

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

**PLANS FOR PROPOSED  
HIGHWAY BRIDGE PROGRAM**

PROJECT BROS-049(160)  
SECTION 10-13112-00-BR  
UNION ROAD DISTRICT  
EFFINGHAM COUNTY

T.R. 266  
PROPOSED STRUCTURE NO. 025-3323  
C-97-018-12

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 266	10-13112-00-BR	EFFINGHAM	21	1
FED. ROAD DIST. NO.		ILLINOIS CONTRACT NO. 95669		

**INDEX OF SHEETS**

SHEET NO.	DESCRIPTION
1.	COVER SHEET
2.	SUMMARY OF QUANTITIES AND GENERAL NOTES
3.	TYPICAL CROSS SECTIONS
4.-5.	PLAN & PROFILE
6.-13.	STATION CROSS SECTIONS
14.-20.	BRIDGE PLANS
21.	BORINGS

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**

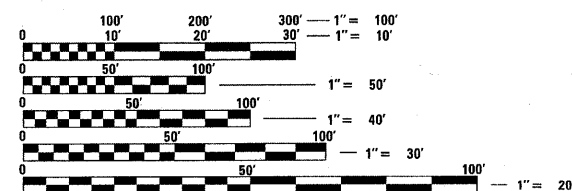
E J WATER COOPERATIVE  
PO BOX 8  
DIETERICH, IL 62424  
ATTN: LEE BECKMAN

MCI  
7719 WEST 60TH PLACE  
PO BOX 387  
SUMMIT, IL 60501  
ATTN: TOM BUHER

WABASH TELEPHONE COOPERATIVE  
PO BOX 299  
LOUISVILLE, IL 62858  
ATTN: TODD FENDER

NORRIS ELECTRIC COOPERATIVE  
ROUTE 130 SOUTH  
NEWTON, IL 62448

QWEST CENTURY LINK  
TO BE DETERMINED

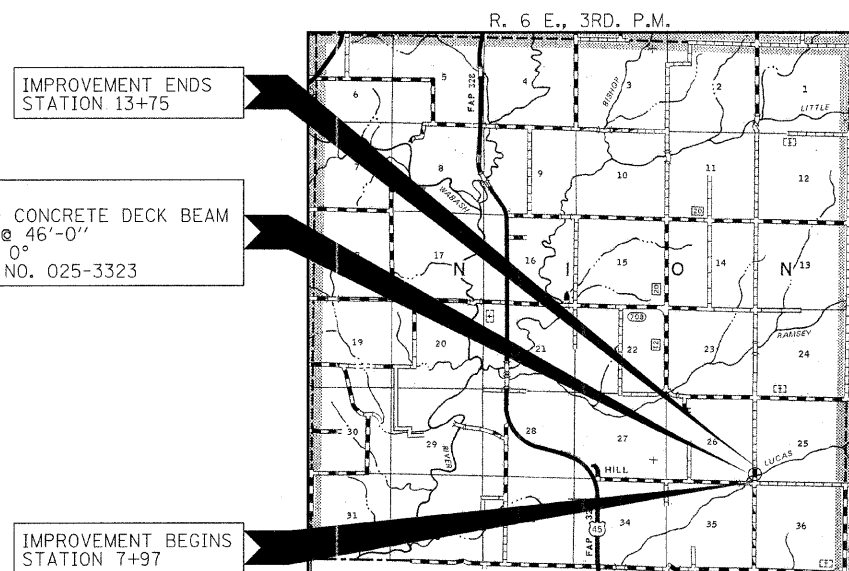


FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.



LOCATION OF SECTION INDICATED THUS: - ■ -

FUNCTIONAL CLASSIFICATION: LOCAL ROAD (0-250 ADT)  
DESIGN SPEED: 30 MPH  
DESIGN TRAFFIC: 50 ADT

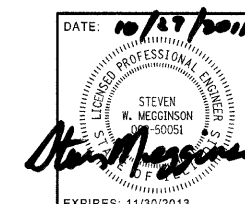


LOCATION MAP

APPROXIMATE SCALE: 0 1 MILE  
NET LENGTH OF SECTION = 578 FEET = 0.109 MILES



ILLINOIS DEPARTMENT OF TRANSPORTATION	
APPROVED	<i>November 24 2011</i> COUNTY ENGINEER
APPROVED	<i>Nov 1 2011</i> ROAD DISTRICT COMMISSIONER
PASSED	<i>Nov 14 2011</i> DISTRICT SEVEN ENGINEER OF LOCAL ROADS & STREETS
Releasing For Bid Based on Limited Review	<i>Nov 14 2011</i> DEPUTY DIRECTOR OF HIGHWAYS REGION FOUR 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

SUMMARY OF QUANTITIES			
CODE NO.	ITEM	UNIT	TOTAL
			CONSTRUCTION TYPE CODE 0011
20100110	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	UNIT	34
20100210	TREE REMOVAL (OVER 15 UNITS DIAMETER)	UNIT	36
20200100	EARTH EXCAVATION	CU YD	230
20300100	CHANNEL EXCAVATION	CU YD	335
20400800	FURNISHED EXCAVATION	CU YD	1225
28100807	STONE DUMPED RIPRAP, CLASS A4	TON	220
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	580
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50300225	CONCRETE STRUCTURES	CU YD	24.0
50300280	CONCRETE ENCASEMENT	CU YD	2.8
50400305	PRECAST PRESTRESSED CONCRETE DECK BEAMS (17" DEPTH)	SQ FT	1288
50800105	REINFORCEMENT BARS	POUND	2520
* 50900205	STEEL RAILING, TYPE S1	FOOT	91
51201400	FURNISHING STEEL PILES HP10X42	FOOT	175
51202305	DRIVING PILES	FOOT	175
51203400	TEST PILES STEEL HP10X42	EACH	1
51500100	NAME PLATES	EACH	1
542D0220	PIPE CULVERTS, CLASS D, TYPE 1 15"	FOOT	36
67100100	MOBILIZATION	L SUM	1
* 78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	4
^ X2501000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.5

^ SEE SPECIAL PROVISIONS

\* 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.
- ALL CLEARING AND GRUBBING AND REMOVAL OF EXISTING DRAINAGE STRUCTURES SHALL BE INCLUDED IN CONTRACT. THE REMOVAL OF THE EXISTING AGGREGATE BASE COURSE AND A-3 SURFACE WILL BE PAID FOR AS EARTH EXCAVATION. ALL BITUMINOUS MATERIAL SHALL BE PROPERLY DISPOSED OF AS APPROVED BY THE ENGINEER.
- THE LOCATIONS OF EXISTING ELECTRIC POWER LINES, TELEPHONE LINES AND OTHER UTILITIES AS SHOWN ON THE PLANS ARE BASED ON CAREFUL FIELD INVESTIGATION 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
- THE CONTRACTOR SHALL PROTECT AND CAREFULLY PRESERVE ALL SECTION OR SUBSECTION MONUMENTS UNTIL THE OWNER, HIS AGENT, PROFESSIONAL LAND SURVEYOR HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATION.
- THE REVISION NUMBER INDICATED FOR THE STANDARDS LISTED IN THE INDEX OF SHEETS SHALL BE USED IN THE CONSTRUCTION OF THIS SECTION.
- THE FOLLOWING RATES OF APPLICATION HAVE BEEN USED IN CALCULATING PLAN QUANTITIES:
 

AGGREGATE SURFACE COURSE	2.05 TON/CU YD
STONE DUMPED RIPRAP, CLASS A4	1.75 TON/CU YD
- THE AREA TO BE SEEDED SHALL CONSIST OF ALL EARTH SURFACES DISTURBED DURING CONSTRUCTION AS DIRECTED BY THE ENGINEER.  
ESTIMATED QUANTITY: SEEDING, CLASS 2 (SPECIAL) = 0.5 ACRES

### EARTHWORK SCHEDULE

LOCATION	EARTH EXCAVATION	CHANNEL EXCAVATION	SHRINKAGE FACTOR	PERCENT USED	EARTH EXCAVATION ADJUSTED FOR SHRINKAGE	EMBANKMENT REQUIRED	EARTHWORK BALANCE
	20200100	20300100			CU.YD.	CU.YD.	CU.YD.
	CU.YD.	CU.YD.			CU.YD.	CU.YD.	CU.YD.
TR 266							
STA 7+97 TO STA 9+76.33	144		25.00%	100.00%	108	557	-449
STA 9+76.33 TO STA 10+23.67	0		25.00%	100.00%	0	0	0
STA 10+23.67 TO STA 13+75	85		25.00%	100.00%	64	994	-930
CHANNEL EXCAVATION		335	25.00%	70.00%	176	0	176
ENTRANCE						20	-20
TOTAL	229	335			348	1571	-1223
USE	230	335					1225

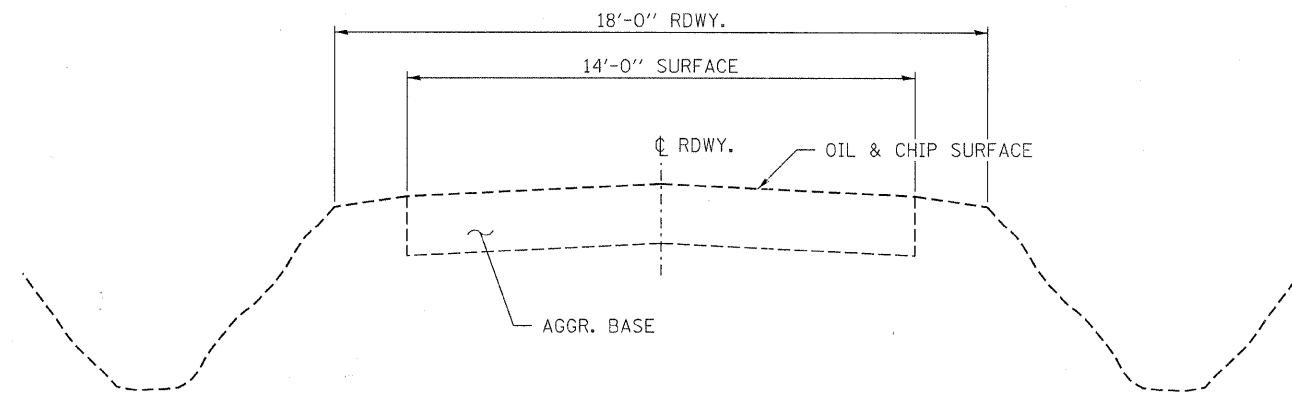
20400800 FURNISHED EXCAVATION = 1225 CU YDS

### ROADWAY SCHEDULE

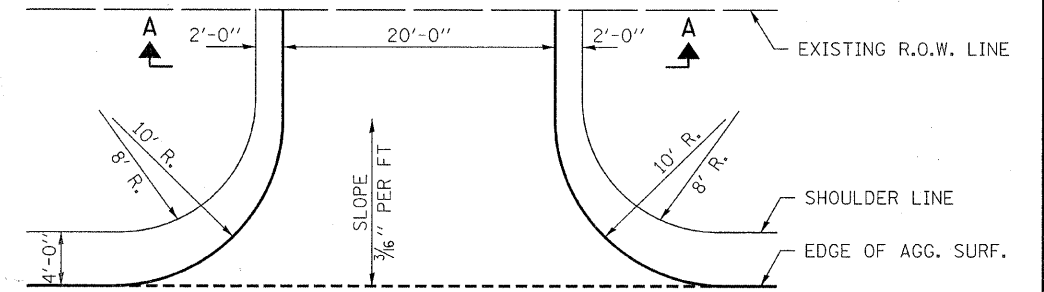
LOCATION	AGGREGATE SURFACE COURSE TYPE B
	40200800
	8"
	TON
TR 266	
STA 7+97 TO STA 9+76.33	200
STA 10+23.67 TO STA 13+75	347
P.E. 8+96	32
TOTAL	579
USE	580

### TREE REMOVAL

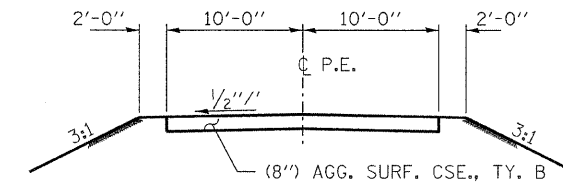
LOCATION	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	TREE REMOVAL (OVER 15 UNITS DIAMETER)
	20100110	20100210
	18.23' RT. STA 9+78.76	
24.36' RT STA 10+26.67	6	
27.34' RT STA 10+26.95	8	
27.34' RT STA 10+26.95	12	
28.34' RT STA 10+30.27	8	
TOTAL	34	36



