

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
C.H. 23	08-00158-00-BR	STARK	23	1
FED. ROAD DIST. NO.		ILLINOIS	CONTRACT NO. 89509	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

**PLANS FOR PROPOSED
AMERICAN RECOVERY
AND REINVESTMENT ACT**

PROJECT ARA-BROS-0175 (023)
SECTION 08-00158-00-BR
STARK COUNTY
C.H. 23
PROPOSED STRUCTURE NO. 088-3223
C-94-020-09

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1.	COVER SHEET
2.	SUMMARY OF QUANTITIES AND GENERAL NOTES
3.	TYPICAL SECTIONS
4.-5.	PLAN AND PROFILE
6.-13.	STATION CROSS SECTIONS
14,21.	BRIDGE PLANS
22.-23.	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

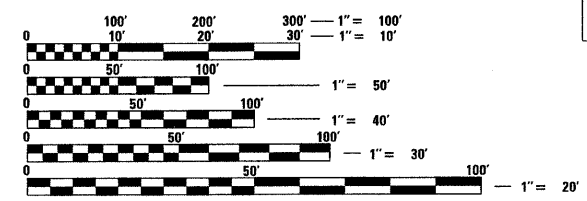
UTILITIES

AMEREN / CILCO
300 LIBERTY STREET
PEORIA, ILLINOIS 61602

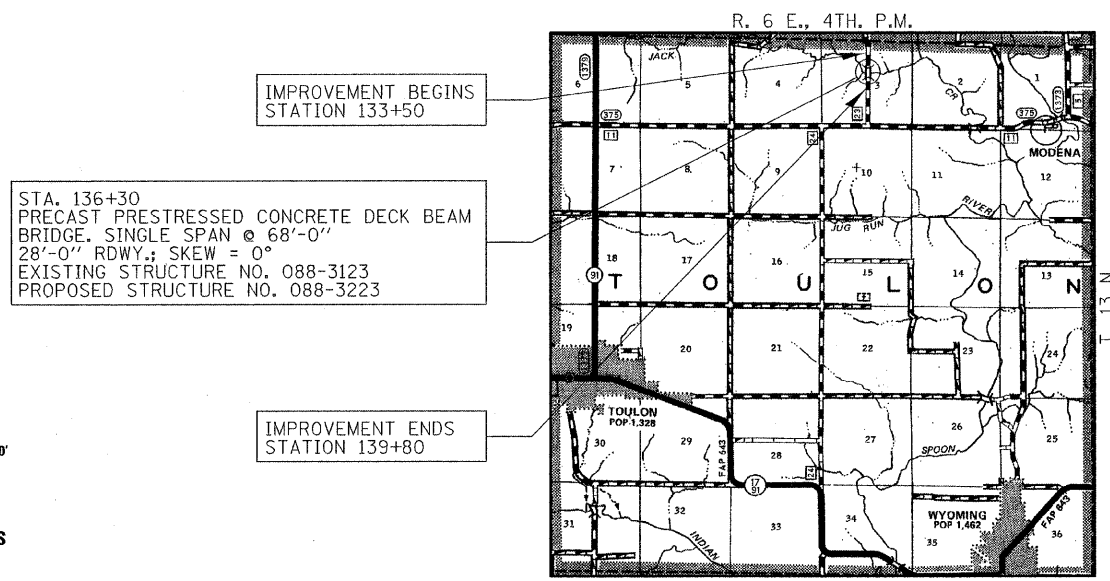
VERIZON NORTH
110 EAST MONROE STREET
PO BOX 2675
BLOOMINGTON, ILLINOIS 61701-2675



FUNCTIONAL CLASSIFICATION: RURAL COLLECTOR
DESIGN SPEED: 30 MPH
DESIGN TRAFFIC: 75 ADT (2009)
DESIGN GUIDELINES: 3R

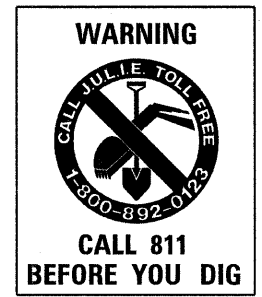


FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

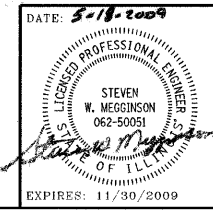


LOCATION MAP

APPROXIMATE SCALE: 0 1 MILE
NET LENGTH OF SECTION = 630 FEET = 0.119 MILES



AGENCY RESPONSIBLE FOR LETTING	
APPROVED	<i>John J. Hodel</i> 5-19-09 COUNTY ENGINEER
PASSED	5-26 20 09 <i>Don C. C. C.</i> DISTRICT FOUR ENGINEER OF LOCAL ROADS & STREETS
Released For Bid Based on Limited Review	<i>May 27</i> 20 09 DEPUTY DIRECTOR OF HIGHWAYS REGION THREE ENGINEER STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION



HAMPTON, LENZINI & RENWICK, INC.
CIVIL & STRUCTURAL ENGINEERS
LAND SURVEYORS

HLR

3085 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
(217) 546-3400

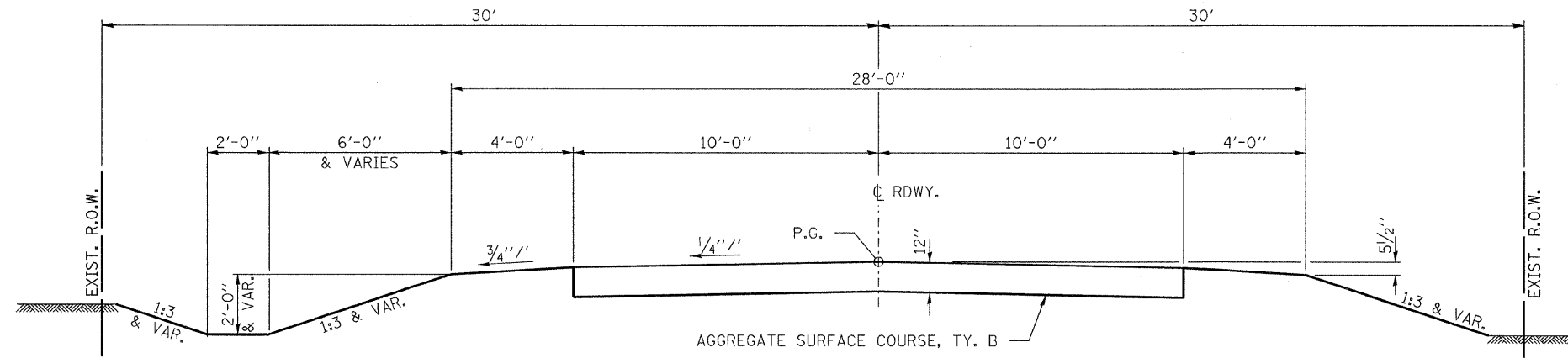
ELGIN • SPRINGFIELD

PROJECT NUMBER: 08.0274.130 DATE: 05/13/09

CONTRACT NO. 89509

STARK COUNTY

SECTION 08-00158-00-BR



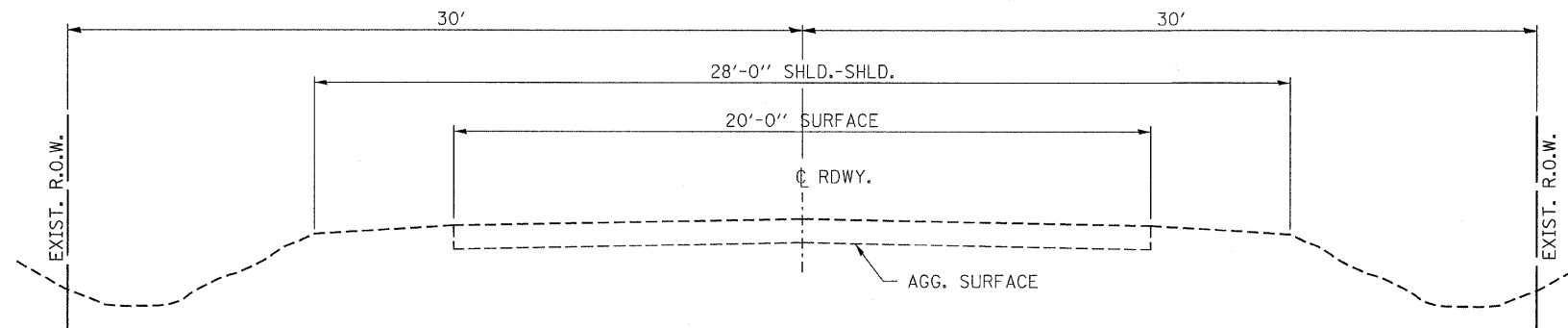
SUGGESTED CUT SECTION
CONSTRUCT AS SHOWN IN
STATION CROSS SECTIONS

TYPICAL CROSS SECTION

STA. 133+50 TO 135+95.33
STA. 136+64.67 TO 139+80

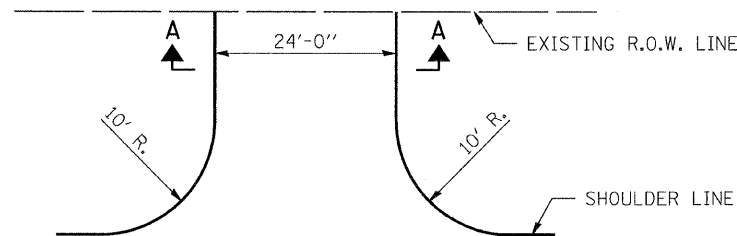
TRANSITION FROM THE PROPOSED ROADWAY TO THE EXISTING
ROADWAY IS TO BE CONSTRUCTED FROM STA. 133+50 TO 134+00 AND
STA. 139+30 TO 139+80. SEE SHEET 14 FOR TRANSITION AT BRIDGE.

SUGGESTED FILL SECTION
CONSTRUCT AS SHOWN IN
STATION CROSS SECTIONS

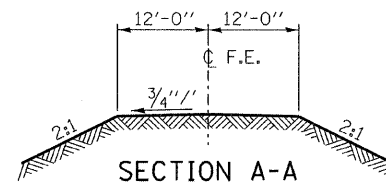


EXISTING CROSS SECTION

STA. 133+50 TO 139+80



FIELD ENTRANCE DETAIL



SECTION A-A

FILE NAME =
080274-shl-typesections.dgn

USER NAME =
PLOT SCALE =
PLOT DATE = 5/18/2009

DESIGNED - A.S.L.
DRAWN - D.A.B.
CHECKED - S.W.M.
DATE - 05/13/09

REVISED -
REVISED -
REVISED -
REVISED -

STATE OF ILLINOIS
STARK COUNTY HIGHWAY DEPARTMENT



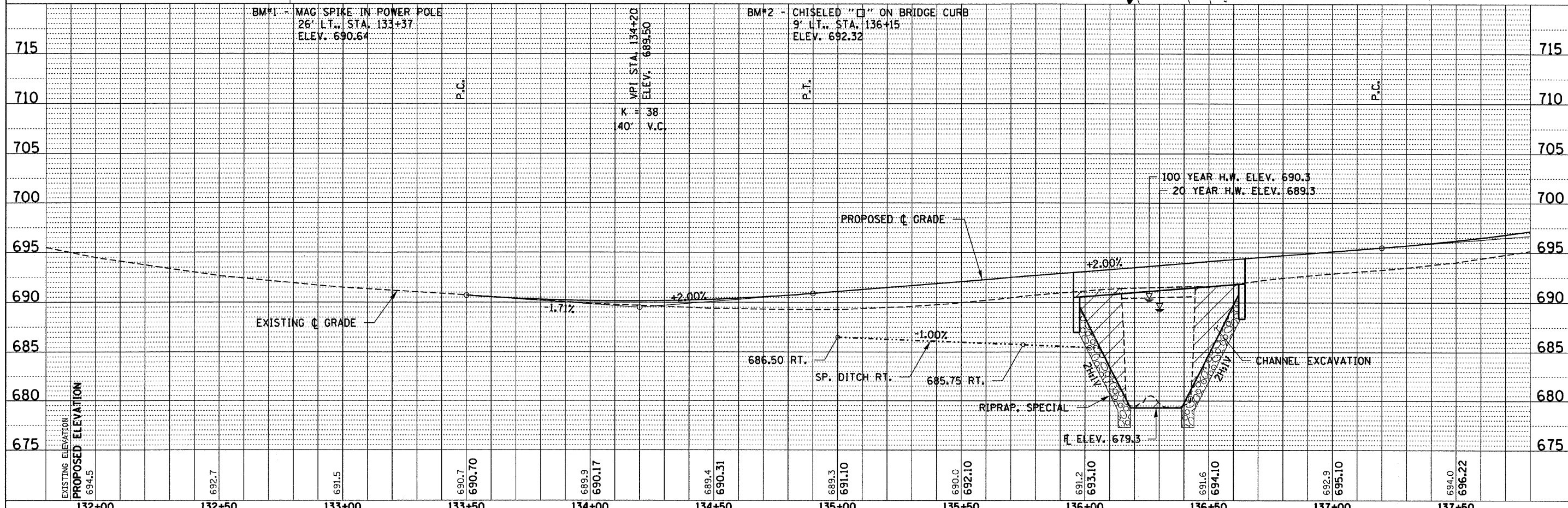
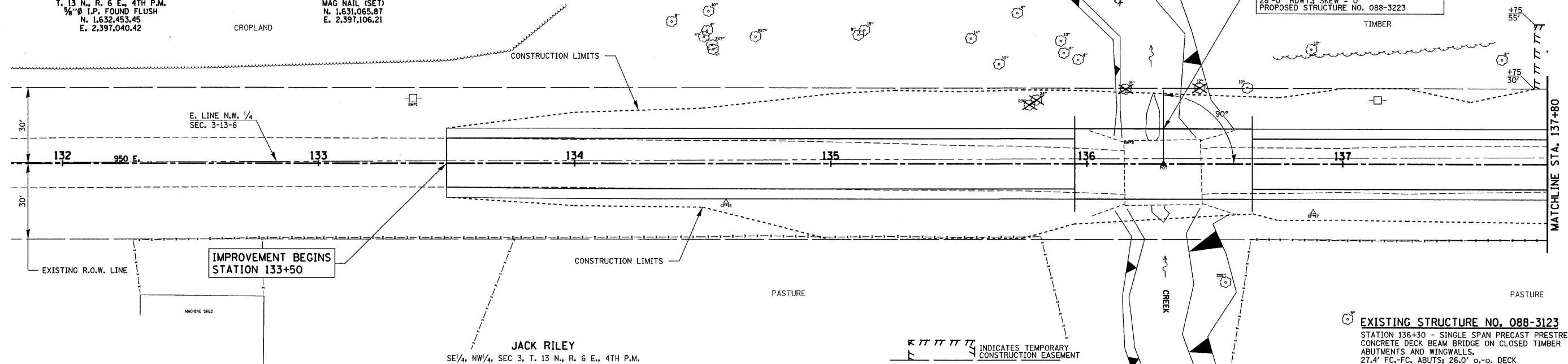
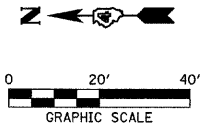
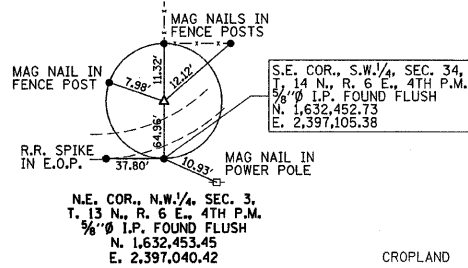
HAMPTON, LENZINI & RENWICK, INC.
CIVIL & STRUCTURAL ENGINEERS
LAND SURVEYORS

TYPICAL SECTIONS

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

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
23	08-00158-00-BR	STARK	23	3
CONTRACT NO. 89509				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

THEODORE ROLAND KRUGER, et al
 SW 1/4, NE 1/4, SEC 3, T. 13 N., R. 6 E., 4TH P.M.



