

06-14-13 LETTING ITEM 228

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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

**PROJECT BROS-0183(315)
SECTION 10-15145-00-BR
PILOT ROAD DISTRICT
VERMILION COUNTY
T.R. 131 / 2800N
PROPOSED STRUCTURE NO. 092-3523
JOB NO. C-95-332-12**

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 131	10-15145-00-BR	VERMILION	20	1
FED. ROAD DIST. NO.		ILLINOIS CONTRACT NO. 91477		

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1.	COVER SHEET
2.	SUMMARY OF QUANTITIES AND GENERAL NOTES
3.	TYPICAL CROSS SECTIONS
4.	PLAN AND PROFILE
5-11.	STATION CROSS SECTIONS
12-18.	BRIDGE PLANS
19-20.	BORINGS

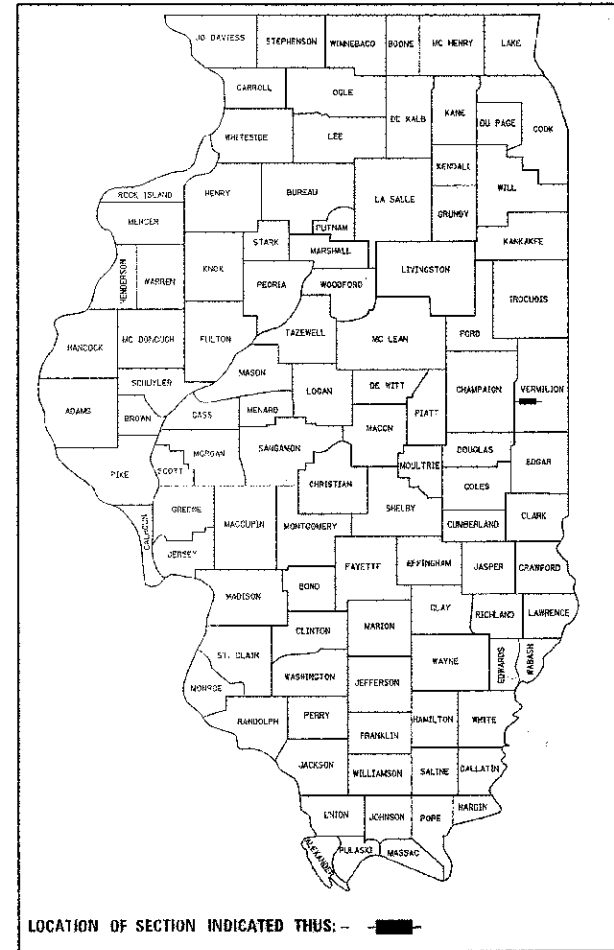
HIGHWAY STANDARDS:

000001-06	STANDARD SYMBOLS, ABBREVIATIONS, AND PATTERNS.
280001-07	TEMPORARY EROSION CONTROL SYSTEMS
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

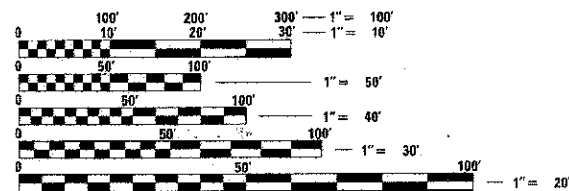
UTILITIES

FRONTIER COMMUNICATIONS
104 MULBERRY
NORMAL, IL 61761
217-463-3129
ATTN: MICHELE LEWSADER

EASTERN ILLINI ELECTRIC COOP.
330 W OTTAWA ST
PO BOX 96
PAXTON IL 60957
217-379-2131
ATTN: ALAN SCHWEIGHART



FUNCTIONAL CLASSIFICATION: LOCAL ROAD (D-250 ADT)
DESIGN SPEED: 30 MPH
DESIGN TRAFFIC: 50 ADT

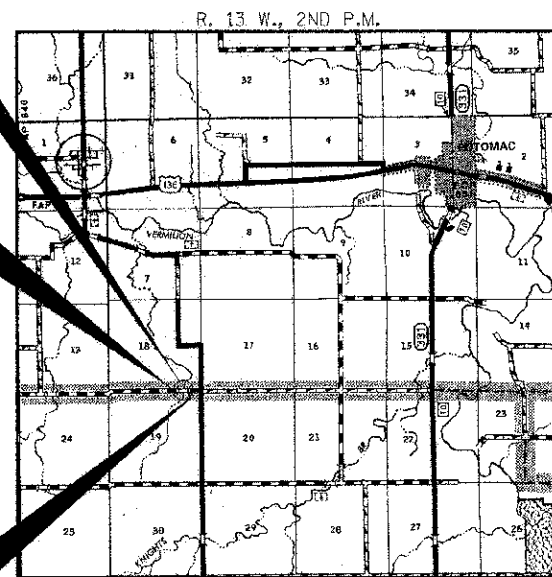


FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

STA. 10+00
PRECAST PRESTRESSED CONCRETE DECK BEAM
BRIDGE, SINGLE SPAN @ 45'-0"
27'-0" RDWY.; SKEW = 0°
EXISTING STRUCTURE NO. 092-3111
PROPOSED STRUCTURE NO. 092-3523

IMPROVEMENT BEGINS
STATION 7+50

IMPROVEMENT ENDS
STATION 12+20



LOCATION MAP

APPROXIMATE SCALE: 0 1 MILE
NET LENGTH OF SECTION = 470 FEET = 0.089 MILES



ILLINOIS DEPARTMENT OF TRANSPORTATION

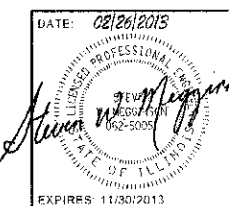
APPROVED *March 2, 2013*
Douglas R. Alaka
COUNTY ENGINEER

APPROVED *RTO* 3/2/13
TOWNSHIP COMMISSIONER

PASSED *March 22, 2013*
Steve Decker
DISTRICT FIVE ENGINEER OF LOCAL ROADS & STREETS

Releasing For Bid Based on Limited Review: 03/20/13

Joseph R. Coursey
DEPUTY DIRECTOR OF HIGHWAYS
REGION THREE 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.hlrengineering.com

CONTRACT NO. 91477

DATE: 02/26/2013
EXPIRES: 11/30/2013
PROJECT NUMBER: 11.0265.130
DATE: 02/28/13

SUMMARY OF QUANTITIES			
CODE NO.	ITEM	UNIT	TOTAL CONSTRUCTION TYPE CODE 0011
20200100	EARTH EXCAVATION	CU YD	230
20300100	CHANNEL EXCAVATION	CU YD	75
20400500	FURNISHED EXCAVATION	CU YD	160
28000305	TEMPORARY DITCH CHECKS	FOOT	55
28000500	INLET AND PIPE PROTECTION	EACH	2
28100207	STONE DUMPED RIPRAP, CLASS A4	TON	130
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	515
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50200100	STRUCTURE EXCAVATION	CU YD	65
50300225	CONCRETE STRUCTURES	CU YD	23.6
50400305	PRECAST PRESTRESSED CONCRETE DECK BEAMS (17" DEPTH)	SQ. FT.	1,215
50800105	REINFORCEMENT BARS	POUND	2,530
50900205	STEEL RAILING, TYPE S1	FOOT	88
51201400	FURNISHING STEEL PILES HP10X42	FOOT	270
51202305	DRIVING PILES	FOOT	270
51203400	TEST PILE STEEL HP10X42	EACH	2
51204650	PILE SHOES	EACH	6
51500100	NAME PLATES	EACH	1
542D0220	PIPE CULVERTS, CLASS D, TYPE 1 15"	FOOT	80
59300100	CONTROLLED LOW-STRENGTH MATERIAL	CU YD	48
60100925	PIPE DRAINS 8"	FOOT	10
60100945	PIPE DRAINS 12"	FOOT	10
67100100	MOBILIZATION	L.SUM.	1
70101830	TRAFFIC CONTROL AND PROTECTION, STANDARD BLR 21	L.SUM.	1
78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	4
Z0013798	CONSTRUCTION LAYOUT	L.SUM.	1
X2501000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.4
XX004566	CONCRETE CUT-OFF WALL	CU YD	6.4

^ SEE SPECIAL PROVISIONS
 Δ SPECIALTY ITEMS

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.
- THE REVISION NUMBERS OF THE STANDARDS LISTED IN THE PLANS ARE TO BE USED FOR CONSTRUCTING OF THIS SECTION.
- ALL CLEARING AND GRUBBING, FENCE REMOVAL AND REMOVAL OF EXISTING DRAINAGE STRUCTURES SHALL BE INCLUDED IN THE COST OF EARTH EXCAVATION.
- 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 1.80 TON/CU YD
 STONE 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) = 0.4 ACRES

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.	CU.YD.	CU.YD.
TR 131 / 2800 N							
STA 7+50 TO STA 9+76.83	108		25.00%	100.00%	81	160	-79
STA 9+76.83 TO STA 10+23.17		75	25.00%	70.00%	39	0	39
STA 10+23.17 TO STA 12+20	120		25.00%	100.00%	90	233	-143
STRUCTURE EXCAVATION		65	25.00%	70.00%	34	0	34
ENTRANCE EMBANKMENT						11	-11
TOTAL	228				244	404	-160
USE	230	75					160

FURNISHED EXCAVATION 160 CU YDS

TEMPORARY DITCH CHECKS

LOCATION	TEMPORARY DITCH CHECKS	INLET AND PIPE PROTECTION
	28000305 FOOT	28000500 EACH
TR 131 / 2800 N		
RT. STA 8+80	11	
LT. STA 8+80	11	
RT. STA 9+70	11	
LT. STA 9+70	11	
RT. STA 10+25	11	
LT. STA 10+25		1
RT. STA 11+67		1
LT. STA 11+67		
TOTAL	55	2

ROADWAY SCHEDULE

LOCATION	AGGREGATE SURFACE COURSE TYPE B 12"	AGGREGATE SURFACE COURSE TYPE B 6"
	40200800 TON	40200800 TON
TR 131 / 2800 N		
STA 7+50 TO STA 8+00	53.3	
STA 8+00 TO STA 9+76.83	212.2	
STA 10+23.17 TO STA 11+70	176.2	
STA 11+70 TO STA 12+20	53.3	
F.E. STA 11+52		19.4
TOTAL	495.1	19.4
USE	495	20

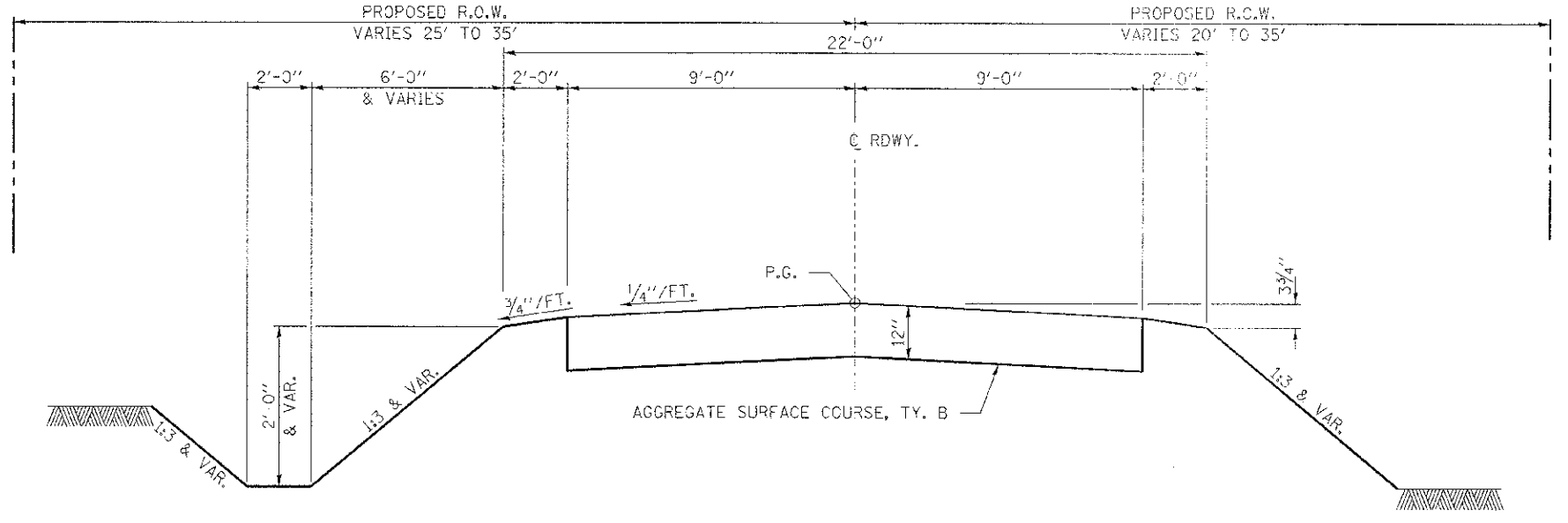
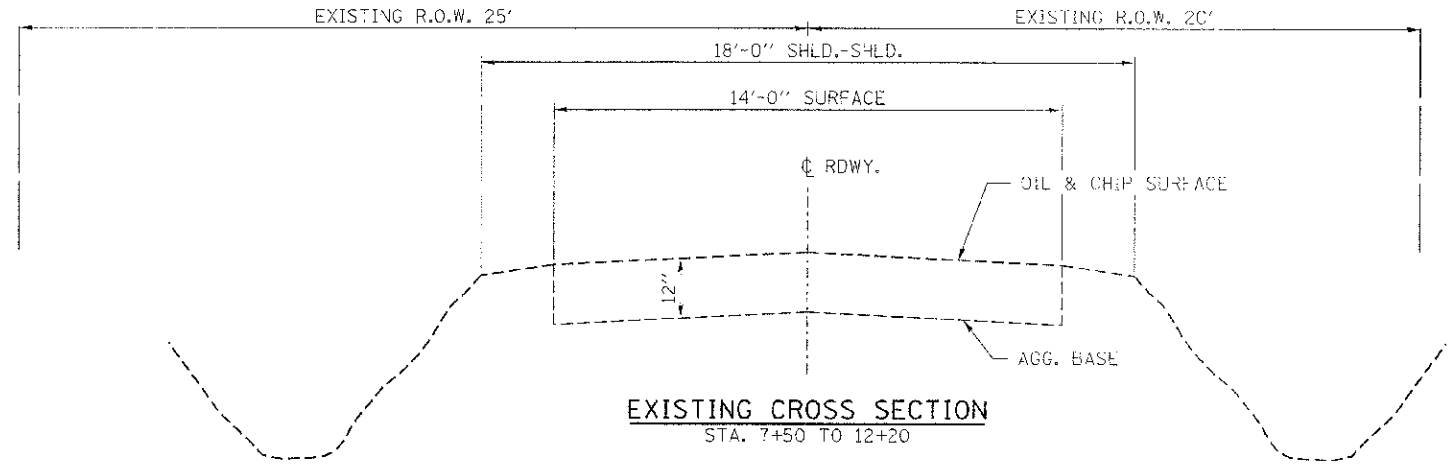
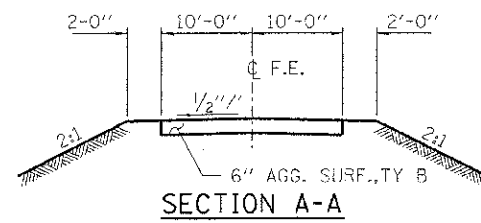
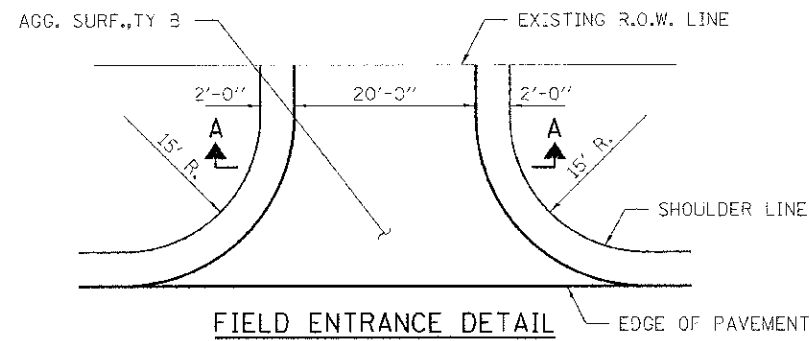
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HAMPTON LENZINI AND RENWICK, INC. 338 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62701	PLOT SCALE =	DRAWN - D.A.B.	REVISED -
ILLINOIS PROFESSIONAL DESIGN FIRM L3 / PE / SE / COPP / 04-00000	PLOT DATE = 4/1/2013	CHECKED - S.W.M.	REVISED -
		DATE - 02/26/13	REVISED -

STATE OF ILLINOIS
 VERMILION COUNTY HIGHWAY DEPARTMENT

SUMMARY OF QUANTITIES & GENERAL NOTES
 2800N ROAD

SCALE: SHEET NO. 1 OF 1 SHEETS STA. TO STA.

