

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

**PLANS FOR PROPOSED
SURFACE TRANSPORTATION PROGRAM
OFF SYSTEM BRIDGE**

**PROJECT BROS-0081(077)
SECTION 14-00210-00-BR
JEFFERSON COUNTY
C.H. 26 / EAST ACADEMY ROAD
PROPOSED STRUCTURE NO. 041-3757
C-99-507-15**

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
C.H. 26	14-00210-00-BR	JEFFERSON	19	1
FED. ROAD DIST. NO.		ILLINOIS CONTRACT NO. 99559		

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1.	COVER SHEET
2.	SUMMARY OF QUANTITIES AND GENERAL NOTES
3.	TYPICAL CROSS SECTIONS
4.	PLAN AND PROFILE
5-11.	STATION CROSS SECTIONS
12-18.	BRIDGE PLANS
19.	BORINGS

HIGHWAY STANDARDS:

000001-06	STANDARD SYMBOLS, ABBREVIATIONS, AND PATTERNS
515001-03	NAME PLATE FOR BRIDGES
701901-05	TRAFFIC CONTROL DEVICES
725001	OBJECT AND TERMINAL MARKERS
BLR 21-9	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS

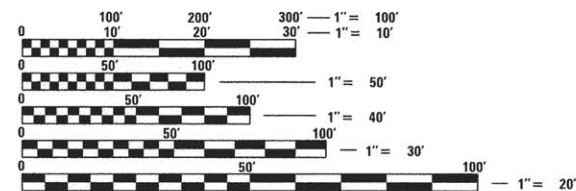
UTILITIES

TRI-COUNTY ELECTRIC CO-OP
3907 BROADWAY
PO BOX 309
MT. VERNON, IL 62864

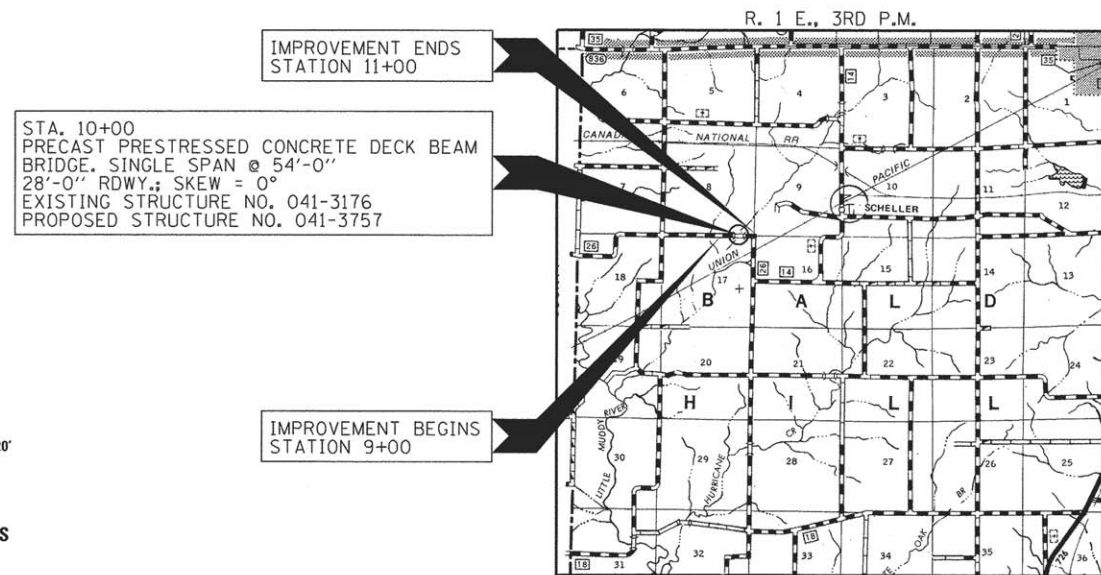
WASHINGTON COUNTY WATER
17575 CONNECTICUT ROAD
NASHVILLE, IL 62263



FUNCTIONAL CLASSIFICATION: LOCAL ROAD
DESIGN SPEED: 30 MPH
DESIGN TRAFFIC: 75 ADT (2015)



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.

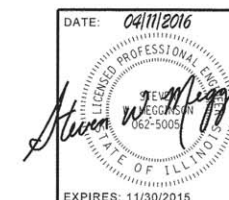


LOCATION MAP

APPROXIMATE SCALE: 0 1 MILE
NET LENGTH OF SECTION = 200 FEET = 0.038 MILES



ILLINOIS DEPARTMENT OF TRANSPORTATION	
APPROVED	4/18 2016 <i>[Signature]</i> COUNTY ENGINEER
PASSED	4/26 2016 <i>[Signature]</i> DISTRICT NINE ENGINEER OF LOCAL ROADS & STREETS
Releasing For Bid Based on Limited Review	4/26 2016 <i>[Signature]</i> DEPUTY DIRECTOR OF HIGHWAYS REGION FIVE 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

SUMMARY OF QUANTITIES			
CODE NO.	ITEM	CONSTRUCTION CODE 0011	
		UNIT	TOTAL
20200100	EARTH EXCAVATION	CU YD	195
20300100	CHANNEL EXCAVATION	CU YD	235
^ 28100807	STONE DUMPED RIPRAP, CLASS A4	TON	230
^ 40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	150
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50300225	CONCRETE STRUCTURES	CU YD	26.0
^ 50400405	PRECAST PRESTRESSED CONCRETE DECK BEAMS (21" DEPTH)	SQ FT	1,512
50800105	REINFORCEMENT BARS	POUND	2,850
* 50900205	STEEL RAILING, TYPE S1	FOOT	106
51201400	FURNISHING STEEL PILES HP10X42	FOOT	320
51202305	DRIVING PILES	FOOT	320
51500100	NAME PLATES	EACH	1
^ 59300100	CONTROLLED LOW STRENGTH MATERIAL	CU YD	50
67100100	MOBILIZATION	L SUM	1
* 72501000	TERMINAL MARKER - DIRECT APPLIED	EACH	4
^ X2501000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.25

^ SEE SPECIAL PROVISIONS

* SPECIALTY ITEMS

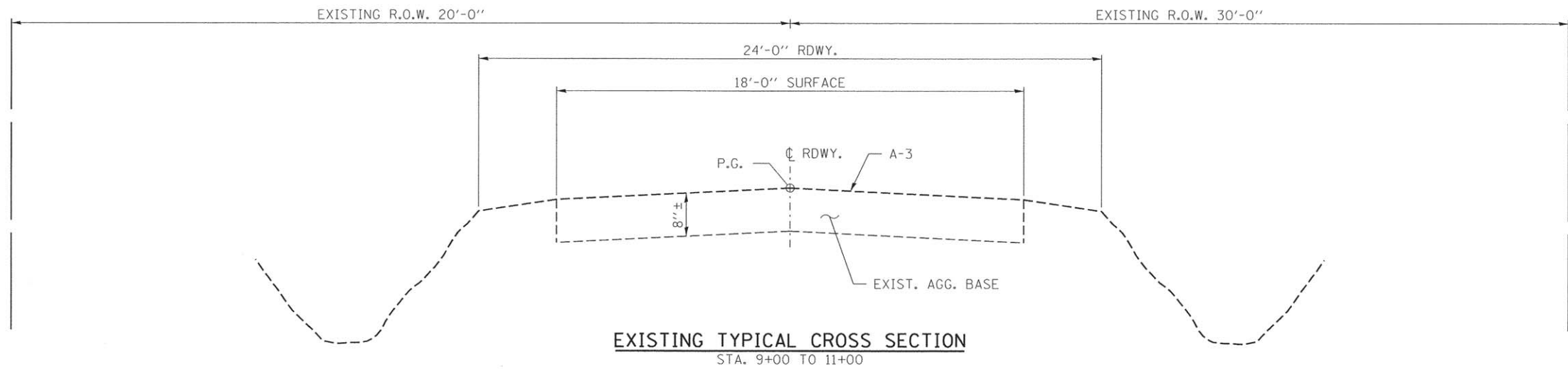
GENERAL NOTES

- 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 OF THE EXISTING AGGREGATE SURFACE WILL BE PAID FOR AS EARTH EXCAVATION. ALL BITUMINOUS MATERIAL SHALL BE PROPERLY DISPOSED OF BY THE CONTRACTOR IN A METHOD APPROVED BY THE ENGINEER. PROPOSED DISPOSAL OF BITUMINOUS MATERIAL SHALL BE INCLUDED IN THE COST OF EARTH EXCAVATION AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
- THE LOCATION OF EXISTING GAS MAINS, ELECTRIC POWER LINES, TELEPHONE LINES AND OTHER UTILITIES AS SHOWN ON THE PLANS ARE BASED ON CAREFUL FIELD INVESTIGATION AND THE BEST INFORMATION AVAILABLE, BUT THE LOCATIONS ARE NOT GUARANTEED. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ASCERTAIN THEIR EXACT LOCATION FROM THE INDIVIDUAL 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 MONUMENTS UNTIL AN AUTHORIZED SURVEYOR OR AGENT HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING AN AUTHORIZED SURVEYOR REESTABLISH ANY SECTION OR SUBSECTION MONUMENTS DESTROYED BY HIS OPERATIONS.
- THE REVISION NUMBER INDICATED FOR THE STANDARDS LISTED IN THE INDEX OF SHEETS SHALL BE USED IN THE CONSTRUCTION OF THIS SECTION.
- THE EXISTING STRUCTURE WAS INVESTIGATED FOR PRESENCE OF ASBESTOS DURING THE PRELIMINARY DESIGN PHASE AND WAS FOUND TO NOT CONTAIN ASBESTOS. DOCUMENTATION CONFIRMING THIS FINDING WAS PROVIDED TO THE ILLINOIS DEPARTMENT OF TRANSPORTATION AT THAT TIME TO CLEAR THIS PROJECT FOR APPROVAL.
- THE FOLLOWING RATES OF APPLICATION HAVE BEEN USED IN CALCULATING PLAN QUANTITIES.

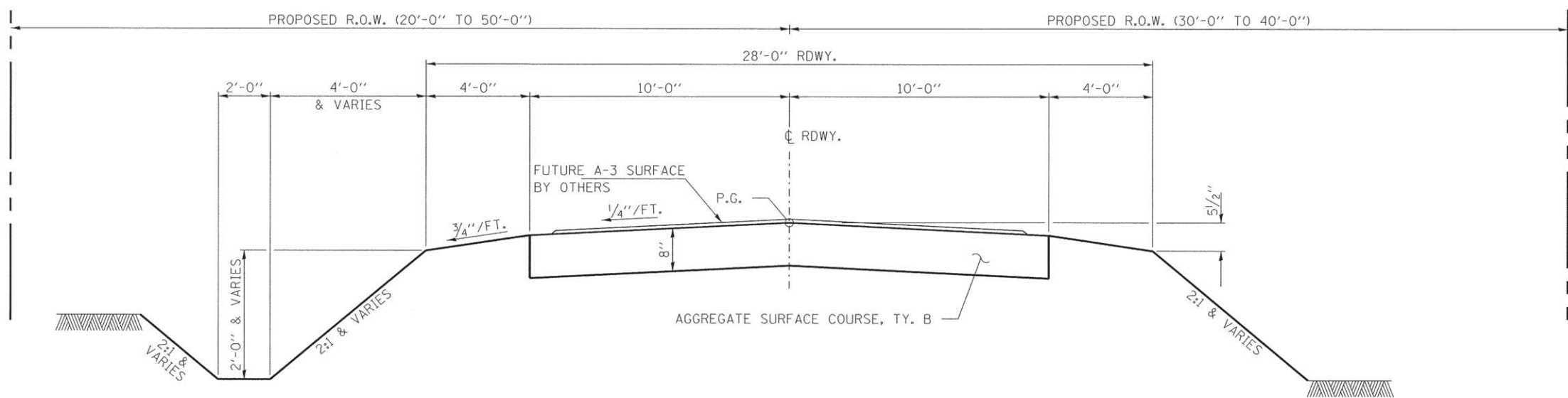
AGGREGATE SURFACE COURSE, TYPE B	2.05 TON/CU YD
STONE DUMPED RIPRAP, CLASS A4	1.75 TON/CU YD
- THE AREA TO BE SEEDED SHALL CONSIST OF ALL EARTH SURFACES WITHIN THE RIGHT OF WAY OR AS DIRECTED BY THE ENGINEER
SEEDING, CLASS 2 (SPECIAL) = 0.25 ACRES
- COMMITMENTS:
 THE CONTRACTOR SHALL TEMPORARILY RELOCATE THE NORTH AND SOUTH FENCES BEFORE CONSTRUCTION TO RESTRAIN CATTLE IN ADJACENT PROPERTY TO THE SATISFACTION OF THE LAND OWNER AND THE ENGINEER. THE CONTRACTOR SHALL CONSULT WITH THE ENGINEER TO RELOCATE FENCES TO A PERMANENT POSITION AFTER CONSTRUCTION IS COMPLETE. COST SHALL BE INCLUDED IN REMOVAL OF EXISTING STRUCTURES.

EARTHWORK SUMMARY							
LOCATION	EARTH EXCAVATION	CHANNEL EXCAVATION	SHRINKAGE FACTOR	% USED	EARTH EXCAVATION ADJUSTED FOR SHRINKAGE	EMBANKMENT REQUIRED	EARTHWORK BALANCE WASTE (+) / SHORTAGE (-)
	CU YD	CU YD			CU YD	CU YD	CU YD
CH 26 / EAST ACADEMY ROAD							
STA 9+00 TO STA 9+72.33	25		25.00%	100.00%	19	55	-36
STA 9+72.33 TO STA 10+27.67		235	25.00%	70.00%	123		123
STA 10+27.67 TO STA 11+00	169		25.00%	100.00%	127	191	-64
TOTAL	194	235			269	246	23
USE	195	235					25

WASTE 25 CU.YD.