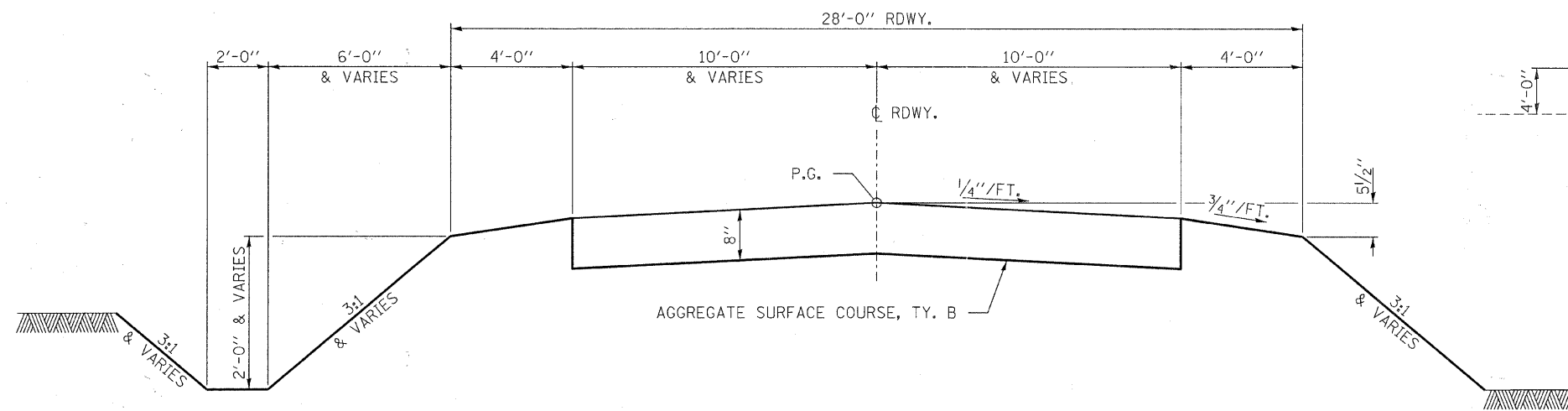
**EXISTING TYPICAL CROSS SECTION**  
STA. 7+97 TO 15+00



**PRIVATE ENTRANCE DETAIL**  
RT. STA. 8+96



**SECTION A-A**

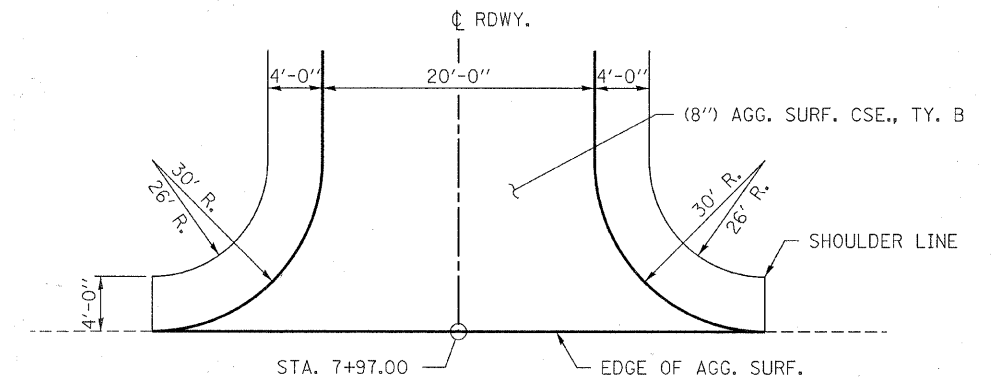


SUGGESTED CUT SECTION  
CONSTRUCT AS SHOWN IN  
STATION CROSS SECTIONS

**PROPOSED TYPICAL CROSS SECTION**  
STA. 7+97 TO 13+75

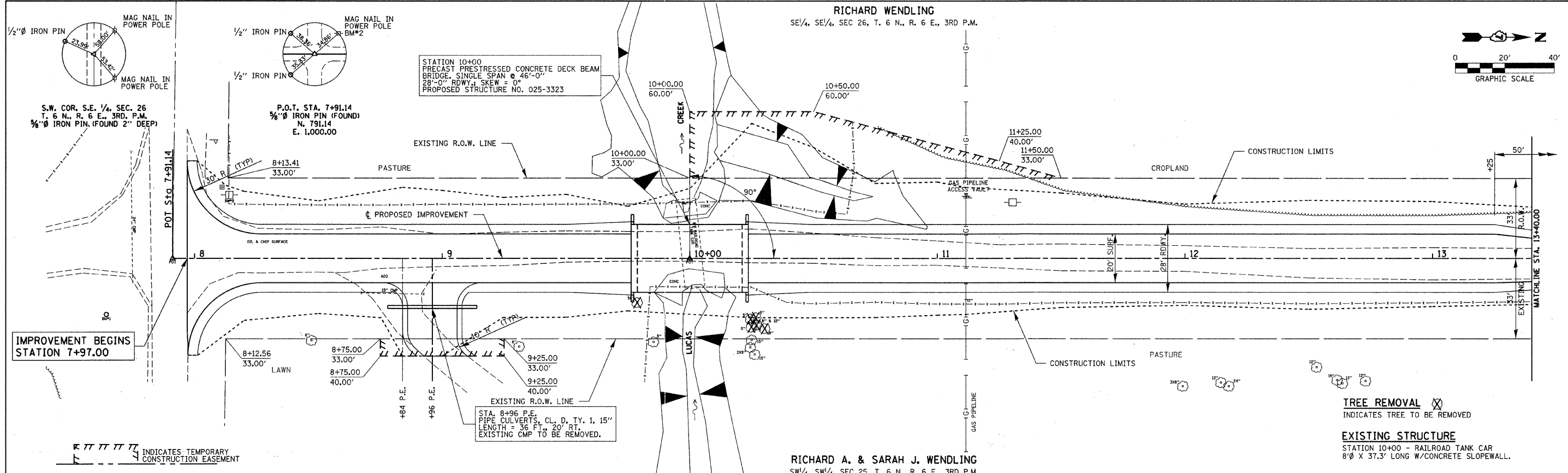
TRANSITION FROM THE PROPOSED ROADWAY TO THE EXISTING ROADWAY  
IS TO BE CONSTRUCTED FROM STA. 7+97 TO 8+27 AND FROM  
STA. 13+25 TO 13.75. SEE SHEET 14 FOR TRANSITION AT BRIDGE.

SUGGESTED FILL SECTION  
CONSTRUCT AS SHOWN IN  
STATION CROSS SECTIONS



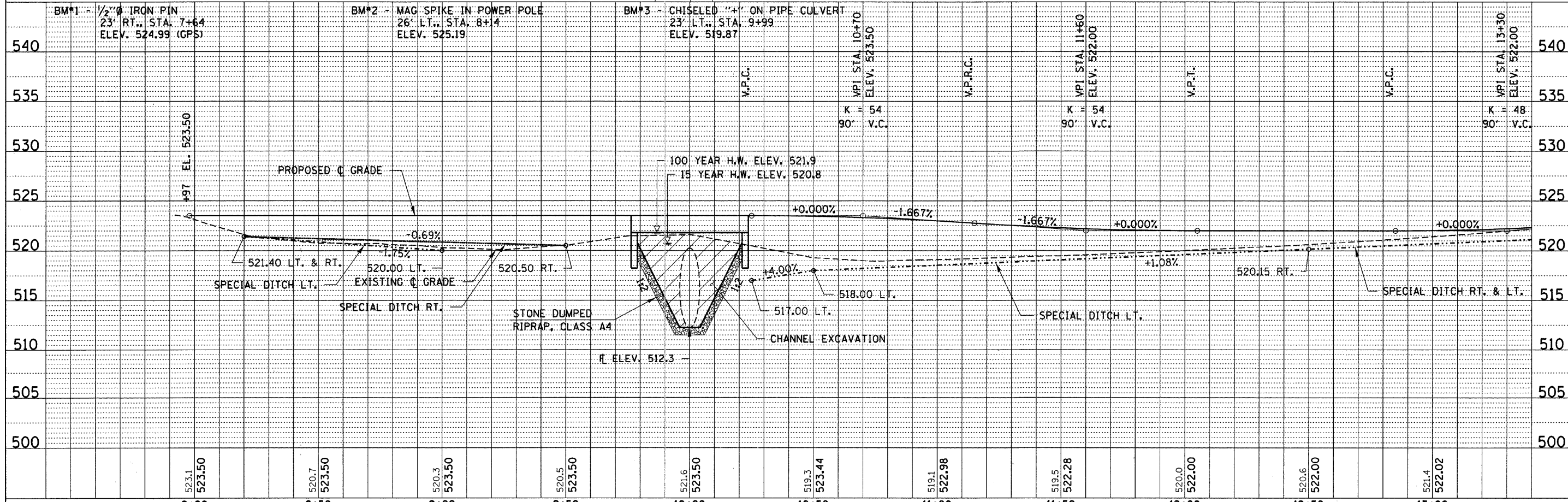
**INTERSECTION DETAIL**  
STA. 7+97.00

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HAMPTON, LENZINI AND RENWICK, INC. 3055 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62793	PLOT SCALE =	DRAWN - D.T.M.	REVISED -				266	10-13112-00-BR	EFFINGHAM	21	3
ILLINOIS PROFESSIONAL DESIGN FIRM L3/PB/SE CORP. 184-00099	PLOT DATE = 10/27/2011	CHECKED - S.W.M.	REVISED -				UNION ROAD DISTRICT		CONTRACT NO. 95669		
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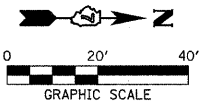
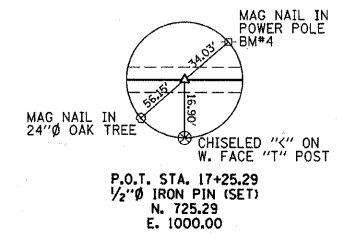
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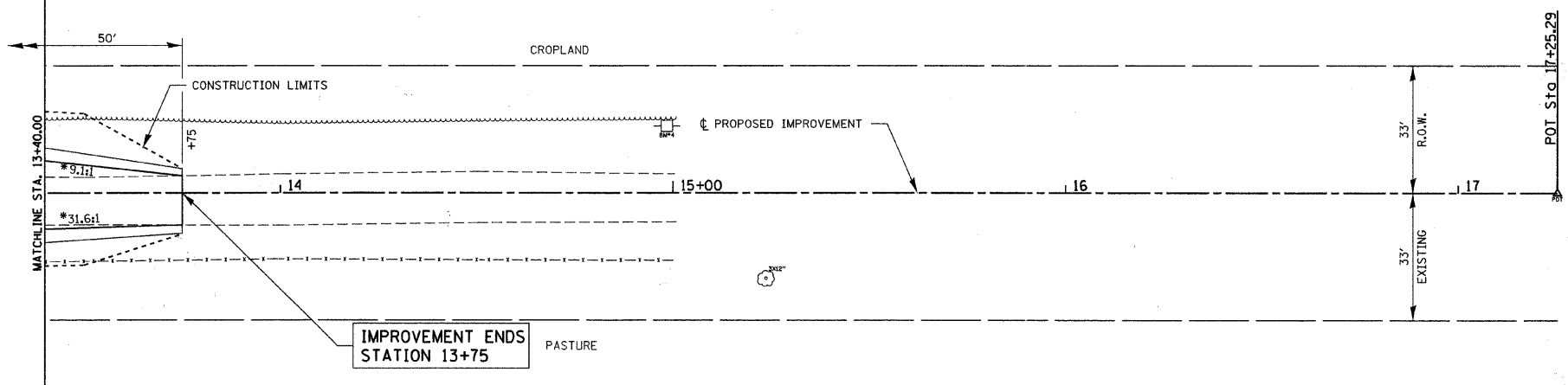


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HAMPTON, LENZINI AND RENWICK, INC. 3068 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM L3 / PE / SE CORP. 184.000939	PLOT SCALE =	DRAWN - D.T.M.	REVISED -		SCALE: H20xV5	SHEET NO.	OF	SHEETS	STA.	TO STA.	266	10-13112-00-BR	EFFINGHAM	21	4
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		DATE = 03/03/11	REVISED -		[ILLINOIS] FED. AID PROJECT										

RICHARD WENDLING  
SE 1/4, SE 1/4, SEC 26, T. 6 N., R. 6 E., 3RD P.M.



