

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 138	10-01198-00-BR	UNION	18	1
FED. ROAD DIST. NO.		ILLINOIS CONTRACT NO. 99543		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

**PLANS FOR PROPOSED
SURFACE TRANSPORTATION PROGRAM – BRIDGE**

**PROJECT BROS-0181(056)
SECTION 10-01198-00-BR
COUNTY UNIT ROAD DISTRICT
UNION COUNTY
T.R. 138 / HAPPY HOLLER LANE
PROPOSED STRUCTURE NO. 091-3238
C-99-525-11**

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1.	COVER SHEET
2.	SUMMARY OF QUANTITIES AND GENERAL NOTES
3.	TYPICAL CROSS SECTIONS
4.	PLAN AND PROFILE
5-9.	STATION CROSS SECTIONS
10-17.	BRIDGE PLANS
18.	BORINGS

HIGHWAY STANDARDS:

000001-06	STANDARD SYMBOLS, ABBREVIATIONS, AND PATTERNS
515001-03	NAME PLATE FOR BRIDGES
635006-03	REFLECTOR & TERMINAL MARKER PLACEMENT
701901-04	TRAFFIC CONTROL DEVICES
BLR 21-9	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS

UTILITIES

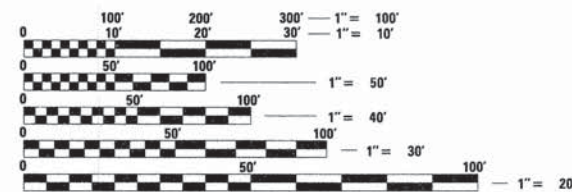
FRONTIER COMMUNICATIONS
208 W. UNION
MARION, ILLINOIS 62959

SOUTH WATER INC.
11543 LAKE OF EGYPT ROAD
MARION, ILLINOIS 62959

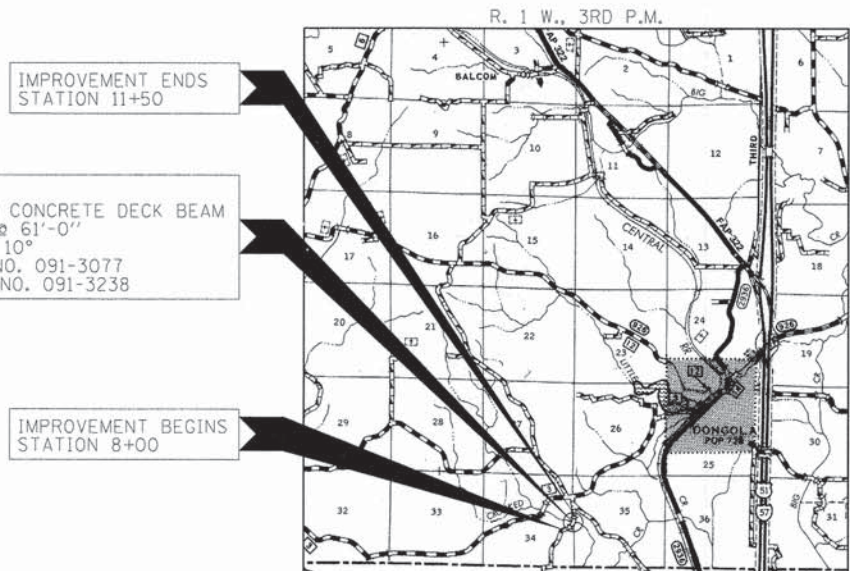


LOCATION OF SECTION INDICATED THUS: — —

FUNCTIONAL CLASSIFICATION: LOCAL ROAD
DESIGN SPEED: 20 MPH
DESIGN TRAFFIC: 75 ADT (2014)



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.



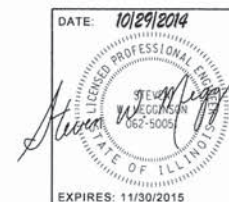
STA. 9+96
PRECAST PRESTRESSED CONCRETE DECK BEAM BRIDGE. SINGLE SPAN @ 61'-0"
24'-0" RDWY.; SKEW = 10°
EXISTING STRUCTURE NO. 091-3077
PROPOSED STRUCTURE NO. 091-3238

LOCATION MAP

APPROXIMATE SCALE:
NET LENGTH OF SECTION = 350 FEET = 0.066 MILES



ILLINOIS DEPARTMENT OF TRANSPORTATION	
APPROVED	November 6, 2014 <i>Dorinda L. Gramms</i> COUNTY ENGINEER
PASSED	November 12, 2014 <i>Dani W. Hillel</i> DISTRICT NINE ENGINEER OF LOCAL ROADS & STREETS
Releasing For Bid Based on Limited Review	November 12, 2014 <i>Jeffrey L. Keen</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
HLR
3085 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
217.546.3400 www.hlrengineering.com
184.000959
ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORPORATION

EXPIRES: 11/30/2015

PROJECT NUMBER: 14.0002.130

DATE: 10/29/14

SUMMARY OF QUANTITIES			
CODE NO.	ITEM	UNIT	TOTAL
			CONSTRUCTION TYPE CODE 0011
^ 20100110	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	UNIT	50
20200100	EARTH EXCAVATION	CU YD	100
20300100	CHANNEL EXCAVATION	CU YD	220
20400800	FURNISHED EXCAVATION	CU YD	50
^ 28100809	STONE DUMPED RIPRAP, CLASS A5	TON	520
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	280
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50300225	CONCRETE STRUCTURES	CU YD	25.8
^ 50400505	PRECAST PRESTRESSED CONCRETE DECK BEAMS (27" DEPTH)	SQ FT	1,464
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	2,840
* 50900205	STEEL RAILING, TYPE S1	FOOT	119
51201400	FURNISHING STEEL PILES HP10X42	FOOT	560
51202305	DRIVING PILES	FOOT	560
51500100	NAME PLATES	EACH	1
67100100	MOBILIZATION	LSUM	1
* 78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	4
^ X2501000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.25

^ SEE SPECIAL PROVISIONS

* SPECIALTY ITEMS

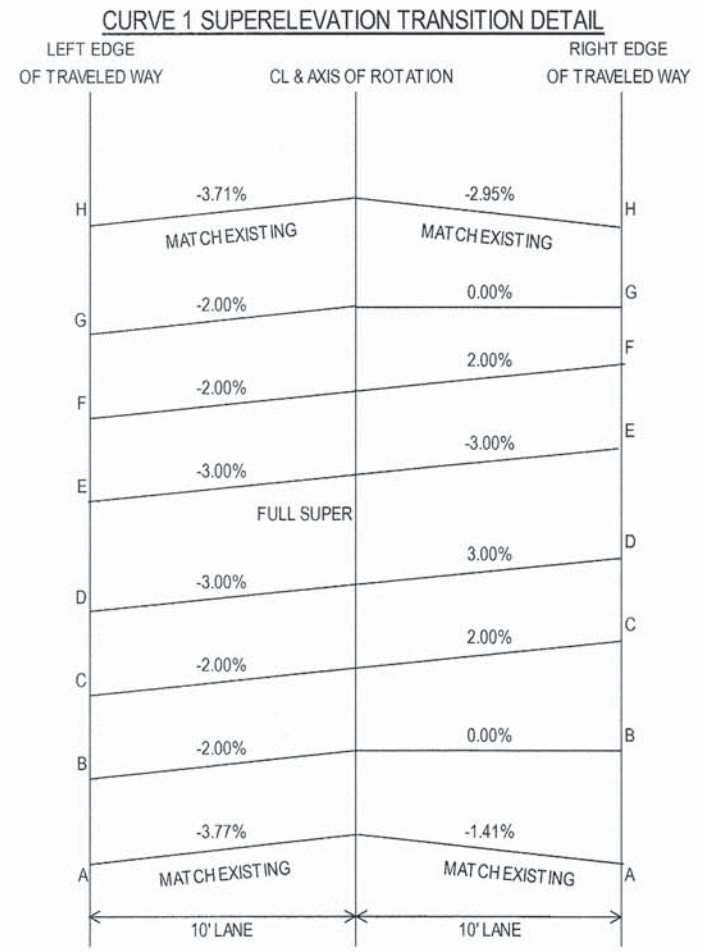
EARTHWORK SCHEDULE							
LOCATION	EARTH EXCAVATION	CHANNEL EXCAVATION	SHRINKAGE FACTOR	PERCENT USED	EARTH EXCAVATION ADJUSTED FOR SHRINKAGE	EMBANKMENT REQUIRED	EARTHWORK BALANCE
	20200100 CU.YD.	20300100 CU.YD.			CU.YD.		
TR 138 / HAPPY HOLLER LANE							
STA 8+00 TO STA 9+64.60	43		25.00%	100.00%	32	163	-131
STA 9+64.60 TO STA 10+27.01		220	25.00%	70.00%	116		116
STA 10+27.01 TO STA 11+50	57		25.00%	100.00%	42	73	-31
TOTAL	99	220			190	235	-46
USE	100	220					-50

FURNISHED EXCAVATION 50 CU YDS

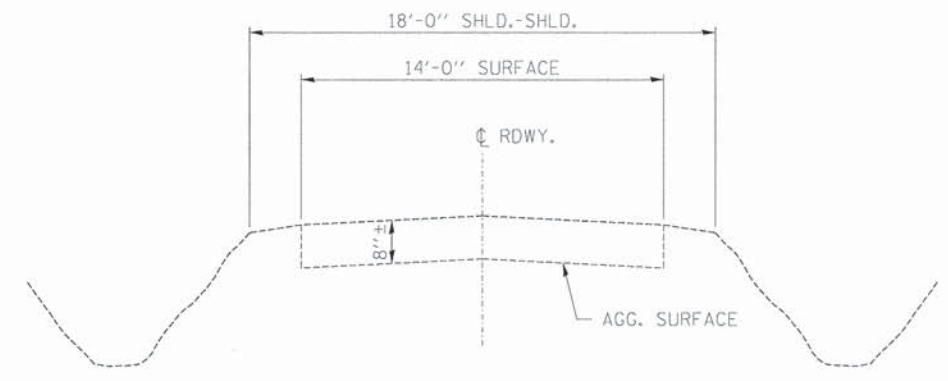
GENERAL NOTES

- 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 AND DISPOSAL OF EXISTING AGGREGATE PAVEMENT OF BITUMINOUS MATERIALS 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:

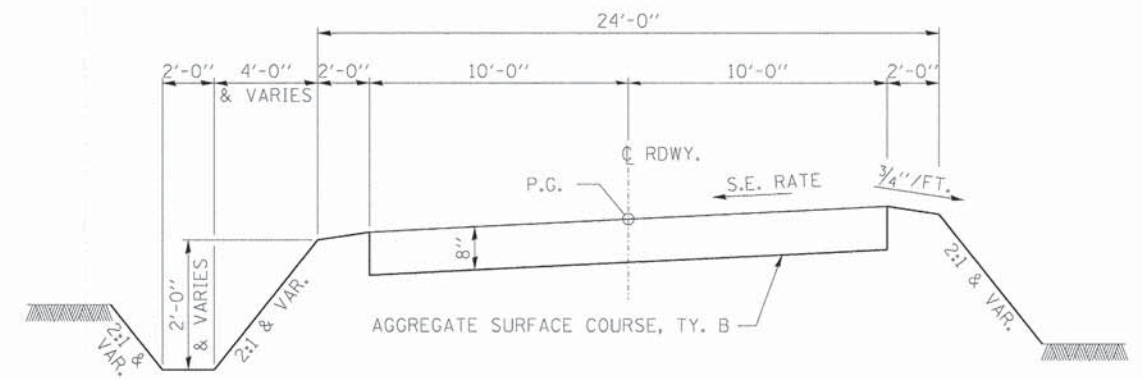
AGGREGATE SURFACE COURSE	2.05 TON/CU YD
STONE DUMPED RIPRAP	1.75 TON/CU YD
- THE AREA TO BE SEEDED SHALL CONSIST OF ALL DISTURBED EARTH SURFACES WITHIN THE RIGHT OF WAY AS DIRECTED BY THE ENGINEER.
ESTIMATED QUANTITY: SEEDING, CLASS 2 (SPECIAL) = 0.25 ACRES



CURVE 1 SUPERELEVATION TRANSITION			
LOCATION	STATION	CROSS SLOPE	
		LEFT	RIGHT
A	8+00.00	-3.77%	-1.41%
B	8+27.00	-2.00%	0.00%
C	8+54.00	-2.00%	2.00%
D	8+67.50	-3.00%	3.00%
FULL SUPER			
E	10+82.50	-3.00%	3.00%
F	10+96.00	-2.00%	2.00%
G	11+23.00	-2.00%	0.00%
H	11+50.00	-3.71%	-2.95%



EXISTING TYPICAL CROSS SECTION
STA. 8+00 TO 11+50



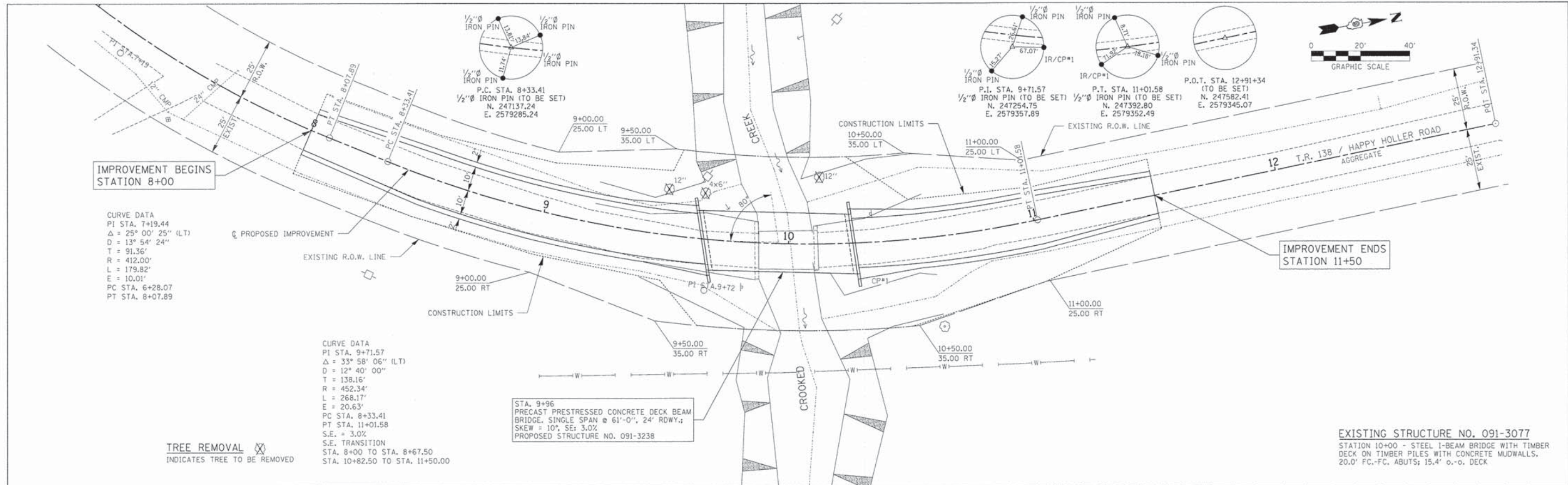
SUGGESTED CUT SECTION
CONSTRUCT AS SHOWN IN
STATION CROSS SECTIONS

SUGGESTED FILL SECTION
CONSTRUCT AS SHOWN IN
STATION CROSS SECTIONS

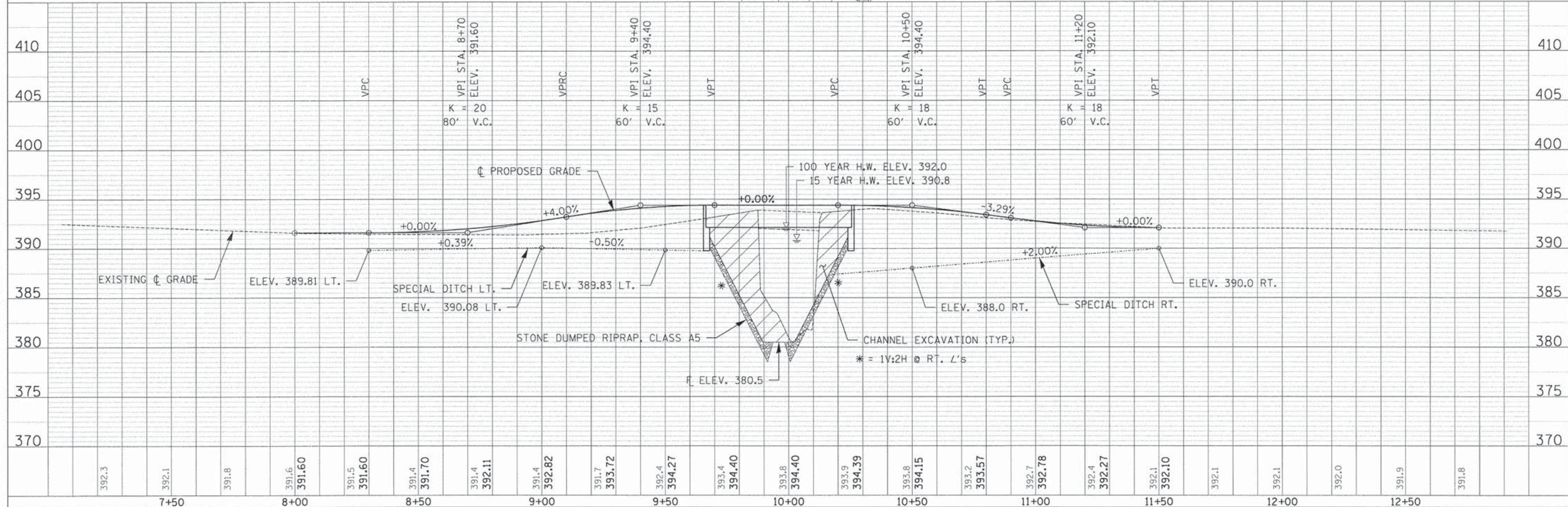
PROPOSED TYPICAL CROSS SECTION
STA. 8+00 TO 11+50

TRANSITIONS FROM THE PROPOSED ROADWAY TO THE EXISTING ROADWAY ARE TO BE CONSTRUCTED FROM STA. 8+00 TO 8+50 AND STA. 11+00 TO 11+50. SEE SHEET 10 FOR TRANSITION AT BRIDGE.

