

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 155	07-20124-00-BR	McLEAN	17	1
FED. ROAD DIST. NO.		ILLINOIS CONTRACT NO. 91442		

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**  
**DIVISION OF HIGHWAYS**

**PLANS FOR PROPOSED  
HIGHWAY BRIDGE PROGRAM**

**PROJECT BROS-0113(031)**  
**SECTION 07-20124-00-BR**  
**LAWNDALE ROAD DISTRICT**  
**McLEAN COUNTY**  
**T.R. 155 / MACKINAW RIVER ROAD**  
**PROPOSED STRUCTURE NO. 057-4814**  
**HAMMITT BRIDGE**  
**C-95-336-10**

**INDEX OF SHEETS**

SHEET NO.	DESCRIPTION
1.	COVER SHEET
2.	SUMMARY OF QUANTITIES AND GENERAL NOTES
3.	TYPICAL SECTIONS
4.	PLAN AND PROFILE
5.-9.	STATION CROSS SECTIONS
10.-16	BRIDGE PLANS
17.	BORINGS

HIGHWAY STANDARDS:  
000001-05 STANDARD SYMBOLS, ABBREVIATIONS, AND PATTERNS  
515001-03 NAME PLATE FOR BRIDGES  
701901-01 TRAFFIC CONTROL DEVICES  
BLR 21-8 TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS  
**280001-05 TEMPORARY EROSION CONTROL SYSTEMS**

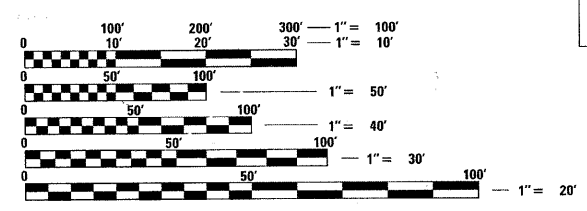
**UTILITIES**

CORN BELT ENERGY  
ONE ENERGY PLACE  
P.O. BOX 815  
BLOOMINGTON, IL 61702

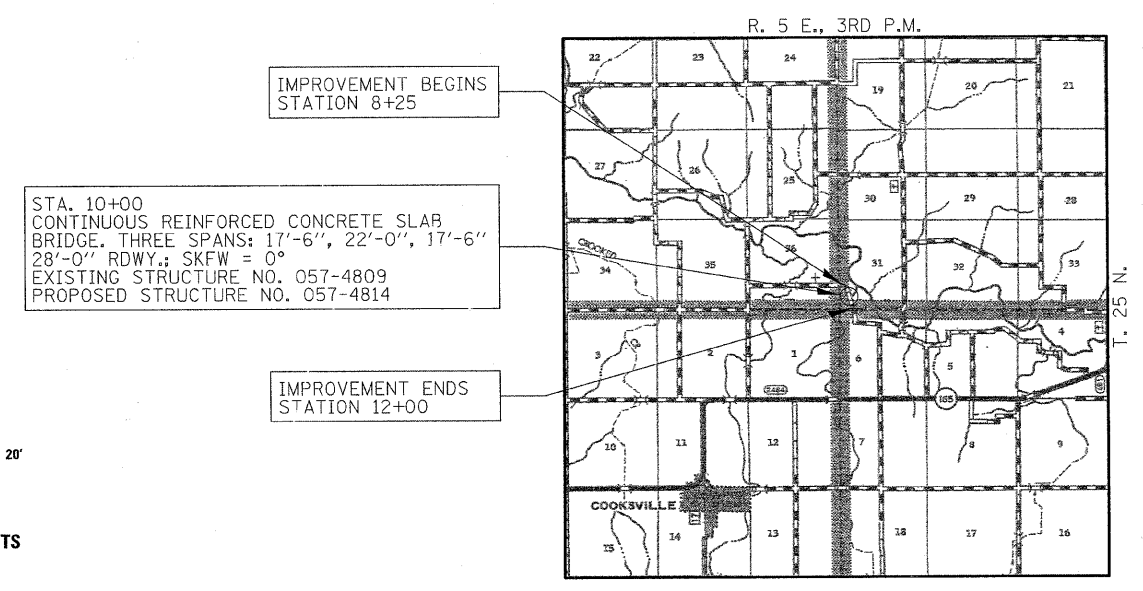
VERIZON NORTH  
109 EAST MARKET  
BLOOMINGTON, IL 61701



**FUNCTIONAL CLASSIFICATION:** LOCAL ROAD (0-250 ADT)  
**DESIGN SPEED:** 30 MPH  
**DESIGN TRAFFIC:** 50 ADT (2005)



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.

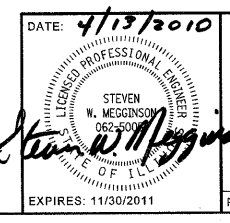


STA. 10+00  
CONTINUOUS REINFORCED CONCRETE SLAB BRIDGE. THREE SPANS: 17'-6", 22'-0", 17'-6"  
28'-0" RDWY.; SKFW = 0°  
EXISTING STRUCTURE NO. 057-4809  
PROPOSED STRUCTURE NO. 057-4814

**LOCATION MAP**  
APPROXIMATE SCALE: 0 1 MILE  
NET LENGTH OF SECTION = 375 FEET = 0.071 MILES



<b>ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	
APPROVED <u>APRIL 15 2010</u> <i>Eric J. [Signature]</i>	COUNTY ENGINEER
APPROVED <u>April 15 2010</u> <i>Jack [Signature]</i>	ROAD COMMISSIONER
PASSED <u>5/11 2010</u> <i>Debra [Signature]</i>	DISTRICT FIVE ENGINEER OF LOCAL ROADS & STREETS
Released For Bid Based on Limited Review <u>MAY 10 2010</u> <i>[Signature]</i>	DEPUTY DIRECTOR OF HIGHWAYS REGION THREE 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.hirengineering.com  
184.000959  
ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORPORATION

**CONTRACT NO. 91442**

DATE: 4/13/2010  
EXPIRES: 11/30/2011  
PROJECT NUMBER: 07.0445.130  
DATE: 04/13/10

SUMMARY OF QUANTITIES			
CODE NO.	ITEM	CONSTRUCTION CODE X020-2A	
		UNIT	TOTAL
20200100	EARTH EXCAVATION	CU YD	190
20300100	CHANNEL EXCAVATION	CU YD	250
20400800	FURNISHED EXCAVATION	CU YD	10
20700110	POROUS GRANULAR EMBANKMENT	TON	74
25001000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.3
28000305	TEMPORARY DITCH CHECKS	FOOT	16
28000400	PERIMETER EROSION BARRIER	FOOT	495
28101500	RIPRAP, SPECIAL	SQ YD	277
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	510
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50300225	CONCRETE STRUCTURES	CU YD	28.6
50300255	CONCRETE SUPERSTRUCTURE	CU YD	72.8
50300280	CONCRETE ENCASEMENT	CU YD	13.6
50300300	PROTECTIVE COAT	SQ YD	203
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	24,130
50900205	STEEL RAILING, TYPE S1	FOOT	114
51201400	FURNISHING STEEL PILES HP10X42	FOOT	540
51202305	DRIVING PILES	FOOT	540
51203400	TEST PILE STEEL HP10X42	EACH	2
51500100	NAME PLATES	EACH	1
542D0220	PIPE CULVERTS, CLASS D, TYPE 1 15"	FOOT	68
59100100	GEOCOMPOSITE WALL DRAIN	SQ YD	28
60109580	PIPE UNDERDRAINS FOR STRUCTURES 4"	FOOT	100
67100100	MOBILIZATION	L SUM	1
70101700	TRAFFIC CONTROL AND PROTECTION	L SUM	1
78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	4

^ SEE SPECIAL PROVISIONS

\* SPECIALTY ITEMS

HORIZONTAL ALIGNMENT		
LOCATION	NORTHING	EASTING
P.O.B. STA. 5+00.00	1424254.4000	886181.5200
P.O.E. STA. 15+00.02	1423294.2200	886460.8800

TEMPORARY DITCH CHECKS	
	28000305 FOOT
TR 155	
LT STA. 8+75.00	8
RT STA. 9+80.00	8
TOTAL	16

PERIMETER EROSION BARRIER	
	28000400 FOOT
TR 155	
LT STA. 8+75.00 TO LT. STA. 9+90.00	115
RT STA. 10+10.00 TO RT. STA. 12+00.00	190
LT STA. 10+10.00 TO LT. STA. 12+00.00	190
TOTAL	495

### GENERAL NOTES

- ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE STATE OF ILLINOIS "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION ADOPTED JANUARY 1, 2007," THESE PLANS AND THE SPECIAL PROVISIONS INCLUDED IN THE CONTRACT DOCUMENTS.
- ALL CLEARING AND GRUBBING, FENCE REMOVAL AND REMOVAL OF EXISTING DRAINAGE STRUCTURES SHALL BE INCLUDED IN THE COST OF EARTH EXCAVATION. THE REMOVAL OF THE EXISTING BITUMINOUS SURFACE WILL BE PAID FOR AS EARTH EXCAVATION. ALL BITUMINOUS MATERIAL SHALL BE PROPERLY DISPOSED OF BY THE CONTRACTOR IN A METHOD APPROVED BY THE ENGINEER. PROPER DISPOSAL OF BITUMINOUS MATERIAL SHALL BE INCLUDED IN THE COST OF EARTH EXCAVATION AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
- THE LOCATION OF EXISTING GAS MAINS, ELECTRIC POWER LINES, TELEPHONE LINES AND OTHER UTILITIES AS SHOWN ON THE PLANS ARE BASED ON CAREFUL FIELD 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.
- 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, TYPE B	2.05 TON/CU YD
POROUS GRANULAR EMBANKMENT	2.00 TON/CU YD
- THE AREA TO BE SEEDED SHALL CONSIST OF ALL DISTURBED EARTH SURFACES WITHIN THE R.O.W. AS DIRECTED BY THE ENGINEER.
- THE TOP SURFACE OF THE DECK SHALL BE SCREEDED WITH A STRAIGHT EDGE AND THEN FINISHED WITH A WOODEN HAND FLOAT. FURTHER FINISHING SHALL BE DELAYED UNTIL THE WATER SHEEN APPEARS, BUT NOT TO THE POINT OF RENDERING FURTHER MANIPULATION INEFFECTIVE. THE SURFACE THEN SHALL BE ROUGHENED WITH A SUITABLE STIFF-BRISTLED BROOM OR WIRE BRUSH DRAWN IN TRANSVERSE DIRECTION REMOVING ANY LAITANCE PRESENT AND BREAKING UP THE WATER SHEEN. THE CORRUGATIONS FORMED SHALL BE UNIFORM IN APPEARANCE AND IN NO CASE MORE THAN 1/4 INCH IN DEPTH.
- THE REVISION NUMBER INDICATED FOR THE STANDARDS LISTED IN THE INDEX SHEETS SHALL BE USED IN THE CONSTRUCTION OF THIS SECTION.

### EARTHWORK SCHEDULE

LOCATION	EARTH EXCAVATION	CHANNEL EXCAVATION	SHRINKAGE FACTOR	PERCENT USED	EARTH EXCAVATION ADJUSTED FOR SHRINKAGE	EMBANKMENT REQUIRED	EARTHWORK BALANCE
	CU.YD.	CU.YD.			CU.YD.	CU.YD.	CU.YD.
TR 155							
STA 8+25 TO STA 9+70.25	122		25.00%	100.00%	92	66	26
STA 9+70.25 TO STA 10+29.75	67		25.00%	100.00%	50	188	-138
CHANNEL EXCAVATION ENTRANCE		250	25.00%	70.00%	131	0	131
						27	-27
TOTAL	189	250			273	281	-8
USE	190						-10

FURNISHED EXCAVATION = 10 CU YDS

### SEEDING TABLE

LOCATION	CLASS 2 (SPECIAL)
	25001000 ACRE
TR 155	
STA. 8+25.00 TO STA. 9+70.25	0.105
STA. 10+29.75 TO STA. 12+00.00	0.122
TOTAL	0.227
USE	0.300

### ROADWAY SCHEDULE

LOCATION	AGGREGATE SURFACE COURSE, TYPE B
	40200800 TON
TR 155	
STA. 8+25.00 TO STA. 9+70.25	207
STA. 10+29.75 TO STA. 12+00.00	245
ENTRANCES	58
TOTAL	510
USE	510

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USER NAME =

DESIGNED - A.S.L.

REVISED -

DRAWN - D.A.B.

REVISED -

PLOT SCALE =

CHECKED - S.W.M.

REVISED -

PLOT DATE = 5/3/2010

DATE - 03/22/10

REVISED -

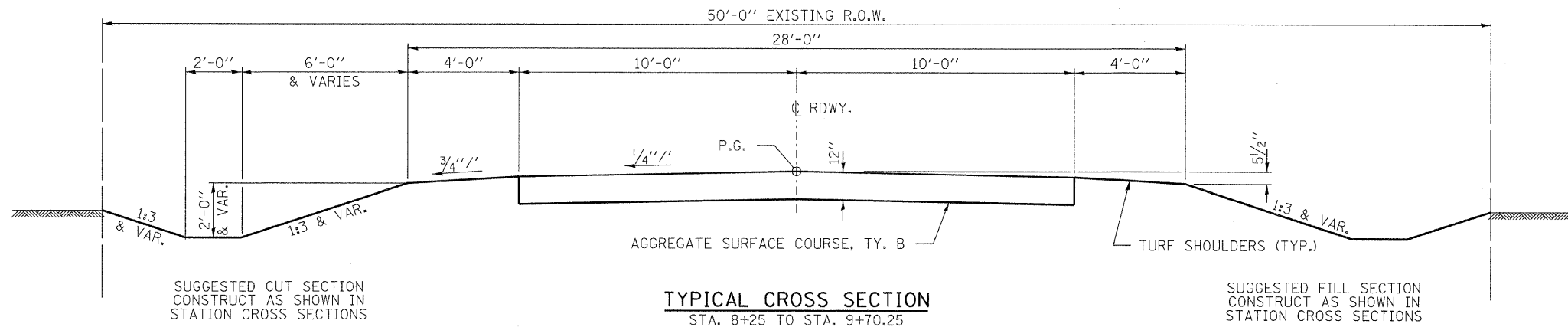
STATE OF ILLINOIS  
McLEAN COUNTY HIGHWAY DEPARTMENT



SUMMARY OF QUANTITIES AND GENERAL NOTES  
MACKINAW RIVER ROAD

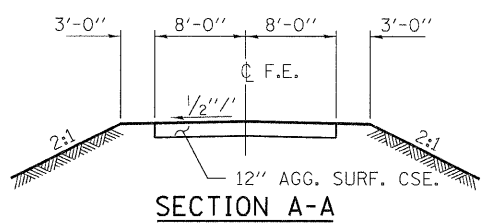
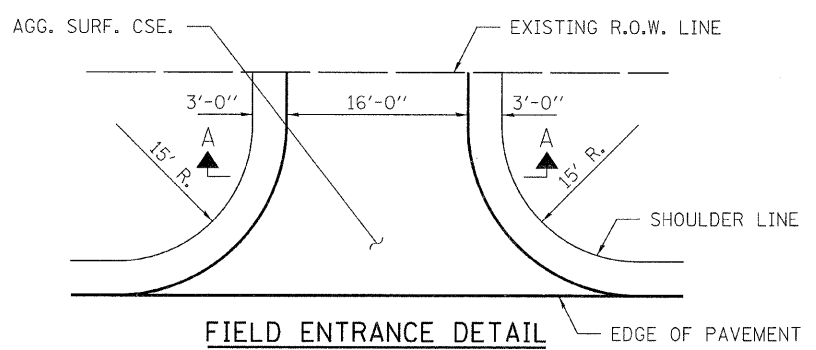
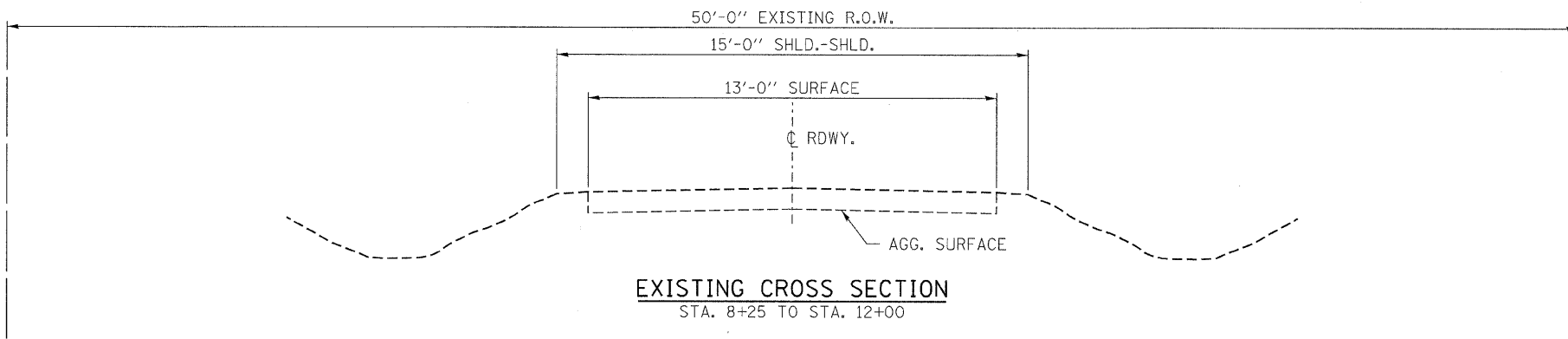
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LAWDALE ROAD DISTRICT		CONTRACT NO. 91442		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT BR05-0113031		