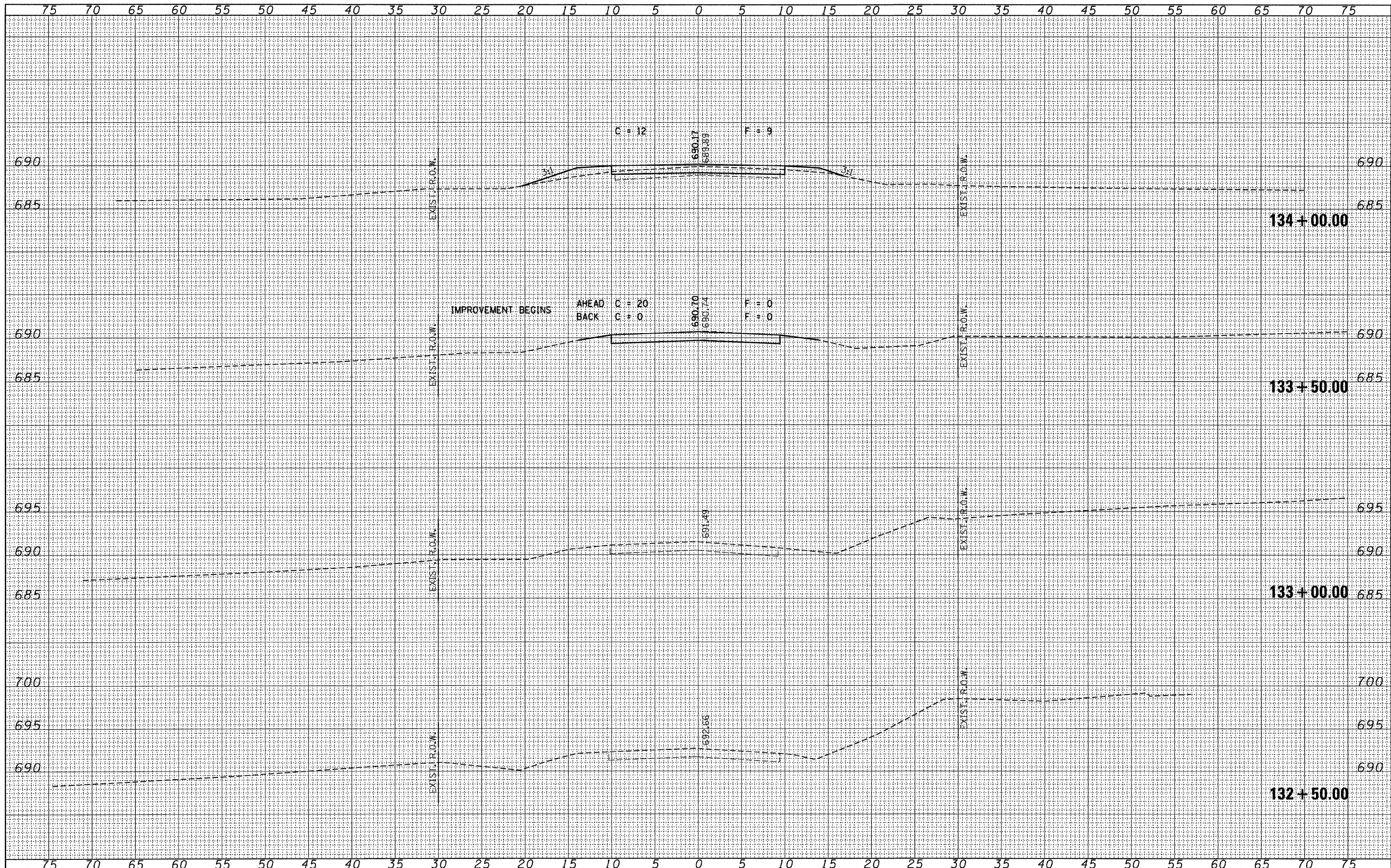
PLAN	SURVEYED	DATE
	ALIGNED	
	CHECKED	
	BY	
	NO. OF PAGES	
	FILE NAME	

PROFILE	SURVEYED	DATE
	GRADES CHECKED	
	B.M. NOTED	
	STRUCTURE NOTATIONS	
	BY	
	NO.	

FILE NAME = 080274-sht-pp1.dgn	USER NAME =	DESIGNED - J.W.F.	REVISED -	STATE OF ILLINOIS STARK COUNTY HIGHWAY DEPARTMENT	HAMPTON, LENZINI & RENWICK, INC. CIVIL & STRUCTURAL ENGINEERS LAND SURVEYORS	PLAN & PROFILE 950 E.	C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
PLOT SCALE =	CHECKED - S.W.M.	REVISED -	23				08-00158-00-BR	STARK	23	4	
PLOT DATE = 5/13/2009	DATE - 05/13/09	REVISED -	CONTRACT NO. 89509								
SCALE: 1" = 20'		SHEET NO. OF SHEETS					STA. 133+00 TO STA. 139+00		FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT		

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

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



FILE NAME = 080274-shr-xxx.dgn

USER NAME =
 PLOT SCALE =
 PLOT DATE = 5/13/2009

DESIGNED - J.W.F.
 DRAWN - D.T.M.
 CHECKED - S.W.M.
 DATE - 05/13/09

REVISED -
 REVISED -
 REVISED -
 REVISED -

STATE OF ILLINOIS
 STARK COUNTY HIGHWAY DEPARTMENT

HLR HAMPTON, LENZINI & RENWICK, INC.
 CIVIL & STRUCTURAL ENGINEERS
 LAND SURVEYORS
 SCALE: 1" = 5'

CROSS SECTIONS
950 E.

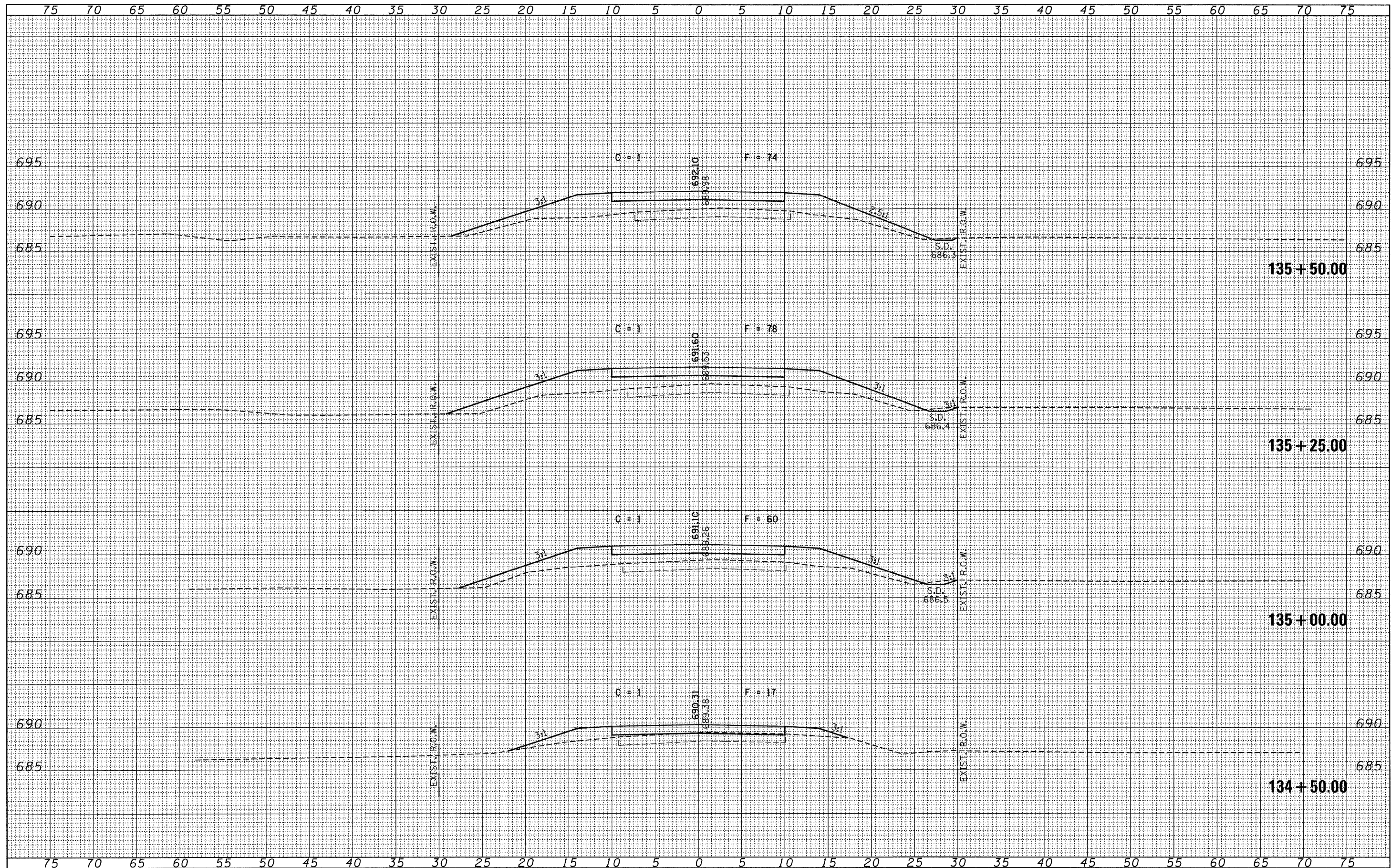
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23	08-00158-00-BR	STARK	23	6
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		

SHEET NO. OF SHEETS STA. 132+50.00 TO STA. 134+00.00

CONTRACT NO. 89509

DATE	
BY	
SURVEYED	
PLOTTED	
NOTE BOOK	
AREAS CHECKED	
NO.	

DATE	
BY	
SURVEYED	
PLOTTED	
NOTE BOOK	
AREAS CHECKED	
NO.	



FILE NAME = 080274-sht-xxx.dgn

USER NAME =
 PLOT SCALE =
 PLOT DATE = 5/13/2009

DESIGNED	- J.W.F.	REVISED	-
DRAWN	- D.T.M.	REVISED	-
CHECKED	- S.W.M.	REVISED	-
DATE	- 05/13/09	REVISED	-

STATE OF ILLINOIS
 STARK COUNTY HIGHWAY DEPARTMENT

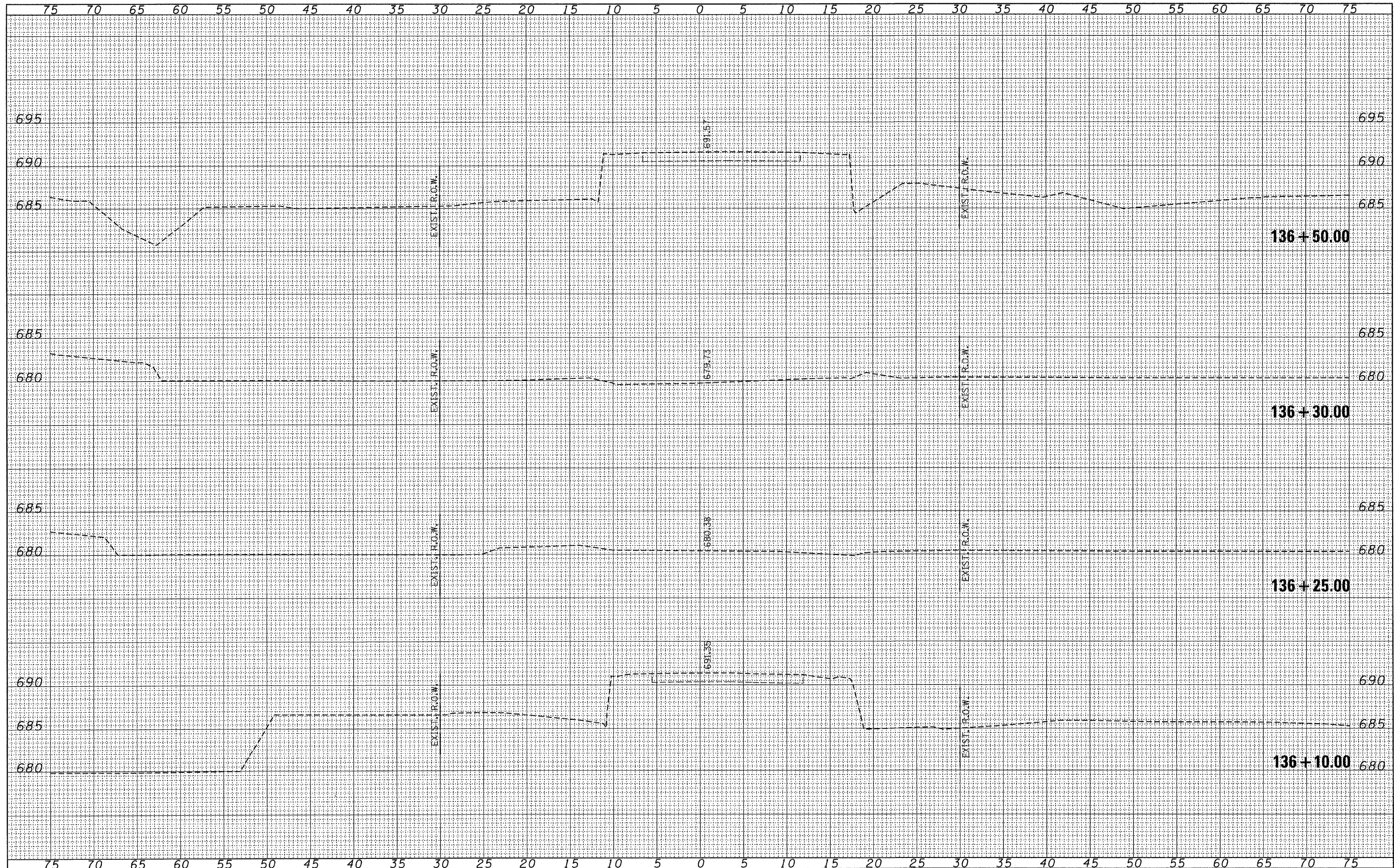
HLR HAMPTON, LENZINI & RENWICK, INC.
 CIVIL & STRUCTURAL ENGINEERS
 LAND SURVEYORS
 SCALE: 1" = 5'
 SHEET NO. OF SHEETS

CROSS SECTIONS
950 E.
 STA. 134+50.00 TO STA. 135+50.00

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
23	08-00158-00-BR	STARK	23	7
CONTRACT NO. 89509			ILLINOIS FED. AID PROJECT	

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

BY	DATE
SURVEYED	
PLOTTED	
ORIGINAL SURVEY BOOK	
NOTE BOOK	
AREAS CHECKED	
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FILE NAME = 088274-shr-ssa.dgn
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 PLOT SCALE =
 PLOT DATE = 5/13/2009