PLAN	SURVEYED	BY	DATE
	DESIGNED		
	CHECKED		
	NOTED		
	NO. OF WAY CHECKED		
	CADD FILE NAME		



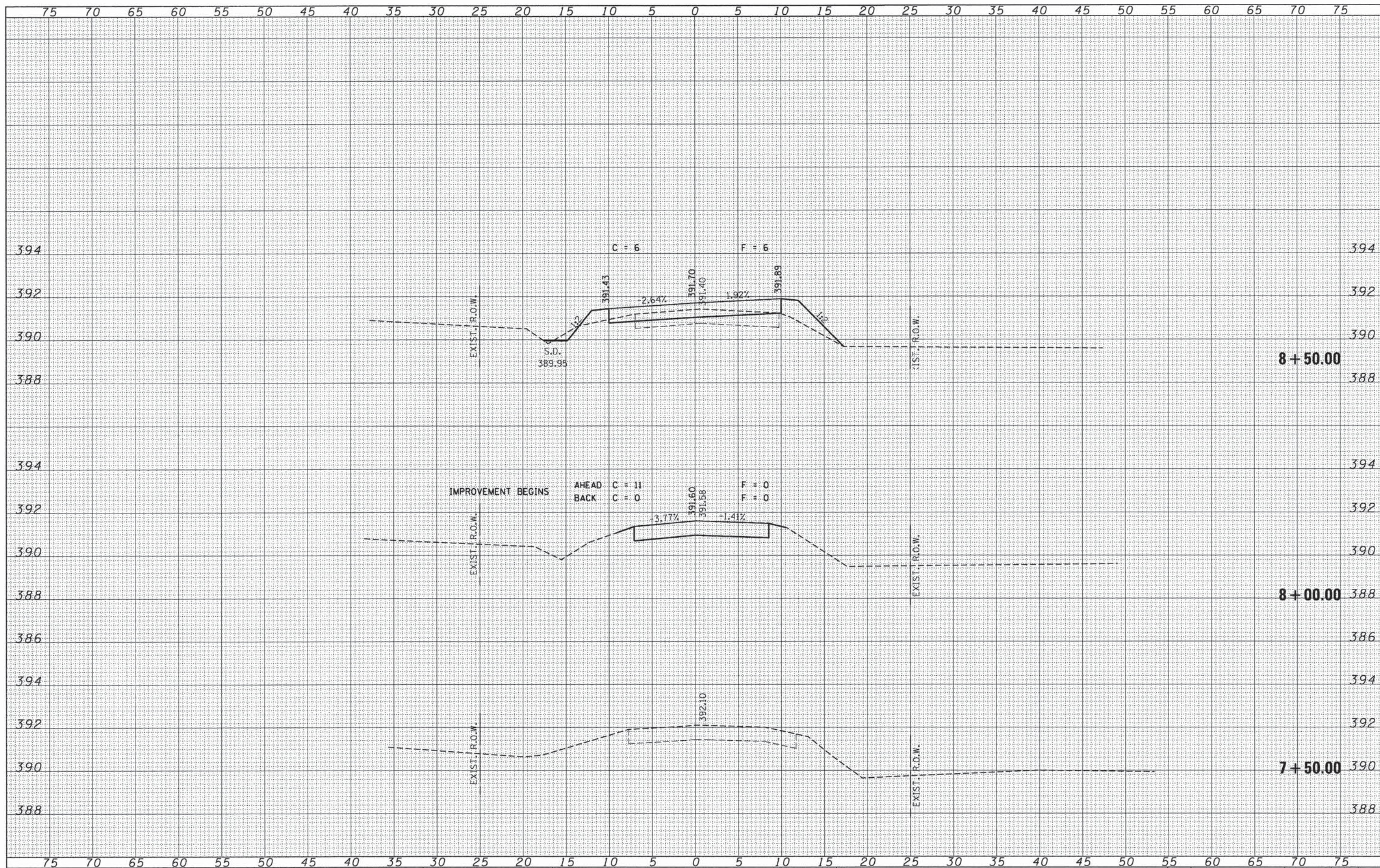
PROFILE	SURVEYED	BY	DATE
	DESIGNED		
	CHECKED		
	NOTED		
	NO. OF WAY CHECKED		
	STRUCTURE NOTATIONS CHECKED		



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DESIGNED - L.A.P.	DRAWN - T.W.K.	CHECKED - S.W.M.	DATE - 10/29/14			138	10-01198-00-BR	UNION	18	4	
PLLOT SCALE = #SCALE#	PLLOT DATE = 10/29/2014	SCALE: 20H:5V	SHEET NO. 1 OF 1 SHEETS			ST.A.	TO STA.	CONTRACT NO. 99543			
PLLOT DATE = 10/29/2014	DATE - 10/29/14					ILLINOIS FED. AID PROJECT BROS-01810561					

DATE	
BY	
FINAL SURVEY	SURVEYED
NOTE BOOK	PLOTTED
NO.	TEMPLATE
	AREAS CHECKED

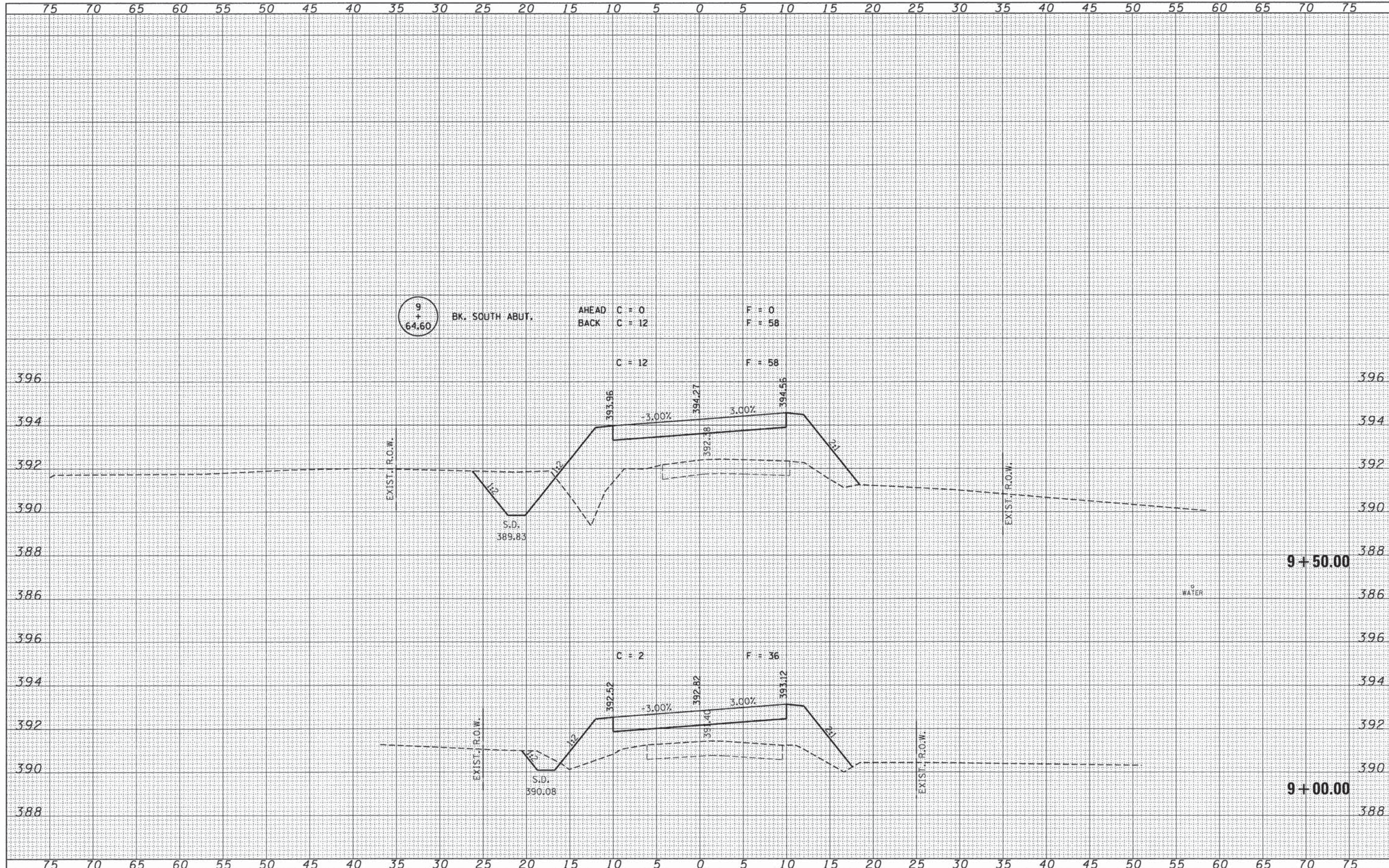
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NOTE BOOK	PLOTTED
NO.	TEMPLATE
	AREAS CHECKED



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HAMPTON, LENZINI AND RENWICK, INC. 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62763 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000988	PLLOT SCALE =	DRAWN - T.W.K.	REVISED -		138	10-01198-00-BR	UNION	18	5				
PLLOT DATE = 10/29/2014	DATE - 10/29/14	CHECKED - S.W.M.	REVISED -		SCALE: 5H:2V SHEET NO. 1 OF 5 SHEETS STA. 7+50.00 TO STA. 8+50.00				COUNTY UNIT ROAD DISTRICT	CONTRACT NO. 99543			
		DATE - 10/29/14	REVISED -		[ILLINOIS] FED. AID PROJECT BROS-01810561								

DATE	
BY	
FINAL SURVEY	
SURVEYED	
PLOTTED	
NOTE BOOK	
TEMP. PLATE	
AREAS CHECKED	
NO.	

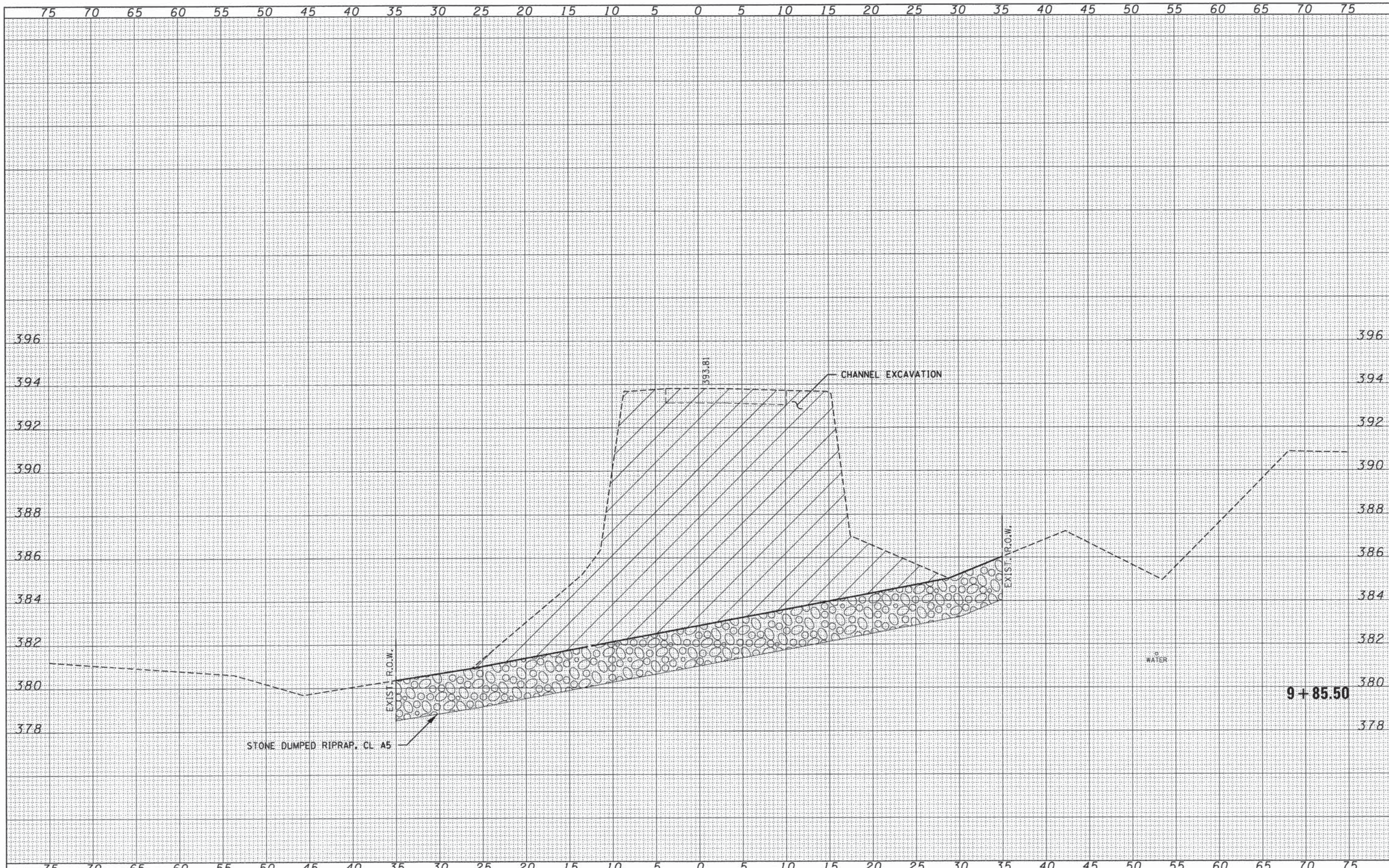
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HAMPTON, LENZINI AND RENWICK, INC. 3660 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62769	PLOT SCALE =	DRAWN - T.W.K.	REVISED -		138	10-01198-00-BR	UNION	18	6				
ILLINOIS PROFESSIONAL DESIGN FIRM L8 / PE 7 SE CORP. 184.000959	PLOT DATE = 10/29/2014	CHECKED - S.W.M.	REVISED -		SCALE: 5H:2V SHEET NO. 2 OF 5 SHEETS STA. 9+00.00 TO STA. 9+50.00				CONTRACT NO. 99543				
		DATE - 10/29/14	REVISED -		ILLINOIS FED. AID PROJECT BR05-01810561								

