

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**  
**DIVISION OF HIGHWAYS**  
**PLANS FOR PROPOSED**  
**SURFACE TRANSPORTATION PROGRAM**  
**OFF SYSTEM BRIDGE**

**PROJECT BROS-0181(061)**  
**SECTION 12-01204-00-BR**  
**COUNTY UNIT ROAD DISTRICT**  
**UNION COUNTY**  
**T.R. 152 / HUGHEY LANE**  
**PROPOSED STRUCTURE NO. 091-3244**  
**C-99-523-13**

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 152	12-01204-00-BR	UNION	22	1
FED. ROAD DIST. NO.		ILLINOIS	CONTRACT NO. 99587	

**INDEX OF SHEETS**

SHEET NO.	DESCRIPTION
1.	COVER SHEET
2.	SUMMARY OF QUANTITIES AND GENERAL NOTES
3.	TYPICAL CROSS SECTIONS
4.	PLAN AND PROFILE
5-14.	STATION CROSS SECTIONS
15-21.	BRIDGE PLANS
22.	BORINGS

**HIGHWAY STANDARDS:**

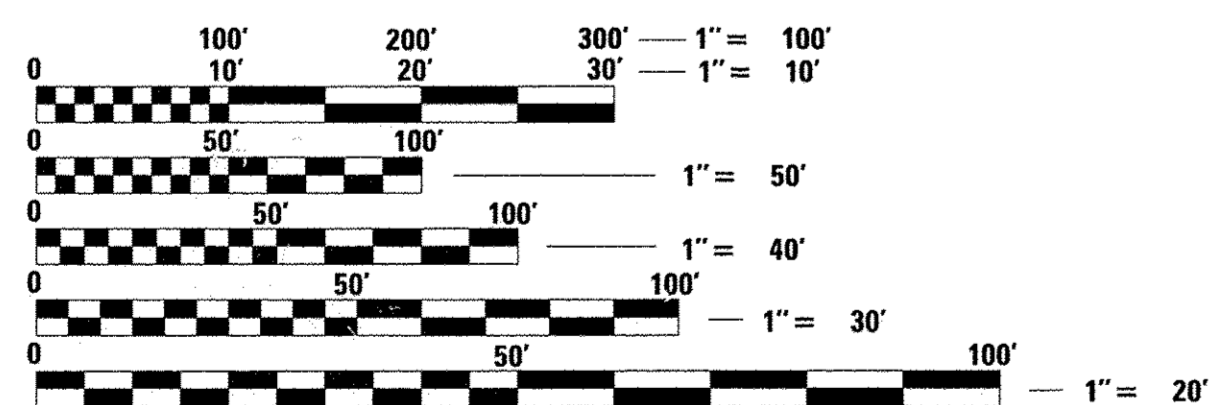
000001-06	STANDARD SYMBOLS, ABBREVIATIONS, AND PATTERNS
515001-03	NAME PLATE FOR BRIDGES
701901-06	TRAFFIC CONTROL DEVICES
BLR 21-9	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS

**UTILITIES**

FRONTIER COMMUNICATIONS  
 208 W UNION  
 MARION, IL 62959

LICK CREEK PUBLIC WATER DISTRICT  
 150 BORGSMILLER LANE  
 MURPHYSBORO, IL 62966

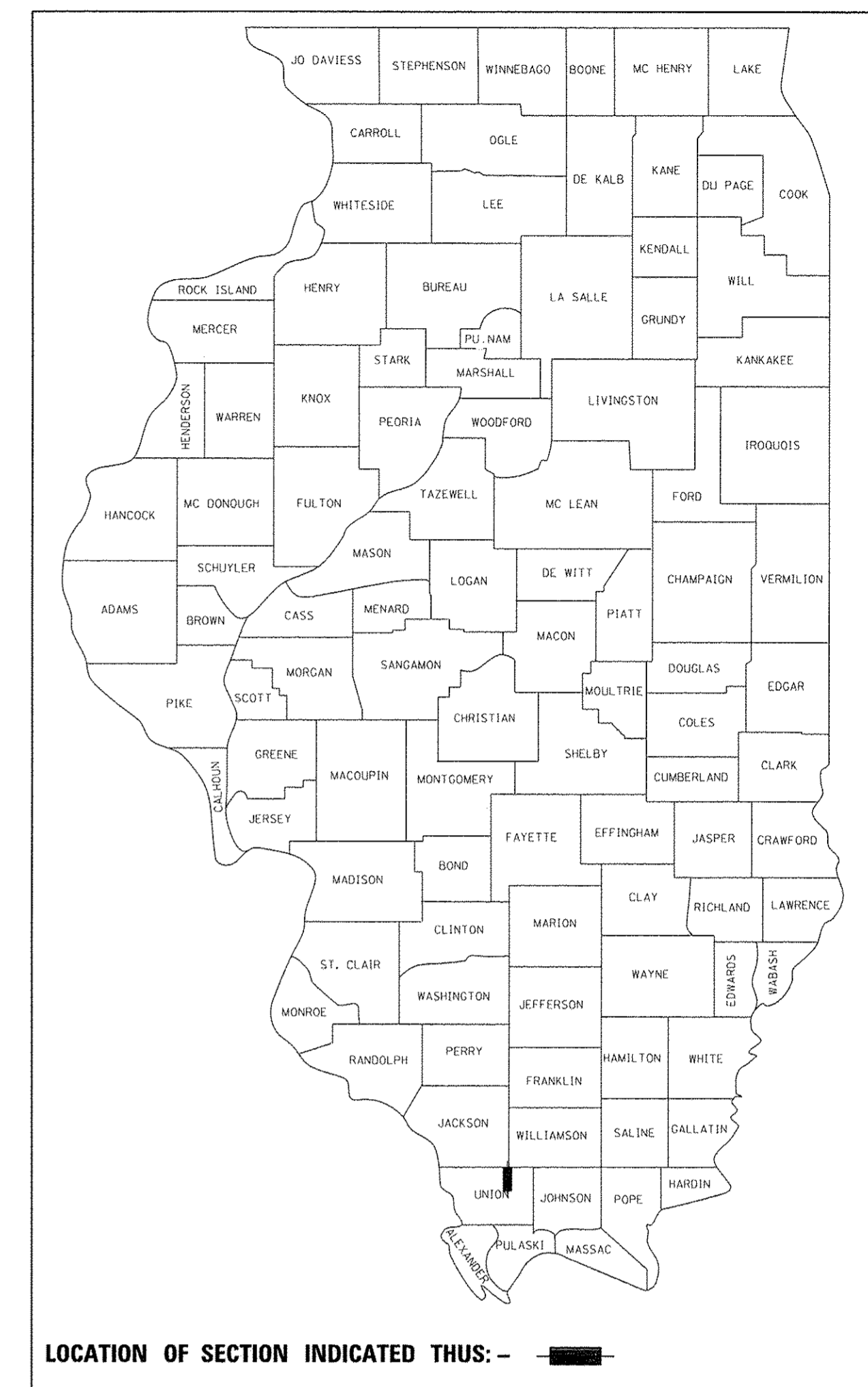
SOUTHERN ILLINOIS ELECTRIC CO-OP  
 7420 US HIGHWAY 51 SOUTH  
 DONGOLA, IL 62926



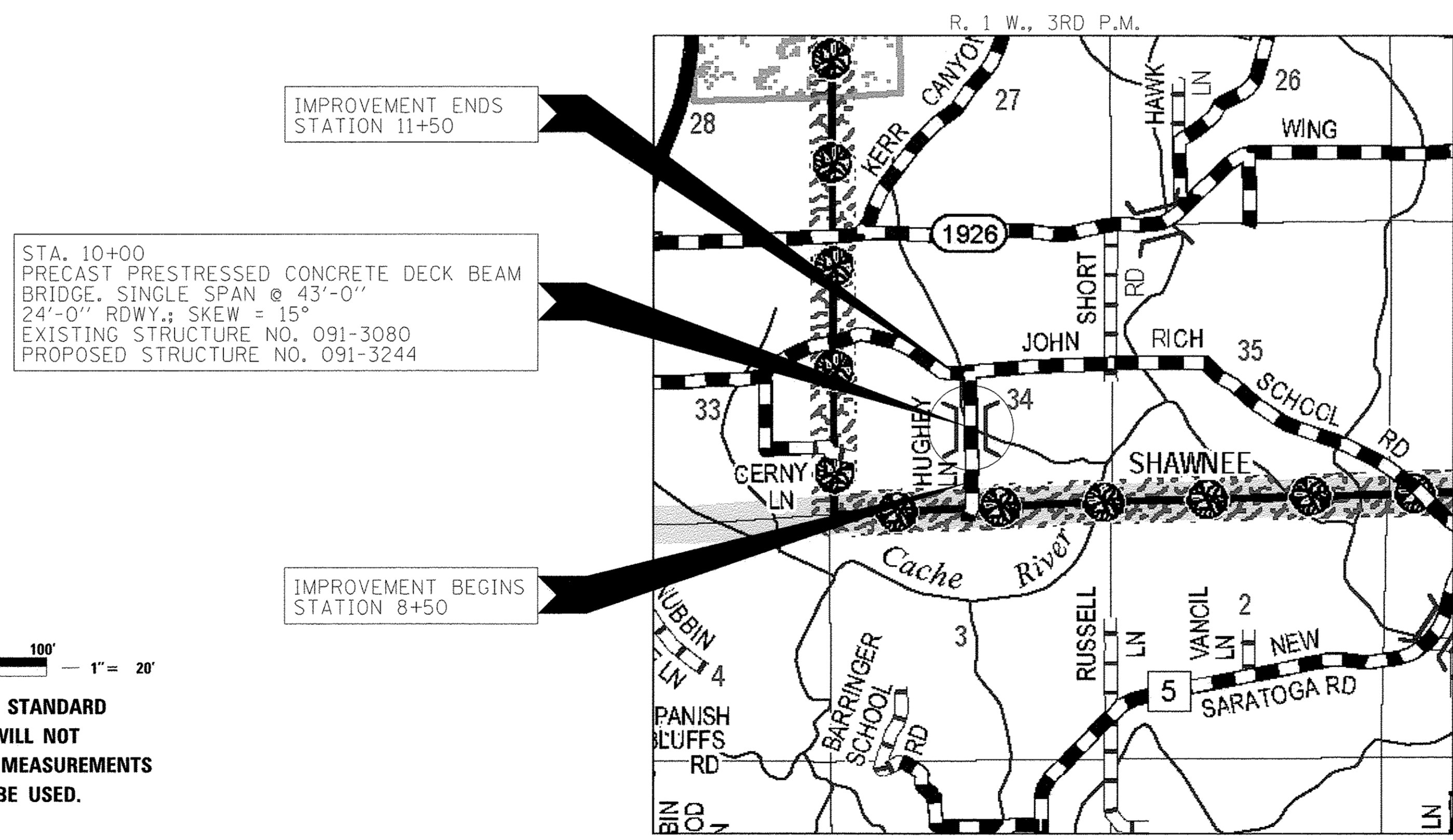
FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

FUNCTIONAL CLASSIFICATION: LOCAL ROAD < 250 ADT  
 DESIGN SPEED: 30 MPH  
 DESIGN TRAFFIC: < 50 ADT

**CONTRACT NO. 99587 PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS**



LOCATION OF SECTION INDICATED THUS: -



STA. 10+00  
 PRECAST PRESTRESSED CONCRETE DECK BEAM BRIDGE. SINGLE SPAN @ 43'-0"  
 24'-0" RDWY.; SKEW = 15°  
 EXISTING STRUCTURE NO. 091-3080  
 PROPOSED STRUCTURE NO. 091-3244

IMPROVEMENT ENDS STATION 11+50

IMPROVEMENT BEGINS STATION 8+50

**LOCATION MAP**

APPROXIMATE SCALE: 0 1/2 MILE  
 NET LENGTH OF SECTION = 300 FEET = 0.056 MILES



**WARNING**

**CALL 811 BEFORE YOU DIG**  
**DIG NO: A0991956**

**ILLINOIS DEPARTMENT OF TRANSPORTATION**

APPROVED *March 31, 2017*

*Kevin Grammer*  
 COUNTY ENGINEER

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PASSED *April 10, 2017*

*Dennis W. Hillebrand*  
 DISTRICT NINE ENGINEER OF LOCAL ROADS & STREETS

Releasing For Bid Based on Limited Review  
*April 10, 2017*

*Jeffrey L. Kern*  
 REGION FIVE ENGINEER

**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**

DATE: *03/10/2017*

EXPIRES: 11/30/2017

**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

PROJECT NUMBER: 16.0087.130 DATE: 03/10/17

SUMMARY OF QUANTITIES			
CODE NO.	ITEM	UNIT	TOTAL
			CONSTRUCTION TYPE CODE 0011
^ 20100110	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	UNIT	20
^ 20100210	TREE REMOVAL (OVER 15 UNITS DIAMETER)	UNIT	60
	20200100 EARTH EXCAVATION	CU YD	140
^ 20200200	ROCK EXCAVATION	CU YD	9.8
	20300100 CHANNEL EXCAVATION	CU YD	90
^ 28100807	STONE DUMPED RIPRAP, CLASS A4	TON	200
	40200800 AGGREGATE SURFACE COURSE, TYPE B	TON	240
	50100100 REMOVAL OF EXISTING STRUCTURES	EACH	1
	50300225 CONCRETE STRUCTURES	CU YD	44.1
	50400305 PRECAST PRESTRESSED CONCRETE DECK BEAMS (17" DEPTH)	SQ FT	1,032
	50800205 REINFORCEMENT BARS, EPOXY COATED	POUND	5,680
* 50900205	STEEL RAILING, TYPE S1	FOOT	83
	51500100 NAME PLATES	EACH	1
	542D0220 PIPE CULVERTS, CLASS D, TYPE 1 15"	FOOT	66
	542D0223 PIPE CULVERTS, CLASS D, TYPE 1 18"	FOOT	148
	58700300 CONCRETE SEALER	SQ FT	96
	67100100 MOBILIZATION	LSUM	1
* 72501000	TERMINAL MARKER - DIRECT APPLIED	EACH	4
^ X2501000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.25

^ SEE SPECIAL PROVISIONS

\* SPECIALTY ITEMS

### GENERAL NOTES

- ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE STATE OF ILLINOIS "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION ADOPTED APRIL 1, 2016," THESE PLANS AND THE SPECIAL PROVISIONS INCLUDED IN THE CONTRACT DOCUMENTS.
- ALL CLEARING AND GRUBBING, FENCE REMOVAL, AND REMOVAL OF EXISTING DRAINAGE STRUCTURES SHALL BE INCLUDED IN THE COST OF EARTH EXCAVATION. THE REMOVAL AND DISPOSAL OF EXISTING AGGREGATE PAVEMENT SHALL BE INCLUDED IN THE COST OF EARTH EXCAVATION AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
- THE LOCATION OF EXISTING GAS MAINS, ELECTRIC POWER LINES, TELEPHONE LINES AND OTHER UTILITIES AS SHOWN ON THE PLANS ARE BASED ON CAREFUL FIELD 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.
- WHERE SECTION OR SUBSECTION MONUMENTS ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED BEFORE SUCH MONUMENTS ARE REMOVED. THE CONTRACTOR SHALL PROTECT AND CAREFULLY PRESERVE ALL PROPERTY MARKS AND MONUMENTS UNTIL THE OWNER, AN AUTHORIZED SURVEYOR OR AGENT HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATION.
- THE FOLLOWING RATES OF APPLICATION HAVE BEEN USED IN CALCULATING PLAN QUANTITIES:  

<b>AGGREGATE SURFACE COURSE</b>	<b>2.05 TON/CU YD</b>
<b>STONE DUMPED RIPRAP</b>	<b>1.75 TON/CU YD</b>
- THE AREA TO BE SEEDED SHALL CONSIST OF ALL DISTURBED EARTH SURFACES WITHIN THE RIGHT OF WAY AS DIRECTED BY THE ENGINEER.  
**ESTIMATED QUANTITY: SEEDING, CLASS 2 (SPECIAL) = 0.25 ACRES**
- COMMITMENTS:  
 1) TREES SHALL NOT BE CLEARED BETWEEN APRIL 1 TO SEPTEMBER 30.  
 2) A BAT ASSESSMENT SHALL BE CONDUCTED IF WORK OCCURS TO EXISTING STRUCTURE AFTER AUGUST 15.

EARTHWORK SCHEDULE							
LOCATION	EARTH EXCAVATION	CHANNEL EXCAVATION	SHRINKAGE FACTOR	PERCENT USED	EARTH EXCAVATION ADJUSTED FOR SHRINKAGE	EMBANKMENT REQUIRED	EARTHWORK BALANCE
	CU.YD.	CU.YD.			CU.YD.	CU.YD.	CU.YD.
TR 152 / HUGHEY LANE							
STA 8+50 TO STA 9+77.80	74		25.00%	100.00%	55	67	-12
STA 9+77.80 TO STA 10+22.19		90	25.00%	70.00%	47		47
STA 10+22.19 TO STA 11+50	63		25.00%	100.00%	47	47	0
TOTAL	137	90			149	114	35
USE	140	90					35

WASTE EXCAVATION 35 CU YDS

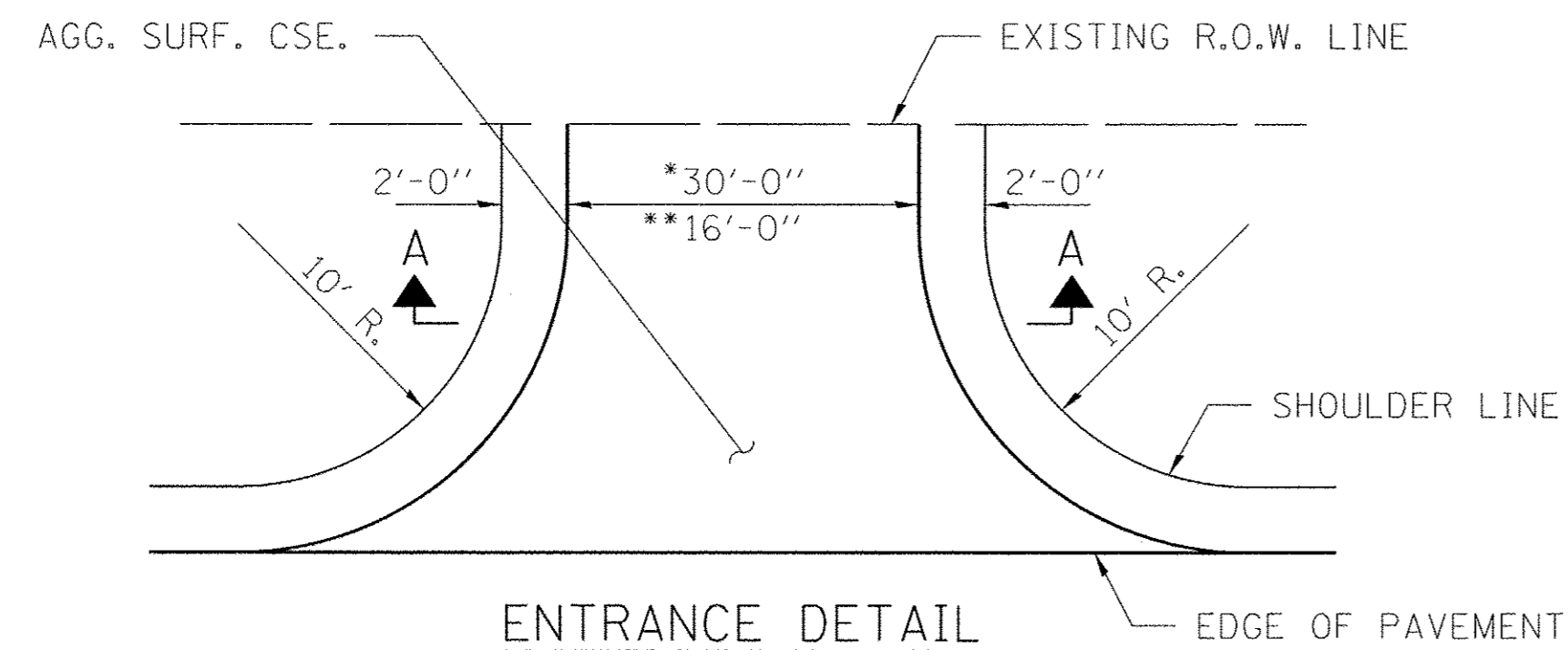
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	PLOT DATE = 3/13/2017	CHECKED - S.W.M.	REVISED -
		DATE - 02/23/17	REVISED -