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



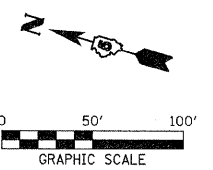
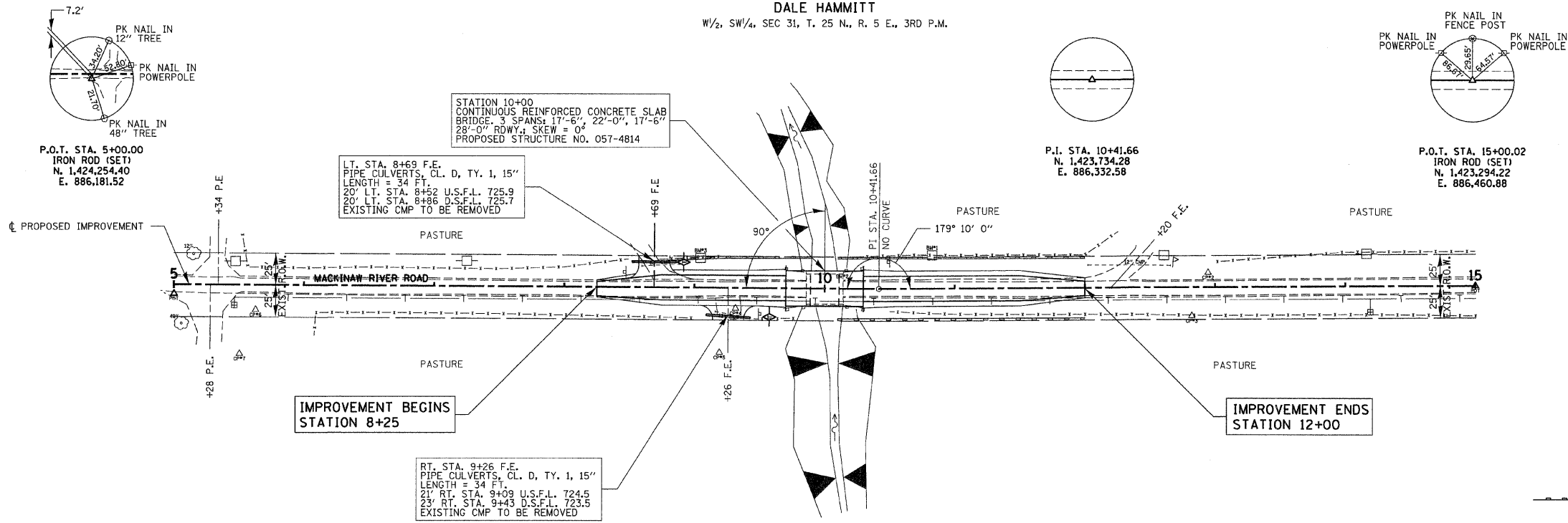
**TYPICAL CROSS SECTION**  
 STA. 8+25 TO STA. 9+70.25  
 STA. 10+29.75 TO STA. 12+00

TRANSITION FROM THE PROPOSED ROADWAY TO THE EXISTING ROADWAY IS TO BE CONSTRUCTED FROM STA. 8+25 TO STA. 8+75 AND STA. 10+50 TO STA. 11+00. SEE SHEET 10 FOR TRANSITION AT BRIDGE.



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		DATE - 03/22/10	REVISED -					FED. ROAD DIST. NO. [ILLINOIS] FED. AID PROJECT BR05-0113031				
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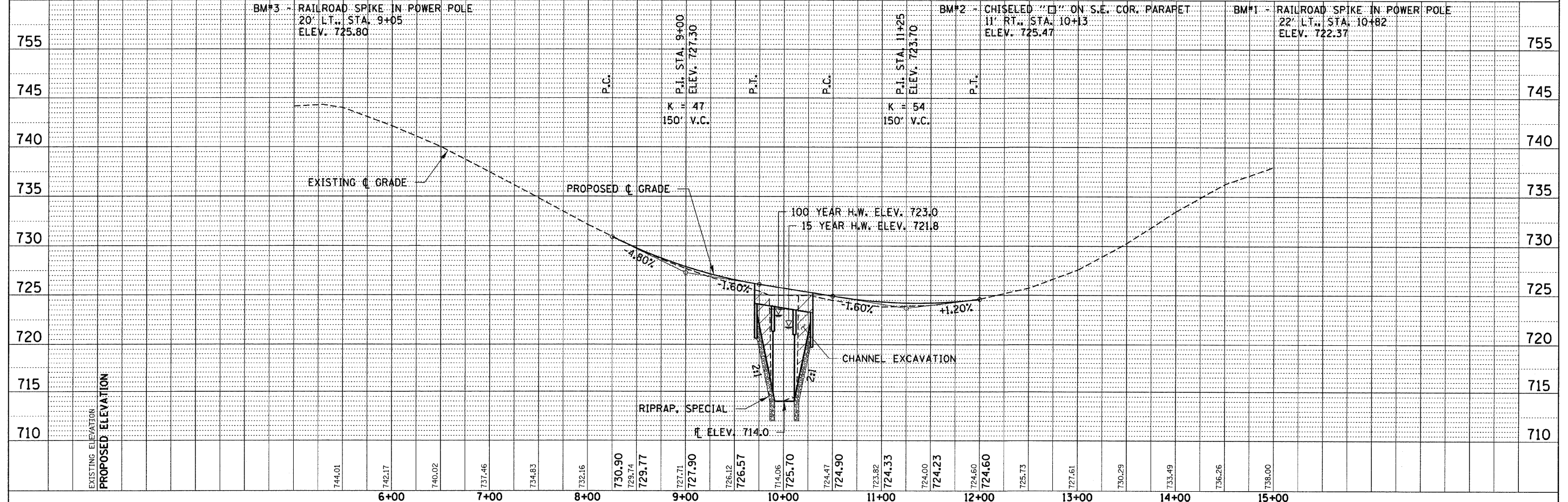
DALE HAMMITT  
W/2, SW/4, SEC 31, T. 25 N., R. 5 E., 3RD P.M.



**LEGEND**  
 TEMPORARY EROSION CONTROL BARRIER  
 TEMPORARY DITCH CHECK

**EXISTING STRUCTURE NO. 057-4809**  
 STATION 10+00 - SINGLE SPAN CAST IN PLACE  
 CONCRETE BRIDGE WITH CONCRETE CURB ON CLOSED  
 TIMBER ABUTMENTS AND WINGWALLS.  
 27.4' FC.-FC. ABUTS; 28.3' o.-o. DECK

R. HAMMITT  
SW/4, SW/4, SEC 31, T. 25 N., R. 5 E., 3RD P.M.



FILE NAME = 870448-shr-pp1.dgn	USER NAME =	DESIGNED - J.W.F.	REVISED -	<b>STATE OF ILLINOIS</b> <b>McLEAN COUNTY HIGHWAY DEPARTMENT</b> 	<b>PLAN &amp; PROFILE</b> <b>MACKINAW RIVER ROAD</b>		T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.				
		DRAWN - D.T.M.	REVISED -		SCALE:	SHEET NO.	OF	SHEETS	STA.	TO STA.	155	07-20124-00-BR	McLEAN	17	4
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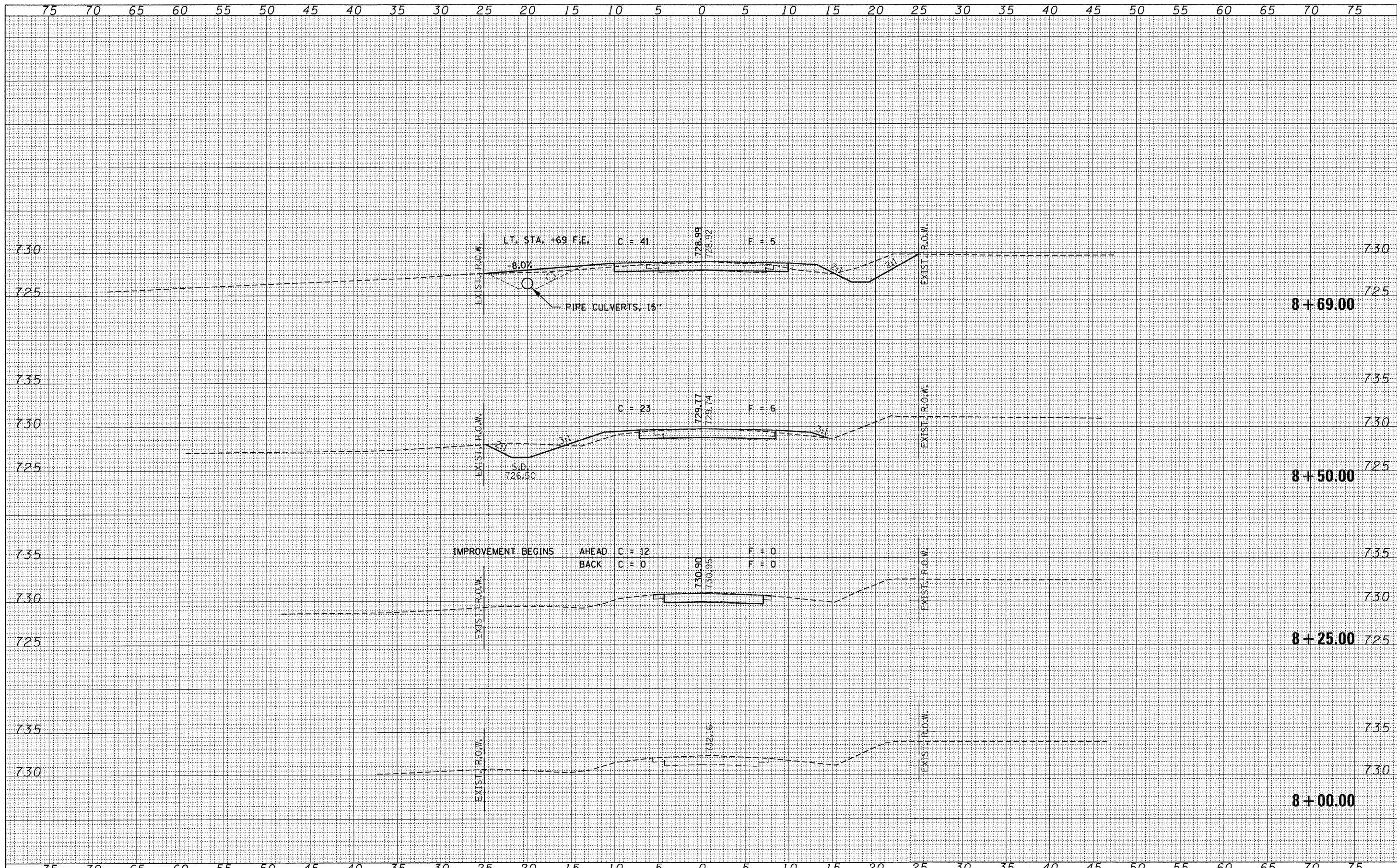
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FINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
NO.	TEMPLATE		
	AS		
	CHECKED		
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ORIGINAL SURVEY	SURVEYED	BY	DATE
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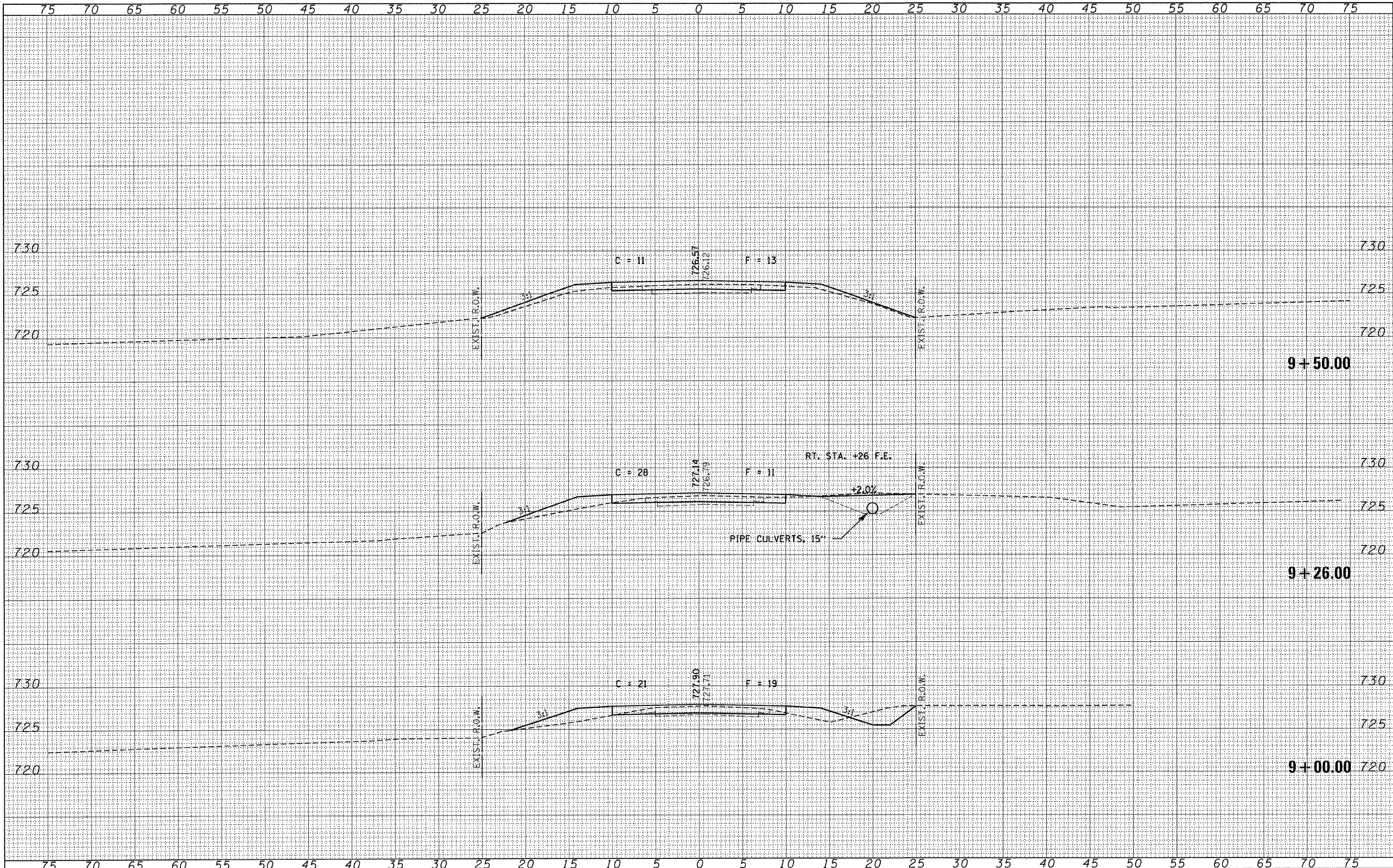


