

1-18-13 LETTING ITEM 125

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

**PLANS FOR PROPOSED  
HIGHWAY BRIDGE PROGRAM**

PROJECT BROS-0087(130)  
SECTION 10-01218-00-BR  
COUNTY UNIT ROAD DISTRICT  
JOHNSON COUNTY  
T.R. 85 / DOUBLE BRIDGES LANE  
PROPOSED STRUCTURE NO. 044-3134  
C-99-520-11

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 85	10-01218-00-BR	JOHNSON	19	1
FED. ROAD DIST. NO.		ILLINOIS CONTRACT NO. 99476		

**INDEX OF SHEETS**

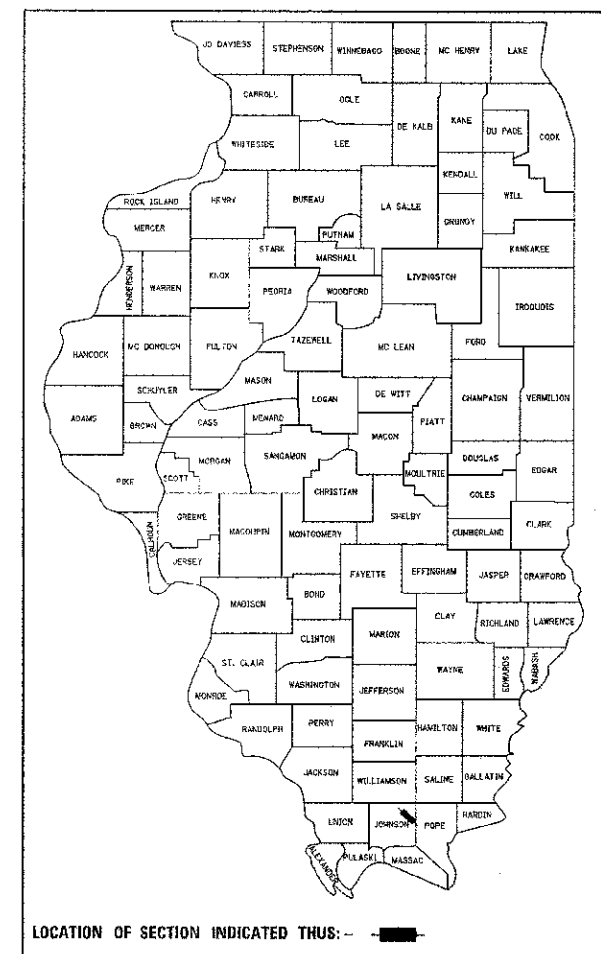
SHEET NO.	DESCRIPTION
1.	COVER SHEET
2.	SUMMARY OF QUANTITIES AND GENERAL NOTES
3.	TYPICAL SECTIONS
4-5.	PLAN AND PROFILE
6-10.	STATION CROSS SECTIONS
11-18.	BRIDGE PLANS
19.	BORINGS

SEE PROPOSAL BOOKLET FOR HIGHWAY STANDARDS:

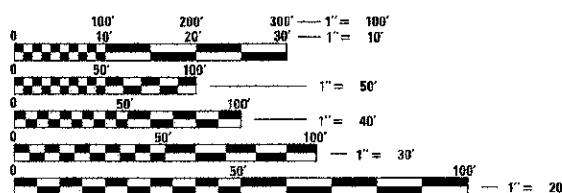
000001-06	STANDARD SYMBOLS, ABBREVIATIONS, AND PATTERNS
515001-03	NAME PLATE FOR BRIDGES
635006-03	REFLECTOR AND TERMINAL MARKER PLACEMENT
701901-02	TRAFFIC CONTROL DEVICES
BLR 21-9	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS

**UTILITIES**

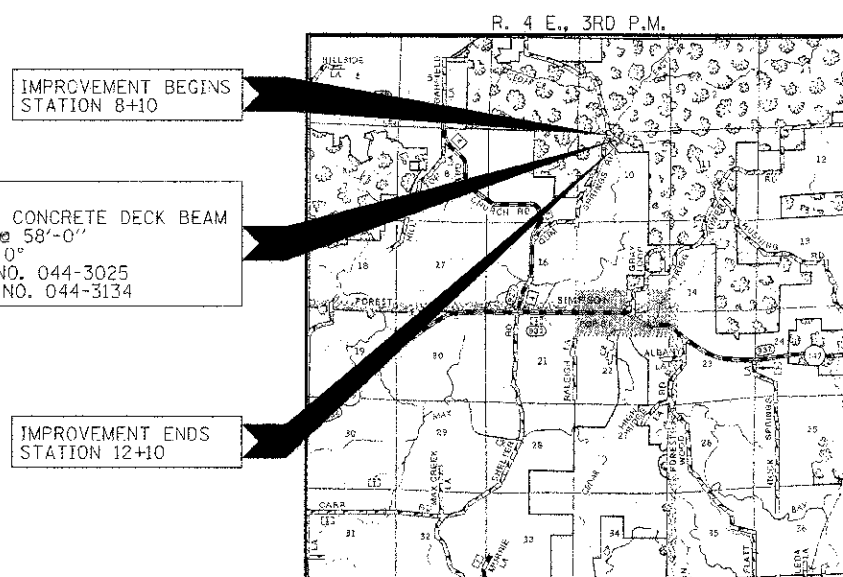
NONE



FUNCTIONAL CLASSIFICATION: LOCAL ROAD (NON-URBAN)  
DESIGN SPEED: 20 MPH  
DESIGN TRAFFIC: 5 ADT

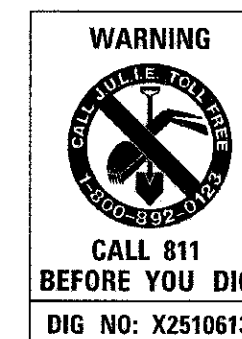


FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

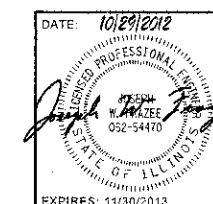


LOCATION MAP

APPROXIMATE SCALE: 1 MILE  
NET LENGTH OF SECTION = 400 FEET = 0.076 MILES



JOHNSON COUNTY HIGHWAY DEPARTMENT	
APPROVED	11-8 2012 <i>Steve Kelly</i> COUNTY ENGINEER
PASSED	NOV. 2, 2012 <i>Dennis W. Hill</i> DISTRICT NINE ENGINEER OF LOCAL ROADS & STREETS
Releasing For Bid Based on Limited Review	11-5 2012 <i>Orren Osman</i> DEPUTY DIRECTOR OF HIGHWAYS REGION FIVE ENGINEER STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION



HAMPTON, LENZINI AND RENWICK, INC.  
CIVIL ENGINEERS - STRUCTURAL ENGINEERS - LAND SURVEYORS  
3085 STEVENSON DRIVE, SUITE 201  
SPRINGFIELD, ILLINOIS 62703  
217.546.3400 www.hlrenr.com

194.000959  
ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORPORATION

EXPIRES: 11/30/2013

PROJECT NUMBER: 11 6138 130

DATE: 10/29/12

CONTRACT NO. 99476

SUMMARY OF QUANTITIES			
CODE NO.	ITEM	UNIT	TOTAL CONSTRUCTION TYPE CODE 0011
20100500	TREE REMOVAL, ACRES	ACRE	0.1
20200100	EARTH EXCAVATION	CU YD	80
20300100	CHANNEL EXCAVATION	CU YD	120
20400800	FURNISHED EXCAVATION	CU YD	275
28000305	TEMPORARY DITCH CHECKS	FOOT	10
28000400	PERIMETER EROSION BARRIER	FOOT	150
28100707	STONE DUMPED RIPRAP, CLASS A4	SQ YD	180
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	259
50100130	REMOVAL OF EXISTING STRUCTURES	EACH	1
50300225	CONCRETE STRUCTURES	CU YD	23.8
50300280	CONCRETE ENCASEMENT	CU YD	2.8
50400405	PRECAST PRESTRESSED CONCRETE DECK BEAMS (21" DEPTH)	SQ FT	1218
50800105	REINFORCEMENT BARS	POUND	2340
* 50900205	STEEL RAILING, TYPE S1	FOOT	113
51201400	FURNISHING STEEL PILES HP10X42	FOOT	360
51202305	DRIVING PILES	FOOT	360
51500100	NAME PLATES	EACH	1
67100100	MOBILIZATION	L SUM	1
* 78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	4
^ X2501000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.2

^ SEE SPECIAL PROVISIONS  
\* SPECIALTY ITEMS

EARTHWORK SCHEDULE							
LOCATION	EARTH EXCAVATION	CHANNEL EXCAVATION	SHRINKAGE FACTOR	PERCENT USED	EARTH EXCAVATION ADJUSTED FOR SHRINKAGE	EMBANKMENT REQUIRED	EARTHWORK BALANCE
	CU.YD.	CU.YD.			CU.YD.	CU.YD.	CU.YD.
TR 85							
STA 8+10 TO STA 9+70.34	25		25.00%	100.00%	19	139	-120
STA 9+70.34 TO STA 10+29.66	0		25.00%	100.00%	0	0	0
STA 10+29.66 TO STA 12+10	52		25.00%	100.00%	39	254	-215
CHANNEL EXCAVATION		120	25.00%	70.00%	63	0	63
TOTAL	77	120			121	393	-272
USE	80	120					-275

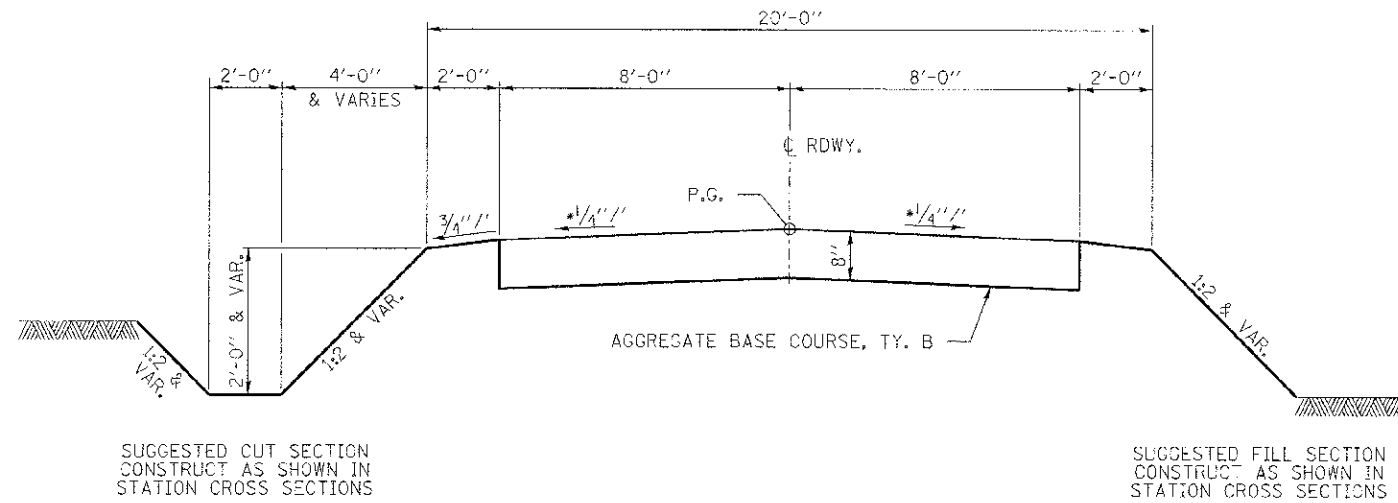
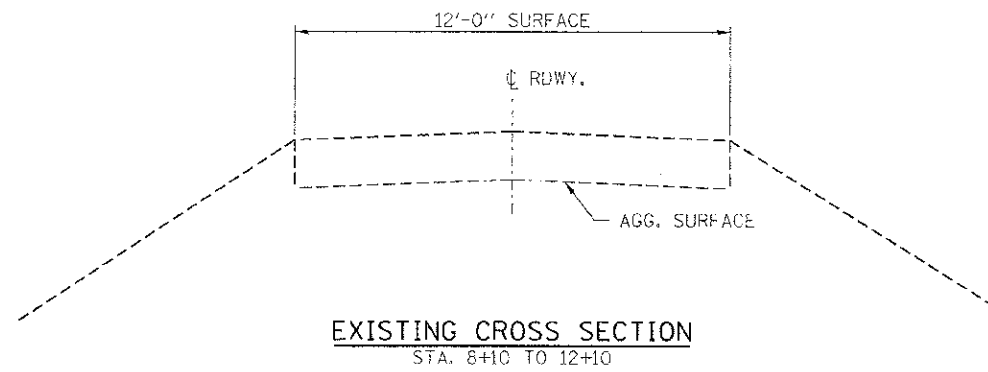
20400800 FURNISHED EXCAVATION = 275 CU YDS

### GENERAL NOTES

- ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE STATE OF ILLINOIS "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION ADOPTED JANUARY 1, 2012." THESE PLANS AND THE SPECIAL PROVISIONS INCLUDED IN THE CONTRACT DOCUMENTS.
- ALL CLEARING AND GRUBBING, FENCE REMOVAL AND REMOVAL OF EXISTING DRAINAGE STRUCTURES SHALL BE INCLUDED IN THE COST OF EARTH EXCAVATION. THE REMOVAL OF THE EXISTING BITUMINOUS SURFACE WILL BE PAID FOR AS EARTH EXCAVATION. ALL BITUMINOUS MATERIAL SHALL BE PROPERLY DISPOSED OF BY THE CONTRACTOR IN A METHOD APPROVED BY THE ENGINEER. PROPER DISPOSAL OF BITUMINOUS MATERIAL SHALL BE INCLUDED IN THE COST OF EARTH EXCAVATION AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
- THE LOCATION OF EXISTING GAS MAINS, ELECTRIC POWER LINES, TELEPHONE LINES AND OTHER UTILITIES AS SHOWN ON THE PLANS ARE BASED ON CAREFUL FIELD INVESTIGATIONS AND THE BEST INFORMATION AVAILABLE. BUT THE LOCATIONS ARE NOT GUARANTEED. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ASCERTAIN THEIR EXACT LOCATION FROM THE INDIVIDUAL UTILITY COMPANIES AND BY FIELD INSPECTION.
- WHERE SECTION OR SUBSECTION MONUMENTS ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED BEFORE SUCH MONUMENTS ARE REMOVED. THE CONTRACTOR SHALL PROTECT AND CAREFULLY PRESERVE ALL PROPERTY MARKS AND MONUMENTS UNTIL THE OWNER, AN AUTHORIZED SURVEYOR OR AGENT HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATION.
- THE FOLLOWING RATES OF APPLICATION HAVE BEEN USED IN CALCULATING PLAN QUANTITIES:  
AGGREGATE SURFACE COURSE 2.05 TON/CU YD  
STONE RIPRAP, CLASS A4 (SPECIAL) 1.75 TON/CU YD
- THE AREA TO BE SEEDED SHALL CONSIST OF ALL DISTURBED EARTH SURFACES WITHIN THE RIGHT OF WAY AS DIRECTED BY THE ENGINEER.  
**ESTIMATED QUANTITY: SEEDING, CLASS 2 (SPECIAL) = 0.2 ACRES**
- TREES WITHIN THE RIGHT-OF-WAY WHICH INTERFERE WITH CONSTRUCTION SHALL BE REMOVED ONLY AT THE DIRECTION OF THE ENGINEER. THE AREA DESIGNATED FOR REMOVAL SHALL BE MARKED AND MEASURED FOR PAYMENT BY THE ENGINEER BEFORE REMOVAL.  
**ESTIMATED QUANTITY: TREE REMOVAL, ACRES = 0.1 ACRES**
- TREE REMOVAL SHALL NOT BE CONDUCTED DURING THE PERIOD FROM APRIL 1 THROUGH SEPTEMBER 30.
- THERE SHALL BE NO INTENTIONAL OR MALICIOUS HARMING OF ANY WILDLIFE SPECIES, INCLUDING SNAKES, DURING THE CONSTRUCTION WORK.

