

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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

**PROJECT BROS-0105(058)
SECTION 11-20117-00-BR / 11-24133-00-BR
PIKE / ROOKS CREEK ROAD DISTRICTS
LIVINGSTON COUNTY
T.R. 145 / 1500N
PROPOSED STRUCTURE NO. 053-4209
C-93-066-013**

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 145	*	LIVINGSTON	25	1
FED. ROAD DIST. NO.		ILLINOIS CONTRACT NO.	87562	
* 11-20117-00-BR / 11-24133-00-BR				

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1.	COVER SHEET
2.	SUMMARY OF QUANTITIES AND GENERAL NOTES
3.	TYPICAL CROSS SECTIONS
4.	PLAN AND PROFILE
5-12.	STATION CROSS SECTIONS
13-23.	BRIDGE PLANS
24-25.	BORINGS

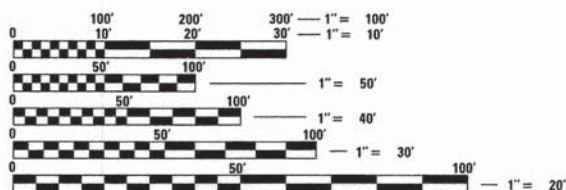
HIGHWAY STANDARDS:

280001-07	TEMPORARY EROSION CONTROL SYSTEMS
515001-03	NAME PLATE FOR BRIDGES
635006-03	REFLECTOR AND TERMINAL MARKER PLACEMENT
701901-03	TRAFFIC CONTROL DEVICES
BLR 21-9	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS

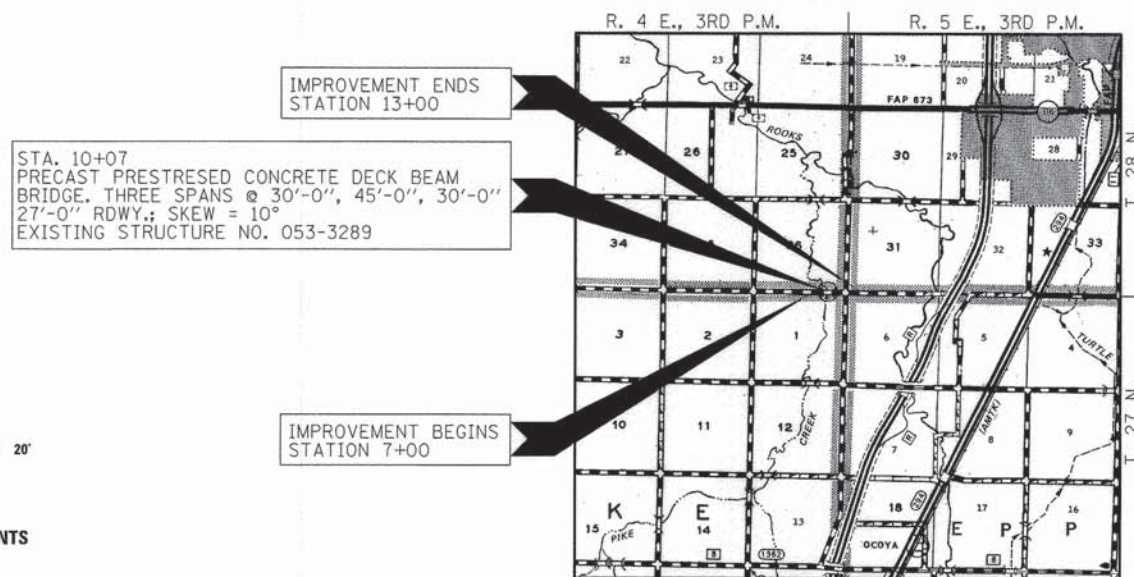


UTILITIES

FRONTIER COMMUNICATIONS
120 S. STERLING STREET
STREATOR, ILLINOIS 61364
ATTN: BILL DANIEL



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 = 600 FEET = 0.113 MILES

FUNCTIONAL CLASSIFICATION: LOCAL ROAD
DESIGN SPEED: 30 MPH
DESIGN TRAFFIC: 75 ADT (2013)



ILLINOIS DEPARTMENT OF TRANSPORTATION

APPROVED 02/05 2014
Bill Miller
COUNTY ENGINEER

APPROVED 1-29 2014
Mike...
PIKE TOWNSHIP COMMISSIONER

APPROVED 1-31 2014
Jeffrey...
ROOKS CREEK TOWNSHIP COMMISSIONER

PASSED 2/11 2014
David...
DISTRICT THREE ENGINEER OF LOCAL ROADS & STREETS

Releasing For Bid Based on Limited Review
2/14 2014
Paul...
DEPUTY DIRECTOR OF HIGHWAYS
REGION TWO ENGINEER
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



HAMPTON, LENZINI AND RENWICK, INC.
CIVIL ENGINEERS - STRUCTURAL ENGINEERS - LAND SURVEYORS
3085 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
217.546.3400 www.hlrengineering.com
184.000959
ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORPORATION

SUMMARY OF QUANTITIES			
CODE NO.	ITEM	CONSTRUCTION TYPE CODE 0011	
		UNIT	TOTAL
20100110	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	UNIT	140
20200100	EARTH EXCAVATION	CU YD	275
20300100	CHANNEL EXCAVATION	CU YD	360
20400800	FURNISHED EXCAVATION	CU YD	50
28000305	TEMPORARY DITCH CHECKS	FOOT	60
28100107	STONE RIPRAP, CLASS A4	SQ YD	665
28200200	FILTER FABRIC	SQ YD	665
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	555
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50300225	CONCRETE STRUCTURES	CU YD	47.6
50300280	CONCRETE ENCASEMENT	CU YD	12.4
50400305	PRECAST PRESTRESSED CONCRETE DECK BEAMS (17" DEPTH)	SQ FT	2,835
50800105	REINFORCEMENT BARS	POUND	4,870
50900205	STEEL RAILING, TYPE S1	FOOT	208
51201400	FURNISHING STEEL PILES HP10X42	FOOT	765
51202305	DRIVING PILES	FOOT	765
51203400	TEST PILE STEEL HP10X42	EACH	1
51500100	NAME PLATES	EACH	1
542D0220	PIPE CULVERTS, CLASS D, TYPE 1 15"	FOOT	146
67100100	MOBILIZATION	L SUM	1
70101830	TRAFFIC CONTROL AND PROTECTION, STANDARD BLR 21	L SUM	1
78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	4
X2070302	POROUS GRANULAR EMBANKMENT, SPECIAL	TON	90
X2501000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.5
Z0046304	PIPE UNDERDRAINS FOR STRUCTURES 4"	FOOT	140

* SEE SPECIAL PROVISIONS SPECIALTY ITEM

TREE REMOVAL	
LOCATION	UNITS
24' LT. STA 9+63	10
17' LT. STA 10+26	40
25' LT. STA 10+94	18
25' LT. STA 11+08	24
26' LT. STA 11+15	32
26' LT. STA 12+11	16
TOTAL	140

GENERAL NOTES

- ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE STATE OF ILLINOIS "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, ADOPTED JANUARY 1, 2012", (HERE IN AFTER REFERRED TO AS THE STANDARD SPECIFICATIONS); THE "SUPPLEMENTAL SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS" ADOPTED JANUARY 1, 2014; THE LATEST EDITION OF THE "ILLINOIS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS"; THE DETAILS IN THE PLANS AND THE SPECIAL PROVISIONS INCLUDED IN THE DOCUMENTS.
- ALL CLEARING, GRUBBING AND REMOVAL OF EXISTING DRAINAGE STRUCTURES SHALL BE INCLUDED IN THE COST OF EARTH EXCAVATION. ALL BITUMINOUS MATERIAL SHALL BE REMOVED AND PROPERLY DISPOSED OF BY THE CONTRACTOR IN A METHOD APPROVED BY THE ENGINEER. REMOVAL AND DISPOSAL OF BITUMINOUS MATERIAL SHALL BE INCLUDED IN THE COST OF EARTH EXCAVATION AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
- 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.
- ANY REFERENCE TO A STANDARD THROUGHOUT THE PLANS OR SPECIAL PROVISIONS SHALL BE INTERPRETED TO BE THE LATEST STANDARD OF THE DEPARTMENT.
- THE LOCATION ON THE PLANS OF EXISTING DRAINAGE STRUCTURES, TELEPHONE LINES, ELECTRIC LINES, WATER SERVICE LINES, GAS MAINS, AND OTHER UTILITY FACILITIES AS SHOWN ON THE PLANS ARE BASED ON FIELD INVESTIGATIONS AND THE BEST INFORMATION AVAILABLE, BUT THE LOCATIONS ARE NOT GUARANTEED. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ASCERTAIN THEIR EXACT LOCATION FROM THE INDIVIDUAL UTILITY COMPANIES AND BY FIELD INSPECTION.
- THE CONTRACTOR SHALL PROVIDE ACCESS TO ADJUTING PROPERTY AT ALL TIMES DURING CONSTRUCTION OF THE PROJECT.
- THE FOLLOWING RATES OF APPLICATION HAVE BEEN USED IN CALCULATING PLAN QUANTITIES
AGGREGATE SURFACE COURSE, TYPE B 2.05 TON/CU YD
POROUS GRANULAR EMBANKMENT 2.00 TON/CU YD
- THE AREA TO BE SEEDDED SHALL CONSIST OF ALL DISTURBED EARTH SURFACES WITHIN THE RIGHT OF WAY OR AS DIRECTED BY THE ENGINEER. SEEDING, CLASS 2 (SPECIAL) = 0.5 ACRES
- THE FINAL SURFACE OF ALL EMBANKMENT AREAS SHALL BE SEEDDED. THE TOP 4 INCHES OF THE SEEDDED AREAS SHALL BE VEGETATIVE SUSTAINING SOIL SUBJECT TO THE APPROVAL OF THE ENGINEER. THE COST OF SHAPING THE SLOPES AND PROVIDING VEGETATION SUSTAINING SOIL WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE COST OF FURNISHED EXCAVATION.

EARTHWORK SCHEDULE

LOCATION	EARTH EXCAVATION	CHANNEL EXCAVATION	SHRINKAGE FACTOR	PERCENT USED	EXCAVATION ADJUSTED FOR SHRINKAGE CU.YD.	EMBANKMENT REQUIRED CU.YD.	EARTHWORK BALANCE CU.YD.
	CU.YD.	CU.YD.					
TR 145 / 1500 N							
STA 7+00 TO STA 9+53.74	133		25.00%	100.00%	100	109	-9
STA 9+53.74 TO STA 10+60.26		360	25.00%	70.00%	189		189
STA 10+60.26 TO STA 13+00	139		25.00%	100.00%	104	282	-178
ENTRANCE EMBANKMENT						49	-49
TOTAL	272	360			393	440	-47
TOTAL USE	275	360					-50

FURNISHED EXCAVATION = 50 CU YDS

FILE NAME = 130007-ah-summary.dgn	USER NAME =	DESIGNED - L.A.P.	REVISED -
HAMPTON, LENZINI AND RENWICK, INC. 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62763	PLOT SCALE =	DRAWN - R.D.H.	REVISED -
ILLINOIS PROFESSIONAL DESIGN FIRM L.S. / P.E. / S.E. CORP. 184.000099	PLOT DATE = 1/27/2014	CHECKED - S.W.M.	REVISED -
		DATE - 01/27/14	REVISED -

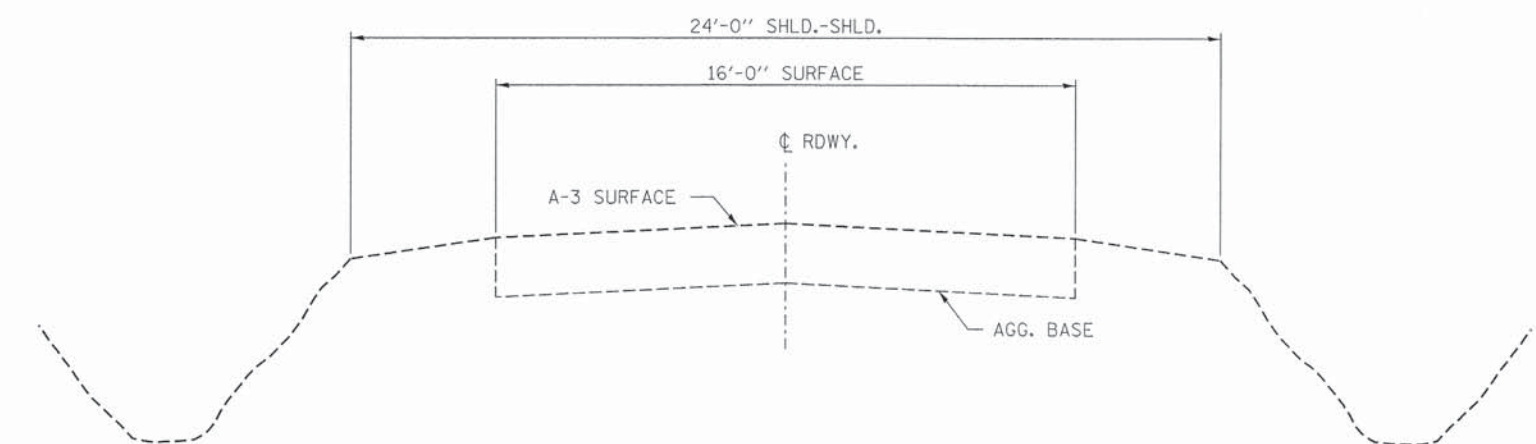
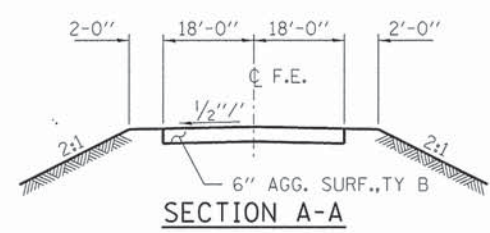
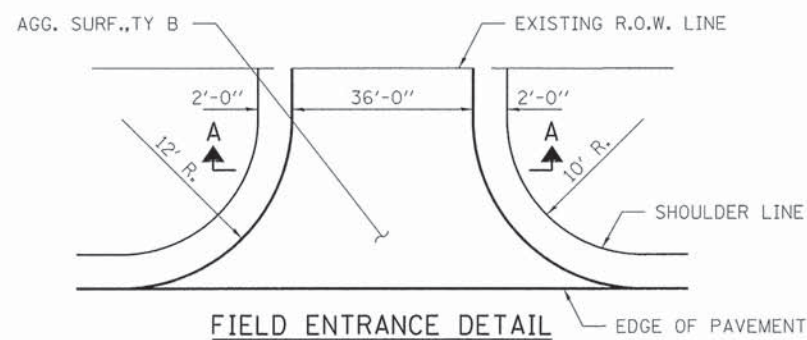
STATE OF ILLINOIS
LIVINGSTON COUNTY HIGHWAY DEPARTMENT

SUMMARY OF QUANTITIES AND GENERAL NOTES

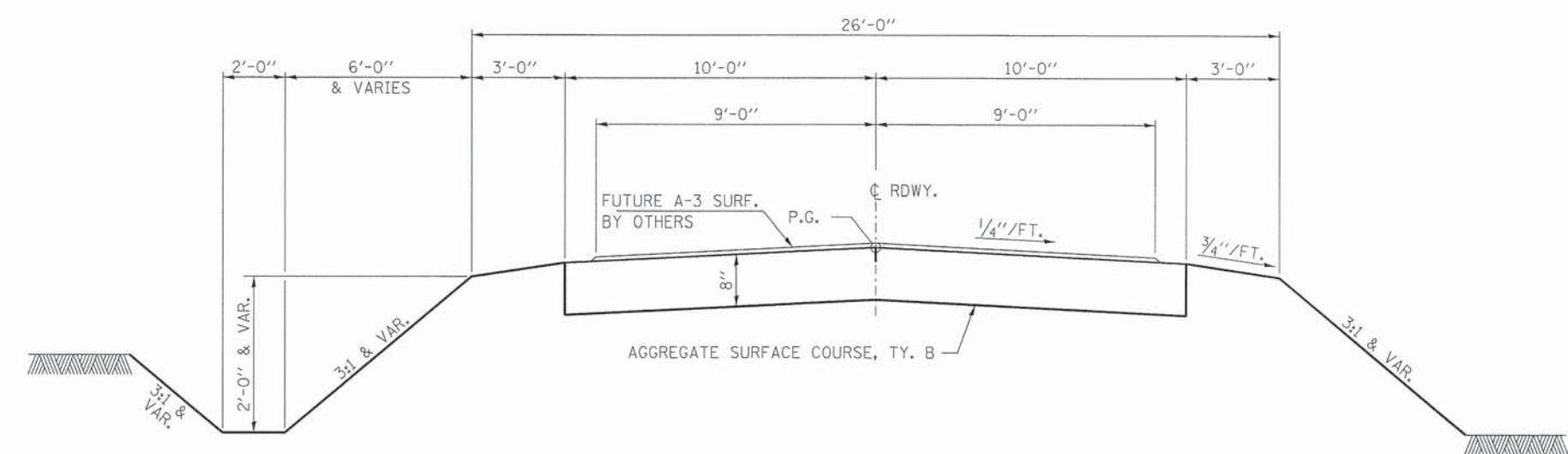
• 11-20117-00-BR / 11-24133-00-BR

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
145		LIVINGSTON	25	2
PIKE / ROOKS CREEK R.D.		CONTRACT NO. 87562		
ILLINOIS FED. AID PROJECT BROS-0105(058)				

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



EXISTING TYPICAL CROSS SECTION
STA. 7+00 TO 13+00



SUGGESTED CUT SECTION
CONSTRUCT AS SHOWN IN
STATION CROSS SECTIONS

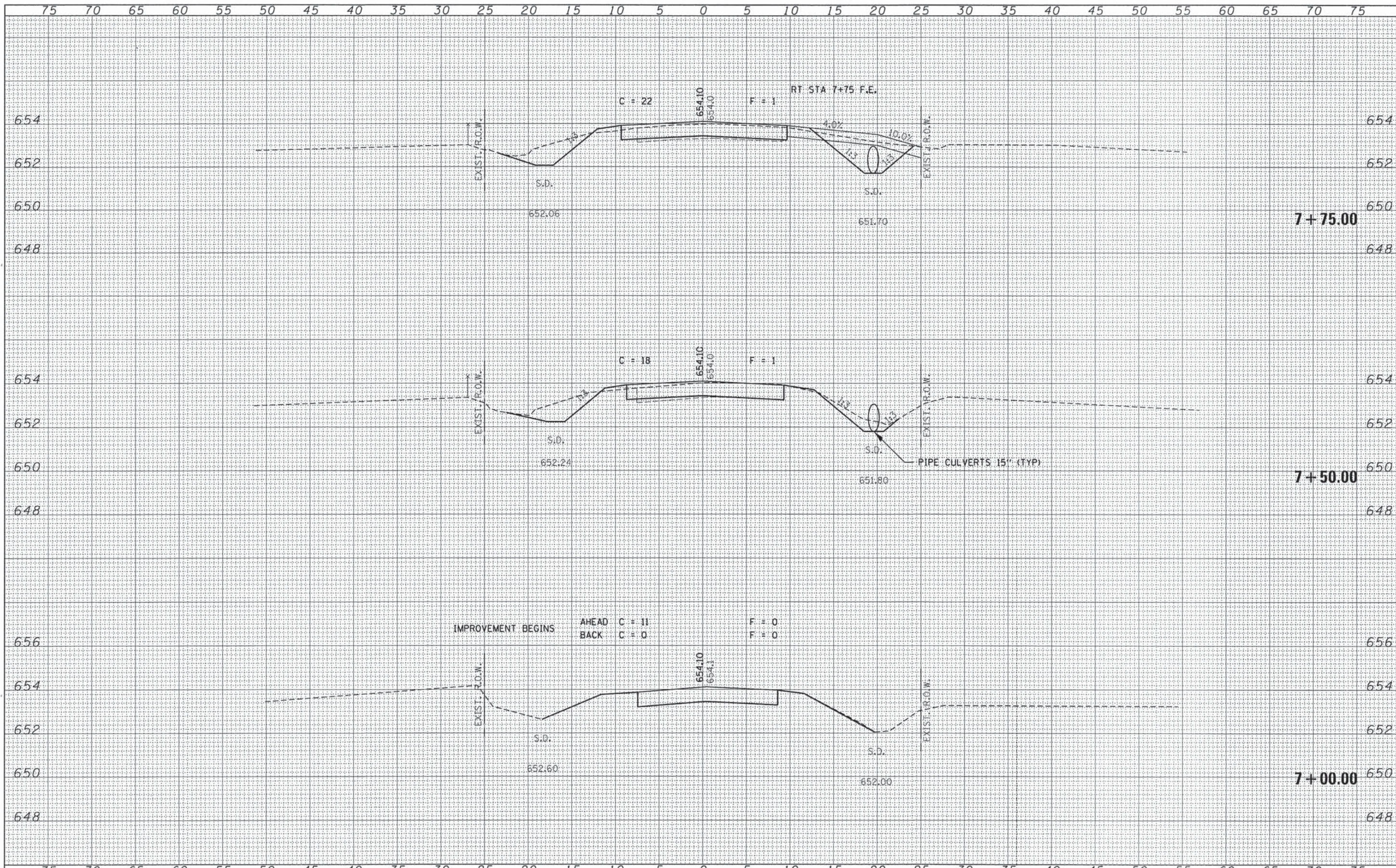
SUGGESTED FILL SECTION
CONSTRUCT AS SHOWN IN
STATION CROSS SECTIONS

PROPOSED TYPICAL CROSS SECTION
STA. 7+00 TO 13+00

TRANSITIONS FROM THE PROPOSED ROADWAY TO THE EXISTING ROADWAY ARE TO BE CONSTRUCTED FROM STA. 7+00 TO 8+00 AND STA. 12+00 TO 13+00. SEE SHEET 13 FOR TRANSITION AT BRIDGE.

