

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 231	09-23113-00-BR	SHELBY	20	1
FED. ROAD DIST. NO.		ILLINOIS CONTRACT NO.	95631	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

**PLANS FOR PROPOSED
HIGHWAY BRIDGE PROGRAM**

PROJECT BROS-173(171)
SECTION 09-23113-00-BR
TOWER HILL ROAD DISTRICT
SHELBY COUNTY
T.R. 231
PROPOSED STRUCTURE NO. 087-3570
C-97-125-10

INDEX OF SHEETS

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

HIGHWAY STANDARDS:

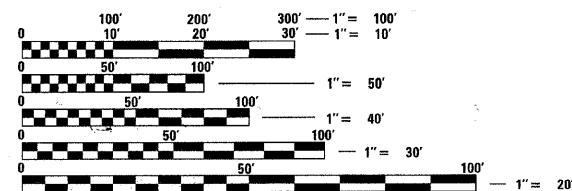
000001-05	STANDARD SYMBOLS, ABBREVIATIONS, AND PATTERNS
515001-03	NAME PLATE FOR BRIDGES
635006-03	REFLECTOR AND TERMINAL MARKER PLACEMENT
701901-01	TRAFFIC CONTROL DEVICES
BLR 21-8	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS
280001-05	TEMP EROSION CONTROL SYSTEMS

UTILITIES

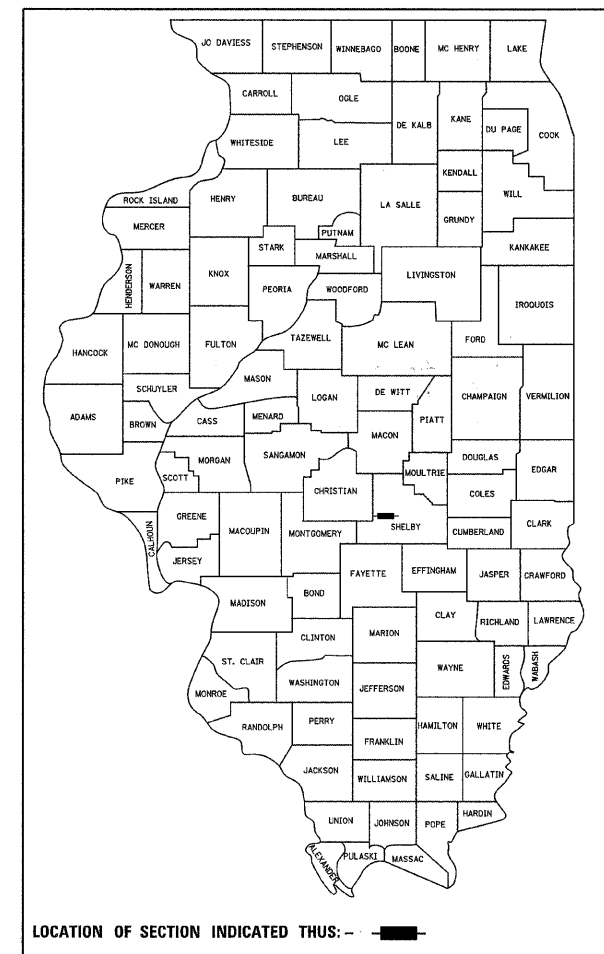
CONSOLIDATED COMMUNICATIONS
121 SOUTH 17TH STREET
MATTOON, ILLINOIS 61938
ATTN: DOUG SOWERS

SHELBY ELECTRIC CO-OPERATIVE
PO BOX 560
SHELBYVILLE, ILLINOIS 62565
ATTENTION: JIM MATLOCK

LINCOLN PRAIRIE WATER COMPANY
P.O. BOX 554
SHELBYVILLE, IL 62565



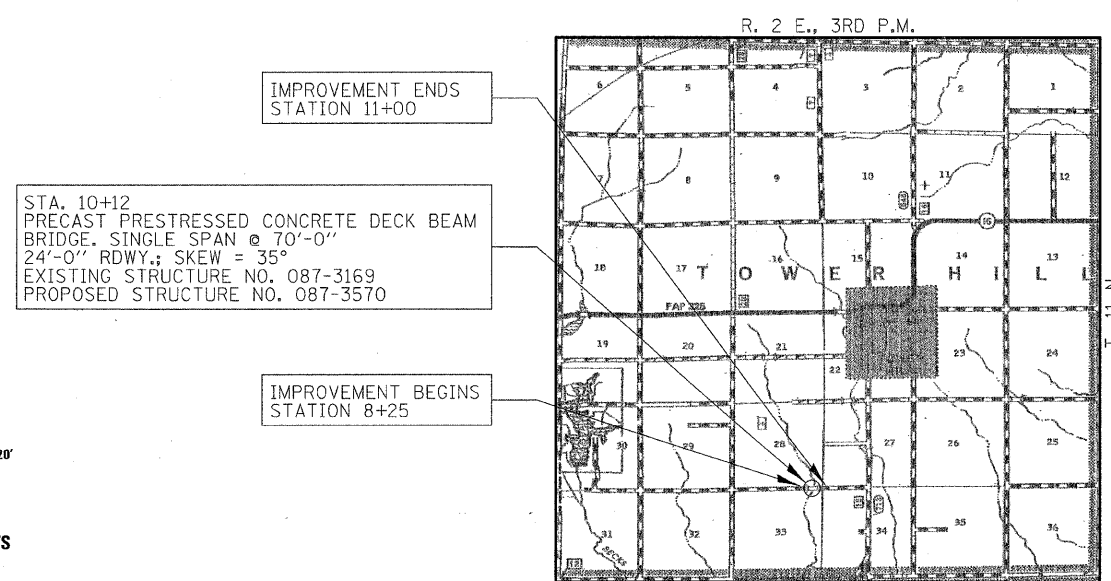
FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.



LOCATION OF SECTION INDICATED THIS: [Symbol]

FUNCTIONAL CLASSIFICATION: LOCAL ROAD 0-250 ADT
DESIGN SPEED: 30 MPH
DESIGN TRAFFIC: 110 ADT (2005)

ILLINOIS DEPARTMENT OF TRANSPORTATION	
APPROVED	<i>[Signature]</i> 20 COUNTY ENGINEER
APPROVED	April 1 2010 <i>[Signature]</i> ROAD COMMISSIONER
PASSED	4/9 2010 <i>[Signature]</i> DISTRICT SEVEN ENGINEER OF LOCAL ROADS & STREETS
Releasing For Bid Based on Limited Review	4/9 2010 <i>[Signature]</i> DEPUTY DIRECTOR OF HIGHWAYS REGION FOUR ENGINEER STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION



LOCATION MAP

APPROXIMATE SCALE: 0 1 MILE
NET LENGTH OF SECTION = 275 FEET = 0.052 MILES

CONTRACT NO. 95631

DATE: 3/21/2010

STEVEN W. MCGINNIS
062-54161
ILLINOIS PROFESSIONAL ENGINEER

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

184.000959
ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORPORATION

EXPIRES: 11/30/2011

PROJECT NUMBER: 09.0135.130

DATE: 03/30/10

SUMMARY OF QUANTITIES			
CODE NO.	ITEM	CONSTRUCTION TYPE CODE X081-2A	
		UNIT	TOTAL
20100500	TREE REMOVAL, ACRES	ACRE	0.2
20200100	EARTH EXCAVATION	CU YD	95
20300100	CHANNEL EXCAVATION	CU YD	185
20400800	FURNISHED EXCAVATION	CU YD	30
25000200	SEEDING, CLASS 2	ACRE	0.2
25000400	NITROGEN FERTILIZER NUTRIENT	POUND	18
25000500	PHOSPHORUS FERTILIZER NUTRIENT	POUND	18
25000600	POTASSIUM FERTILIZER NUTRIENT	POUND	18
25100115	MULCH, METHOD 2	ACRE	0.2
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	40
28000305	TEMPORARY DITCH CHECKS	FOOT	30
28100207	STONE RIPRAP, CLASS A4	TON	270
28102600	STONE RIPRAP DITCH	TON	60
28200200	FILTER FABRIC	SQ YD	275
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	200
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50300225	CONCRETE STRUCTURES	CU YD	29.6
50300280	CONCRETE ENCASEMENT	CU YD	14.0
50400505	PRECAST PRESTRESSED CONCRETE DECK BEAMS (27" DEPTH)	SQ FT	1,680
50800105	REINFORCEMENT BARS	POUND	3,020
50900205	STEEL RAILING, TYPE S1	FOOT	140
51201600	FURNISHING STEEL PILES HP12X53	FOOT	204
51500100	NAME PLATES	EACH	1
67100100	MOBILIZATION	L SUM	1
78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	4
Z0065000	SETTING PILES IN ROCK	EACH	8

^ SEE SPECIAL PROVISIONS
* SPECIALTY ITEMS

HORIZONTAL ALIGNMENT		
LOCATION	NORTHING	EASTING
P.O.T. STA 5+75.84	981,896.2580	802,384.8730
P.O.T. STA 15+24.90	981,906.6390	803,333.8810

STONE RIPRAP DITCH	
LOCATION	28102600 TON
TR 231	
LT. STA 8+25 TO LT. STA 9+25	56.90
TOTAL	56.90
USE	60

TREE REMOVAL ACRES	
LOCATION	ACRE
TR 231	
RT. STA 9+03.00 TO RT. STA 9+48.00	0.04
LT. STA 9+10.00 TO LT. STA 9+90.00	0.06
RT. STA 10+16.00 TO RT. STA 11+00.00	0.06
LT. STA 10+42.00 TO LT. STA 10+77.00	0.02
TOTAL	0.18
USE	0.20

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 CONTRACTOR SHALL CONSULT THE ENGINEER IN REGARD TO THE EXACT LENGTH OF PIPE CULVERTS AND PIPE DRAINS BEFORE ORDERING THESE ITEMS.
- THE REVISION NUMBER INDICATED FOR THE STANDARDS LISTED IN THE INDEX SHEETS SHALL BE USED IN THE CONSTRUCTION OF THIS SECTION.
- THE FOLLOWING RATES OF APPLICATION HAVE BEEN USED IN CALCULATING PLAN QUANTITIES.

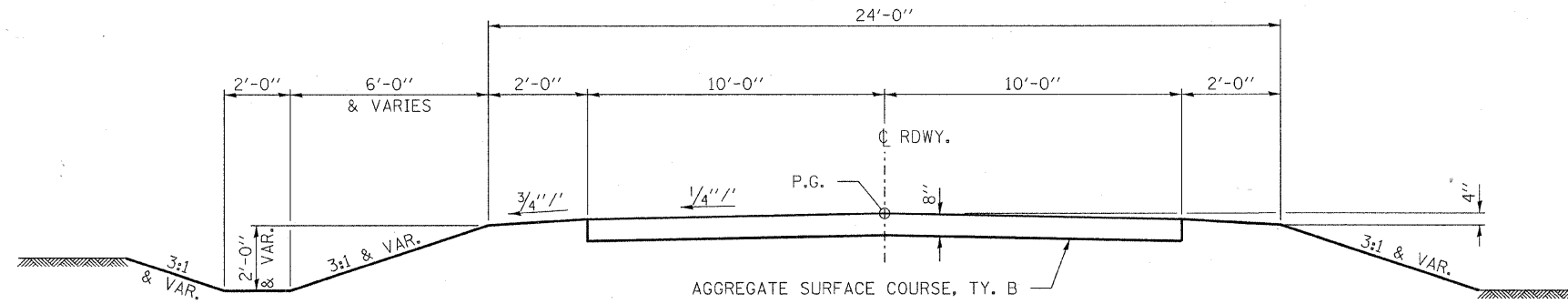
AGGREGATE SURFACE COURSE	2.05 TON/CU YD
STONE RIPRAP, CLASS A4	1.75 TON/CU YD
STONE RIPRAP DITCH	1.75 TON/CU YD
- THE AREA TO BE SEEDED SHALL CONSIST OF ALL EARTH SURFACES DISTURBED DURING CONSTRUCTION AS DIRECTED BY THE ENGINEER.
ESTIMATED QUANTITY = 0.2 ACRES
- TREES WITHIN THE RIGHT-OF-WAY WHICH INTERFERE WITH CONSTRUCTION SHALL BE REMOVED ONLY AT THE DIRECTION OF THE ENGINEER. THE AREA DESIGNATED FOR REMOVAL SHALL BE MARKED AND MEASURED FOR PAYMENT BY THE ENGINEER BEFORE REMOVAL.

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 231							
STA 8+25.00 TO STA 9+76.19	73		25.00%	100.00%	55	169	-114
STA 10+47.82 TO STA 11+00.00	22		25.00%	100.00%	17	27	-11
CHANNEL EXCAVATION		185	25.00%	70.00%	97	0	97
TOTAL	95	185			169	196	-28
USE	95						30

FURNISHED EXCAVATION=30 CU YDS

ROADWAY SCHEDULE	
LOCATION	AGGREGATE SURFACE COURSE TYPE B, (8")
	40200800 TON
TR 231	
STA 8+25.00 TO STA 9+76.19	149
STA 10+47.82 TO STA 11+00.00	46
TOTAL	195
USE	200

SEEDING TABLE	
LOCATION	SEEDING, CLASS 2
	25000200 ACRE
TR 231	
STA 8+25 TO STA 9+76.19	0.14
STA 10+47.82 TO STA 11+00	0.05
TOTAL	0.19
USE	0.20

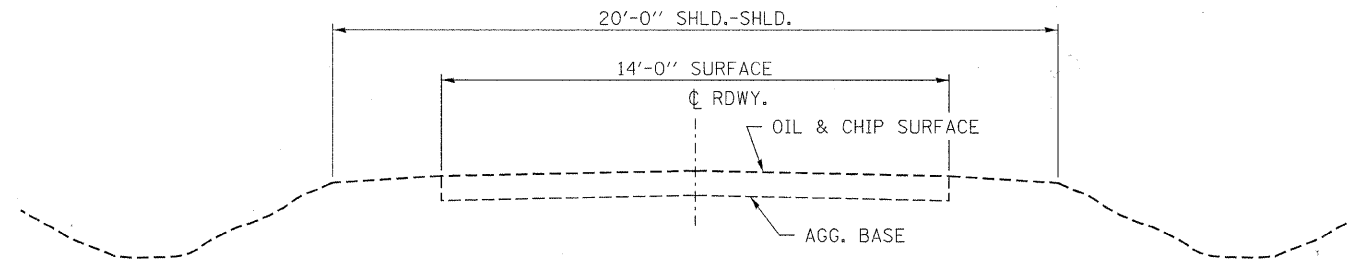


SUGGESTED CUT SECTION
CONSTRUCT AS SHOWN IN
STATION CROSS SECTIONS

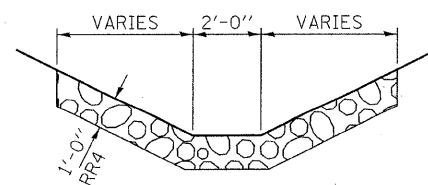
TYPICAL CROSS SECTION
STA. 8+25 TO STA. 11+00

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. 8+25 TO 8+75 AND STA. 10+50 TO 11+00. SEE SHEET 12 FOR TRANSITION AT BRIDGE.