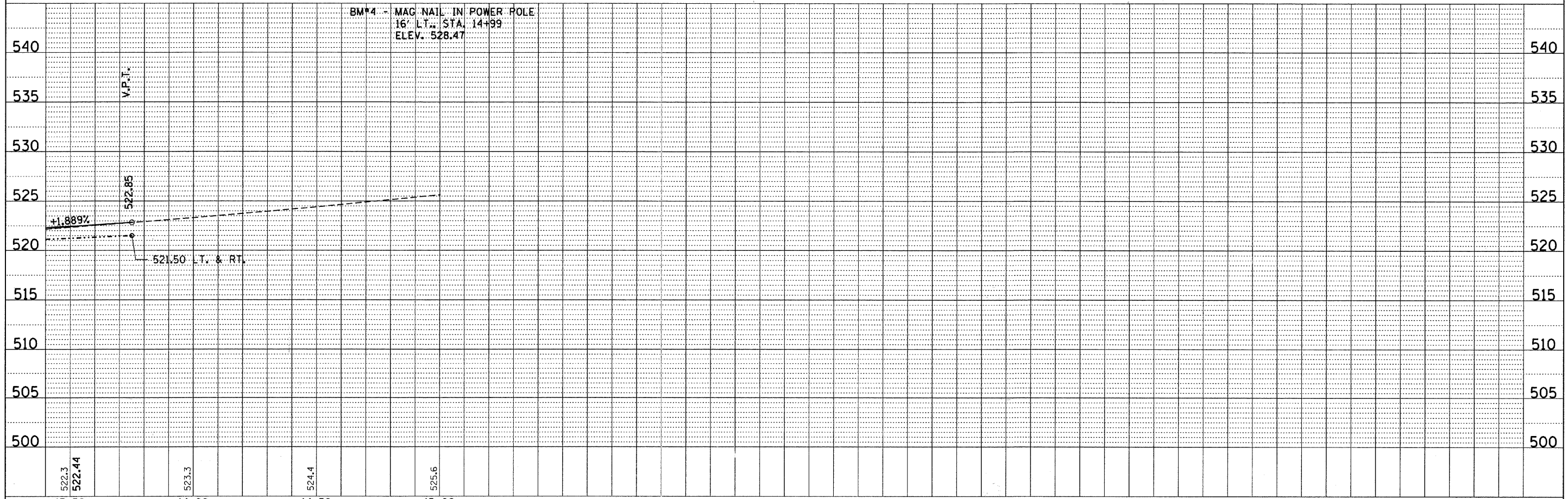
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\*TRANSITION FROM THE PROPOSED ROADWAY TO THE EXISTING ROADWAY IS TO BE CONSTRUCTED FROM STA. 13+25 TO 13+75.

RICHARD A. & SARAH J. WENDLING  
SW 1/4, SW 1/4, SEC 25, T. 6 N., R. 6 E., 3RD P.M.

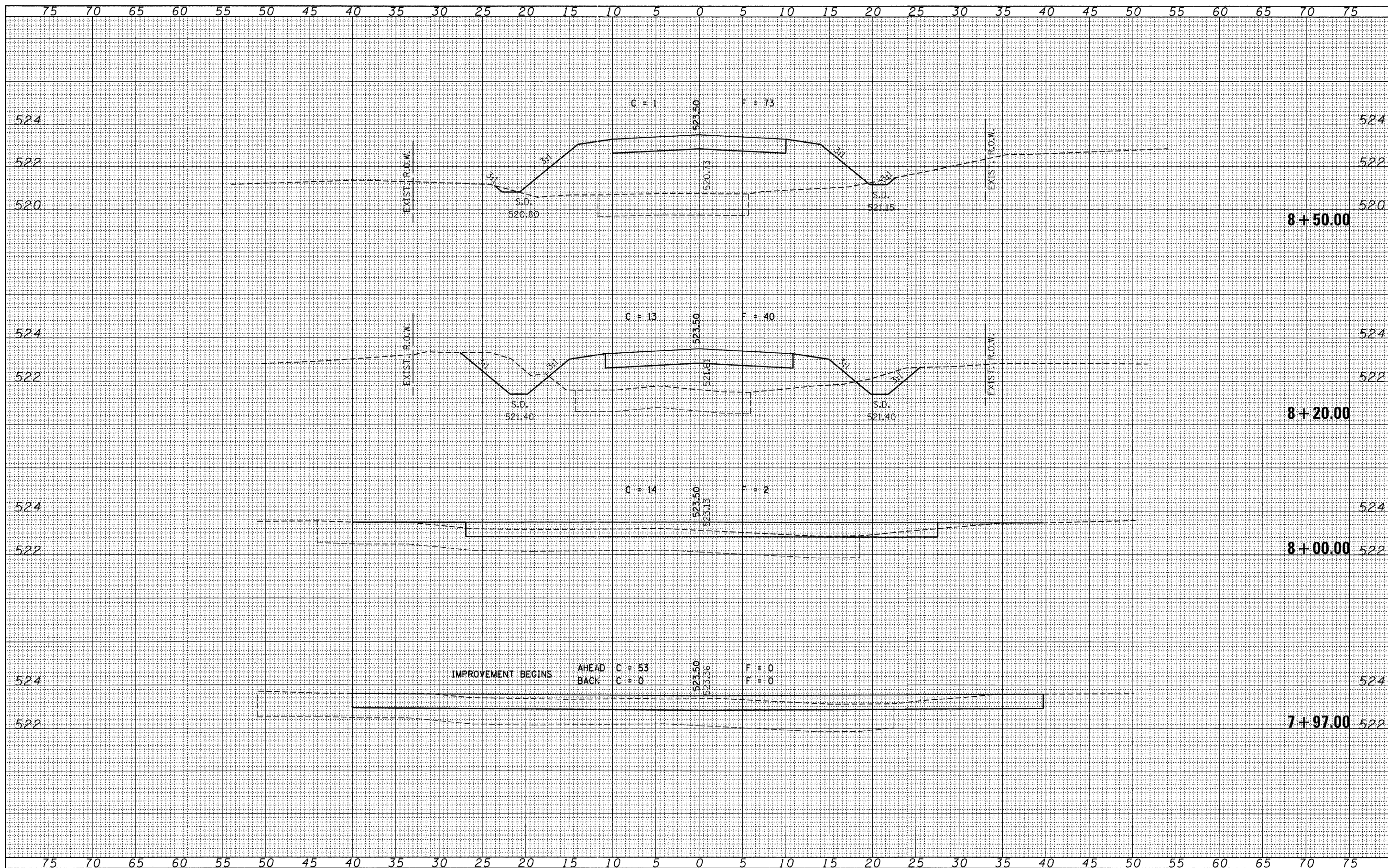
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HAMPTON, LENZINI AND RENWICK, INC.		DRAWN - D.T.M.	REVISED -		266	10-13112-00-BR	EFFINGHAM	21	5		
1308 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62793	PLOT SCALE =	CHECKED - S.W.M.	REVISED -		UNION ROAD DISTRICT		CONTRACT NO. 95669				
ILLINOIS PROFESSIONAL DESIGN FIRM 15 / 18 / SE CORP. 144-000950	PLOT DATE = 10/27/2011	DATE = 03/03/11	REVISED -		SCALE: H20xV5	SHEET NO. OF SHEETS	STA. TO STA.	[ILLINOIS] FED. AID PROJECT			

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TEMPLATE	
NOTE BOOK	
AREAS CHECKED	
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DATE	
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ORIGINAL SURVEY	
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PLOTTED	
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NOTE BOOK	
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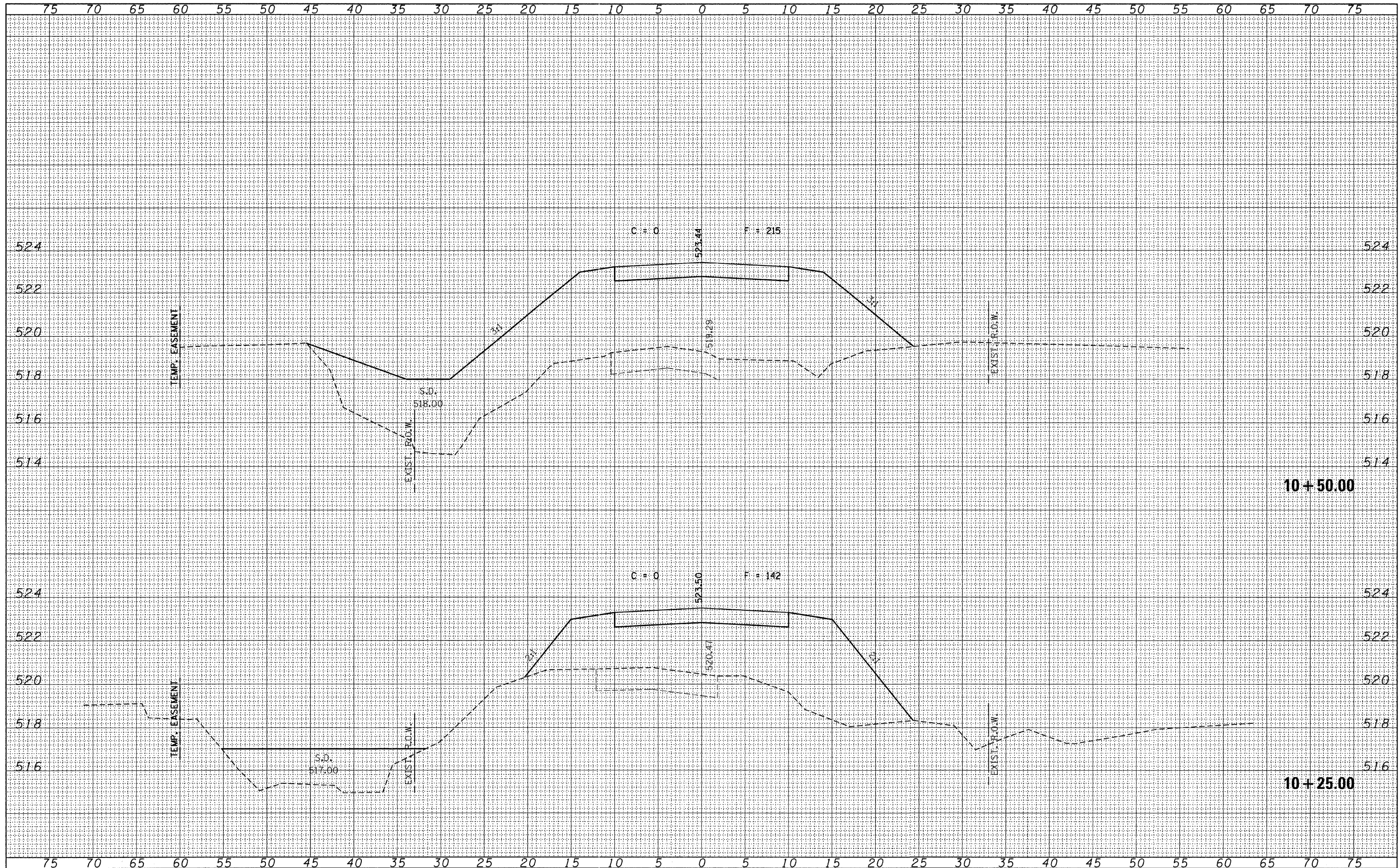






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AREAS CHECKED	AREAS CHECKED
TEMPLATE	TEMPLATE
NOTE BOOK	NOTE BOOK
SURVEYED	SURVEYED
PLOTTED	PLOTTED
FINAL SURVEY	FINAL SURVEY

DATE	BY
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AREAS CHECKED	AREAS CHECKED
TEMPLATE	TEMPLATE
NOTE BOOK	NOTE BOOK
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PLOTTED	PLOTTED
ORIGINAL SURVEY	ORIGINAL SURVEY



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 CHECKED - S.W.M.  
 DATE - 07/06/11

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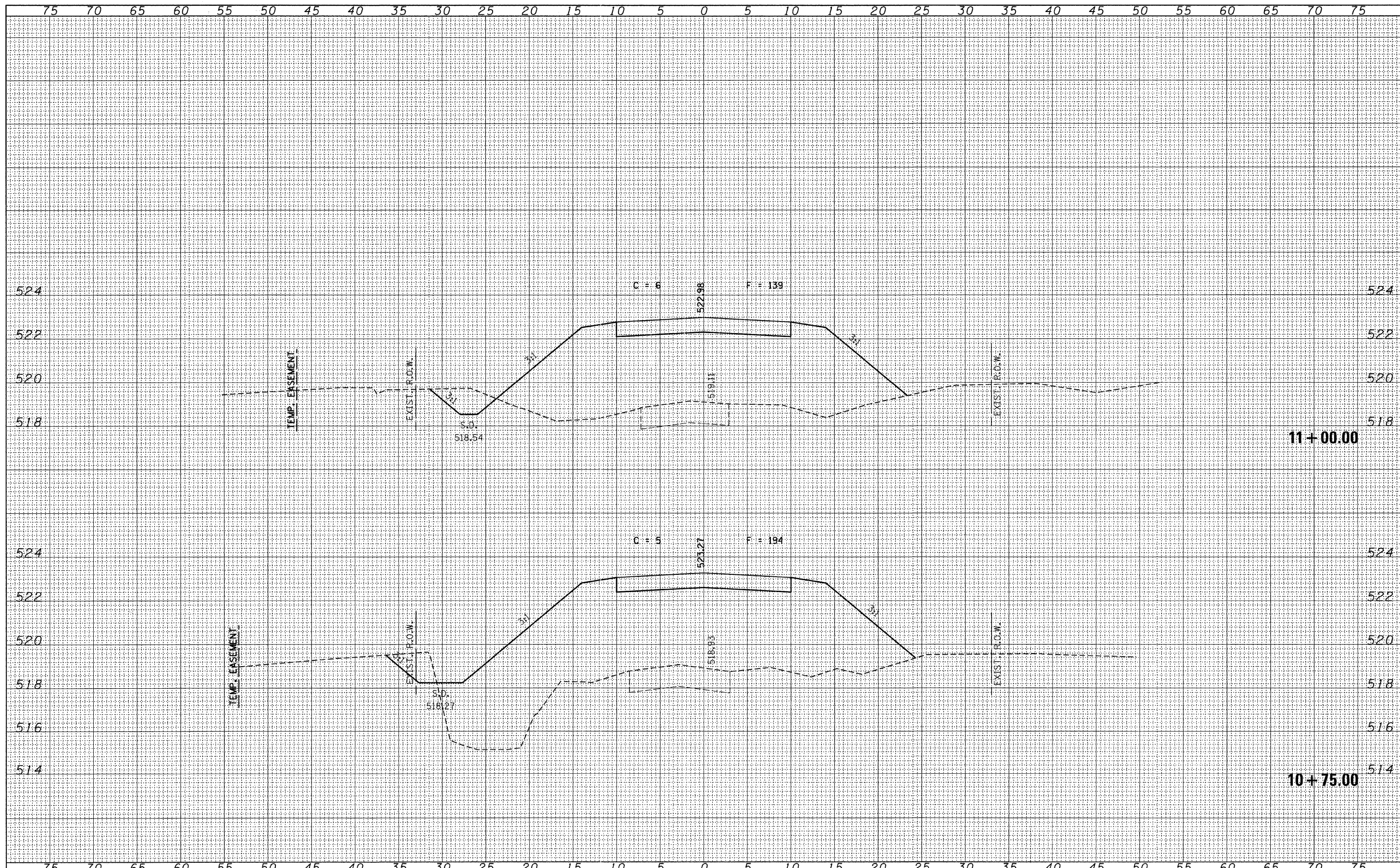
STATE OF ILLINOIS  
 EFFINGHAM COUNTY HIGHWAY DEPARTMENT