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SURVEYED	
PLOTTED	
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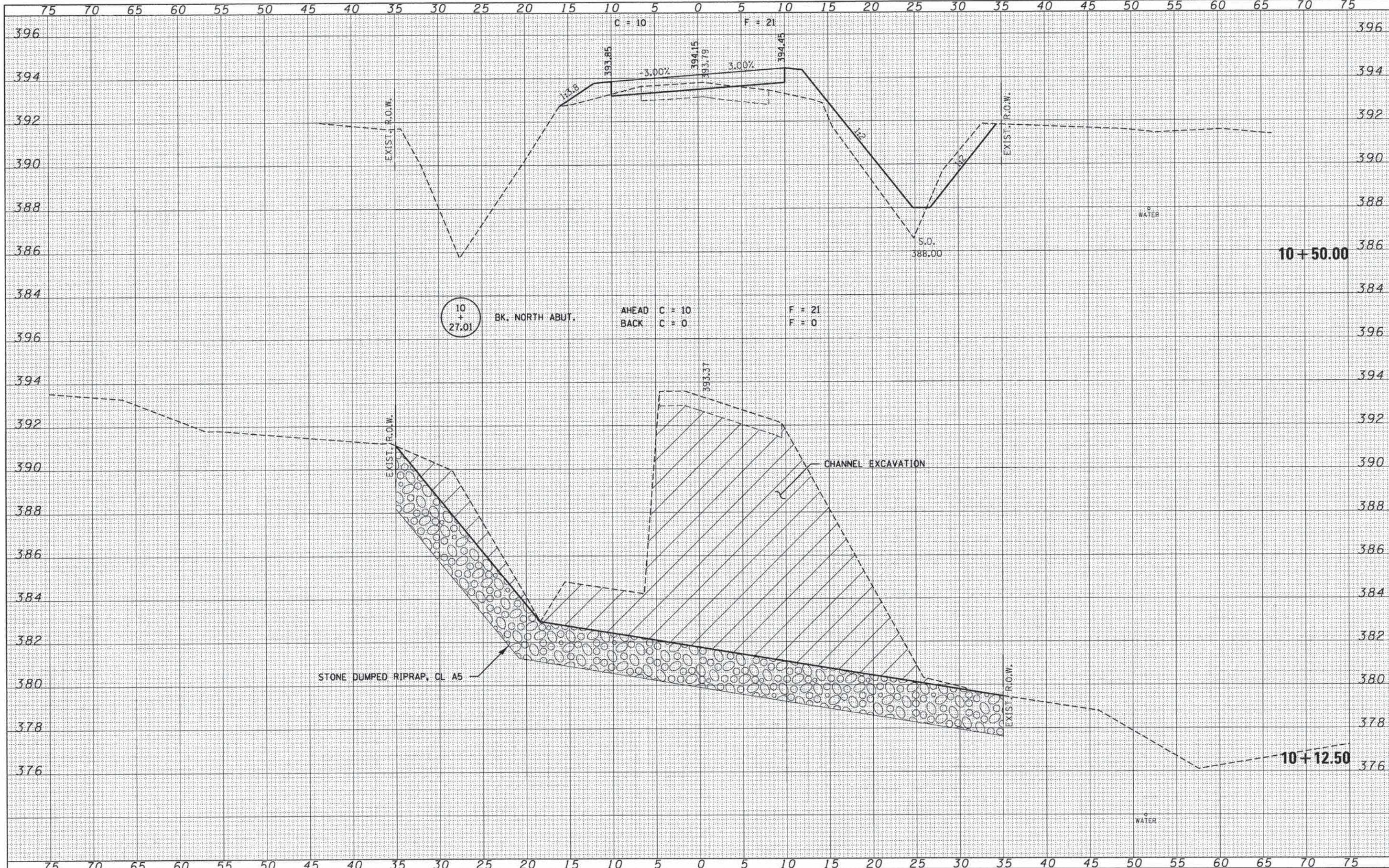
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HAMPTON, LENZINI AND RENWICK, INC. 3003 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM 15 / PE / SE CORP. 186.020569	PLOT SCALE =	DRAWN - T.W.K.	REVISED -		138	10-01198-00-BR	UNION	18	7				
PLOT DATE = 10/29/2014	DATE = 10/29/14	CHECKED - S.W.M.	REVISED -		SCALE: 5H:2V		SHEET NO. 3 OF 5 SHEETS		STA. 9+85.50 TO STA. 9+85.50		COUNTY UNIT ROAD DISTRICT		CONTRACT NO. 99543
		DATE = 10/29/14	REVISED -		[ILLINOIS] FED. AID PROJECT BROS-01810561								

DATE	
BY	
FINAL SURVEY	
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NOTE BOOK	
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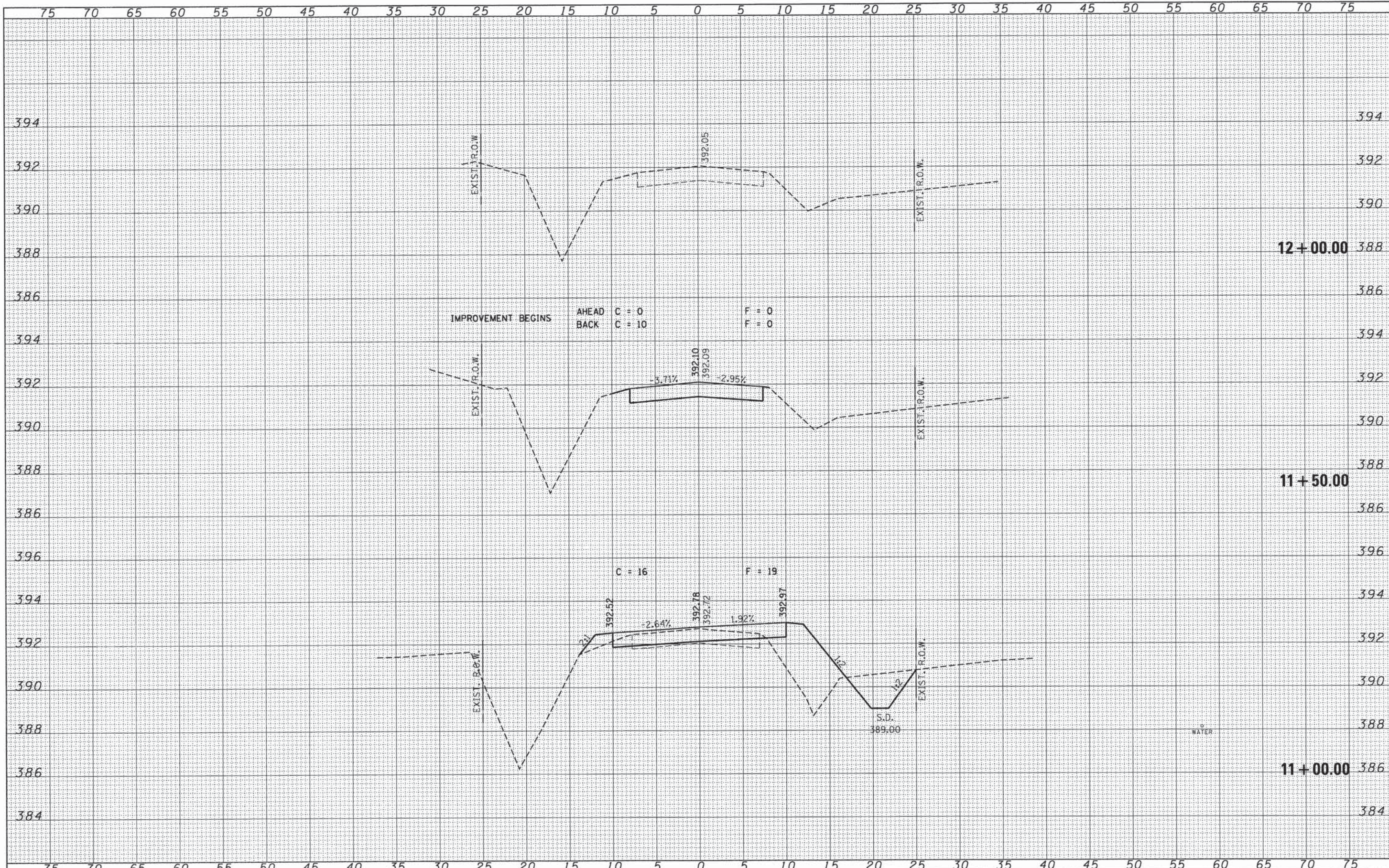
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NO.	



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HAMPTON, LENZINI AND RENWICK, INC. 399 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62761 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184-020859	PLLOT SCALE =	DRAWN - T.W.K.	REVISED -		TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
PLLOT DATE = 10/29/2014		CHECKED - S.W.M.	REVISED -		138	10-01198-00-BR	UNION	18	8
		DATE - 10/29/14	REVISED -		COUNTY UNIT ROAD DISTRICT CONTRACT NO. 99543				[ILLINOIS] FED. AID PROJECT BROS-01810561

DATE	
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SURVEYED	
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NOTE BOOK	
AREAS CHECKED	
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HAMPTON, LENZINI AND RENWICK, INC. 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM 12 - P.E. / 88 - CORP. 186.000989	PLOT SCALE =	DRAWN - T.W.K.	REVISED -		138	10-01198-00-BR	UNION	18	9				
PLOT DATE = 10/29/2014	CHECKED - S.W.M.	REVISED -	SCALE: 5H:2V		SHEET NO. 5 OF 5 SHEETS STA. 11+00.00 TO STA. 12+00.00				COUNTY UNIT ROAD DISTRICT CONTRACT NO. 99543				
DATE = 10/29/14	REVISOR -	REVISED -					[ILLINOIS] FED. AID PROJECT BROS-01810561						

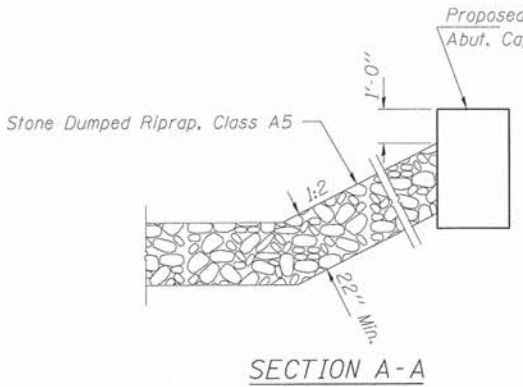
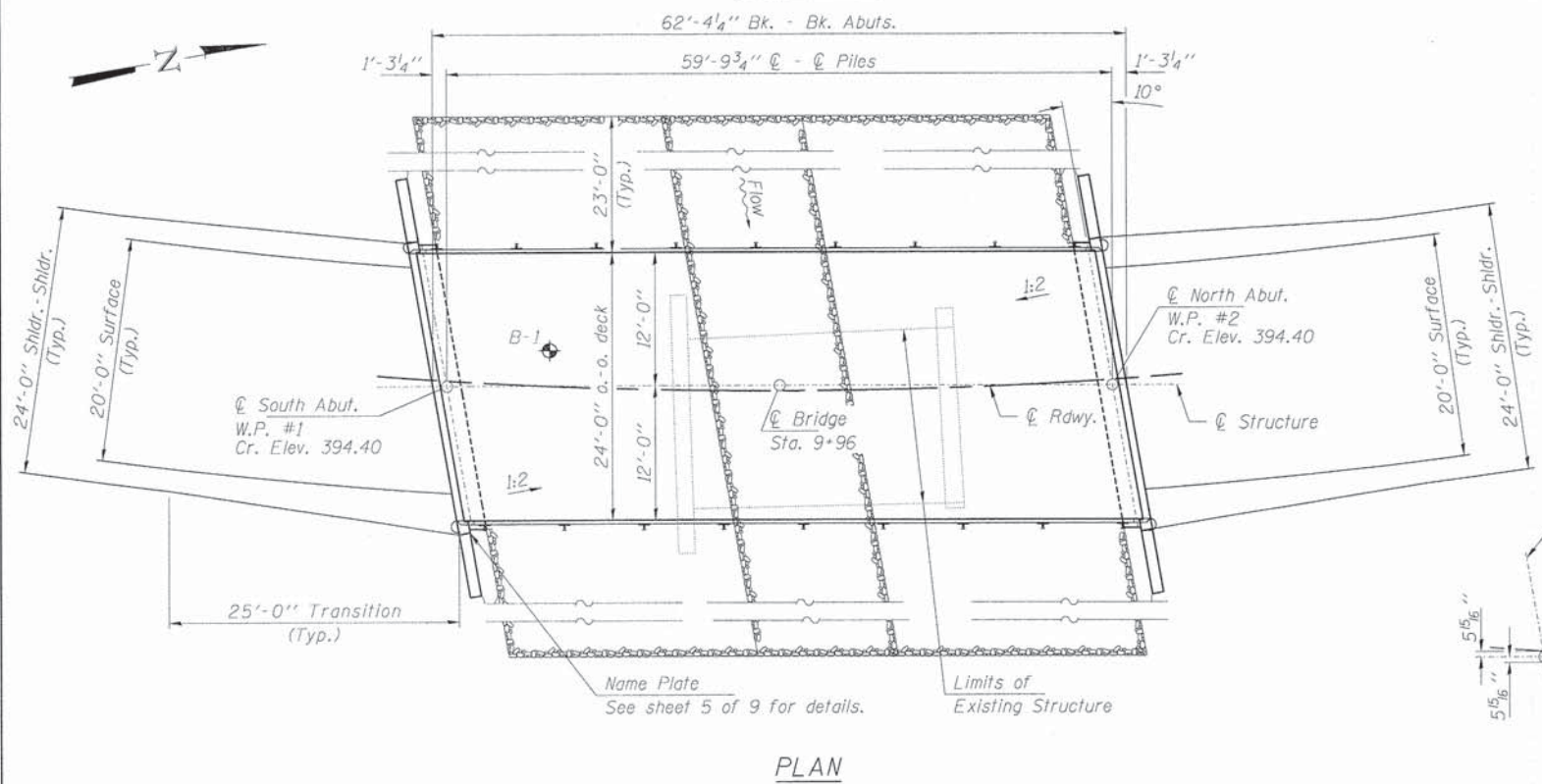
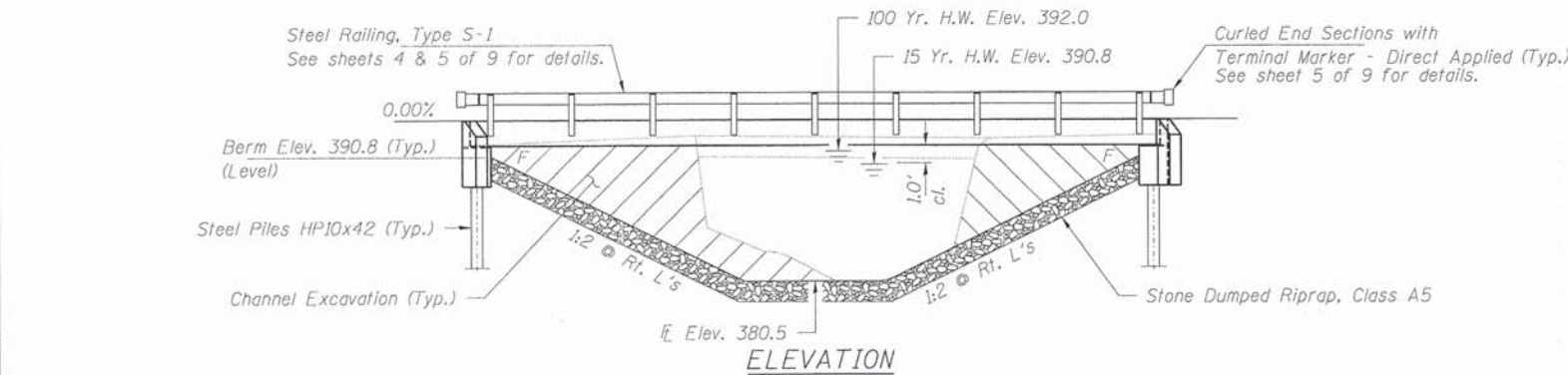
EXISTING STRUCTURE NO. 091-3077: Single span steel I-beam bridge with timber deck on timber piles with concrete mudwalls, 20.0' fc.-fc. abut.; 15.4' o.-o. deck.

Structure closed to traffic during construction.

No Salvage

GENERAL NOTES

Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.
 Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60 (IL Modified). 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.
 All bars shall be epoxy coated.