EXISTING CROSS SECTION
STA. 6+25 TO 14+50

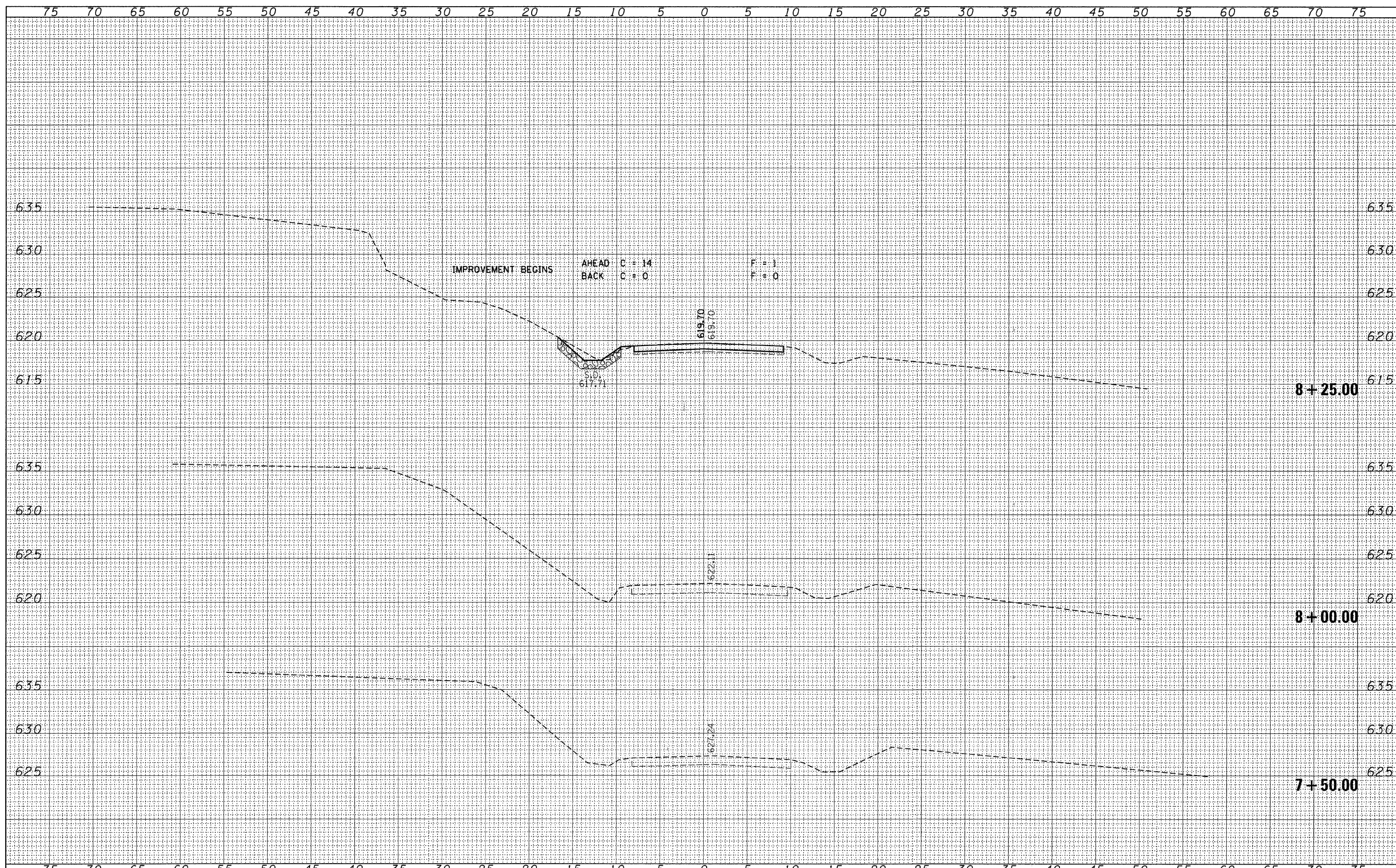


STONE RIPRAP DITCH
LT. STA. 8+25 TO STA. 9+25

FILE NAME = 092135-shr-typsections.dgn	USER NAME =	DESIGNED - A.S.L.	REVISED -	STATE OF ILLINOIS SHELBY COUNTY HIGHWAY DEPARTMENT	HLR	TYPICAL CROSS SECTIONS T.R. 231 / 1000 N. ROAD		T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
	PLOT SCALE =	CHECKED - S.W.M.	REVISED -					231	09-23113-00-BR	SHELBY	20	3	
PLOT DATE = 3/31/2010	DATE - 03/30/10	REVISED -	SCALE:			SHEET NO.	OF SHEETS	STA.	TO STA.	TOWER HILL ROAD DISTRICT CONTRACT NO. 95631			
								FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT	BROS-1731711			

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

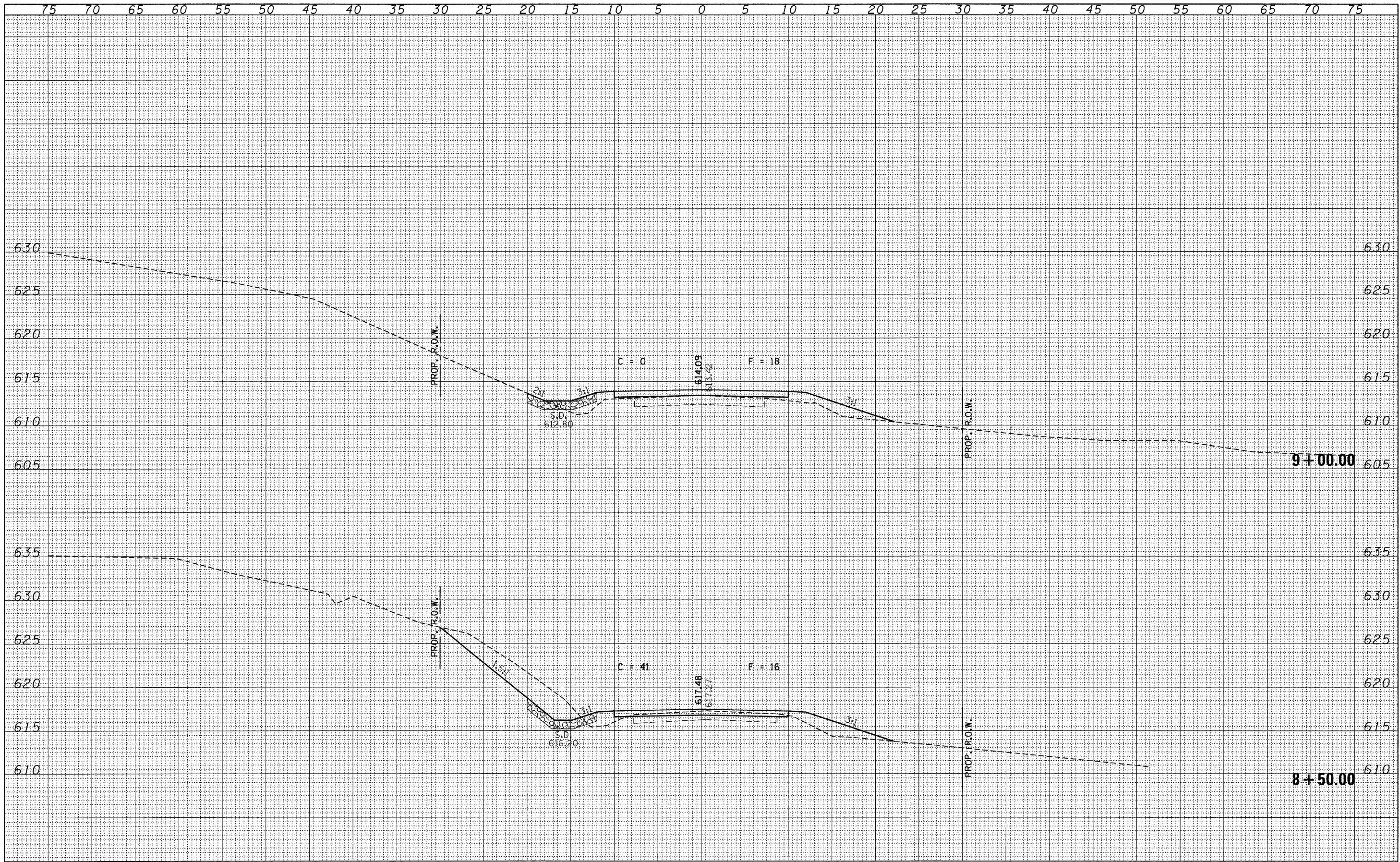
BY	DATE
ORIGINAL SURVEY	SURVEYED
NOTE BOOK	PLOTTED
NO.	TEMPLATE
	AREAS CHECKED



FILE NAME = 090135-shr-axs.dgn	USER NAME =	DESIGNED - J.W.F.	REVISED -	STATE OF ILLINOIS SHELBY COUNTY HIGHWAY DEPARTMENT		CROSS SECTIONS		T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN - D.T.M.	REVISED -			231	09-23113-00-BR	SHELBY	20	5		
		CHECKED - S.W.M.	REVISED -			TOWER HILL ROAD DISTRICT CONTRACT NO. 95631						
		DATE - 01/28/10	REVISED -			FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT BROS-173(171)						
PLOT SCALE =				SCALE: H5:V5		SHEET NO. OF SHEETS		STA. 7+50.00 TO STA. 8+25.00				

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

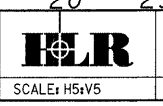
DATE	
BY	
ORIGINAL SURVEY	SURVEYED
NOTE BOOK NO.	PLOTTED
	TEMPLATE
	AREAS CHECKED



FILE NAME = 090135-sh-t-ssa.dgn
 USER NAME =
 PLOT SCALE =
 PLOT DATE = 3/31/2010

DESIGNED - J.W.F.	REVISED -
DRAWN - D.T.M.	REVISED -
CHECKED - S.W.M.	REVISED -
DATE - 01/28/10	REVISED -

STATE OF ILLINOIS
 SHELBY COUNTY HIGHWAY DEPARTMENT



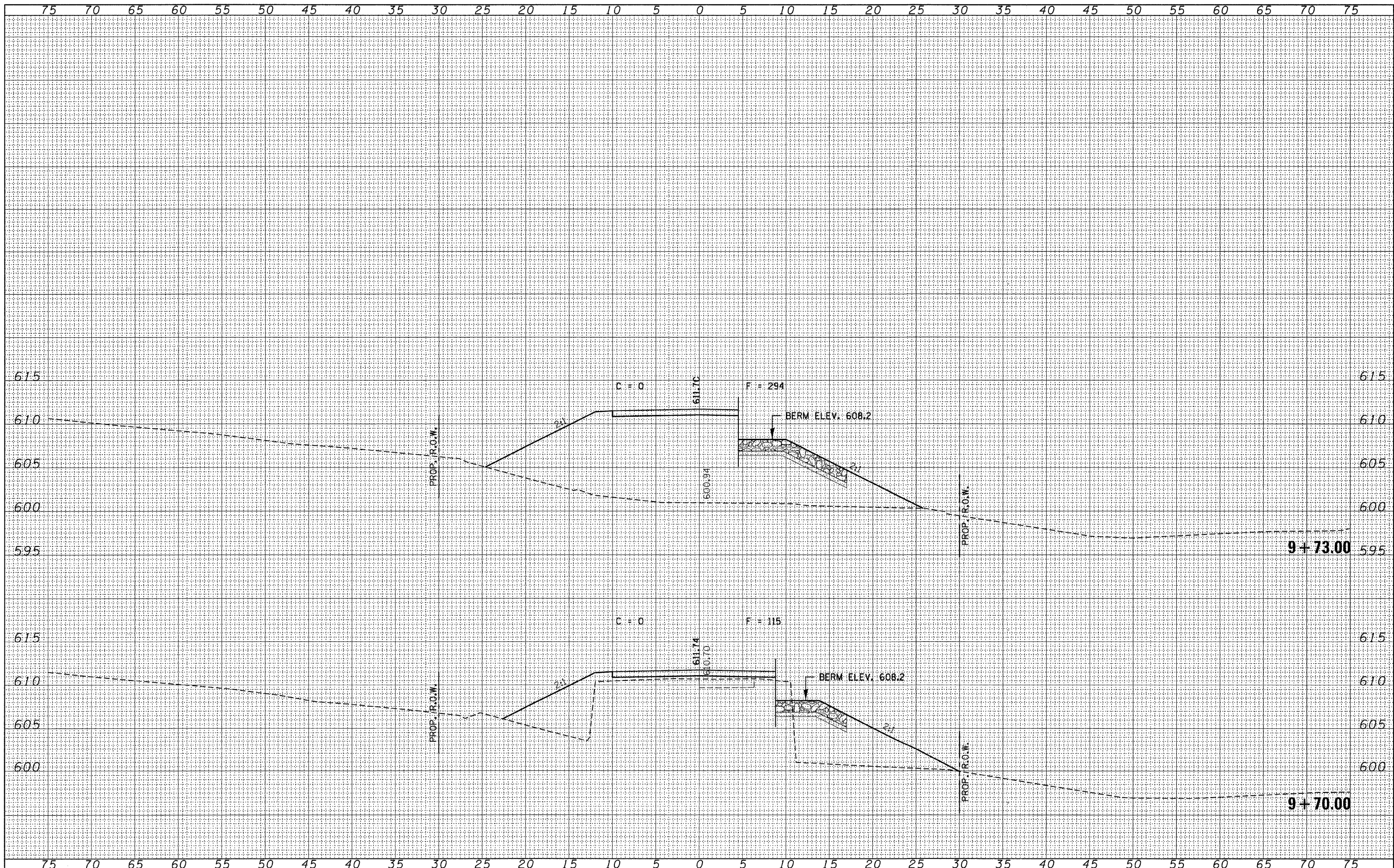
SCALE: H5:V5
 SHEET NO. OF SHEETS STA. 8+50.00 TO STA. 9+00.00

CROSS SECTIONS
 ROAD NAME

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
231	09-23113-00-BR	SHELBY	20	6
TOWER HILL ROAD DISTRICT			CONTRACT NO. 95631	
FED. ROAD DIST. NO. ILLINOIS			FED. AID PROJECT BR05-173(171)	

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

ORIGINAL SURVEY	SURVEYED	DATE
NOTE BOOK NO.	PLOTTED	
	TEMPLATE	
	AREAS CHECKED	



FILE NAME = 090135-eh1-ssx.dgn
 USER NAME =
 PLOT SCALE =
 PLOT DATE = 3/31/2010

DESIGNED - J.W.F.
 DRAWN - D.T.M.
 CHECKED - S.W.M.
 DATE - 01/28/10

REVISED -
 REVISED -
 REVISED -
 REVISED -

STATE OF ILLINOIS
 SHELBY COUNTY HIGHWAY DEPARTMENT



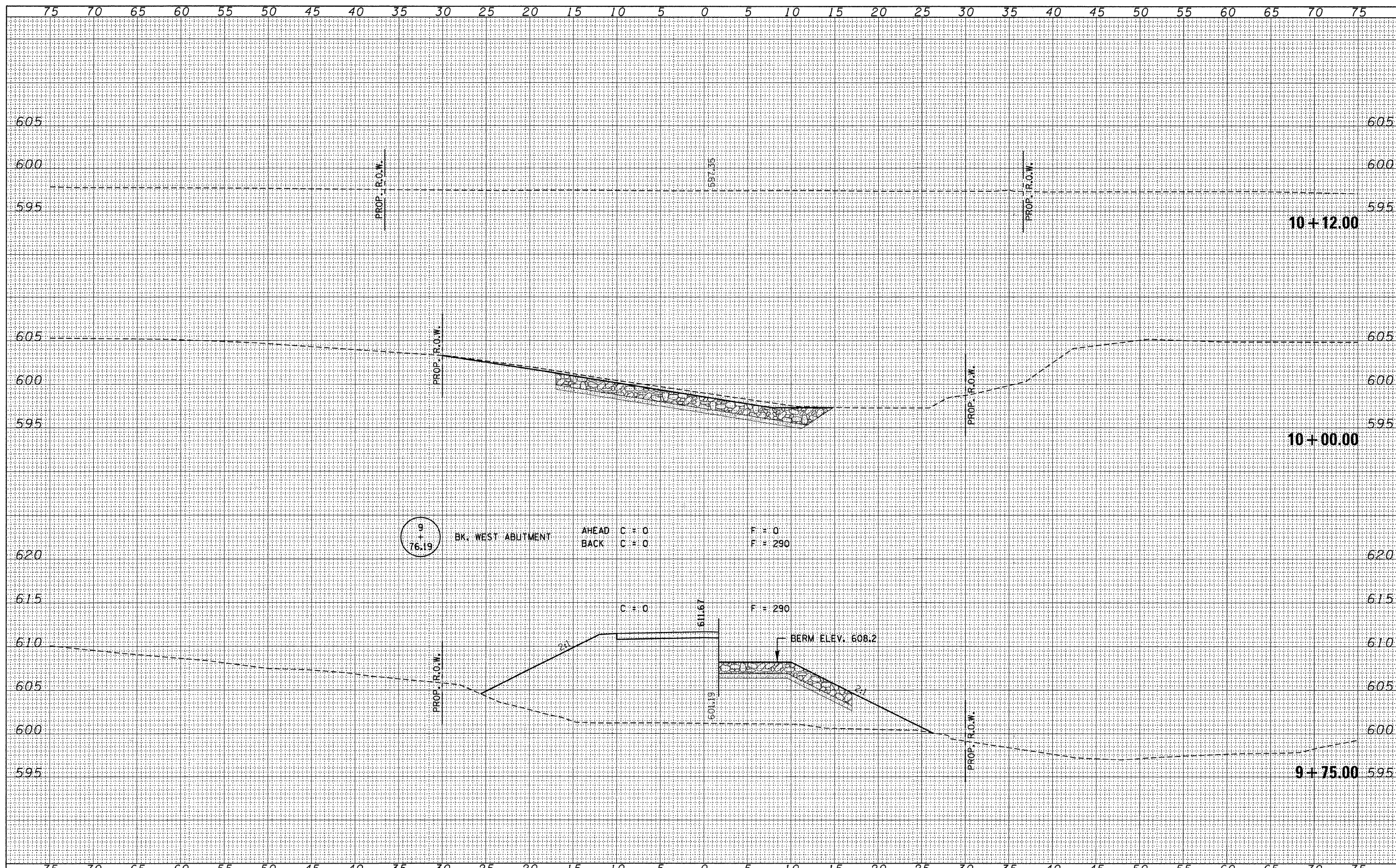
SCALE: H5:V5


CROSS SECTIONS
 ROAD NAME
 SHEET NO. OF SHEETS STA. 9+70.00 TO STA. 9+73.00

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
231	09-23113-00-BR	SHELBY	20	8
TOWER HILL ROAD DISTRICT			CONTRACT NO. 95631	
FED. ROAD DIST. NO. ILLINOIS			FED. AID PROJECT BR05-173(171)	