EXISTING TYPICAL CROSS SECTION
STA. 9+00 TO 11+00



PROPOSED TYPICAL CROSS SECTION
STA. 9+00 TO 11+00

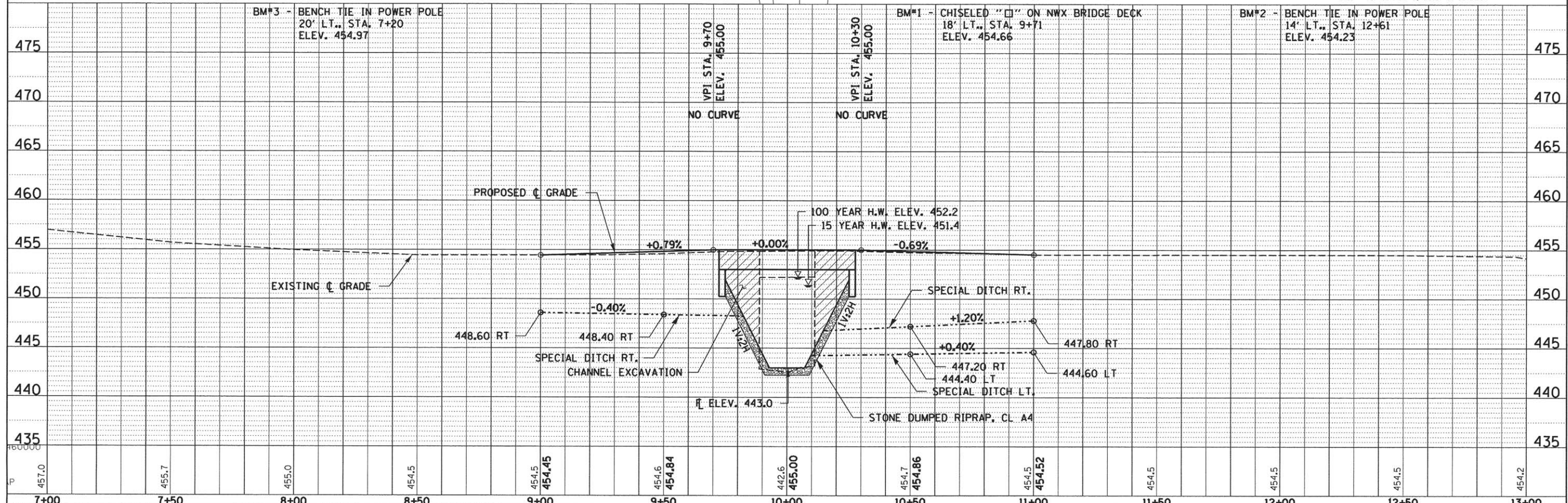
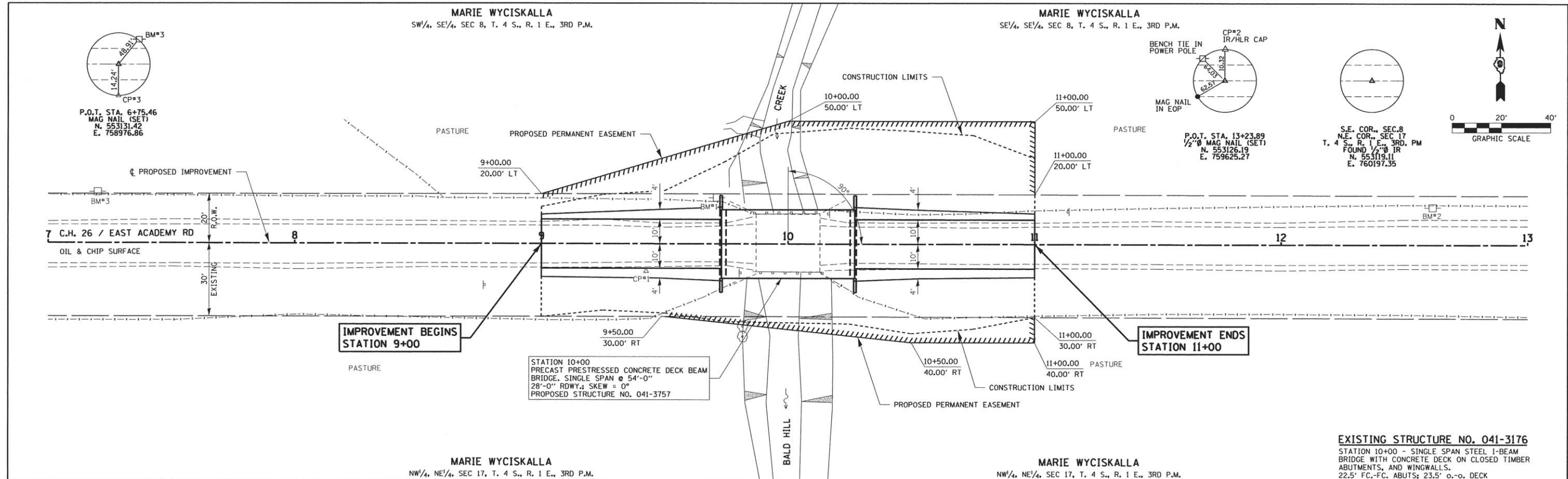
SUGGESTED CUT SECTION
CONSTRUCT AS SHOWN IN
STATION CROSS SECTIONS

SUGGESTED FILL SECTION
CONSTRUCT AS SHOWN IN
STATION CROSS SECTIONS

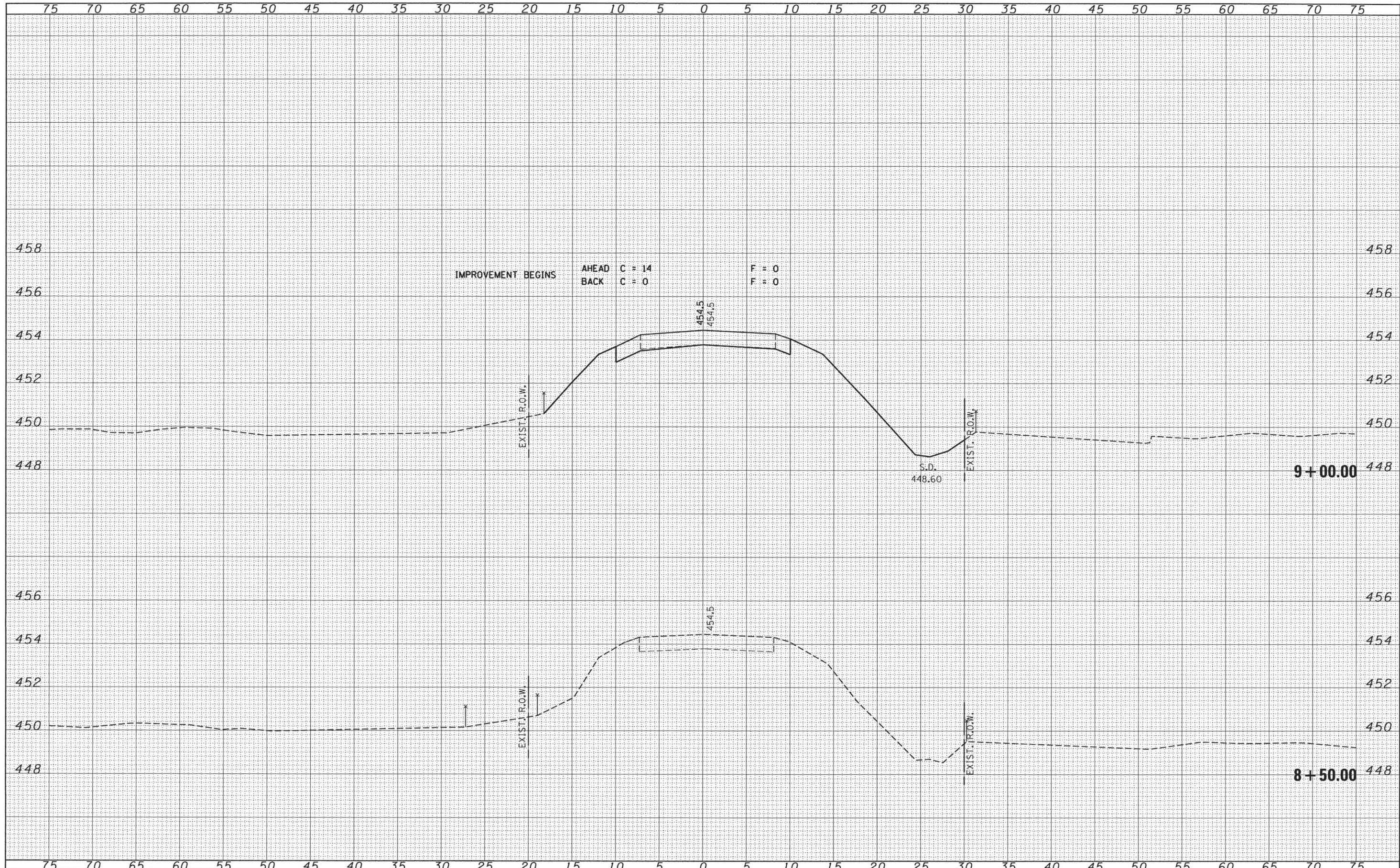
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ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959	PLOT DATE = 4/11/2016	CHECKED - S.W.M.	REVISED -			CONTRACT NO. 99559					
		DATE - 08/28/15	REVISED -			ILLINOIS FED. AID PROJECT BR05-00810771					
SCALE: SHEET NO. 1 OF 1 SHEETS STA. TO STA.											

PLAN	DESIGNED	DATE
	PLOTTED	
	GRADES CHECKED	
	STRUCTURE NOTATION CHECKED	
	FILE NAME	

PROFILE	DESIGNED	DATE
	PLOTTED	
	GRADES CHECKED	
	STRUCTURE NOTATION CHECKED	
	FILE NAME	



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HAMPTON, LENZINI AND RENWICK, INC. 3985 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM L3 / PE / SE CORP. 184.000959	PLOT SCALE =	DRAWN - L.G.C.	REVISED -			26	14-00210-00-BR	JEFFERSON	19	4	
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		DATE - 08/28/15	REVISED -			ILLINOIS FED. AID PROJECT BROS-00810771					



FINAL SURVEY	BY	DATE
SURVEYED		
NOTE BOOK		
TEMPLATE		
AREAS CHECKED		
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SURVEYED		
NOTE BOOK		
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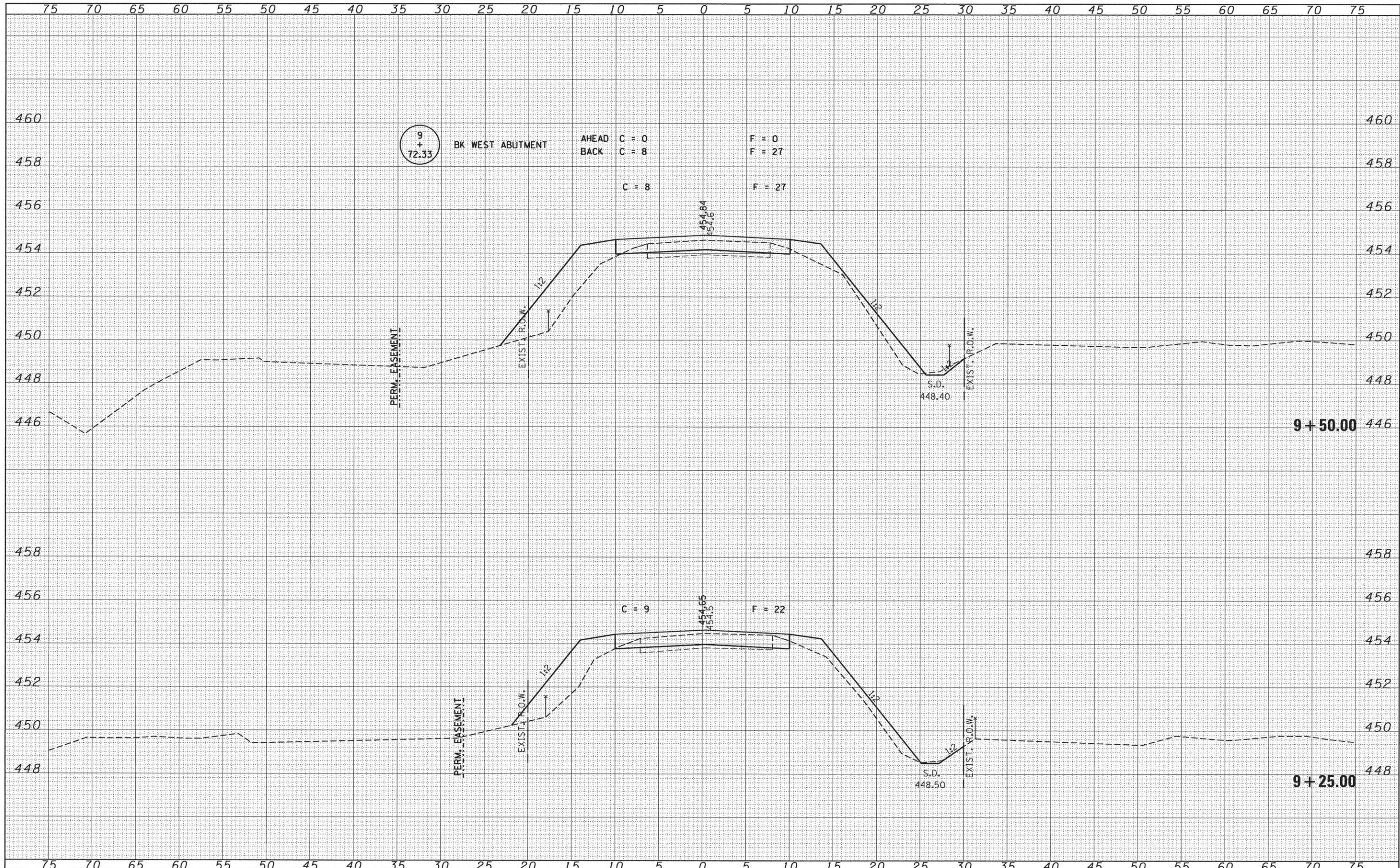
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 PLOT DATE = 4/11/2016

DESIGNED - L.A.P.	REVISED -
DRAWN - T.W.K.	REVISED -
CHECKED - S.W.M.	REVISED -
DATE - 08/28/15	REVISED -

**STATE OF ILLINOIS
 JEFFERSON COUNTY HIGHWAY DEPARTMENT**

STATION CROSS SECTIONS
 SCALE: 5H:2V SHEET NO. 1 OF 7 SHEETS STA. 8+50.00 TO STA. 9+00.00

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CONTRACT NO. 99559			ILLINOIS FED. AID PROJECT BROS-00B1077	



DATE	
BY	
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SURVEYED	
NOTE BOOK	
TEMPLATE	
AREAS	
AREAS CHECKED	
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DATE	
BY	
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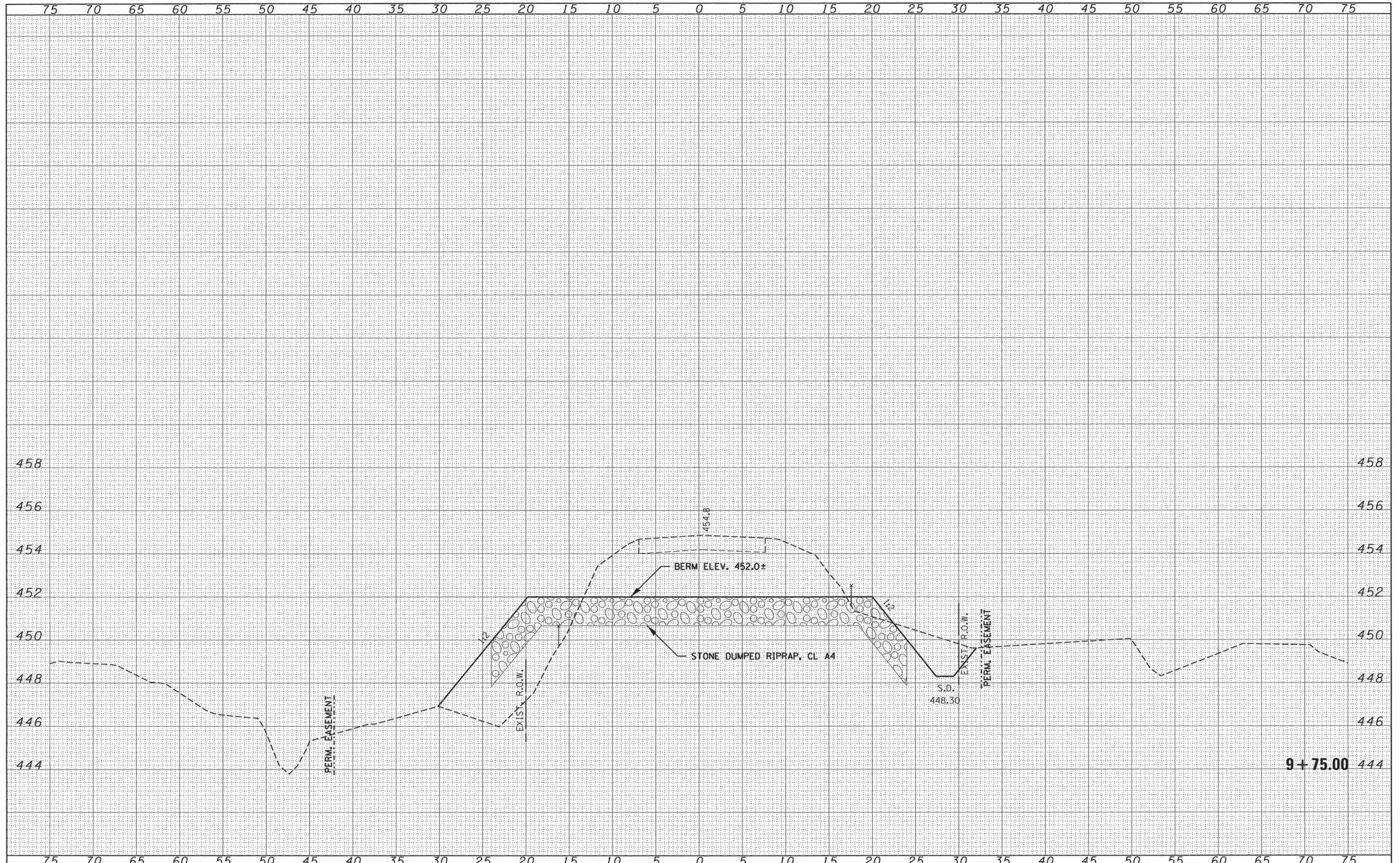
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 PLOT SCALE =
 PLOT DATE = 4/11/2016