STATE OF ILLINOIS  
UNION COUNTY HIGHWAY DEPARTMENT

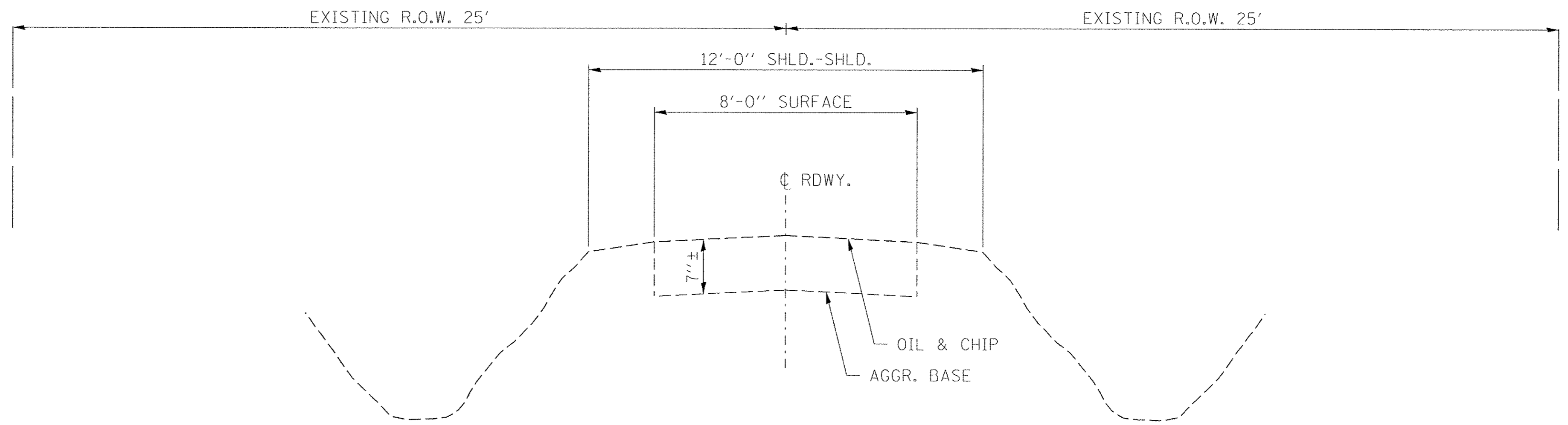
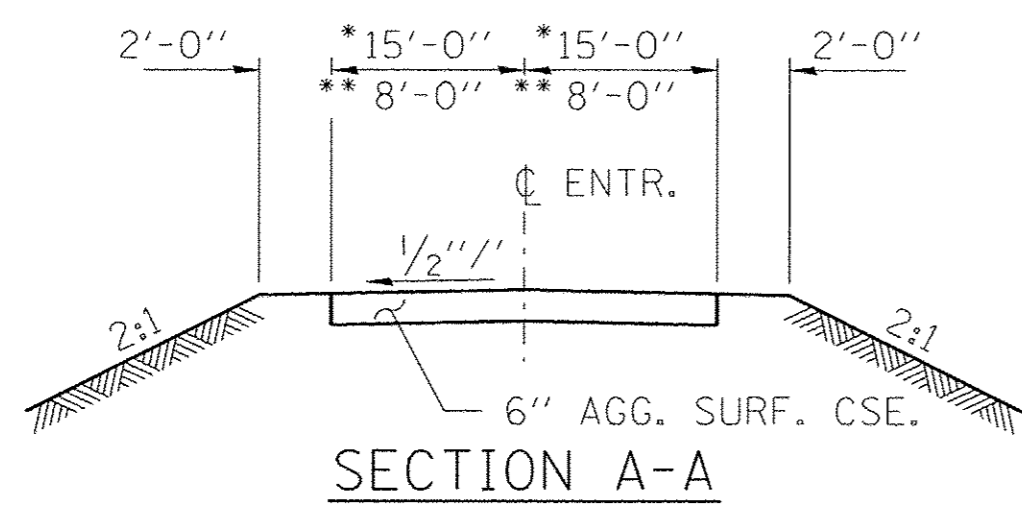
### SUMMARY OF QUANTITIES AND GENERAL NOTES

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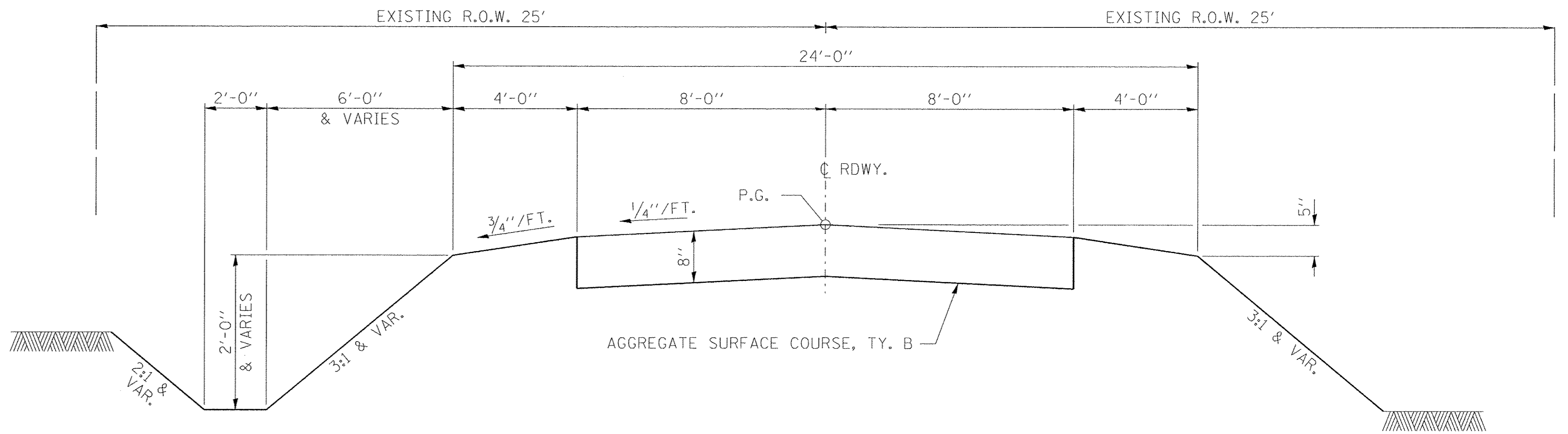
T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
152	12-01204-00-BR	UNION	22	2
COUNTY UNIT ROAD DISTRICT		CONTRACT NO. 99587		
[ILLINOIS] FED. AID PROJECT BR05-01810611				



**ENTRANCE DETAIL**  
 \*LT. STA. 8+96  
 \*\*LT. & RT. STA. 9+39 AND RT. STA. 11+49



**EXISTING TYPICAL CROSS SECTION**  
 STA. 8+50 TO 11+50



**SUGGESTED CUT SECTION**  
 CONSTRUCT AS SHOWN IN  
 STATION CROSS SECTIONS

**PROPOSED TYPICAL CROSS SECTION**  
 STA. 8+50 TO 11+50

**SUGGESTED FILL SECTION**  
 CONSTRUCT AS SHOWN IN  
 STATION CROSS SECTIONS

TRANSITIONS FROM THE PROPOSED ROADWAY TO THE EXISTING ROADWAY ARE TO BE CONSTRUCTED FROM STA. 8+50 TO 9+50 AND STA. 10+50 TO 11+50. SEE SHEET 14 FOR TRANSITION AT BRIDGE.

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HAMPTON, LENZINI AND RENWICK, INC. 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959	PLOT SCALE = #SCALE#	DRAWN - R.D.H.	REVISED -				152	12-01204-00-BR	UNION	22	3
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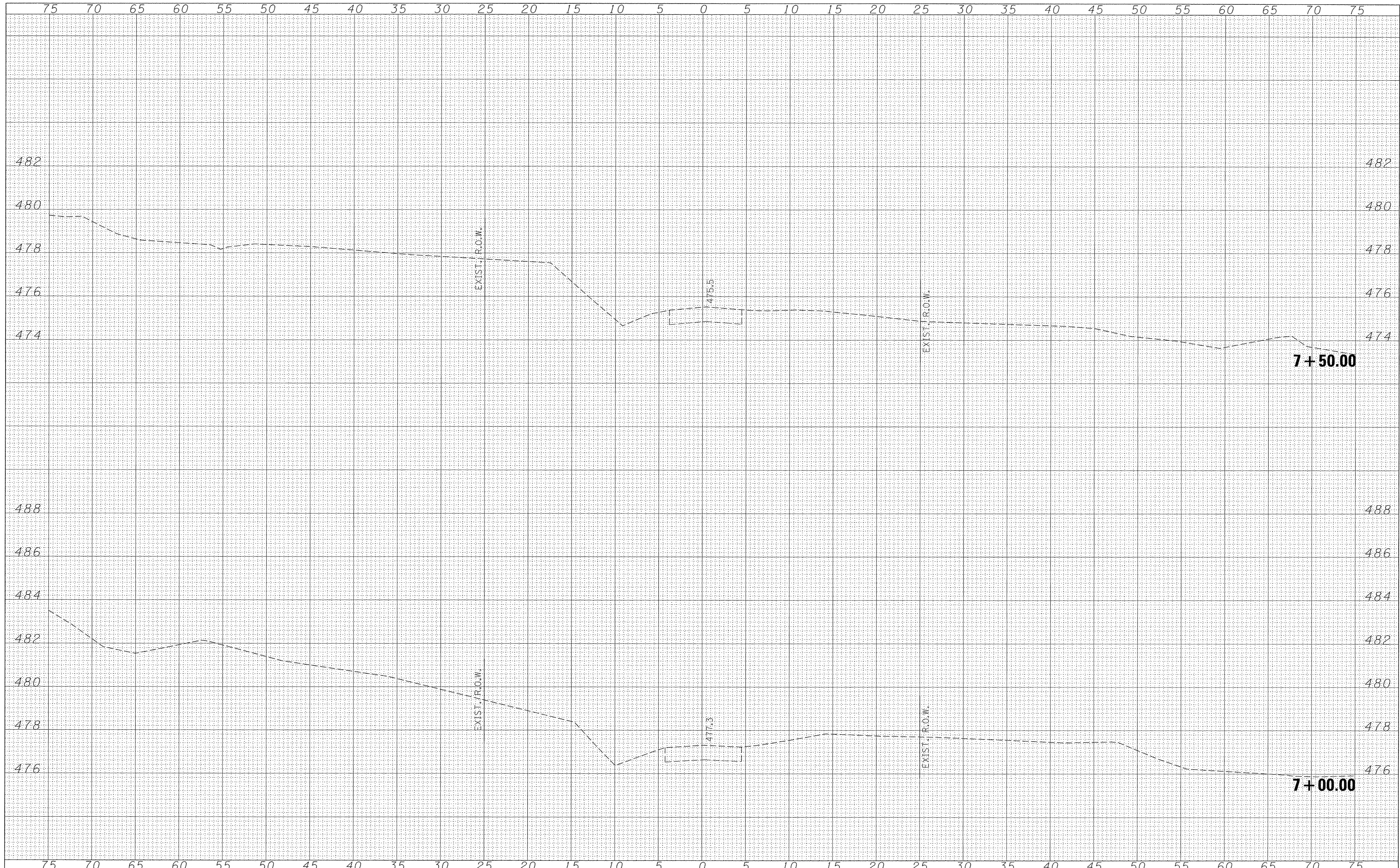






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<b>HAMPTON, LENZINI AND RENWICK, INC.</b> 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62761 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 194.000959	PLOT SCALE = #SCALE#	DRAWN - L.G.C.	REVISED -		152	12-01204-00-BR	UNION	22	5				
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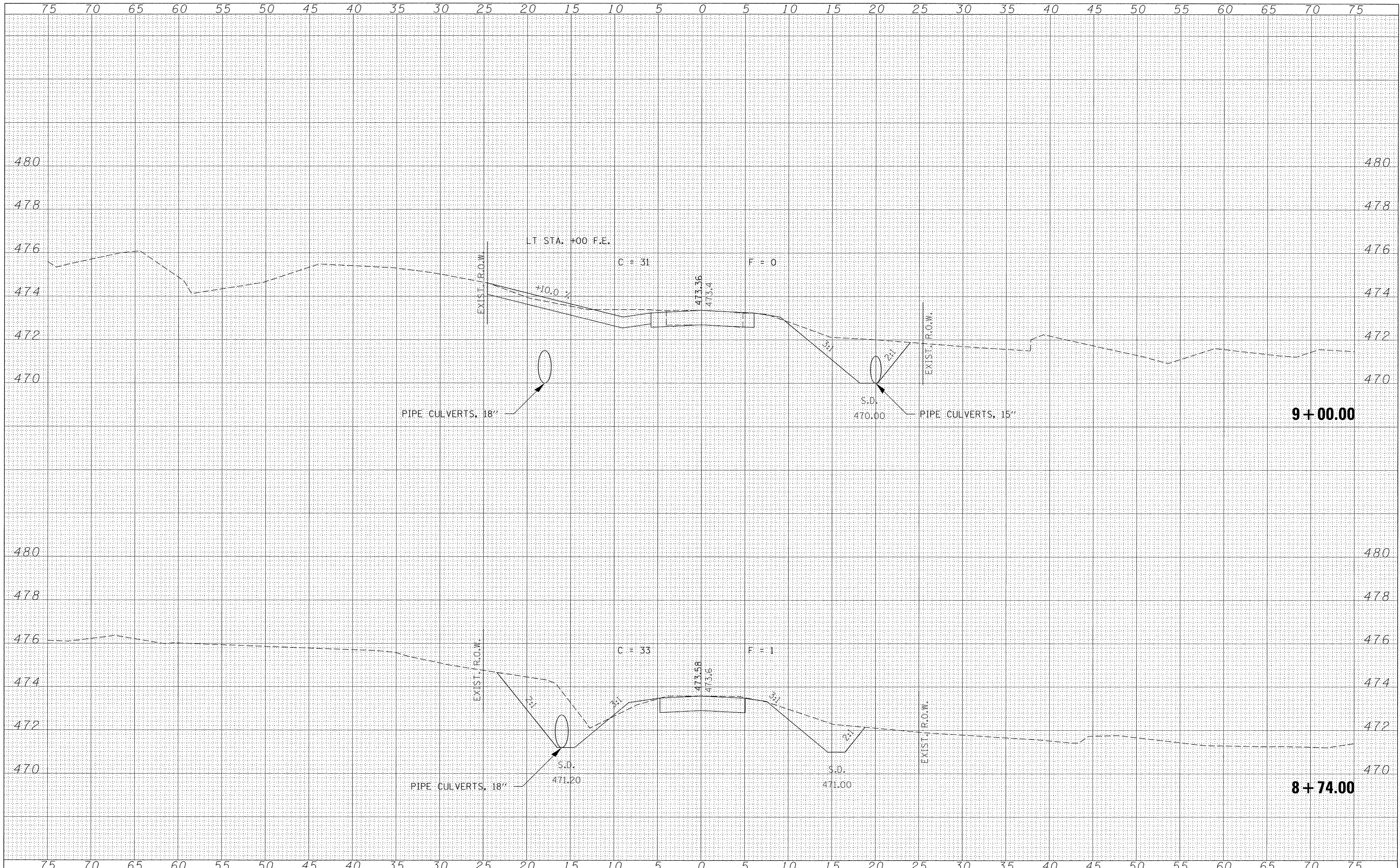






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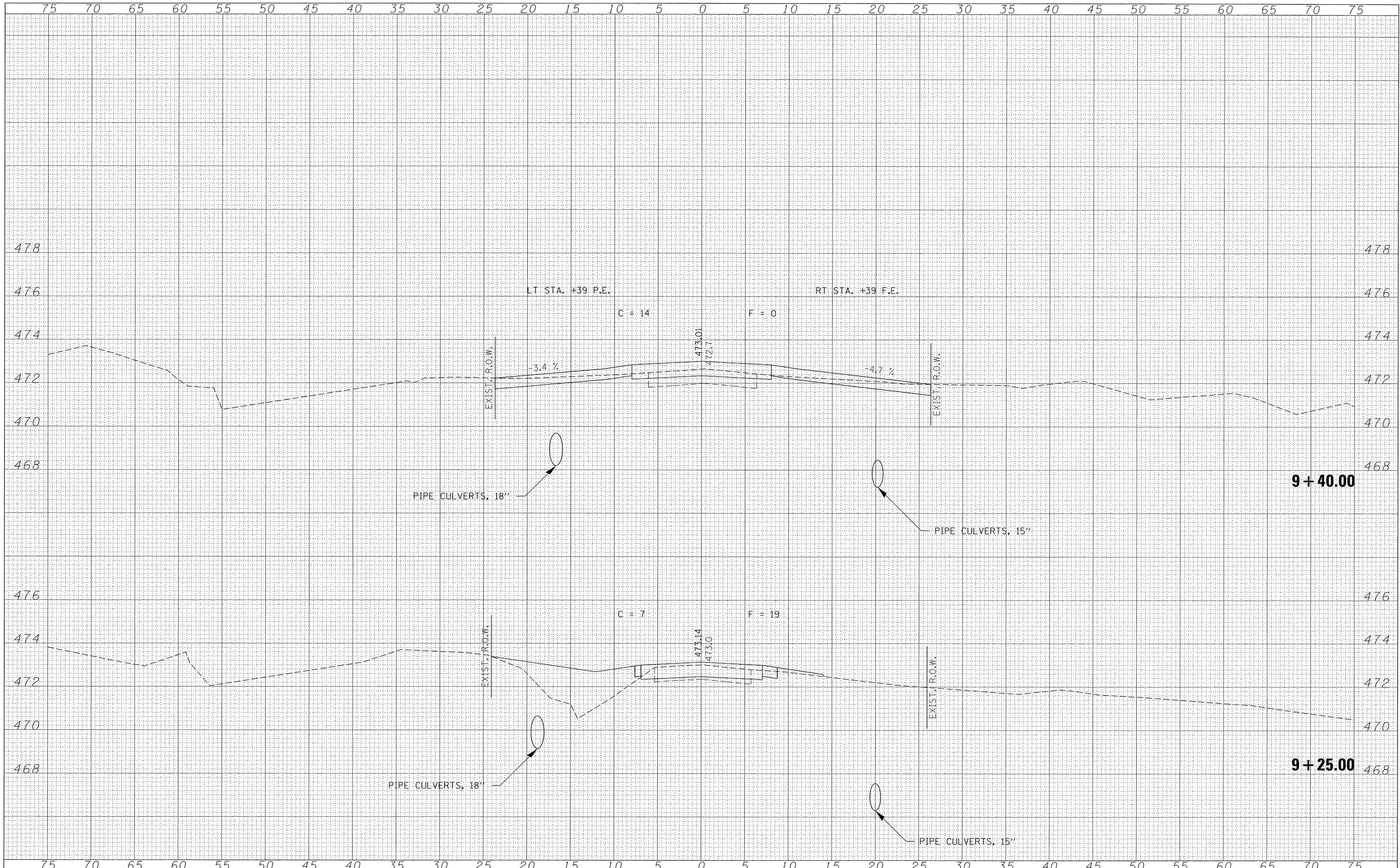


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HAMPTON, LENZINI AND RENWICK, INC. 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62791 ILLINOIS PROFESSIONAL DESIGN FIRM LS/PE/SE CORP. 184.009959	PLOT SCALE = #SCALE#	DRAWN - L.G.C.	REVISED -		152	12-01204-00-BR	UNION	22	7		
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		REVISOR -	REVISED -						ILLINOIS FED. AID PROJECT BR05-0181(061)		



