

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

PLANS FOR PROPOSED  
HIGHWAY BRIDGE PROGRAM

PROJECT BROS-025(061)  
SECTION 06-11129-00-BR  
STANFORD ROAD DISTRICT  
CLAY COUNTY  
T.R. 363 / MARIGOLD LANE  
PROPOSED STRUCTURE NO. 013-3235  
C-97-047-10

ROUTE NO. T.R. 363	SECTION 06-11129 -00-BR	COUNTY CLAY	TOTAL SHEETS 16	SHEET NO. 1
FED. ROAD DIST. NO.		ILLINOIS	CONTRACT NO. 95621	

INDEX OF SHEETS

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

HIGHWAY STANDARDS:

000001-05	STANDARD SYMBOLS, ABBREVIATIONS, AND PATTERNS
515001-03	NAME PLATE FOR BRIDGES
701901-01	TRAFFIC CONTROL DEVICES
BLR 21-8	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS

UTILITIES

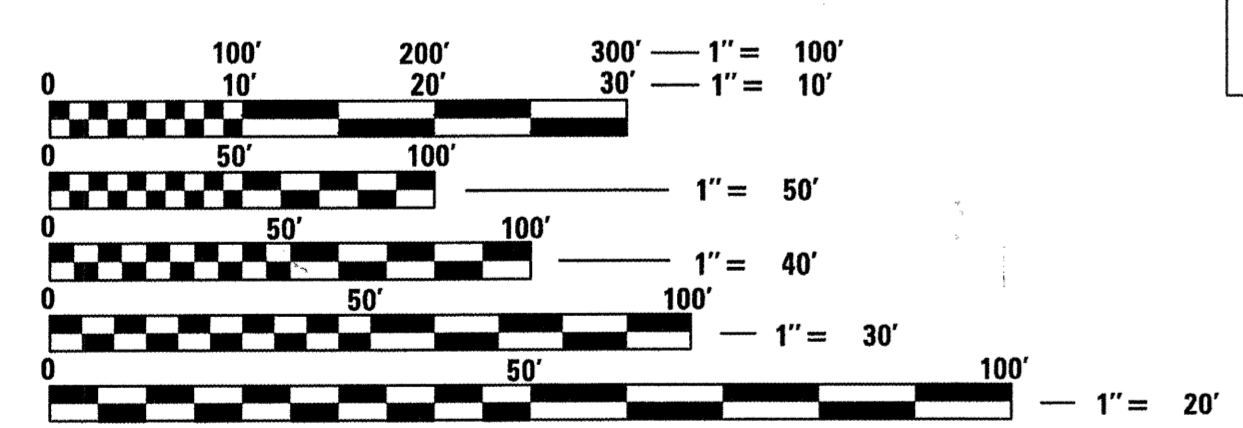
VERIZON  
225 EAST CHESTNUT ST.  
OLNEY, IL 62450

CLAY ELECTRIC CO-OP, INC.  
7784 OLD HIGHWAY 50  
P.O. BOX 517  
FLORA, IL 62839-0517



LOCATION OF SECTION INDICATED THUS: - [shaded area] -

FUNCTIONAL CLASSIFICATION: LOCAL ROAD (NON-URBAN) < 150 ADT  
DESIGN SPEED: 30 MPH  
DESIGN TRAFFIC: 125 ADT (2005)

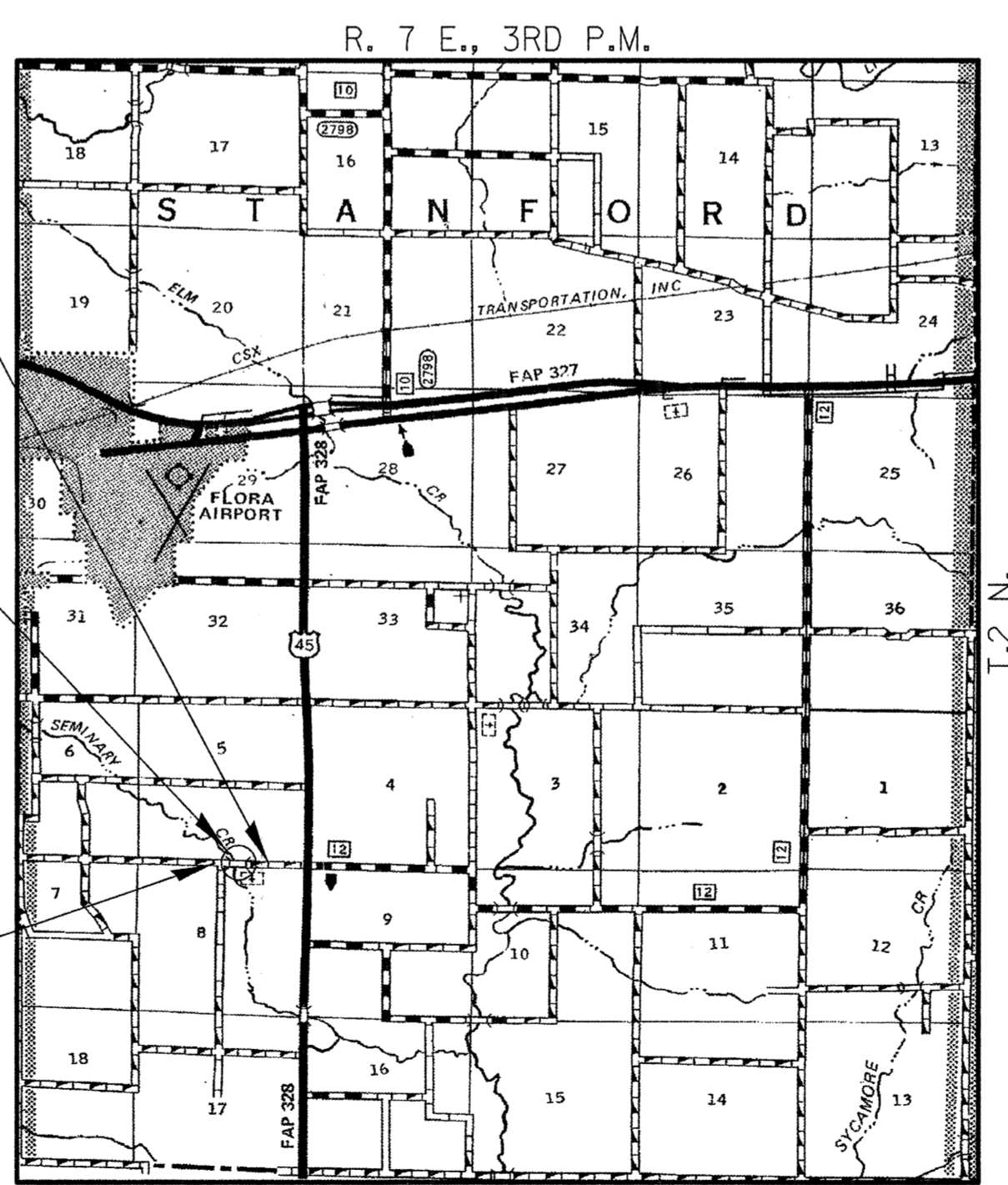


FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

STA. 10+03  
PRECAST PRESTRESSED CONCRETE DECK BEAM BRIDGE, SINGLE SPAN @ 45'-0"  
24'-0" RDWY.; SKEW = 10°  
EXISTING STRUCTURE NO. 013-3124  
PROPOSED STRUCTURE NO. 013-3235

IMPROVEMENT ENDS STATION 11+50

IMPROVEMENT BEGINS STATION 8+00

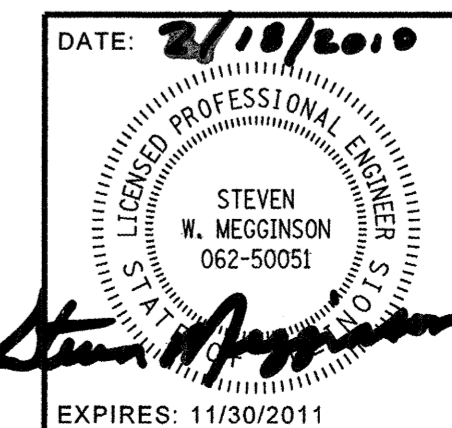


LOCATION MAP

APPROXIMATE SCALE: 0 1 MILE  
NET LENGTH OF SECTION = 350 FEET = 0.066 MILES



ILLINOIS DEPT. OF TRANSPORTATION	
APPROVED	<u>February 23, 2010</u> <i>[Signature]</i> COUNTY ENGINEER
APPROVED	<u>2-22-2010</u> <i>[Signature]</i> ROAD COMMISSIONER
PASSED	<u>4/13/2010</u> <i>[Signature]</i> DISTRICT SEVEN ENGINEER OF LOCAL ROADS & STREETS
Releasing For Bid Based on Limited Review	<u>4/13/2010</u> <i>[Signature]</i> DEPUTY DIRECTOR OF HIGHWAYS REGION FOUR ENGINEER STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION



DATE: 2/18/2010

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

184.000959  
ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORPORATION

PROJECT NUMBER: 09.0128.130 DATE: 02/18/10

CONTRACT NO. 95621

CLAY COUNTY

SECTION 06-11129-00-BR

SUMMARY OF QUANTITIES			
CODE NO.	ITEM	UNIT	TOTAL CONSTRUCTION TYPE CODE X080
20100500	TREE REMOVAL, ACRES	ACRE	0.1
20200100	EARTH EXCAVATION	CU YD	165
20300100	CHANNEL EXCAVATION	CU YD	20
20400800	FURNISHED EXCAVATION	CU YD	340
^ 25001000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.3
^ 28101700	RIPRAP, SPECIAL	TON	140
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	280
^ 50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50300225	CONCRETE STRUCTURES	CU YD	21.8
50300280	CONCRETE ENCASEMENT	CU YD	2.8
50400305	PRECAST PRESTRESSED CONCRETE DECK BEAMS (17" DEPTH)	SQ FT	1,080
50800105	REINFORCEMENT BARS	POUND	2,340
Δ 50900205	STEEL RAILING, TYPE S1	FOOT	84
51201400	FURNISHING STEEL PILES HP10X42	FOOT	175
51202305	DRIVING PILES	FOOT	175
51203400	TEST PILE STEEL HP10X42	EACH	1
51500100	NAME PLATES	EACH	1
^ 542D0220	PIPE CULVERTS, CLASS D, TYPE 1 15"	FOOT	36
67100100	MOBILIZATION	L SUM	1

^ SEE SPECIAL PROVISIONS

Δ SPECIALTY ITEMS

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 363							
STA 8+00.00 TO STA 9+79.82	92		25.00%	100.00%	69	351	-282
STA 10+26.18 TO STA 11+50	72		25.00%	100.00%	54	111	-57
CHANNEL EXCAVATION ENTRANCE		20	25.00%	70.00%	11	0	11
						13	-13
TOTAL	164	20			134	475	-341
USE	165						340

FURNISHED EXCAVATION = 340 CU YDS

### GENERAL NOTES

- ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE STATE OF ILLINOIS "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION ADOPTED JANUARY 1, 2007," THESE PLANS AND THE SPECIAL PROVISIONS INCLUDED IN THE CONTRACT DOCUMENTS.
- ALL CLEARING AND GRUBBING, FENCE REMOVAL AND REMOVAL OF EXISTING DRAINAGE STRUCTURES SHALL BE INCLUDED IN THE COST OF EARTH EXCAVATION. THE REMOVAL OF THE EXISTING BITUMINOUS SURFACE WILL BE PAID FOR AS EARTH EXCAVATION. ALL BITUMINOUS MATERIAL SHALL BE PROPERLY DISPOSED OF BY THE CONTRACTOR IN A METHOD APPROVED BY THE ENGINEER. PROPER DISPOSAL OF BITUMINOUS MATERIAL SHALL BE INCLUDED IN THE COST OF EARTH EXCAVATION AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
- THE LOCATION OF EXISTING GAS MAINS, ELECTRIC POWER LINES, TELEPHONE LINES AND OTHER UTILITIES AS SHOWN ON THE PLANS ARE BASED ON CAREFUL FIELD INVESTIGATION AND THE BEST INFORMATION AVAILABLE, BUT THE LOCATIONS ARE NOT GUARANTEED. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ASCERTAIN THEIR EXACT LOCATION FROM THE INDIVIDUAL UTILITY COMPANIES AND BY FIELD INSPECTION.
- WHERE SECTION OR SUBSECTION MONUMENTS ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED BEFORE SUCH MONUMENTS ARE REMOVED. THE CONTRACTOR SHALL PROTECT AND CAREFULLY PRESERVE ALL PROPERTY MARKS AND MONUMENTS UNTIL THE OWNER, AN AUTHORIZED SURVEYOR OR AGENT HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATION.
- THE CONTRACTOR SHALL CONSULT THE ENGINEER IN REGARD TO THE EXACT LENGTH OF PIPE CULVERTS AND PIPE DRAINS BEFORE ORDERING THESE ITEMS.
- THE REVISION NUMBER INDICATED FOR THE STANDARDS LISTED IN THE INDEX SHEETS SHALL BE USED IN THE CONSTRUCTION OF THIS SECTION.
- THE FOLLOWING RATES OF APPLICATION HAVE BEEN USED IN CALCULATING PLAN QUANTITIES.  

AGGREGATE SURFACE COURSE	2.05 TON/CU YD
STONE RIPRAP	1.75 TON/CU YD
- THE AREA TO BE SEEDED SHALL CONSIST OF ALL DISTURBED EARTH SURFACES WITHIN THE R.O.W. AS DIRECTED BY THE ENGINEER.
- TREES WITHIN THE RIGHT-OF-WAY WHICH INTERFERE WITH CONSTRUCTION SHALL BE REMOVED ONLY AT THE DIRECTION OF THE ENGINEER. THE AREA DESIGNATED FOR REMOVAL SHALL BE MARKED AND MEASURED FOR PAYMENT BY THE ENGINEER BEFORE REMOVAL.

ROADWAY SCHEDULE	
LOCATION	AGGREGATE SURFACE COURSE, TYPE B (8")
	40200800 TON
TR 363	
STA 8+00.00 TO STA 9+79.82	165
STA 10+26.18 TO STA 11+50.00	115
TOTAL	280
USE	280

HORIZONTAL ALIGNMENT		
LOCATION	NORTHING	EASTING
P.O.B. STA 6+94.40	10007.2790	9641.2230
P.O.E. STA 13+14.92	10007.4120	10261.7400

SEEDING TABLE	
LOCATION	CLASS 2 (SPECIAL)
	25001000 ACRE
TR 363	
STA 8+00.00 TO STA 9+79.82	0.18
STA 10+26.18 TO STA 11+50.00	0.13
TOTAL	0.31
USE	0.30

TREE REMOVAL ACRES	
LOCATION	ACRE
TR 363	
LT. STA 8+00.00 TO LT. STA 9+81.00	0.043
LT. STA 10+21.00 TO LT. STA 11+37.00	0.029
RT. STA 9+63.00 TO RT. STA 9+89.00	0.001
TOTAL	0.073
USE	0.100

FILE NAME = 090128-shr-summary.dgn

USER NAME =

DESIGNED - A.S.L.

REVISED -

DRAWN - D.A.B.

REVISED -

PLOT SCALE =

CHECKED - S.W.M.

REVISED -

PLOT DATE = 2/18/2010

DATE - 02/18/10

REVISED -

STATE OF ILLINOIS  
CLAY COUNTY HIGHWAY DEPARTMENT



SUMMARY OF QUANTITIES  
AND GENERAL NOTES

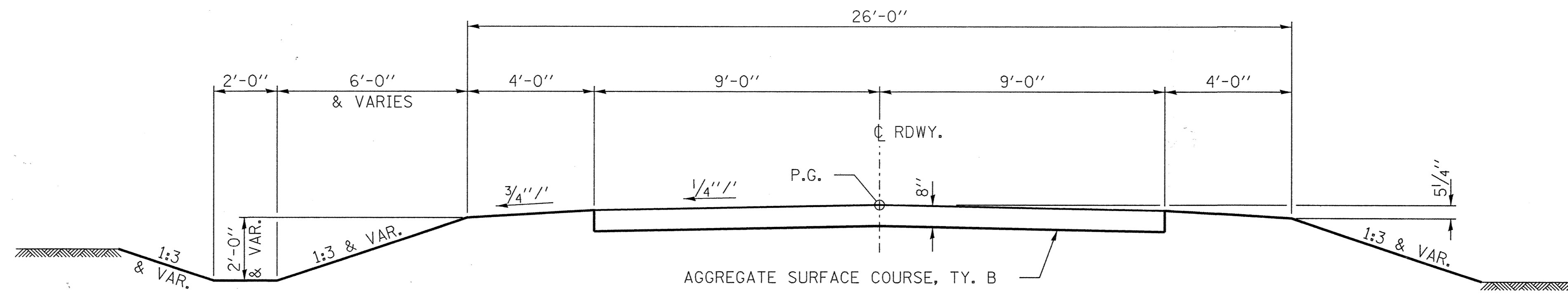
T.R. SECTION COUNTY TOTAL SHEETS SHEET NO.

363 06-11129-00-BR CLAY 16 2

CONTRACT NO. 95621

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

FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT BROS-02510611

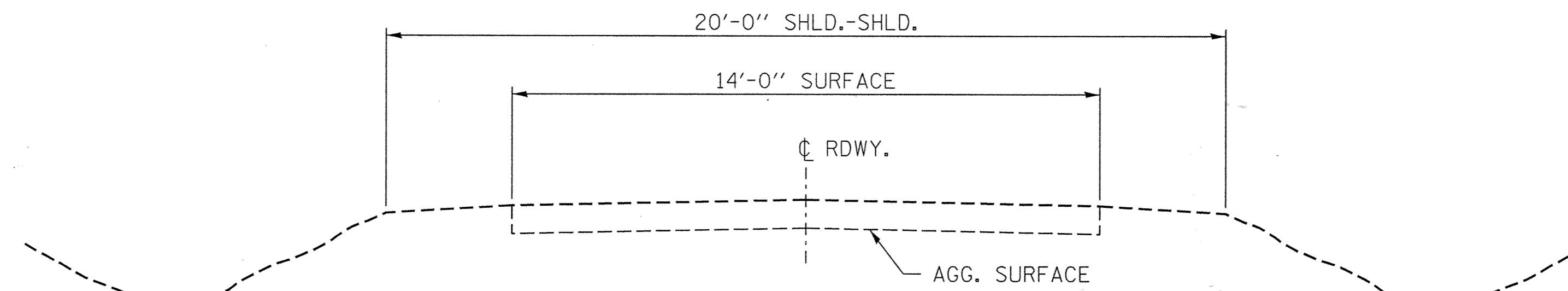


SUGGESTED CUT SECTION  
CONSTRUCT AS SHOWN IN  
STATION CROSS SECTIONS

**TYPICAL CROSS SECTION**

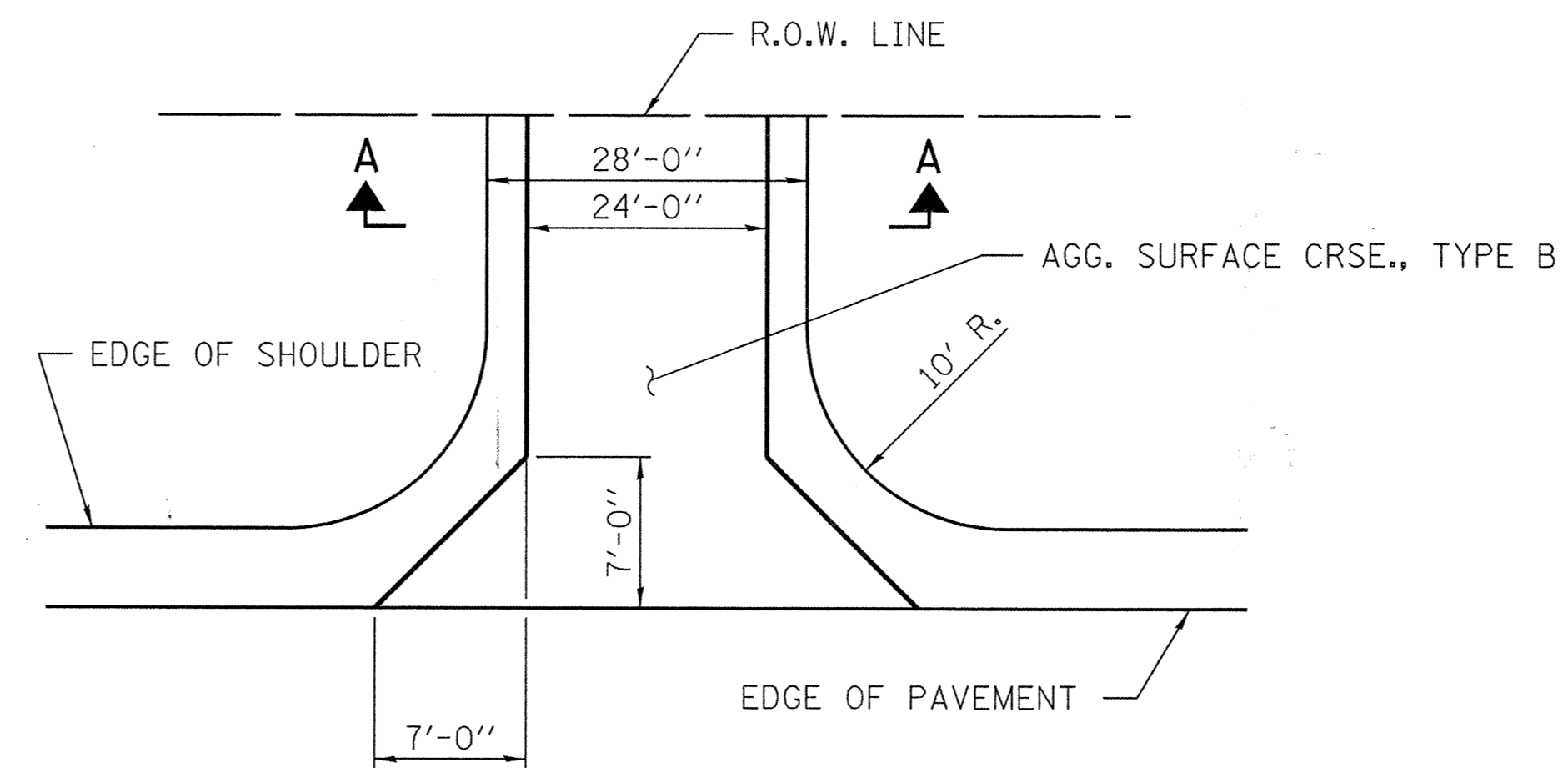
STA. 8+00.00 TO 9+79.82  
STA. 10+26.18 TO 11+50.00  
TRANSITION FROM THE PROPOSED ROADWAY TO THE EXISTING  
ROADWAY IS TO BE CONSTRUCTED FROM STA. 8+00 TO 8+50 AND  
STA. 11+00 TO 11+50. SEE SHEET 9 FOR TRANSITION AT BRIDGE.