DESIGNED	-	L.A.P.	REVISED	-
DRAWN	-	T.W.K.	REVISED	-
CHECKED	-	S.W.M.	REVISED	-
DATE	-	08/28/15	REVISED	-

STATE OF ILLINOIS
 JEFFERSON COUNTY HIGHWAY DEPARTMENT

STATION CROSS SECTIONS
 SCALE: 5h2V
 SHEET NO. 2 OF 7 SHEETS
 STA. 9+25.00 TO STA. 9+50.00

CH	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO. 99559			ILLINOIS FED. AID PROJECT BR05-0081077	



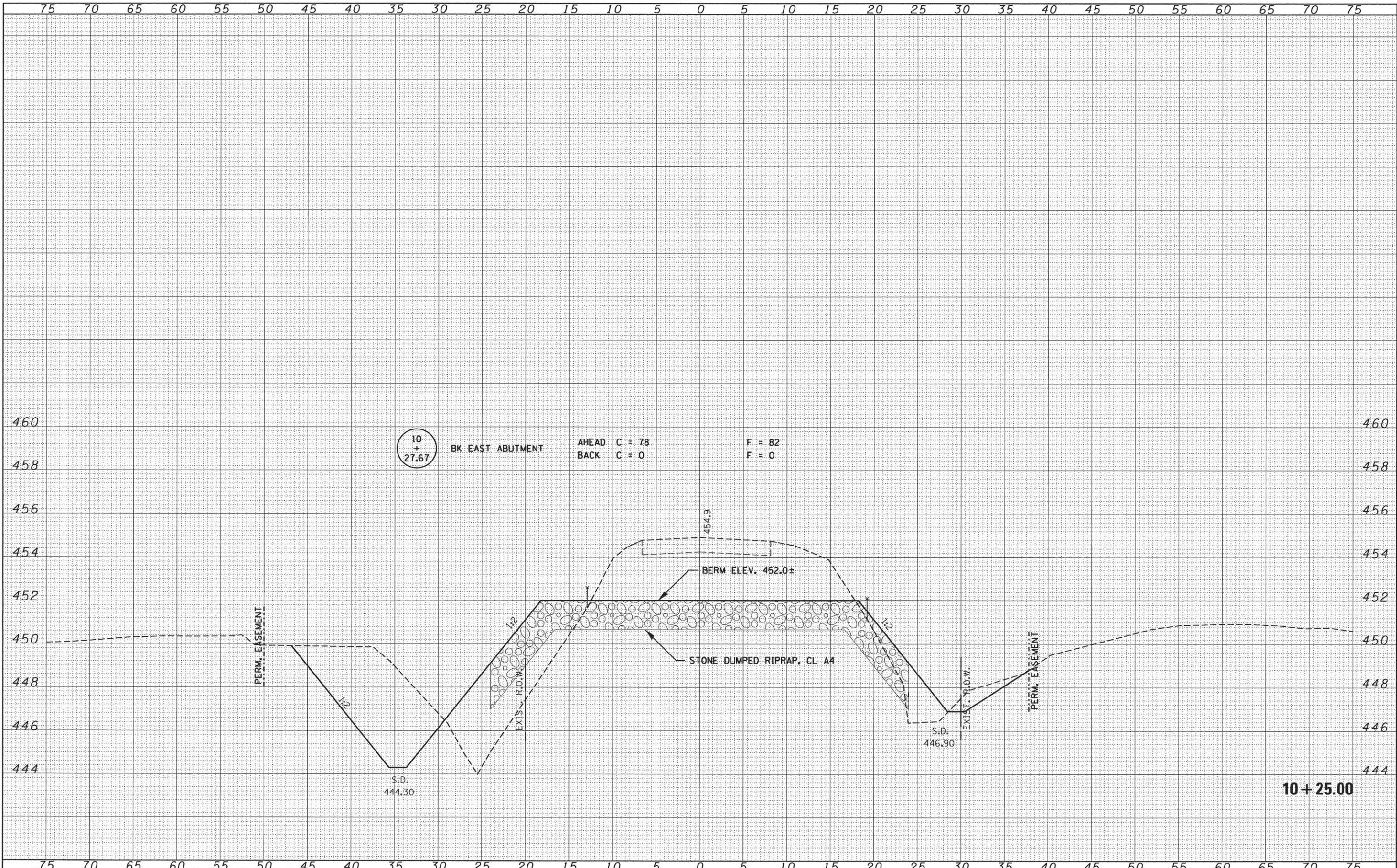
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NOTE BOOK	
AREA CHECKED	
TEMP. _____	
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BY _____	

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HAMPTON, LENZINI AND RENWICK, INC. 3045 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703	PLOT SCALE =	DRAWN - T.W.K.	REVISED -		26	14-00210-00-BR	JEFFERSON	19	7				
ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.00909	PLOT DATE = 4/11/2016	CHECKED - S.W.M.	REVISED -		CONTRACT NO. 99559								
		DATE - 08/28/15	REVISED -		ILLINOIS FED. AID PROJECT BR05-0081077								
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DATE	
BY	
FINAL SURVEY	
SURVEYED	
NOTE BOOK	
TEMPLATE	
AREAS	
CHECKED	
NO.	

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



10+25.00

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 300 STEVENSON DRIVE, SUITE 201
 SPRINGFIELD, ILLINOIS 62761
 ILLINOIS PROFESSIONAL DESIGN FIRM
 LS / PE / SE CORP. 184.000093

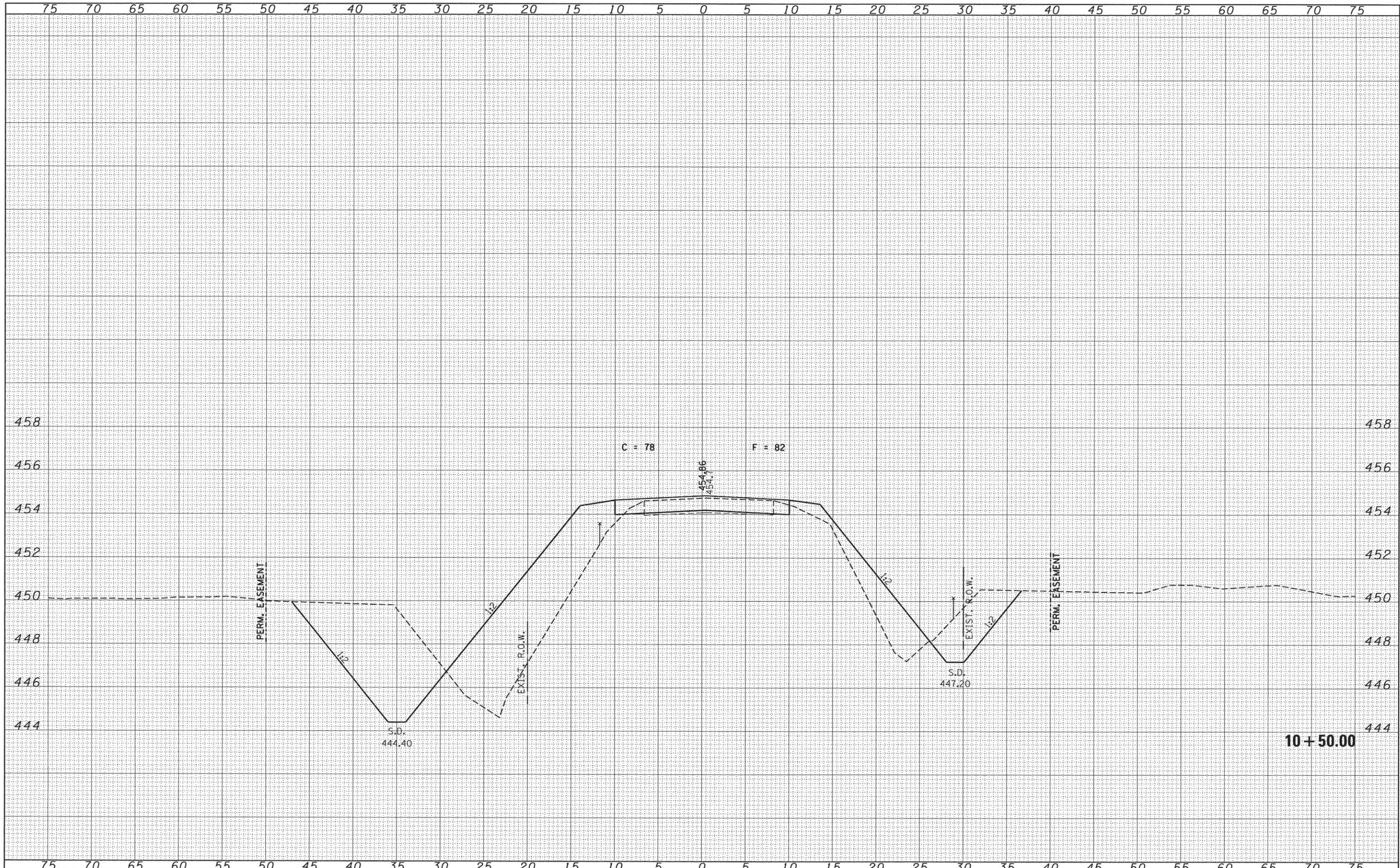
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	DATE - 08/28/15	REVISED -

STATE OF ILLINOIS
JEFFERSON COUNTY HIGHWAY DEPARTMENT

STATION CROSS SECTIONS

SCALE: 5H:2V SHEET NO. 4 OF 7 SHEETS STA. 10+25.00 TO STA. 10+25.00

CH	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
26	14-00210-00-BR	JEFFERSON	19	8
CONTRACT NO. 99559				
ILLINOIS FED. AID PROJECT BR05-0081077				



DATE	
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DATE	
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DRAWN	
CHECKED	
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DATE	
BY	
DESIGNED	
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DATE	
FILE NAME	
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DRAWN	
CHECKED	
DATE	

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 3985 STEVENSON DRIVE, SUITE 201
 SPRINGFIELD, ILLINOIS 62703
 ILLINOIS PROFESSIONAL DESIGN FIRM
 LS / PE / SE CORP. 184.000959

USER NAME =
 PLOT SCALE =
 PLOT DATE = 4/11/2016

DESIGNED - L.A.P.
 DRAWN - T.W.K.
 CHECKED - S.W.M.
 DATE - 08/28/15

REVISED -
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 REVISED -
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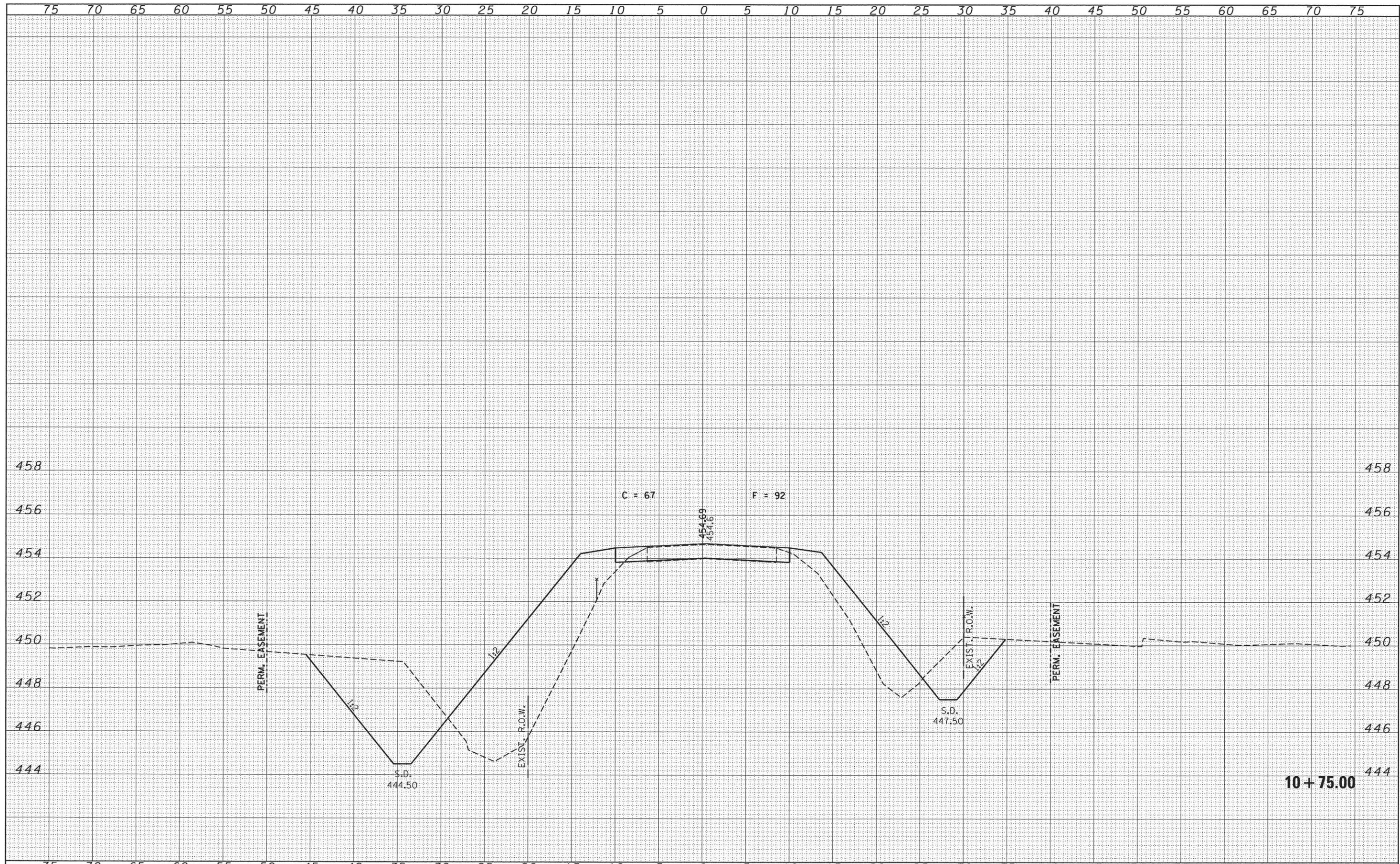
STATE OF ILLINOIS
 JEFFERSON COUNTY HIGHWAY DEPARTMENT