PERIMETER EROSION BARRIER	
LOCATION	PERIMETER EROSION BARRIER 28000400 FOOT
7' LT. STA 7+00 TO 5' LT. STA 7+60	60
5' LT. STA 7+60 TO 7' LT. STA 8+10	50
7' LT. STA 8+10 TO 10' LT. STA 8+50	40
TOTAL	150

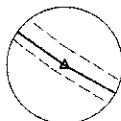
FILE NAME = 110138-ehf-sumorg.dgn	USER NAME =	DESIGNED - J.W.F.	REVISED -	<b>STATE OF ILLINOIS JOHNSON COUNTY HIGHWAY DEPARTMENT</b>	<b>SUMMARY OF QUANTITIES AND GENERAL NOTES T.R. 85 / DOUBLE BRIDGES LANE</b>	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
<b>HAMPTON, LENZINI AND RENWICK, INC.</b> 3005 STEVENSON DRIVE, SUITE 201 CHICAGO, ILLINOIS 60631	PLOT SCALE =	DRAWN - D.A.B.	REVISED -			85	10-01218-00-BR	JOHNSON	19	2	
<b>ELWOOD PROFESSIONAL DESIGN FIRM</b> 1517 E. 98th ST. CHICAGO, IL 60619	PLOT DATE = 10/29/2012	CHECKED - M.G.B.	REVISED -			COUNTY UNIT ROAD DISTRICT	CONTRACT NO. 99476	ILLINOIS FEDERAL AID PROJECT			
		DATE - 10/29/12	REVISED -			SCALE:	SHEET NO. : OF 1 SHEETS	STA.	TO STA.		



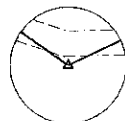
**TYPICAL CROSS SECTION**  
 STA. 8+10 TO 12+10  
 TRANSITION FROM THE PROPOSED ROADWAY TO THE EXISTING ROADWAY IS TO BE CONSTRUCTED FROM STA. 8+10 TO 8+60 AND STA. 11+60 TO 12+10. SEE SHEET 11 FOR TRANSITION AT BRIDGE.  
 \* (S.E. TRANSITION STA. 8+13.14 TO STA. 11+13.35)

FILE NAME = 110138-shl-tyxcrosssections.dgn	USER NAME =	DESIGNED - J.W.F.	REVISED -	<b>STATE OF ILLINOIS JOHNSON COUNTY HIGHWAY DEPARTMENT</b>	<b>TYPICAL CROSS SECTIONS T.R. 85 / DOUBLE BRIDGES LANE</b>			T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
<b>HAMPTON, LENZINI AND RENWICK, INC.</b> 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62709	PLOT SCALE =	DRAWN - D.A.B.	REVISED -		85	10-01218-00-BR	JOHNSON	19	3			
<b>ILLINOIS PROFESSIONAL DESIGN FIRM</b> 1517 PEI SF CENTER *REG. 0000085	PLOT DATE = 10/29/2012	CHECKED - M.S.B.	REVISED -		COUNTY UNIT ROAD DISTRICT			CONTRACT NO. 99476				
	DATE = 10/29/12	REVISOR -	REVISED -		SCALE:	SHEET NO. 1 OF 1 SHEETS	STA.	TO STA.		ILLINOIS FED. AID PROJECT		



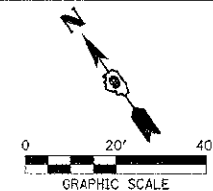


P.I. STA. 12+34.53  
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E. 861,526.2807

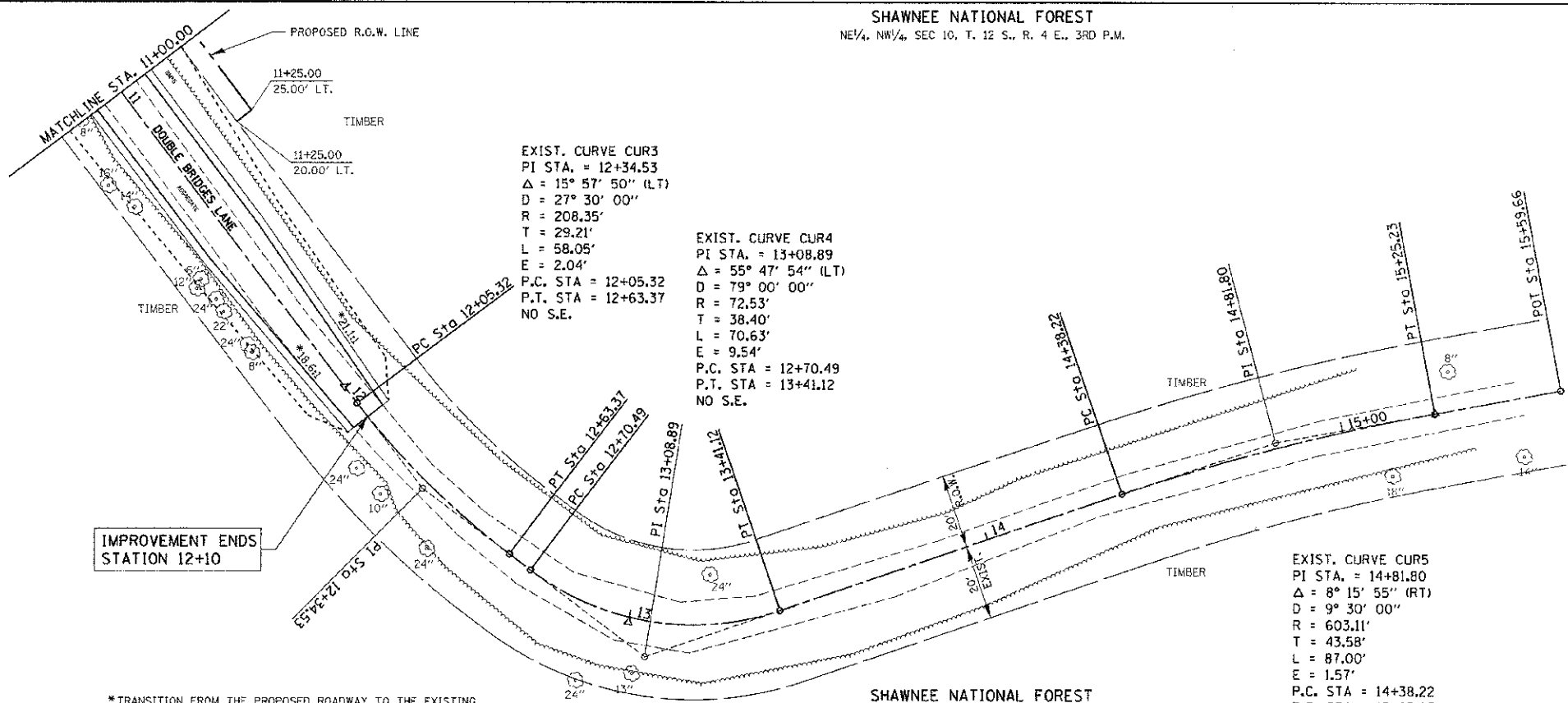


P.I. STA. 13+08.89  
(TO BE SET)  
N. 301,771.4625  
E. 861,549.2345

SHAWNEE NATIONAL FOREST  
NE 1/4, NW 1/4, SEC 10, T. 12 S., R. 4 E., 3RD P.M.



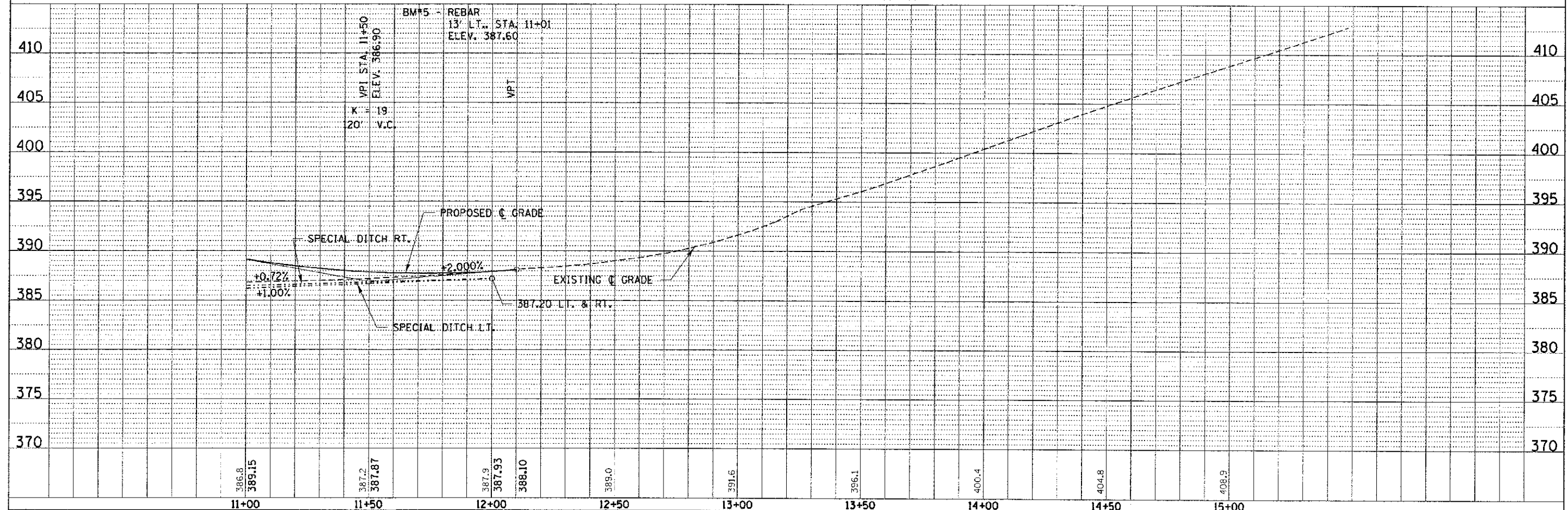
DATE	
BY	
PROF. FILE	
NO.	



\*TRANSITION FROM THE PROPOSED ROADWAY TO THE EXISTING ROADWAY IS TO BE CONSTRUCTED FROM STA. 11+50 TO 12+10.

SHAWNEE NATIONAL FOREST  
NE 1/4, NW 1/4, SEC 10, T. 12 S., R. 4 E., 3RD P.M.

DATE	
BY	
PROF. FILE	
NO.	

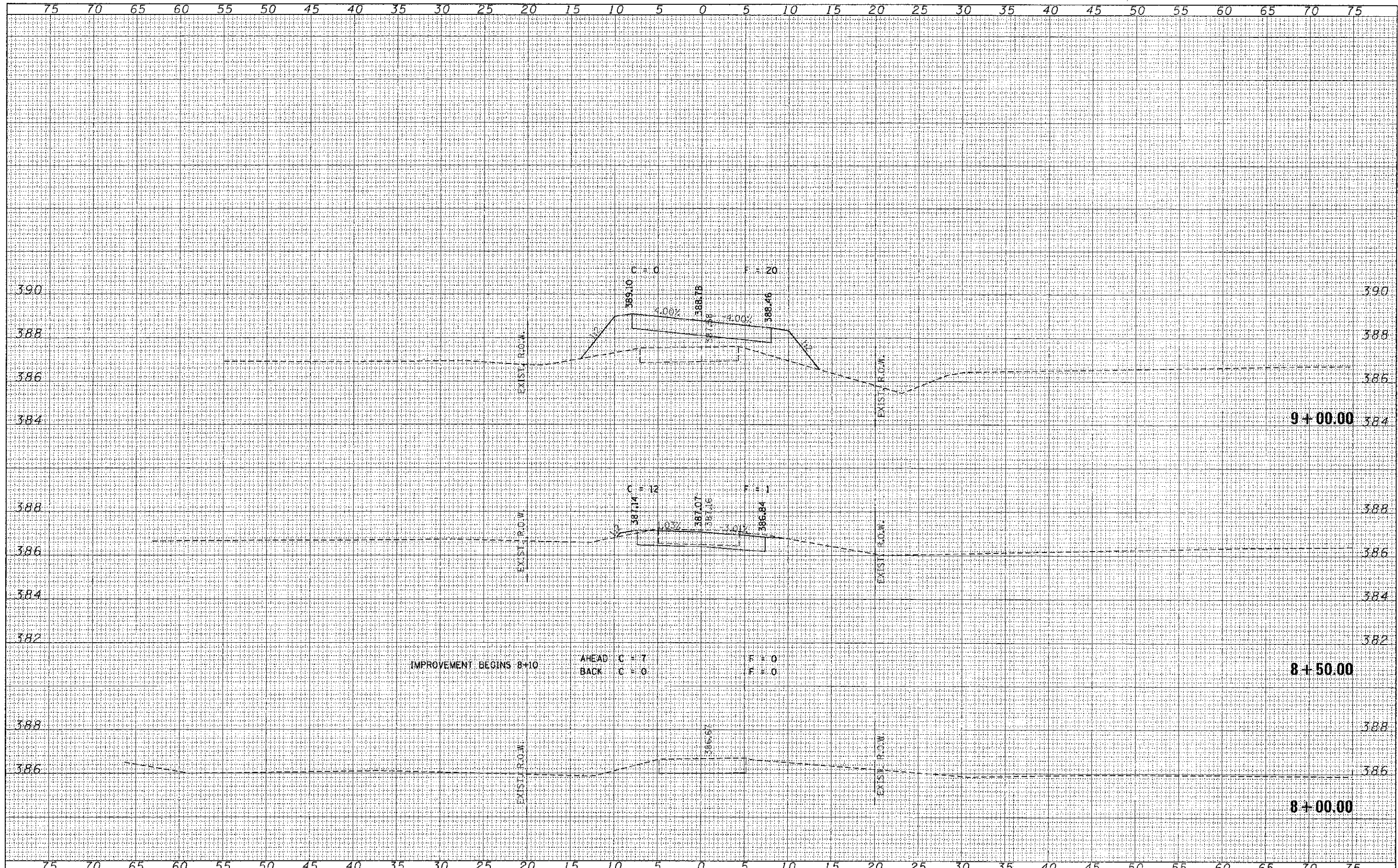


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HAMPTON, LENZINI AND RENWICK, INC.		DRAWN - T.W.K.	REVISED -		85	10-01218-00-RR	JOHNSON	19	5		
1301 WESTPARK DRIVE, SUITE 701 SPRINGFIELD, ILLINOIS 62713		CHECKED - M.G.B.	REVISED -		COUNTY UNIT ROAD DISTRICT	CONTRACT NO. 99476					
ILLINOIS PROFESSIONAL DESIGN FIRM 05 / WEST SEC 009 184,00039		DATE - 10/29/12	REVISED -		SCALE: H20xV5	SHEET NO. 2 OF 2 SHEETS	STA. 11+00.00 TO STA. 15+59.66	ILLINOIS FEEL AND PROJECT			