SUGGESTED FILL SECTION  
CONSTRUCT AS SHOWN IN  
STATION CROSS SECTIONS

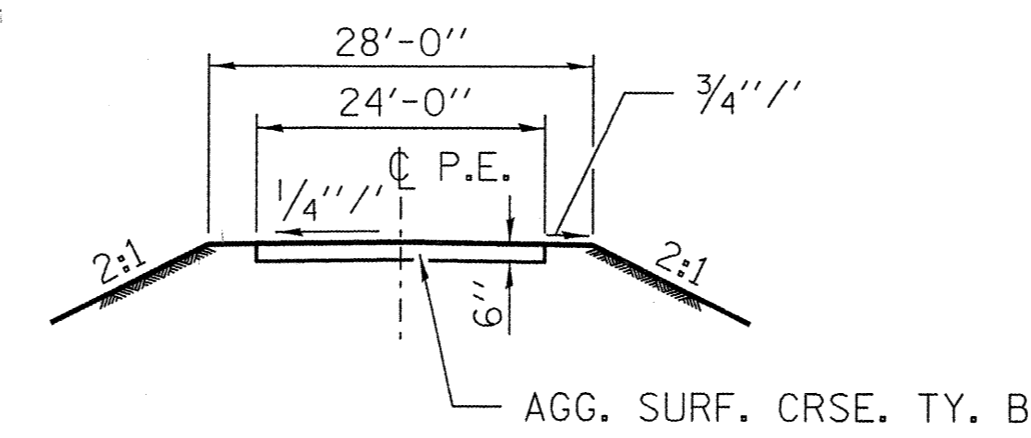


**EXISTING CROSS SECTION**

STA. 8+00 TO 11+50



**FIELD ENTRANCE DETAIL**



**SECTION A-A**

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		CHECKED - S.W.M.	REVISED -
		DATE - 02/18/10	REVISED -

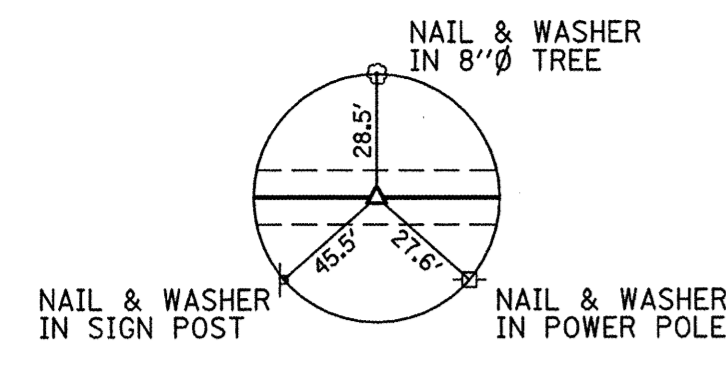
STATE OF ILLINOIS  
CLAY COUNTY HIGHWAY DEPARTMENT



**TYPICAL CROSS SECTIONS**

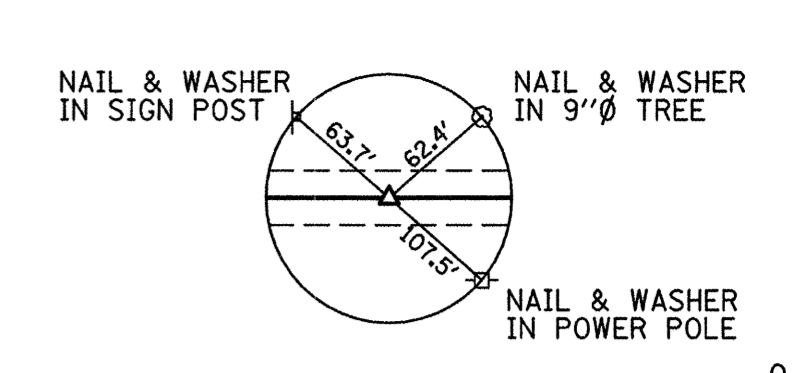
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CONTRACT NO. 95621				
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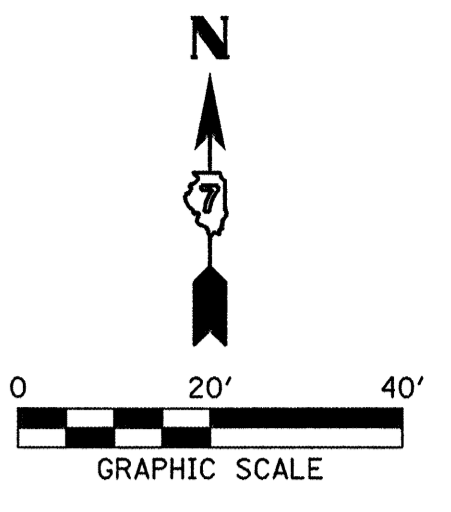


P.O.T. STA. 6+94.40  
N. 10,007.279  
E. 9,641.223

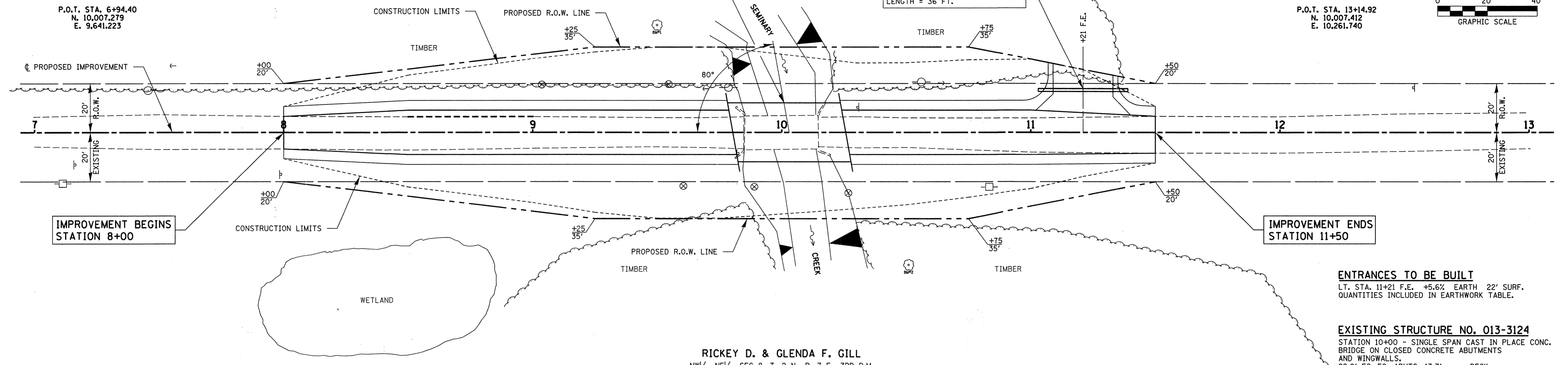
RANDALL SHELTON  
SW 1/4, SE 1/4, SEC 5, T. 2 N., R. 7 E., 3RD P.M.



P.O.T. STA. 13+14.92  
N. 10,007.412  
E. 10,261.740

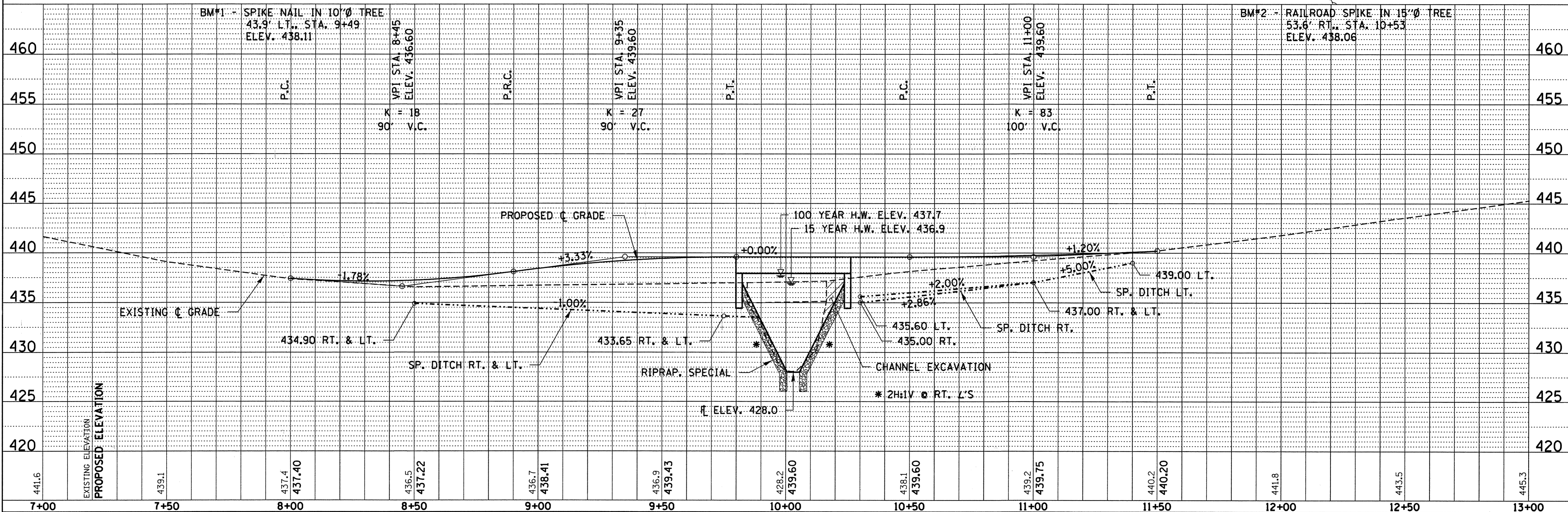


PLAN	SURVEYED	BY	DATE
	PLOTTED		
	CHECKED		
	NOTED		
	NO. _____		
	FILE NAME _____		



RICKEY D. & GLENDA F. GILL  
NW 1/4, NE 1/4, SEC 8, T. 2 N., R. 7 E., 3RD P.M.

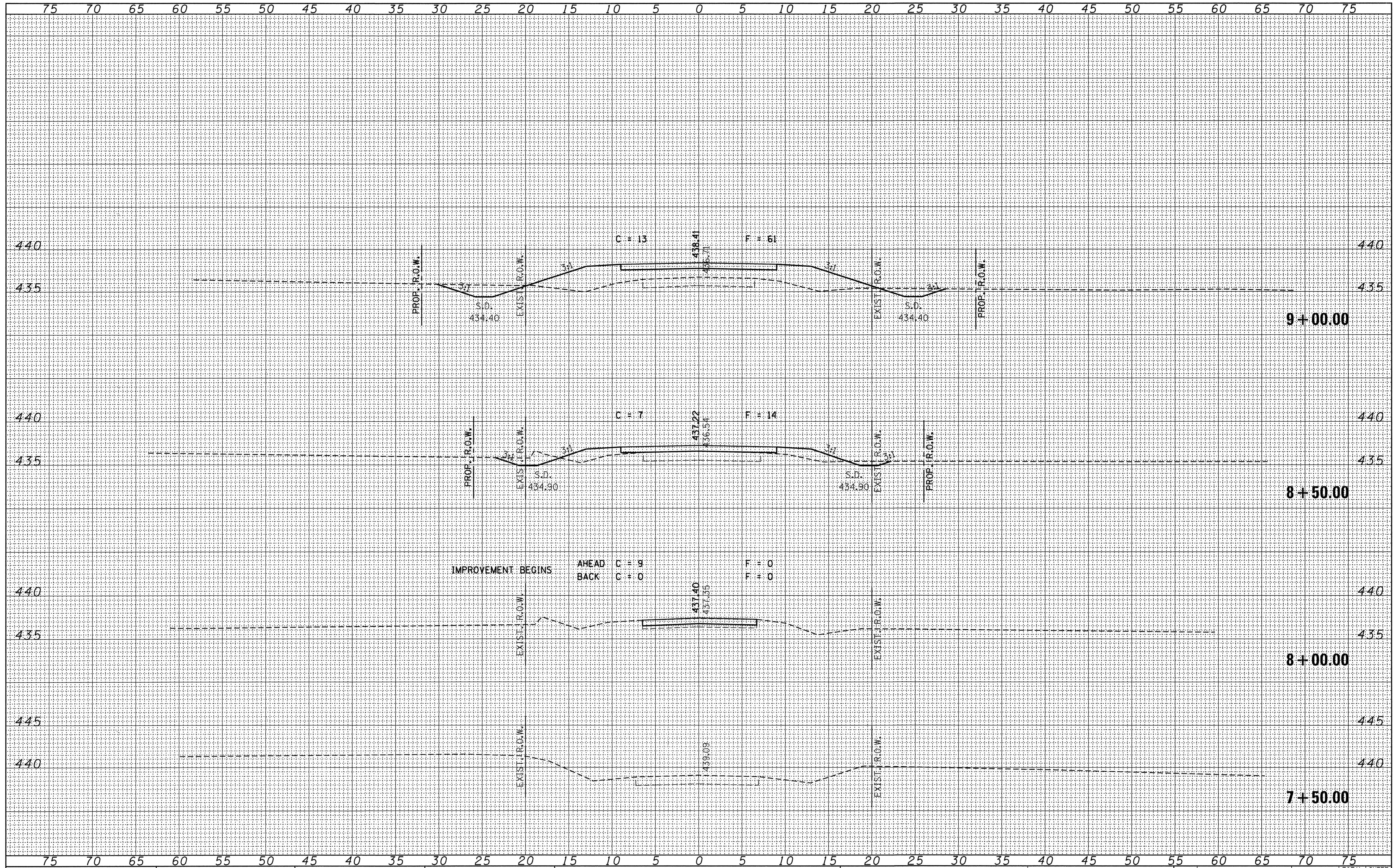
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PLOT SCALE =	CHECKED - S.W.M.	REVISED -	SCALE: 20H:5V			SHEET NO. 1 OF 1 SHEETS	STA. 7+00	TO STA. 13+00	CONTRACT NO. 95621		
PLOT DATE = 2/18/2010	DATE = 08/12/09	REVISED -	FED. ROAD DIST. NO. [ ]			ILLINOIS FED. AID PROJECT BROS-025(061)					

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

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



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 PLOT DATE = 2/18/2010

DESIGNED - A.S.L.  
 DRAWN - D.T.M.  
 CHECKED - S.W.M.  
 DATE - 08/05/09

REVISED -  
 REVISED -  
 REVISED -  
 REVISED -

STATE OF ILLINOIS  
 CLAY COUNTY HIGHWAY DEPARTMENT

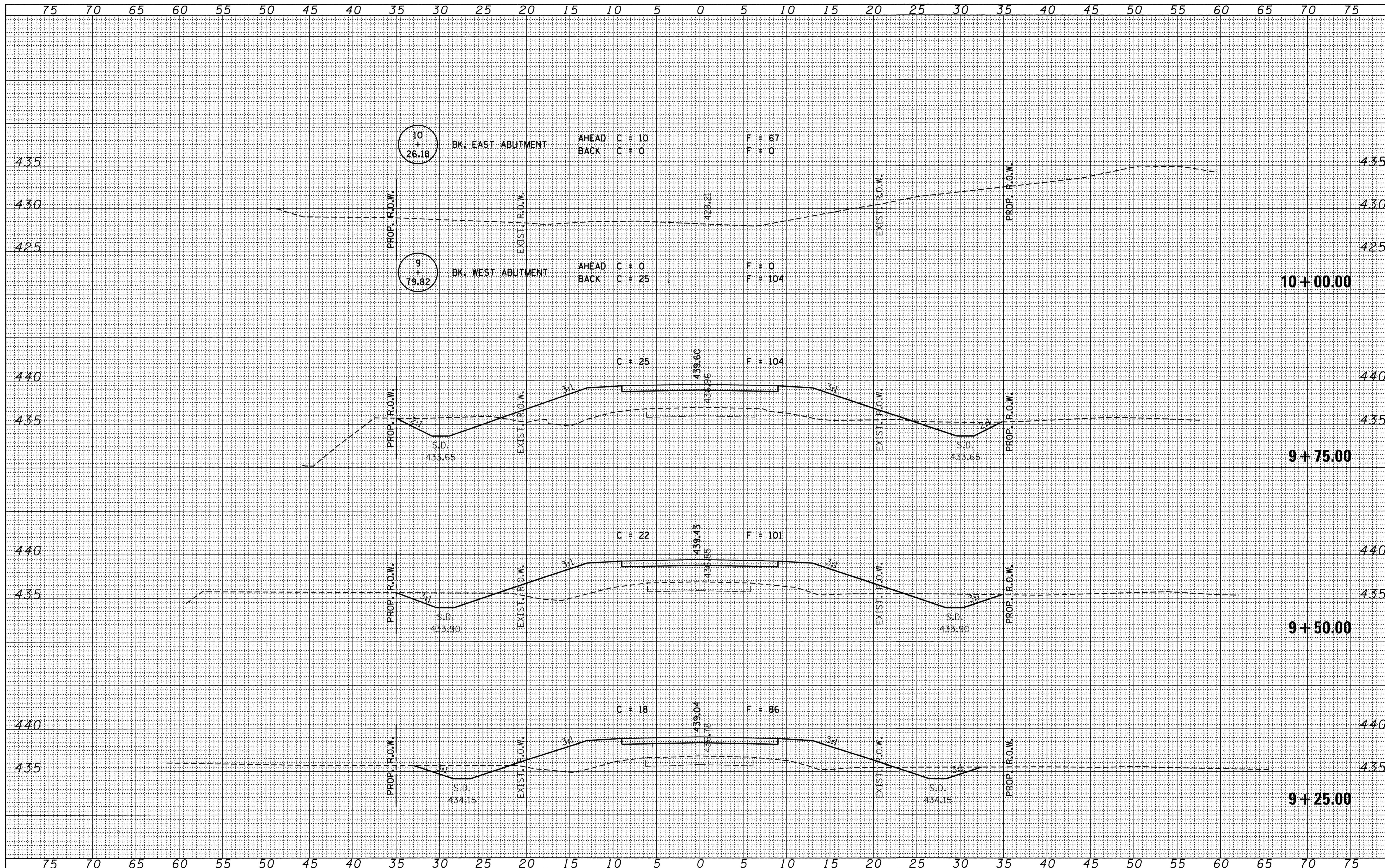
**HLR** HAMPTON, LENZINI & RENWICK, INC.  
 CIVIL & STRUCTURAL ENGINEERS  
 LAND SURVEYORS  
 SCALE: 5H:5V SHEET NO. OF SHEETS

CROSS SECTIONS  
 MARIGOLD LN.  
 STA. 7+50.00 TO STA. 9+00.00

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
363	06-11129-00-BR	CLAY	16	5
CONTRACT NO. 95621			ILLINOIS FED. AID PROJECT BROS-025(061)	

DATE	BY
SURVEYED	PLOTTED
NOTE BOOK	AREAS CHECKED
NO.	

DATE	BY
SURVEYED	PLOTTED
NOTE BOOK	AREAS CHECKED
NO.	



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	DRAWN - D.T.M.	REVISED -
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PLOT DATE = 2/18/2010	DATE - 08/05/09	REVISED -

STATE OF ILLINOIS  
CLAY COUNTY HIGHWAY DEPARTMENT

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

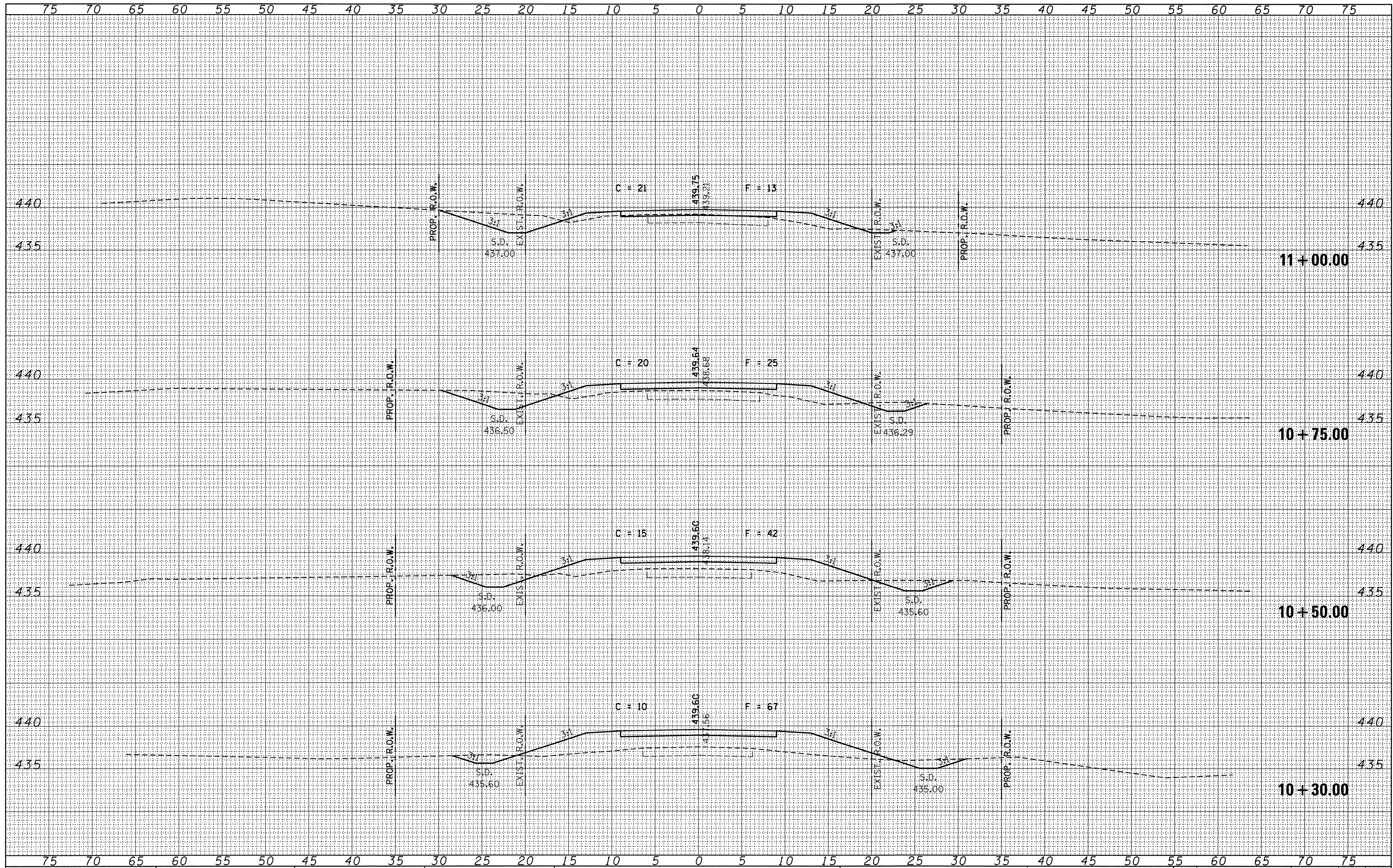
**CROSS SECTIONS  
MARIGOLD LN.**

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363	06-11129-00-BR	CLAY	16	6
CONTRACT NO. 95621				
FED. ROAD DIST. NO. [ILLINOIS] FED. AID PROJECT BROS-025061				

SCALE: 5H:5V SHEET NO. OF SHEETS STA. 9+25.00 TO STA. 10+00.00

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

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



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 CHECKED - S.W.M.  
 DATE - 08/05/09

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STATE OF ILLINOIS  
 CLAY COUNTY HIGHWAY DEPARTMENT



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 CIVIL & STRUCTURAL ENGINEERS  
 LAND SURVEYORS

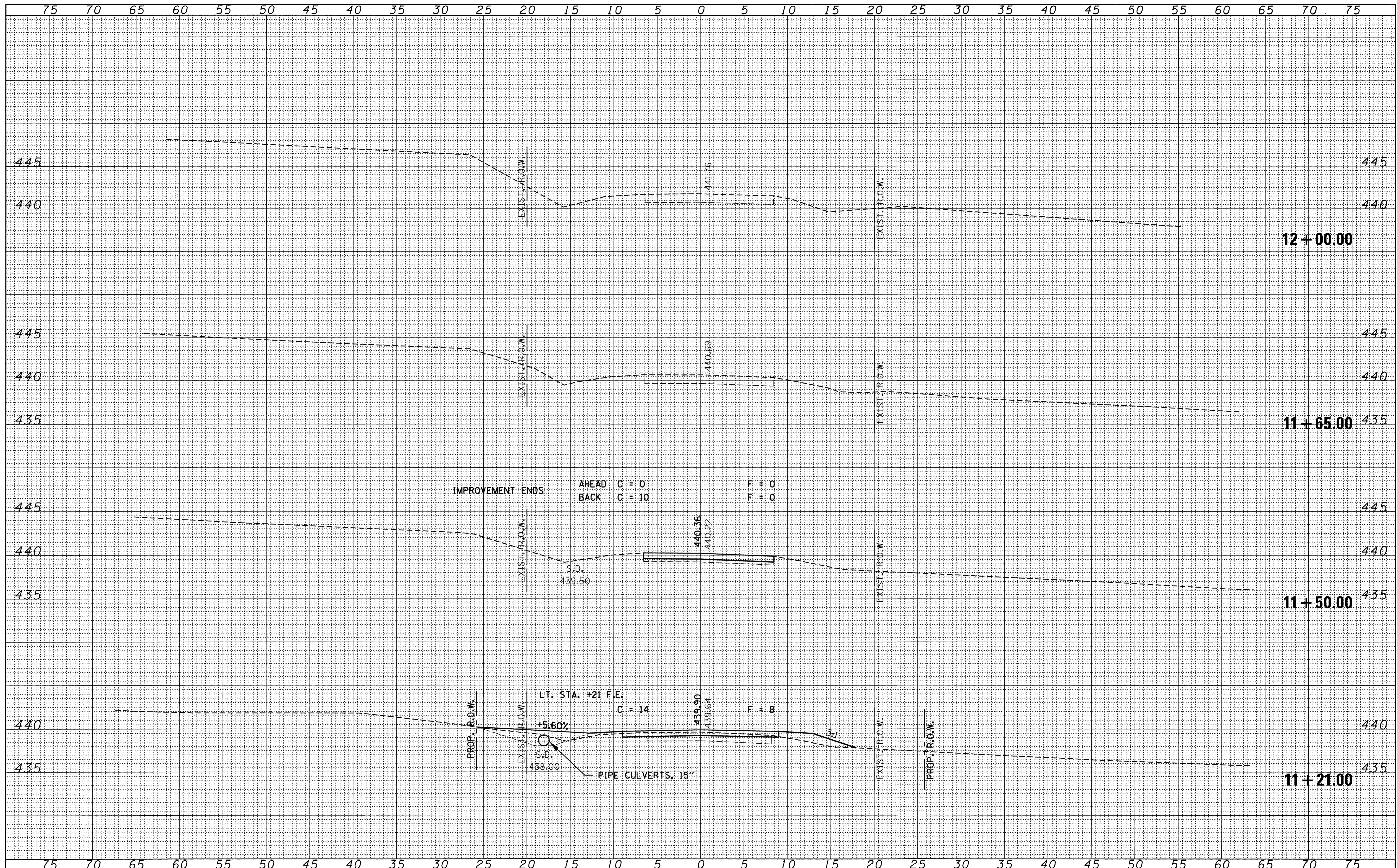
CROSS SECTIONS  
 MARIGOLD LN.

