

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR373	12-09120-00-BR 12-05119-00-BR	SHELBY	19	1
FED. ROAD DIST. NO.		ILLINOIS CONTRACT NO.	95810	

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS**

**PLANS FOR PROPOSED  
STP BRIDGE**

**SECTION'S 12-09120-00-BR, 12-05119-00-BR  
LAKEWOOD / DRY POINT TOWNSHIPS  
TR 373  
SHELBY COUNTY**

JOB NO. C-97-053-15  
PROJECT NO. BR OS-173(190)

**INDEX OF SHEETS**

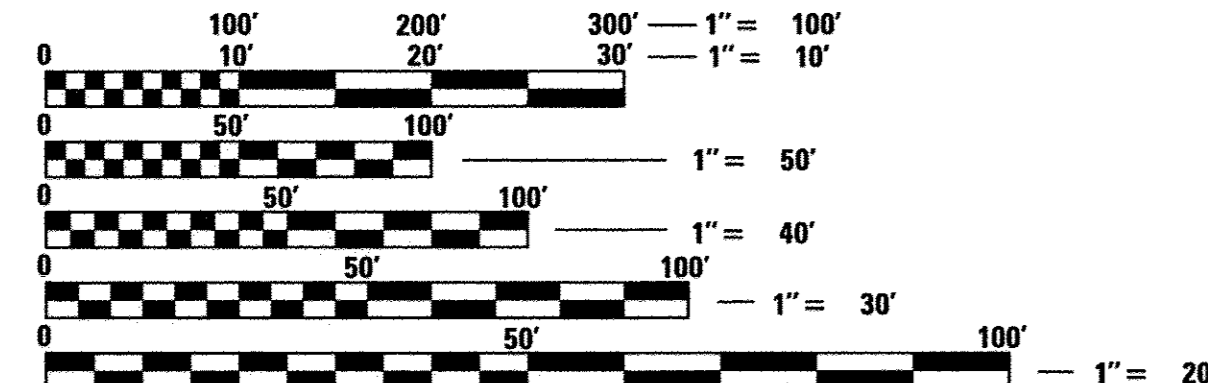
- 1 COVER SHEET
- 2 SUMMARY OF QUANTITIES
- 3 PLAN AND PROFILE
- 4 GENERAL PLAN AND ELEVATION
- 5 GENERAL DETAILS
- 6-7 DECK BEAM DETAILS SPANS 1 & 3
- 8-9 DECK BEAM DETAILS SPAN 2
- 10 STEEL RAILING TYPE S-1
- 11 ABUTMENT DETAILS
- 12 PIER DETAILS 1 & 2
- 13 HP PILE DETAILS
- 14 EROSION CONTROL PLAN
- 15-19 CROSS SECTIONS

**HIGHWAY STANDARDS**

- 000001-06 STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
- 280001-07 TEMPORARY EROSION CONTROL SYSTEMS
- 515001-03 NAME PLATES FOR BRIDGES
- 701901-06 TRAFFIC CONTROL DEVICES
- 725001-01 OBJECT AND TERMINAL MARKERS
- BLR 21-9 TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS

ADT-CURRENT <125 DESIGN ADT 150  
CLASS-RURAL LOCAL ROAD  
DESIGN SPEED-30 MPH  
DESIGN YEAR 2030

**SCALE**

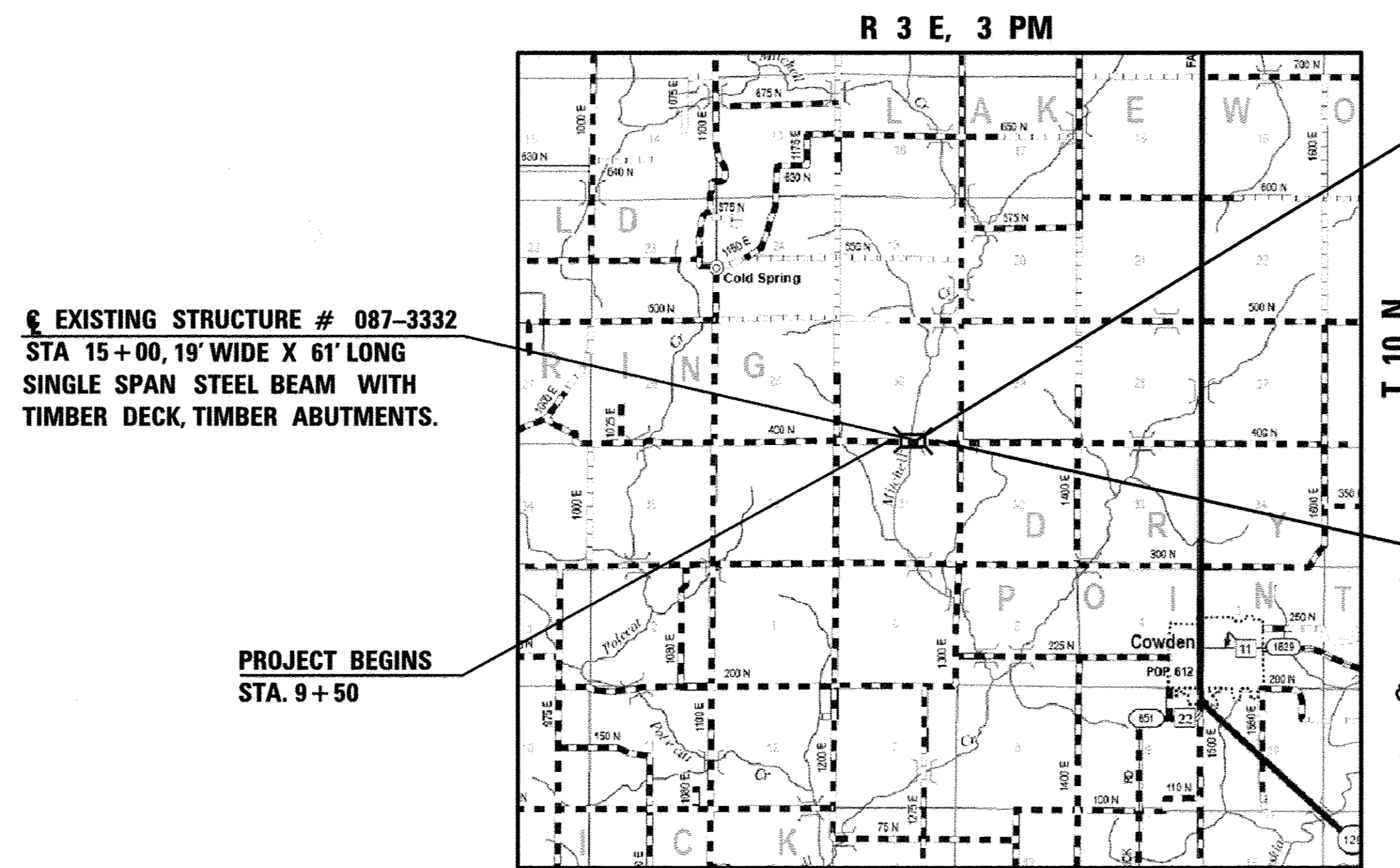


FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

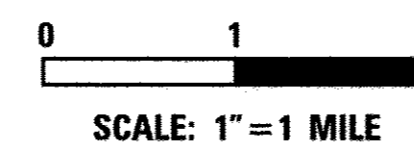
J.U.L.I.E.  
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION  
1-800-892-0123  
OR 811



LOCATION OF SECTION INDICATED THIS: - [Symbol]



**LOCATION MAP**



TOTAL AND NET LENGTH OF PROJECT = 1000 FT. = 0.19 MI.

PROPOSED STRUCTURE # 087-3582  
STA. 15+00, 24'-0" WIDE x 81'-6"  
LONG, THREE SPAN PRECAST,  
PRESTRESSED CONCRETE DECK BEAM  
BRIDGE, 17" DEPTH, NO SKEW

EXISTING STRUCTURE # 087-3332  
STA 15+00, 19' WIDE X 61' LONG  
SINGLE SPAN STEEL BEAM WITH  
TIMBER DECK, TIMBER ABUTMENTS.

PROJECT BEGINS  
STA. 9+50

PROJECT ENDS  
STA. 19+50



Andy L. Baker, P.E.  
LICENSE EXP. DATE 11-30-17

APPROVED: *[Signature]*  
COUNTY ENGINEER

APPROVED: *[Signature]* *[Signature]*  
HIGHWAY COMMISSIONER

PASSED: *[Signature]*  
DISTRICT SEVEN ENGINEER OF LOCAL ROADS AND STREETS

RELEASING FOR BID BASED ON LIMITED REVIEW: *[Signature]*  
REGION FOUR ENGINEER  
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

**SUMMARY OF QUANTITIES**

CODE	ITEM	UNIT	QUANTITY
20100500	TREE REMOVAL, ACRES	ACRE	0.20
20200100	EARTH EXCAVATION	CU. YD.	2898
20300100	CHANNEL EXCAVATION	CU. YD.	208
25000200	SEEDING, CLASS 2	ACRE	1.5
25000400	NITROGEN FERTILIZER NUTRIENT	POUND	135
25000500	PHOSPHORUS FERTILIZER NUTRIENT	POUND	135
25000600	POTASSIUM FERTILIZER NUTRIENT	POUND	135
25100115	MULCH, METHOD 2	ACRE	1.5
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	200
28000305	TEMPORARY DITCH CHECKS	FOOT	92
28000400	PERIMETER EROSION BARRIER	FOOT	265
28100207	STONE RIPRAP, CLASS A4	TON	994
28200200	FILTER FABRIC	SQ. YD.	1277
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	966
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50200100	STRUCTURE EXCAVATION	CU. YD.	75
50200300	COFFERDAM EXCAVATION	CU. YD.	59
50201121	COFFERDAM (TYPE 2) (LOCATION-1)	EACH	1
50201122	COFFERDAM (TYPE 2) (LOCATION-2)	EACH	1
50300225	CONCRETE STRUCTURES	CU. YD.	90.2
50300280	CONCRETE ENCASEMENT	CU. YD.	7
50400305	PRECAST PRESTRESSED CONCRETE DECK BEAM (17" DEPTH)	SQ. FT.	1920
50800105	REINFORCEMENT BARS	POUND	7380
* 50900205	STEEL RAILING, TYPE S1	FOOT	163
51201400	FURNISHING STEEL PILES HP10x42	FOOT	928
51202305	DRIVING PILES	FOOT	928
51203400	TEST PILE STEEL HP10x42	EACH	4
51204650	PILE SHOES	EACH	20
51500100	NAME PLATES	EACH	1
542D0220	PIPE CULVERTS, CLASS D, TYPE 1 15"	FOOT	112
542D0229	PIPE CULVERTS, CLASS D, TYPE 1 24"	FOOT	42
67100100	MOBILIZATION	L. SUM	1
* 72501000	TERMINAL MARKER - DIRECT APPLIED	EACH	4
X2830495	AGGREGATE DITCH (SPECIAL)	TON	222

\* SPECIALTY ITEMS

**GENERAL NOTES**

- TEMPORARY EROSION CONTROL TO BE IMPLEMENTED PER THE PLANS AND AS DIRECTED BY THE ENGINEER.
- THE CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AT ALL TIMES WITHIN THE CONSTRUCTION AREAS AND PREVENT DRAINAGE OR PONDING OF WATER ONTO PRIVATE PROPERTY.
- ONLY TREES OR SHRUBS MARKED FOR REMOVAL BY THE ENGINEER SHALL BE REMOVED BY THE CONTRACTOR.
- ALL DISTURBED EARTH SURFACES WITHIN THE LIMITS OF THE R.O.W. AND EASEMENTS SHALL BE SEEDING AS DIRECTED BY THE ENGINEER.
- 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 MARKERS AND MONUMENTS UNTIL THE OWNER, AN AUTHORIZED SURVEYOR OR AGENT HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATION.

**TREE REMOVAL SCHEDULE**

STA 14+60 TO STA 15+60 RT = 0.09 ACRE  
 STA 14+50 TO STA 15+40 LT = 0.09 ACRE  
 TOTAL = 0.18 ACRES  
 SAY 0.20 ACRES

**EARTHWORK SCHEDULE**

1 LOCATION	2 EARTH EXCAVATION	3 STRUCTURE EXCAVATION	4 *CHANNEL EXCAVATION	5 EARTH EXCAVATION ADJUSTED FOR SHRINKAGE	6 EMBANKMENT	7 EARTHWORK BALANCE WASTE (+) OR SHORTAGE (-)
	CU YD	CU YD	CU YD	CU YD	CU YD	CU YD
STA 9+50 TO STA 14+59	2070	38	148	1692	1228	464
STA 15+40 TO STA 19+50	828	37	60	694	698	-4
<b>TOTAL</b>	<b>2898</b>	<b>75</b>	<b>208</b>	<b>2386</b>	<b>1926</b>	<b>460</b>

COLUMN 1,2,&6 - LOCATION AND QUANTITIES FROM CROSS SECTIONS,  
 CUT = EARTH EXCAVATION FILL = EMBANKMENT

COLUMN 3 - QUANTITIES OF STRUCTURAL EXCAVATION (CUT) FROM BRIDGE PLANS

COLUMN 4 - \*QUANTITY OF CHANNEL EXCAVATION (CUT) REDUCED 10% FOR UNSUITABLE MATERIAL FOR USE AS FILL

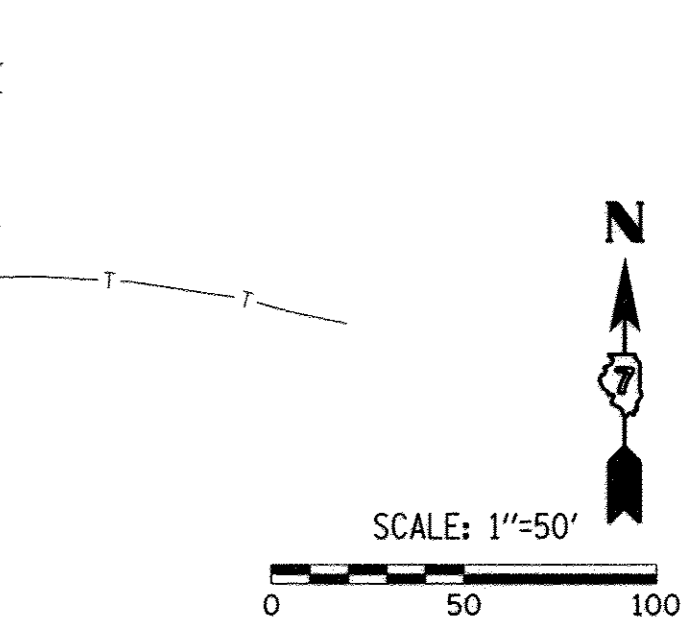
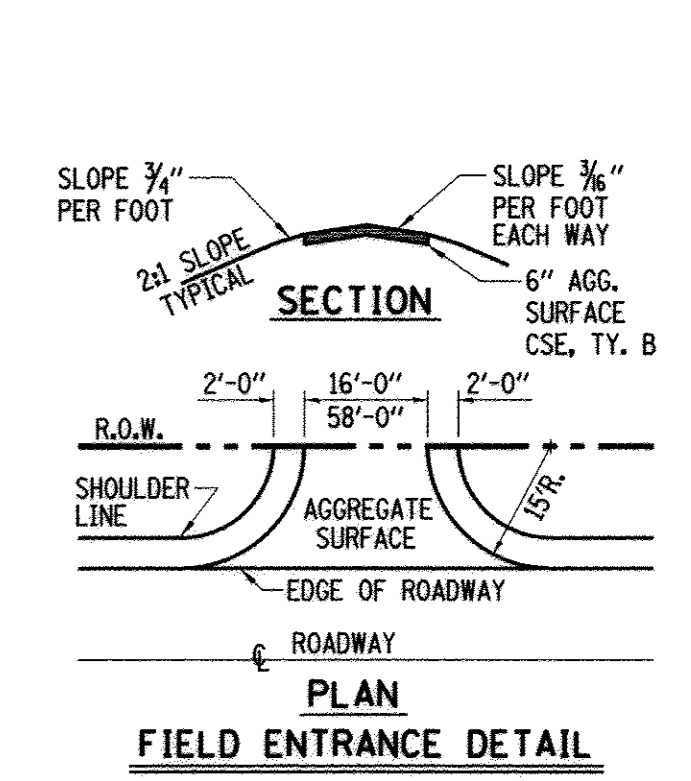
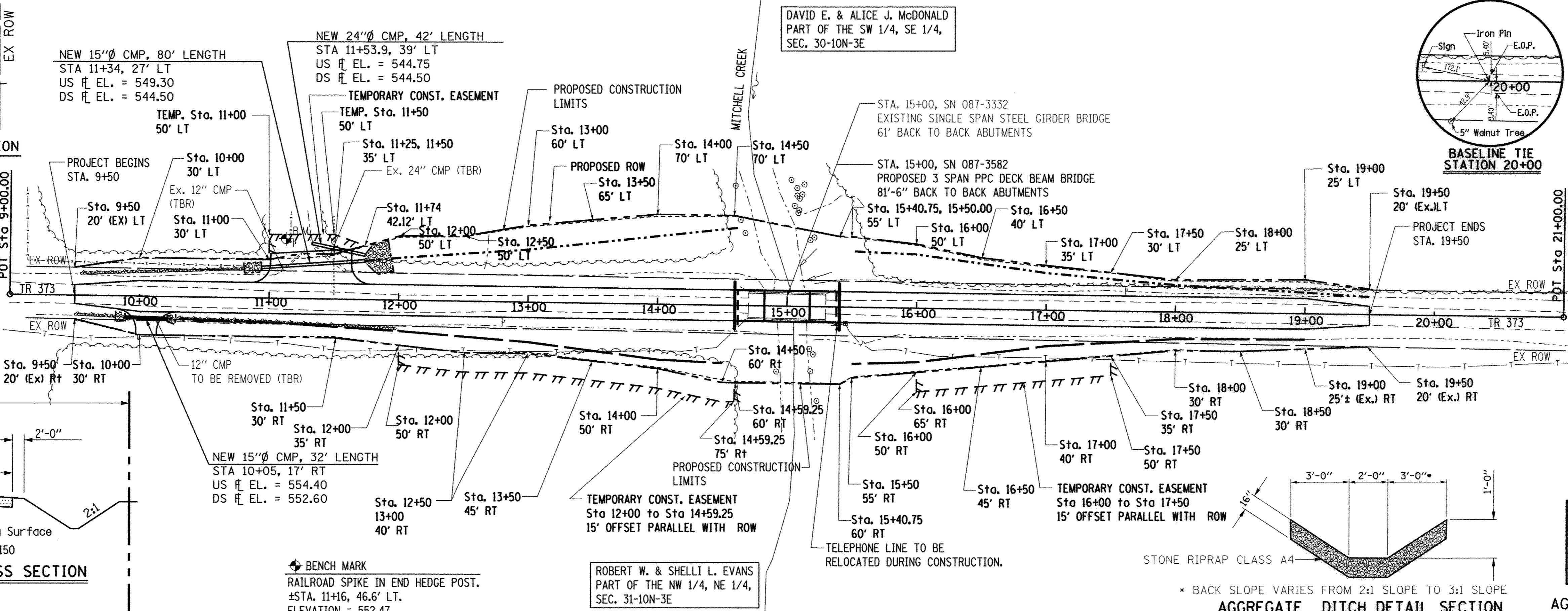
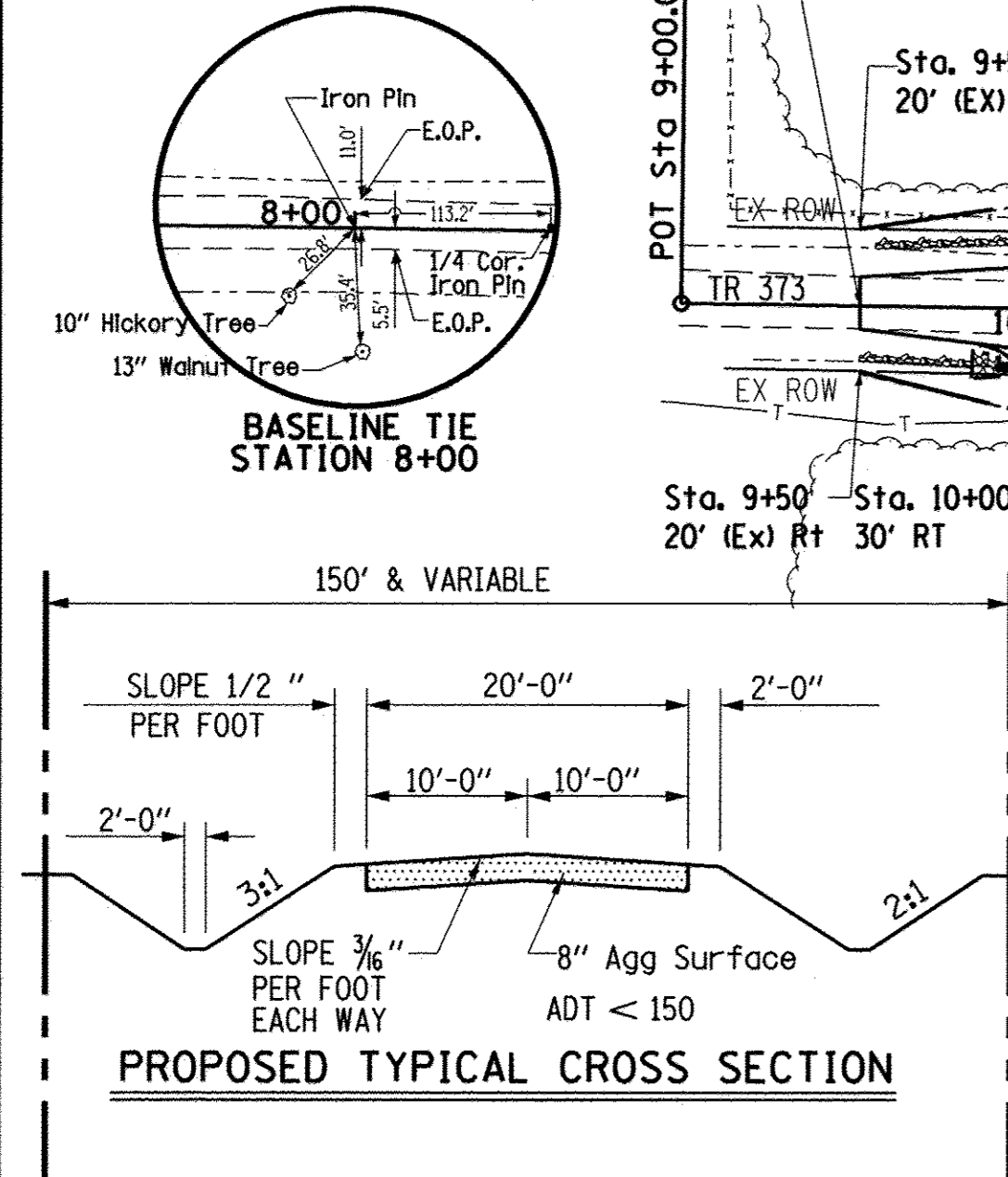
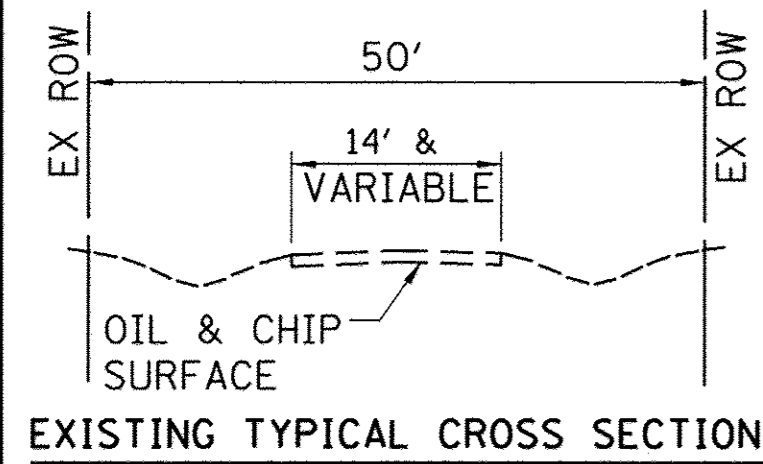
COLUMN 5 - QUANTITY OF EARTH EXCAVATION (CUT) ADJUSTED FOR A SHRINKAGE FACTOR OF 25%

COLUMN 7 - EARTHWORK BALANCE (-) = QUANTITY OF FURNISHED EXCAVATION NEEDED EARTHWORK BALANCE  
 (+) = QUANTITY OF EARTH EXCAVATION ADJUSTED FOR SHRINKAGE TO BE WASTED

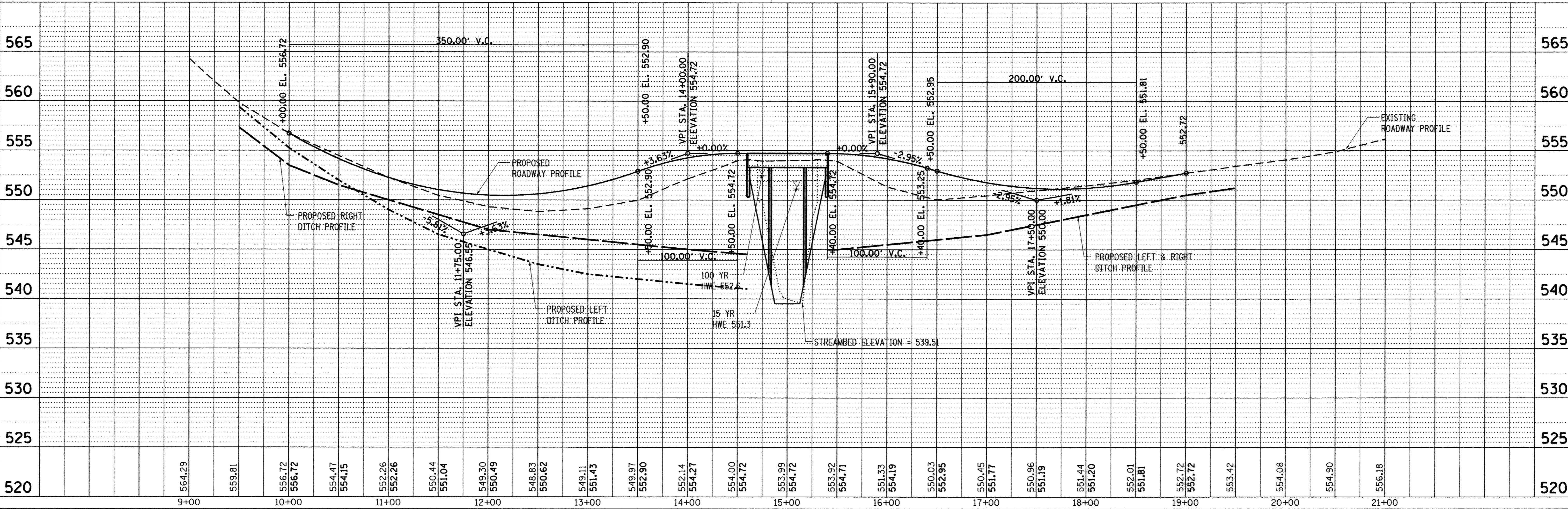


DATE	
BY	
REVISIONS	
NO.	
DESCRIPTION	
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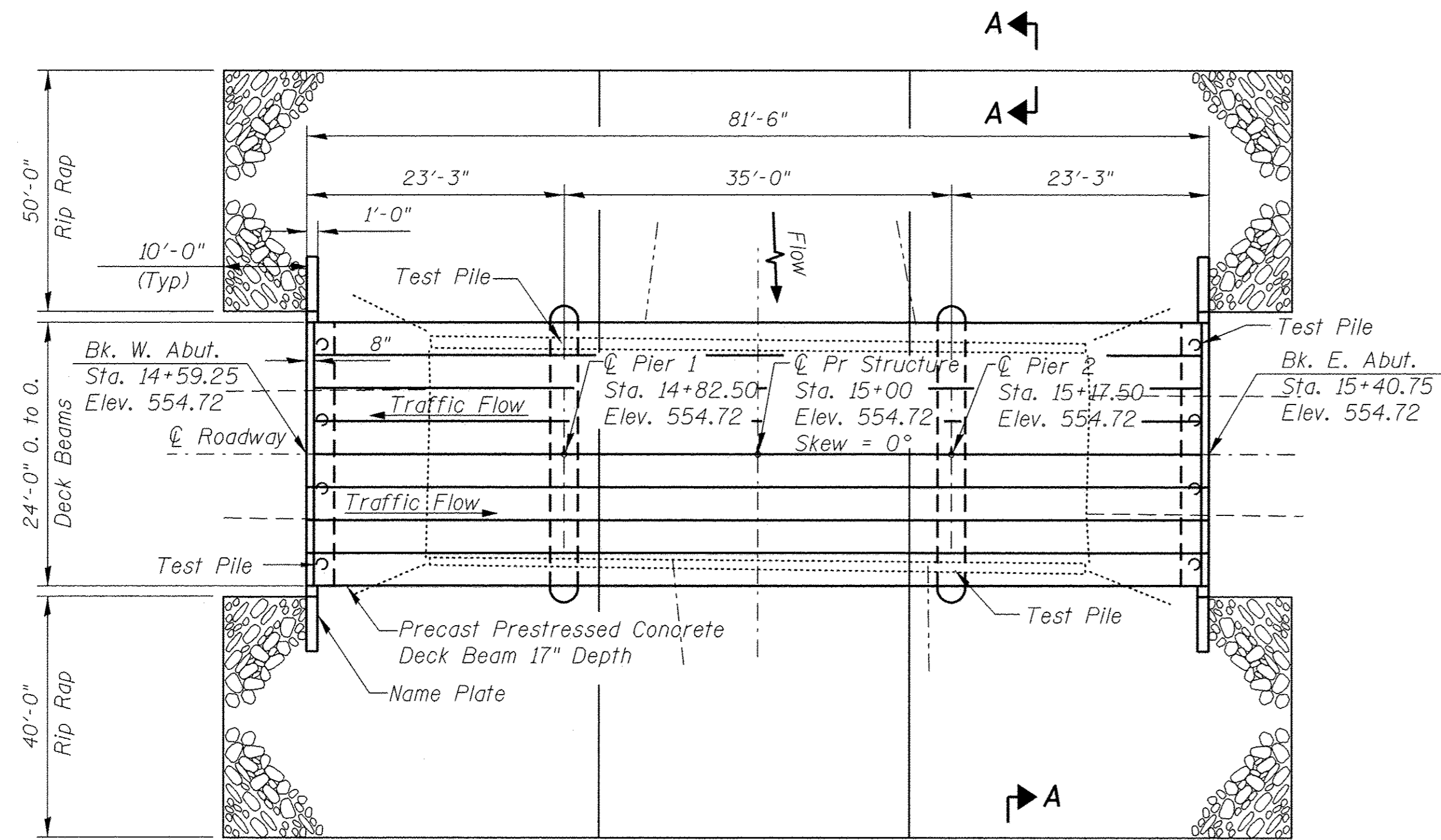