STATION CROSS SECTIONS
 SCALE: 5H:2V
 SHEET NO. 5 OF 7 SHEETS
 STA. 10+50.00 TO STA. 10+50.00

CH	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
26	14-00210-00-BR	JEFFERSON	19	9
CONTRACT NO. 99559			ILLINOIS FED. AID PROJECT BR05-00810771	

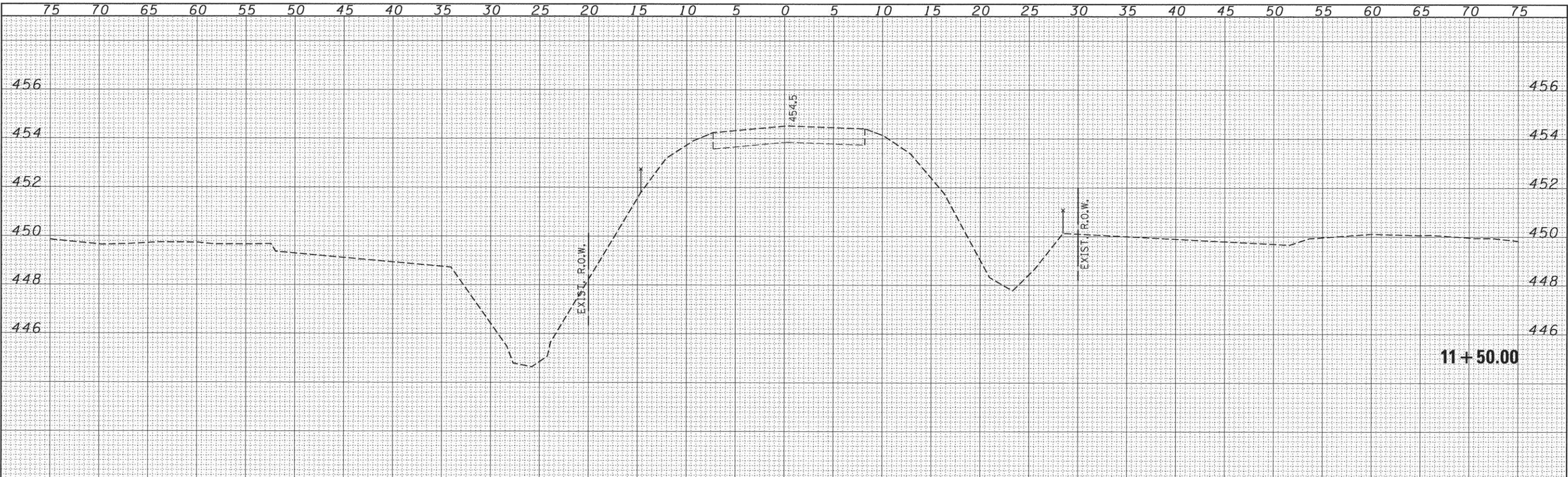
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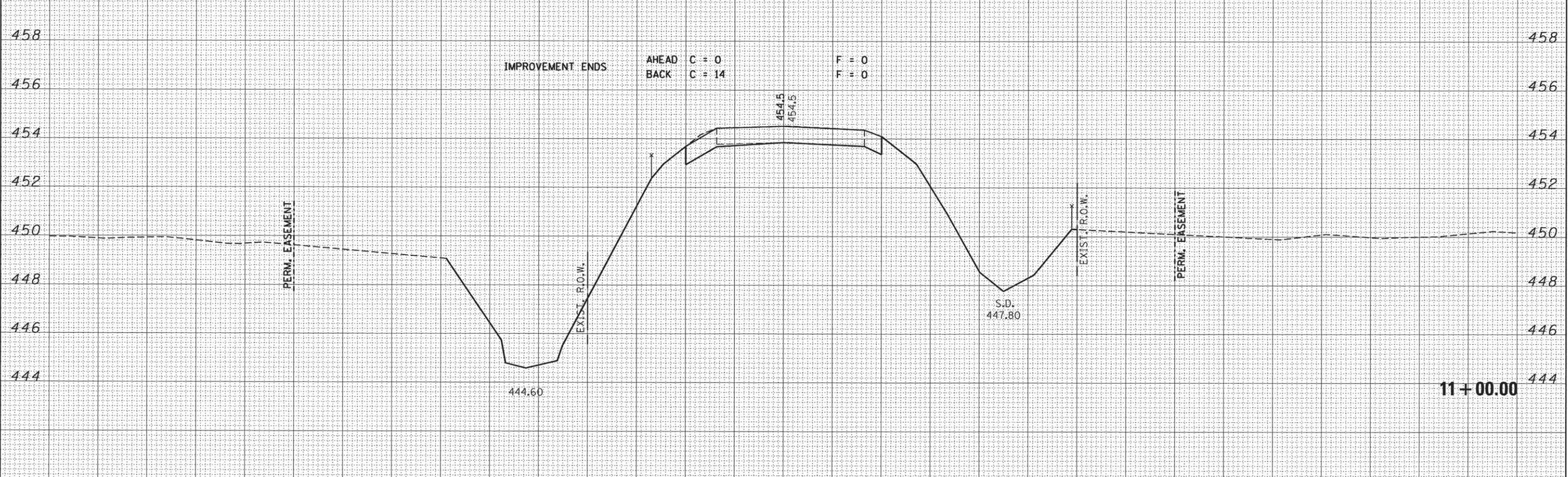


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HAMPTON, LENZINI AND RENWICK, INC.	PLOT SCALE =	DRAWN - T.W.K.	REVISED -					26	14-00210-00-BR	JEFFERSON	19	10
3888 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62776	PLOT DATE = 4/11/2016	CHECKED - S.W.M.	REVISED -					CONTRACT NO. 99559				
ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959		DATE - 08/28/15	REVISED -	SCALE: 5H:2V		SHEET NO. 6 OF 7 SHEETS		STA. 10+75.00 TO STA. 10+75.00		ILLINOIS FED. AID PROJECT BR05-00810771		

DATE	BY



DATE	BY



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HAMPSON, LENZINI AND RENWICK, INC. 157 P.E. / S.E. CORP. 194.000929		PLOT DATE = 4/11/2016	CHECKED - S.W.M.	REVISED -	CH	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	CONTRACT NO. 99559	
			DATE - 08/28/15	REVISED -	26	14-00210-00-BR	JEFFERSON	19	11	ILLINOIS FED. AID PROJECT BROS-0081077	
					SCALE: 5H:2V		SHEET NO. 7 OF 7 SHEETS		STA. 11+00.00 TO STA. 11+50.00		

BENCHMARK: Chiseled "□" on N.W. Wingwall 18.0' Lt., Sta. 9+71, Elev. 454.66

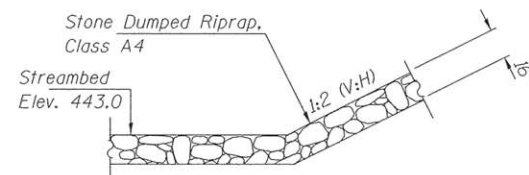
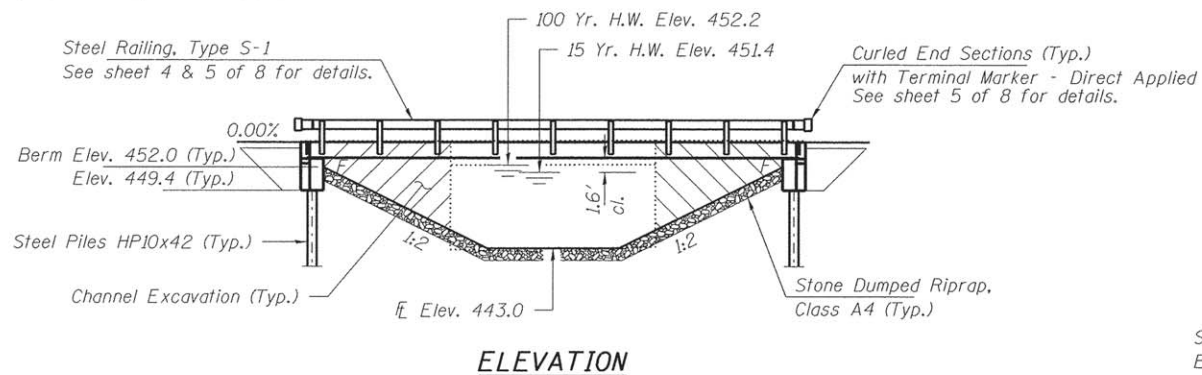
EXISTING STRUCTURE: Sta. 10+00 - Single span steel I-beam bridge with concrete deck on closed timber abutments and wingwalls. 22.5' fc.-fc. abuts; 23.5' o.-o. deck.

Structure closed to traffic during construction.

All materials deemed salvageable by the Engineer shall be stored on adjacent right-of-way for removal by the Jefferson County Highway Department. Broken concrete from bridge deck removal may be used as riprap. See Special Provisions.

GENERAL NOTES

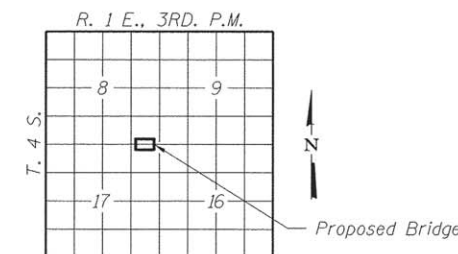
Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer. Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. Excavation required to construct the Abutments shall be included in the cost of Concrete Structures. No additional 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.



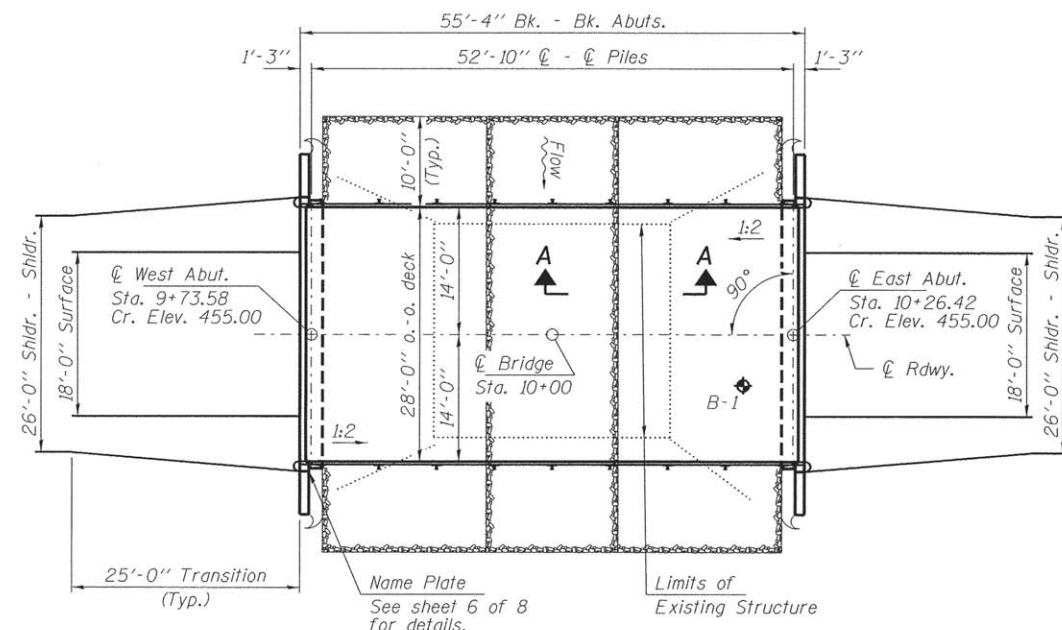
SECTION A-A
Note: See Special Provisions for Stone Dumped Riprap, Class A4.

INDEX OF STRUCTURE SHEETS

1. General Plan & Elevation
2. 21"x48" PPC Deck Beam
3. 21"x48" PPC Deck Beam Details
4. Superstructure Details
5. Steel Railing, Type S-1
6. Abutments
7. HP Pile Details
8. Borings



LOCATION SKETCH



PLAN

BALD HILL CREEK
BUILT 201 BY
JEFFERSON COUNTY
SEC. 14-00210-00-BR
STR. NO. 041-3757
LOADING HL-93

NAME PLATE
See Std. 515001

DESIGN SPECIFICATIONS

2012 AASHTO LRFD Bridge Design Specifications, 6th Edition with all 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"φ low lax. strands)
fpbt = 201,960 psi (3/8"φ low lax. strands)
fy = 60,000 psi (Reinf.)