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	DATE - 04/17/09	REVISED -	FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT BR05-0113031									



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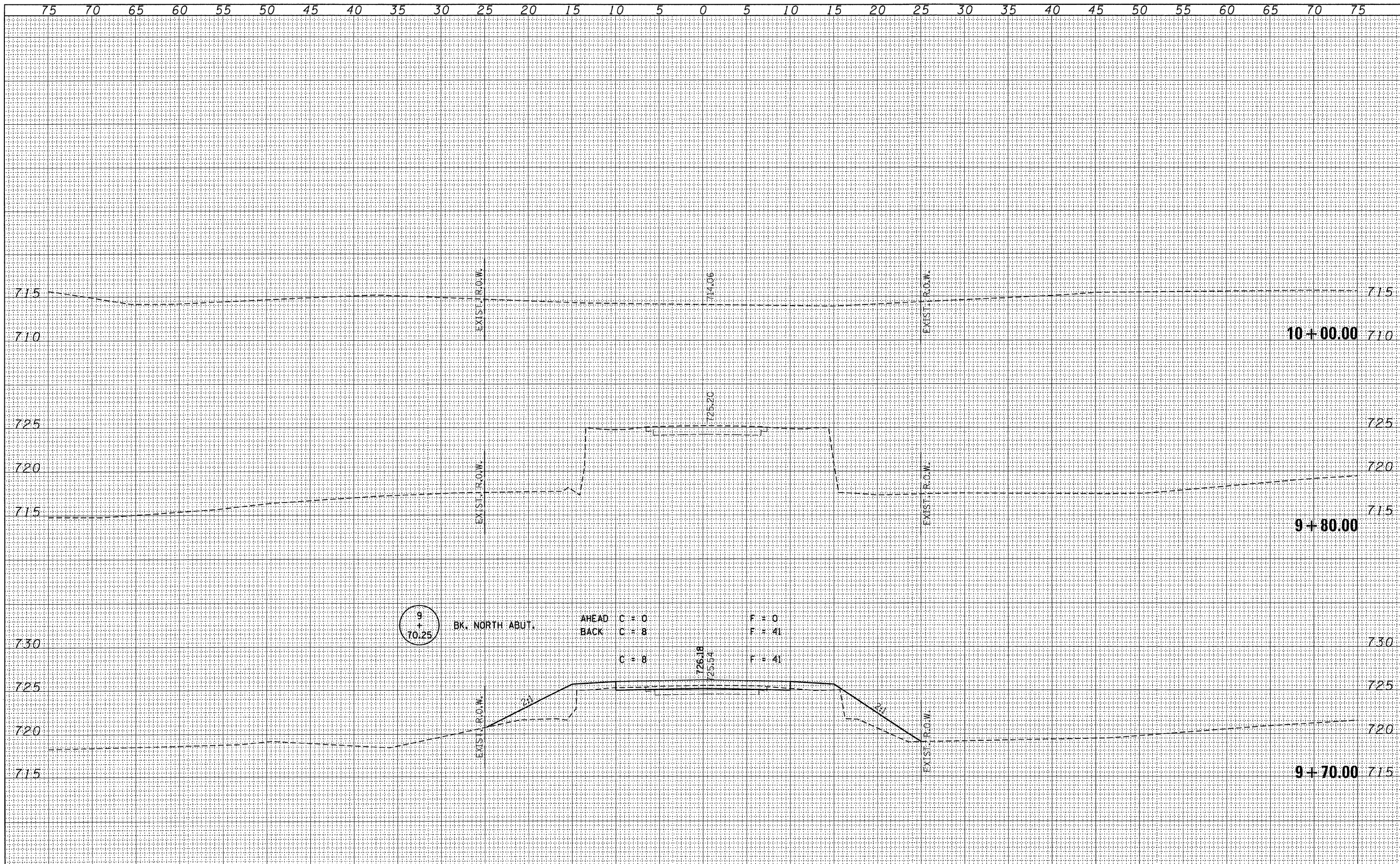


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		DATE - 04/17/09	REVISED -					FED. ROAD DIST. NO.				ILLINOIS FED. AID PROJECT BR05-0113(031)
PLOT SCALE =				SCALE:		SHEET NO.	OF	SHEETS	STA. 9+00.00	TO STA. 9+50.00		



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REVIEWED		
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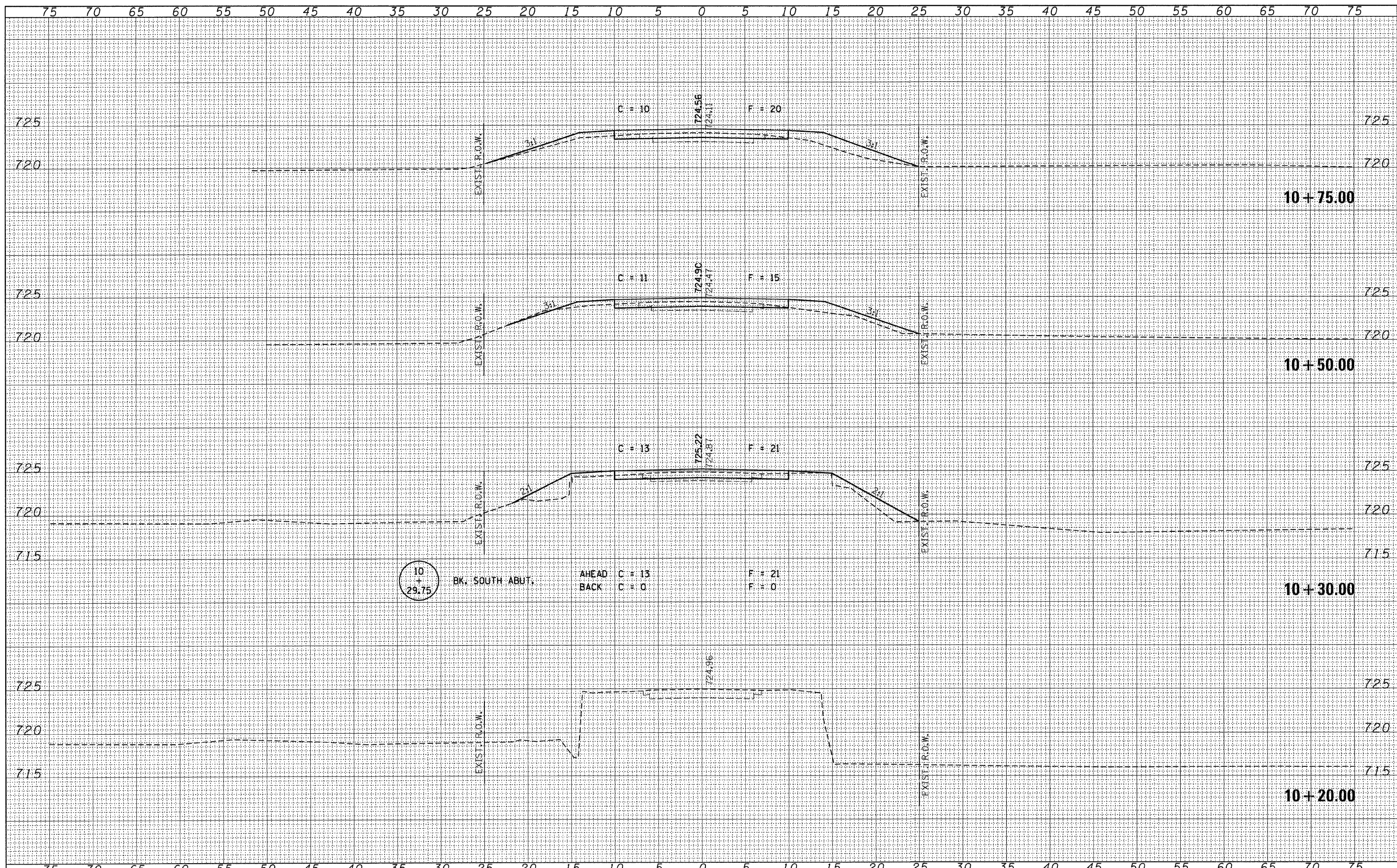


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		DRAWN - D.T.M.	REVISED -					155	07-20124-00-BR	McLEAN	17	7
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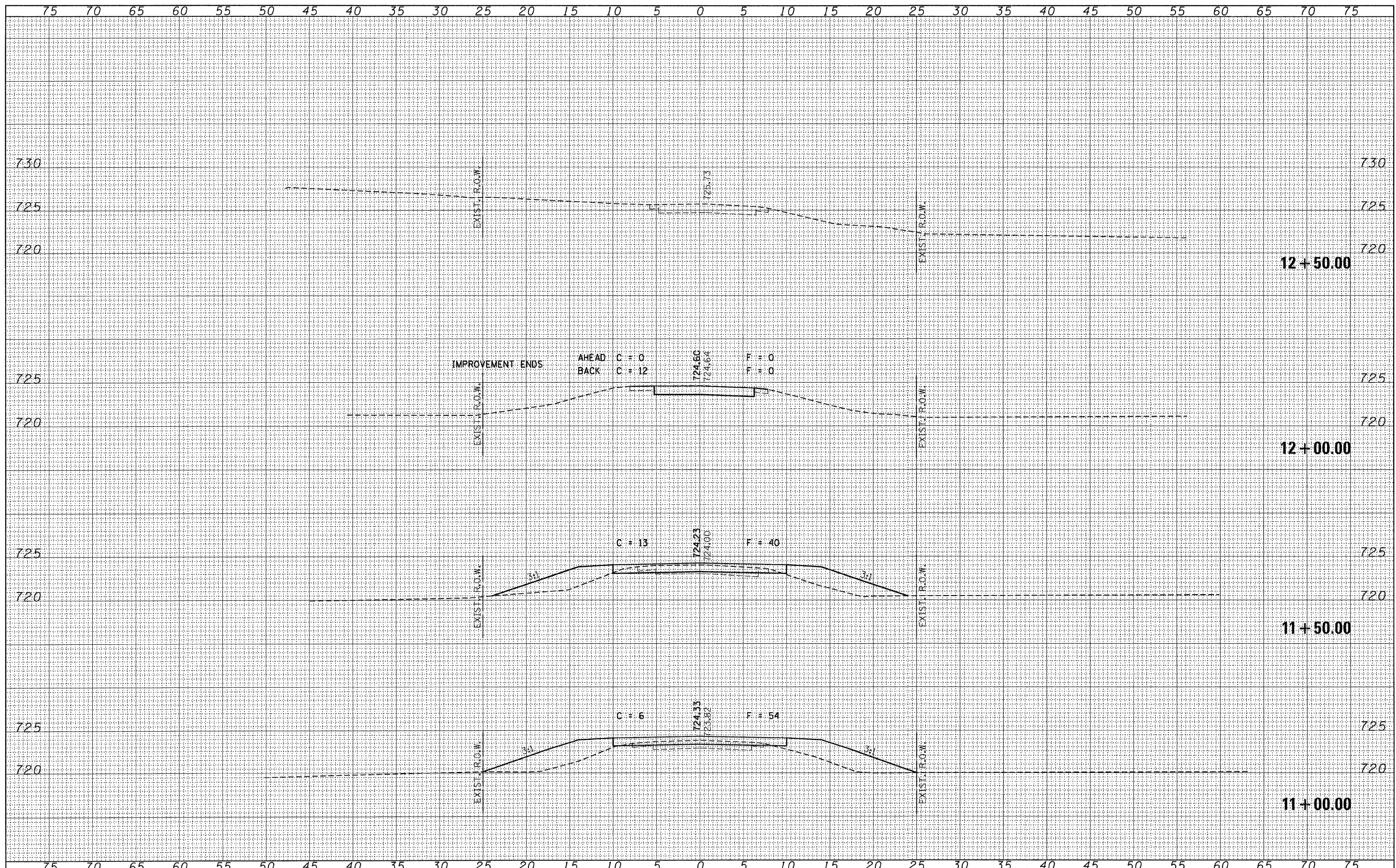
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NOTE BOOK	
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		DRAWN - D.T.M.	REVISED -			155	07-20124-00-BR	McLEAN	17	8		
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		DATE - 04/17/09	REVISED -			FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT BROS-01131031J						
PLOT SCALE =		DATE = 04/17/09		SCALE:		SHEET NO. OF SHEETS	STA. 10+20.00 TO STA. 10+75.00					





BY	DATE
SURVEYED	
PLOTTED	
TEMPLATE	
NOTE BOOK	
AREAS CHECKED	
NO.	

BY	DATE
SURVEYED	
PLOTTED	
TEMPLATE	
NOTE BOOK	
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NO.	

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 PLOT DATE = 4/13/2010

DESIGNED - J.W.F.	REVISED -
DRAWN - D.T.M.	REVISED -
CHECKED - S.W.M.	REVISED -
DATE - 04/17/09	REVISED -

**STATE OF ILLINOIS**  
**McLEAN COUNTY HIGHWAY DEPARTMENT**

**HLR**

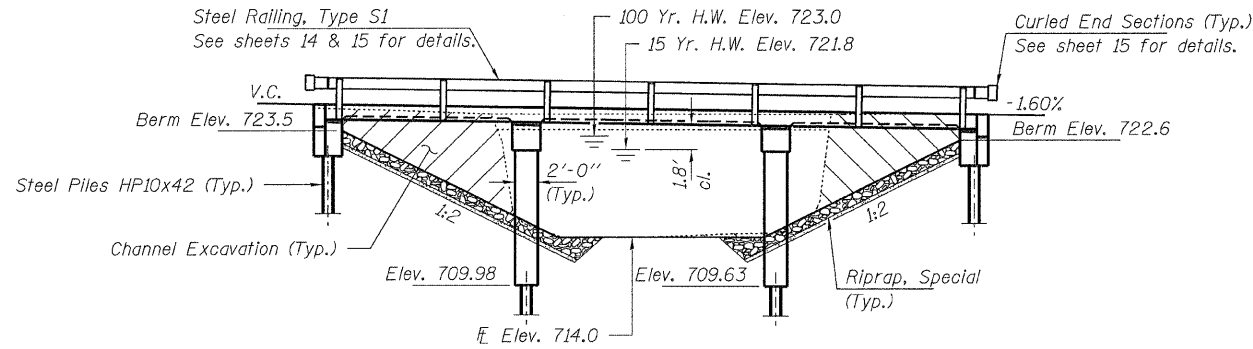
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<b>CROSS SECTIONS</b>		T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
<b>MACKINAW RIVER ROAD</b>		155	07-20124-00-BR	McLEAN	17	9
		LAWDALE ROAD DISTRICT		CONTRACT NO. 91442		
		FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT BR05-0113031				

BENCHMARK: Chiseled "□" on Southeast corner of parapet. 11' Rt., Sta. 10+13, Elev. 725.47

EXISTING STRUCTURE: Single span cast in place concrete bridge with concrete curbs on closed timber abutments and wingwalls. 27.4' fc.-fc. abuts.; 28.3' o.-o. deck. Structure closed to traffic.