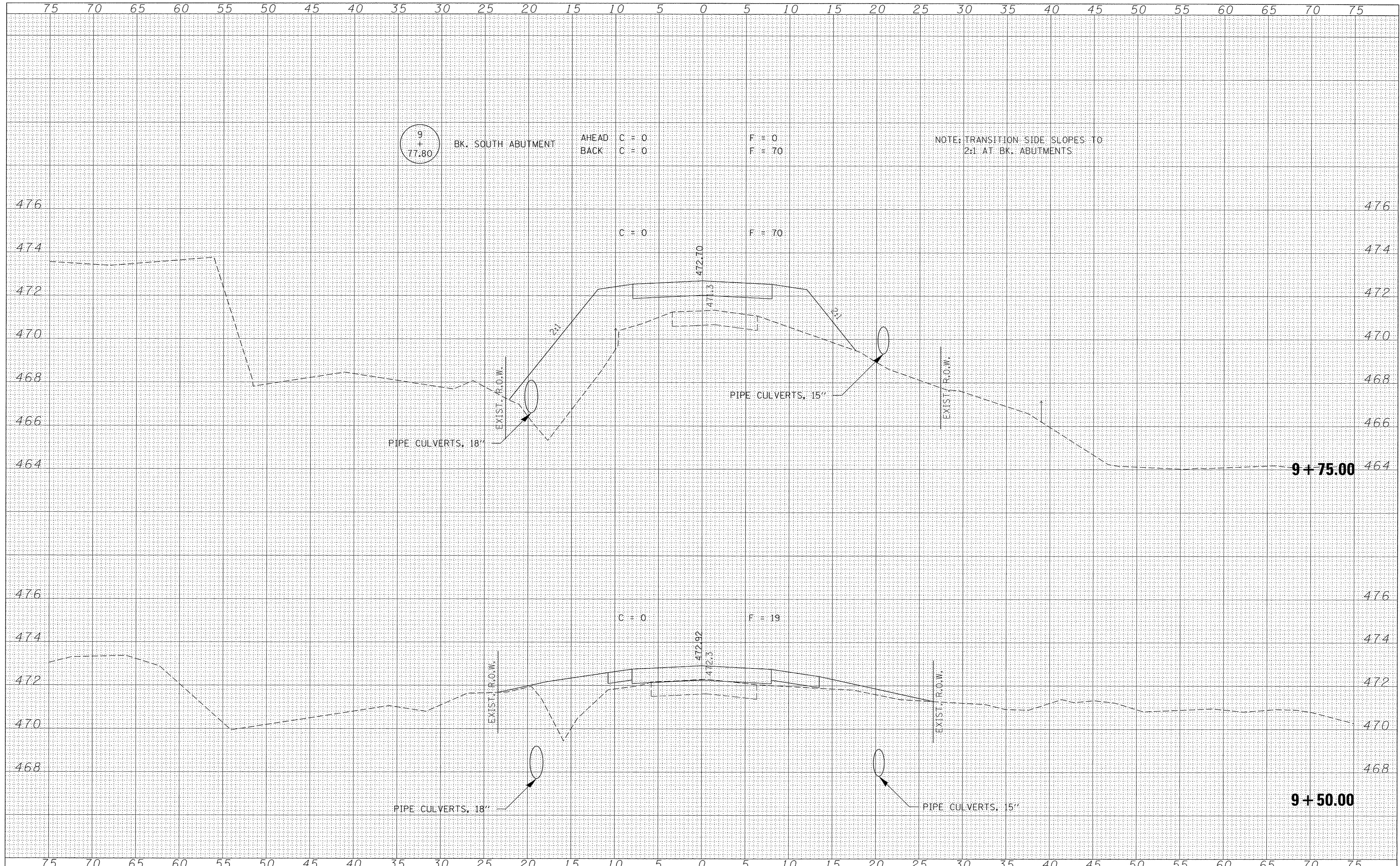
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HAMPTON, LENZINI AND RENWICK, INC. 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62761 ILLINOIS PROFESSIONAL DESIGN FIRM LS/PE/SE CORP. 184.009959	PLOT SCALE = #SCALE#	DRAWN - L.G.C.	REVISED -		152	12-01204-00-BR	UNION	22	8		
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		REVISOR -	REVISED -		SCALE: 5H:2V	SHEET NO. 4 OF 10 SHEETS	STA. 9+25.00	TO STA. 9+40.00			





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 3085 STEVENSON DRIVE, SUITE 201  
 SPRINGFIELD, ILLINOIS 62791  
 ILLINOIS PROFESSIONAL DESIGN FIRM  
 LS/PE/SE CORP. 184.000959

USER NAME = #USER#  
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 DRAWN - L.G.C.  
 CHECKED - S.W.M.  
 DATE - 02/23/17  
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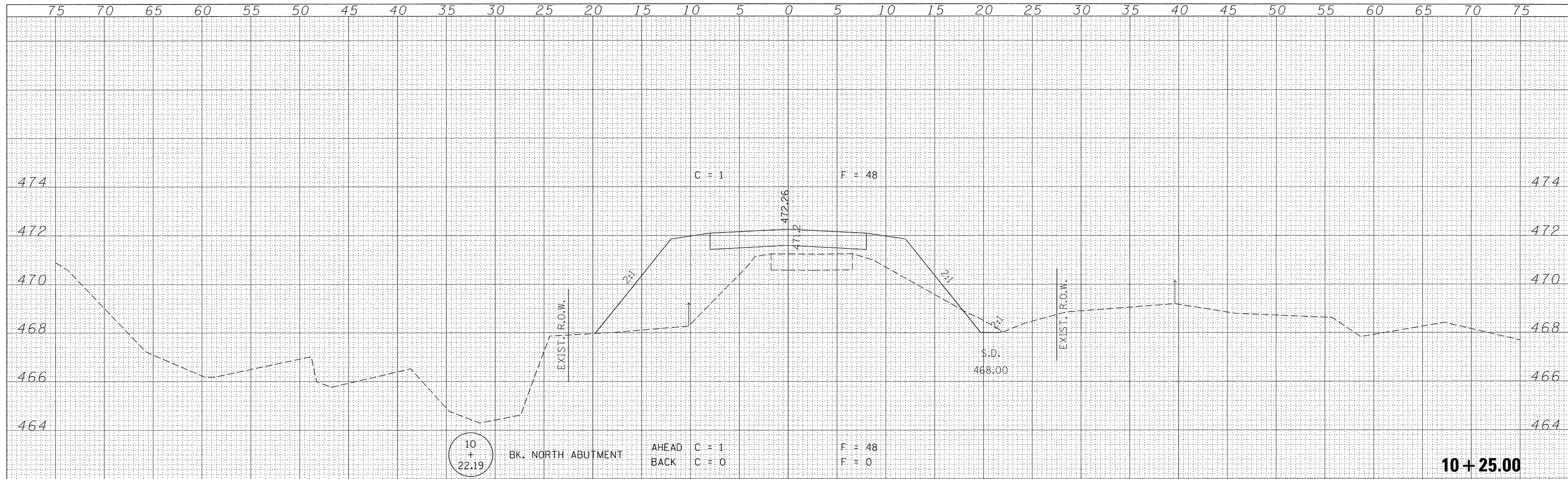
**STATE OF ILLINOIS  
 UNION COUNTY HIGHWAY DEPARTMENT**

**STATION CROSS SECTIONS**  
 SCALE: 5H:2V  
 SHEET NO. 5 OF 10 SHEETS  
 STA. 9+50.00 TO STA. 9+75.00

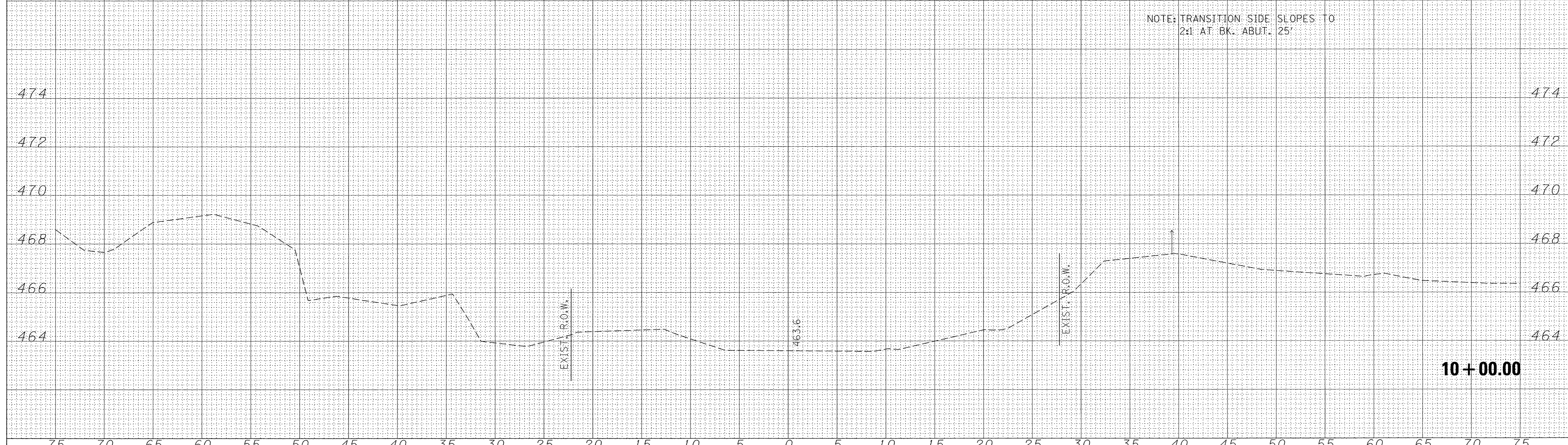
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152	12-01204-00-BR	UNION	22	9
COUNTY UNIT ROAD DISTRICT			CONTRACT NO. 99587	
ILLINOIS FED. AID PROJECT BROS-0181061				



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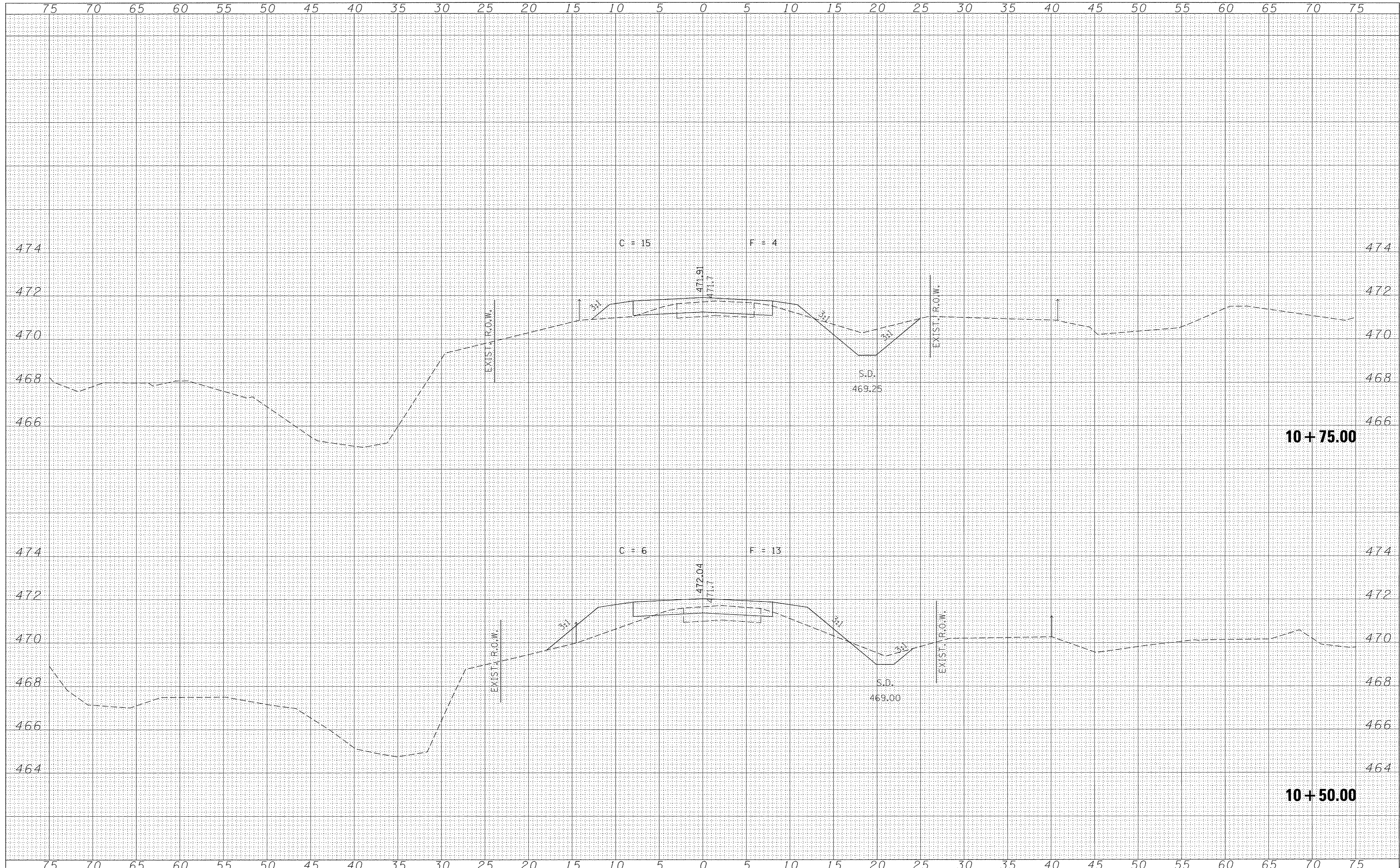
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<b>HAMPTON, LENZINI AND RENWICK, INC.</b> 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62769 ILLINOIS PROFESSIONAL DESIGN FIRM LS/PE/SE CORP. 184.009959		DRAWN - L.G.C.	REVISED -		152	12-01204-00-BR	UNION	22	10		
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	PLOT DATE = 3/10/2017	DATE - 02/23/17	REVISED -		SCALE: 5H:2V	SHEET NO. 6 OF 10 SHEETS	STA. 10+00.00	TO STA. 10+25.00			



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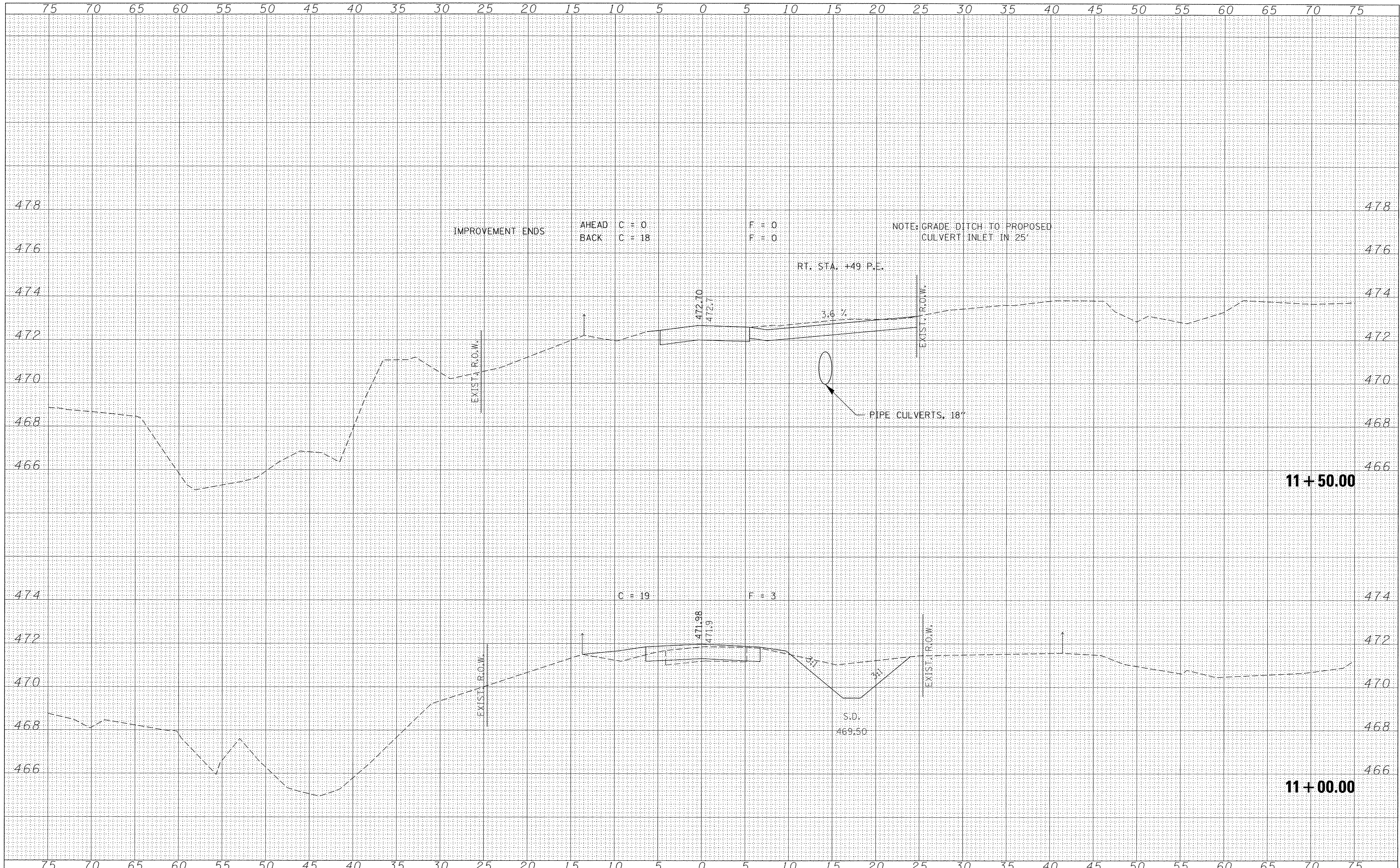


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<b>HAMPTON, LENZINI AND RENWICK, INC.</b> 3080 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959		DRAWN - L.G.C.	REVISED -		152	12-01204-00-BR	UNION	22	11			
		CHECKED - S.W.M.	REVISED -		COUNTY UNIT ROAD DISTRICT		CONTRACT NO. 99587					
		DATE - 02/23/17	REVISED -		SCALE: 5H:2V	SHEET NO. 7 OF 10 SHEETS	STA. 10+50.00	TO STA. 10+75.00	ILLINOIS FED. AID PROJECT BR05-018106J			



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CHECKED - S.W.M.	REVISIONS
DATE - 02/23/17	REVISIONS
PLOT SCALE = #SCALE#	
PLOT DATE = 3/10/2017	

DESIGNED - L.A.P.	REVISIONS
DRAWN - L.G.C.	REVISIONS
CHECKED - S.W.M.	REVISIONS
DATE - 02/23/17	REVISIONS

**STATE OF ILLINOIS  
UNION COUNTY HIGHWAY DEPARTMENT**

STATION CROSS SECTIONS			
SCALE: 5H:2V	SHEET NO. 8 OF 10 SHEETS	STA. 11+00.00	TO STA. 11+50.00

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
152	12-01204-00-BR	UNION	22	12
COUNTY UNIT ROAD DISTRICT			CONTRACT NO. 99587	
[ILLINOIS] FED. AID PROJECT BROS-0181061				

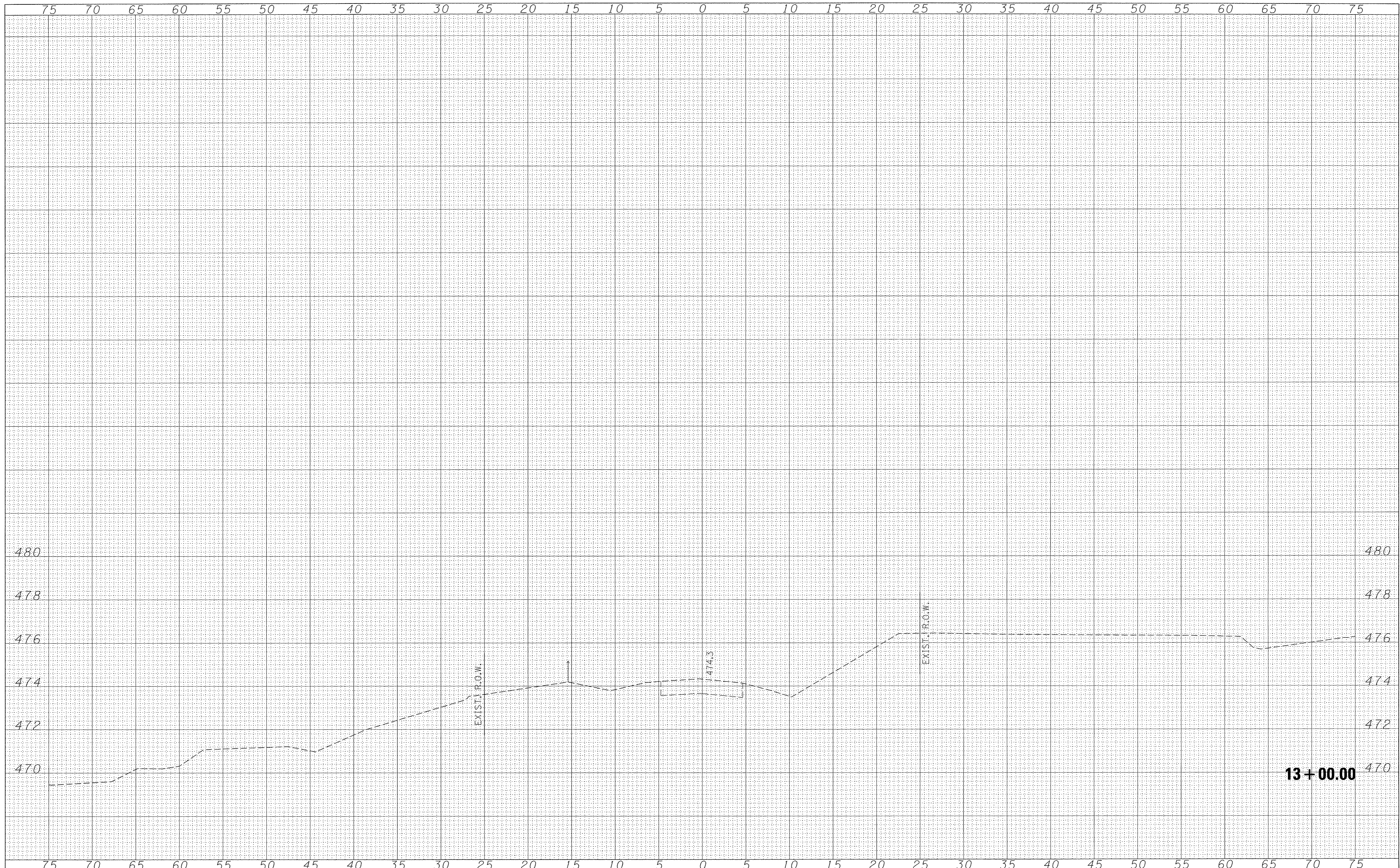






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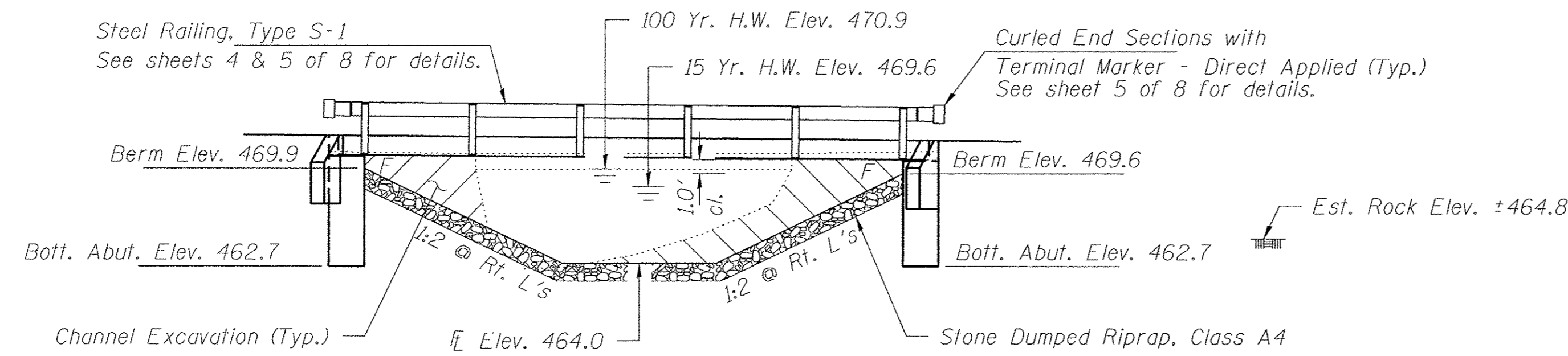