SCALE: 5H:5V SHEET NO. OF SHEETS STA. 10+30.00 TO STA. 11+00.00

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
363	06-11129-00-BR	CLAY	16	7
FED. ROAD DIST. NO. [ILLINOIS] FED. AID PROJECT BROS-025(061)			CONTRACT NO. 95621	

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

DATE	BY
ORIGINAL SURVEY NO.	SURVEYED
NOTE BOOK NO.	PLOTTED
	TEMPLATE
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DRAWN - D.T.M.	REVISED -
CHECKED - S.W.M.	REVISED -
DATE - 08/05/09	REVISED -

STATE OF ILLINOIS  
 CLAY COUNTY HIGHWAY DEPARTMENT

HLR HAMPTON, LENZINI & RENWICK, INC.  
 CIVIL & STRUCTURAL ENGINEERS  
 LAND SURVEYORS  
 SCALE: 5H:5V SHEET NO. OF SHEETS

CROSS SECTIONS  
 MARIGOLD LN.  
 STA. 11+21.00 TO STA. 12+00.00

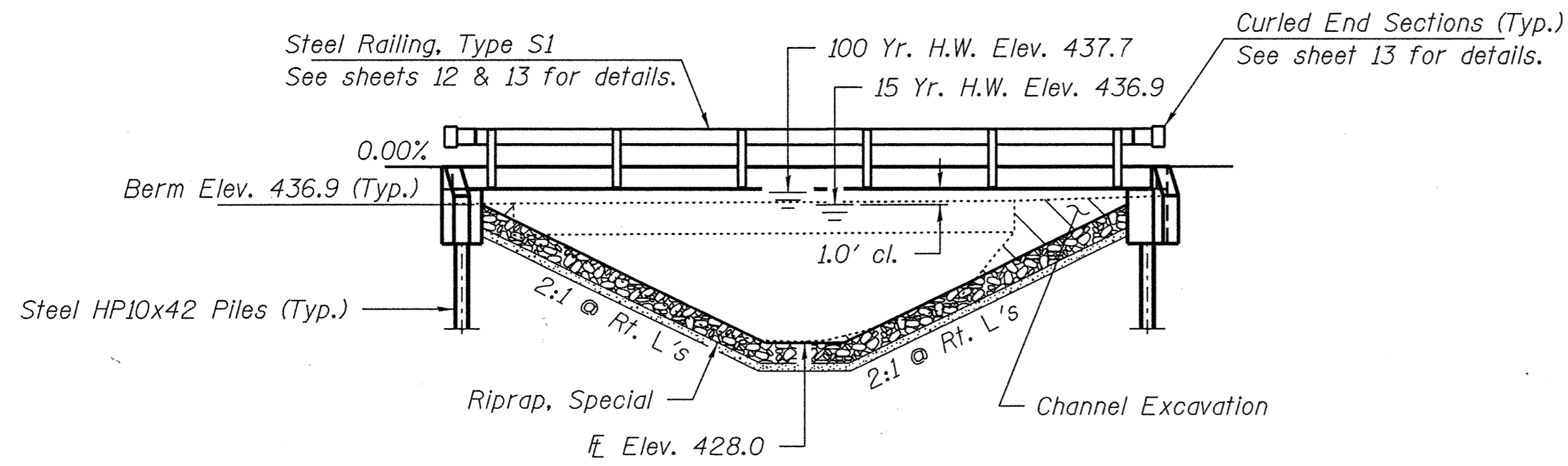
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FED. ROAD DIST. NO. [ILLINOIS] FED. AID PROJECT BROS-025(061)			CONTRACT NO. 95621	



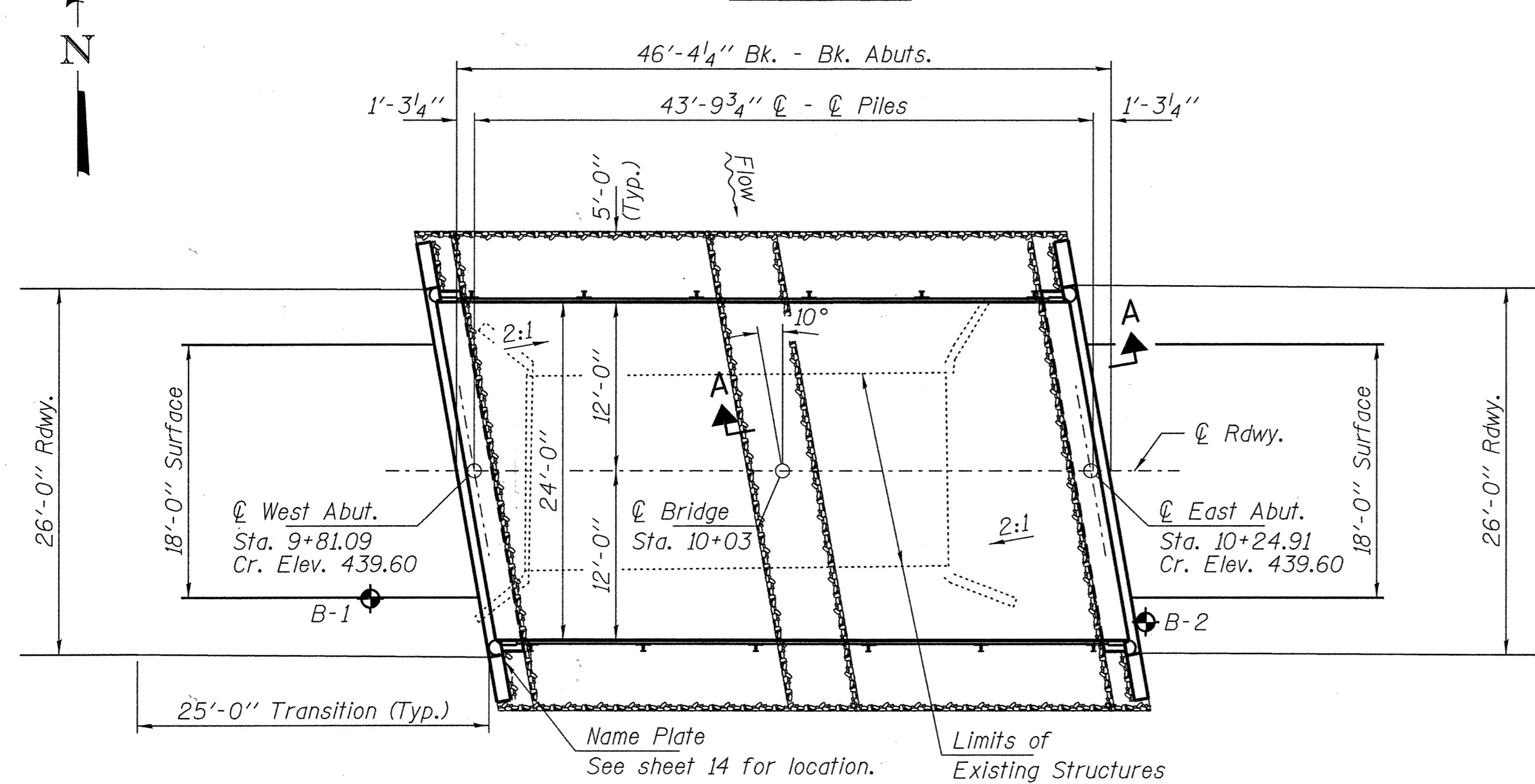
BENCHMARK: Spike Nail in 10"φ tree. Sta. 9+49, 43.9' Lt., Elev. 438.11

EXISTING STRUCTURE: Single span cast in place concrete bridge on closed concrete abutments and wingwalls. 29.0' fc.-fc. abuts.; 13.7' o.-o. deck structure closed to traffic.

No Salvage



ELEVATION



PLAN

GENERAL NOTES

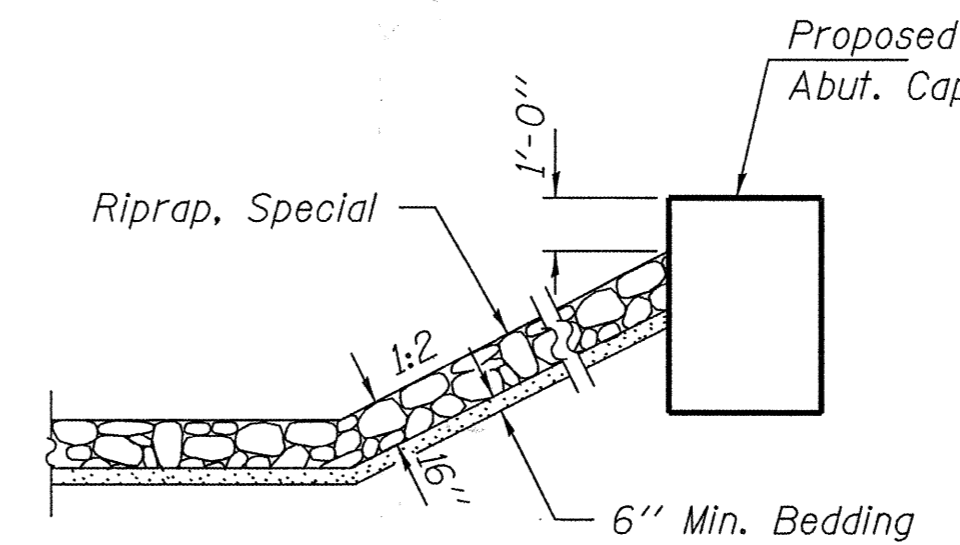
Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer. The Contractor shall drive test piles to 110% of the nominal required bearing specified in production locations at West Abutment or approved by the Engineer before ordering the remainder of piles. Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60 (IL Modified). See Special Provisions. Excavation required to construct the Abutments shall be included in the cost of Concrete Structures. No additional compensation will be allowed for Structure Excavation. All proposed construction activities shall be in accordance with Nationwide Permit number 14 of the Department of the Army authorized under Section 404 of the Clean Water Act. The IEPA has issued Section 401 Water Quality Certification for this activity. See Special Provisions for conditions.

SEMINARY CREEK  
BUILT 20 BY  
CLAY COUNTY  
SEC. 06-11129-00-BR  
STANFORD ROAD DISTRICT  
STR. NO. 013-3235  
LOADING HL-93

NAME PLATE  
See Std. 515001

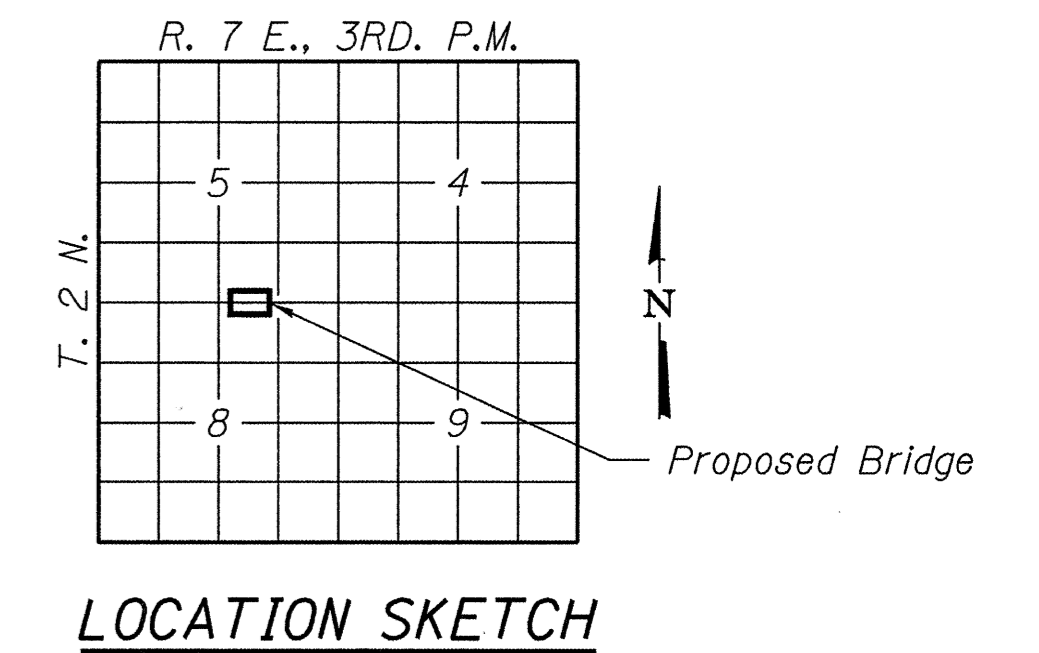
INDEX OF STRUCTURE SHEETS

- 9. General Plan & Elevation
- 10. Superstructure
- 11-12. Superstructure Details
- 13. Steel Railing, Type S-1
- 14. Abutments
- 15. HP Pile Details
- 16. Borings



SECTION A-A

Note: See Special Provisions for Riprap, Special.



LOCATION SKETCH

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	Cu. Yd.			20
Riprap, Special	Ton			140
Removal of Existing Structures	Each			1
Concrete Structures	Cu. Yd.		21.8	21.8
Concrete Encasement	Cu. Yd.		2.8	2.8
Precast Prestressed Concrete Deck Beams (17" Depth)	Sq. Ft.	1,080		1,080
Reinforcement Bars	Pound		2,340	2,340
Steel Railing, Type S1	Foot	84		84
Furnishing Steel Piles HP10x42	Foot		175	175
Driving Piles	Foot		175	175
Test Pile Steel HP10x42	Each		1	1
Name Plates	Each		1	1

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 (1/2"φ low lax. strands)  
fy = 60,000 psi (Reinf.)

LOADING HL-93

Design Specifications: 2007 AASHTO LRFD with all applicable interims.  
50#/Sq. Ft. included in dead load for future wearing surface.

SEISMIC DATA

Seismic Performance Zone (SPZ) = 2  
Design Spectral Acceleration at 1.0 sec. (Sp1) = 0.187g  
Design Spectral Acceleration at 0.2 sec. (Sp5) = 0.514g  
Soil Site Class = C

WATERWAY INFORMATION

Drainage Area = 5.4 Sq. Mi. Existing Low Grade Elev. 436.5 @ Sta. 8+50  
Proposed Low Grade Elev. 437.1 @ Sta. 8+55

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Natural Head - Ft.		Headwater El.		
			Exist.	Prop.	H.W.E. Exist.	Prop.	Exist.	Prop.	
Overtopping	10	1320	140	210	436.85	0.75	0.53	437.60	437.38
Design	15	1510	140	220	436.85	0.75	0.53	437.60	437.38
Base	100	2500	140	260	437.65	0.77	0.90	438.42	438.55
Max. Calc.	500	3400	140	270	438.25	0.71	1.05	438.96	439.30

10 Year Velocity through Existing Bridge = 6.4 Tps      10 Year Velocity through Proposed Bridge = 4.8 Tps

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 2/18/2010  
ILLINOIS STRUCTURAL NO. 081-6064

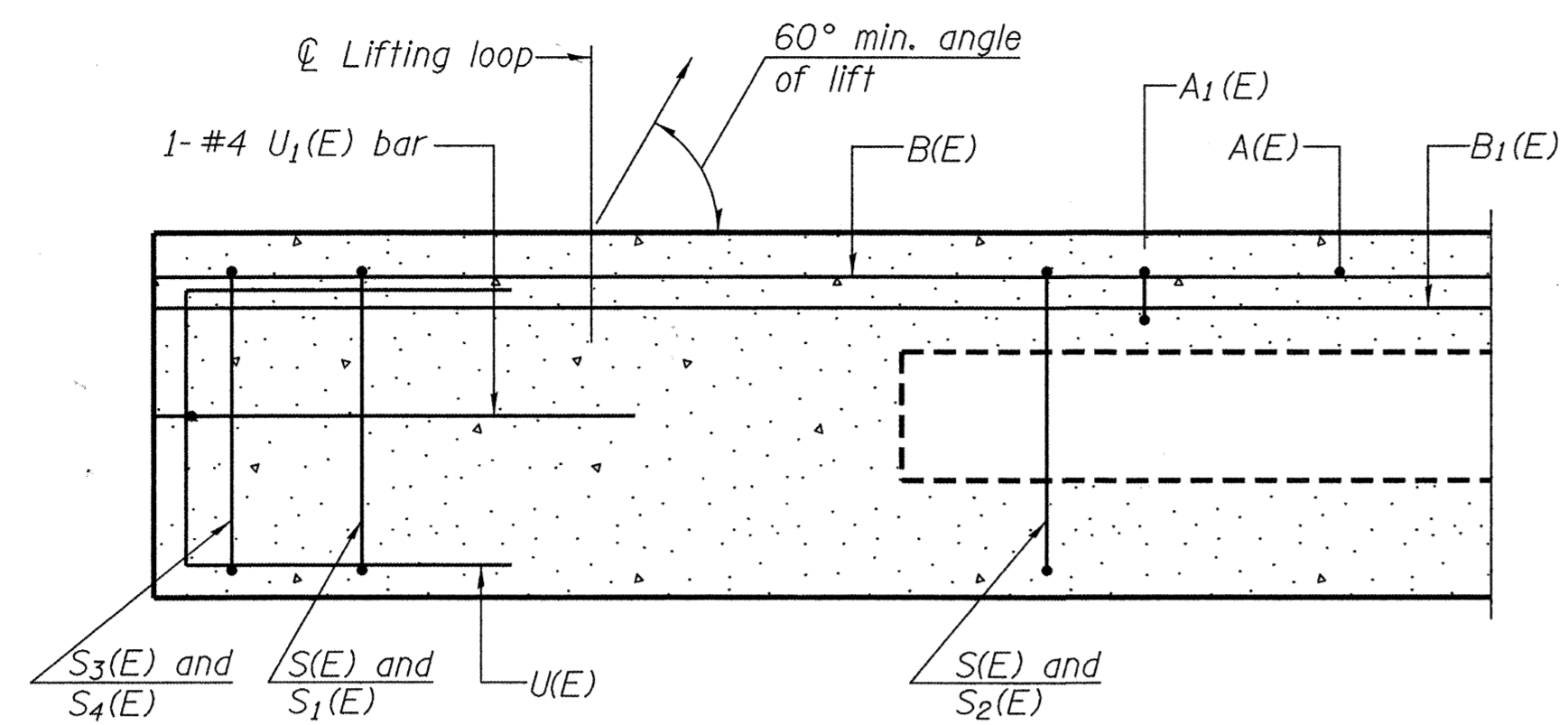


Expires 11-30-2010

GENERAL PLAN AND ELEVATION  
STRUCTURE NO. 013-3235

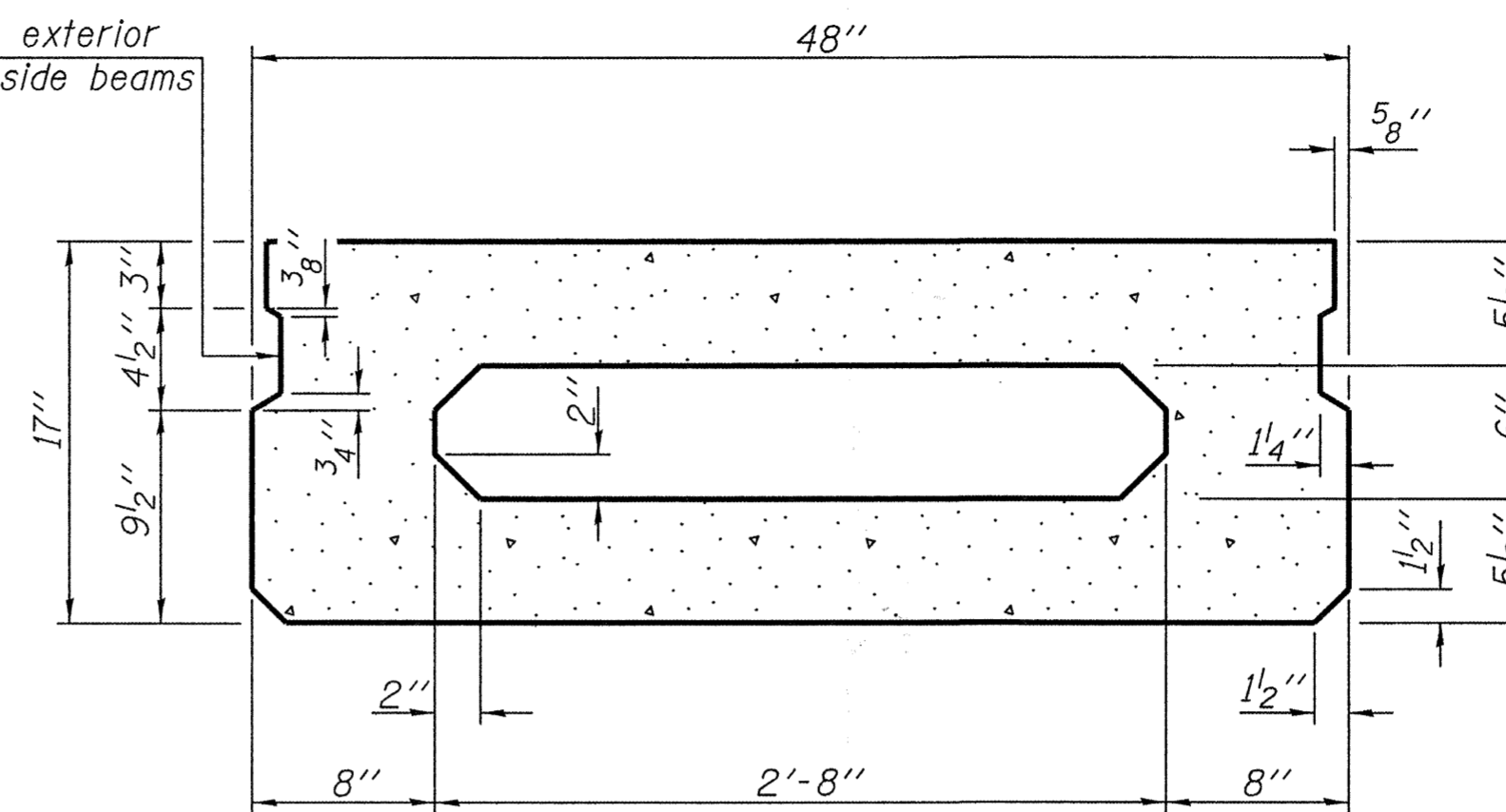
DESIGNED	- A.S.L.
CHECKED	- S.W.M.
DRAWN	- D.A.B.
CHECKED	- S.W.M.