STATION CROSS SECTIONS  
 T.R. 266 / 1700TH STREET  
 SCALE: H5:V2  
 SHEET NO. OF SHEETS STA. 10+25.00 TO STA. 10+50.00

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
266	10-13112-00-BR	EFFINGHAM	21	9
UNION ROAD DISTRICT			CONTRACT NO. 95669	
ILLINOIS FED. AID PROJECT				

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FINAL SURVEY	

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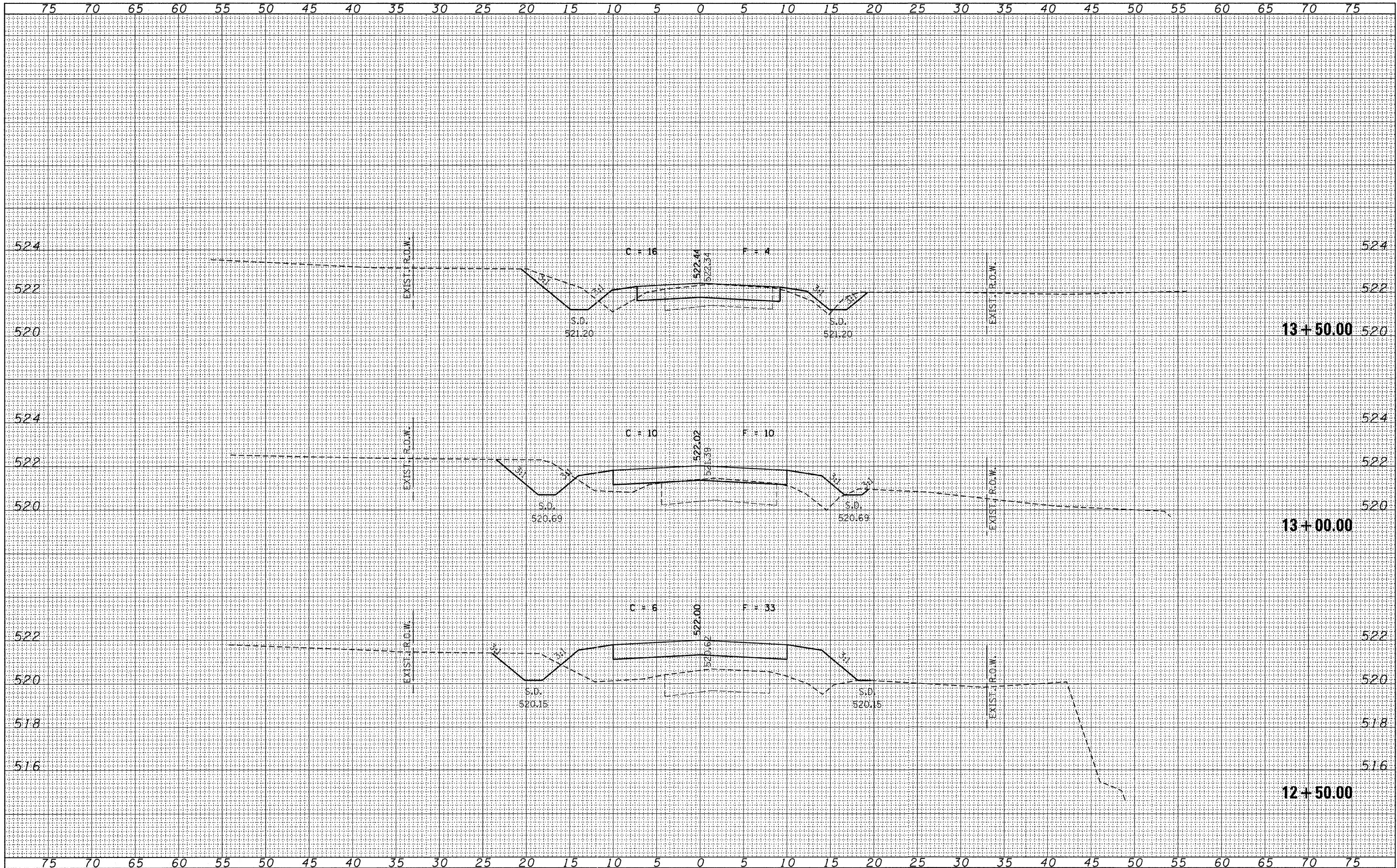


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HAMPTON, LENZINI AND RENWICK, INC. 3063 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184-000059	PLOT SCALE =	DRAWN - D.T.M.	REVISED -		266	10-13112-00-BR	EFFINGHAM	21	10		
PLOT DATE = 10/27/2011	CHECKED - S.W.M.	REVISED -	SCALE: H5:V2		SHEET NO. OF SHEETS STA. 10+75.00 TO STA. 11+00.00		UNION ROAD DISTRICT	CONTRACT NO. 95669			
	DATE - 07/06/11	REVISED -					ILLINOIS FED. AID PROJECT				



BY	DATE

BY	DATE



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 3085 STEVENSON DRIVE, SUITE 201  
 SPRINGFIELD, ILLINOIS 62703  
 ILLINOIS PROFESSIONAL DESIGN FIRM  
 LS / PE / SE CORP. 184-000953

USER NAME =  
 PLOT SCALE =  
 PLOT DATE = 10/27/2011

DESIGNED - J.W.F.  
 DRAWN - D.T.M.  
 CHECKED - S.W.M.  
 DATE - 07/06/11

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STATE OF ILLINOIS  
 EFFINGHAM COUNTY HIGHWAY DEPARTMENT

STATION CROSS SECTIONS  
 T.R. 266 / 1700TH STREET  
 SCALE: H5:V2 SHEET NO. OF SHEETS STA. 12+50.00 TO STA. 13+50.00

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
266	10-13112-00-BR	EFFINGHAM	21	12
UNION ROAD DISTRICT			CONTRACT NO. 95669	
ILLINOIS FED. AID PROJECT				



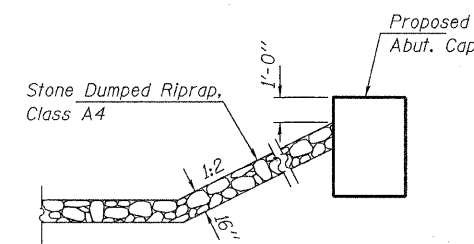
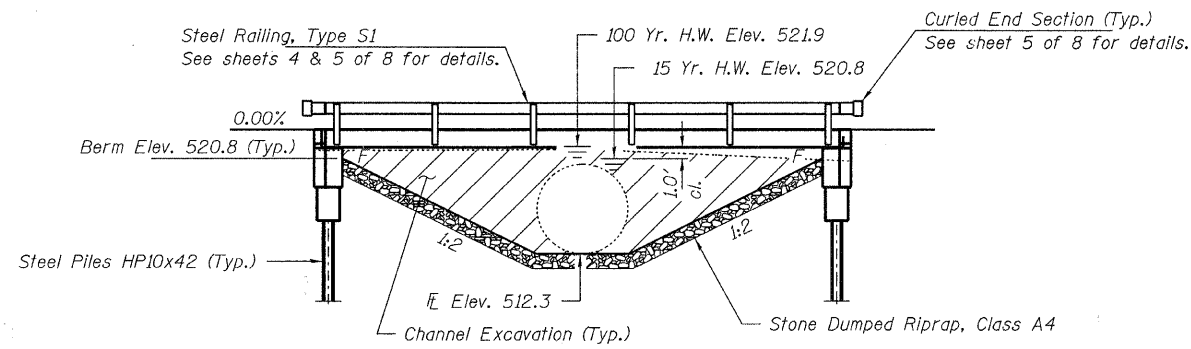
BENCHMARK: Chiseled "+" on pipe culvert. 23.0' Lt., Sta. 9+99, Elev. 519.87

EXISTING STRUCTURE: Sta. 10+00, 1 8'φ Railroad Tank Car. (37.3' long)  
Structure closed to traffic.

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

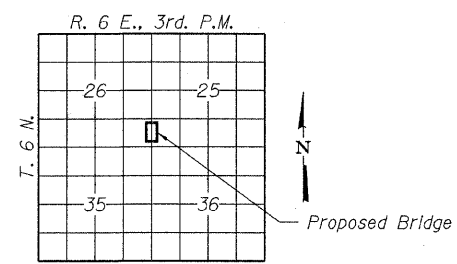
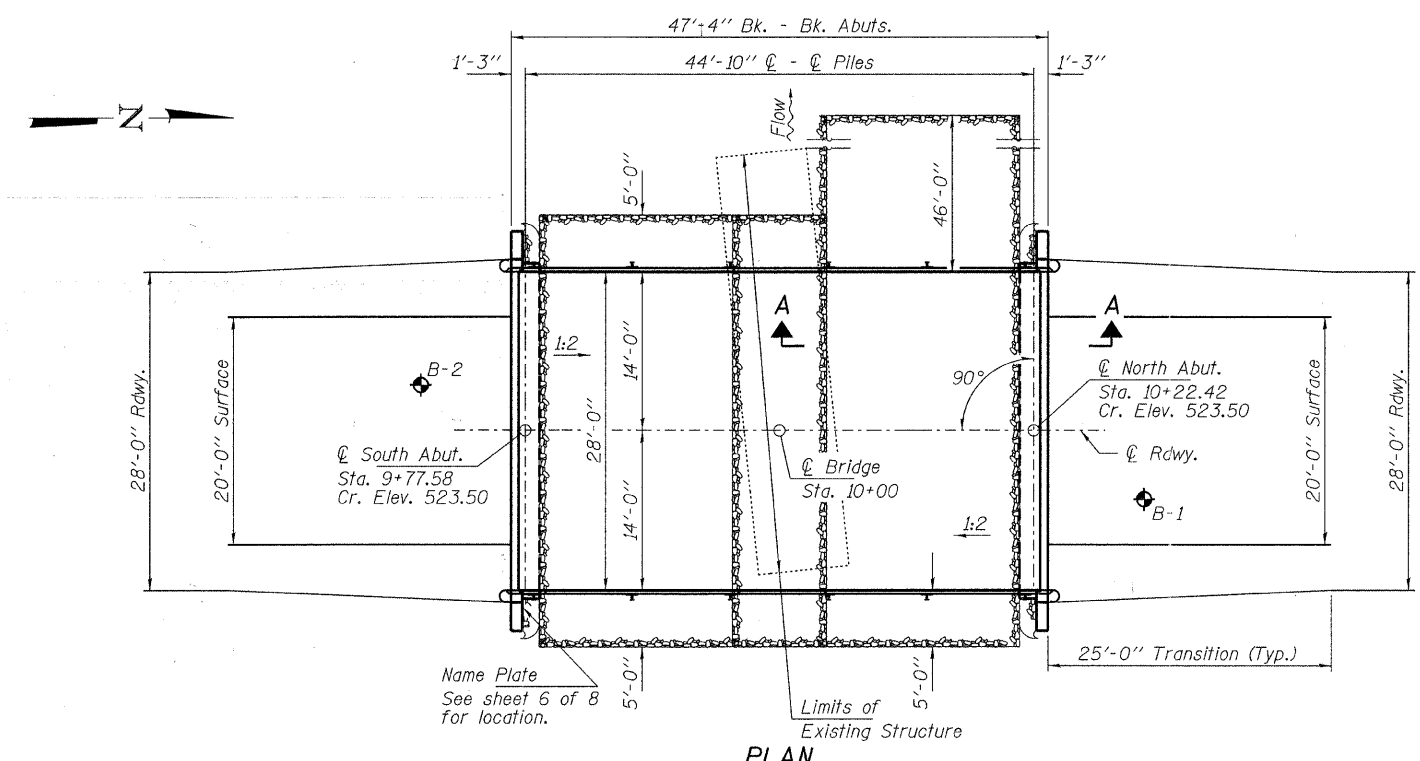


**ELEVATION**

**SECTION A-A**  
Note: See Special Provisions for Stone Dumped Riprap, Class A4.

**INDEX OF STRUCTURE SHEETS**

1. General Plan & Elevation
2. 17" x 48" PPC Deck Beam
3. 17" x 48" PPC Deck Beam Details
4. Superstructure Details
5. Steel Railing, Type S-1
6. Abutments
7. HP Pile Details
8. Borings



**LOCATION SKETCH**

LUCAS CREEK  
BUILT 201L BY  
EFFINGHAM COUNTY  
SEC. 10-13112-00-BR  
UNION ROAD DISTRICT  
STR. NO. 025-3323  
LOADING HL-93

**NAME PLATE**  
See Std. 515001

**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"φ low lax. strands)  
fpbt = 201,960 psi (1/2"φ low lax. strands)  
fy = 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 surface.