No Salvage



ELEVATION

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 South Abutment and Pier 1 or approved by the Engineer before ordering the remainder of piles.

Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60 (IL Modified). See Special Provisions.

Excavation required to construct the Abutments and Piers 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.

The top surface of the deck shall be screeded with a straight edge and then finished with a wooden hand float. Further finishing shall be delayed until the water sheen appears, but not to the point of rendering further manipulation ineffective. The surface then shall be roughened with a suitable stiff-bristled broom or wire brush drawn in transverse direction removing any laitance present and breaking up the water sheen. The corrugations formed shall be uniform in appearance and in no case more than 1/4" in depth.

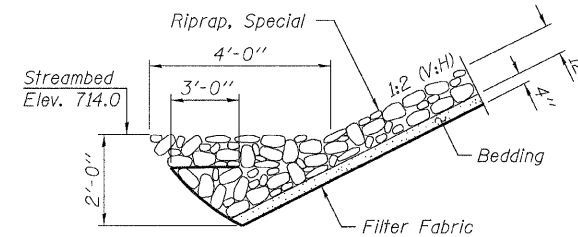
Protective Coat shall be applied to the top surface and the sides of the concrete deck.

INDEX OF STRUCTURE SHEETS

1. General Plan & Elevation
2. Slab Elevations
3. Superstructure
- 4.-5. Superstructure Details
6. Steel Railing, Type S-1
7. HP Pile Details
8. Borings

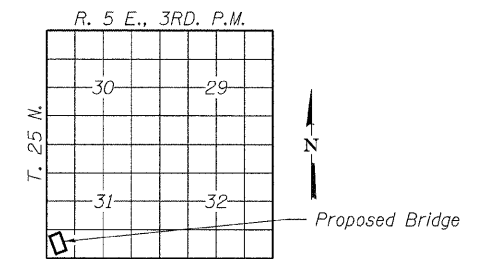
HAMMITT BRIDGE  
BUILT 201\_ BY  
McLEAN COUNTY  
SEC. 07-20124-00-BR  
LAWDALE ROAD DISTRICT  
STR. NO. 057-4814  
LOADING HL-93

NAME PLATE  
See Std. 515001

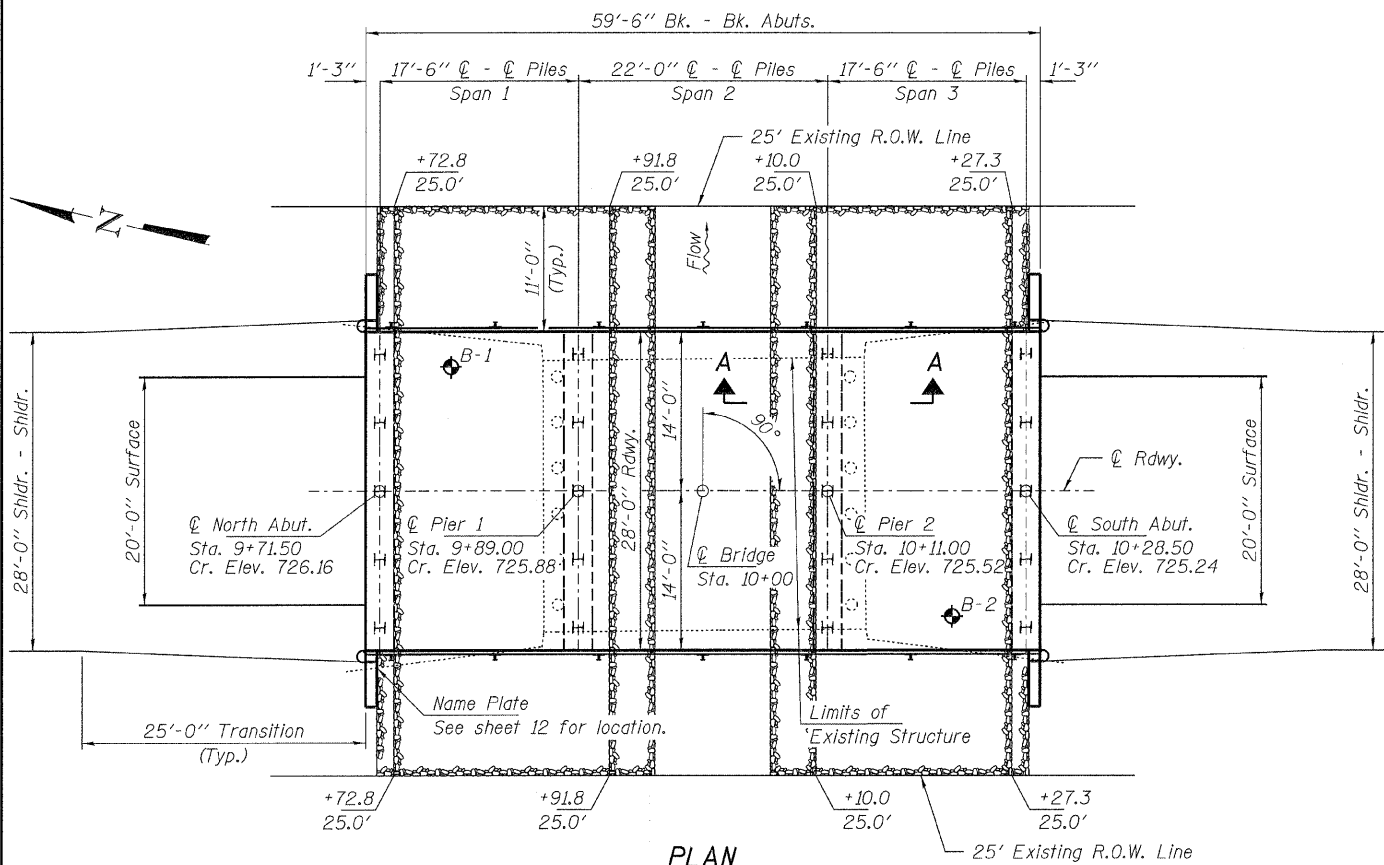


SECTION A-A

Note: See Special Provisions for Riprap, Special.



LOCATION SKETCH



PLAN

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	Cu. Yd.			250
Porous Granular Embankment	Ton		74	74
Riprap, Special	Sq. Yd.			277
Removal of Existing Structures	Each			1
Concrete Structures	Cu. Yd.		28.6	28.6
Concrete Superstructure	Cu. Yd.	72.8		72.8
Concrete Encasement	Cu. Yd.		13.6	13.6
Protective Coat	Sq. Yd.	203		203
Reinforcement Bars, Epoxy Coated	Pound		24,130	24,130
Steel Railing, Type S1	Foot	114		114
Furnishing Steel Piles HP10x42	Foot		540	540
Driving Piles	Foot		540	540
Test Pile Steel HP10x42	Each		2	2
Name Plates	Each		1	1
Geocomposite Wall Drain	Sq. Yd.			28
Pipe Underdrains for Structures, 4"	Foot			100

DESIGN STRESSES

FIELD UNITS

f'c = 3,500 psi Load Resistance  
fy = 60,000 psi (Reinf.) Factor Design

LOADING HL-93

Design Specifications: 2007 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. (SD1) = 0.084g  
Design Spectral Acceleration at 0.2 sec. (SD5) = 0.145g  
Soil Site Class = C

WATERWAY INFORMATION

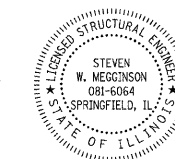
Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Natural H.W.E.	Head - Ft.		Headwater El.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	10	1140	190	220	721.5	0.5	0.0	722.0	721.5
Base	100	2170	230	290	723.0	1.7	0.2	724.7	723.2
Max. Calc.	500	2960	240	320	723.9	1.7	1.6	725.6	725.5
Overtopping Ex.	100	2170	230		723.0	1.7		724.7	
Overtopping Pr.	100	2960	320		723.9		1.6		725.5

Drainage Area = 8.2 Sq. Mi. Existing Low Grade Elev. 723.8 @ Sta. 11+00 Proposed Low Grade Elev. 724.2 @ Sta. 11+50

10 Year Velocity through Existing Bridge = 6.4 fps 10 Year Velocity through Proposed Bridge = 5.2 fps

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

Steven W. McGinnison 4/12/2010  
ILLINOIS STRUCTURAL NO. 081-6064



GENERAL PLAN AND ELEVATION  
STRUCTURE NO. 057-4814

DESIGNED - A.S.L.
CHECKED - M.G.B.
DRAWN - D.A.B.
CHECKED - M.G.B.

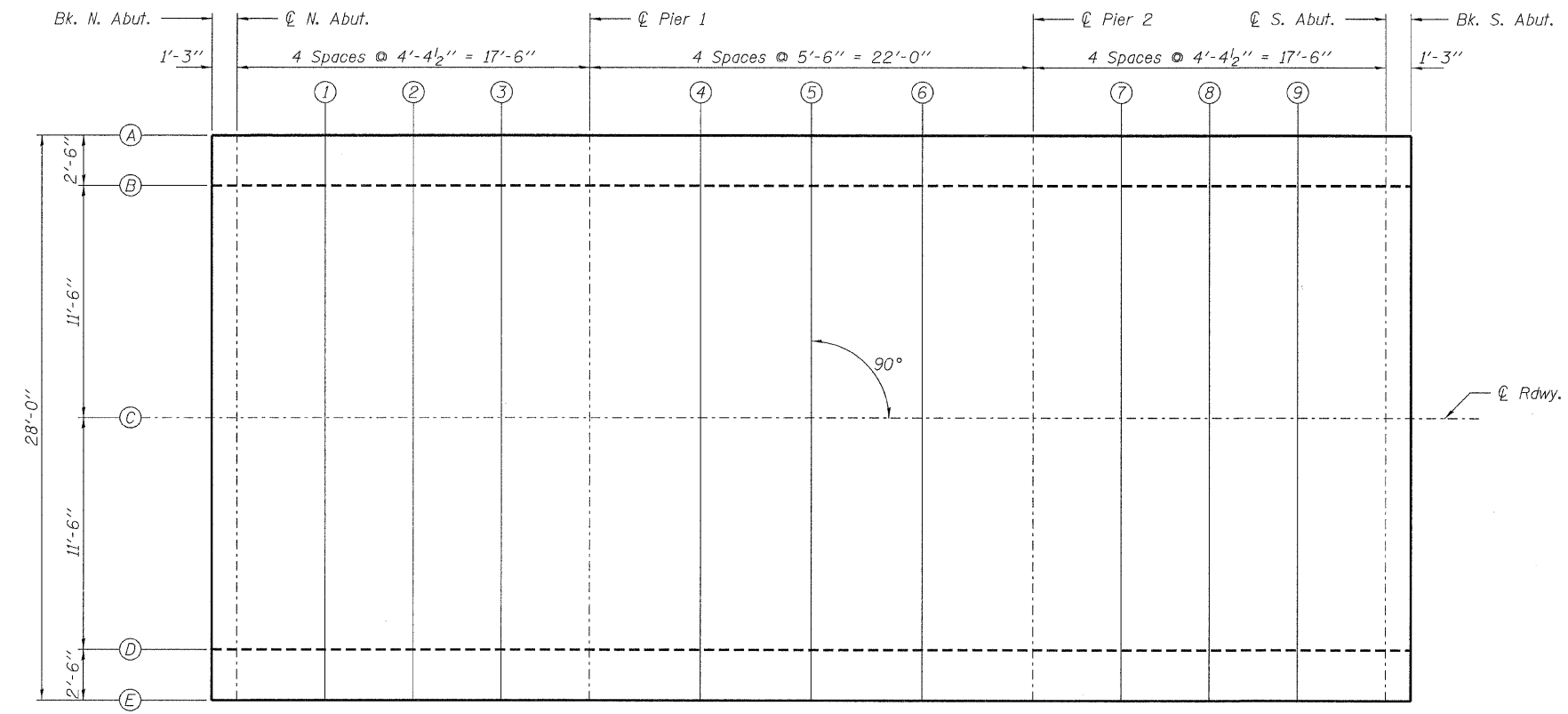
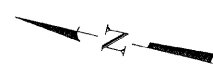
HAMPTON, LENZINI AND RENWICK, INC.  
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SPRINGFIELD, ILLINOIS 62703  
217.546.3400 www.hirengineering.com

154 000569  
ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORPORATION

PROJECT NUMBER: 07.0445.130 DATE: 03/22/10

SHEET NO. 1	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	155	07-20124-00-BR	McLEAN	17	10
8 SHEETS	LAWDALE ROAD DISTRICT		CONTRACT NO. 91442		
	FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT BROS-0113031	





PLAN

TABLE OF ELEVATIONS

LOCATION		BK. OF N. ABUT.	☐ OF N. ABUT.	SPAN 1			☐ OF PIER 1	SPAN 2			☐ OF PIER 2	SPAN 3			☐ OF S. ABUT.	BK. OF S. ABUT.
LINE	T.	725.887	725.866	725.794	725.724	725.654	725.584	725.496	725.408	725.320	725.232	725.162	725.092	725.022	724.952	724.932
A	ADJ.	725.887	725.866	725.796	725.726	725.655	725.584	725.498	725.411	725.322	725.232	725.163	725.094	725.024	724.952	724.932
**	Bot. of Slab	724.553	724.532	724.462	724.393	724.322	724.251	724.164	724.077	723.988	723.899	723.830	723.761	723.690	723.619	723.599

LOCATION		BK. OF N. ABUT.	☐ OF N. ABUT.	SPAN 1			☐ OF PIER 1	SPAN 2			☐ OF PIER 2	SPAN 3			☐ OF S. ABUT.	BK. OF S. ABUT.
LINE	T.	725.939	725.918	725.846	725.776	725.706	725.636	725.548	725.460	725.372	725.284	725.214	725.144	725.074	725.004	724.984
B	ADJ.	725.939	725.918	725.848	725.778	725.707	725.636	725.550	725.463	725.374	725.284	725.215	725.146	725.076	725.004	724.984
	Bot. of Slab	724.939	724.918	724.848	724.778	724.707	724.636	724.550	724.463	724.374	724.284	724.215	724.146	724.076	724.004	723.984

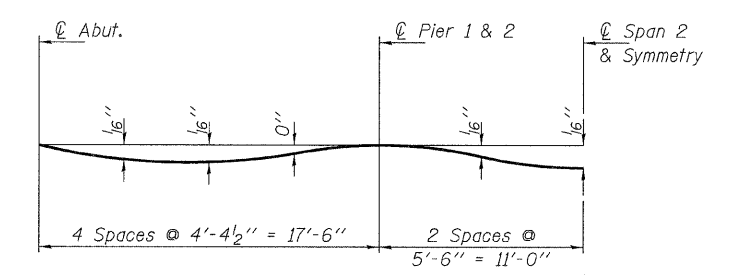
LOCATION		BK. OF N. ABUT.	☐ OF N. ABUT.	SPAN 1			☐ OF PIER 1	SPAN 2			☐ OF PIER 2	SPAN 3			☐ OF S. ABUT.	BK. OF S. ABUT.
LINE	T.	726.178	726.157	726.086	726.016	725.946	725.876	725.788	725.700	725.612	725.524	725.454	725.384	725.314	725.244	725.224
C	ADJ.	726.178	726.157	726.087	726.018	725.947	725.876	725.789	725.702	725.613	725.524	725.455	725.386	725.315	725.244	725.224
	Bot. of Slab	725.178	725.157	725.087	725.018	724.947	724.876	724.789	724.702	724.613	724.524	724.455	724.386	724.315	724.244	724.224

LOCATION		BK. OF N. ABUT.	☐ OF N. ABUT.	SPAN 1			☐ OF PIER 1	SPAN 2			☐ OF PIER 2	SPAN 3			☐ OF S. ABUT.	BK. OF S. ABUT.
LINE	T.	725.939	725.918	725.846	725.776	725.706	725.636	725.548	725.460	725.372	725.284	725.214	725.144	725.074	725.004	724.984
D	ADJ.	725.939	725.918	725.848	725.778	725.707	725.636	725.550	725.463	725.374	725.284	725.215	725.146	725.076	725.004	724.984
	Bot. of Slab	724.939	724.918	724.848	724.778	724.707	724.636	724.550	724.463	724.374	724.284	724.215	724.146	724.076	724.004	723.984

LOCATION		BK. OF N. ABUT.	☐ OF N. ABUT.	SPAN 1			☐ OF PIER 1	SPAN 2			☐ OF PIER 2	SPAN 3			☐ OF S. ABUT.	BK. OF S. ABUT.
LINE	T.	725.887	725.866	725.794	725.724	725.654	725.584	725.496	725.408	725.320	725.232	725.162	725.092	725.022	724.952	724.932
E	ADJ.	725.887	725.866	725.796	725.726	725.655	725.584	725.498	725.411	725.322	725.232	725.163	725.094	725.024	724.952	724.932
**	Bot. of Slab	724.553	724.532	724.462	724.393	724.322	724.251	724.164	724.077	723.988	723.899	723.830	723.761	723.690	723.619	723.599



DEAD LOAD DEFLECTION DIAGRAM  
(Includes weight of concrete only.)