STATION	
09+50 to 10+94	LT
09+50 to 09+89	RT
10+21 to 12+00	RT

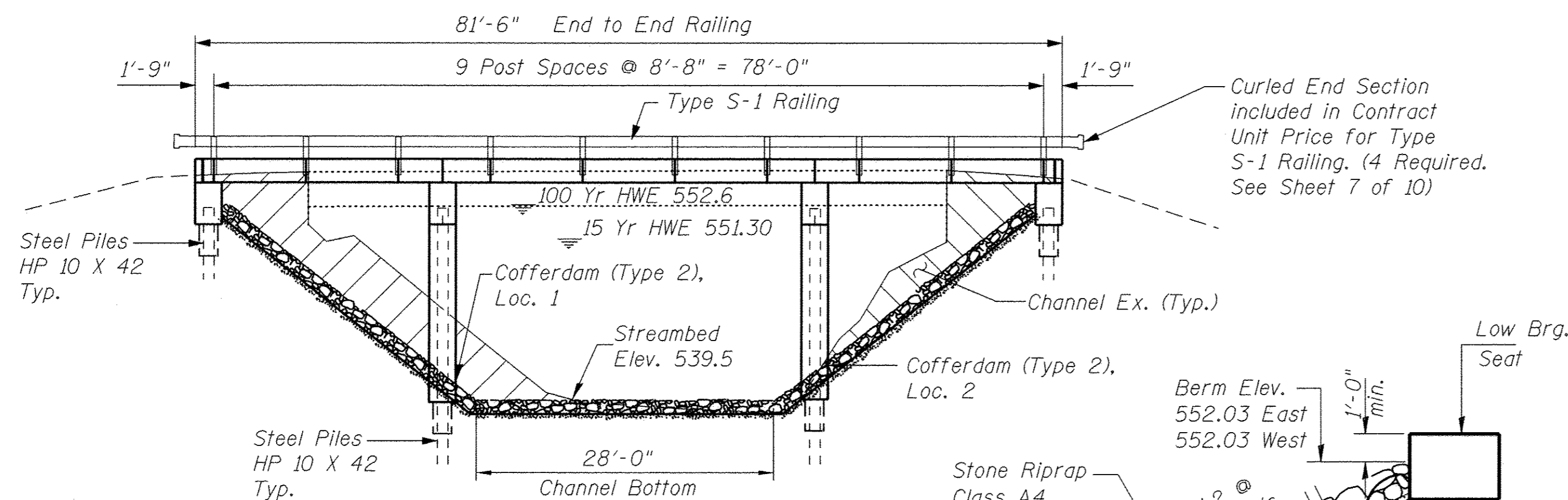


FILE NAME =	USER NAME = Sta15	DESIGNED - ALB	REVISED -	<b>LAKEWOOD / DRY POINT TWP SHELBY COUNTY, ILLINOIS</b>	<b>PLAN AND PROFILE TR 373 OVER MITCHELL CREEK</b>	RTE.	SECTIONS	COUNTY	TOTAL SHEETS	SHEET NO.	
P1anProfile.Co.Revised.ROW.dgn		DRAWN - ALB	REVISED -			TR373	12-09120-00,12-05119-00	SHELBY	19	3	
PLOT SCALE = 50.0000' / in.		CHECKED - MJS	REVISED -			CONTRACT NO. 95810					
PLOT DATE = 1/31/2017		DATE - 1-23-2017	REVISED -			ILLINOIS FED. AID PROJECT					

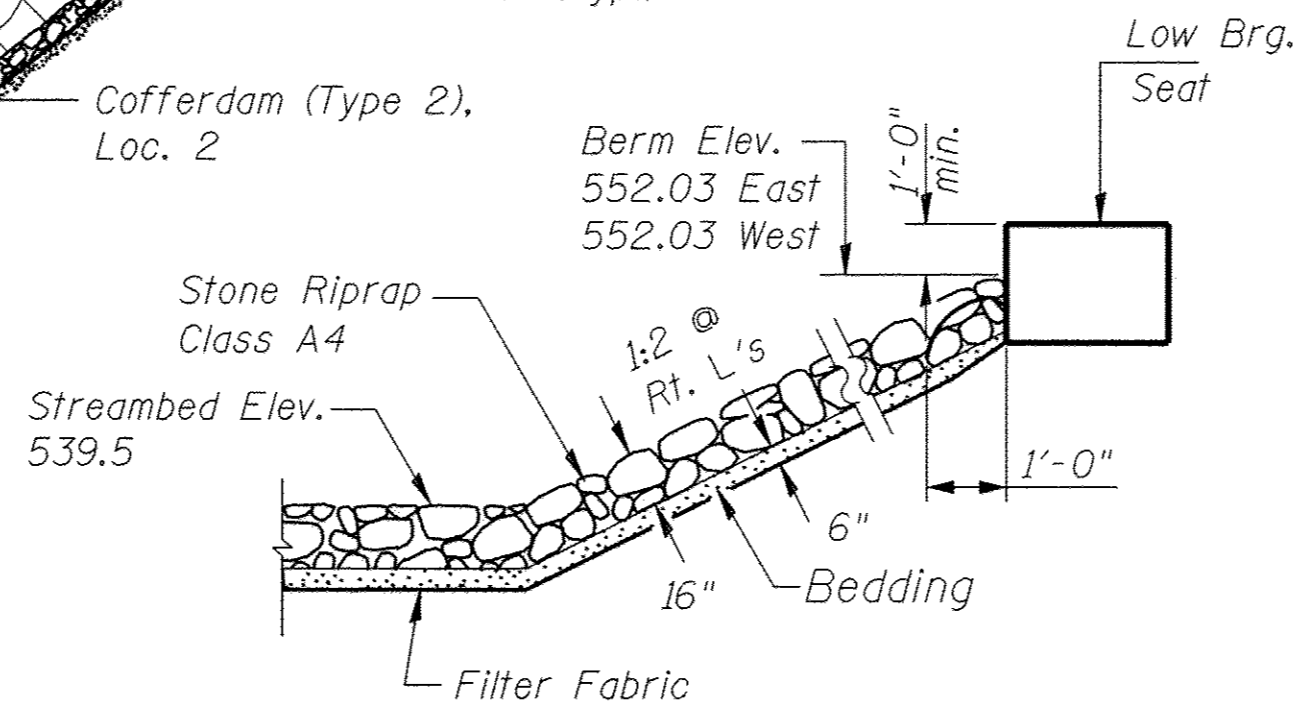




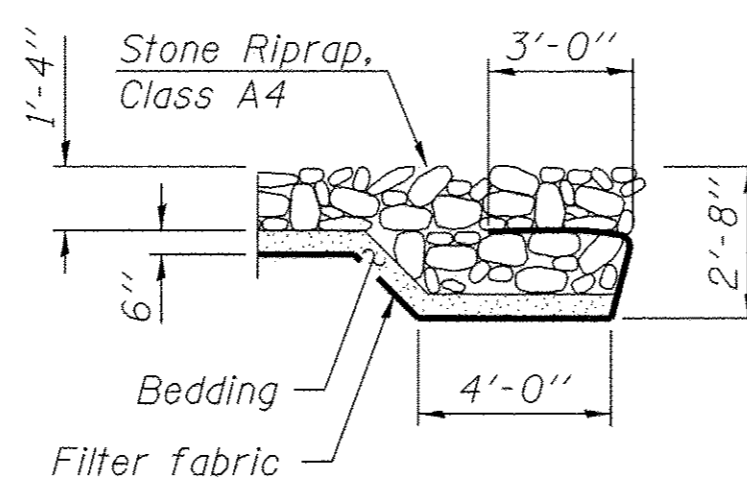
**PLAN**  
Not to Scale



**ELEVATION**  
Not to Scale



**STONE RIPRAP DETAIL**

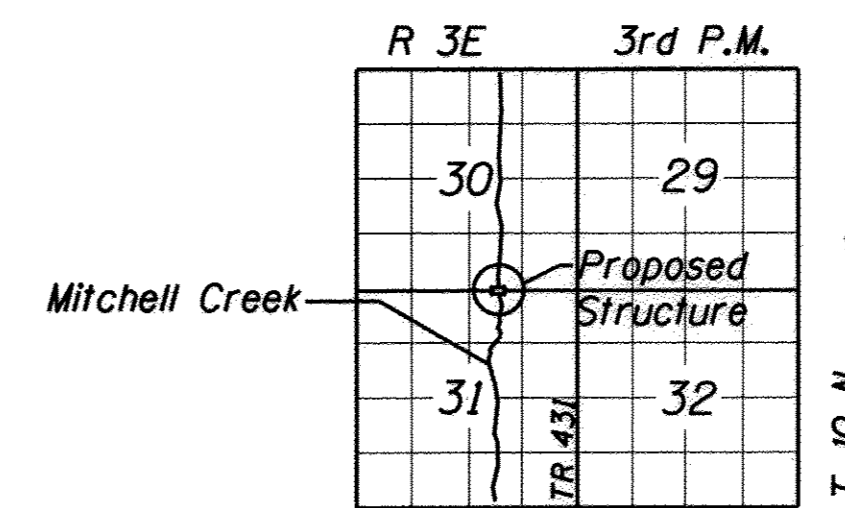


**SECTION A-A**

MITCHELL CREEK  
BUILT 20\_\_ BY  
SHELBY COUNTY  
LAKEWOOD & DRY POINT ROAD DISTRICTS  
SEC'S. 12-09120-00-BR, 12-05119-00-BR  
STATION 15+00  
STR. NO. 087-3582 LOADING HL 93

**LETTERING FOR NAME PLATE**

LOCATE ON THE SE WINGWALL  
(See Std. 515001)



**LOCATION SKETCH**

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	SUPER	SUB	TOTAL
Stone Riprap, Class A4	Ton		994	994
Filter Fabric	Sq. Yd.		1277	1277
Removal of Existing Structures	L. Sum		1	1
Structure Excavation	Cu. Yd.		75	75
Cofferdam Excavation	Cu. Yd.		59	59
Concrete Structures	Cu. Yd.		90.2	90.2
Concrete Encasement	Cu. Yd.		7.0	7.0
Precast Prestressed Concrete Deck Beams (17" Depth)	Sq. Ft.	1920		1920
Reinforcement Bars	Pound		7380	7380
Steel Railing, Type S1	Foot	163		163
Furnishing Steel Piles HP10X42	Foot		928	928
Driving Piles	Foot		928	928
Test Pile Steel HP10X42	Each		4	4
Pile Shoes	Each		20	20
Name Plates	Each		1	1
Cofferdam (Type 2), Location 1	Each		1	1
Cofferdam (Type 2), Location 2	Each		1	1

**GENERAL NOTES**

- The contractor shall drive (4) test piles of the nominal required bearing specified in production locations at substructures specified or approved by the engineer before ordering the remainder of the piles.
- Boring data is shown in the special provisions only as a guide to the bidders in estimating soil conditions that may be encountered.
- 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.

**INDEX OF SHEETS**

- General Plan and Elevation
- General Details
- 17" PPC Deck Beam Span 1 & 3
- 17" PPC Deck Beam Details Span 1 & 3
- 17" PPC Deck Beam Span 2
- 17" PPC Deck Beam Details Span 2
- Steel Railing, Type S-1
- Abutment Details
- Pier Details 1 & 2
- HP Pile Details

**DESIGN STRESSES:**

**SUBSTRUCTURE**

$f_y = 60,000$  p.s.i. (Reinforcement)  
 $f'_c = 3,500$  p.s.i.

**P.P.C. SUPERSTRUCTURE**

$f_y = 60,000$  p.s.i. (Reinforcement)  
 $f'_c = 6,000$  p.s.i.  
 $f'_{ci} = 5,000$  p.s.i.  
 $f'_s = 270,000$  psi ( $\frac{1}{2}$ "  $\phi$  low lax. strands)  
 $f'_{si} = 201,960$  psi ( $\frac{1}{2}$ "  $\phi$  low lax. strands)

**DESIGN LOADING**

HL 93  
25 p.s.f. Future Wearing Surface

**DESIGN SPECIFICATIONS**

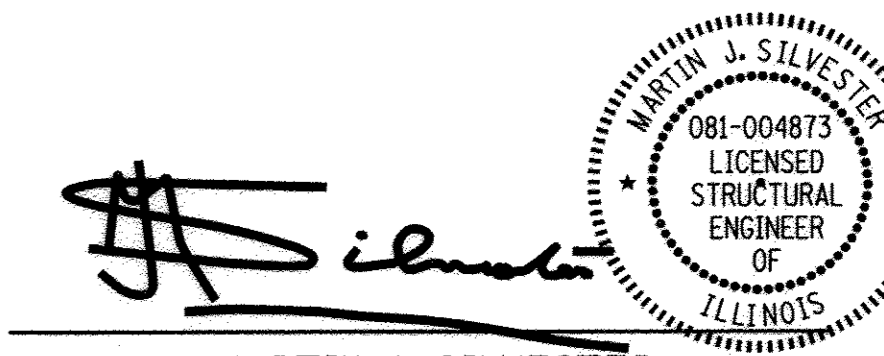
2013 AASHTO LRFD Bridge Design Specifications, 7th Edition

**SEIMIC DATA**

Seismic Performance Zone (SPZ) = 1  
Design Spectral Acceleration at 1.0 sec. ( $S_{D1}$ ) = 0.131 g  
Design Spectral Acceleration at 0.2 sec. ( $S_{D5}$ ) = 0.293 g  
Soil Site Class = C

This structure has been designed to be stable for scour conditions in accordance with the FHWA Technical Advisory - T 5140.23, "Evaluating scour at Bridges" and hydraulic engineering circular 18 - Evaluating Scour at Bridges.

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 the requirements of the current AASHTO LRFD Specifications.



MARTIN J. SILVESTER  
STRUCTURAL ENGINEER  
LICENSE EXP. DATE 11-30-18

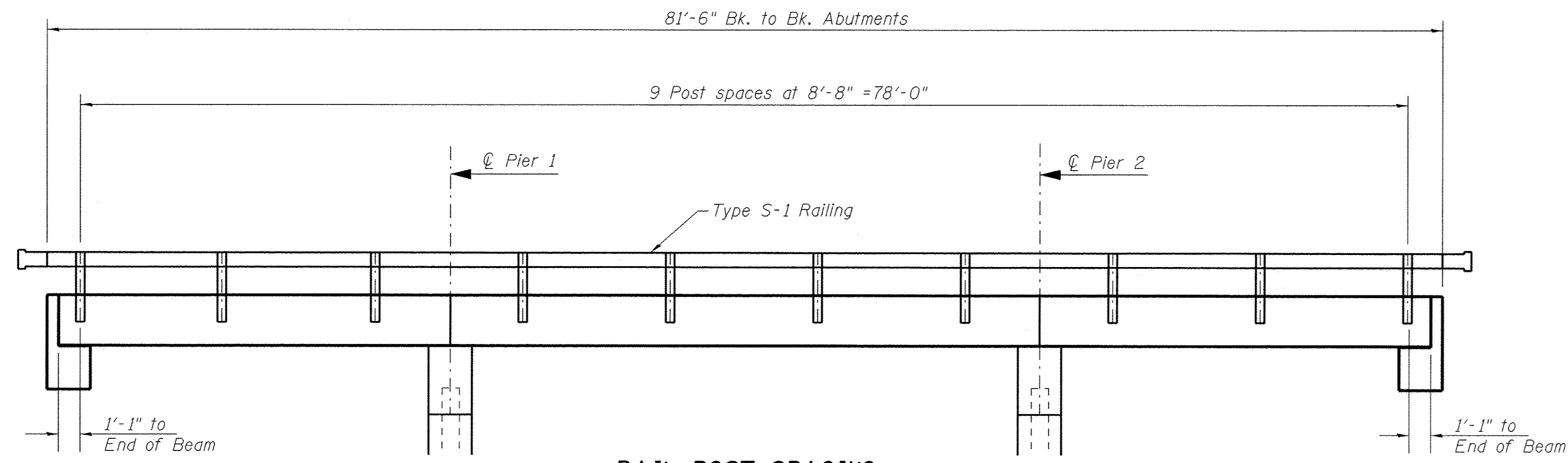
**GENERAL PLAN AND ELEVATION**  
**TR 373 OVER MITCHELL CREEK**  
**SEC'S 12-09120-00-BR**  
**12-05119-00-BR**  
**SHELBY COUNTY**  
**STATION 15+00**  
**STRUCTURE NO. 087-3582**

**WATERWAY INFORMATION**

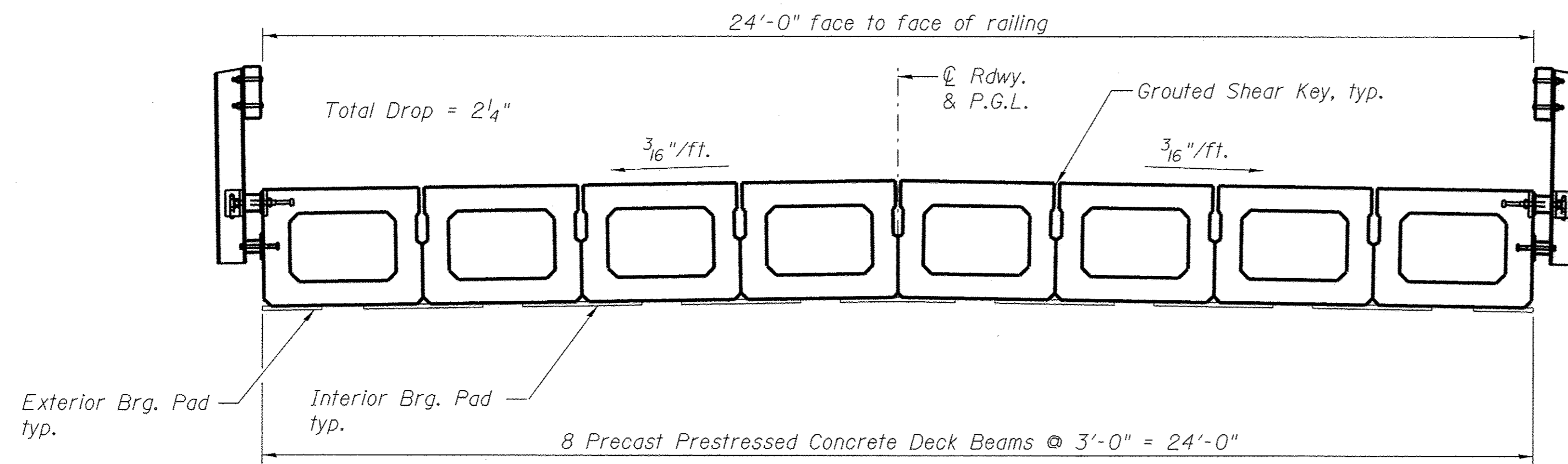
Drainage Area = 23.1 Sq. Mi. - Pr. Low Grade Elev. = 553.3 @ Sta. 15+00

Flood	Freq. Yr.	Q C.F.S.	Opening Exist.	Sq. Ft. Prop.	Nat. H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
Design	15	3480	508	535	551.3	0.10	0.80	551.4	552.1
Base	100	5830	541	626	552.6	0.10	0.60	552.7	553.2
Overtopping									
Max. Calc.	500	7860	541	675	553.5	0.0	0.30	553.5	553.8