**SEISMIC DATA**

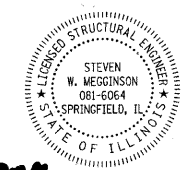
Seismic Performance Zone (SPZ) = 2  
Design Spectral Acceleration at 1.0 sec. (Sp1) = 0.166g  
Design Spectral Acceleration at 0.2 sec. (Sp5) = 0.420g  
Soil Site Class = C

**WATERWAY INFORMATION**

Drainage Area = 7.01 Sq. Mi.		Existing Low Grade Elev. 519.0 @ Sta. 10+70		Proposed Low Grade Elev. 522.0 @ Sta. 12+05		
Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Prop.	Natural H.W.E. Exist.	Head - Ft. Exist. Prop.	Headwater El. Exist. Prop.
Design	10	1173	50	200	520.47	0.65 0.44 521.12 520.91
Base	100	2150	50	260	521.92	0.00 0.93 521.92 522.85
Overtop-Exist.	15	1340	50	210	520.79	0.44 0.44 521.23 521.23
Overtop-Prop.	100	2150	50	260	521.92	0.00 0.93 521.92 522.85
Max. Calc.	500	2870	50	260	522.66	0.00 0.84 522.66 523.50

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."

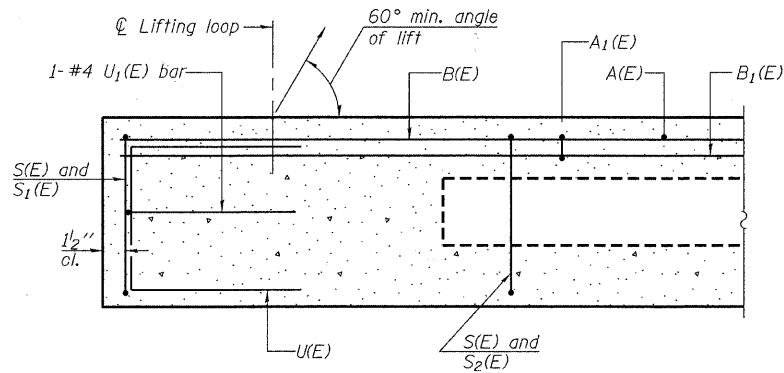
*Steven W. Meigs* 10/27/2010  
ILLINOIS STRUCTURAL ENGINEER NO. 081-6064 Expires 11-30-2012



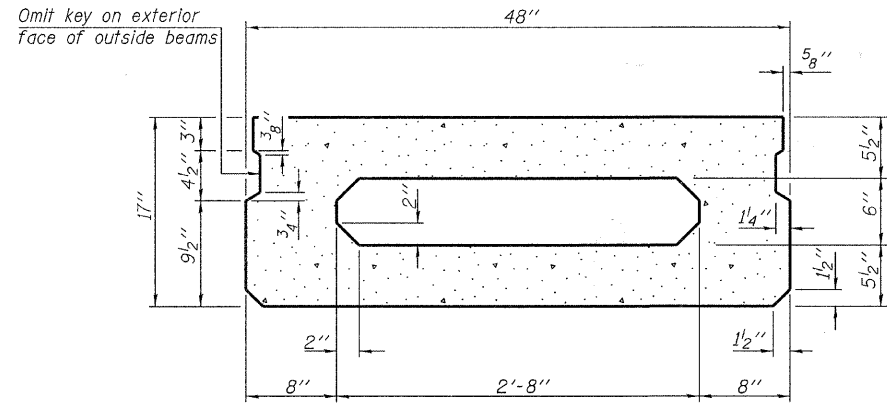
**TOTAL BILL OF MATERIAL**

ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	Cu. Yd.			335
Stone Dumped Riprap, Class A4	Ton			220
Removal of Existing Structures	Each			1
Concrete Structures	Cu. Yd.		24.0	24.0
Concrete Encasement	Cu. Yd.		2.8	2.8
Precast Prestressed Concrete Deck Beams (17" Depth)	Sq. Ft.	1,288		1,288
Reinforcement Bars	Pound		2,520	2,520
Steel Railing, Type S1	Foot	91		91
Furnishing Steel Piles HP10x42	Foot		175	175
Driving Piles	Foot		175	175
Test Pile Steel HP10x42	Each		1	1
Name Plates	Each		1	1

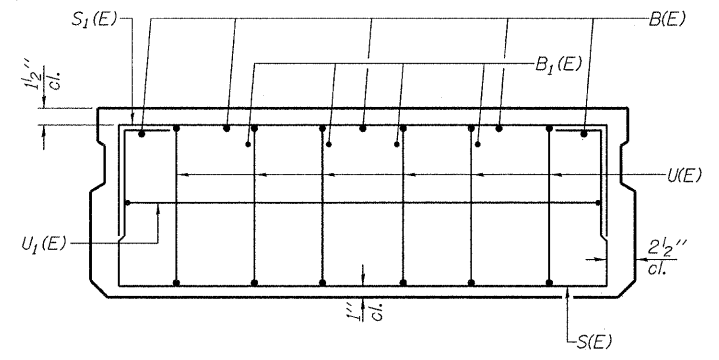
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HAMPTON, LENZINI AND RENWICK, INC. 3306 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703	PLOT SCALE =	CHECKED - S.W.M.	REVISED -			266	10-13112-00-BR	EFFINGHAM	21	14	
ILLINOIS PROFESSIONAL DESIGN FIRM 131 P.E. IN GOOD ST. 164-000699	PLOT DATE = 10/27/2011	DRAWN - D.A.B.	REVISED -			UNION ROAD DISTRICT					CONTRACT NO. 95669
		CHECKED - S.W.M.	REVISED -								ILLINOIS FED. AID PROJECT



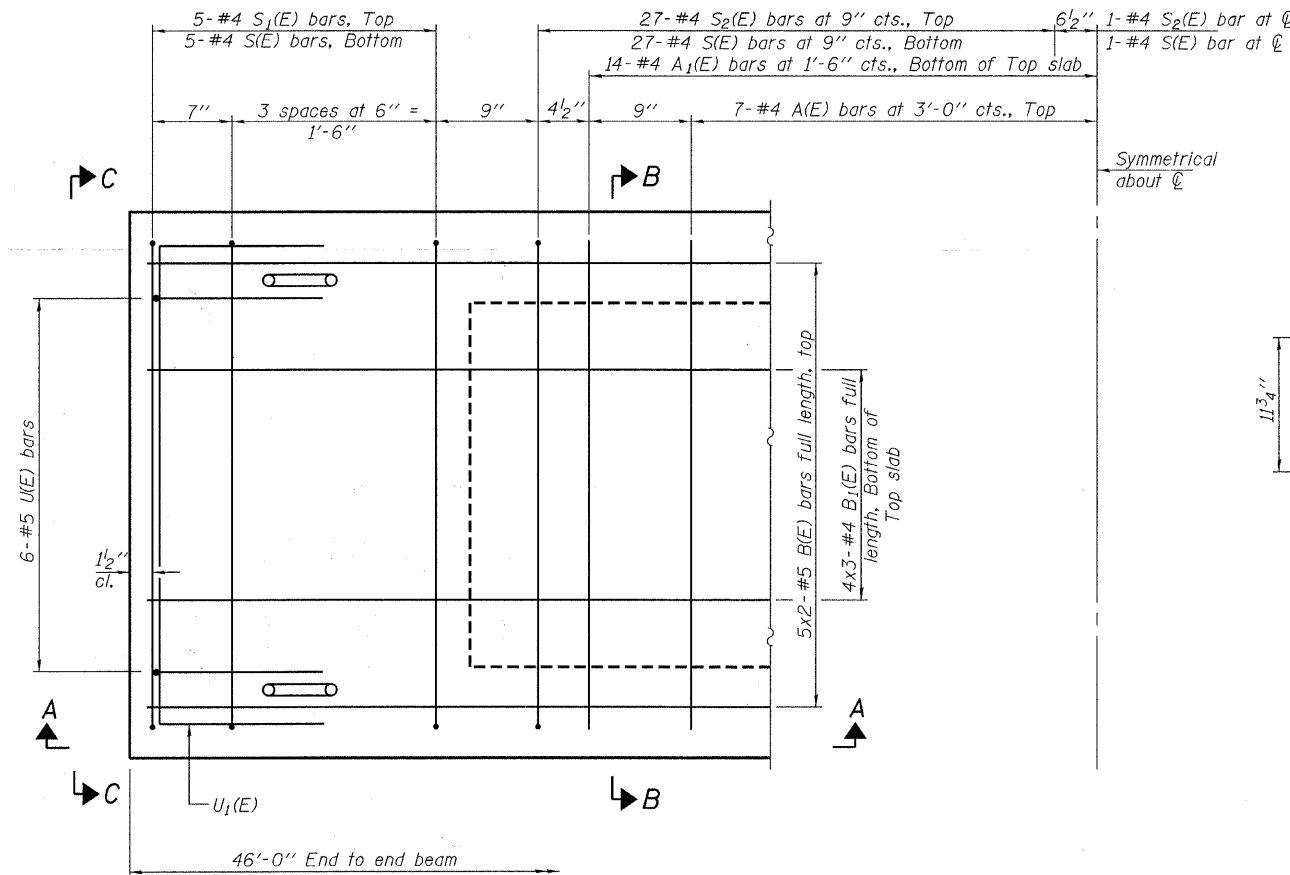
**SECTION A-A**



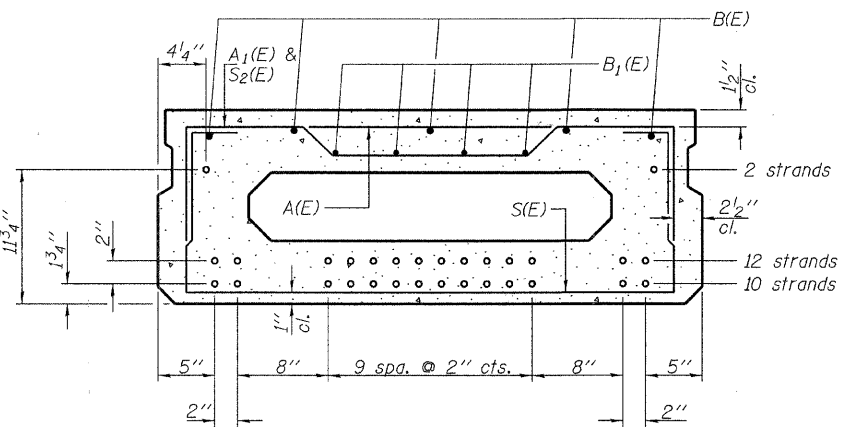
**SECTION B-B**  
(Showing dimensions)



**VIEW C-C**



**PLAN VIEW**



**SECTION B-B**  
(Showing reinforcement and permissible strand locations)

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

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

Bar	No.	Size	Length	Shape
A(E)	14	#4	3'-7"	—
A1(E)	28	#4	3'-10"	—
B(E)	10	#5	24'-2"	—
B1(E)	12	#4	16'-7"	—
S(E)	65	#4	6'-9"	—
S1(E)	10	#4	5'-3"	—
S2(E)	55	#4	5'-6"	—
U(E)	12	#5	3'-8"	—
U1(E)	2	#4	6'-0"	—

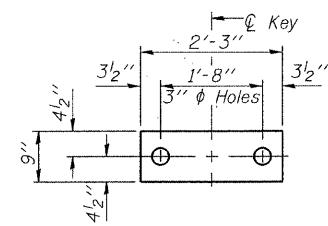
Note: See sheet 3 & 4 of 9 for additional details and Bill of Material.

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

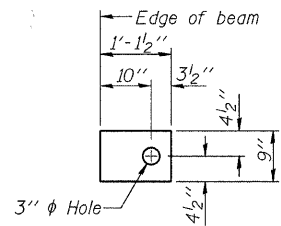
Notes:  
Spacing of S(E) and S2(E) bars may be adjusted up to 4" in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.  
Bars indicated thus 5x2-#5 etc. indicates 5 lines of bars with 2 lengths per line.

