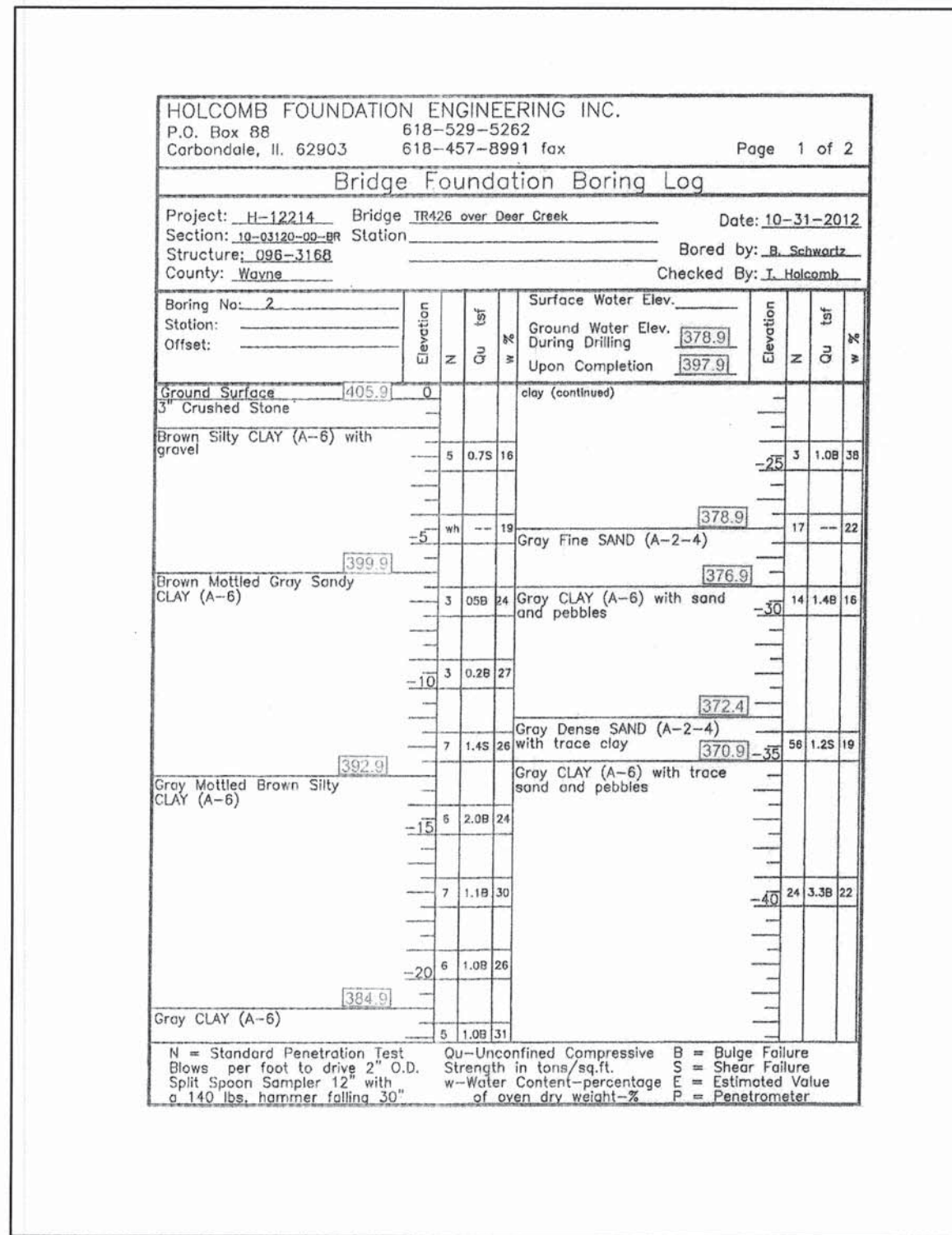
Boring No. <u>1</u> Station: _____ Offset: _____	Elevation	N	Qu tsf	w %	Surface Water Elev.		Elevation	N	Qu tsf	w %
					Ground Water Elev. During Drilling	Upon Completion				
clay (continued)		45	17	2.7B	24					
Gray Sandy CLAY (A-6)							-70			
		18	2.1S	15						
Gray Fine SAND (A-2-4)							-75			
		20		28						
Gray SHALE							-80			
		100	73	13						
		100	76	13						
End of Boring @ -64.0		100	74	13						