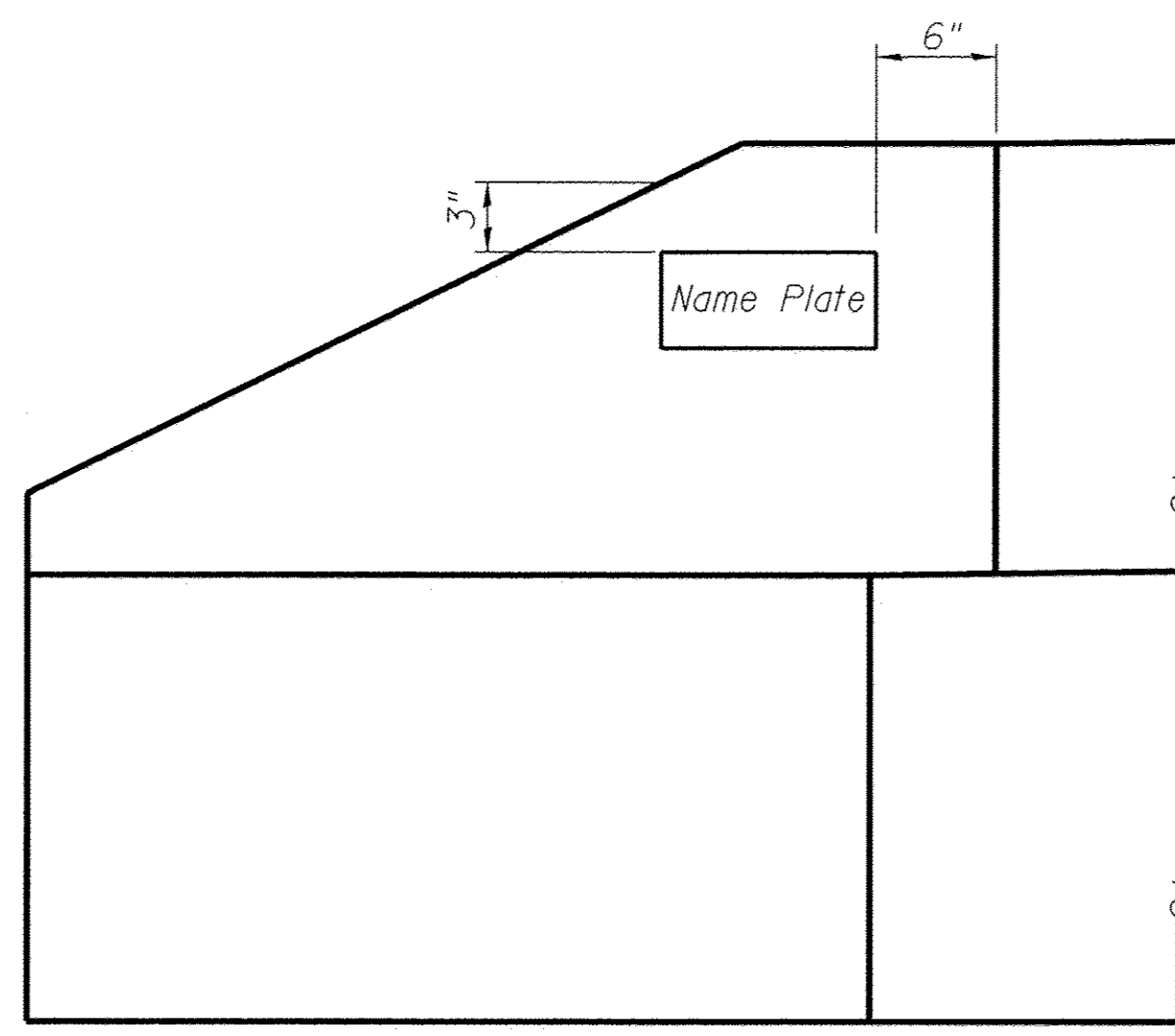




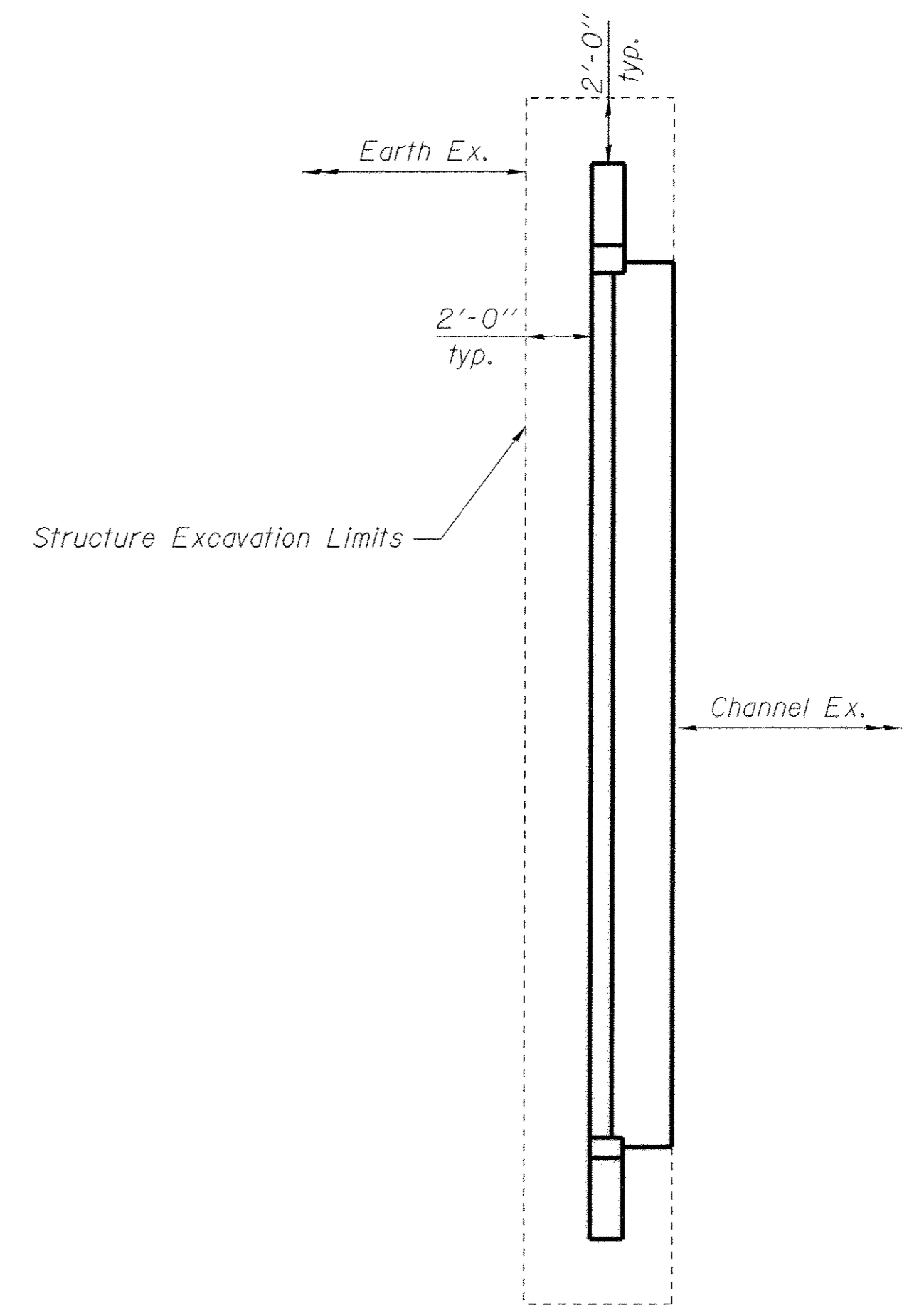
**RAIL POST SPACING**



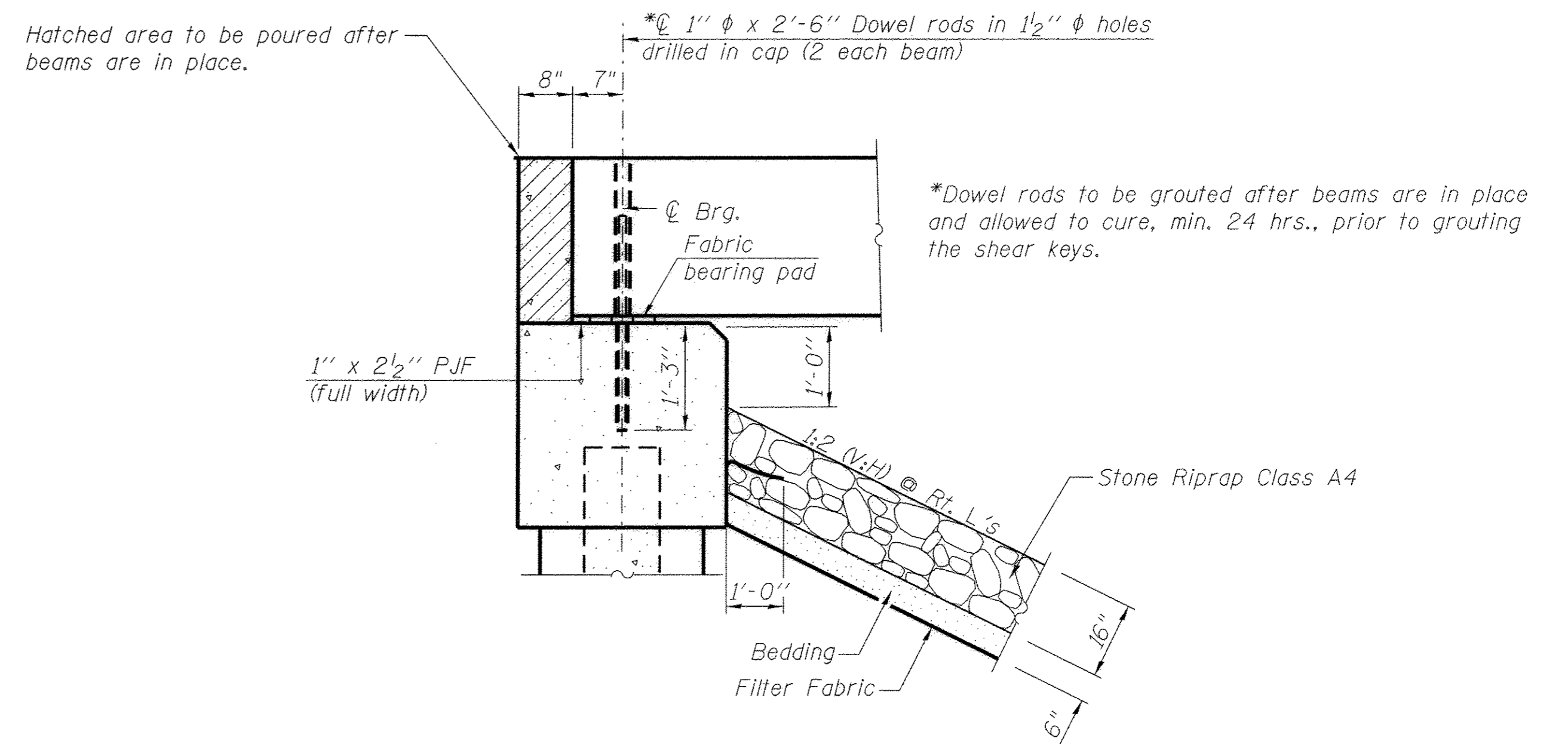
**CROSS SECTION**



**SOUTHWEST WINGWALL ELEVATION**



**PARTIAL PLAN**



**SECTION THRU ABUTMENT**

FILE NAME = 087-3565-001-Details.dgn	USER NAME = Stal5	DESIGNED - ALB	REVISED -
		DRAWN - ALB	REVISED -
		CHECKED - MJS	REVISED -
		DATE - 1-23-2017	REVISED -

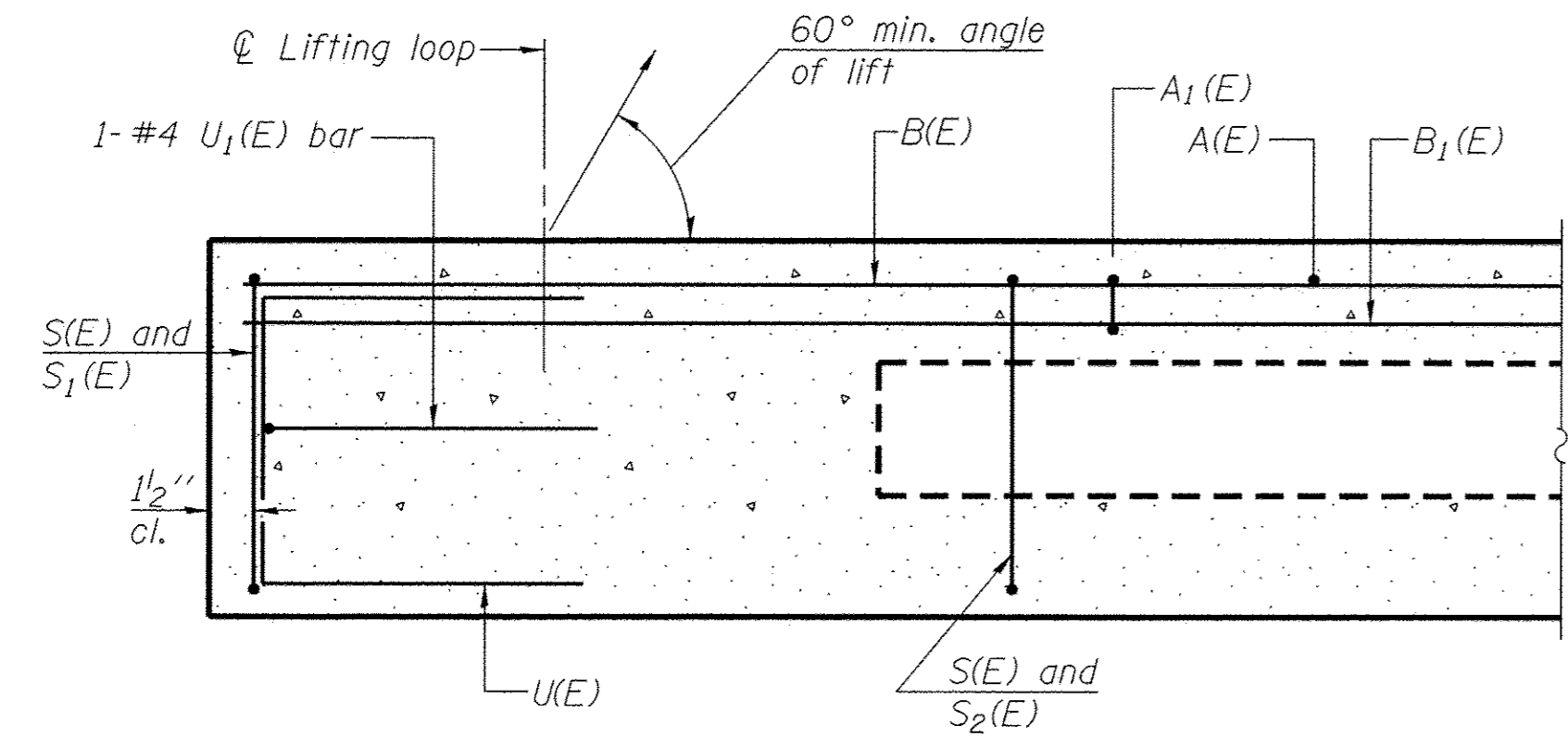
**LAKEWOOD / DRY POINT TWP  
SHELBY COUNTY, ILLINOIS**

**GENERAL DETAILS  
STRUCTURE NO. 087-3582**

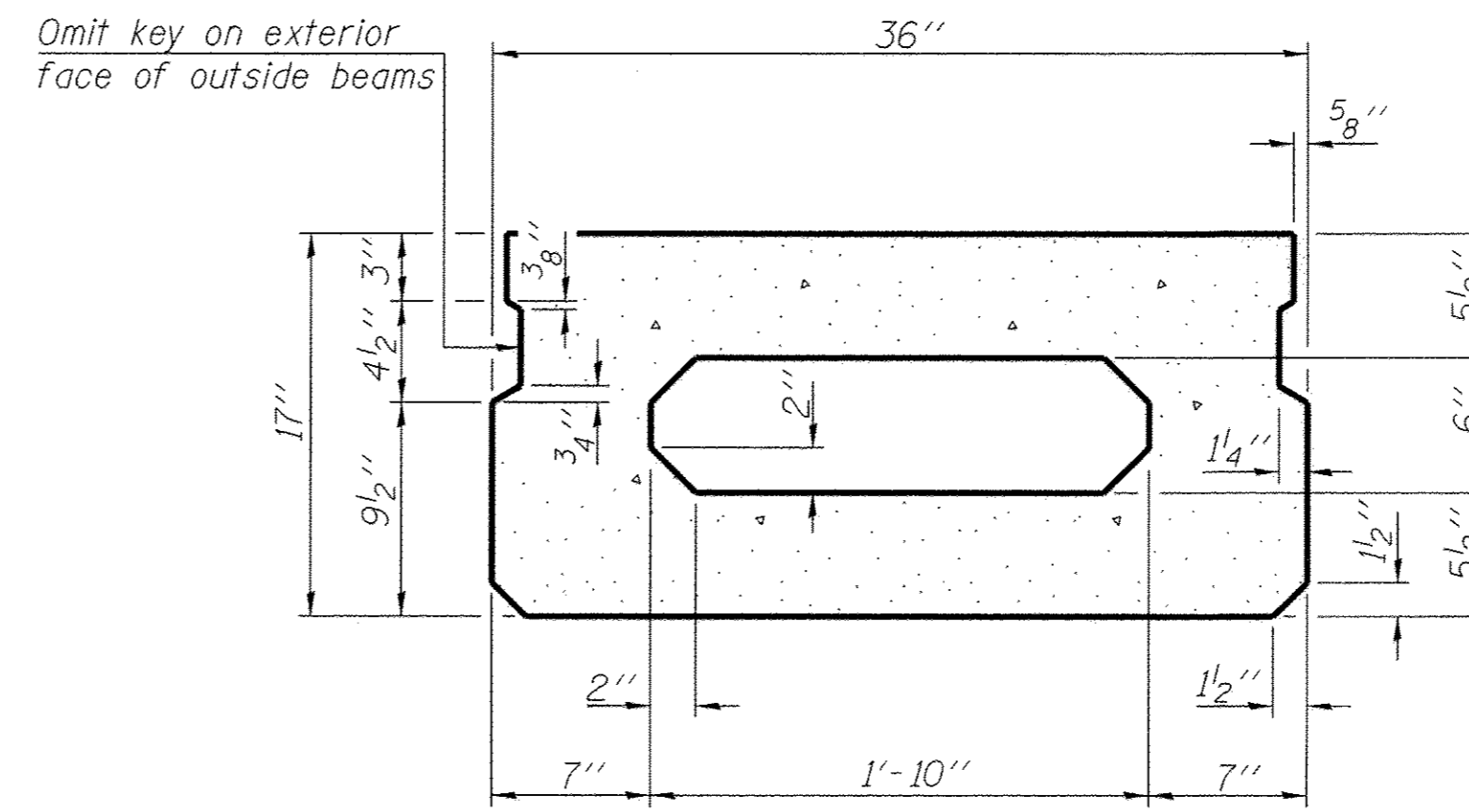
SCALE: SHEET 2 OF 10 SHEETS STA. TO STA.

RTE. TR373	SECTIONS 12-09120-00,12-05119-00	COUNTY SHELBY	TOTAL SHEETS 19	SHEET NO. 5
ILLINOIS FED. AID PROJECT			CONTRACT NO. 95810	

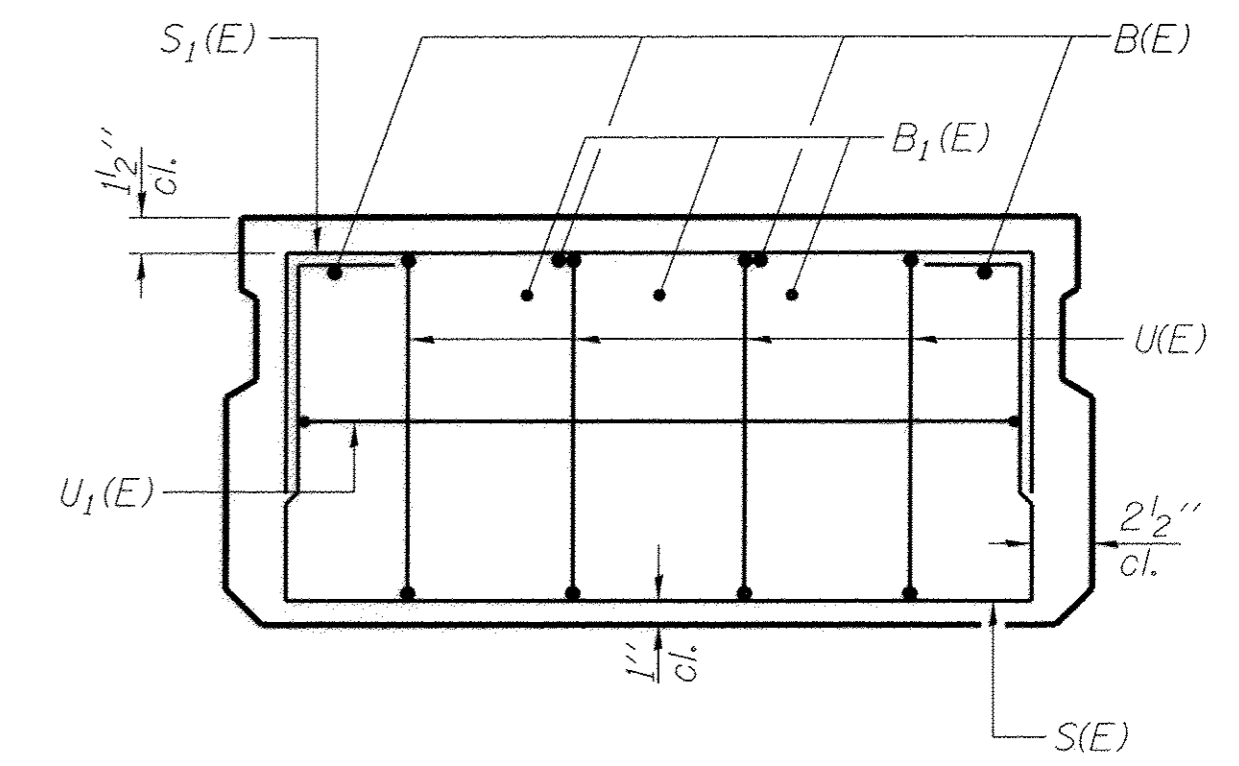




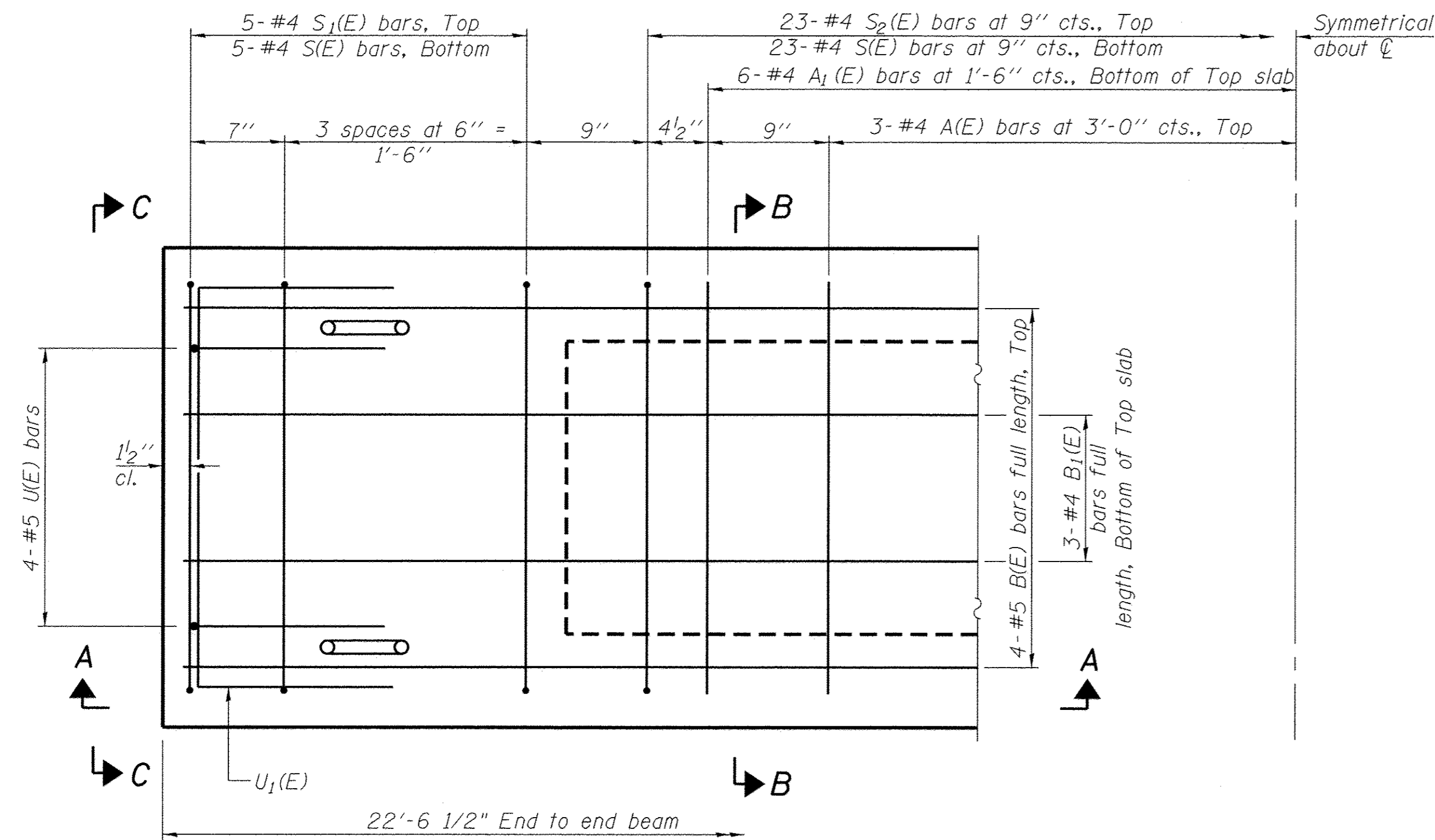
**SECTION A-A**



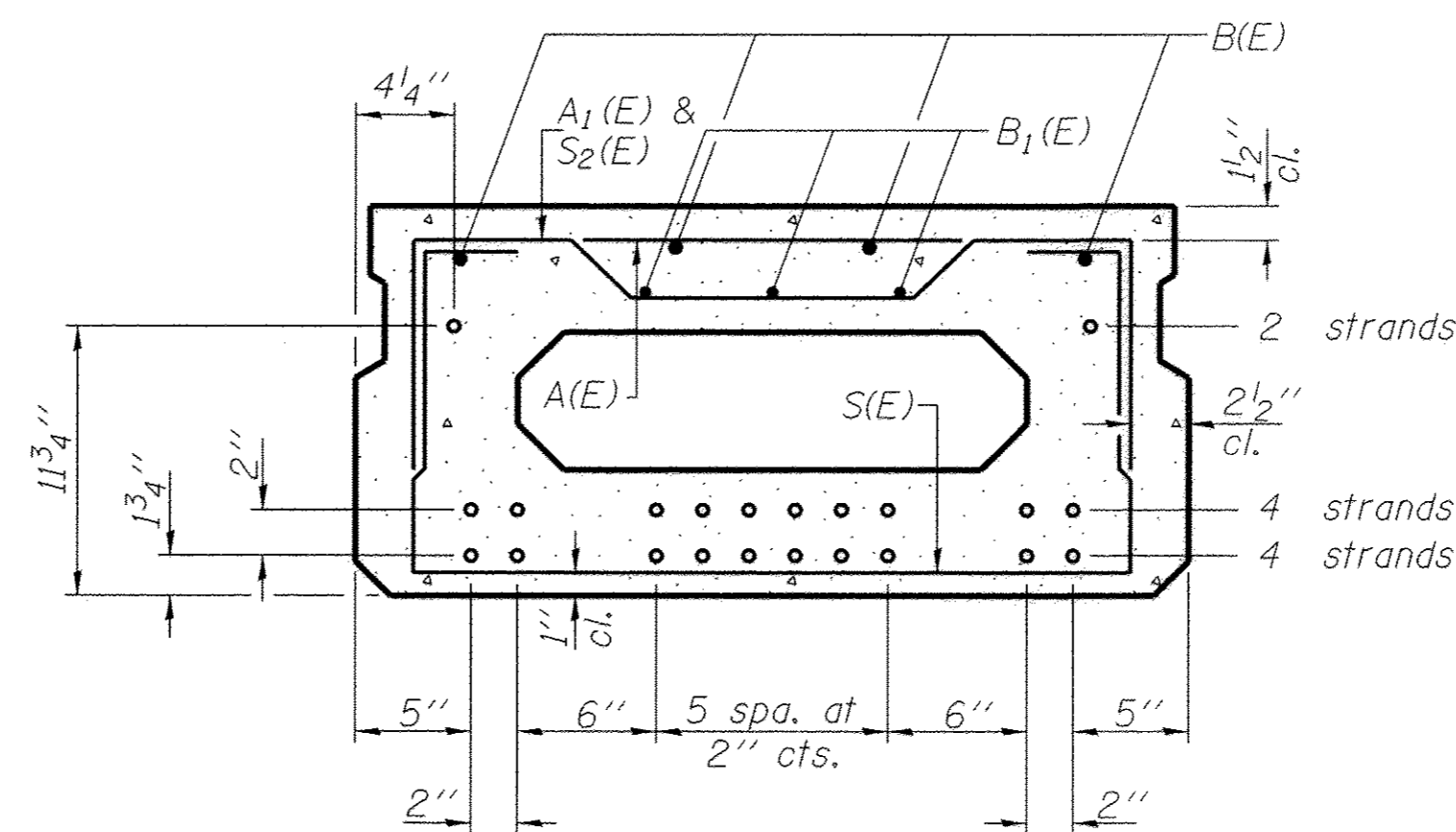
**SECTION B-B**  
(Showing dimensions)



**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)	6	#4	2'-7"	—
A1(E)	12	#4	2'-10"	—
B(E)	4	#5	22'-3"	—
B1(E)	3	#4	22'-3"	—
S(E)	33	#4	5'-9"	□
S1(E)	10	#4	4'-3"	□
S2(E)	23	#4	4'-6"	□
U(E)	8	#5	3'-8"	□
U1(E)	2	#4	5'-0"	□

Note: See sheet 4 of 10 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**

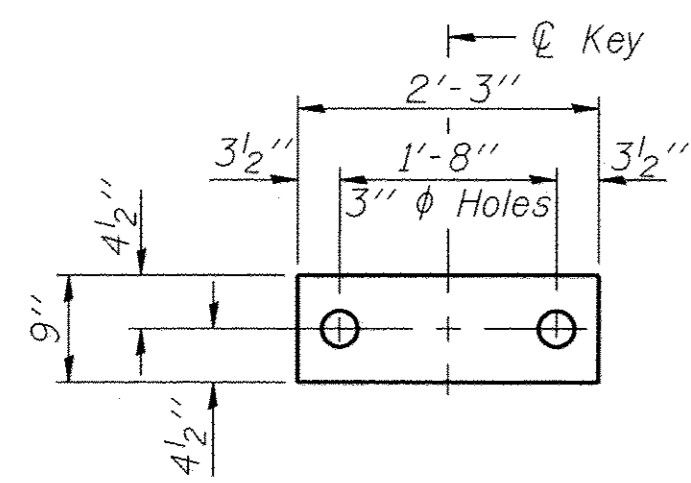
#4 bar = 2'-0"  
#5 bar = 2'-6"

PD-1736-0

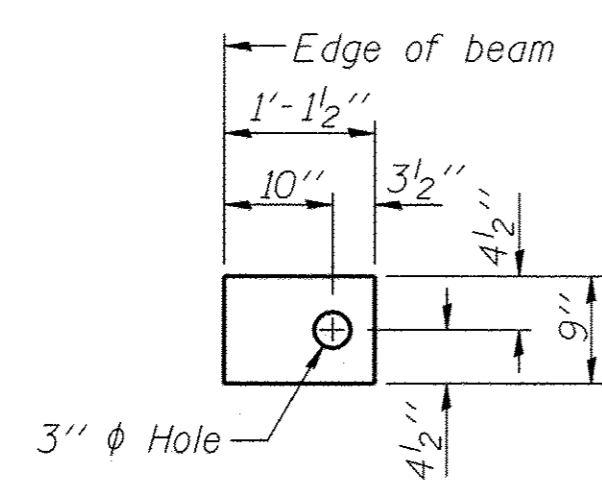
7-1-10

FILE NAME = 087-3565-001-PPCDeckBm Span 1 & 3.dgn	DESIGNED - ALB	REVISOR -	<b>LAKEWOOD / DRY POINT TWP SHELBY COUNTY, ILLINOIS</b>	<b>17" x 36" PPC DECK BEAM SPANS 1 &amp; 3 STRUCTURE NO. 087-3582</b>	RTE. TR373	SECTIONS 12-09120-00,12-05119-00	COUNTY SHELBY	TOTAL SHEETS 19	SHEET NO. 6	
PLOT SCALE = 1.0000' / in.	DRAWN - ALB	REVISOR -			SCALE:	SHEET 3 OF 10 SHEETS	STA. TO STA.	ILLINOIS FED. AID PROJECT		
PLOT DATE = 1/31/2017	CHECKED - MJS	REVISOR -			CONTRACT NO. 95810					
DATE - 1-23-2017	DESIGNED - ALB	REVISOR -								