PD-1748-0 7-1-10

FILE NAME = 120098-sht-bridge.dgn	USER NAME =	DESIGNED - A.S.L.	REVISED -	<b>STATE OF ILLINOIS</b> <b>EFFINGHAM COUNTY HIGHWAY DEPARTMENT</b>	<b>17" x 48" PPC DECK BEAM</b> <b>STRUCTURE NO. 025-3323</b>	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 -			266	10-13112-00-BR	EFFINGHAM	21	15	
ILLINOIS PROFESSIONAL DESIGN FIRM L8 / PE / SE CORP. 184 800998	PLOT DATE = 10/27/2011	DRAWN - D.A.B.	REVISED -			UNION ROAD DISTRICT		CONTRACT NO. 95669		ILLINOIS FED. AID PROJECT	
		CHECKED - S.W.M.	REVISED -			SHEET NO. 2 OF 8 SHEETS					



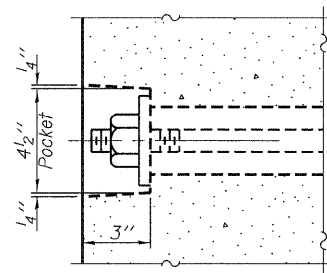
**FABRIC BEARING PAD**  
(Interior - 12 Req'd.)



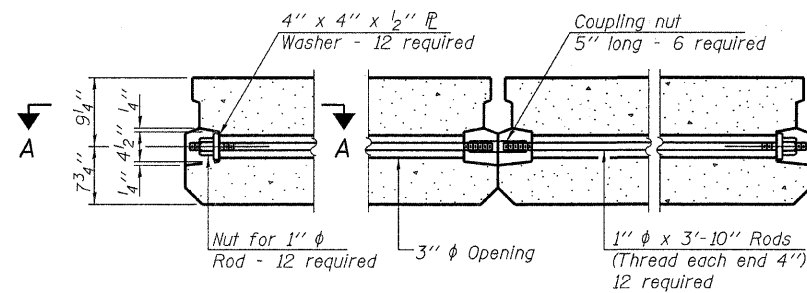
**FABRIC BEARING PAD**  
(Exterior - 4 Req'd.)

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

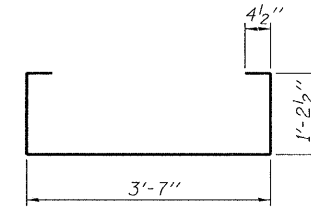
**FIXED**



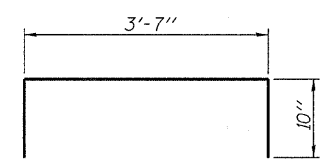
**SECTION A-A**



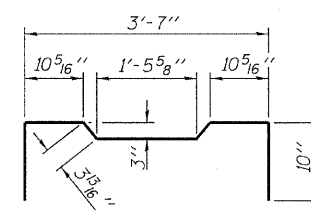
**TYPICAL TRANSVERSE TIE ASSEMBLY**



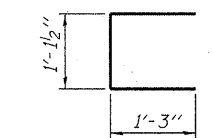
**BAR S(E)**



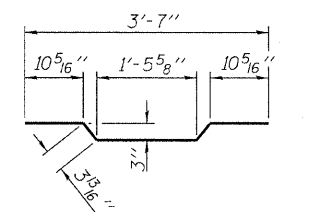
**BAR S1(E)**



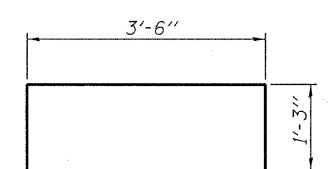
**BAR S2(E)**



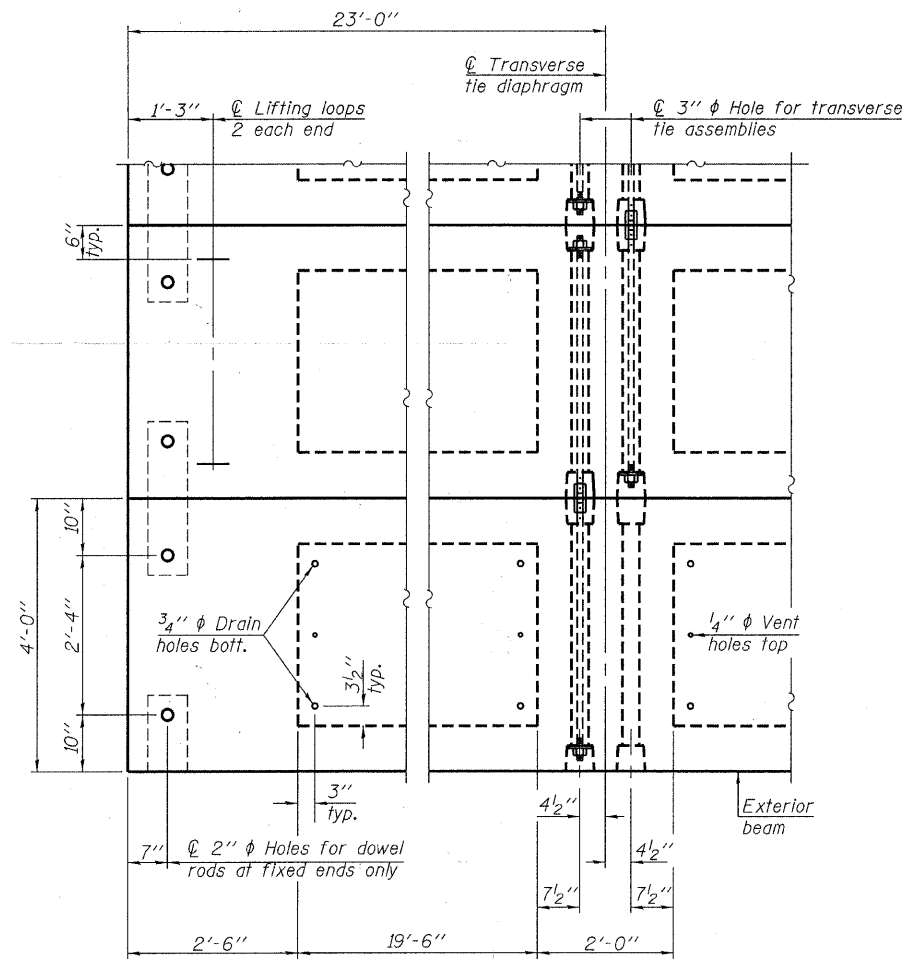
**BAR U(E)**



**BAR A1(E)**



**BAR U1(E)**

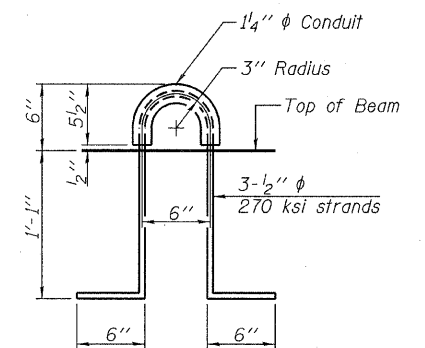


**PLAN VIEW**

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 1/8" 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 bars shall be epoxy coated.



**LIFTING LOOP DETAIL**

**BILL OF MATERIAL**

Precast Prestressed Conc. Deck Bms. (17" depth)	Sq. Ft.	1,288
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PD-1748-OD

7-1-10

FILE NAME = 100078-shr-bridge.dgn	USER NAME =	DESIGNED - A.S.L.	REVISED -
HAMPTON, LENZINI AND RENWICK, INC. 3008 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703		CHECKED - S.W.M.	REVISED -
ILLINOIS PROFESSIONAL DESIGN FIRM L3 / PE / SE CORP. 18-000099	PLOT SCALE =	DRAWN - D.A.B.	REVISED -
	PLOT DATE = 10/27/2011	CHECKED - S.W.M.	REVISED -

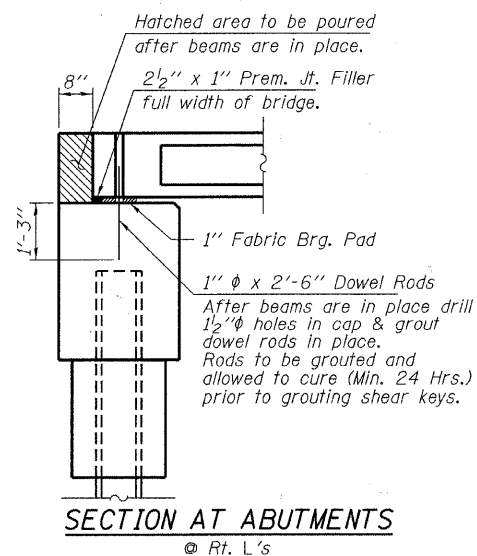
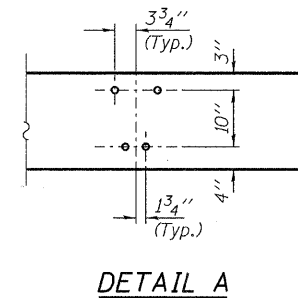
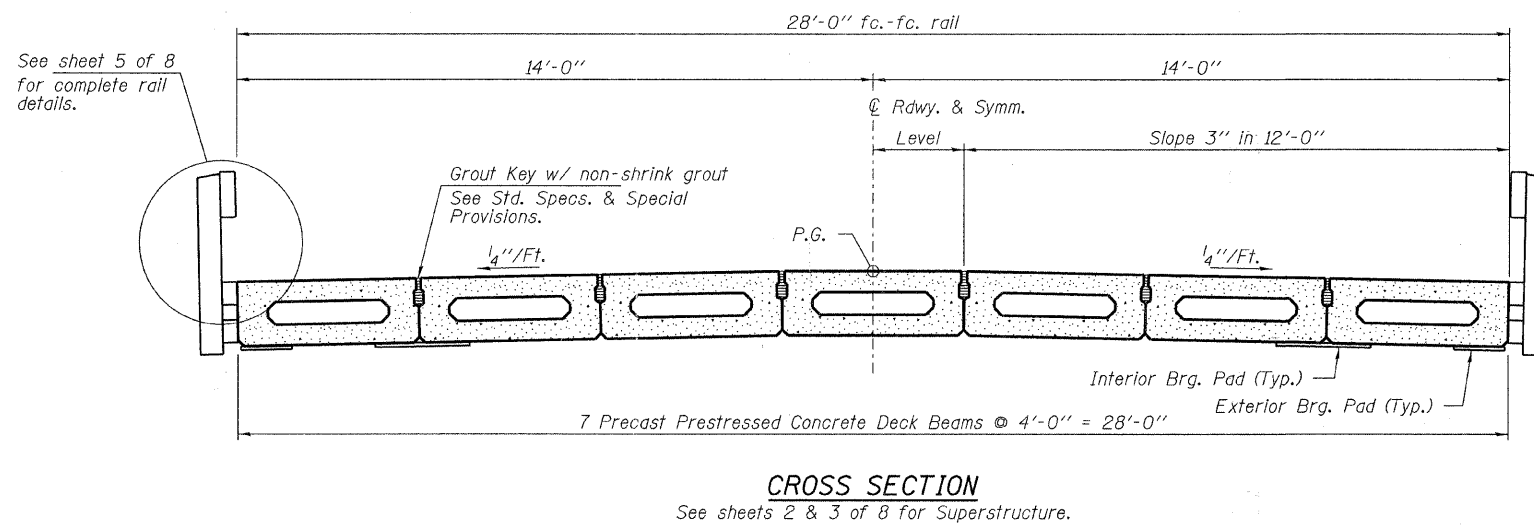
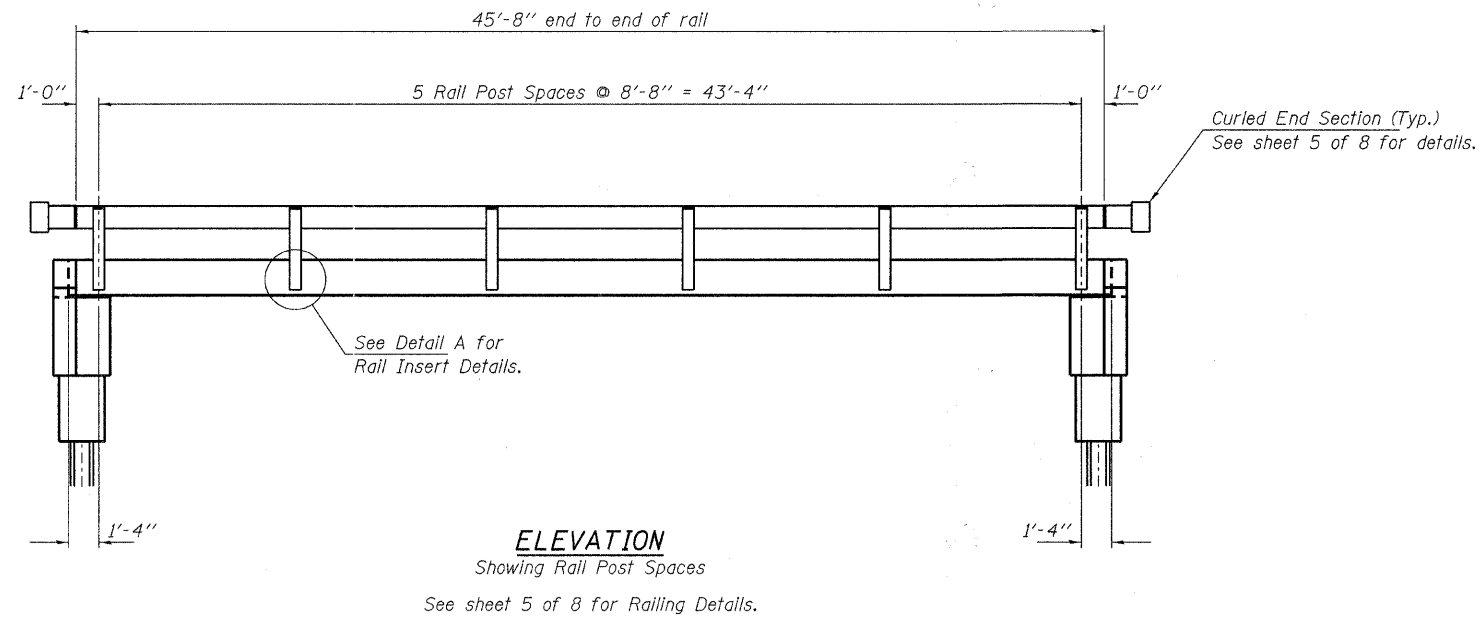
STATE OF ILLINOIS  
EFFINGHAM COUNTY HIGHWAY DEPARTMENT