FILE NAME = 130007-ah-typesections.dgn	USER NAME =	DESIGNED - L.A.P.	REVISED -	STATE OF ILLINOIS LIVINGSTON COUNTY HIGHWAY DEPARTMENT	TYPICAL CROSS SECTIONS	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
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ILLINOIS PROFESSIONAL DESIGN FIRM L.S. / P.E. / S.E. CORP. 184.000989	PLOT DATE = 1/27/2014	CHECKED - S.W.M.	REVISED -			PIKE / ROOKS CREEK R.D. CONTRACT NO. 87562					
		DATE - 01/27/14	REVISED -			ILLINOIS FED. AID PROJECT BR05-010505B					
						SCALE:	SHEET NO. 1 OF 1 SHEETS	STA.	TO STA.		

• 11-20117-00-BR / 11-24133-00-BR



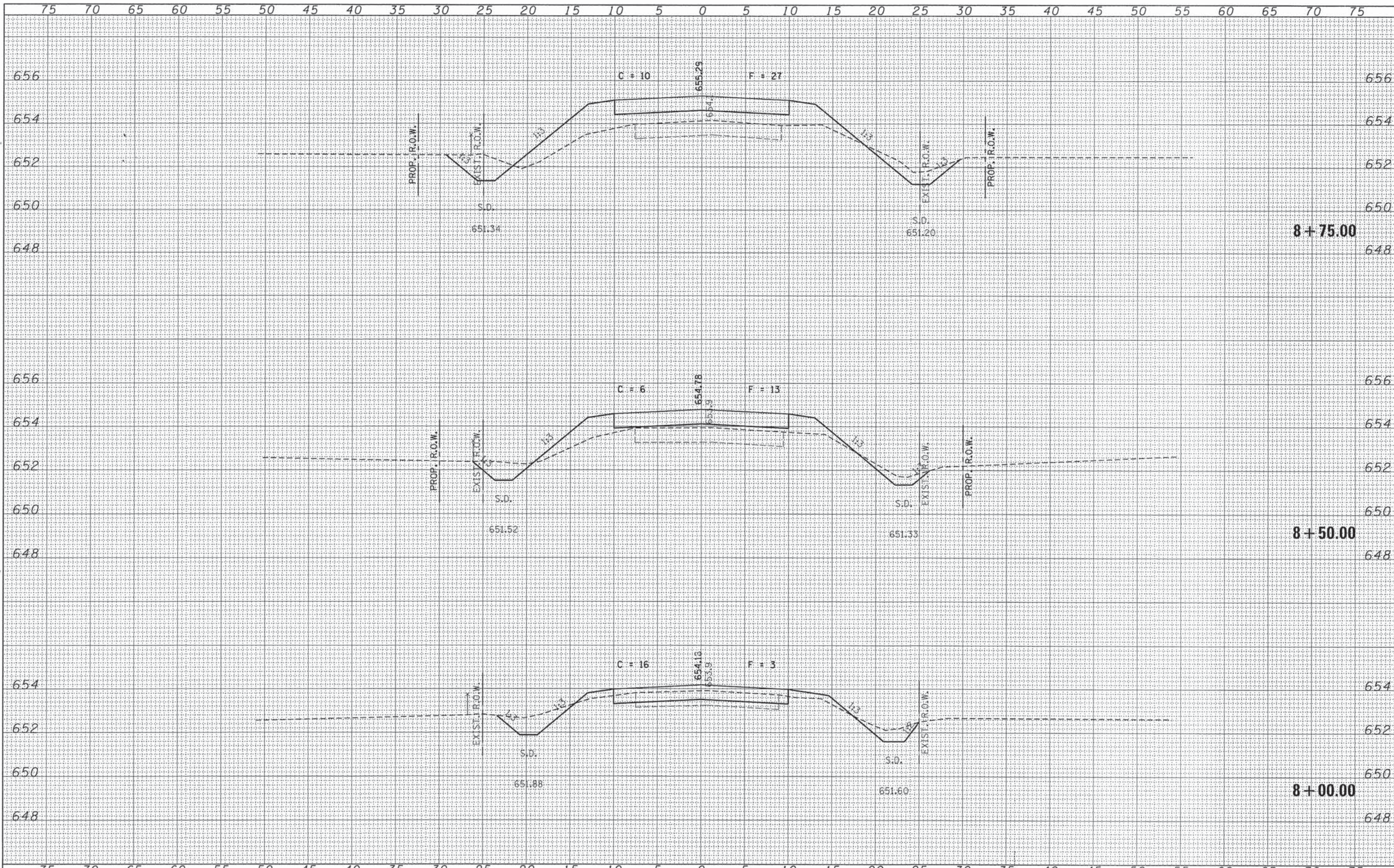
DATE	
BY	
FINISH SURVEY	
NOTED BOOK	
NO.	
REVISIONS	
DATE	
BY	
DESCRIPTION	

DATE	
BY	
ORIGINAL SURVEY	
NOTED BOOK	
NO.	
REVISIONS	
DATE	
BY	
DESCRIPTION	

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HAMPTON, LENZINI AND RENWICK, INC.		DRAWN - L.G.C.	REVISED -		T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2015 BEECHER DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703		CHECKED - S.W.M.	REVISED -		145	11-2017-00-BR/11-24133-00-BR	LIVINGSTON	25	5
ILLINOIS PROFESSIONAL DESIGN FIRM L.S. / P.E. / S.E. COMP. 184-000089	PLOT SCALE =	DATE = 01/27/14	REVISED -		PIKE / ROOKS CREEK ROAD DIST. CONTRACT NO. 87562				
	PLOT DATE = 1/27/2014				[ILLINOIS] FED. AID PROJECT BR05-0105(050)				

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

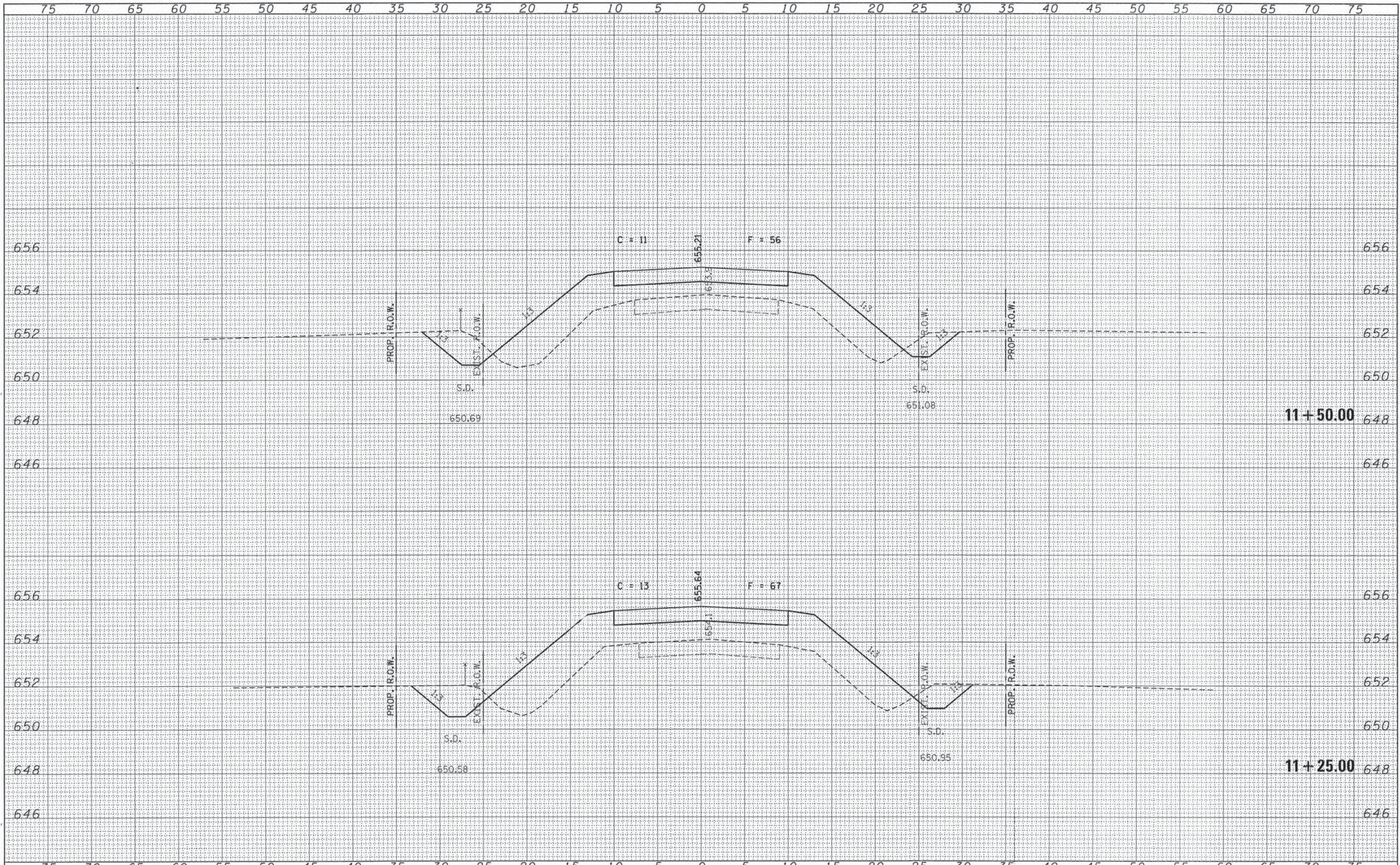
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BY	
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NOTE BOOK	PLOTTED
NO.	TEMPLATE
	AREAS CHECKED



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HAMPTON, LENZINI AND RENWICK, INC.		DRAWN - L.G.C.	REVISED -		145	11-2017-00-BR/11-24133-00-BR	LIVINGSTON	25	6			
3015 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703	PLOT SCALE =	CHECKED - S.W.M.	REVISED -		PIKE / ROOKS CREEK ROAD DIST.			CONTRACT NO. 87562				
ILLINOIS PROFESSIONAL DESIGN FIRM L.S. / P.E. / S.E. CORP. 184.000099	PLOT DATE = 1/27/2014	DATE - 01/27/14	REVISED -		SCALE: 5H:2V			SHEET NO. 2 OF 8 SHEETS STA. 8+00.00 TO STA. 8+75.00				
										ILLINOIS FED. AID PROJECT BROS-0105(05B)		

DATE	
BY	
FINISHED SURVEY PLOTTED	
NOTE BOOK	
AREAS CHECKED	
NO.	

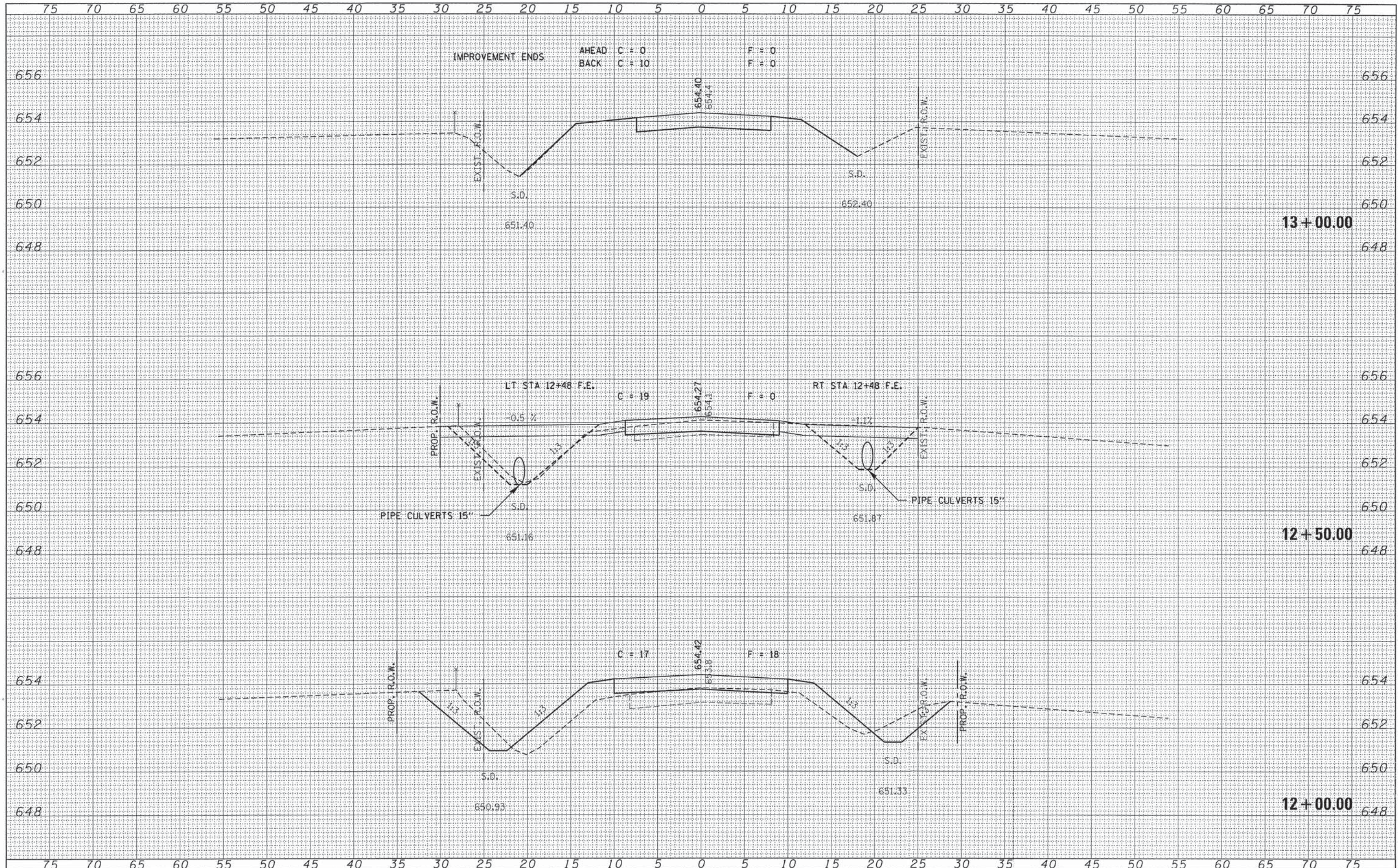
DATE	
BY	
ORIGINAL SURVEY PLOTTED	
NOTE BOOK	
AREAS CHECKED	
NO.	



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HAMPTON, LENZINI AND RENWICK, INC.		DRAWN - L.G.C.	REVISED -		145	11-20117-00-BR/11-24133-00-BR	LIVINGSTON	25	11
1800 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703	PLOT SCALE =	CHECKED - S.W.M.	REVISED -		PIKE / ROOKS CREEK ROAD DIST. CONTRACT NO. 87562				
ILLINOIS PROFESSIONAL DESIGN FIRM LS 1 / PE 1 / SE CORP. 184-000093	PLOT DATE = 1/27/2014	DATE - 01/27/14	REVISED -		ILLINOIS FED. AID PROJECT BROS-0105(058)				

DATE	
BY	
CONVERTED	
PLOTTED	
TEMPLATE	
AREAS	
CHECKED	
NO.	

DATE	
BY	
ORIGINAL	
SURVEY	
NOTE BOOK	
AREAS	
CHECKED	
NO.	