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
131	10-15145-00-BR	VERMILION	20	2
PILOT ROAD DISTRICT			CONTRACT NO. 91477	
[ILLINOIS] FED. AID PROJECT				

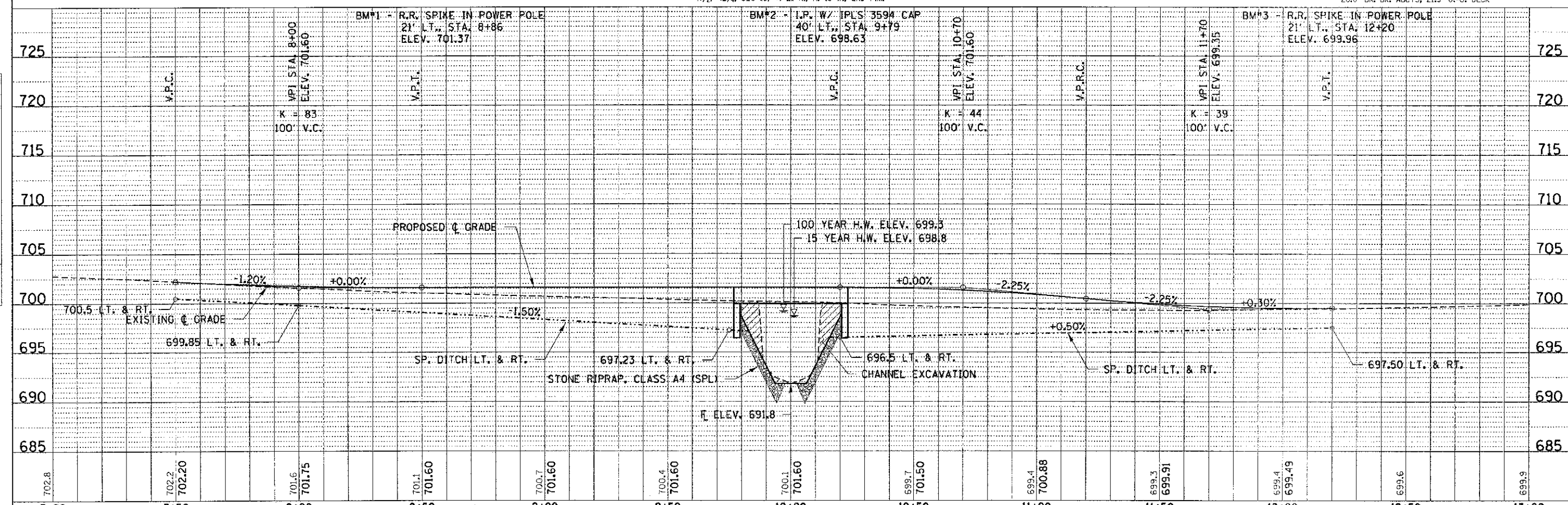
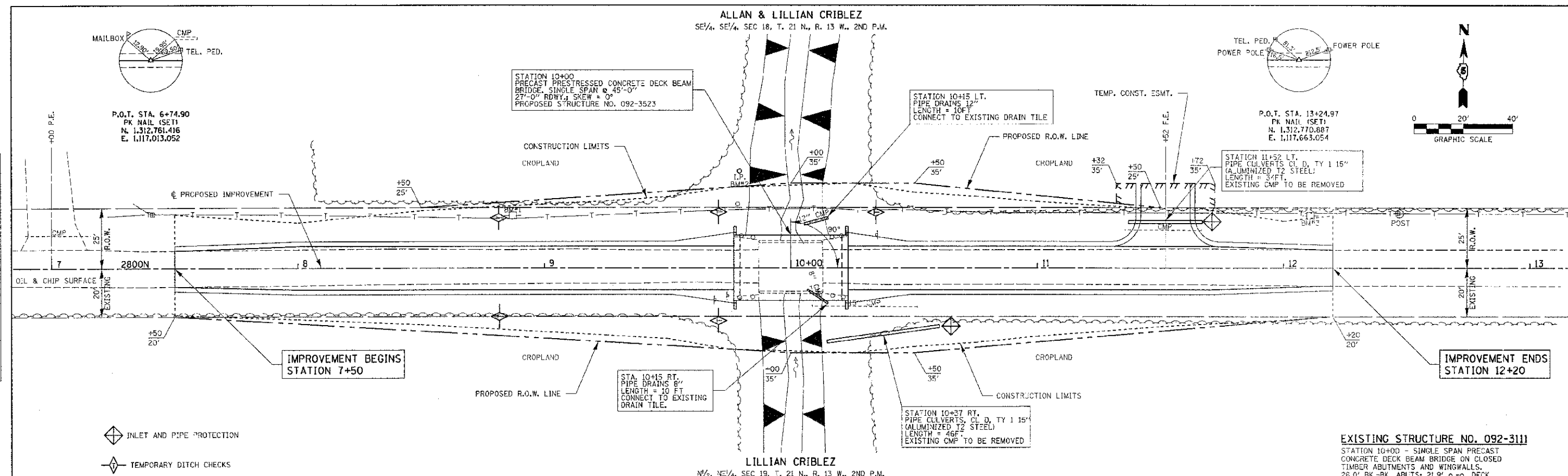


SUGGESTED CUT SECTION
CONSTRUCT AS SHOWN IN
STATION CROSS SECTIONS

SUGGESTED FILL SECTION
CONSTRUCT AS SHOWN IN
STATION CROSS SECTIONS

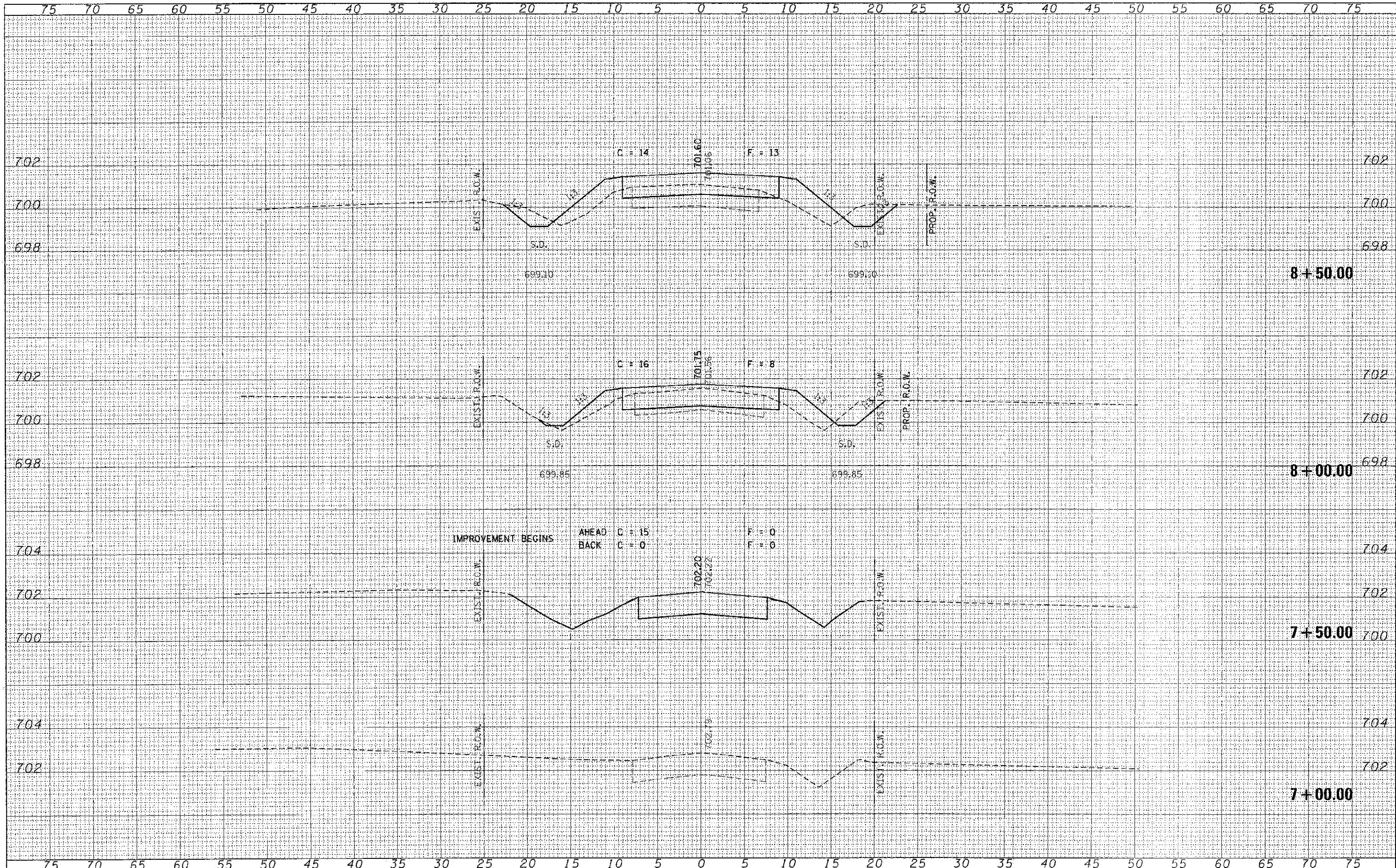
TRANSITION FROM THE PROPOSED ROADWAY TO THE EXISTING
ROADWAY IS TO BE CONSTRUCTED FROM STA. 7+50 TO 8+00 AND
STA. 11+70 TO 12+20. SEE SHEET 12 FOR TRANSITION AT BRIDGE.

FILE NAME = 110295-sht-typsections.dgn	USER NAME =	DESIGNED - J.W.F.	REVISED -	STATE OF ILLINOIS VERMILION COUNTY HIGHWAY DEPARTMENT	TYPICAL CROSS SECTIONS 2800N ROAD		F.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND RENWICK, INC. 3603 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62710	PLOT SCALE =	DRAWN - D.A.D.	REVISED -		131	10-15145-00-BR	VERMILION	20	3		
ILLINOIS PROFESSIONAL DESIGN FIRM L3 / FE / SE CORP. 10400999	PLOT DATE = 2/26/2013	CHECKED - S.W.M.	REVISED -		SCALE: SHEET NO. 1 OF 1 SHEETS		STA. TO STA.		CONTRACT NO. 91477		
		DATE - 02/26/2013	REVISED -						ILLINOIS FED. AID PROJECT		



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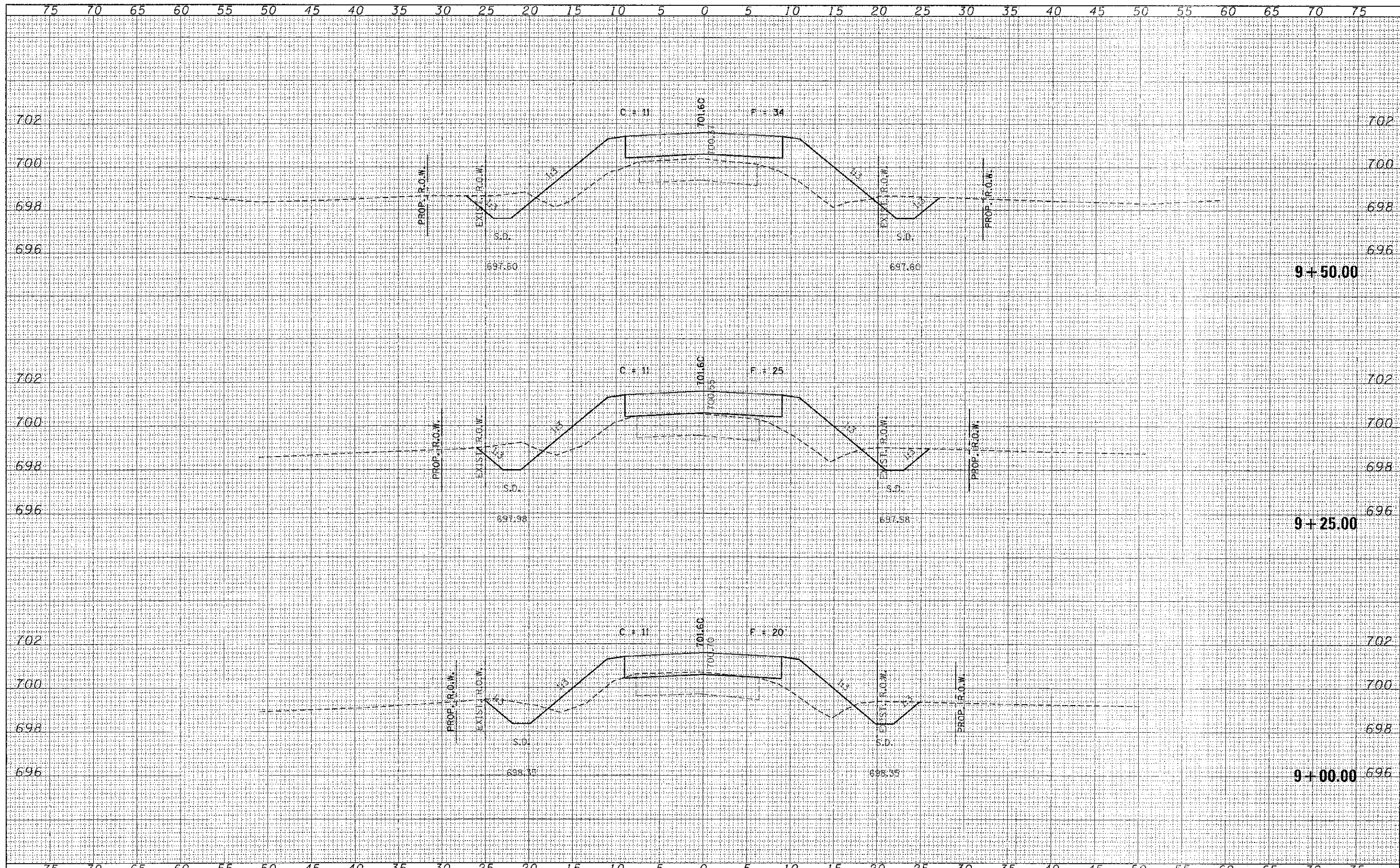
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REVERSE PLOTTED	
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ORIGINAL SURVEY	DATE
REVERSE PLOTTED	
NOTE BOOK	
AREAS CHECKED	
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HAMPTON, LENZINI AND RENWICK, INC.		DRAWN - D.T.M.	REVISED -		131	10-15145-00-BR	VERMILION	20	5		
100 WEST PARKWAY DRIVE SUITE 201 SPRINGFIELD, ILLINOIS 62701		CHECKED - S.W.M.	REVISED -		PILOT ROAD DISTRICT		CONTRACT NO. 91477				
ILLINOIS PROFESSIONAL DESIGN FIRM L1/P1/02 CORP. 184-00064	PLOT SCALE =	DATE - 02/26/13	REVISED -		SCALE: H&V2	SHEET NO. 1 OF 7 SHEETS	STA. 7+00.00 TO STA. 8+50.00	ILLINOIS FED. AID PROJECT			
	PLOT DATE = 2/26/2013										