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

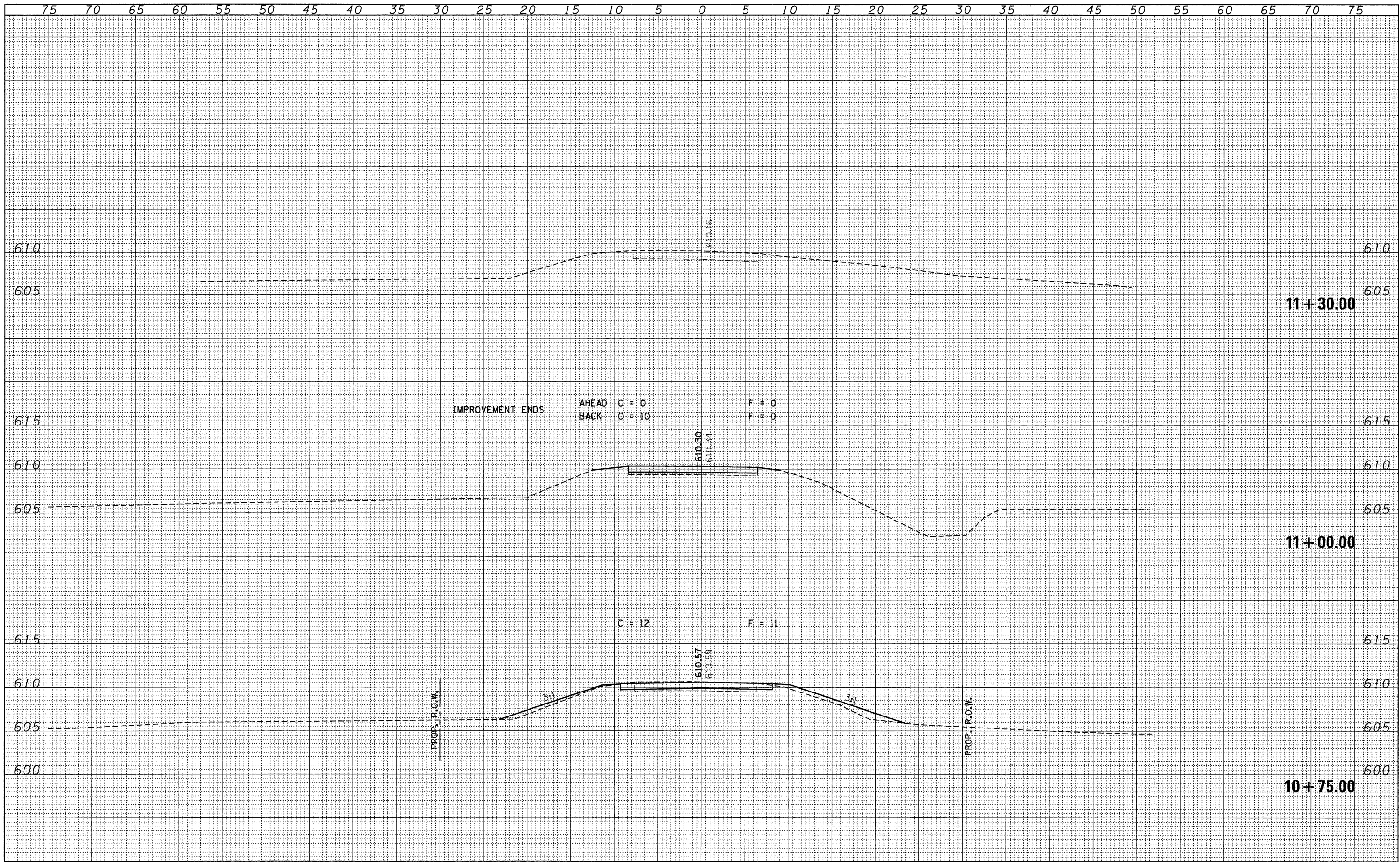
ORIGINAL SURVEY	SURVEYED	DATE
NOTE BOOK NO.	PLOTTED	
	TEMPLATE	
	AREAS CHECKED	



FILE NAME = 090135-eh-xxx.dgn	USER NAME =	DESIGNED - J.W.F.	REVISED -	STATE OF ILLINOIS SHELBY COUNTY HIGHWAY DEPARTMENT  SCALE: H5:V5	CROSS SECTIONS ROAD NAME		T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.			
		DRAWN - D.T.M.	REVISED -		SHEET NO.	OF	SHEETS	STA. 9+75.00	TO STA. 10+12.00	231	09-23113-00-BR	SHELBY	20	9
		CHECKED - S.W.M.	REVISED -		TOWER HILL ROAD DISTRICT CONTRACT NO. 95631									
		DATE - 01/28/10	REVISED -		FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT BROS-173(71)									

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

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



FILE NAME = 090135-shr-axs.dgn
 USER NAME =
 PLOT SCALE =
 PLOT DATE = 3/31/2010

DESIGNED - J.W.F.	REVISED -
DRAWN - D.T.M.	REVISED -
CHECKED - S.W.M.	REVISED -
DATE - 01/28/10	REVISED -

STATE OF ILLINOIS
 SHELBY COUNTY HIGHWAY DEPARTMENT



SCALE: H5:V5
 SHEET NO. OF SHEETS STA. 10+75.00 TO STA. 11+30.00

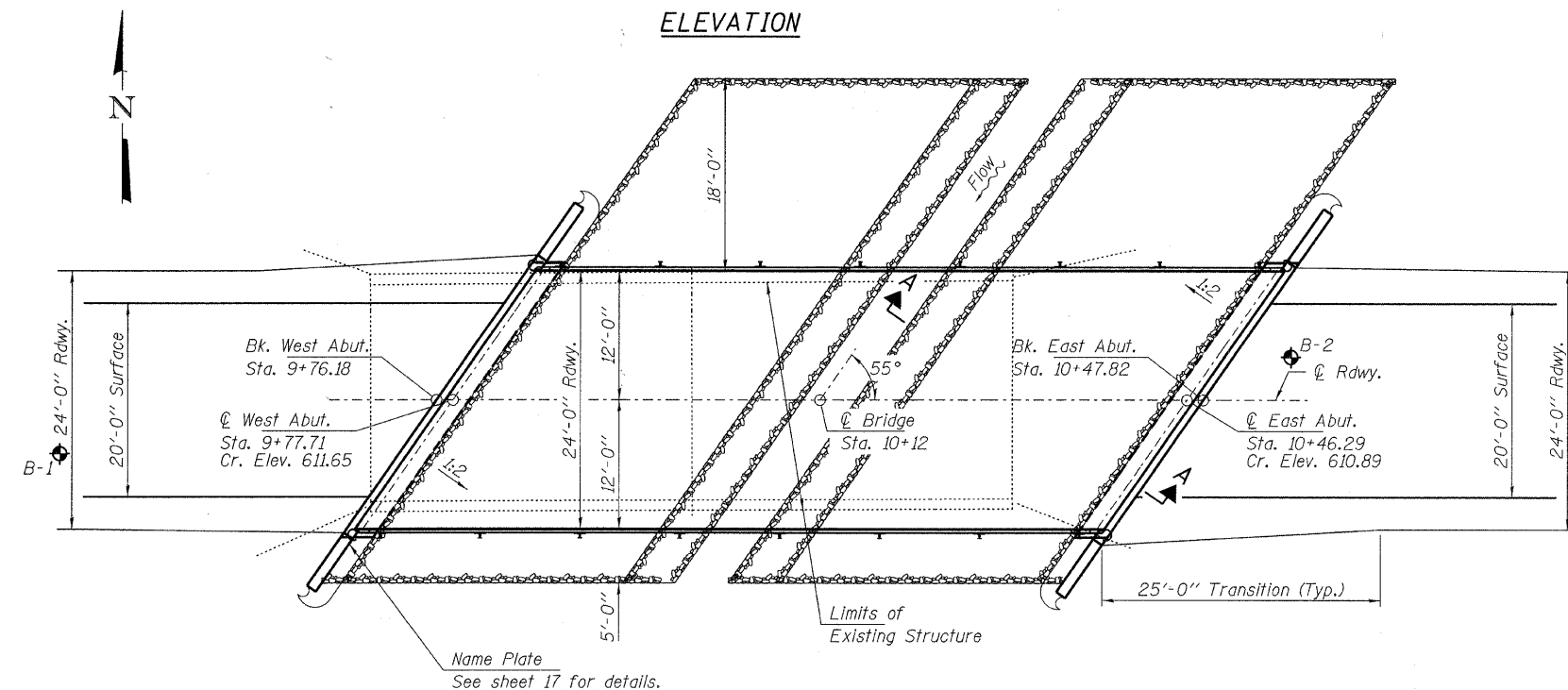
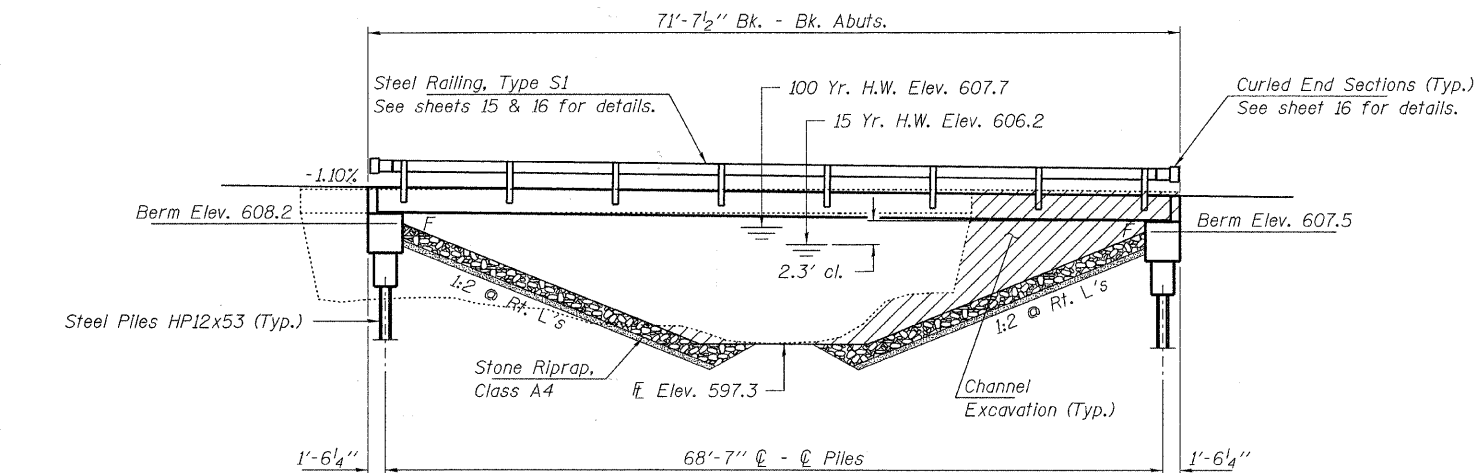
CROSS SECTIONS
 ROAD NAME

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
231	09-23113-00-BR	SHELBY	20	11
TOWER HILL ROAD DISTRICT		CONTRACT NO. 95631		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT BR05-173(171)		

BENCHMARK: Chiseled square on N.E. curb, 12' Lt. Sta. 10+30, Elev. 611.40

EXISTING STRUCTURE NO. 087-3169: Sta. 10+00 - Two span PPC deck beam bridge with concrete curbs on closed timber abutments, wingwalls, & pier.
Structure closed to traffic. 57.0' fc.-fc. abuts.; 20.0' o.-o. deck

No Salvage



DESIGN STRESSES

FIELD UNITS

f'c = 3,500 psi
fy = 60,000 psi (Reinf.)

PRECAST PRESTRESSED UNITS

f'c = 6,000 psi
f'ci = 5,000 psi
fpu = 270,000 psi (1/2" low lax. strands)
fpbt = 201,960 psi (1/2" low lax. strands)
fy = 60,000 psi (Reinf.)

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) = 2
Design Spectral Acceleration at 1.0 sec. (SD1) = 0.188g
Design Spectral Acceleration at 0.2 sec. (SDS) = 0.397g
Soil Site Class = D

WATERWAY INFORMATION

Drainage Area = 3.4 Sq. Mi.		Existing Low Grade Elev. 610.10 @ Sta. 11+40		Proposed Low Grade Elev. 610.10 @ Sta. 11+40			
Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist. Prop.	Natural H.W.E. Exist. Prop.	Head - Ft. Exist. Prop.	Headwater El. Exist. Prop.	
Design	10	1100	260 240	605.72 606.15	0.80 0.76	0.02 0.07	606.52 606.91
Base	15	1270	270 260	606.15 607.66	0.76 0.62	0.07 0.46	606.91 608.12
Max. Calc.	100	2130	340 330	607.66 608.69	0.62 1.19	0.46 1.62	608.28 610.31

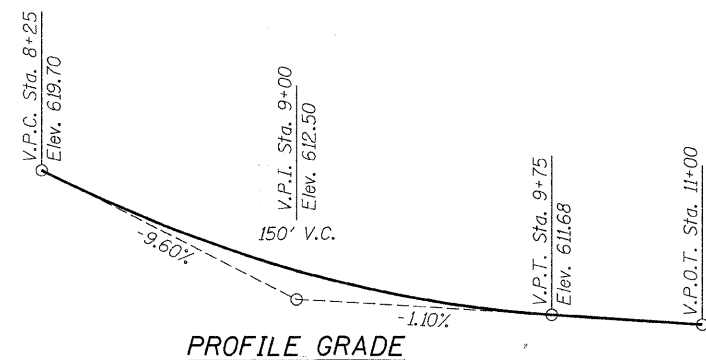
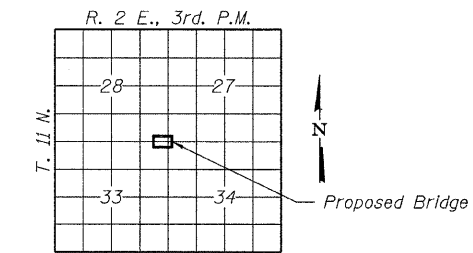
GENERAL NOTES

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 (IL Modified). See Special Provisions.
Excavation required to construct the Abutments shall be included in the cost of Concrete Structures. No additional compensation will be allowed for Structure Excavation.
All proposed construction activities shall be in accordance with Nationwide Permit number 14 of the Department of the Army authorized under Section 404 of the Clean Water Act. The IEPA has issued Section 401 Water Quality Certification for this activity. See Special Provisions for conditions.