SEISMIC DATA

Seismic Performance Zone (SPZ) = 3
Design Spectral Acceleration at 1.0 sec. (SD1) = 0.460g
Design Spectral Acceleration at 0.2 sec. (SD5) = 0.861g
Soil Site Class = E

DESIGN SCOUR ELEVATION TABLE

Event/Limit State	Design Scour Elevations (ft.)		Item 113
	W. Abut.	E. Abut.	
Q100	449.4	449.4	8
Q200	449.4	449.4	
Design	449.4	449.4	
Check	449.4	449.4	

WATERWAY INFORMATION

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Natural Head - Ft.		Headwater El.		
			Exist.	Prop.	Exist.	Prop.	Exist.	Prop.	
Design	10	1327	200	250	451.20	1.76	0.99	452.96	452.19
Base	100	2540	220	300	452.19	2.39	1.94	454.58	454.13
Overlapping	100	2540	220	300	452.19	2.39	1.94	454.58	454.13
Max. Calc.	500	3510	220	330	452.82	2.41	1.97	455.23	454.79

Drainage Area = 4.3 Sq. Mi. Existing Low Grade Elev. 454.5 @ Sta. 8+50 Proposed Low Grade Elev. 454.5 @ Sta. 8+50
10 Year Velocity through Existing Bridge = 6.6 fps 10 Year Velocity through Proposed Bridge = 5.4 fps

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

Steven W. McGinnis 04/11/2016
ILLINOIS STRUCTURAL ENGINEER NO. 081-6064



Expires 11-30-2016

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	Cu. Yd.			235
Stone Dumped Riprap, Class A4	Ton			230
Removal of Existing Structures	Each			1
Concrete Structures	Cu. Yd.		26.0	26.0
Precast Prestressed Concrete Deck Beams (21" Depth)	Sq. Ft.	1,512		1,512
Reinforcement Bars	Pound		2,850	2,850
Steel Railing, Type S-1	Foot	106		106
Furnishing Steel Piles HP10x42	Foot		320	320
Driving Piles	Foot		320	320
Name Plates	Each		1	1
Controlled Low Strength Material	Cu. Yd.		50	50

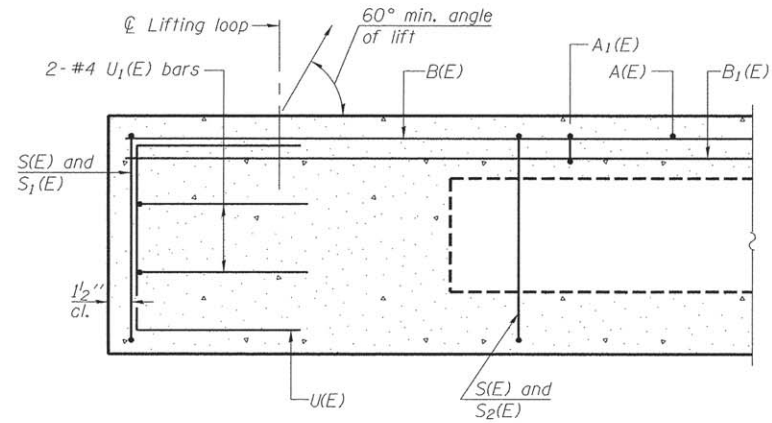
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HAMPTON, LENZINI AND RENWICK, INC. 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703	PLOT SCALE =	CHECKED - S.W.M.	REVISED -
ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000899	PLOT DATE = 4/11/2016	DRAWN - R.D.H.	REVISED -
		CHECKED - S.W.M.	REVISED -

STATE OF ILLINOIS
JEFFERSON COUNTY HIGHWAY DEPARTMENT

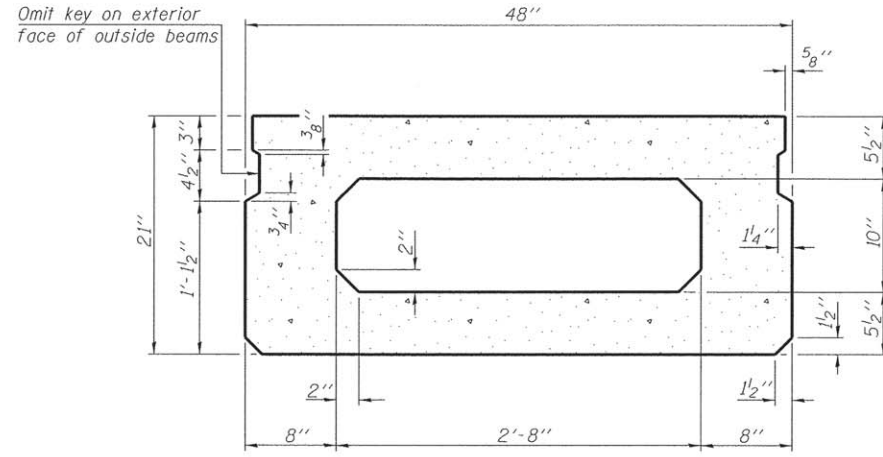
GENERAL PLAN & ELEVATION
STRUCTURE NO. 041-3757

SHEET NO. 1 OF 8 SHEETS

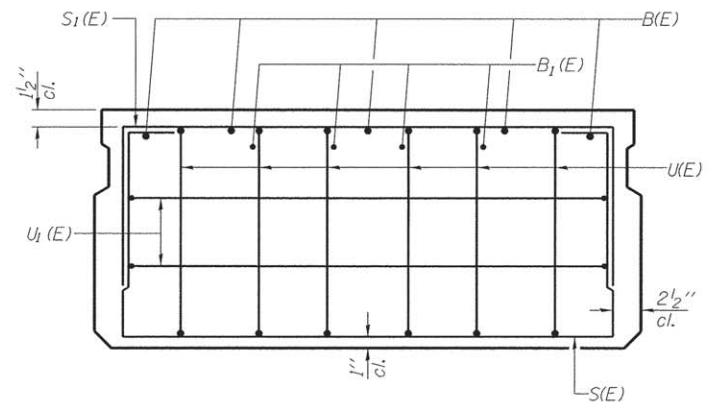
C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
26	14-00210-00-BR	JEFFERSON	19	12
			CONTRACT NO. 99559	
ILLINOIS FED. AID PROJECT BR05-0081077				



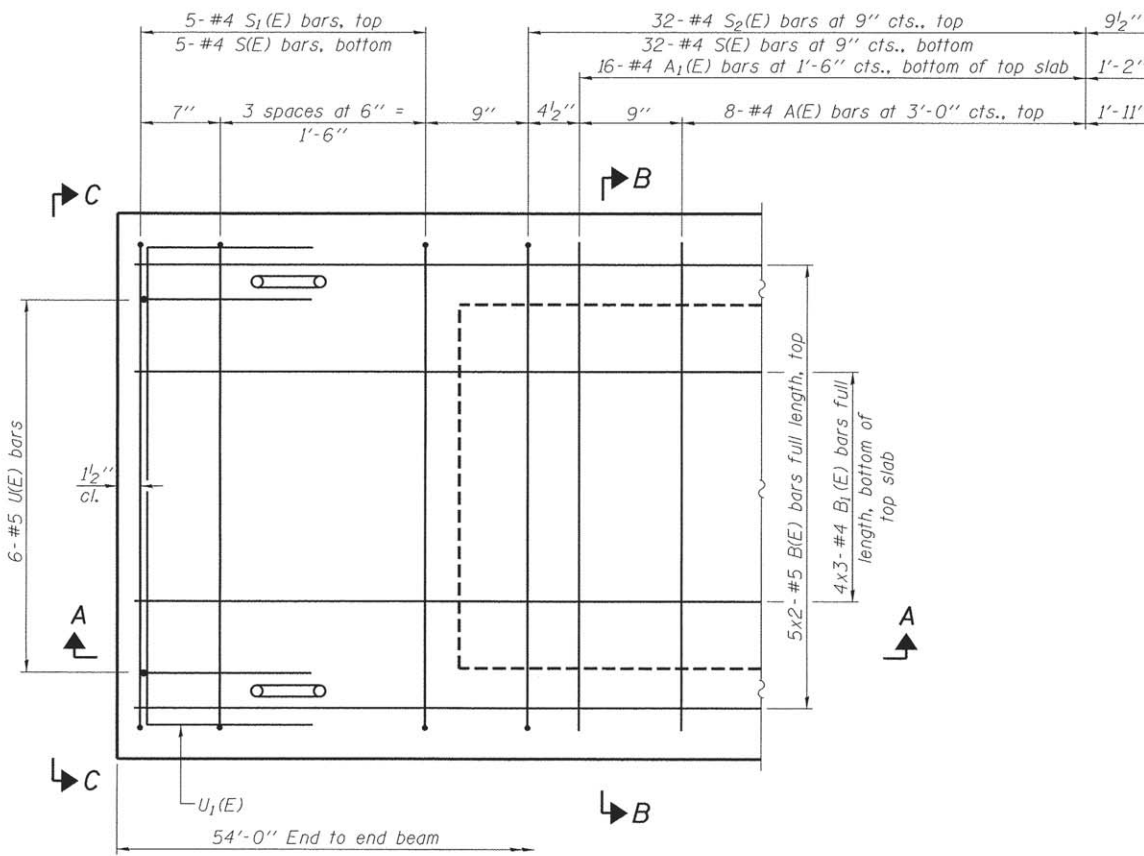
SECTION A-A



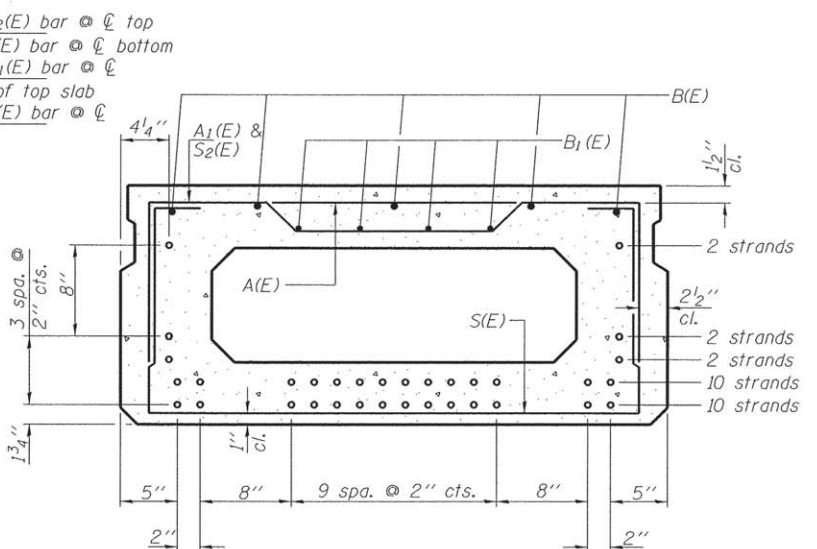
SECTION B-B
(Showing dimensions)



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)	17	#4	3'-7"	—
A1(E)	33	#4	3'-10"	—
B(E)	10	#5	28'-2"	—
B1(E)	12	#4	19'-3"	—
S(E)	75	#4	7'-5"	U
S1(E)	10	#4	5'-11"	U
S2(E)	65	#4	6'-2"	U
U(E)	12	#5	4'-0"	U
U1(E)	4	#4	6'-0"	U

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

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

MINIMUM BAR LAP

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

PD-2148-0 6-8-15

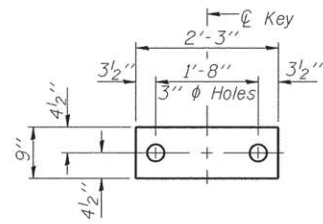
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HAMPTON, LENZINI AND RENWICK, INC. 3095 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703	PLOT SCALE =	CHECKED - S.W.M.	REVISED -
ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 194.000959	PLOT DATE = 4/11/2016	DRAWN - R.D.H.	REVISED -
		CHECKED - S.W.M.	REVISED -

STATE OF ILLINOIS
 JEFFERSON COUNTY HIGHWAY DEPARTMENT

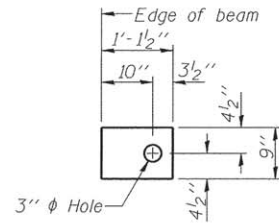
21" x 48" PPC DECK BEAM
 STRUCTURE NO. 041-3757

SHEET NO. 2 OF 8 SHEETS

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
26	14-00210-00-BR	JEFFERSON	19	13
CONTRACT NO. 99559			ILLINOIS FED. AID PROJECT BROS-0081077	



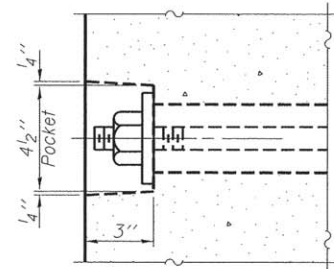
FABRIC BEARING PAD
(Interior - 12 Req'd.)



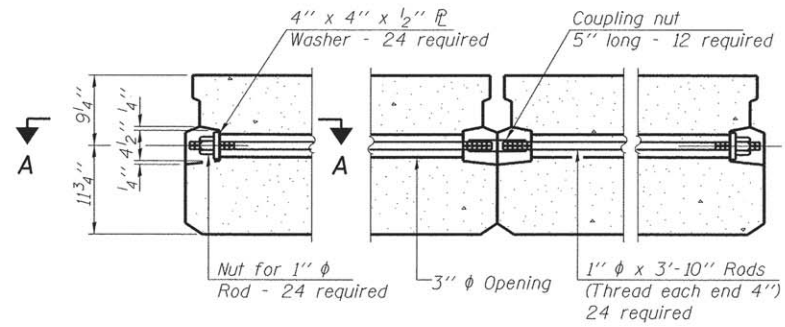
FABRIC BEARING PAD
(Exterior - 4 Req'd.)

FIXED

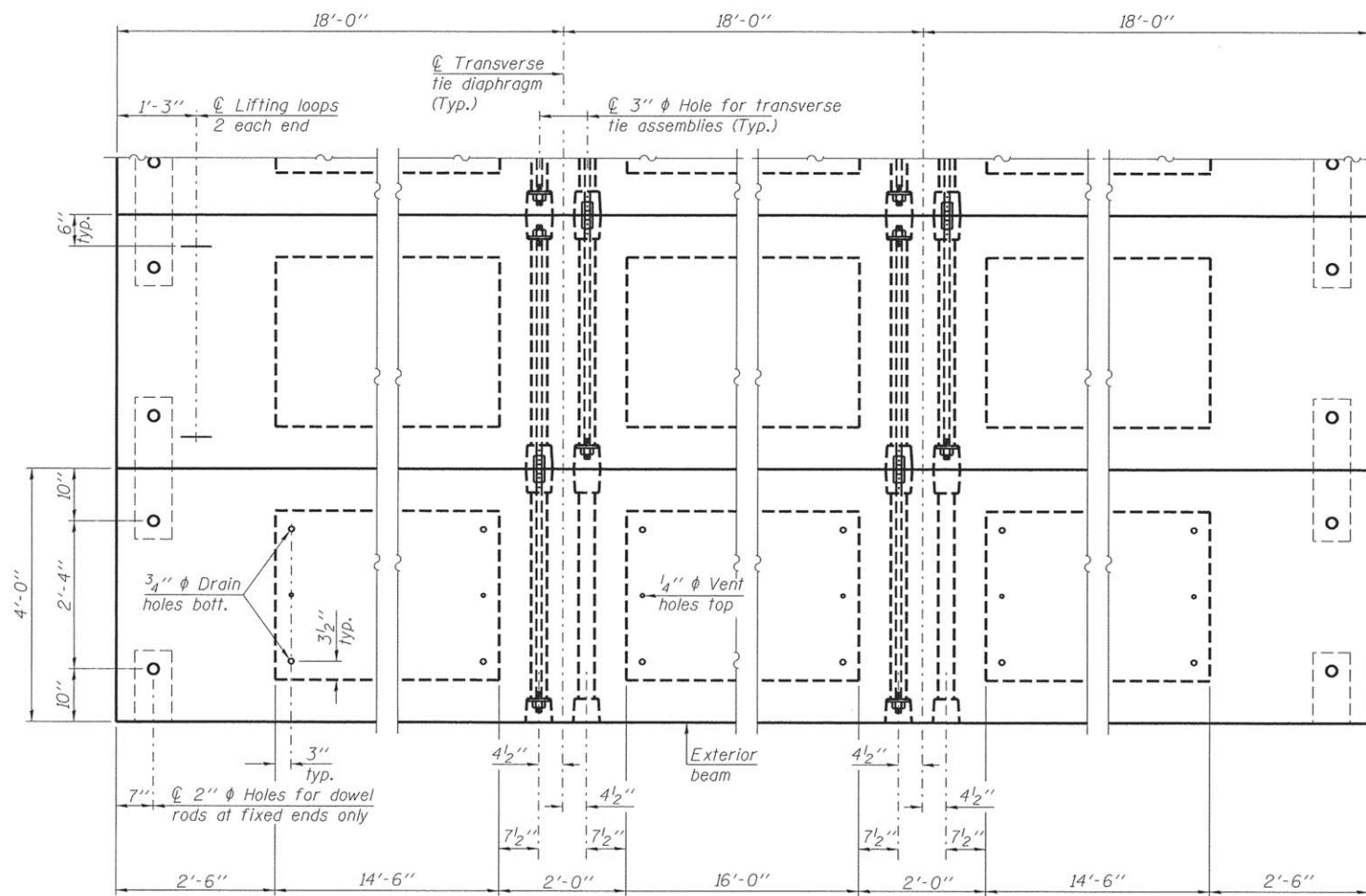
Notes:
All bearing pads shall be 1" thick.
Omit holes when using expansion bearings.
Expansion bearing pad shall be bonded to the substructure.