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<b>HAMPTON, LENZINI AND RENWICK, INC.</b> 3035 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62761 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959	PLOT SCALE = #SCALE#	DRAWN - L.G.C.	REVISED -		152	12-01204-00-BR	UNION	22	14			
PLOT DATE = 3/10/2017	CHECKED - S.W.M.	DATE - 02/23/17	REVISED -		COUNTY UNIT ROAD DISTRICT		CONTRACT NO. 99587		ILLINOIS FED. AID PROJECT BROS-0181061			
					SCALE: 5H:2V	SHEET NO. 10 OF 10 SHEETS	STA. 13+00.00	TO STA. 13+00.00				

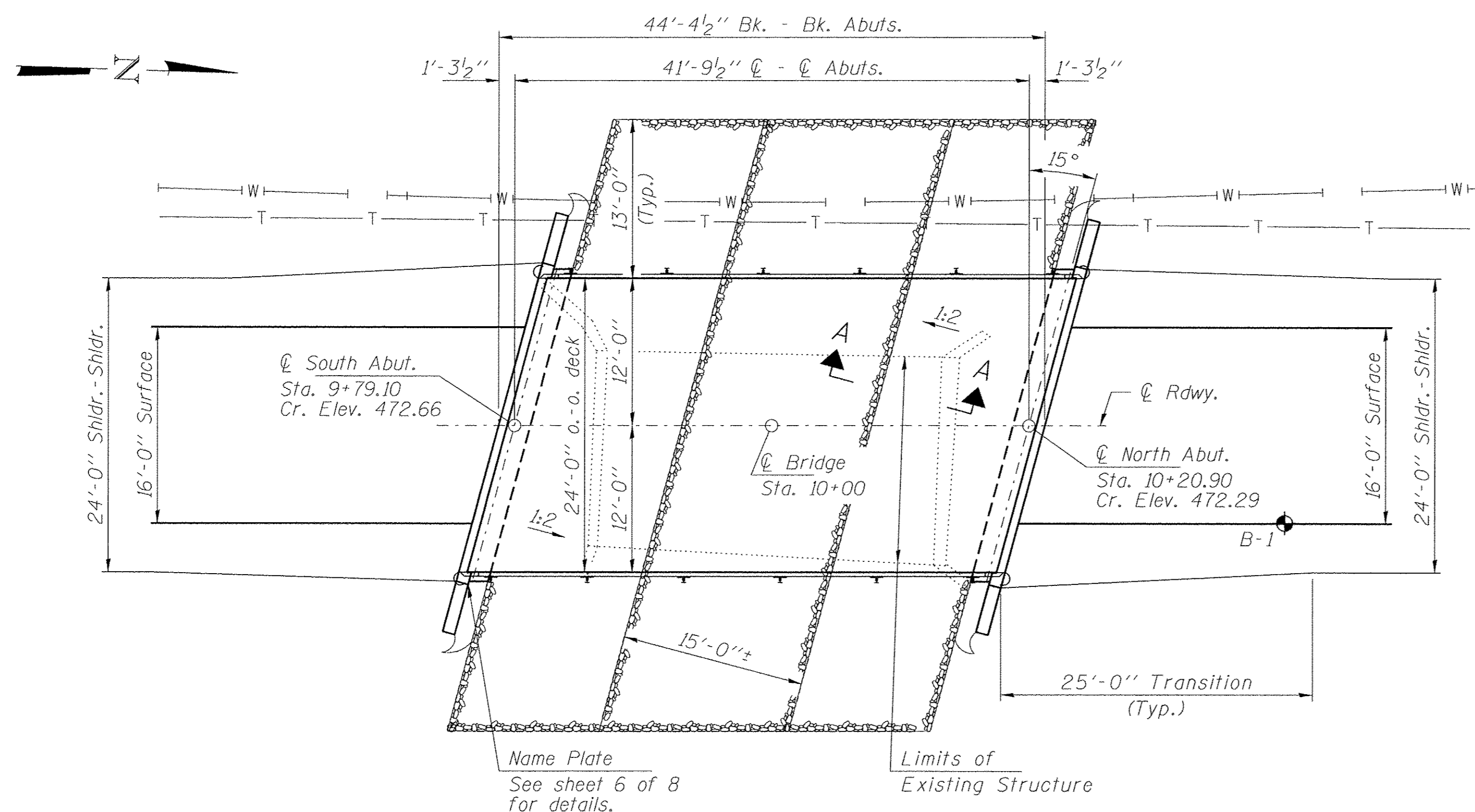


EXISTING STRUCTURE NO. 091-3080: Single span steel I-beam bridge with timber deck on closed concrete abutments and wingwalls. 23.0' fc.-fc. abuts.; 16.4' o.-o. deck.

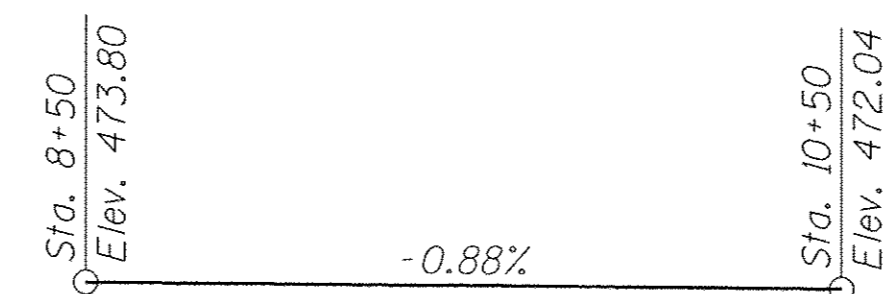
Structure closed to traffic during construction.



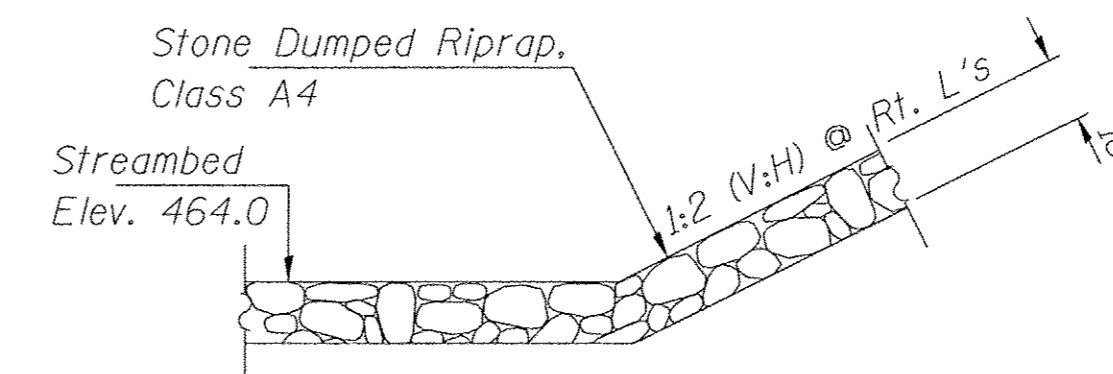
ELEVATION



PLAN



PROFILE GRADE  
(Along C T.R. 152)



SECTION A-A

Note: See Special Provisions for Stone Dumped Riprap, Class A4.

GENERAL NOTES

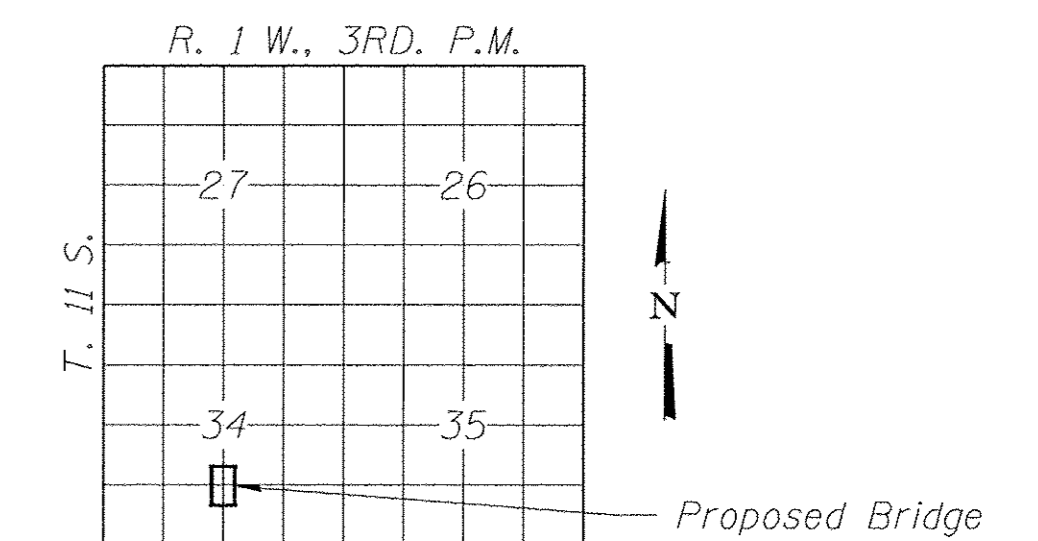
Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.  
Reinforcement bars designated (E) shall be epoxy coated.  
Excavation required to construct the Abutments shall be included in the cost of Concrete Structures. No additional compensation 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.  
Concrete sealer shall be applied to the designated areas of the abutments.

INDEX OF STRUCTURE SHEETS

1. General Plan & Elevation
2. 17"x48" PPC Deck Beam
3. 17"x48" PPC Deck Beam Details
4. Superstructure Details
5. Steel Railing, Type S-1
6. South Abutment
7. North Abutment
8. Boring

BUILT 201\_ BY  
UNION COUNTY  
SEC. 12-01204-00-BR  
COUNTY UNIT ROAD DISTRICT  
STR. NO. 091-3244  
LOADING HL-93

NAME PLATE  
See Std. 515001



LOCATION SKETCH

DESIGN SPECIFICATIONS

2014 AASHTO LRFD Bridge Design Specifications, 7th Edition with 2015 & 2016 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) = 3  
Design Spectral Acceleration at 1.0 sec. (SD1) = 0.325g  
Design Spectral Acceleration at 0.2 sec. (SD5) = 0.858g  
Soil Site Class = C

WATERWAY INFORMATION

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Natural H.W.E.		Head - Ft.		Headwater El.	
			Exist.	Prop.	Exist.	Prop.	Exist.	Prop.	Exist.	Prop.
Design	15	950	80	150	469.61	0.47	0.00	470.08	469.61	
Base	100	1580	90	190	470.94	2.27	0.95	473.21	471.89	
Scour Check	200	1830	90	190	471.63	1.58	1.35	473.21	472.98	
Existing Overtop	100	1580	90		470.94	2.27		473.21	470.94	
Proposed Overtop								0.00	0.00	
Max Calc.	500	2190	90	190	472.35	0.89	0.50	473.24	472.85	

Drainage Area = 0.7 Sq. Mi. Existing Low Grade Elev. 471.1 @ Sta. 10+00 Proposed Low Grade Elev. 472.1 @ Sta. 10+75

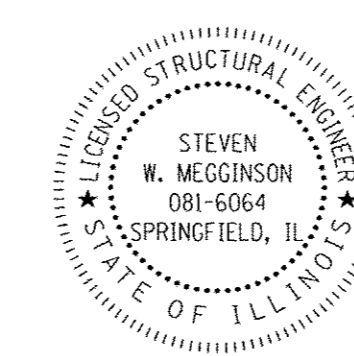
10 Year Velocity through Existing Bridge = 5.0 fps 10 Year Velocity through Proposed Bridge = 5.9 fps

DESIGN SCOUR ELEVATION TABLE

Event/Limit State	Design Scour Elevations (ft.)		Item 113
	S. Abut.	N. Abut.	
Q100	462.7	462.7	8
Q200	462.7	462.7	
Design	462.7	462.7	
Check	462.7	462.7	

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. McGinnis 03/10/2017  
ILLINOIS STRUCTURAL ENGINEER NO. 081-6064



Expires 11-30-2018

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Rock Excavation	Cu. Yd.			9.8
Channel Excavation	Cu. Yd.			90
Stone Dumped Riprap, Class A4	Ton			200
Removal of Existing Structures	Each			1
Concrete Structures	Cu. Yd.		44.1	44.1
Precast Prestressed Concrete Deck Beams (17" Depth)	Sq. Ft.	1,032		1,032
Reinforcement Bars, Epoxy Coated	Pound		5,680	5,680
Steel Railing, Type S-1	Foot	83		83
Name Plates	Each		1	1
Terminal Marker - Direct Applied	Each	4		4
Concrete Sealer	Sq. Ft.		96	96

FILE NAME = 160087-sht-brIDGE.dgn	USER NAME =	DESIGNED - L.A.P.	REVISED -
HAMPTON, LENZINI AND RENWICK, INC. 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS/PE/SE CORP. 184.000559	CHECKED - A.E.U.	REVISIONS -	
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PLOT DATE = 3/10/2017	CHECKED - A.E.U.	REVISED -	

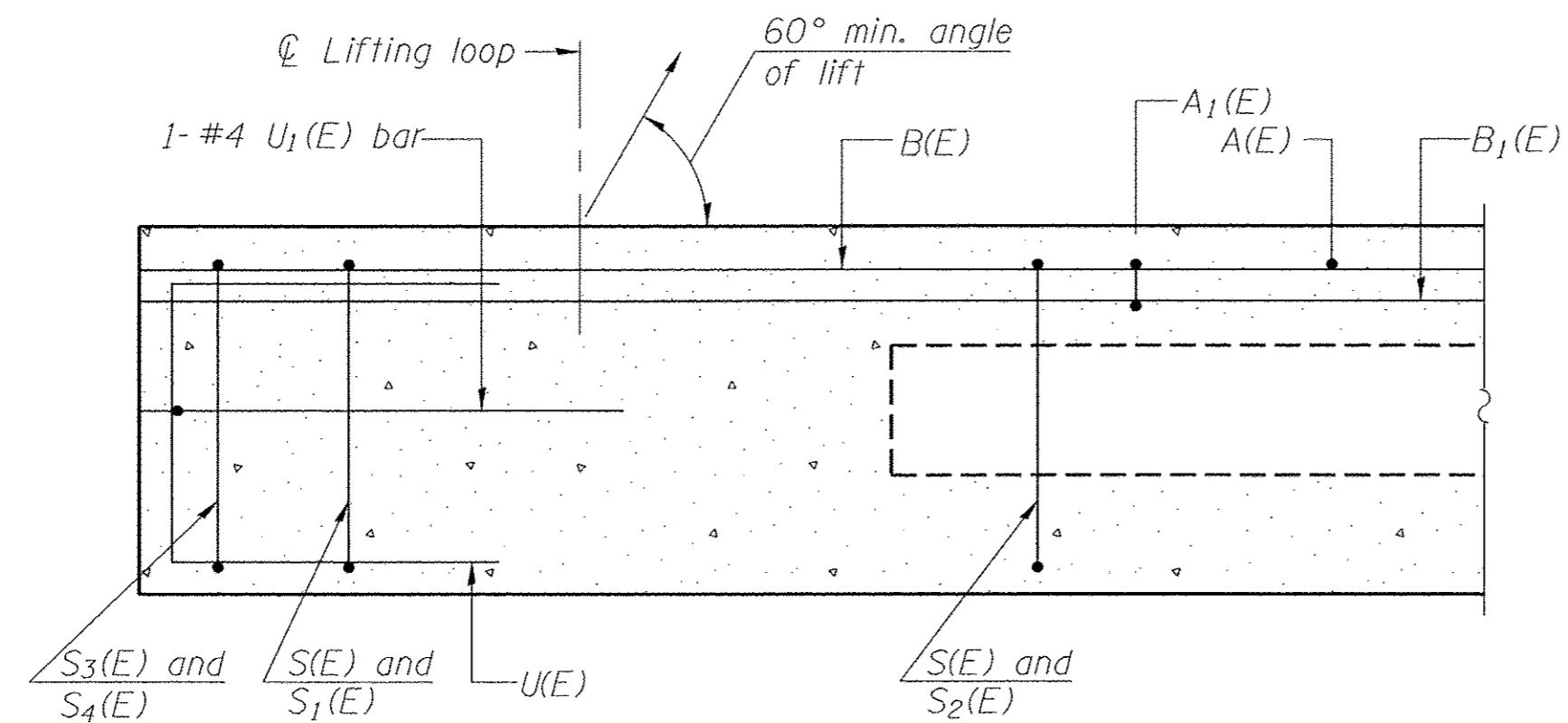
STATE OF ILLINOIS  
UNION COUNTY HIGHWAY DEPARTMENT

GENERAL PLAN & ELEVATION  
STRUCTURE NO. 091-3244

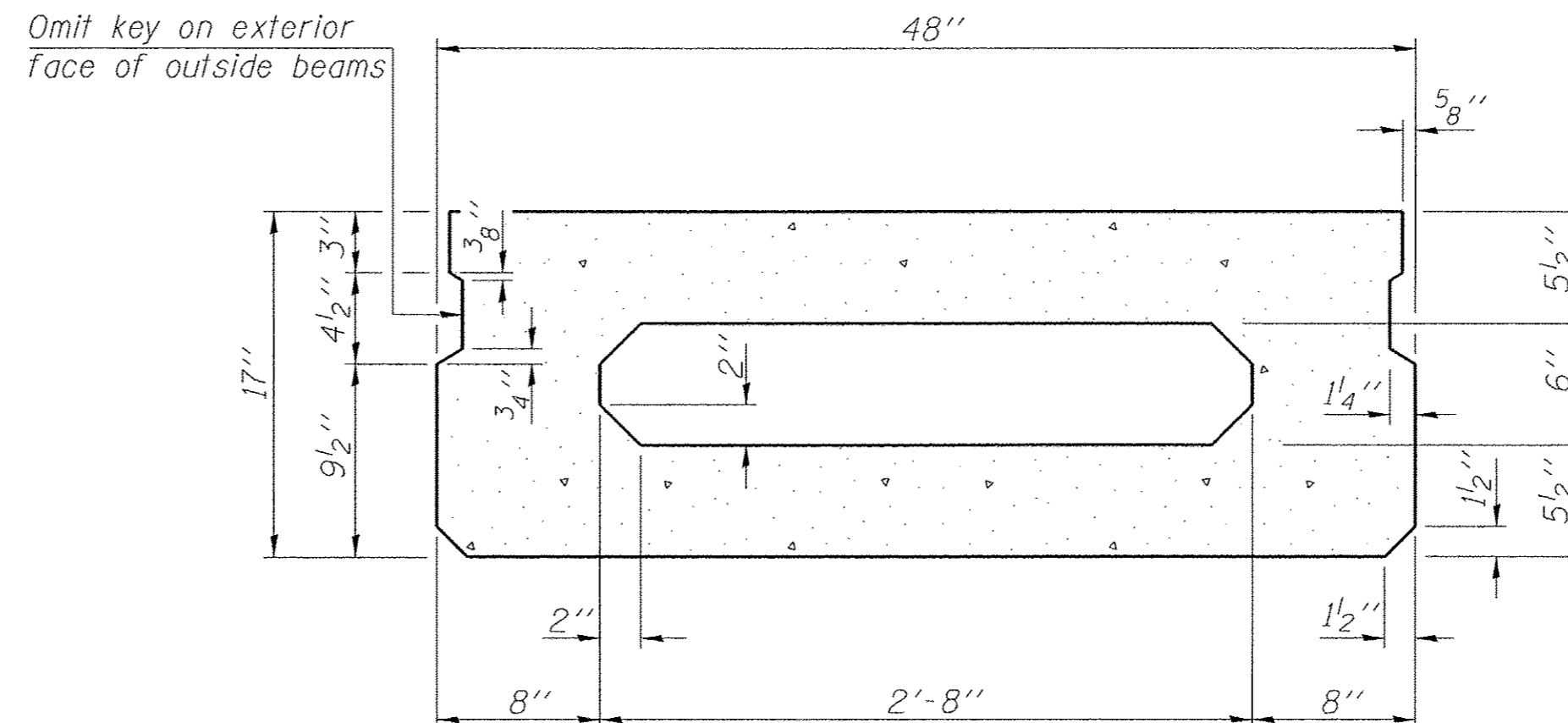
SHEET NO. 1 OF 8 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
152	12-01204-00-BR	UNION	22	15
	COUNTY UNIT ROAD DISTRICT		CONTRACT NO. 99587	
		ILLINOIS	FED. AID PROJECT BROS-0181061	