BUILT 201 BY
SHELBY COUNTY
SEC. 09-23113-00-BR
TOWER HILL ROAD DISTRICT
STR. NO. 087-3570
LOADING HL-93

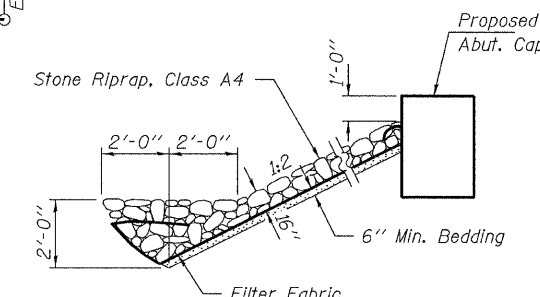
NAME PLATE

See Std. 515001



INDEX OF STRUCTURE SHEETS

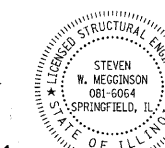
1. General Plan & Elevation
2. Superstructure
- 3-4. Superstructure Details
5. Steel Railing, Type S1
6. West Abutment
7. East Abutment
8. Pile Details
9. Borings



TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	Cu. Yd.			185
Stone Riprap, Class A4	Ton			270
Filter Fabric	Sq. Yd.			275
Removal of Existing Structures	Each			1
Concrete Structures	Cu. Yd.		29.6	29.6
Concrete Encasement	Cu. Yd.		14.0	14.0
Precast Prestressed Concrete Deck Beams (27" Depth)	Sq. Ft.	1,680		1,680
Reinforcement Bars	Pound		3,020	3,020
Steel Railing, Type S1	Foot	140		140
Furnishing Steel Piles HP12x53	Foot		204	204
Setting Piles in Rock	Foot		8	8
Name Plates	Each		1	1

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."



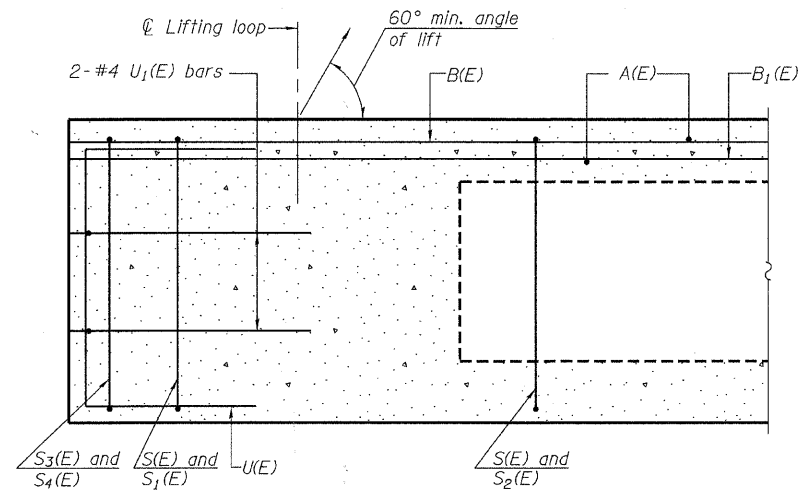
Steven W. Magnuson 081-6064
ILLINOIS STRUCTURAL ENGINEER NO. 081-6064
Expires 11-30-2010

**GENERAL PLAN AND ELEVATION
STRUCTURE NO. 087-3570**

DESIGNED - A.S.L.
CHECKED - S.W.M.
DRAWN - D.T.M.
CHECKED - S.W.M.

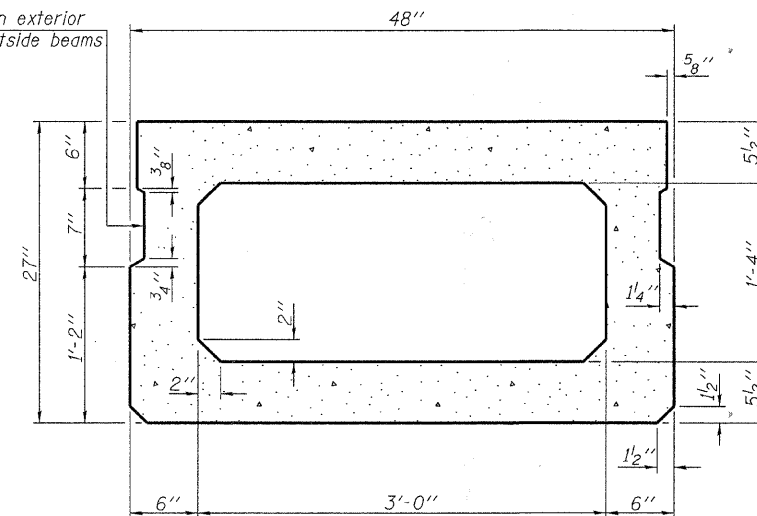
HAMPTON, LENZINI AND RENWICK, INC.
CIVIL ENGINEERS - STRUCTURAL ENGINEERS - LAND SURVEYORS
3085 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
217.546.3400 www.hlrengineering.com

SHEET NO. 1	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9 SHEETS	231	09-23113-00-BR	SHELBY	20	12
PROJECT NUMBER: 09.0135.130		DATE: 02/09/10		TOWER HILL ROAD DISTRICT	
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT BROS-173(171)		CONTRACT NO. 95631	

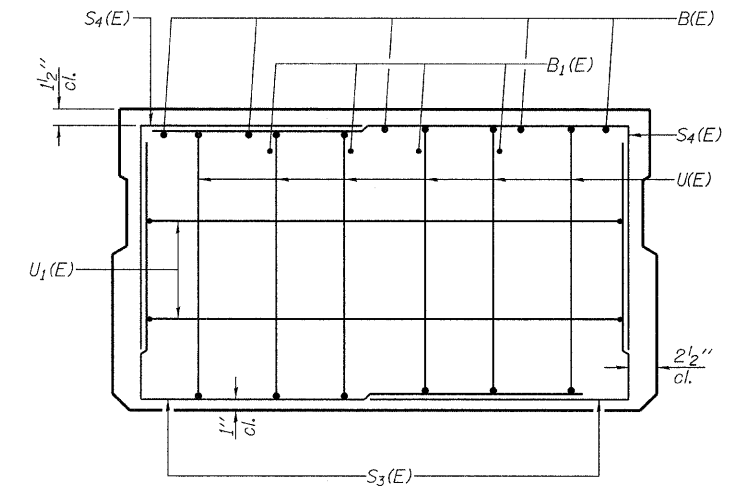


SECTION C-C

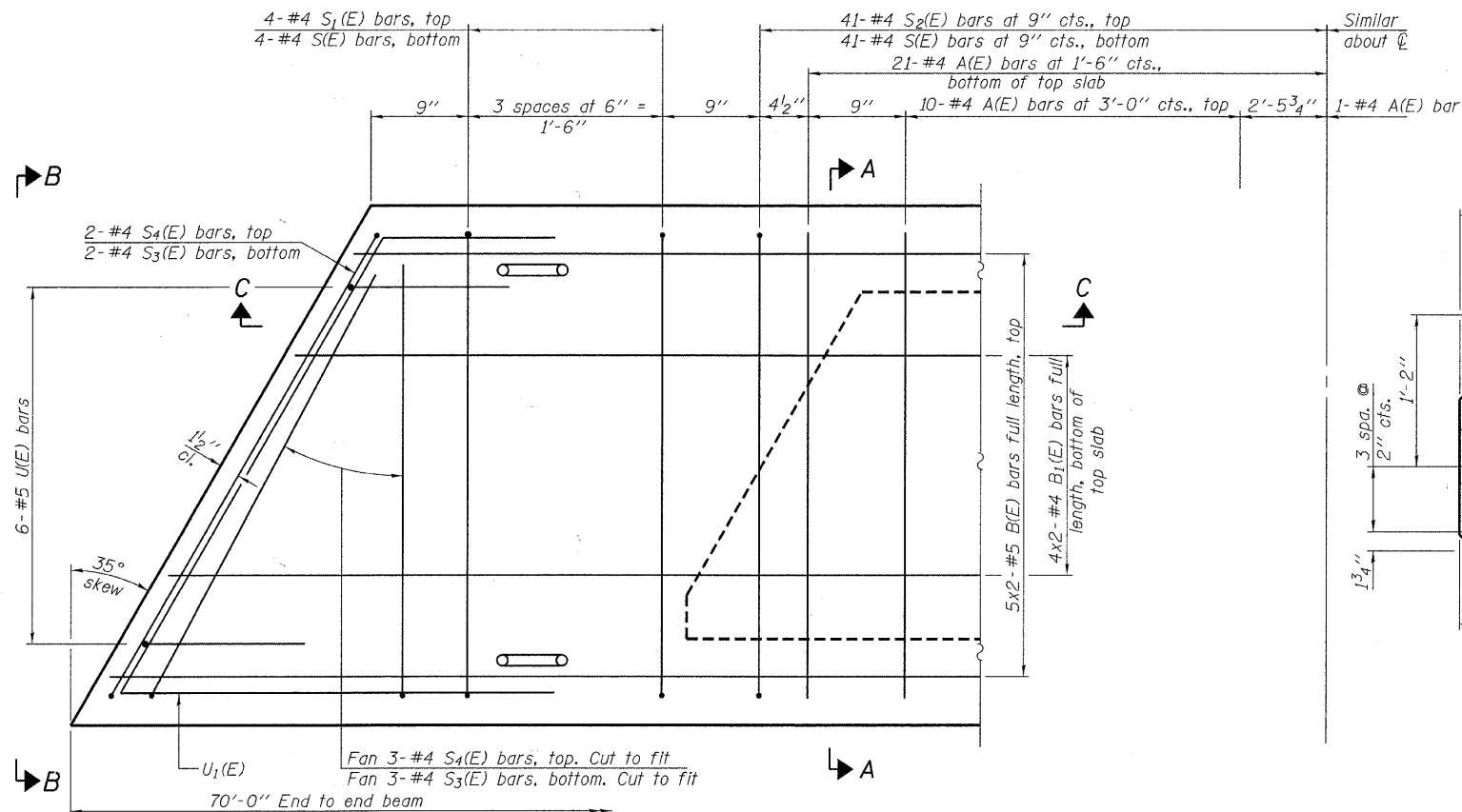
Omit key on exterior face of outside beams



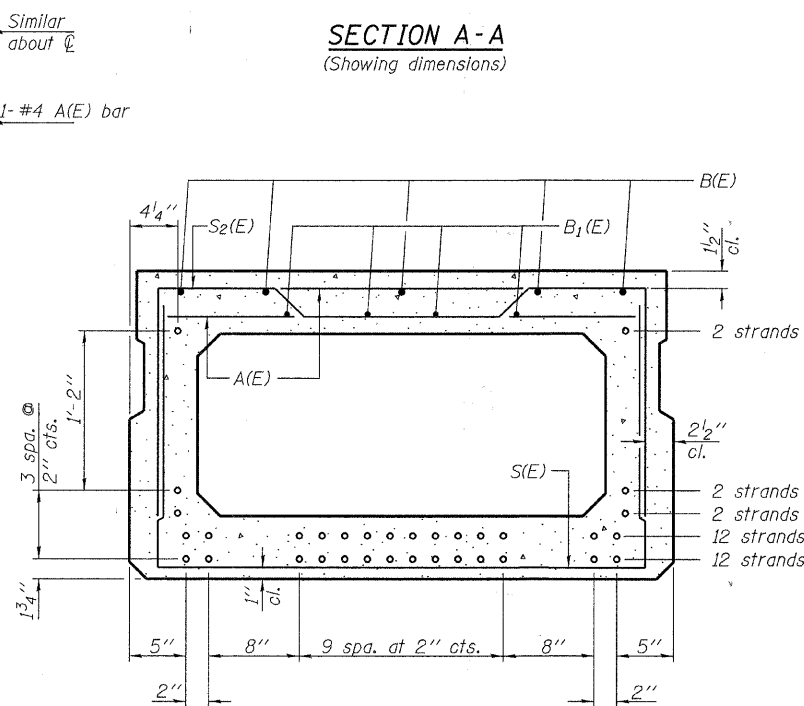
SECTION A-A
(Showing dimensions)



VIEW B-B



PLAN VIEW



SECTION A-A
(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)	63	#4	3'-7"	—
B(E)	10	#5	36'-1"	—
B1(E)	8	#4	35'-10"	—
S(E)	90	#4	7'-5"	U
S1(E)	8	#4	6'-11"	U
S2(E)	82	#4	7'-2"	U
S3(E)	10	#4	5'-0"	J
S4(E)	10	#4	4'-9"	J
U(E)	12	#5	4'-6"	C
U1(E)	4	#4	9'-3"	C

Note: See sheet 14 & 15 for additional details and Bill of Material.

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.

MINIMUM BAR LAP

#4 bar = 2'-0"
#5 bar = 2'-6"

DESIGNED - A.S.L.
CHECKED - S.W.M.
DRAWN - D.T.M.
CHECKED - S.W.M.

PD-2748-L

11-1-09

HAMPTON, LENZINI AND RENWICK, INC.
CIVIL ENGINEERS - STRUCTURAL ENGINEERS - LAND SURVEYORS
3085 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
217.548.3400 www.hlrenwrick.com