Notes:  
 The deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown.  
 The Contractor shall make allowance for the deflection of forms, shrinkage and settlement of falsework in addition to allowance for dead load deflection.

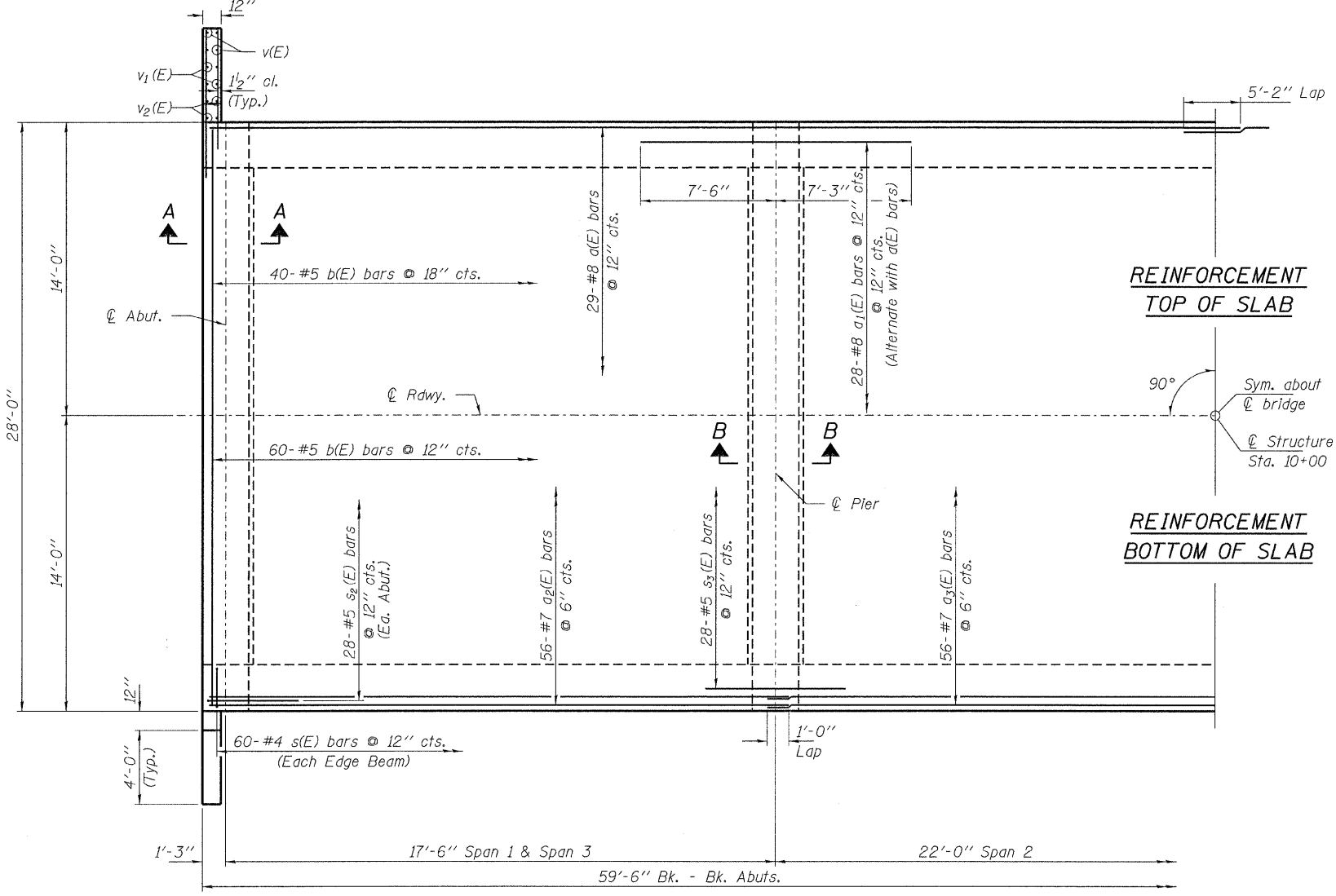
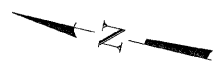
DESIGNED - A.S.L.  
 CHECKED - M.G.B.  
 DRAWN - D.A.B.  
 CHECKED - M.G.B.

T. - Theoretical elevation at top of slab  
 Adj. - T adjusted for dead load deflection  
 \*\* Bottom of slab elevation equals bottom of edge beam.

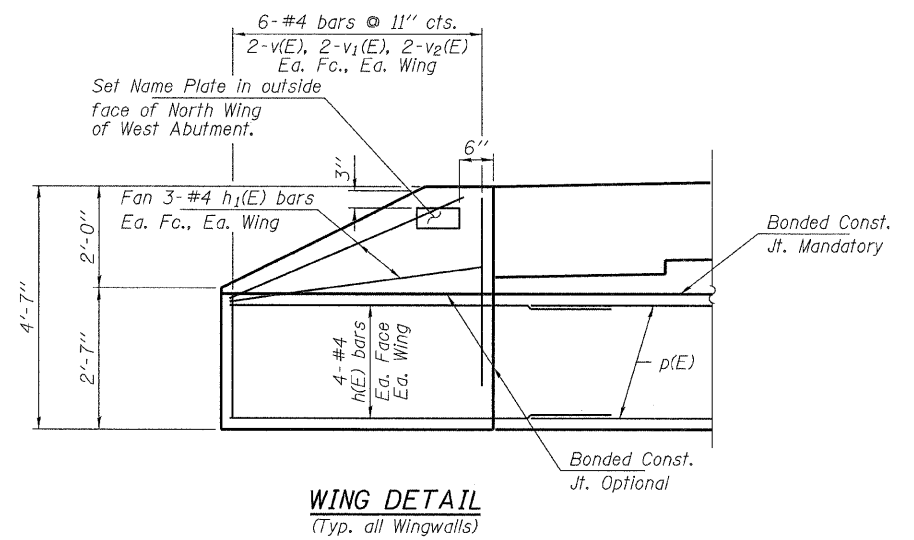
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 SPRINGFIELD, ILLINOIS 62703  
 217.546.3400 www.hlrengineering.com  
 184.000889  
 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORPORATION  
 PROJECT NUMBER: 07.0445.130 DATE: 03/22/10

SHEET NO. 2  8 SHEETS	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	155	07-20124-00-BR	McLEAN	17	11
LAWDALE ROAD DISTRICT			CONTRACT NO. 91442		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT BROS-0113(031)			

SLAB ELEVATIONS  
 STRUCTURE NO. 057-4814



**PLAN**



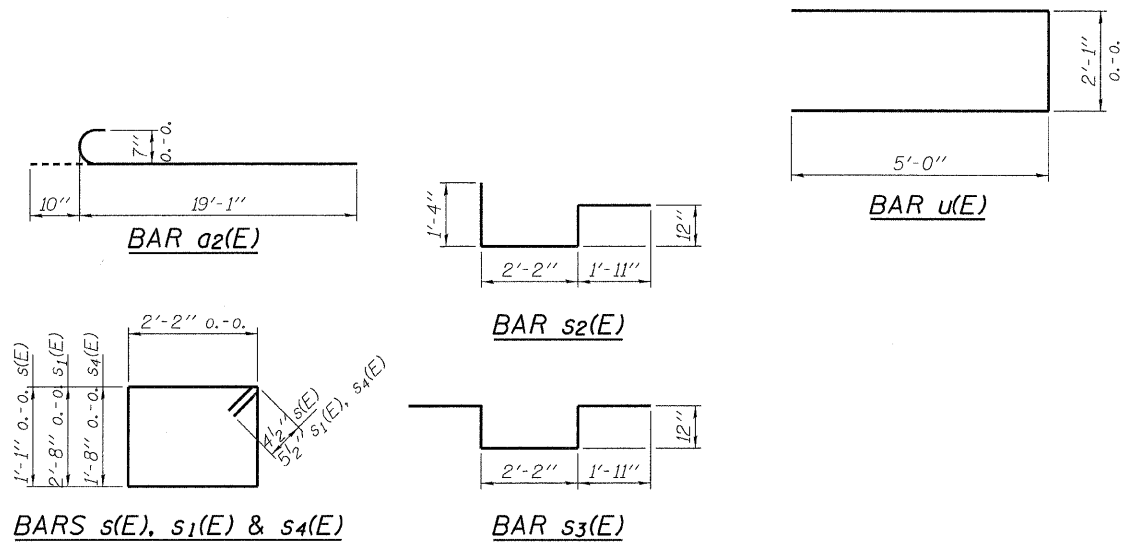
**WING DETAIL**  
(Typ. all Wingwalls)

**BILL OF MATERIAL**

BAR	NO.	SIZE	LENGTH	SHAPE
a(E)	58	#8	32'-2"	—
a <sub>1</sub> (E)	56	#8	14'-9"	—
a <sub>2</sub> (E)	112	#7	19'-11"	C
a <sub>3</sub> (E)	56	#7	23'-0"	—
b(E)	100	#5	27'-8"	—
h(E)	32	#4	6'-3"	—
h <sub>1</sub> (E)	24	#4	4'-9"	—
p(E)	24	#7	27'-8"	—
p <sub>1</sub> (E)	20	#8	27'-8"	—
s(E)	120	#4	7'-3"	□
s <sub>1</sub> (E)	52	#5	10'-7"	□
s <sub>2</sub> (E)	56	#5	6'-5"	□
s <sub>3</sub> (E)	56	#5	8'-0"	□
s <sub>4</sub> (E)	52	#5	8'-7"	□
u(E)	28	#6	12'-1"	—
v(E)	16	#4	2'-4"	—
v <sub>1</sub> (E)	16	#4	3'-4"	—
v <sub>2</sub> (E)	16	#4	4'-4"	—
v <sub>3</sub> (E)	224	#5	3'-2"	—
Concrete Structures			Cu. Yd.	28.6
Concrete Superstructure			Cu. Yd.	72.8
Reinforcement Bars, Epoxy Coated			Pound	24,130
Steel Pile HP10x42			Foot	540
Test Pile Steel HP10x42			Each	2
Name Plates			Each	1

Reinforcement bars designated (E) shall be epoxy coated. For Elevations, Sections A-A, and B-B see sheet 13. For Edge Beam Details see Detail A on sheet 13.

**MIN. BAR LAPS**  
#8 = 5'-2"



**BARS s(E), s<sub>1</sub>(E) & s<sub>4</sub>(E)**

**BAR s<sub>3</sub>(E)**

DESIGNED - A.S.L.
CHECKED - M.G.B.
DRAWN - D.A.B.
CHECKED - M.G.B.

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217.546.3400 www.hlrenwicks.com