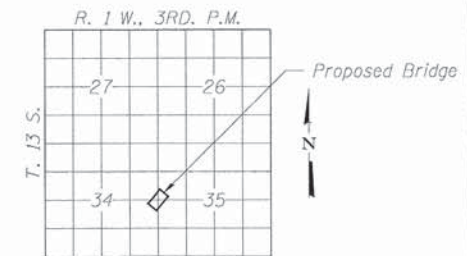
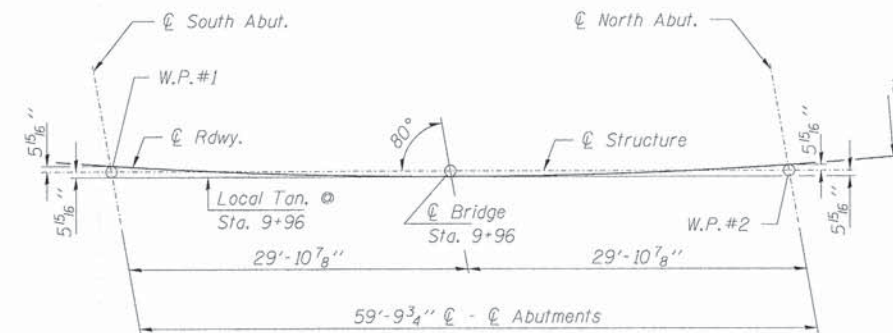
Note: See Special Provisions for Stone Dumped Riprap, Class A5.

INDEX OF STRUCTURE SHEETS

1. General Plan & Elevation
2. 27"x48" PPC Deck Beam
3. 27"x48" PPC Deck Beam Details
4. Superstructure Details
5. Steel Railing, Type S-1
6. South Abutment
7. North Abutment
8. HP Pile Details
9. Borings

CROOKED CREEK
 BUILT 2011 BY
 UNION COUNTY
 SEC. 10-01198-00-BR
 COUNTY UNIT ROAD DISTRICT
 STR. NO. 091-3238
 LOADING HL-93

NAME PLATE
 See Std. 515001



DESIGN SPECIFICATIONS

2012 AASHTO LFRD 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.)

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) = 4
 Design Spectral Acceleration at 1.0 sec. (SD1) = 0.602g
 Design Spectral Acceleration at 0.2 sec. (SDS) = 1.409g
 Soil Site Class = D

Design Scour Elevations (ft.)		
	S. Abut.	N. Abut.
0.100	388.2	388.2

WATERWAY INFORMATION

Drainage Area = 4.0 Sq. Mi.		Existing Low Grade Elev. 391.4 @ Sta. 8+50 Proposed Low Grade Elev. 391.8 @ Sta. 8+40							
Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Natural Head - Ft.		Headwater E.I.		
			Exist.	Prop.	Exist.	Prop.	Exist.	Prop.	
Design	10	1680	210	350	390.34	0.82	0.08	391.16	390.42
Base (Overtopping)	15	1890	220	380	390.80	1.15	0.14	391.95	390.94
Max. Calc.	500	4000	250	430	391.98	1.21	0.59	393.19	392.57
								393.59	393.22

10 Year Velocity through Existing Bridge = 8.0 fps
 10 Year Velocity through Proposed Bridge = 4.8 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 LFRD Specifications."

Steven W. Megginson 10/29/2014
 ILLINOIS STRUCTURAL ENGINEER NO. 081-6064



Expires 11-30-2016

TOTAL BILL OF MATERIAL

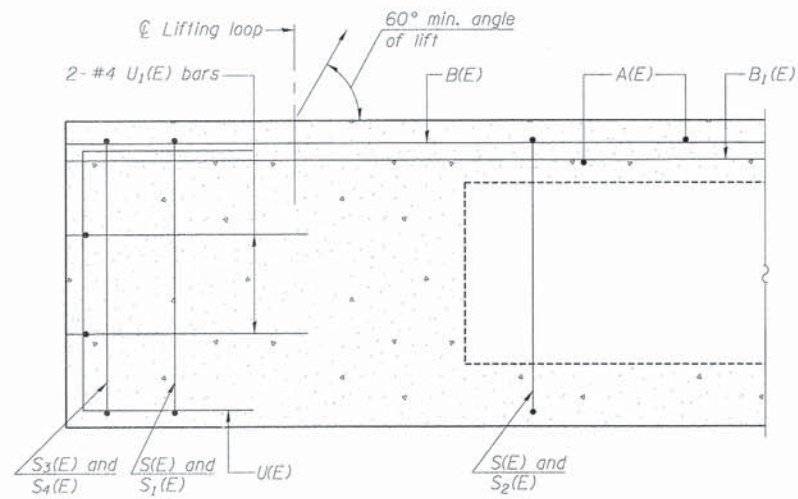
ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	Cu. Yd.			220
Stone Dumped Riprap, Class A5	Ton			520
Removal of Existing Structures	Each			1
Concrete Structures	Cu. Yd.		25.8	25.8
Precast Prestressed Concrete Deck Beams (27" Depth)	Sq. Ft.	1,464		1,464
Reinforcement Bars, Epoxy Coated	Pound		2,840	2,840
Steel Railing, Type S-1	Foot	119		119
Furnishing Steel Piles HP10x42	Foot		560	560
Driving Piles	Foot		560	560
Name Plates	Each		1	1
Terminal Marker - Direct Applied	Each	4		4

FILE NAME = 148002-shr-bridge.dgn	USER NAME =	DESIGNED - L.A.P.	REVISED -
HAMPTON, LENZINI AND RENWICK, INC. 3030 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62767 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184-000889	PLOT SCALE =	CHECKED - S.W.M.	REVISED -
PLOT DATE = 10/29/2014		DRAWN - R.D.H.	REVISED -
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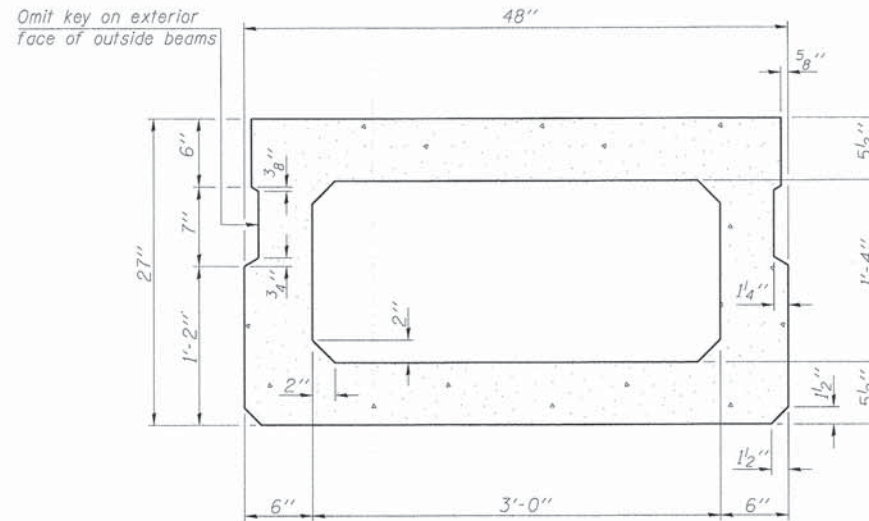
STATE OF ILLINOIS
 UNION COUNTY HIGHWAY DEPARTMENT

GENERAL PLAN & ELEVATION
 STRUCTURE NO. 091-3238
 SHEET NO. 1 OF 9 SHEETS

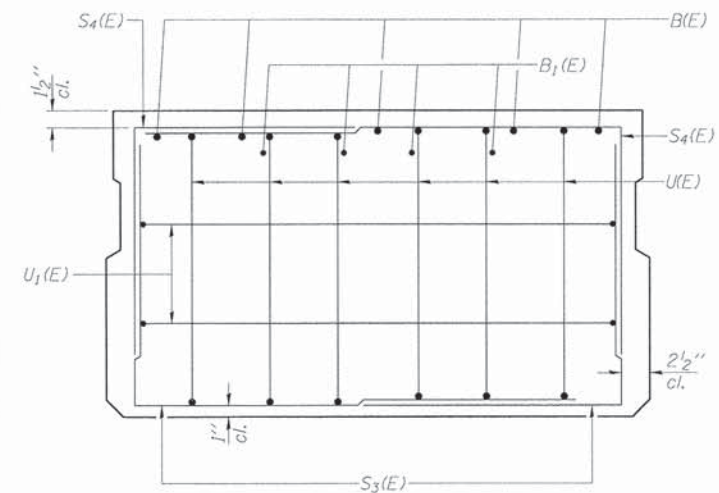
T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
138	10-01198-00-BR	UNION	18	10
COUNTY UNIT ROAD DISTRICT			CONTRACT NO. 99543	
ILLINOIS FED. AID PROJECT BROS-01810561				



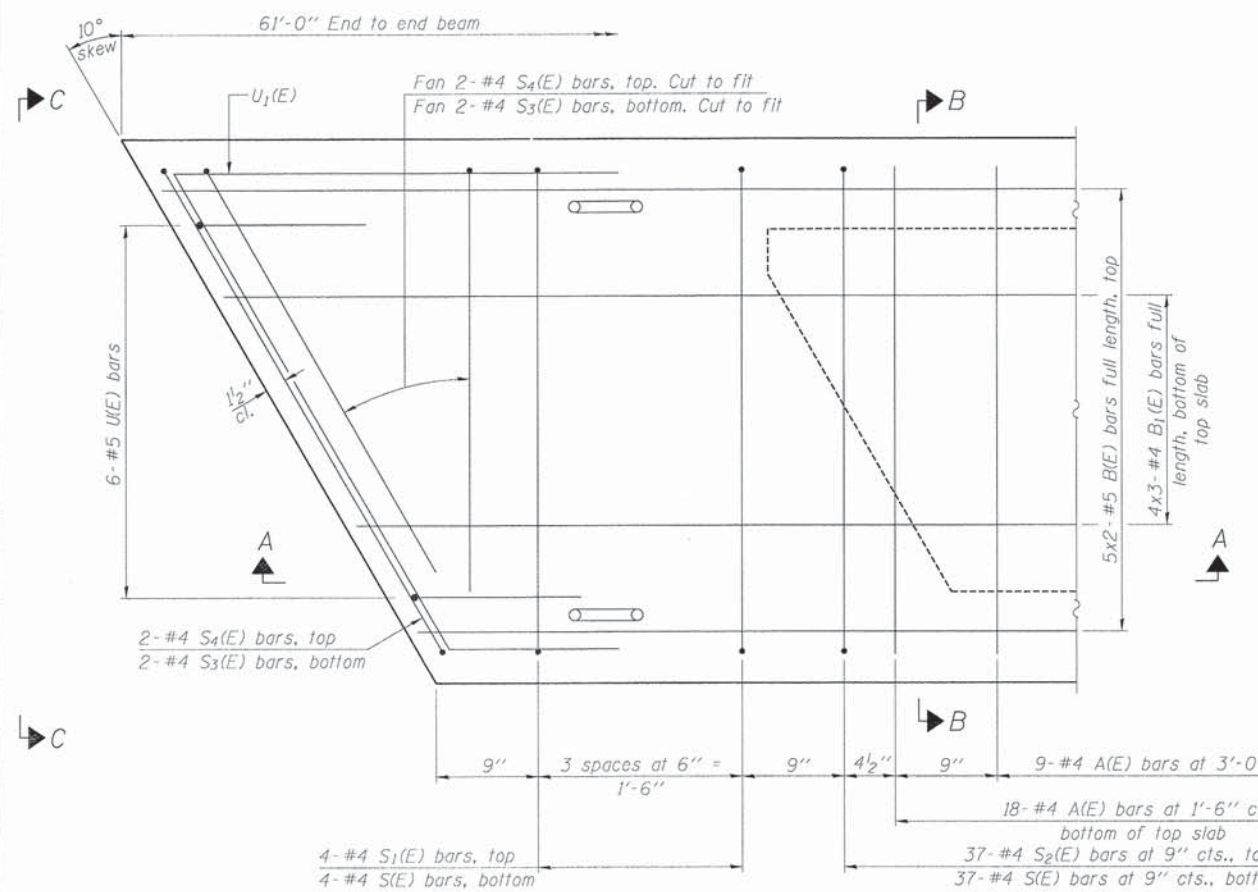
SECTION A-A



SECTION B-B
(Showing dimensions)

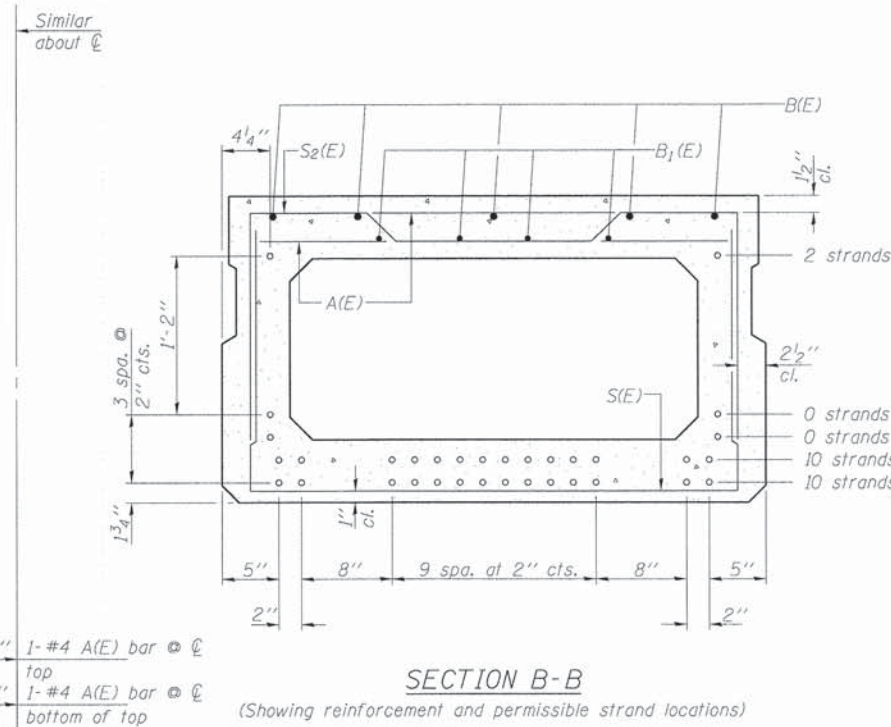


VIEW C-C



PLAN VIEW

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 5x2-#5 etc. indicates 5 lines of bars with 2 lengths per line.



SECTION B-B
(Showing reinforcement and permissible strand locations)
Note: Place the number of strands specified in each row symmetrically about the centerline of beam in the permissible strand locations shown.

BAR LIST
ONE BEAM ONLY
(For information only)

Bar	No.	Size	Length	Shape
A(E)	56	#4	3'-7"	—
B(E)	10	#5	31'-8"	—
B1(E)	12	#4	21'-7"	—
S(E)	82	#4	7'-5"	┌
S1(E)	8	#4	6'-11"	┌
S2(E)	74	#4	7'-2"	┌
S3(E)	8	#4	4'-8"	┌
S4(E)	8	#4	4'-5"	┌
U(E)	12	#5	4'-6"	┌
U1(E)	4	#4	6'-8"	┌

Note: See sheets 3 & 4 of 9 for additional details and Bill of Material.

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

PD-2748-R

7-1-10

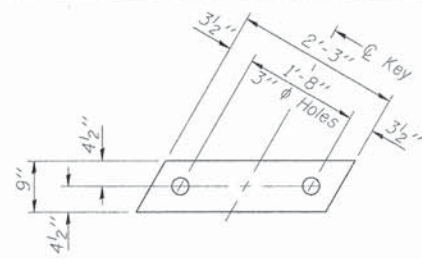
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HAMPTON, LENZINI AND RENWICK, INC. 3030 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703	PLOT SCALE =	CHECKED - S.W.M.	REVISED -
ELKHORN PROFESSIONAL DESIGN FIRM 161 PEI BLVD CORP. 184 000959	PLOT DATE = 10/29/2014	DRAWN - R.D.H.	REVISED -
		CHECKED - S.W.M.	REVISED -

STATE OF ILLINOIS
UNION COUNTY HIGHWAY DEPARTMENT

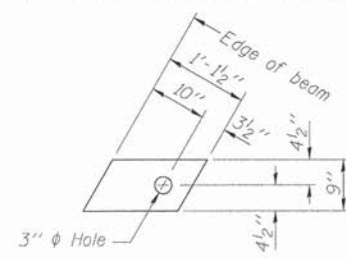
27" x 48" PPC DECK BEAM
STRUCTURE NO. 091-3238

SHEET NO. 2 OF 9 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
138	10-01198-00-BR	UNION	18	11
COUNTY UNIT ROAD DISTRICT		CONTRACT NO. 99543		
[ILLINOIS] FED. AID PROJECT BROS-01810561				



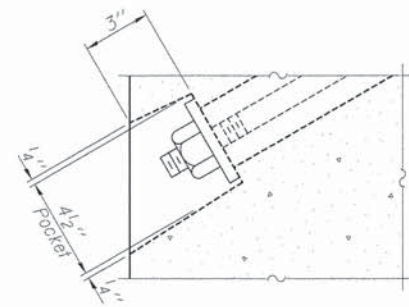
FABRIC BEARING PAD
(Interior - 10 Req'd.)