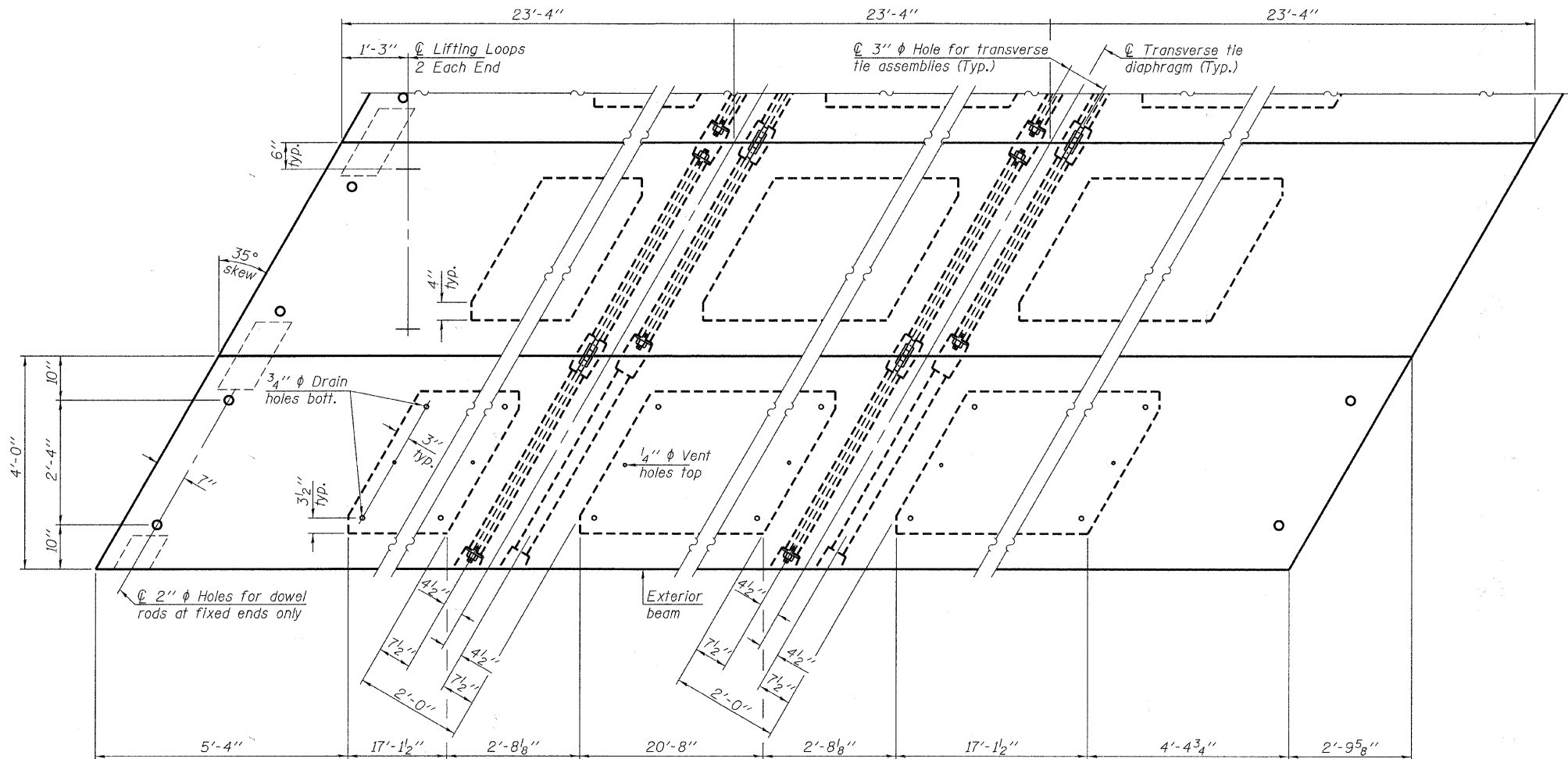
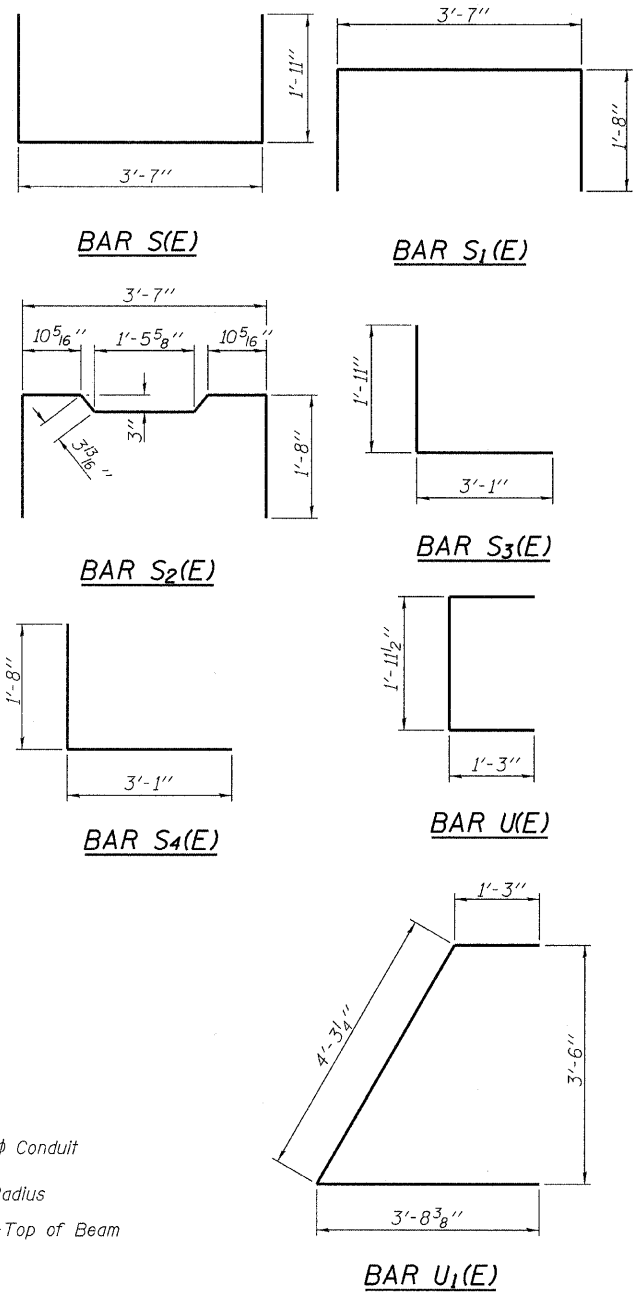
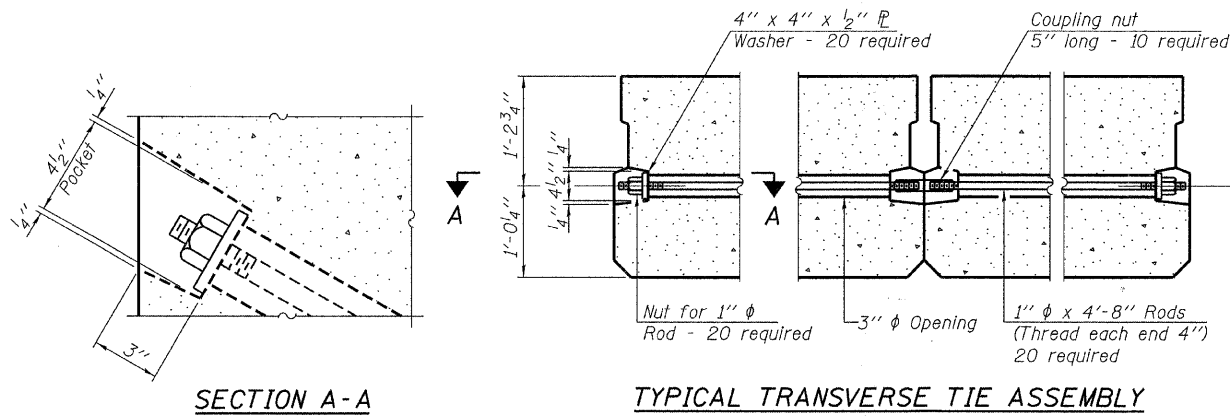
HLR
184.000959
ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORPORATION
PROJECT NUMBER: 09.0135.130 DATE: 02/09/10

SHEET NO. 2

9 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
231	09-23113-00-BR	SHELBY	20	13
TOWER HILL ROAD DISTRICT		CONTRACT NO. 95631		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT BROS-173(171)		

SUPERSTRUCTURE
27" X 48" PPC DECK BEAM
STRUCTURE NO. 087-3570



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.

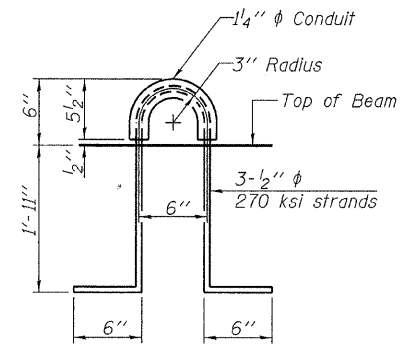
Reinforcement bars shall conform to ASTM A 706, Grade 60. (See Special Provisions). Two 1/8" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.

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.

Note: The loop shall be formed in a manner such that all strands are engaged during lifting. Burning of the lifting loops shall not be permitted. Lifting loops shall be ground off level with the surface of the deck beams and protected with a two-compound epoxy in accordance with Article 1025.01 of the Standard Specifications.



LIFTING LOOP DETAIL

DESIGNED	A.S.L.
CHECKED	S.W.M.
DRAWN	D.T.M.
CHECKED	S.W.M.

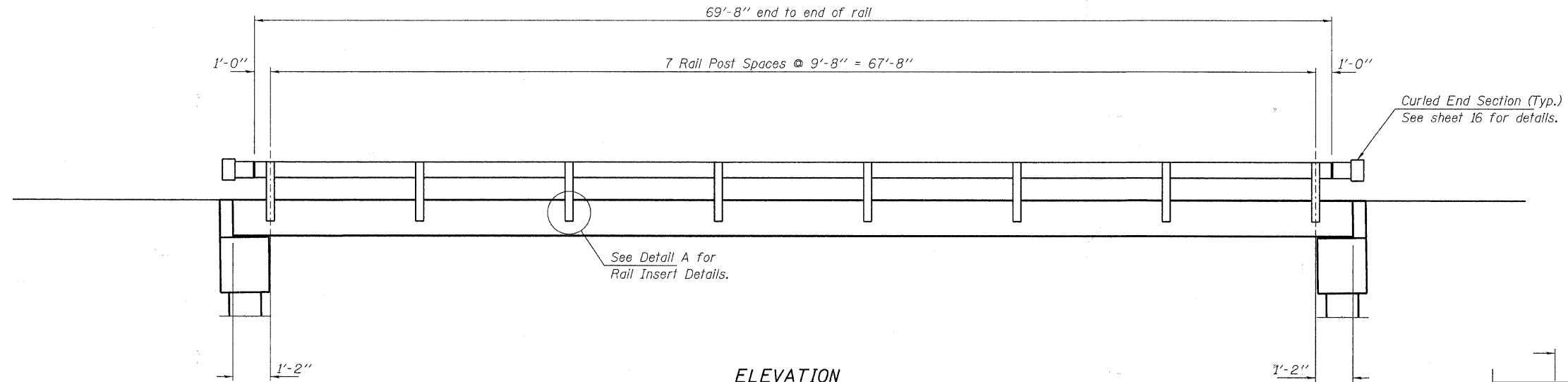
PD-2748-LD 11-1-09

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

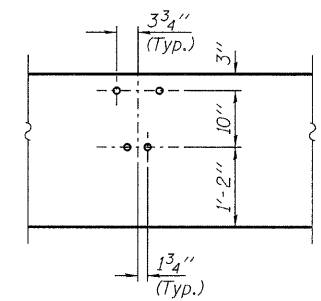
184.000950
 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORPORATION
 PROJECT NUMBER: 09.0135.130 DATE: 02/08/10

SHEET NO. 3	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9 SHEETS	231	09-23113-00-BR	SHELBY	20	14
TOWER HILL ROAD DISTRICT			CONTRACT NO. 95631		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT BROS-173(171)			

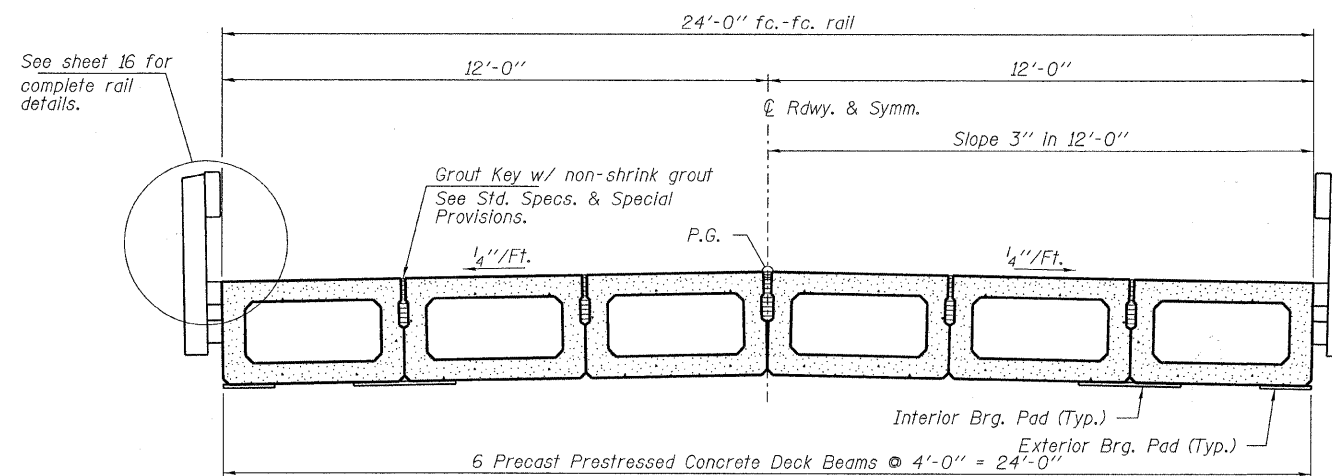
SUPERSTRUCTURE DETAILS
 27" X 48" PPC DECK BEAM DETAILS
 STRUCTURE NO. 087-3570



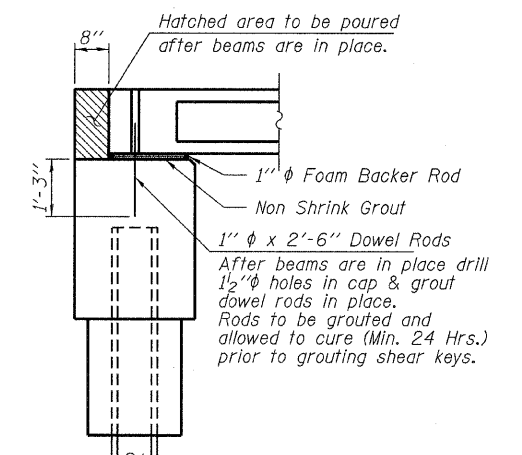
ELEVATION
Showing Rail Post Spaces
See sheet 16 for Railing Details.



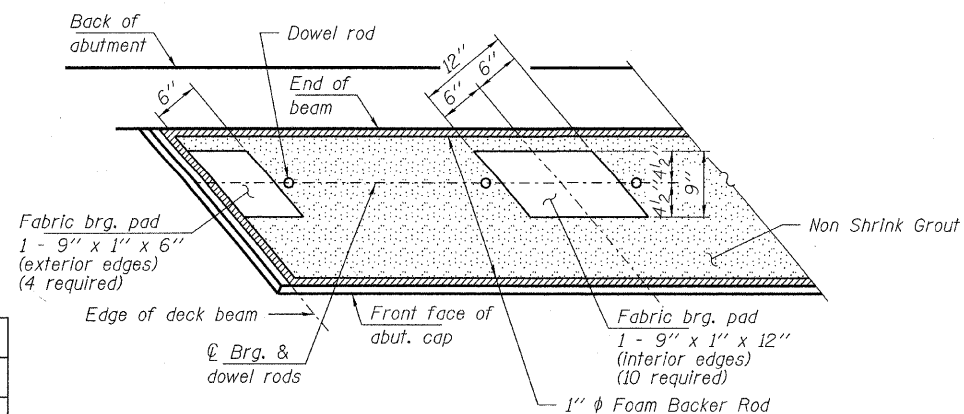
DETAIL A



CROSS SECTION
See sheets 13 & 14 for Superstructure.



SECTION AT ABUTMENTS
© Rt. L's

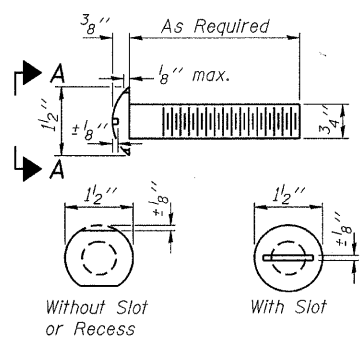


GRAUTED BEARING SEAT DETAIL AT ABUTMENT

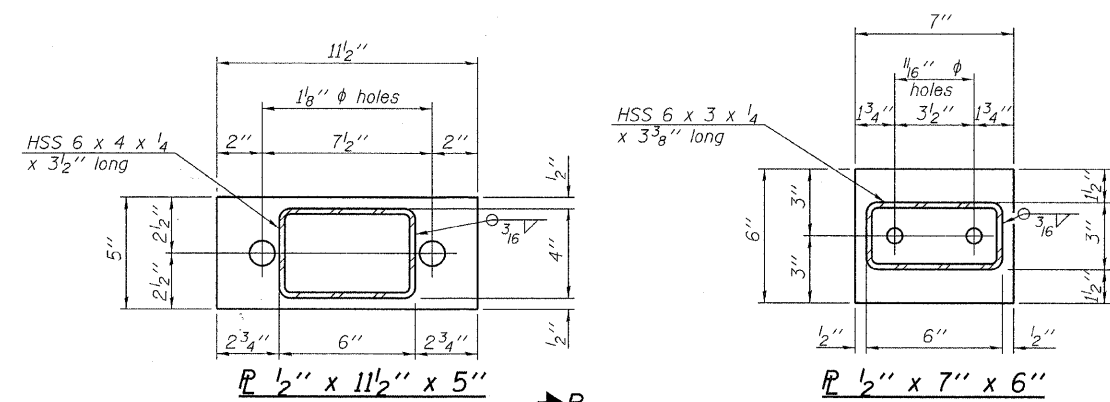
DESIGNED - A.S.L.
CHECKED - S.W.M.
DRAWN - D.T.M.
CHECKED - S.W.M.