HAMPTON, LENZINI AND RENWICK, INC. CIVIL ENGINEERS - STRUCTURAL ENGINEERS - LAND SURVEYORS 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 217.546.3400 www.hlrengineering.com	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	363	06-11129-00-BR	CLAY	16	9
PROJECT NUMBER: 09.0128	STANFORD ROAD DISTRICT		CONTRACT NO. 95621		
DATE: 02/18/10	FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT BROS-025(061)		

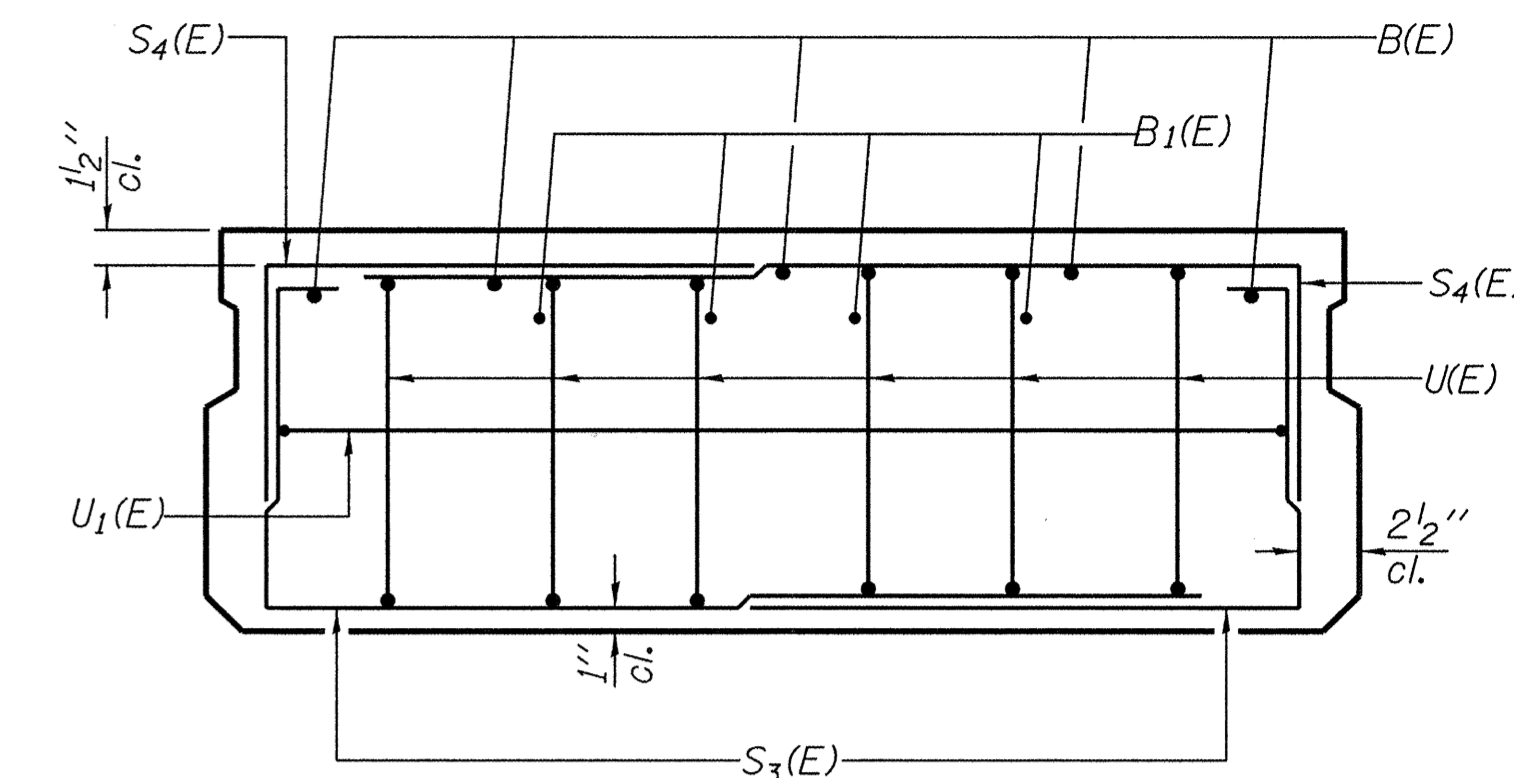


SECTION C-C

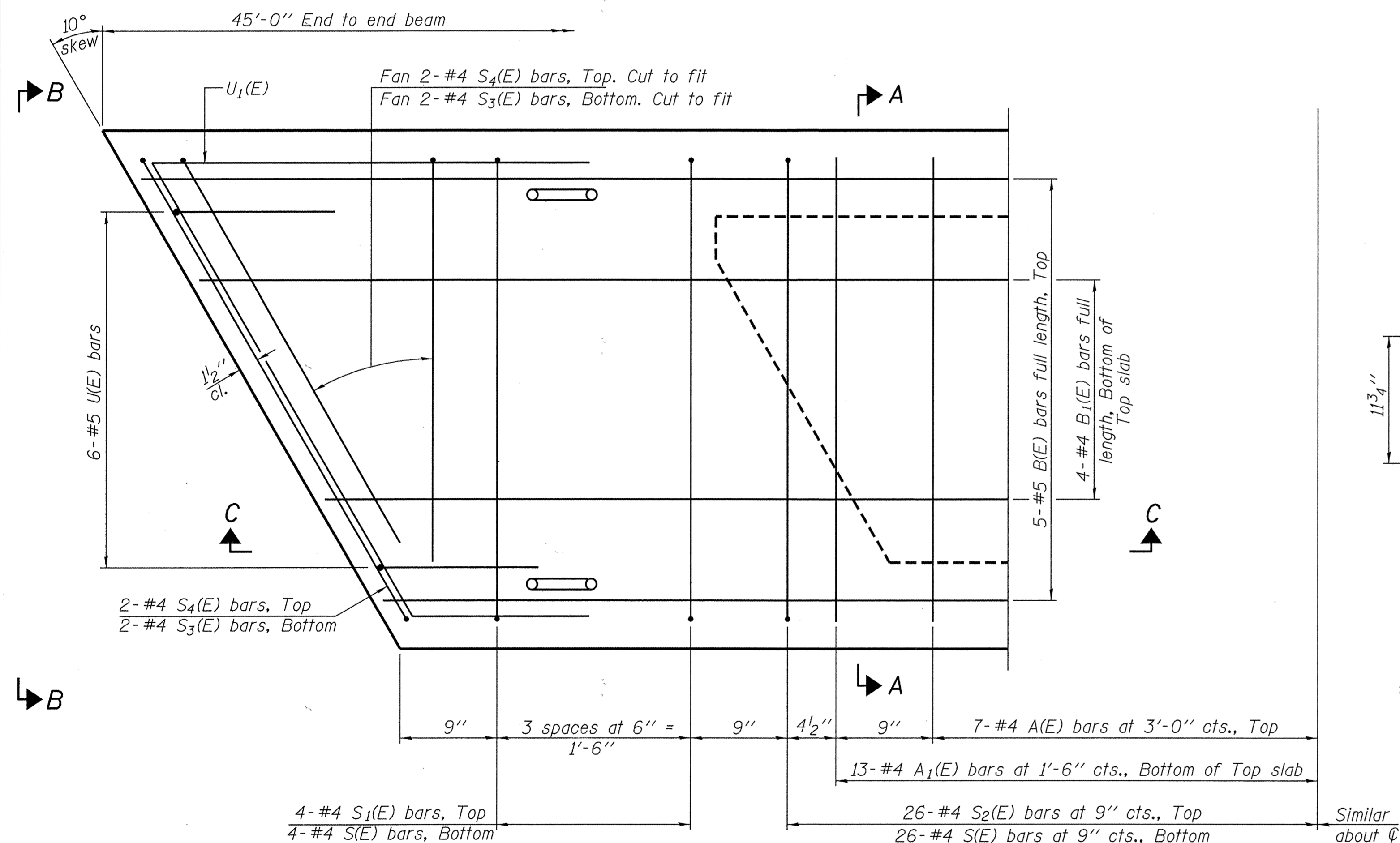
Omit key on exterior face of outside beams



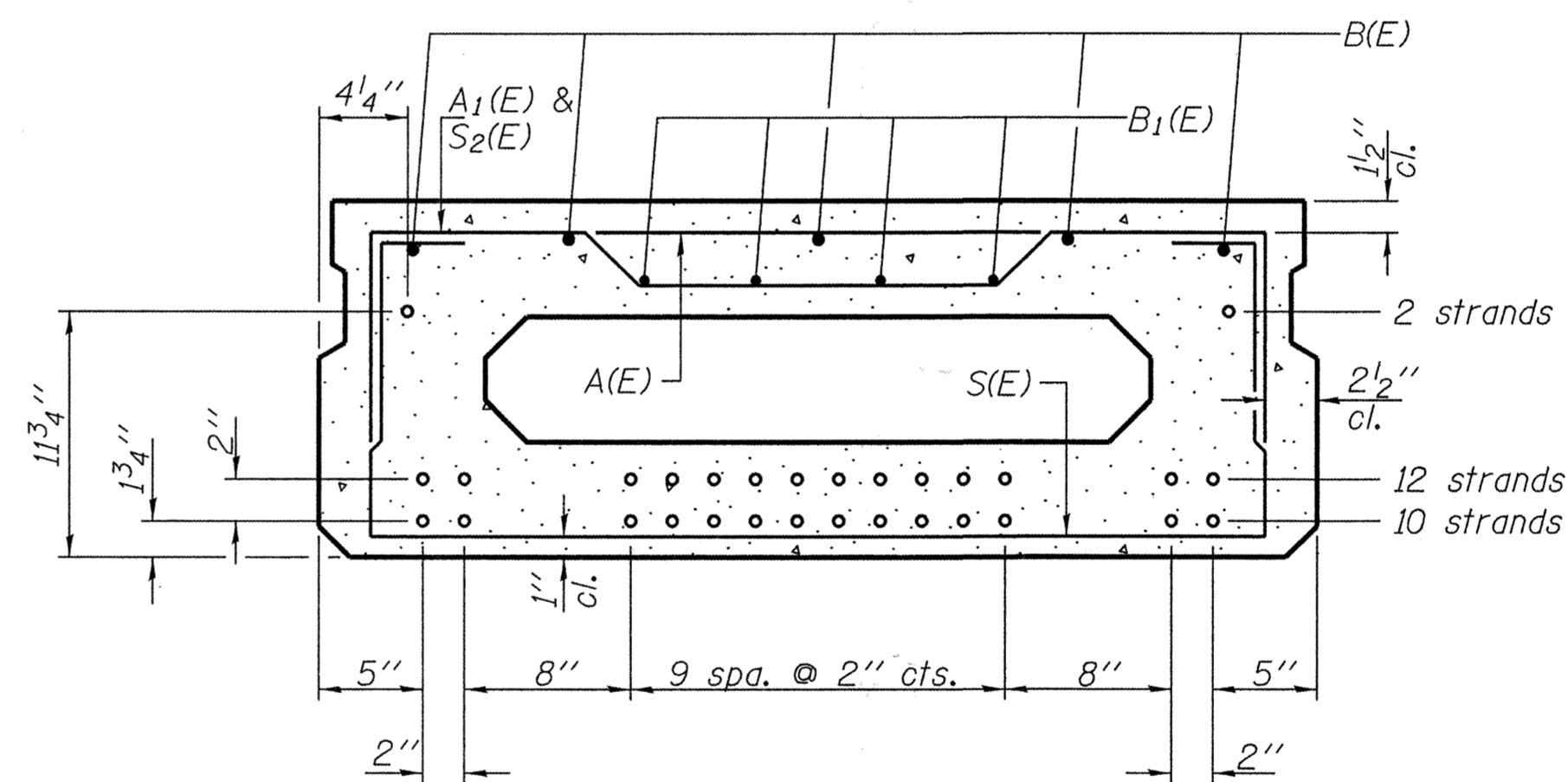
SECTION A-A  
(Showing dimensions)



VIEW B-B



PLAN VIEW



SECTION A-A  
(Showing reinforcement and permissible strand locations)  
Note: Place the number of strands specified in each row symmetrically about the centerline of beam in the permissible strand locations shown.

BAR LIST  
ONE BEAM ONLY  
(For information only)

Bar	No.	Size	Length	Shape
A(E)	14	#4	3'-7"	—
A1(E)	26	#4	3'-10"	—
B(E)	5	#5	44'-8"	—
B1(E)	4	#4	44'-8"	—
S(E)	60	#4	6'-9"	U
S1(E)	8	#4	5'-3"	U
S2(E)	52	#4	5'-6"	U
S3(E)	8	#4	4'-4"	U
S4(E)	8	#4	3'-7"	U
U(E)	12	#5	3'-8"	U
U1(E)	2	#4	6'-8"	U

Note: See sheets 11 & 12 for additional details and Bill of Material.

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

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

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

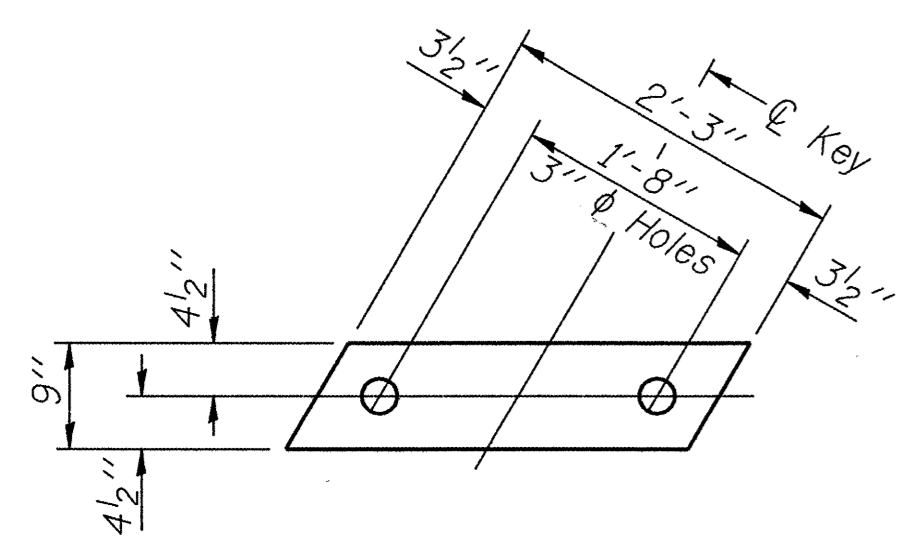
PD-1748-R

11-1-09

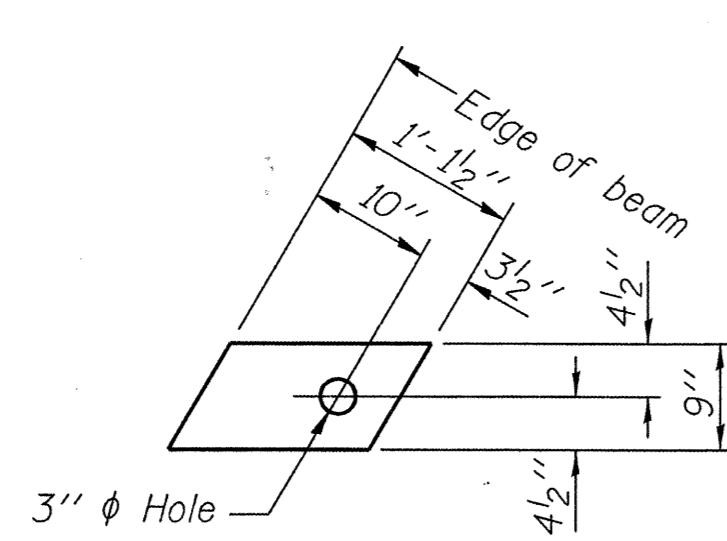
**HAMPTON, LENZINI AND RENWICK, INC.**  
 CIVIL ENGINEERS - STRUCTURAL ENGINEERS - LAND SURVEYORS  
 3085 STEVENSON DRIVE, SUITE 201  
 SPRINGFIELD, ILLINOIS 62703  
 217.546.3400 www.hlrengineering.com  
 184.00089  
 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORPORATION  
 PROJECT NUMBER: 09.0128 DATE: 02/18/10

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
363	06-11129-00-BR	CLAY	16	10
STANFORD ROAD DISTRICT		CONTRACT NO. 95621		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT	BROS-025(061)		

SUPERSTRUCTURE  
17" x 48" PPC DECK BEAM  
STRUCTURE NO. 013-3235



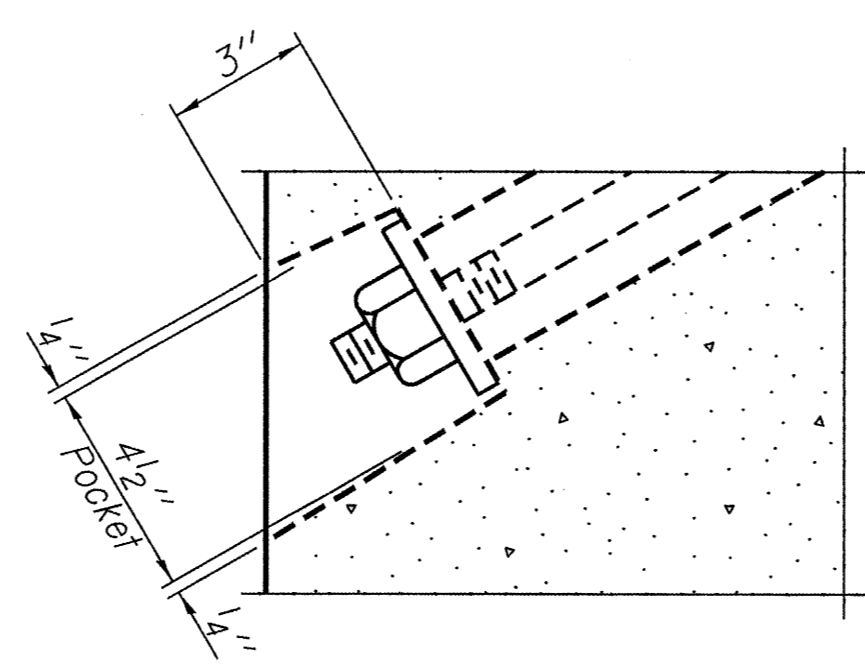
**FABRIC BEARING PAD**  
(Interior - 10 Req'd.)



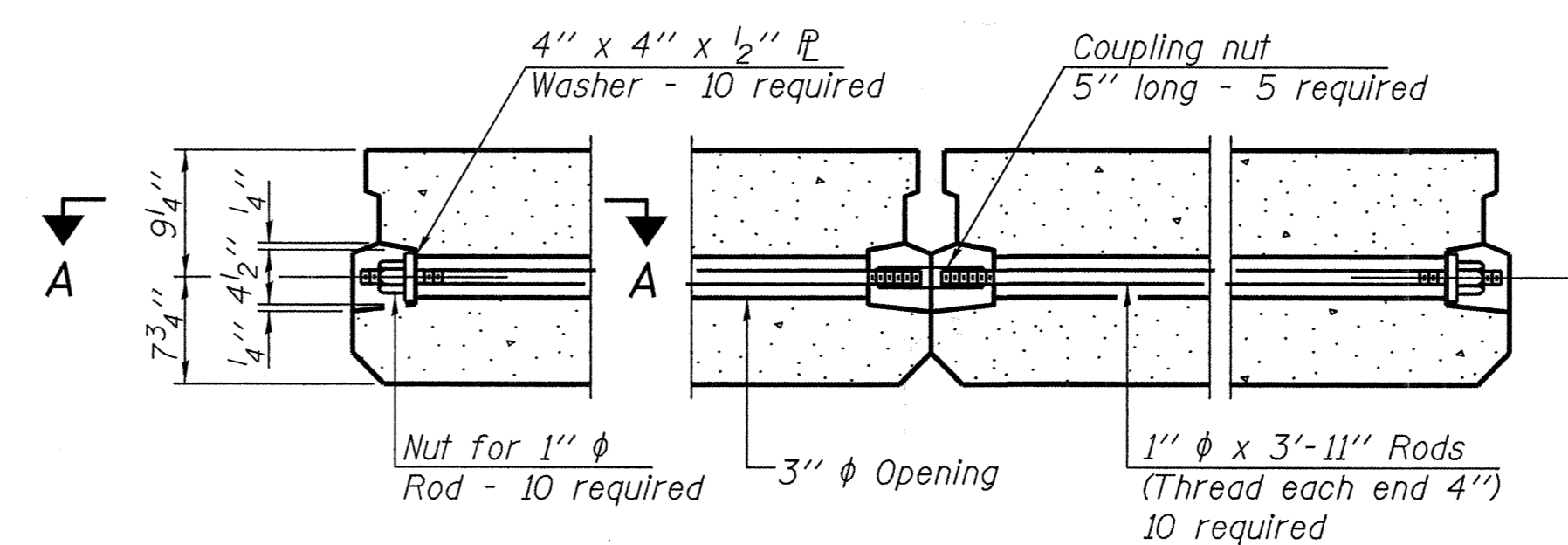
**FABRIC BEARING PAD**  
(Exterior - 4 Req'd.)

**FIXED**

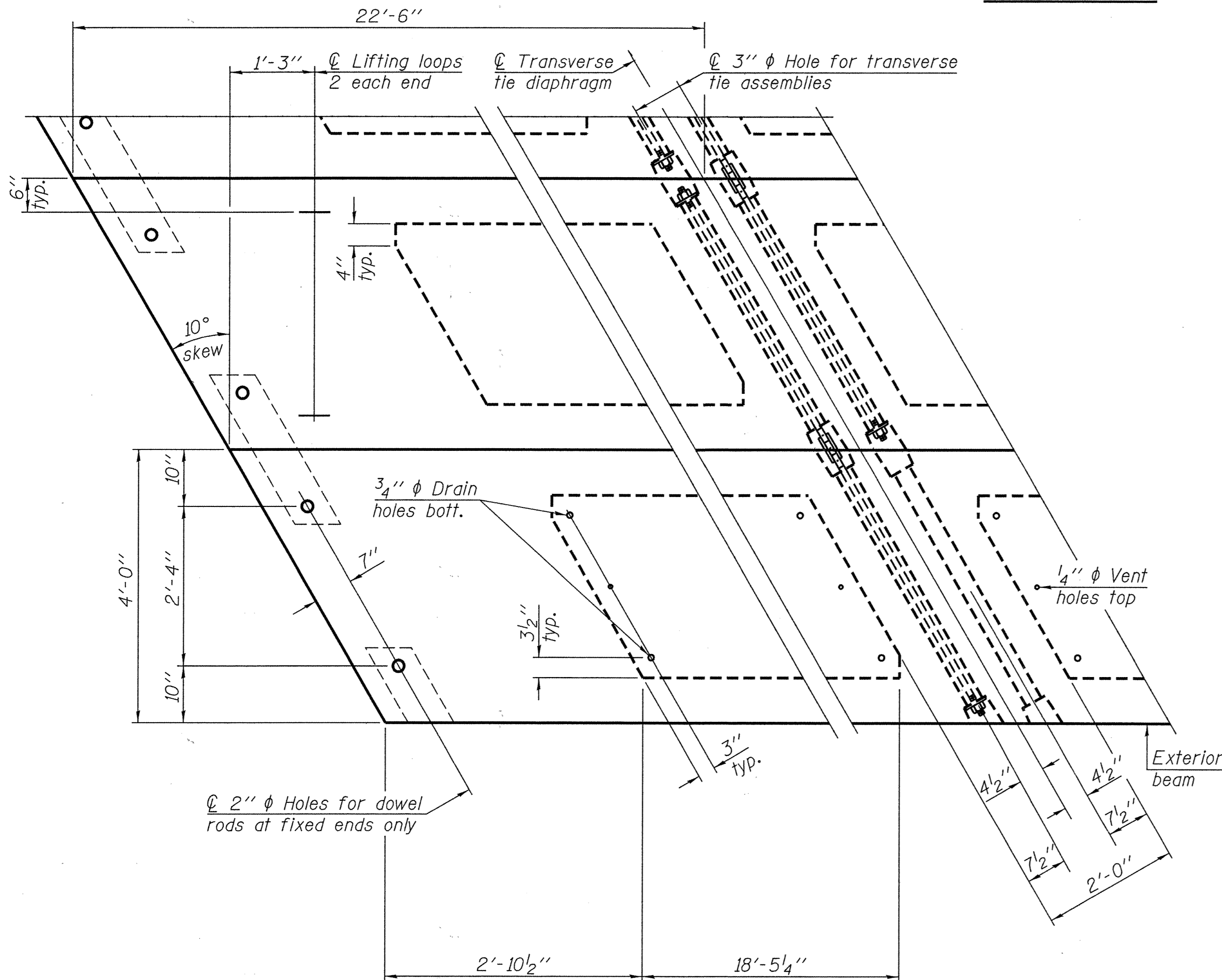
Notes:  
All bearing pads shall be 1" thick.  
Omit holes when using expansion bearings.  
Expansion bearing pad shall be bonded to the substructure.