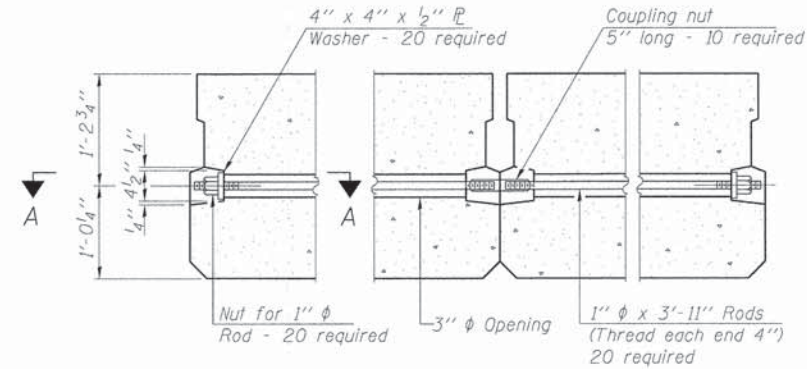
FABRIC BEARING PAD
(Exterior - 4 Req'd.)

FIXED

Notes:
All bearing pads shall be 1" thick.
Omit holes when using expansion bearings.
Expansion bearing pad shall be bonded to the substructure.
20'-4"



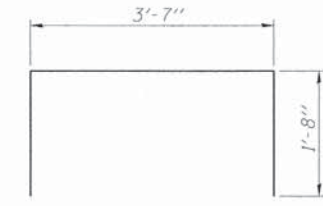
SECTION A-A



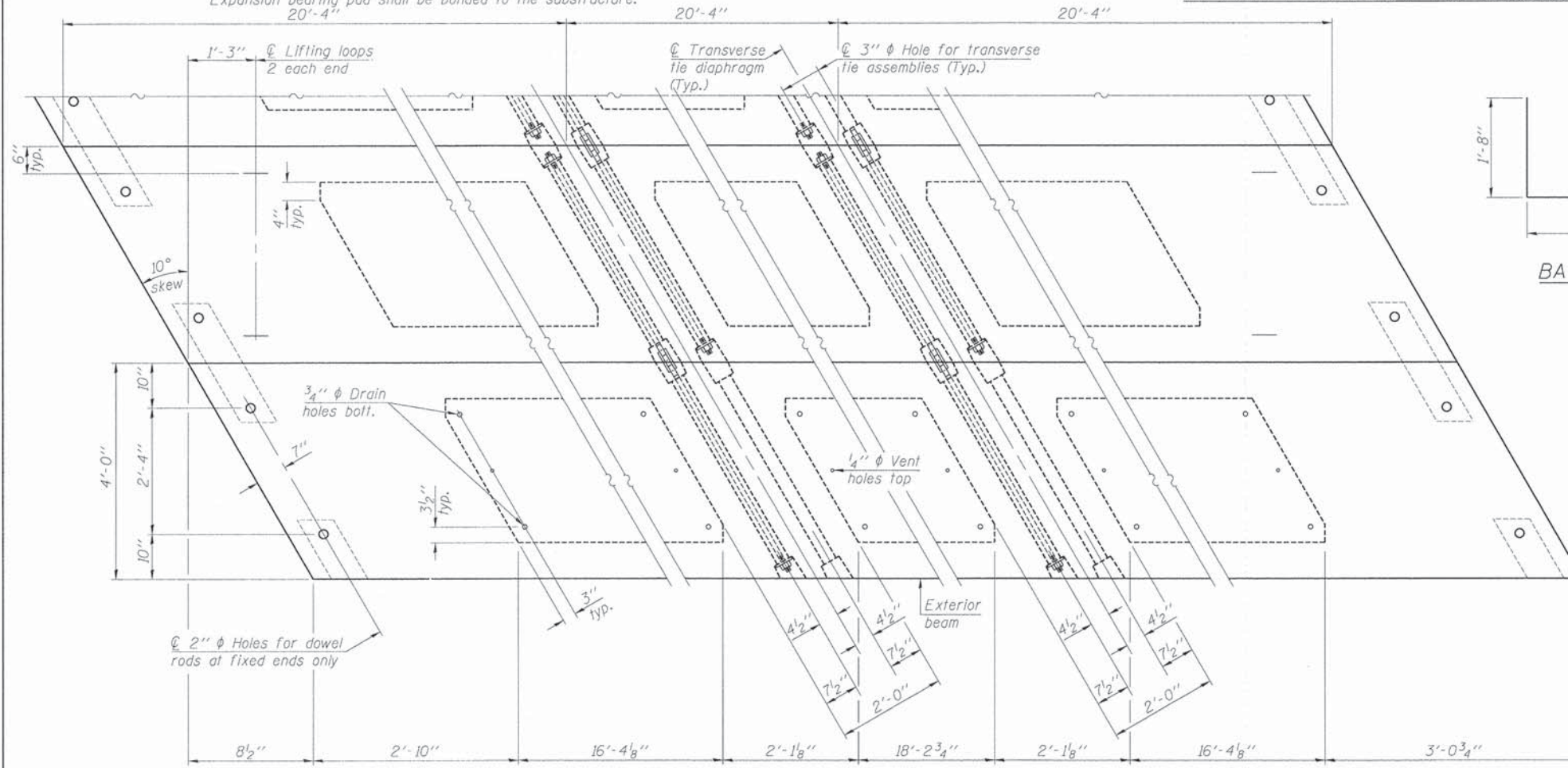
TYPICAL TRANSVERSE TIE ASSEMBLY



BAR S(E)



BAR S1(E)

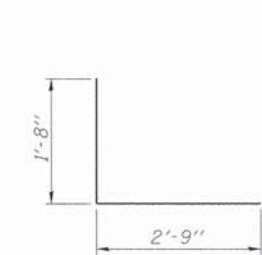


PLAN VIEW

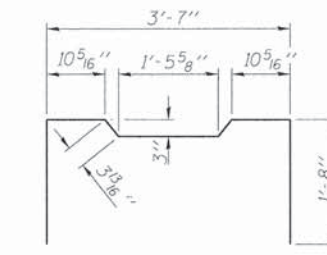
Note: Connect beams in pairs with the transverse tie configuration shown.

NOTES

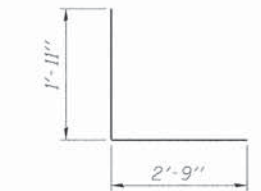
Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in. The 1" rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior 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 1/2" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.
A minimum 2 1/2" 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.



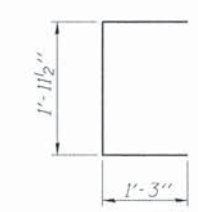
BAR S4(E)



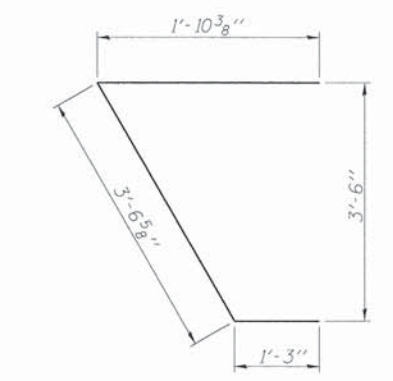
BAR S2(E)



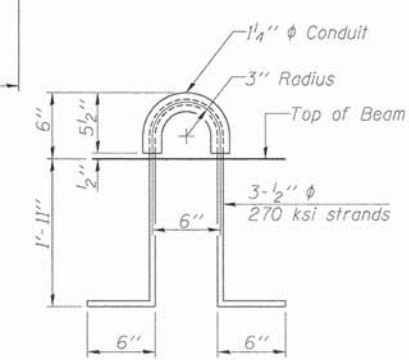
BAR S3(E)



BAR U(E)



BAR U1(E)



LIFTING LOOP DETAIL

BILL OF MATERIAL

Precast Prestressed Conc. Deck Bms. (27" depth)	Sq. Ft.	1,464
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PD-2748-RD 7-1-10

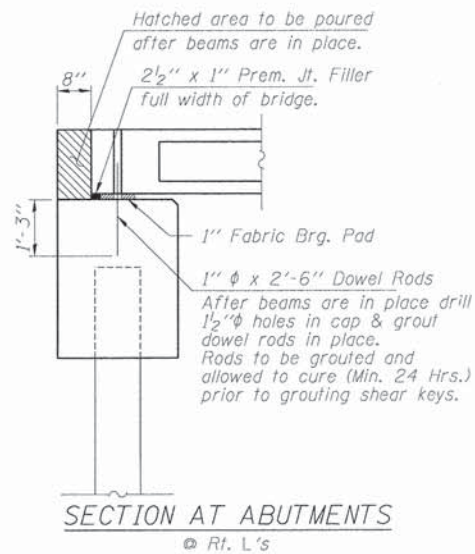
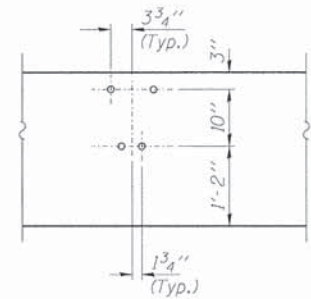
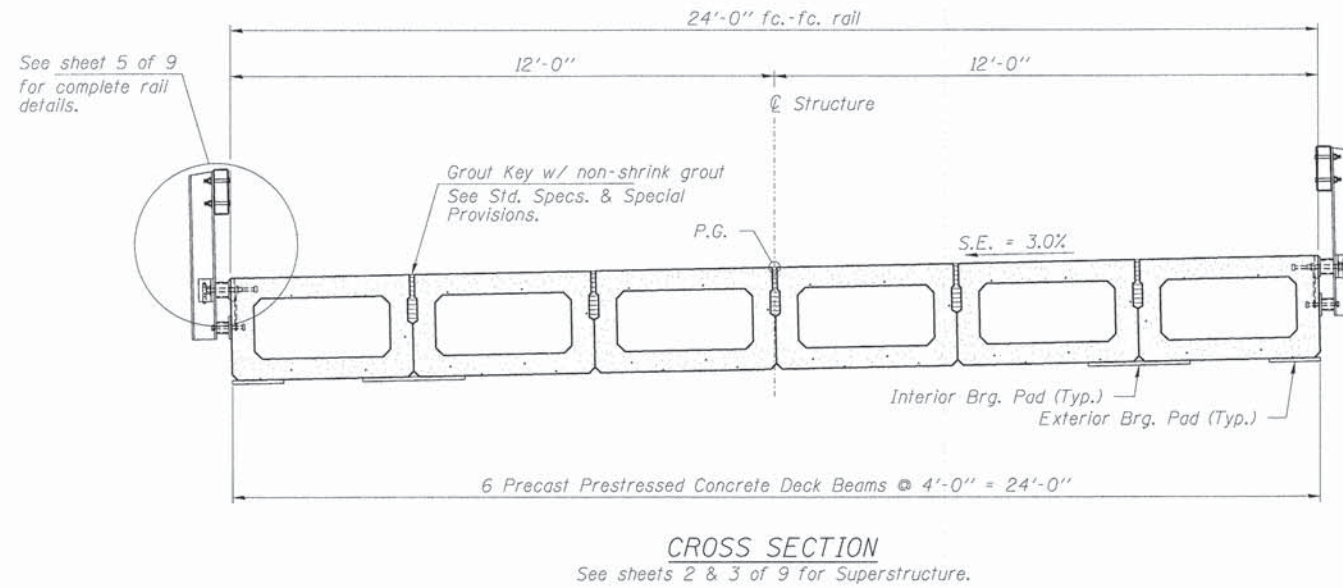
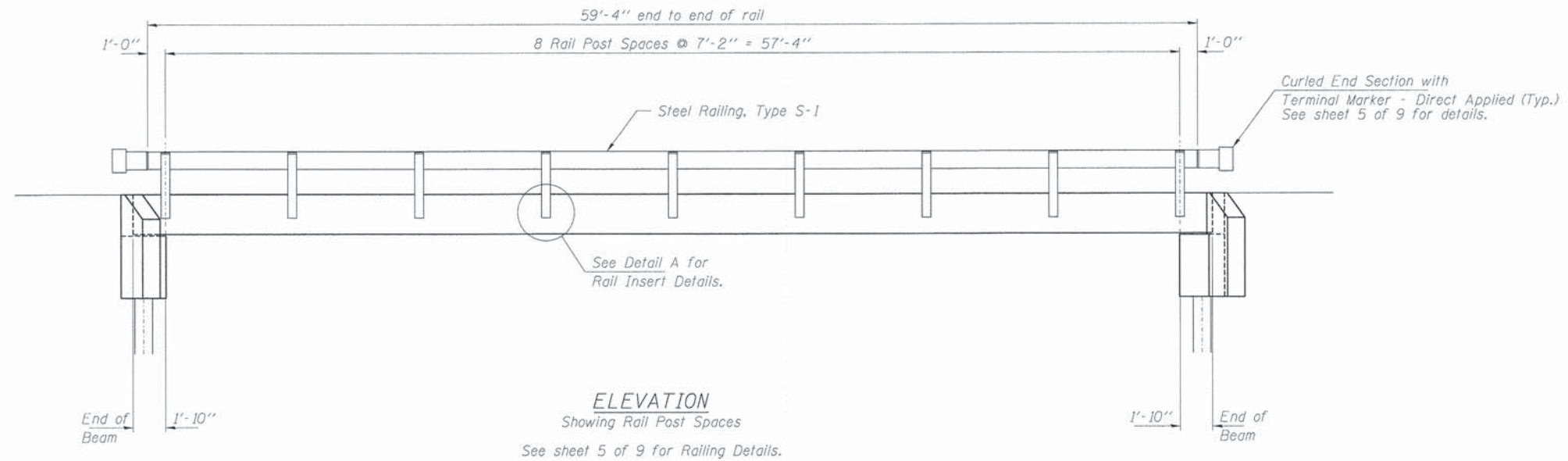
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HAMPTON, LENZINI AND RENWICK, INC.		CHECKED - S.W.M.	REVISED -
308 STEVENSON DRIVE, SUITE 201		DRAWN - R.D.H.	REVISED -
SPRINGFIELD, ILLINOIS 62703		CHECKED - S.W.M.	REVISED -
ILLINOIS PROFESSIONAL DESIGN FIRM			
LSI P.E./S.E. CORP. 184-000009			

STATE OF ILLINOIS
UNION COUNTY HIGHWAY DEPARTMENT

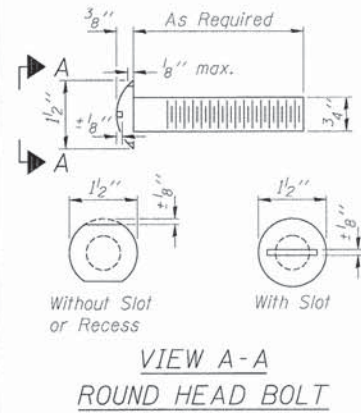
27" x 48" PPC DECK BEAM DETAILS
STRUCTURE NO. 091-3238

SHEET NO. 3 OF 9 SHEETS

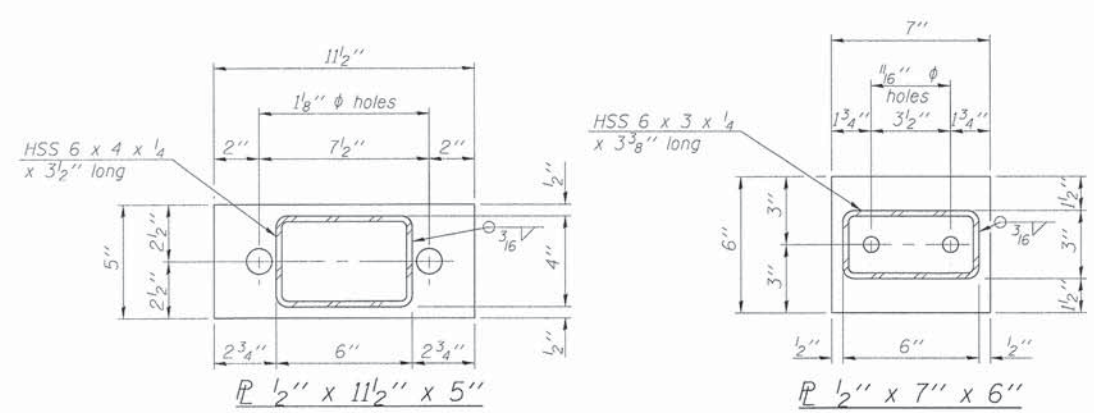
T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
138	10-01198-00-BR	UNION	18	12
COUNTY UNIT ROAD DISTRICT			CONTRACT NO. 99543	
ILLINOIS FED. AID PROJECT BROS-01810561				