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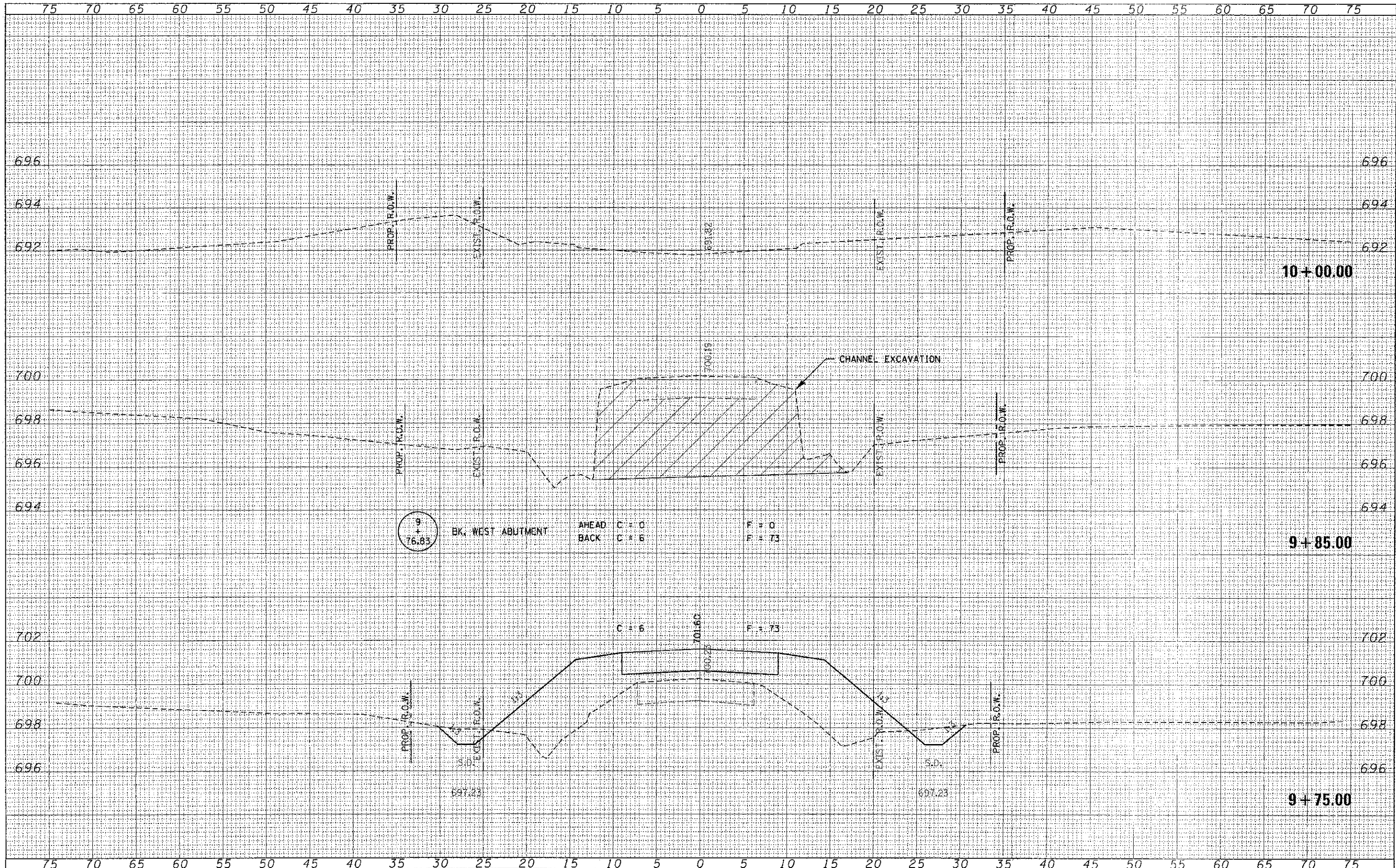
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HAMPTON, LENZINI AND RENWICK, INC.		DRAWN - D.T.M.	REVISED -		131	10-15145-00-BR	VERMILION	20	6		
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FINAL SURVEY	
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NOTE BOOK	
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ORIGINAL SURVEY	
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HAMPTON, LENZINI AND RENWICK, INC.		DRAWN - D.T.M.	REVISED -	131	10-15145-00-BR	VERMILION	20	7
ILLINOIS PROFESSIONAL DESIGN FIRM 121 W. DuSable 18402359	P.OT SCALE =	CHECKED - S.W.M.	REVISED -	PILOT ROAD DISTRICT CONTRACT NO. 91477				
	P.OT DATE = 2/26/2013	DATE - 02/26/13	REVISED -	[ILLINOIS] FED. AID PROJECT				

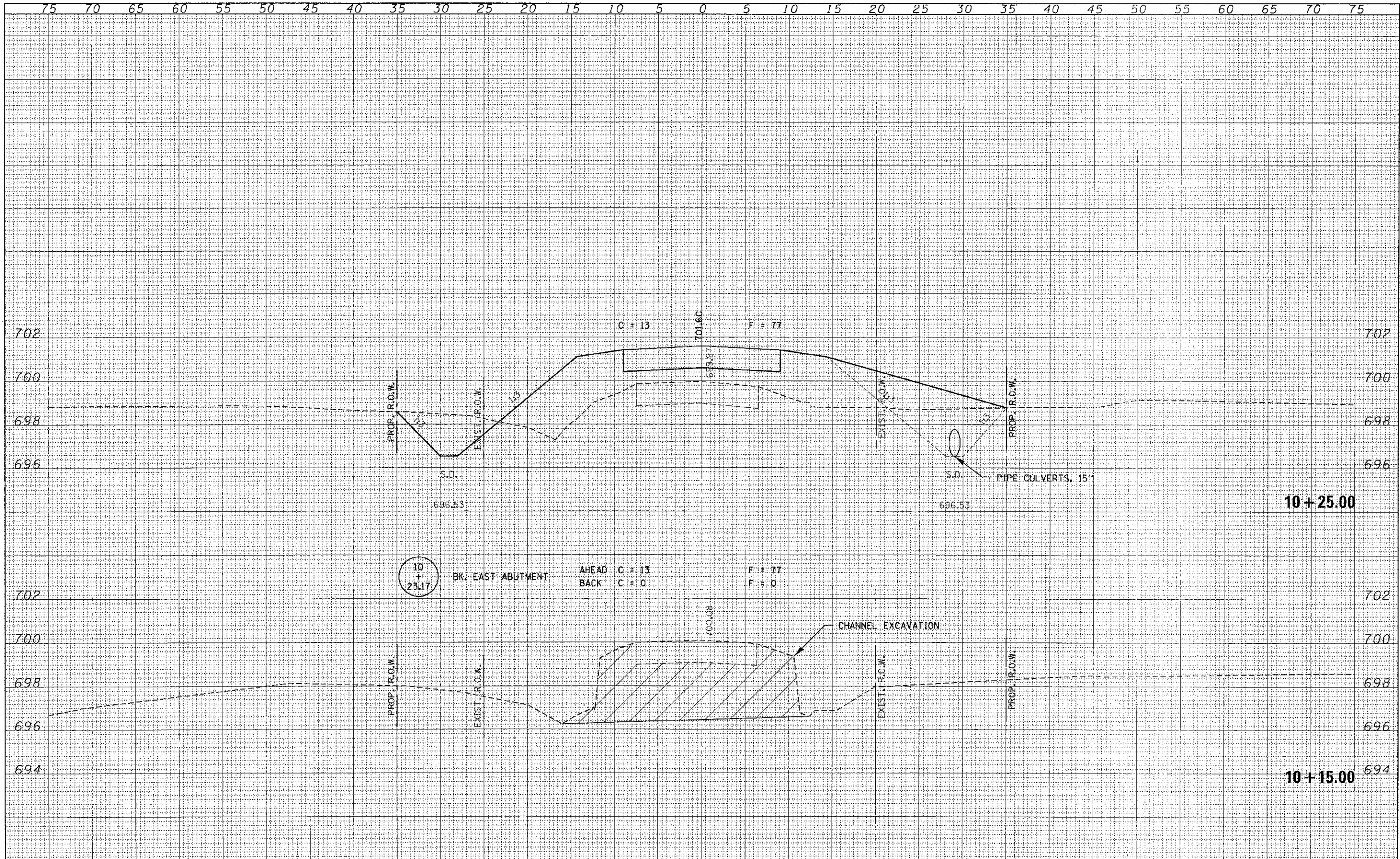
**STATE OF ILLINOIS
VERMILION COUNTY HIGHWAY DEPARTMENT**

**STATION CROSS SECTIONS
2800N ROAD**

SCALE: H5:V2 SHEET NO. 3 OF 7 SHEETS STA. 9+75.00 TO STA. 10+00.00

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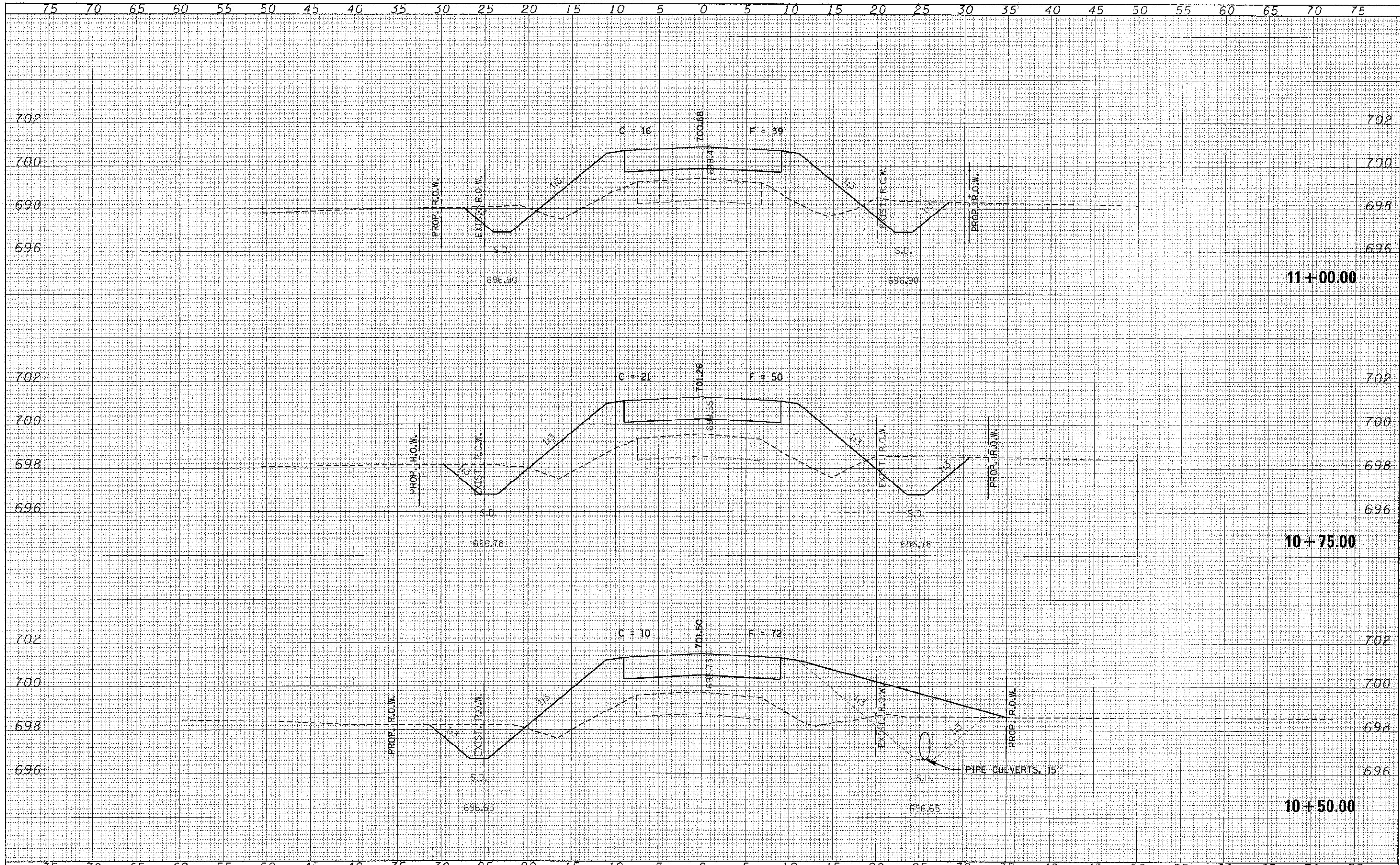
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HAMPTON, LENZINI AND RENWICK, INC.		DRAWN - D.T.M.	REVISED -		131	10-15145-00-BR	VERMILION	20	8		
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131/PE/ES CORP.	PLOT DATE = 2/26/2013	DATE - 02/26/13	REVISED -		SCALE: H5:V2	SHEET NO. 4 OF 7 SHEETS	STA. 10+15.00 TO STA. 10+25.00				

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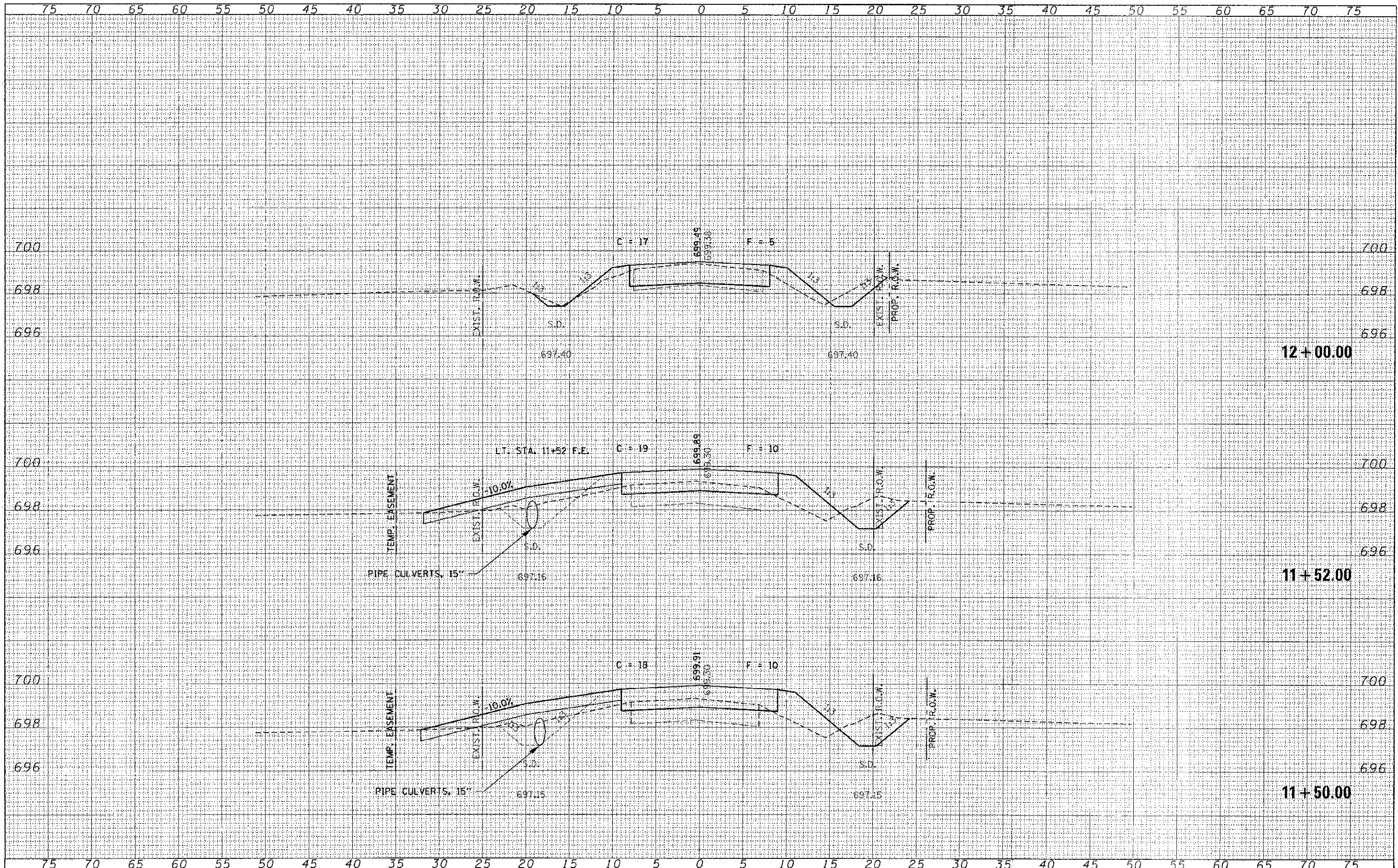
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FILE NAME # 110295-sh-xxa.dgn	USER NAME #	DESIGNED - A.S.L.	REVISED -	STATE OF ILLINOIS VERMILION COUNTY HIGHWAY DEPARTMENT	STATION CROSS SECTIONS 2800N ROAD		T.P.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
HAMPTON, LENZINI AND RENWICK, INC. <small>200 STEUBENS DRIVE SUITE 200 SPRINGFIELD, ILLINOIS 62763</small>		DRAWN - D.T.M.	REVISED -		131	10-15145-00-BR	VERMILION	20	9			
ILR <small>ILLINOIS PROFESSIONAL ENGINEERING FIRM LICENSE NO. 021-000000-000000</small>		CHECKED - S.W.M.	REVISED -		SCALE: H5:V2		SHEET NO. 5 OF 7 SHEETS		STA. 10+50.00 TO STA. 11+00.00		CONTRACT NO. 91477	
PLOT SCALE = PLOT DATE = 2/26/2013		DATE - 02/26/13	REVISED -		ILLINOIS FED. AID PROJECT							