DATE	
BY	
FINAL SURVEY	
NOTED BOOK	
PLATE	
AREAS	
AREAS	

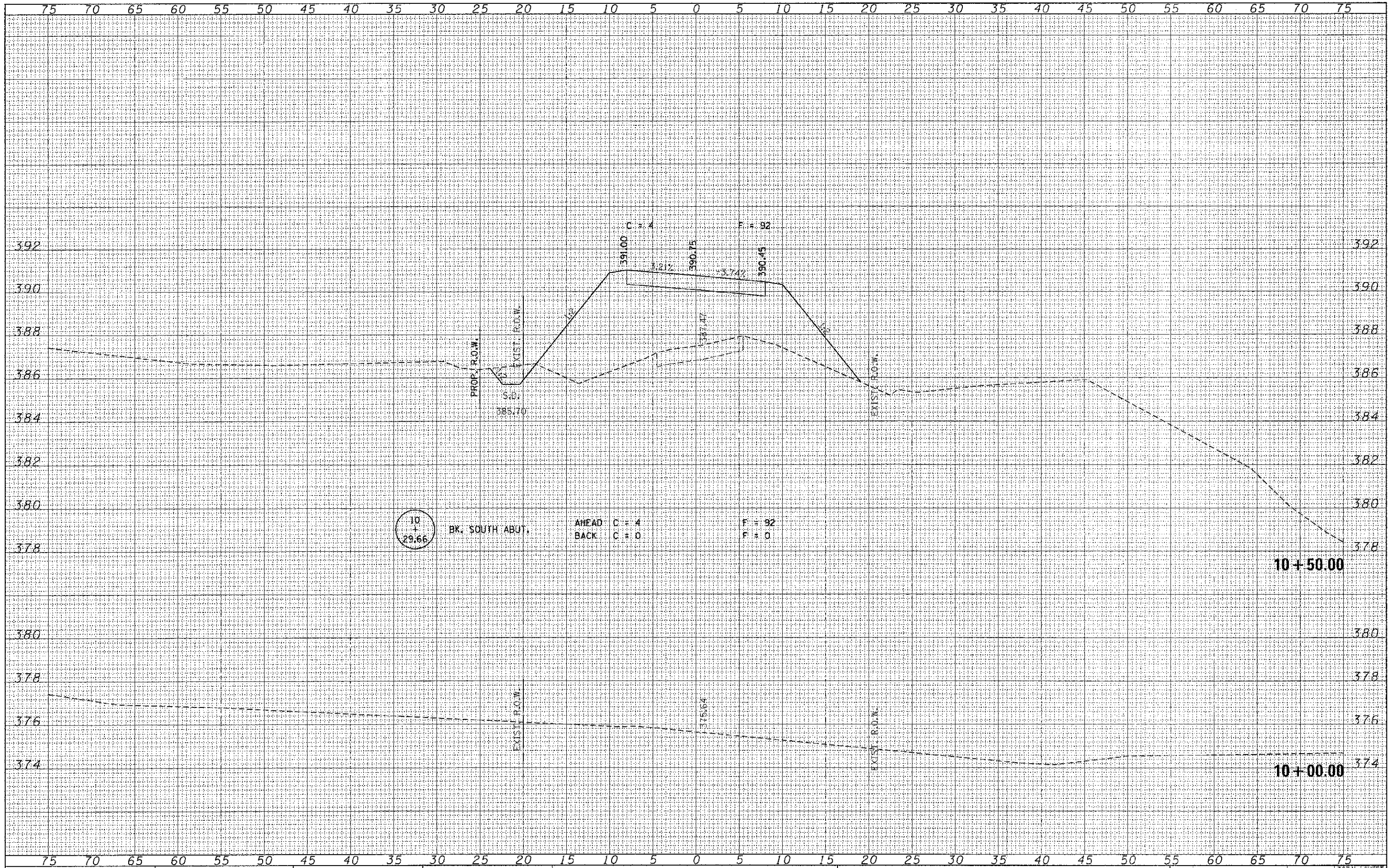
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ORIGINAL SURVEY	
NOTED BOOK	
PLATE	
AREAS	
AREAS	



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HAMPTON, LENZINI AND RENWICK, INC.		DRAWN - T.W.K.	REVISED -		55	10-01218-00-DR	JOHNSON	19	6			
380 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62733		CHECKED - M.S.B.	REVISED -		SCALE: H5:V2		SHEET NO. 1 OF 5 SHEETS		STA. 8+00.00 TO STA. 9+00.00		CONTRACT NO. 99476	
ILLINOIS PROFESSIONAL DESIGN FIRM 627 P.E. / SE CDMP 18400993		DATE - 10/29/2012	REVISED -		ILLINOIS FED. AID PROJECT							







FINAL SURVEY	DATE
REVISIONS	BY
PLANNING	
DESIGN	
CONSTRUCTION	

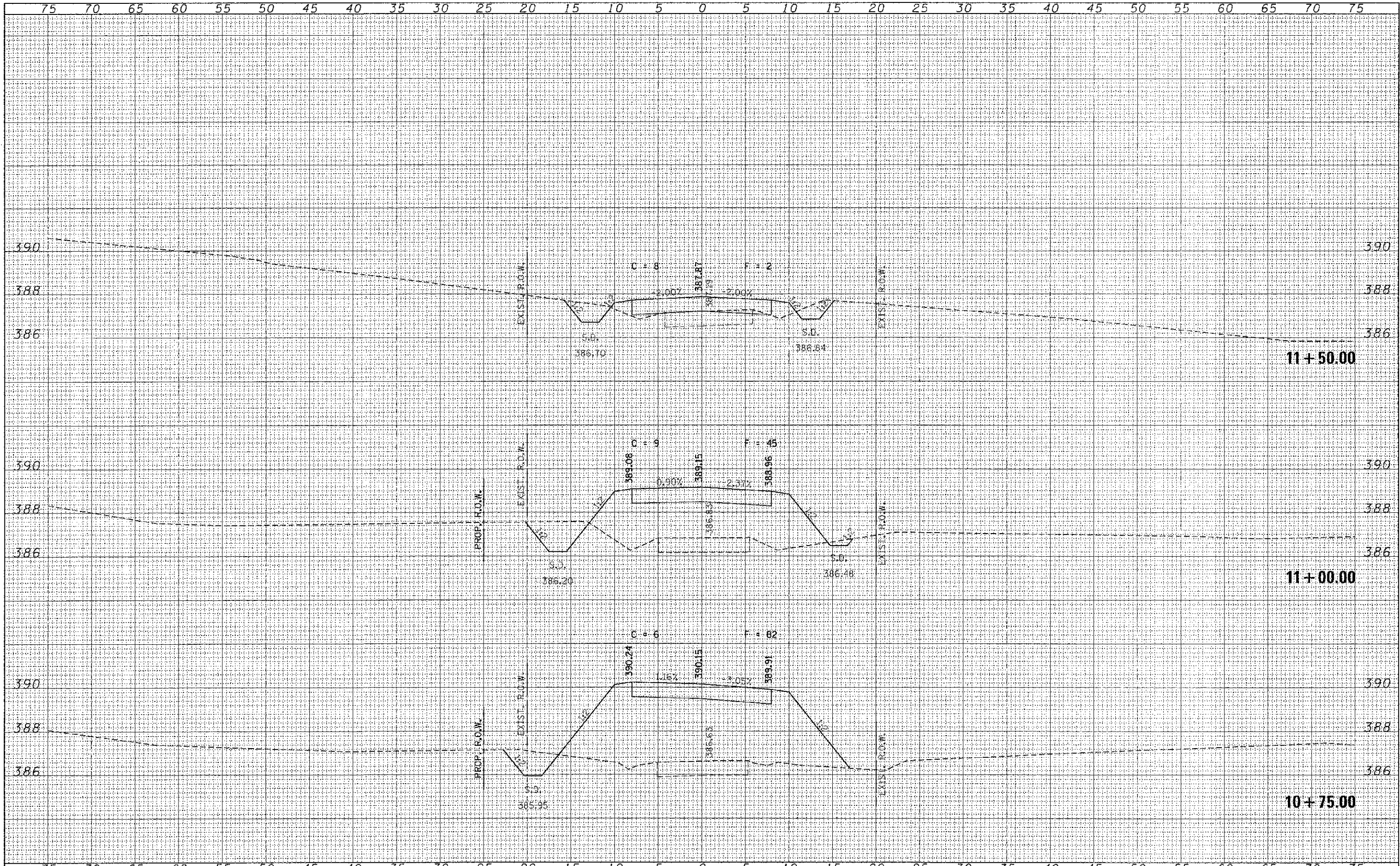
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REVISIONS	BY
PLANNING	
DESIGN	
CONSTRUCTION	

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HAMPTON, LENZINI AND RENWICK, INC.	PLOT SCALE =	DRAWN - T.W.K.	REVISED -			B5	10-01218-00-BR	JOHNSON	19	8	
111 N. WISCONSIN ST. SUITE 101 SPRINGFIELD, ILLINOIS 62733	PLOT DATE = 10/29/2012	CHECKED - M.S.B.	REVISED -			CONTRACT NO. 99476					
ILLINOIS PROFESSIONAL ENGINEER REG. NO. 124-000000	DATE = 10/29/2012	REVISED -	REVISED -			ILLINOIS FED. AID PROJECT					



DATE	
BY	
FINAL SURVEY	
NOTED DRAW	
AREAS CHECKED	

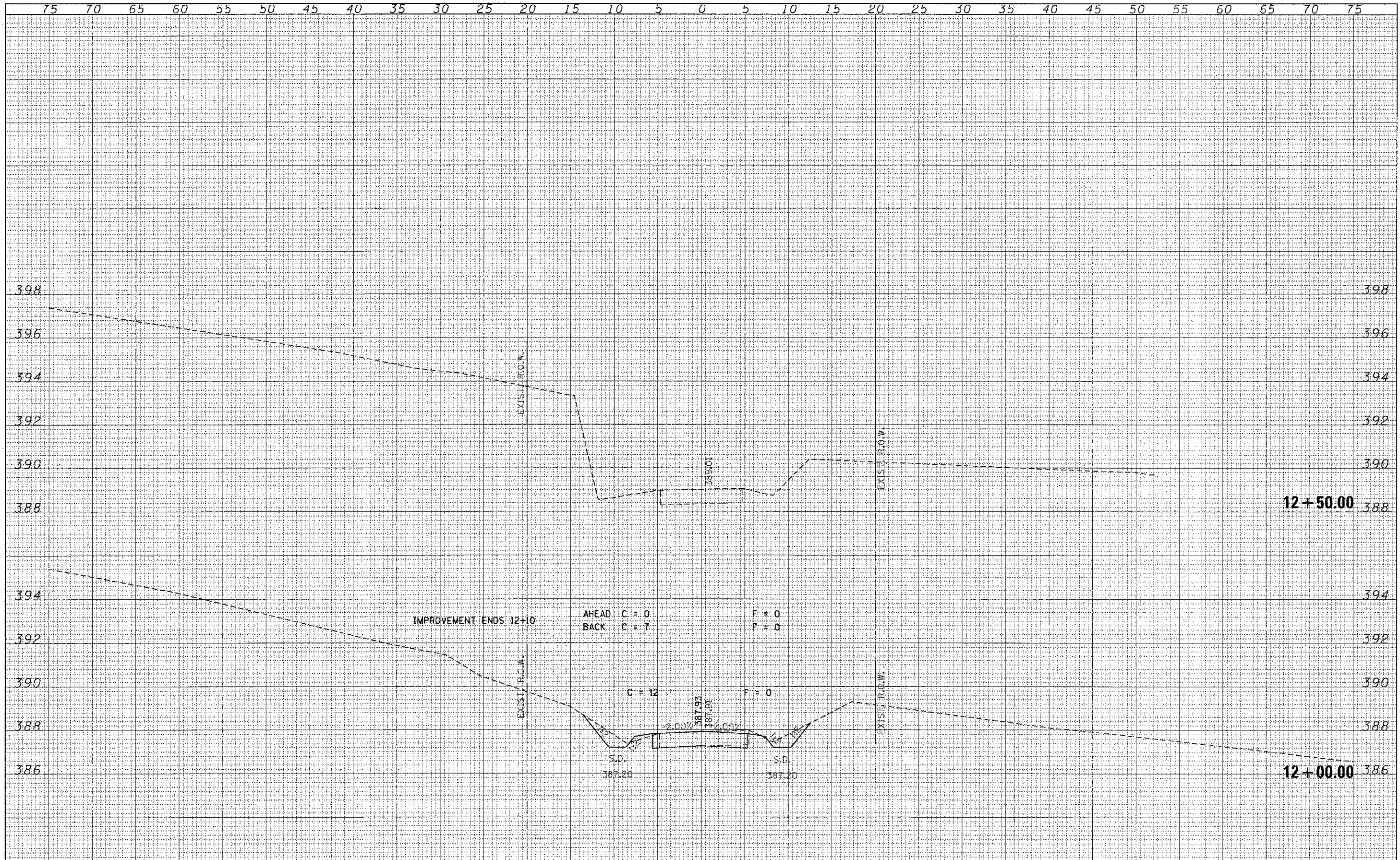
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HAMPTON, LENZINI AND RENWICK, INC.		DRAWN - T.W.K.	REVISED -		85	10-01218-00-BR	JOHNSON	19	9			
3008 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62702		CHECKED - M.C.B.	REVISED -		SCALE: H5V2		SHEET NO. 4 OF 5 SHEETS		STA. 10+75.00 TO STA. 11+50.00		CONTRACT NO. 99476	
ILLINOIS PROFESSIONAL DESIGN FIRM LS 118 / 02 CORP. 16423094		DATE - 10/25/2012	REVISED -		ILLINOIS FED. AID PROJECT							

DATE	
BY	
FINAL	
SURVEY	
TEMPLATE	
NOTE BOOK	
AREAS	
CHECKED	

DATE	
BY	
ORIGINAL	
SURVEY	
TEMPLATE	
NOTE BOOK	
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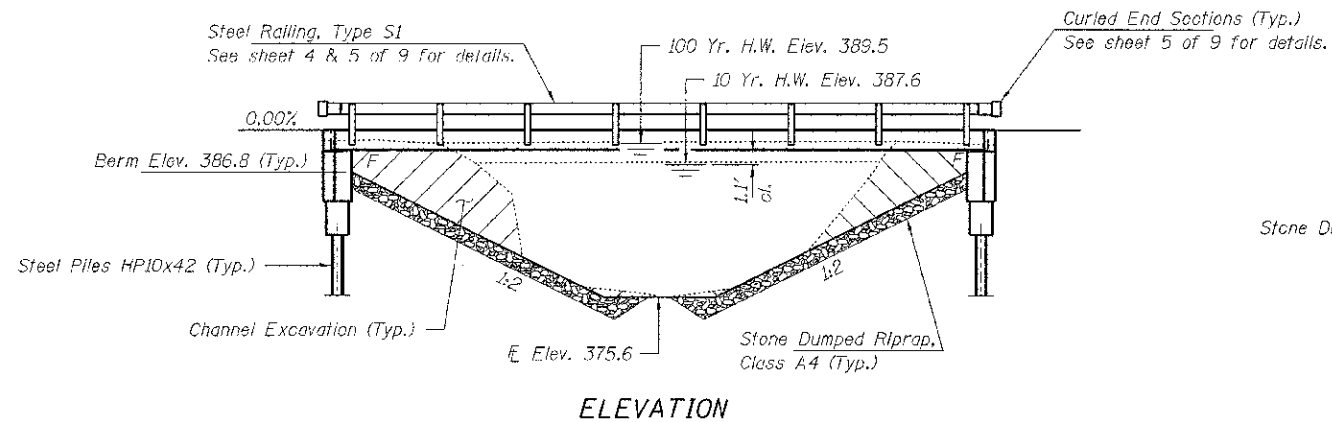
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HAMPTON, LENZINI AND REHWICK, INC.	DRAWN - T.W.K.	REVISED -	65		10-01218-00-BR	JOHNSON	19	10	
303 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62761	CHECKED - M.G.B.	REVISED -	CONTRACT NO. 99476						
ILLINOIS PROFESSIONAL DESIGN FIRM LS 178 / 98 CORP. 18-00991	DATE - 10/29/2012	REVISED -	ILLINOIS FED. AID PROJECT						
PLOT SCALE =	PLOT DATE = 10/29/2012	REVISED -							



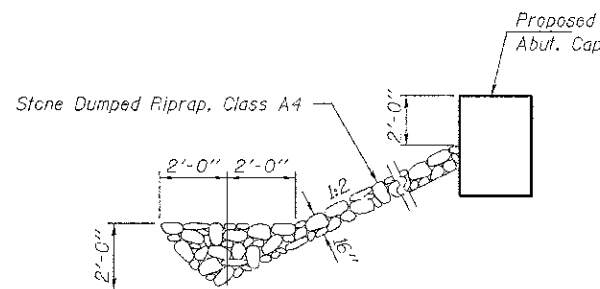
BENCHMARK: Rebar. 15' Lt., Sta. 9+16, Elev. 388.05

EXISTING STRUCTURE NO. 044-3025: Single span I-beam bridge with timber deck on closed concrete abutments and wingwalls. 40.0' bk.-bk. abutts.; 14.5' o.-o. deck.