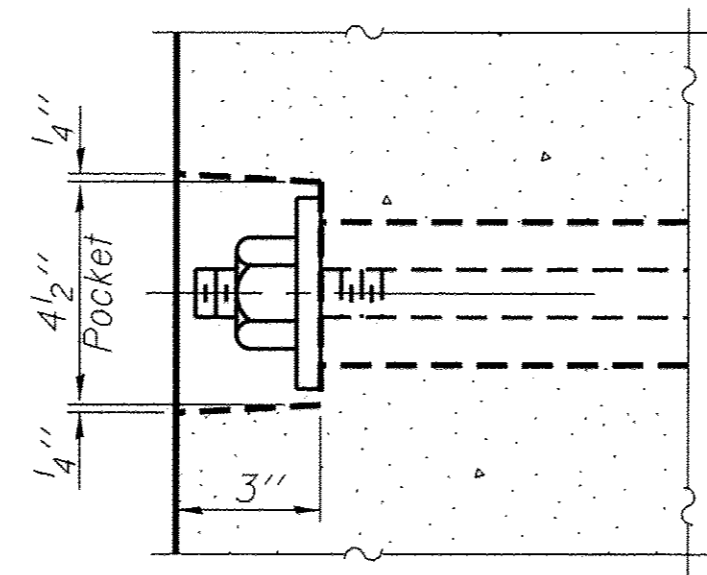
**FABRIC BEARING PAD**  
(Interior)



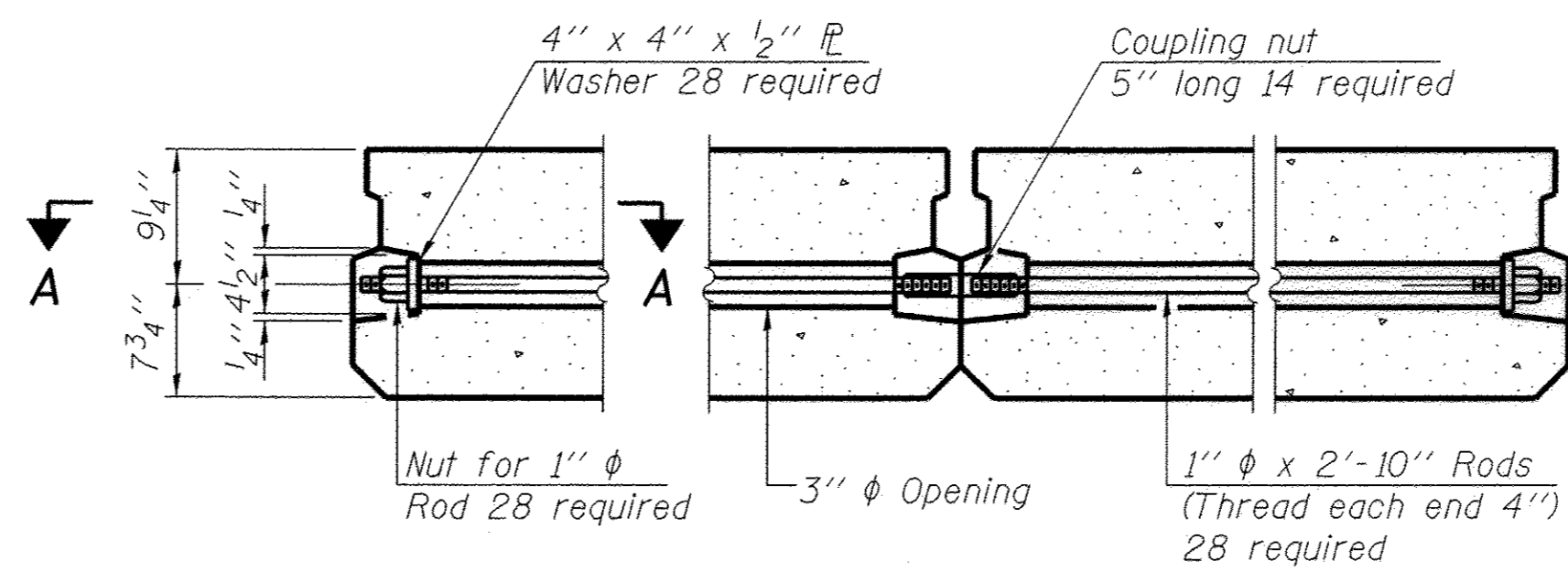
**FABRIC BEARING PAD**  
(Exterior)

**FIXED**

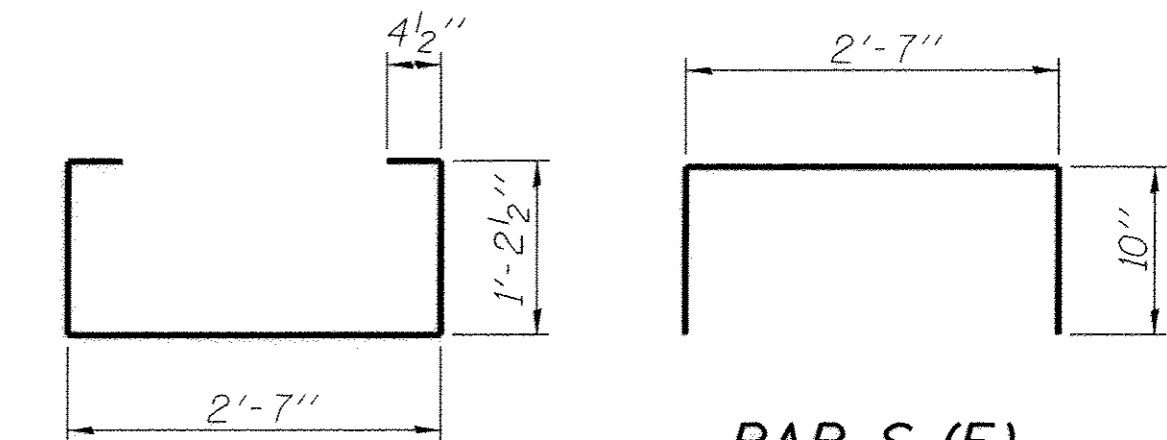
Notes:  
All bearing pads shall be 1" thick.



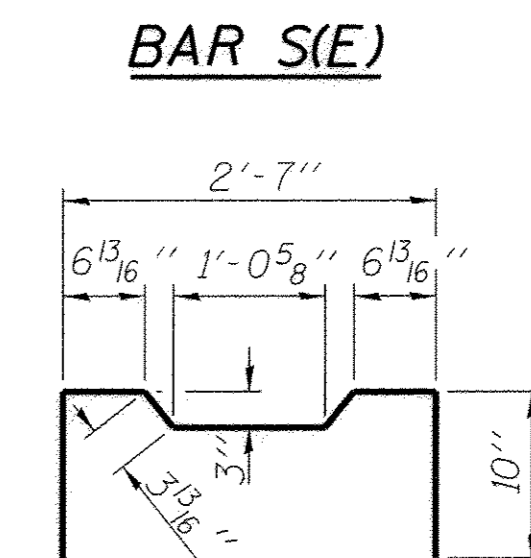
**SECTION A-A**



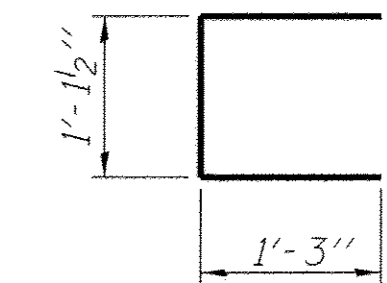
**TYPICAL TRANSVERSE TIE ASSEMBLY**  
(Total Quantity for Two (2) Tie Assemblies)



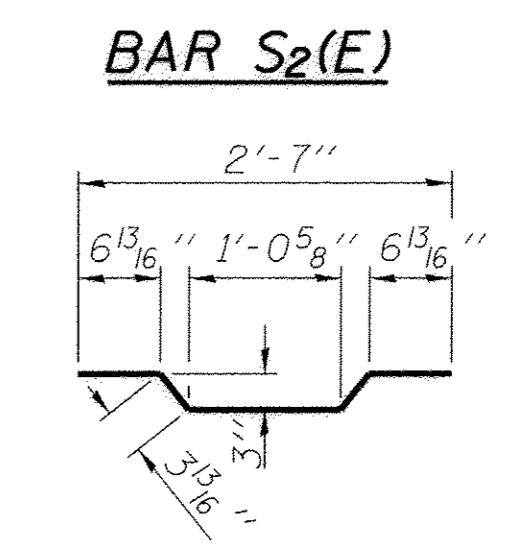
**BAR S<sub>1</sub>(E)**



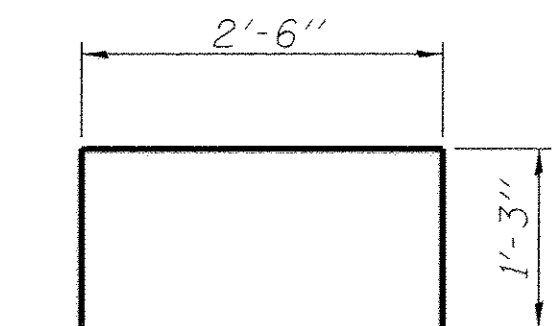
**BAR S(E)**



**BAR U<sub>1</sub>(E)**

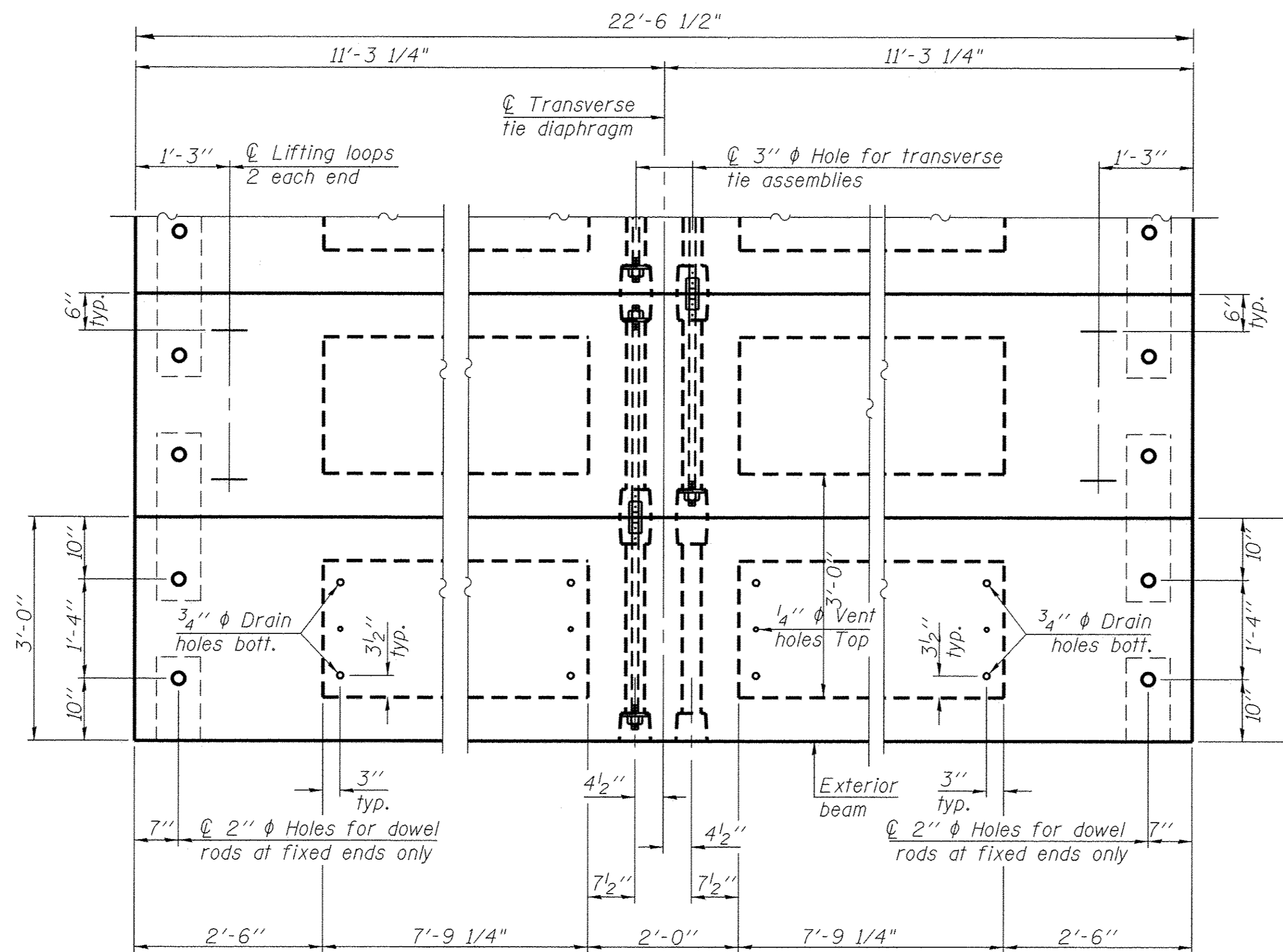


**BAR S<sub>2</sub>(E)**



**BAR U<sub>2</sub>(E)**

**BAR A<sub>1</sub>(E)**

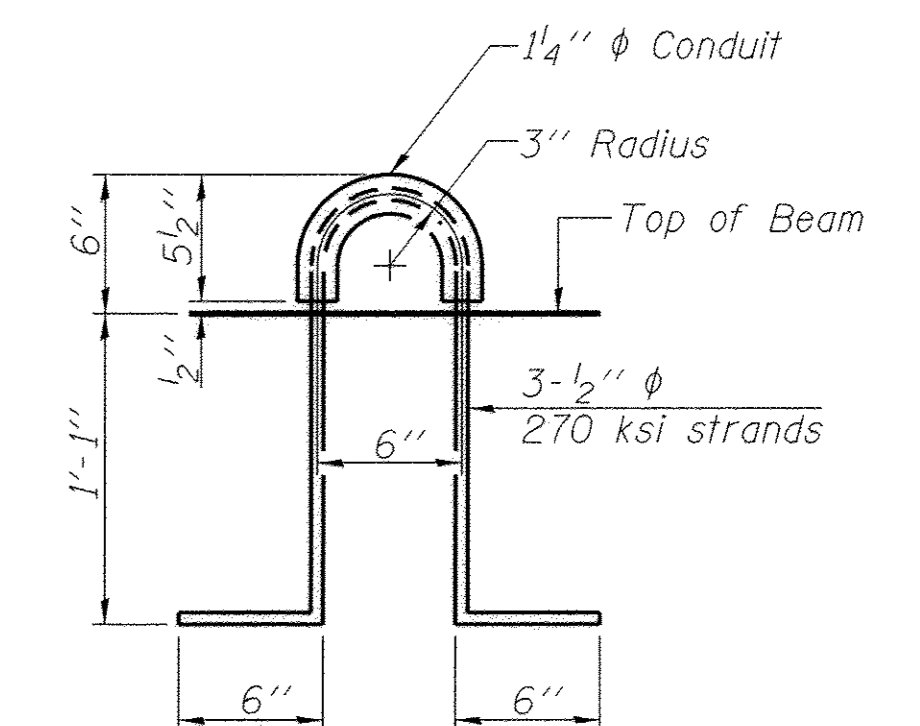


**PLAN VIEW**

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

**NOTES**

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in. The 1" 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" 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.



**LIFTING LOOP DETAIL**

**BILL OF MATERIAL**

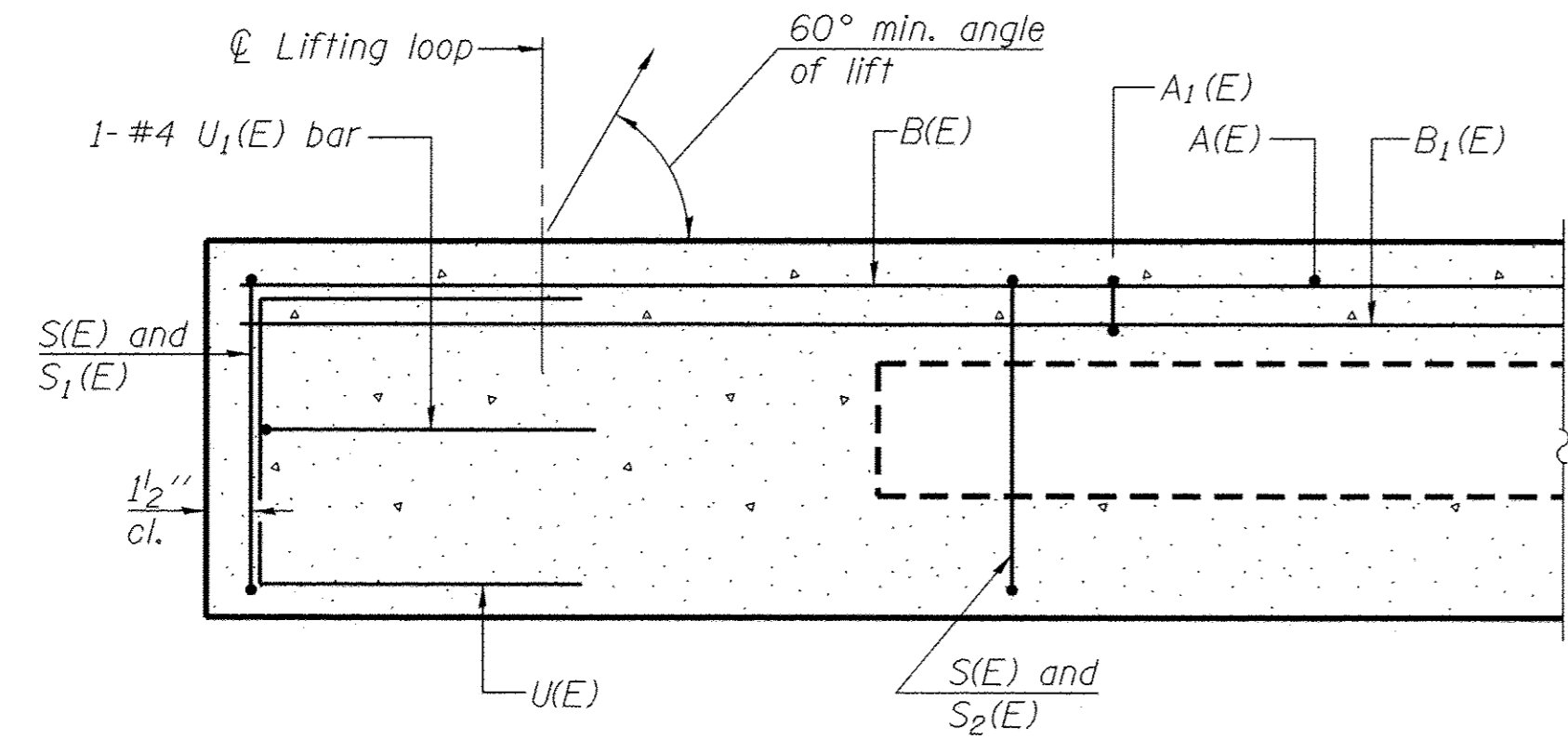
Precast Prestressed Conc. Deck Bms. (17" depth)	Sq. Ft.	1082
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PD-1736-OD

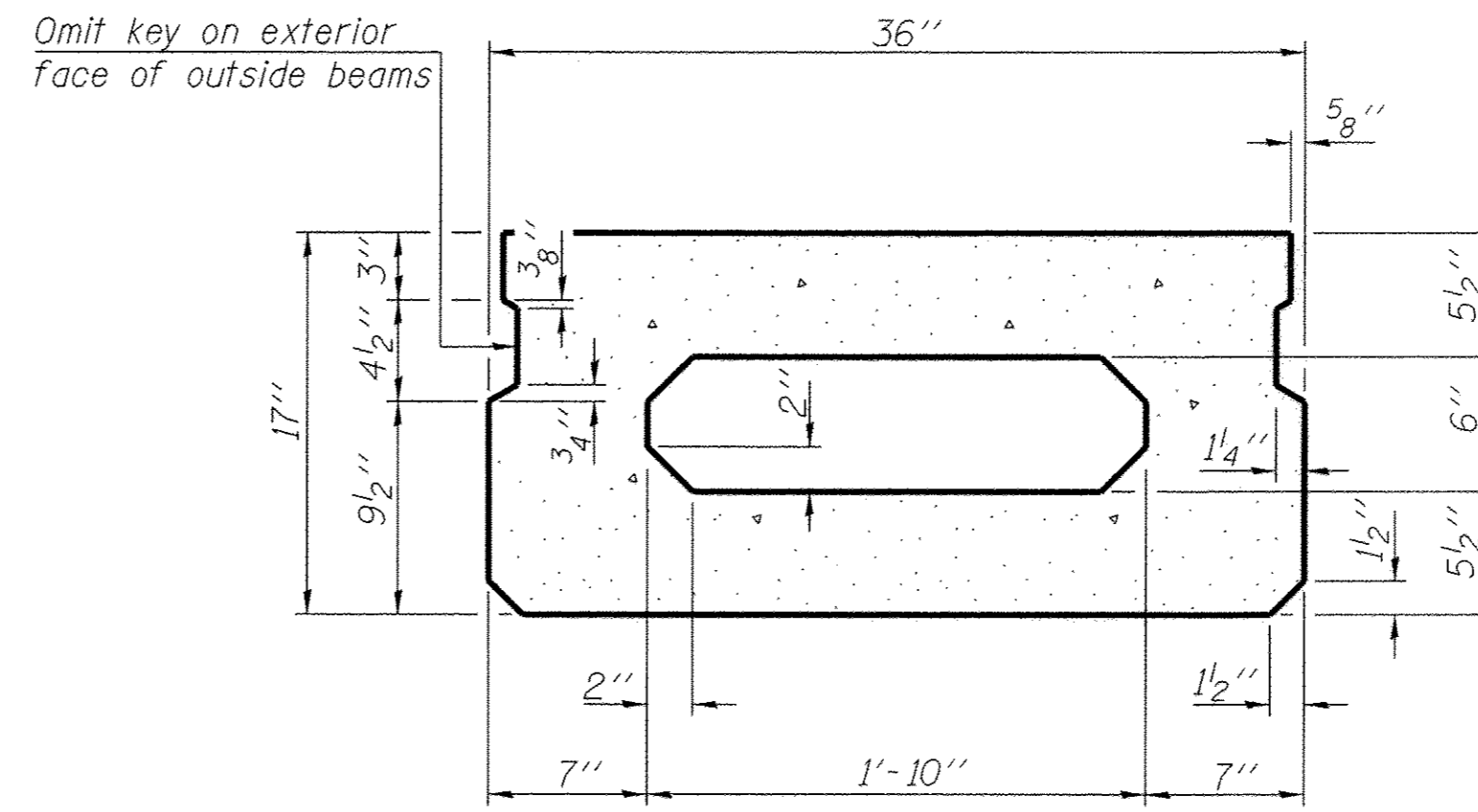
7-1-10

FILE NAME = 087-3565-003-PCCDeckBm Span 1&3 Detail.dgn	USER NAME = Stal15	DESIGNED - ALB	REVISED -	<b>LAKEWOOD / DRY POINT TWP SHELBY COUNTY, ILLINOIS</b>	<b>17" x 36" PPC DECK BEAM DETAILS SPAN 1 &amp; 3 STRUCTURE NO. 087-3582</b>		RTE. TR373	SECTIONS 12-09120-00,12-05119-00	COUNTY SHELBY	TOTAL SHEETS 19	SHEET NO. 7	
05_Deck Beam Spans 1 and 3	PLOT SCALE = 1.00000 ' / in.	CHECKED - MJS	REVISED -		SCALE:	SHEET 4 OF 10 SHEETS	STA. TO STA.	ILLINOIS FED. AID PROJECT				
	PLOT DATE = 1/31/2017	DATE - 1-23-2017	REVISED -		CONTRACT NO. 95810							