17" x 48" PPC DECK BEAM DETAILS  
STRUCTURE NO. 025-3323

SHEET NO. 3 OF 8 SHEETS

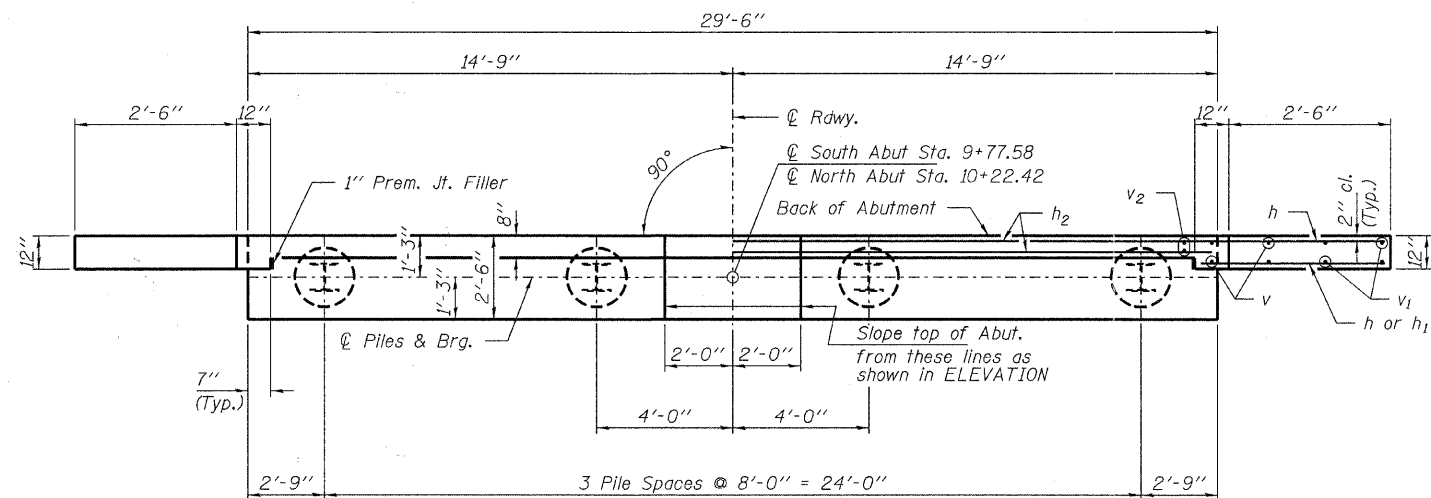
T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
266	10-13112-00-BR	EFFINGHAM	21	16
UNION ROAD DISTRICT		CONTRACT NO. 95669		
ILLINOIS FED. AID PROJECT				



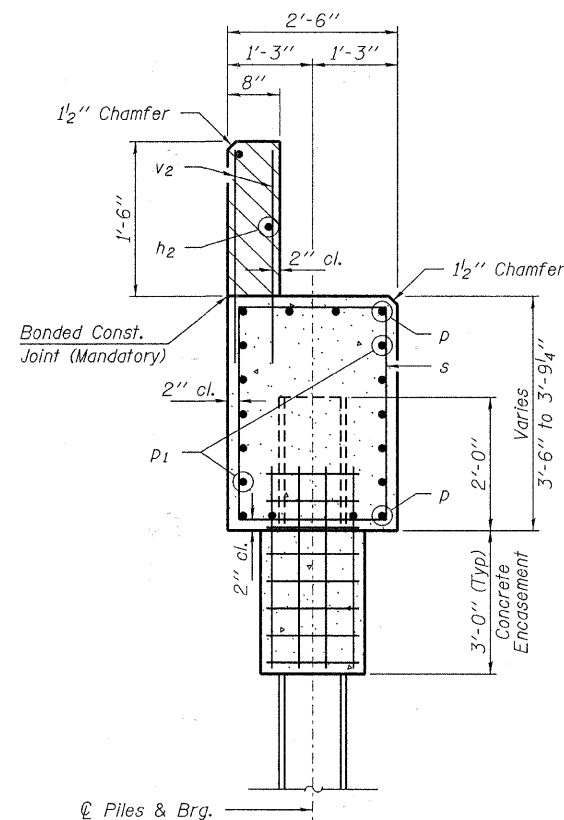


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HAMPTON, LENZINI AND RENWICK, INC. 3008 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703	PLOT SCALE =	CHECKED - S.W.M.	REVISED -			266	10-13112-00-BR	EFFINGHAM	21	17
ILR ILLINOIS PROFESSIONAL DESIGN FIRM L8 / P8 / SE. CGRP. 184-000888	PLOT DATE = 10/27/2011	DRAWN - D.A.B.	REVISED -			UNION ROAD DISTRICT		CONTRACT NO. 95669		
		CHECKED - S.W.M.	REVISED -			SHEET NO. 4 OF 8 SHEETS		ILLINOIS FED. AID PROJECT		



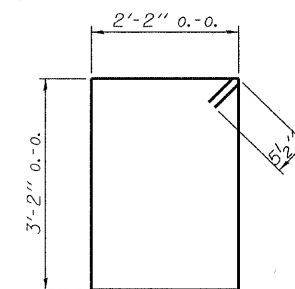


**PLAN**

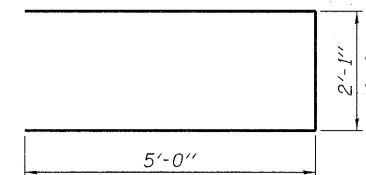


**SECTION A-A**

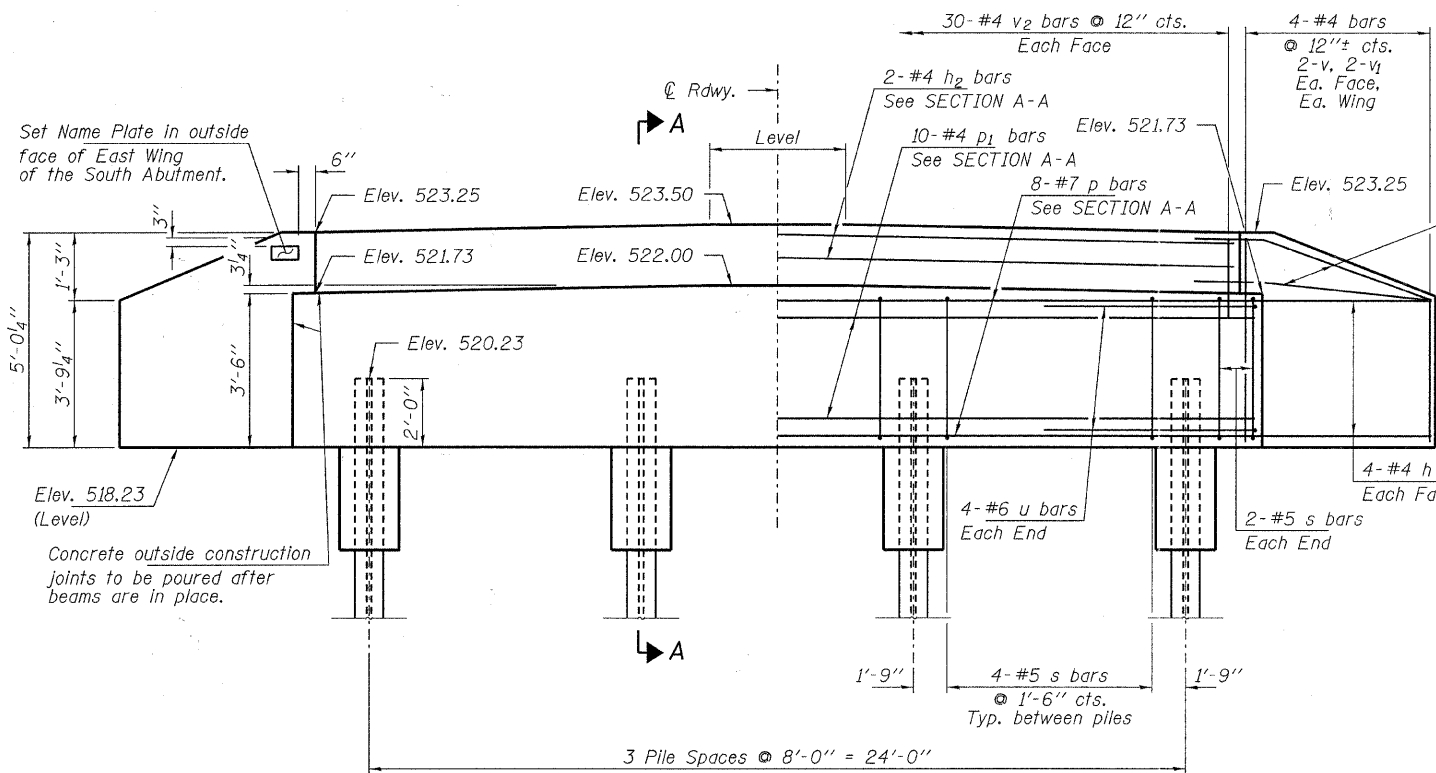
Hatched area to be poured after beams are in place.



**BAR s**



**BAR u**



**ELEVATION**

Note: Extend h bars into abutment cap.

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

**PILE DATA**

Type ----- Steel HP10x42  
No. Req'd. (2. Abutments) ----- 8  
Factored Resistance Available (Rf) ----- 184 Kips/Pile  
Nominal Required Bearing (Rn) ----- 335 Kips/Pile  
Est. Length ----- 25 Ft/Pile

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

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

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	4'-9"	—
h1	8	#4	3'-3"	—
h2	4	#4	29'-2"	—
p	16	#7	29'-2"	—
p1	20	#4	29'-2"	—
s	32	#5	11'-7"	□
u	16	#6	12'-1"	—
v	16	#4	4'-6"	—
v1	16	#4	3'-6"	—
v2	120	#4	2'-4"	—
Concrete Structures			Cu. Yd.	24.0
Concrete Encasement			Cu. Yd.	2.8
Reinforcement Bars			Pound	2,520
Steel Piles HP10x42			Foot	175
Test Pile Steel HP10x42			Each	1
Name Plates			Each	1

FILE NAME = 100098-sh4-bridge.dgn  
USER NAME =  
DESIGNED - A.S.L.  
CHECKED - S.W.M.  
DRAWN - D.A.B.  
CHECKED - S.W.M.  
PLOT SCALE =  
PLOT DATE = 10/27/2011

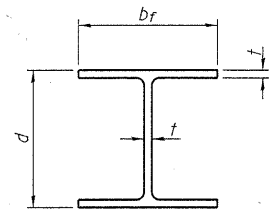
DESIGNED - A.S.L.  
CHECKED - S.W.M.  
DRAWN - D.A.B.  
CHECKED - S.W.M.  
REVISOR -  
REVISOR -  
REVISOR -  
REVISOR -

**STATE OF ILLINOIS  
EFFINGHAM COUNTY HIGHWAY DEPARTMENT**

**ABUTMENTS  
STRUCTURE NO. 025-3323**

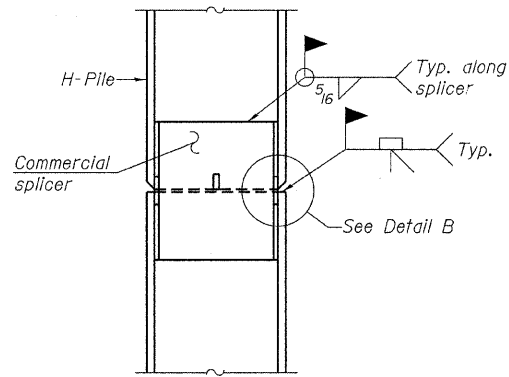
SHEET NO. 6 OF 8 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
266	10-13112-00-BR	EFFINGHAM	21	19
UNION ROAD DISTRICT			CONTRACT NO. 95669	
[ILLINOIS] FED. AID PROJECT				