Structure closed to traffic during construction.

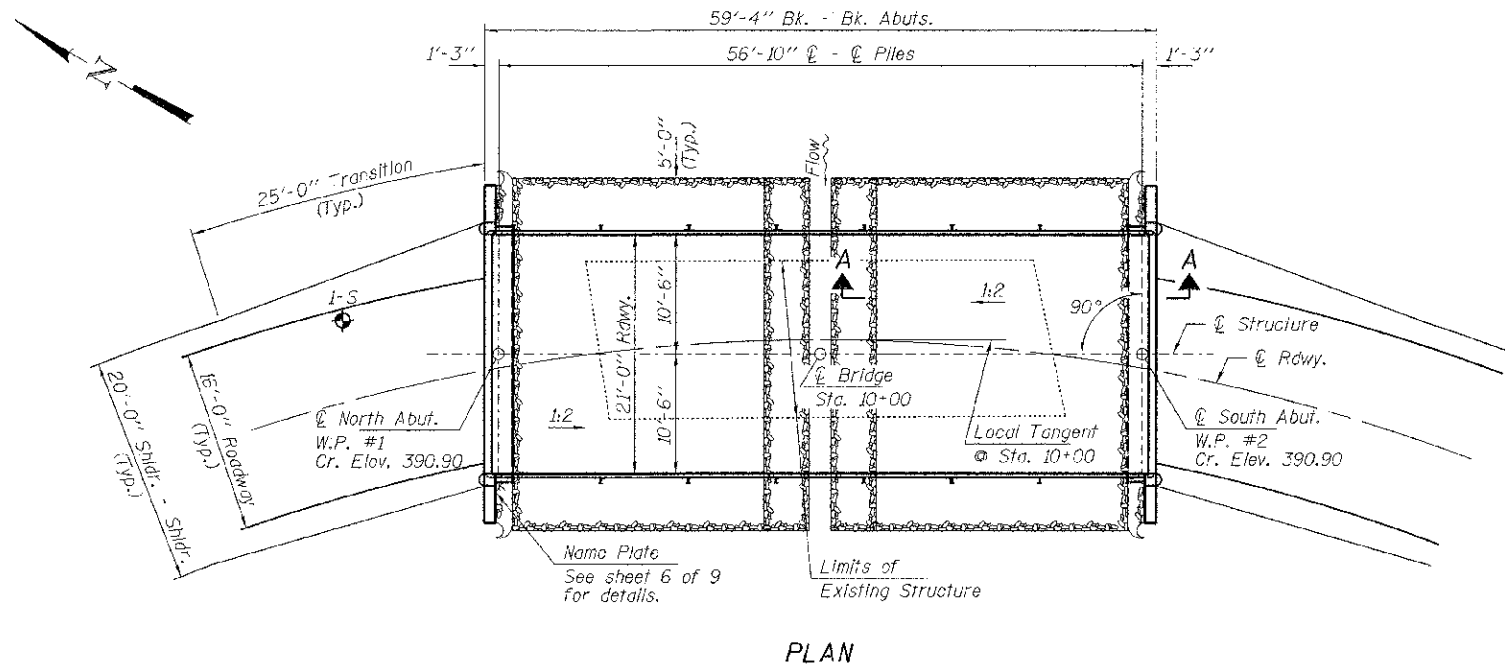


ELEVATION

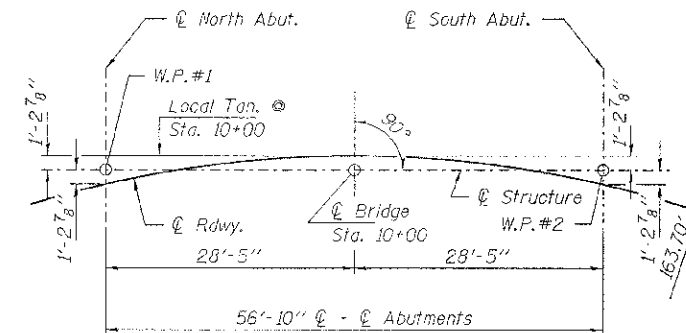


SECTION A-A

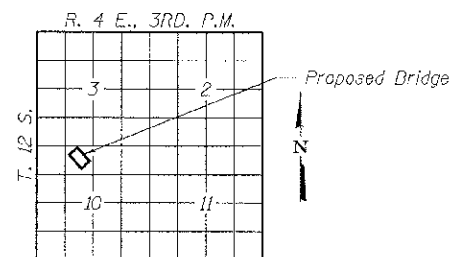
Note: See Special Provisions for Stone Dumped Riprap, Class A4.



PLAN



OFFSET SKETCH



LOCATION SKETCH

BUILT 2011 BY  
JOHNSON COUNTY  
SEC. 10-01218-00-BR  
COUNTY UNIT ROAD DISTRICT  
STR. NO. 044-3134  
LOADING HL-93

NAME PLATE  
See Std. 515001

DESIGN STRESSES

FIELD UNITS

$f'_c = 3,500$  psi  
 $f_y = 60,000$  psi (Reinf.)

PRECAST PRESTRESSED UNITS

$f'_c = 6,000$  psi  
 $f'_ci = 5,000$  psi  
 $f_{pu} = 270,000$  psi ( $\frac{1}{2}$ " low tax. strands)  
 $f_{pbt} = 201,960$  psi ( $\frac{1}{2}$ " low tax. strands)  
 $f_y = 60,000$  psi (Reinf.)

LOADING HL-93

Design Specifications: 2010 AASHTO LRFD with all applicable interims. 50#/Sq. Ft. included in dead load for future wearing surfaces.

SEISMIC DATA

Seismic Performance Zone (SPZ) = 4  
Design Spectral Acceleration at 1.0 sec. ( $S_{D1}$ ) = 0.656g  
Design Spectral Acceleration at 0.2 sec. ( $S_{D5}$ ) = 0.918g  
Soil Site Class = E

DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	W. Abut.	E. Abut.
	384.1	384.1

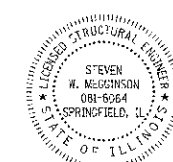
WATERWAY INFORMATION

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Natural Head - Ft.		Headwater El.		
			Exist.	Prop.	Exist.	Prop.	Exist.	Prop.	
Design	10	3340	260	410	387.58	0.52	0.33	388.10	387.91
Base	100	5910	260	470	389.54	0.00	0.27	389.54	389.81
	500	7970	260	470	390.67	0.00	0.15	390.67	390.82

Existing Low Grade Elev. 386.7 @ Sta. 8+00  
Proposed Low Grade Elev. 386.7 @ Sta. 8+00  
Drainage Area = 10.3 Sq. Mi.

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. Magrison 10/29/12  
ILLINOIS STRUCTURAL ENGINEER NO. 081-6064



Expires 11-30-2012

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	Cu. Yd.			120
Stone Dumped Riprap, Class A4	Ton			160
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 (21" Depth)	Sq. Ft.	1,218		1,218
Reinforcement Bars	Pound		2,340	2,340
Steel Railing, Type S1	Foot	113		113
Furnishing Steel Piles HP10x42	Foot		360	360
Driving Piles	Foot		360	360
Name Plates	Each		1	1

FILE NAME = 110139-sh+bridge.dgn  
USER NAME =  
DESIGNED - J.W.F.  
CHECKED - S.W.M.  
DRAWN - D.A.B.  
CHECKED - M.G.B.  
REVISIONS -  
REVISIONS -  
REVISIONS -  
REVISIONS -  
HAMPTON, LENZINI AND RENWICK, INC.  
390 STEVENSON DRIVE, SUITE 201  
SPRINGFIELD, IL 62761  
ILLINOIS PROFESSIONAL DESIGN FIRM  
3/27/11 P.C. 020

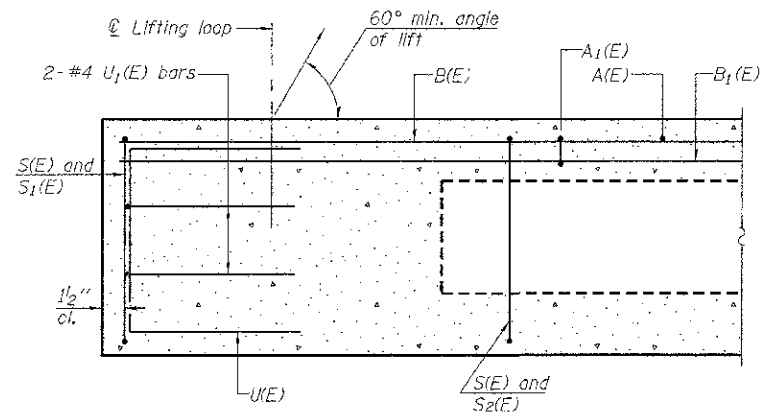
DESIGNED - J.W.F.  
CHECKED - S.W.M.  
DRAWN - D.A.B.  
CHECKED - M.G.B.  
REVISIONS -  
REVISIONS -  
REVISIONS -  
REVISIONS -

STATE OF ILLINOIS  
JOHNSON COUNTY HIGHWAY DEPARTMENT

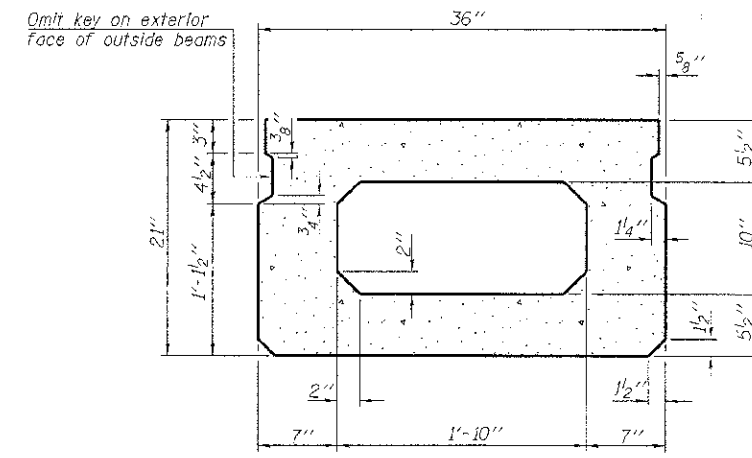
GENERAL PLAN & ELEVATION  
STRUCTURE NO. 044-3134  
SHEET NO. 1 OF 9 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
95	10-01218-00-BR	JOHNSON	19	11
COUNTY UNIT ROAD DISTRICT			CONTRACT NO. 99476	
ILLINOIS FED. AID PROJECT				

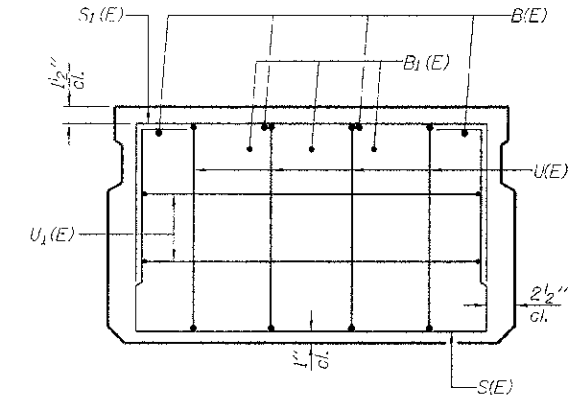




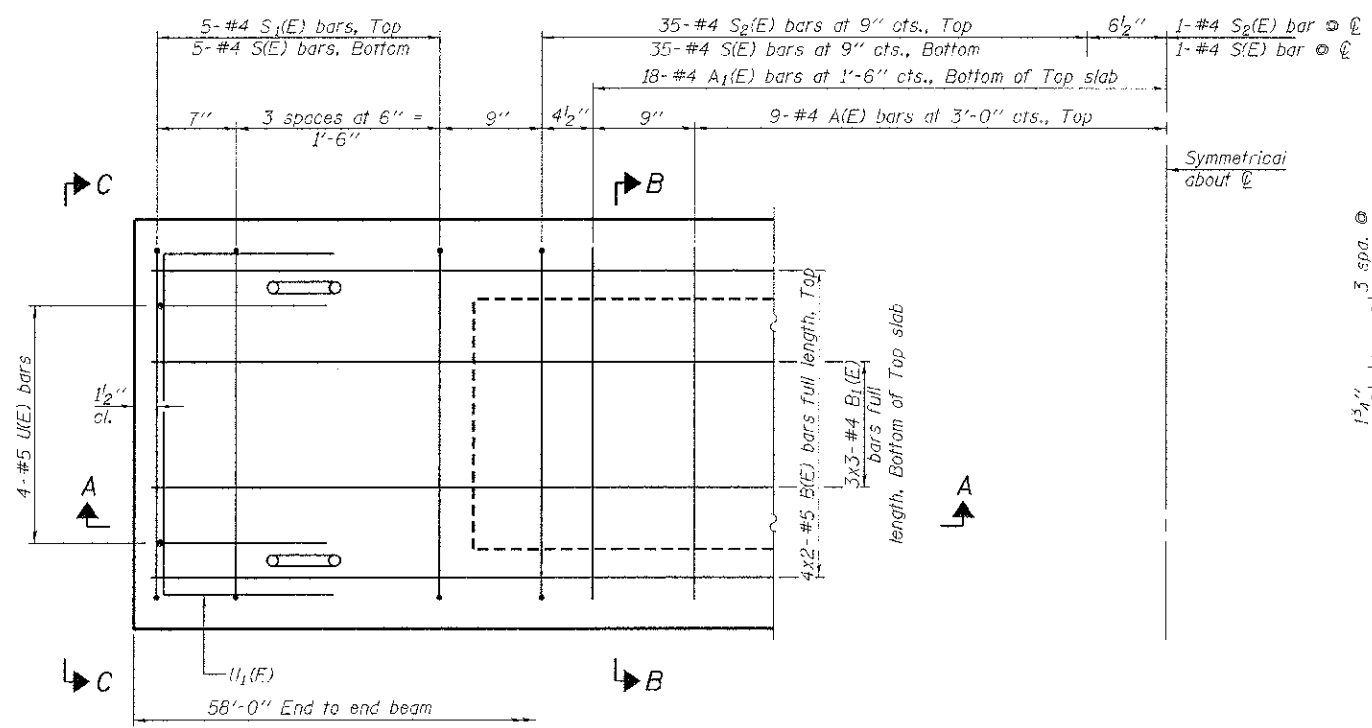
SECTION A-A



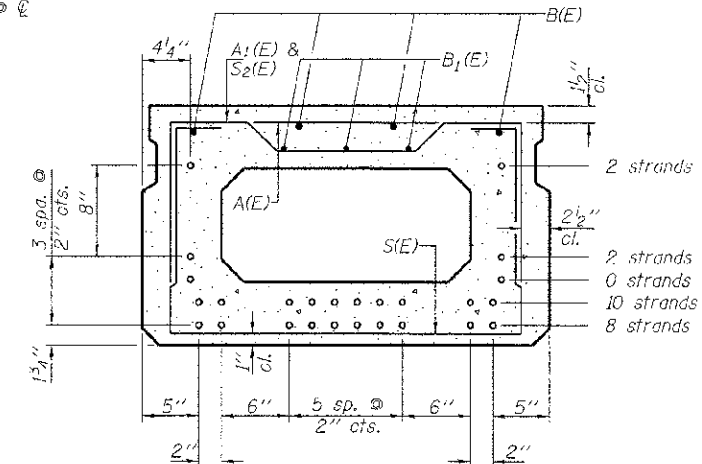
SECTION B-B  
(Showing dimensions)



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)	18	#4	2'-7"	—
A1(E)	36	#4	2'-10"	—
B(E)	8	#5	30'-2"	—
B1(E)	9	#4	20'-7"	—
S(E)	81	#4	6'-5"	□
S1(E)	10	#4	4'-11"	□
S2(E)	71	#4	5'-2"	□
U1(E)	8	#5	4'-0"	□
U1(E)	4	#4	5'-0"	□

Note: See sheets 3 & 4 of B 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 4x2-#5 etc. indicates 4 lines of bars with 2 lengths per line.