SECTION A-A

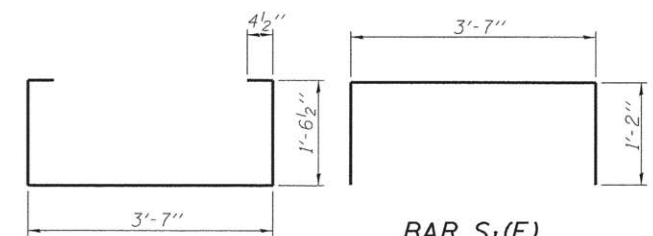


TYPICAL TRANSVERSE TIE ASSEMBLY



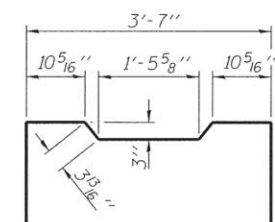
PLAN VIEW

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

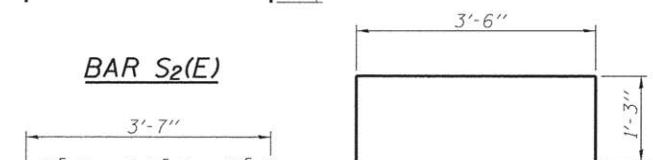


BAR S₁(E)

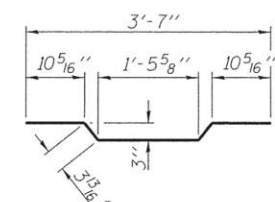
BAR S(E)



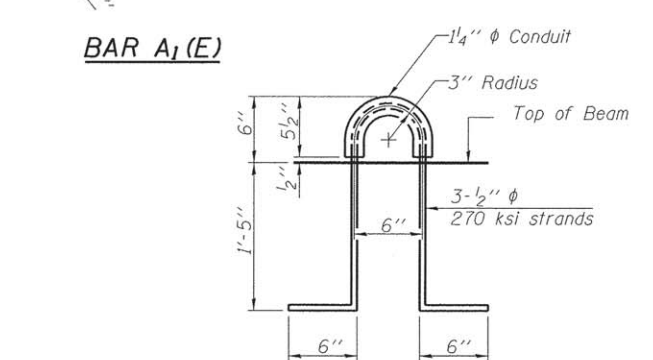
BAR U(E)



BAR S₂(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" 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.
All bars designated (E) shall be epoxy coated.

BILL OF MATERIAL

Precast Prestressed Conc. Deck Bms. (21" depth)	Sq. Ft.	1,512
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PD-2148-OD

7-1-10

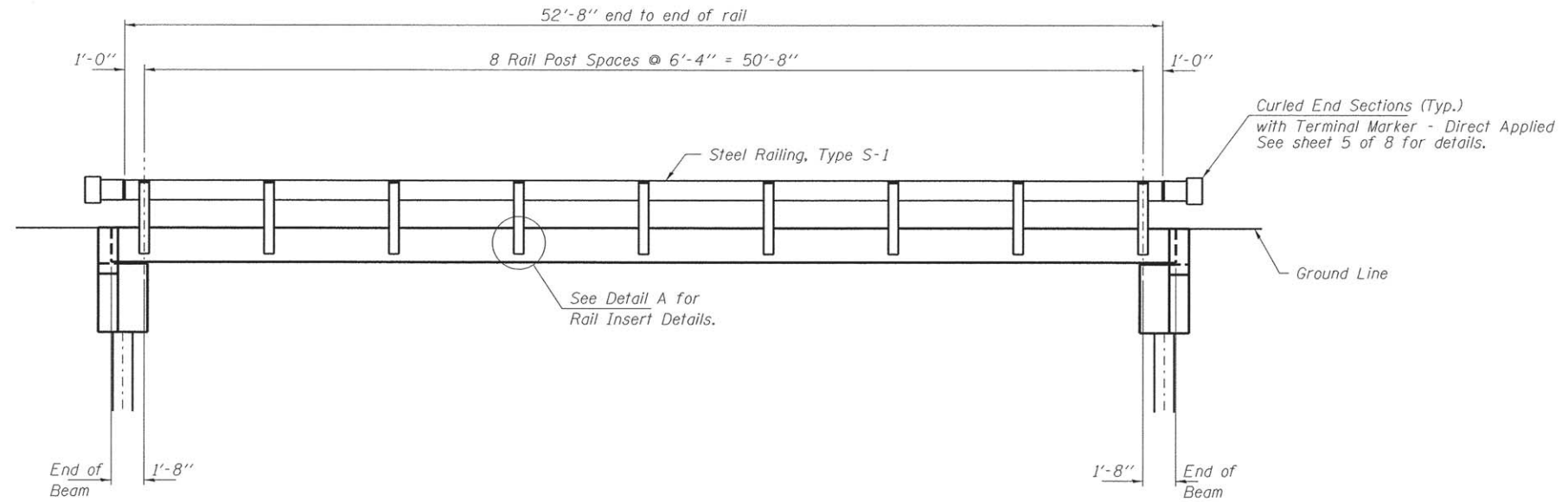
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ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000659	PLOT DATE = 4/11/2016	DRAWN - R.D.H.	REVISED -
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STATE OF ILLINOIS
JEFFERSON COUNTY HIGHWAY DEPARTMENT

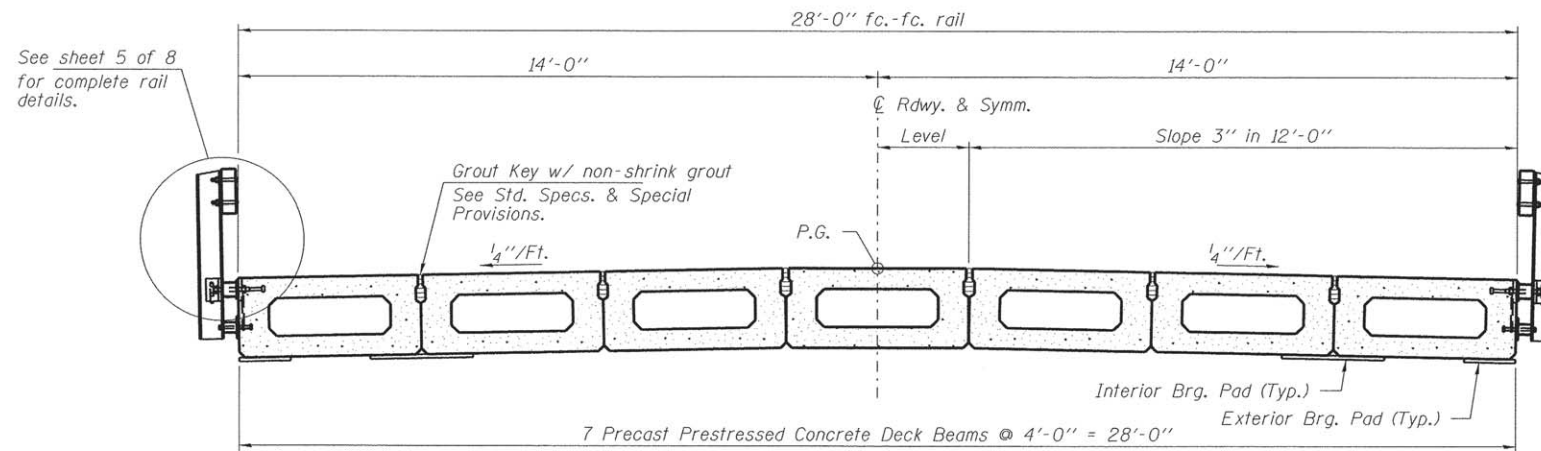
21" x 48" PPC DECK BEAM DETAILS
STRUCTURE NO. 041-3757

SHEET NO. 3 OF 8 SHEETS

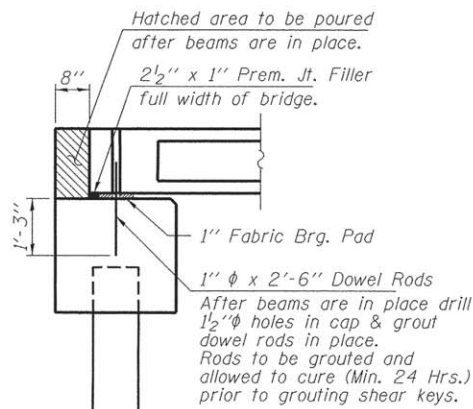
C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
26	14-00210-00-BR	JEFFERSON	19	14
CONTRACT NO. 99559			ILLINOIS FED. AID PROJECT BROS-0081077	



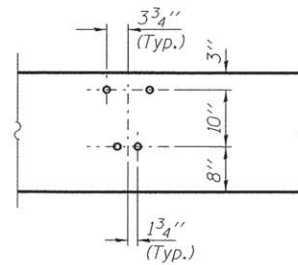
ELEVATION
Showing Rail Post Spaces
See sheet 5 of 8 for Railing Details.



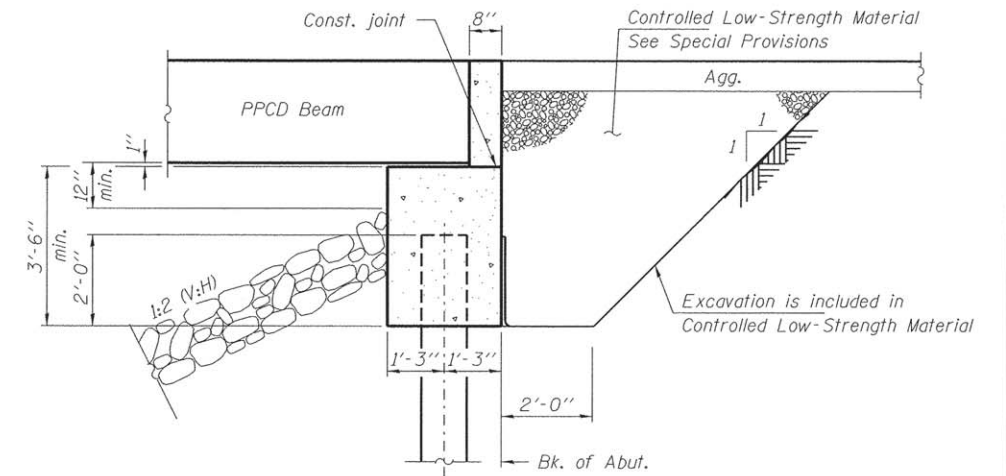
CROSS SECTION
See sheets 2 & 3 of 8 for Superstructure.



SECTION AT ABUTMENTS
@ Rt. L's

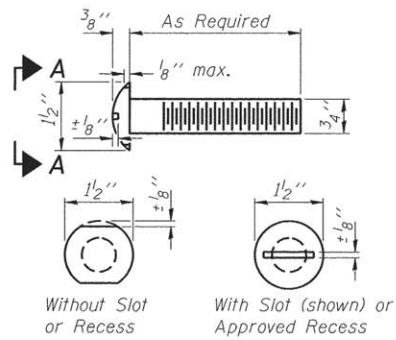


DETAIL A

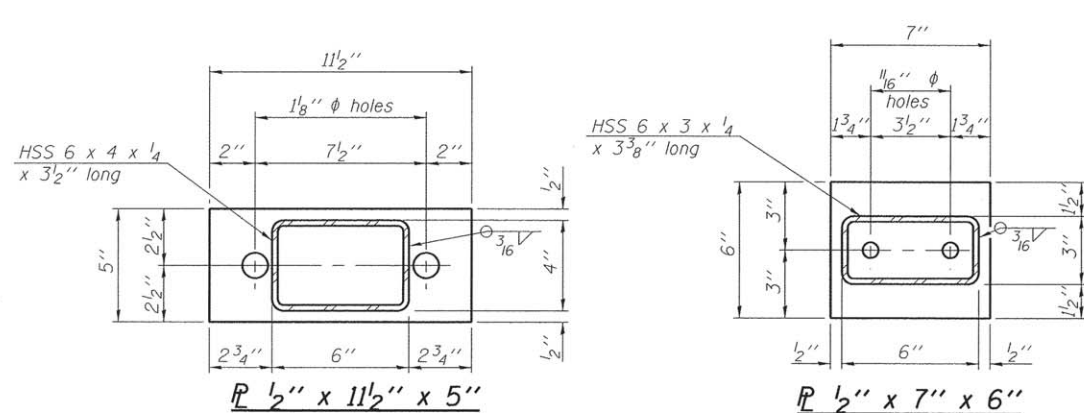


SECTION THRU ABUTMENT
(Horiz. dim. @ Rt. L's)

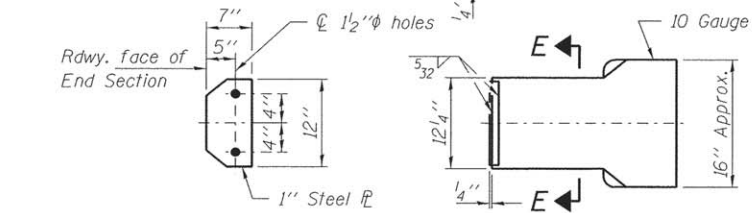
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HAMPTON, LENZINI AND RENWICK, INC. 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703	PLOT SCALE =	CHECKED - S.W.M.	REVISED -			26	14-00210-00-BR	JEFFERSON	19	15	
ILR ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000859	PLOT DATE = 4/11/2016	DRAWN - R.D.H.	REVISED -			CONTRACT NO. 99559					
		CHECKED - S.W.M.	REVISED -			ILLINOIS FED. AID PROJECT BR05-00810771					
SHEET NO. 4 OF 8 SHEETS											



VIEW A-A
ROUND HEAD BOLT



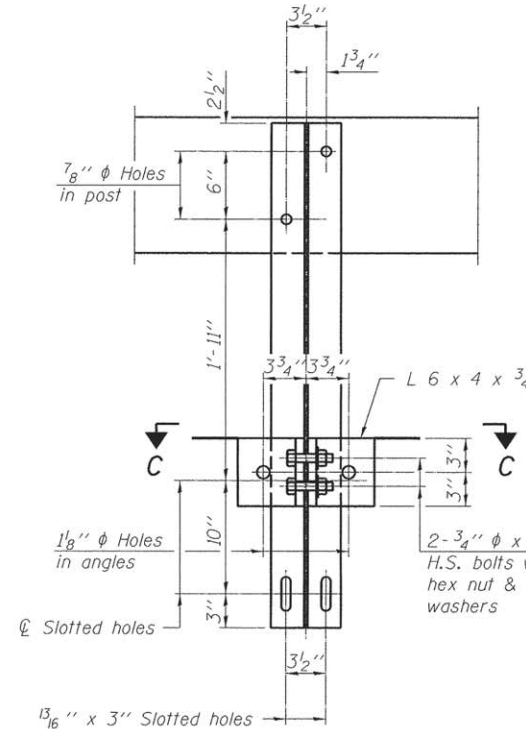
Note: Cost of curled end sections shall be included with the Steel Railing. (4 Required)