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

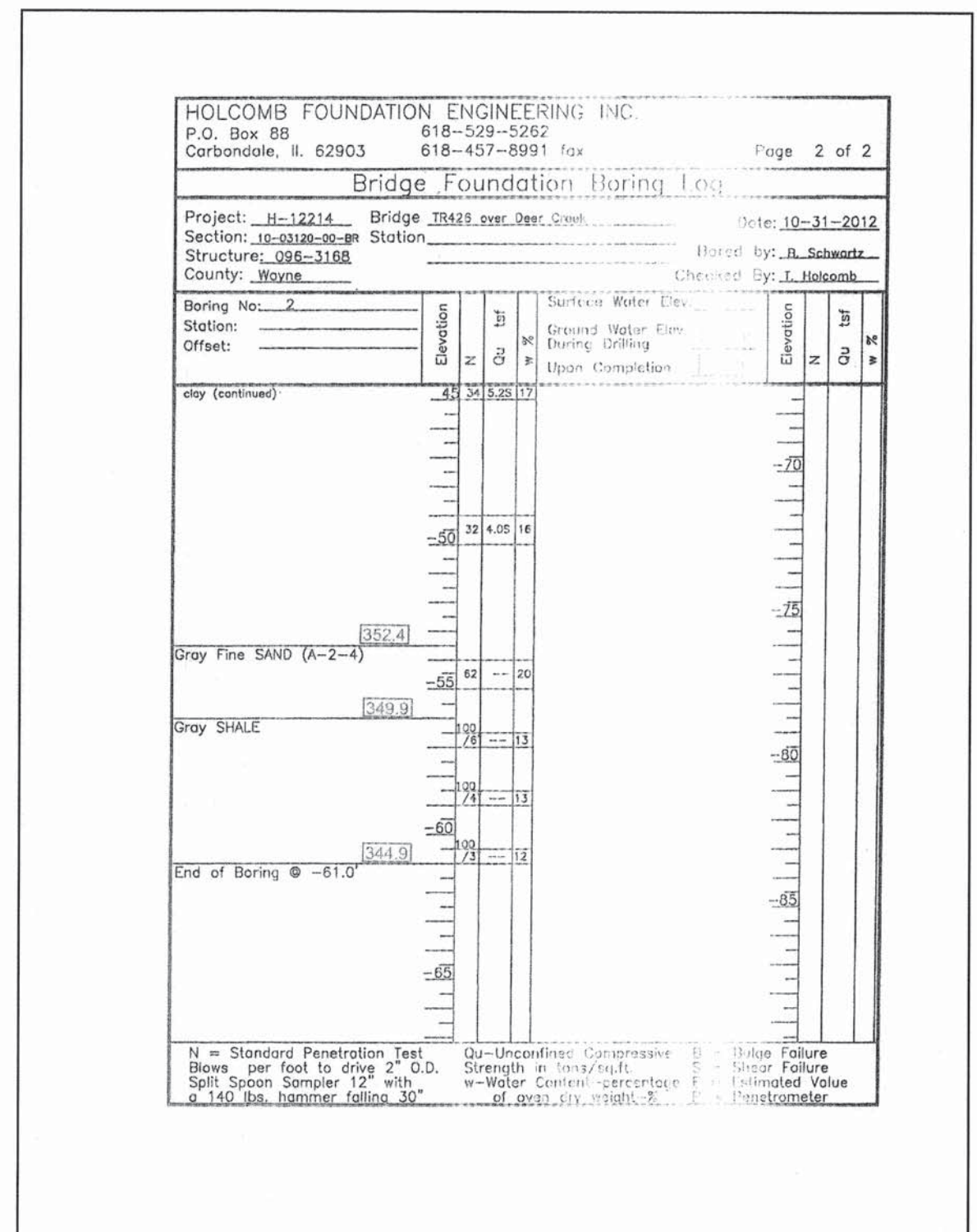
BORING

BORING-1





BORING



BORING

BORING-2

FILE NAME = 120232-ahtr-bridge.dgn	USER NAME =	DESIGNED - D.W.T.	REVISED -	<b>STATE OF ILLINOIS WAYNE COUNTY HIGHWAY DEPARTMENT</b>	<b>BORINGS STRUCTURE NO. 096-3459</b>	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND RENWICK, INC. 508 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703	PLOT SCALE =	CHECKED - S.W.M.	REVISED -			426	10-06119-00-BR	WAYNE	13	13
ILLINOIS PROFESSIONAL DESIGN FIRM L5 / PE / SE CORP. 184-001859	PLOT DATE = 1/14/2014	DRAWN - R.D.H.	REVISED -			ELM RIVER ROAD DISTRICT				
				SHEET NO. 9 OF 9 SHEETS		ILLINOIS FED. AID PROJECT				