**SUPERSTRUCTURE DETAILS
STRUCTURE NO. 087-3570**

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 184 000956 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORPORATION PROJECT NUMBER: 09.0135.130 DATE: 02/08/10	SHEET NO. 4	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	9 SHEETS	231	09-23113-00-BR	SHELBY	20	15
TOWER HILL ROAD DISTRICT			CONTRACT NO. 95631			
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT BROS-173(171)				

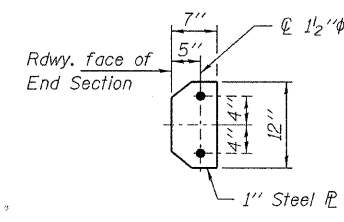


**VIEW A-A
ROUND HEAD BOLT**

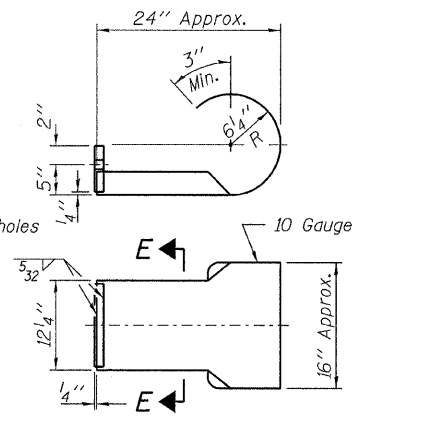


PL 1/2" x 11 1/2" x 5" **PL 1/2" x 7" x 6"**

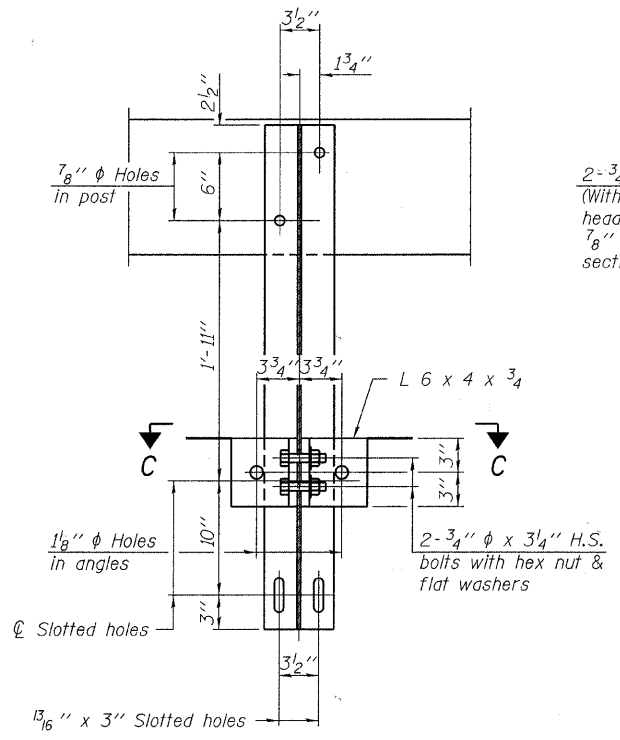
Note: Cost of curled end sections shall be included with the Steel Railing. (4 Required)



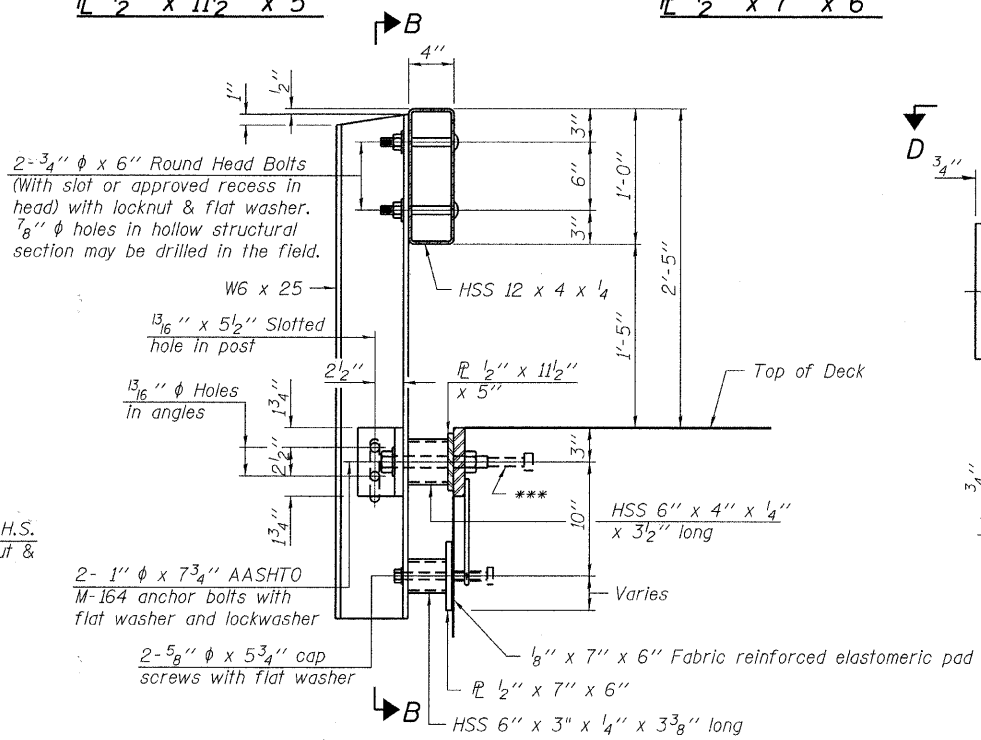
SECTION E-E



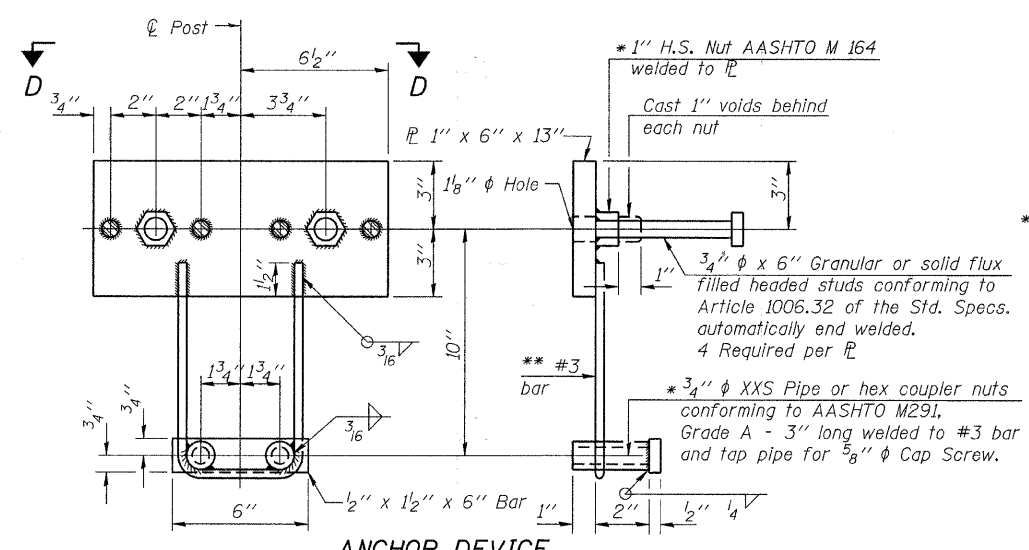
CURLED END SECTION DETAILS



SECTION B-B

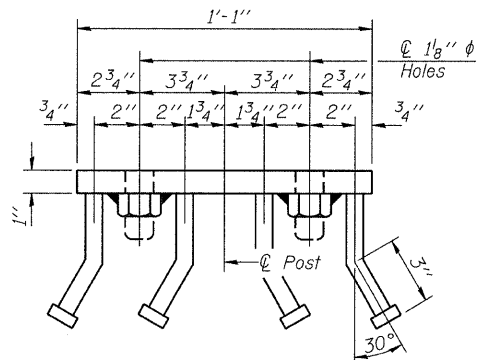


SECTION AT RAILING POST

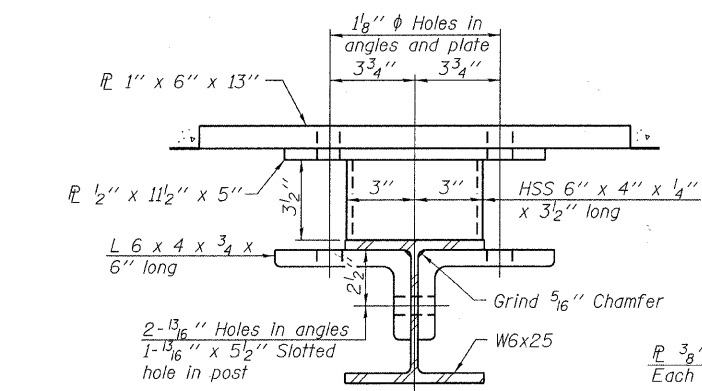


ANCHOR DEVICE

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.

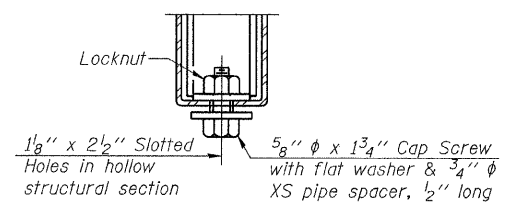


VIEW D-D

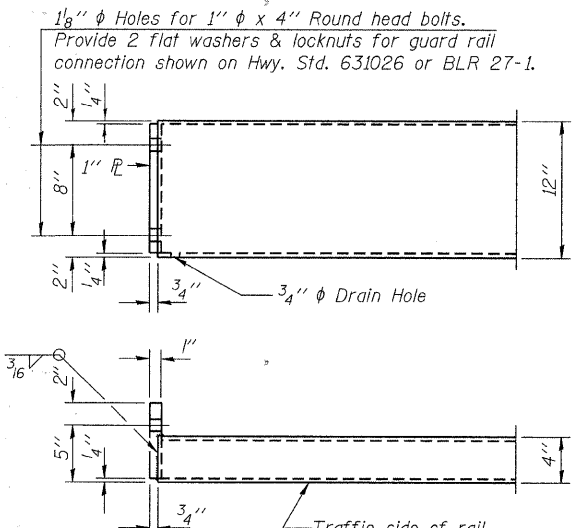


SECTION C-C

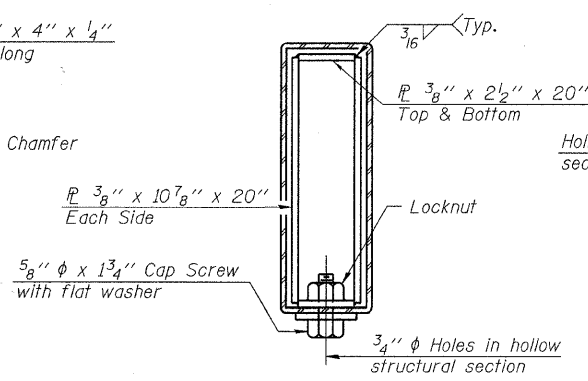
** Whenever the lower insert assemblies interfere with strand locations, the #3 bars shall be cut and adjusted in order to allow raising or lowering of the lower inserts. Maximum adjustment not to exceed 1/2".



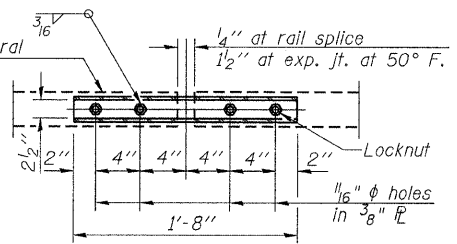
**RAIL SPLICE CONNECTION
AT EXPANSION JT.**



END OF RAIL DETAILS



SECTIONS AT RAIL SPLICE



**PLAN-BOTT. SPLICE PL
TYPICAL**

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S-1	Foot	140

**STEEL RAILING, TYPE S-1
STRUCTURE NO. 087-3570**

DESIGNED - A.S.L.
CHECKED - S.W.M.
DRAWN - D.T.M.
CHECKED - S.W.M.

R-23A

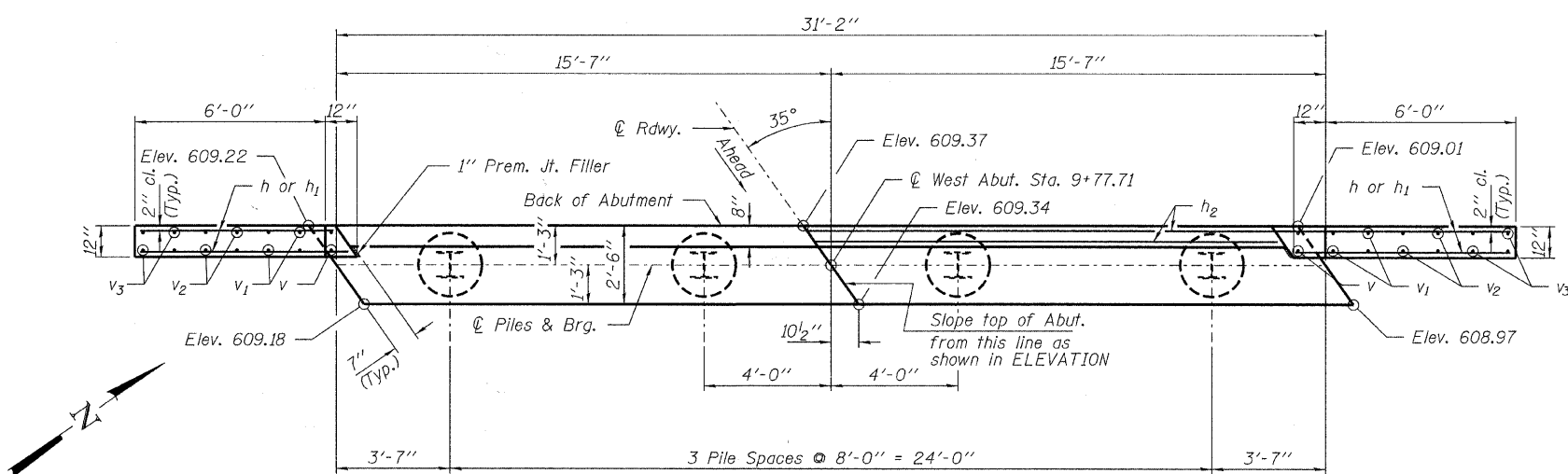
11-1-09

(10'-9" Maximum Post Spacing)

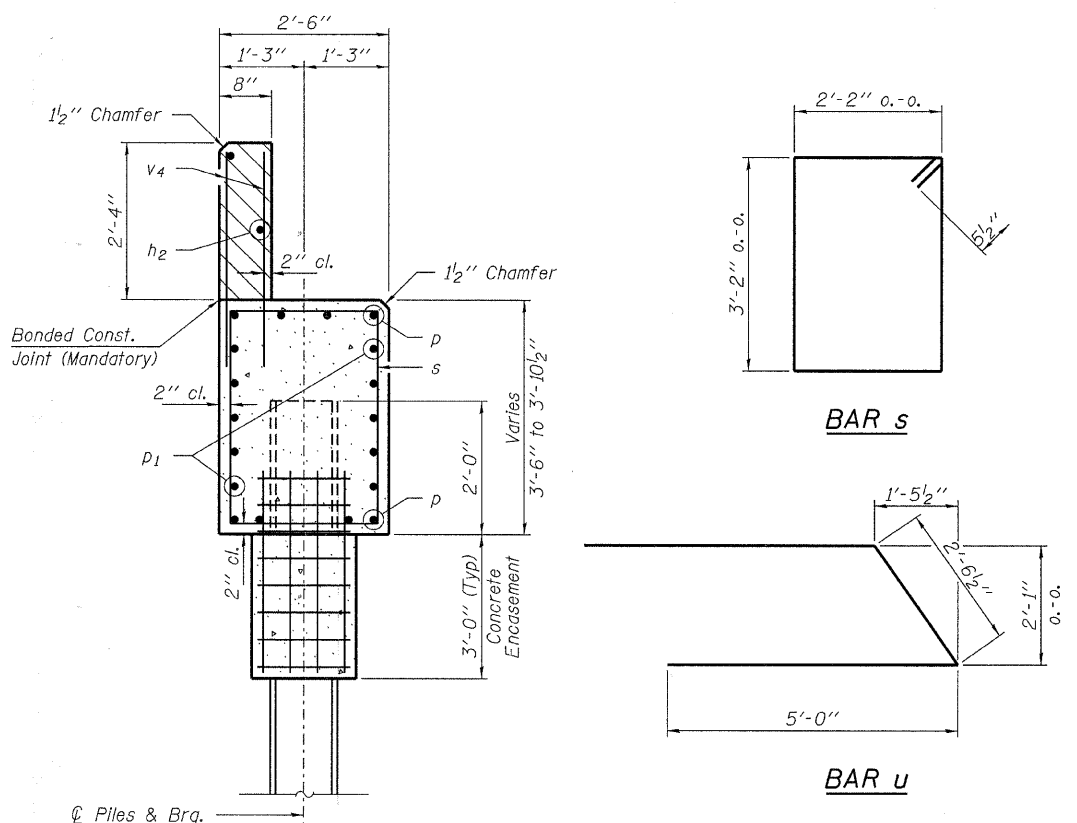
HAMPTON, LENZINI AND RENWICK, INC.
CIVIL ENGINEERS - STRUCTURAL ENGINEERS - LAND SURVEYORS
3085 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
217.546.3400 www.hlrengineering.com