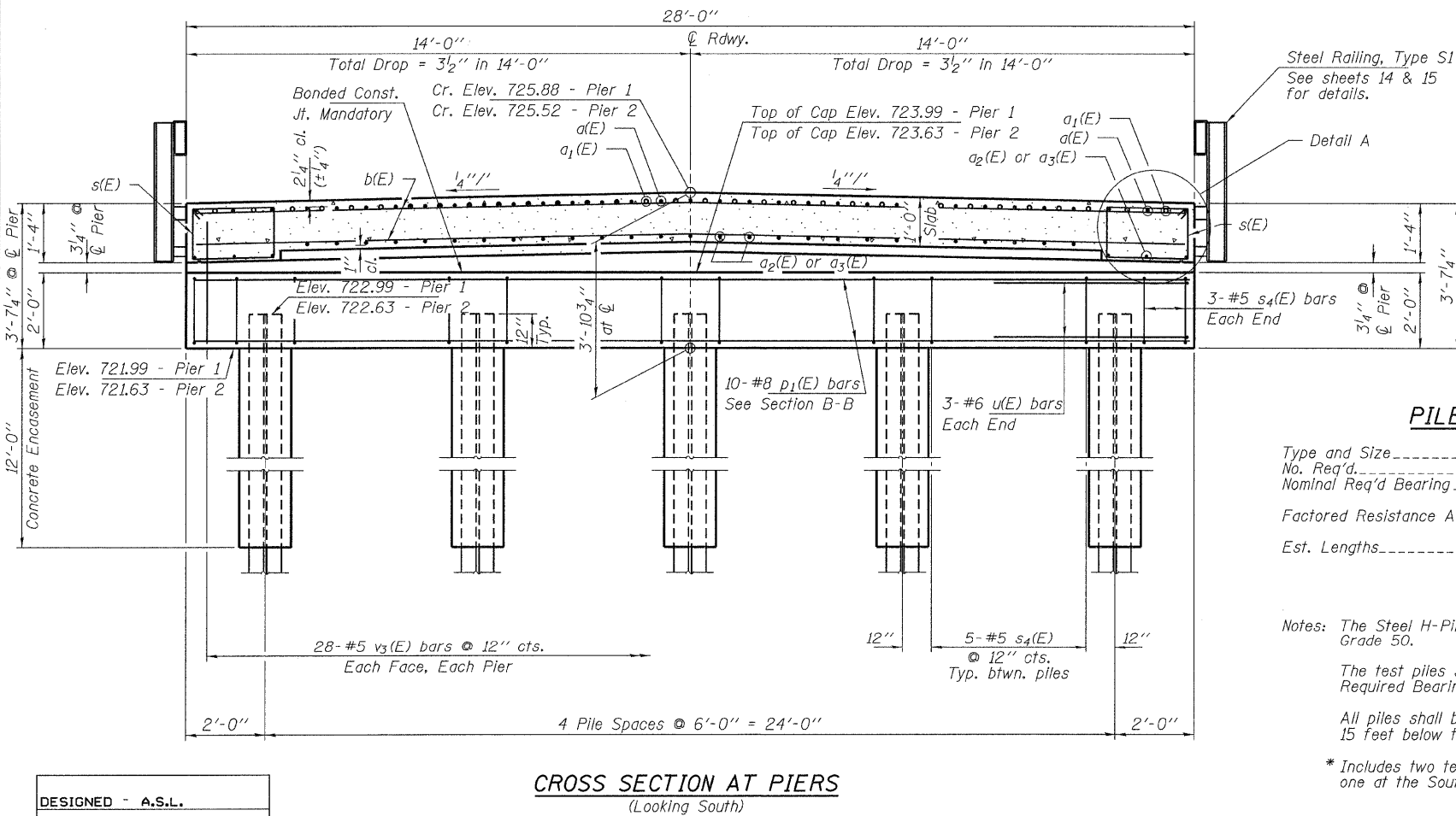
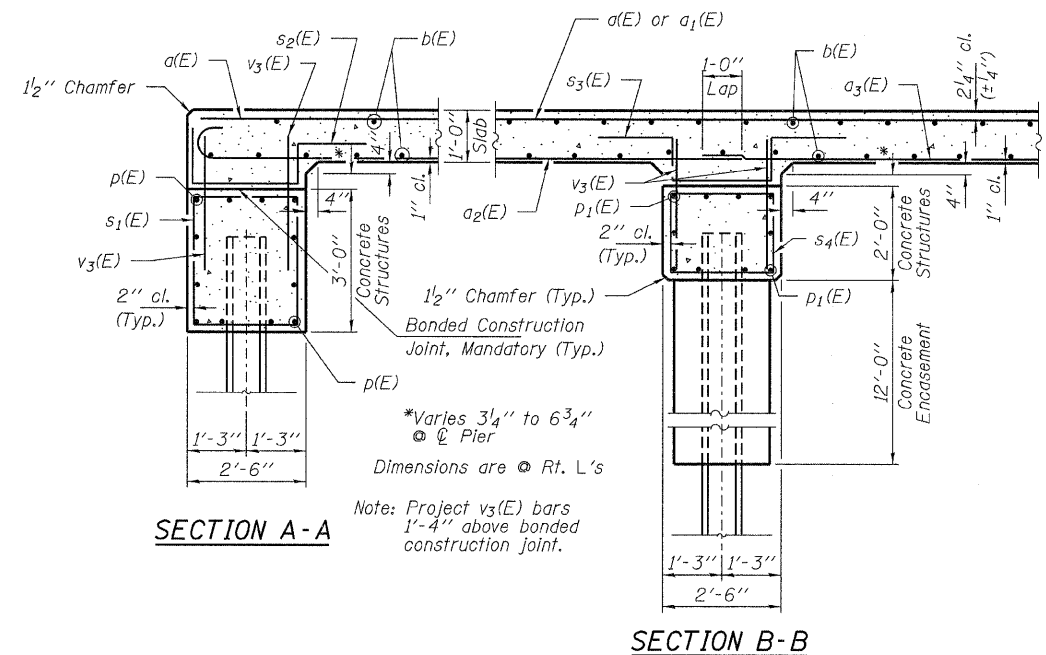
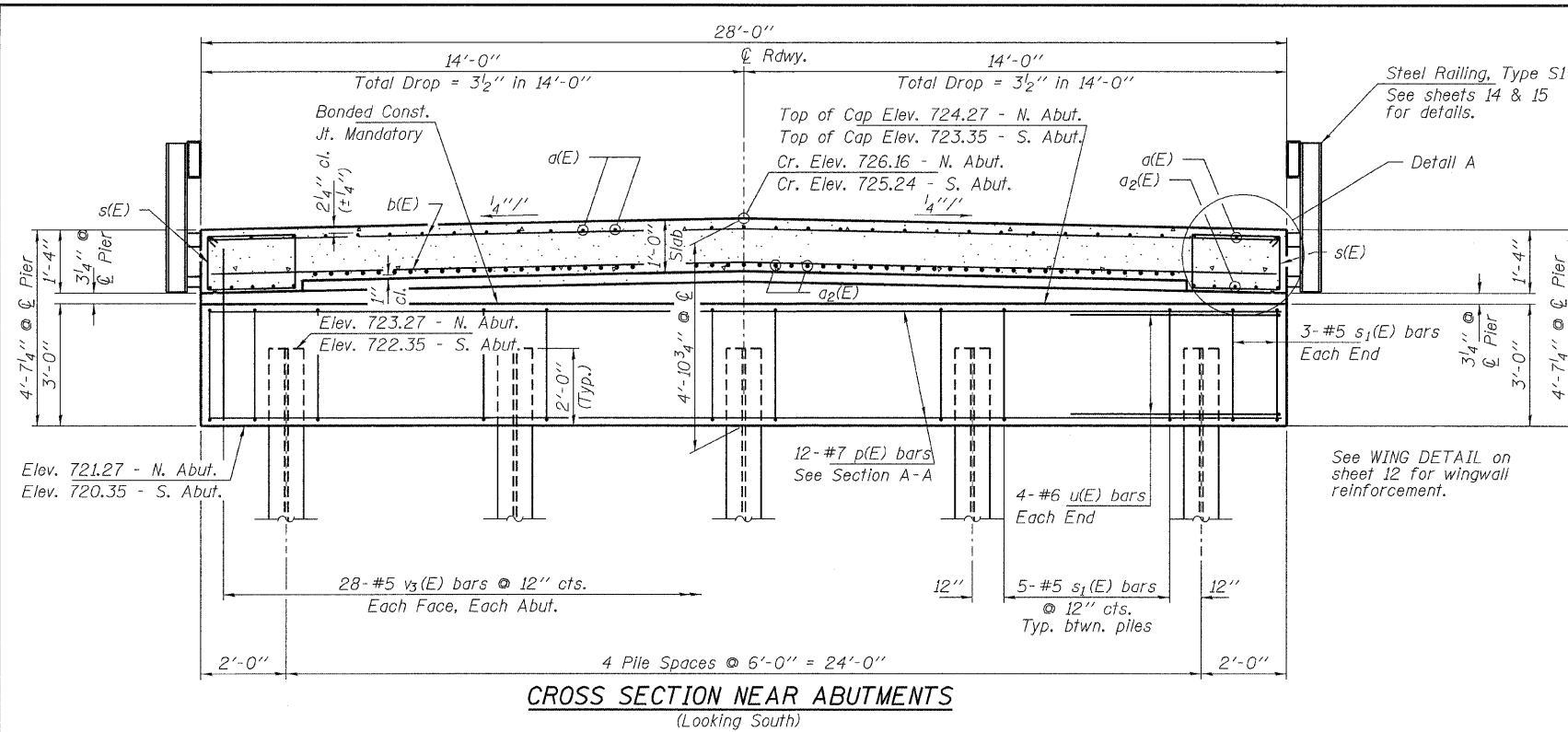
184.000950  
ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORPORATION

PROJECT NUMBER: 07.0445.130 DATE: 03/22/10

SHEET NO. 3 8 SHEETS	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	155	07-20124-00-BR	McLEAN	17	12
LAWDALE ROAD DISTRICT			CONTRACT NO. 91442		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT BROS-0113(031)		

**SUPERSTRUCTURE  
STRUCTURE NO. 057-4814**



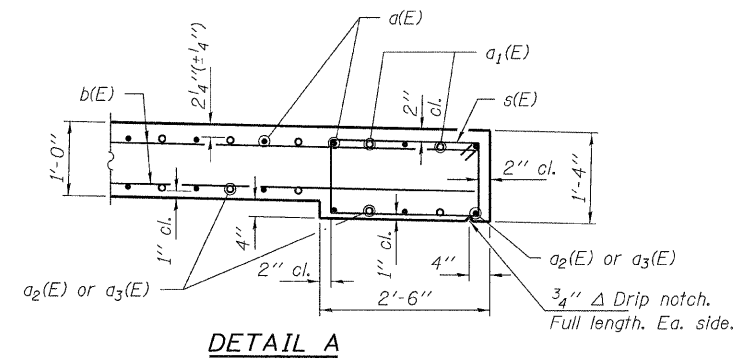


**PILE DATA**

Type and Size	Furnishing Steel Piles HP10x42
No. Req'd	*20
Nominal Req'd Bearing	136 Kips/Pile @ Abuts. 220 Kips/Pile @ Piers
Factored Resistance Available	68 Kips/Pile @ Abuts. 110 Kips/Pile @ Piers
Est. Lengths	25 Ft/Pile @ N. Abut. 35 Ft/Pile @ Pier 1 35 Ft/Pile @ Pier 2 25 Ft/Pile @ S. Abut.

Notes: 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.  
All piles shall be driven to a minimum tip elevation of 699.0, 15 feet below the stream flowline.

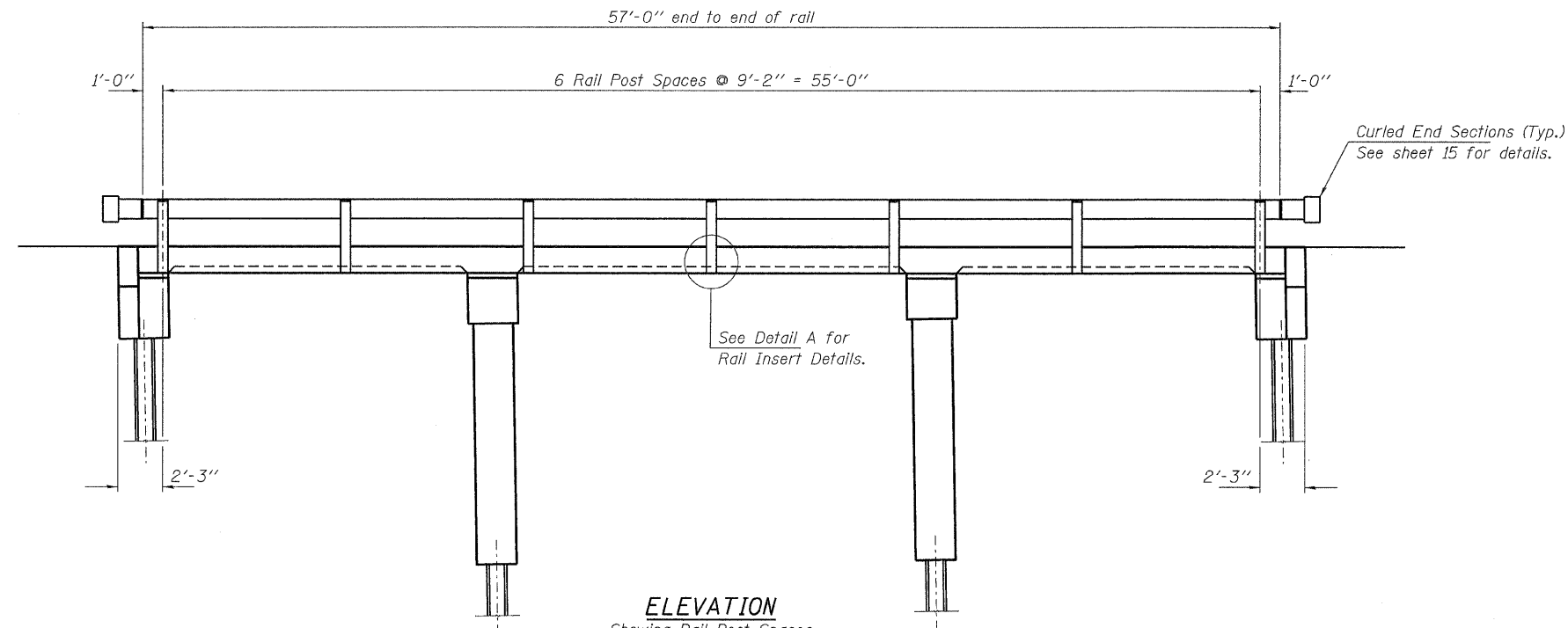
\* Includes two test piles to be driven in permanent locations, one at the South Abutment and one at Pier 1.



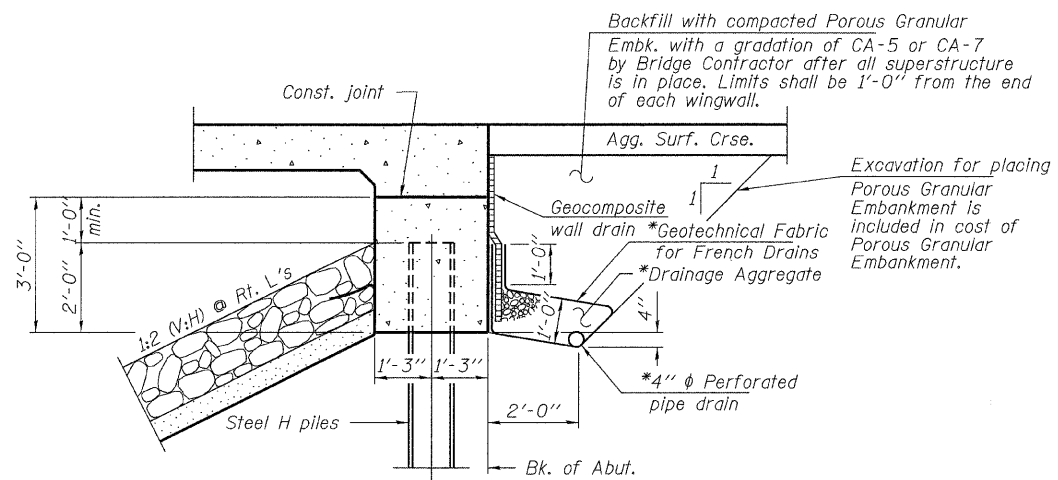
DESIGNED - A.S.L.
CHECKED - M.G.B.
DRAWN - D.A.B.
CHECKED - M.G.B.

**SUPERSTRUCTURE DETAILS**  
**STRUCTURE NO. 057-4814**

<b>HAMPTON, LENZINI AND RENWICK, INC.</b> CIVIL ENGINEERS - STRUCTURAL ENGINEERS - LAND SURVEYORS 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 217.546.3400 www.hlrengineering.com ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORPORATION PROJECT NUMBER: 07.0445.130 DATE: 03/22/10	SHEET NO. 4	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	8 SHEETS	155	07-20124-00-BR	McLEAN	17	13
			LAWDALE ROAD DISTRICT	CONTRACT NO. 91442		
			FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT	BROS-0113(O31)	

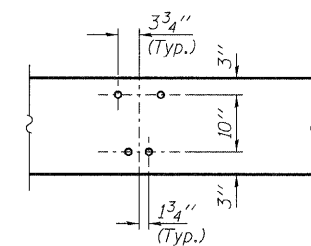


**ELEVATION**  
Showing Rail Post Spaces  
See sheet 15 for Railing Details.



**SECTION THRU INTEGRAL ABUTMENT**

(Horiz. dim. @ Rt. L's)  
\*Included in the cost of Pipe Underdrains for Structures, 4".



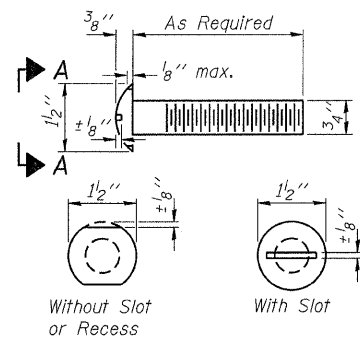
**DETAIL A**

DESIGNED - A.S.L.
CHECKED - M.G.B.
DRAWN - D.A.B.
CHECKED - M.G.B.