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TEMPLATE	
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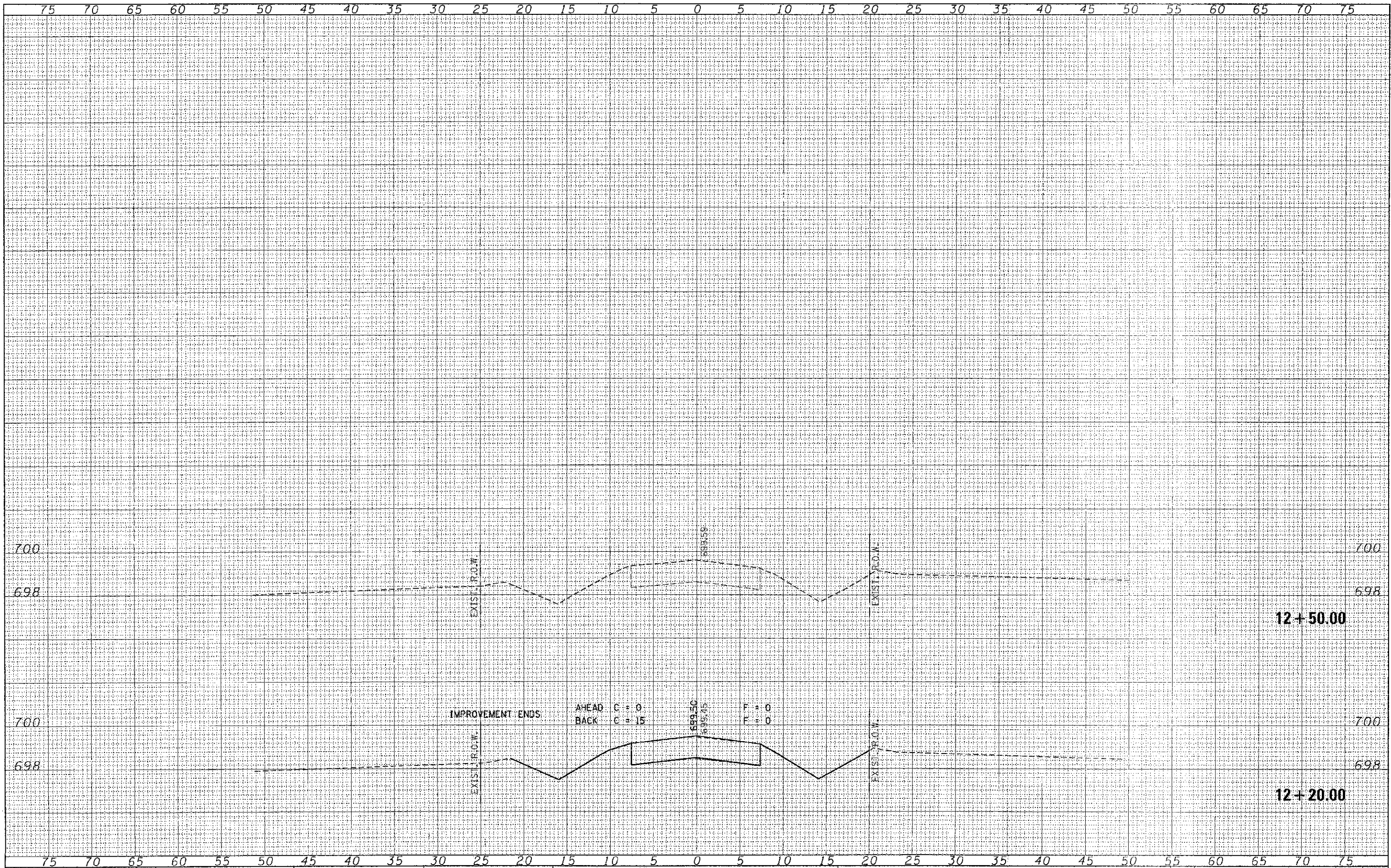
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DESIGNED BY	DRAWN - D.T.M.	REVISED -	131				10-15145-00-BR	VERMILION	20	10	
CHECKED - S.W.M.	REVISED -	PILOT SCALE =	PILOT ROAD DISTRICT								
DATE - 02/26/13	REVISED -	PILOT DATE = 2/26/2013	CONTRACT NO. 91477								
SCALE: H5xV2 SHEET NO. 6 OF 7 SHEETS STA. 11+50.00 TO STA. 12+00.00				ILLINOIS FED. AID PROJECT							

FINAL SURVEY	CHECKED BY	DATE
NOTE BOOK	PLotted	
AREAS	TEMPLATE	
AREAS	CHECKED	

ORIGINAL SURVEY	DATE
NOTE BOOK	
AREAS	
AREAS	



FILE NAME = 112279_ah1-ax1.dgn
 HAMPTON, LENZINI AND RENWICK, INC.
 3535 STEVENSON DRIVE, SUITE 201
 SPRINGFIELD, ILLINOIS 62709
 ILLINOIS PROFESSIONAL DESIGN FIRM
 LS / PE / SE CORP. 04-000019

USER NAME	DESIGNED - A.S.L.	REVISED -
	DRAWN - D.T.M.	REVISED -
PLOT SCALE =	CHECKED - S.W.M.	REVISED -
PLOT DATE = 2/26/2013	DATE - 02/26/13	REVISED -

STATE OF ILLINOIS
 VERMILION COUNTY HIGHWAY DEPARTMENT

STATION CROSS SECTIONS
 2800N ROAD
 SCALE: H5:V2 SHEET NO. 7 OF 7 SHEETS STA. 12+20.00 TO STA. 12+50.00

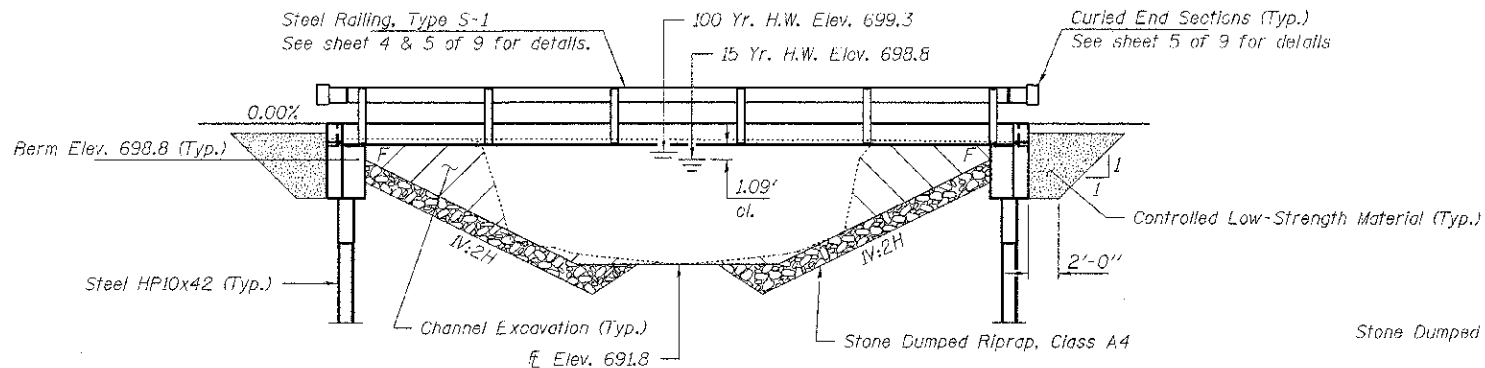
I.R.	SECTION	COUNTY	TOTAL SHEETS
131	10-15145-00-BR	VERMILION	20 11
PILOT ROAD DISTRICT			CONTRACT NO. 91477
ILLINOIS FED. AID PROJECT			

BENCHMARK: IP with IPLS 3594 cap. 40' Lt. Sta. 9+79, Elev. 698.63

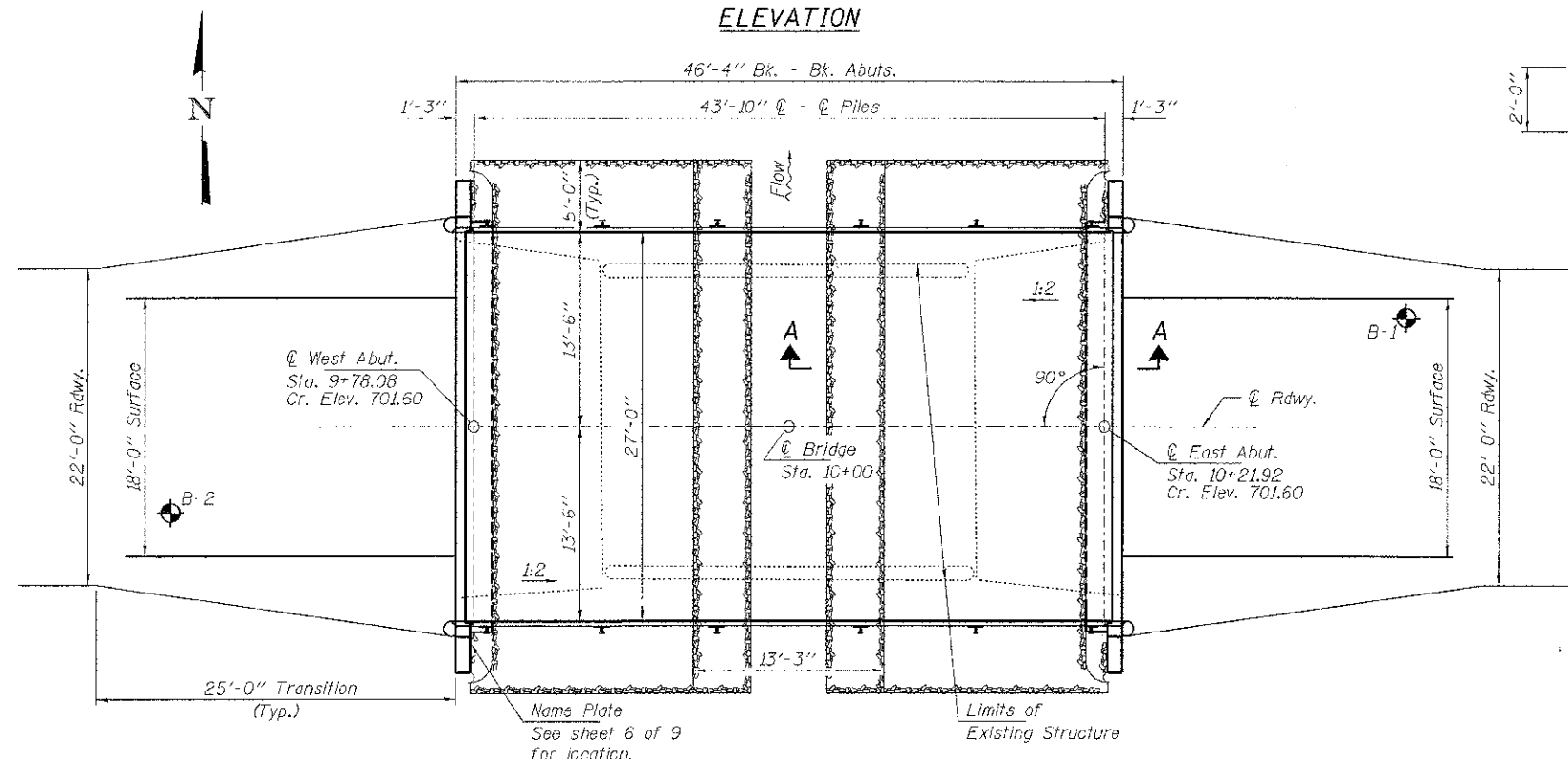
EXISTING STRUCTURE NO. 092-3111: Sta. 10+00, Single span precast concrete deck beam bridge on closed timber abutments and wingwalls, including one or more steel HP and concrete pile replacements. 26.0' bk.-bk. abuts.; 21.9' o.-o. deck.

Structure closed to traffic during construction.

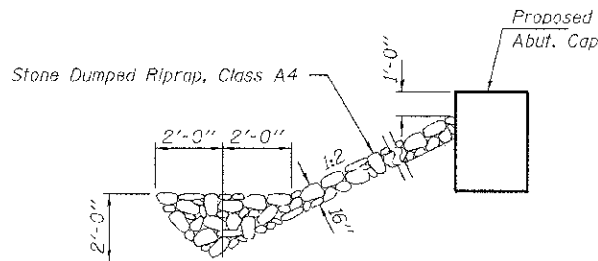
No Salvage



ELEVATION

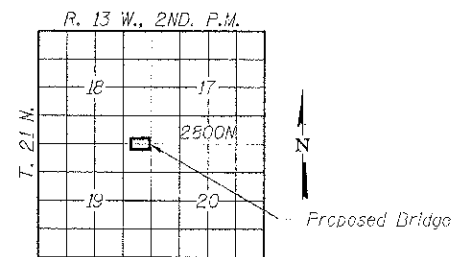


PLAN



SECTION A-A

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



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 West 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. 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.

INDEX OF STRUCTURE SHEETS

1. General Plan & Elevation
2. 17"x36" PPC Deck Beam
3. 17"x36" PPC Deck Beam Details
4. Superstructure Details
5. Steel Railing, Type S-1
6. Abutments
7. HP Pile Details
- 8-9. Borings

BUILT 2011 BY
VERMILION COUNTY
SEC. 10-15145-00-BR
PILOT ROAD DISTRICT
STR. NO. 092-3523
LOADING HL-93

NAME PLATE
See Sta. 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 lax. strands)
 $f_{pbt} = 201,960$ psi ($\frac{1}{2}$ " low lax. strands)
 $f_y = 60,000$ psi (Reinf.)

LOADING HL-93

Design Specifications: 2012 AASHTO LRFD with all applicable Interims. 50# / Sq. Ft. included in dead load for future wearing surface.

SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.12/g
Design Spectral Acceleration at 0.2 sec. (S_{D5}) = 0.214g
Soil Site Class = D

DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	W. Abut.	E. Abut.
	696.3	696.3

WATERWAY INFORMATION

Drainage Area = 1.34 Sq. Mi.		Existing Low Grade Elev. 699.3 @ Sta. 11+50		Proposed Low Grade Elev. 699.5 @ Sta. 12+00	
Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist. Prop.	Natural Head - Ft. Exist. Prop.	Headwater El. Exist. Prop.
Design	10	412	140 180	698.67 0.17 0.19	698.64 698.66
Base	100	810	150 210	699.31 0.33 0.37	699.64 699.68
Overtop Exist.	100	810	150 210	699.31 0.33 0.37	699.64 699.68
Overtop Prop.	500	1110	150 220	699.63 0.36 0.65	699.99 700.28
Max. Calc.	500	1110	150 220	699.63 0.36 0.65	699.99 700.28

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. Megawson 02/26/2013
ILLINOIS STRUCTURAL ENGINEER NO. 081-6064



TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	Cu. Yd.			75
Controlled Low-Strength Material	Cu. Yd.			46
Stone Dumped Riprap, Class A4	Ton			130
Removal of Existing Structures	Each			1
Structure Excavation	Cu. Yd.		65	65
Concrete Structures	Cu. Yd.		23.6	23.6
Precast Prestressed Concrete Deck Beams (17" Depth)	Sq. Ft.	1,215		1,215
Reinforcement Bars	Pound		2,530	2,530
Steel Railing, Type S1	Foot	88		88
Furnishing Steel Piles HP10x42	Foot		270	270
Driving Piles	Foot		270	270
Pile Shoes	Each		8	8
Test Pile Steel HP10x42	Each		2	2
Name Plates	Each		1	1
Concrete Cut-Off Wall	Cu. Yd.		6.4	6.4

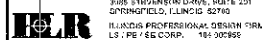
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CHECKED - S.W.M. REVISIONS -
DRAWN - D.A.B. REVISIONS -
CHECKED - S.W.M. REVISIONS -

DESIGNED - A.S.L. REVISIONS -
CHECKED - S.W.M. REVISIONS -
DRAWN - D.A.B. REVISIONS -
CHECKED - S.W.M. REVISIONS -

STATE OF ILLINOIS
VERMILION COUNTY HIGHWAY DEPARTMENT

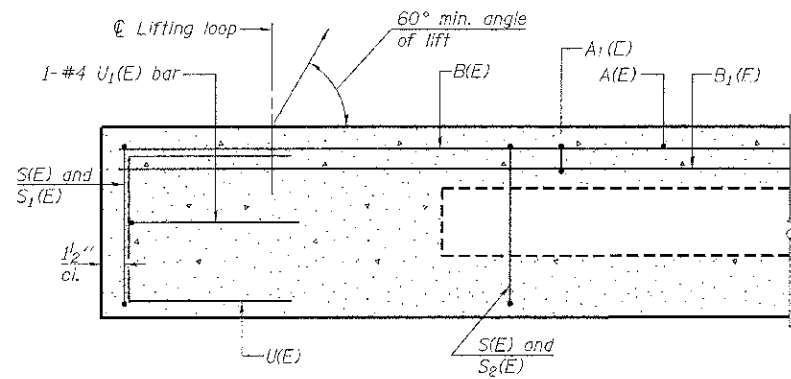
GENERAL PLAN & ELEVATION
STRUCTURE NO. 092-3523

T.R. SECTION COUNTY TOTAL SHEETS SHEET NO.
131 10-15145-00-BR VERMILION 20 12
PILOT ROAD DISTRICT CONTRACT NO. 91477
ILLINOIS FED. AID PROJECT