DESIGNED - J.W.F.
 DRAWN - D.T.M.
 CHECKED - S.W.M.
 DATE - 05/13/09

REVISED -
 REVISED -
 REVISED -
 REVISED -

STATE OF ILLINOIS
 STARK COUNTY HIGHWAY DEPARTMENT

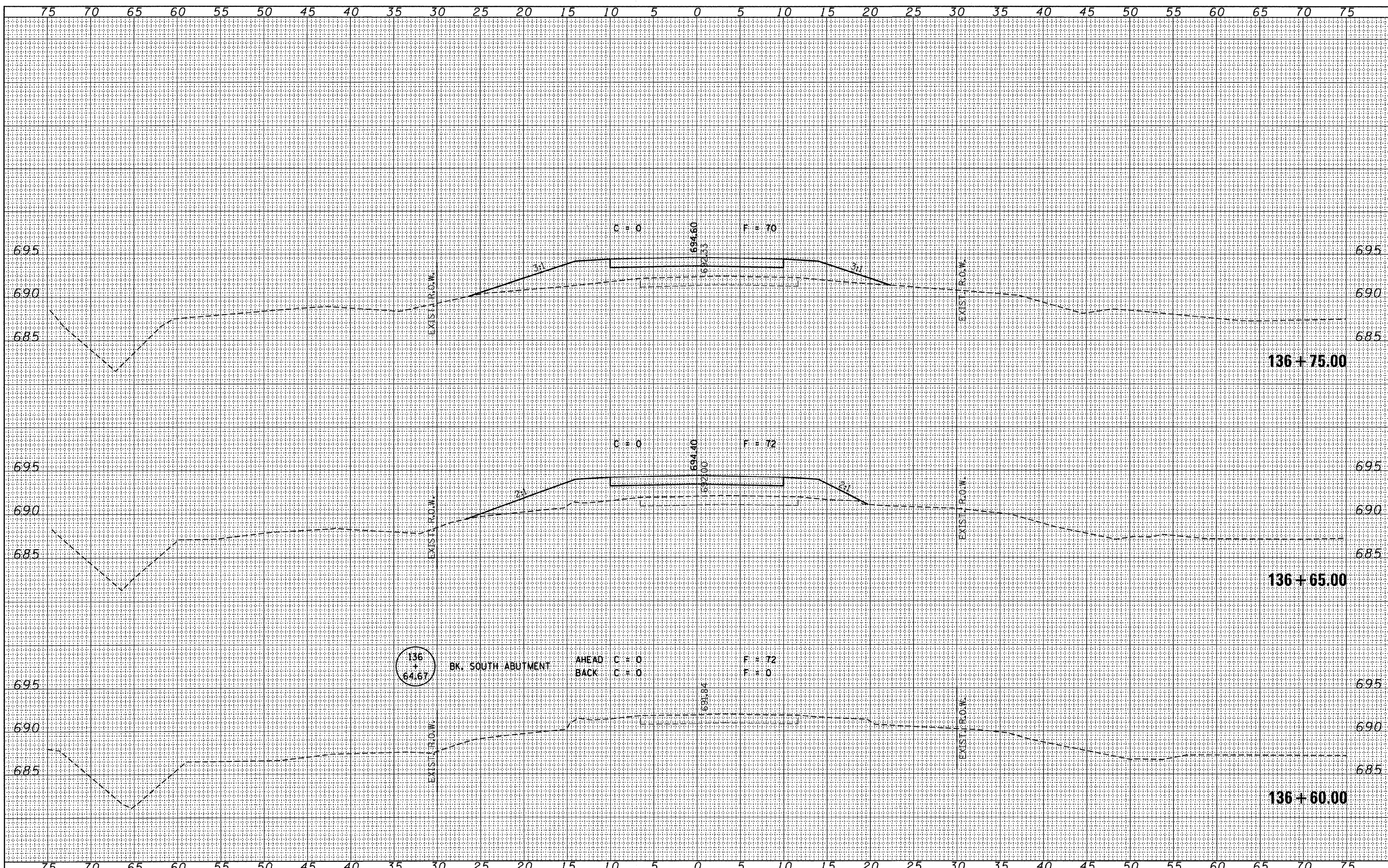
HLR HAMPTON, LENZINI & RENWICK, INC.
 CIVIL & STRUCTURAL ENGINEERS
 LAND SURVEYORS
 SCALE: 1" = 5'

CROSS SECTIONS
 950 E.
 SHEET NO. OF SHEETS
 STA. 136+10.00 TO STA. 136+50.00

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
23	08-00158-00-BR	STARK	23	9
CONTRACT NO. 89509			FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT	

DATE _____
 BY _____
 SURVEYED _____
 PLOTTED _____
 NOTE BOOK _____
 AREAS CHECKED _____
 NO. _____

DATE _____
 BY _____
 ORIGINAL SURVEY _____
 PLOTTED _____
 NOTE BOOK _____
 AREAS CHECKED _____
 NO. _____



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PLOT SCALE =	DRAWN - D.T.M.	REVISED -
PLOT DATE = 5/13/2009	CHECKED - S.W.M.	REVISED -
	DATE - 05/13/09	REVISED -

STATE OF ILLINOIS
 STARK COUNTY HIGHWAY DEPARTMENT

HLR HAMPTON, LENZINI & RENWICK, INC.
 CIVIL & STRUCTURAL ENGINEERS
 LAND SURVEYORS
 SCALE: 1" = 5'

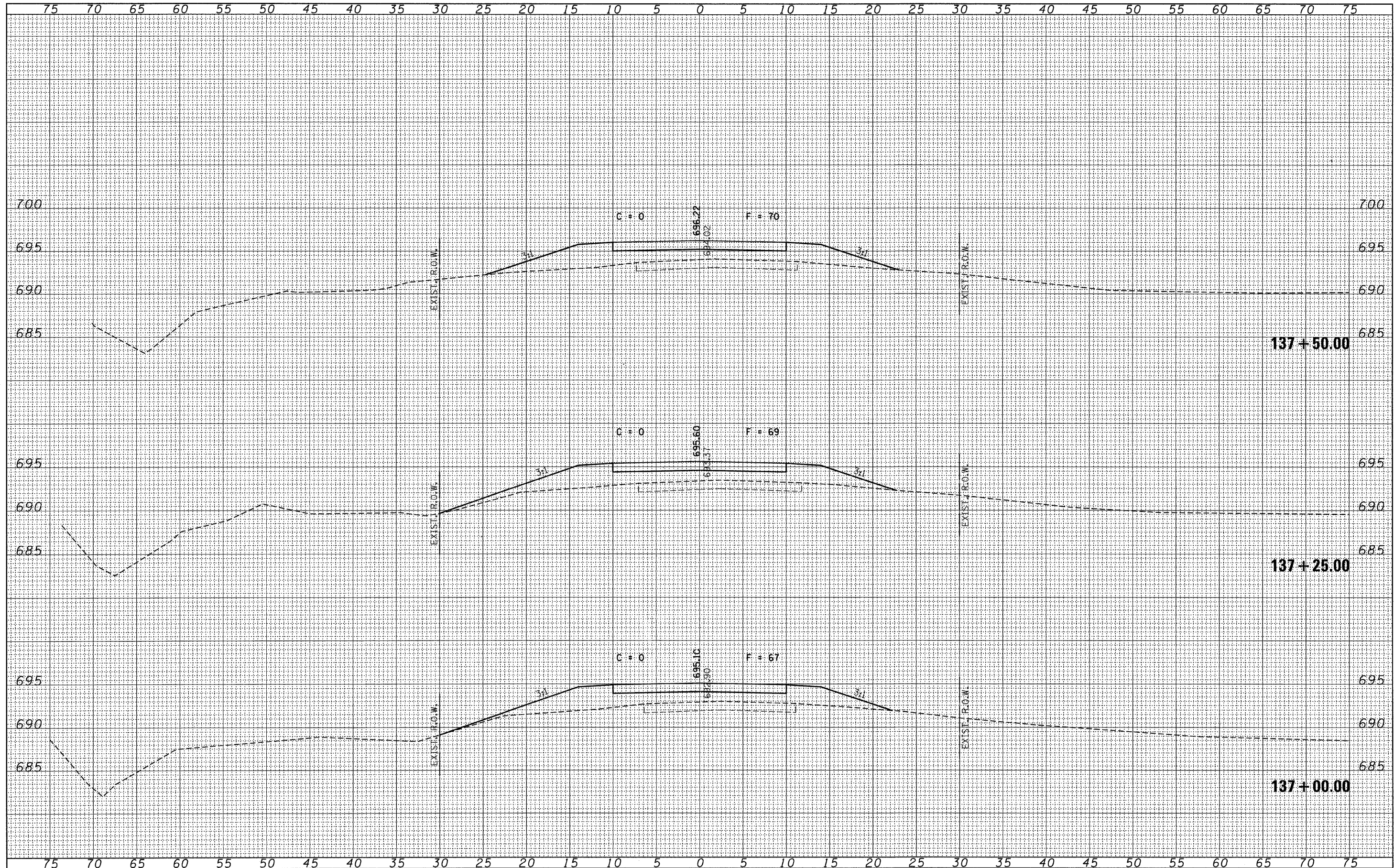
**CROSS SECTIONS
 950 E.**

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
23	08-00158-00-BR	STARK	23	10
CONTRACT NO. 89509				

FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT

FINAL SURVEY	DATE
SURVEYED	
NOTE BOOK	
NO.	
AREAS CHECKED	

ORIGINAL SURVEY	DATE
SURVEYED	
NOTE BOOK	
NO.	
AREAS CHECKED	



FILE NAME = 080274-sht-axe.dgn

USER NAME =
PLOT SCALE =
PLOT DATE = 5/13/2009

DESIGNED - J.W.F.
DRAWN - D.T.M.
CHECKED - S.W.M.
DATE - 05/13/09

REVISED -
REVISED -
REVISED -
REVISED -

STATE OF ILLINOIS
STARK COUNTY HIGHWAY DEPARTMENT

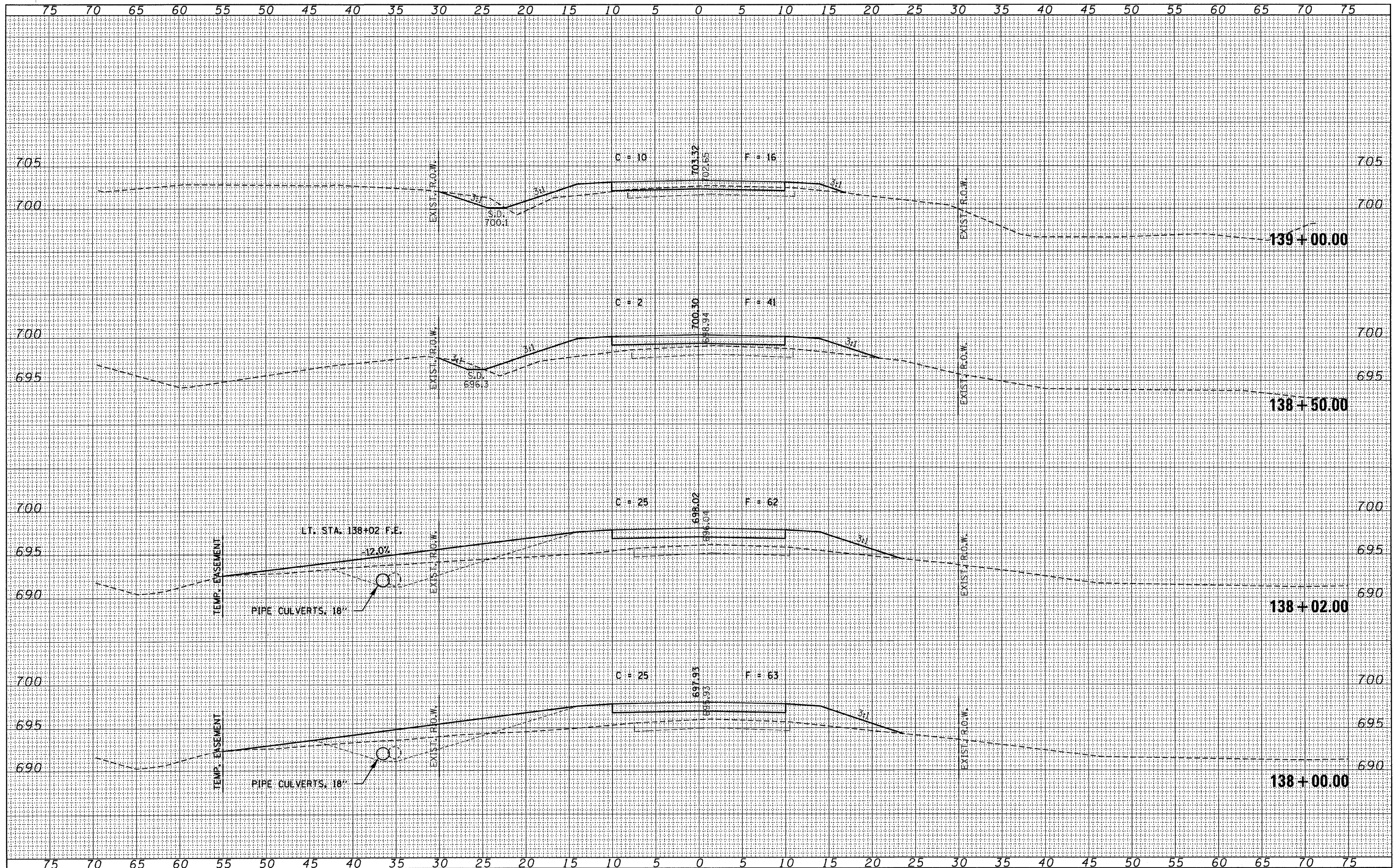
HLR HAMPTON, LENZINI & RENWICK, INC.
CIVIL & STRUCTURAL ENGINEERS
LAND SURVEYORS
SCALE: 1" = 5'

CROSS SECTIONS
950 E.
C.H. 23
SECTION 08-00158-00-BR
COUNTY STARK
TOTAL SHEETS 23
SHEET NO. 11
CONTRACT NO. 89509

STA. 137+00.00 TO STA. 137+50.00
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT

DATE	
BY	
FINAL SURVEY	
NOTE BOOK	
NO.	
TEMP. DATE	
AREAS CHECKED	

DATE	
BY	
ORIGINAL SURVEY	
NOTE BOOK	
NO.	
TEMP. DATE	
AREAS CHECKED	



FILE NAME = 080274-sht-axe.dgn

USER NAME =
 PLOT SCALE =
 PLOT DATE = 5/13/2009

DESIGNED - J.W.F.
 DRAWN - D.T.M.
 CHECKED - S.W.M.
 DATE - 05/13/09

REVISED -
 REVISED -
 REVISED -
 REVISED -

STATE OF ILLINOIS
 STARK COUNTY HIGHWAY DEPARTMENT

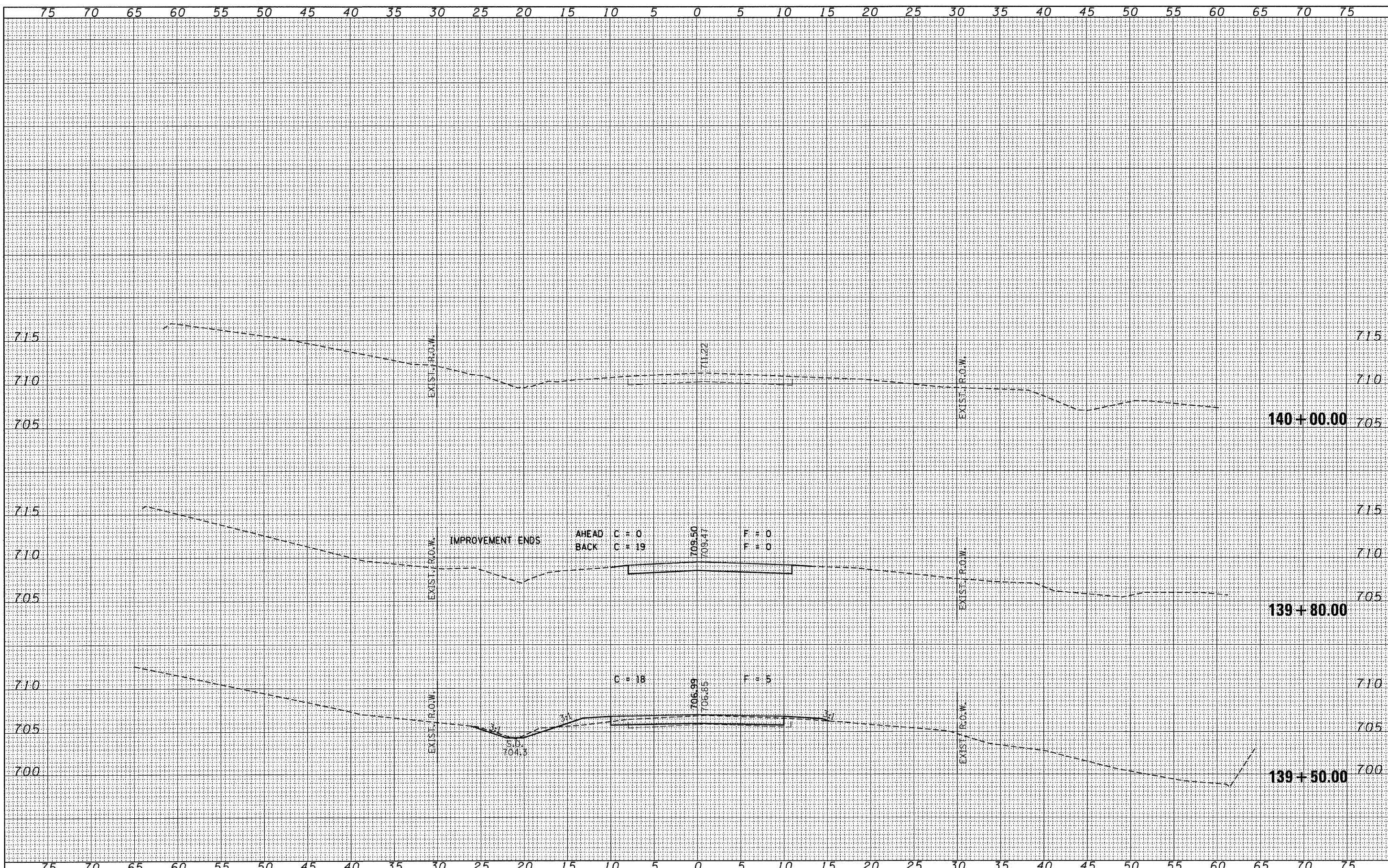
HLR HAMPTON, LENZINI & RENWICK, INC.
 CIVIL & STRUCTURAL ENGINEERS
 LAND SURVEYORS
 SCALE: 1" = 5' SHEET NO. OF SHEETS

CROSS SECTIONS
 950 E.
 STA. 138+00.00 TO STA. 139+00.00

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
23	08-00158-00-BR	STARK	23	12
CONTRACT NO. 89509			FED. ROAD DIST. NO. [ILLINOIS] FED. AID PROJECT	

DATE	
BY	
FINAL SURVEY	
NOTE BOOK	
NO.	