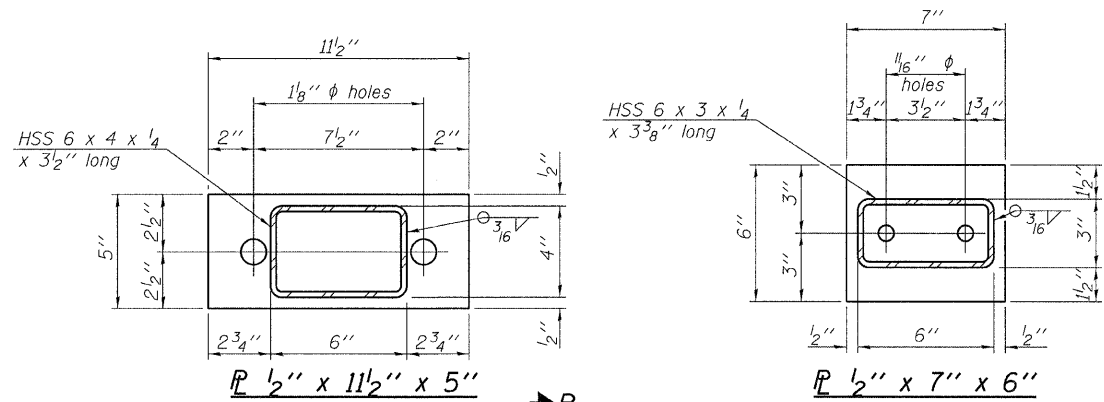
**SUPERSTRUCTURE DETAILS**  
**STRUCTURE NO. 057-4814**

<b>HAMPTON, LENZINI AND RENWICK, INC.</b> CIVIL ENGINEERS • STRUCTURAL ENGINEERS • LAND SURVEYORS <b>HLR</b> 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 217.546.3400 www.hlrengineering.com <small>184.000955 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORPORATION</small>	SHEET NO. 5	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	8 SHEETS	155	07-20124-00-BR	McLEAN	17	14
PROJECT NUMBER: 07.0445.130	DATE: 03/22/10	LAWDALE ROAD DISTRICT		CONTRACT NO. 91442		
		FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT BROS-0113(031)		

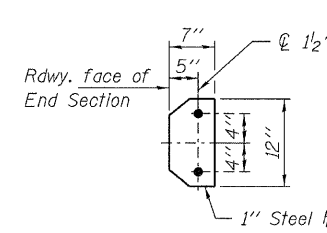




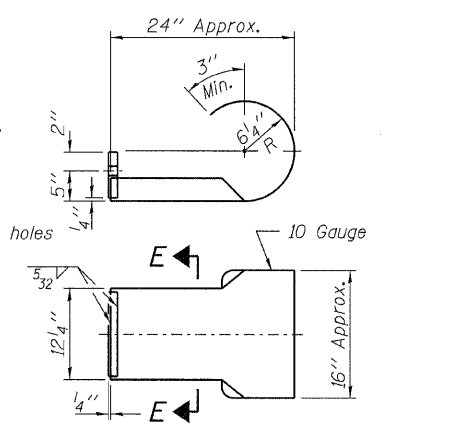
**VIEW A-A  
ROUND HEAD BOLT**



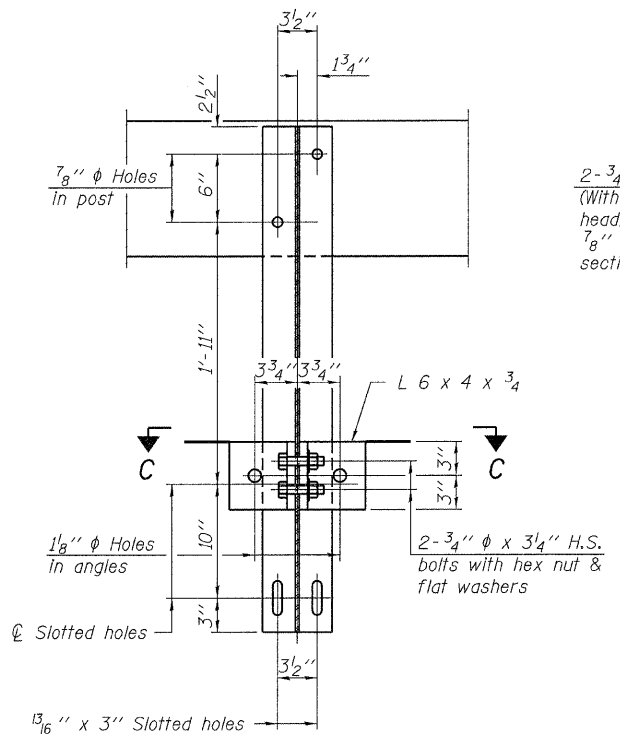
Note: Cost of curled end sections shall be included with the Steel Railing. (4 Required)



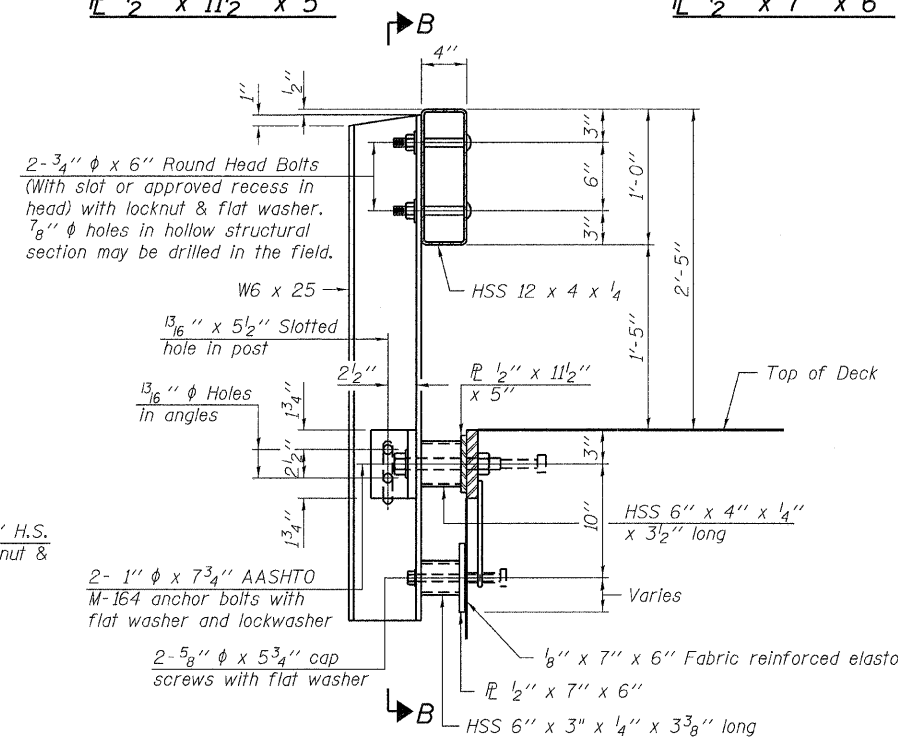
**SECTION E-E**



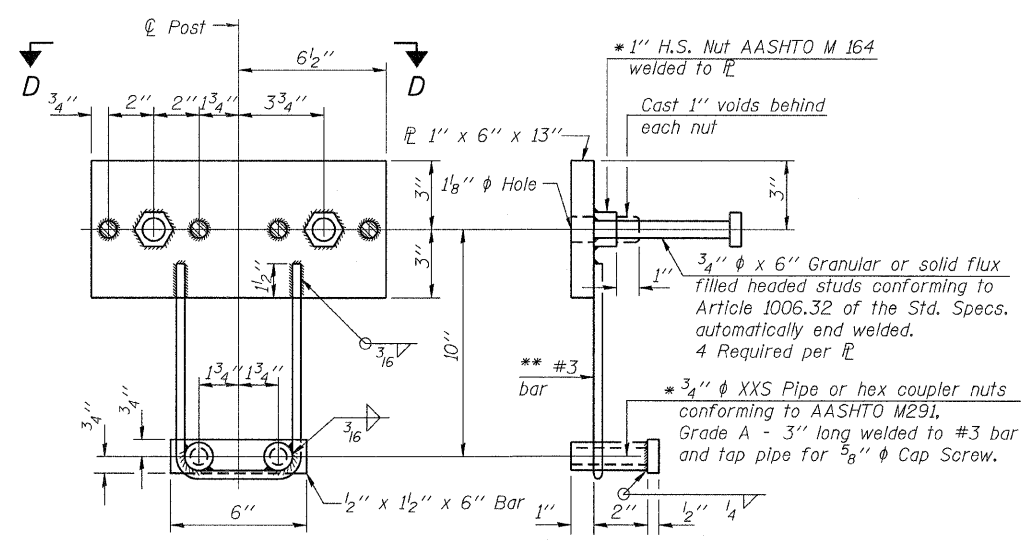
**CURLED END SECTION DETAILS**



**SECTION B-B**

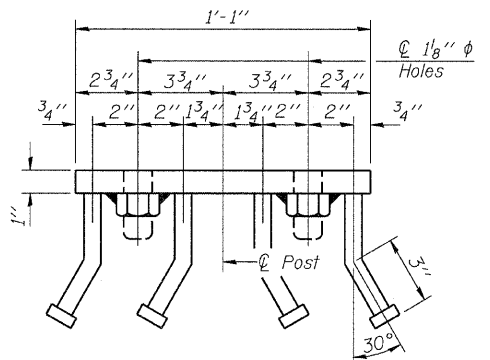


**SECTION AT RAILING POST**

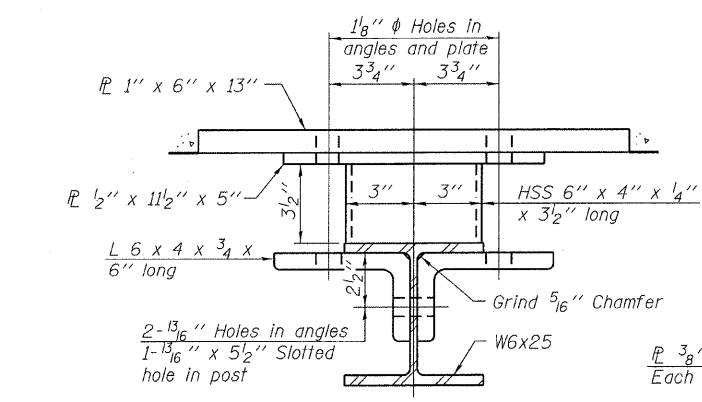


**ANCHOR DEVICE**

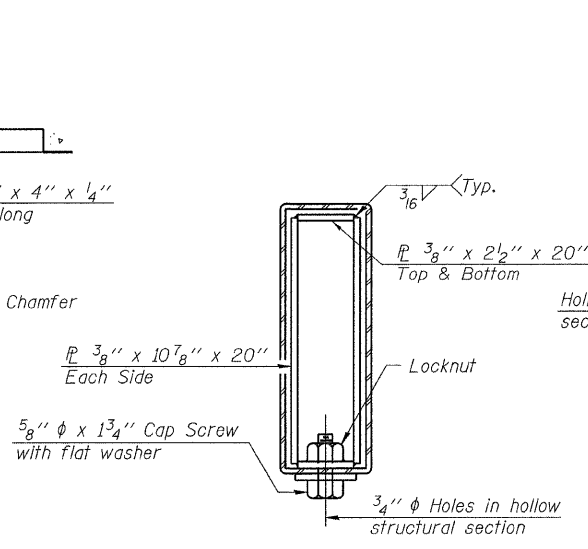
Notes:  
All field drilled holes shall be coated with an approved zinc rich paint before erection.  
For multi-span bridges, sufficient 1/4" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with Steel Railing, Type S-1.  
All steel rail elements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



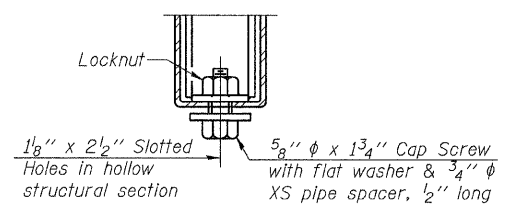
**VIEW D-D**



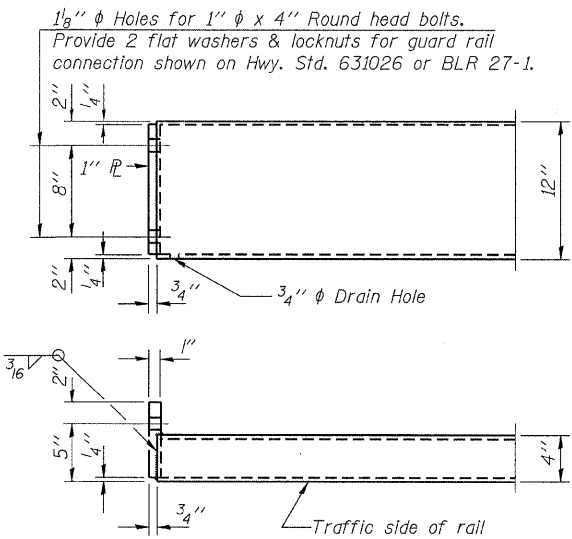
**SECTION C-C**



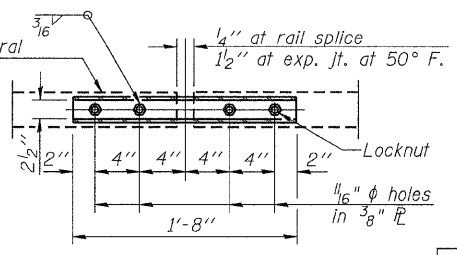
**SECTIONS AT RAIL SPLICE**



**RAIL SPLICE CONNECTION  
AT EXPANSION JT.**



**END OF RAIL DETAILS**



**PLAN-BOTT. SPLICE P  
TYPICAL**

**BILL OF MATERIAL**

Item	Unit	Quantity
Steel Railing, Type S-1	Foot	114

**STEEL RAILING, TYPE S-1  
STRUCTURE NO. 057-4814**

DESIGNED - A.S.L.
CHECKED - M.G.B.
DRAWN - D.A.B.
CHECKED - M.G.B.