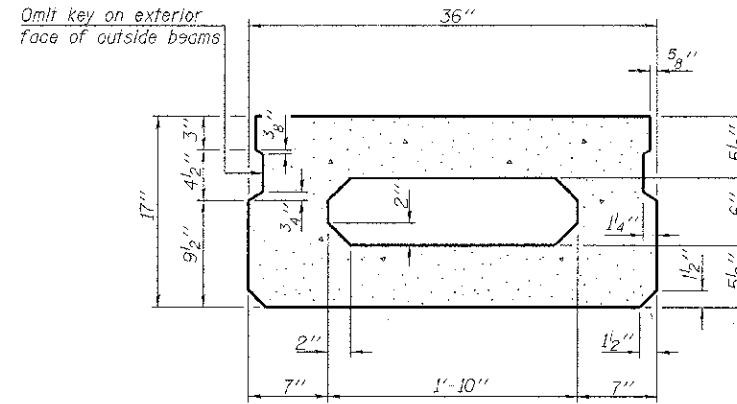


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PLOT DATE = 2/26/2013

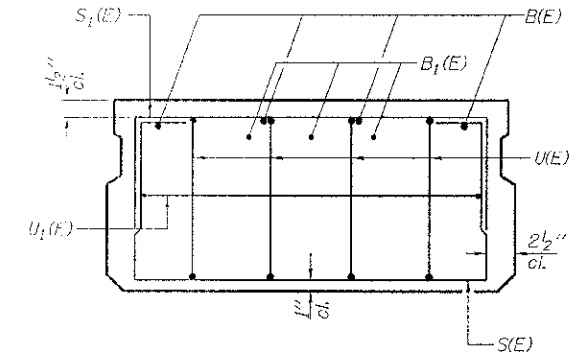
SHEET NO. 1 OF 9 SHEETS



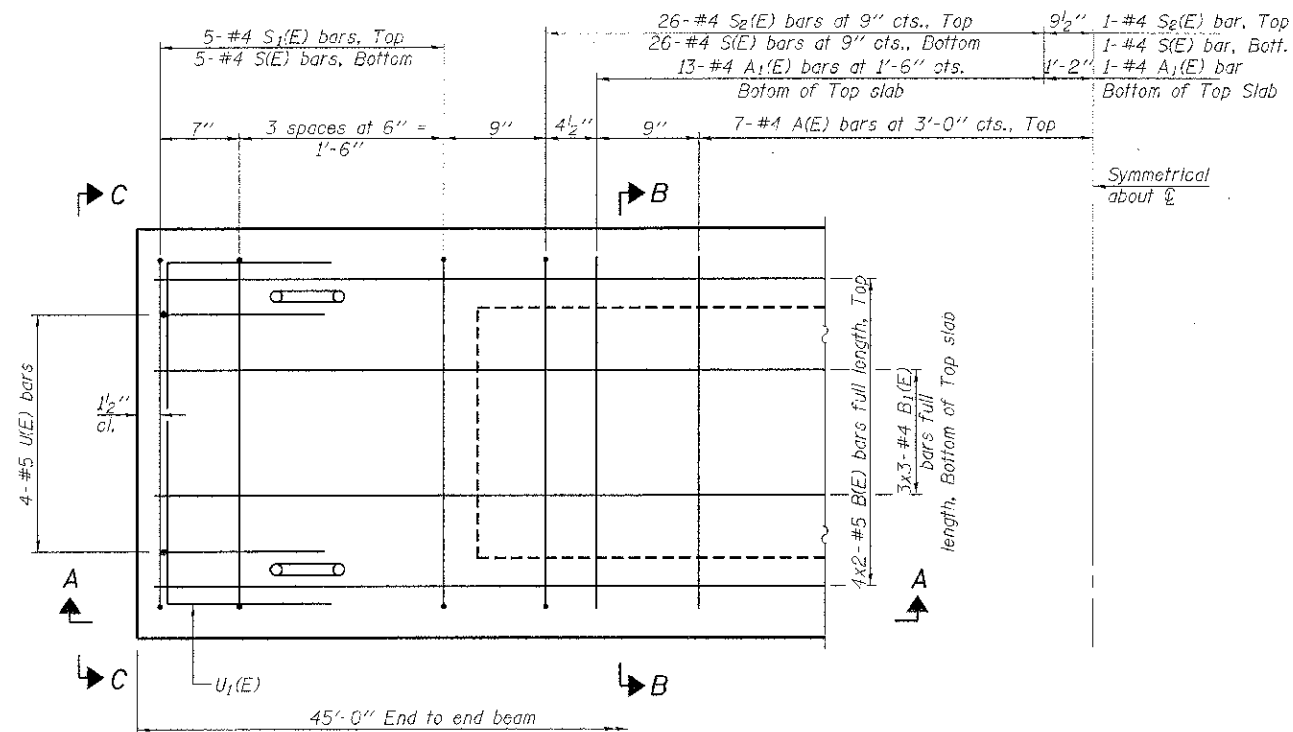
SECTION A-A



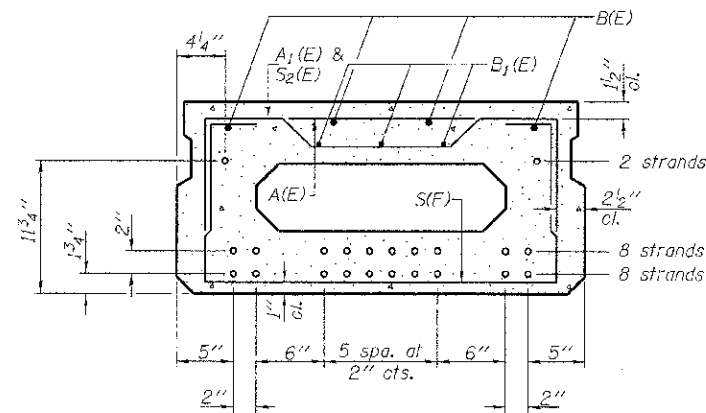
SECTION B-B
(Showing dimensions)



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)	14	#4	2'-7"	—
A1(E)	27	#4	2'-10"	—
B(E)	8	#5	23'-8"	—
B1(F)	9	#4	16'-3"	—
S(E)	63	#4	5'-9"	U
S1(E)	10	#4	4'-3"	U
S2(F)	53	#4	4'-6"	U
U(L)	8	#5	3'-8"	C
U1(E)	2	#4	5'-0"	C

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"

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-1736-0

1-1-10

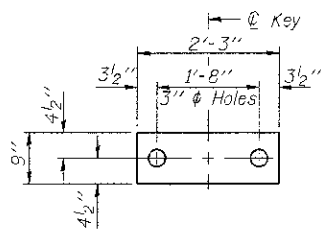
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STATE OF ILLINOIS
VERMILION COUNTY HIGHWAY DEPARTMENT

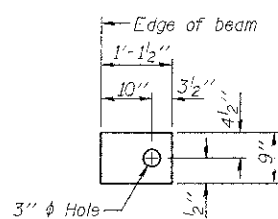
17" x 36" PPC DECK BEAM
STRUCTURE NO. 092-3523

SHEET NO. 2 OF 9 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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PILOT ROAD DISTRICT		CONTRACT NO. 91477		
ILLINOIS FED. AID PROJECT				



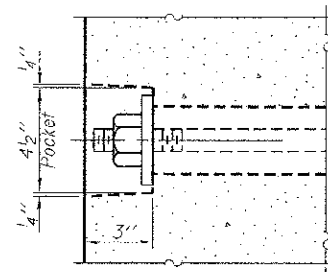
FABRIC BEARING PAD
(Interior - 16 Req'd.)



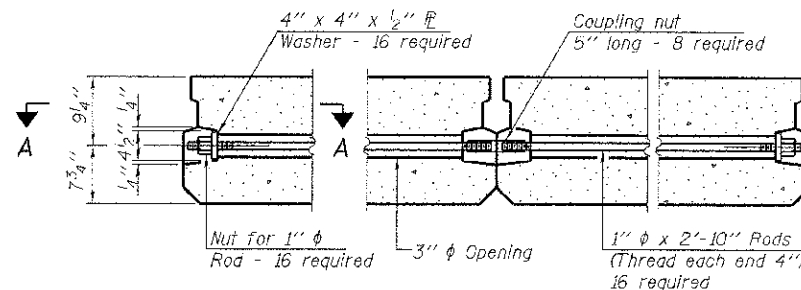
FABRIC BEARING PAD
(Exterior - 4 Req'd.)

FIXED

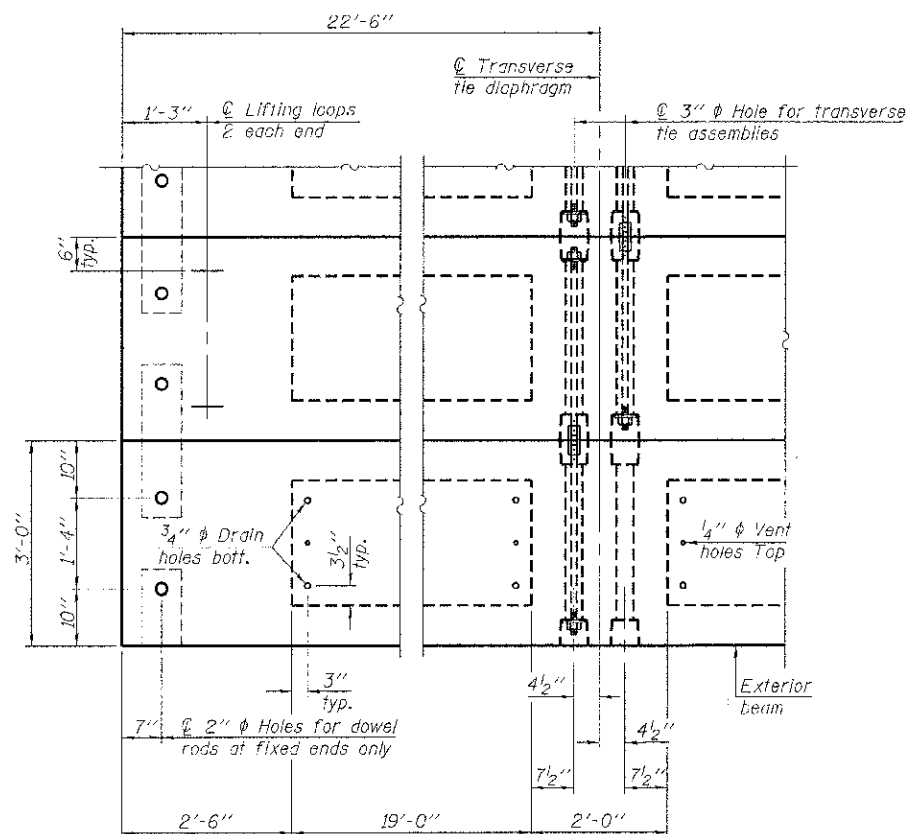
Notes:
All bearing pads shall be 1" thick.
Omit holes when using expansion bearings.
Expansion bearing pad shall be bonded to the substructure.



SECTION A-A

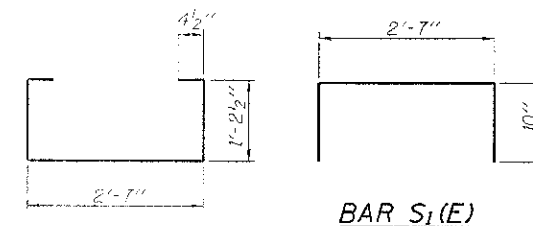


TYPICAL TRANSVERSE TIE ASSEMBLY

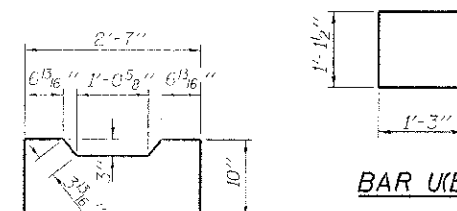


PLAN VIEW

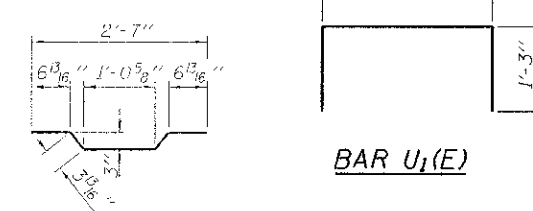
Note: Connect beams in pairs with the transverse tie configuration shown.



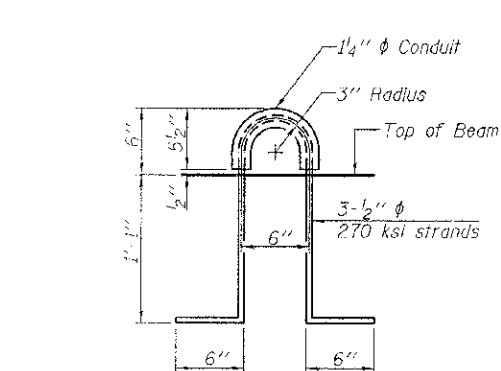
BAR S1(E)



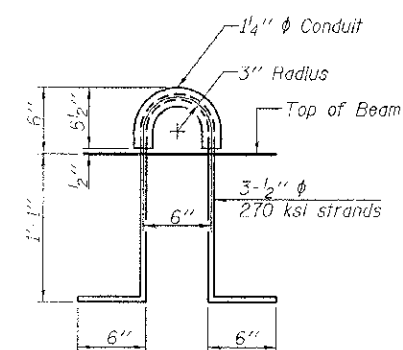
BAR U(E)



BAR S2(E)



BAR U1(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" 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" diameter 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.
All reinforcement shall be epoxy coated.

BILL OF MATERIAL

Precast Prestressed Conc. Deck Bms. (17" depth)	Sq. Ft.	1,215

PD-1736-OD

7-1-10

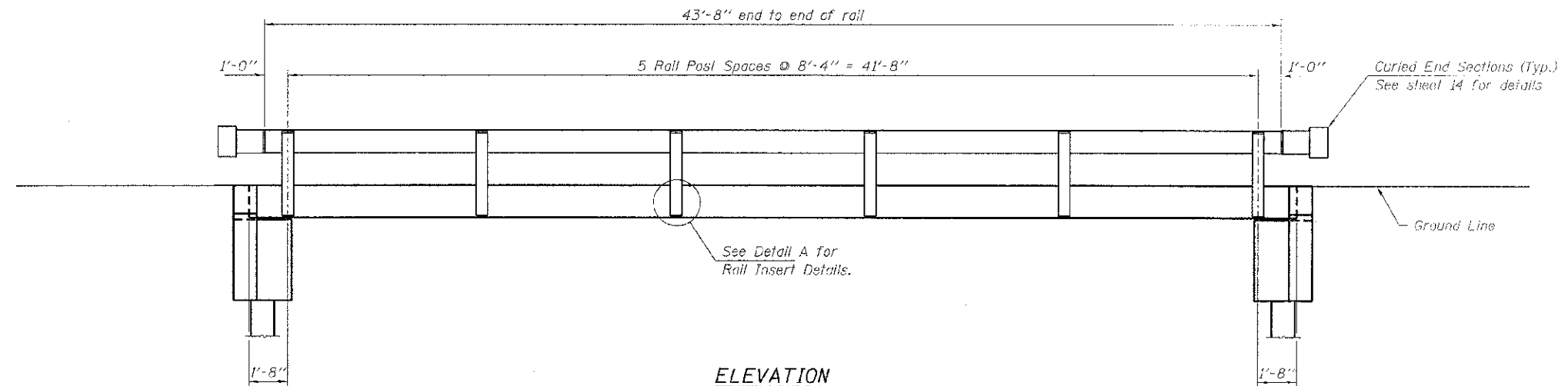
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1300 STEPHENSON BLVD. SUITE 100 SPRINGFIELD, IL 62761-1000	PLOT SCALE =	DRAWN - D.A.B.	REVISED -
ILLINOIS PROFESSIONAL DESIGN FIRM L.S. 107-02 CORP. 184-02000	PLOT DATE = 2/25/2013	CHECKED - S.W.M.	REVISED -

STATE OF ILLINOIS
VERMILION COUNTY HIGHWAY DEPARTMENT

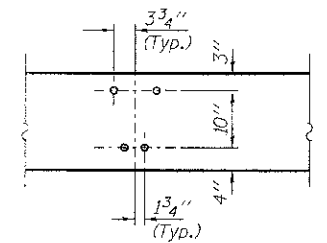
17" x 36" PPC DECK BEAM DETAILS
STRUCTURE NO. 092-3523