DATE	
BY	
ORIGINAL SURVEY	
NOTE BOOK	
NO.	



FILE NAME = 080274-ah-eks.dgn
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 PLOT SCALE =
 PLOT DATE = 5/13/2009

DESIGNED - J.W.F.	REVISED -
DRAWN - D.T.M.	REVISED -
CHECKED - S.W.M.	REVISED -
DATE - 05/13/09	REVISED -

STATE OF ILLINOIS
 STARK COUNTY HIGHWAY DEPARTMENT

HLR HAMPTON, LENZINI & RENWICK, INC.
 CIVIL & STRUCTURAL ENGINEERS
 LAND SURVEYORS
 SCALE: 1" = 5'

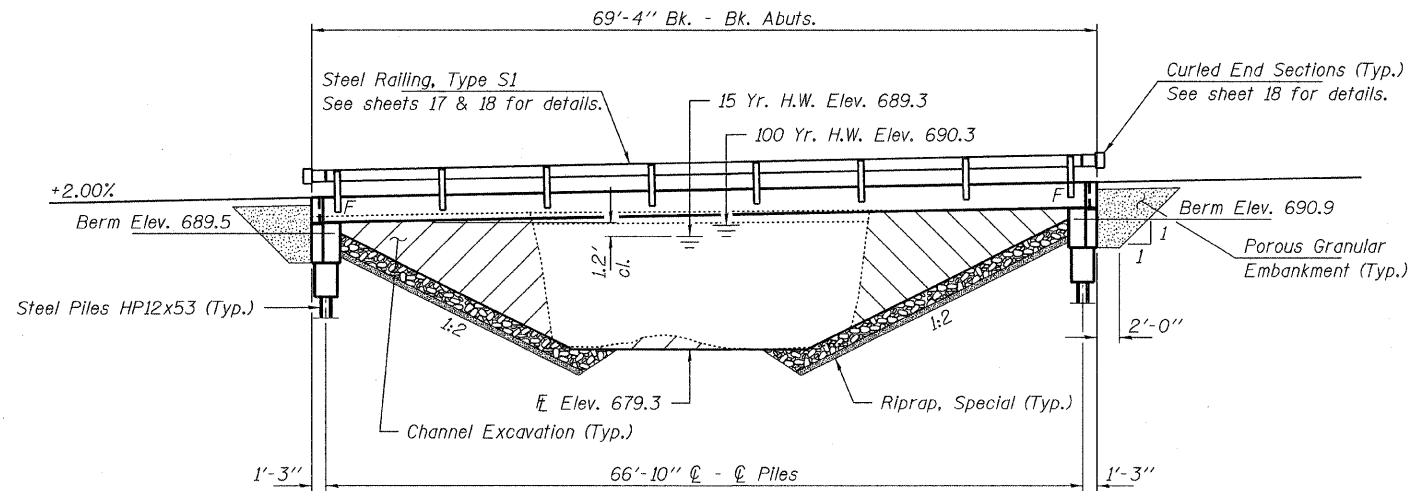
CROSS SECTIONS
 950 E.
 STA. 139+50.00 TO STA. 140+00.00

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
23	08-00158-00-BR	STARK	23	13
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO. 89509	

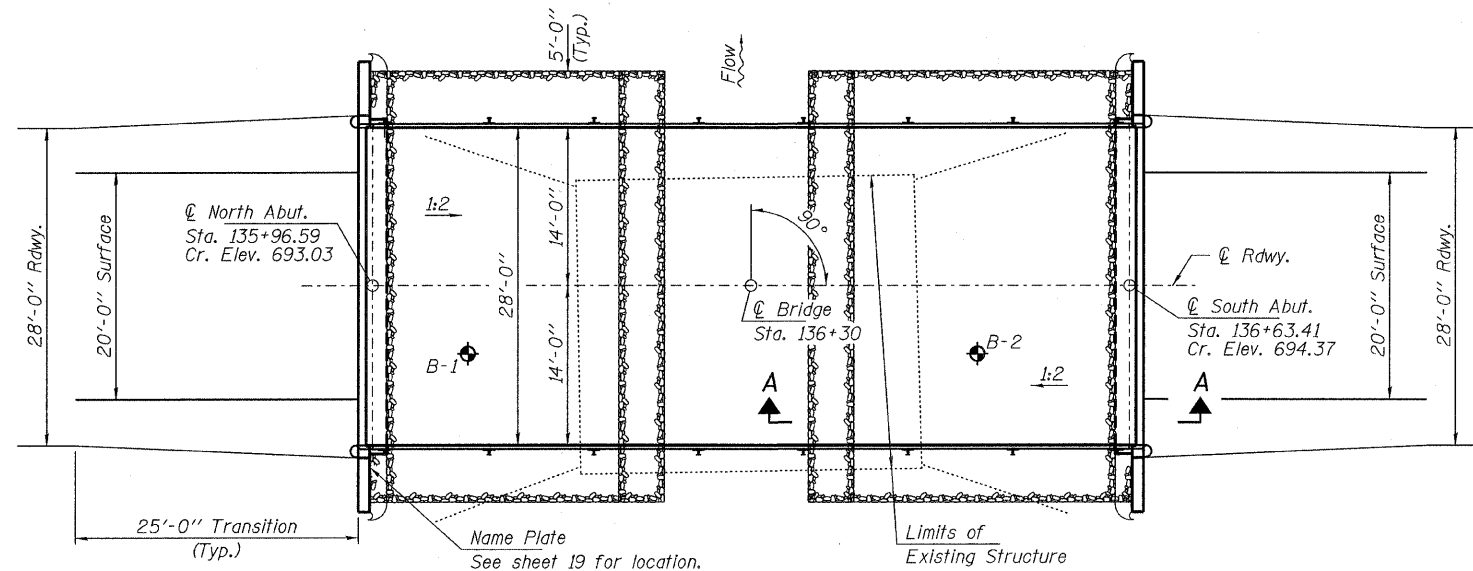
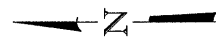
BENCHMARK: Chiseled "□" on bridge curb. 9' Lt., Sta. 136+15, Elev. 692.32

EXISTING STRUCTURE: Single span precast prestressed concrete deck beam bridge on closed timber abutments and wingwalls. 27.4' bk.-bk. abuts.; 26.0' o.-o. deck. Structure closed to traffic.

No Salvage



ELEVATION



PLAN

DESIGN STRESSES

FIELD UNITS

$f'_c = 3,500$ psi
 $f_y = 60,000$ psi (Reinf.)

PRECAST PRESTRESSED UNITS

$f'_c = 6,000$ psi
 $f'_{ci} = 5,000$ psi
 $f_{pu} = 270,000$ psi ($\frac{1}{2}$ " ϕ low lax. strands)
 $f_{pbt} = 201,960$ psi ($\frac{1}{2}$ " ϕ low lax. strands)
 $f_y = 60,000$ 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) = 1
 Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.099g
 Design Spectral Acceleration at 0.2 sec. (S_{D5}) = 0.154g
 Soil Site Class = D

WATERWAY INFORMATION

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Natural Head - Ft.		Headwater El.		
			Exist.	Prop.	Exist.	Prop.	Exist.	Prop.	
Design	20	2,080	260	370	688.70	1.06	0.47	689.76	689.17
Base	100	3,830	300	470	690.30	1.23	0.86	691.53	691.16
Overtopping Ex. 10	2,080	260			688.70	1.06		689.76	
Overtopping Pr. 100	3,830				690.30		0.86		691.16
Max. Calc.	500	5,160	300	480	691.23	1.21	1.34	692.44	692.57

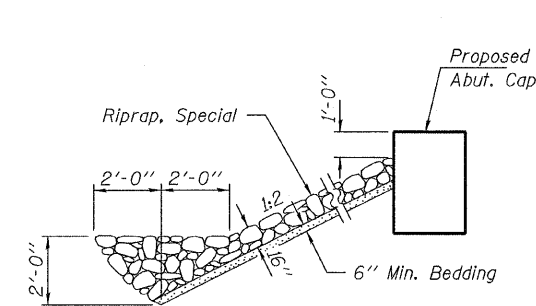
Existing Low Grade Elev. 689.3 @ Sta. 134+60
 Drainage Area = 14.0 Sq. Mi. Proposed Low Grade Elev. 690.2 @ Sta. 134+20
 10 Year Velocity through Existing Bridge = 8.9 Tps 10 Year Velocity through Proposed Bridge = 5.9 Tps

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 or approved by the Engineer before ordering the remainder of piles.
 Excavation behind existing abutment walls shall be performed to balance front and back soil pressure before removing the existing superstructure.
 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. See sheets 22 & 23 for Borings.

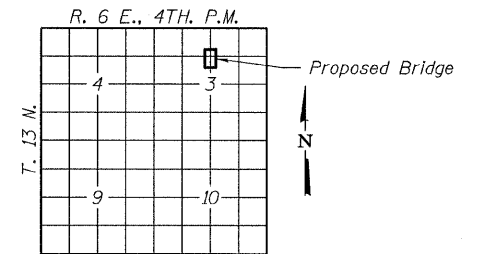
JACK CREEK
 BUILT 200_ BY
 STARK COUNTY
 SEC. 08-00158-00-BR
 C.H. 23
 STR. NO. 088-3223
 LOADING HL-93

NAME PLATE
 See Std. 515001



SECTION A-A

Note: See Special Provisions for Riprap, Special.



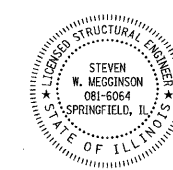
LOCATION SKETCH

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	Cu. Yd.			315
Porous Granular Embankment	Ton			120
Riprap, Special	Ton			190
Removal of Existing Structures	Each			1
Concrete Structures	Cu. Yd.		27.0	27.0
Concrete Encasement	Cu. Yd.		2.8	2.8
Precast Prestressed Concrete Deck Beams (27" Depth)	Sq. Ft.	1,904		1,904
Reinforcement Bars	Pound		2,820	2,820
Steel Railing, Type S1	Foot	134		134
Furnishing Steel Piles HP12x53	Foot		175	175
Driving Piles	Foot		175	175
Test Pile Steel HP12x53	Each		1	1
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. Mezzanin 5/12/2009
 ILLINOIS STRUCTURAL NO. 081-6064



Expires 11-30-2010

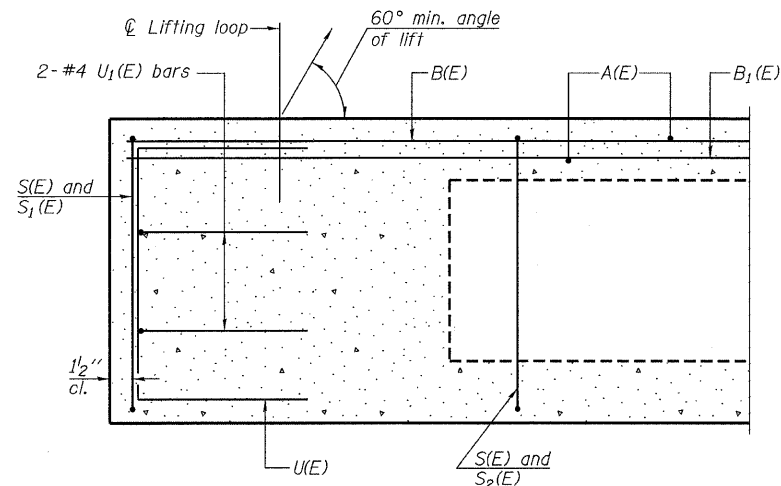
GENERAL PLAN AND ELEVATION
STRUCTURE NO. 088-3223

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

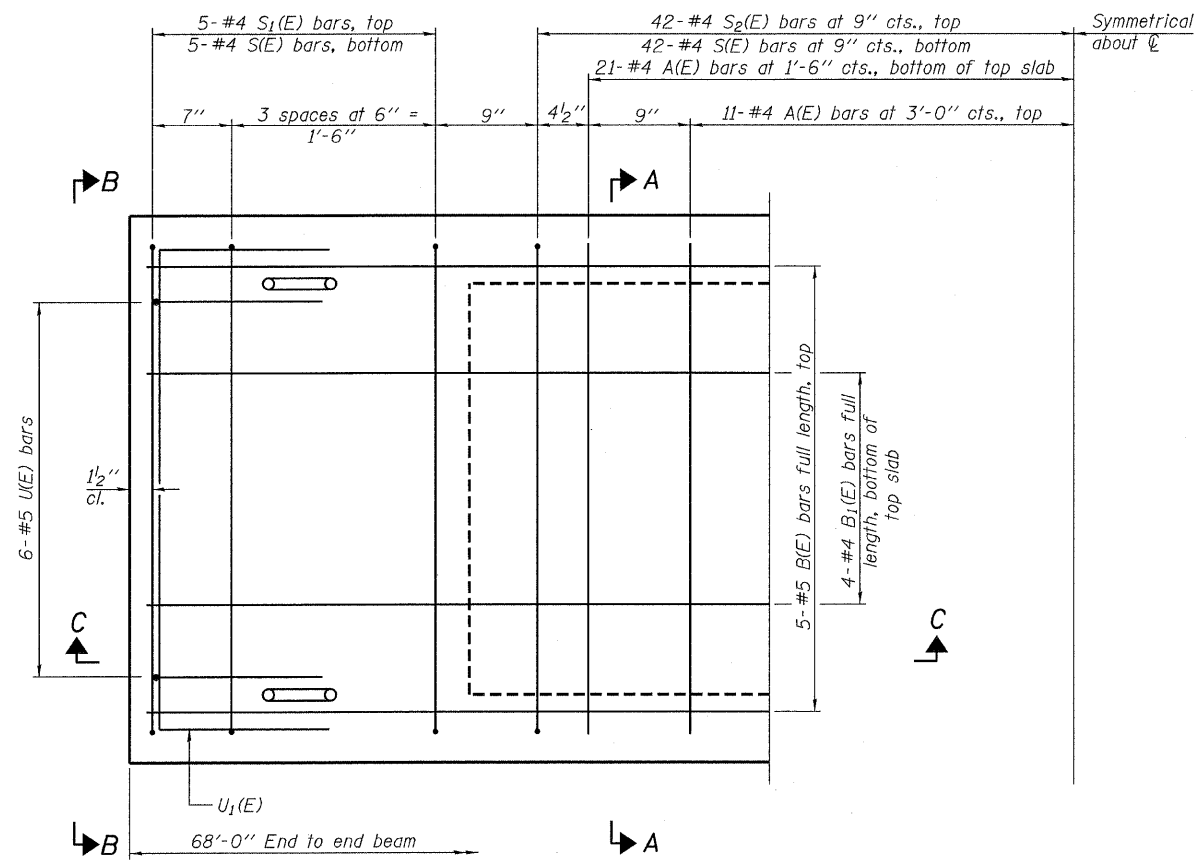
HAMPTON, LENZINI & RENWICK, INC.
 CIVIL & STRUCTURAL ENGINEERS
 LAND SURVEYORS
 3085 STEVENSON DRIVE, SUITE 201
 SPRINGFIELD, ILLINOIS 62703
 (217) 546-3400

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
23	08-00158-00-BR	STARK	23	14
CONTRACT NO. 89509			FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT	