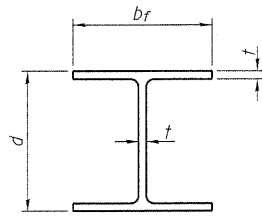
R-23A

11-1-09 (10'-9" Maximum Post Spacing)

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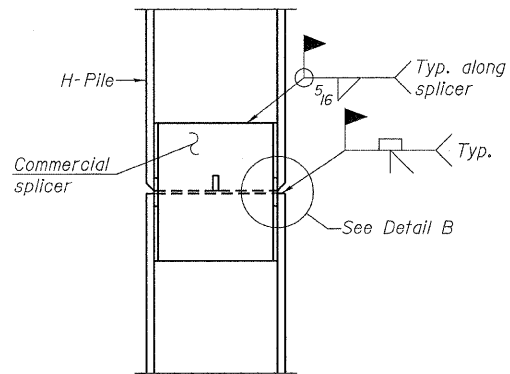
184.000985 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORPORATION  
PROJECT NUMBER: 07.0445.130 DATE: 03/22/10

SHEET NO. 6 8 SHEETS	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	155	07-20124-00-BR	McLEAN	17	15
LAWDALE ROAD DISTRICT			CONTRACT NO. 91442		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT BROS-01130301		

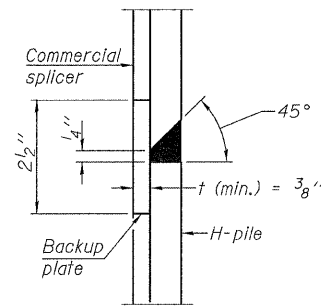


**STEEL PILE TABLE**

Designation	Depth d	Flange width bf	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	13/16"	30"
x102	14"	14 3/4"	11/16"	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"	11/16"	24"
x74	12 1/8"	12 1/4"	5/8"	24"
x63	12"	12 1/8"	1/2"	24"
x53	11 3/4"	12"	7/16"	24"
HP 10x57	10"	10 1/4"	9/16"	24"
x42	9 3/4"	10 1/8"	7/16"	24"
HP 8x36	8"	8 1/8"	7/16"	18"

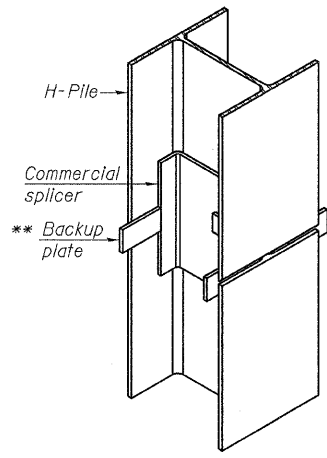


**ELEVATION**

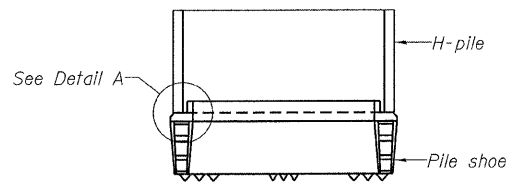


**DETAIL "B"**

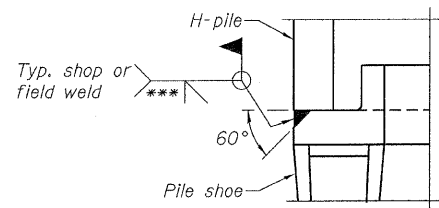
**WELDED COMMERCIAL SPLICE**



**ISOMETRIC VIEW**

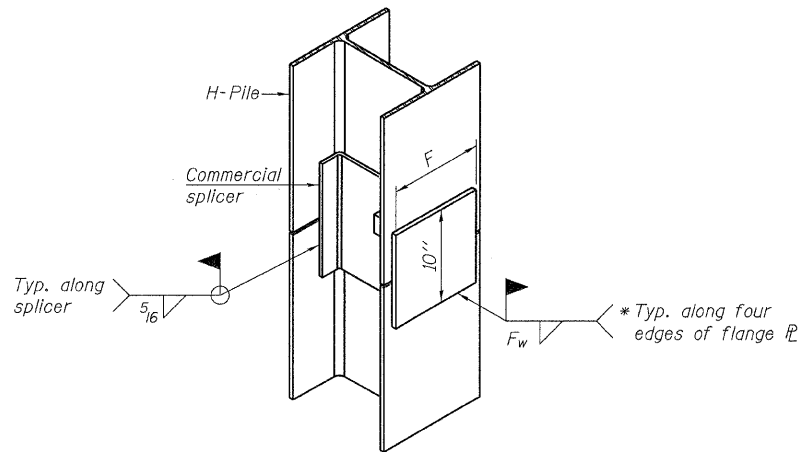


**ELEVATION**



**DETAIL A**

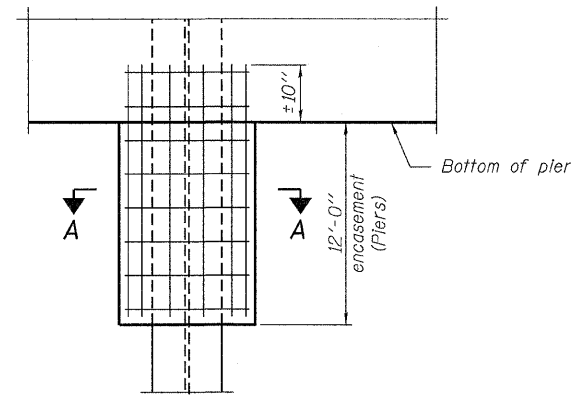
**H-PILE SHOE ATTACHMENT**



**ISOMETRIC VIEW**

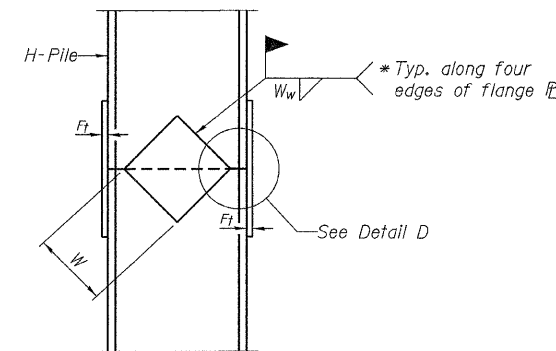
**WELDED COMMERCIAL SPLICE ALTERNATE**

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

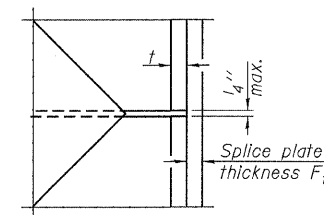


**ELEVATION**

**PILE ENCASEMENT**

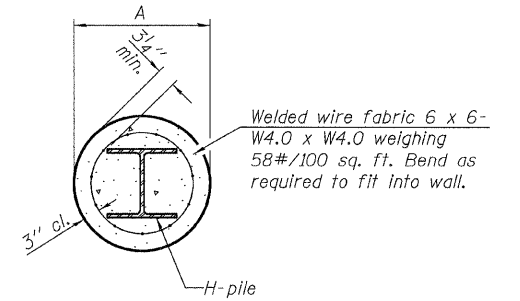


**ELEVATION**



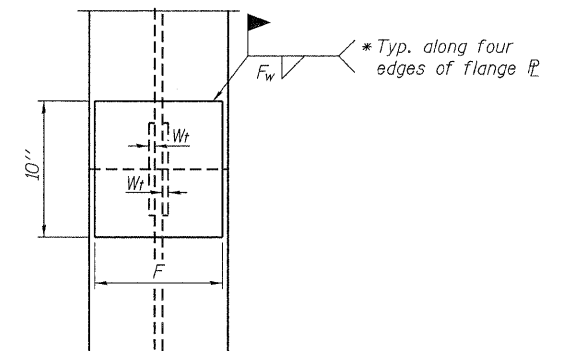
**DETAIL D**

**WELDED PLATE FIELD SPLICE**



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

**SECTION A-A**



**END VIEW**

Designation	F	Ft	Fw	W	Wt	Ww
HP 14x117	12 1/2"	1"	7/8"	7 3/4"	5/8"	1/2"
x102	12 1/2"	7/8"	3/4"	7 3/4"	5/8"	1/2"
x89	12 1/2"	3/4"	11/16"	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"	11/16"	6 1/2"	5/8"	1/2"
x74	10"	7/8"	11/16"	6 1/2"	5/8"	1/2"
x63	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
x53	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
HP 10x57	8"	3/4"	9/16"	5 1/4"	1/2"	3/8"
x42	8"	5/8"	9/16"	5 1/4"	1/2"	3/8"
HP 8x36	7"	5/8"	7/16"	4 1/4"	1/2"	3/8"

DESIGNED - A.S.L.
CHECKED - M.G.B.
DRAWN - D.A.B.
CHECKED - M.G.B.

F-HP 11-1-09

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

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 217.546.3400 www.hlrengineering.com

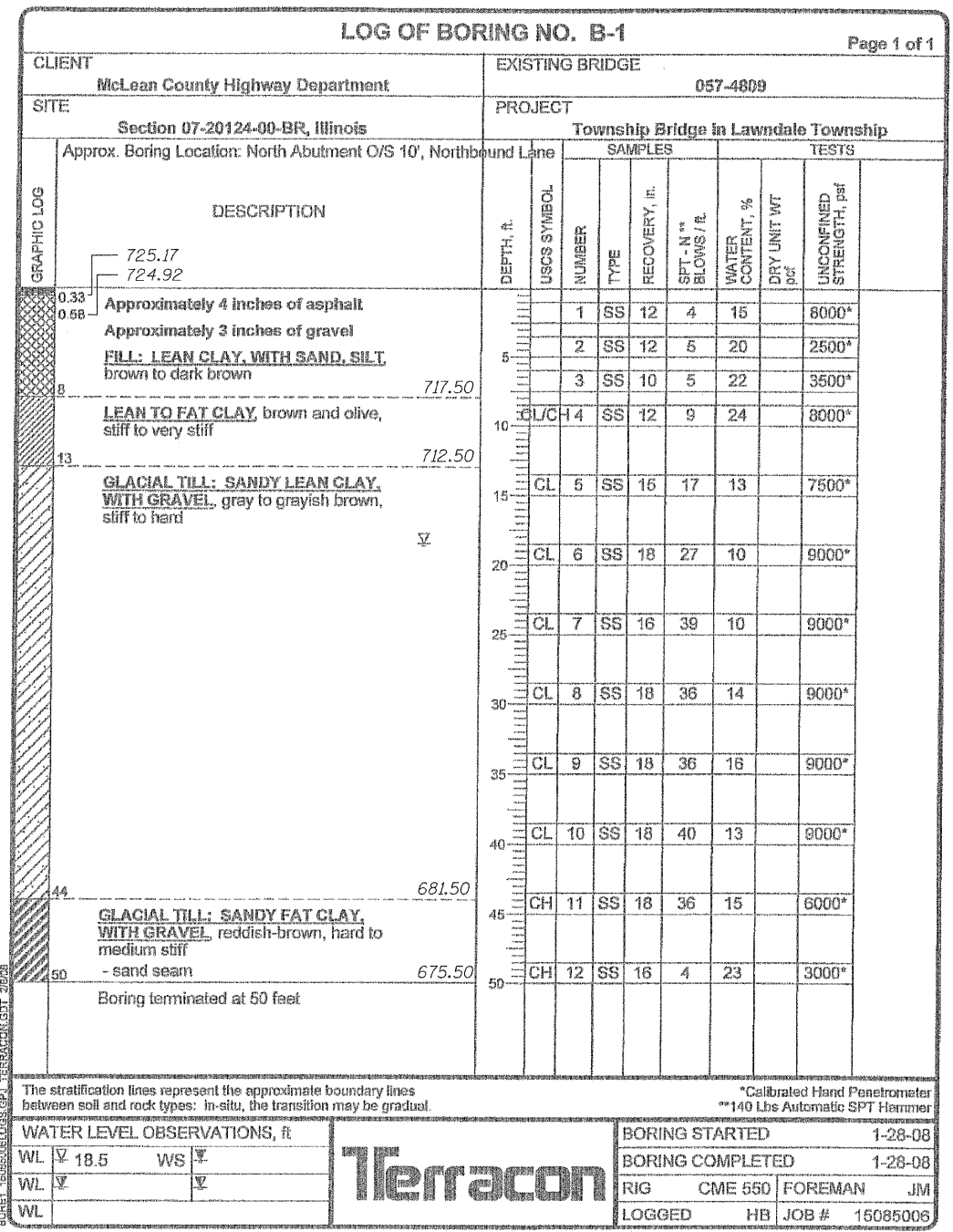
184 000959  
 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORPORATION

PROJECT NUMBER: 07.0445.130 DATE: 03/22/10

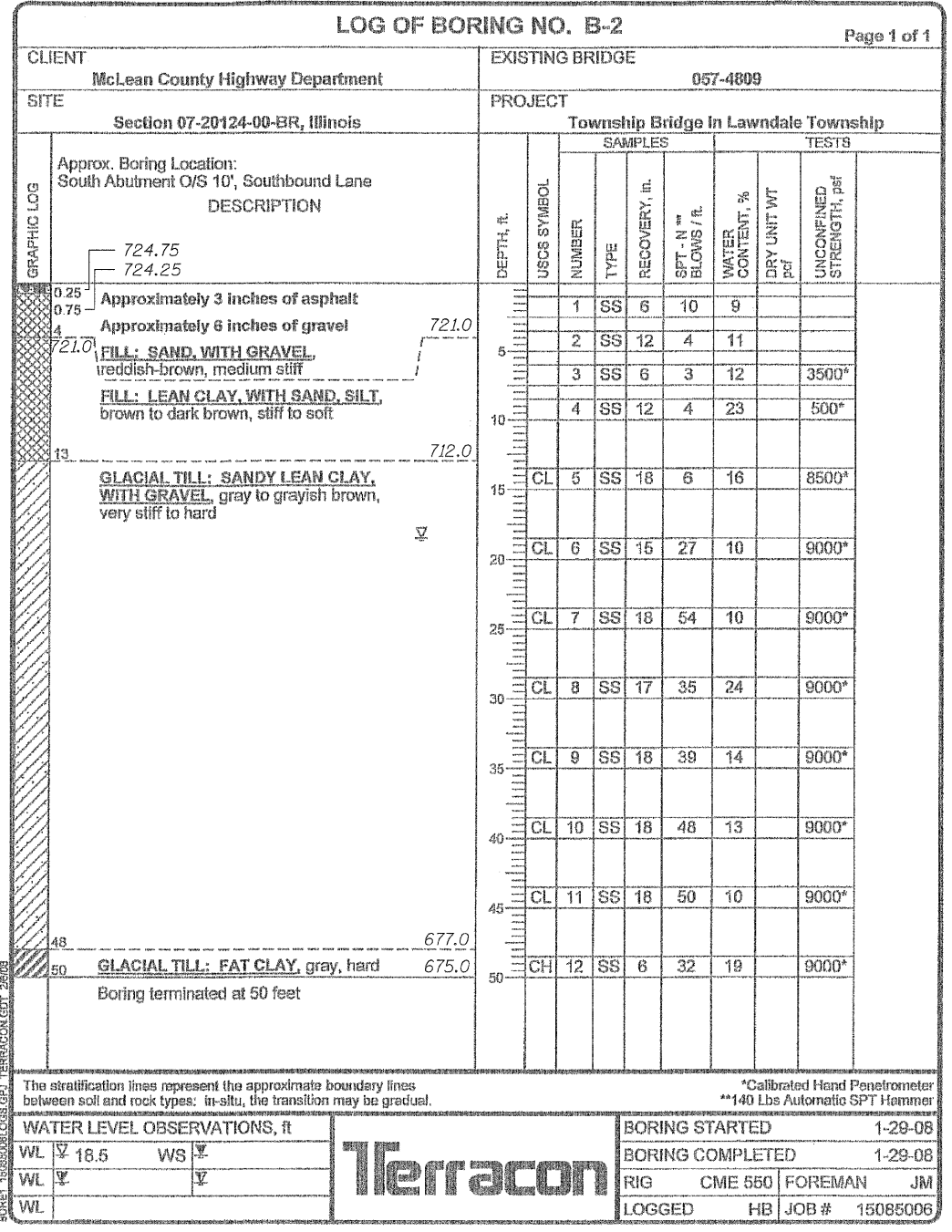
SHEET NO. 7  
8 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
155	07-20124-00-BR	McLEAN	17	16
LAWDALE ROAD DISTRICT		CONTRACT NO. 91442		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT BROS-0113(031)	

**HP PILE DETAILS  
STRUCTURE NO. 057-4814**



BORING 1



BORING 2

DESIGNED - A.S.L.
CHECKED - M.G.B.
DRAWN - D.A.B.
CHECKED - M.G.B.

**BORINGS  
STRUCTURE NO. 057-4814**

 <b>HAMPTON, LENZINI AND RENWICK, INC.</b> <small>CIVIL ENGINEERS • STRUCTURAL ENGINEERS • LAND SURVEYORS          3085 STEVENSON DRIVE, SUITE 201          SPRINGFIELD, ILLINOIS 62703          217.546.3400 www.hlrengineering.com</small>	SHEET NO. 8	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	8 SHEETS	155	07-20124-00-BR	McLEAN	17	17
PROJECT NUMBER: 07-0445-130    DATE: 03/22/10		LAWDALE ROAD DISTRICT		CONTRACT NO. 91442		
		FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT BROS-0113(031)		