SHEET NO. 3 OF 9 SHEETS

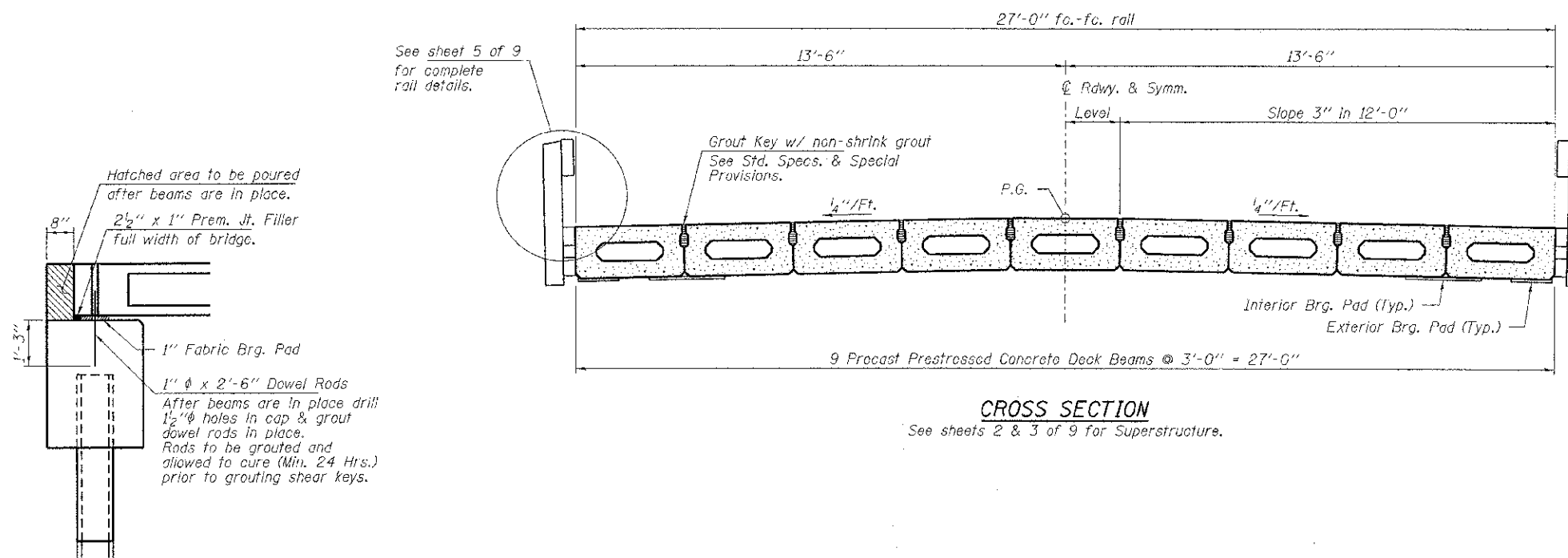
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131	10-15145-00-BR	VERMILION	20 14
PILOT ROAD DISTRICT		CONTRACT NO. 91477	
ILLINOIS FED. AID PROJECT			



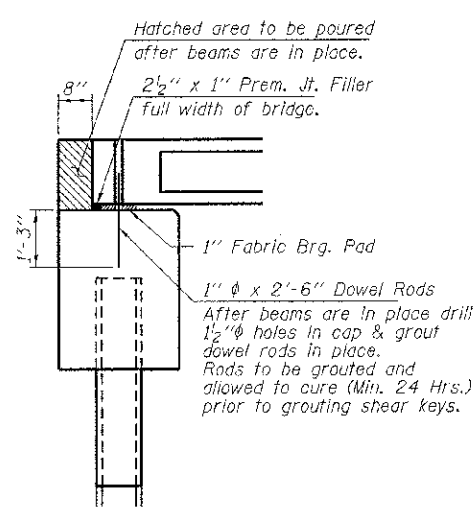
ELEVATION
Showing Rail Post Spaces
See sheet 5 of 8 for Rating Details.



DETAIL A

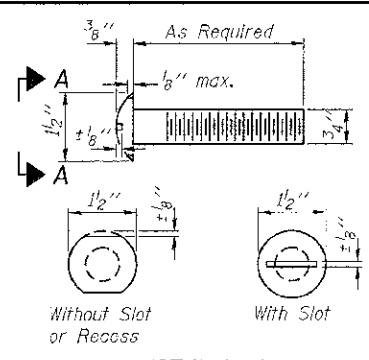


CROSS SECTION
See sheets 2 & 3 of 9 for Superstructure.

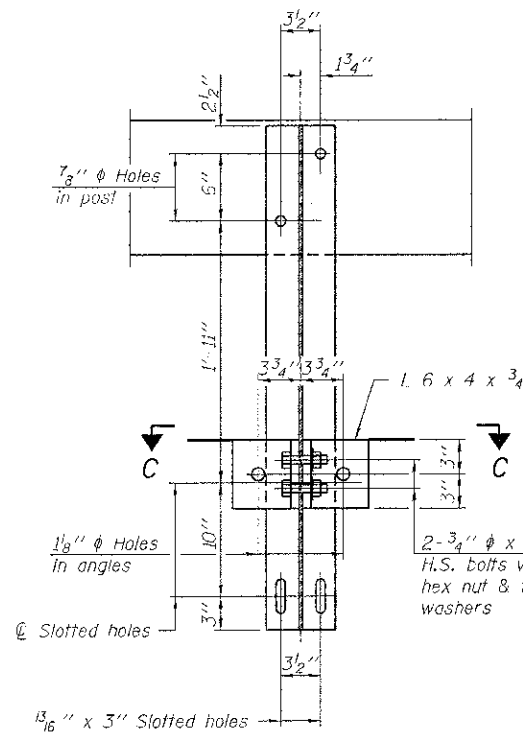
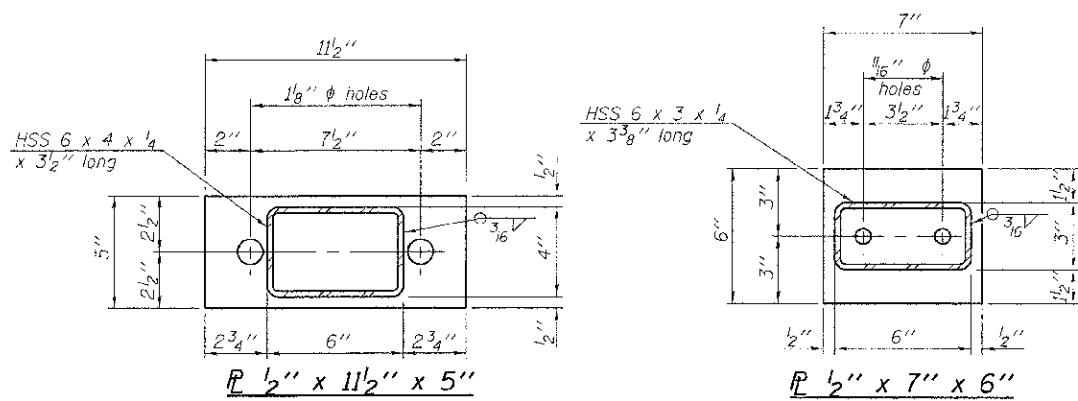


SECTION AT ABUTMENTS
@ Rt. L's

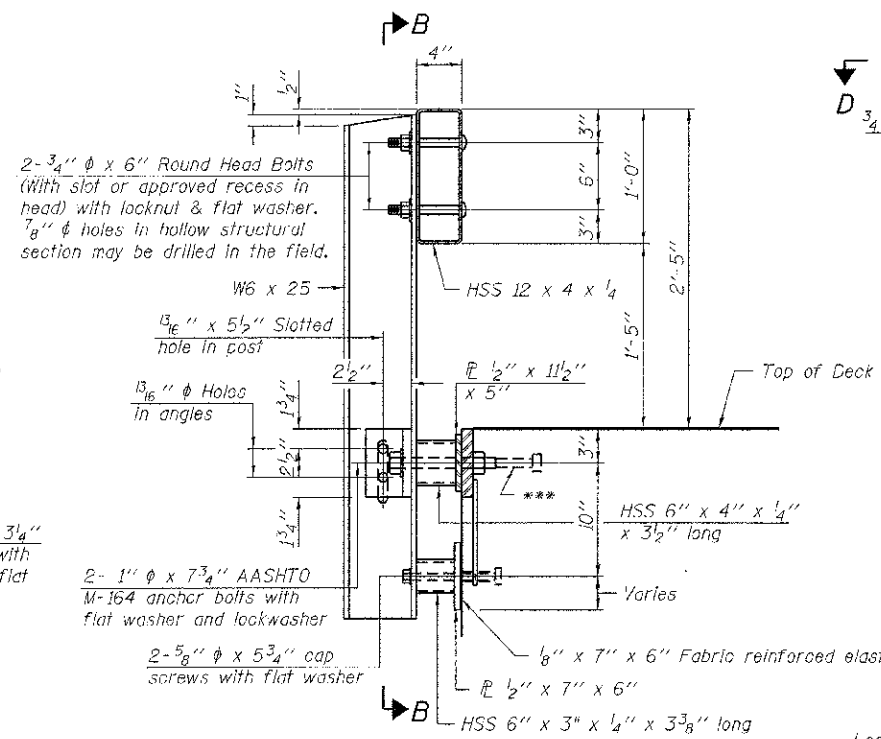
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ILLINOIS PROFESSIONAL DESIGN FIRM L.S. / P.E. / S.E. / C.E.P. 181,000,000	PLOT DATE = 2/26/2013	DRAWN - D.A.B.	REVISED -			PILGRIM ROAD DISTRICT		CONTRACT NO. 91477		
		CHECKED - S.W.M.	REVISED -			SHEET NO. 4 OF 9 SHEETS		ILLINOIS FED. AID PROJECT		



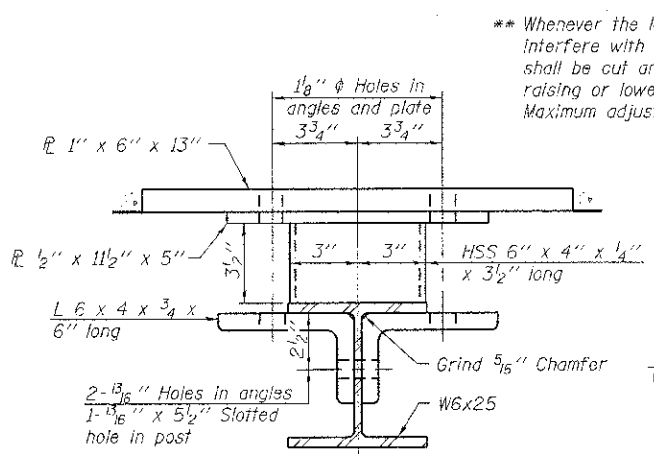
**VIEW A-A
ROUND HEAD BOLT**



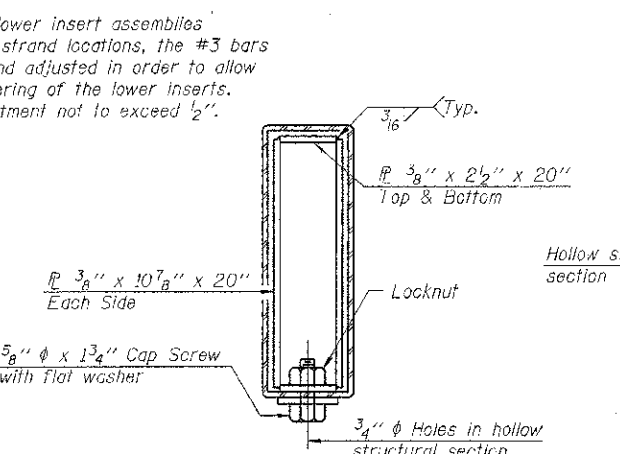
SECTION B-B



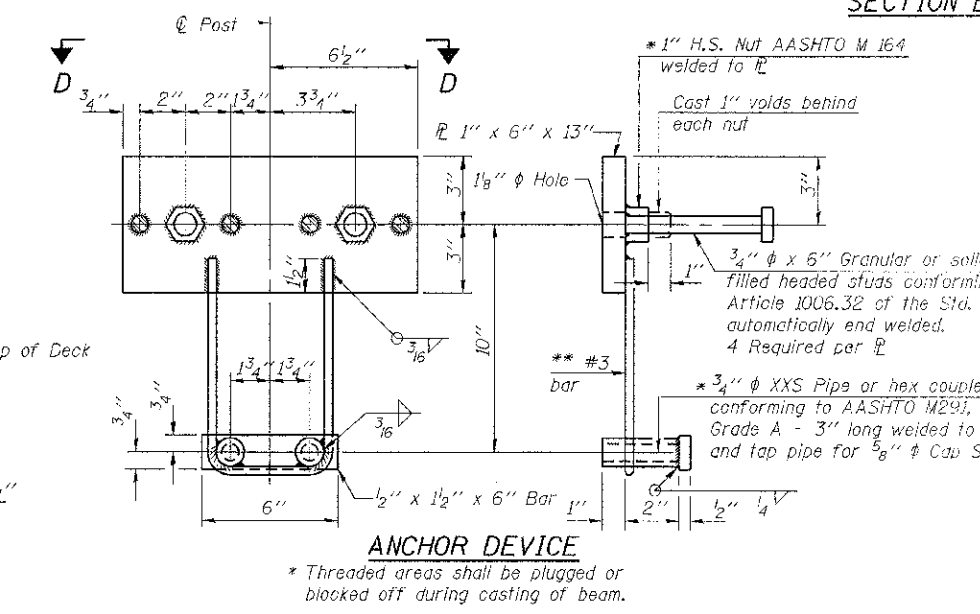
SECTION AT RAILING POST



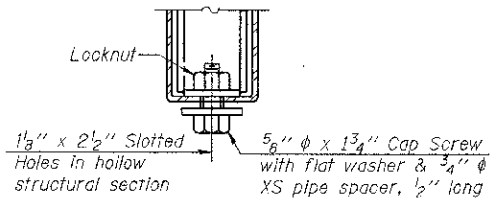
SECTION C-C



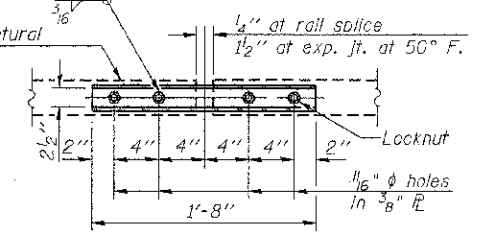
SECTIONS AT RAIL SPLICE



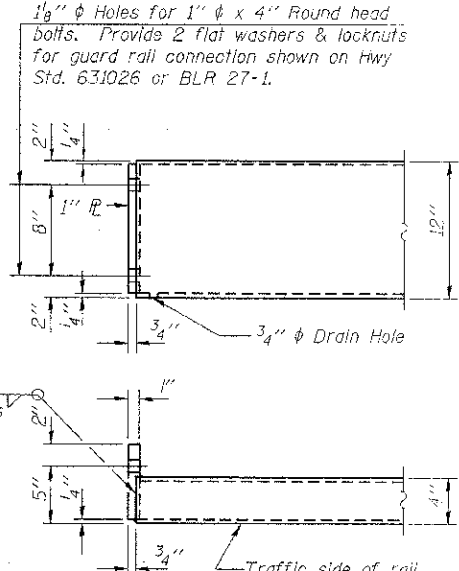
ANCHOR DEVICE



**RAIL SPLICE CONNECTION
AT EXPANSION JT.**

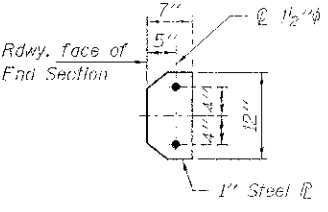


**PLAN-BOTT. SPLICE
TYPICAL**

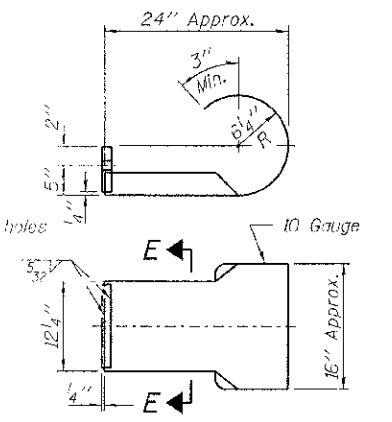


END OF RAIL DETAILS

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

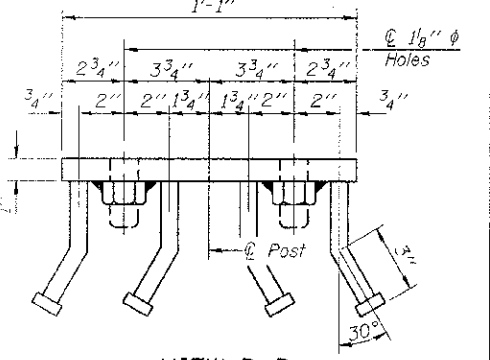


SECTION E-E



CURLED END SECTION DETAILS

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.