PROJECT NUMBER: 08.0274.130 DATE: 05/13/09

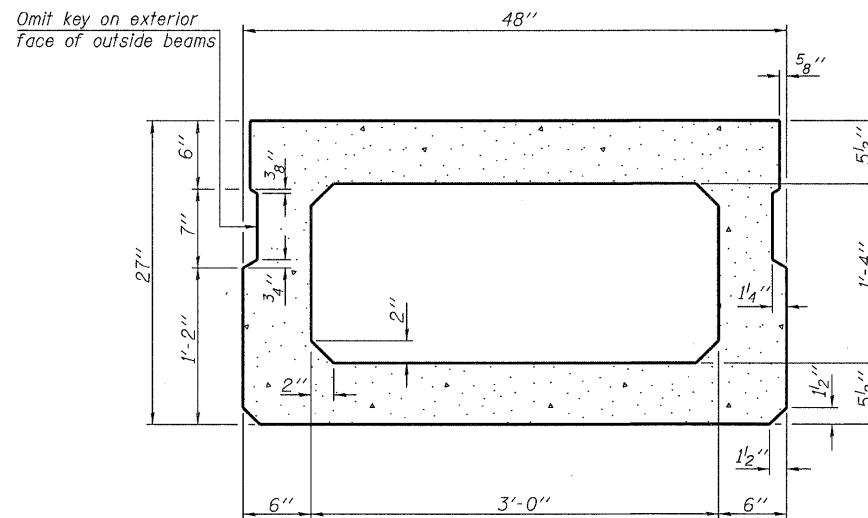


SECTION C-C

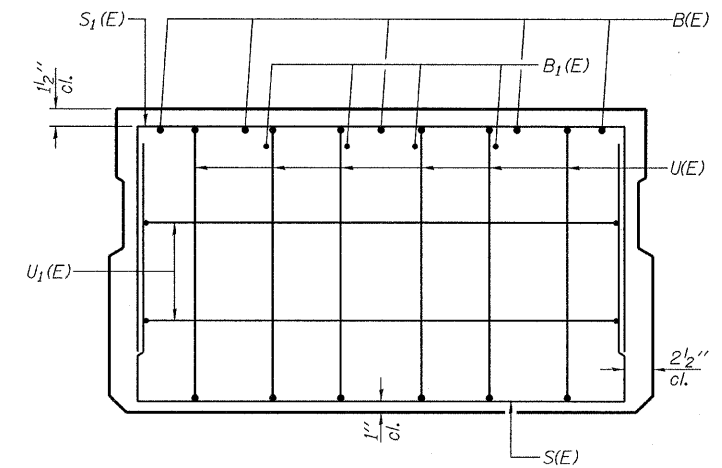


PLAN VIEW

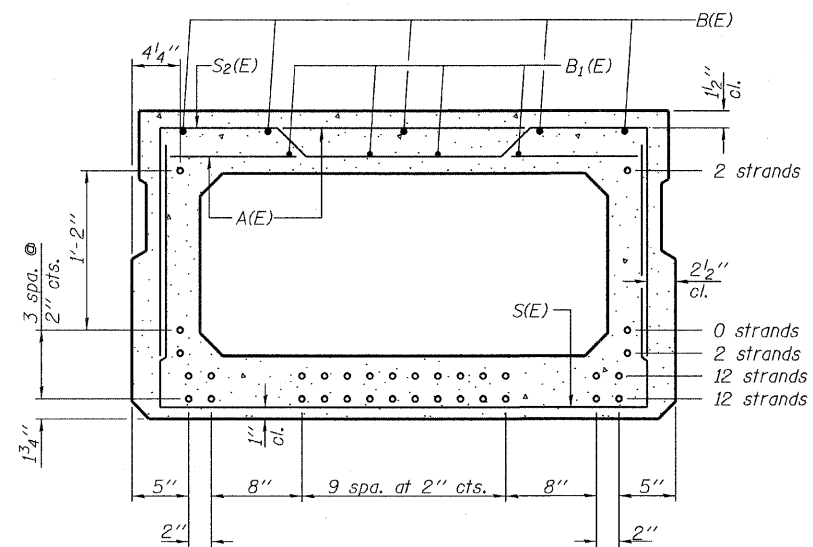
Note: Spacing of S(E) and S₂(E) bars may be adjusted up to 4" in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.



SECTION A-A
(Showing dimensions)



VIEW B-B



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)	64	#4	3'-7"	—
B(E)	5	#5	67'-8"	—
B ₁ (E)	4	#4	67'-8"	—
S(E)	94	#4	7'-5"	⌋
S ₁ (E)	10	#4	6'-11"	⌋
S ₂ (E)	84	#4	7'-2"	⌋
U(E)	12	#5	4'-6"	⌋
U ₁ (E)	4	#4	6'-0"	⌋

Note: See sheets 16 & 17 for additional details and Bill of Material.

SUPERSTRUCTURE
27" x 48" PPC DECK BEAM
STRUCTURE NO. 088-3223

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

PD-2748-0

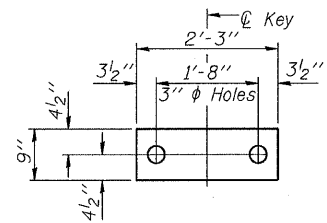
10-1-08

HAMPTON, LENZINI & RENWICK, INC.
CIVIL & STRUCTURAL ENGINEERS
LAND SURVEYORS

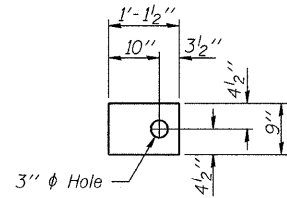
HLR 3085 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
(217) 546-3400

PROJECT NUMBER: 08.0274.130 DATE: 05/13/09

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
23	08-00158-00-BR	STARK	23	15
CONTRACT NO. 89509				
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



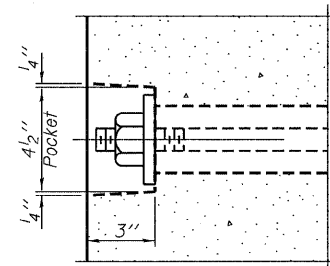
FABRIC BEARING PAD
(Interior - 12 Req'd.)



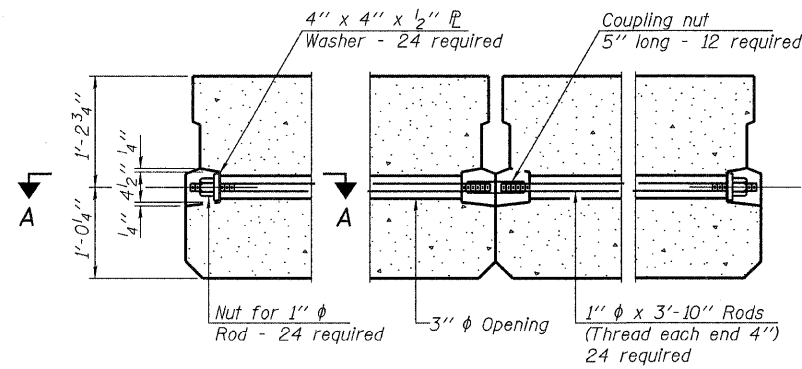
FABRIC BEARING PAD
(Exterior - 4 Req'd.)

FIXED

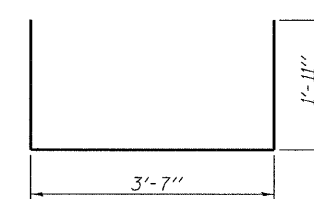
Note: Omit holes when using expansion bearings.



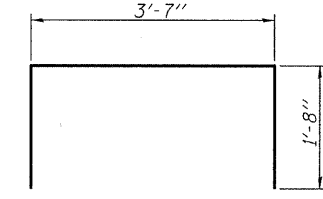
SECTION A-A



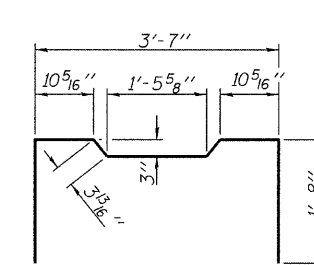
TYPICAL TRANSVERSE TIE ASSEMBLY



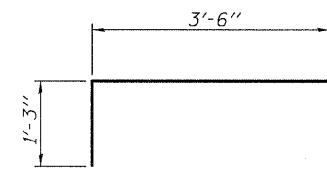
BAR S1(E)



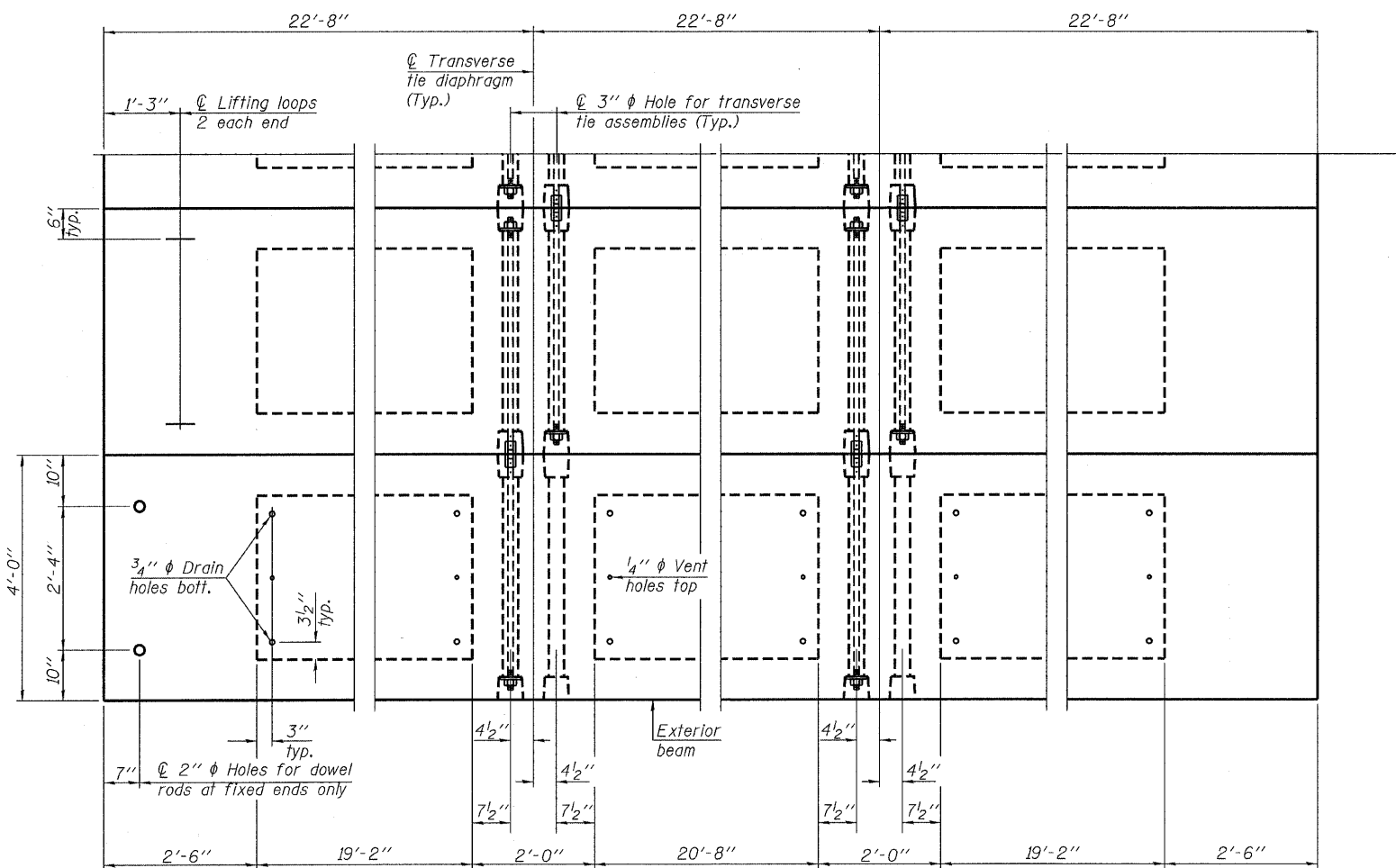
BAR S2(E)



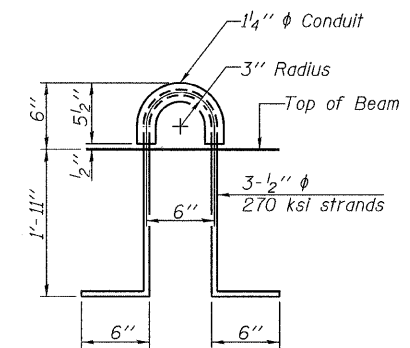
BAR U1(E)



BAR U2(E)



PLAN VIEW



LIFTING LOOP DETAIL

NOTES

- Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2 inch and the nominal cross-sectional area shall be 0.153 sq. in.
- The 1 inch 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 inch fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.
- A minimum 2 1/2 inch 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'cl, shall be 5000 psi.

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

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

PD-2748-0D

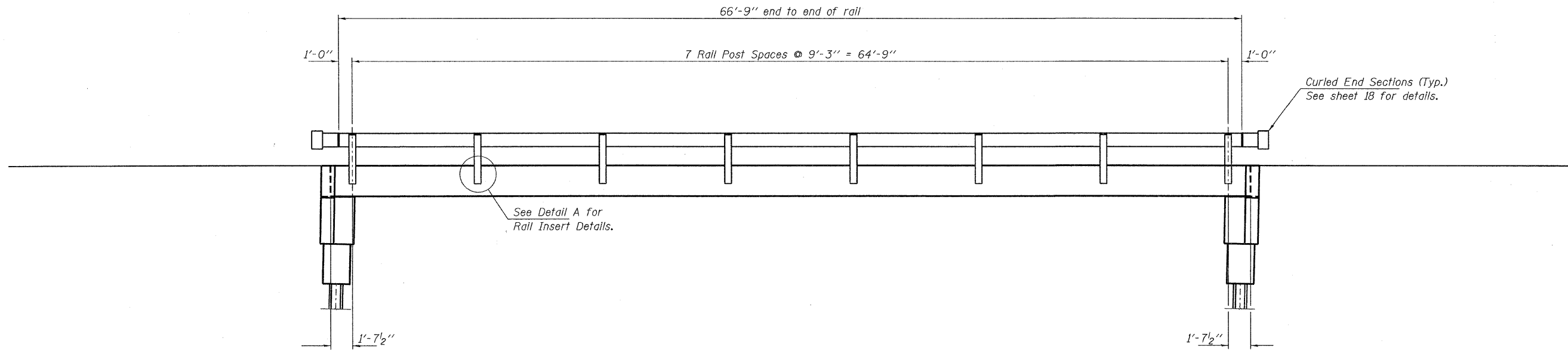
10-1-08

BILL OF MATERIAL

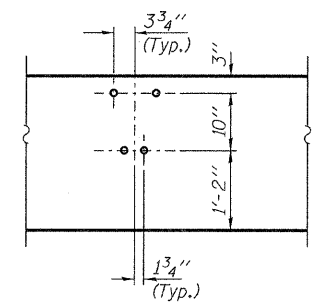
Precast Prestressed Conc. Deck Bms. (27" depth)	Sq. Ft.	1,904
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SUPERSTRUCTURE DETAILS
27" x 48" PPC DECK BEAM DETAILS
STRUCTURE NO. 088-3223