FILE NAME = 130087-ahtr-sss.dgn	USER NAME =	DESIGNED - L.A.P.	REVISED -	STATE OF ILLINOIS LIVINGSTON COUNTY HIGHWAY DEPARTMENT	STATION CROSS SECTIONS				
HAMPTON, LENZINI AND RENWICK, INC.		DRAWN - L.G.C.	REVISED -		T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1835 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703		CHECKED - S.W.M.	REVISED -		145	11-20117-00-BR/11-24133-00-BR	LIVINGSTON	25	12
ILLINOIS PROFESSIONAL DESIGN FIRM L.S. 1/98 CORP. 184-00098	PLOT SCALE =	DATE - 01/27/14	REVISED -		PIKE / ROOKS CREEK ROAD DIST. CONTRACT NO. 87562				
	PLOT DATE = 1/27/2014				ILLINOIS FED. AID PROJECT BROS-01050581				

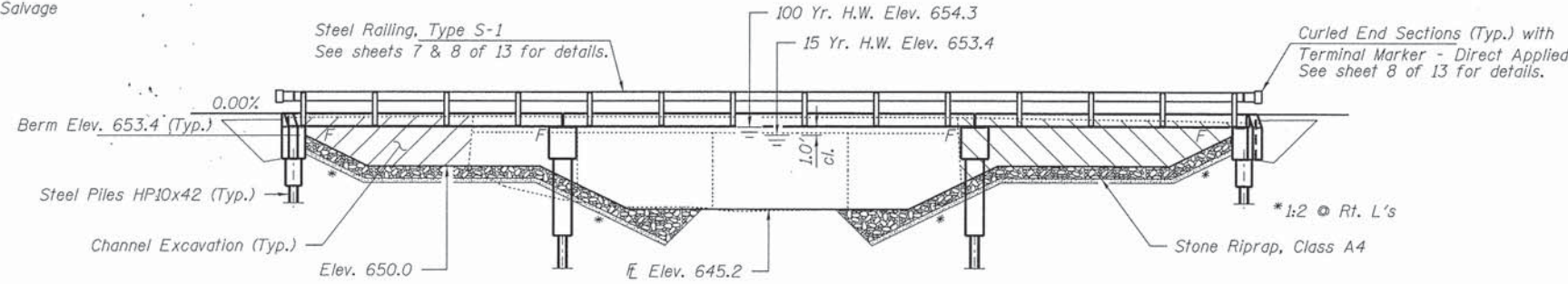
SCALE: 5H:2V SHEET NO. 8 OF 8 SHEETS STA. 12+00.00 TO STA. 13+00.00

BENCHMARK: Chiseled "□" on S.W. Wingwall 20.3' Rt., Sta. 9+68, Elev. 655.28

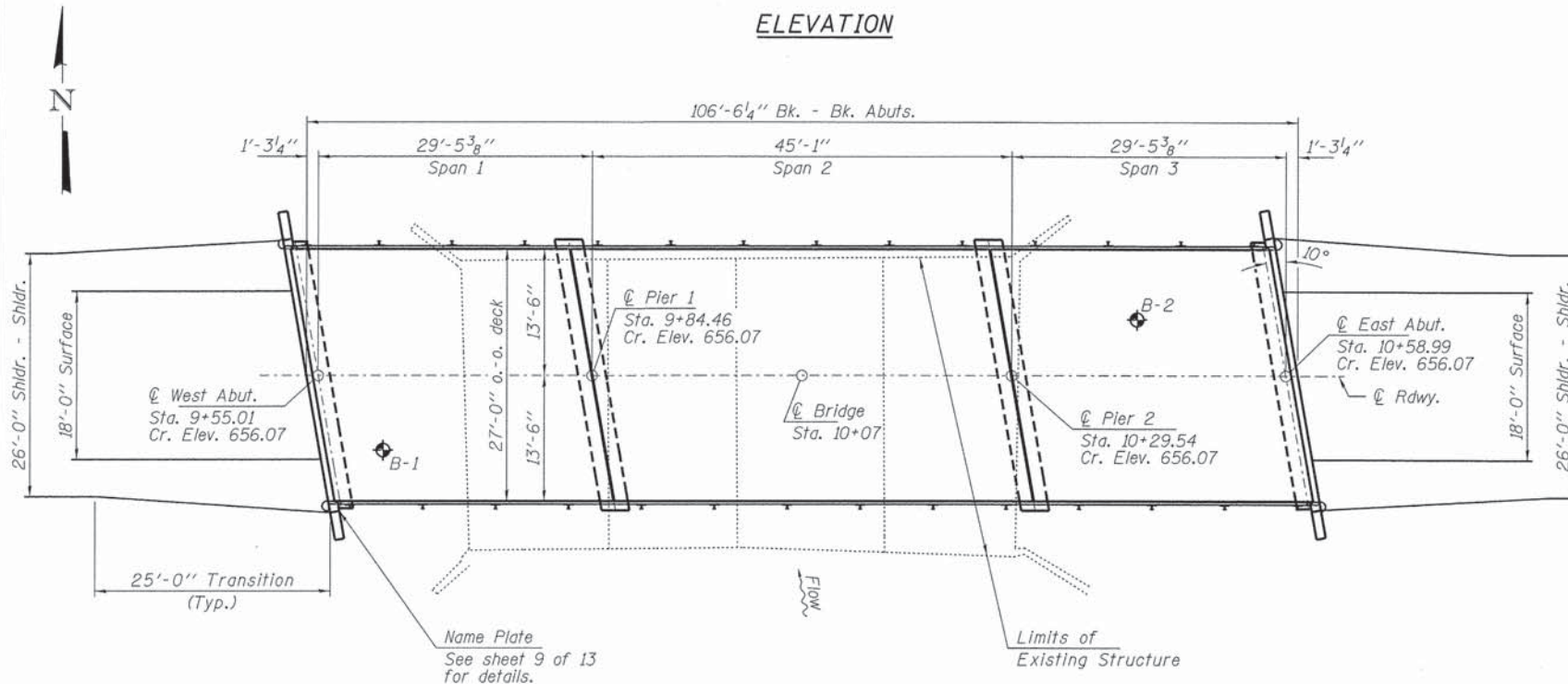
EXISTING STRUCTURE: Sta. 10+00 - 4 span steel I-beam bridge with concrete deck on closed concrete abutments and wingwalls and concrete piers. 58.20' fc.-fc. abuts; 30.70' o.-o. deck.

Structure closed to traffic during construction.

No Salvage



ELEVATION



PLAN

GENERAL NOTES

Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.

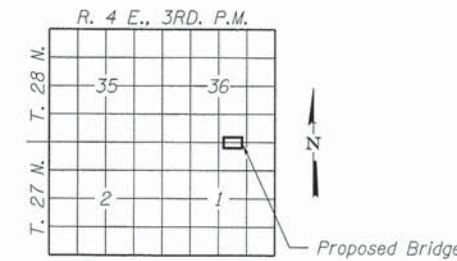
The Contractor shall drive test piles to 110% of the nominal required bearing specified in production locations at Pier 1 or approved by the Engineer before ordering the remainder of piles. Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.

Excavation required to construct the Abutments and Piers shall be included in the cost of Concrete Structures. No additional compensation will be allowed for Structure Excavation or Cofferdams.

All proposed construction activities shall be in accordance with Nationwide Permit number 14 of the Department of the Army authorized under Section 404 of the Clean Water Act. The IEPA has issued Section 401 Water Quality Certification for this activity. See Special Provisions for conditions.

INDEX OF STRUCTURE SHEETS

1. General Plan & Elevation
2. Riprap Layout
3. 17"x36" PPC Deck Beam - Spans 1 & 3
4. 17"x36" PPC Deck Beam Details - Spans 1 & 3
5. 17"x36" PPC Deck Beam - Span 2
6. 17"x36" PPC Deck Beam Details - Span 2
7. Superstructure Details
8. Steel Railing, Type S-1
9. Abutments
10. Piers
11. HP Pile Details
- 12-13. Borings



LOCATION SKETCH

BUILT 201_ BY
LIVINGSTON COUNTY
SEC. 11-02117-00-BR/11-24133-00-BR
PIKE/ROOKS CREEK R.D.
STR. NO. 053-4209
LOADING HL-93

NAME PLATE
See Std. 515001

DESIGN SPECIFICATIONS

2012 AASHTO LRFD Bridge Design Specifications, 6th Edition with all applicable Interims.

LOADING HL-93

Allow 50#/sq. ft. for future wearing surface.

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.)

SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.111g
Design Spectral Acceleration at 0.2 sec. (S_{D5}) = 0.179g
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.	Exist.	Prop.	
10	2499	360	440	653.20	0.61	0.61	653.81	653.81
15	2850	370	460	653.42	0.70	0.75	654.12	654.17
100	4590	420	550	654.34	0.92	0.79	655.26	655.13
10	2499	360		653.20	0.61		653.81	653.20
100	4590	550		654.34	0.79		654.34	655.13

Existing Low Grade Elev. 654.0 @ Sta. 8+50
Proposed Low Grade Elev. 654.0 @ Sta. 7+75

Drainage Area = 31.4 Sq. Mi.

10 Year Velocity through Existing Bridge = 6.9 fps
10 Year Velocity through Proposed Bridge = 5.7 fps

Q100	Design Scour Elevations (ft.)			
	W. Abut.	Pier 1	Pier 2	E. Abut.
0100	650.9	640.2	640.2	650.9

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."

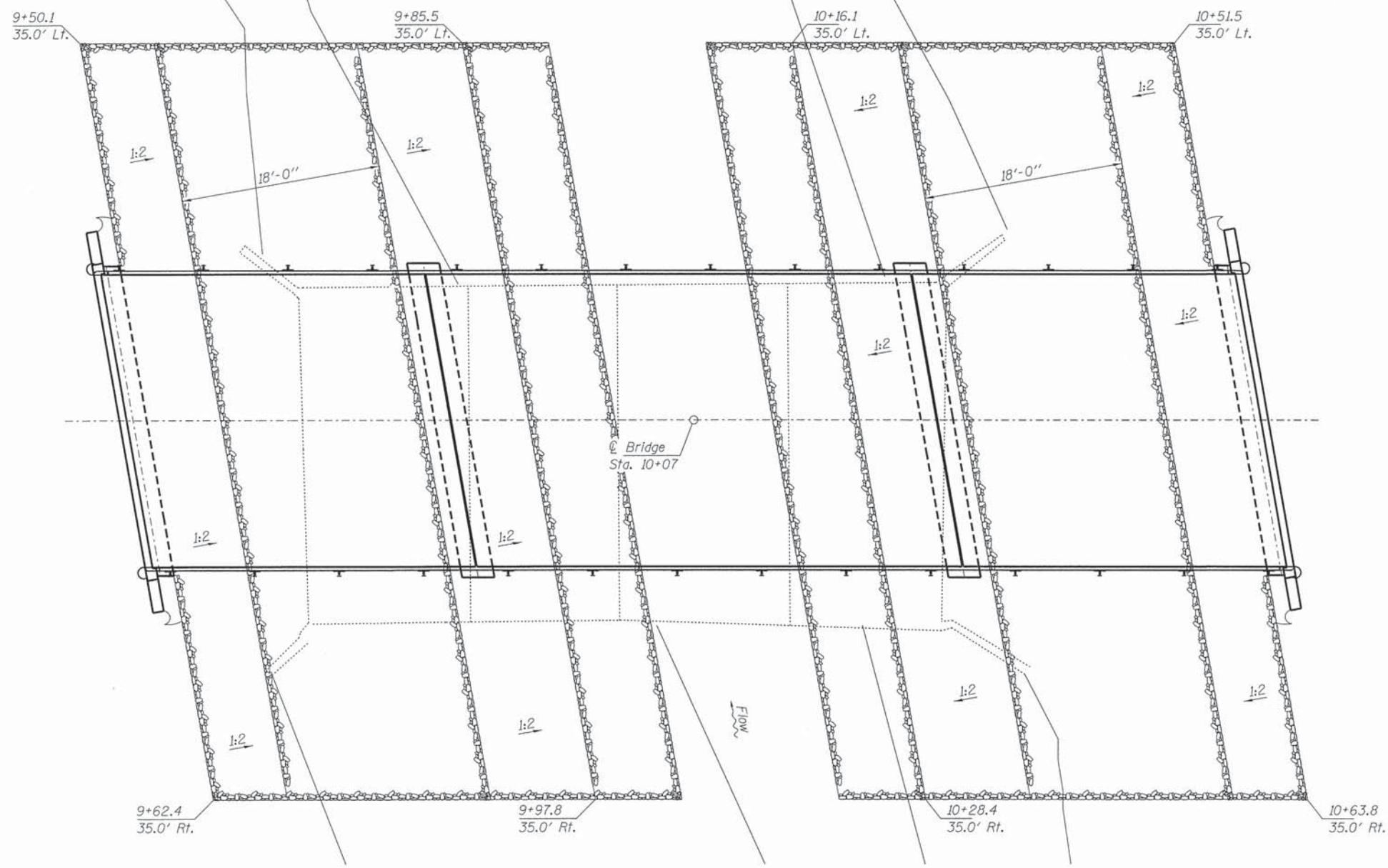
Steven W. Megginson 01/27/2014
ILLINOIS STRUCTURAL ENGINEER NO. 081-6064



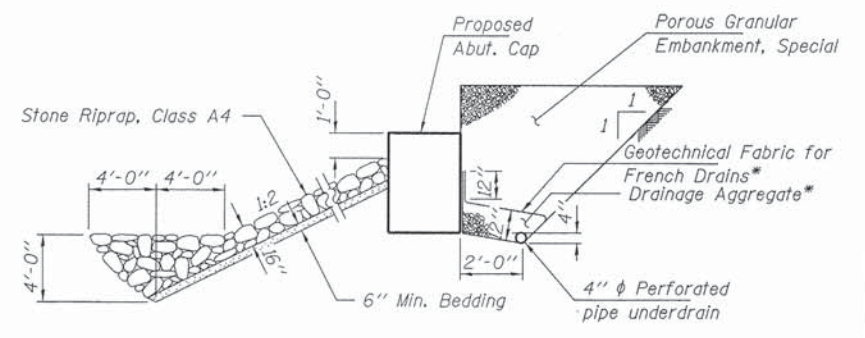
Expires 11-30-2014

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	Cu. Yd.			360
Stone Riprap, Class A4	Sq. Yd.			665
Filter Fabric	Sq. Yd.			665
Removal of Existing Structures	Each			1
Concrete Structures	Cu. Yd.		47.6	47.6
Concrete Encasement	Cu. Yd.		12.4	12.4
Precast Prestressed Concrete Deck Beams (17" Depth)	Sq. Ft.	2,835		2,835
Reinforcement Bars	Pound		4,870	4,870
Steel Railing, Type S-1	Foot	208		208
Furnishing Steel Piles HP10x42	Foot		765	765
Driving Piles	Foot		765	765
Test Pile Steel HP10x42	Each		1	1
Name Plates	Each		1	1
Porous Granular Embankment, Special	Ton		90	90
Pipe Underdrains for Structures 4"	Foot		140	140



PLAN



SECTION A-A

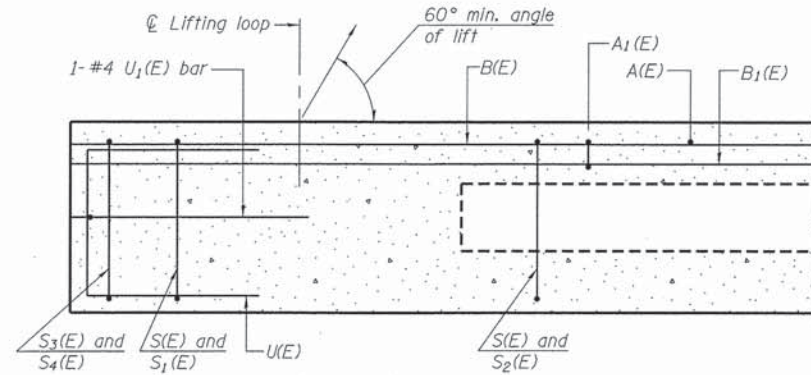
* Included in the cost of Pipe Underdrains for Structures.

FILE NAME = 130207-ah-bridge.dgn	USER NAME =	DESIGNED - L.A.P.	REVISED
HAMPTON, LENZINI AND RENWICK, INC. 3055 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62763		CHECKED - S.W.M.	REVISED -
ILLINOIS PROFESSIONAL DESIGN FIRM L5 / PE / SE COMP. 184.002059	PLOT SCALE =	DRAWN - R.D.H.	REVISED -
	PLOT DATE = 1/27/2014	CHECKED - S.W.M.	REVISED -

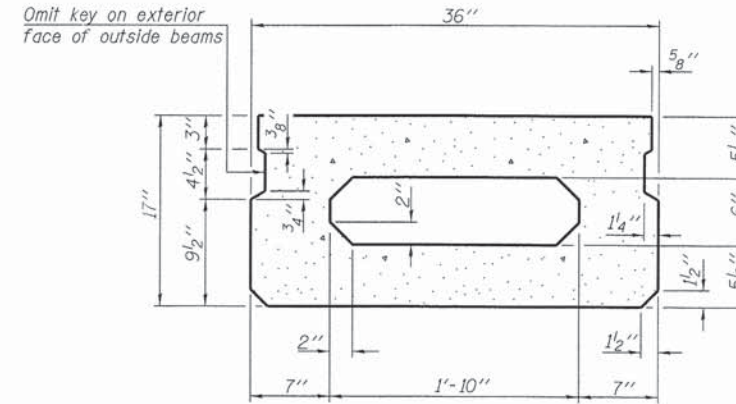
STATE OF ILLINOIS
LIVINGSTON COUNTY HIGHWAY DEPARTMENT

RIPRAP LAYOUT
STRUCTURE NO. 053-4209
SHEET NO. 2 OF 13 SHEETS

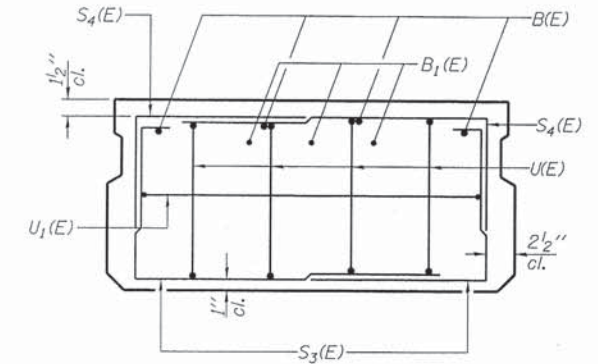
11-20117-00-BR / 11-24133-00-BR			
T.R.	SECTION	COUNTY	TOTAL SHEETS
145		LIVINGSTON	25
PIKES/ROOKS CREEK ROAD DIST.		CONTRACT NO. 87562	
ILLINOIS FED. AID PROJECT BROS-01050581			



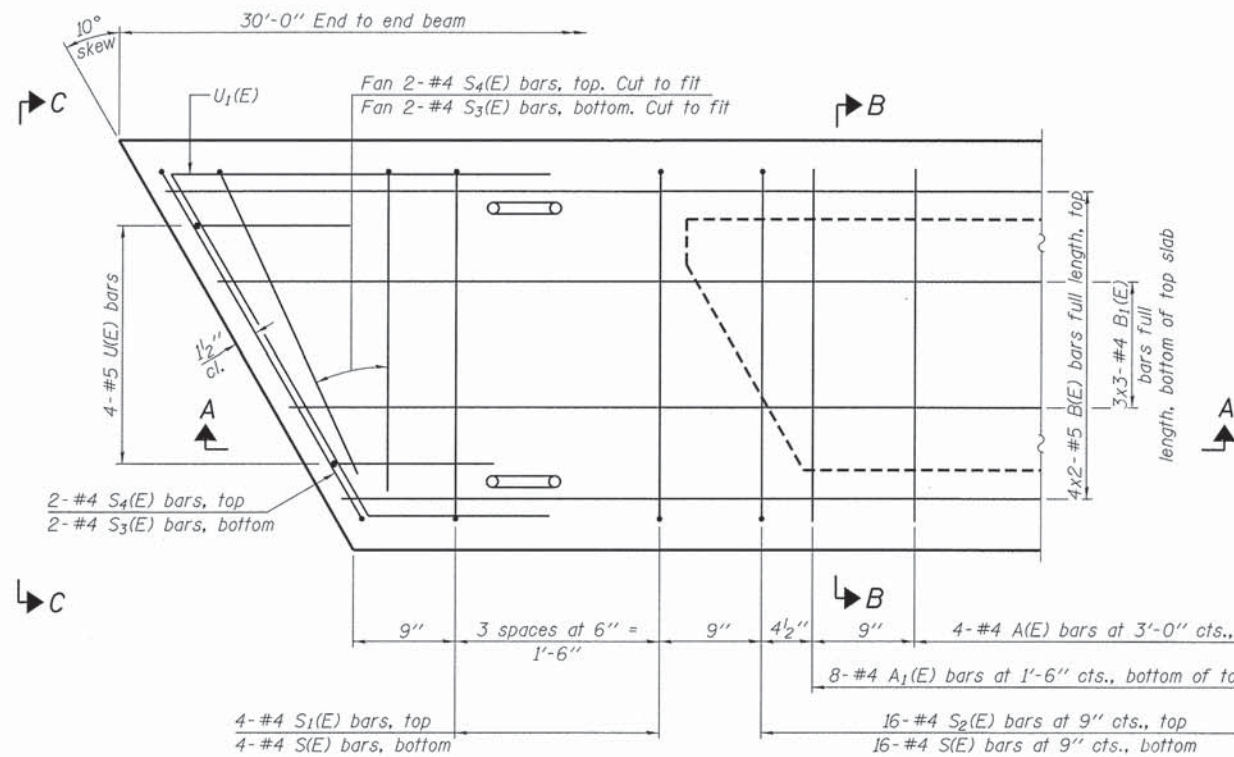
SECTION A-A



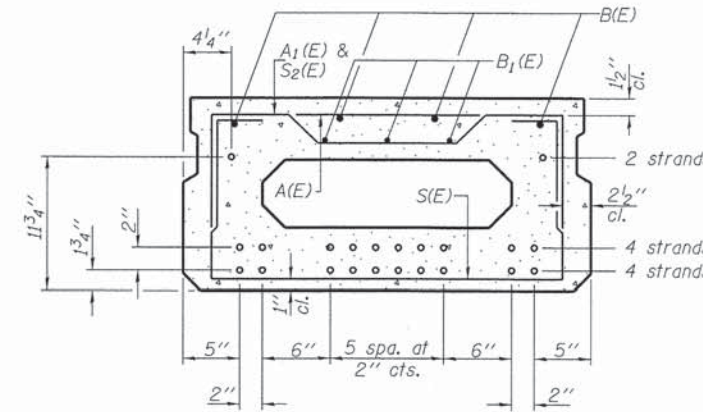
SECTION B-B
(Showing dimensions)



VIEW C-C



PLAN VIEW



SECTION B-B

(Showing reinforcement and permissible strand locations)

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

BAR LIST
ONE BEAM ONLY
(For information only)

Bar	No.	Size	Length	Shape
A(E)	9	#4	2'-7"	—
A1(E)	17	#4	2'-10"	—
B(E)	8	#5	16'-2"	—
B1(E)	9	#4	11'-3"	—
S(E)	41	#4	5'-9"	U
S1(E)	8	#4	4'-3"	U
S2(E)	33	#4	4'-6"	U
S3(E)	8	#4	3'-10"	U
S4(E)	8	#4	3'-1"	U
U(E)	8	#5	3'-8"	U
U1(E)	2	#4	5'-6"	U

Note: See sheet 4 & 7 of 13 for additional details and Bill of Material.