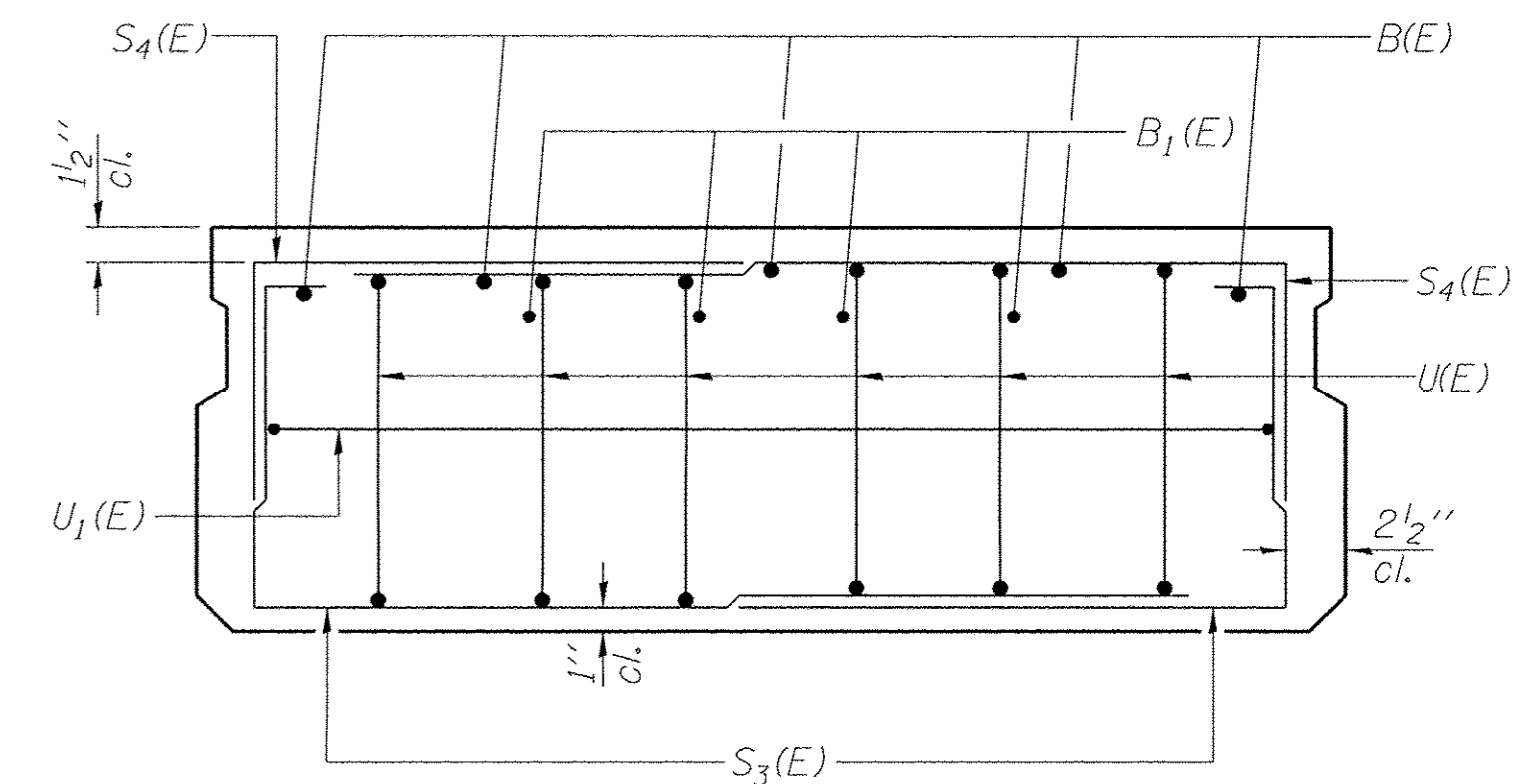




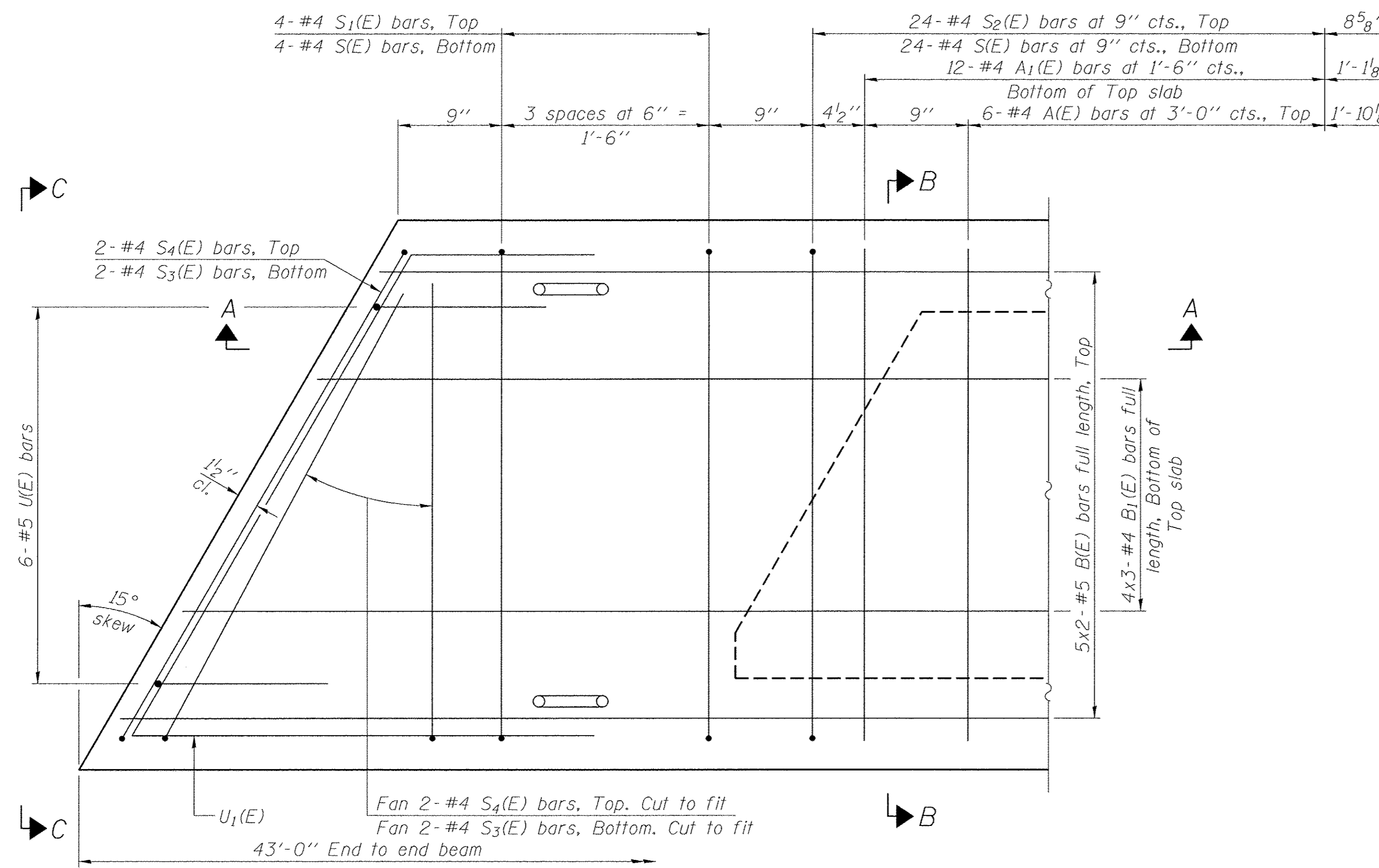
SECTION A-A



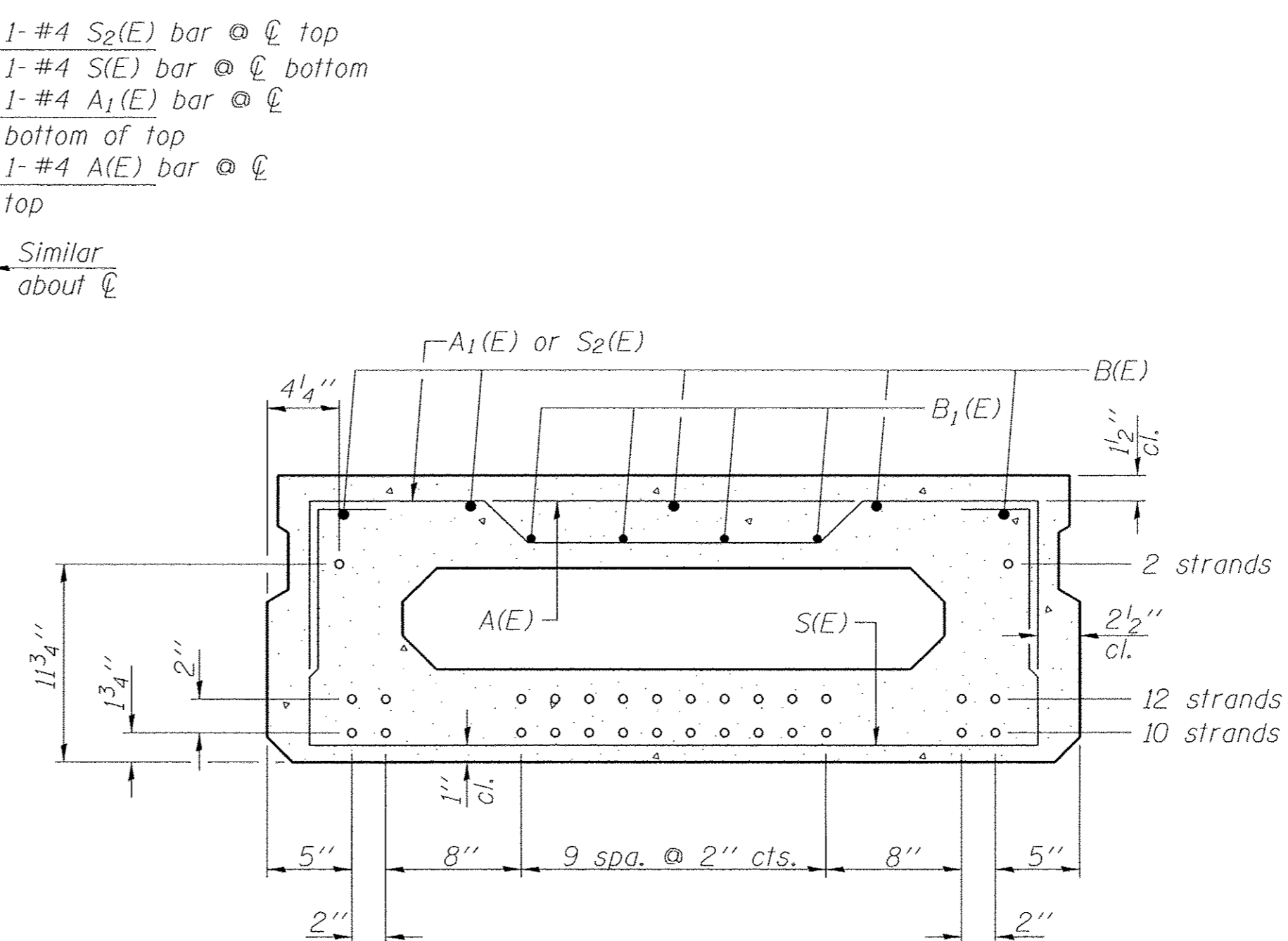
SECTION B-B  
(Showing dimensions)



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)	13	#4	3'-7"	—
A1(E)	25	#4	3'-10"	—
B(E)	10	#5	22'-8"	—
B1(E)	12	#4	15'-7"	—
S(E)	57	#4	6'-9"	⌈
S1(E)	8	#4	5'-3"	⌈
S2(E)	49	#4	5'-6"	⌈
S3(E)	8	#4	4'-6"	⌈
S4(E)	8	#4	3'-9"	⌈
U(E)	12	#5	3'-8"	⌈
U1(E)	2	#4	7'-1"	⌈

Note: See sheets 3 & 4 of 8 for additional details and Bill of Material.

MINIMUM BAR LAP

#4 bar = 1'-11"  
#5 bar = 2'-6"

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

PD-1748-L

06-01-16

FILE NAME = 162087-sht-bridge.dgn	USER NAME =	DESIGNED - L.A.P.	REVISED -
HAMPTON, LENZINI AND RENWICK, INC. 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62793 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959		CHECKED - A.E.U.	REVISED -
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	PLOT DATE = 3/10/2017	CHECKED - A.E.U.	REVISED -

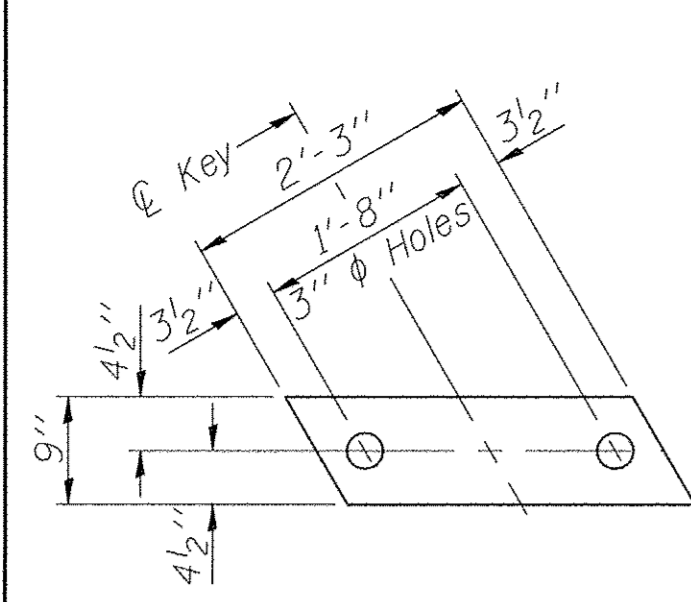
STATE OF ILLINOIS  
UNION COUNTY HIGHWAY DEPARTMENT

17" x 48" PPC DECK BEAM  
STRUCTURE NO. 091-3244

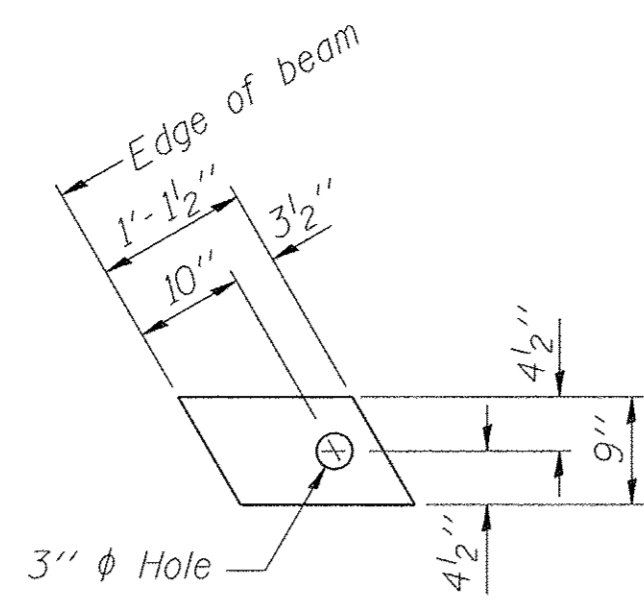
SHEET NO. 2 OF 8 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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COUNTY UNIT ROAD DISTRICT		CONTRACT NO. 99587		
ILLINOIS FED. AID PROJECT BROS-01810611				





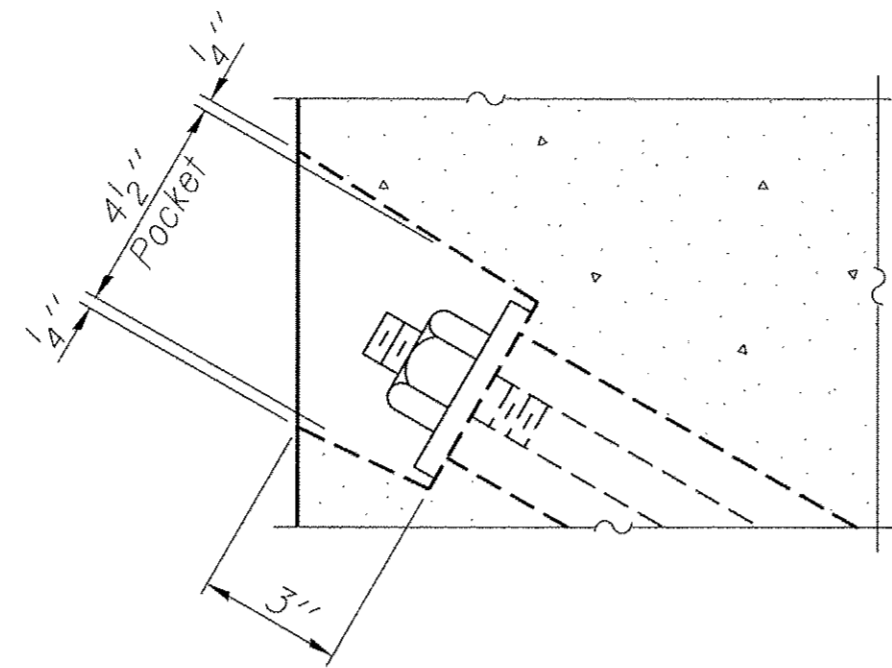
**FABRIC BEARING PAD**  
(Interior - 10 Req'd.)