**SECTION A-A**



**TYPICAL TRANSVERSE TIE ASSEMBLY**

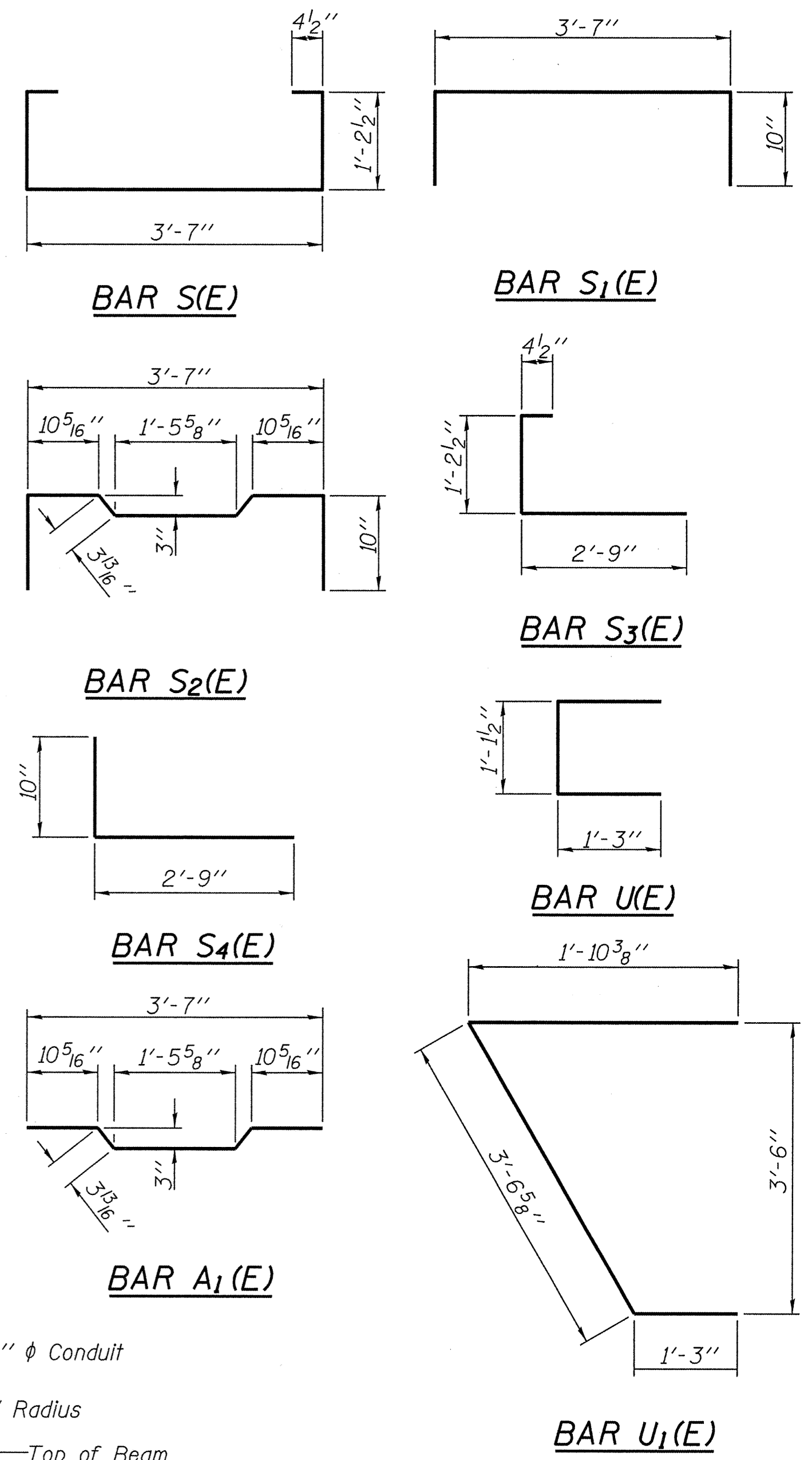


**PLAN VIEW**

**NOTES**

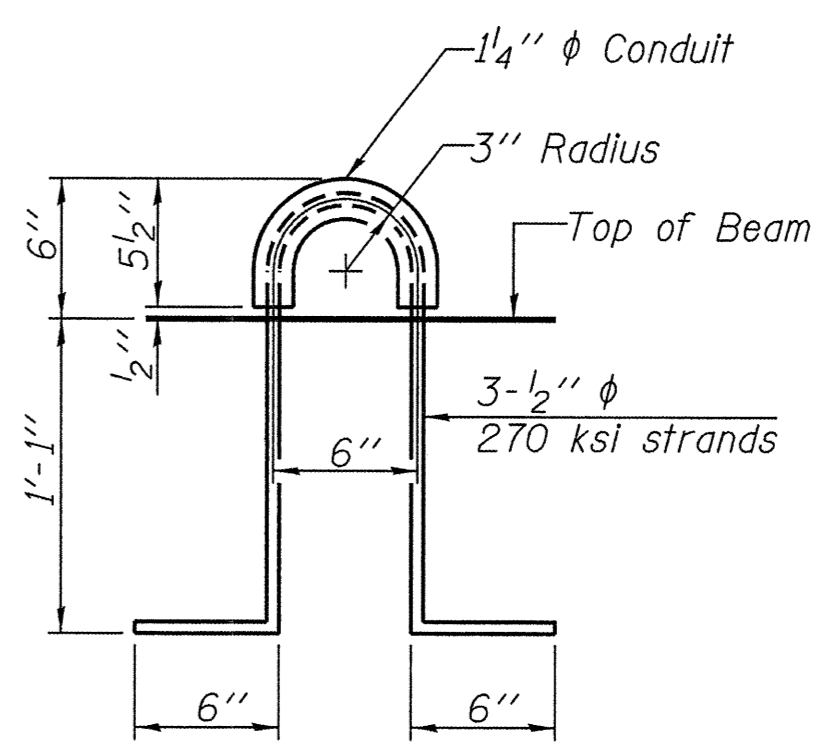
Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in. The 1" rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior 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 3/8" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.  
A minimum 2 1/2" diameter lifting pin shall be used to engage the lifting loops during handling.  
Corrosion Inhibitor, per Article 1020.05(b)(12) and 1021.06 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams.  
Compressive strength of prestressed concrete, f'c, shall be 6000 psi.  
Compressive strength of prestressed concrete at release, f'ci, shall be 5000 psi.

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



**BILL OF MATERIAL**

Precast Prestressed Conc. Deck Bms. (17" depth)	Sq. Ft.	1,080
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**LIFTING LOOP DETAIL**

**SUPERSTRUCTURE DETAILS**  
**17" x 48" PPC DECK BEAM**  
**STRUCTURE NO. 013-3235**

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

PD-1748-RD 11-1-09

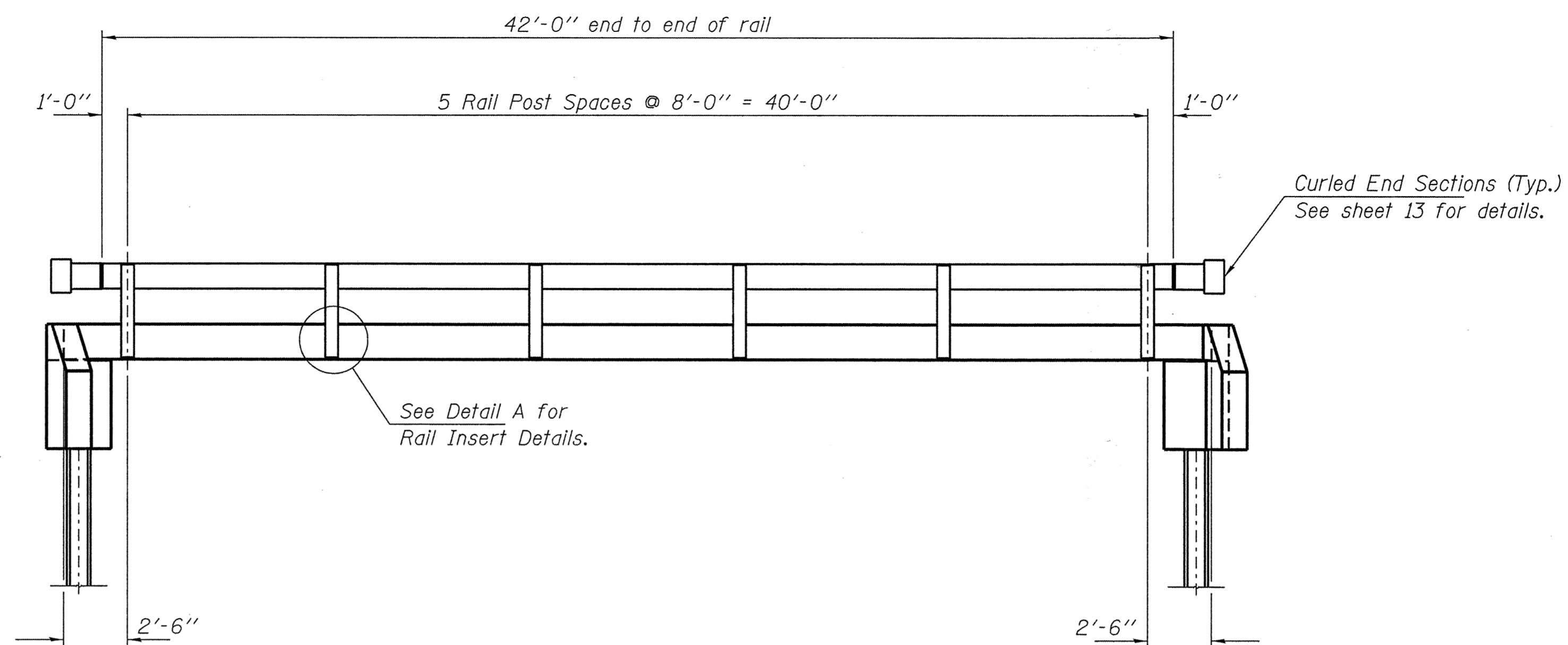
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**HLR**

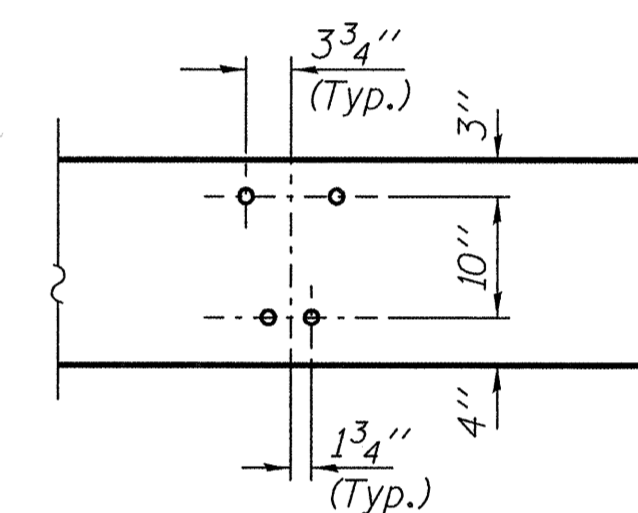
184.000959  
ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORPORATION

PROJECT NUMBER: 09.0128 DATE: 02/18/10

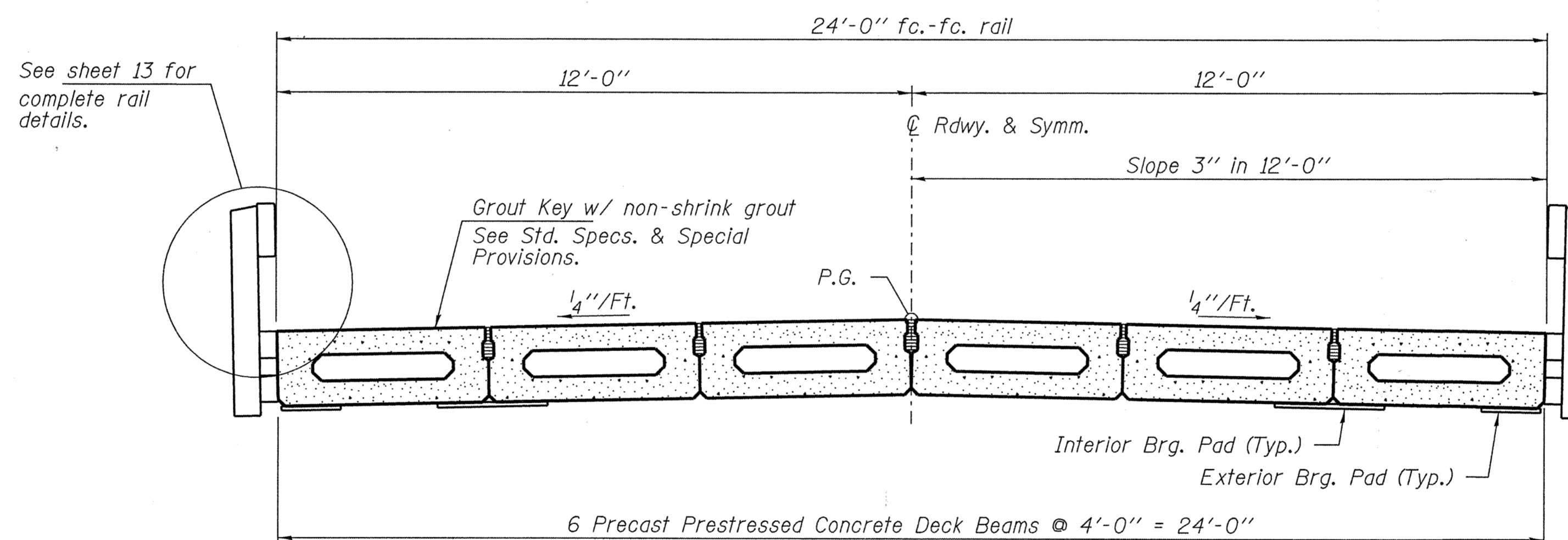
T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
363	06-11129-00-BR	CLAY	16	11
STANFORD ROAD DISTRICT		CONTRACT NO. 95621		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT	BROS-025(061)	



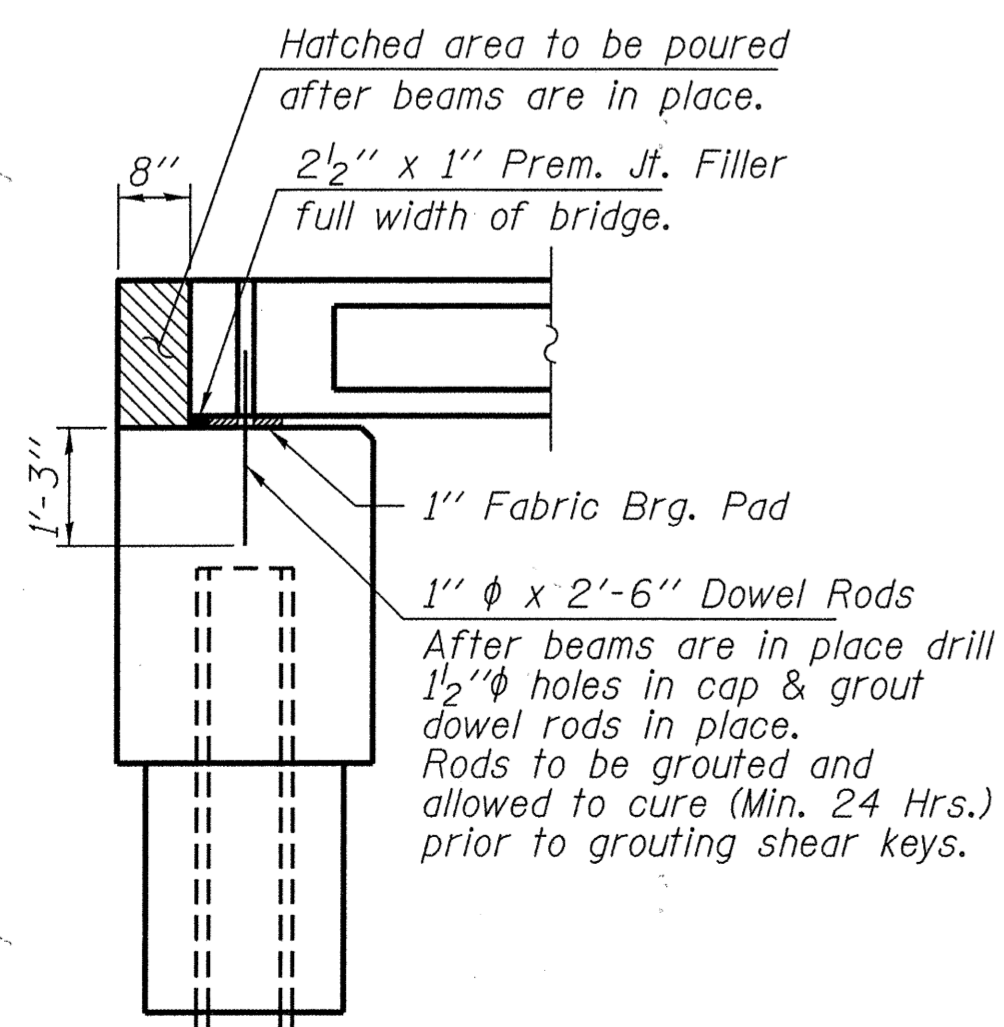
**ELEVATION**  
Showing Rail Post Spaces  
See sheet 13 for Railing Details.



**DETAIL A**



**CROSS SECTION**  
See sheets 10 & 11 for Superstructure.



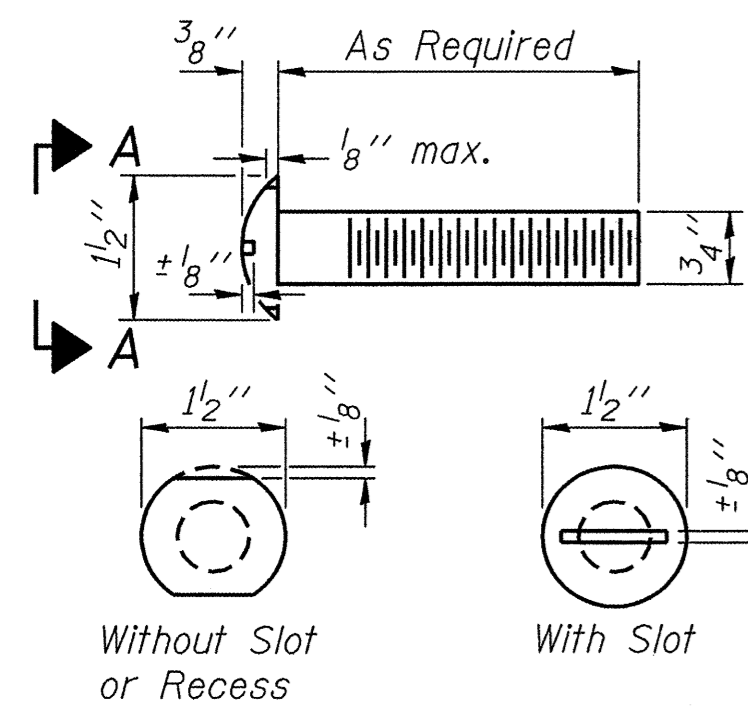
**SECTION AT ABUTMENTS**

© Rt. L's

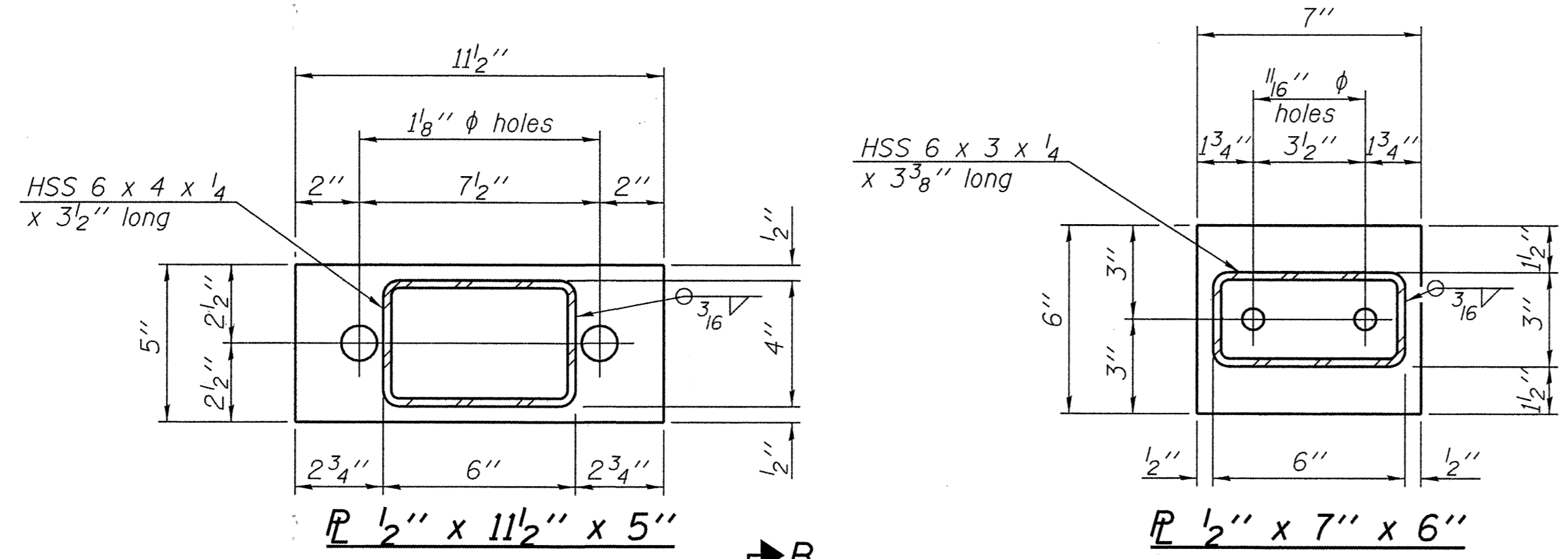
DESIGNED	- A.S.L.
CHECKED	- S.W.M.
DRAWN	- D.A.B.
CHECKED	- S.W.M.

**SUPERSTRUCTURE DETAILS**  
**STRUCTURE NO. 013-3235**

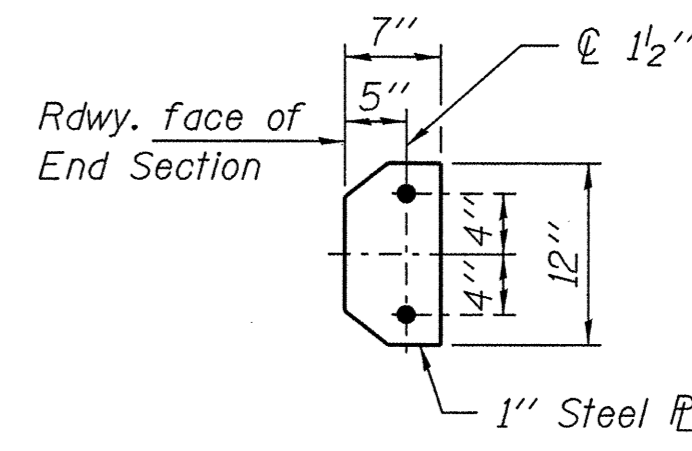
<b>HAMPTON, LENZINI AND RENWICK, INC.</b> <small>CIVIL ENGINEERS - STRUCTURAL ENGINEERS - LAND SURVEYORS</small> <b>HLR</b> 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 217.546.3400 www.hirengineering.com <small>184.000959 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORPORATION</small>	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	363	06-11129-00-BR	CLAY	16	12
PROJECT NUMBER: 09.0128	DATE: 02/18/10	STANFORD ROAD DISTRICT		CONTRACT NO. 95621	
		FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT BROS-025(061)	



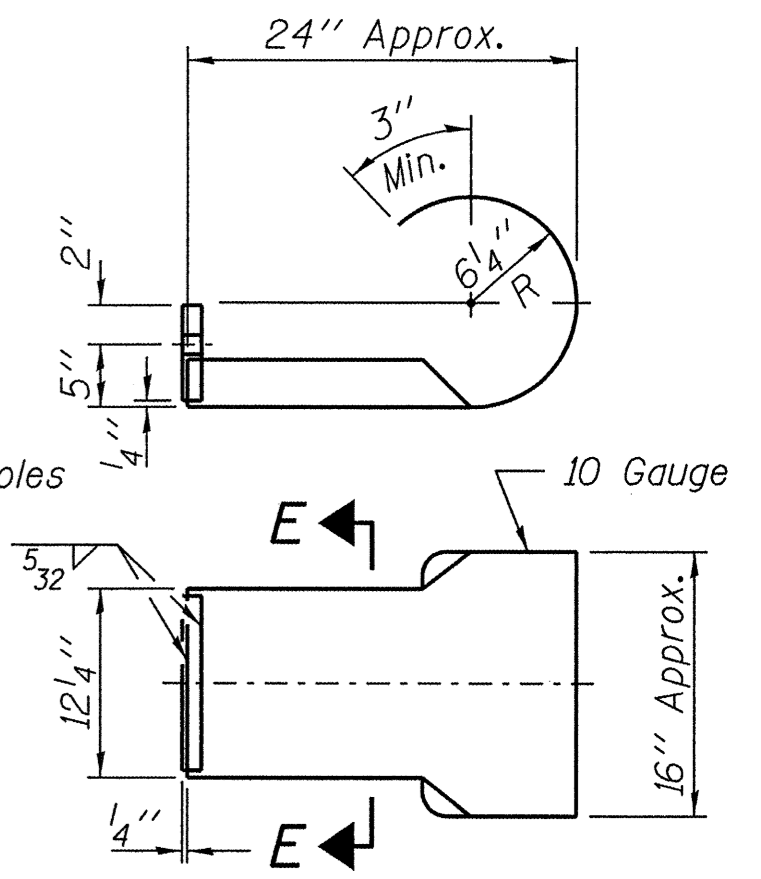
VIEW A-A  
ROUND HEAD BOLT



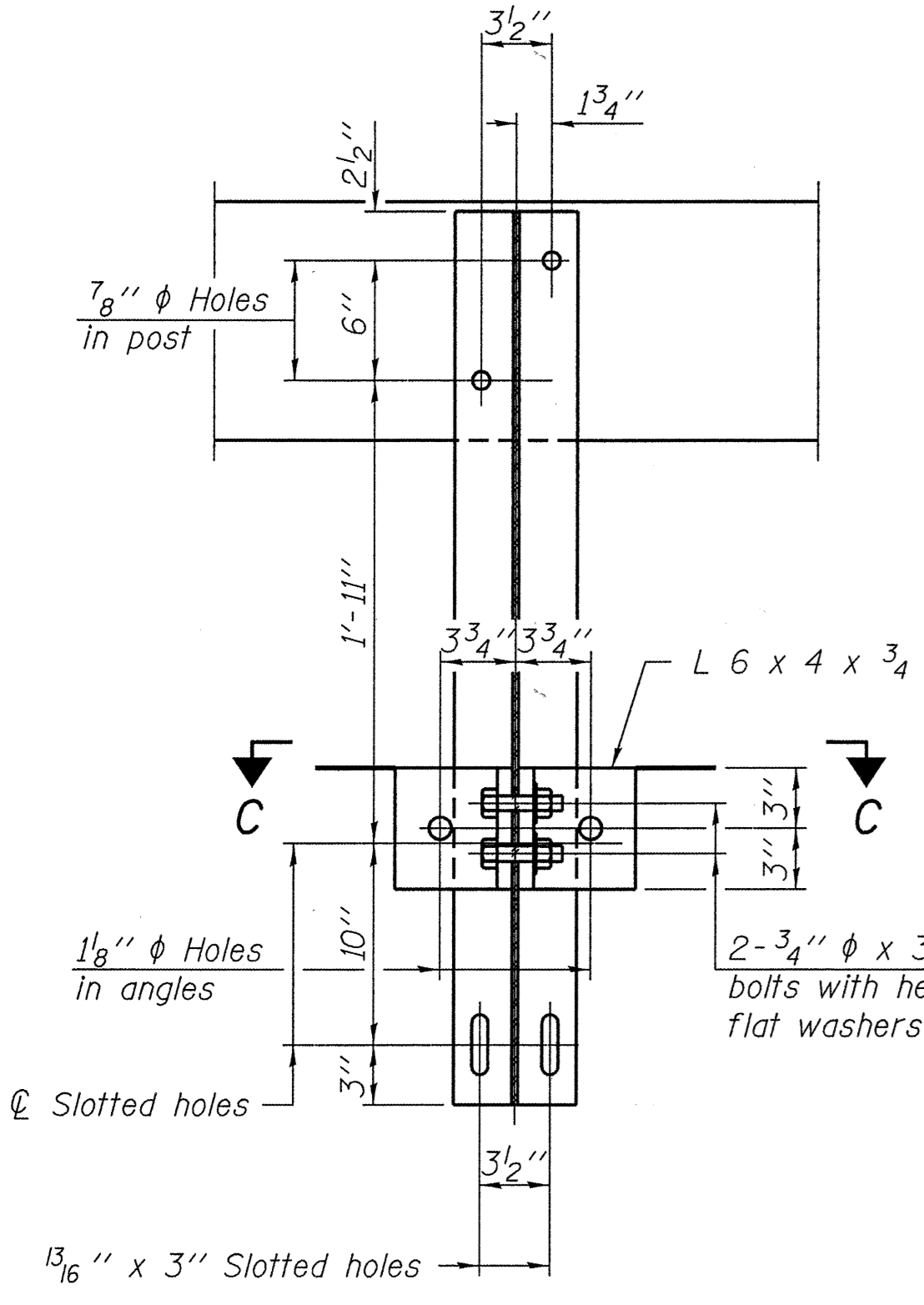
Note: Cost of curled end sections shall be included with the Steel Railing. (4 Required)