MINIMUM BAR LAP

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

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

PD-1736-R

7-1-10

FILE NAME = 130007-ah-bridge.dgn	USER NAME =	DESIGNED - L.A.P.	REVISED
HAMPTON, LENZINI AND RENWICK, INC.		CHECKED - S.W.M.	REVISED -
3055 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62761	PLOT SCALE =	DRAWN - R.D.H.	REVISED -
ILLINOIS PROFESSIONAL DESIGN FIRM L5 / PE / SE COMP. 184.000989	PLOT DATE = 1/27/2014	CHECKED - S.W.M.	REVISED -

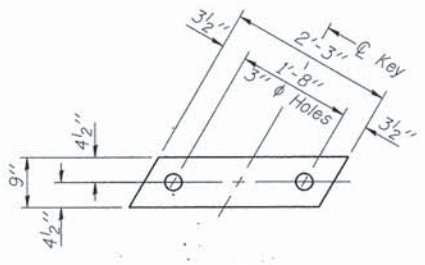
STATE OF ILLINOIS
LIVINGSTON COUNTY HIGHWAY DEPARTMENT

17" x 36" PPC DECK BEAM - SPANS 1 & 3
STRUCTURE NO. 053-4209

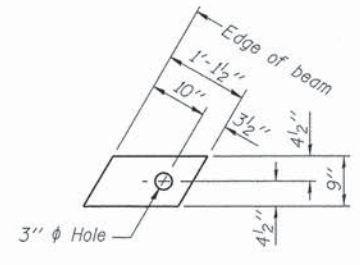
SHEET NO. 3 OF 13 SHEETS

11-20117-00-BR / 11-24133-00-BR

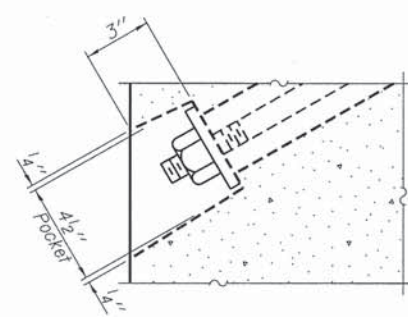
T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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PIKES/ROOKS CREEK ROAD DIST.			CONTRACT NO. 87562	
ILLINOIS FED. AID PROJECT BROS-0105(05B)				



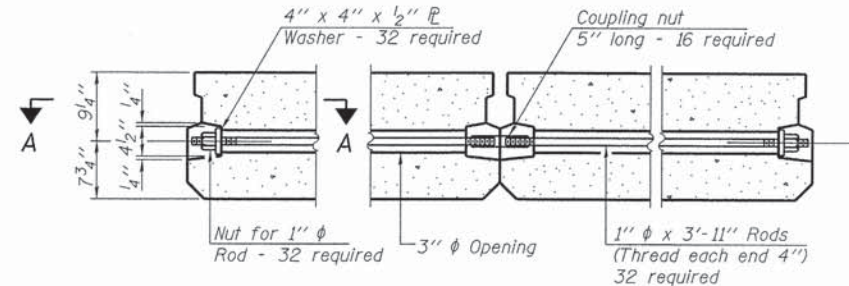
FABRIC BEARING PAD
(Interior - 32 Req'd)



FABRIC BEARING PAD
(Exterior - 8 Req'd)

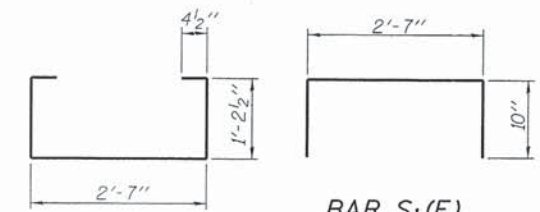
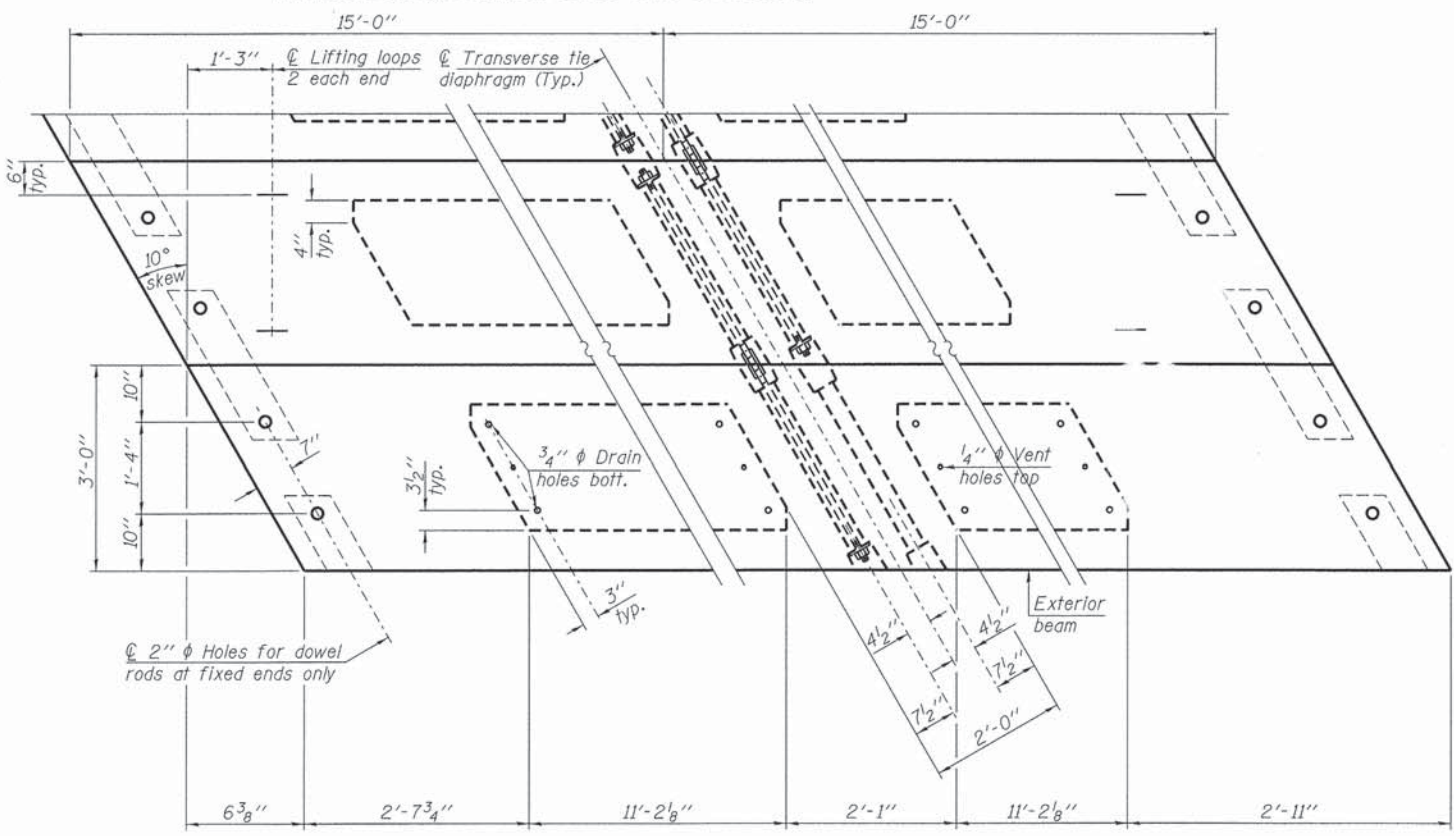


SECTION A-A

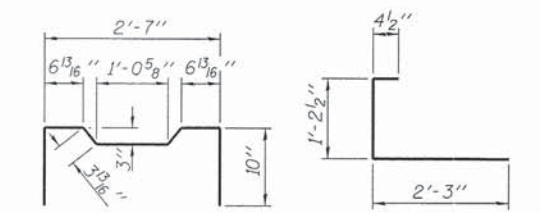


TYPICAL TRANSVERSE TIE ASSEMBLY

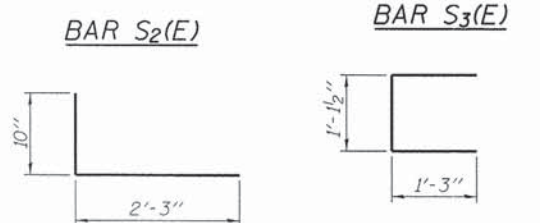
FIXED
Notes:
All bearing pads shall be 1" thick.
Omit holes when using expansion bearings.
Expansion bearing pad shall be bonded to the substructure.



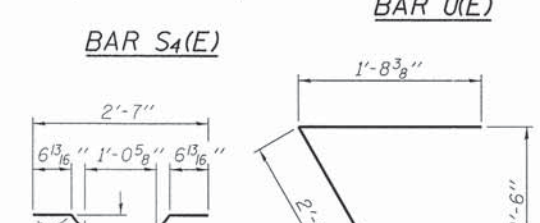
BAR S(E)



BAR S1(E)



BAR S2(E)



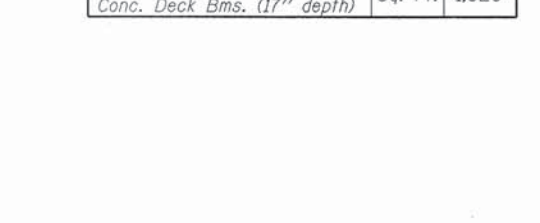
BAR S3(E)



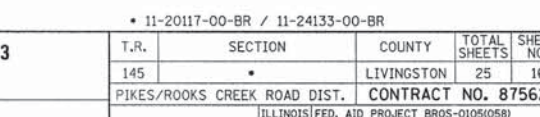
BAR U(E)



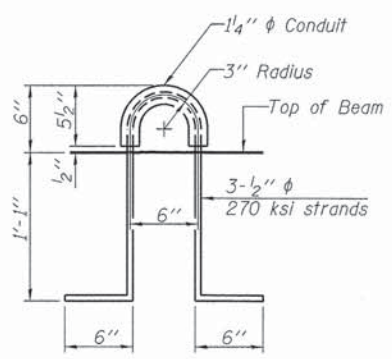
BAR S4(E)



BAR A1(E)



BAR U1(E)



LIFTING LOOP DETAIL

NOTES

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in. The 1" rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior faces of bridge shall be filled with grout after transverse tie assembly is in place.
Reinforcement bars shall conform to ASTM A 706, Grade 60. (See Special Provisions).
Two 1/8" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.
A minimum 2 1/2" phi lifting pin shall be used to engage the lifting loops during handling.
Corrosion Inhibitor, per Article 1020.05(b)(12) and 1021.07 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams.
Compressive strength of prestressed concrete, f'c, shall be 6000 psi.
Compressive strength of prestressed concrete at release, f'ci, shall be 5000 psi.
Reinforcement bars designated (E) shall be epoxy coated.

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

BILL OF MATERIAL SPANS 1 & 3

Precast Prestressed Conc. Deck Bms. (17" depth)	Sq. Ft.	1,620
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PD-1736-RD 7-1-10

FILE NAME = 130007-sh1-bridge.dgn	USER NAME =
HAMPTON, LENZINI AND RENWICK, INC.	
3008 STEVENSON DRIVE, SUITE 201	
SPRINGFIELD, ILLINOIS 62703	
ILLINOIS PROFESSIONAL DESIGN FIRM	
LS / PE / SE COMP. 184.002859	
PLOT SCALE =	
PLOT DATE = 1/27/2014	

DESIGNED - L.A.P.	REVISED
CHECKED - S.W.M.	REVISED -
DRAWN - R.D.H.	REVISED -
CHECKED - S.W.M.	REVISED -

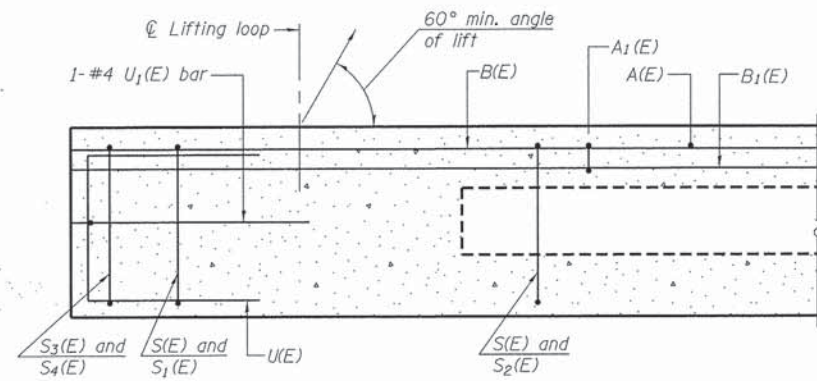
STATE OF ILLINOIS
LIVINGSTON COUNTY HIGHWAY DEPARTMENT

17" x 36" PPC DECK BEAM DETAILS - SPANS 1 & 3
STRUCTURE NO. 053-4209

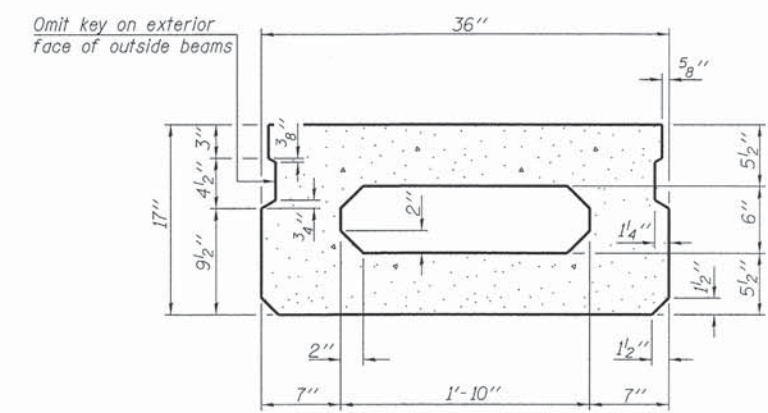
SHEET NO. 4 OF 13 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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PIKES/ROOKS CREEK ROAD DIST.			CONTRACT NO. 87562	
[ILLINOIS] FED. AID PROJECT BROS-0105058				

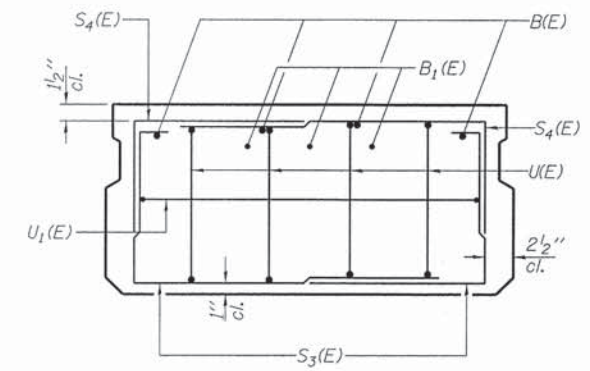
• 11-20117-00-BR / 11-24133-00-BR



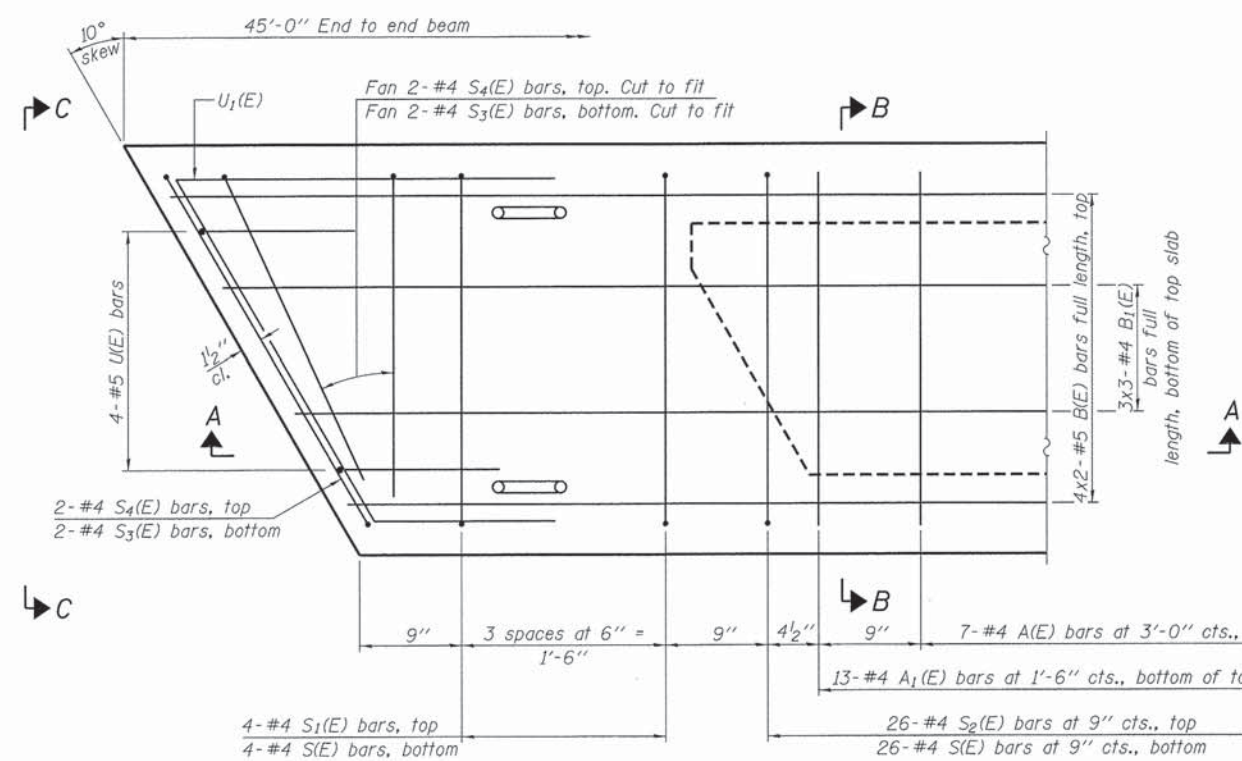
SECTION A-A



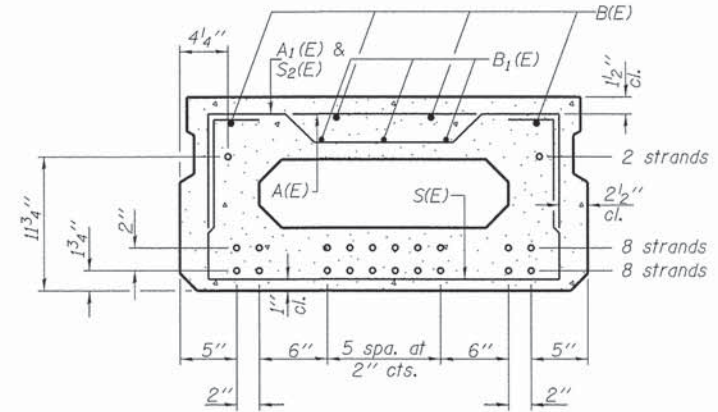
SECTION B-B
(Showing dimensions)



VIEW C-C



PLAN VIEW



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

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

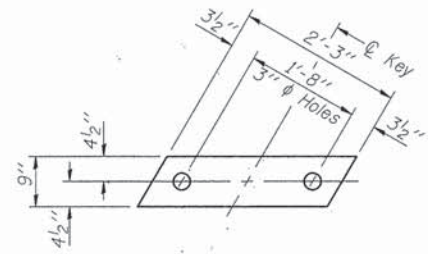
BAR LIST
ONE BEAM ONLY
(For information only)

Bar	No.	Size	Length	Shape
A(E)	14	#4	2'-7"	—
A1(E)	27	#4	2'-10"	—
B(E)	8	#5	23'-8"	—
B1(E)	9	#4	16'-3"	—
S(E)	61	#4	5'-9"	□
S1(E)	8	#4	4'-3"	□
S2(E)	53	#4	4'-6"	□
S3(E)	8	#4	3'-10"	□
S4(E)	8	#4	3'-1"	□
U(E)	8	#5	3'-8"	□
U1(E)	2	#4	5'-6"	□

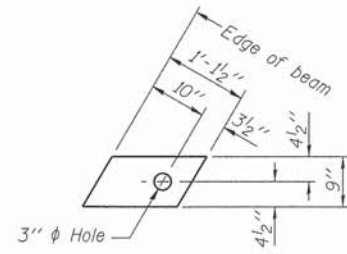
Note: See sheet 6 & 7 of 13 for additional details and Bill of Material.