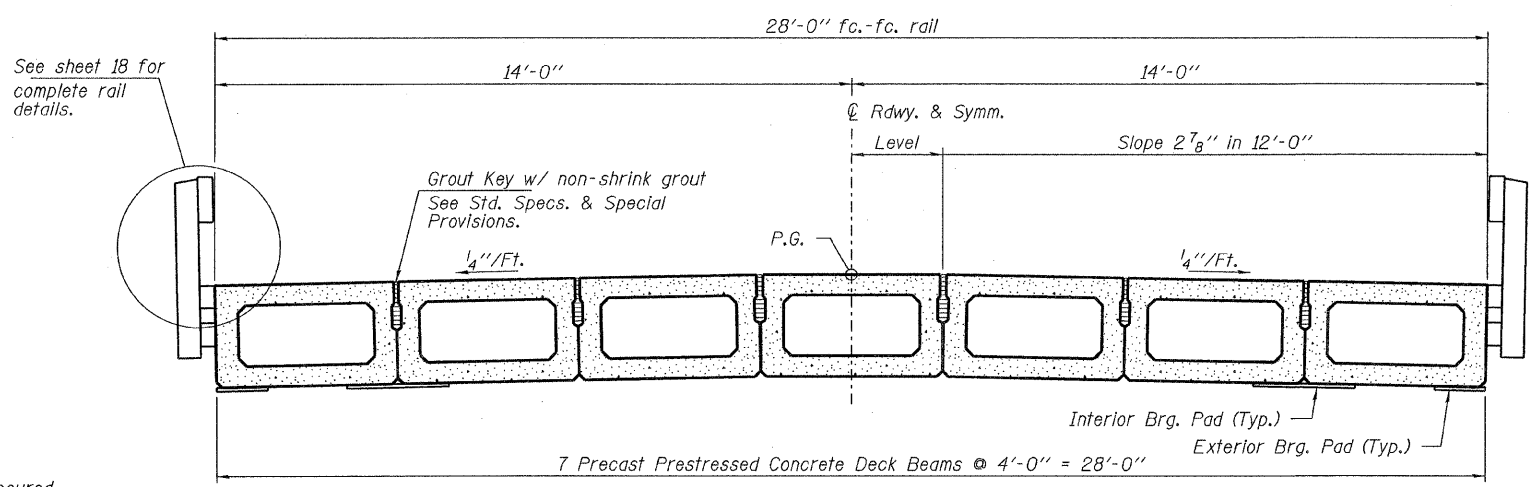
 HAMPTON, LENZINI & RENWICK, INC. CIVIL & STRUCTURAL ENGINEERS LAND SURVEYORS 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 (217) 548-3400	C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	23	08-00158-00-BR	STARK	23	16
PROJECT NUMBER: 08.0274.130			DATE: 05/13/09		
FED. ROAD DIST. NO.		ILLINOIS		FED. AID PROJECT	
CONTRACT NO. 89509					



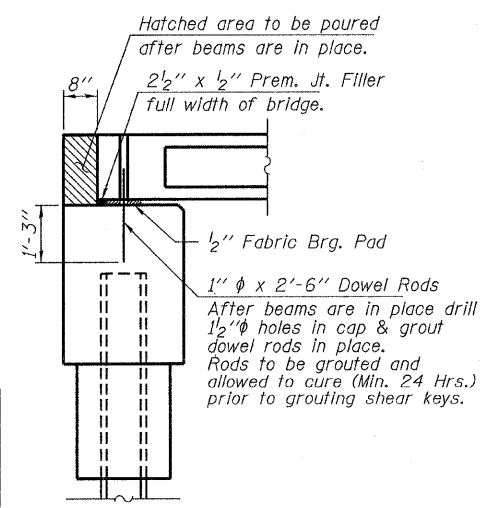
ELEVATION
Showing Rail Post Spaces
See sheet 18 for Railing Details.



DETAIL A



CROSS SECTION
See sheets 15 & 16 for Superstructure.

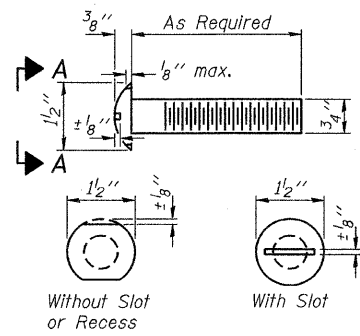


SECTION AT ABUTMENTS
© Rt. L's

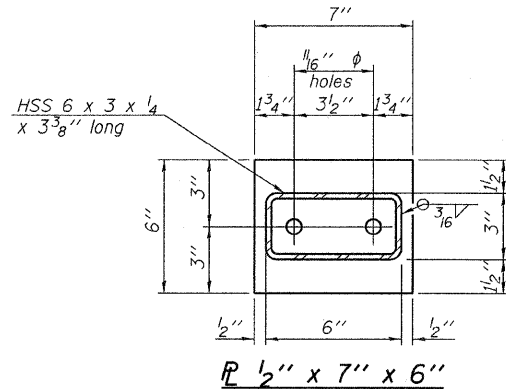
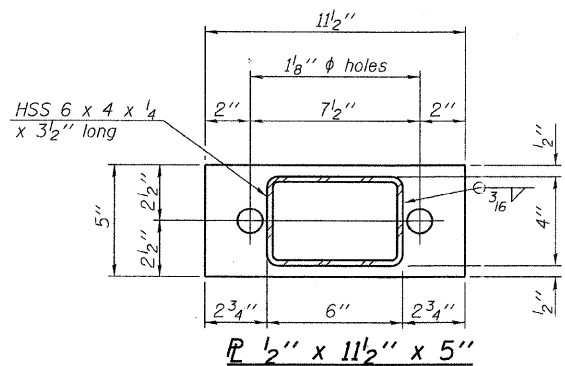
DESIGNED - A.S.L.
CHECKED - S.W.M.
DRAWN - D.A.B.
CHECKED - D.T.M.

SUPERSTRUCTURE DETAILS
STRUCTURE NO. 088-3223

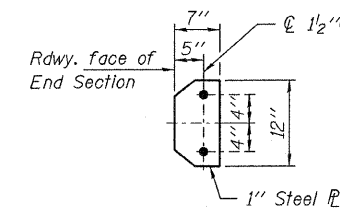
 HAMPTON, LENZINI & RENWICK, INC. CIVIL & STRUCTURAL ENGINEERS LAND SURVEYORS 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 (217) 546-3400	C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	23	08-00158-00-BR	STARK	23	17
PROJECT NUMBER: 08.0274.130			DATE: 05/13/09		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		CONTRACT NO. 89509	



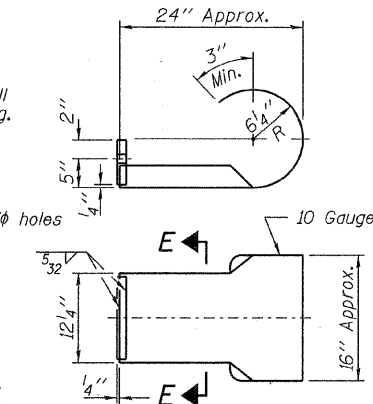
**VIEW A-A
ROUND HEAD BOLT**



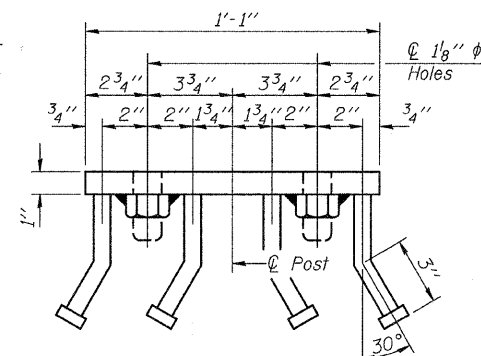
Note: Cost of curled end sections shall be included with the Steel Railing. (4 Required)



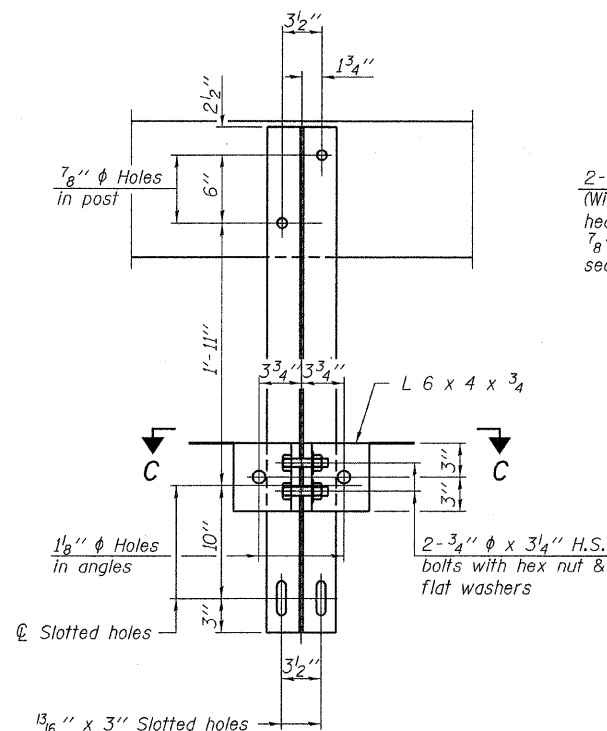
**SECTION E-E
CURLED END SECTION DETAILS**



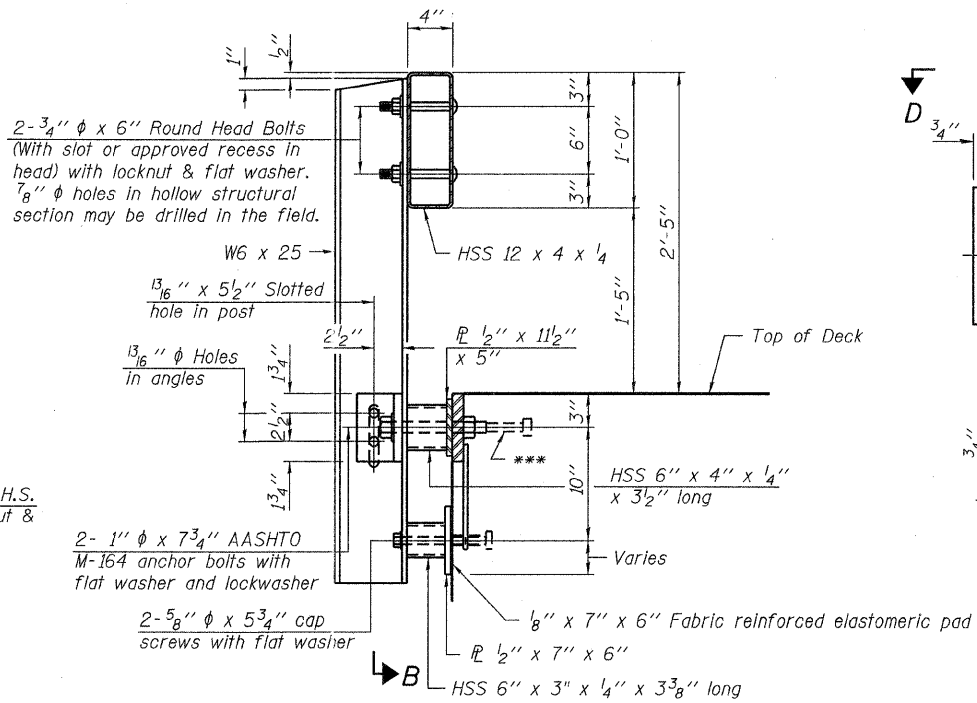
Notes:
All field drilled holes shall be coated with an approved zinc rich paint before erection.
For multi-span bridges, sufficient 4" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with Steel Railing, Type S-1.
All steel rail elements shall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



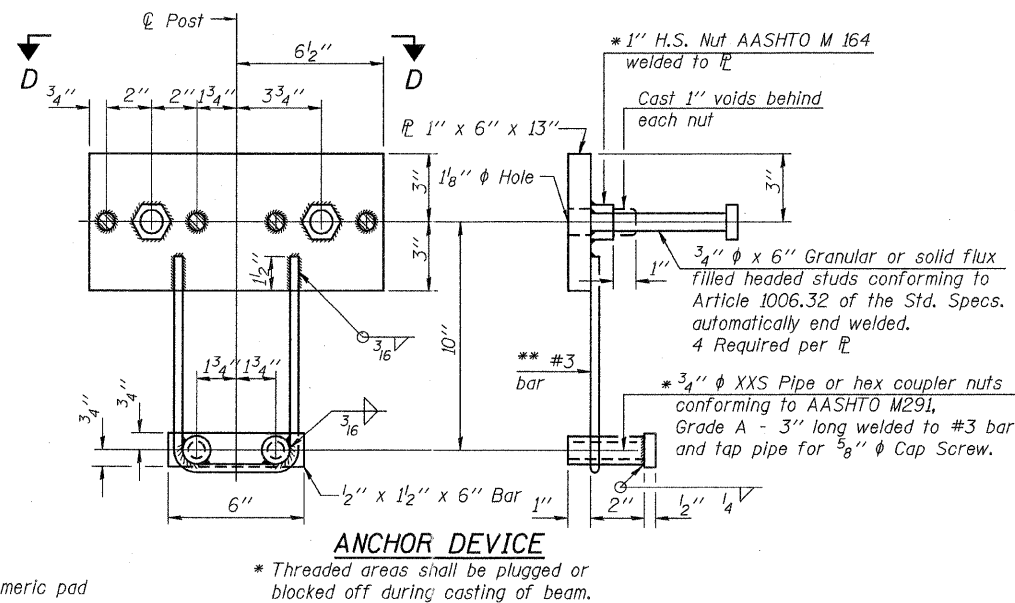
VIEW D-D



SECTION B-B

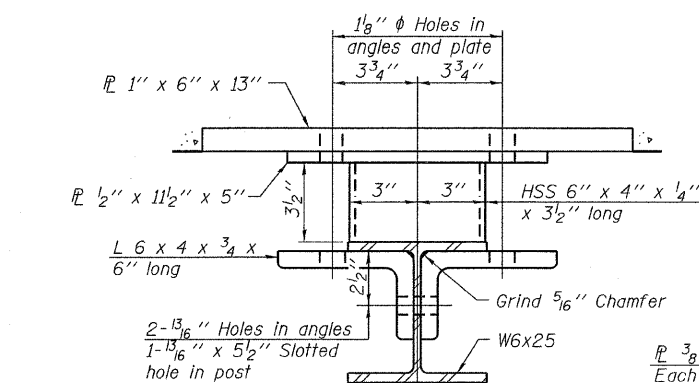


SECTION AT RAILING POST



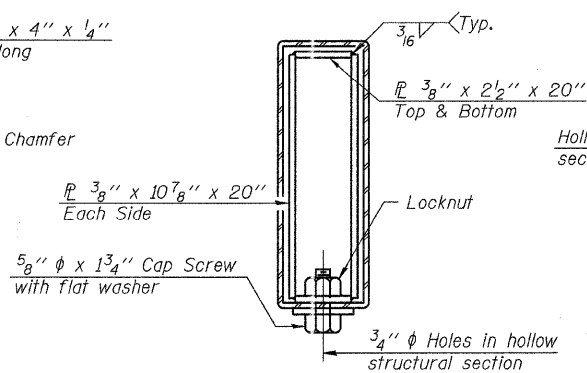
ANCHOR DEVICE

* Threaded areas shall be plugged or blocked off during casting of beam.

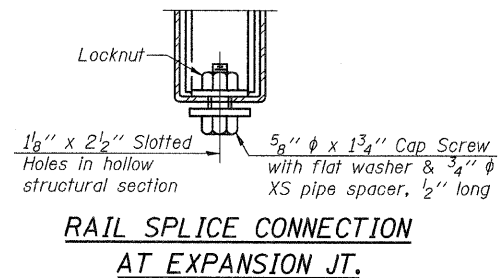


SECTION C-C

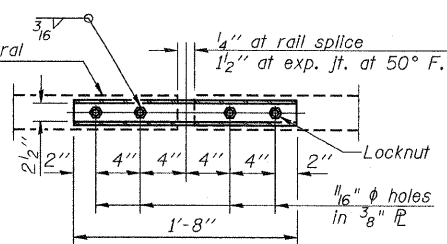
** Whenever the lower insert assemblies interfere with strand locations, the #3 bars shall be cut and adjusted in order to allow raising or lowering of the lower inserts. Maximum adjustment not to exceed 1/2 inch.