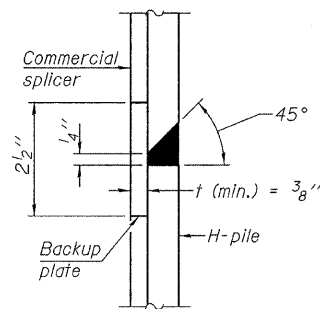


**STEEL PILE TABLE**

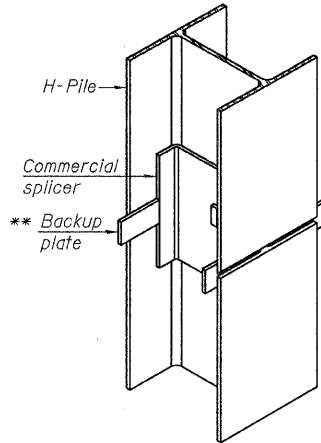
Designation	Depth <i>d</i>	Flange width <i>b<sub>f</sub></i>	Web and Flange thickness <i>t</i>	Encasement diameter <i>A</i>
HP 14x117	14 1/4"	14 7/8"	13/16"	30"
x102	14"	14 3/4"	1/16"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 5/8"	14 5/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	1/16"	24"
x74	12 1/2"	12 1/4"	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"	7/16"	18"



**ELEVATION**

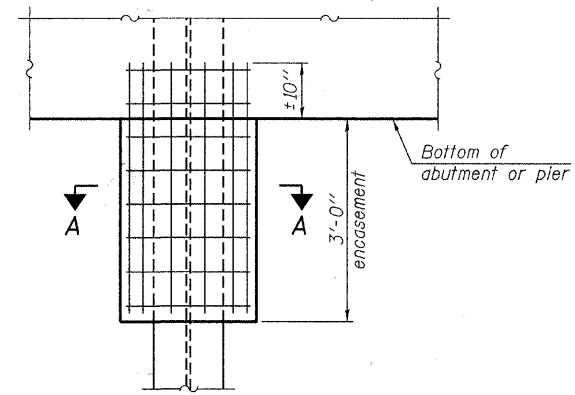


**DETAIL "B"**



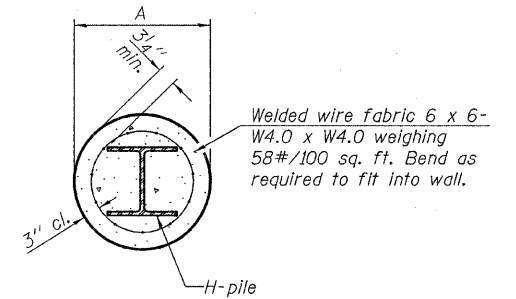
**ISOMETRIC VIEW**

**WELDED COMMERCIAL SPLICE**



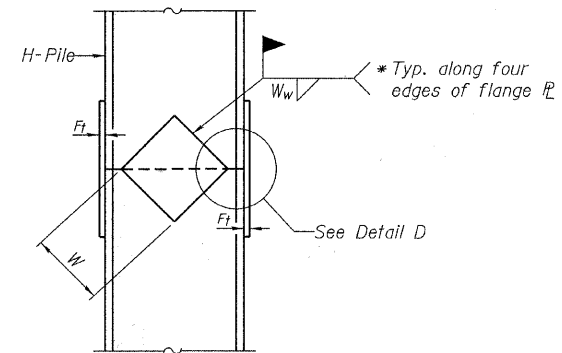
**ELEVATION**

**PILE ENCASEMENT**

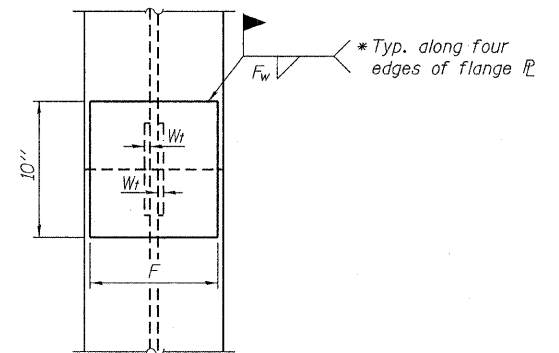


**SECTION A-A**

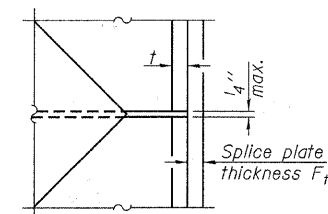
Note:  
Forms for encasement may be omitted when soil conditions permit.



**ELEVATION**



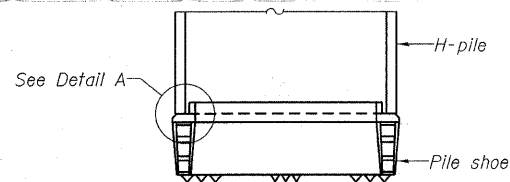
**END VIEW**



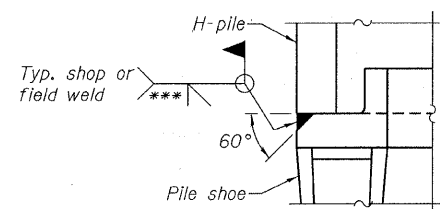
**DETAIL D**

**WELDED PLATE FIELD SPLICE**

Designation	F	F <sub>t</sub>	F <sub>w</sub>	W	W <sub>t</sub>	W <sub>w</sub>
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"

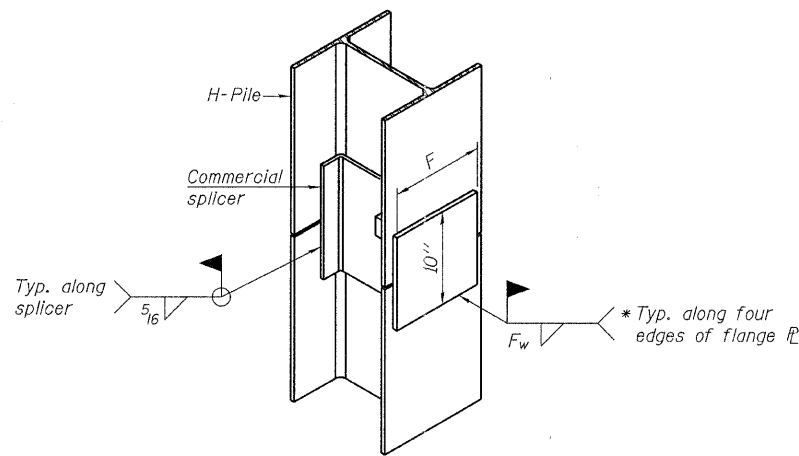


**ELEVATION**



**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.).

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

F-HP

7-1-10

FILE NAME = 100098-ah-bridge.dgn	USER NAME =	DESIGNED - A.S.L.	REVISED -	<b>STATE OF ILLINOIS EFFINGHAM COUNTY HIGHWAY DEPARTMENT</b>	<b>HP PILE DETAILS STRUCTURE NO. 025-3323</b>	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
HAMPTON, LENZINI AND RENWICK, INC. 3335 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703	PLOT SCALE =	CHECKED - S.W.M.	REVISED -			266	10-13112-00-BR	EFFINGHAM	21	20	
ILLINOIS PROFESSIONAL DESIGN FIRM I.S./P.E. REG. NO. 154-000558	PLOT DATE = 10/27/2011	DRAWN - D.A.B.	REVISED -			UNION ROAD DISTRICT CONTRACT NO. 95669					
		CHECKED - S.W.M.	REVISED -			ILLINOIS FED. AID PROJECT					

SHEET NO. 7 OF 8 SHEETS

<b>HOLCOMB FOUNDATION ENGINEERING INC.</b> P.O. Box 88                      618-529-5262 Carbondale, Il. 62903        618-457-8991 fax													
<b>Bridge Foundation Boring Log</b>													
Project: <u>H-11018</u> Bridge <u>Co Rd 1700E over Lucas Creek</u> Date: <u>2/11/2011</u>				Section: <u>10-13112-00-BR</u> Station _____				Bored by: <u>J. Carter</u>					
Structure: _____				Checked By: <u>J. Holcomb</u>				County: <u>Effingham</u>					
Boring No: <u>1</u>	Elevation	N	Qu	tsf	W	%	Surface Water Elev. _____	Elevation	N	Qu	tsf	W	%
Station: _____							Ground Water Elev. <u>90.3</u>						
Offset: _____							Upon Completion <u>91.8</u>						
Ground Surface <u>520.7</u> <u>99.8</u> 0 4" A-3 surface Gray Mottled Brown Silty CLAY to Clayey SILT (A-6 to A-4)													
		4	1.38	22			<u>495.7</u> <u>74.8</u> -25	63	6.55	8			
517.2 <u>96.3</u> Brown Sandy CLAY to Clayey SAND (A-6 to A-2-4)													
	-5	4	0.78	22			End of Boring @ -25.0'						
513.2 <u>92.3</u> Gray Sandy CLAY (A-6) with pebbles													
		17	--	17			-30						
	-10	66	5.95	7									
		86	4.75	8			-35						
	-15	64	6.85	8									
		72	3.75	8			-40						
	-20	57	4.55	8									
		63	6.85	9									
N = Standard Penetration Test    Qu-Unconfined Compressive    B = Bulge Failure Blows per foot to drive 2" O.D.    Strength in tons/sq.ft.        S = Shear Failure Split Spoon Sampler 12" with        w-Water Content-percentage    E = Estimated Value a 140 lbs. hammer falling 30"        of oven dry weight-%        P = Penetrometer													

U.S.G.S. Elev. 520.9 = 100.0

<b>HOLCOMB FOUNDATION ENGINEERING INC.</b> P.O. Box 88                      618-529-5262 Carbondale, Il. 62903        618-457-8991 fax													
<b>Bridge Foundation Boring Log</b>													
Project: <u>H-11018</u> Bridge <u>Co Rd 1700E over Lucas Creek</u> Date: <u>2/11/2011</u>				Section: <u>10-13112-00-BR</u> Station _____				Bored by: <u>J. Carter</u>					
Structure: _____				Checked By: <u>J. Holcomb</u>				County: <u>Effingham</u>					
Boring No: <u>2</u>	Elevation	N	Qu	tsf	W	%	Surface Water Elev. _____	Elevation	N	Qu	tsf	W	%
Station: _____							Ground Water Elev. <u>95.1</u>						
Offset: _____							Upon Completion <u>85.1</u>						
Ground Surface <u>522.0</u> <u>101.1</u> 0 4" A-3 surface Brown Sandy CLAY (A-6)													
		5	1.25	15			-25	48	9.25	9			
518.5 <u>97.6</u> Brown Mottled Gray Silty to Sandy CLAY (A-6)													
	-5	2	1.08	25				88	--	10			
492.0 <u>71.1</u> End of Boring @ -30.0'													
		2	0.68	21			-30	132	4.45	11			
512.5 <u>91.6</u> Gray Sandy CLAY (A-6) with pebbles													
	-10	4	1.95	12									
		48	8.25	8			-35						
	-15	48	9.75	8									
505.0 <u>84.1</u> Gray Sandy CLAY (A-6) with sand lenses													
		121	8.25	8			-40						
	-20	61	7.15	9									
		51	6.75	9									
N = Standard Penetration Test    Qu-Unconfined Compressive    B = Bulge Failure Blows per foot to drive 2" O.D.    Strength in tons/sq.ft.        S = Shear Failure Split Spoon Sampler 12" with        w-Water Content-percentage    E = Estimated Value a 140 lbs. hammer falling 30"        of oven dry weight-%        P = Penetrometer													

U.S.G.S. Elev. 520.9 = 100.0

BORINGS

FILE NAME = 100098-ah-bridge.dgn	USER NAME =	DESIGNED - A.S.L.	REVISED -	<b>STATE OF ILLINOIS</b> <b>EFFINGHAM COUNTY HIGHWAY DEPARTMENT</b>	<b>BORINGS</b> <b>STRUCTURE NO. 025-3323</b>	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND RENWICK, INC.		CHECKED - S.W.M.	REVISED -			266	10-13112-00-BR	EFFINGHAM	21	21
3305 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62709	PLOT SCALE =	DRAWN - D.A.B.	REVISED -			UNION ROAD DISTRICT		CONTRACT NO. 95669		
ILLINOIS PROFESSIONAL DESIGN FIRM S.E. / P.E. / GE COND. - 184-000059	PLOT DATE = 10/27/2011	CHECKED - S.W.M.	REVISED -			SHEET NO. 8 OF 8 SHEETS		ILLINOIS FED. AID PROJECT		