PD-2136-0 7-1-10

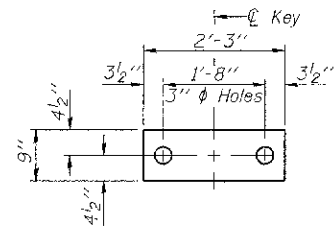
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HAMPTON, LENZINI AND RENWICK, INC.		CHECKED - S.W.M.	REVISED -
1540 STEVENSON DRIVE, SUITE 201		DRAWN - D.A.B.	REVISED -
SPRINGFIELD, ILLINOIS 62762	PLOT SCALE =	CHECKED - M.G.B.	REVISED -
ILLINOIS PROFESSIONAL JOURNALIST * IAWA	PLOT DATE = 10/29/2012		
LS/PE/SE CORP. 13400958			

STATE OF ILLINOIS  
JOHNSON COUNTY HIGHWAY DEPARTMENT

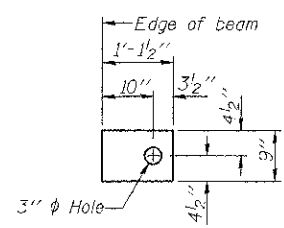
21" x 36" PPC DECK BEAM  
STRUCTURE NO. 044-3134

SHEET NO. 2 OF 9 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEET NO.
65	10-01218-00-BR	JOHNSON	19 12
COUNTY UNIT ROAD DISTRICT		CONTRACT NO. 99476	
ILLINOIS FED. AID PROJECT			



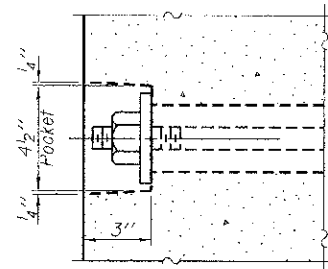
**FABRIC BEARING PAD**  
(Interior - 12 Req'd.)



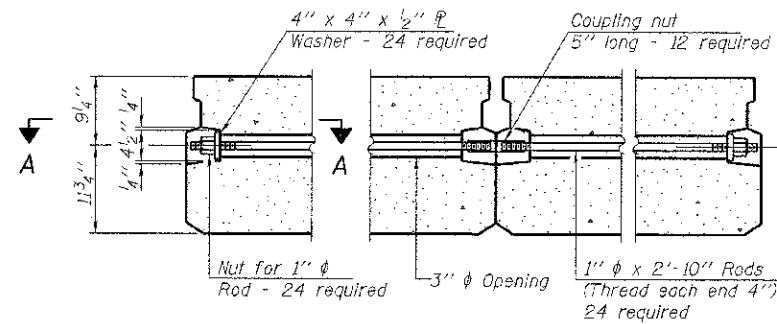
**FABRIC BEARING PAD**  
(Exterior - 4 Req'd.)

**FIXED**

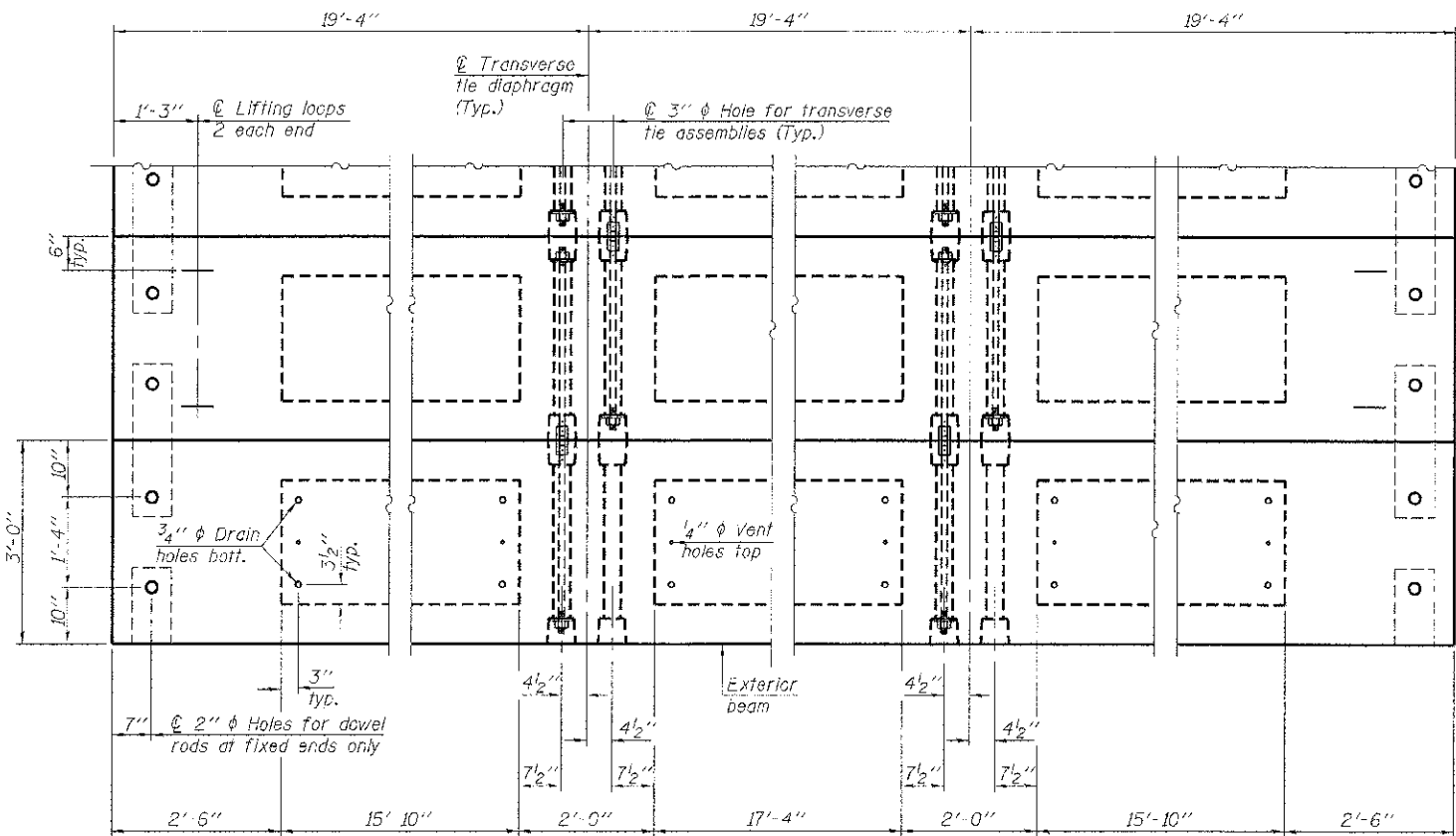
Notes:  
All bearing pads shall be 1" thick.  
Omit holes when using expansion bearings.  
Expansion bearing pad shall be bonded to the substructure.



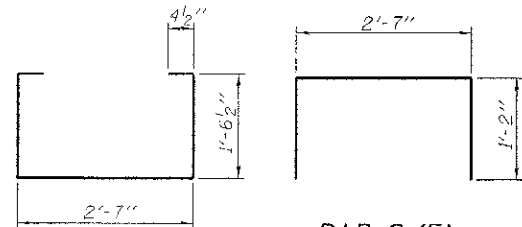
**SECTION A-A**



**TYPICAL TRANSVERSE TIE ASSEMBLY**

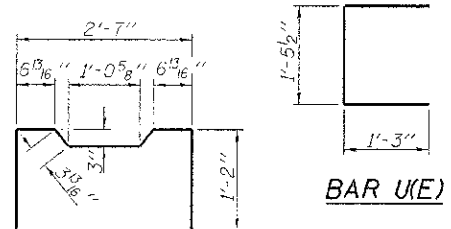


**PLAN VIEW**



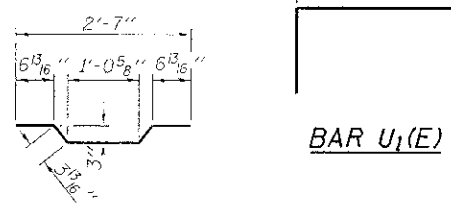
**BAR S<sub>1</sub>(E)**

**BAR S(E)**



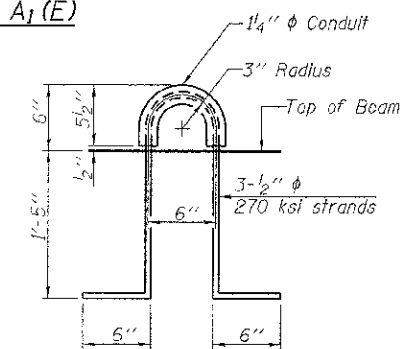
**BAR U(E)**

**BAR S<sub>2</sub>(E)**



**BAR U<sub>1</sub>(E)**

**BAR A<sub>1</sub>(E)**



**LIFTING LOOP DETAIL**

**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" diameter 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.

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" diameter lifting pin shall be used to engage the lifting loops during handling.

Corrosion Inhibitor, per Article 1020.05(b)(12) and 1021.06 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.

All reinforcement shall be epoxy coated.

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

PD-2136-0D 7-1-10

FILE NAME = 110138-elt-bridge.dgn	USER NAME =	DESIGNED - J.W.F.	REVISED
HAMPTON, LENZINI AND RENWICK, INC.		CHECKED - S.W.M.	REVISED -
3801 STEVENSON DRIVE, SUITE 211 BROOKFIELD, IL 60513-4710	PLT SCALE =	DRAWN - D.A.B.	REVISED -
ILLINOIS PROFESSIONAL DESIGN FIRM L37 PE/SE/CE/CP/ 184.03283	PLT DATE = 10/29/2012	CHECKED - M.G.B.	REVISED -

**STATE OF ILLINOIS**  
**JOHNSON COUNTY HIGHWAY DEPARTMENT**

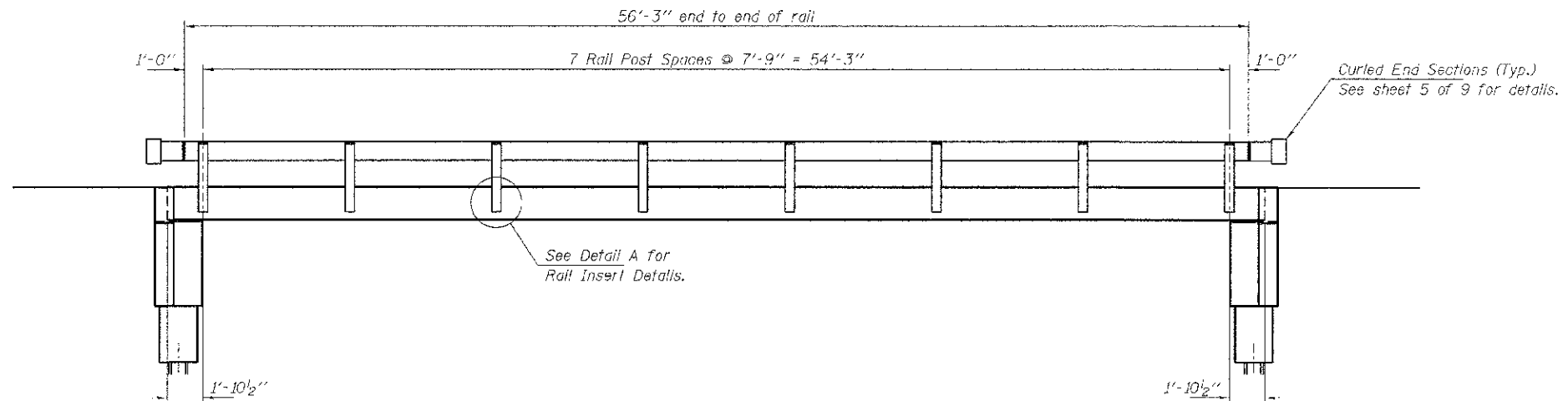
**21" x 36" PPC DECK BEAM DETAILS**  
**STRUCTURE NO. 044-3134**

SHEET NO. 3 OF 9 SHEETS

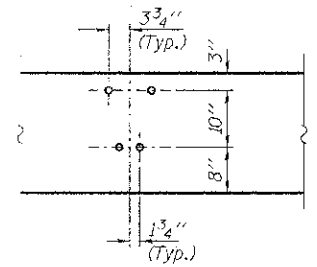
**BILL OF MATERIAL**

Precast Prestressed Conc. Deck Bms. (21" depth)	Sq. Ft.	1,218
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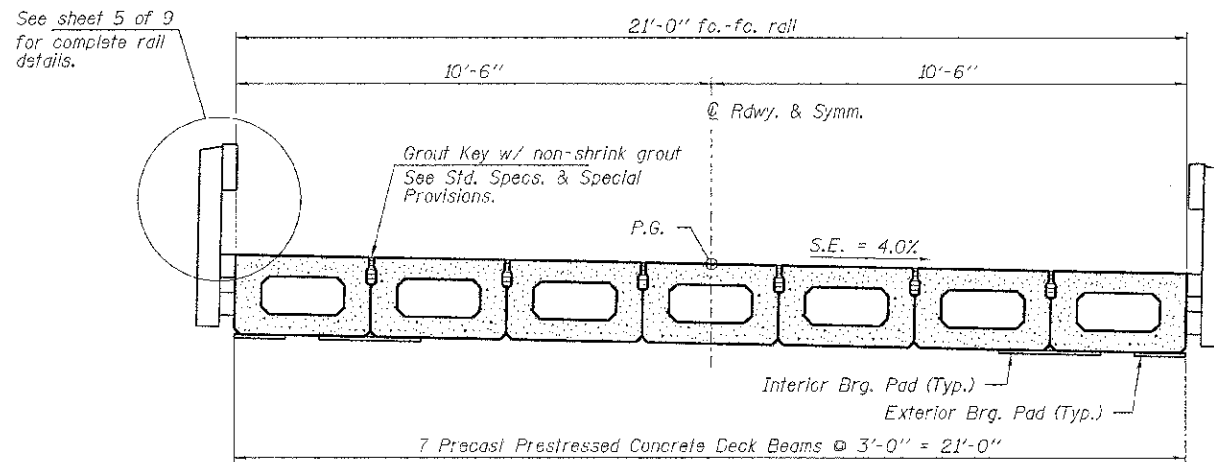
T.R.	SECTION	COUNTY	TOTAL SHEET NO.
85	10-01218-00-BR	JOHNSON	19 13
COUNTY UNIT ROAD DISTRICT		CONTRACT NO. 99476	
ILLINOIS FED. AID PROJECT			



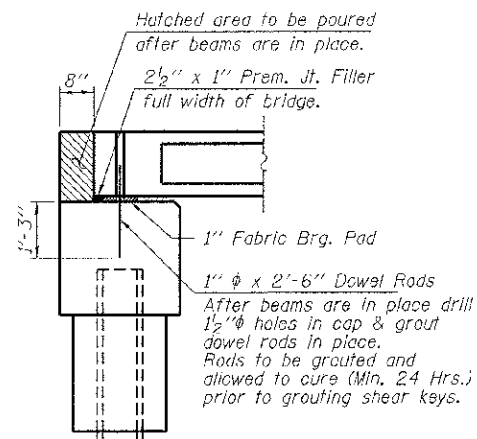
**ELEVATION**  
Showing Rail Post Spacing  
See sheet 5 of 9 for Railing Details.