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

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



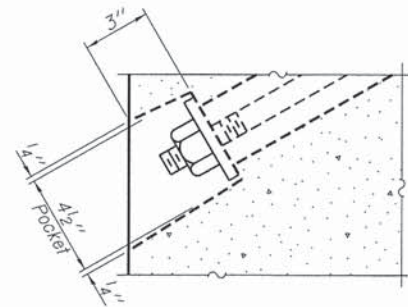
FABRIC BEARING PAD
(Interior - 16 Req'd)



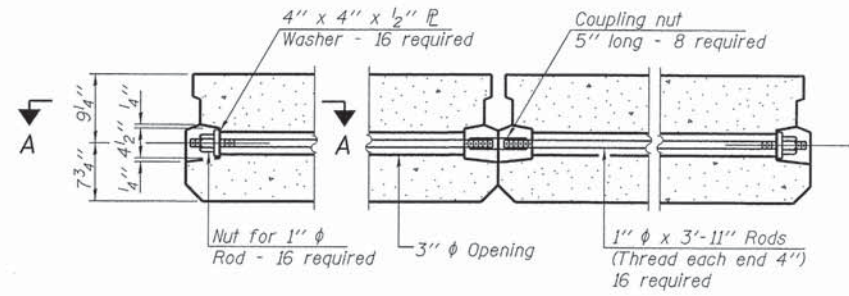
FABRIC BEARING PAD
(Exterior - 4 Req'd)

FIXED

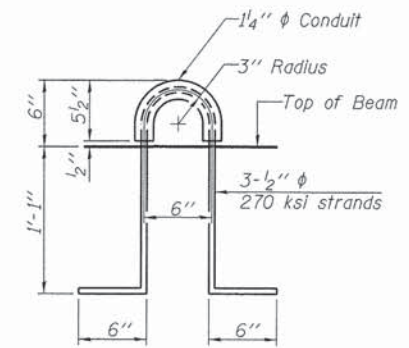
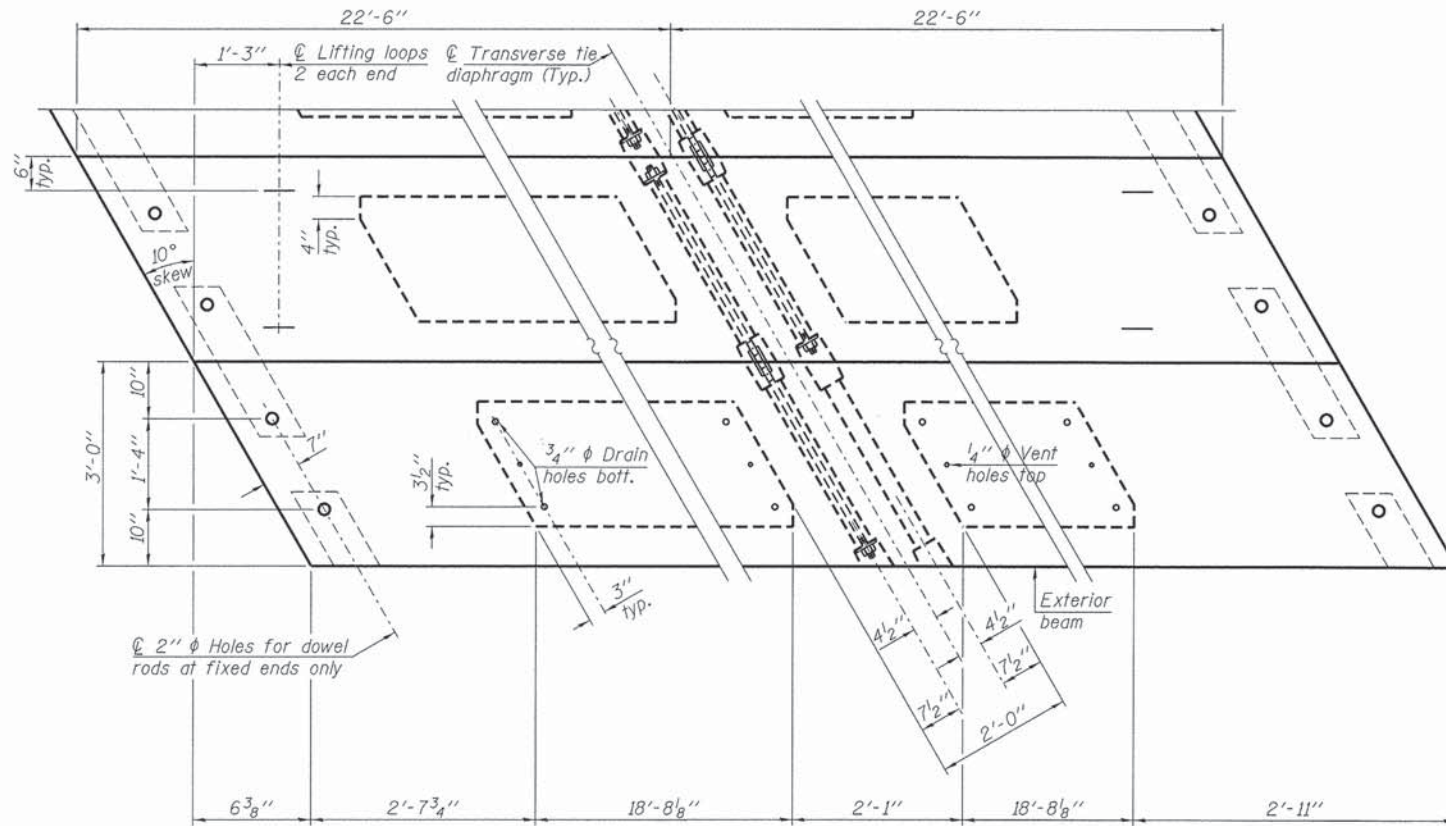
Notes:
All bearing pads shall be 1" thick.
Omit holes when using expansion bearings.
Expansion bearing pad shall be bonded to the substructure.



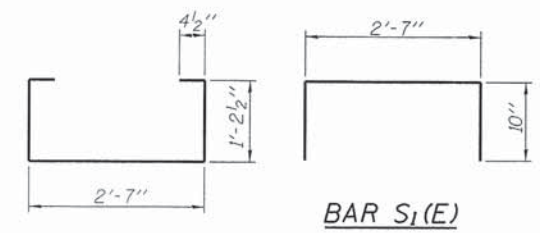
SECTION A-A



TYPICAL TRANSVERSE TIE ASSEMBLY

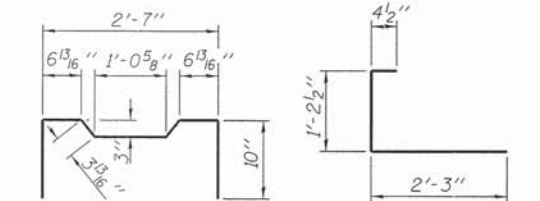


LIFTING LOOP DETAIL



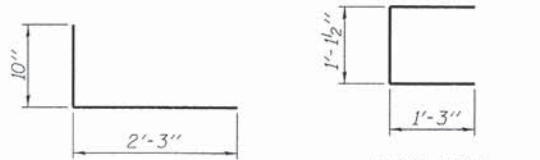
BAR S₁(E)

BAR S(E)



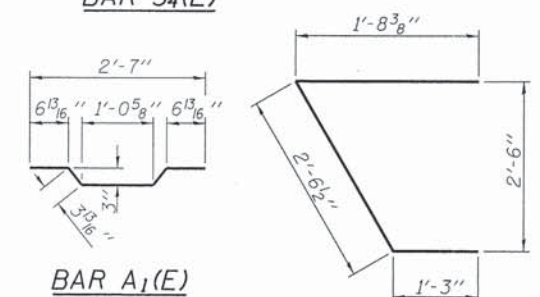
BAR S₂(E)

BAR S₃(E)



BAR S₄(E)

BAR U(E)



BAR A₁(E)

BAR U₁(E)

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" diameter rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior faces of bridge shall be filled with grout after transverse tie assembly is in place. Reinforcement bars shall conform to ASTM A 706, Grade 60. (See Special Provisions). Two 1/8" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location. A minimum 2 1/2" diameter lifting pin shall be used to engage the lifting loops during handling. Corrosion inhibitor, per Article 1020.05(b)(12) and 1021.07 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams. Compressive strength of prestressed concrete, f'c, shall be 6000 psi. Compressive strength of prestressed concrete at release, f'ci, shall be 5000 psi. Reinforcement bars designated (E) shall be epoxy coated.

BILL OF MATERIAL SPAN 2

Precast Prestressed Conc. Deck Bms. (17" depth)	Sq. Ft.	1,215
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PD-1736-RD 7-1-10

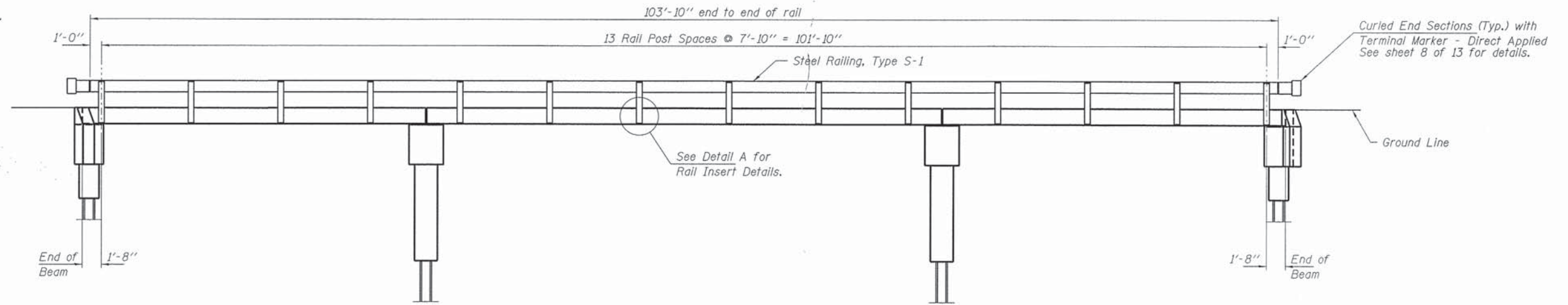
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HAMPTON, LENZINI AND RENWICK, INC.		CHECKED - S.W.M.	REVISED -
2085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703	PLOT SCALE =	DRAWN - R.D.H.	REVISED -
ILLINOIS PROFESSIONAL DESIGN FIRM L3 / PE / SE CORP. 184-00889	PLOT DATE = 1/27/2014	CHECKED - S.W.M.	REVISED -

STATE OF ILLINOIS
LIVINGSTON COUNTY HIGHWAY DEPARTMENT

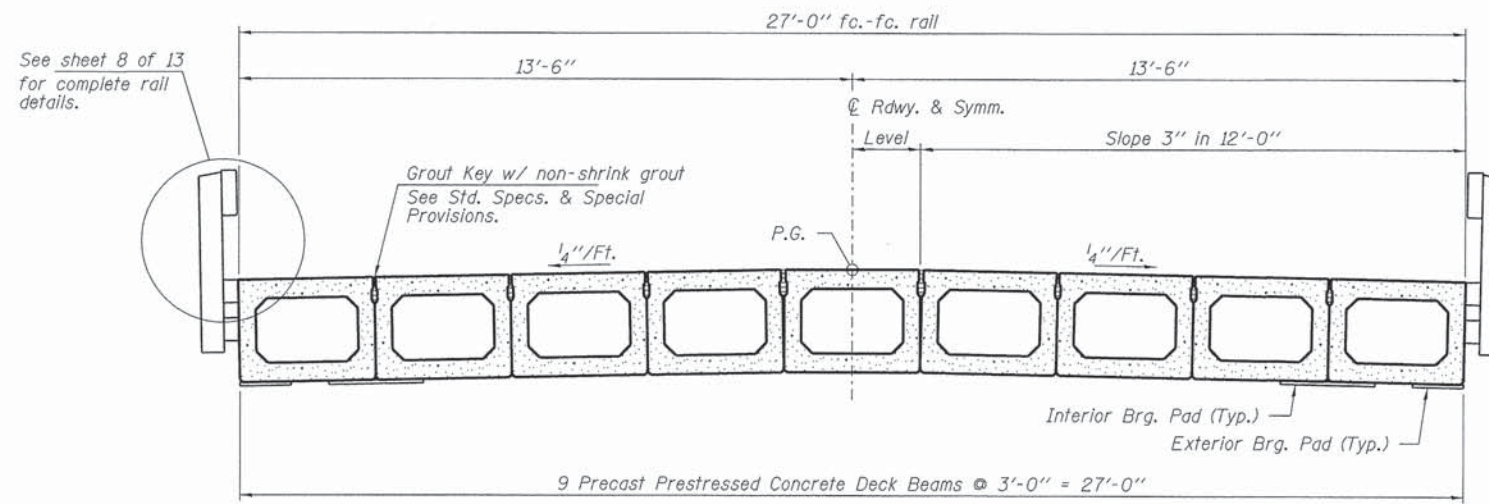
17" x 36" PPC DECK BEAM DETAILS - SPAN 2
STRUCTURE NO. 053-4209

SHEET NO. 6 OF 13 SHEETS

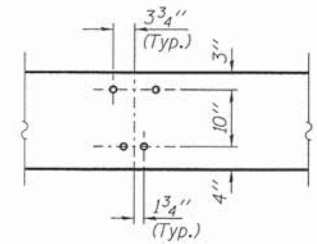
• 11-20117-00-BR / 11-24133-00-BR				
T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
145		LIVINGSTON	25	18
PIKES/ROOKS CREEK ROAD DIST.			CONTRACT NO. 87562	
ILLINOIS FED. AID PROJECT BROS-01050581				



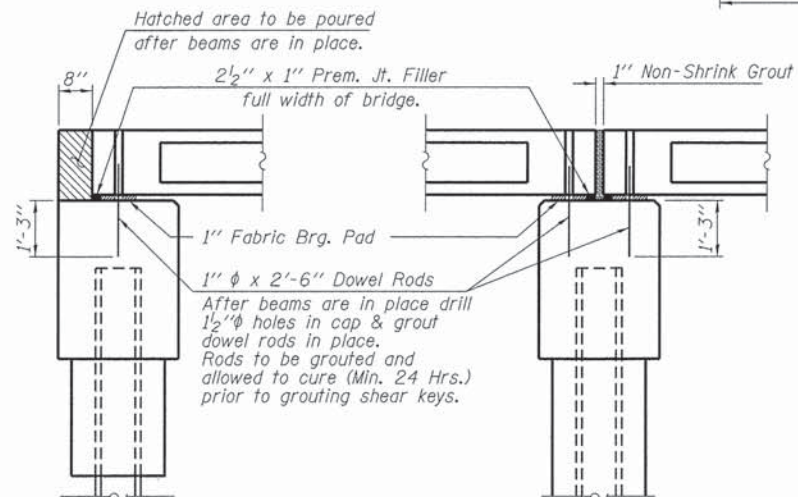
ELEVATION
Showing Rail Post Spaces
See sheet 8 of 13 for Railing Details.



CROSS SECTION
See sheets 3 thru 6 of 13 for Superstructure.