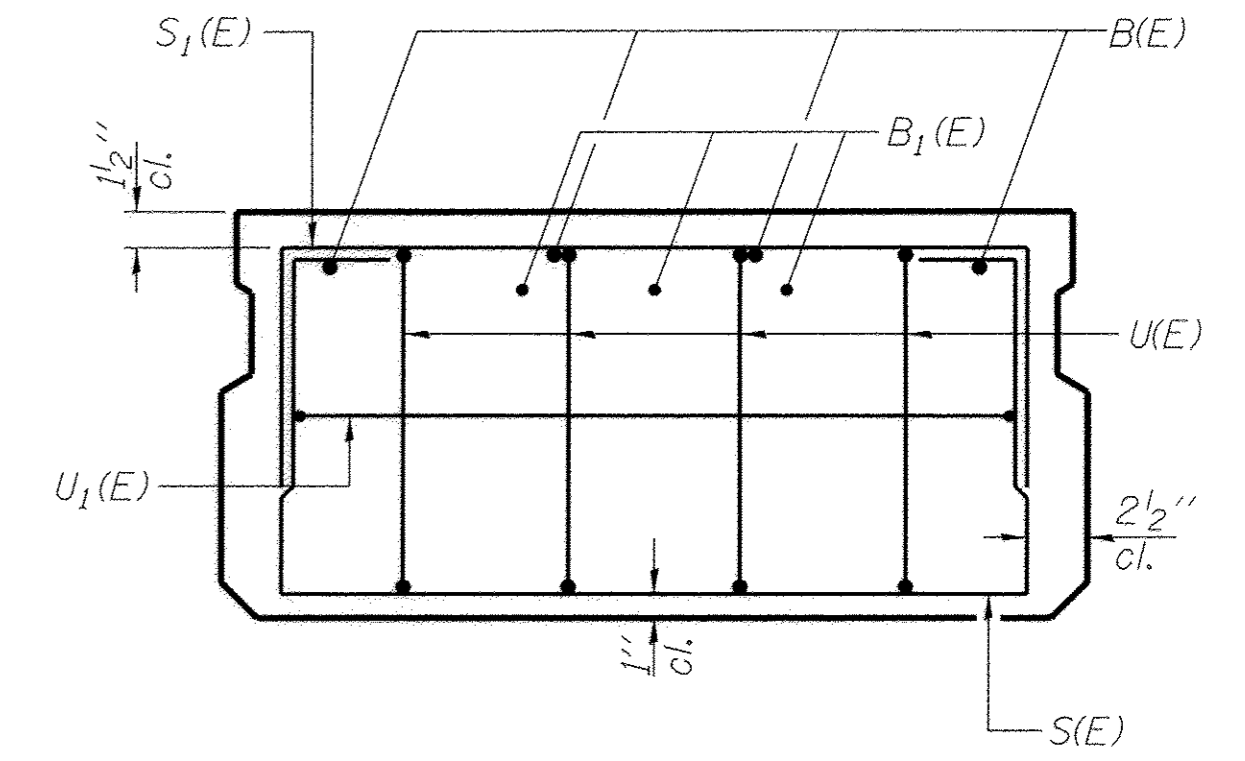




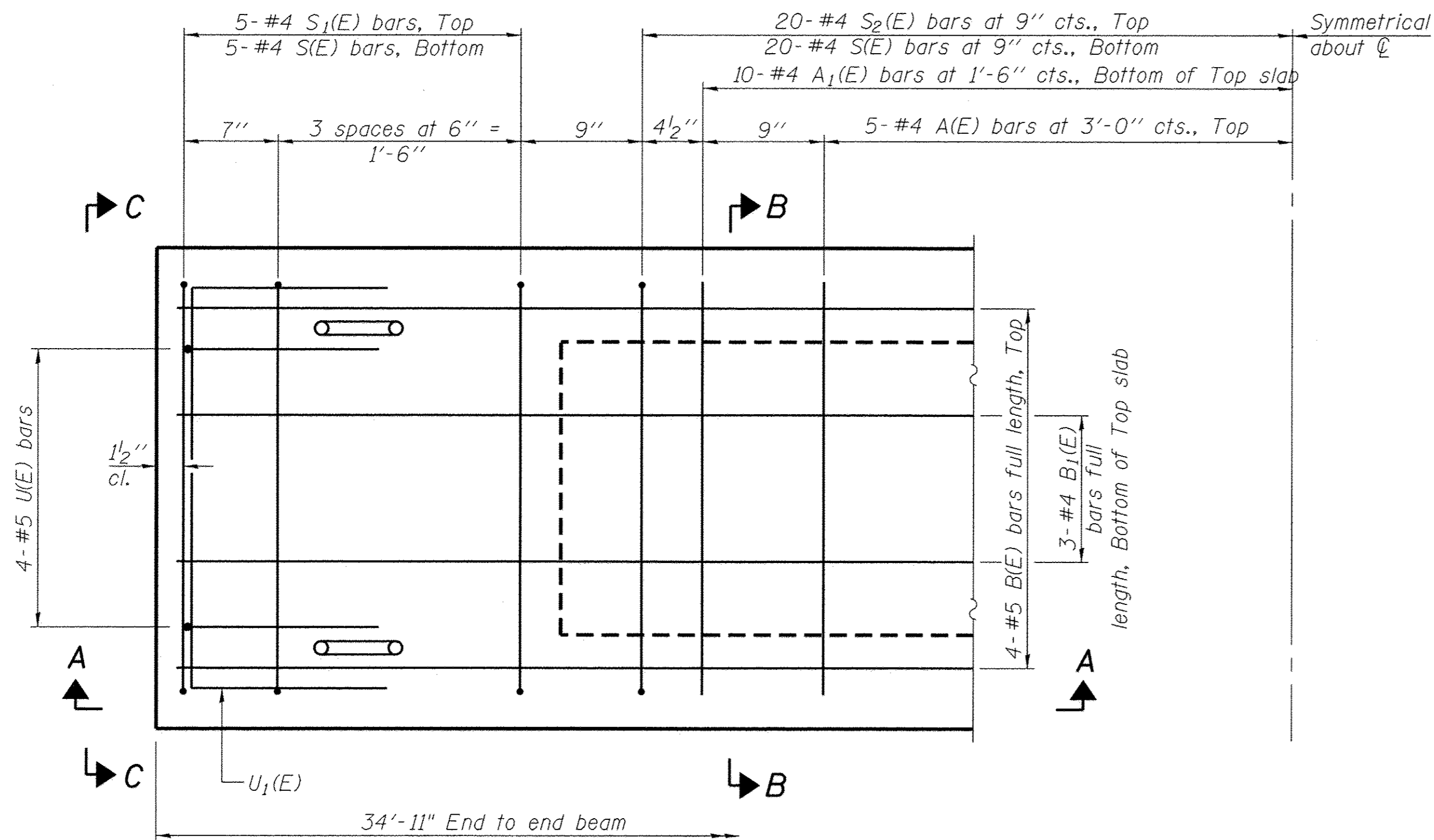
**SECTION A-A**



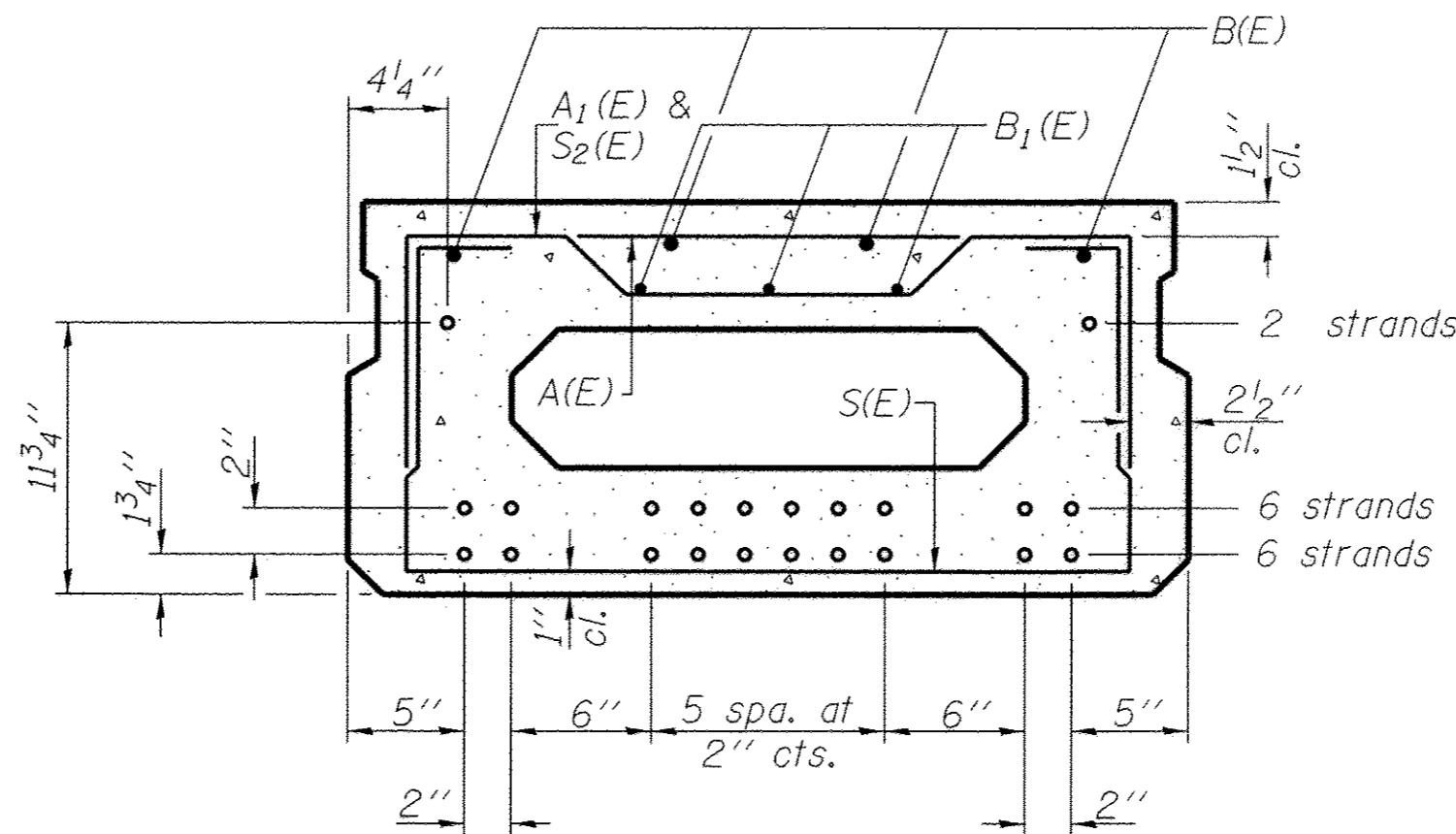
**SECTION B-B**  
(Showing dimensions)



**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)	10	#4	2'-7"	—
A1(E)	20	#4	2'-10"	—
B(E)	4	#5	34'-8"	—
B1(E)	3	#4	34'-8"	—
S(E)	50	#4	5'-9"	□
S1(E)	10	#4	4'-3"	□
S2(E)	40	#4	4'-6"	□
U(E)	8	#5	3'-8"	□
U1(E)	2	#4	5'-0"	□

Note: See sheet 6 of 10 for additional details and Bill of Material.

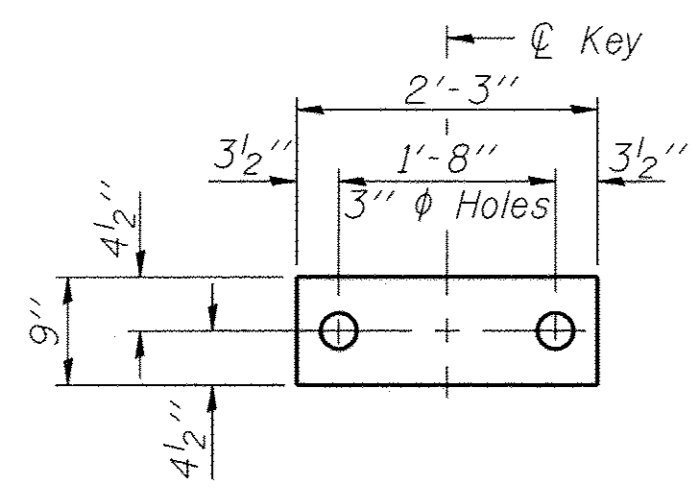
Note: Spacing of S(E) and S2(E) bars may be adjusted up to 4" in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.

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

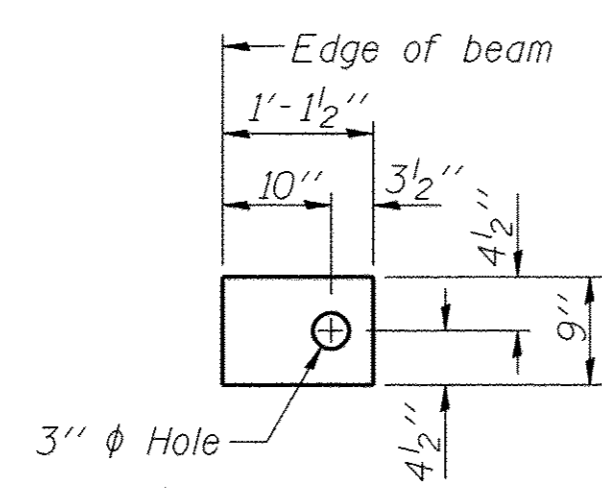
PD-1736-0

7-1-10

FILE NAME = 087-3565-002-PCCDeckBm Span 2.dgn	USER NAME = Stal15	DESIGNED - ALB	REVISED -	<b>LAKEWOOD / DRY POINT TWP SHELBY COUNTY, ILLINOIS</b>	<b>17" x 36" PPC DECK BEAM SPAN 2 STRUCTURE NO. 087-3582</b>	SCALE:	SHEET 5 OF 10 SHEETS	STA.	TO STA.	RTE.	SECTIONS	COUNTY	TOTAL SHEETS	SHEET NO.	
085_Deck Beam Spans 1 and 3	PLOT SCALE = 1.0000 ' / in.	DRAWN - ALB	REVISED -			TR373	12-09120-00,12-05119-00	SHELBY	19	8					
	PLOT DATE = 1/31/2017	CHECKED - MJS	REVISED -			CONTRACT NO. 95810									
		DATE - 1-23-2017	REVISED -			ILLINOIS FED. AID PROJECT									



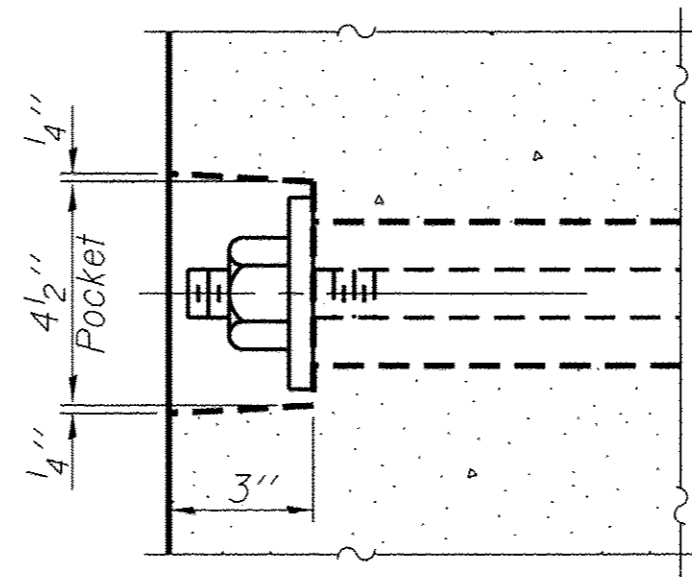
**FABRIC BEARING PAD**  
(Interior)



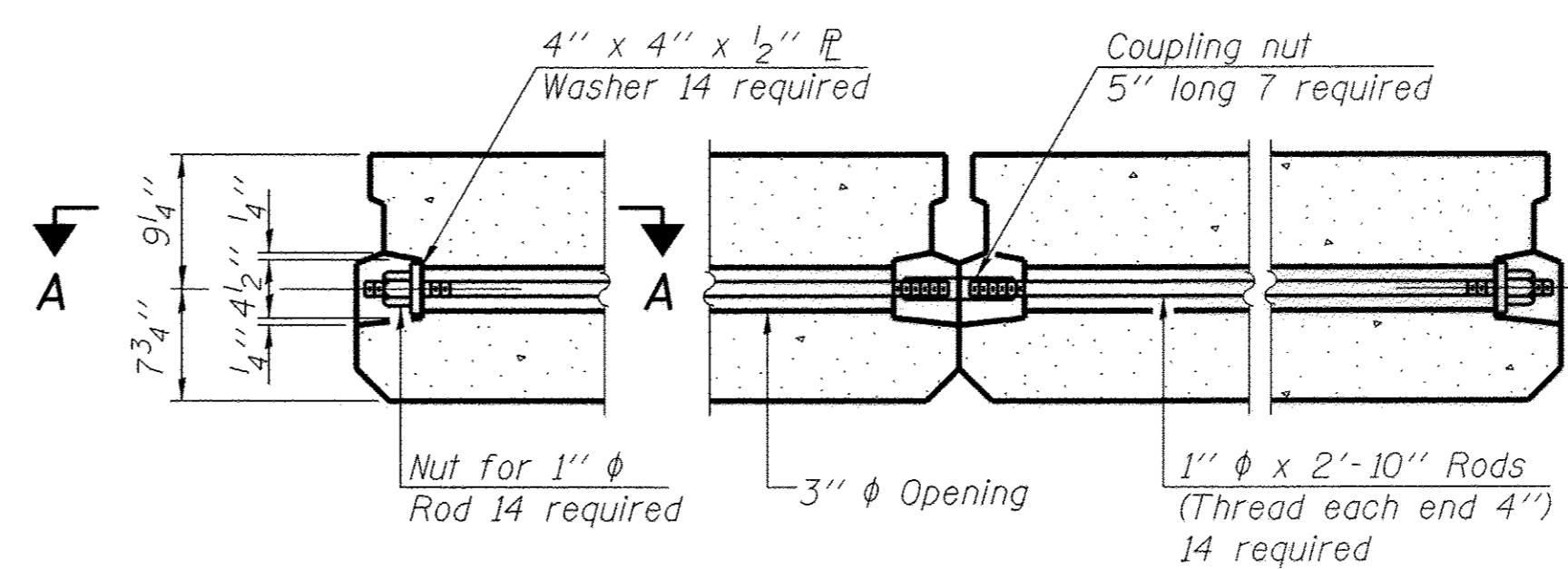
**FABRIC BEARING PAD**  
(Exterior)

**FIXED**

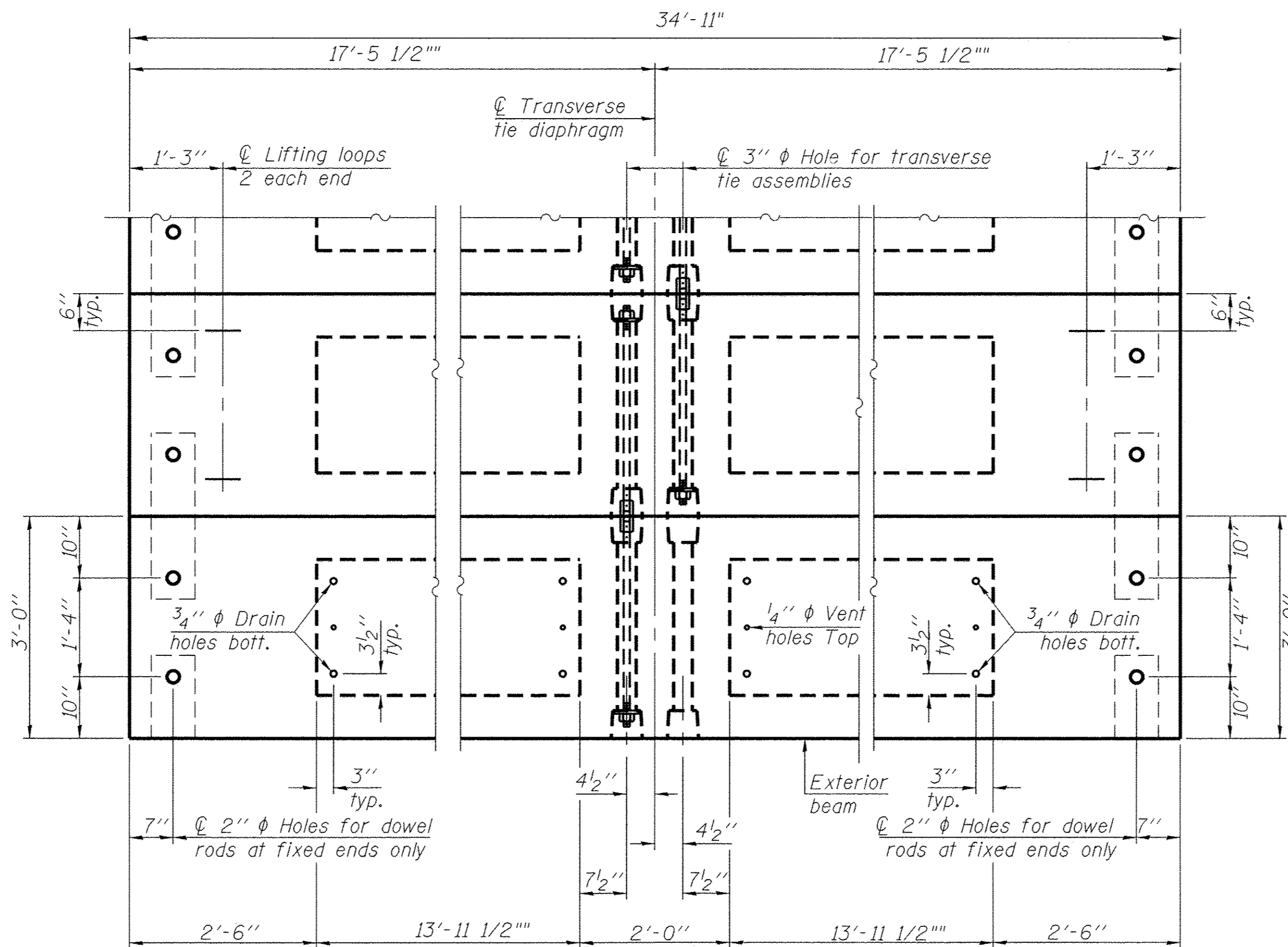
Notes:  
All bearing pads shall be 1" thick.



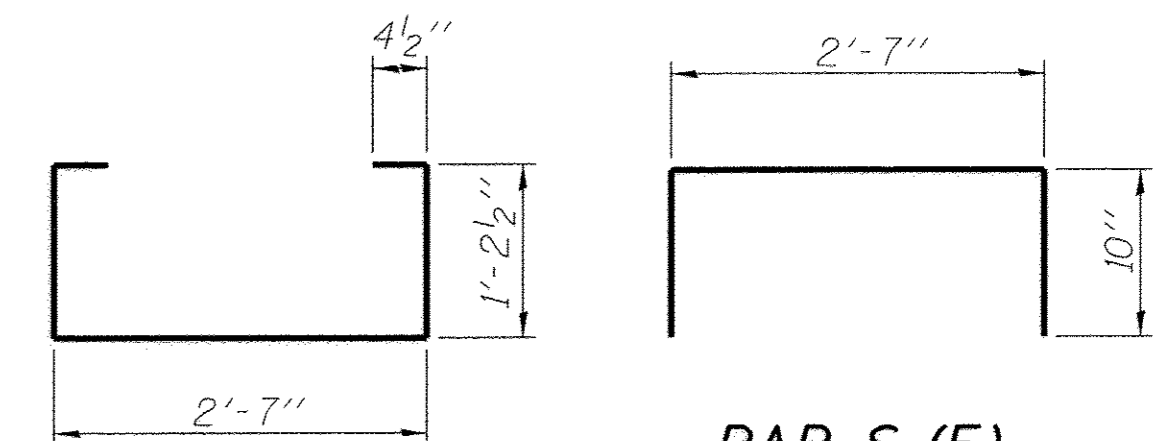
**SECTION A-A**



**TYPICAL TRANSVERSE TIE ASSEMBLY**

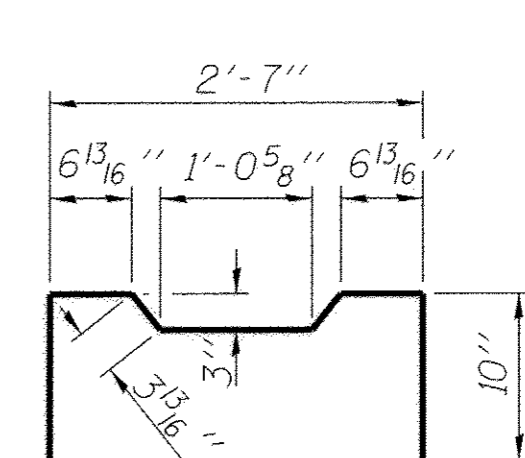


**PLAN VIEW**



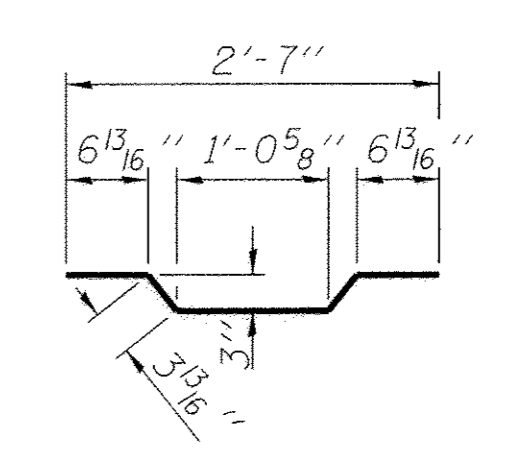
**BAR S<sub>1</sub>(E)**

**BAR S(E)**

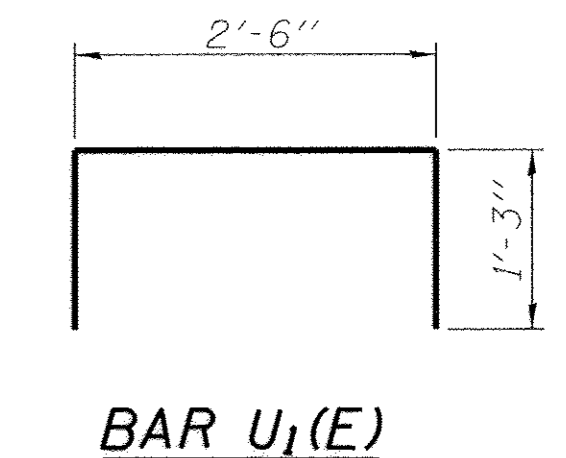


**BAR U(E)**

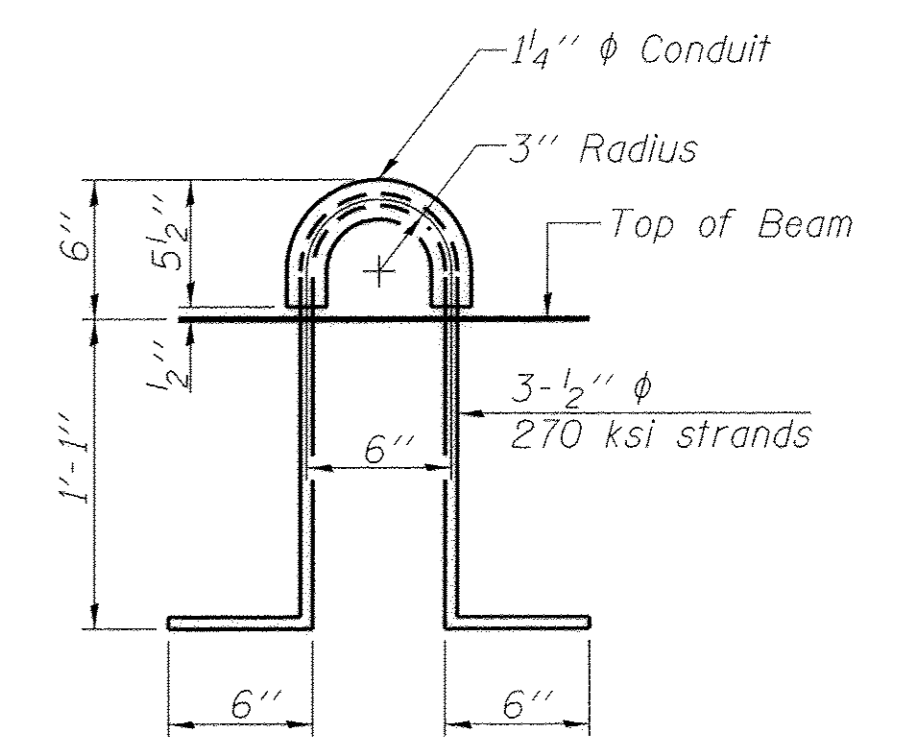
**BAR S<sub>2</sub>(E)**



**BAR A<sub>1</sub>(E)**



**BAR U<sub>1</sub>(E)**



**LIFTING LOOP DETAIL**

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

**NOTES**

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in. The 1" phi 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" phi 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.