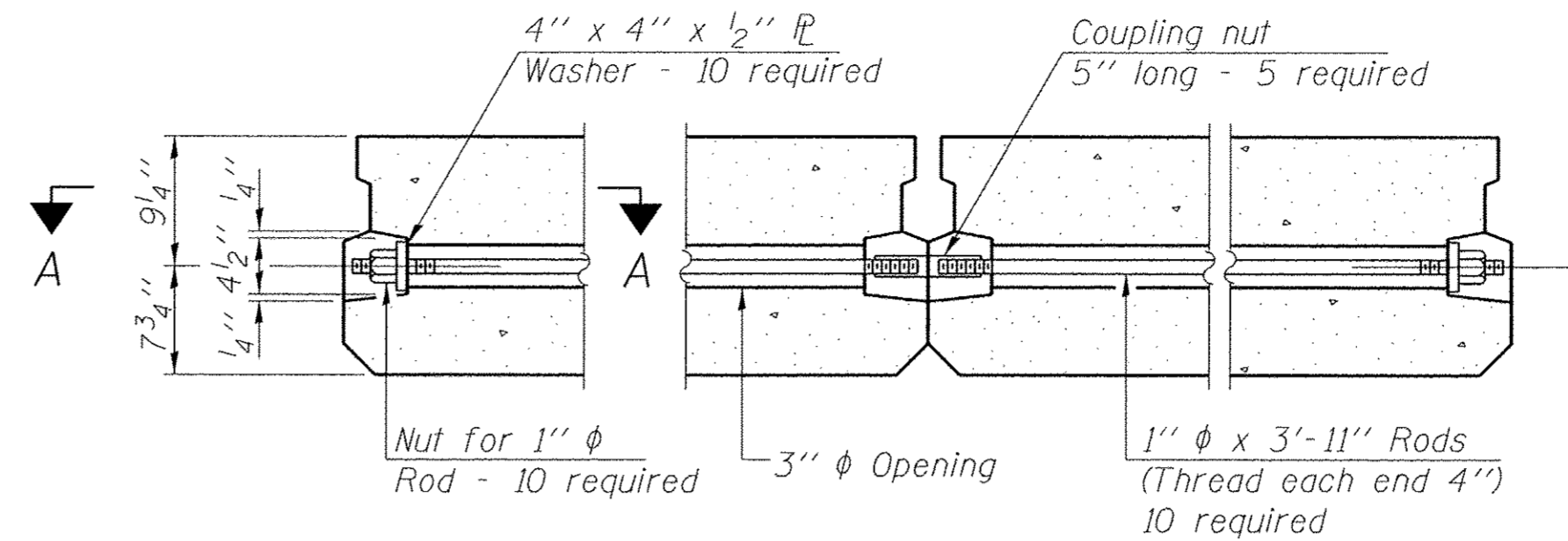
**FABRIC BEARING PAD**  
(Exterior - 4 Req'd.)

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

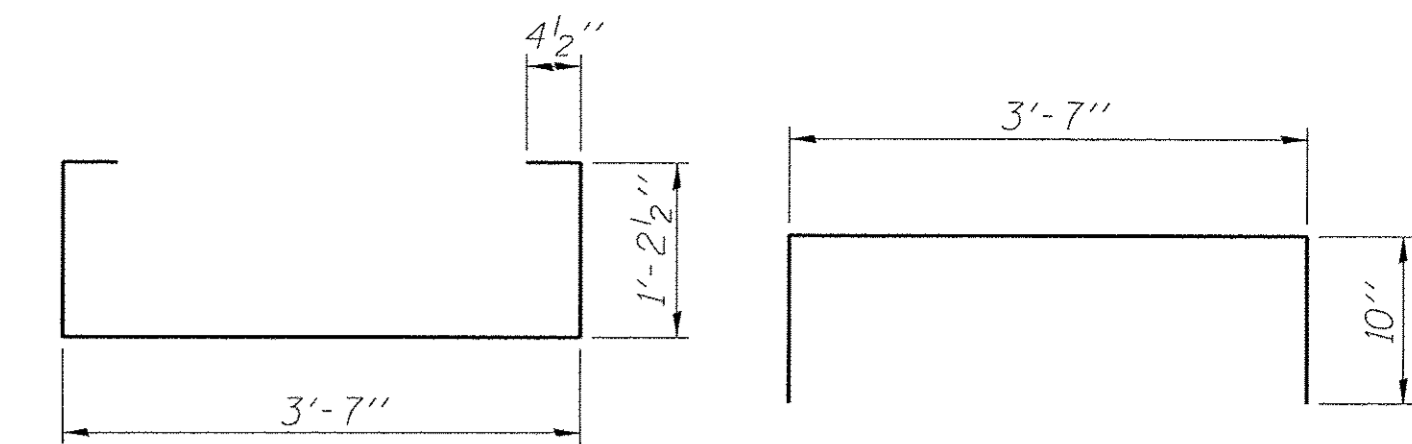
**FIXED**



**SECTION A-A**

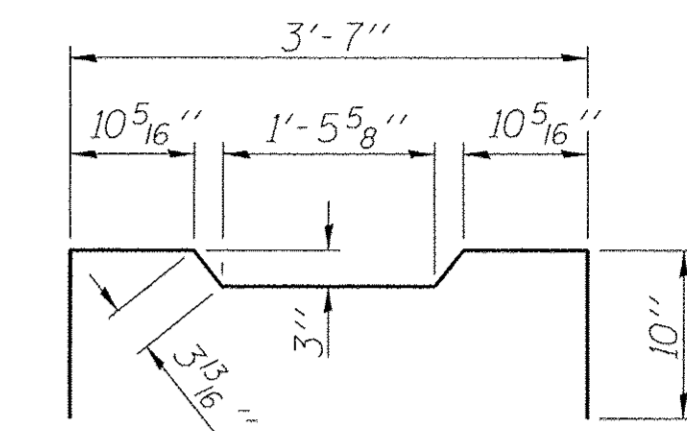


**TYPICAL TRANSVERSE TIE ASSEMBLY**



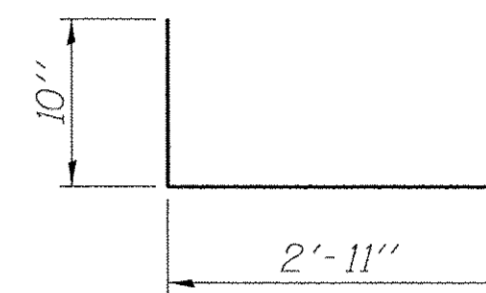
**BAR S1(E)**

**BAR S2(E)**



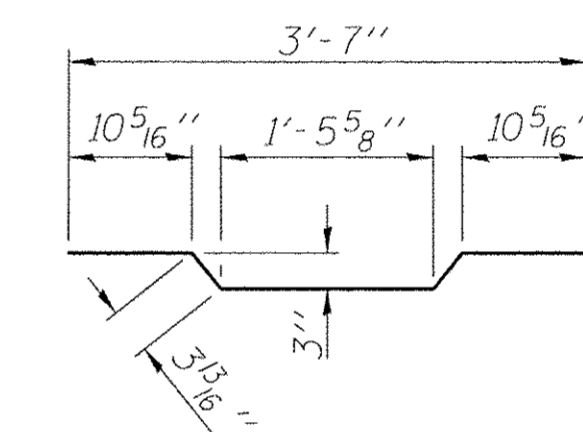
**BAR S3(E)**

**BAR S4(E)**

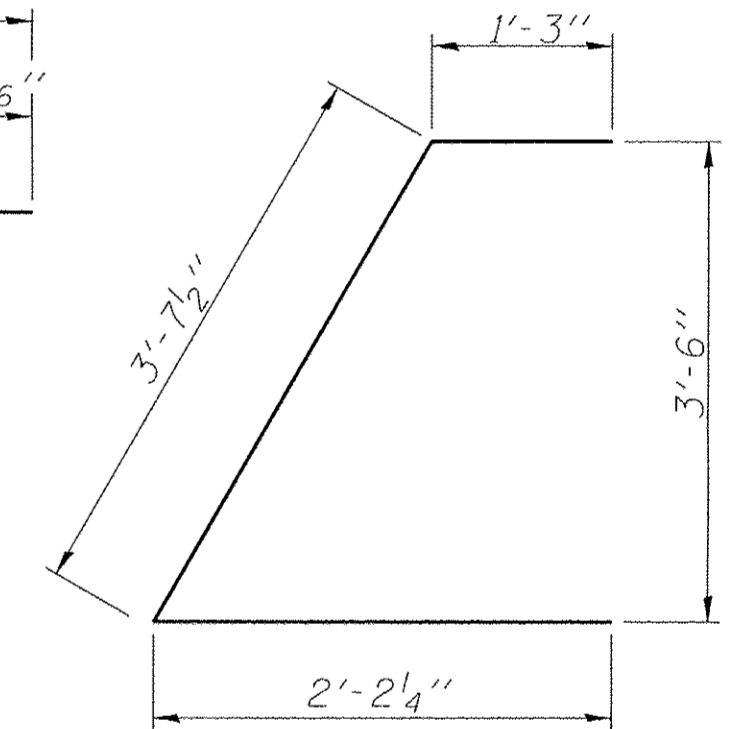


**BAR U1(E)**

**BAR U2(E)**

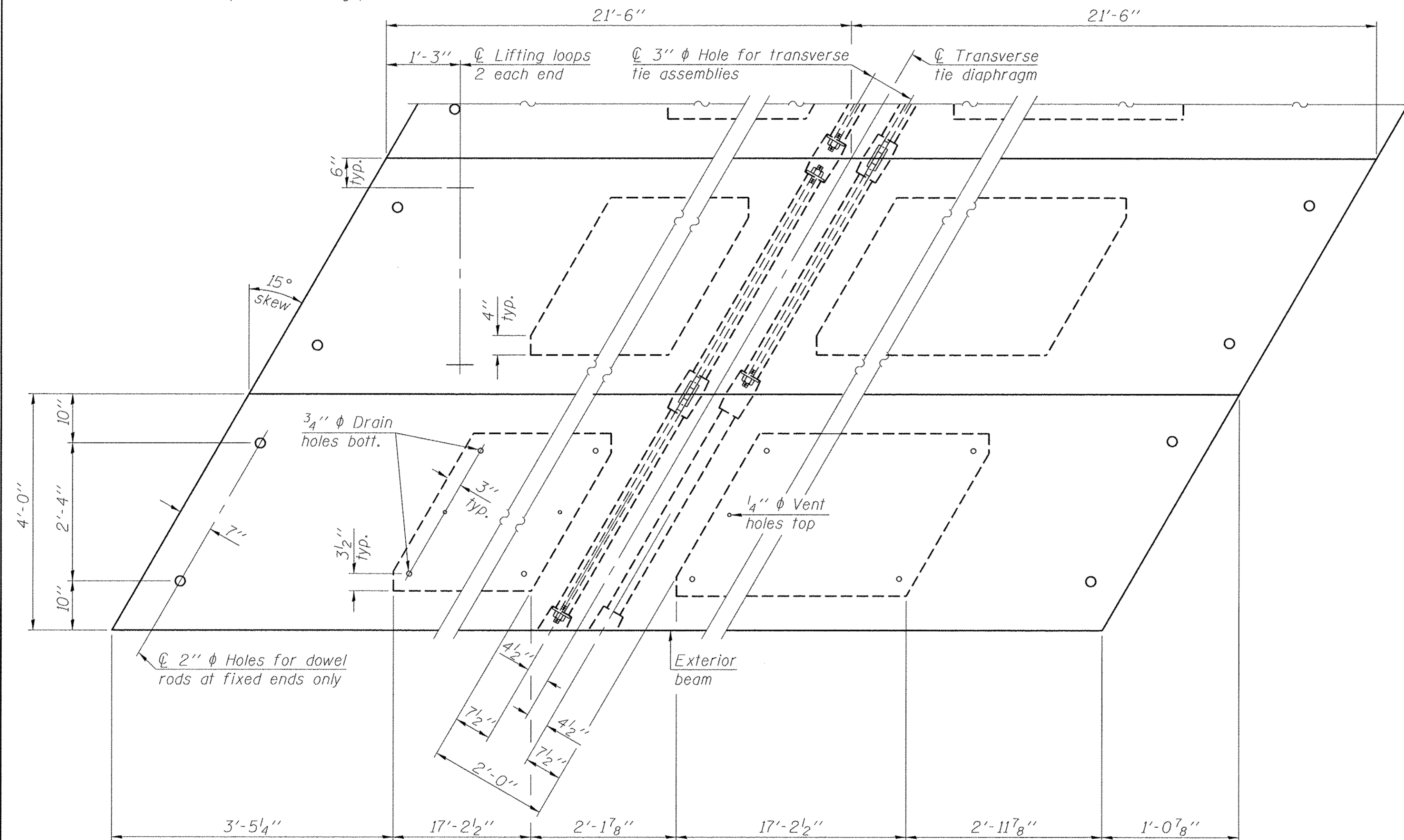


**BAR A1(E)**



**BAR U3(E)**

**BAR U4(E)**

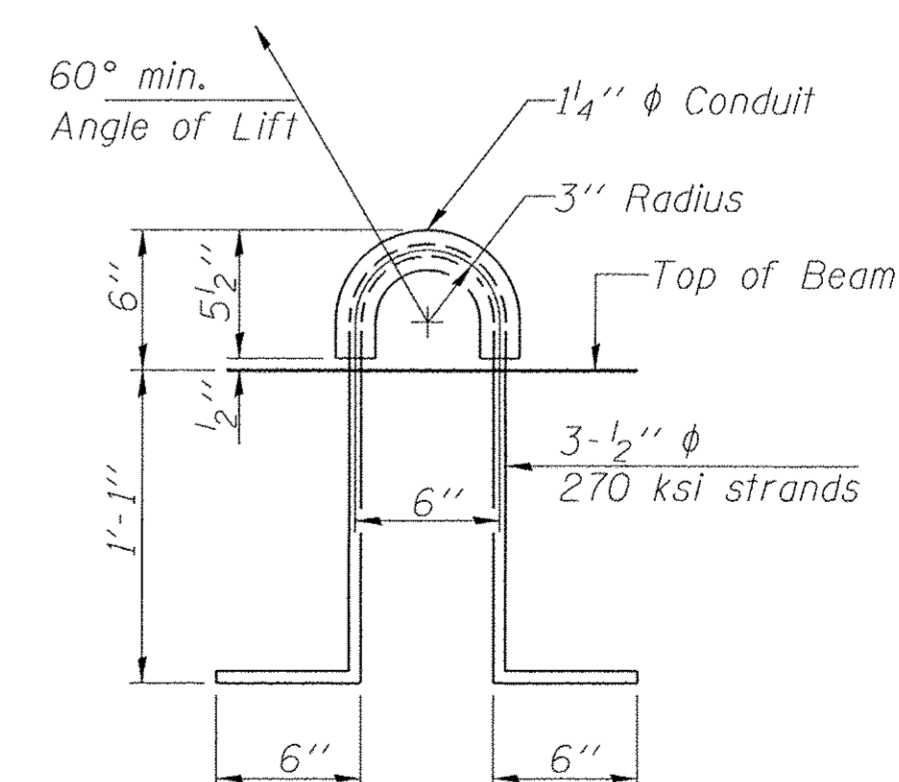


**PLAN VIEW**

**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. 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" lifting pin shall be used to engage the lifting loops during handling. Corrosion Inhibitor, per Article 1020.05(b)(10) 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.



**LIFTING LOOP DETAIL**

**BILL OF MATERIAL**

Precast Prestressed Conc. Deck Bms. (17" depth)	Sq. Ft.	1,032
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PD-1748-LD 06-01-16

FILE NAME = 162087-sht-bridge.dgn	USER NAME =	DESIGNED - L.A.P.	REVISED -
HAMPTON, LENZINI AND RENWICK, INC. 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62793 ILLINOIS PROFESSIONAL DESIGN FIRM L5 / PE / SE CORP. 184.000959	PLOT SCALE =	CHECKED - A.E.U.	REVISED -
	PLOT DATE = 3/10/2017	DRAWN - R.D.H.	REVISED -
		CHECKED - A.E.U.	REVISED -

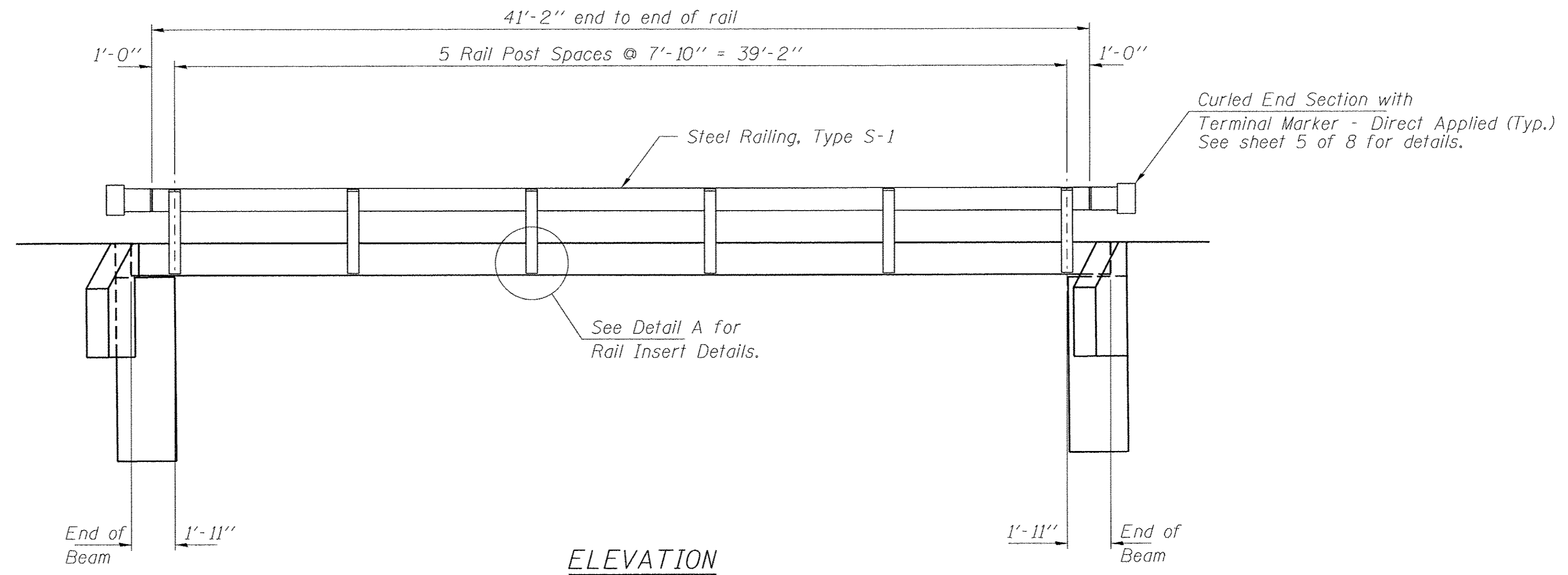
**STATE OF ILLINOIS  
UNION COUNTY HIGHWAY DEPARTMENT**

**17" x 48" PPC DECK BEAM DETAILS  
STRUCTURE NO. 091-3244**

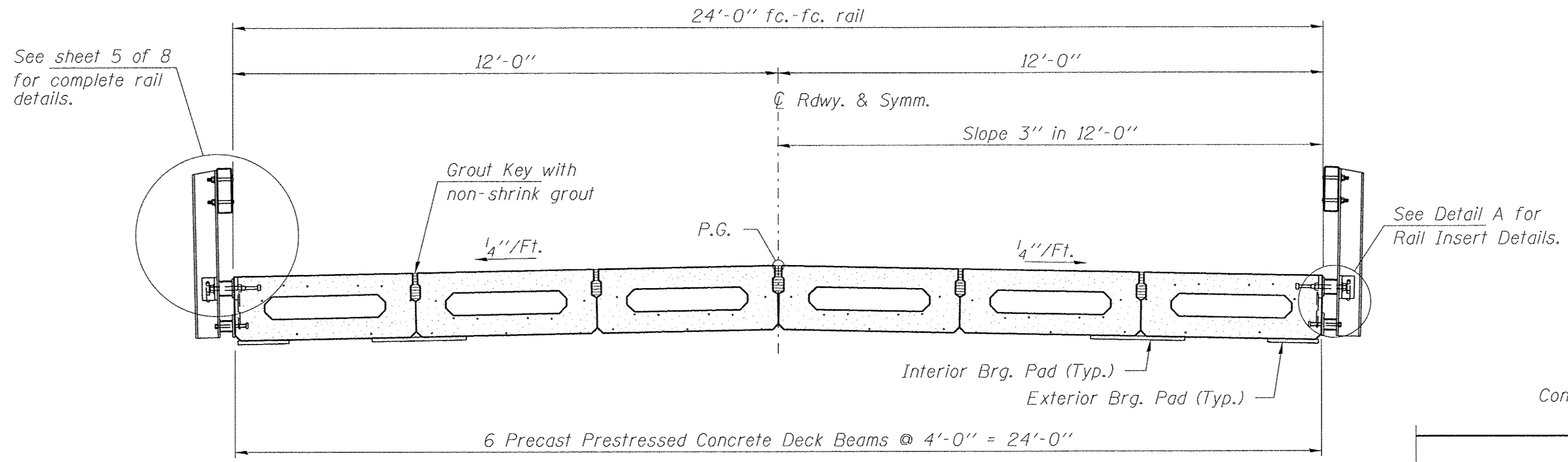
SHEET NO. 3 OF 8 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
152	12-01204-00-BR	UNION	22	17
COUNTY UNIT ROAD DISTRICT		CONTRACT NO. 99587		
[ILLINOIS] FED. AID PROJECT BROS-01810611				