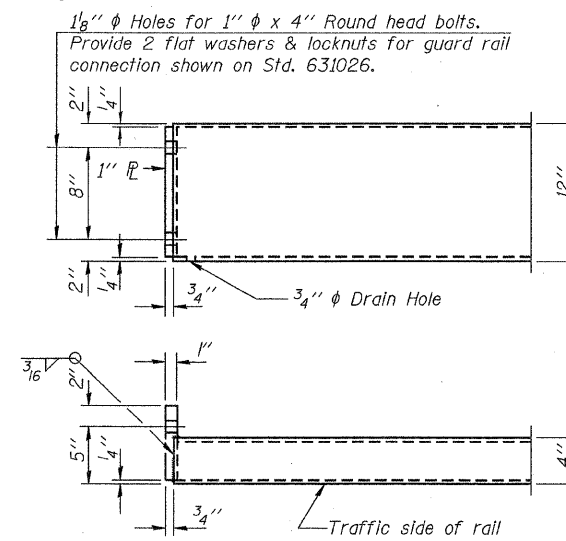
SECTIONS AT RAIL SPLICE



**RAIL SPLICE CONNECTION
AT EXPANSION JT.**



**PLAN-BOTT. SPLICE
TYPICAL**



END OF RAIL DETAILS

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S-1	Foot	134

**STEEL RAILING, TYPE S-1
STRUCTURE NO. 088-3223**

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

R-23A

10-1-08

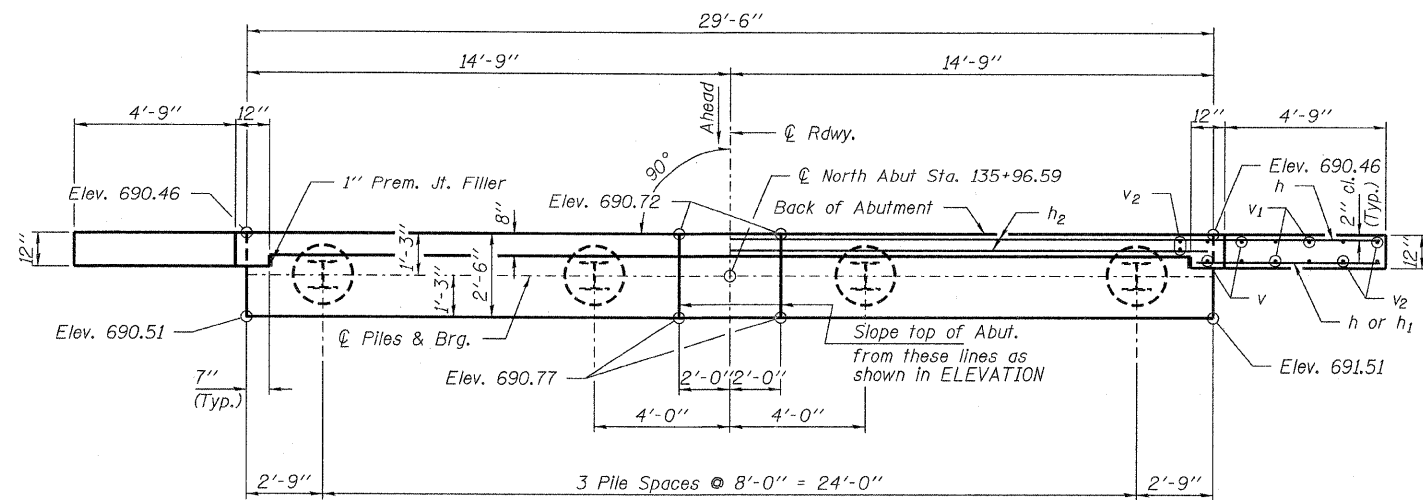
(10'-9" Maximum Post Spacing)

HAMPTON, LENZINI & RENWICK, INC.
CIVIL & STRUCTURAL ENGINEERS
LAND SURVEYORS

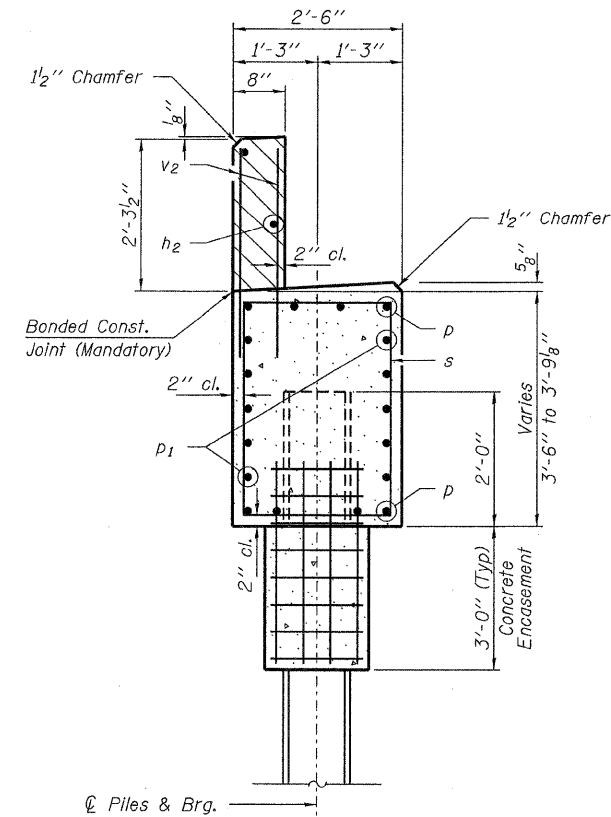
HLR 308E STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
(217) 546-3400

PROJECT NUMBER: 08.0274.130 DATE: 05/13/09

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
23	08-00158-00-BR	STARK	23	18
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT	
CONTRACT NO. 89509				

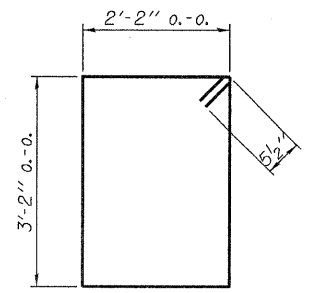


PLAN

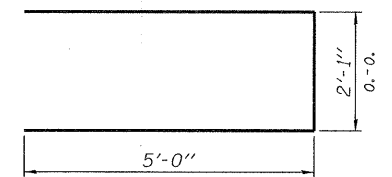


SECTION A-A

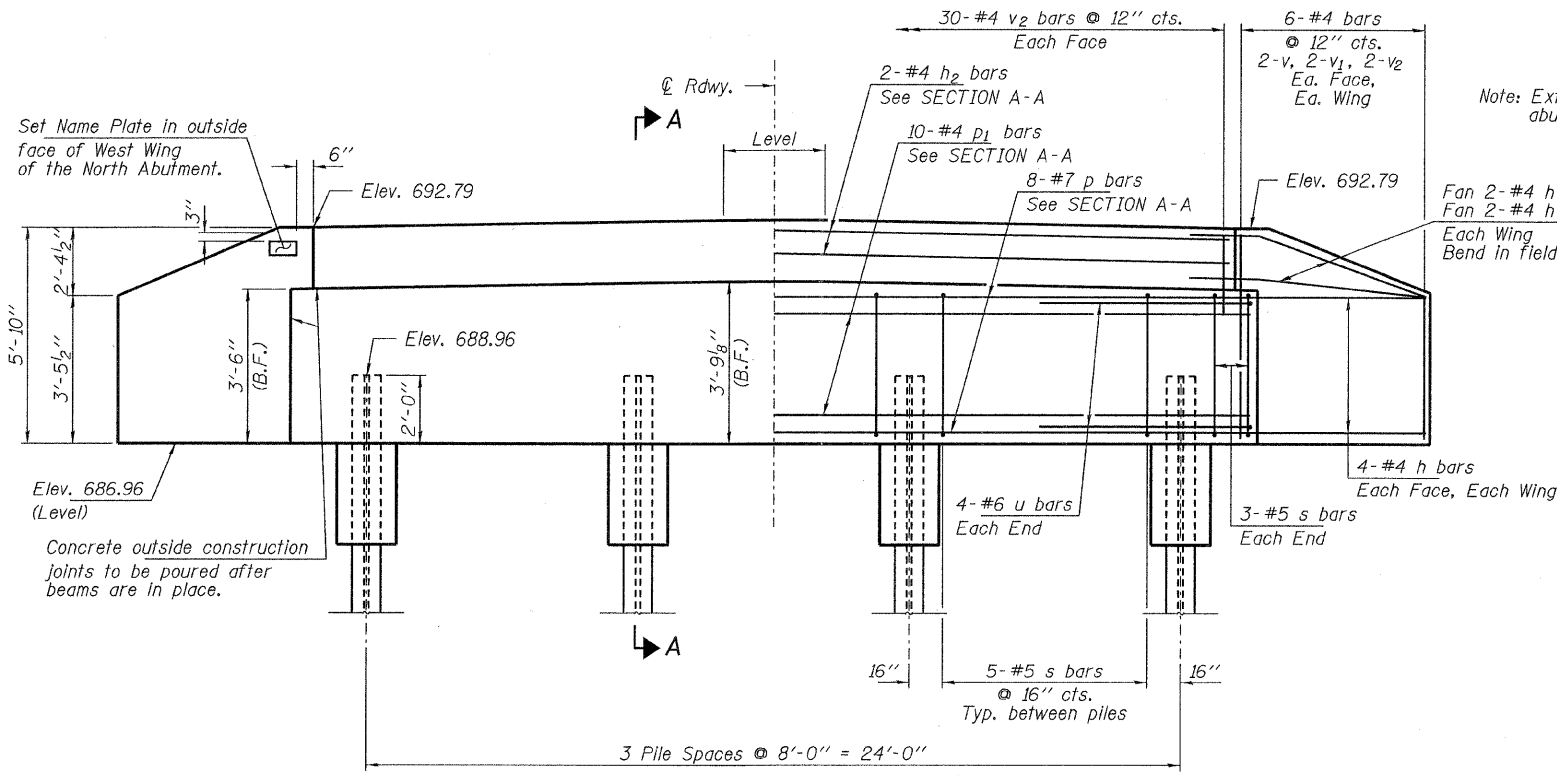
Hatched area to be poured after beams are in place.



BAR s



BAR u



ELEVATION
(Looking North)

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 HP12x53
No. Req'd. (N Abut.): 4
Factored Resistance Available (Rf): 209 Kips/Pile
Nominal Required Bearing (Rn): 419 Kips/Pile
Est. Length: 25 Ft/Pile

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

BILL OF MATERIAL - N. ABUT.

BAR	NO.	SIZE	LENGTH	SHAPE
h	20	#4	7'-0"	—
h1	4	#4	5'-6"	—
h2	2	#4	29'-2"	—
p	8	#7	29'-2"	—
p1	10	#4	29'-2"	—
s	21	#5	11'-7"	□
u	8	#6	12'-1"	—
v	8	#4	5'-2"	—
v1	8	#4	4'-2"	—
v2	68	#4	3'-2"	—
Concrete Structures			Cu. Yd.	13.5
Concrete Encasement			Cu. Yd.	1.4
Reinforcement Bars			Pound	1,410
Steel Piles HP12x53			Foot	100
Name Plates			Each	1

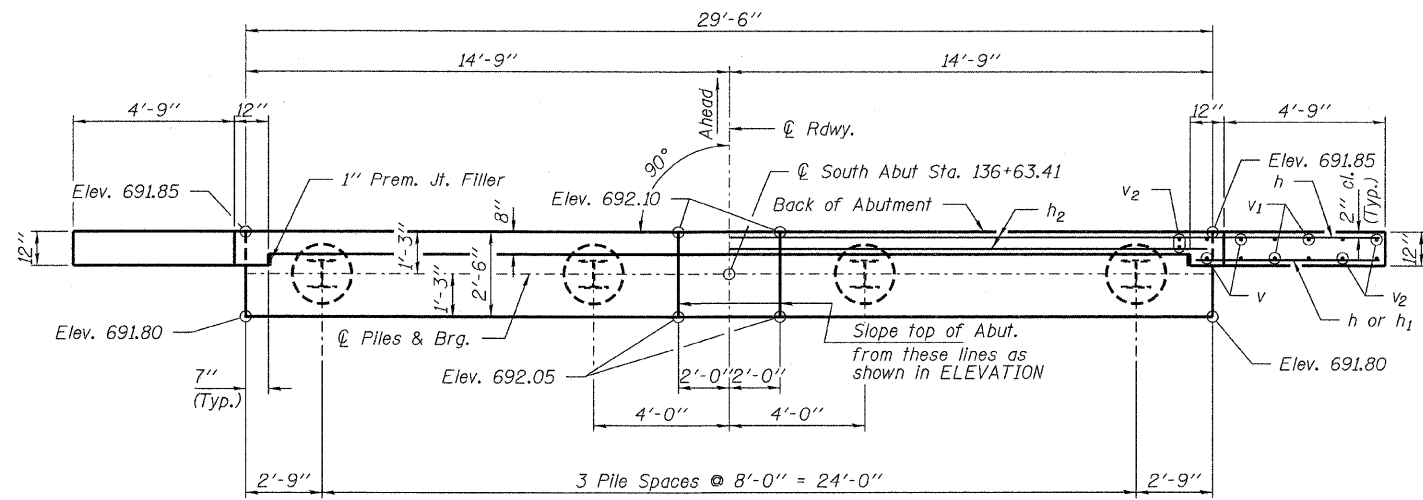
DESIGNED - A.S.L.
CHECKED - S.W.M.
DRAWN - D.A.B.
CHECKED - D.T.M.

**NORTH ABUTMENT
STRUCTURE NO. 088-3223**

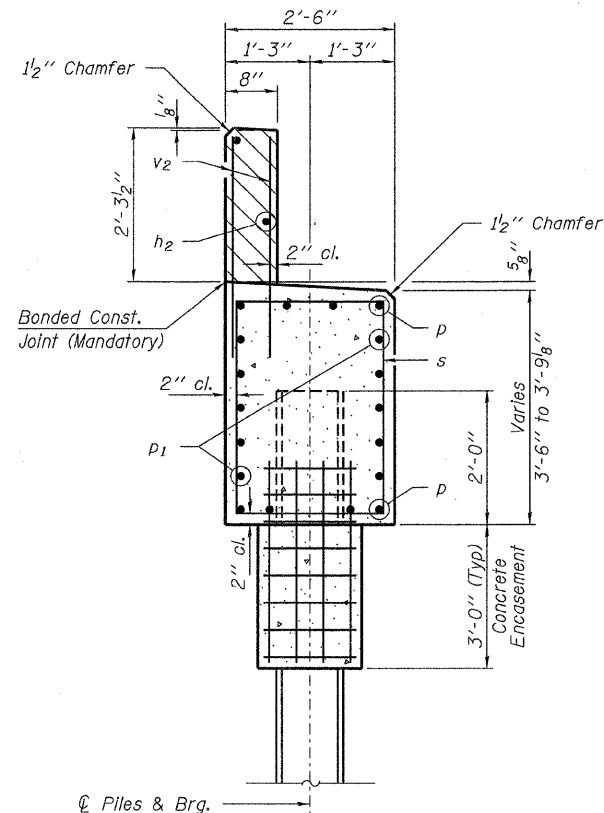
HAMPTON, LENZINI & RENWICK, INC.
CIVIL & STRUCTURAL ENGINEERS
LAND SURVEYORS
HLR
3085 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
(217) 546-3400

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
23	08-00158-00-BR	STARK	23	19
CONTRACT NO. 89509				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