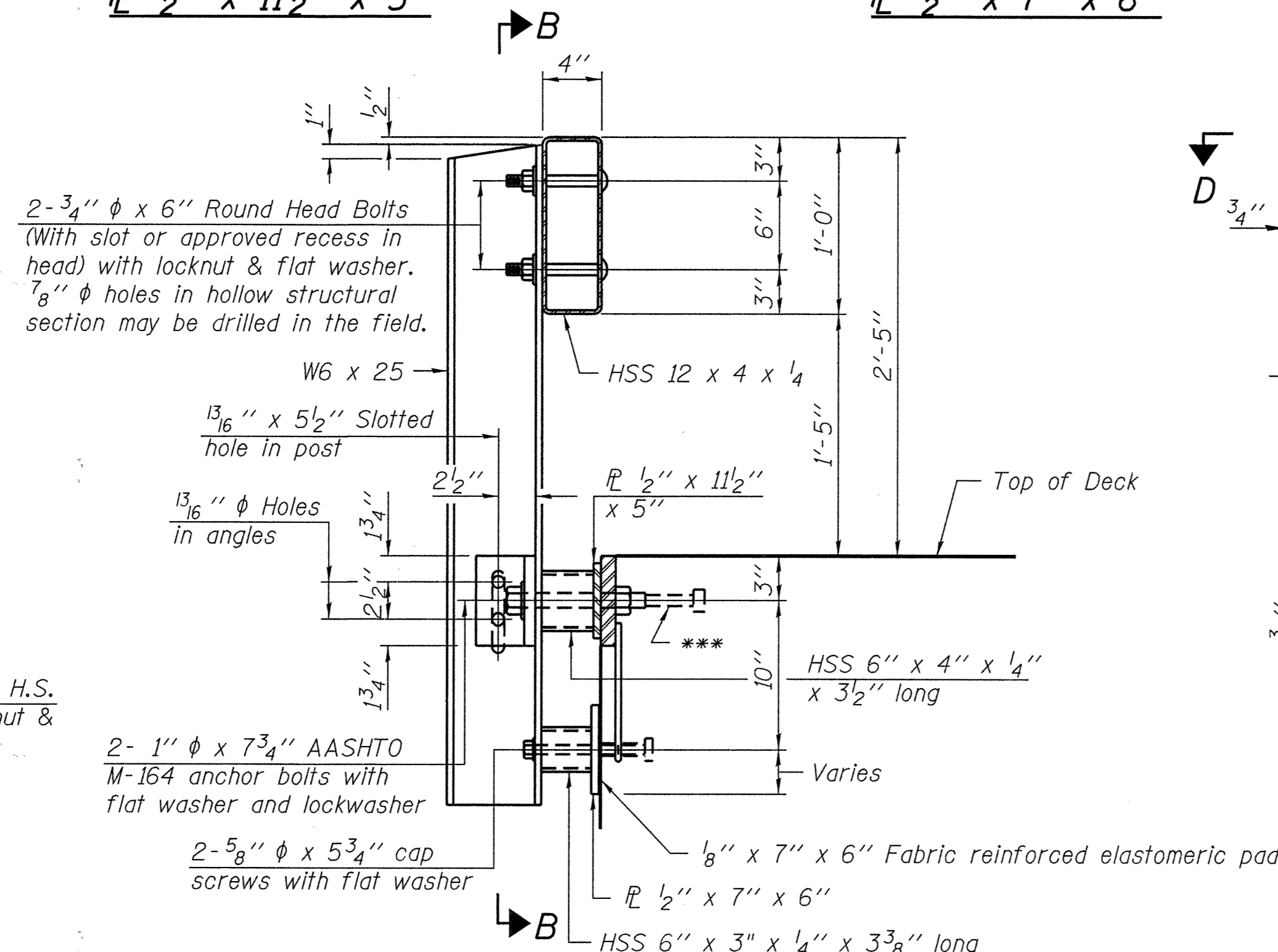
SECTION E-E



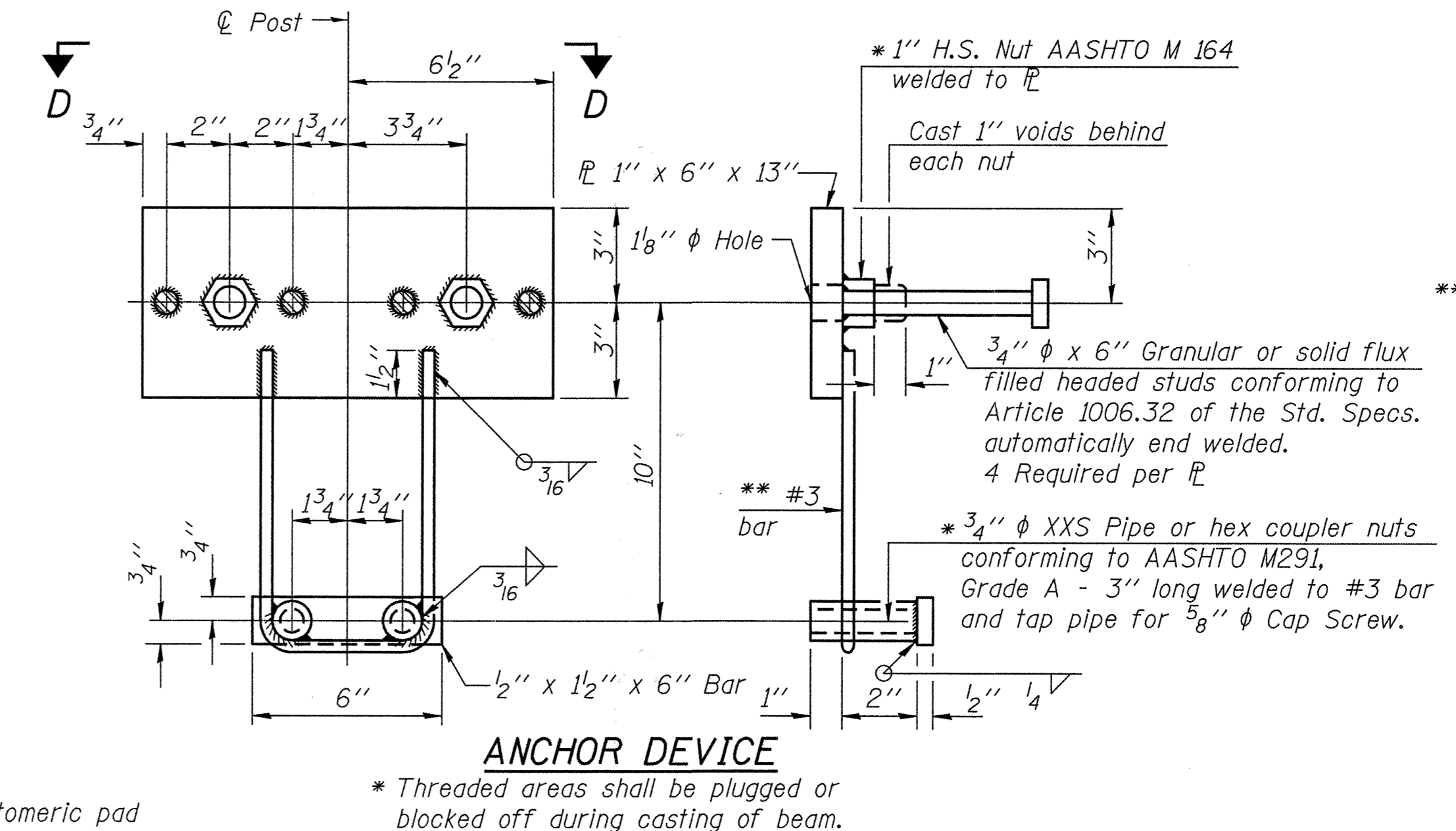
CURLED END SECTION DETAILS



SECTION B-B

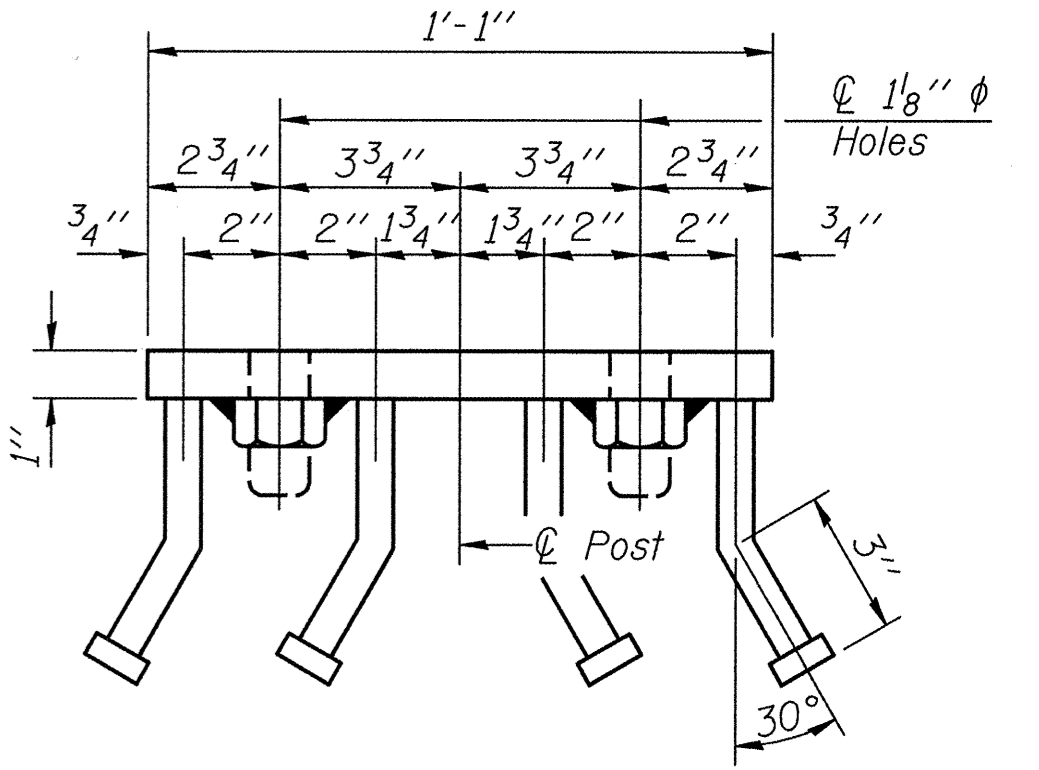


SECTION AT RAILING POST

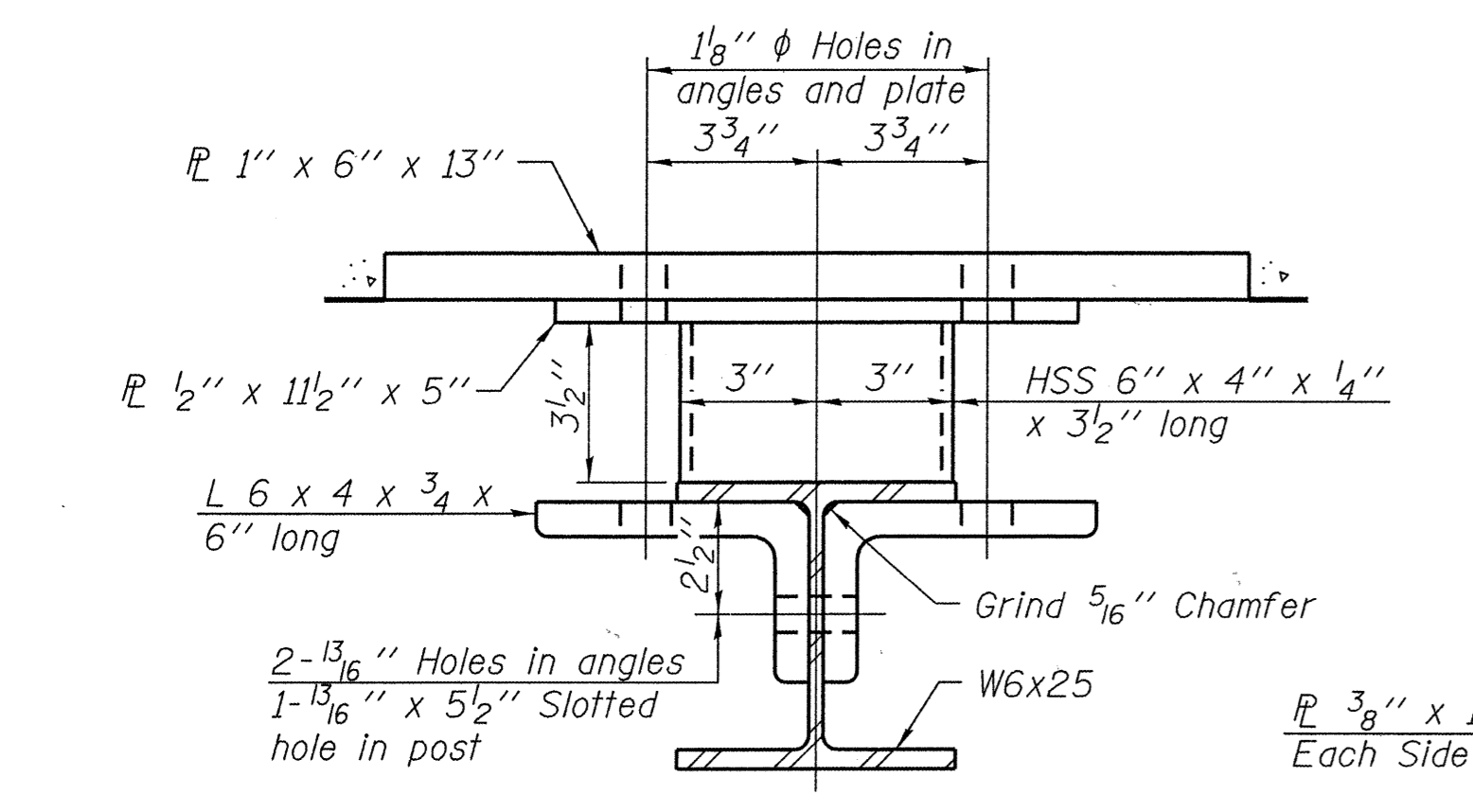


ANCHOR DEVICE

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.

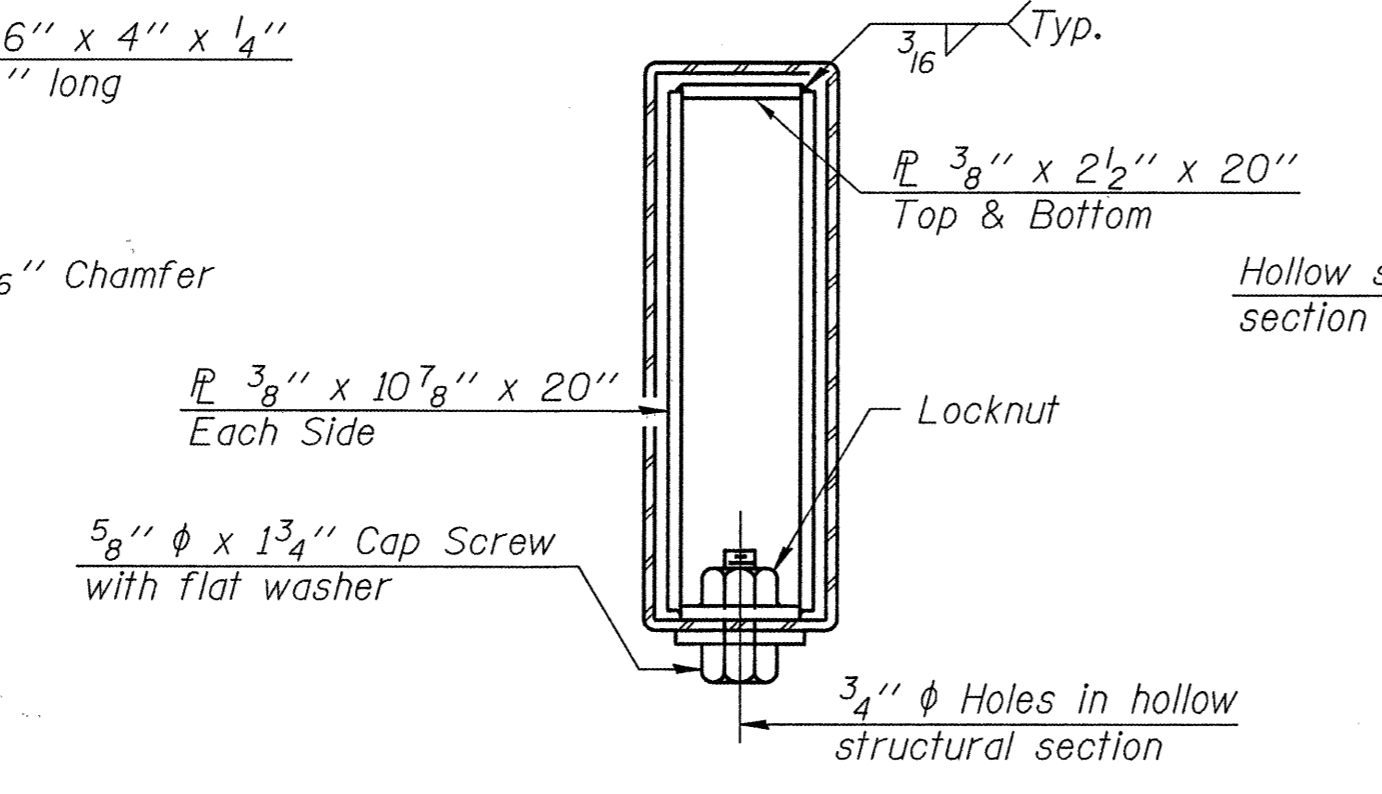


VIEW D-D

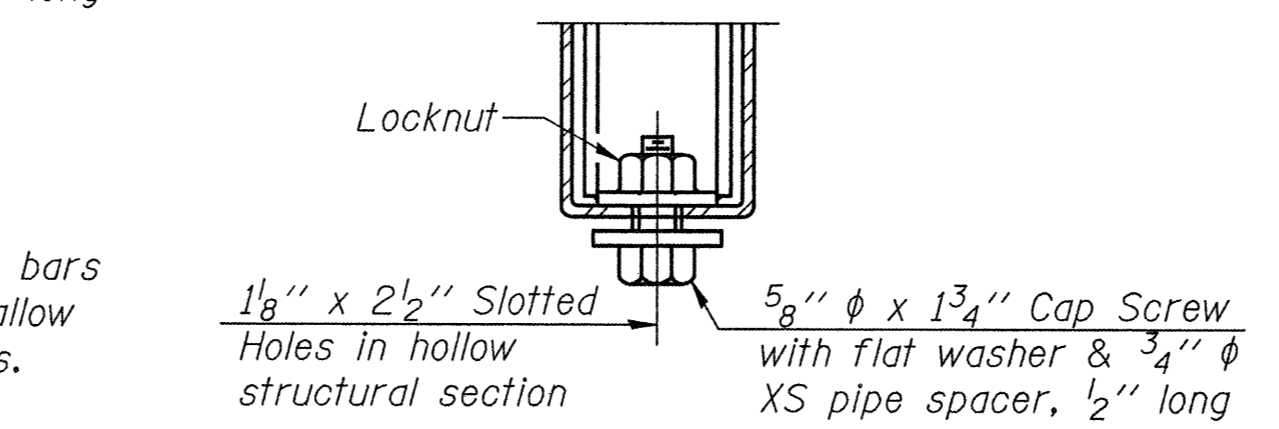


SECTION C-C

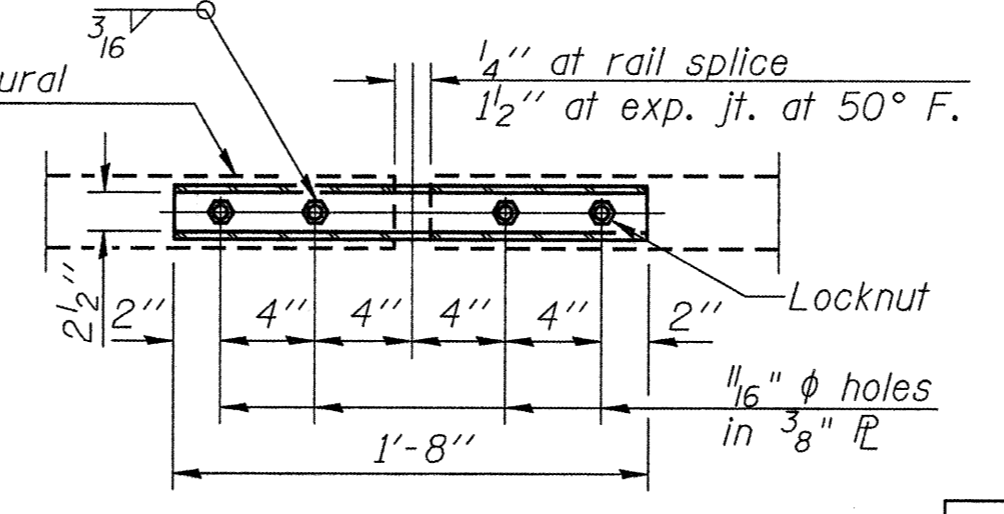
\*\*\* Whenever the lower insert assemblies interfere with strand locations, the #3 bars shall be cut and adjusted in order to allow raising or lowering of the lower inserts. Maximum adjustment not to exceed 1/2 inch.