VIEW D-D

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S-1	Foot	88

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

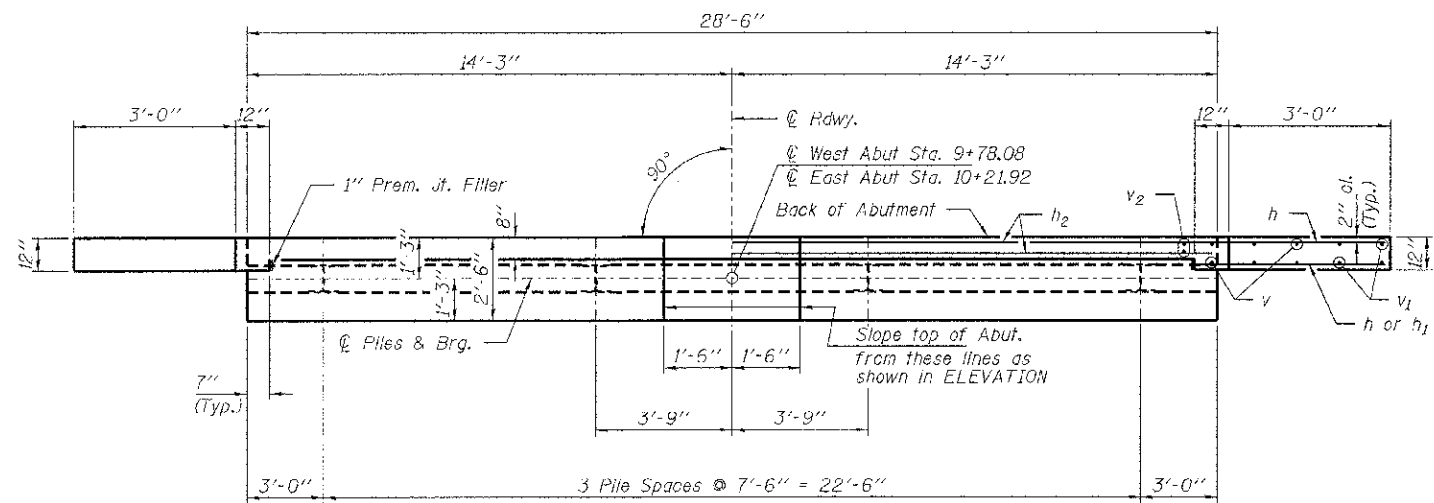
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3840 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62708	PLOT SCALE =	DRAWN - D.A.B.	REVISED -
ILLINOIS PROFESSIONAL GEO 241 FIRM L5 1/2 PC 0000 104 20089	PLOT DATE = 7/28/2013	CHECKED - S.W.M.	REVISED -

STATE OF ILLINOIS
VERMILION COUNTY HIGHWAY DEPARTMENT

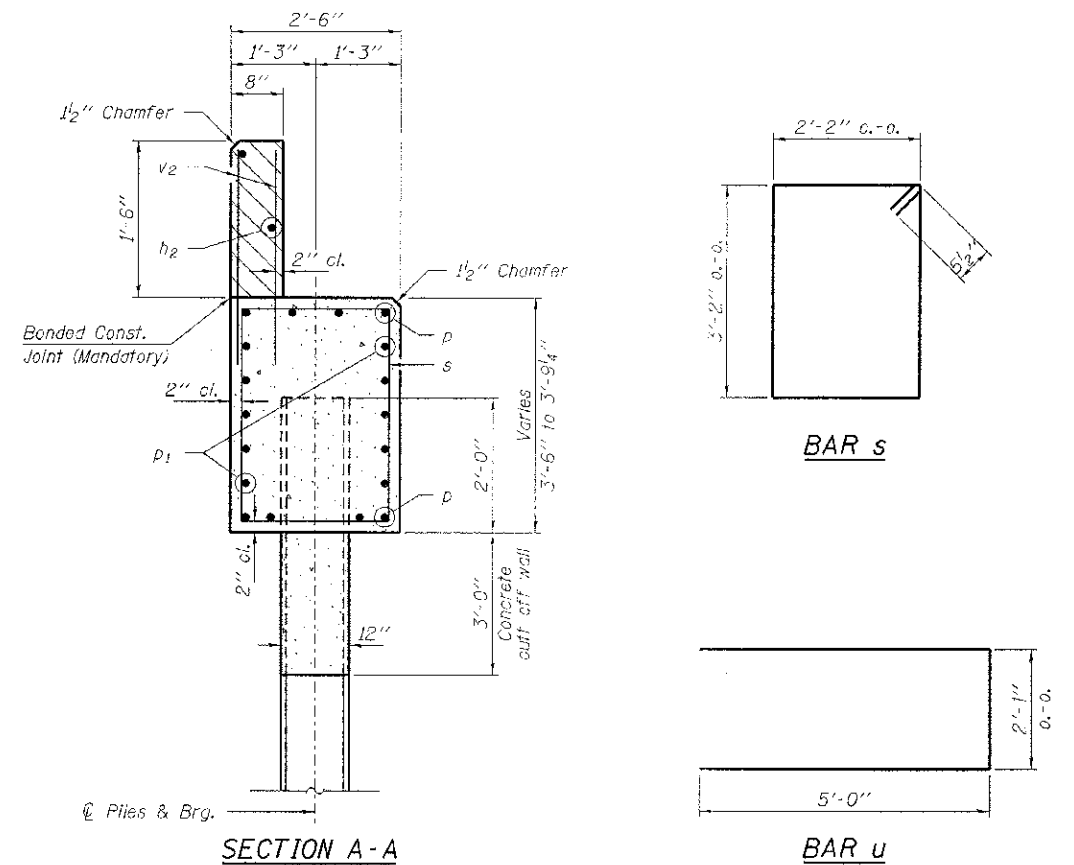
STEEL RAILING, TYPE S-1
STRUCTURE NO. 092-3523

SHEET NO. 5 OF 9 SHEETS

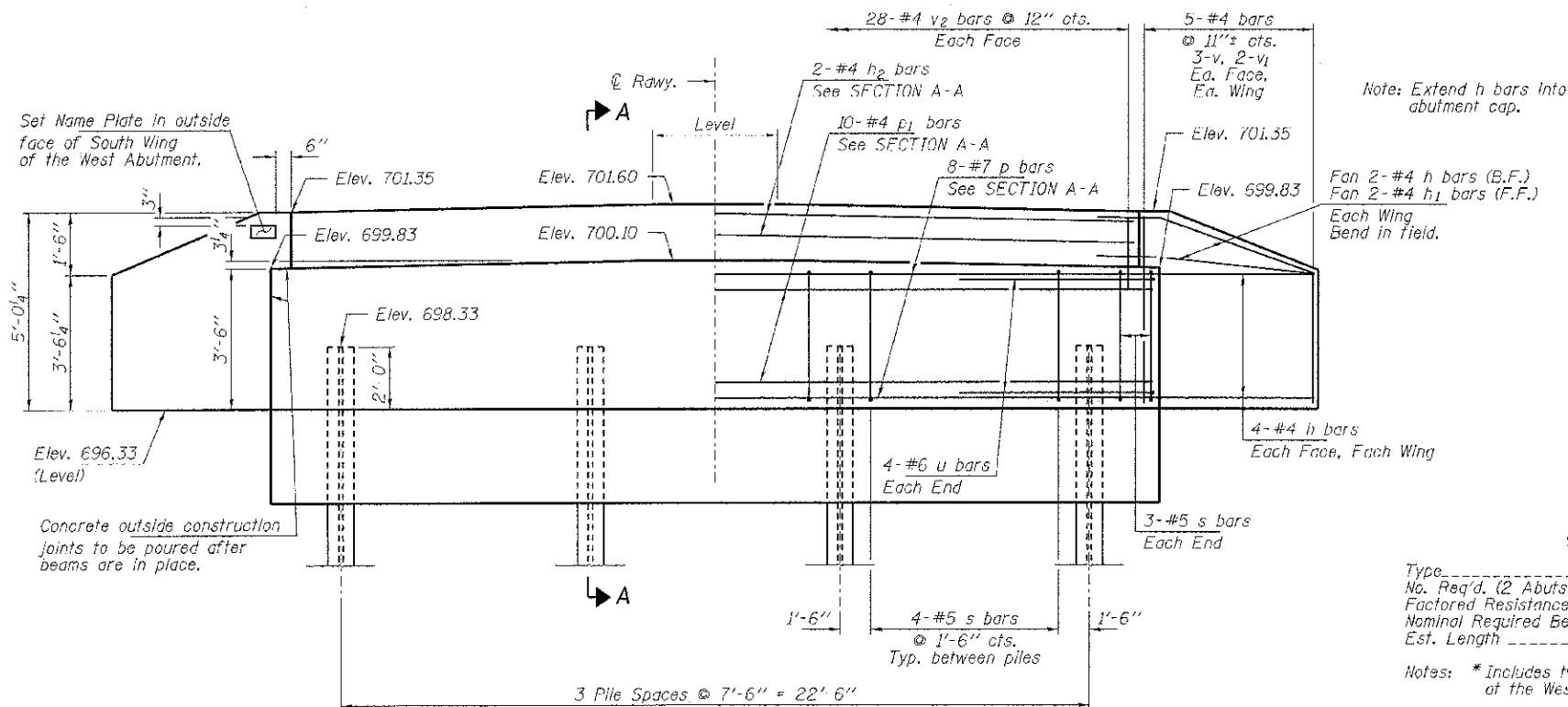
T.R.	SECTION	COUNTY	TOTAL SHEET NO.
131	10-15145-00-BR	VERMILION	20 16
PILOT ROAD DISTRICT		CONTRACT NO. 91477	
ILLINOIS FED. AID PROJECT			



PLAN



SECTION A-A



ELEVATION

PILE DATA

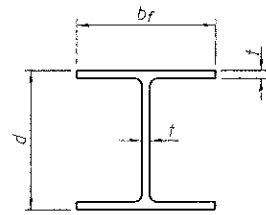
Type: Steel Piles HP10x42 W/Pile Shoes
 No. Req'd. (2 Abuts.): 8
 Factored Resistance Available (Rf): 145 Kips/Pile
 Nominal Required Bearing (Rn): 264 Kips/Pile
 Est. Length: 45 Ft./Pile

Notes: * Includes two test piles to be driven in permanent locations of the West and East Abutments.

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

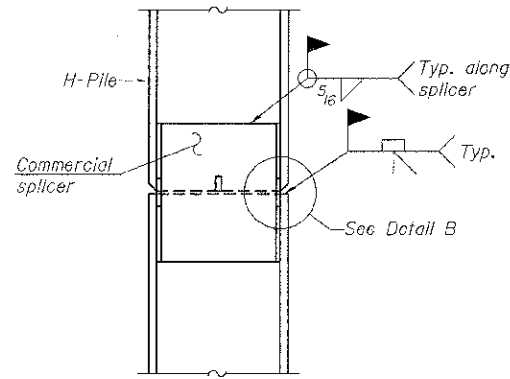
BILL OF MATERIAL - 2 ABUTS.

BAR	NO.	SIZE	LENGTH	SHAPE	
h	40	#4	5'-3"	—	
h1	8	#4	3'-9"	—	
h2	4	#4	26'-8"	—	
p	16	#7	28'-2"	—	
p1	20	#4	28'-2"	—	
s	36	#5	11'-7"	□	
u	15	#6	12'-1"	U	
v	24	#4	4'-2"	—	
v1	16	#4	3'-3"	—	
v2	112	#4	2'-4"	—	
Concrete Structures				Cu. Yd.	23.6
Concrete Cut-Off Wall				Cu. Yd.	6.4
Reinforcement Bars				Pound	2,530
Steel Piles HP10x42				Foot	270
Pile Shoes				Each	8
Test Pile Steel HP10x42				Each	2
Name Plates				Each	1

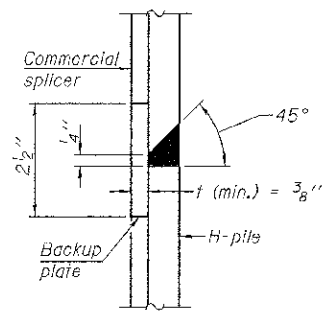


STEEL PILE TABLE

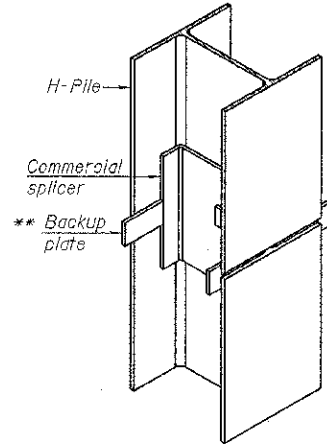
Designation	Depth d	Flange width bf	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	1 5/16"	30"
x102	14"	14 3/4"	1 1/16"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 5/8"	14 5/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	1 1/16"	24"
x74	12 1/8"	12 1/4"	5/8"	24"
x63	12"	12 1/8"	1/2"	24"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

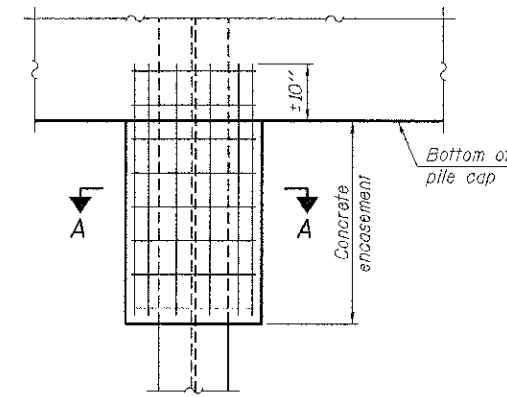


DETAIL "B"



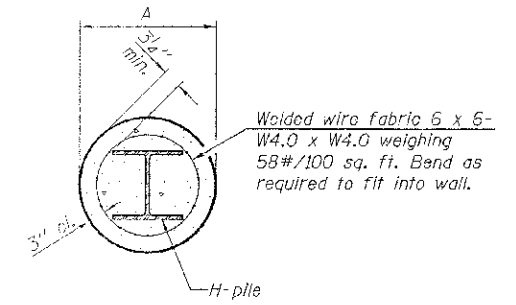
ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE



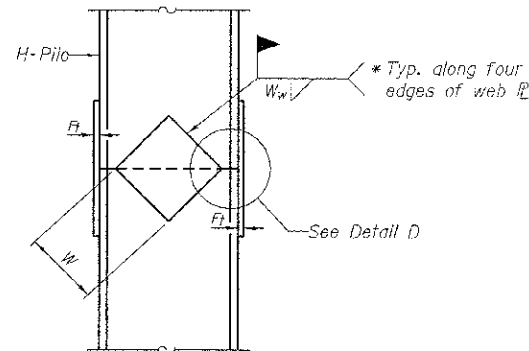
ELEVATION

PILE ENCASEMENT

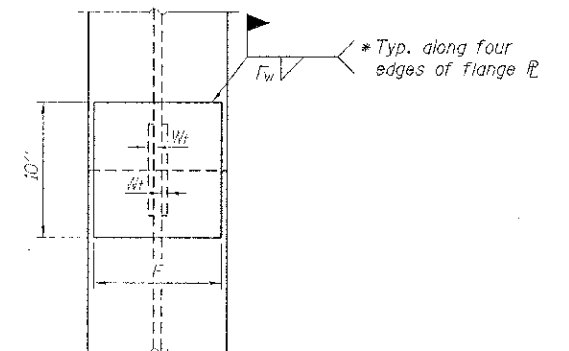


SECTION A-A

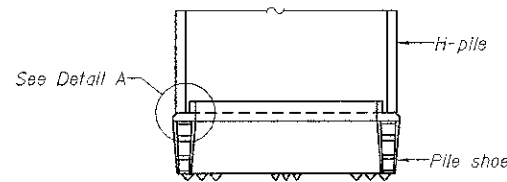
Note:
Forms for encasement may be omitted when soil conditions permit.



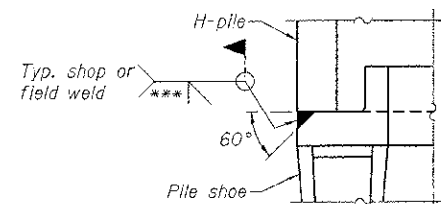
ELEVATION



END VIEW

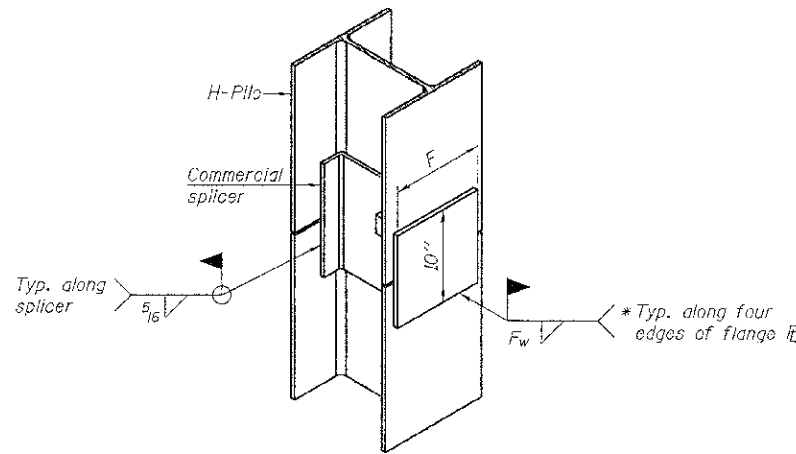


ELEVATION



DETAIL A

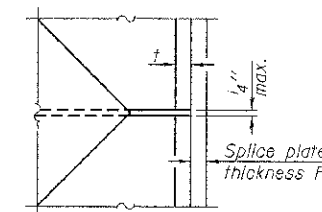
H-PILE SHOE ATTACHMENT



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.).