184.00095
ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORPORATION
PROJECT NUMBER: 09.0135.130 DATE: 02/08/10

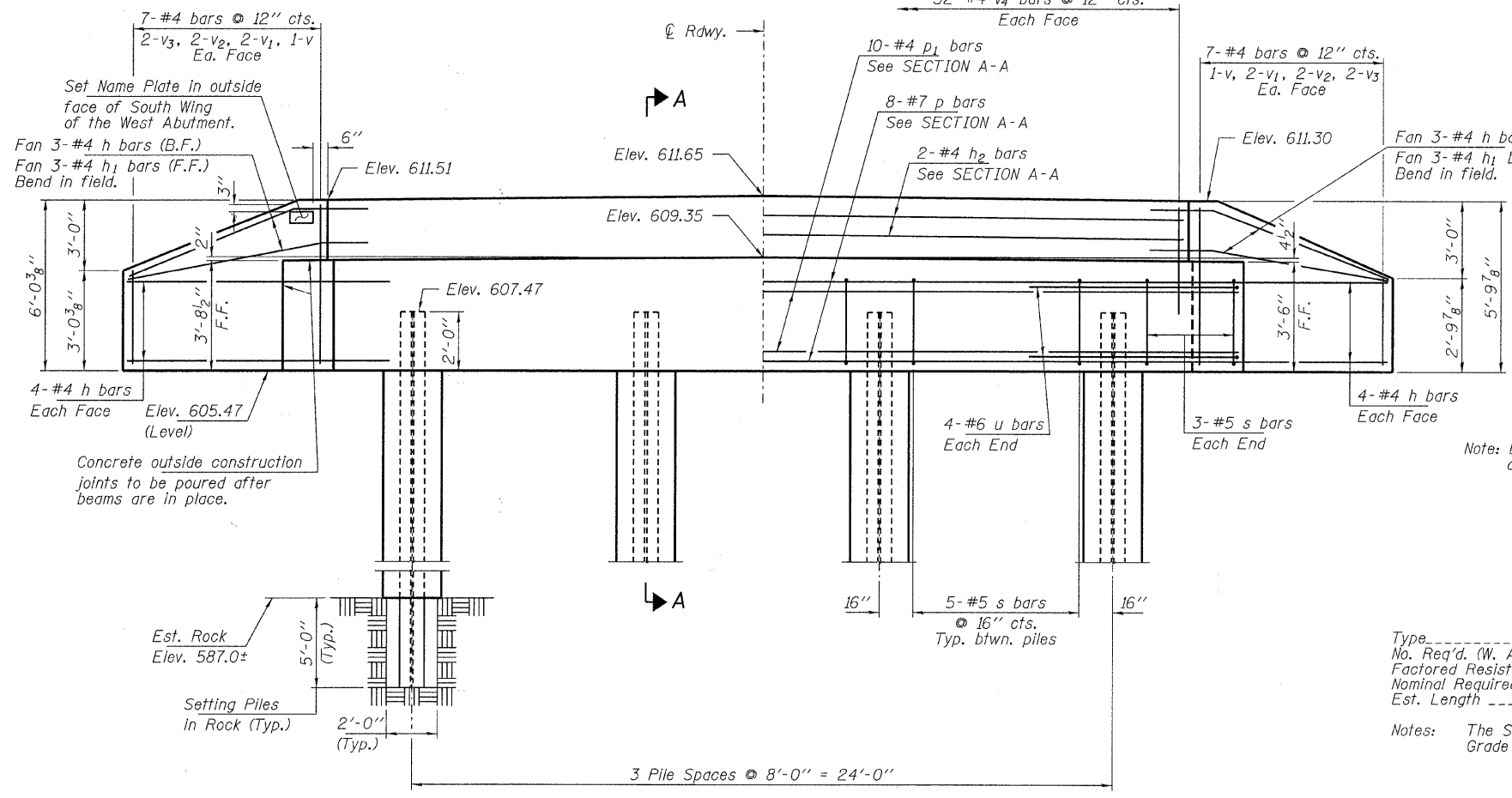
SHEET NO. 5	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9 SHEETS	231	09-23113-00-BR	SHELBY	20	16
TOWER HILL ROAD DISTRICT			CONTRACT NO. 95631		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT BROS-173(171)			



PLAN



SECTION A-A



ELEVATION
(Looking West)

PILE DATA

Type ----- Steel HP12x53
 No. Req'd. (W. Abut.) ----- 4
 Factored Resistance Available (Rf) ----- 209 Kips/Pile
 Nominal Required Bearing (Rn) ----- 419 Kips/Pile
 Est. Length ----- 28 Ft/Pile
 Notes: The Steel H-Piles shall be according to AASHTO M270 Grade 50.

BILL OF MATERIAL - WEST ABUT.

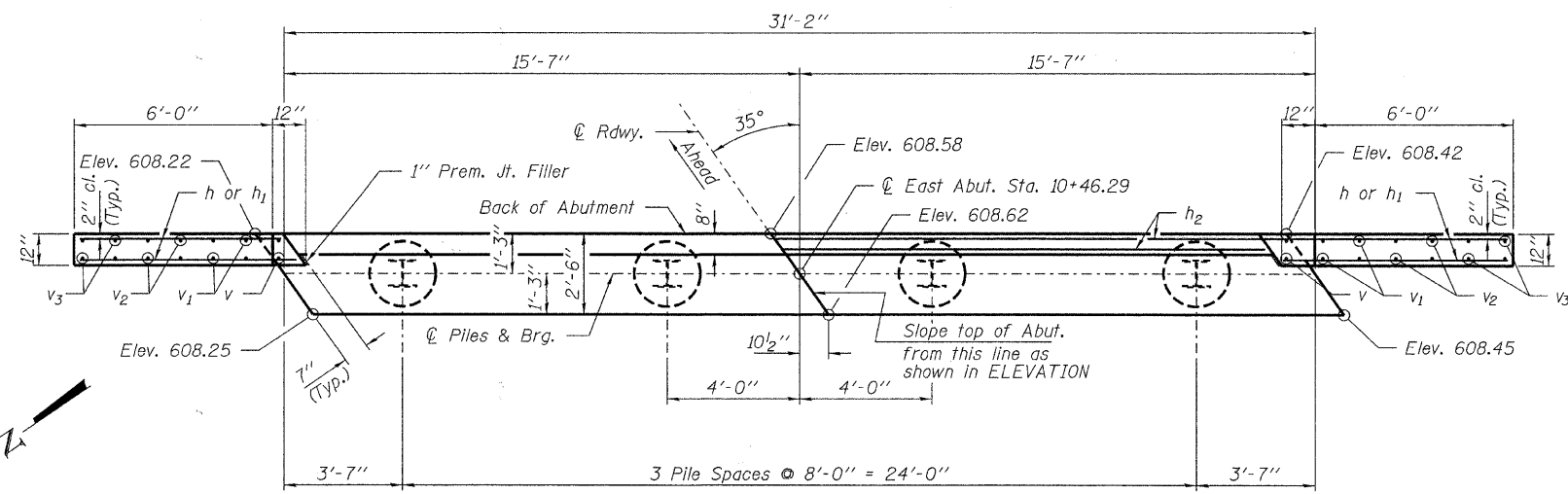
BAR	NO.	SIZE	LENGTH	SHAPE
h	22	#4	8'-3"	—
h1	6	#4	6'-9"	—
h2	2	#4	30'-10"	—
p	8	#7	30'-10"	—
p1	10	#4	30'-10"	—
s	21	#5	11'-7"	□
u	8	#6	12'-7"	▤
v	4	#4	5'-6"	—
v1	8	#4	4'-7"	—
v2	8	#4	3'-7"	—
v3	8	#4	2'-7"	—
v4	64	#4	3'-2"	—
Concrete Structures			Cu. Yd.	14.8
Concrete Encasement			Cu. Yd.	8.3
Reinforcement Bars			Pound	1,510
Steel Piles HP12x53			Foot	112
Name Plates			Each	1
Setting Piles in Rock			Each	4

WEST ABUTMENT
STRUCTURE NO. 087-3570

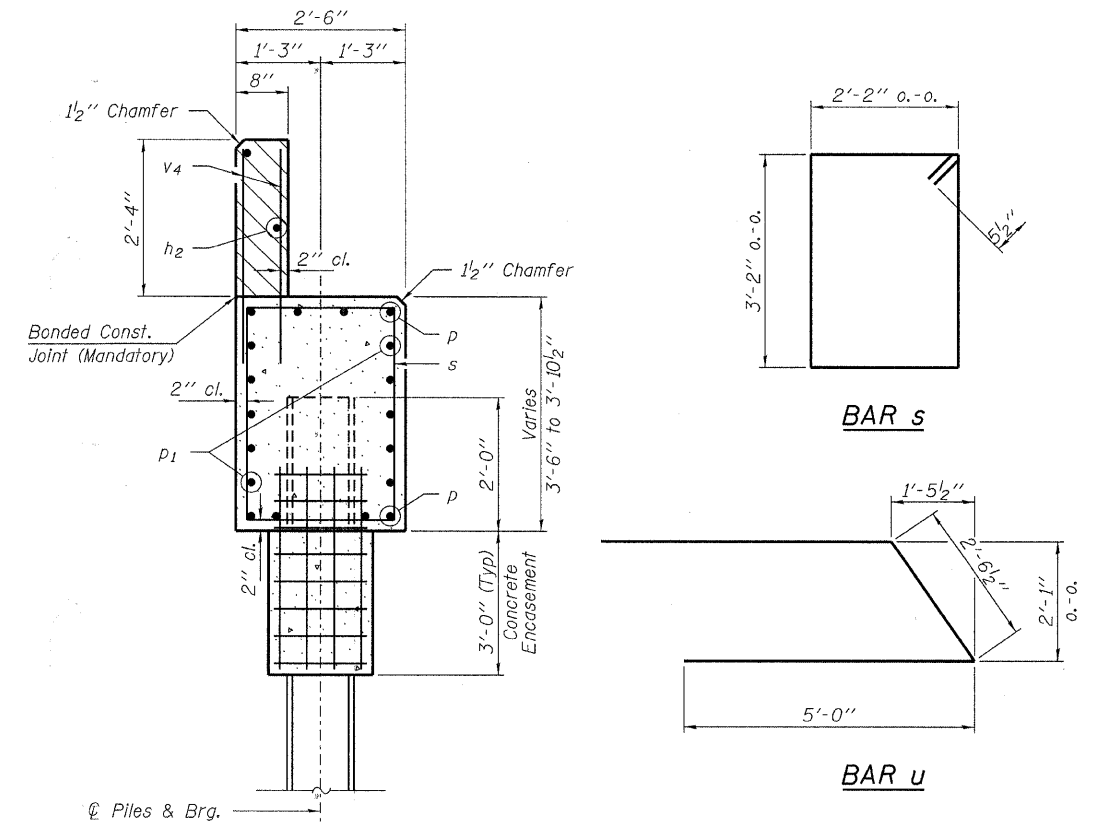
DESIGNED - A.S.L.
CHECKED - S.W.M.
DRAWN - D.T.M.
CHECKED - S.W.M.

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
 154 003859
 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORPORATION
 PROJECT NUMBER: 09.0135.130 DATE: 02/08/10

SHEET NO. 6 9 SHEETS	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	231	09-23113-00-BR	SHELBY	20	17
TOWER HILL ROAD DISTRICT			CONTRACT NO. 95631		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT BROS-173(171)			

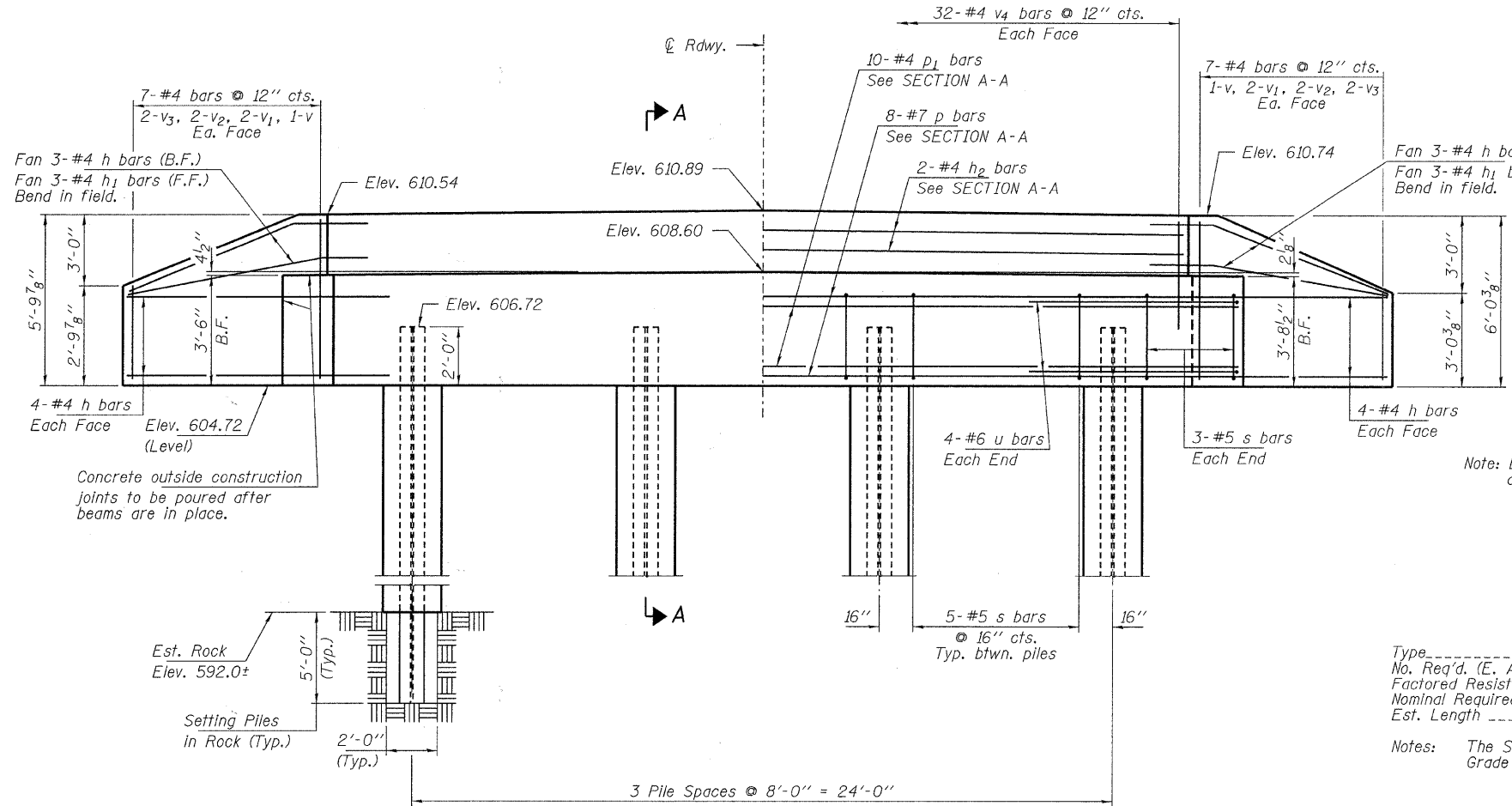


PLAN



SECTION A-A

Hatched area to be poured after beams are in place.



ELEVATION
(Looking East)

PILE DATA

Type _____ Steel HP12x53
 No. Req'd. (E. Abut.) _____ 4
 Factored Resistance Available (Rf) _____ 209 Kips/Pile
 Nominal Required Bearing (Rn) _____ 419 Kips/Pile
 Est. Length _____ 23 Ft/Pile

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

BILL OF MATERIAL - EAST ABUT.