DETAIL A



SECTION AT ABUTMENTS

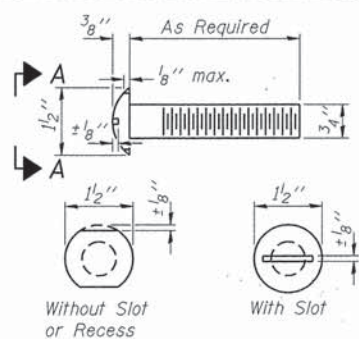
© Rt. L's

SECTION AT PIERS

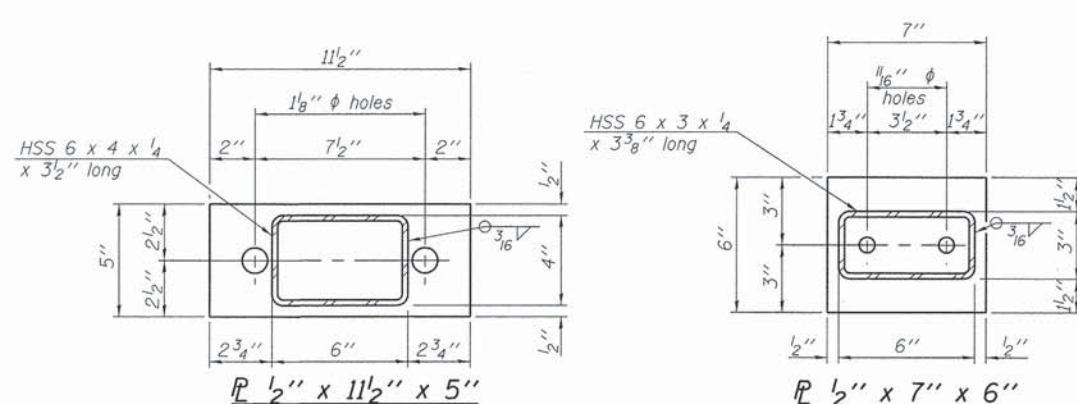
© Rt. L's

FILE NAME = 130207-eh-bridge.dgn	USER NAME =	DESIGNED - L.A.P.	REVISED	STATE OF ILLINOIS LIVINGSTON COUNTY HIGHWAY DEPARTMENT	SUPERSTRUCTURE DETAILS STRUCTURE NO. 053-4209	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
HAMPTON, LENZINI AND RENWICK, INC. 3008 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703	PLOT SCALE =	CHECKED - S.W.M.	REVISED -			145		LIVINGSTON	25	19	
ILR ILLINOIS PROFESSIONAL DESIGN FIRM L.S. / P.E. / S.E. CORP. 184-000899	PLOT DATE = 1/27/2014	DRAWN - R.D.H.	REVISED -			PIKES/ROOKS CREEK ROAD DIST. CONTRACT NO. 87562					
		CHECKED - S.W.M.	REVISED -			ILLINOIS FED. AID PROJECT BR05-01060581					
						SHEET NO. 7 OF 13 SHEETS					

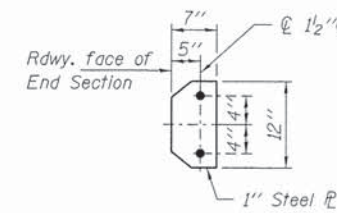
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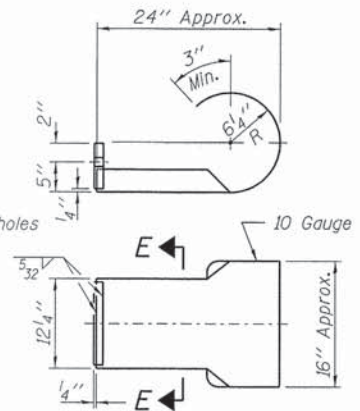
**VIEW A-A
ROUND HEAD BOLT**



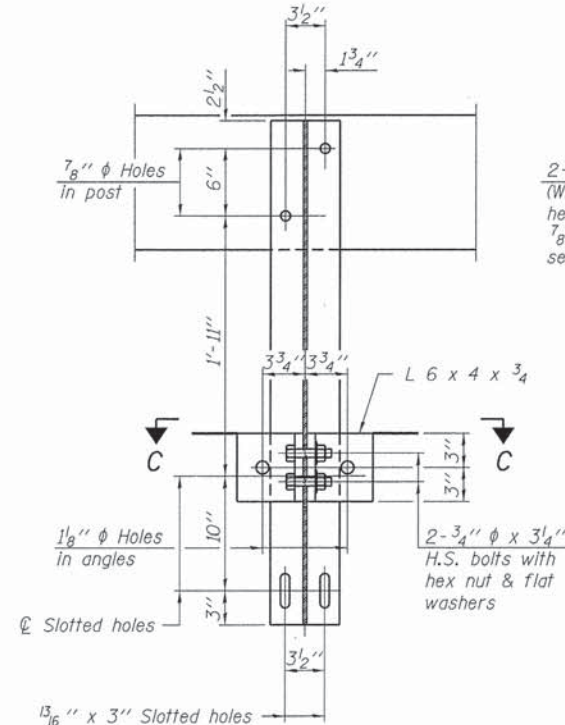
Note: Cost of curled end sections shall be included with the Steel Railing. (4 Required)



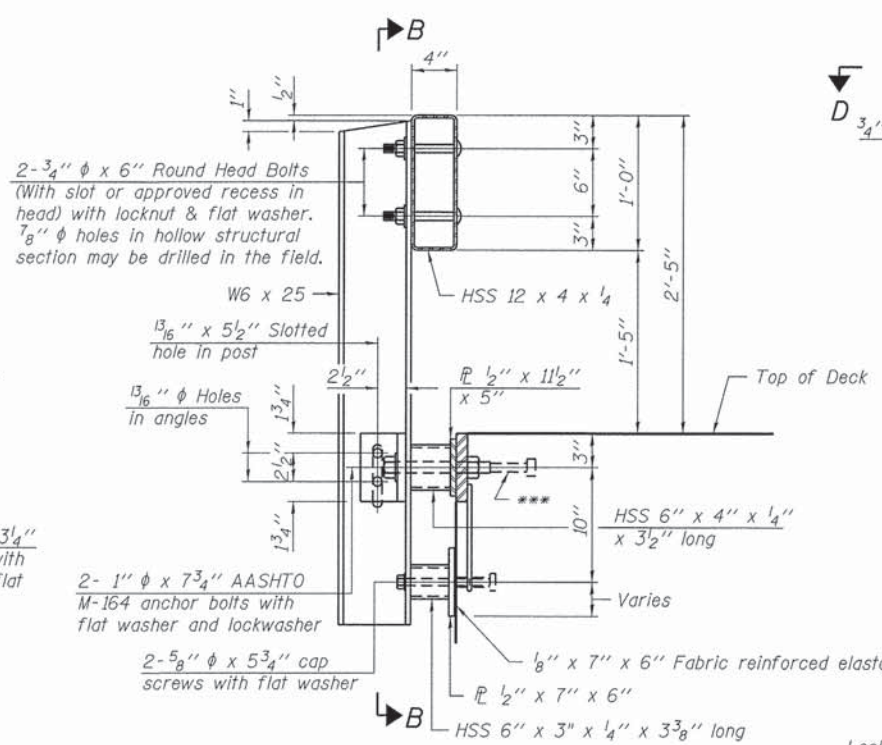
SECTION E-E



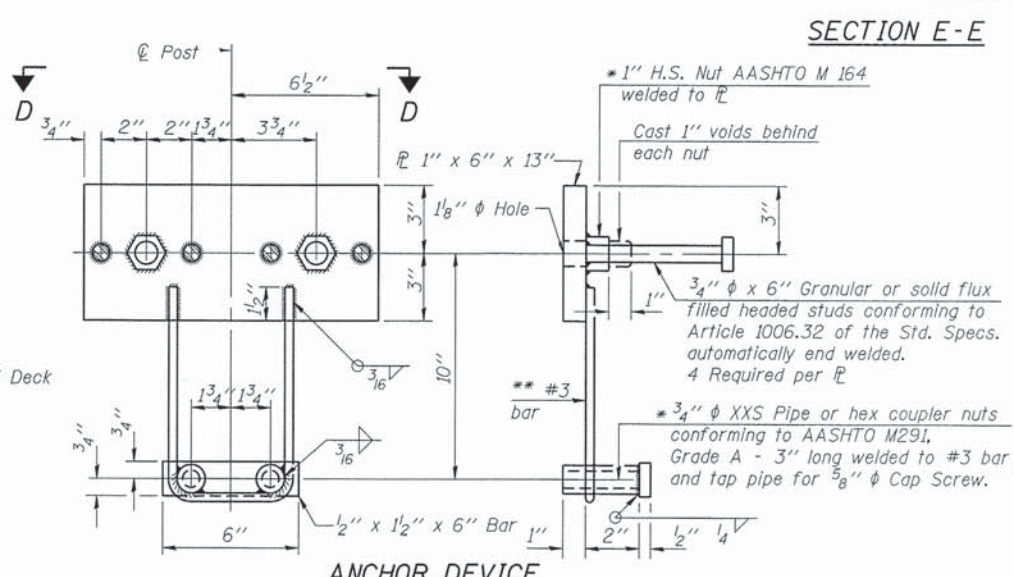
CURLED END SECTION DETAILS



SECTION B-B

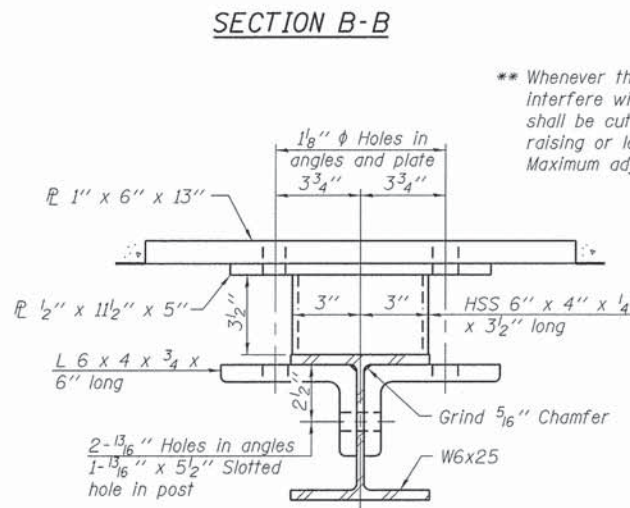


SECTION AT RAILING POST

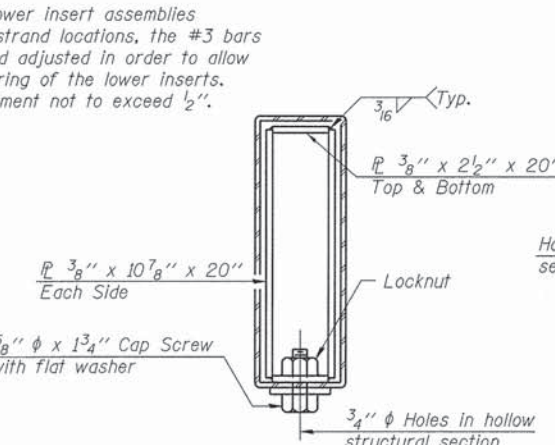


ANCHOR DEVICE

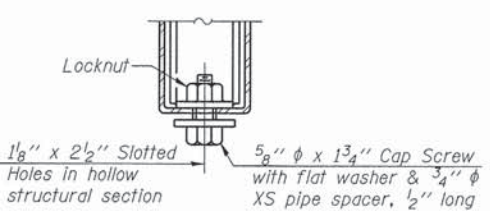
Notes:
All field drilled holes shall be coated with an approved zinc rich paint before erection.
For multi-span bridges, sufficient 1/4 x 6 x 1-2 galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with Steel Railing, Type S-1.
All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.
*** The studs of the anchor devices shall be placed below the top reinforcement bars and the outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchor device.



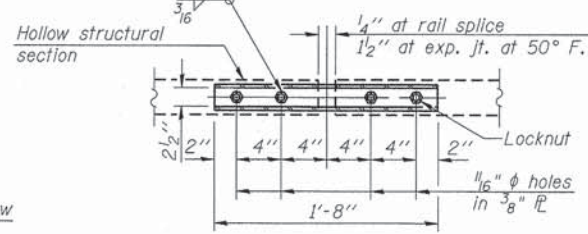
SECTION C-C



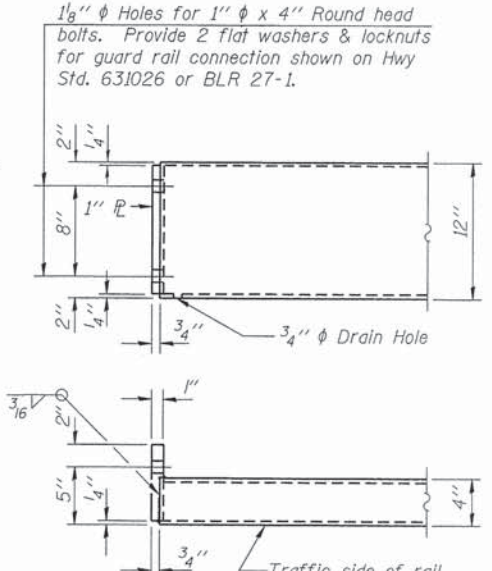
SECTIONS AT RAIL SPLICE



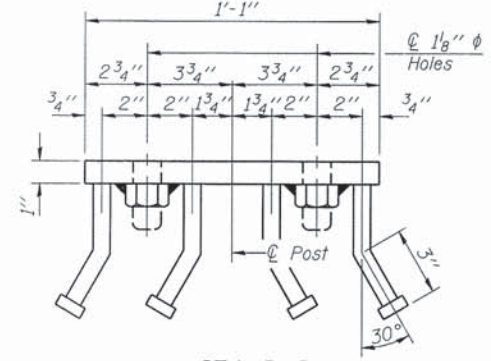
**RAIL SPLICE CONNECTION
AT EXPANSION JT.**



**PLAN-BOTT. SPLICE R
TYPICAL**



**STEEL RAILING, TYPE S-1
END OF RAIL DETAILS**



VIEW D-D

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S-1	Foot	208

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

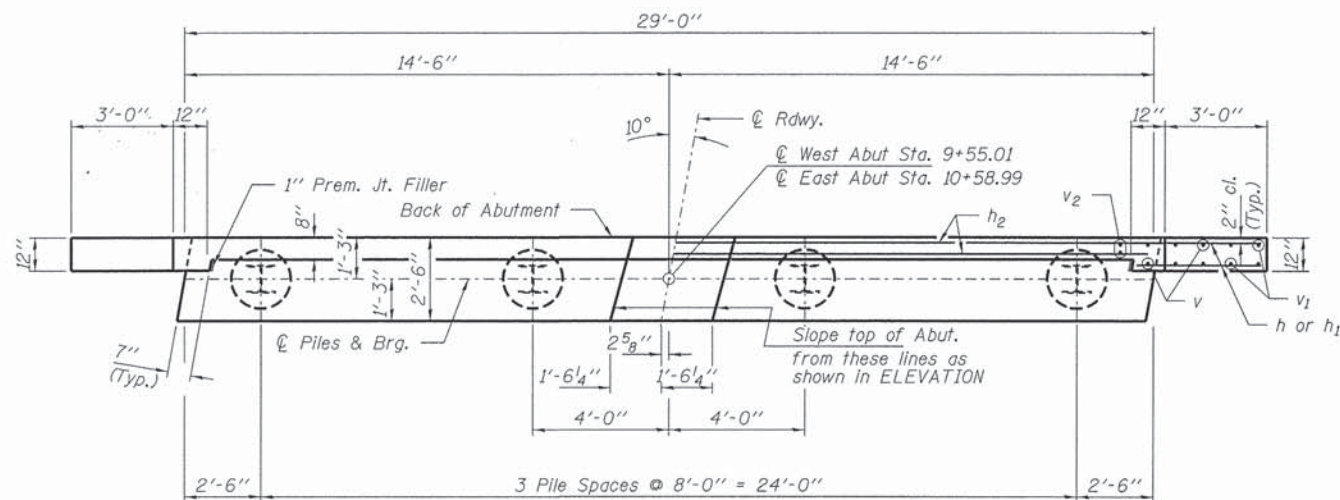
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HAMPTON, LENZINI AND RENWICK, INC.		CHECKED - S.W.M.	REVISED -
3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62761	PLOT SCALE =	DRAWN - R.D.H.	REVISED -
ILLINOIS PROFESSIONAL DESIGN FIRM L.S. PEI & CO. INC. 184-000008	PLOT DATE = 1/27/2014	CHECKED - S.W.M.	REVISED -

STATE OF ILLINOIS
LIVINGSTON COUNTY HIGHWAY DEPARTMENT

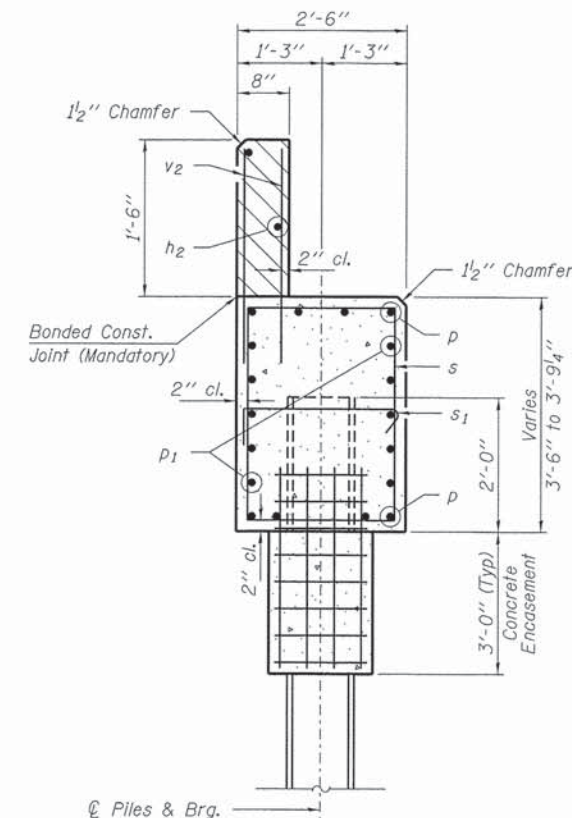
STEEL RAILING, TYPE S-1
STRUCTURE NO. 053-4209

SHEET NO. 8 OF 13 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
145	*	LIVINGSTON	25	20
PIKES/ROOKS CREEK ROAD DIST.			CONTRACT NO. 87562	
ILLINOIS/FED. AID PROJECT BROS-01051058				

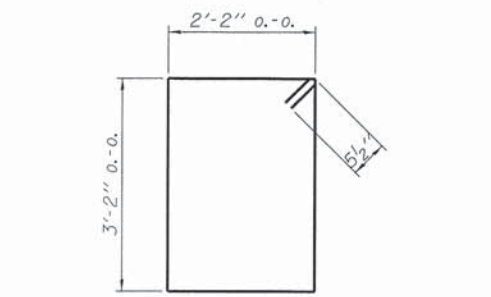


PLAN

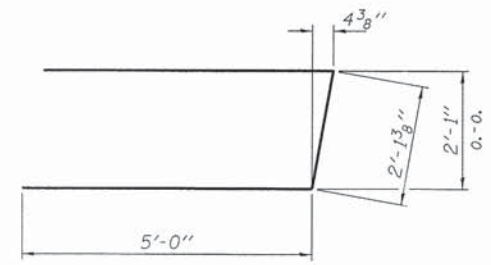


SECTION A-A

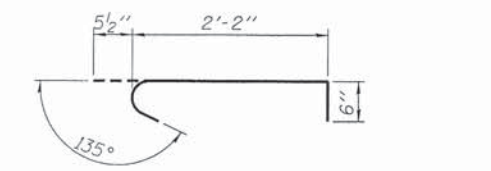
Hatched area to be poured after beams are in place.