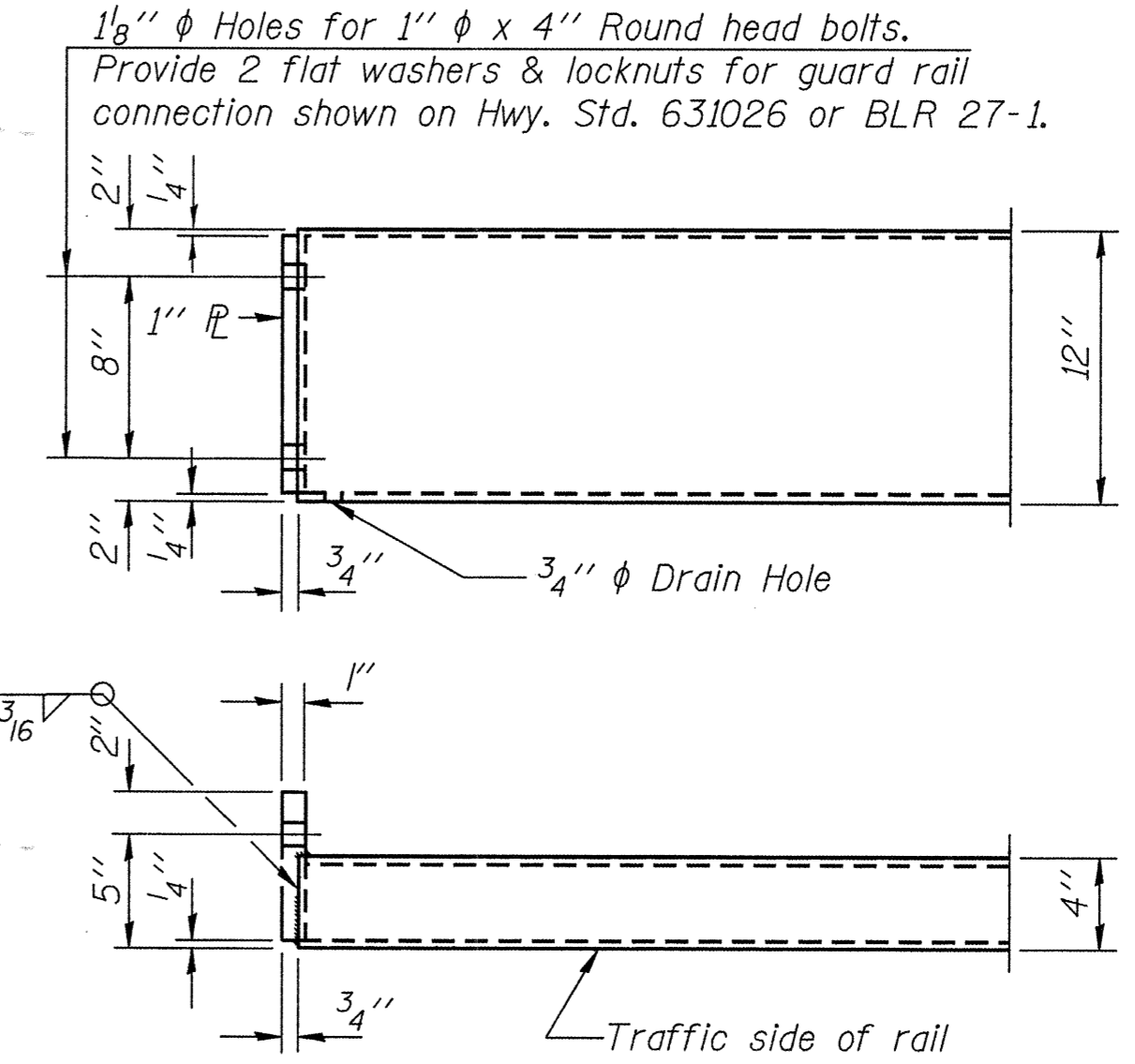
SECTIONS AT RAIL SPLICE



RAIL SPLICE CONNECTION AT EXPANSION JT.



PLAN-BOTT. SPLICE TYPICAL



END OF RAIL DETAILS

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S-1	Foot	84

STEEL RAILING, TYPE S-1  
STRUCTURE NO. 013-3235

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

R-23A

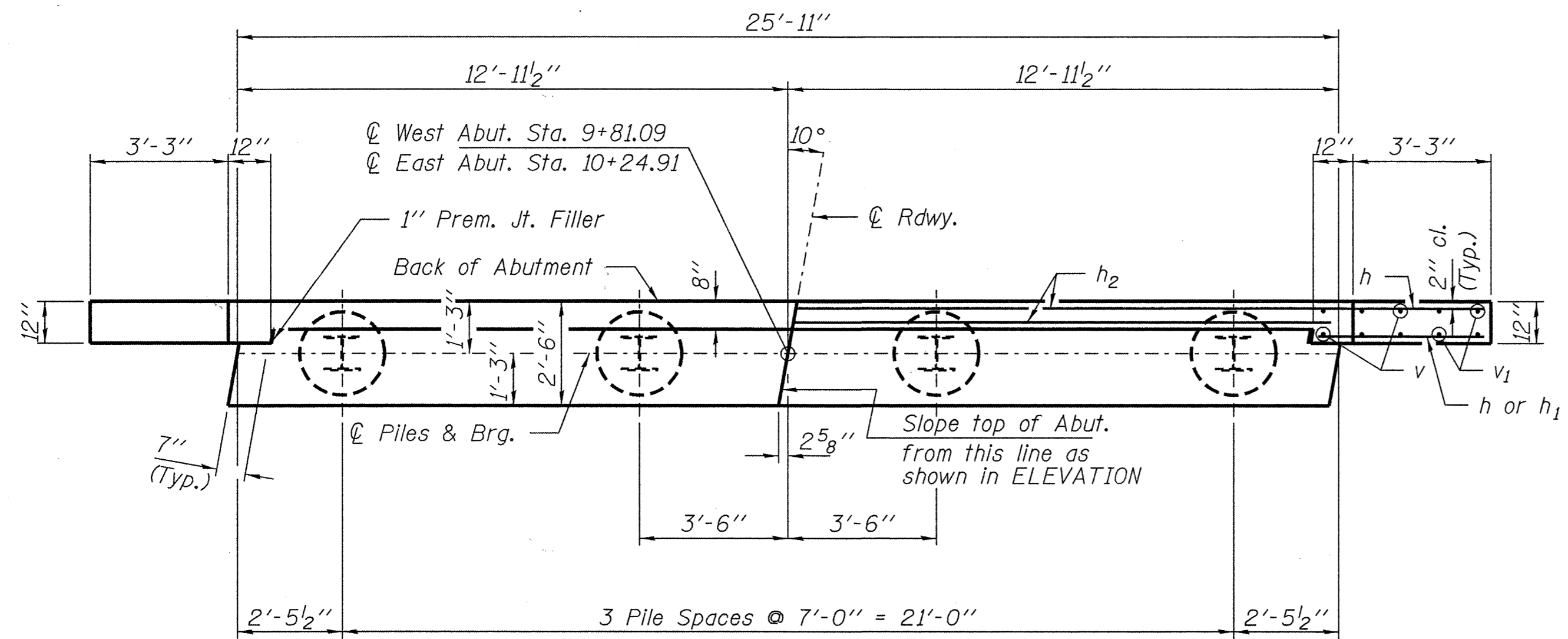
11-1-09 (10'-9" Maximum Post Spacing)

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217.546.3400 www.hlrengeenr.com

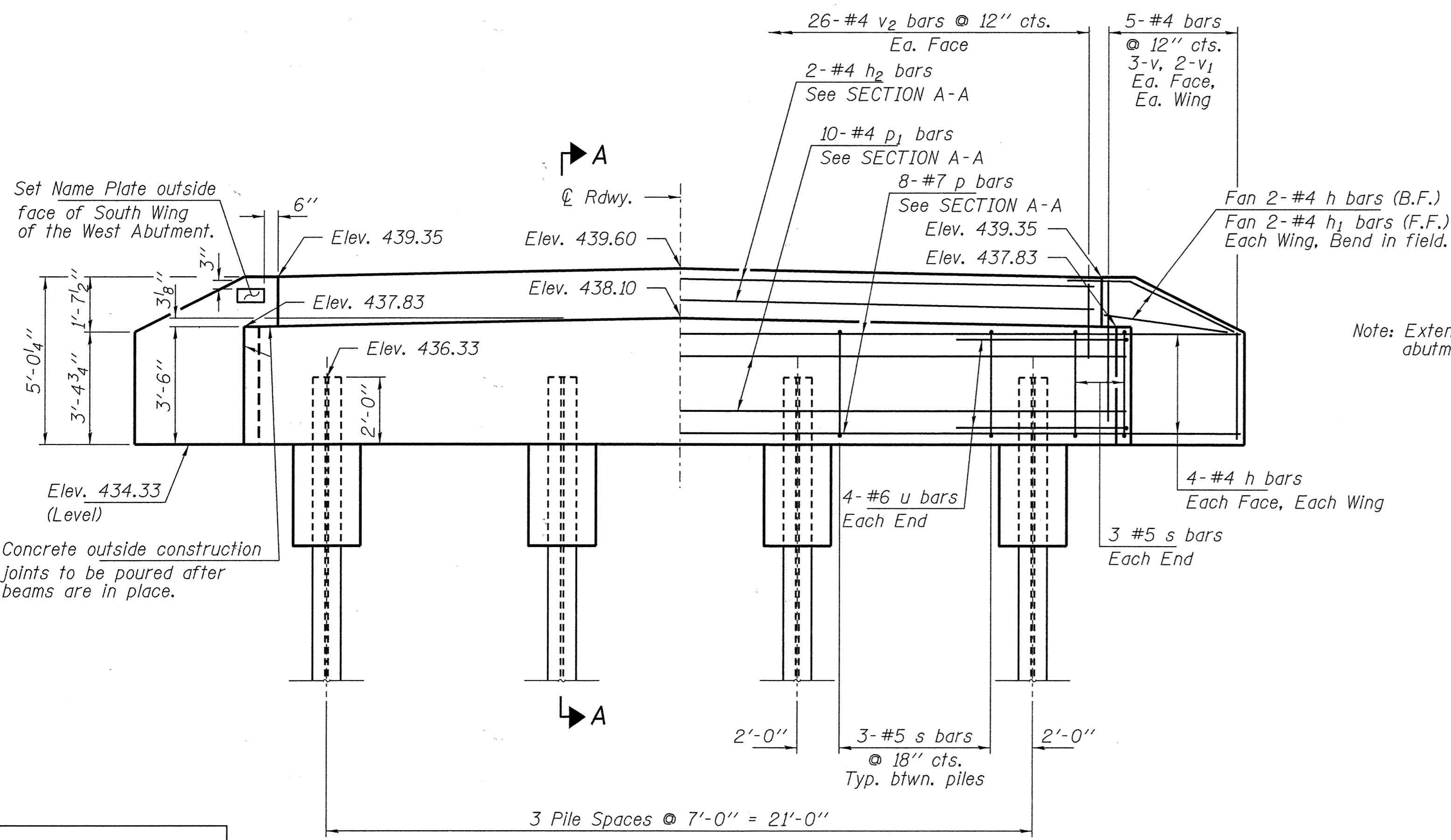
184.000959  
ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORPORATION

PROJECT NUMBER: 09.0128 DATE: 02/18/10

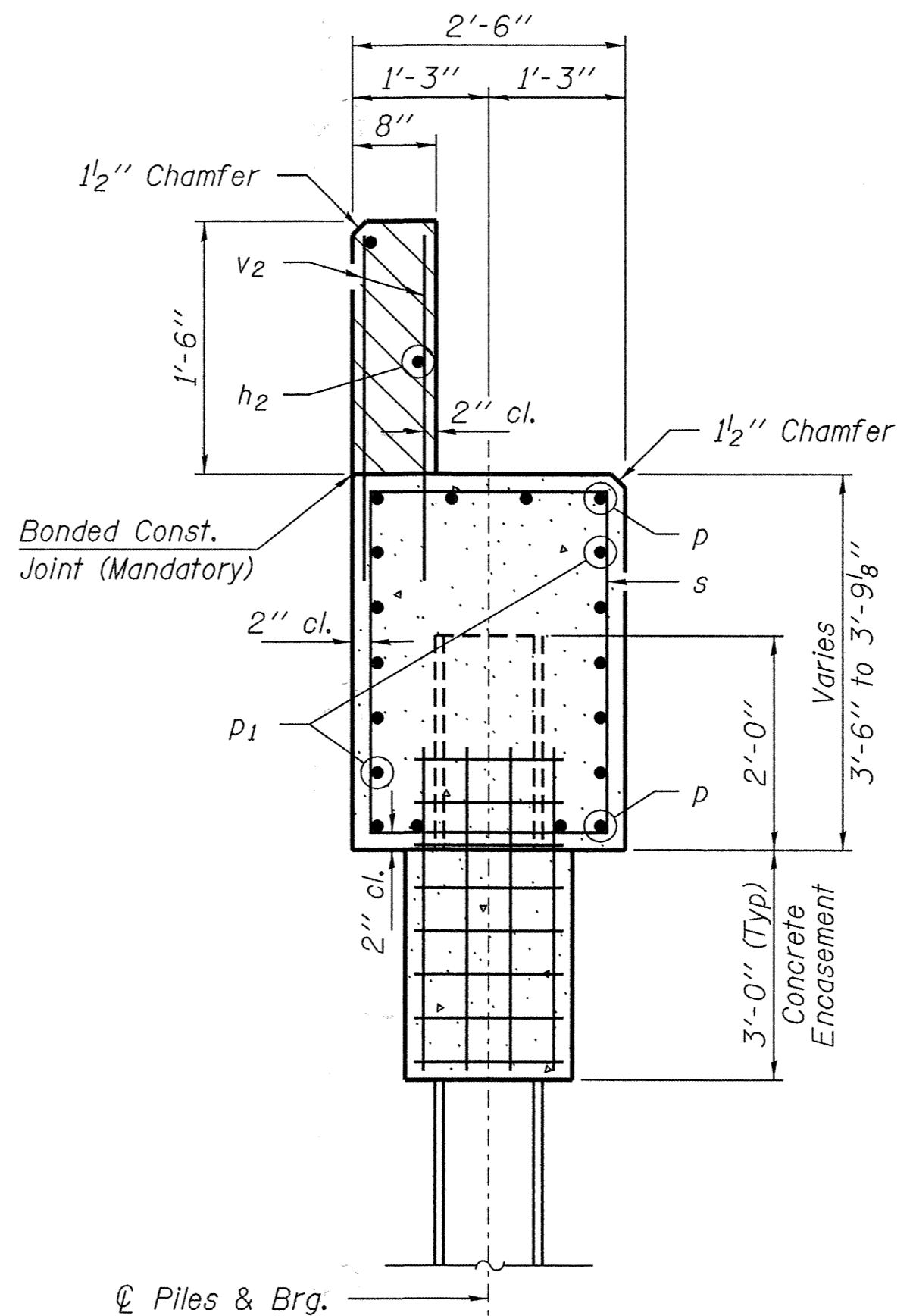
T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
363	06-11129-00-BR	CLAY	16	13
STANFORD ROAD DISTRICT		CONTRACT NO. 95621		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT	BROS-025(061)	



**PLAN**

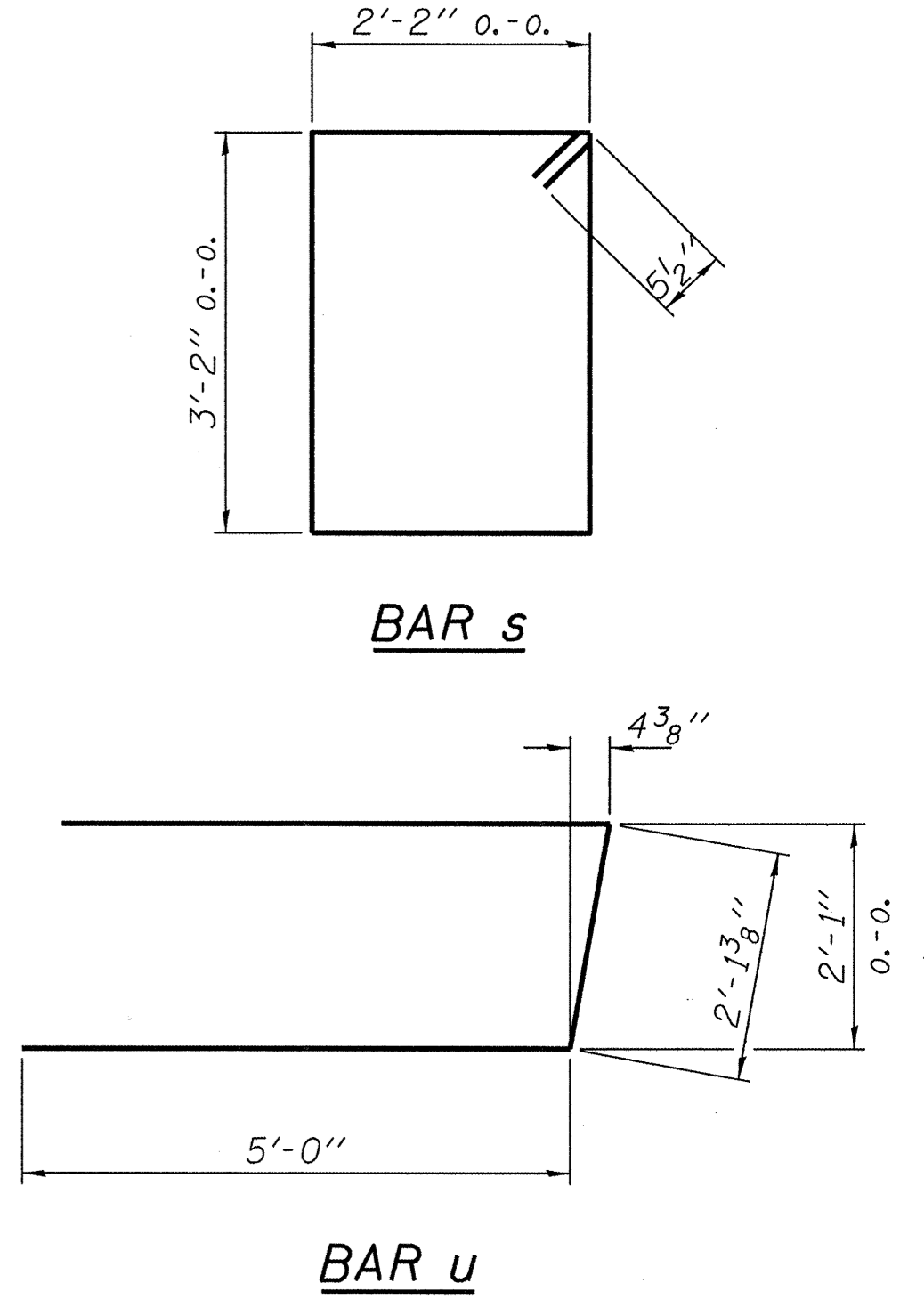


**ELEVATION**



**SECTION A-A**

Hatched area to be poured after beams are in place.



**BAR s**

**BAR u**

**BILL OF MATERIAL - 2 ABUTS.**

BAR	NO.	SIZE	LENGTH	SHAPE
h	40	#4	5'-6"	—
h1	8	#4	4'-0"	—
h2	4	#4	25'-9"	—
p	16	#7	25'-9"	—
p1	20	#4	25'-9"	—
s	30	#5	11'-7"	□
u	16	#6	12'-2"	U
v	24	#4	4'-1"	—
v1	16	#4	3'-1"	—
v2	104	#4	2'-4"	—
Concrete Structures			Cu. Yd.	21.8
Concrete Encasement			Cu. Yd.	2.8
Reinforcement Bars			Pound	2,340
Steel Piles HP10x42			Foot	175
Test Pile Steel HP10x42			Each	1
Name Plates			Each	1

**PILE DATA**

Type: Steel HP10x42  
 No. Req'd. (2 Abuts.): 8  
 Factored Resistance Available (Rf): 167 Kips/Pile  
 Nominal Required Bearing (Rn): 335 Kips/Pile  
 Est. Length: 25 Ft/Pile

Notes: \* Includes one test pile to be driven in permanent location at the West Abutment.

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

The test piles shall be driven to 110 percent of the Nominal Required Bearing indicated in the pile data information.

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

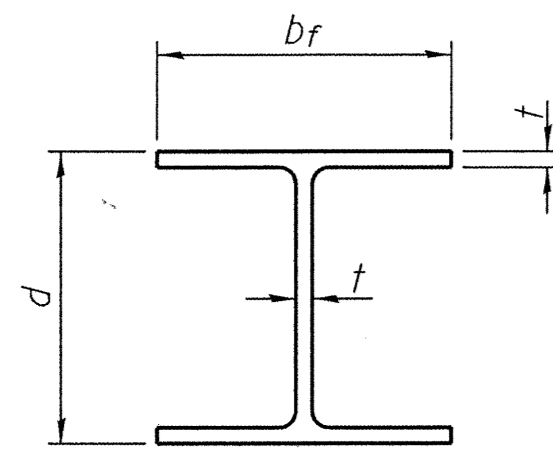
**ABUTMENTS  
STRUCTURE NO. 013-3235**

**HAMPTON, LENZINI AND RENWICK, INC.**  
 CIVIL ENGINEERS - STRUCTURAL ENGINEERS - LAND SURVEYORS  
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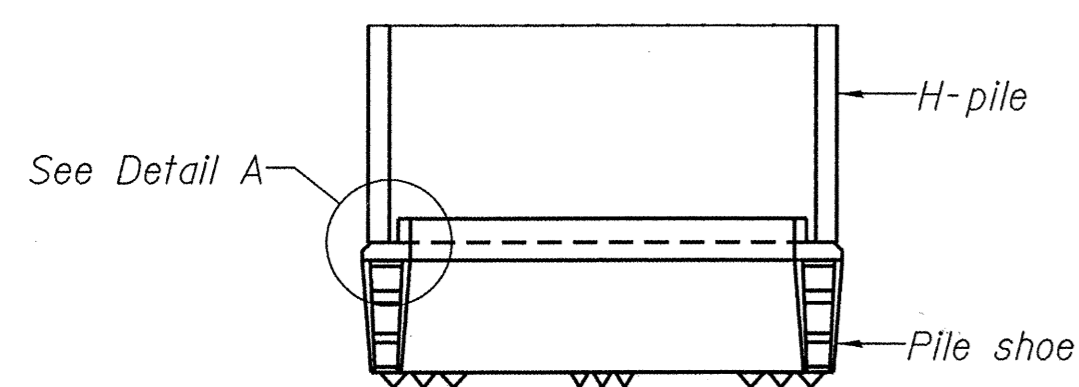
PROJECT NUMBER: 09.0128 DATE: 02/18/10

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
363	06-11129-00-BR	CLAY	16	14
STANFORD ROAD DISTRICT		CONTRACT NO. 95621		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT BROS-025(061)		

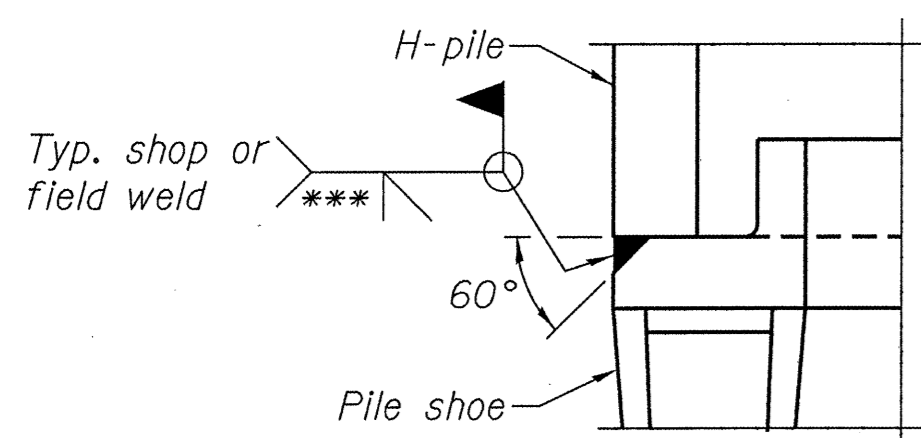


**STEEL PILE TABLE**

Designation	Depth d	Flange width b <sub>f</sub>	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"