DETAIL D

WELDED PLATE FIELD SPLICE

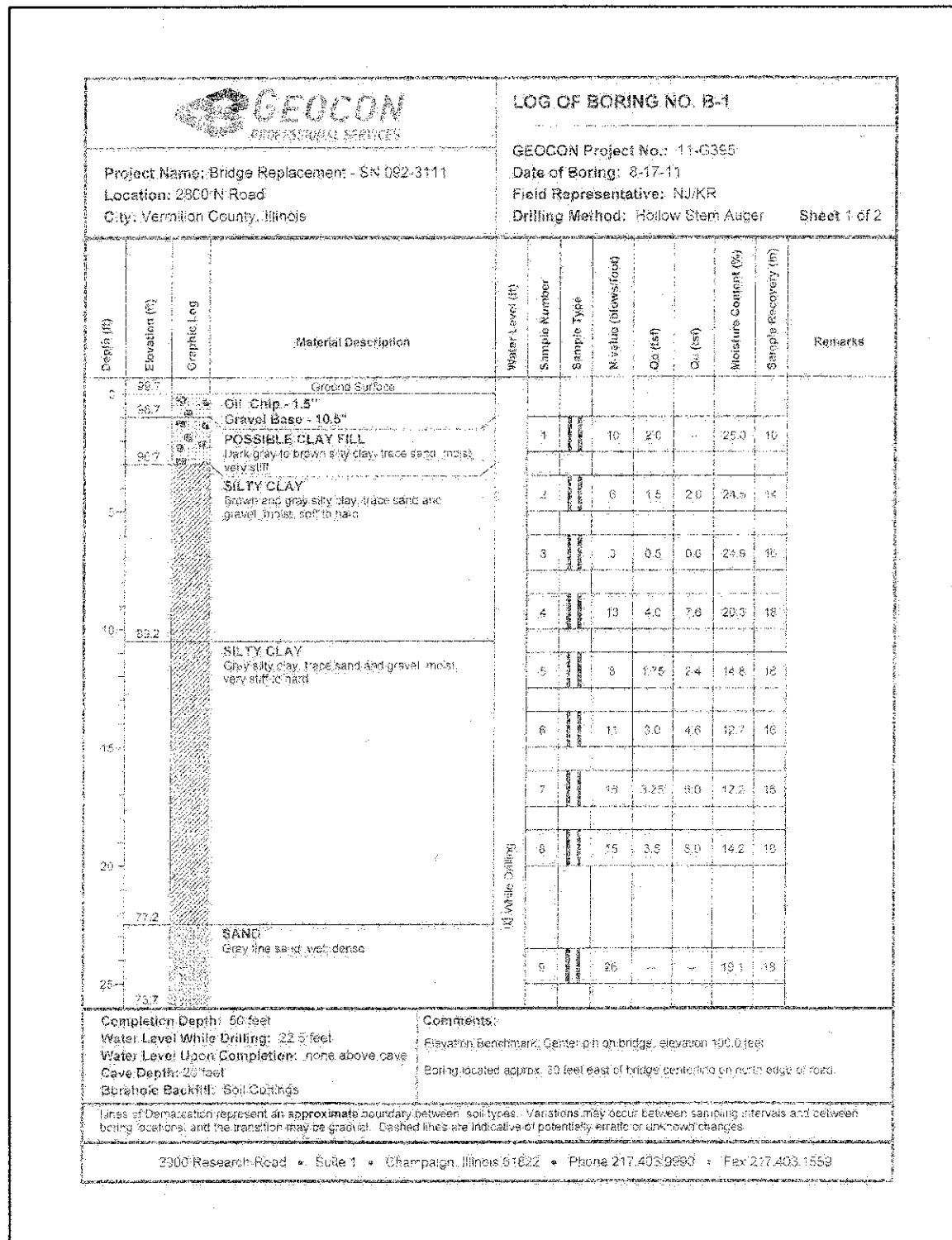
Designation	F	F1	Fw	W	W1	Ww
HP 14x117	12 1/2"	1"	7/8"	7 3/4"	5/8"	1/2"
x102	12 1/2"	7/8"	3/4"	7 3/4"	5/8"	1/2"
x89	12 1/2"	3/4"	1/16"	7 3/4"	5/8"	1/2"
x73	12 1/2"	5/8"	9/16"	7 3/4"	5/8"	1/2"
HP 12x84	10"	7/8"	1/16"	6 1/2"	5/8"	1/2"
x74	10"	7/8"	1/16"	6 1/2"	5/8"	1/2"
x63	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
x53	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
HP 10x57	8"	3/8"	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.

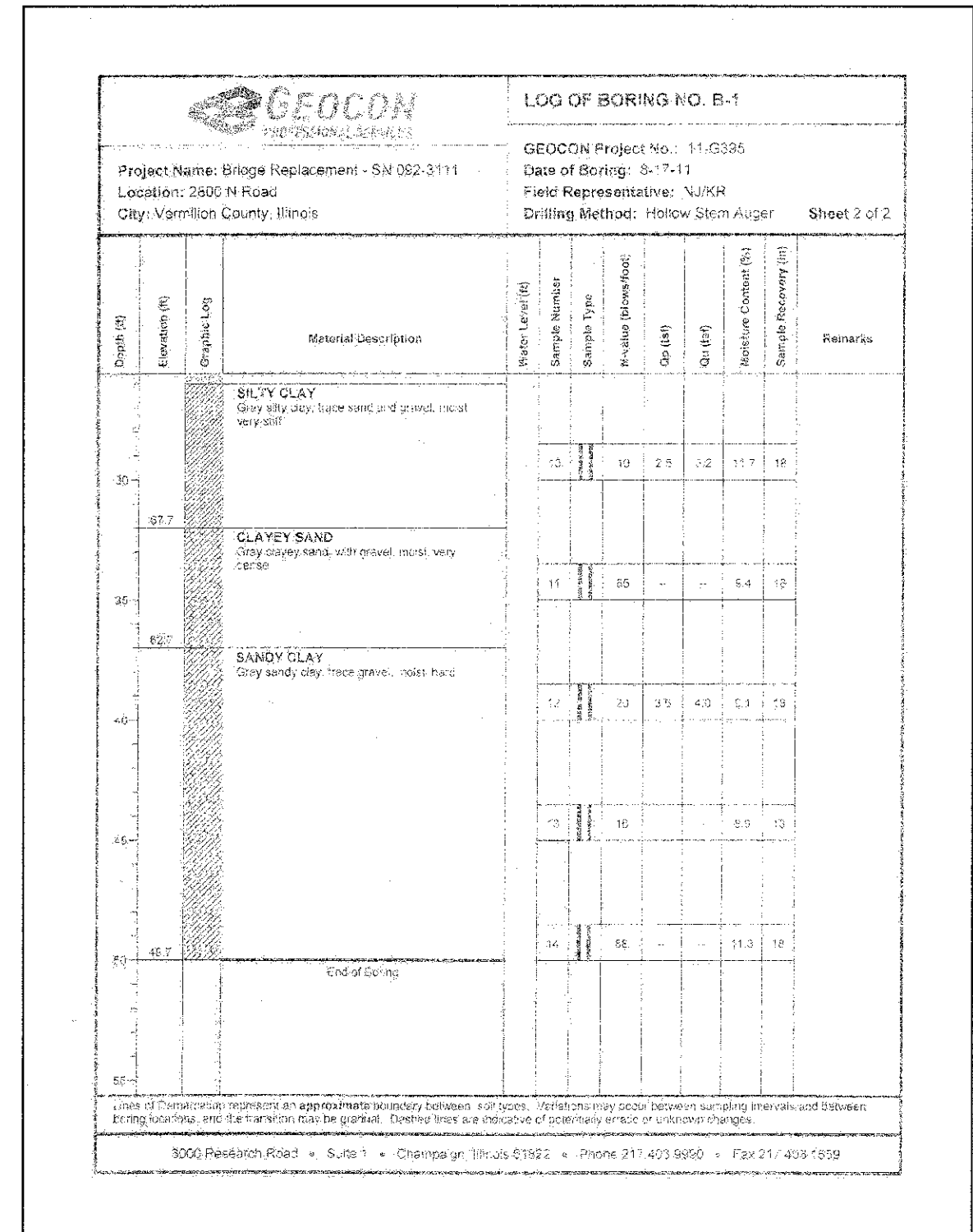
F-HP

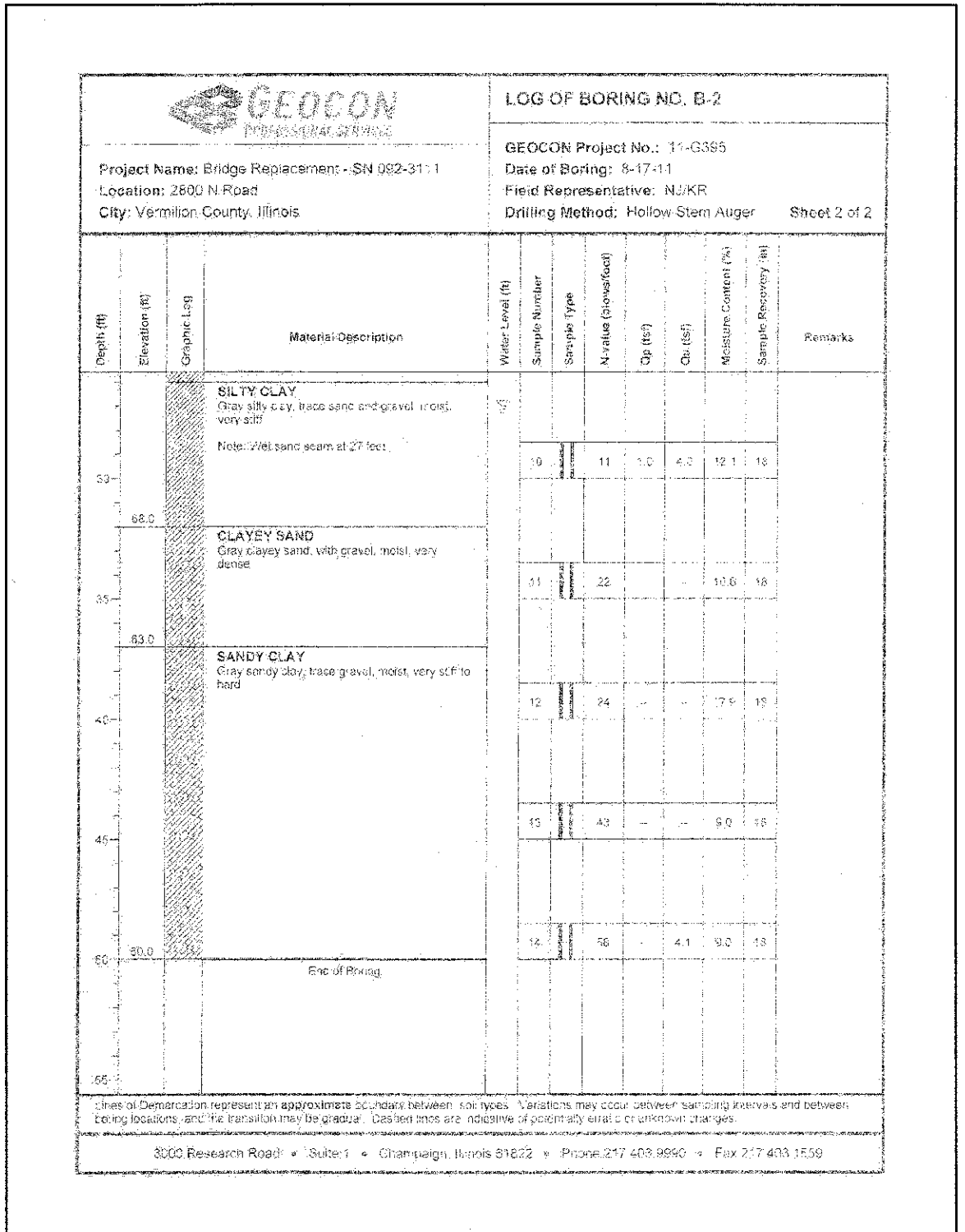
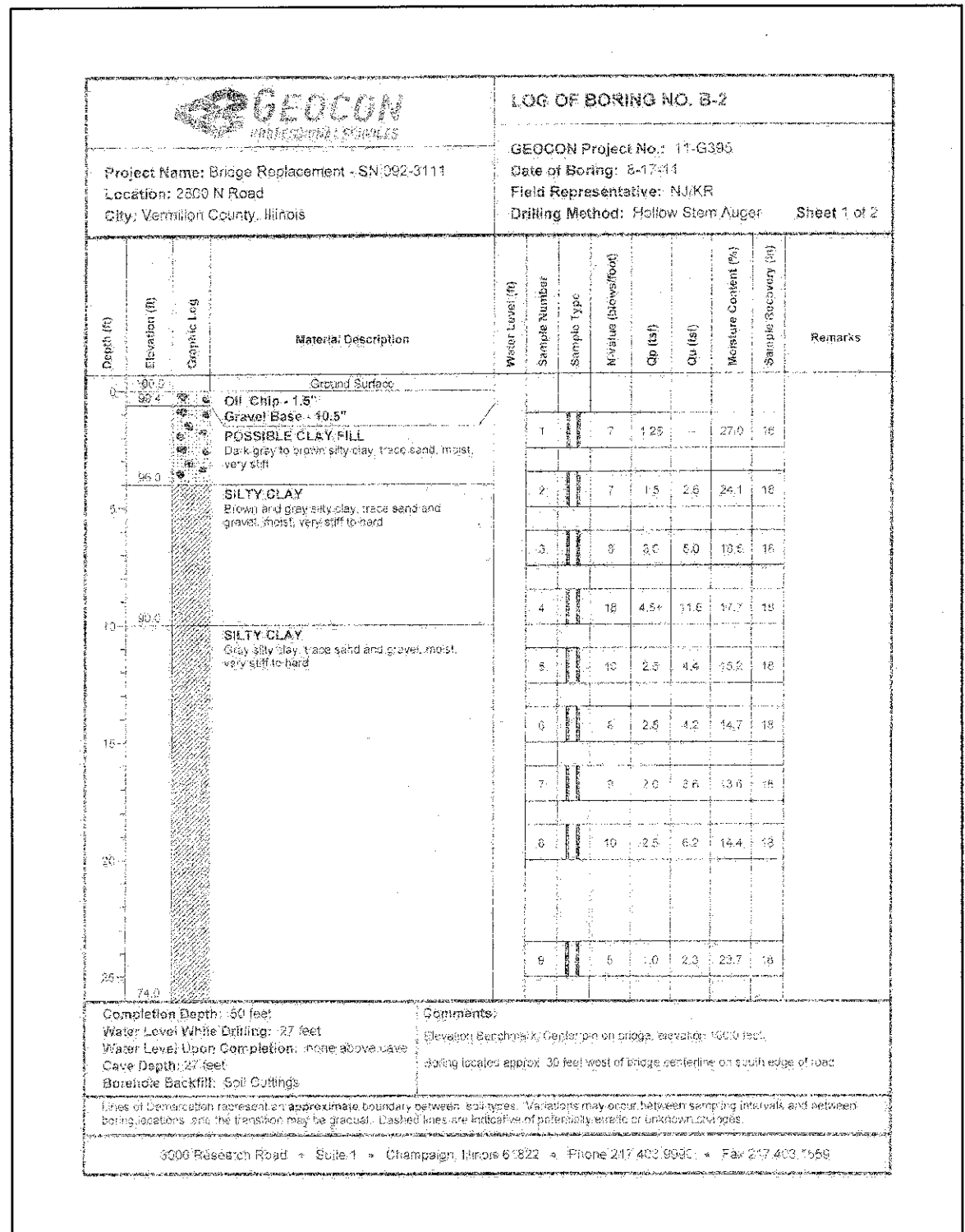
1-27-12

FILE NAME = 110298-ah-h-bridge.dgn	USER NAME =	DESIGNED - A.S.L.	REVISED -	STATE OF ILLINOIS VERMILION COUNTY HIGHWAY DEPARTMENT	HP PILE DETAILS STRUCTURE NO. 092-3523	T.T.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
HAMPTON, LENZINI AND RENWICK, INC. 205 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62762	PLOT SCALE =	CHECKED - S.W.M.	REVISED -			131	10-15145-00-BR	VERMILION	20	18	
ILLINOIS PROFESSIONAL SEAL NO. 043-04 FROM 12/19/11 SEE COMP. 13A-02299	PLOT DATE = 2/26/2013	DRAWN - D.A.B.	REVISED -			PILOT ROAD DISTRICT		CONTRACT NO. 91477		ILLINOIS FED. AID PROJECT	
		CHECKED - S.W.M.	REVISED -								



BORING B-1





BORING B-2