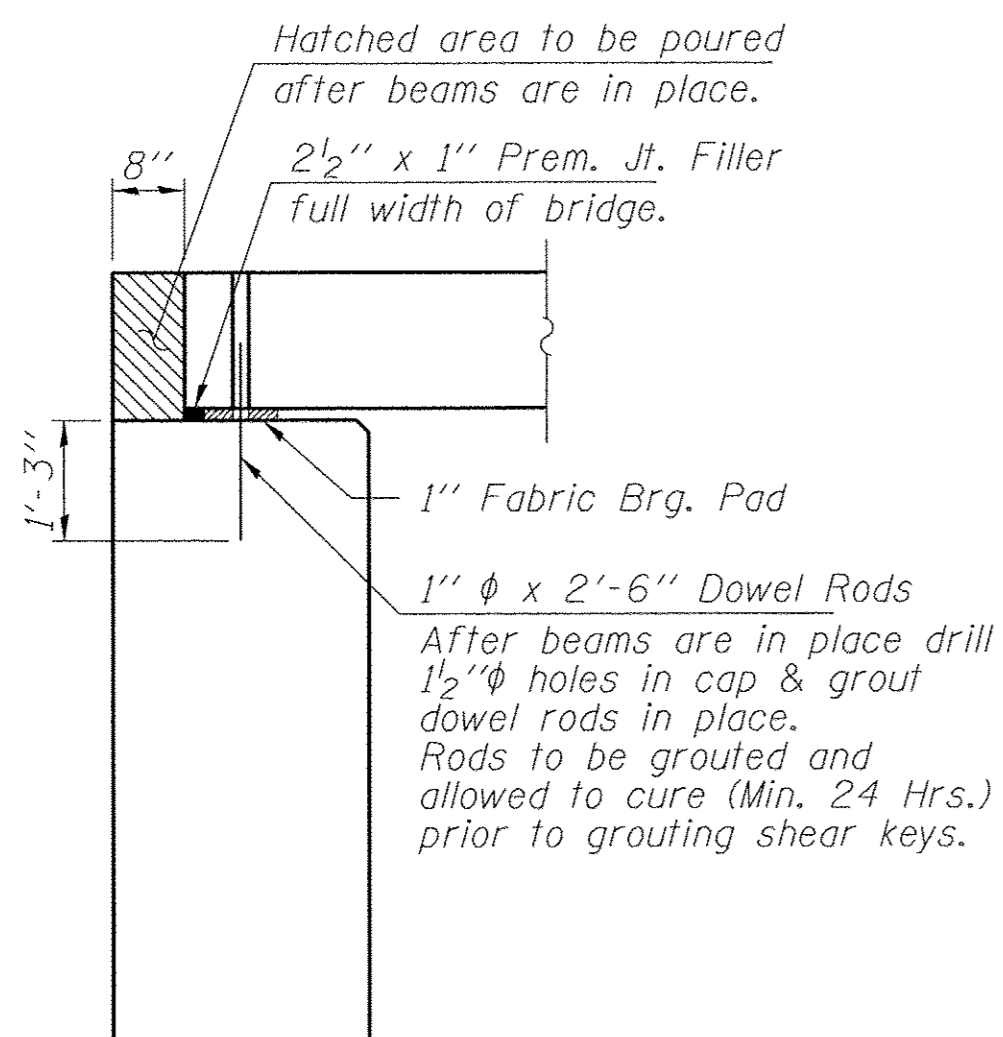




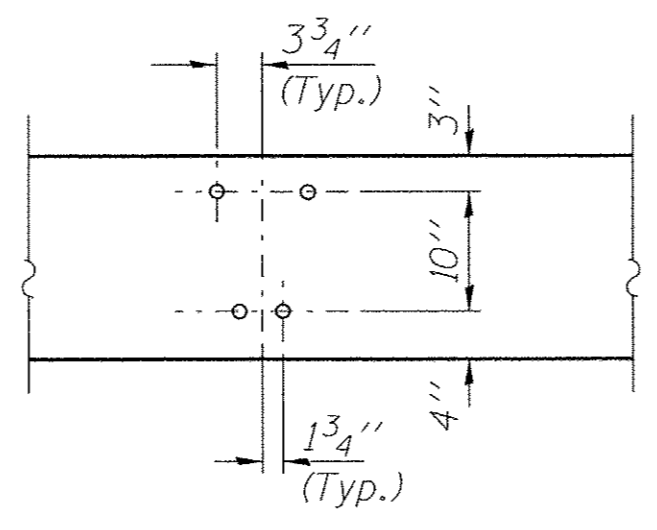
**ELEVATION**  
 Showing Rail Post Spaces  
 See sheet 5 of 8 for Railing Details.



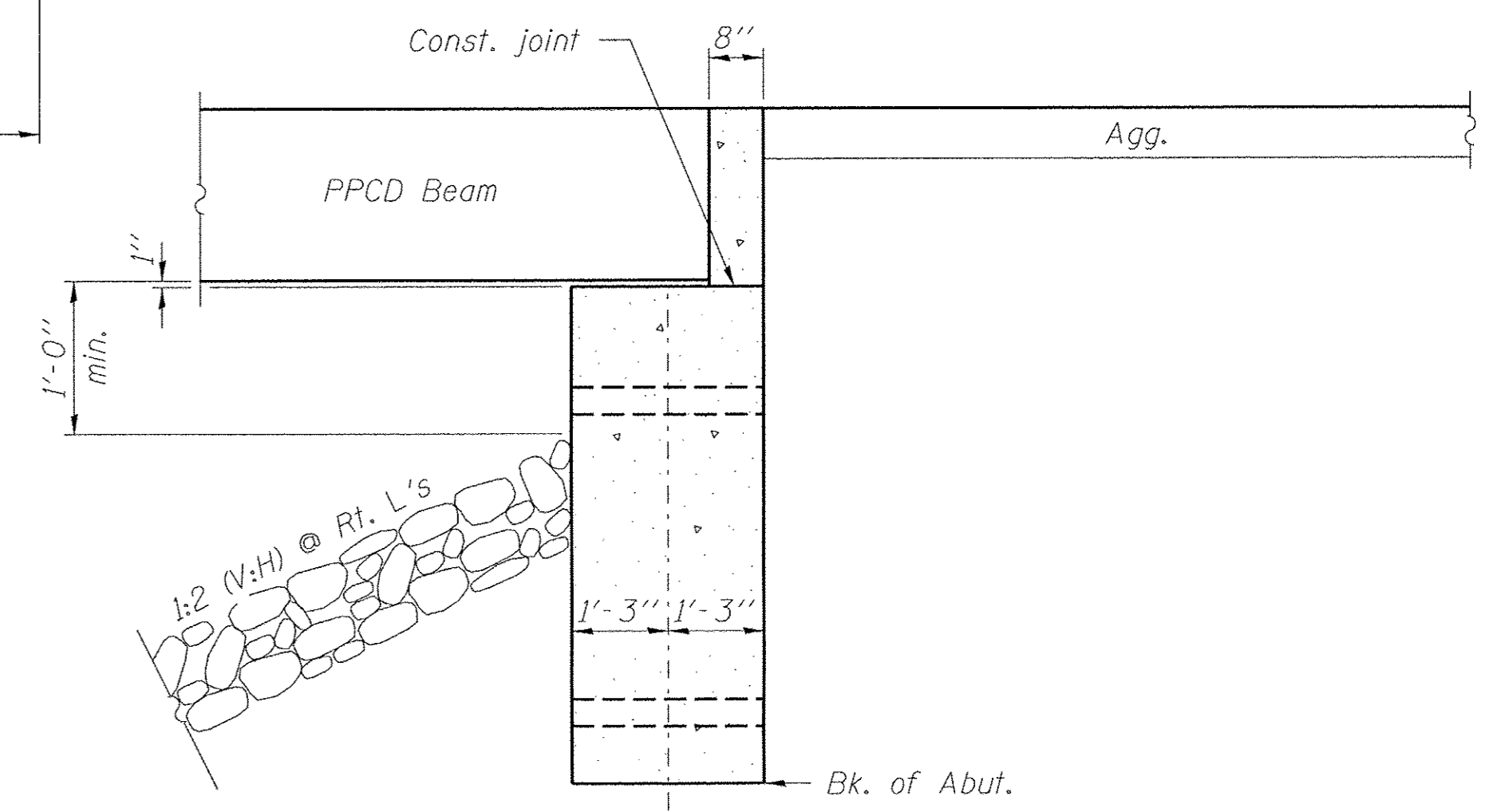
**CROSS SECTION**  
 See sheets 2 & 3 of 8 for Superstructure.



**SECTION AT ABUTMENTS**  
 @ Rt. L's



**DETAIL A**



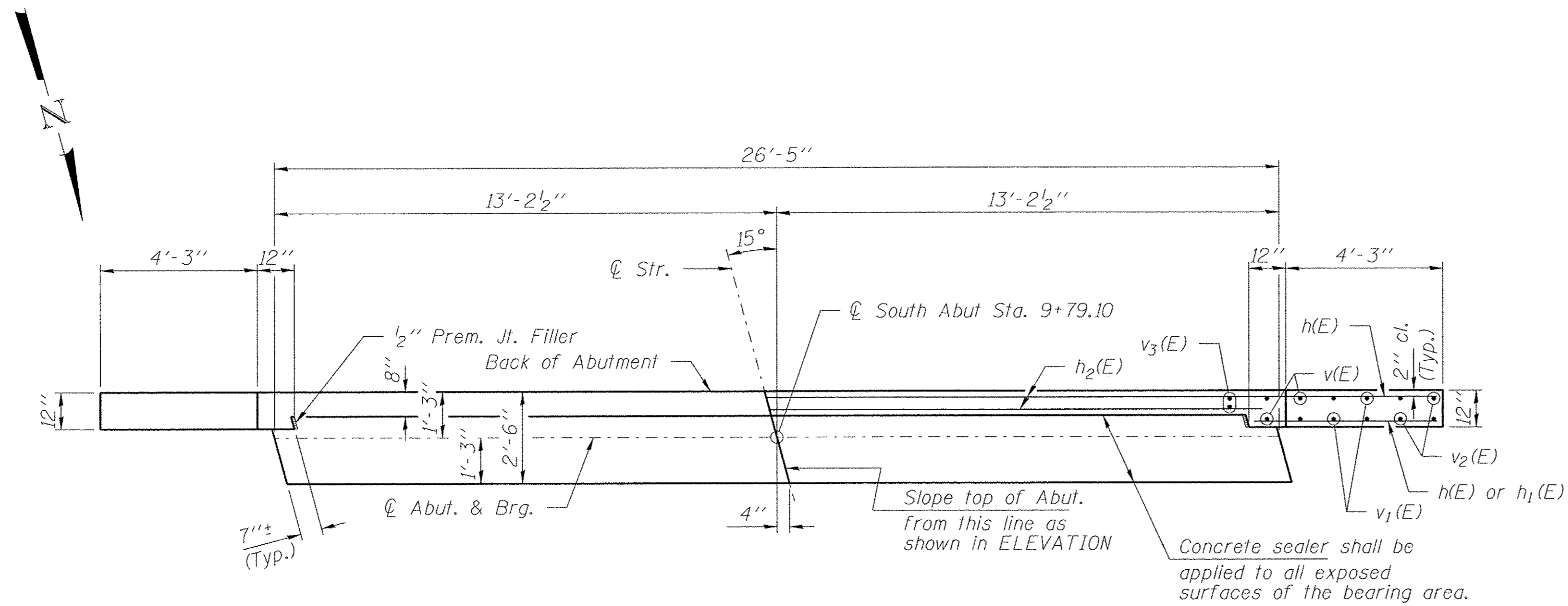
**SECTION THRU ABUTMENT**  
 (Horiz. dim. @ Rt. L's)

FILE NAME = 160087-sht-bridge.dgn	USER NAME =	DESIGNED - L.A.P.	REVISED -	<b>STATE OF ILLINOIS UNION COUNTY HIGHWAY DEPARTMENT</b>	<b>SUPERSTRUCTURE DETAILS STRUCTURE NO. 091-3244</b>	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
<b>HAMPTON, LENZINI AND RENWICK, INC.</b> 3080 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959		CHECKED - A.E.U.	REVISED -			152	12-01204-00-BR	UNION	22	18
	PLOT SCALE =	DRAWN - R.D.H.	REVISED -			COUNTY UNIT ROAD DISTRICT		CONTRACT NO. 99587		
	PLOT DATE = 3/10/2017	CHECKED - A.E.U.	REVISED -			SHEET NO. 4 OF 8 SHEETS		ILLINOIS FED. AID PROJECT BR05-01810617		

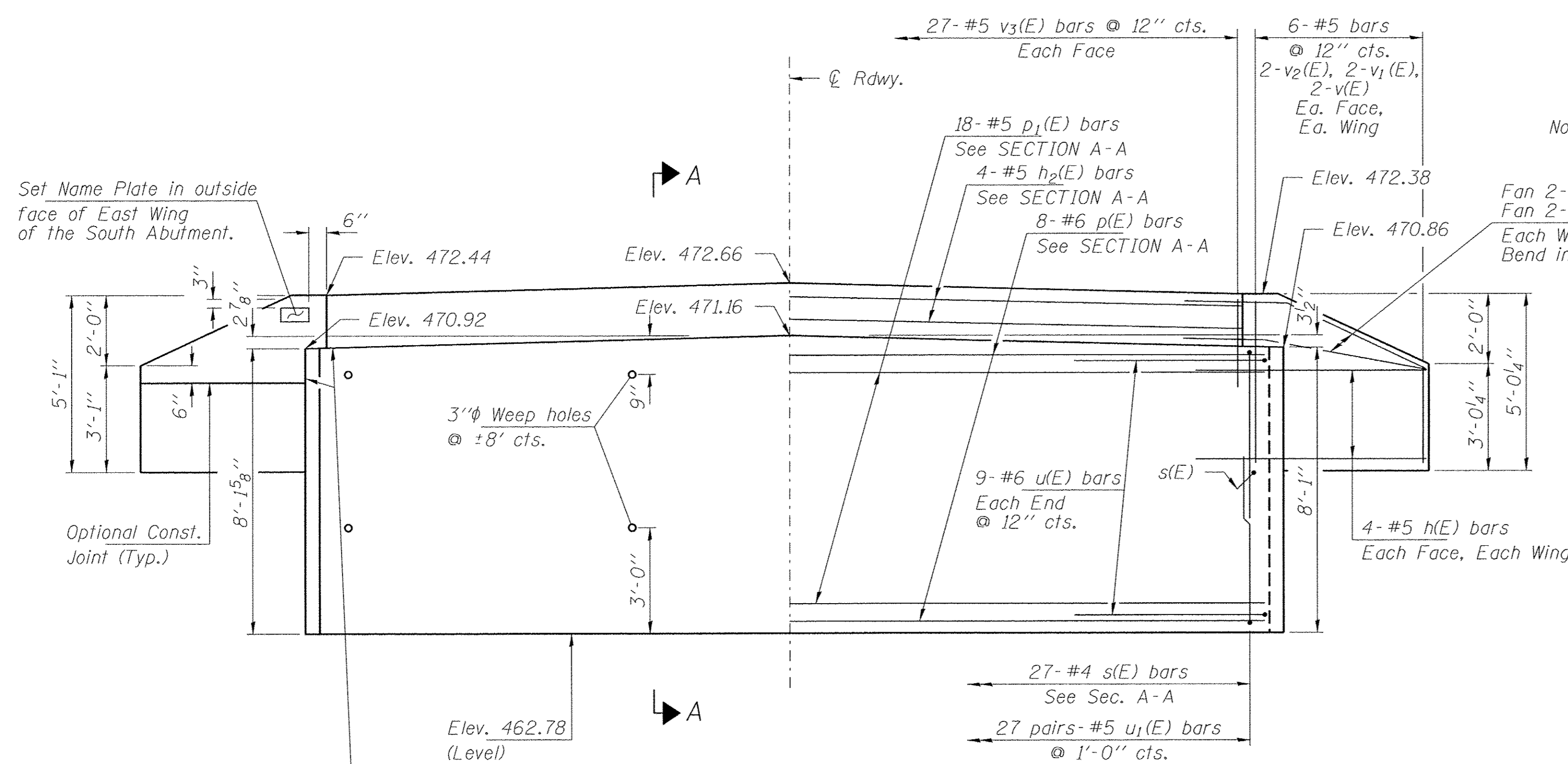




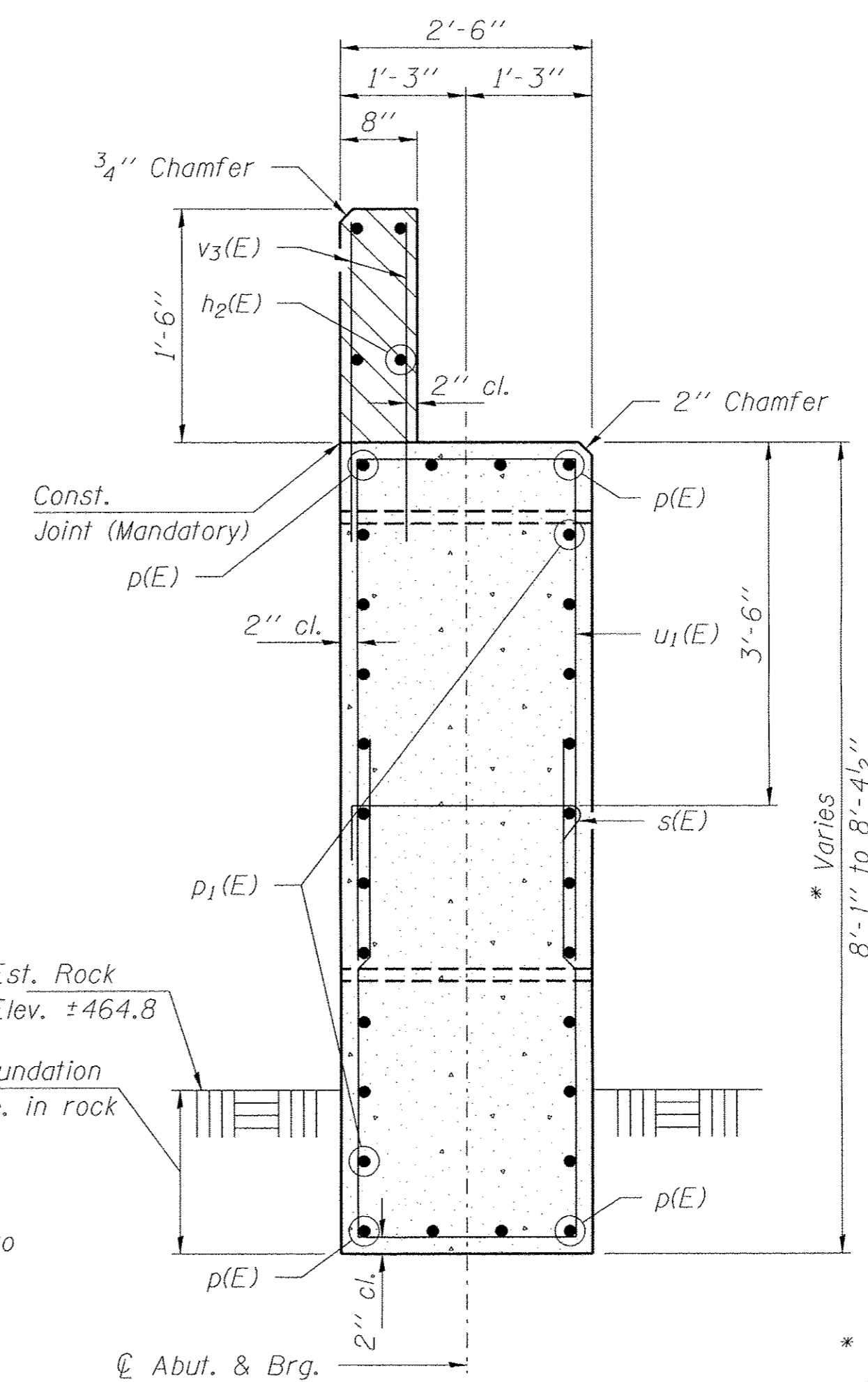




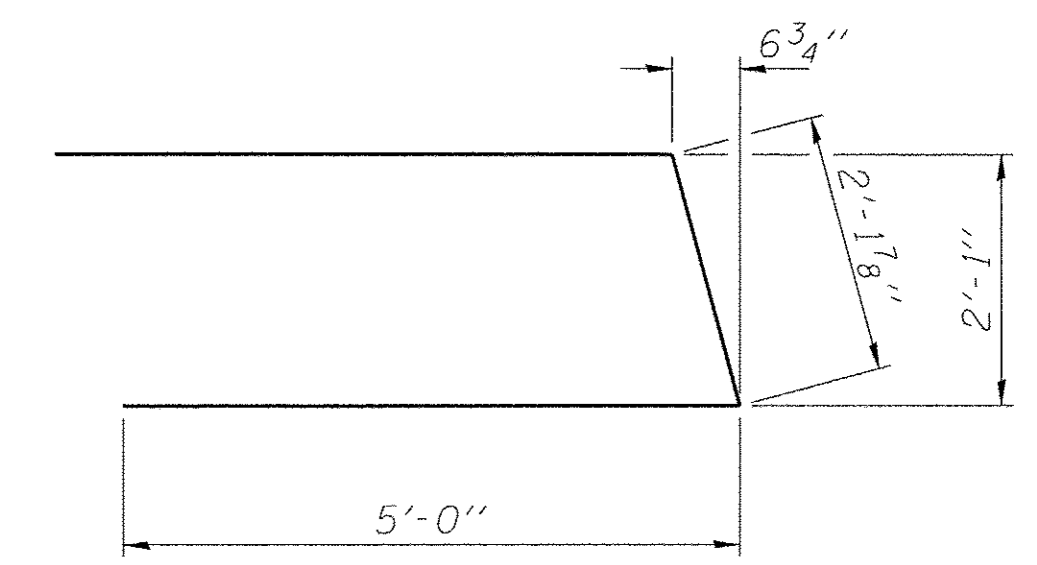
PLAN



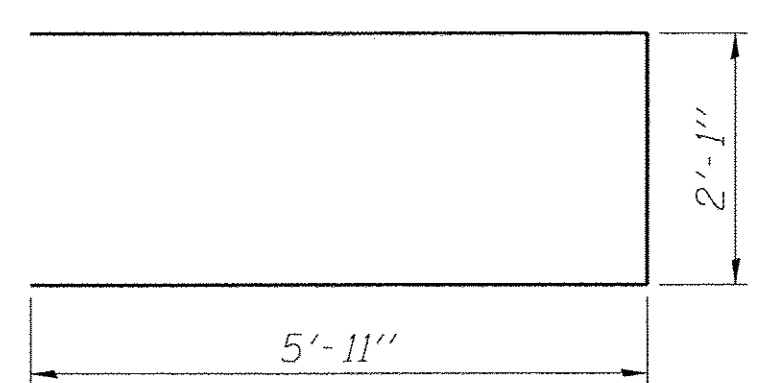
ELEVATION  
(Looking South)