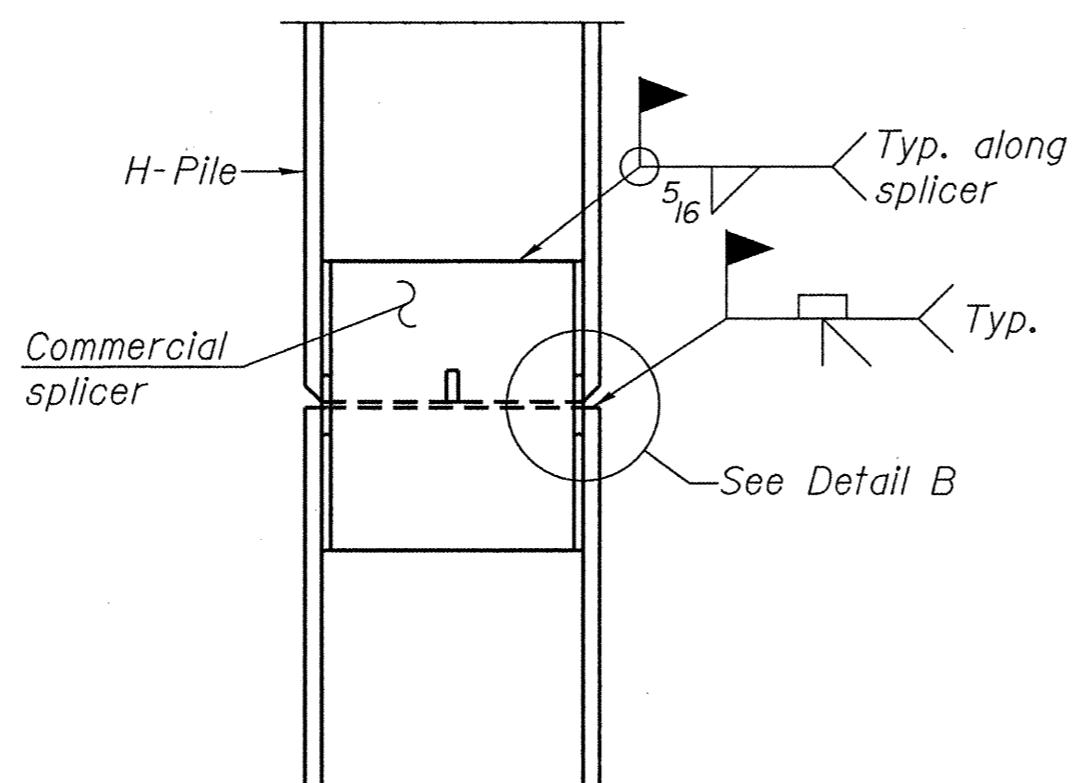


**ELEVATION**

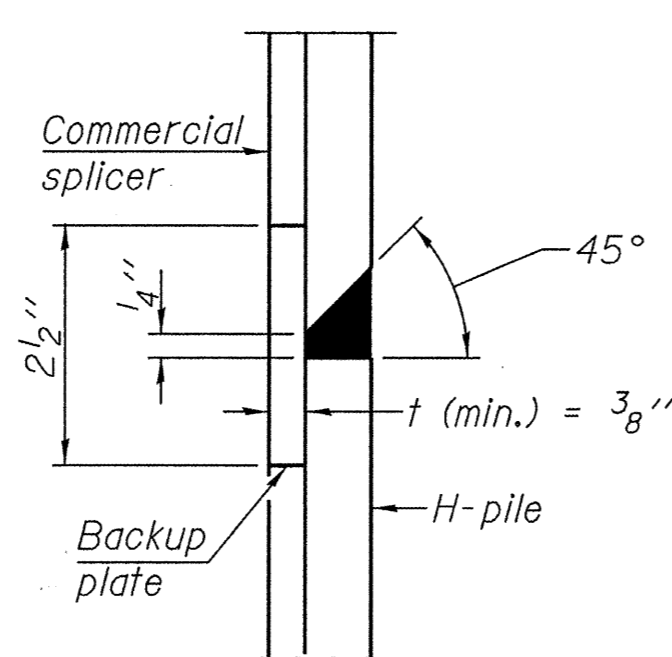


**DETAIL A**

**H-PILE SHOE ATTACHMENT**

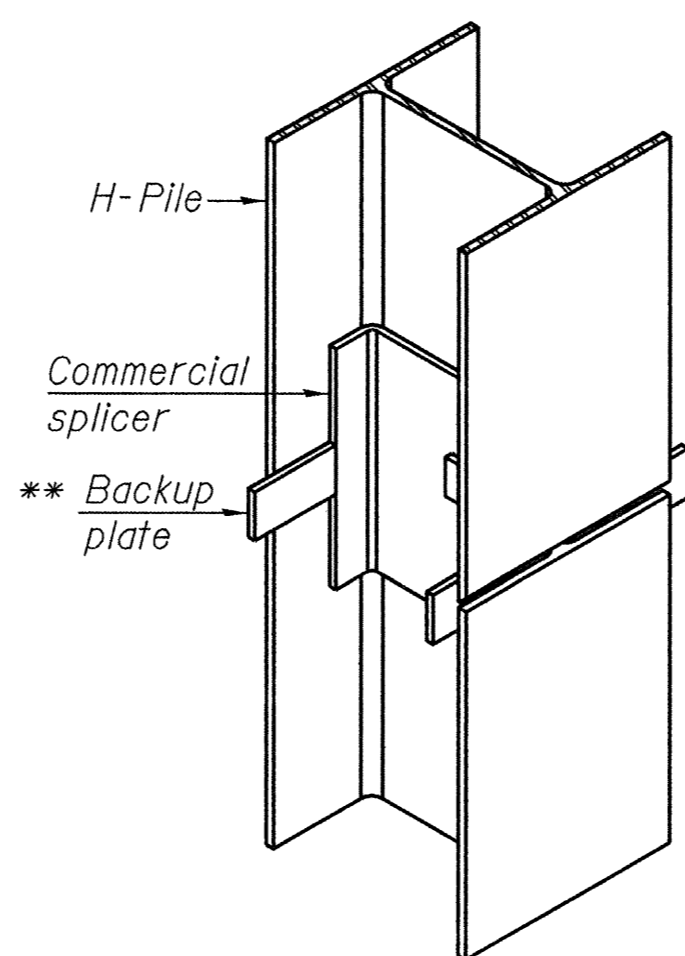


**ELEVATION**

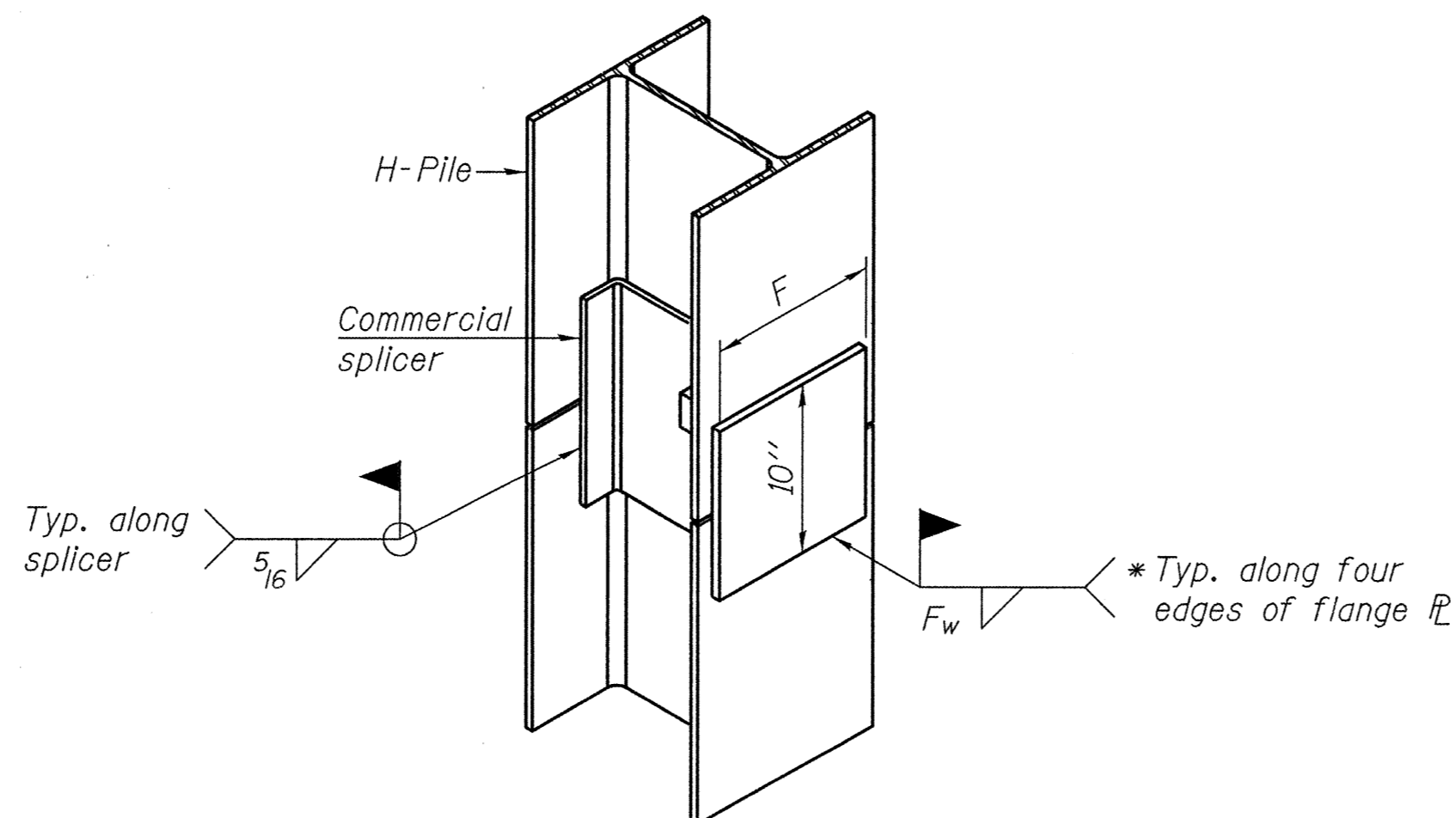


**DETAIL "B"**

**WELDED COMMERCIAL SPLICE**



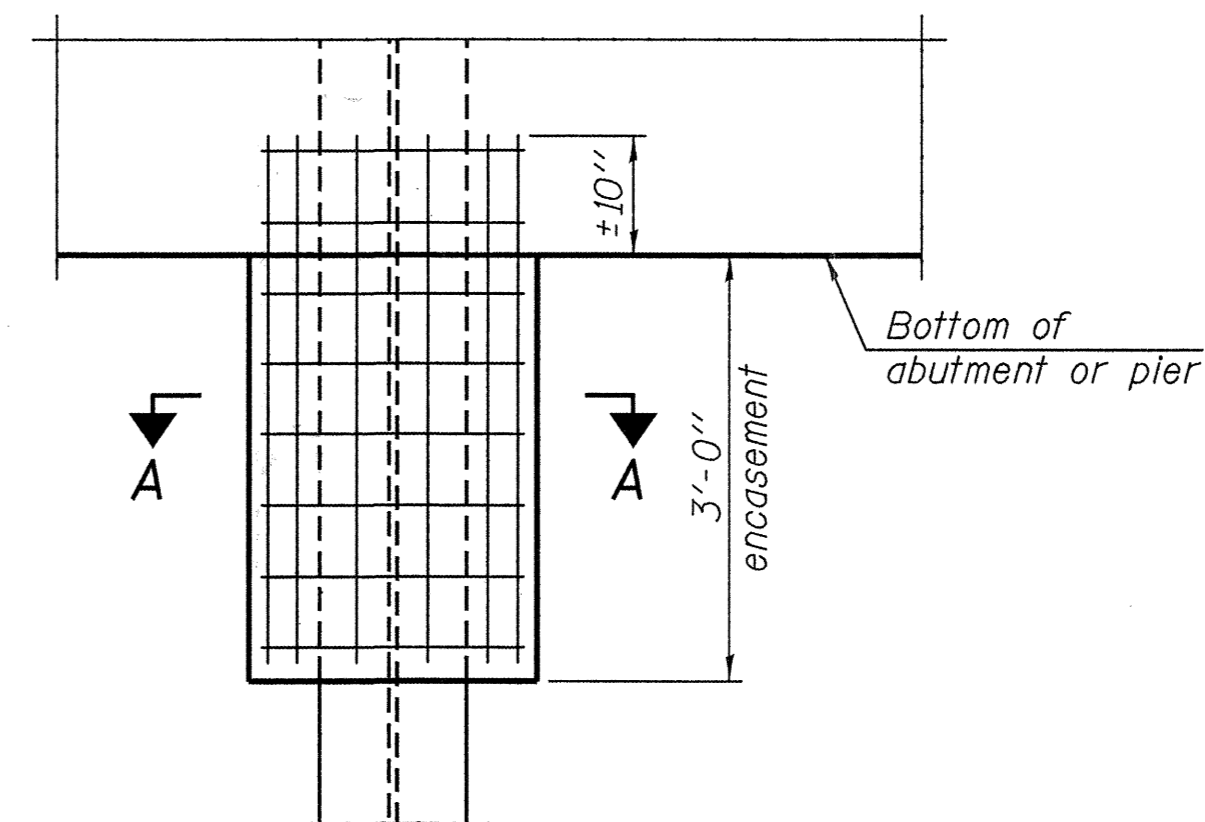
**ISOMETRIC VIEW**



**ISOMETRIC VIEW**

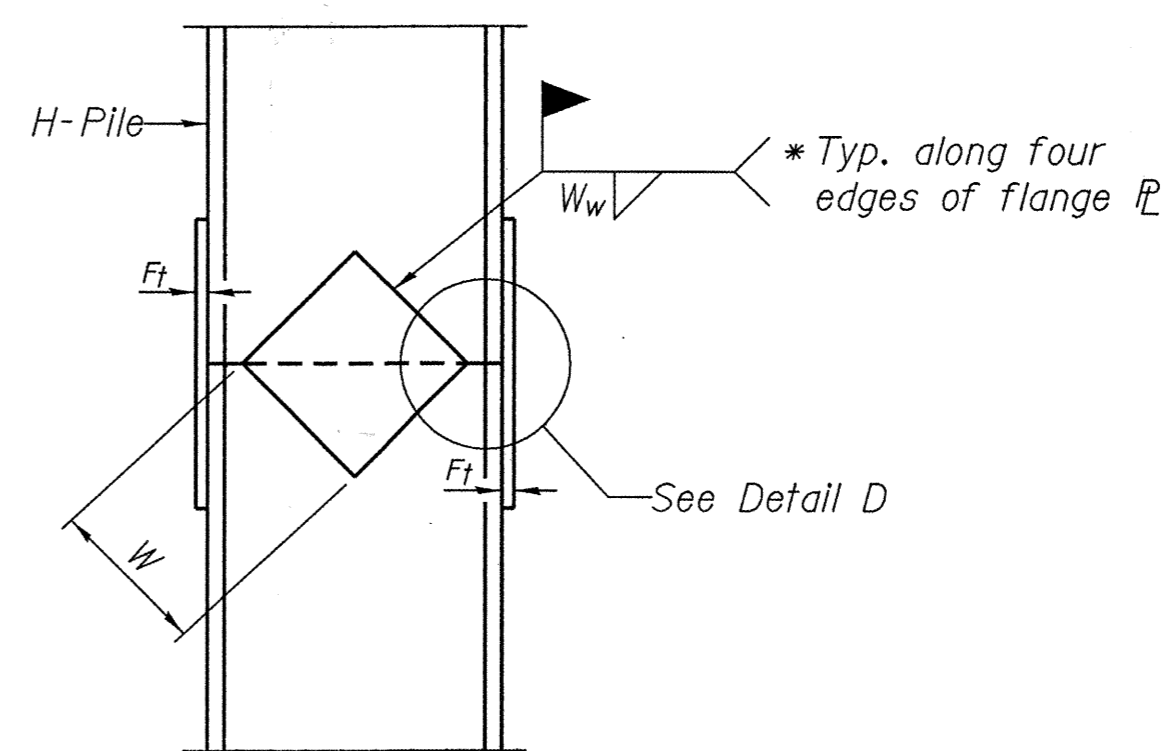
**WELDED COMMERCIAL SPLICE ALTERNATE**

- \* 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.).

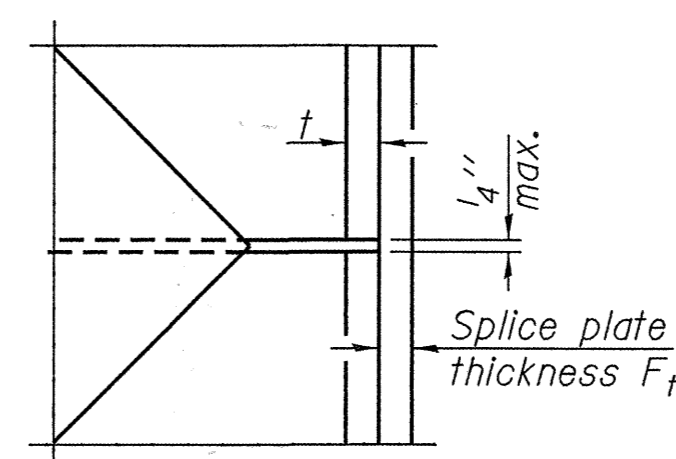


**ELEVATION**

**PILE ENCASEMENT**

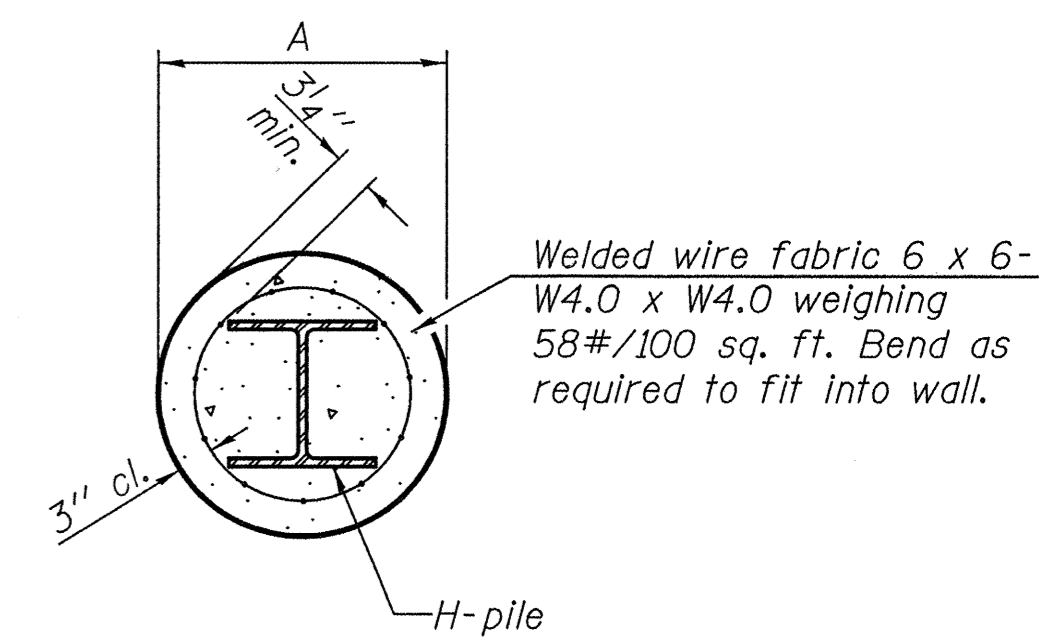


**ELEVATION**



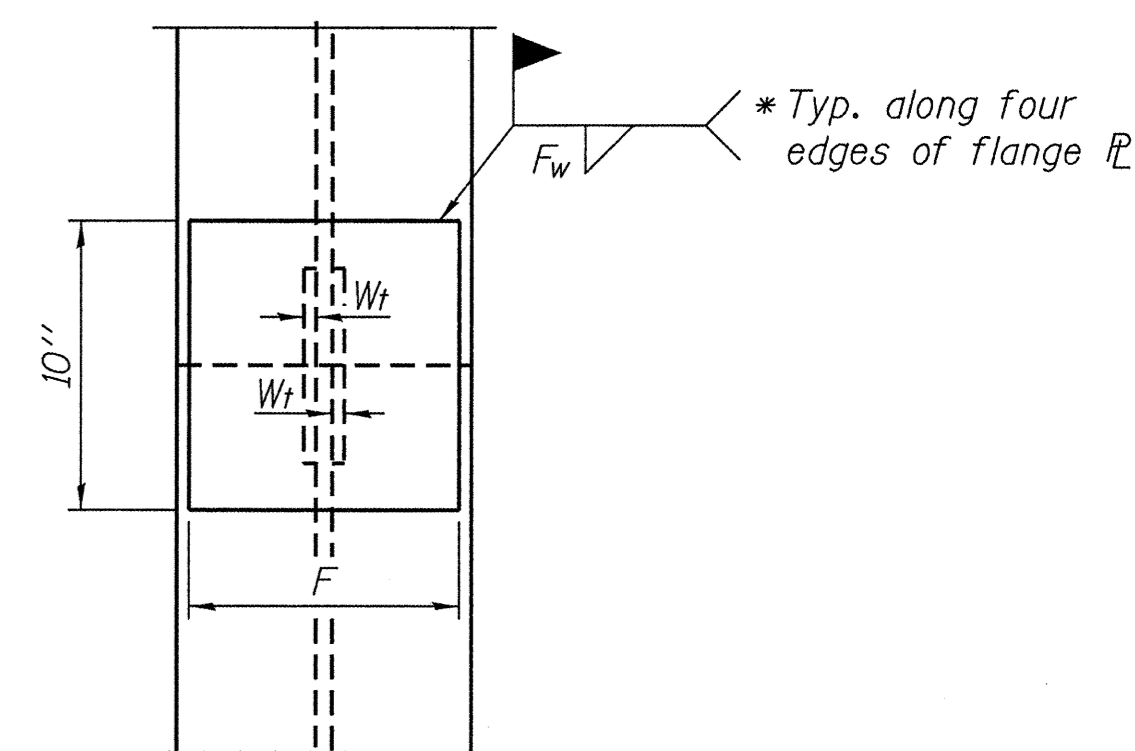
**DETAIL D**

**WELDED PLATE FIELD SPLICE**



**SECTION A-A**

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



**END VIEW**

Designation	F	F <sub>t</sub>	F <sub>w</sub>	W	W <sub>t</sub>	W <sub>w</sub>
HP 14x117	12 1/2"	1"	7/8"	7 3/4"	5 8/8"	1/2"
x102	12 1/2"	7/8"	3/4"	7 3/4"	5 8/8"	1/2"
x89	12 1/2"	3/4"	11/16"	7 3/4"	5 8/8"	1/2"
x73	12 1/2"	5/8"	9/16"	7 3/4"	5 8/8"	1/2"
HP 12x84	10"	7/8"	11/16"	6 1/2"	5 8/8"	1/2"
x74	10"	7/8"	11/16"	6 1/2"	5 8/8"	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"

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

**HP PILE DETAILS  
STRUCTURE NO. 013-3235**

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

F-HP

11-1-09

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

184.000959  
 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORPORATION

PROJECT NUMBER: 09.0128 DATE: 02/18/10

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
363	06-11129-00-BR	CLAY	16	15
STANFORD ROAD DISTRICT		CONTRACT NO. 95621		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT	BROS-025(061)	

NOBLE		BORING No. B-1					water level reading		
ENGINEERING CONSULTANTS		County: Clay, IL		Sheet No. 1 of 1		1st encounter: 7'			
Client: Clay County Highway Dept.		Weather: sunny		Temperature: low 70's		water level reading			
Driller: Noble Engineering Consultants		Date Start: 5-15-09		Surface Elevation: NA (437.0)		@completion 9'			
Location: structure # 013-5005		Date Finished: 5-15-09		Driller: Bill Sudduth		Backfill: soil cuttings			
Depth:	Sample No.	Sample Depth	N-Value	Blow Count	Recovery (%)	Qu (tsf)	Soil Description	USC Class.	Elev.
1									
2	SS-1	1.0'-2.5'	7	2-3-4	90	-	0.0'-1.0' gravel soil mixture	FILL	
3							1.0'-5.0' silty, clayey, etc. FILL		
4	SS-2	3.5'-5.0' (432.0)	3	4-1-2	100	*	5.0'-10.0' SANDY CLAY	FILL	
5							w/ occ. wet sand seams,		
6	SS-3	6.0'-7.5'	5	2-1-4	100	*	trace gravel, soft, brown	CL	
7									
8									
9	SS-4	8.5'-10.0' (427.0)	12	1-6-6	100	*		CL	
10									
11									
12									
13									
14	SS-5	13.5'-15.0' (422.0)	7	1-2-5	100		10.0'-18.5' SILTY FINE TO COARSE SAND	SM	
15							w/ occ. Silty clay seams, trace gravel, loose, gray		
16									
17									
18									
19	SS-6	18.5'-20.0' (417.0)	100+	8-100/5"	100		18.5'-19.5' HIGHLY WEATHERED ROCK		
20							AR 19.5'		
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									
Drilling Method: HSA (2-1/4" id)				comments * Sand seams make Qp test invalid					
Depth: 0' to 19.5'									
Drill Rig: Mobile B-47									
Sampling: split-spoon (SS)									
shelby tube (ST)									

BORING 1

NOBLE		BORING No. B-2					water level reading		
ENGINEERING CONSULTANTS		County: Clay, IL		Sheet No. 1 of 1		1st encounter: 8'			
Client: Clay County Highway Dept.		Weather: sunny		Temperature: low 70's		water level reading			
Driller: Noble Engineering Consultants		Date Start: 5-11-09		Surface Elevation: NA (437.5)		@completion cave			
Location: structure # 013-5005		Date Finished: 5-11-09		Driller: Bill Sudduth		Backfill: soil cuttings			
Depth:	Sample No.	Sample Depth	N-Value	Blow Count	Recovery (%)	Qu (tsf)	Soil Description	USC Class.	Elev.
1									
2	SS-1	1.0'-2.5'	12	3-6-6	100	-	0.0'-1.0' gravel soil mixture	FILL	
3							1.0'-5.0' silty, clayey, etc. FILL		
4	SS-2	3.5'-5.0' (432.5)	4	2-2-2	100	-	5.0'-13.5' SANDY CLAY	FILL	
5							w/ occ. wet sand seams,		
6	SS-3	6.0'-7.5'	3	1-2-1	100	-	trace gravel, soft to very soft, brown	CL	
7									
8									
9	SS-4	8.5'-10.0' (427.5)	1	1-0-1	100	-		CL	
10									
11									
12									
13									
14	SS-5	13.5'-15.0' (422.5)	5	1-2-3	100		13.5'-19.0' SILTY CLAY		
15							w/ occ. wet sand seams, trace gravel, very soft, brown mottled gray		
16									
17									
18									
19	SS-6	18.5'-20.0' (417.5)	45	1-2-43	100	-		CL	
20									
21									
22									
23									
24	SS-7	23.5'-25.0' (412.5)	100+	5-100/5"	100		19.0'-24.4' HIGHLY WEATHERED ROCK		
25							AR 24.4'		
26									
27									
28									
29									
30									
Drilling Method: HSA (2-1/4" id)				comments * Sand seams make Qp test invalid					
Depth: 0' to 24.4'									
Drill Rig: Mobile B-47									
Sampling: split-spoon (SS)									
shelby tube (ST)									

BORING 2

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

BORINGS  
STRUCTURE NO. 013-3235

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STANFORD ROAD DISTRICT		CONTRACT NO. 95621		
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