**DETAIL A**



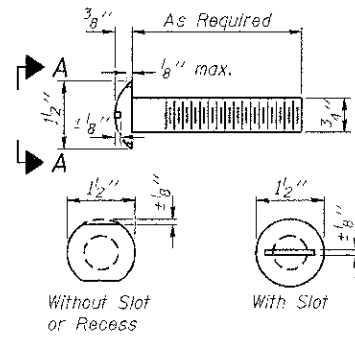
**CROSS SECTION**  
See sheets 2 & 3 of 9 for Superstructure.



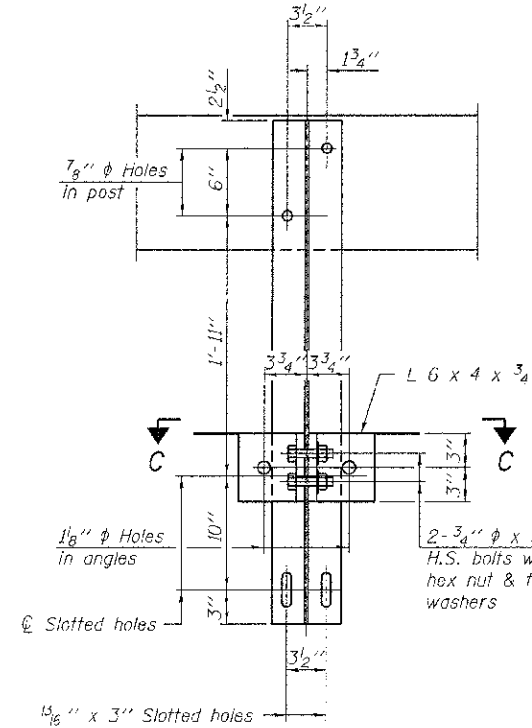
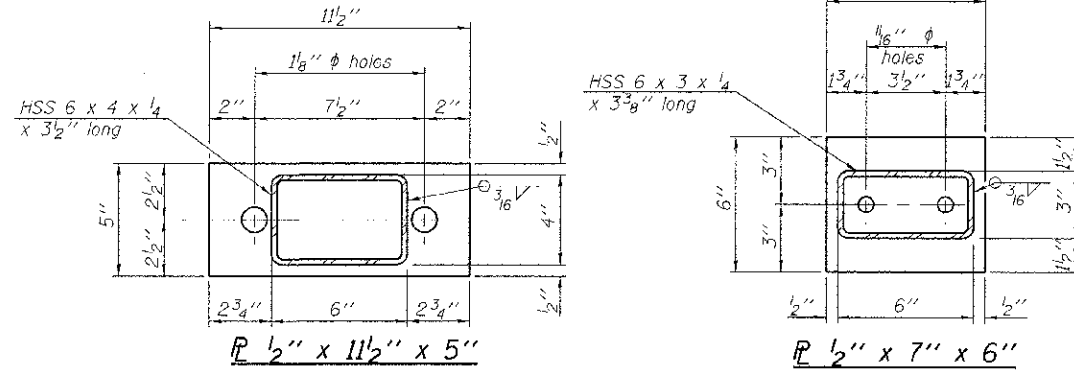
**SECTION AT ABUTMENTS**  
@ Rt. L's

FILE NAME = 110130-sh-tr-bridge.dgn	USER NAME =	DESIGNED - J.W.F.	REVISED -	<b>STATE OF ILLINOIS JOHNSON COUNTY HIGHWAY DEPARTMENT</b>	<b>SUPERSTRUCTURE DETAILS STRUCTURE NO. 044-3134</b>	T.R.	SECTION	COUNTY	TOTAL SHEET	
<b>HAMPTON, LENZINI AND RENWICK, INC.</b> 3000 STEUBEN RD. SUITE 201 SPRINGFIELD, ILLINOIS 62760	PLLOT SCALE =	CHECKED - S.W.M.	REVISED -			85	10-01218-00-BR	JOHNSON	19	14
<b>HLR</b> ILLINOIS PROFESSIONAL DESIGN FIRM L.S./P.E./S.E. CORP. 164.00289	PLLOT DATE = 10/29/2012	DRAWN - D.A.B.	REVISED -			COUNTY UNIT ROAD DISTRICT		CONTRACT NO. 99476		
		CHECKED - M.G.B.	REVISED -			SHEET NO. 4 OF 9 SHEETS		ILLINOIS FED. AID PROJECT		



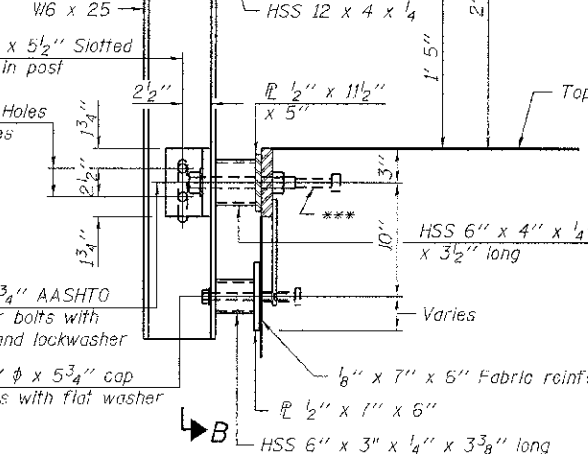


**VIEW A-A  
ROUND HEAD BOLT**

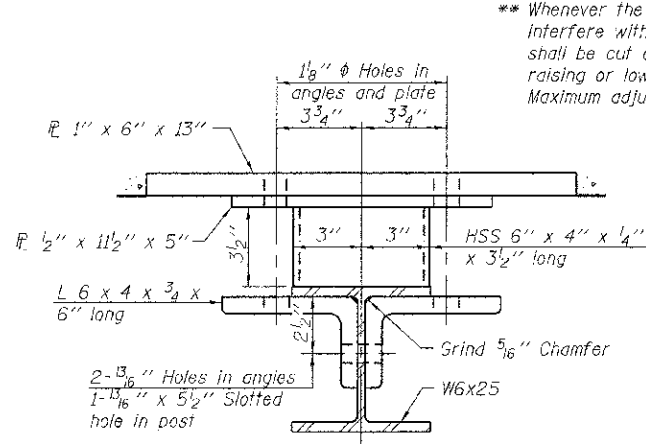


**SECTION B-B**

2- 3/4" φ x 6" Round Head Bolts  
(With slot or approved recess in head) with locknut & flat washer. 7/8" φ holes in hollow structural section may be drilled in the field.

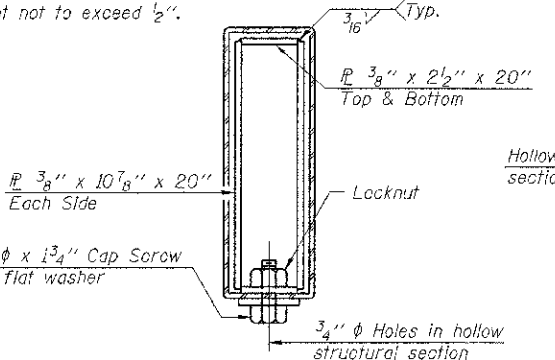


**SECTION AT RAILING POST**

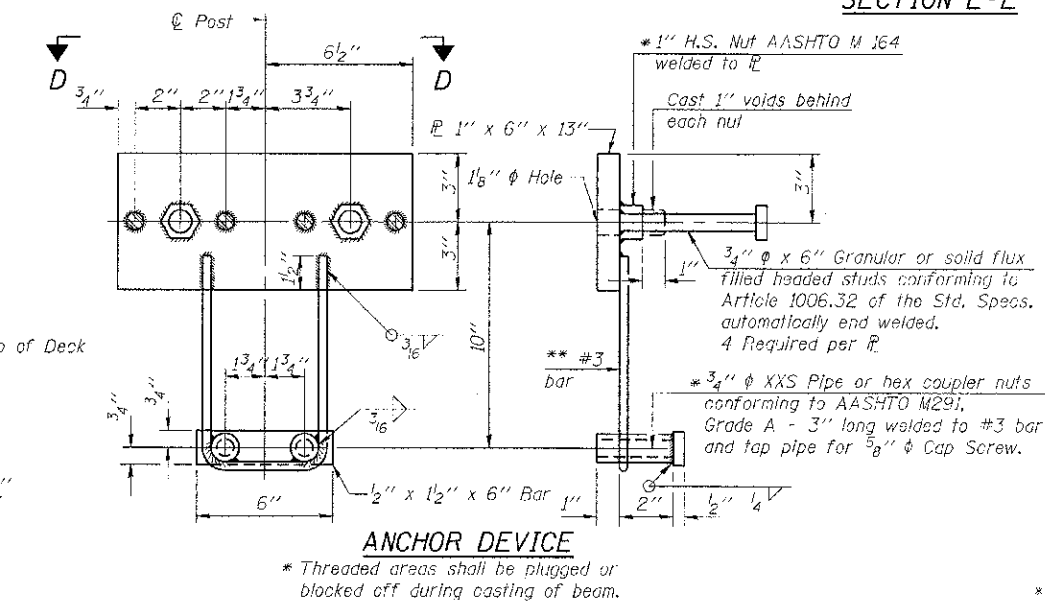


**SECTION C-C**

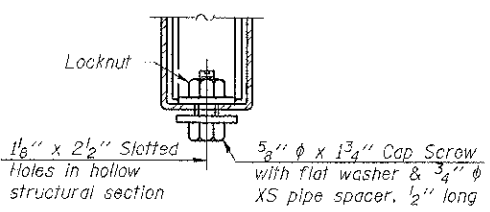
\*\* Whenever the lower insert assemblies interfere with strand locations, the #3 bars shall be cut and adjusted in order to allow raising or lowering of the lower inserts. Maximum adjustment not to exceed 1/2".



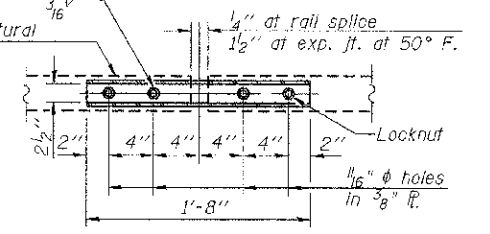
**SECTIONS AT RAIL SPLICE**



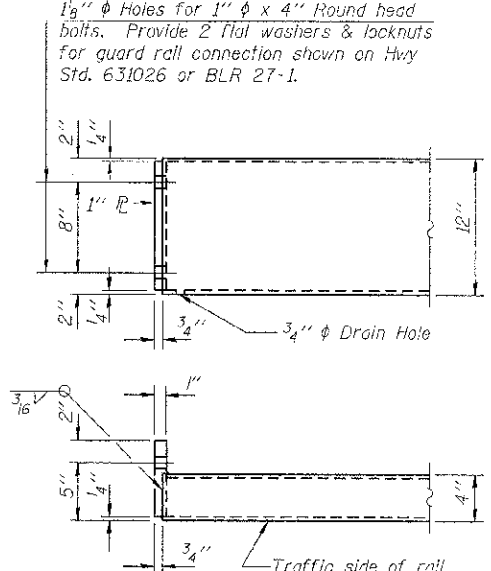
**ANCHOR DEVICE**



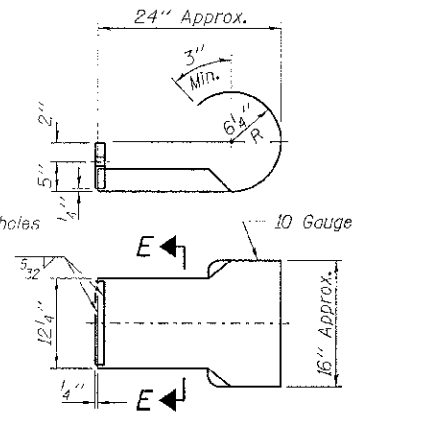
**RAIL SPLICE CONNECTION  
AT EXPANSION JT.**



**PLAN-BOTT. SPLICE TYPICAL**



**END OF RAIL DETAILS**

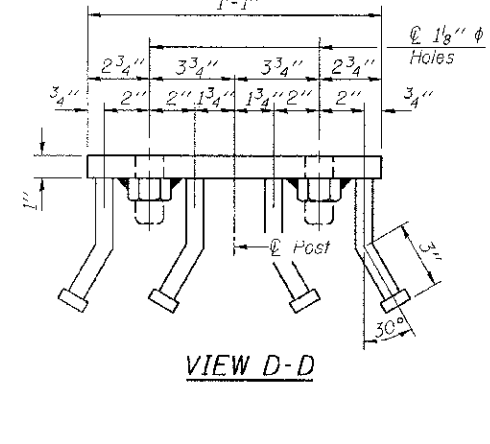


**CURLED END SECTION DETAILS**

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

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

\*\*\* 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.