**BILL OF MATERIAL**

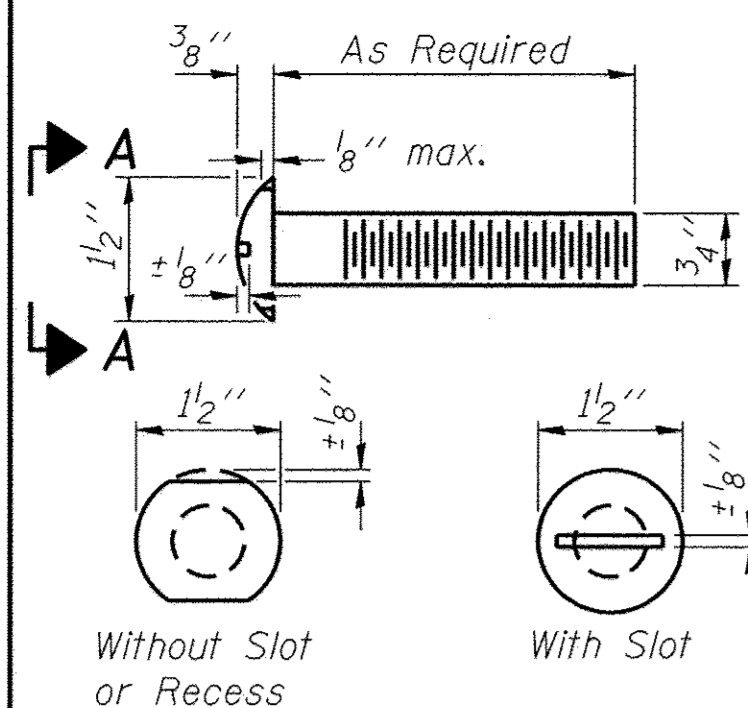
Precast Prestressed Conc. Deck Bms. (17" depth)	Sq. Ft.	838
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PD-1736-OD

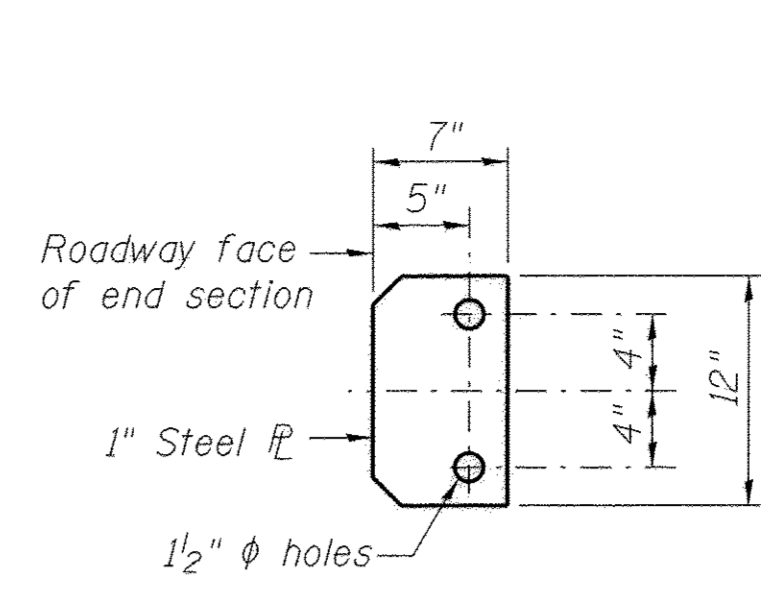
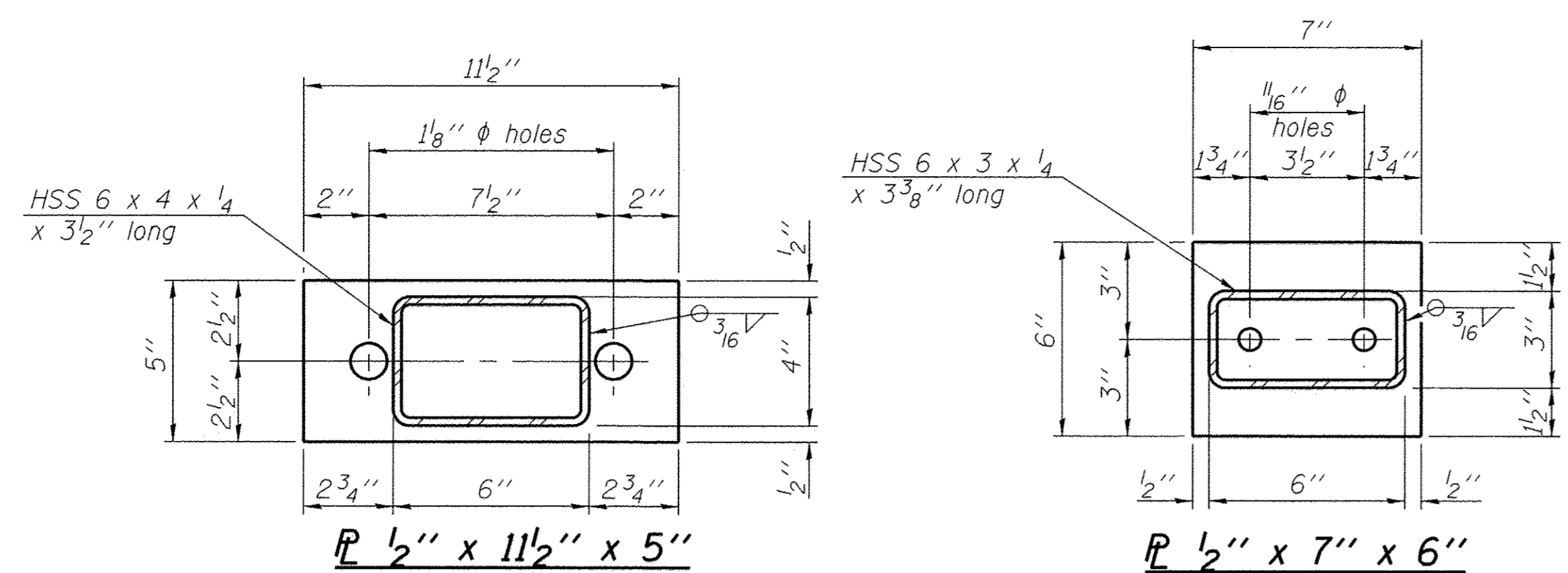
7-1-10

FILE NAME = 087-3565-002-PPCDeckBm Span 2.dgn	USER NAME = Stal15	DESIGNED - ALB	REVISED -	<b>LAKEWOOD / DRY POINT TWP SHELBY COUNTY, ILLINOIS</b>	<b>17" x 36" PPC DECK BEAM DETAILS SPAN 2 STRUCTURE NO. 087-3582</b>	RTE.	SECTIONS	COUNTY	TOTAL SHEETS	SHEET NO.	
085_Deck Beam Spans 1 and 3	PLOT SCALE = 1.0000' / in.	DRAWN - ALB	REVISED -			TR373	12-09120-00,12-05119-00	SHELBY	19	9	
	PLOT DATE = 1/31/2017	CHECKED - MJS	REVISED -			CONTRACT NO. 95810					
		DATE - 1-23-2017	REVISED -			SCALE:	SHEET 6 OF 10 SHEETS	STA.	TO STA.	ILLINOIS FED. AID PROJECT	

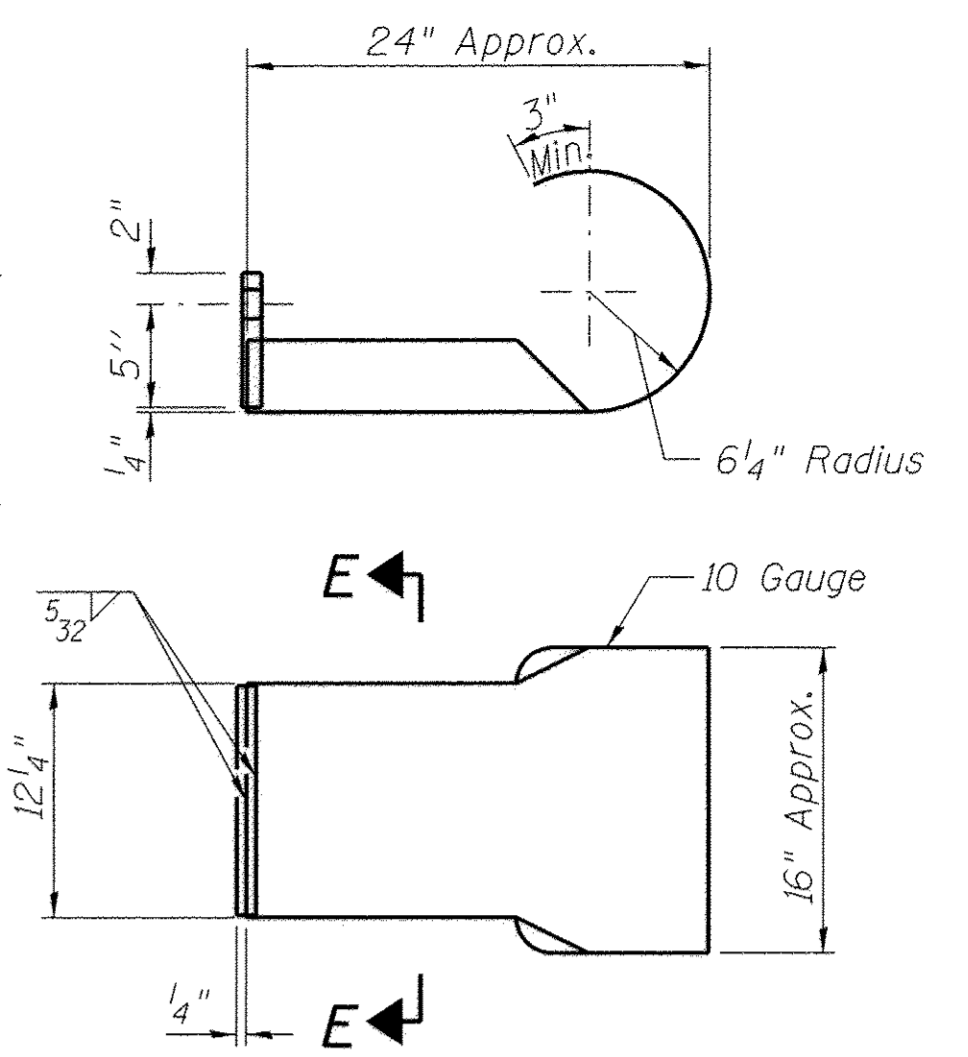




**VIEW A-A  
ROUND HEAD BOLT**



**SECTION E-E**

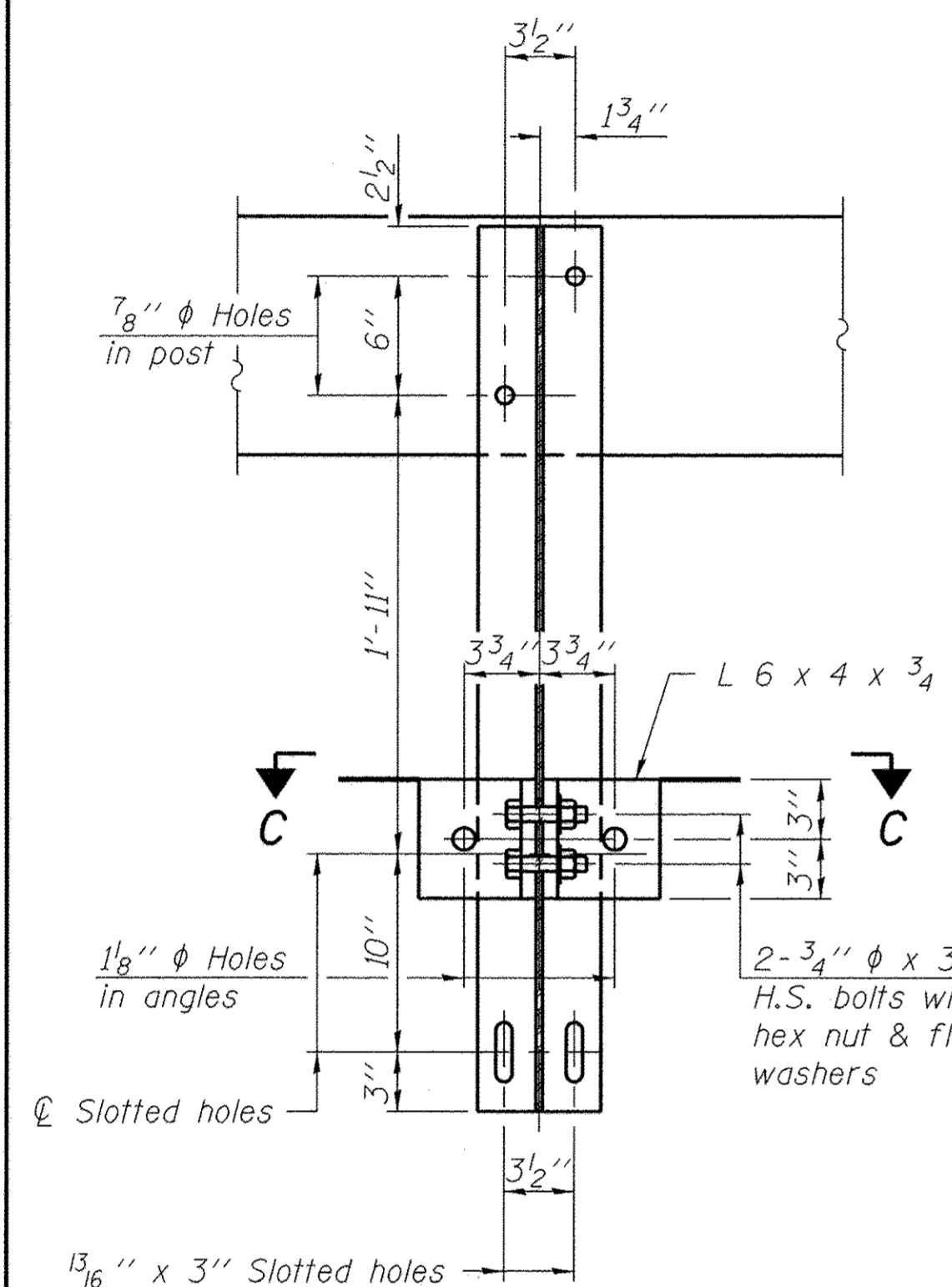


**CURLD END SECTION DETAIL**

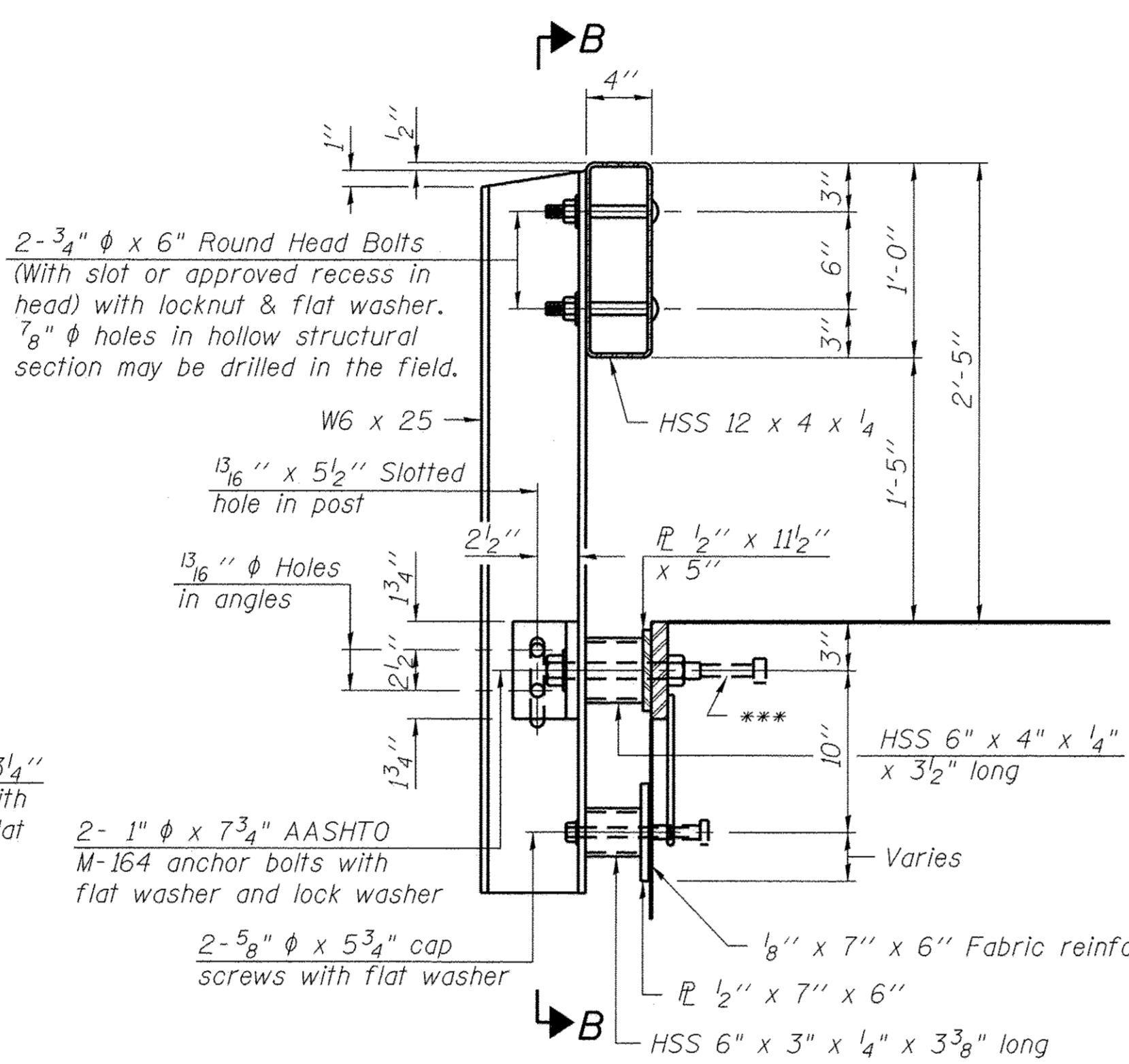
Note:  
Cost of Curled End Sections shall be included in the cost of Steel Railing, Type S-1.  
(4 Required)

Notes:  
All field drilled holes shall be coated with an approved zinc rich paint before erection.  
For multi-span bridges, sufficient 1/4 inch x 6 inch x 1-2 inch galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with Steel Railing, Type S-1.  
All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.

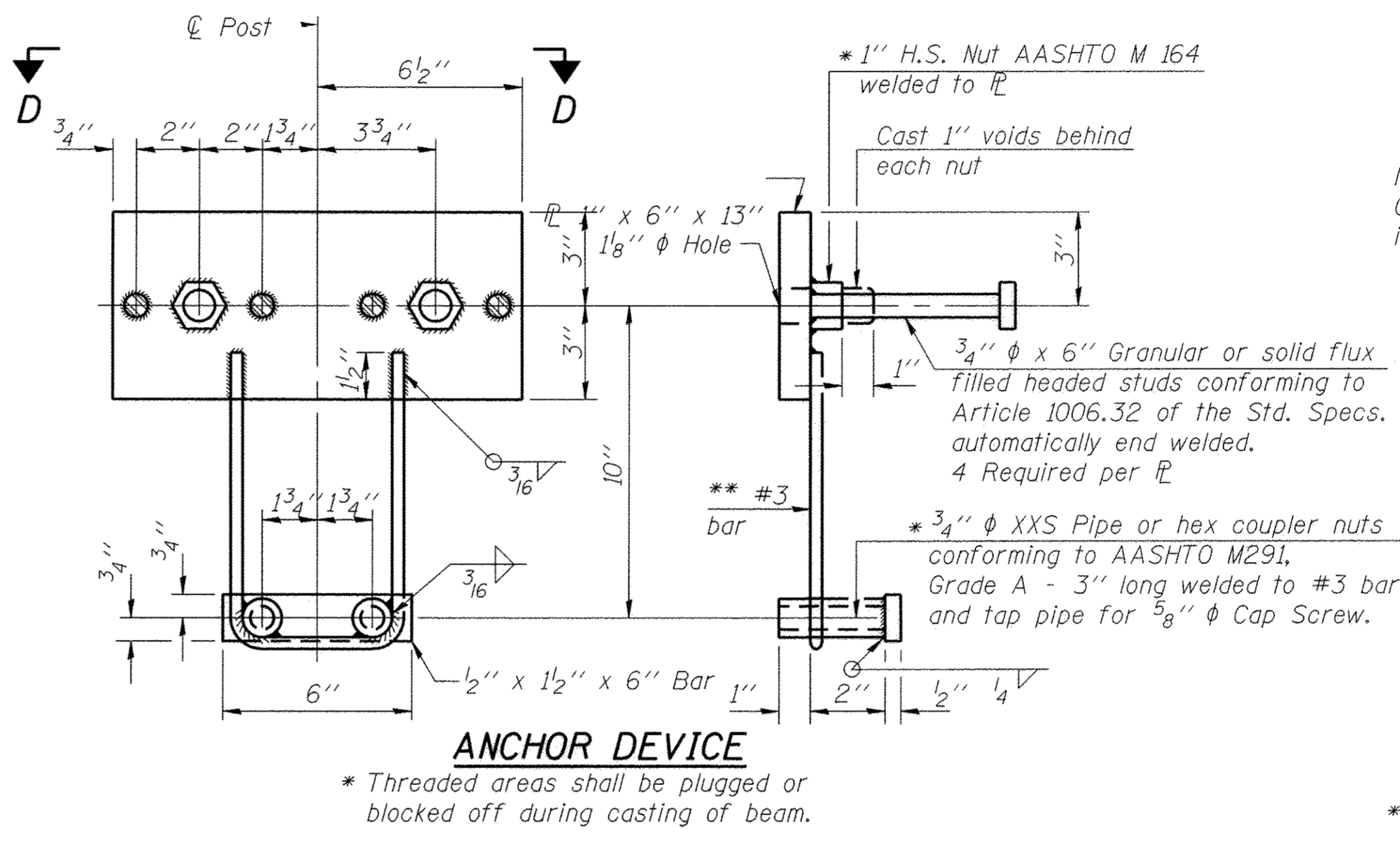
\*\*\* The studs of the anchor devices shall be placed below the top reinforcement bars and the outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchor device.



**SECTION B-B**

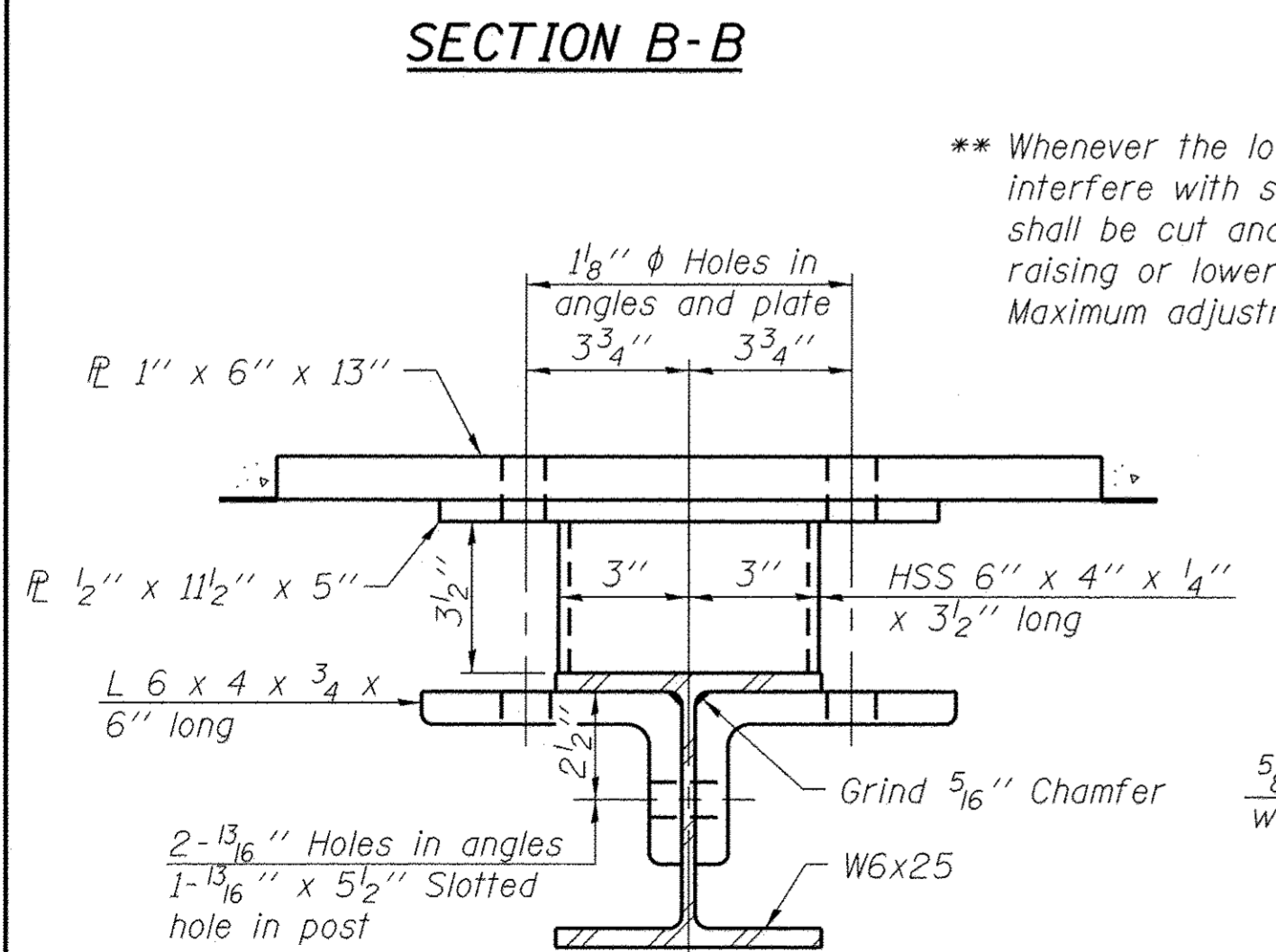


**SECTION AT RAILING POST**



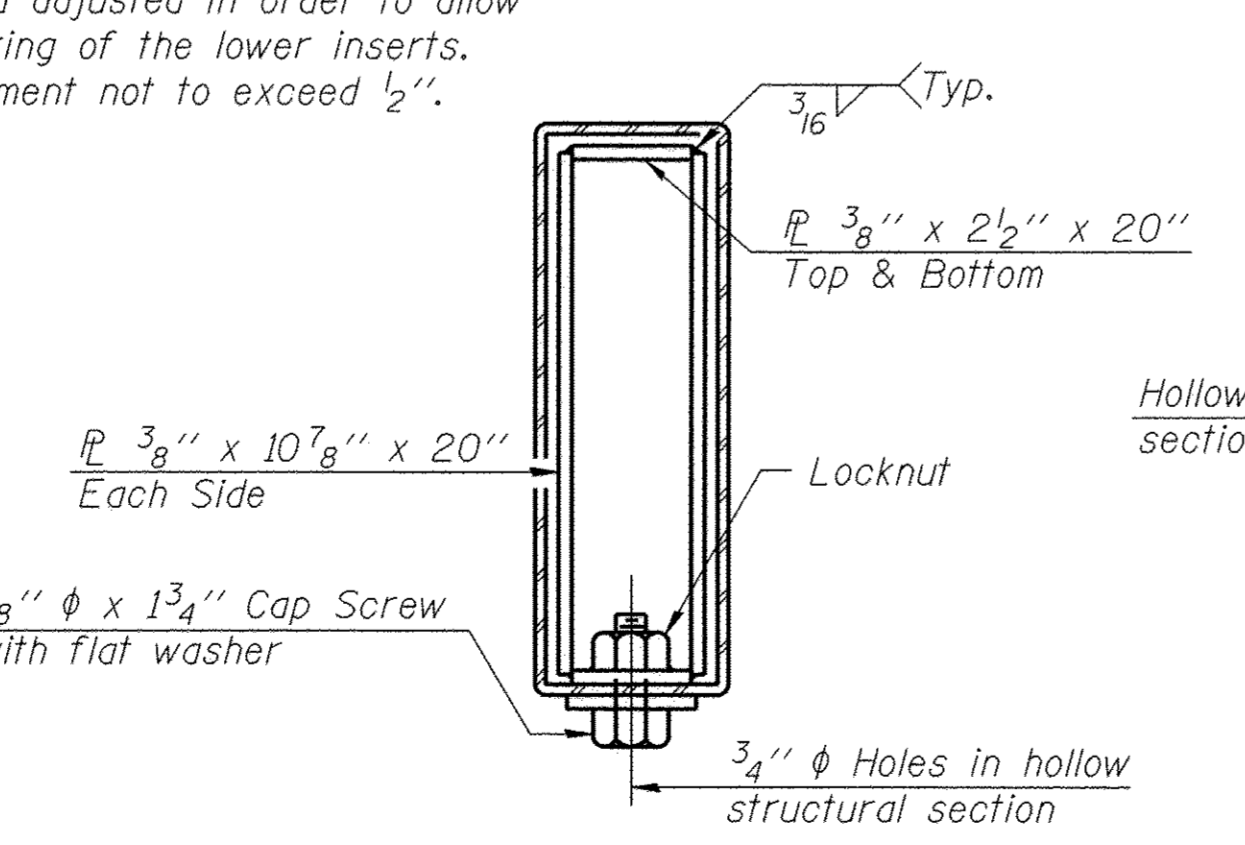
**ANCHOR DEVICE**

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

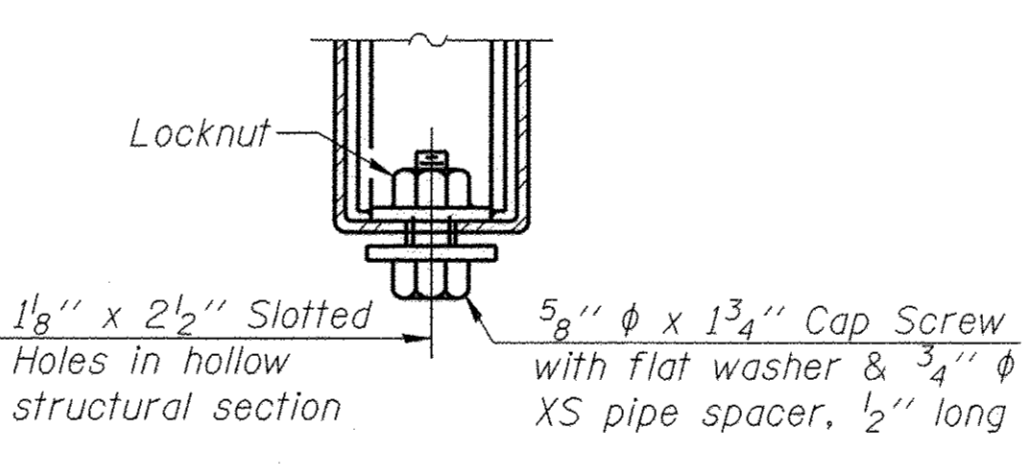


**SECTION C-C**

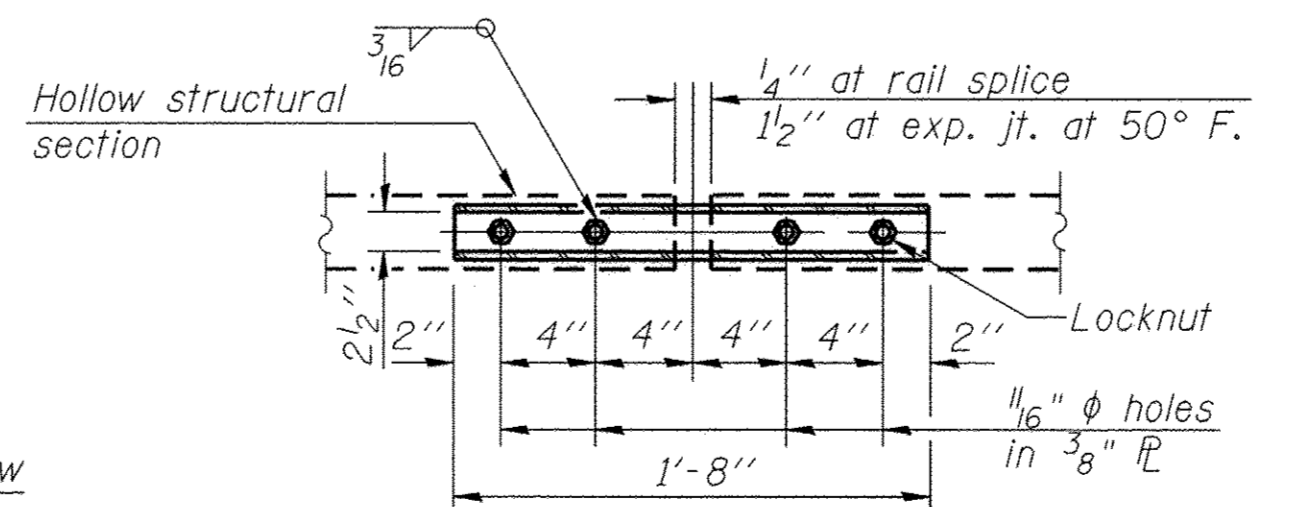
\*\* Whenever the lower insert assemblies interfere with strand locations, the #3 bars shall be cut and adjusted in order to allow raising or lowering of the lower inserts. Maximum adjustment not to exceed 1/2 inch.