FILE NAME = 140002-sh1-bridge.dgn	USER NAME =	DESIGNED - L.A.P.	REVISED -	STATE OF ILLINOIS UNION COUNTY HIGHWAY DEPARTMENT	SUPERSTRUCTURE DETAILS STRUCTURE NO. 091-3238	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
HAMPTON, LENZINI AND RENWICK, INC. 3008 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703	PLOT SCALE =	CHECKED - S.W.M.	REVISED -			138	10-01198-00-BR	UNION	18	13	
ILLINOIS PROFESSIONAL DESIGN FIRM L.S. / P.E. / S.E. CORP. 184.000989	PLOT DATE = 10/29/2014	DRAWN - R.D.H.	REVISED -			COUNTY UNIT ROAD DISTRICT	CONTRACT NO. 99543				
		CHECKED - S.W.M.	REVISED -			SHEET NO. 4 OF 9 SHEETS		[ILLINOIS] FED. AID PROJECT BROS-08110561			

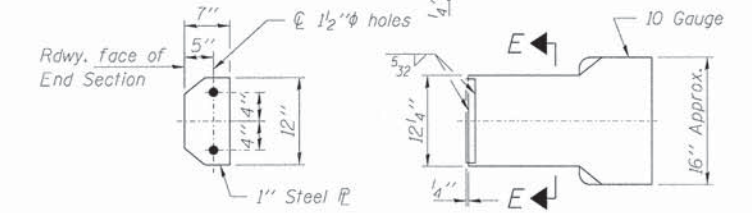


VIEW A-A
ROUND HEAD BOLT

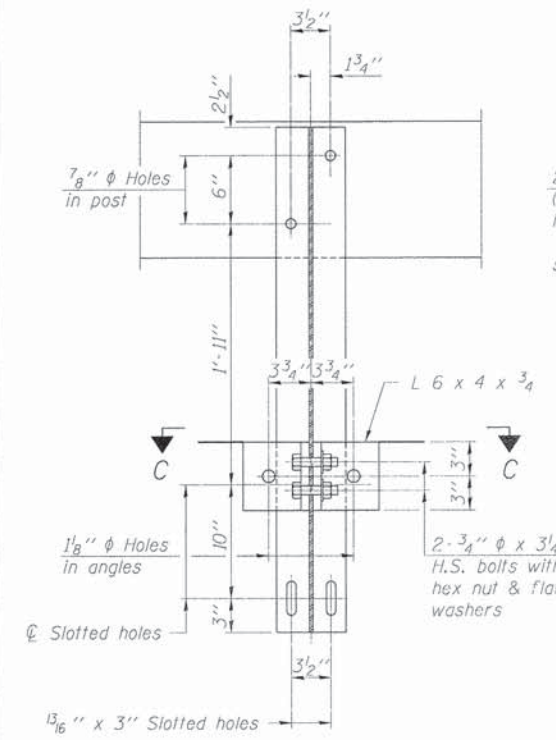


HSS 6 x 4 x 1/4 x 3 1/2" long
HSS 6 x 3 x 1/4 x 3 3/8" long
P 1/2" x 11 1/2" x 5"
P 1/2" x 7" x 6"

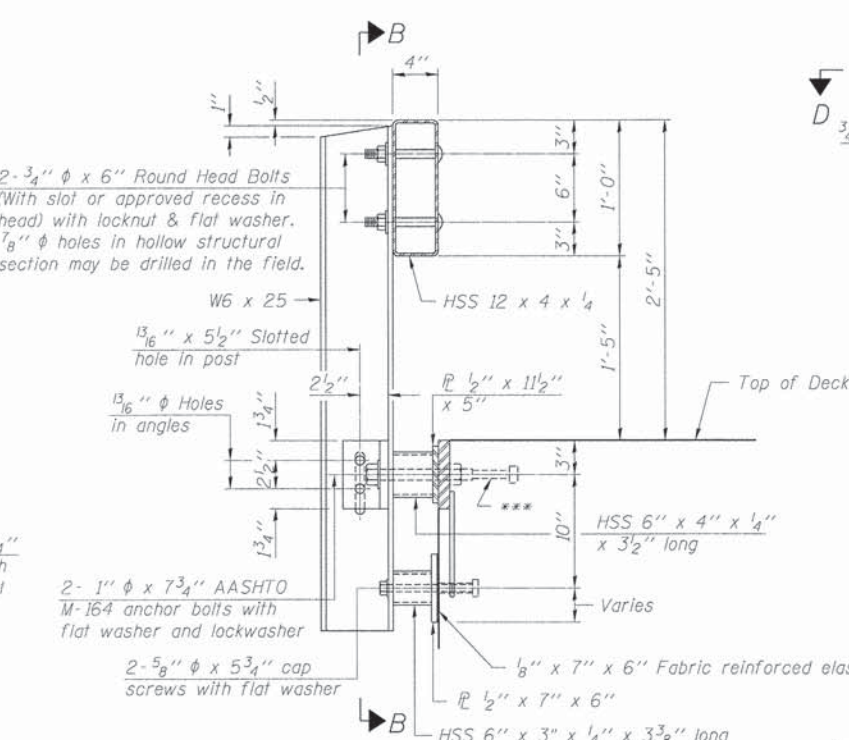
Note: Cost of curled end sections shall be included with the Steel Railing. (4 Required)



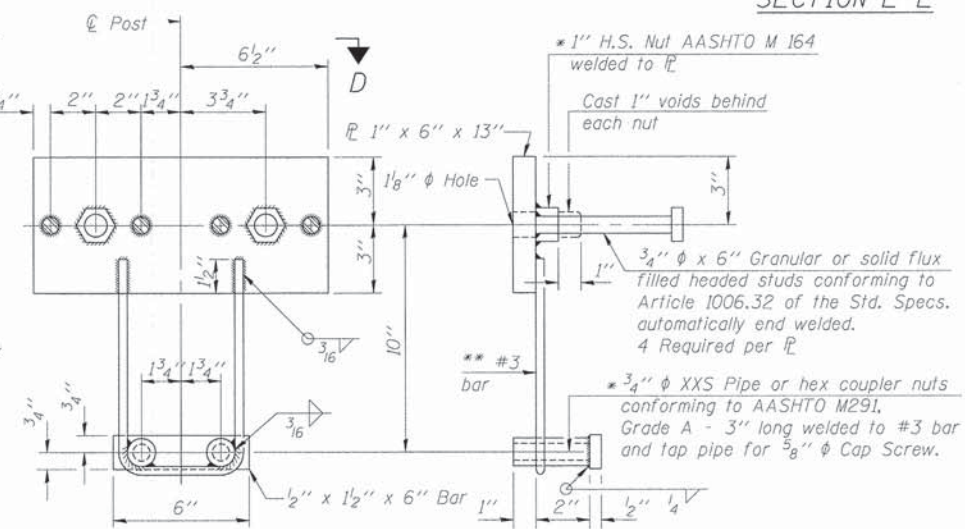
SECTION E-E
CURLLED END SECTION DETAILS



SECTION B-B

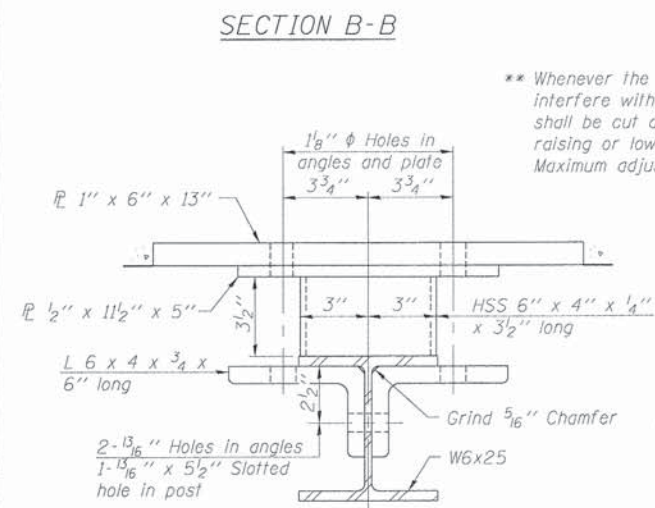


SECTION AT RAILING POST

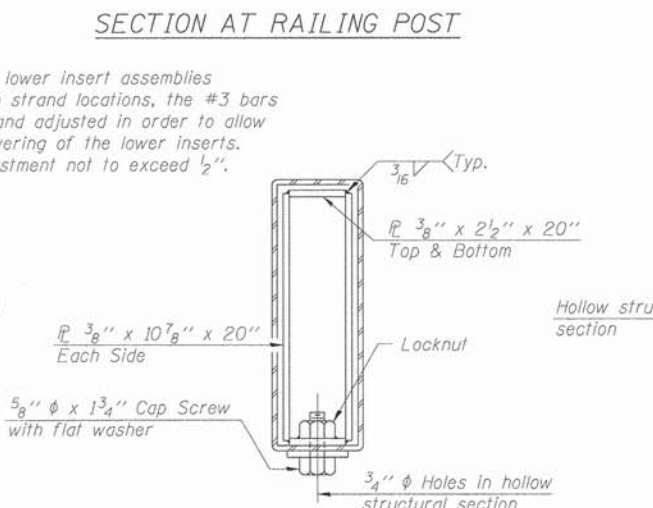


ANCHOR DEVICE

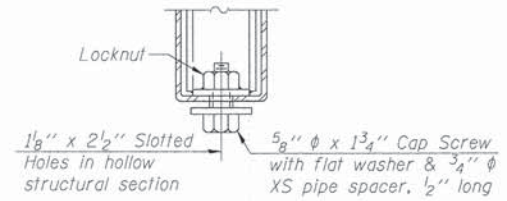
Notes:
All field drilled holes shall be coated with an approved zinc rich paint before erection.
For multi-span bridges, sufficient 1/4" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with Steel Railing, Type S-1.
All steel rail elements shall 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.



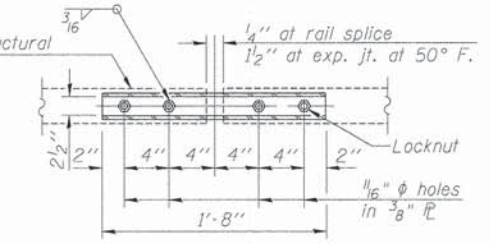
SECTION C-C



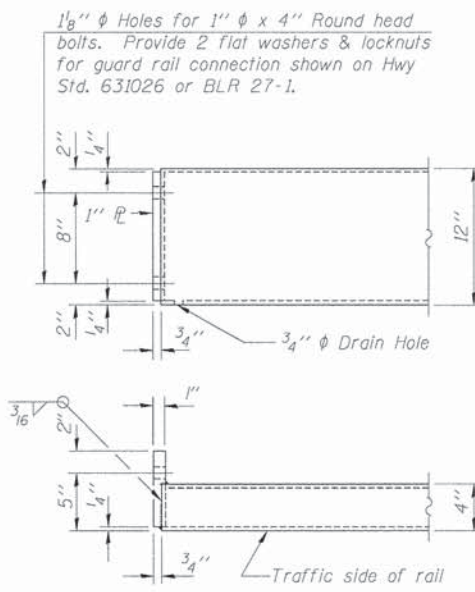
SECTIONS AT RAIL SPLICE



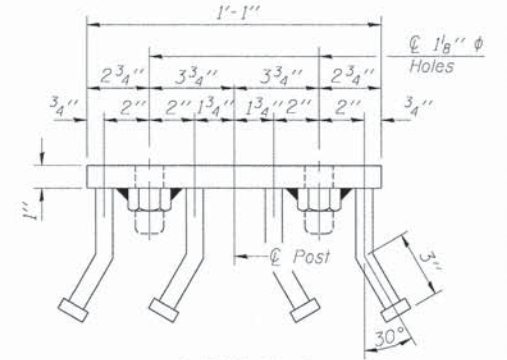
RAIL SPLICE CONNECTION
AT EXPANSION JT.



PLAN-BOTT. SPLICE P
TYPICAL



END OF RAIL DETAILS



VIEW D-D

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S-1	Foot	119

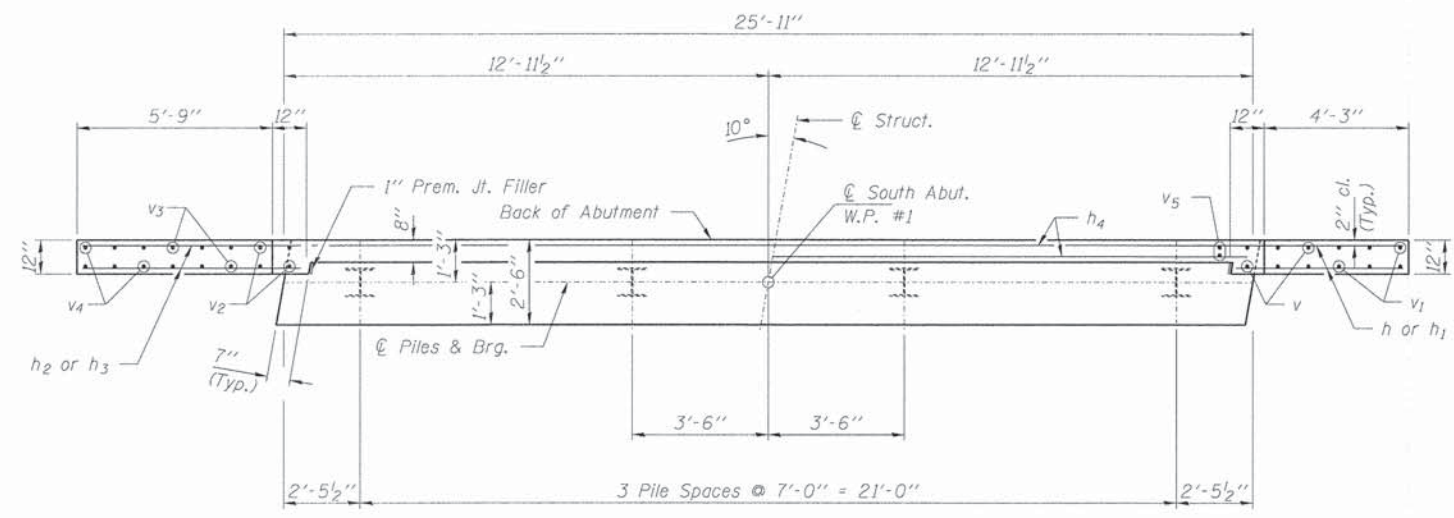
R-23A 7-1-10 (10'-9" Maximum Post Spacing)

FILE NAME = 140282-ah-bridge.dgn	USER NAME =	DESIGNED - L.A.P.	REVISED -
HAMPTON, LENZINI AND RENWICK, INC.	PLOT SCALE =	CHECKED - S.W.M.	REVISED -
3080 STEVENSON DRIVE, SUITE 201	PLOT DATE = 10/29/2014	DRAWN - R.D.H.	REVISED -
SPRINGFIELD, ILLINOIS 62703		CHECKED - S.W.M.	REVISED -
ILLINOIS PROFESSIONAL DESIGN FIRM			
LB / PE / SE CORP. 184-000989			