**VIEW D-D**

**BILL OF MATERIAL**

Item	Unit	Quantity
Steel Railing, Type S-1	Foot	113

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

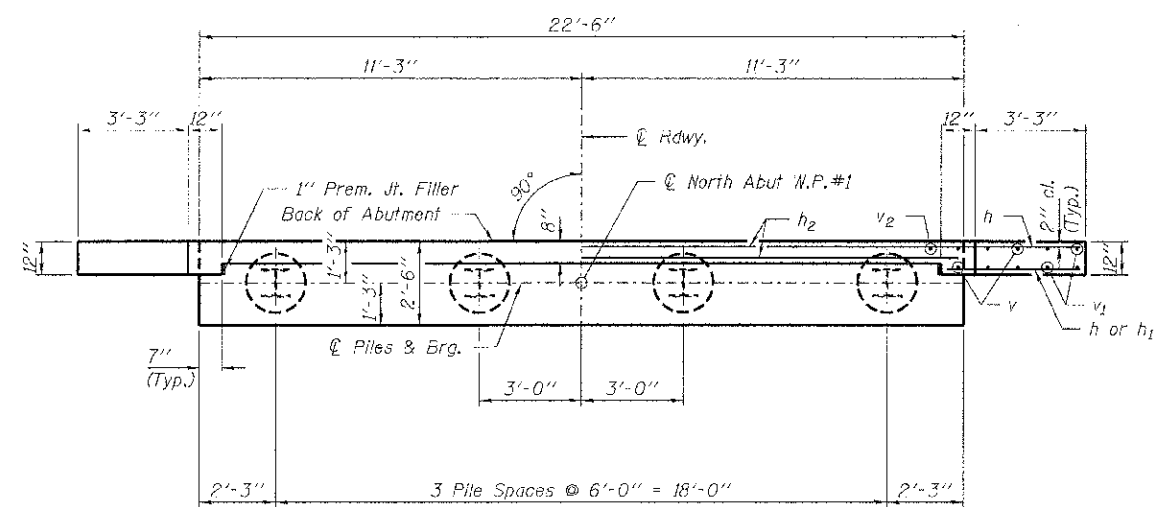
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HAMPTON, LENZINI AND RENWICK, INC.	1000 STEVENSON DRIVE, SUITE 200 SPRINGFIELD, ILLINOIS 62703	CHECKED - S.W.M.	REVISED -
ILLINOIS PROFESSIONAL DESIGN FIRM 1517 P. 158 CORP. 154-03858	PLOT SCALE =	DRAWN - D.A.B.	REVISED -
	PLOT DATE = 12/29/2012	CHECKED - M.G.B.	REVISED -

STATE OF ILLINOIS  
JOHNSON COUNTY HIGHWAY DEPARTMENT

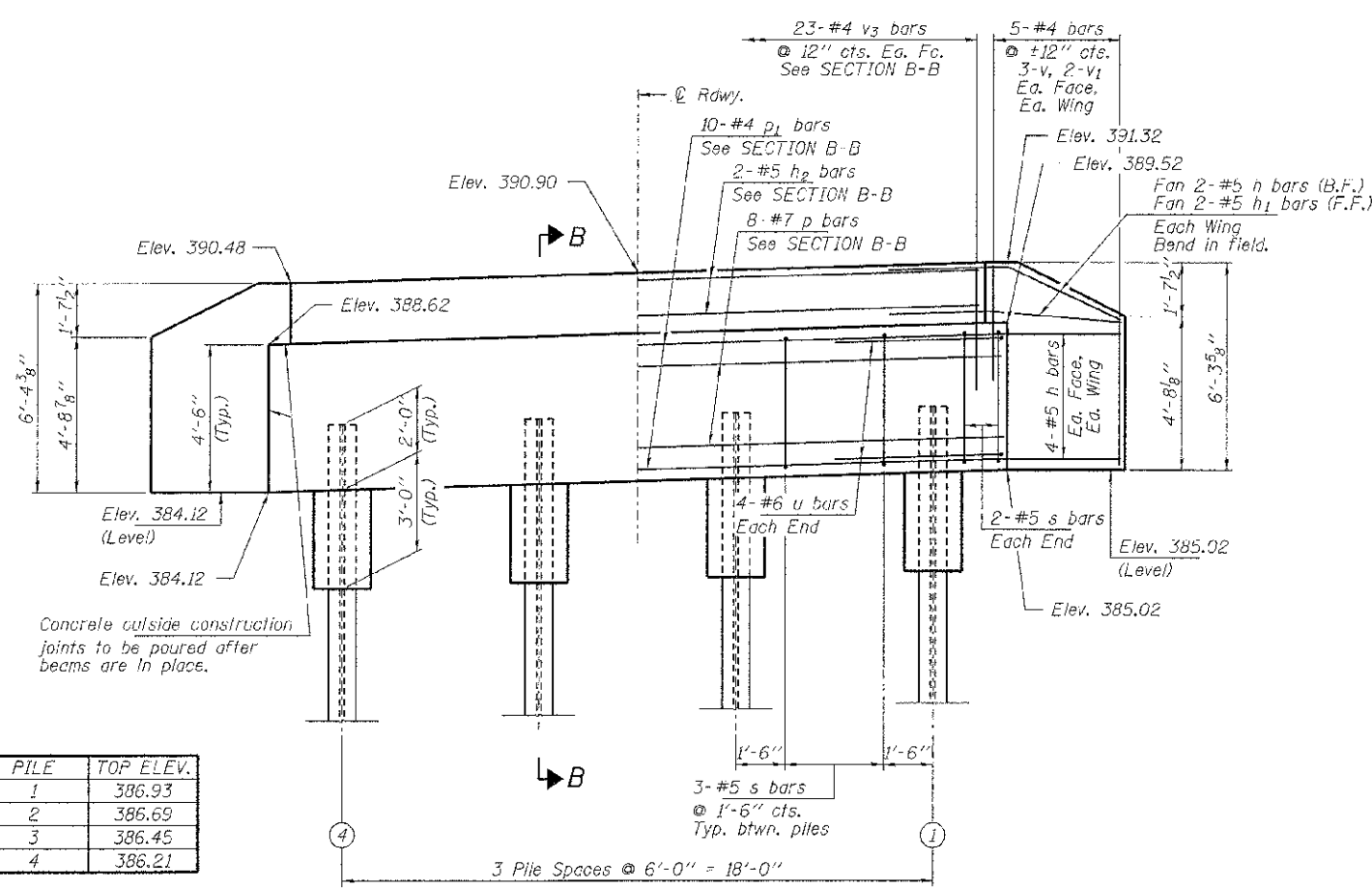
STEEL RAILING, TYPE S1  
STRUCTURE NO. 044-3134

SHEET NO. 5 OF 9 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
65	10-01218-00-BR	JOHNSON	19	15
COUNTY UNIT ROAD DISTRICT			CONTRACT NO. 99476	
ILLINOIS FED. AID PROJECT				

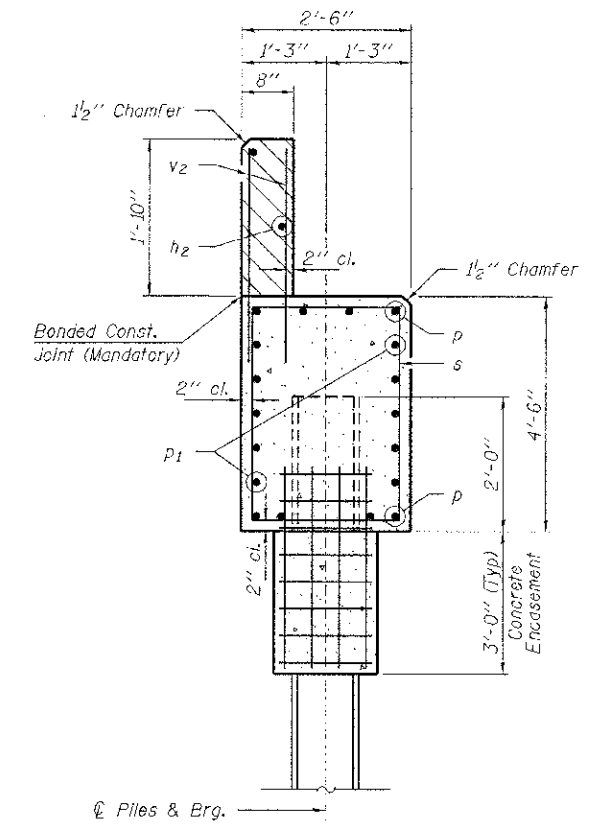


**PLAN**



**ELEVATION**  
(Looking North)

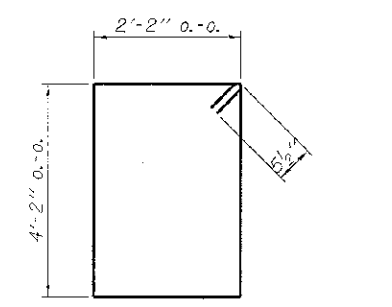
PILE	TOP ELEV.
1	386.93
2	386.69
3	386.45
4	386.21



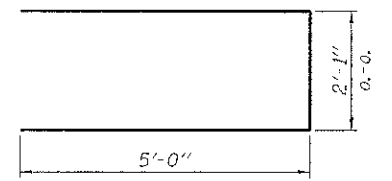
**SECTION A-A**

Hatched area to be poured after beams are in place.

Note: Extend h bars into abutment cap.



**BAR s**



**BAR u**

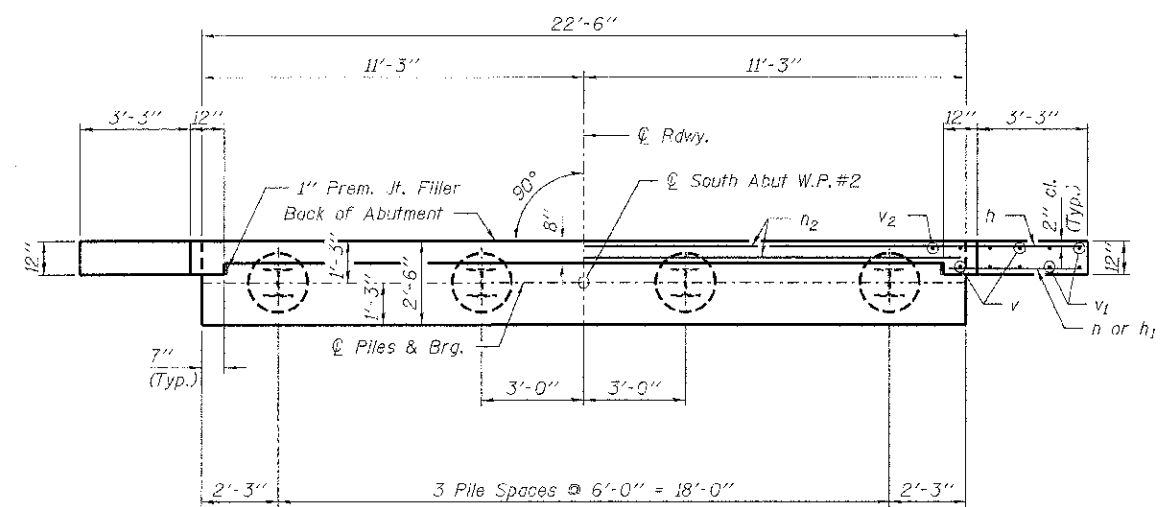
**PILE DATA**

Type ----- Steel HP10x42  
 No. Req'd. (N. Abut.) ----- 4  
 Factored Resistance Available (Rf) ----- 184 Kips/Pile  
 Nominal Required Bearing (Rn) ----- 334 Kips/Pile  
 Est. Length ----- 45 Ft/Pile

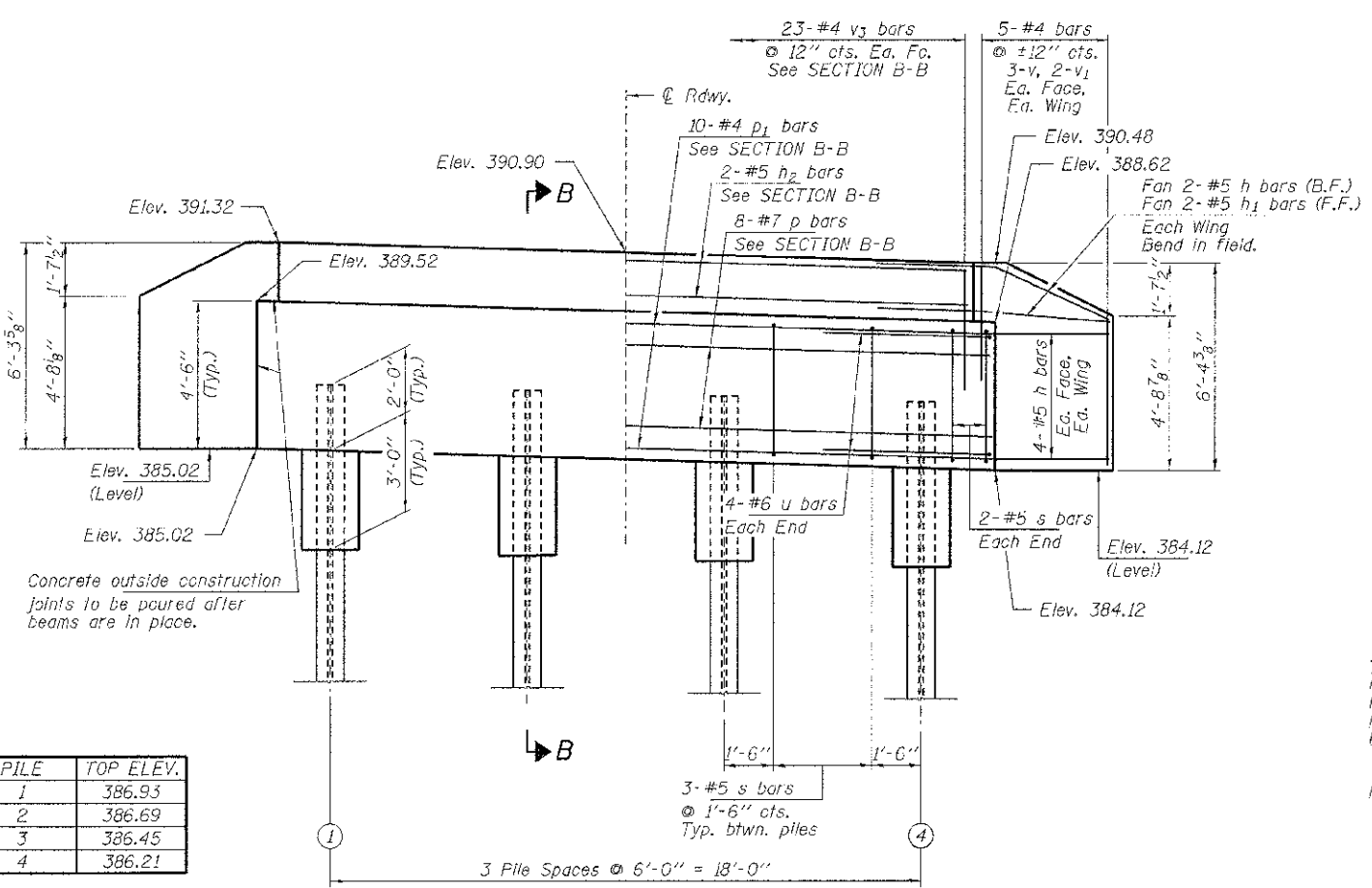
Notes: The Steel H-Piles shall be according to AASHTO M270 Grade 50.