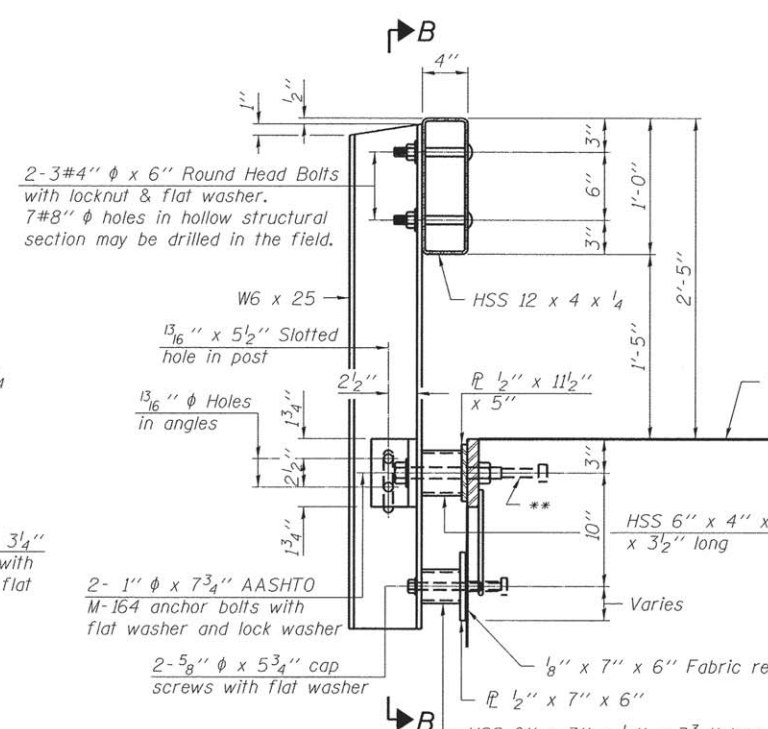
SECTION E-E
CURLLED END SECTION DETAILS
SPLICE DIMENSIONS

T	D	A	B	C	E
≤ 4"	2 1/2"	1'-8"	2"	4"	2 1/2"
> 4" ≤ 6 1/2"	3 3/4"	2'-0"	2 1/2"	5 1/2"	3 1/2"
> 6 1/2" ≤ 9"	5"	2'-4"	3 1/2"	6 1/2"	9"
> 9" ≤ 13"	7"	2'-10"	4 1/2"	8 1/2"	11"
Rail Splice	1/4"	1'-8"	2"	4"	

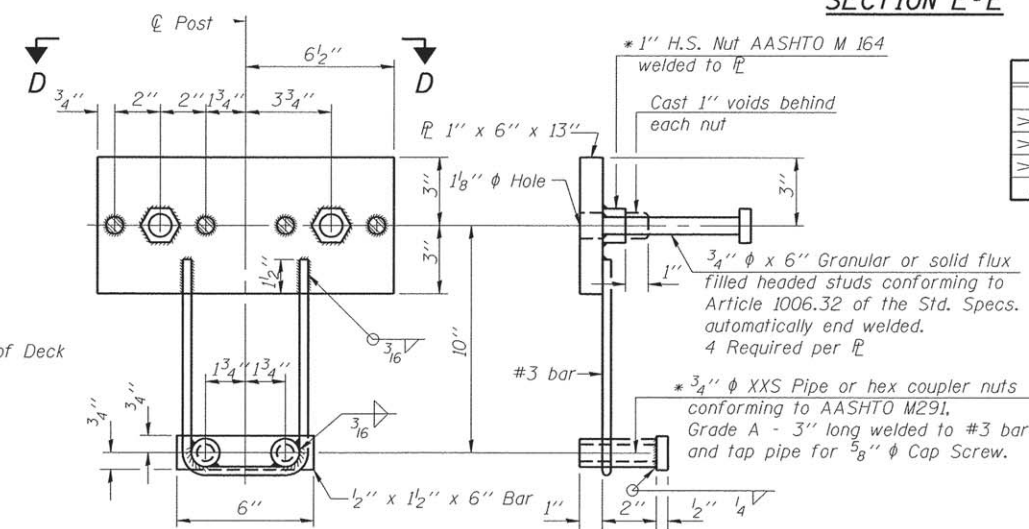
T = Total movement at expansion joint as shown on the design plans.



SECTION B-B

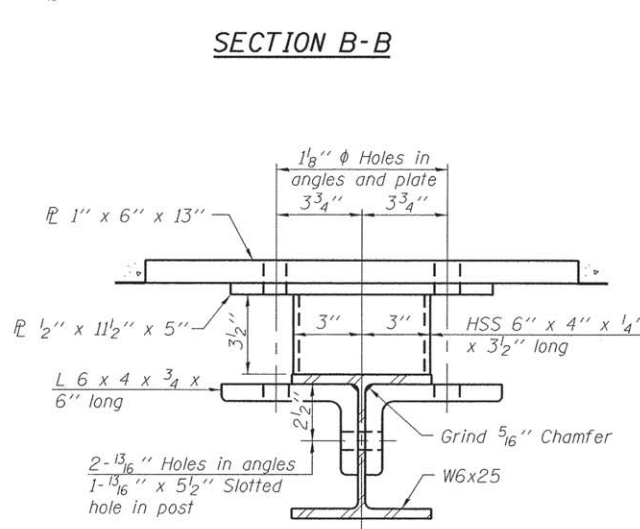


SECTION AT RAILING POST

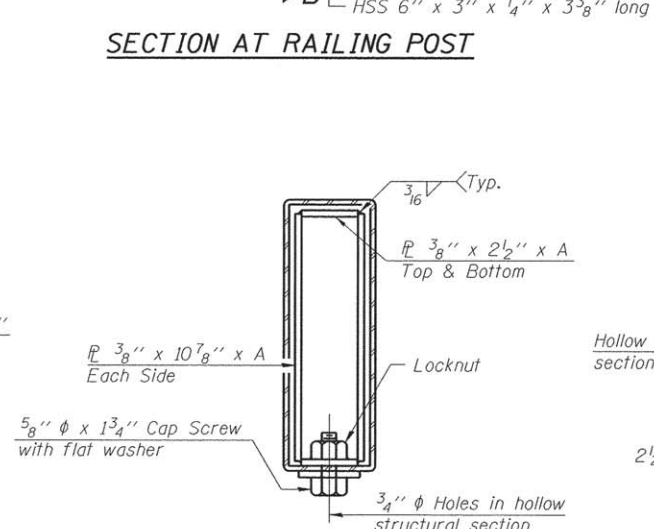


ANCHOR DEVICE

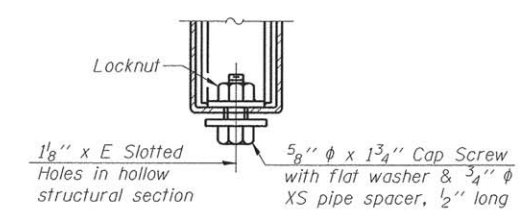
* Threaded areas shall be plugged or blocked off during casting of beam.



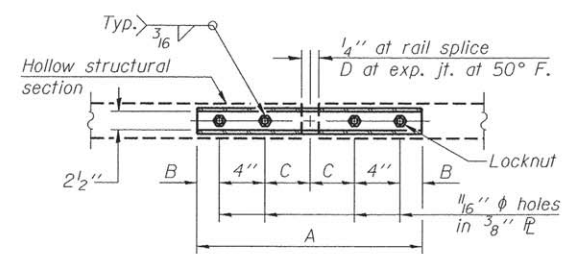
SECTION C-C



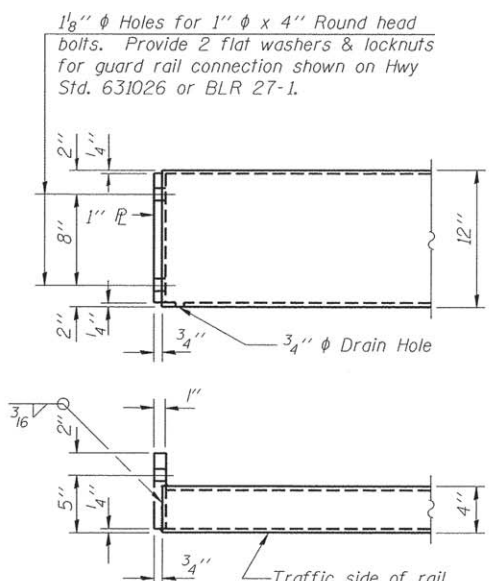
SECTIONS AT RAIL SPLICE



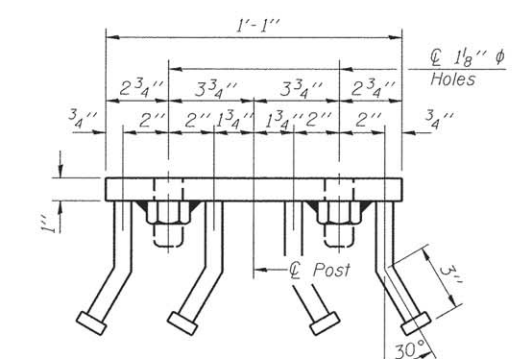
RAIL SPLICE CONNECTION
AT EXPANSION JT.



PLAN-BOTT. SPLICE
TYPICAL



END OF RAIL DETAILS



VIEW D-D

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S-1	Foot	106

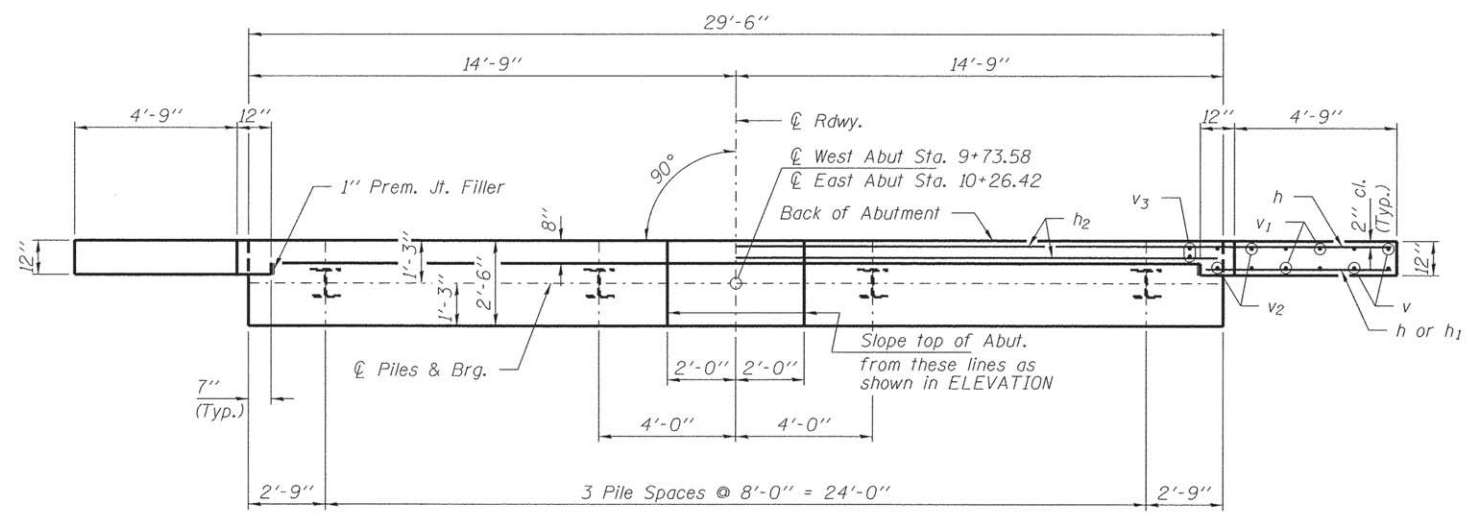
R-23A 1-12-15 (10'-9" Maximum Post Spacing)

FILE NAME = 148153-shr-bridge.dgn	USER NAME =	DESIGNED - L.A.P.	REVISED -
HAMPTON, LENZINI AND RENWICK, INC. 3880 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703	PLOT SCALE =	CHECKED - S.W.M.	REVISED -
ILLINOIS PROFESSIONAL DESIGN FIRM L3 / PE / SE CORP. 184.00959	PLOT DATE = 4/11/2016	DRAWN - R.D.H.	REVISED -
		CHECKED - S.W.M.	REVISED -

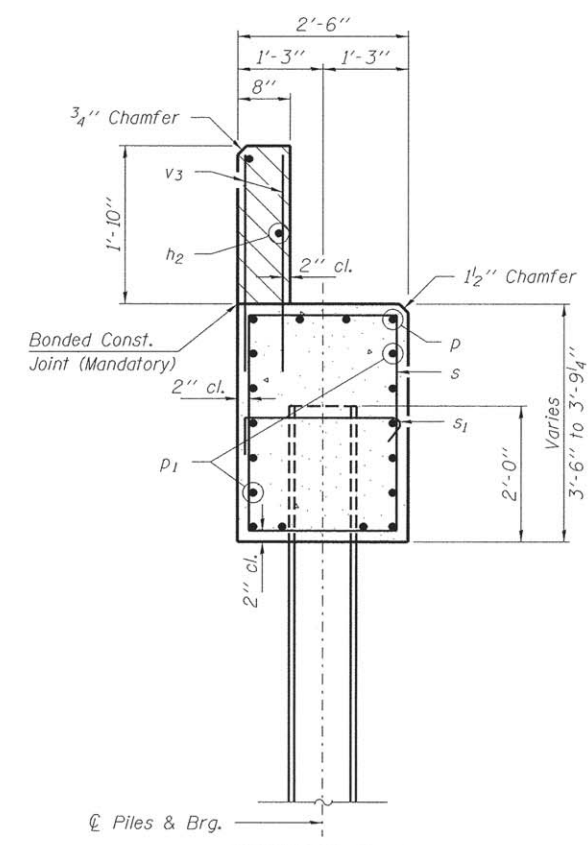
STATE OF ILLINOIS
JEFFERSON COUNTY HIGHWAY DEPARTMENT

STEEL RAILING, TYPE S-1
STRUCTURE NO. 041-3757
SHEET NO. 5 OF 8 SHEETS

C.H.	SECTION	COUNTY	TOTAL SHEET NO.
26	14-00210-00-BR	JEFFERSON	19 16
			CONTRACT NO. 99559
ILLINOIS FED. AID PROJECT BROS-0081077			