BAR	NO.	SIZE	LENGTH	SHAPE
h	22	#4	8'-3"	—
h1	6	#4	6'-9"	—
h2	2	#4	30'-10"	—
p	8	#7	30'-10"	—
p1	10	#4	30'-10"	—
s	21	#5	11'-7"	□
u	8	#6	12'-7"	▽
v	4	#4	5'-6"	—
v1	8	#4	4'-7"	—
v2	8	#4	3'-7"	—
v3	8	#4	2'-7"	—
v4	64	#4	3'-2"	—
Concrete Structures			Cu. Yd.	14.8
Concrete Encasement			Cu. Yd.	5.7
Reinforcement Bars			Pound	1,510
Steel Piles HP12x53			Foot	92
Setting Piles in Rock			Each	4

**EAST ABUTMENT
STRUCTURE NO. 087-3570**

DESIGNED -	A.S.L.
CHECKED -	S.W.M.
DRAWN -	D.T.M.
CHECKED -	S.W.M.

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

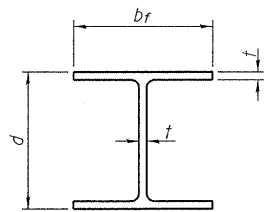
164.000959
 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORPORATION

PROJECT NUMBER: 09.0135.130 DATE: 02/08/10

SHEET NO. 7

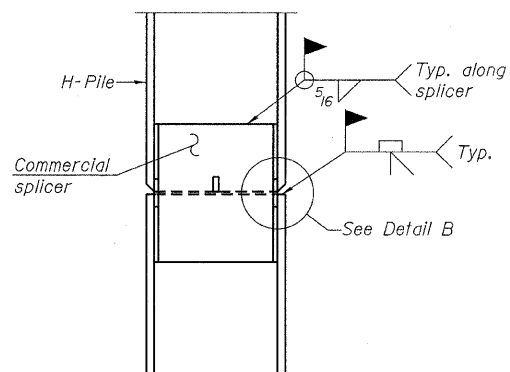
9 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
231	09-23113-00-BR	SHELBY	20	18
TOWER HILL ROAD DISTRICT		CONTRACT NO. 95631		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT BROS-173(171)		

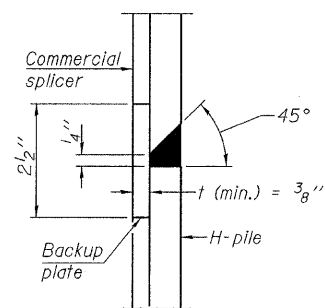


STEEL PILE TABLE

Designation	Depth d	Flange width b_f	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 $\frac{1}{4}$ "	14 $\frac{7}{8}$ "	$\frac{13}{16}$ "	30"
x102	14"	14 $\frac{3}{4}$ "	$\frac{11}{16}$ "	30"
x89	13 $\frac{7}{8}$ "	14 $\frac{3}{4}$ "	$\frac{5}{8}$ "	30"
x73	13 $\frac{5}{8}$ "	14 $\frac{5}{8}$ "	$\frac{1}{2}$ "	30"
HP 12x84	12 $\frac{1}{4}$ "	12 $\frac{1}{4}$ "	$\frac{11}{16}$ "	24"
x74	12 $\frac{1}{8}$ "	12 $\frac{1}{4}$ "	$\frac{5}{8}$ "	24"
x63	12"	12 $\frac{1}{8}$ "	$\frac{1}{2}$ "	24"
x53	11 $\frac{3}{4}$ "	12"	$\frac{7}{16}$ "	24"
HP 10x57	10"	10 $\frac{1}{4}$ "	$\frac{9}{16}$ "	24"
x42	9 $\frac{3}{4}$ "	10 $\frac{1}{8}$ "	$\frac{7}{16}$ "	24"
HP 8x36	8"	8 $\frac{1}{8}$ "	$\frac{7}{16}$ "	18"

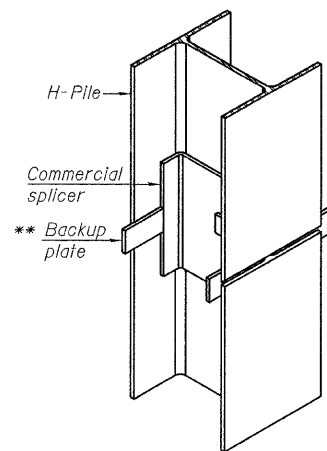


ELEVATION

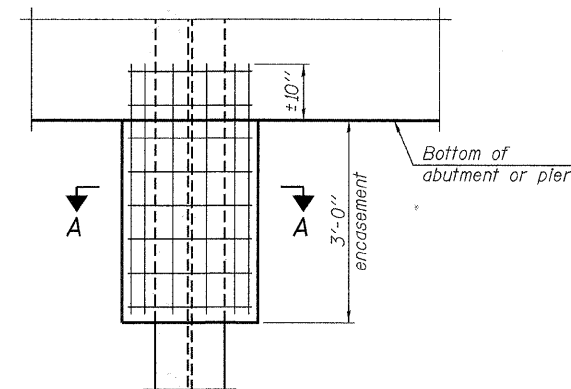


DETAIL "B"

WELDED COMMERCIAL SPLICE

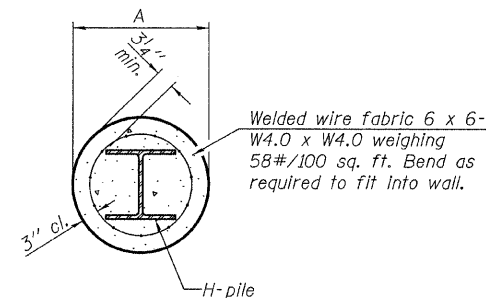


ISOMETRIC VIEW



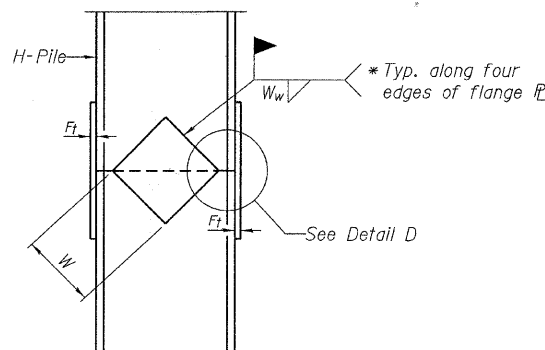
ELEVATION

PILE ENCASEMENT

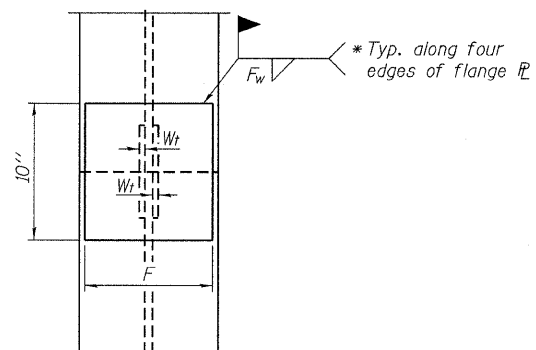


SECTION A-A

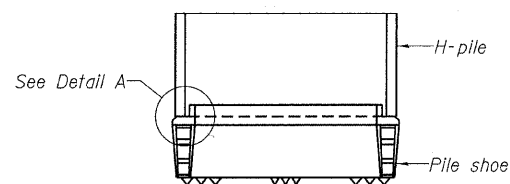
Note: Forms for encasement may be omitted when soil conditions permit.



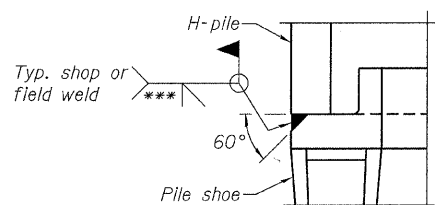
ELEVATION



END VIEW

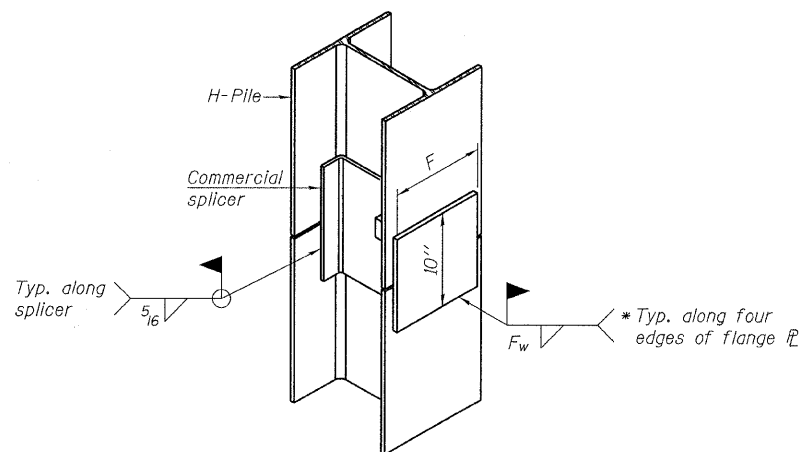


ELEVATION



DETAIL A

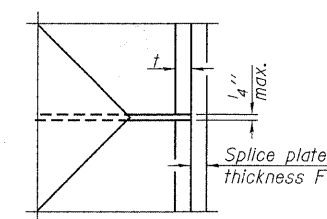
H-PILE SHOE ATTACHMENT



ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE ALTERNATE

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



DETAIL D

WELDED PLATE FIELD SPLICE

Designation	F	F _t	F _w	W	W _t	W _w
HP 14x117	12 $\frac{1}{2}$ "	1"	$\frac{7}{8}$ "	7 $\frac{3}{4}$ "	$\frac{5}{8}$ "	$\frac{1}{2}$ "
x102	12 $\frac{1}{2}$ "	$\frac{7}{8}$ "	$\frac{3}{4}$ "	7 $\frac{3}{4}$ "	$\frac{5}{8}$ "	$\frac{1}{2}$ "
x89	12 $\frac{1}{2}$ "	$\frac{3}{4}$ "	$\frac{11}{16}$ "	7 $\frac{3}{4}$ "	$\frac{5}{8}$ "	$\frac{1}{2}$ "
x73	12 $\frac{1}{2}$ "	$\frac{5}{8}$ "	$\frac{9}{16}$ "	7 $\frac{3}{4}$ "	$\frac{5}{8}$ "	$\frac{1}{2}$ "
HP 12x84	10"	$\frac{7}{8}$ "	$\frac{11}{16}$ "	6 $\frac{1}{2}$ "	$\frac{5}{8}$ "	$\frac{1}{2}$ "
x74	10"	$\frac{7}{8}$ "	$\frac{11}{16}$ "	6 $\frac{1}{2}$ "	$\frac{5}{8}$ "	$\frac{1}{2}$ "
x63	10"	$\frac{5}{8}$ "	$\frac{1}{2}$ "	6 $\frac{1}{2}$ "	$\frac{1}{2}$ "	$\frac{3}{8}$ "
x53	10"	$\frac{5}{8}$ "	$\frac{1}{2}$ "	6 $\frac{1}{2}$ "	$\frac{1}{2}$ "	$\frac{3}{8}$ "
HP 10x57	8"	$\frac{3}{4}$ "	$\frac{9}{16}$ "	5 $\frac{1}{4}$ "	$\frac{1}{2}$ "	$\frac{3}{8}$ "
x42	8"	$\frac{5}{8}$ "	$\frac{9}{16}$ "	5 $\frac{1}{4}$ "	$\frac{1}{2}$ "	$\frac{3}{8}$ "
HP 8x36	7"	$\frac{5}{8}$ "	$\frac{7}{16}$ "	4 $\frac{1}{4}$ "	$\frac{1}{2}$ "	$\frac{3}{8}$ "

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

**HP PILE DETAILS
STRUCTURE NO. 087-3570**

DESIGNED - A.S.L.
CHECKED - S.W.M.
DRAWN - D.T.M.
CHECKED - S.W.M.

F-HP 11-1-09

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

194.000959
 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORPORATION

PROJECT NUMBER: 09.0135.130 DATE: 02/08/10

SHEET NO. 8 9 SHEETS	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	231	09-23113-00-BR	SHELBY	20	19
TOWER HILL ROAD DISTRICT			CONTRACT NO. 95631		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT BROS-173(171)			



Illinois Department of Transportation
Division of Highways
Reynolds Drilling Corp.

SOIL BORING LOG

Page 1 of 1

Date 5/11/09

ROUTE County Road 1000 N DESCRIPTION Bridge Replacement Boring LOGGED BY MER
SECTION 09-23113-00-BR LOCATION SE 1/4, SEC. 28, TWP. 11N, RNG. 2E, 3rd PM
COUNTY Shelby DRILLING METHOD Hollow Stem Auger HAMMER TYPE Hydraulic

STRUCT. NO. Station	BORING NO. Station Offset Ground Surface Elev.	D E P T H (ft)	B L O W S (/6")	U C S Qu (tsf)	M O I S T (%)	Surface Water Elev. _____ ft				D E P T H (ft)											
						Stream Bed Elev. _____ ft				Groundwater Elev.:											
						First Encounter _____ ft				U C S Qu (tsf)											
						Upon Completion _____ ft				M O I S T (%)											
						After .5 Hrs. _____ ft															
SANDY CLAY LOAM, mixed fill, A-2.																					
			5									27									
			32		12.5							100	11.6	13.3							
			38										B								
	611.88																				
SANDY CLAY LOAM, gray / brown moist silty clay, little sand, A-2.																					
			4										67	9.2	13.1						
			4	1.5	12.4																
			3	P																	
	609.38																				
SANDY LOAM, brown / gray moist sandy clay, A-3.																					
			3										76	7.8	16.6						
			6		19.0																
			9																		
	606.88																				
SILTY CLAY LOAM, gray, moist, silty clay, trace sand, trace fine gravel, A-6.																					
			6																		
			5		24.3																
			27																		
			2																		
			3	0.2	20.9																
			3	B																	
			0																		
			1		23.0																
			1																		
			5																		
			100	4.4	14.5																
			77	4.8	13.6																
	595.38																				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)
BBS, from 137 (Rev. 8-99)

BORING 1

DESIGNED	A.S.L.
CHECKED	S.W.M.
DRAWN	D.T.M.
CHECKED	S.W.M.



Illinois Department of Transportation
Division of Highways
Reynolds Drilling Corp.

SOIL BORING LOG

Page 1 of 1

Date 5/12/09

ROUTE County Road 1000 N DESCRIPTION Bridge Replacement Boring LOGGED BY MER
SECTION 09-23113-00-BR LOCATION SE 1/4, SEC. 28, TWP. 11N, RNG. 2E, 3rd PM
COUNTY Shelby DRILLING METHOD Hollow Stem Auger HAMMER TYPE Hydraulic

STRUCT. NO. Station	BORING NO. Station Offset Ground Surface Elev.	D E P T H (ft)	B L O W S (/6")	U C S Qu (tsf)	M O I S T (%)	Surface Water Elev. _____ ft				D E P T H (ft)										
						Stream Bed Elev. _____ ft				Groundwater Elev.:										
						First Encounter _____ ft				U C S Qu (tsf)										
						Upon Completion _____ ft				M O I S T (%)										
						After _____ Hrs. _____ ft														
SANDY CLAY LOAM, Fill, dark brown, moist, silty clay, little sand, trace gravel, A-2.																				
			10																	
			14	2.5	13.8															
			18	P																
	611.51																			
SILTY CLAY, gray, moist, silty clay with sand, A-6																				
			2																	
			3	0.5	19.8															
			4	B																
	609.51																			
SANDY CLAY, brown sandy clay, little to some sand, trace gravel, A-2																				
			11																	
			70	6.3	11.5															
			48																	
			100	4.5	12.8															
			100	11.6	10.3															
	602.51																			
SILTY CLAY, gray, moist, hard silty clay, trace sand, trace gravel, (fill), A-6																				
			100	13.1	11.6															
			92.5	4.5	10.3															
			99	16.0	11.0															

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)
BBS, from 137 (Rev. 8-99)

BORING 2

BORINGS
STRUCTURE NO. 087-3570

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	SHEET NO. 9	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		231	09-23113-00-BR	SHELBY	20	20
9 SHEETS		TOWER HILL ROAD DISTRICT		CONTRACT NO. 95631		
PROJECT NUMBER: 09-0135-130		DATE: 02/08/10		FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT BROS-173(171)		