**BILL OF MATERIAL - N. ABUT.**

BAR	NO.	SIZE	LENGTH	SHAPE
h	20	#5	5'-6"	—
h1	4	#5	4'-0"	—
h2	2	#5	22'-2"	—
p	8	#7	22'-2"	—
p1	10	#4	22'-2"	—
s	13	#5	13'-7"	□
u	8	#6	12'-1"	—
v	12	#4	5'-4"	—
v1	8	#4	4'-4"	—
v2	46	#4	2'-8"	—
Concrete Structures			Cu. Yd.	11.9
Concrete Encasement			Cu. Yd.	1.4
Reinforcement Bars			Pound	1,170
Steel Piles HP10x42			Foot	180
Name Plates			Each	1

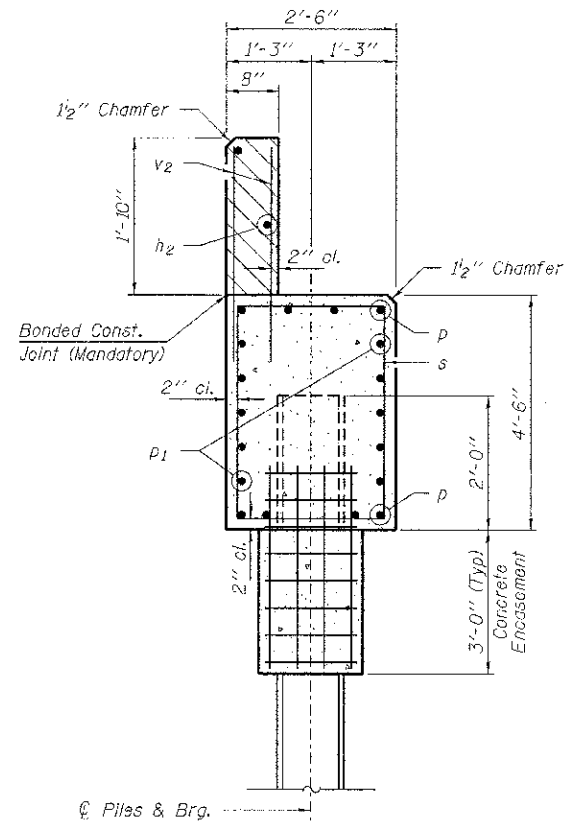


**PLAN**



**ELEVATION**  
(Looking South)

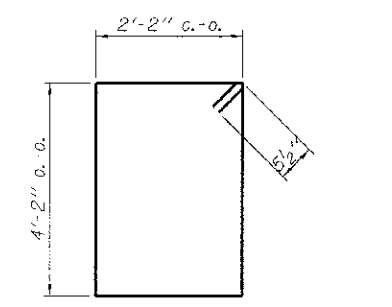
PILE	TOP ELEV.
1	386.93
2	386.69
3	386.45
4	386.21



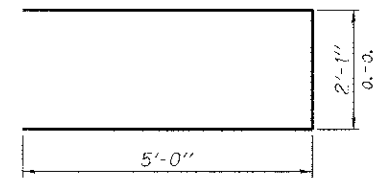
**SECTION A-A**

Hatched area to be poured after beams are in place.

Note: Extend h bars into abutment cap.



**BAR s**



**BAR u**

**BILL OF MATERIAL - S. ABUT.**

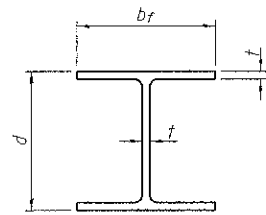
BAR	NO.	SIZE	LENGTH	SHAPE
h	20	#5	5'-6"	—
h1	4	#5	4'-0"	—
h2	2	#5	22'-2"	—
p	8	#7	22'-2"	—
p1	10	#4	22'-2"	—
s	13	#5	13'-7"	□
u	8	#6	12'-1"	—
v	12	#4	5'-4"	—
v1	8	#4	4'-4"	—
v2	46	#4	2'-8"	—
Concrete Structures			Cu. Yd.	11.9
Concrete Encasement			Cu. Yd.	1.4
Reinforcement Bars			Pound	1,170
Steel Piles HP10x42			Foot	180

**PILE DATA**

Type: Steel HP10x42  
 No. Req'd. (S. Abut.): 4  
 Factored Resistance Available (Rf): 181 Kips/Pile  
 Nominal Required Bearing (Rn): 334 Kips/Pile  
 Est. Length: 45 Ft./Pile

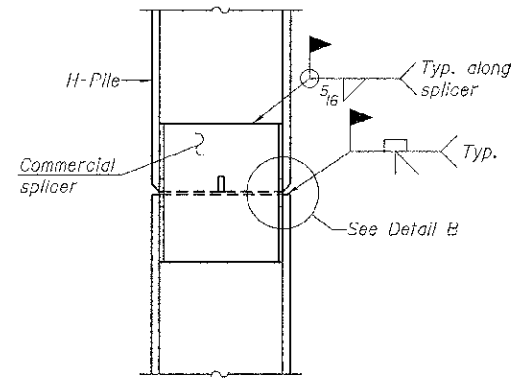
Notes: The Steel H-Piles shall be according to AASHTO M270 Grade 50.



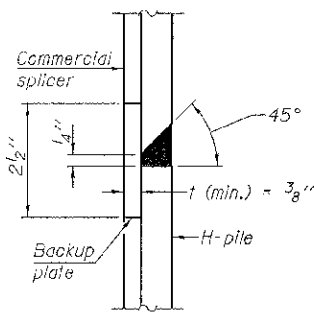


**STEEL PILE TABLE**

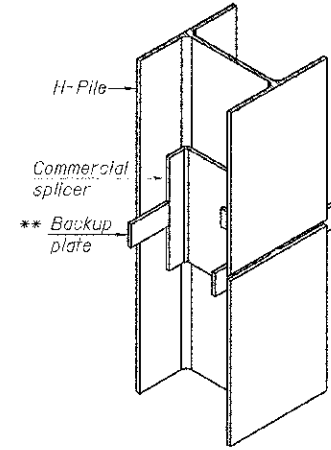
Designation	Depth d	Flange width bf	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	1 1/16"	30"
x102	14"	14 3/4"	1 1/16"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 5/8"	14 5/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	1 1/16"	24"
x74	12 1/8"	12 1/4"	5/8"	24"
x63	12"	12 1/8"	1/2"	24"
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**

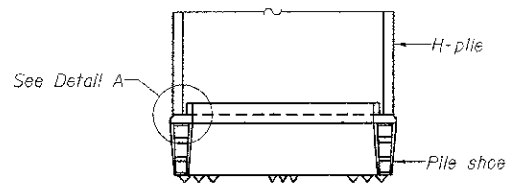


**DETAIL "B"**

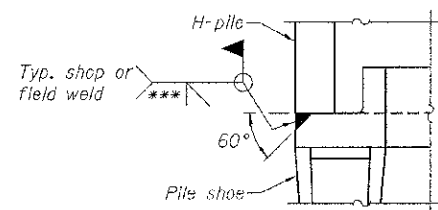


**ISOMETRIC VIEW**

**WELDED COMMERCIAL SPLICE**

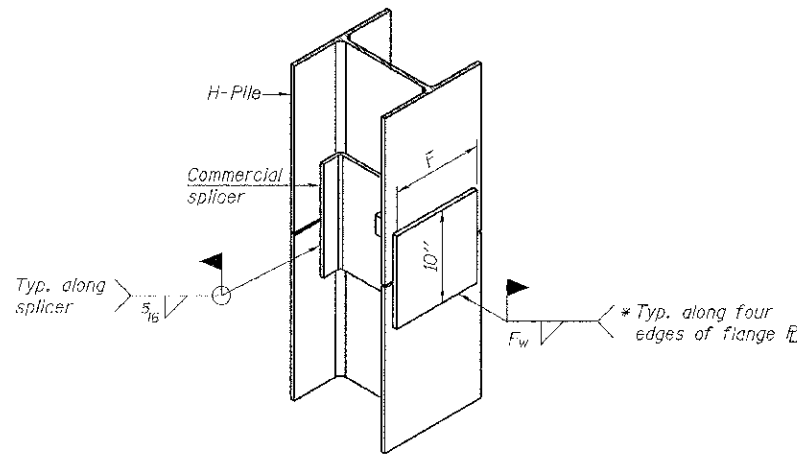


**ELEVATION**



**DETAIL A**

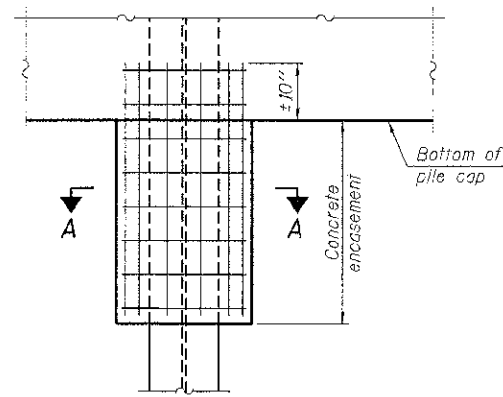
**H-PILE SHOE ATTACHMENT**



**ISOMETRIC VIEW**

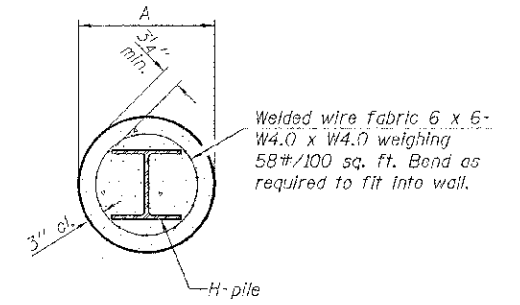
**WELDED COMMERCIAL SPLICE ALTERNATE**

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



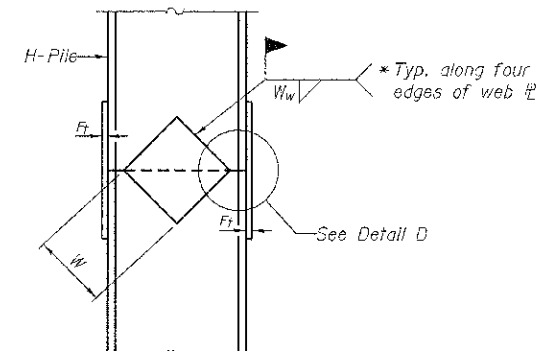
**ELEVATION**

**PILE ENCASEMENT**

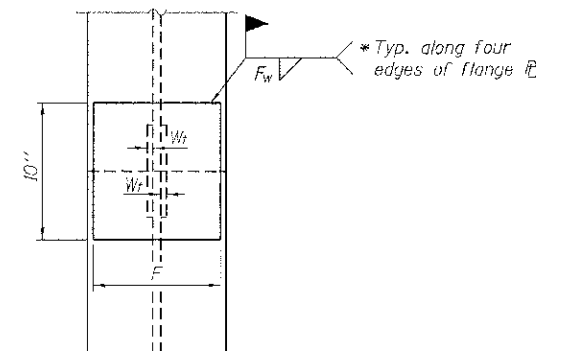


**SECTION A-A**

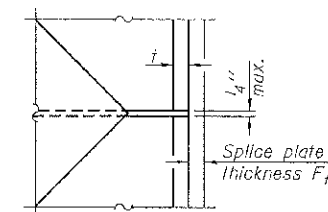
Note:  
Forms for encasement may be omitted when soil conditions permit.



**ELEVATION**



**END 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"	1/2"	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"

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

F-HP

1-27-12

FILE NAME = 112139-shr-bridgedgn	USER NAME =	DESIGNED - J.W.F.	REVISED -	<b>STATE OF ILLINOIS JOHNSON COUNTY HIGHWAY DEPARTMENT</b>	<b>HP PILE DETAILS STRUCTURE NO. 044-3134</b>	T.R.	SECTION	COUNTY	TOTAL SHEETS	
HAMPTON, LENZINI AND RENWICK, INC. 3005 RTG/REIDSON DRIVE, SUITE 207 SPRINGFIELD, ILLINOIS 62703	PLOT SCALE =	CHECKED - S.W.M.	REVISED -			85	10-01218-00-BR	JOHNSON	19	18
ILLINOIS PROFESSIONAL DESIGN #1001 1519 E. PULASKI, CHICAGO, IL 60610	PLOT DATE = 11/29/2012	DRAWN - D.A.B.	REVISED -			COUNTY UNIT ROAD DISTRICT	CONTRACT NO. 99476			
		CHECKED - M.G.B.	REVISED -			ILLINOIS FED. AID PROJECT				

11/25/2003 09:32 6185430086 IDOT LOCAL ROADS PAGE 02  
 ILLINOIS DEPARTMENT OF TRANSPORTATION District Name Materials Bridge Foundation Boring Log  
 TR 85 (Gum Springs Road) Over East Cedar Creek Sheet 1 of 1  
 Route: TR 85 Structure Number: 044-3025 Date: 11/12/2003  
 Section: Bored By: Bryan Keller  
 County: Johnson Location: NW 1/4 SEC30 T12S, R4E Checked By: Rob Graeff

Boring No	D	B	L	C	Qu	W%	Surf Wat Elev:	D	B	L	C	Qu	W%
Station	H	W	tsf	tsf	tsf	tsf	ft	H	W	tsf	tsf	tsf	tsf
1-5 22' N of N Abut 7' E CL Ground Surface (386.9) 89.5 Ft							87.5						
Stiff, moist to very moist, brown, Silty Clay A7-S							87.5						
							87.5						
(384.4) 82.0							82.0						
Stiff, moist, brown, Silty Clay A-6 with Gravel Layers							82.0						
							82.0						
(381.9) 82.5							82.5						
Medium, very moist, brown, Silty Clay Loam A-6							82.5						
							82.5						
(379.4) 80.0							80.0						
Soft, very moist, brown, Silty Clay Loam A-6							80.0						
							80.0						
(376.9) 87.5							87.5						
Very soft, very moist, Silt Loam A-4							87.5						
							87.5						
(374.4) 85.0							85.0						
Very soft, very moist, brown, Silty Clay Loam A-6							85.0						
							85.0						
(371.9) 82.5							82.5						
Soft, very moist, grey, Silty Clay Loam A-6							82.5						
							82.5						
(369.4) 80.0							80.0						
Soft, very moist, grey, Silt Loam A-4 with Rotten Coal Layers							80.0						
							80.0						
(366.9) 77.5							77.5						
Very loose, wet, grey, fine to medium, Silty Sand with Coal Layers							77.5						
							77.5						
(364.4) 75.0							75.0						
Very loose, wet, grey, fine to medium, Silty Sand with Coal Layers							75.0						
							75.0						
(362.0) 72.5							72.5						
Very loose, wet, grey, fine to medium, Silty Sand with Coal Layers							72.5						
							72.5						
(360.0) 70.0							70.0						
Very loose, wet, grey, fine to medium, Silty Sand with Coal Layers							70.0						
							70.0						
(359.4) 70.0							70.0						
Soft, very moist, grey, Silty Clay A-6							70.0						
							70.0						
(358.4) 70.0							70.0						
Soft, very moist, grey, Silty Clay A-6 with Sand Layers							70.0						
							70.0						
(356.9) 67.5							67.5						
Medium, wet, grey, Silty Clay A-6 with Sand Layers							67.5						
							67.5						
(354.4) 65.0							65.0						
Medium, wet, grey, Silty Clay A-6 with Sand Layers							65.0						
							65.0						
(353.4) 64.0							64.0						
Medium, wet, grey, Silty Clay A-6 with Sand Layers							64.0						
							64.0						
(352.0) 63.0							63.0						
Medium, wet, grey, Silty Clay A-6 with Sand Layers							63.0						
							63.0						
(351.9) 62.5							62.5						
Medium, wet, grey, Silty Clay A-6 with Sand Layers							62.5						
							62.5						
(349.4) 60.0							60.0						
Hard, dry, grey, Clay Shale							60.0						
							60.0						
(348.4) 58.0							58.0						
Hard, dry, grey, Limestone							58.0						
							58.0						
(347.4) 56.0							56.0						
Hard, dry, grey, Limestone							56.0						
							56.0						
(346.4) 55.0							55.0						
Hard, dry, grey, Limestone							55.0						
							55.0						
(345.4) 54.0							54.0						
Hard, dry, grey, Limestone							54.0						
							54.0						
(344.4) 53.0							53.0						
Hard, dry, grey, Limestone							53.0						
							53.0						
(343.4) 52.0							52.0						
Hard, dry, grey, Limestone							52.0						
							52.0						
(342.4) 51.0							51.0						
Hard, dry, grey, Limestone							51.0						
							51.0						
(341.4) 50.0							50.0						
Hard, dry, grey, Limestone							50.0						
							50.0						

N-Std Penetr Test: 2" OD Sampler, 140# Hammer, 30" Fall (Type Fall. B-Bulge S-Shear E-Estimated P-Penetrometer)

BORING I-S