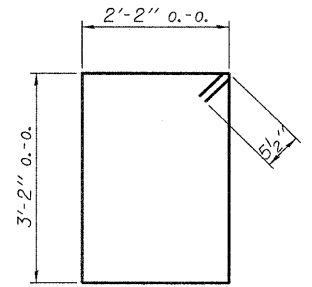
Ahead



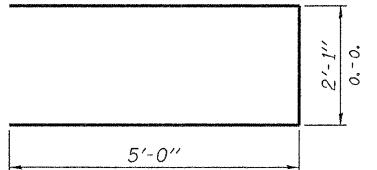
PLAN



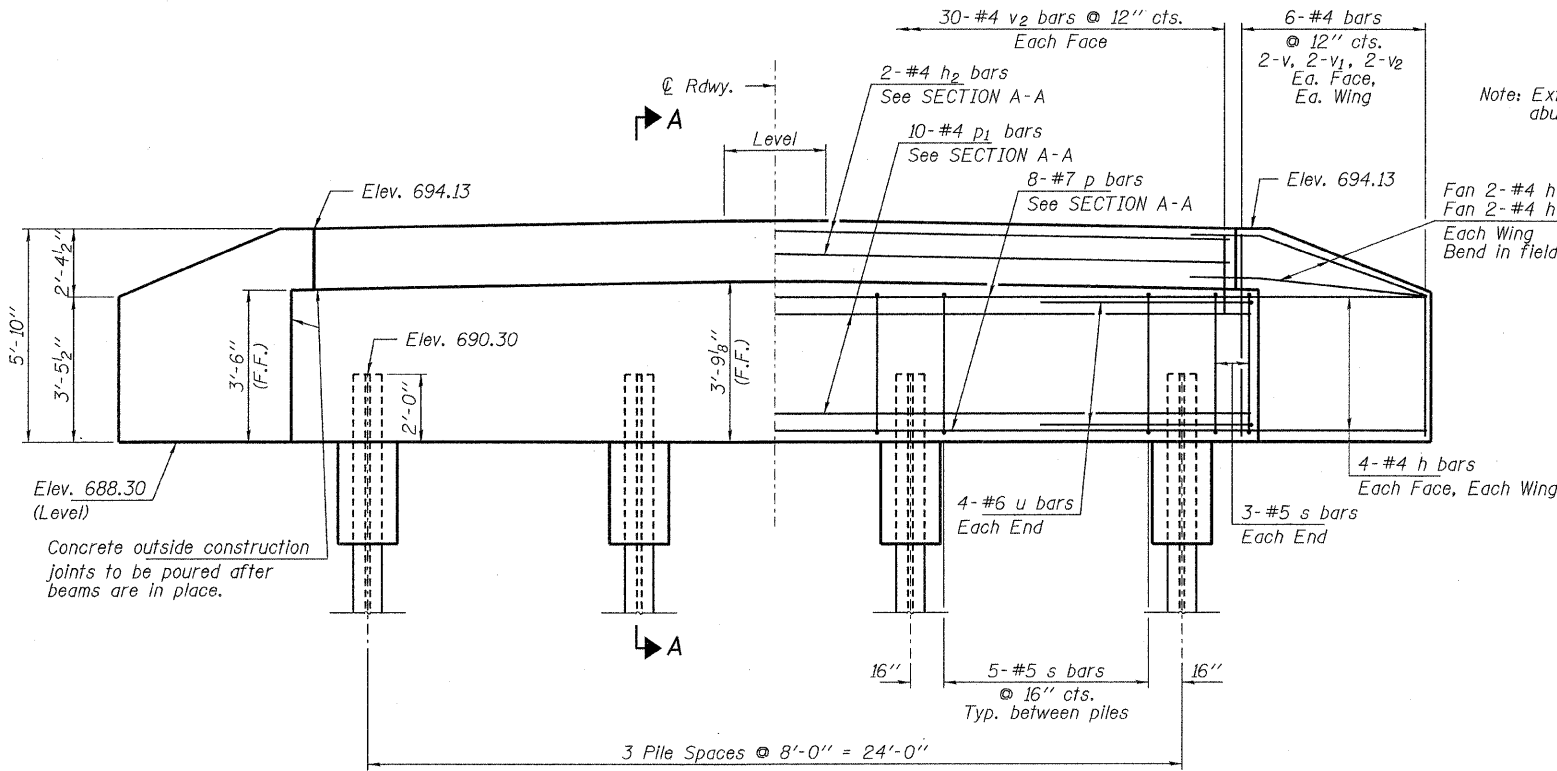
SECTION A-A



BAR s



BAR u



ELEVATION
(Looking South)

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 HP12x53
No. Req'd. (S. Abut.) ----- 4
Factored Resistance Available (Rf) ----- 209 Kips/Pile
Nominal Required Bearing (Rn) ----- 419 Kips/Pile
Est. Length ----- 25 Ft/Pile

Notes: * Includes one test pile to be driven in permanent locations at the South 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 - S. ABUT.

BAR	NO.	SIZE	LENGTH	SHAPE
h	20	#4	7'-0"	—
h1	4	#4	5'-6"	—
h2	2	#4	29'-2"	—
p	8	#7	29'-2"	—
p1	10	#4	29'-2"	—
s	21	#5	11'-7"	□
u	8	#6	12'-1"	—
v	8	#4	5'-2"	—
v1	8	#4	4'-2"	—
v2	68	#4	3'-2"	—
Concrete Structures			Cu. Yd.	13.5
Concrete Encasement			Cu. Yd.	1.4
Reinforcement Bars			Pound	1,410
Steel Piles HP12x53			Foot	75
Test Pile Steel HP12x53			Each	1

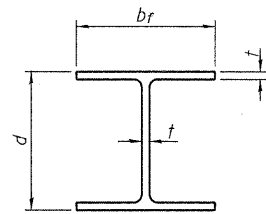
DESIGNED - A.S.L.
CHECKED - S.W.M.
DRAWN - D.A.B.
CHECKED - D.T.M.

HAMPTON, LENZINI & RENWICK, INC.
CIVIL & STRUCTURAL ENGINEERS
LAND SURVEYORS

HLR 3085 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
(217) 546-3400

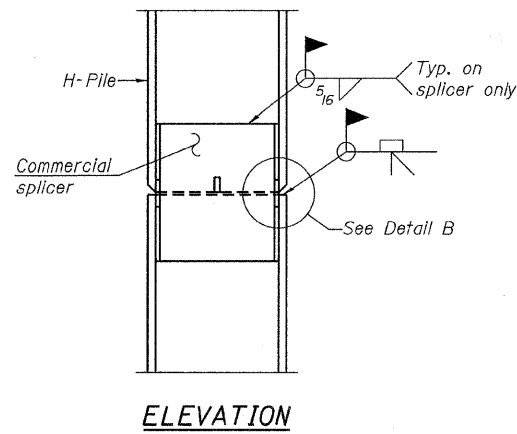
PROJECT NUMBER: 08.0274.130 DATE: 05/13/09

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
23	08-00158-00-BR	STARK	23	20
CONTRACT NO. 89509				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

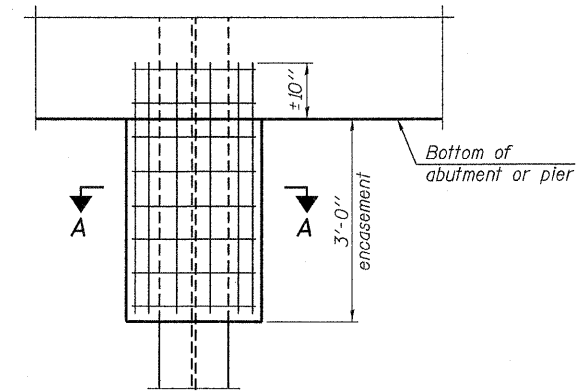


STEEL PILE TABLE

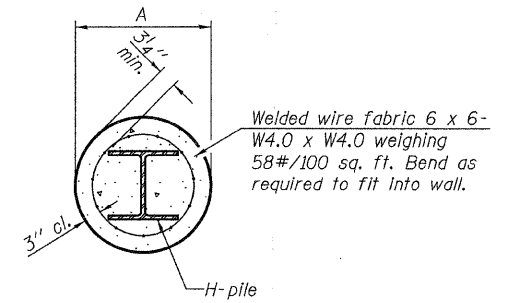
Designation	Depth d	Flange width br	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	13/16"	30"
x102	14"	14 3/4"	1/16"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 5/8"	14 5/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	1/16"	24"
x74	12 1/8"	12 1/4"	5/8"	24"
x63	12"	12 1/8"	1/2"	24"
x53	11 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



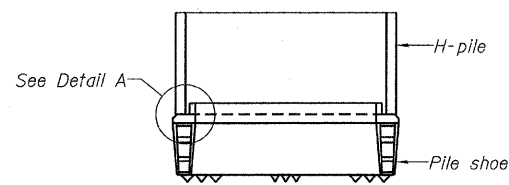
ELEVATION



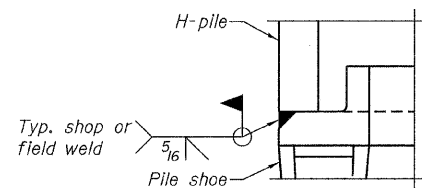
SECTION A-A

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

PILE ENCASEMENT

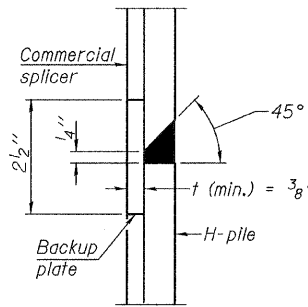


ELEVATION



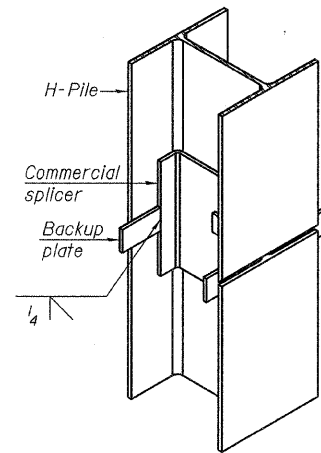
DETAIL A

H-PILE SHOE ATTACHMENT

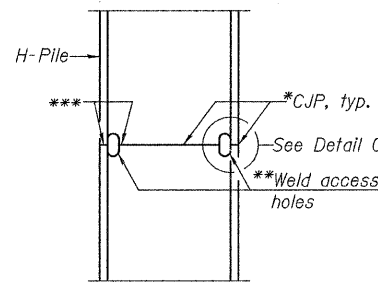


DETAIL "B"

WELDED COMMERCIAL SPLICE

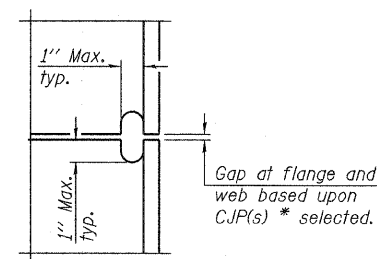


ISOMETRIC VIEW

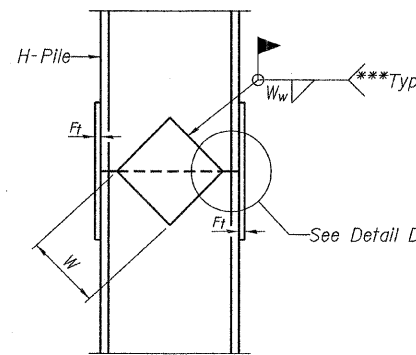


ELEVATION

COMPLETE PENETRATION WELD SPLICE

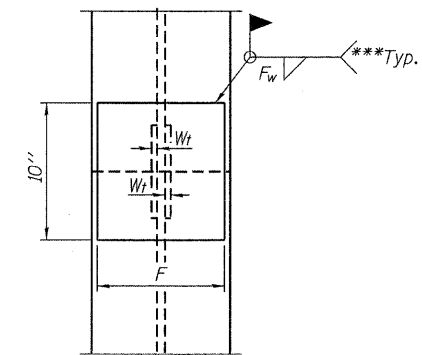


DETAIL C



ELEVATION

WELDED PLATE FIELD SPLICE



END VIEW

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

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

- * Use joint conforming to Figure 3.4 in AWS D1.1, Structure Welding Code - Steel.
- ** Preparation per Fig. 5.2 in AWS D1.1, Structure Welding Code - Steel.
- *** Interrupt welds 1/4" from end of each pile.

**HP PILE DETAILS
STRUCTURE NO. 088-3223**

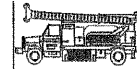
DESIGNED - A.S.L.
CHECKED - S.W.M.
DRAWN - D.A.B.
CHECKED - D.T.M.

F-HP

10-1-08

HAMPTON, LENZINI & RENWICK, INC.
 CIVIL & STRUCTURAL ENGINEERS
 LAND SURVEYORS
 3085 STEVENSON DRIVE, SUITE 201
 SPRINGFIELD, ILLINOIS 62703
 (217) 546-3400
 PROJECT NUMBER: 08.0274.130 DATE: 05/13/08

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
23	08-00158-00-BR	STARK	23	21
CONTRACT NO. 89509				
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	



Midwest Testing Services, Inc.
3705 Progress Blvd.
Peru, IL 61354

BORING LOG

Sheet 1 of 3

Phone: 815-223-6696
Fax: 815-223-6659
e-mail: mts37@comcast.net

Client: Stark County Highway Department
Project Name: Toulon Township Section 08-00158-00-BR
Project Site: Stark County, Illinois

Boring No. B-1
Surface Elev. 99.70 (691.30)
Auger Depth 47 Rotary Depth NA
Start Date 11/29/08 Finish Date 11/29/08

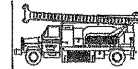
Location: 6' Right of Station 136+05

(DEPTH) ELEV. DESCRIPTION OF MATERIALS

99.70	(691.3)	
98.70		
97.70		
96.70		
95.70	Stiff Black And Brown Silty Clay (Fill)	
94.70		
93.70		
92.70		
91.70		
90.70	(682.3)	
89.70	Stiff Black Silty Clay Loam	
88.70	(680.3)	
87.70		
86.70	Stiff Brown To Brownish Gray Clay	
85.70		
84.70		
83.70		
82.70		
81.70		
80.70	(672.3)	
79.70	Very Dense Gray Shale	

Sample No.	Sample Type	Qu (TSF)	N Value (Blows)	Bulge / Shear	Moisture (%)	Dry Density (PCF)
1	SS	1.7	11	S	19	
2	SS	1.3	8	B	21	
3	SS	1.5	11	B	21	
4	SS	1.0	6	B	24	
5	SS	1.3	7	B	22	
6	SS	1.3	7	B	23	
7	SS	1.9	12	B	18	
8	SS	100	7		8	

Groundwater Data: Static water level after auger removal 12' depth.
Comments: Assumed center of existing bridge deck as elevation 100.0. (691.60)



Midwest Testing Services, Inc.
3705 Progress Blvd.
Peru, IL 61354

BORING LOG

Sheet 2 of 3

Phone: 815-223-6696
Fax: 815-223-6659
e-mail: mts37@comcast.net

Client: Stark County Highway Department
Project Name: Toulon Township Section 08-00158-00-BR
Project Site: Stark County, Illinois

Boring No. B-1
Surface Elev. 99.70 (691.30)
Auger Depth 47 Rotary Depth NA
Start Date 11/29/08 Finish Date 11/29/08

Location: 6' Right of Station 136+05

(DEPTH) ELEV. DESCRIPTION OF MATERIALS

78.70		
77.70		
76.70		
75.70		
74.70		
73.70		
72.70		
71.70		
70.70		
69.70	Very Dense Gray Shale With Limestone Stringers	
68.70		
67.70		
66.70		
65.70		
64.70		
63.70		
62.70		
61.70		
60.70		
59.70		
58.70		

Sample No.	Sample Type	Qu (TSF)	N Value (Blows)	Bulge / Shear	Moisture (%)	Dry Density (PCF)
9	SS	100	5		12	
10	SS	100	6		12	
11	SS	100	4		10	
12	SS	100	4		9	
13	SS	100	3		10	
14	SS	100	5		11	
15	SS	100	1		9	

Groundwater Data: Static water level after auger removal 12' depth.
Comments: Assumed center of existing bridge deck as elevation 100.0. (691.60)



Midwest Testing Services, Inc.
3705 Progress Blvd.
Peru, IL 61354

BORING LOG

Sheet 3 of 3

Phone: 815-223-6696
Fax: 815-223-6659
e-mail: mts37@comcast.net

Client: Stark County Highway Department
Project Name: Toulon Township Section 08-00158-00-BR
Project Site: Stark County, Illinois

Boring No. B-1
Surface Elev. 99.70 (691.30)
Auger Depth 47 Rotary Depth NA
Start Date 11/29/08 Finish Date 11/29/08

Location: 6' Right of Station 136+05

(DEPTH) ELEV. DESCRIPTION OF MATERIALS

57.70		
56.70		
55.70	Very Dense Gray Shale With Limestone Stringers	
54.70		
53.70		
52.70	(644.3)	
51.70	Unable To Penetrate 47' Depth	
50.70		
49.70		
48.70		
47.70		
46.70		
45.70		
44.70		
43.70		
42.70		
41.70		
40.70		
39.70		
38.70		
37.70		

Sample No.	Sample Type	Qu (TSF)	N Value (Blows)	Bulge / Shear	Moisture (%)	Dry Density (PCF)
16	SS	100	2		9	

Groundwater Data: Static water level after auger removal 12' depth.
Comments: Assumed center of existing bridge deck as elevation 100.0. (691.60)

BORING 1

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

**BORINGS
STRUCTURE NO. 088-3223**

HAMPTON, LENZINI & RENWICK, INC.
CIVIL & STRUCTURAL ENGINEERS
LAND SURVEYORS

HLR 3085 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
(217) 546-3400

PROJECT NUMBER: 08.0274.130 DATE: 05/13/09

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
23	08-00158-00-BR	STARK	23	22
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT	
CONTRACT NO. 89509				