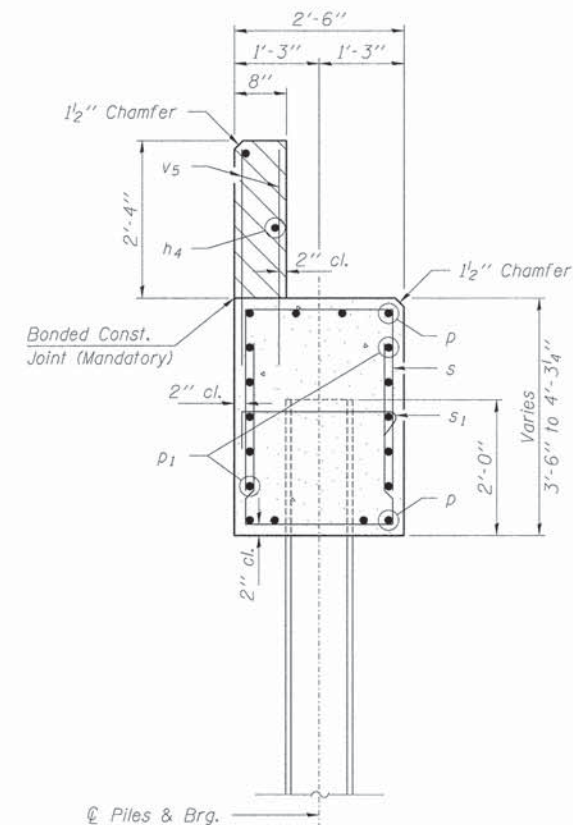
STATE OF ILLINOIS
UNION COUNTY HIGHWAY DEPARTMENT

STEEL RAILING, TYPE S-1
STRUCTURE NO. 091-3238
SHEET NO. 5 OF 9 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
138	10-01198-00-BR	UNION	18	14
COUNTY UNIT ROAD DISTRICT		CONTRACT NO. 99543		
ILLINOIS FED. AID PROJECT BROS-01810561				

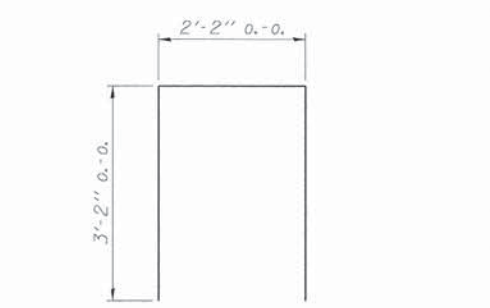


PLAN

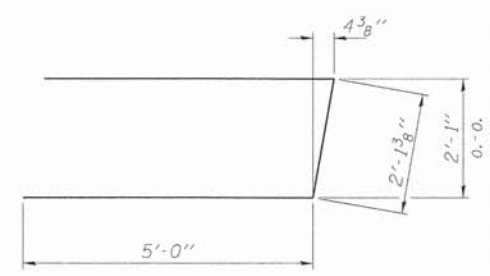


SECTION A-A

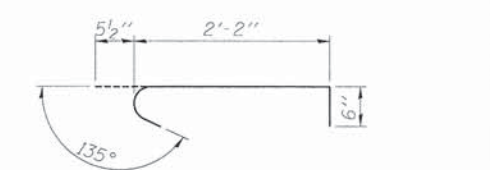
Hatched area to be poured after beams are in place.



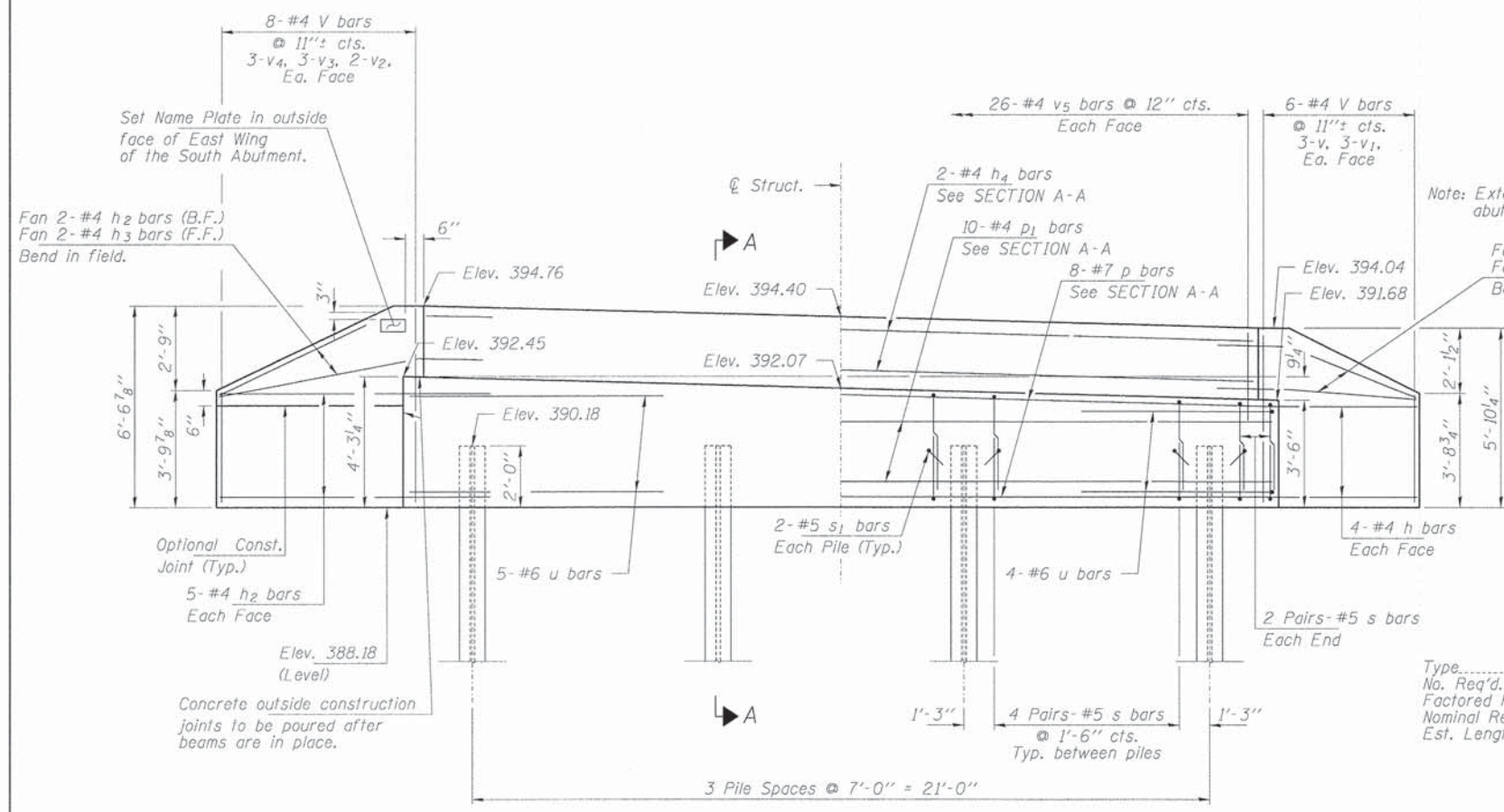
BAR s



BAR u



BAR s1



ELEVATION
(Looking South)

Note: Extend h bars into abutment cap.

Fan 2-#4 h bars (B.F.)
Fan 2-#4 h1 bars (F.F.)
Bend in field.

PILE DATA

Type Steel HP10x42
No. Req'd. (S. Abut.) 4
Factored Resistance Available (Rf) 184 Kips/Pile
Nominal Required Bearing (Rn) 334 Kips/Pile
Est. Length 70 Ft/Pile

BILL OF MATERIAL - S. ABUT.

BAR	NO.	SIZE	LENGTH	SHAPE
h	10	#4	6'-6"	—
h1	2	#4	5'-0"	—
h2	12	#4	8'-0"	—
h3	2	#4	6'-6"	—
h4	2	#4	25'-7"	—
p	8	#7	25'-7"	—
p1	10	#4	25'-7"	—
s	32	#5	8'-6"	□
s1	8	#5	3'-2"	┌
u	9	#6	12'-2"	U
v	6	#4	4'-11"	—
v1	6	#4	3'-6"	—
v2	4	#4	6'-2"	—
v3	6	#4	4'-11"	—
v4	6	#4	3'-8"	—
v5	52	#4	3'-2"	—

Concrete Structures	Cu. Yd.	12.9
Reinforcement Bars, Epoxy Coated	Pound	1,420
Steel Piles HP10x42	Foot	280
Name Plates	Each	1

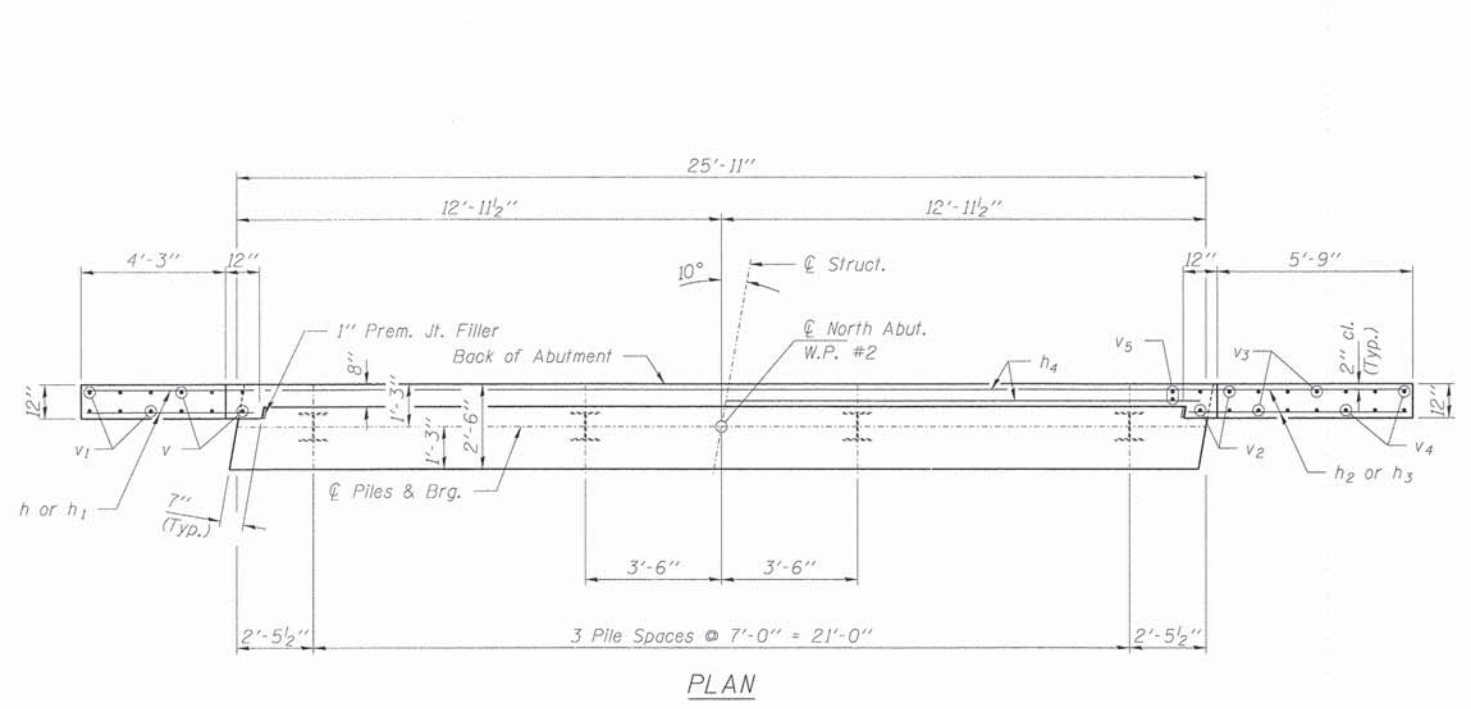
All bars shall be epoxy coated

FILE NAME = 140022-shr-bridge.dgn	USER NAME =	DESIGNED - L.A.P.	REVISED -
HAMPTON, LENZINI AND RENWICK, INC. 3088 STEVENSON DRIVE, SUITE 301 SPRINGFIELD, ILLINOIS 62703	PLOT SCALE =	CHECKED - S.W.M.	REVISED -
ILLINOIS PROFESSIONAL DESIGN FIRM 151 PE / SE CORP. 184-000969	PLOT DATE = 10/29/2014	DRAWN - R.D.H.	REVISED -
		CHECKED - S.W.M.	REVISED -

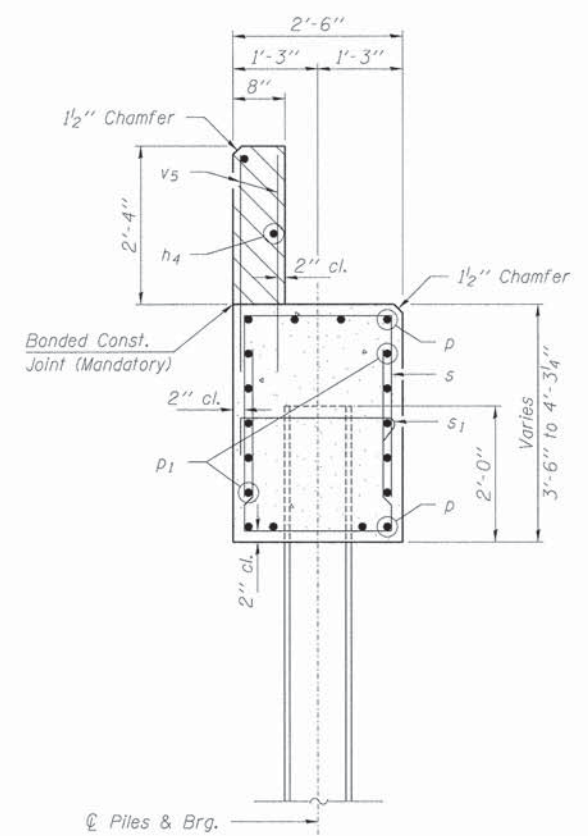
STATE OF ILLINOIS
UNION COUNTY HIGHWAY DEPARTMENT

SOUTH ABUTMENT
STRUCTURE NO. 091-3238
SHEET NO. 6 OF 9 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
138	10-01198-00-BR	UNION	18	15
COUNTY UNIT ROAD DISTRICT			CONTRACT NO. 99543	
[ILLINOIS] FED. AID PROJECT BROS-018(1056)				