BAR s



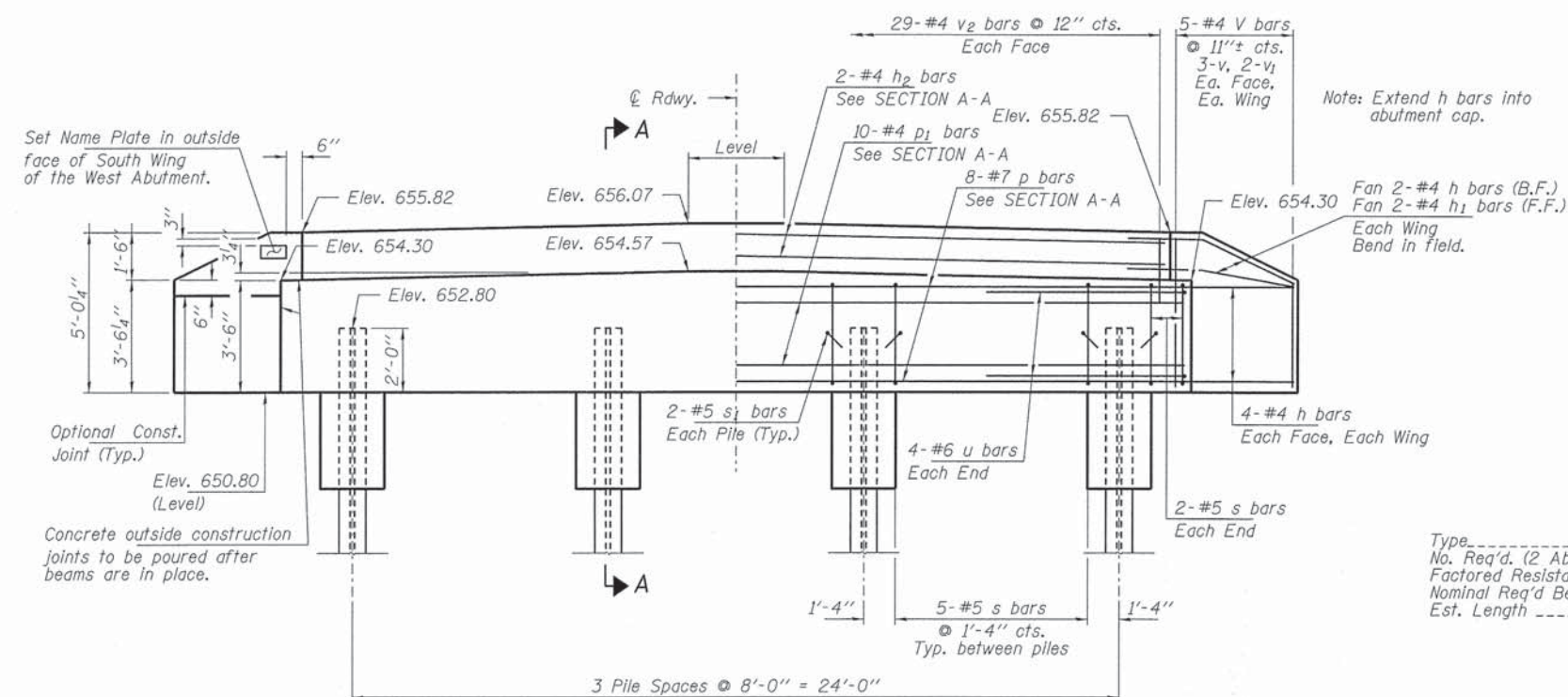
BAR u



BAR s1

BILL OF MATERIAL - 2 ABUTS.

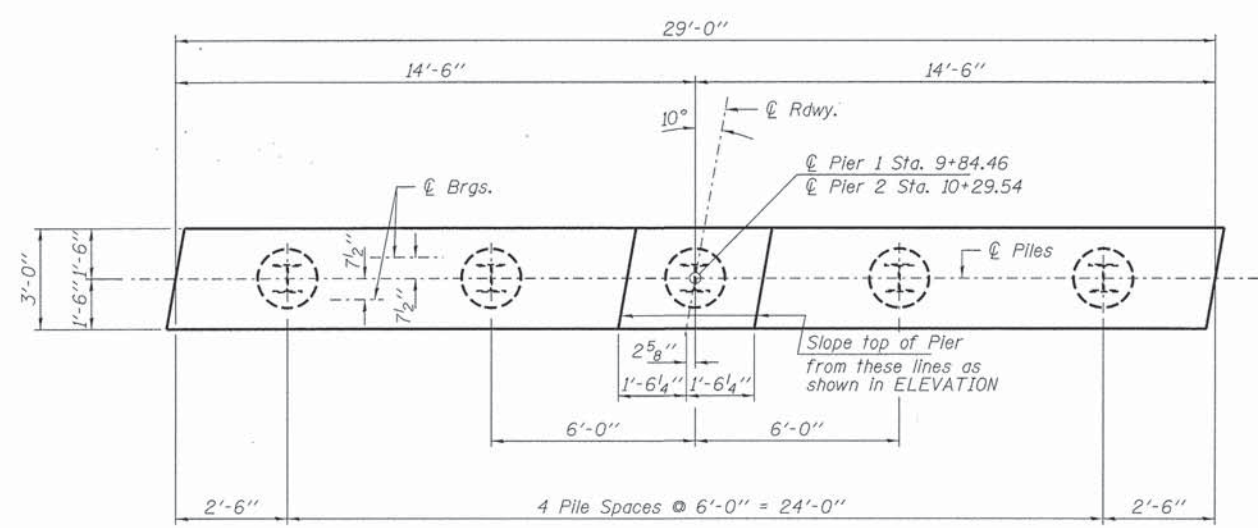
BAR	NO.	SIZE	LENGTH	SHAPE
h	40	#4	5'-3"	—
h1	8	#4	3'-9"	—
h2	4	#4	28'-8"	—
p	16	#7	28'-8"	—
p1	20	#4	28'-8"	—
s	38	#5	11'-7"	□
s1	16	#5	3'-2"	┌
u	16	#6	12'-2"	U
v	24	#4	4'-2"	—
v1	16	#4	3'-3"	—
v2	116	#4	2'-4"	—
Concrete Structures			Cu. Yd.	24.0
Concrete Encasement			Cu. Yd.	2.8
Reinforcement Bars			Pound	2,640
Steel Piles HP10x42			Foot	360
Name Plates			Each	1



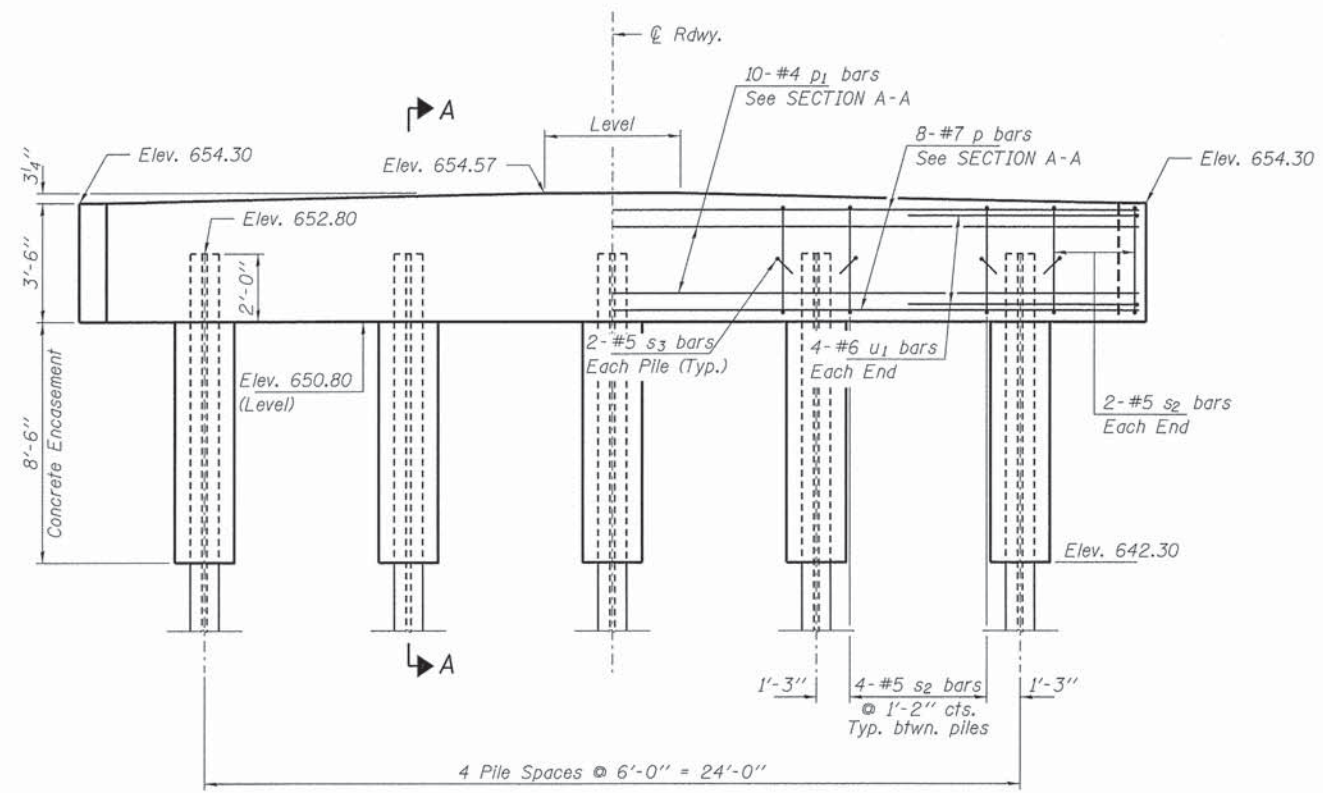
ELEVATION

PILE DATA

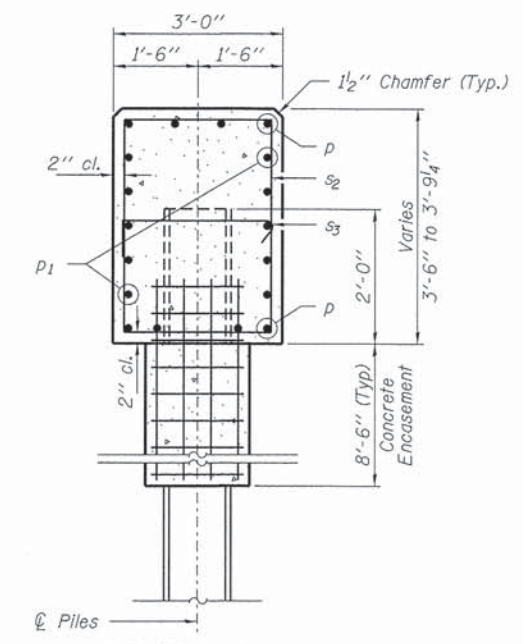
Type: Steel HP10x42
 No. Req'd. (2 Abuts.): 8
 Factored Resistance Available: 184 Kips/Pile
 Nominal Req'd Bearing: 335 Kips/Pile
 Est. Length: 45 Ft/Pile



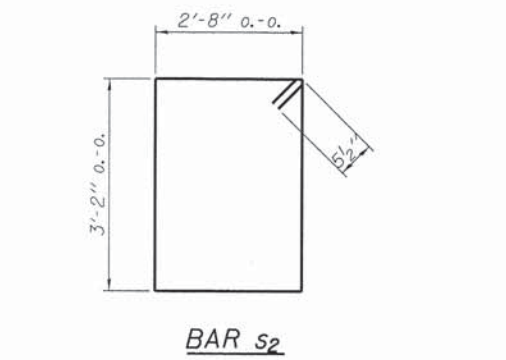
PLAN



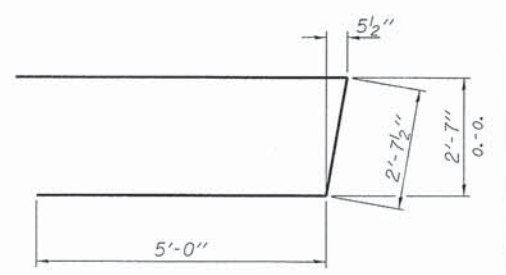
ELEVATION
(Looking West)



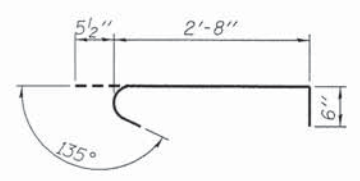
SECTION A-A



BAR s2



BAR u1



BAR s3

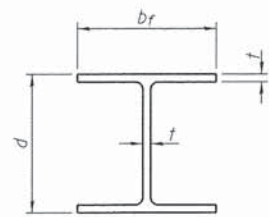
PILE DATA

Type ----- Steel HPI0x42
 No. Req'd. (2 Piers) ----- *10
 Factored Resistance Available ----- 184 Kips/Pile
 Nominal Req'd Bearing ----- 335 Kips/Pile
 Est. Length ----- 45 Ft/Pile

Notes *Includes one test pile to be driven in a permanent location at Pier 1.
 The test piles shall be driven to 110 percent of the Nominal Required Bearing indicated in the pile data information.

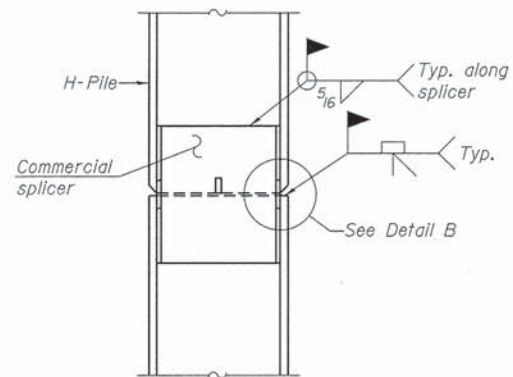
BILL OF MATERIAL - 2 PIERS

BAR	NO.	SIZE	LENGTH	SHAPE	
p	16	#7	28'-8"	—	
p1	20	#4	28'-8"	—	
s2	40	#5	12'-7"	□	
s3	20	#5	3'-8"	U	
u1	16	#6	12'-8"	—	
Concrete Structures				Cu. Yd.	23.6
Concrete Encasement				Cu. Yd.	9.6
Reinforcement Bars				Pound	2,230
Steel Piles HPI0x42				Foot	405
Test Pile Steel HPI0x42				Each	1

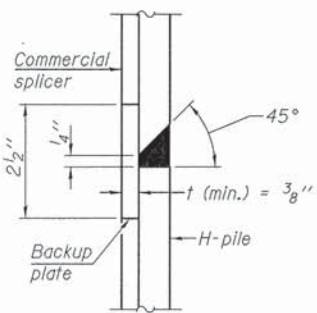


STEEL PILE TABLE

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"

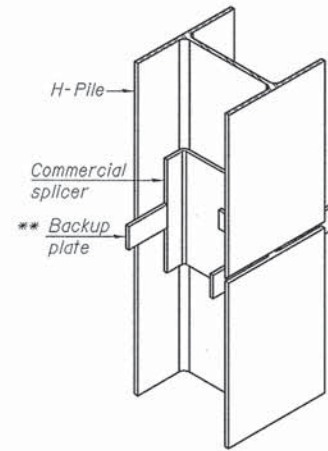


ELEVATION

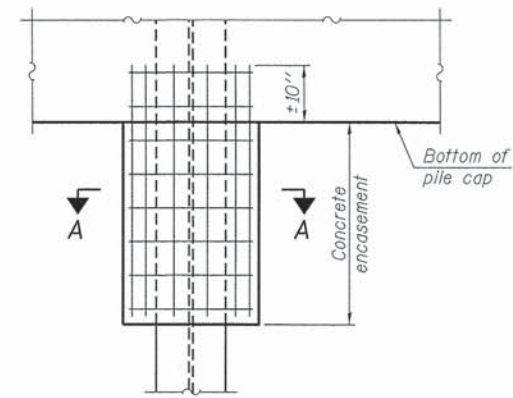


DETAIL "B"

WELDED COMMERCIAL SPLICE

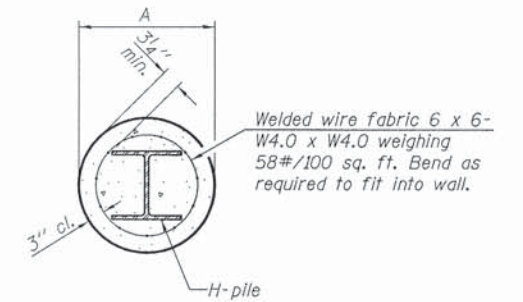


ISOMETRIC VIEW



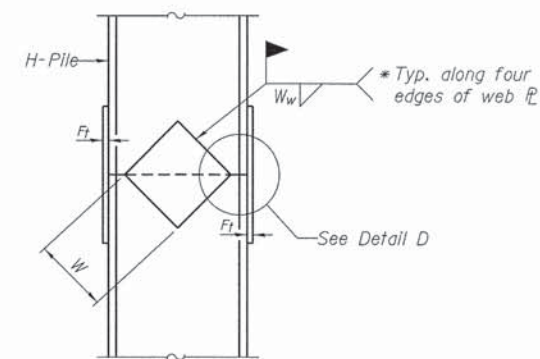
ELEVATION

PILE ENCASEMENT

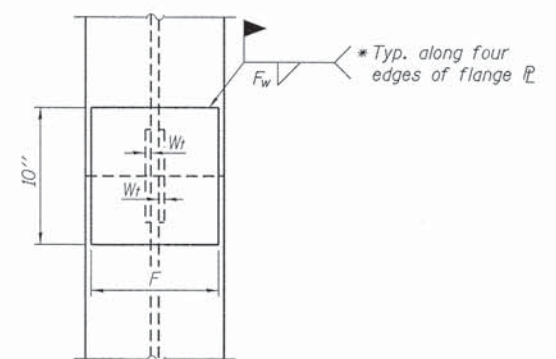


SECTION A-A

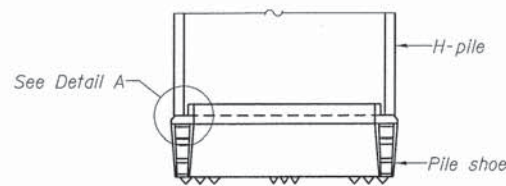
Note:
Forms for encasement may be omitted when soil conditions permit.