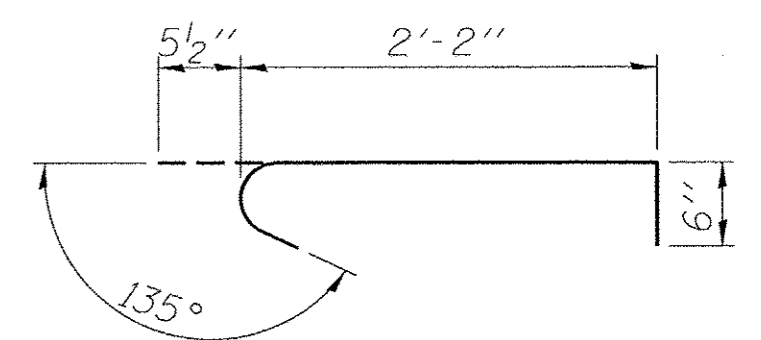
SECTION A-A  
Hatched area to be poured after beams are in place.



BAR u(E)



BAR u1(E)



BAR s(E)

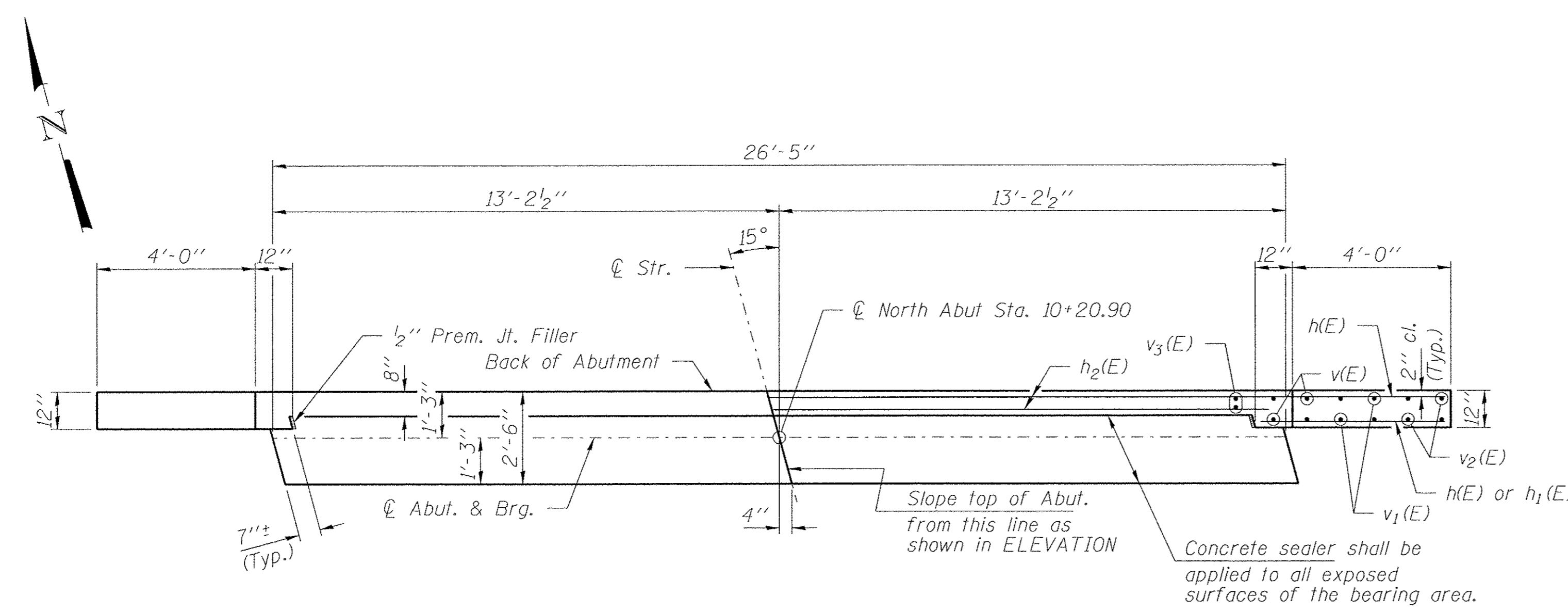
\* Final height to be determined by actual rock elevation in field.

BILL OF MATERIAL - S. ABUT.

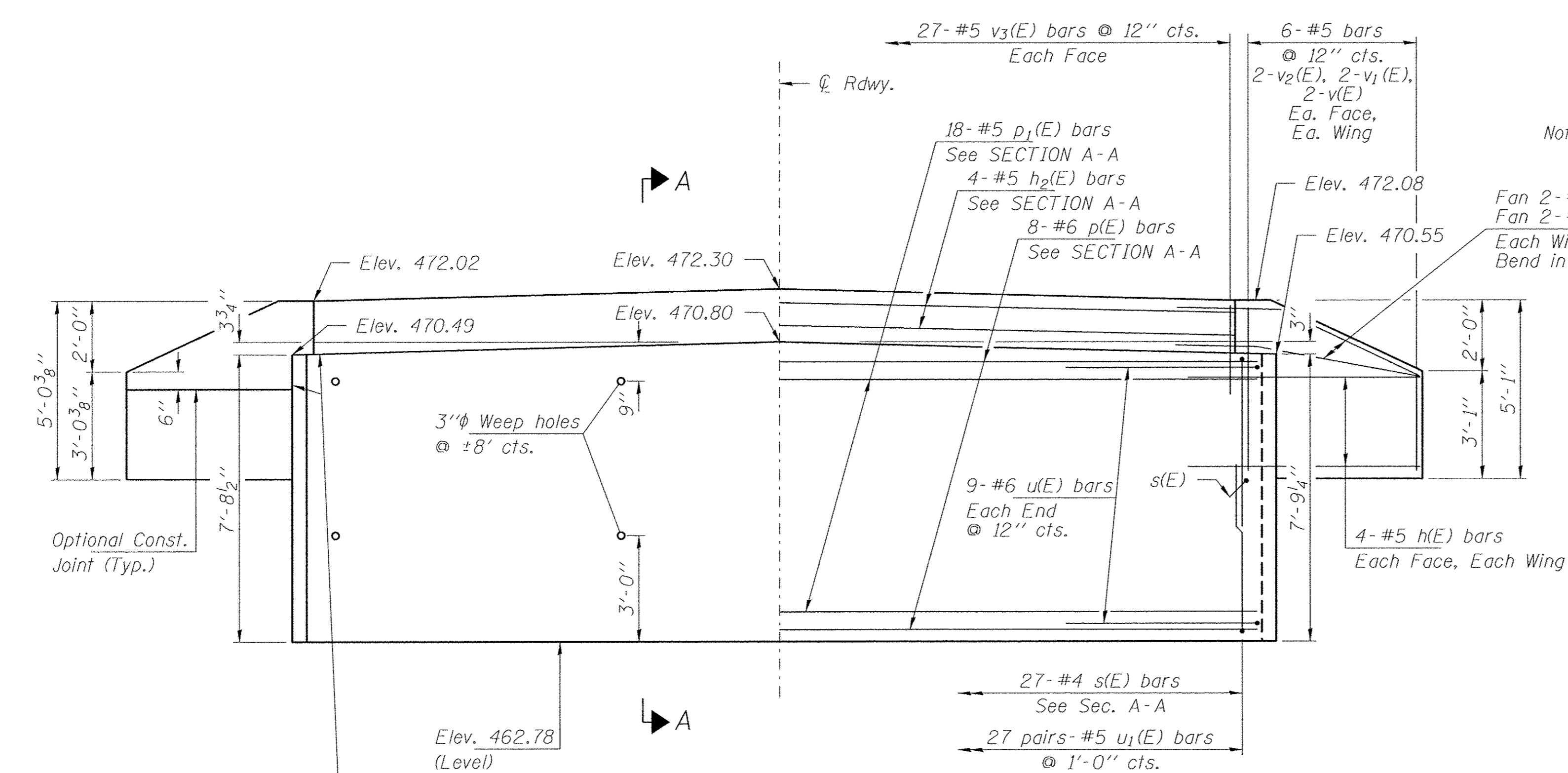
BAR	NO.	SIZE	LENGTH	SHAPE
h(E)	20	#5	6'-6"	—
h1(E)	4	#5	5'-0"	—
h2(E)	4	#5	26'-1"	—
p(E)	8	#6	26'-1"	—
p1(E)	18	#5	26'-1"	—
s(E)	27	#4	3'-2"	U
u(E)	18	#6	12'-2"	U
u1(E)	54	#6	13'-11"	U
v(E)	8	#5	4'-7"	—
v1(E)	8	#5	3'-8"	—
v2(E)	8	#5	2'-9"	—
v3(E)	54	#5	3'-0"	—
Rock Excavation			Cu. Yd.	4.9
Concrete Structures			Cu. Yd.	22.5
Reinforcement Bars, Epoxy Coated			Pound	2,840
Name Plates			Each	1
Concrete Sealer			Sq. Ft.	48

MINIMUM BAR LAP  
#6 bar = 3'-10"

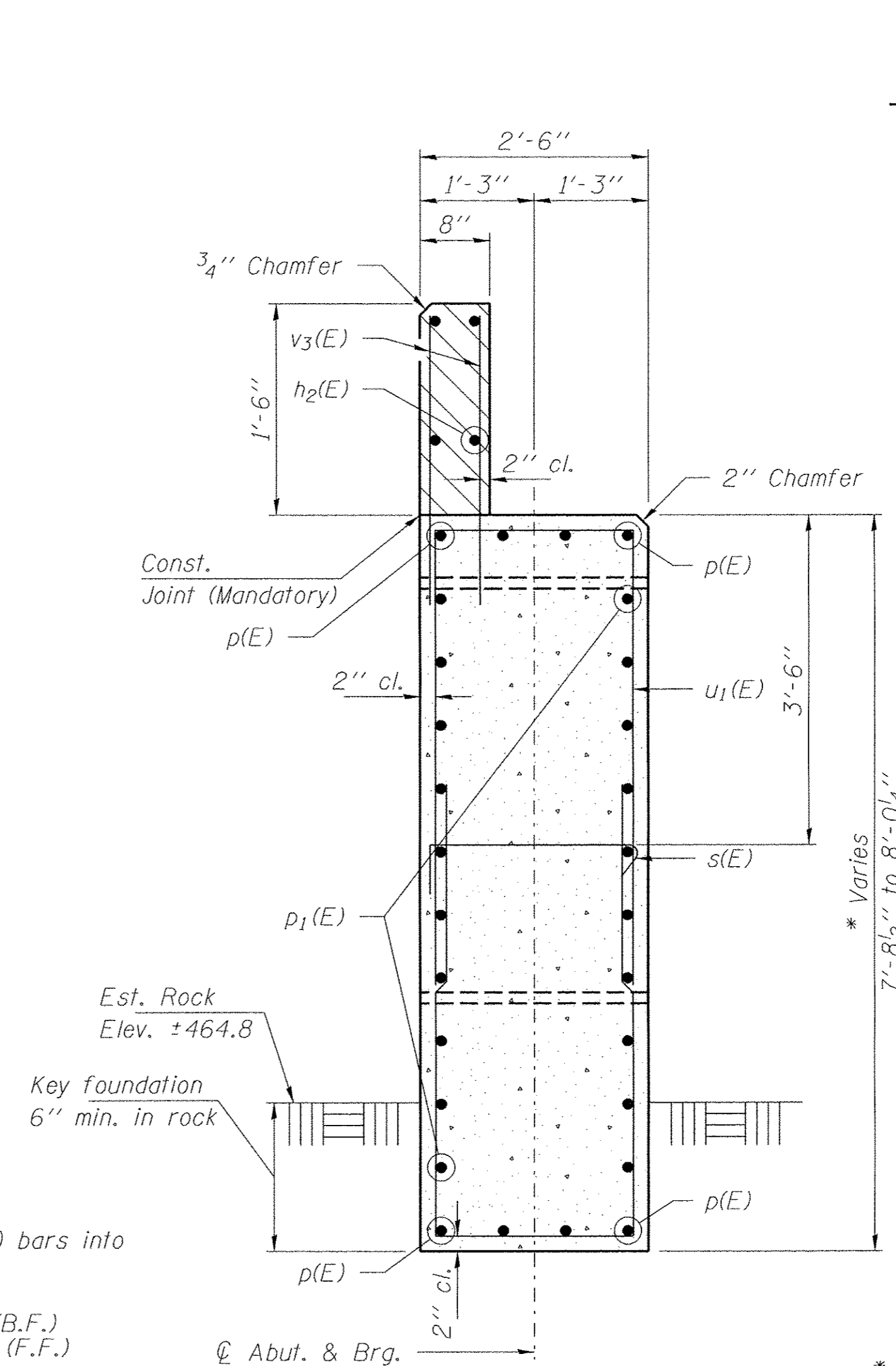




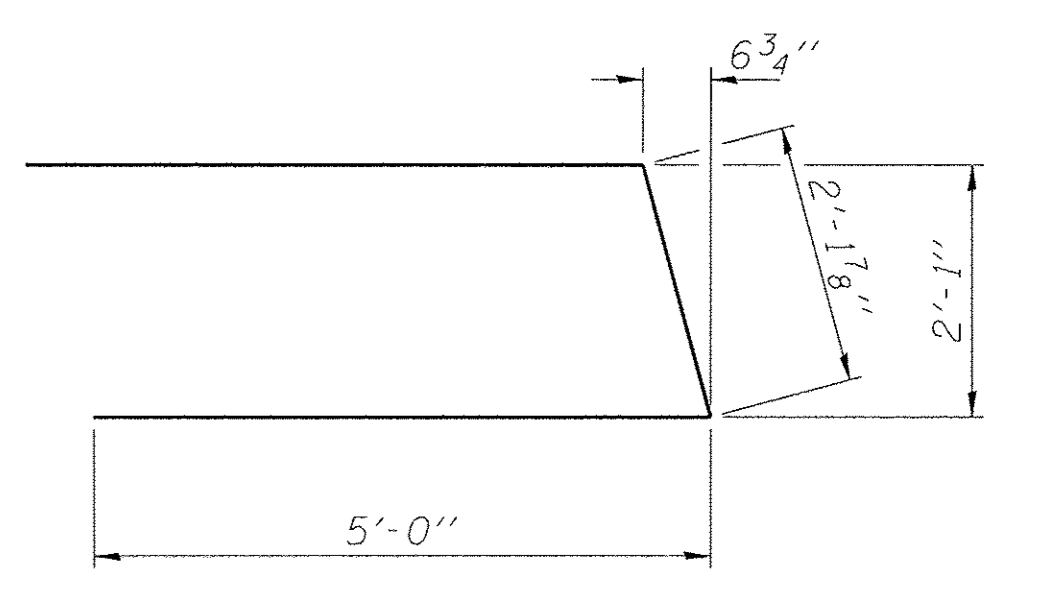
PLAN



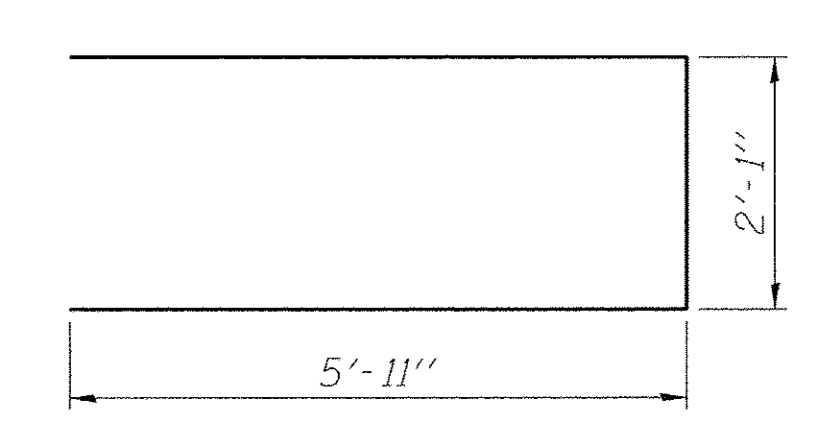
ELEVATION  
(Looking North)



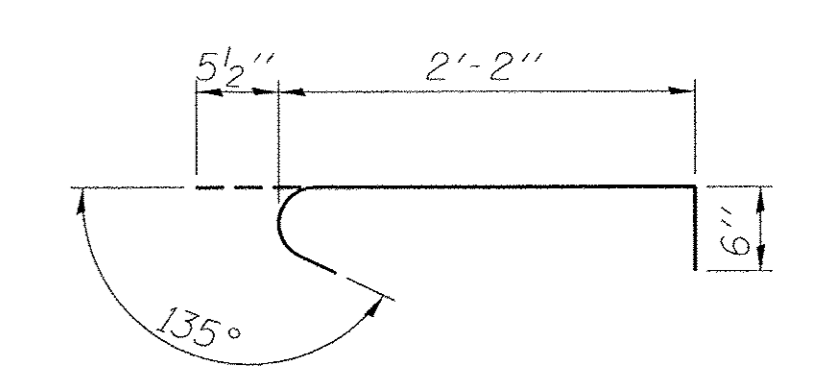
SECTION A-A  
Hatched area to be poured after beams are in place.



BAR u(E)



BAR u1(E)



BAR s(E)

Note: Extend h(E) bars into abutment.

Fan 2-#5 h(E) bars (B.F.)  
Fan 2-#5 h1(E) bars (F.F.)  
Each Wing Bend in Field.

\* Final height to be determined by actual rock elevation in field.

BILL OF MATERIAL - N. ABUT.

BAR	NO.	SIZE	LENGTH	SHAPE
h(E)	20	#5	6'-6"	—
h1(E)	4	#5	5'-0"	—
h2(E)	4	#5	26'-1"	—
p(E)	8	#6	26'-1"	—
p1(E)	18	#5	26'-1"	—
s(E)	27	#4	3'-2"	┌
u(E)	18	#6	12'-2"	▮
u1(E)	54	#6	13'-11"	▮
v(E)	8	#5	4'-7"	—
v1(E)	8	#5	3'-8"	—
v2(E)	8	#5	2'-9"	—
v3(E)	54	#5	3'-0"	—

Rock Excavation	Cu. Yd.	4.9
Concrete Structures	Cu. Yd.	21.6
Reinforcement Bars, Epoxy Coated	Pound	2,840
Concrete Sealer	Sq. Ft.	48

MINIMUM BAR LAP  
#6 bar = 3'-10"