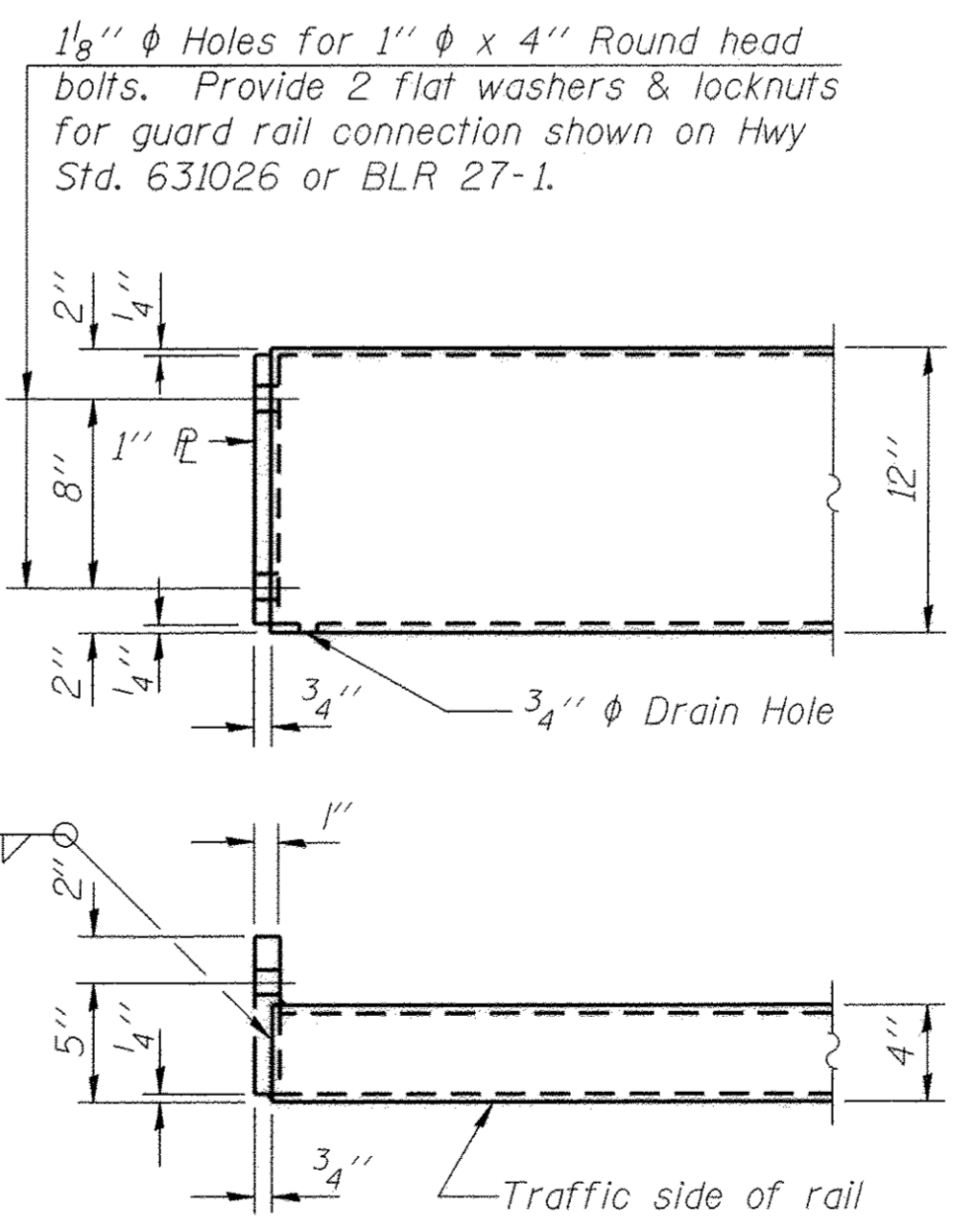
**SECTIONS AT RAIL SPLICE**



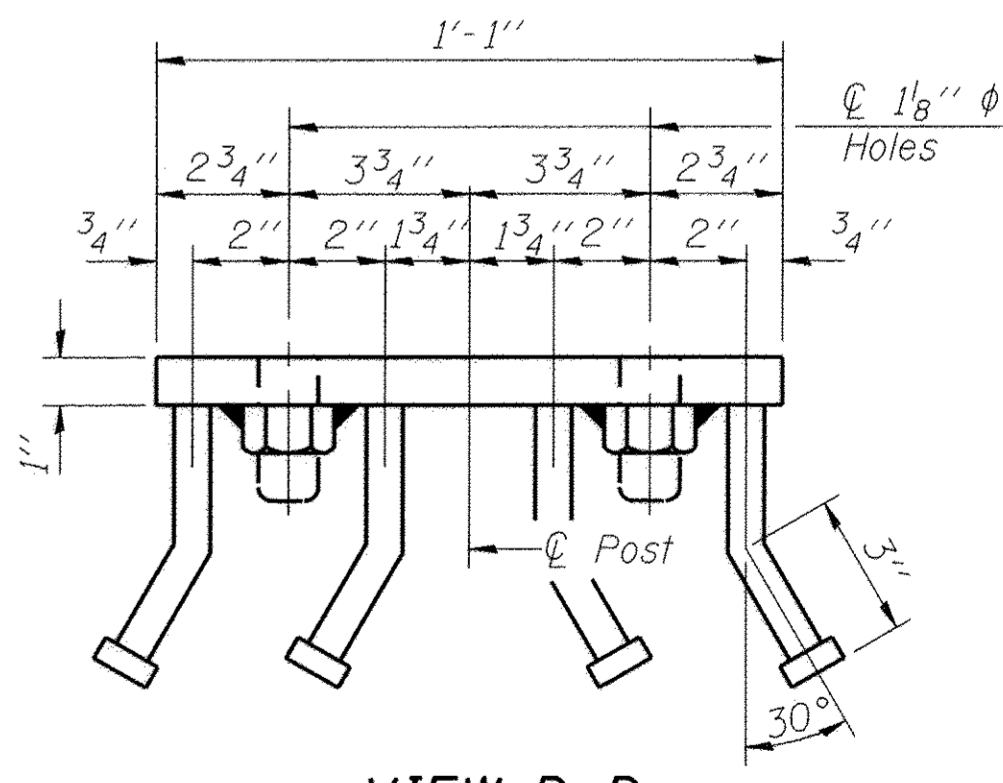
**RAIL SPLICE CONNECTION  
AT EXPANSION JT.**



**PLAN-BOTT. SPLICE R  
TYPICAL**



**END OF RAIL DETAILS**



**VIEW D-D**

**BILL OF MATERIAL**

Item	Unit	Quantity
Steel Railing, Type S-1	Foot	163

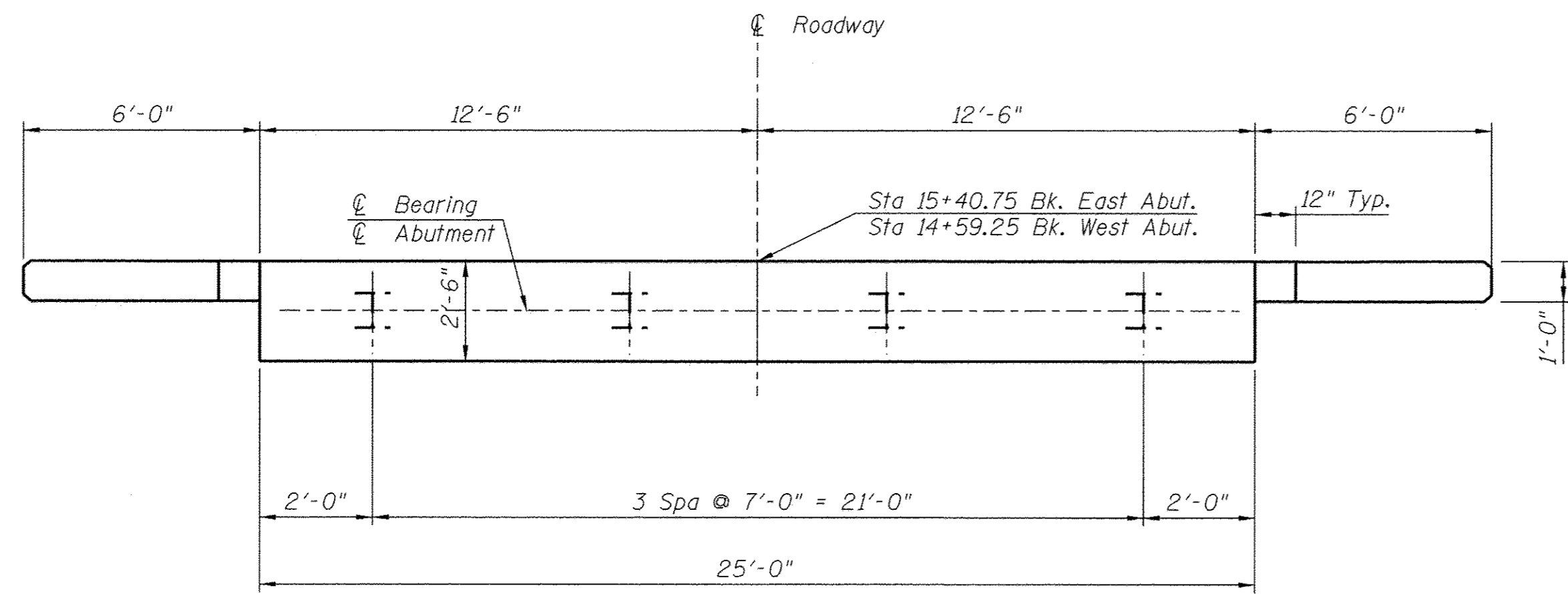
R-23A 7-1-10 (10'-9" Maximum Post Spacing)

FILE NAME = 087-3565-001-s-rail.dgn	USER NAME = Stal15	DESIGNED - ALB	REVISED -
PLOT SCALE = 1.0000' / in.	CHECKED - MJS	DRAWN - ALB	REVISED -
PLOT DATE = 1/31/2017	DATE - 1-23-2017	CHECKED - MJS	REVISED -

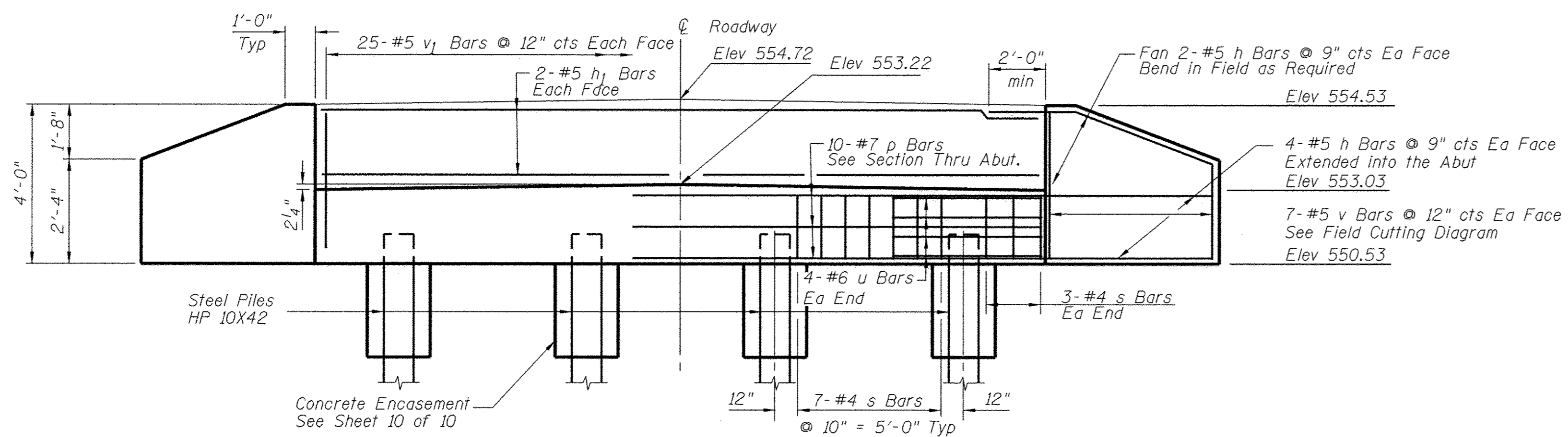
**LAKEWOOD / DRY POINT TWP  
SHELBY COUNTY, ILLINOIS**

**STEEL RAILING, TYPE S-1  
STRUCTURE NO. 087-3582**

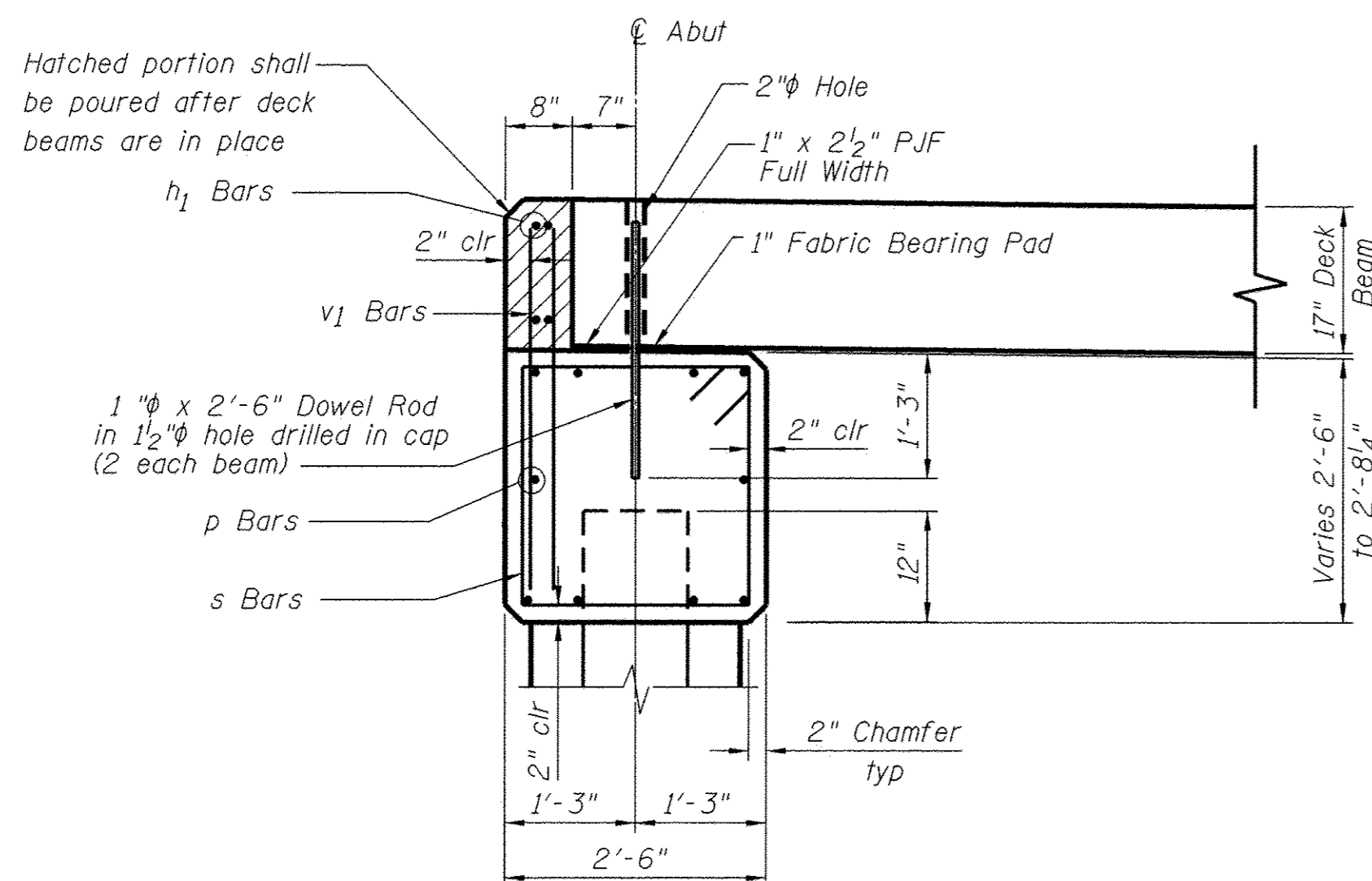
SCALE:	SHEET 7 OF 10 SHEETS	STA.	TO STA.
RTE.	SECTIONS	COUNTY	TOTAL SHEETS
TR373	12-09120-00,12-05119-00	SHELBY	19
			10
			CONTRACT NO. 95810
			ILLINOIS FED. AID PROJECT



**PLAN**  
Not to Scale



**ELEVATION**  
(East and West Abutments Similar)

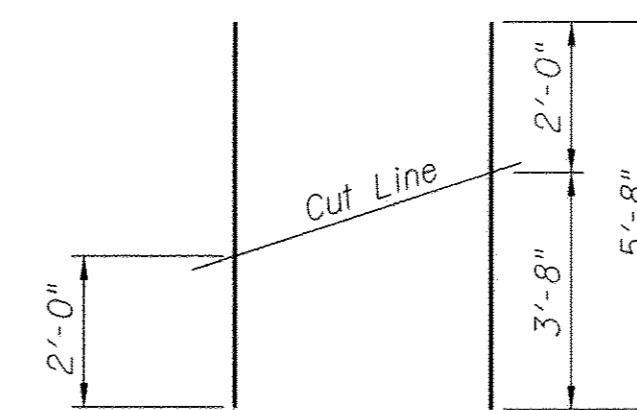


**SECTION THRU ABUTMENT**  
Not to Scale

Notes:  
After beams have been erected, holes shall be drilled into substructure and anchor dowels placed. Dowel holes shall be filled with non-shrink grout to top of beam and allowed to cure min. 24 hrs. prior to grouting the shear keys.  
All horizontal dimensions are at right angles to beam ends.  
Hatched area to be poured after beams are in place.  
See sheet 4 of 10 for bearing pad details.

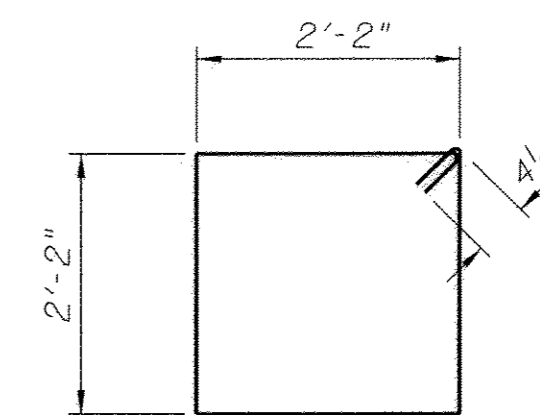
**BILL OF MATERIAL**

BOTH ABUTMENTS AND FOUR WINGS				
BAR	SIZE	NO. REQ'D.	LENGTH	SHAPE
h	#5	48	8'-4"	—
h <sub>1</sub>	#5	8	24'-8"	—
p	#7	20	24'-8"	—
s	#4	54	9'-5"	□
u	#6	16	12'-1"	—
v	#5	28	5'-8"	—
v <sub>1</sub>	#5	100	3'-6"	—
Structure Excavation			Cu. Yd.	60.0
Concrete Structures			Cu. Yd.	16.8
Reinforcement Bars			Pound	2800
Furnishing Steel Piles HP 10X42			Foot	348
Driving Piles			Foot	348
Test Pile Steel HP 10X42			Each	2
Concrete Encasement			Cu. Yd.	2.8

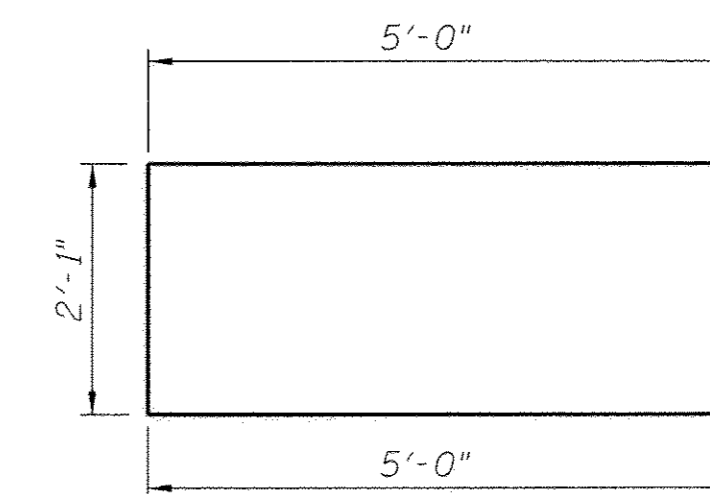


**FIELD CUTTING DIAGRAM**

Order v bars full length. Cut as shown and use remainder of bars in opposite face.



**BAR s**



**BAR u**

**PILE DATA**

Type: Steel Pile HP 10X42
No. Required: 8*
Nominal Required Bearing: 330 kips
Allowable Resistance Available: 165 kips
Est. Length (E. Abut.): 58 Ft.
Est. Length (W. Abut.): 58 Ft.
*Includes one Test Pile at East Abutment and one Test Pile at West Abutment



**BILL OF MATERIAL**

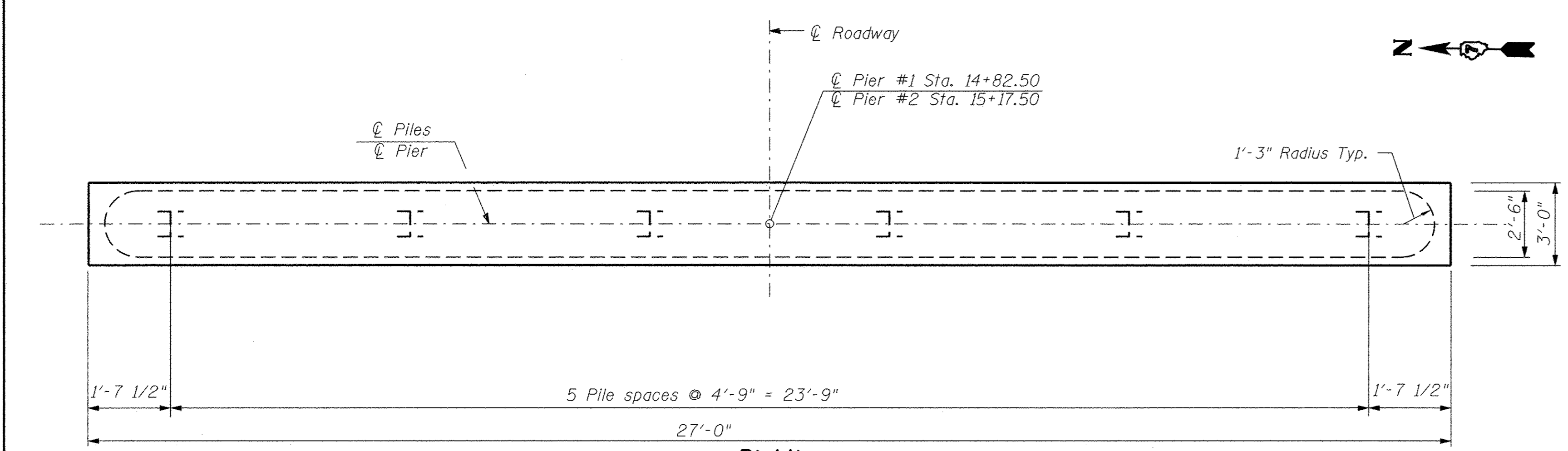
BOTH PIERS				
Bar	No.	Size	Length	Shape
$h_2$	52	#5	23'-8"	
$p_1$	18	#6	26'-8"	
$s_1$	62	#4	10'-5"	□
$u_1$	16	#6	9'-7"	
$u_2$	52	#5	8'-3"	
$v_2$	108	#5	13'-0"	
Structure Excavation			Cu.Yd.	15.0
Cofferdam Excavation			Cu.Yd.	59
Concrete Structures			Cu.Yd.	73.4
Concrete Encasement			Cu.Yd.	4.2
Reinforcement Bars			Lbs.	4580
Furnishing Steel Piles HP 10X42			Ft.	580
Driving Piles			Ft.	580
Test Pile Steel HP 10X42			Each	2
Cofferdam (Type 2) (Location-1)			Each	1
Cofferdam (Type 2) (Location-2)			Each	1

**PILE DATA**

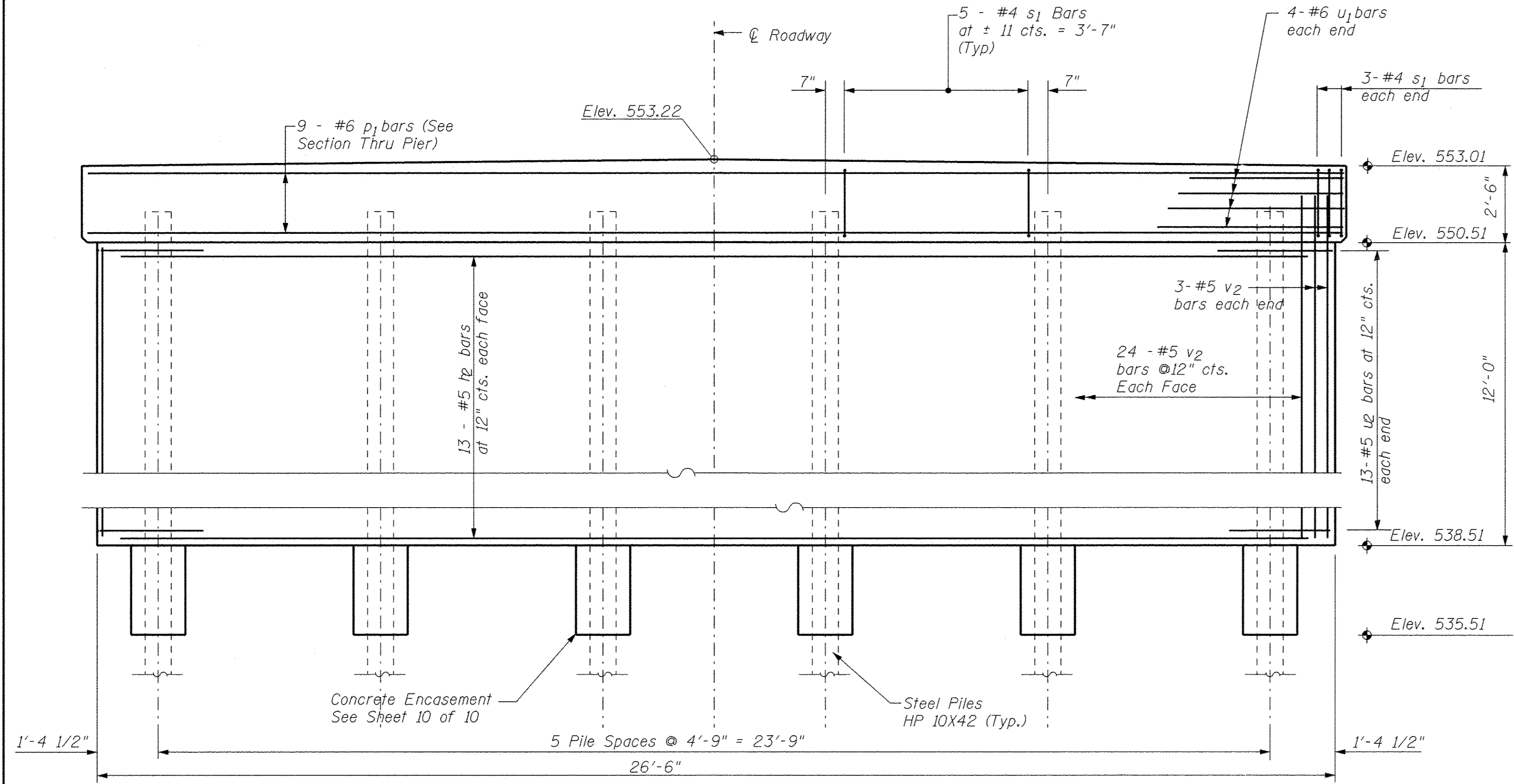
Type: Steel Piles HP 10X42
No. Required (Pier 1): 6*
No. Required (Pier 2): 6*
Nominal Required Bearing: 330 kips
Allowable Resistance Available: 165 kips
Est. Length (Pier 1): 58 Ft.
Est. Length (Pier 2): 58 Ft.