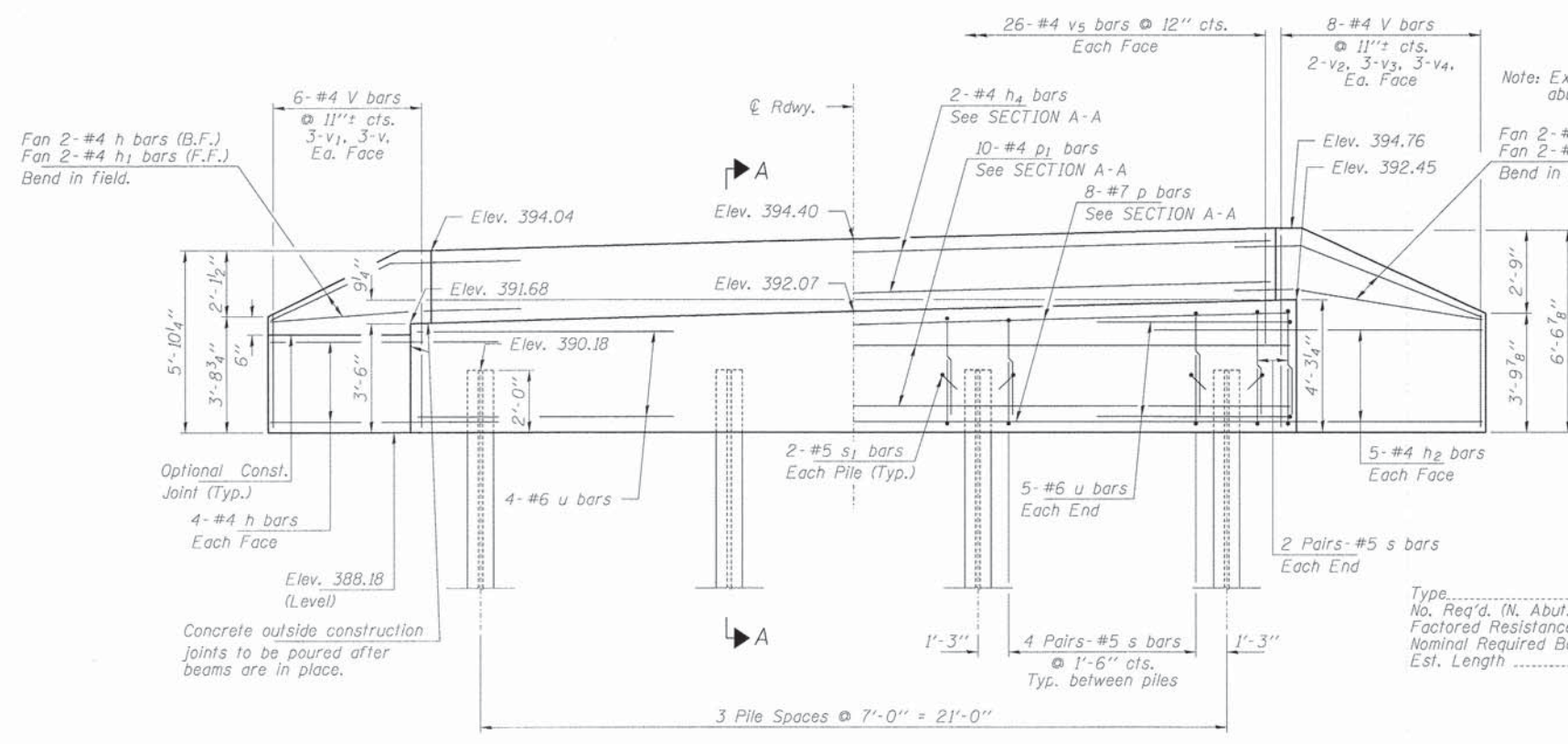
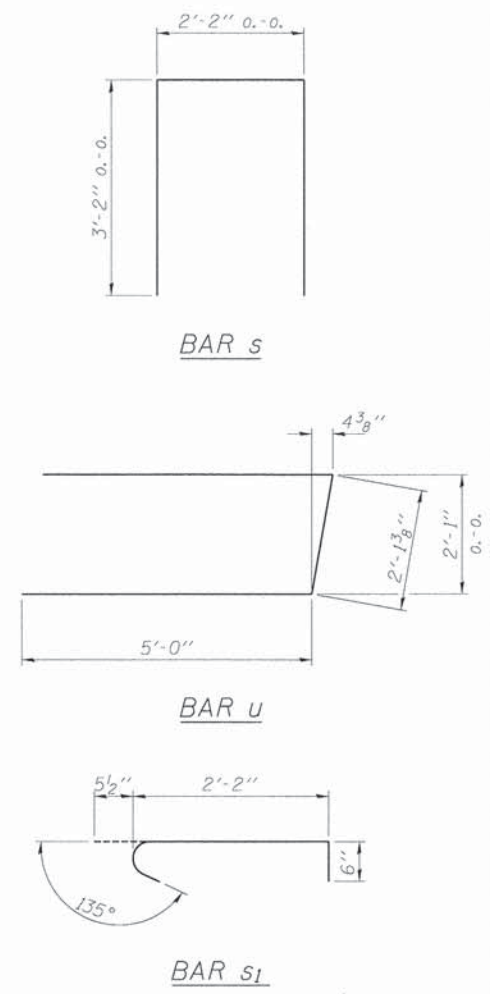


PLAN



SECTION A-A

Hatched area to be poured after beams are in place.



ELEVATION
(Looking North)

PILE DATA

Type Steel HPI0x42
 No. Req'd. (N. Abut.) 4
 Factored Resistance Available (Rf) 184 Kips/Pile
 Nominal Required Bearing (Rn) 334 Kips/Pile
 Est. Length 70 Ft/Pile

BILL OF MATERIAL - N. ABUT.

BAR	NO.	SIZE	LENGTH	SHAPE
h	10	#4	6'-6"	—
h1	2	#4	5'-0"	—
h2	12	#4	8'-0"	—
h3	2	#4	6'-6"	—
h4	2	#4	25'-7"	—
p	8	#7	25'-7"	—
p1	10	#4	25'-7"	—
s	32	#5	8'-6"	□
s1	8	#5	3'-2"	┌
u	9	#6	12'-2"	▱
v	6	#4	4'-11"	—
v1	6	#4	3'-6"	—
v2	4	#4	6'-2"	—
v3	6	#4	4'-11"	—
v4	6	#4	3'-8"	—
v5	52	#4	3'-2"	—
Concrete Structures			Cu. Yd.	12.9
Reinforcement Bars, Epoxy Coated			Pound	1,420
Steel Piles HPI0x42			Foot	280

All bars shall be epoxy coated

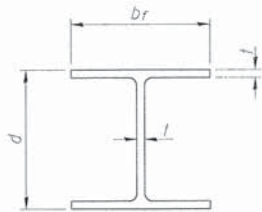
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 USER NAME =
 DESIGNED - L.A.P.
 CHECKED - S.W.M.
 DRAWN - R.D.H.
 CHECKED - S.W.M.
 PLOT SCALE =
 PLOT DATE = 10/29/2014

DESIGNED - L.A.P.
 CHECKED - S.W.M.
 DRAWN - R.D.H.
 CHECKED - S.W.M.
 REVISIONS:
 REVISIONS:
 REVISIONS:

STATE OF ILLINOIS
 UNION COUNTY HIGHWAY DEPARTMENT

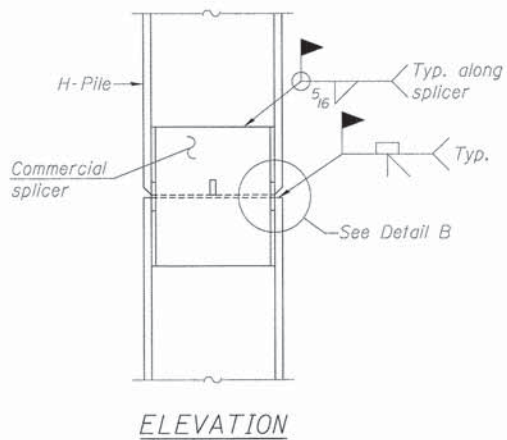
NORTH ABUTMENT
 STRUCTURE NO. 091-3238
 SHEET NO. 7 OF 9 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
138	10-01198-00-BR	UNION	18	16
COUNTY UNIT ROAD DISTRICT		CONTRACT NO. 99543		
[ILLINOIS] FED. AID PROJECT BR05-01810561				

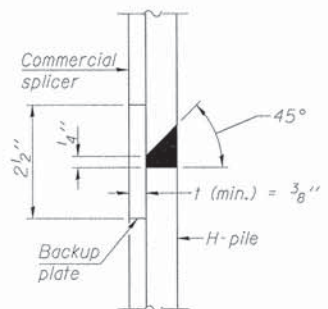


STEEL PILE TABLE

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"	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"	1/16"	24"
x74	12 1/2"	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"	1/16"	18"

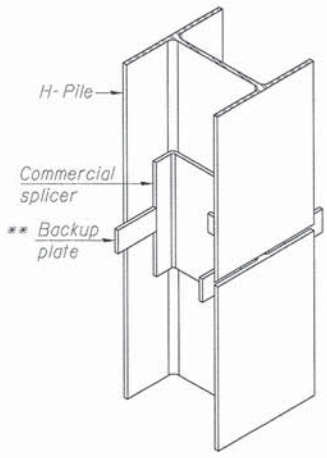


ELEVATION

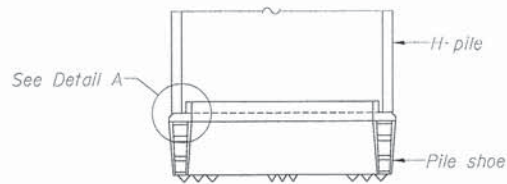


DETAIL "B"

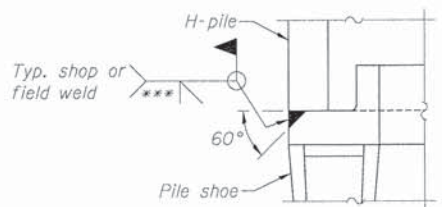
WELDED COMMERCIAL SPLICE



ISOMETRIC VIEW

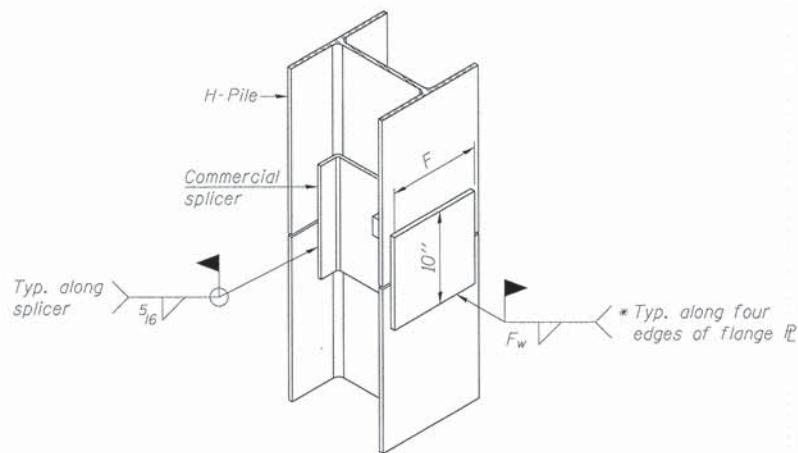


ELEVATION



DETAIL A

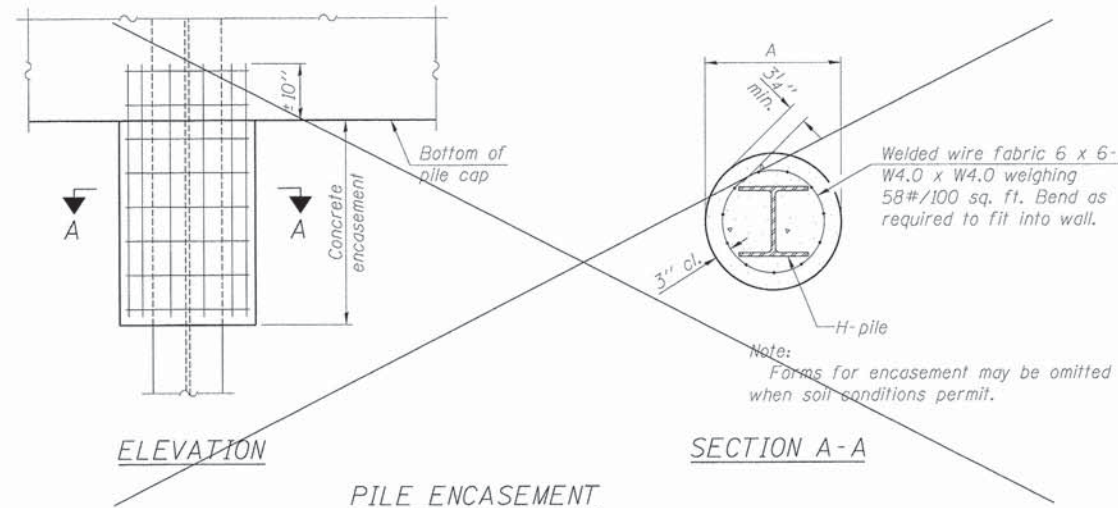
H-PILE SHOE ATTACHMENT



ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE ALTERNATE

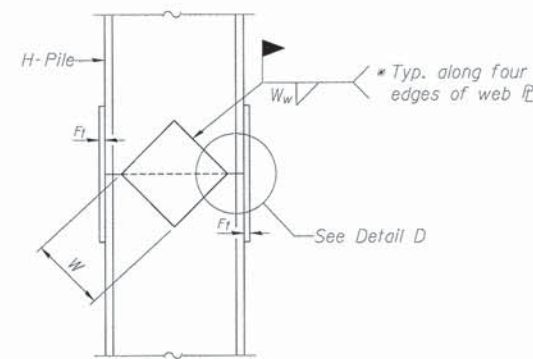
- * Interrupt welds 1/4" from end of web and/or each flange.
- ** Remove portions of backup plates that extend outside the flanges.
- *** Weld size per pile shoe manufacturer (5/16" min.).



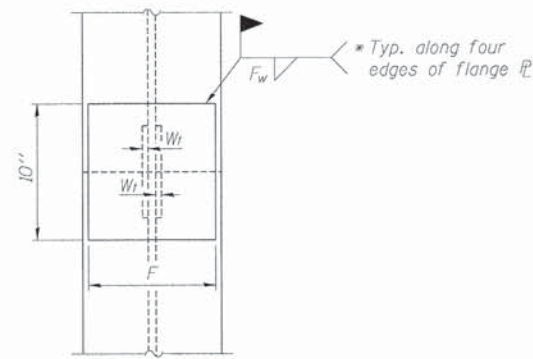
ELEVATION

SECTION A-A

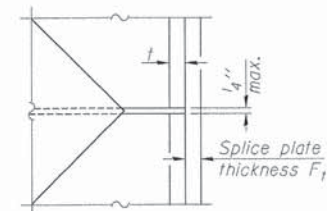
PILE ENCASEMENT



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 1/2"	1/2"
x102	12 1/2"	7/8"	3/4"	7 3/4"	5 1/2"	1/2"
x89	12 1/2"	3/4"	1/16"	7 3/4"	5 1/2"	1/2"
x73	12 1/2"	5/8"	9/16"	7 3/4"	5 1/2"	1/2"
HP 12x84	10"	7/8"	1/16"	6 1/2"	5 1/2"	1/2"
x74	10"	7/8"	1/16"	6 1/2"	5 1/2"	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 = 140802-sht-bridge.dgn	USER NAME =	DESIGNED - L.A.P.	REVISIONS -	STATE OF ILLINOIS UNION COUNTY HIGHWAY DEPARTMENT	HP PILE DETAILS STRUCTURE NO. 091-3238	T.J.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND RENWICK, INC. 3095 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62769	PLLOT SCALE =	CHECKED - S.W.M.	REVISIONS -			138	10-01198-00-BR	UNION	18	17
ILR ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.00095	PLLOT DATE = 10/29/2014	DRAWN - R.D.H.	REVISIONS -			COUNTY UNIT ROAD DISTRICT CONTRACT NO. 99543				
		CHECKED - S.W.M.	REVISIONS -			ILLINOIS FED. AID PROJECT BROS-01810561				

SHEET NO. 8 OF 9 SHEETS

Bridge Foundation Boring Log

Project: H-14023 Bridge Happy Holler Road over Crooked Creek Date: 2/14/2014
Section: 10-01198-00-BR Station _____ Bored by: B. Schwartz
Structure: _____ Checked By: T. Holcomb
County: Union

Boring No: 1	Station:	Offset:	Surface Water Elev.			Elevation	N	Qu	tsf	w	%
			Ground Water Elev. During Drilling	88.0	Upon Completion						
Ground Surface (393.1) 99.0 0											
4" of Topsoil											
Brown Sandy CLAY (A-6)											
							23	--	21		
											-25
											(367.1) 73.0
Chert Gravel											
							26	--	22		
											-5
											(387.1) 93.0
Gray Sandy CLAY (A-6)											
							15	--	20		
											-30
							8	1.4S	27		
											-10
							0	--	29		
											-35
											(379.6) 85.5
Brown Sandy CLAY (A-6) with pebbles											
							6	2.0B	49		
											-15
							4	1.2B	29		
											-40
							25	--	14		
											-20
											(349.6) 55.5
Brown Silty CLAY (A-6)											
							40	--	17		

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

Bridge Foundation Boring Log

Project: H-14023 Bridge Happy Holler Road over Crooked Creek Date: 2/14/2014
Section: 10-01198-00-BR Station _____ Bored by: B. Schwartz
Structure: _____ Checked By: T. Holcomb
County: Union

Boring No: 1	Station:	Offset:	Surface Water Elev.			Elevation	N	Qu	tsf	w	%
			Ground Water Elev. During Drilling	88.0	Upon Completion						
silty clay (continued)											
							45	2	0.8B	39	
											(324.6) 30.5
Gray Limestone											
											(323.1) 29.0
End of Boring @ -70.0'											
											100
											-70
											-75
											(339.6) 45.5
Brown Sandy CLAY (A-6)											
							5	--	48		
											-50
							8	1.4S	27		
											-55
							6	--	73		
											-60
							9	1.2B	29		
											-65
							1	--	30		
											-80
											-85

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