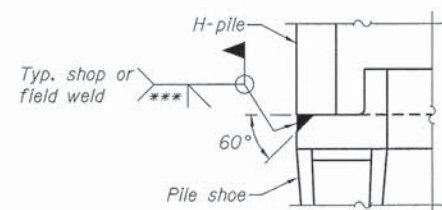
ELEVATION



END VIEW

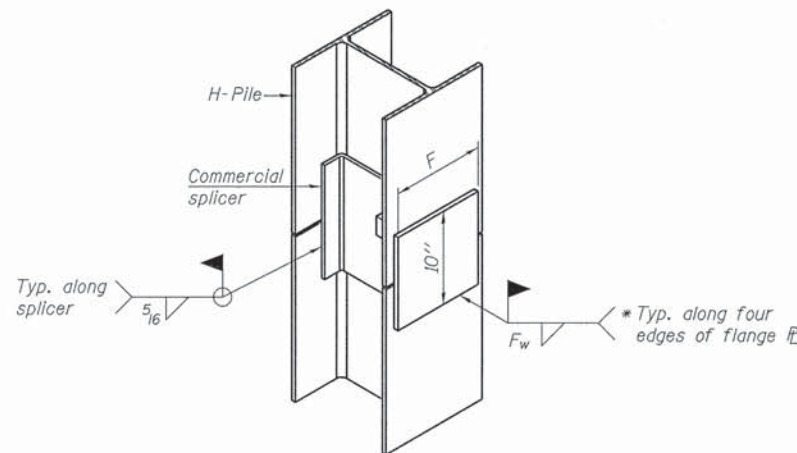


ELEVATION

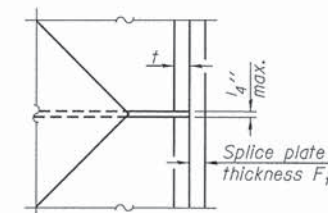


DETAIL A

H-PILE SHOE ATTACHMENT



ISOMETRIC VIEW



DETAIL D

WELDED PLATE FIELD SPLICE

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

WELDED COMMERCIAL SPLICE ALTERNATE

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

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

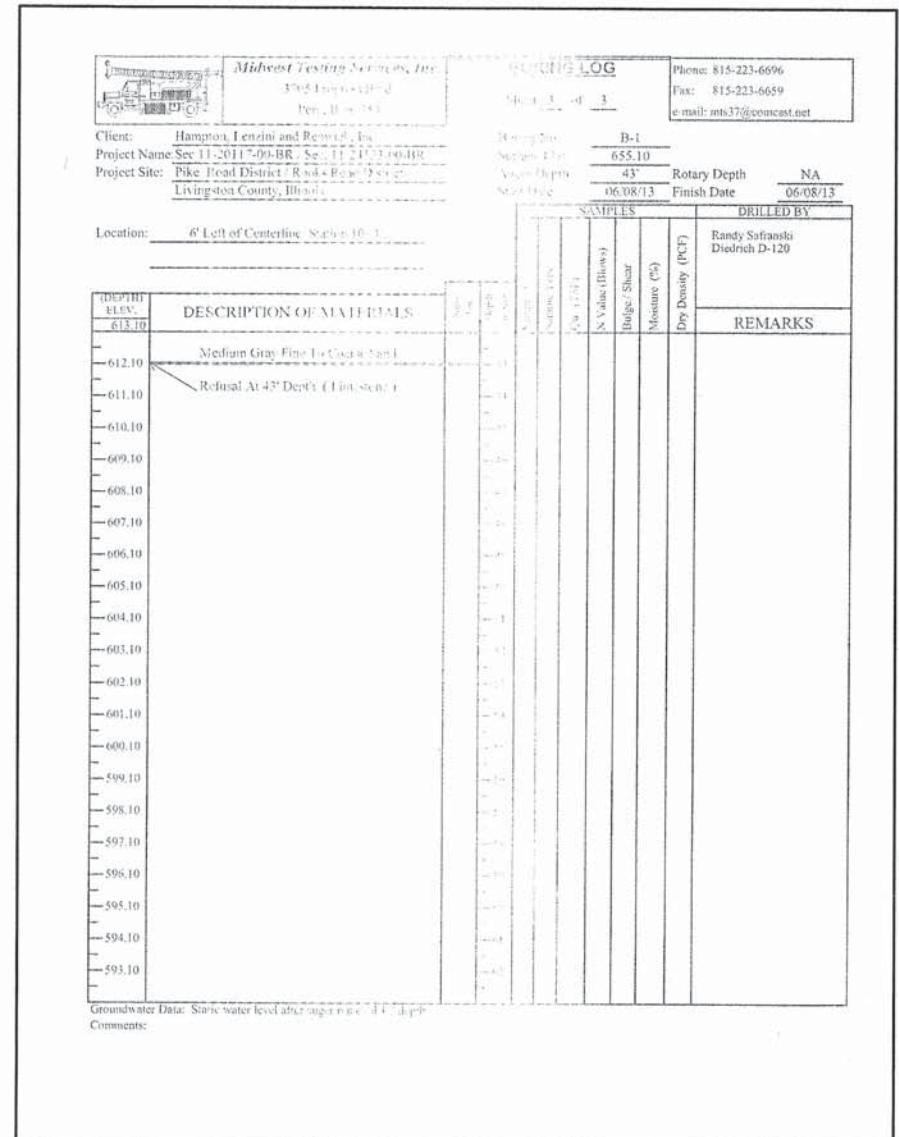
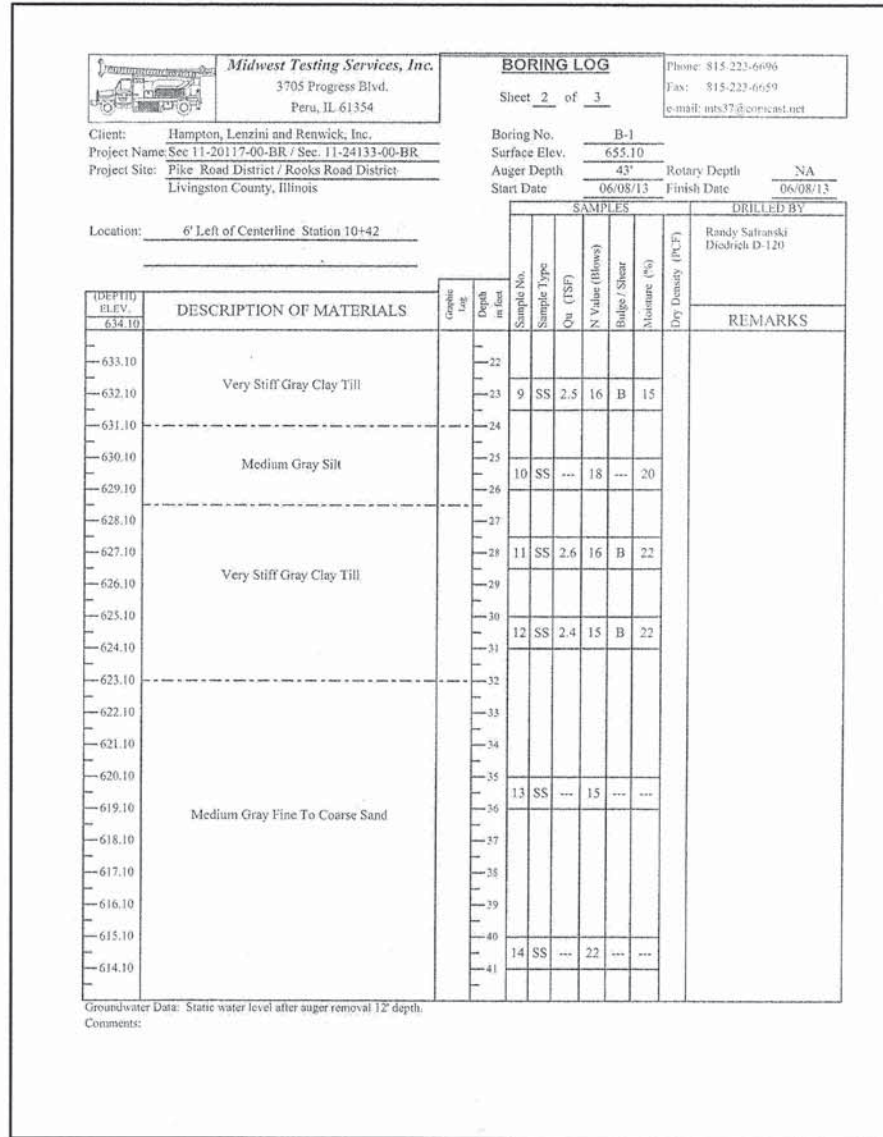
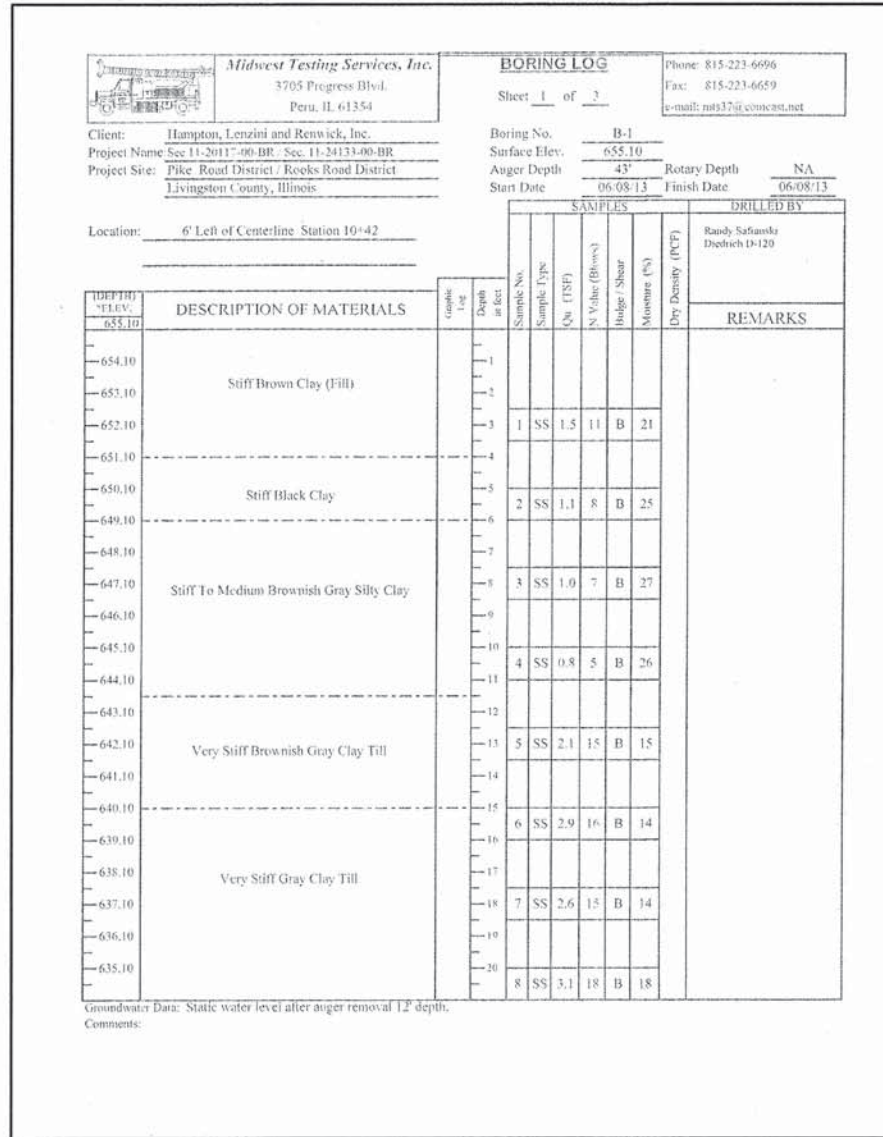
F-HP

1-27-12

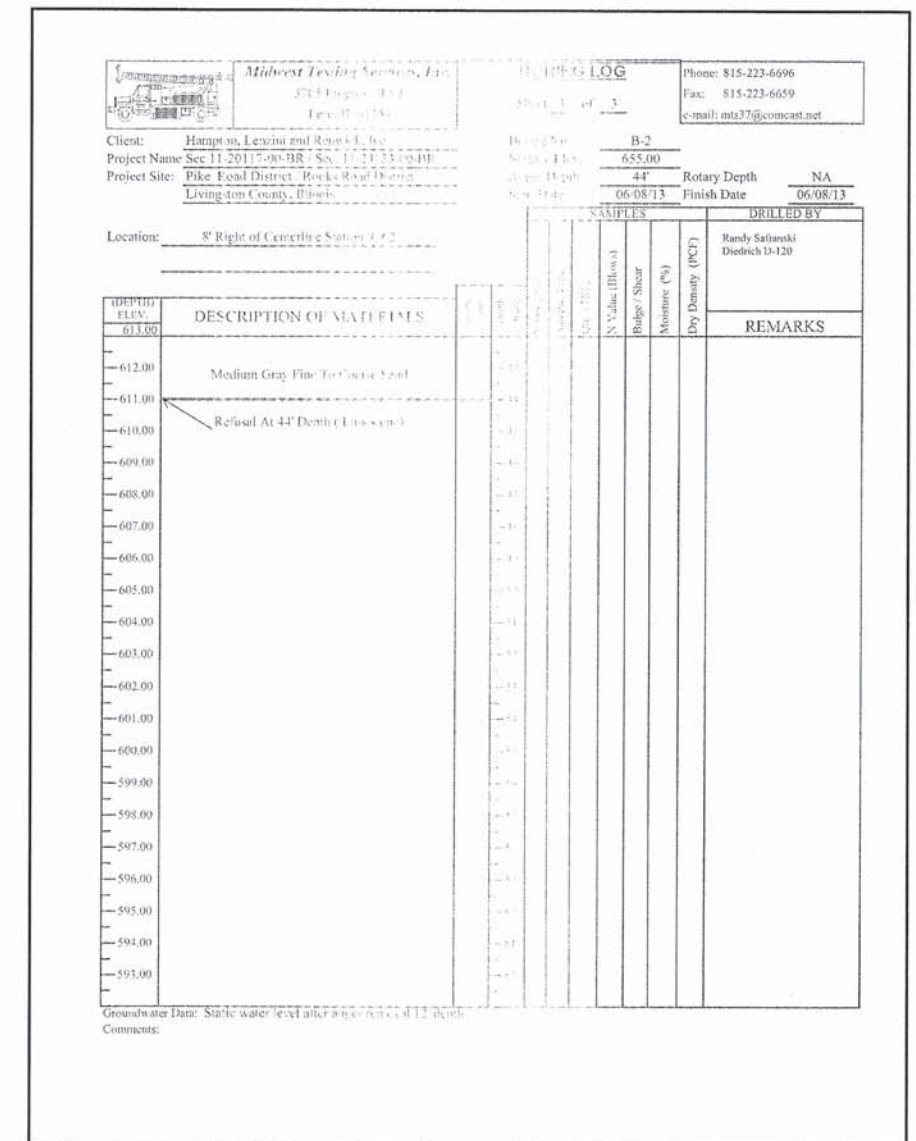
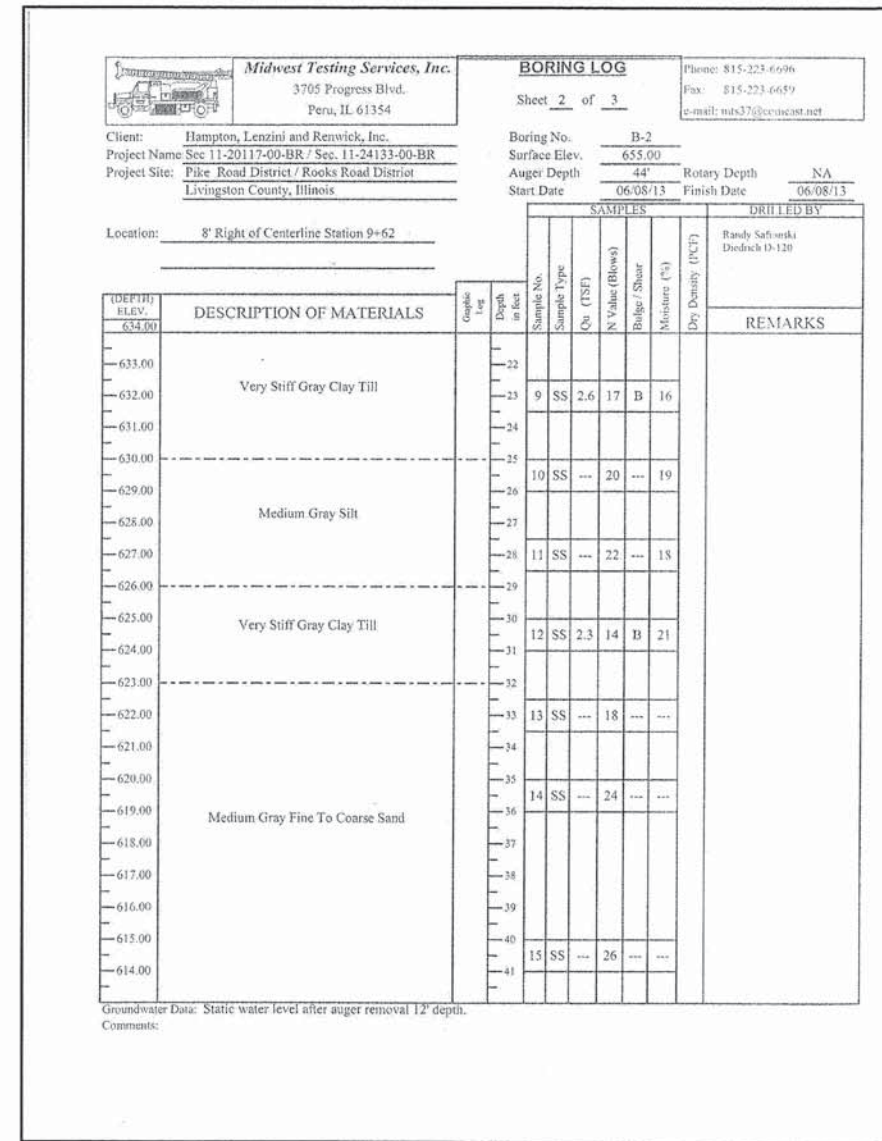
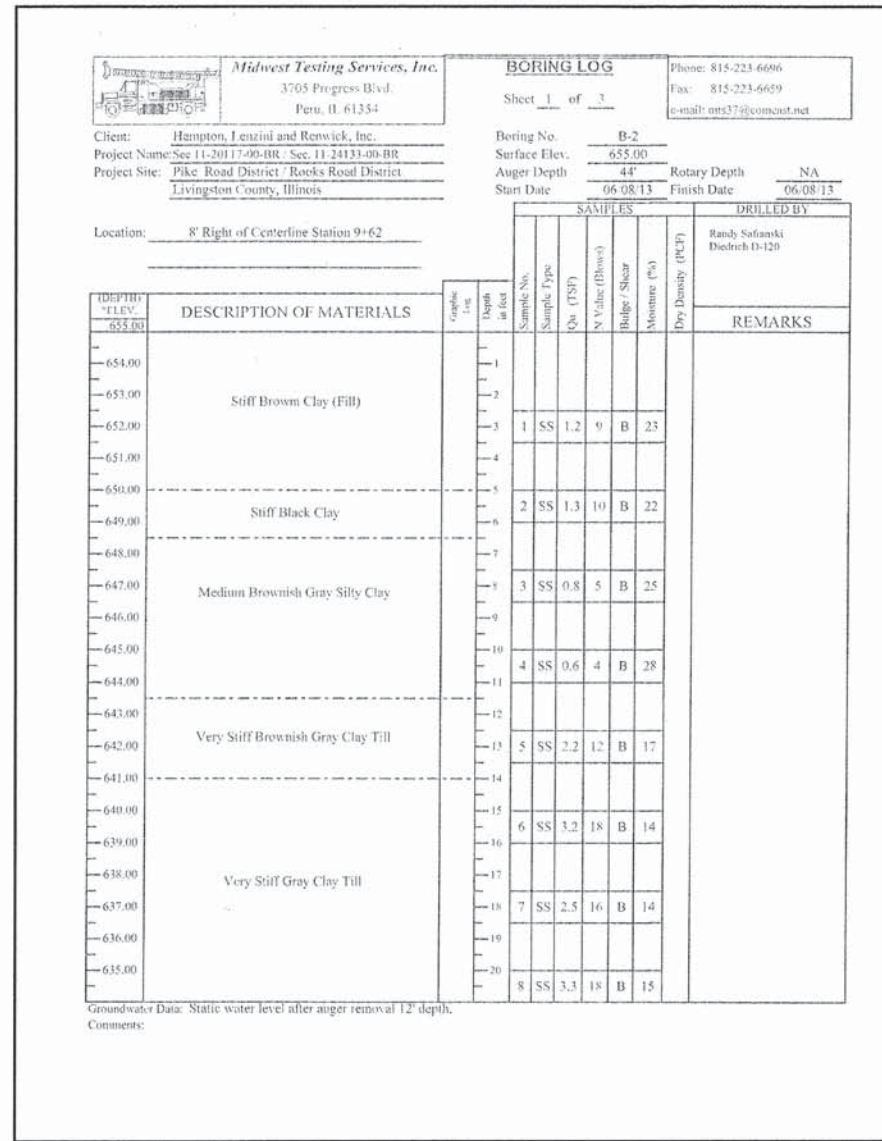
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HAMPTON, LENZINI AND RENWICK, INC. 3055 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62761	PLOT SCALE =	CHECKED - S.W.M.	REVISED -			145		LIVINGSTON	25	23
ILLINOIS PROFESSIONAL DESIGN FIRM L3 / PE / SE CORP. 184.000959	PLOT DATE = 1/27/2014	DRAWN - R.D.H.	REVISED -			PIKES/ROOKS CREEK ROAD DIST. CONTRACT NO. 87562				
		CHECKED - S.W.M.	REVISED -			ILLINOIS FED. AID PROJECT BR05-0105(058)				

• 11-20117-00-BR / 11-24133-00-BR

SHEET NO. 11 OF 13 SHEETS



BORING-1



BORING-2