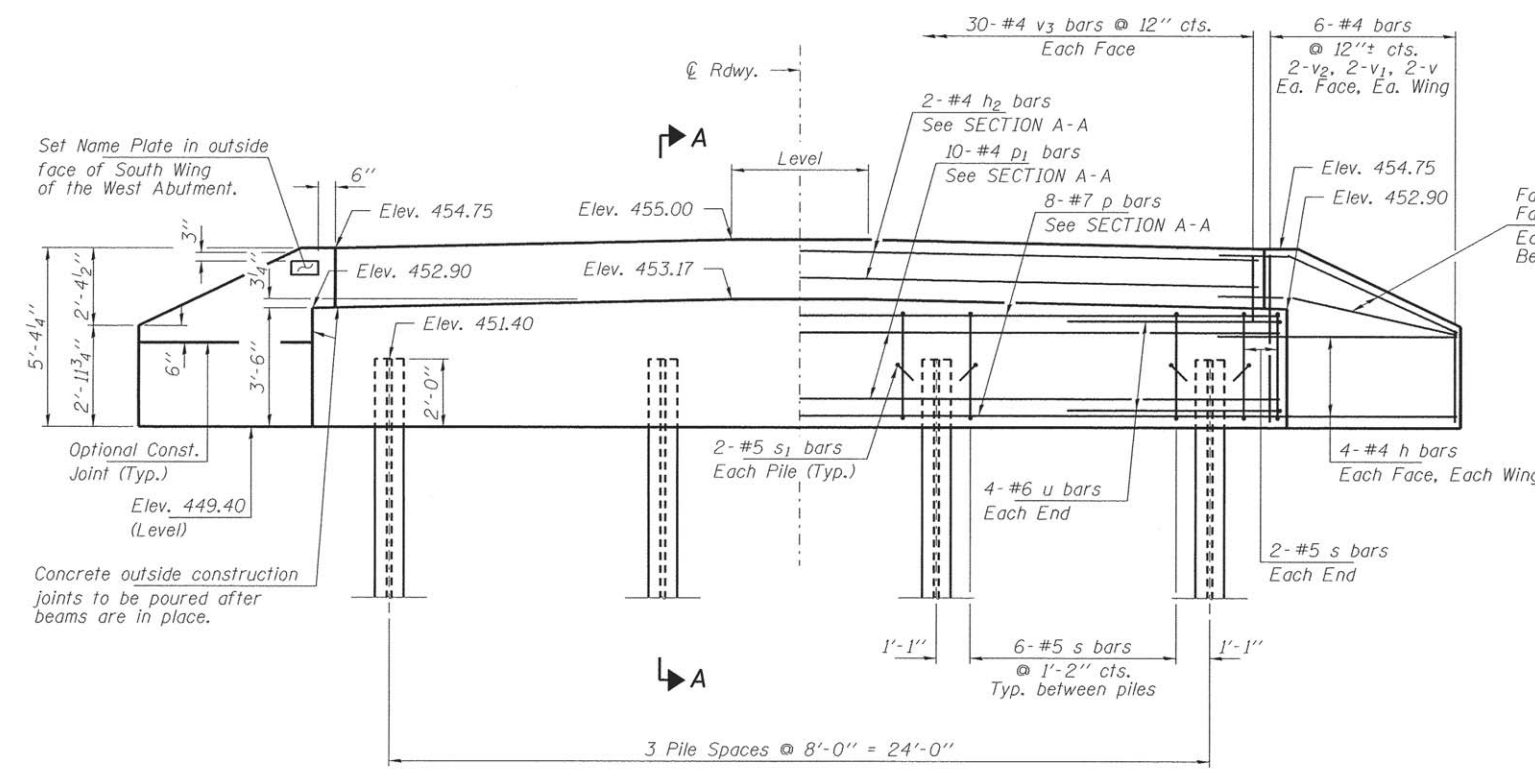
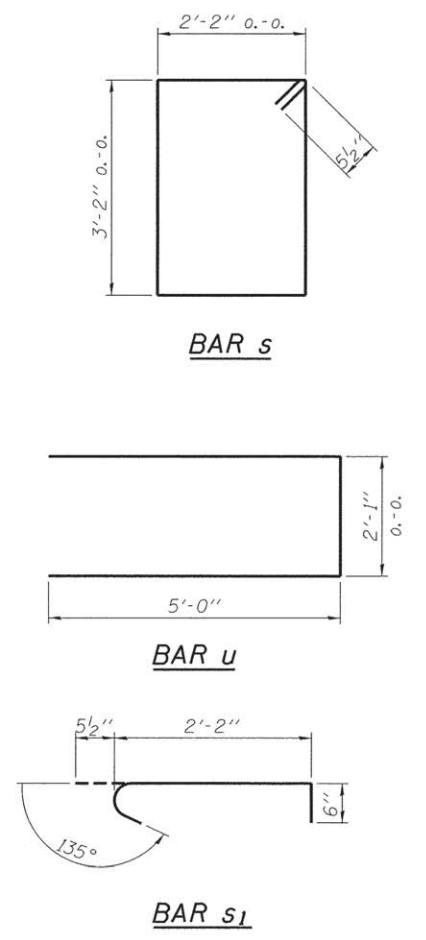


PLAN



SECTION A-A

Hatched area to be poured after beams are in place.



ELEVATION

Note: Extend h bars into abutment cap.

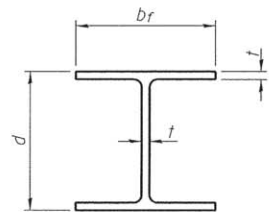
Fan 2-#4 h bars (B.F.)
Fan 2-#4 h1 bars (F.F.)
Each Wing
Bend in field.

PILE DATA

Type: Steel HP10x42
No. Req'd. (2 Abuts.): 8
Factored Resistance Available (Rf): 184 Kips/Pile
Nominal Required Bearing (Rn): 335 Kips/Pile
Est. Length: 40 Ft/Pile

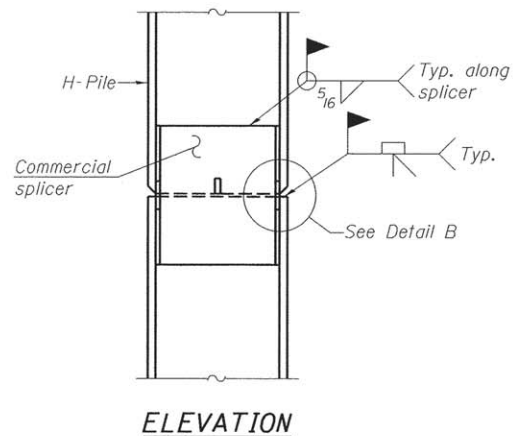
BILL OF MATERIAL - 2 ABUTS.

BAR	NO.	SIZE	LENGTH	SHAPE
h	40	#4	7'-0"	—
h1	8	#4	5'-6"	—
h2	4	#4	29'-2"	—
p	16	#7	29'-2"	—
p1	20	#4	29'-2"	—
s	44	#5	11'-7"	□
s1	16	#5	3'-2"	┌
u	16	#6	12'-1"	▭
v	16	#4	2'-9"	—
v1	16	#4	3'-10"	—
v2	16	#4	4'-11"	—
v3	120	#4	2'-8"	—
Concrete Structures			Cu. Yd.	26.0
Reinforcement Bars, Epoxy Coated			Pound	2,850
Steel Piles HP10x42			Foot	320
Name Plates			Each	1
Concrete Sealer			Sq. Ft.	108

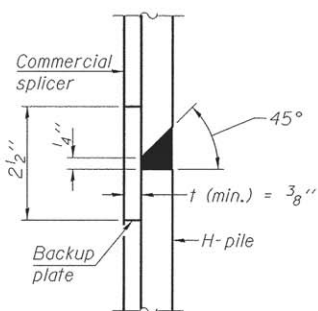


STEEL PILE TABLE

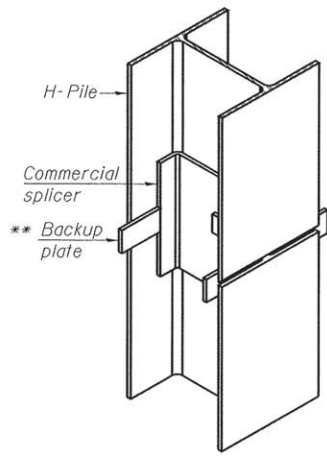
Designation	Depth d	Flange width b _f	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	13/16"	30"
x102	14"	14 3/4"	11/16"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 5/8"	14 5/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	11/16"	24"
x74	12 1/8"	12 1/4"	5/8"	24"
x63	12"	12 1/8"	1/2"	24"
x53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



ELEVATION

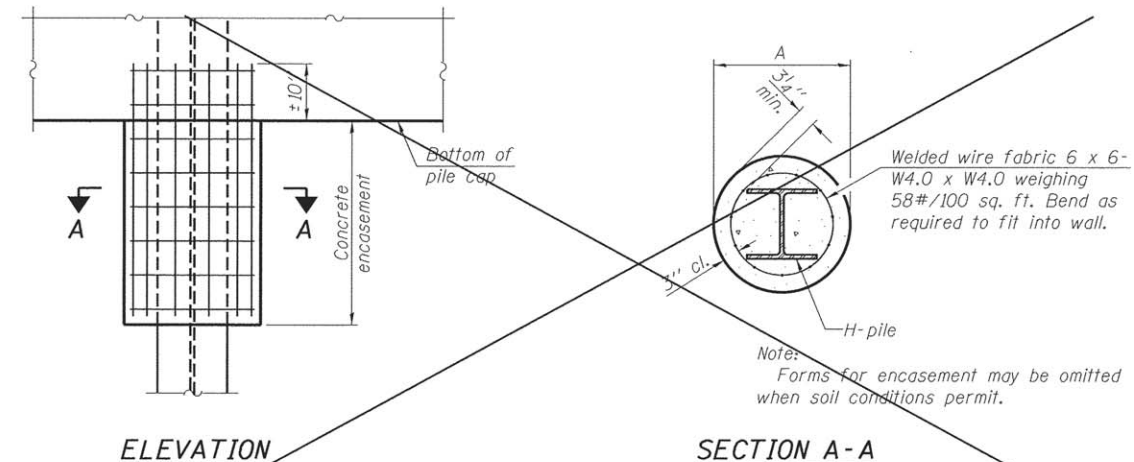


DETAIL "B"



ISOMETRIC VIEW

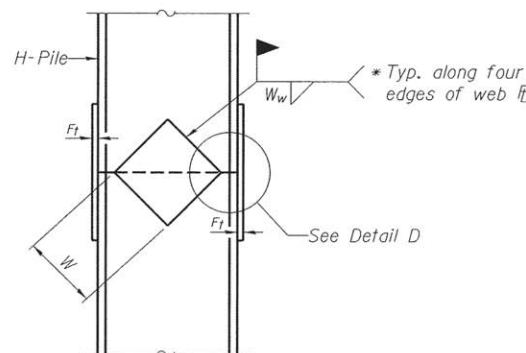
WELDED COMMERCIAL SPLICE



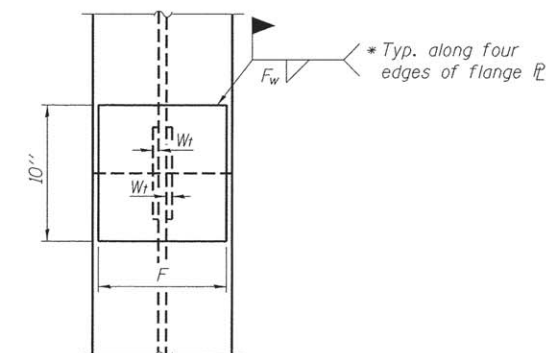
ELEVATION

SECTION A-A

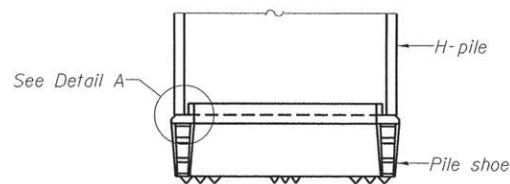
PILE ENCASEMENT
(Not Required)



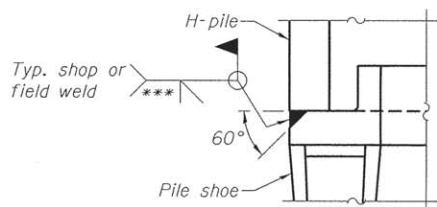
ELEVATION



END VIEW

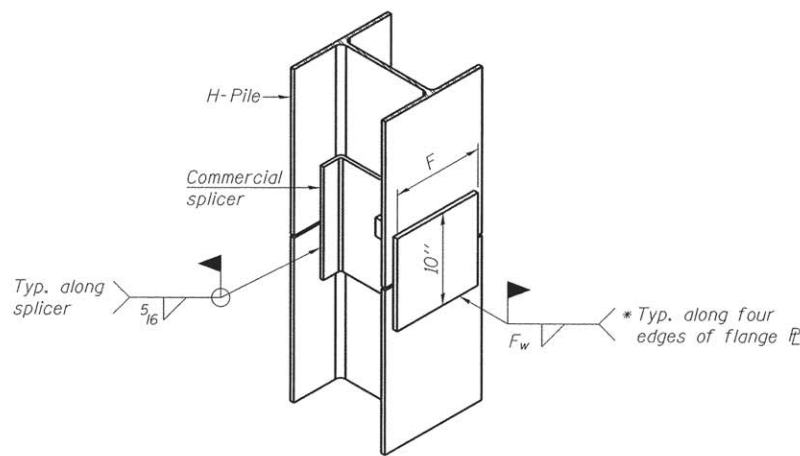


ELEVATION

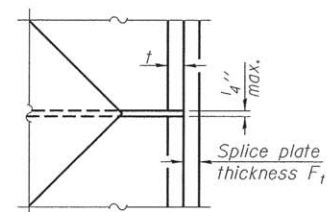


DETAIL A

H-PILE SHOE ATTACHMENT



ISOMETRIC VIEW



DETAIL D

WELDED PLATE FIELD SPLICE

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

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

FILE NAME = 140153-shr-bridge.dgn	USER NAME =	DESIGNED - L.A.P.	REVISED -	STATE OF ILLINOIS JEFFERSON COUNTY HIGHWAY DEPARTMENT	HP PILE DETAILS STRUCTURE NO. 041-3757	C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
HAMPTON, LENZINI AND RENWICK, INC. 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62761	PLLOT SCALE =	CHECKED - S.W.M.	REVISED -			26	14-00210-00-BR	JEFFERSON	19	18	
ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000659	PLLOT DATE = 4/11/2016	DRAWN - R.D.H.	REVISED -			CONTRACT NO. 99559					
		CHECKED - S.W.M.	REVISED -			SHEET NO. 7 OF 8 SHEETS					

ILLINOIS FED. AID PROJECT BROS-0081077

Bridge Foundation Boring Log

Project: H-14096 Bridge CH 26 over Little Muddy River Date: 05/07/2014
 Section: 14-00210-00-BR Station _____
 Structure: 041-3176 Bored by: B. Schwartz
 County: Jefferson Checked By: T. Holcomb

Boring No: <u>1</u>		Elevation	N	Qu	tsf	w	%	Surface Water Elev.		Elevation	N	Qu	tsf	w	%
Station: _____	Offset: _____							During Drilling	Upon Completion						
Ground Surface		(454.8)	99.8	0				clay (continued)							
Brown Silty CLAY (A-6)								(432.3)	76.3						
				5	1.9B	17				-25	5	0.6S	26		
		(452.3)	96.3					(429.8)	73.8						
Brown Mottled Gray Silty CLAY (A-6)															
				2	1.0S	22					7	0.5B	16		
		(449.8)	93.8					(427.3)	71.3						
Gray Silty CLAY (A-6)															
				3	1.2B	24				-30	9	1.8S	20		
				3	1.0B	22									
		(444.8)	88.8												
Gray Mottled Brown Sandy CLAY (A-6)															
				4	1.3B	21				-35	12	1.2B	22		
				4	0.3B	23									
				5	0.2B	22									
								(416.3)	60.3						
										-40	100	/4"	--	19	
										100	/4"	--	18		
				3	0.1B	24									
								(411.8)	55.8						
				3	0.8B	26									
End of Boring @ -44.0'															

N = Standard Penetration Test Blows per foot to drive 2" O.D. Split Spoon Sampler 12" with a 140 lbs. hammer falling 30"
 Qu = Unconfined Compressive Strength in tons/sq.ft.
 w = Water Content - percentage of oven dry weight-%
 B = Bulge Failure
 S = Shear Failure
 E = Estimated Value
 P = Penetrometer

BORING