\* Includes one Test Pile at Pier 1 and one Test Pile at Pier 2.

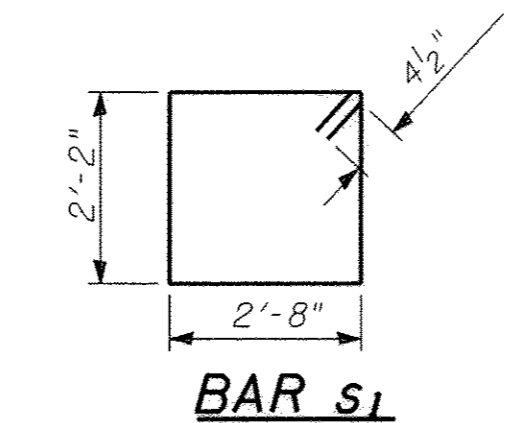
Notes:  
After beams have been erected, holes shall be drilled into substructure and anchor dowels placed. Dowel holes shall be filled with non-shrink grout to top of beam and allowed to cure min. 24 hrs. prior to grouting the shear keys.  
See sheets 4 & 6 of 10 for bearing pad details.



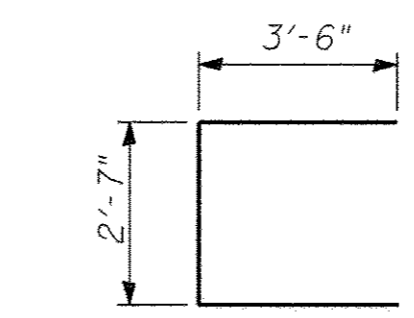
**PLAN**  
(Not to Scale)



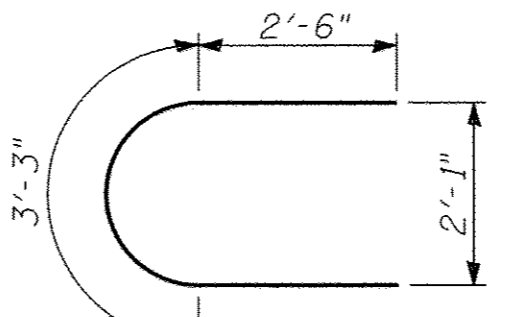
**ELEVATION**  
(Pier 1 and Pier 2 Similar)



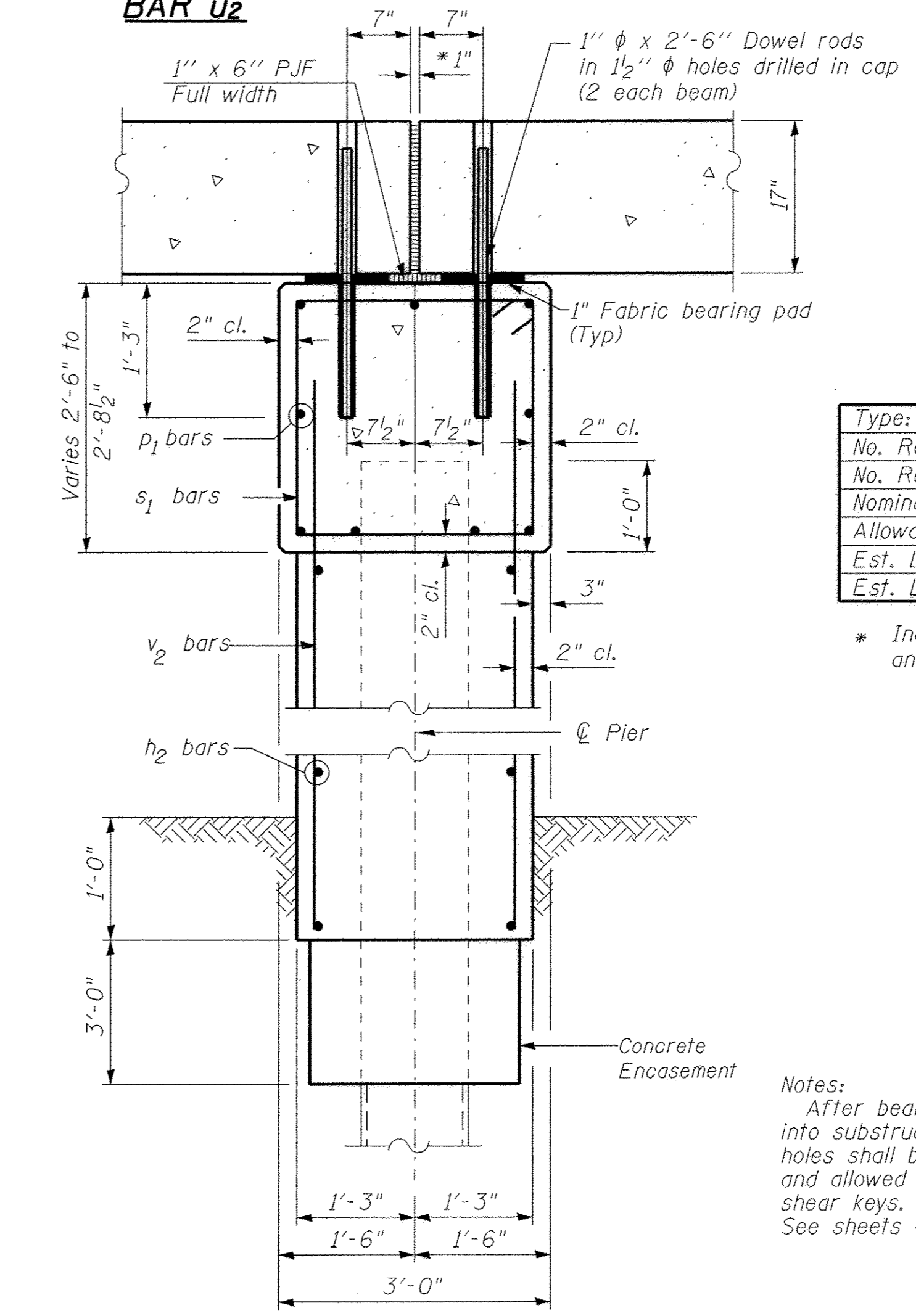
**BAR s1**



**BAR u1**

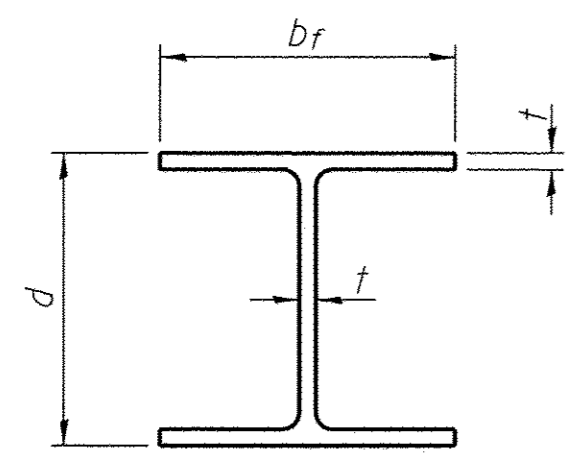


**BAR u2**



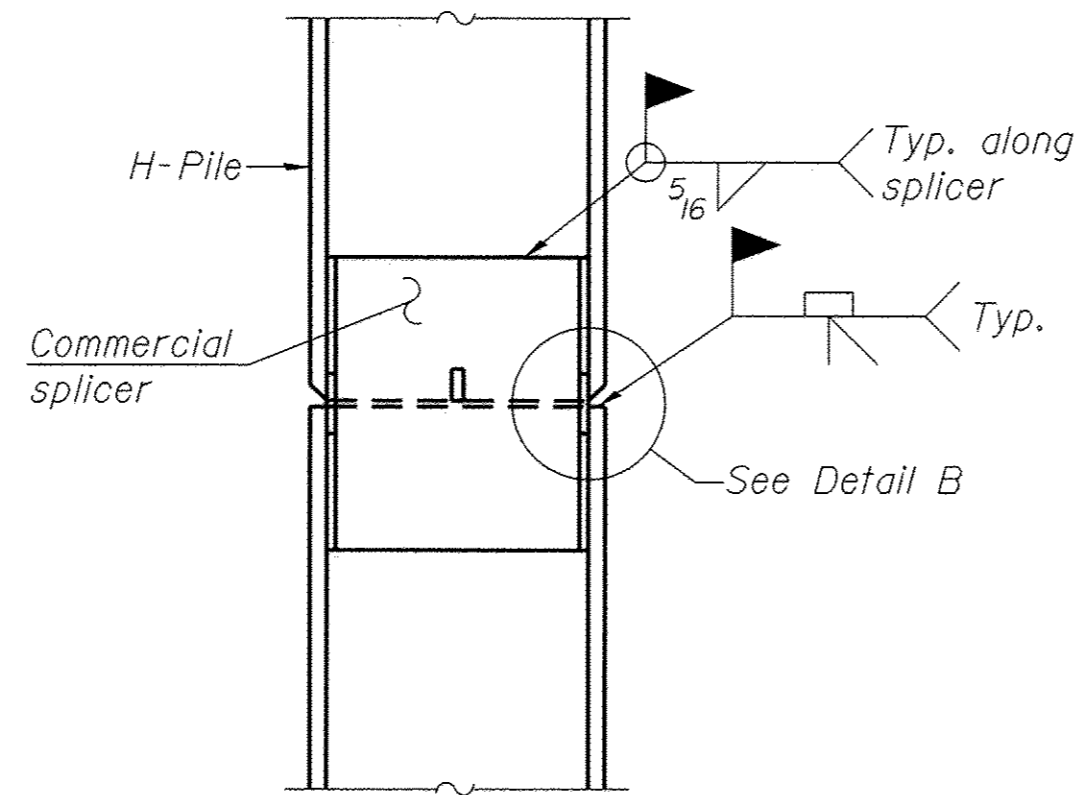
**SECTION THRU PIER**

\*1" Jt. shall be filled with non-shrink grout. 1" dimension may vary to accommodate tolerance in beam lengths.

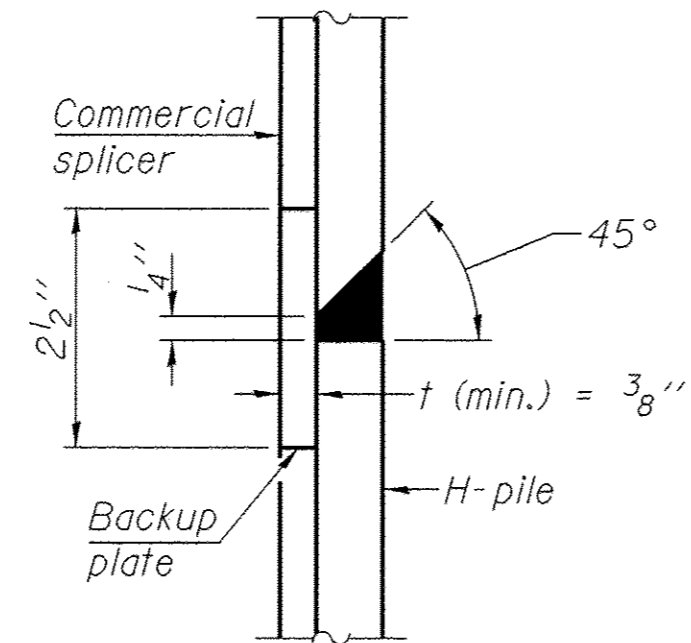


**STEEL PILE TABLE**

Designation	Depth d	Flange width br	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	13/16"	30"
x102	14"	14 3/4"	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"

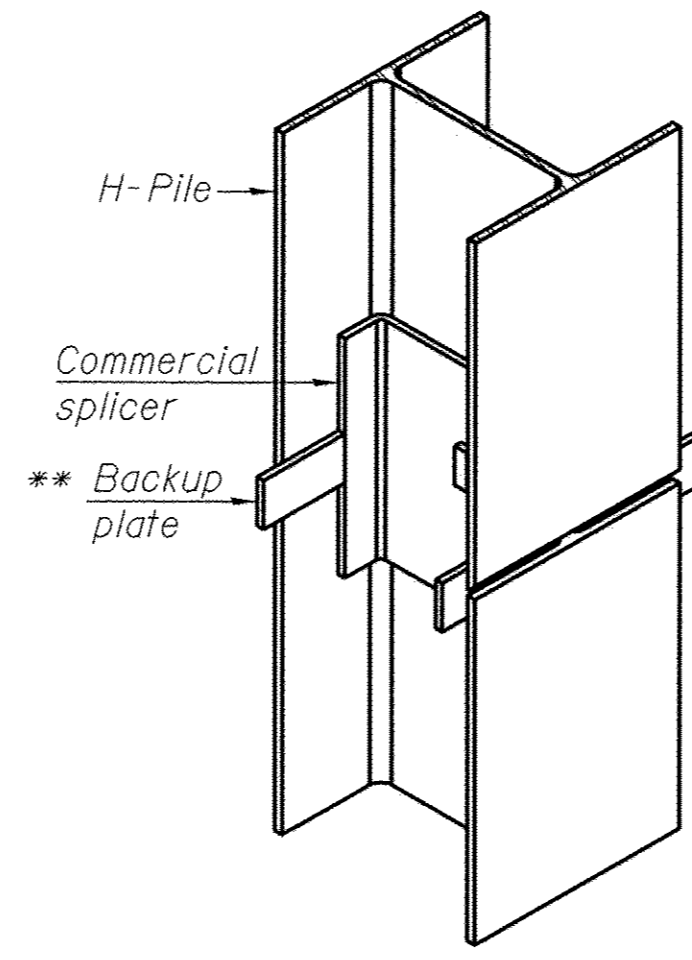


**ELEVATION**

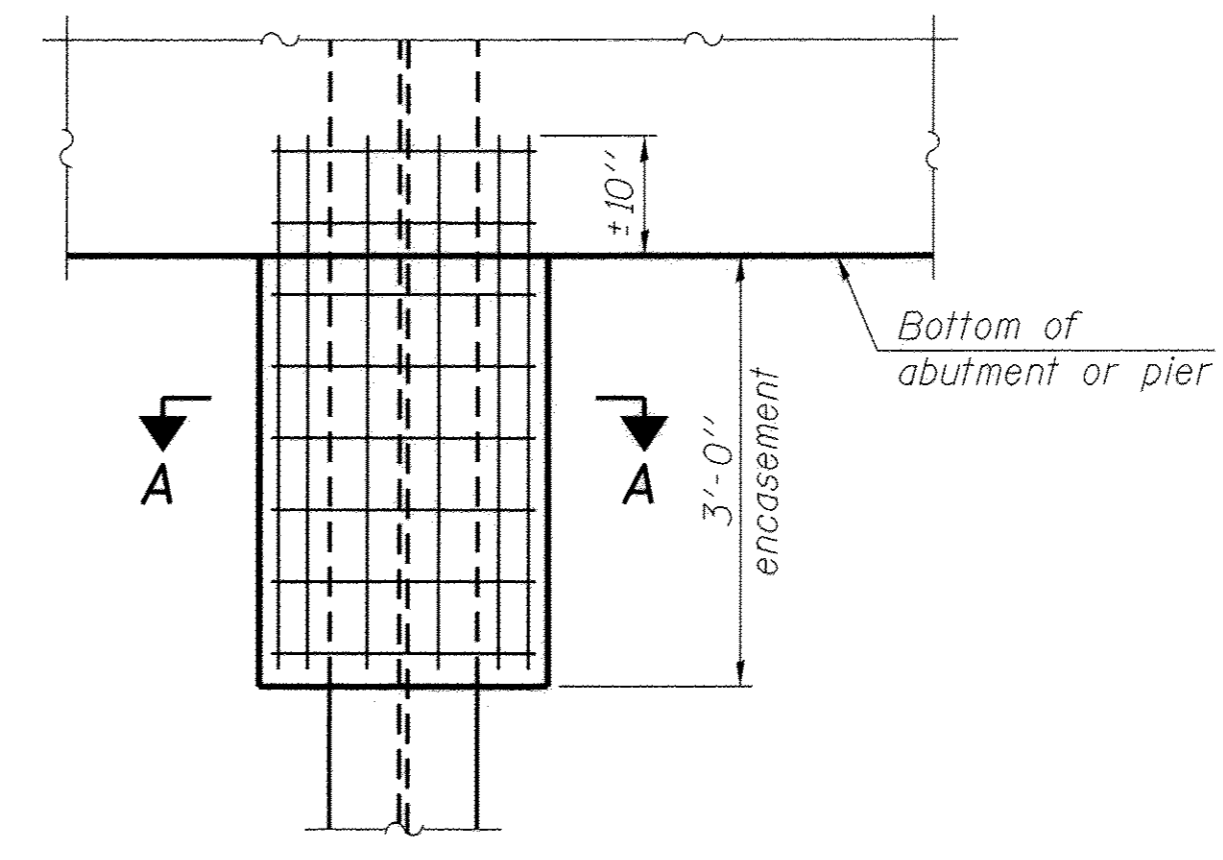


**DETAIL "B"**

**WELDED COMMERCIAL SPLICE**

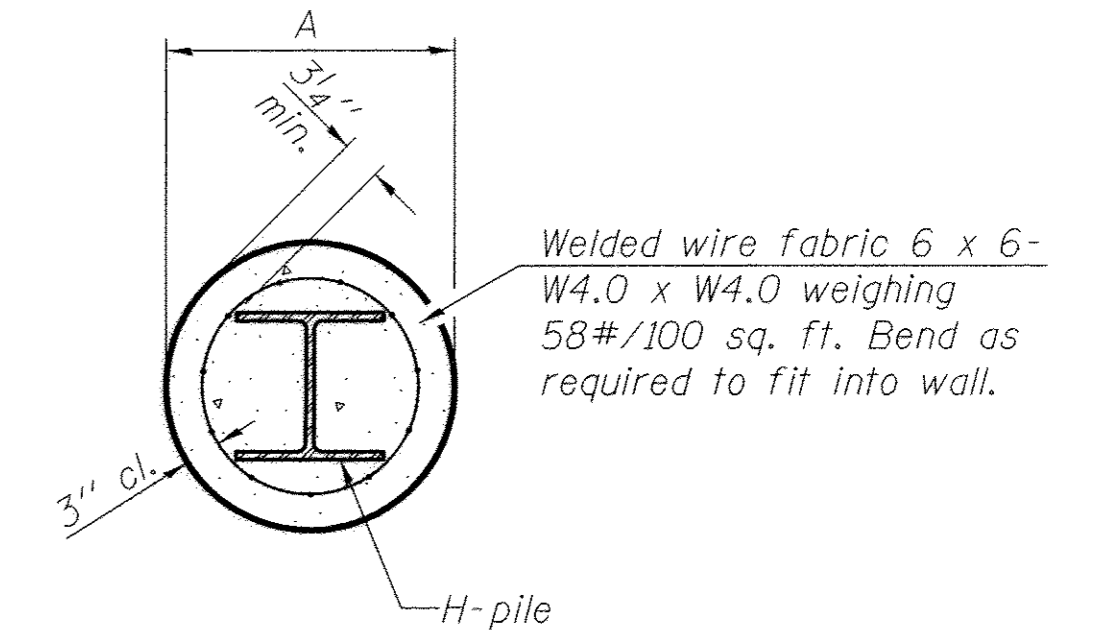


**ISOMETRIC VIEW**



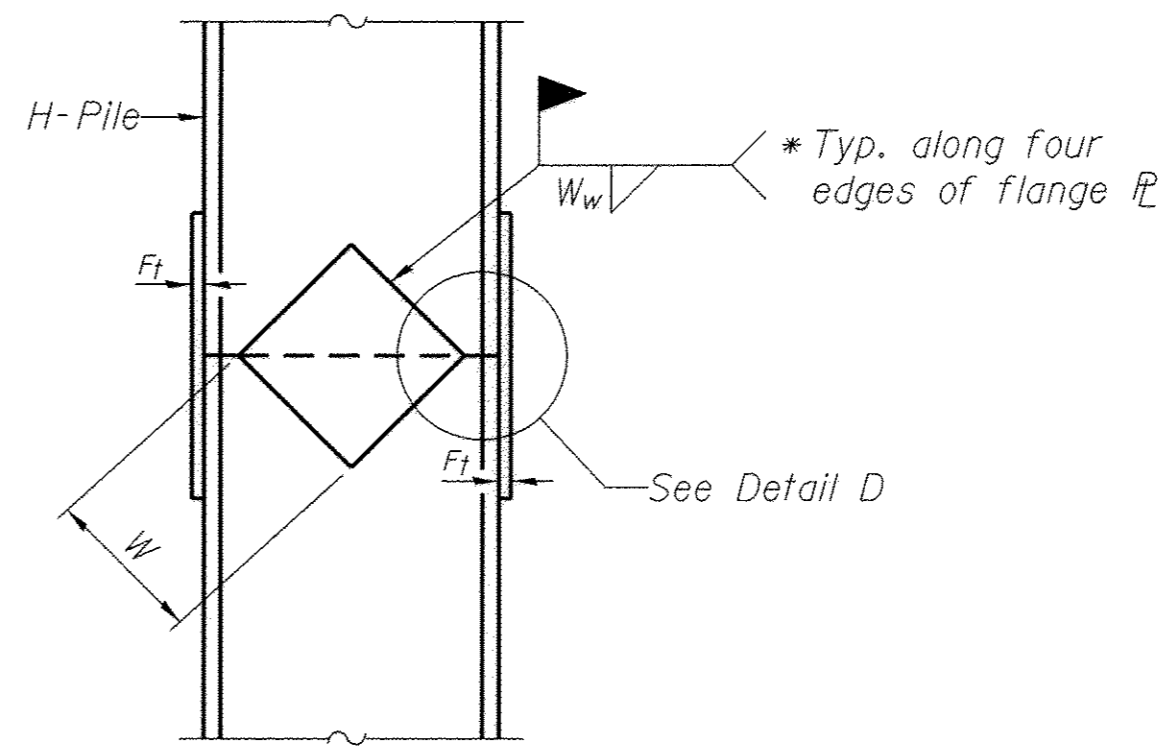
**ELEVATION**

**PILE ENCASEMENT**

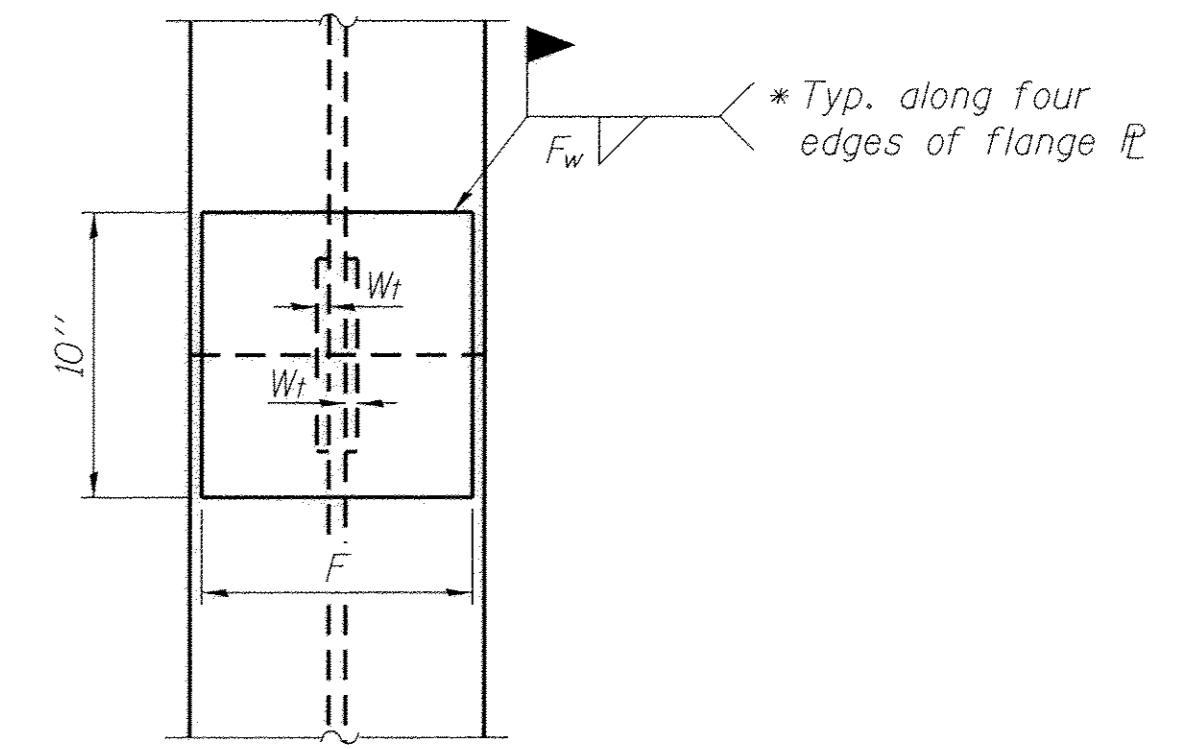


**SECTION A-A**

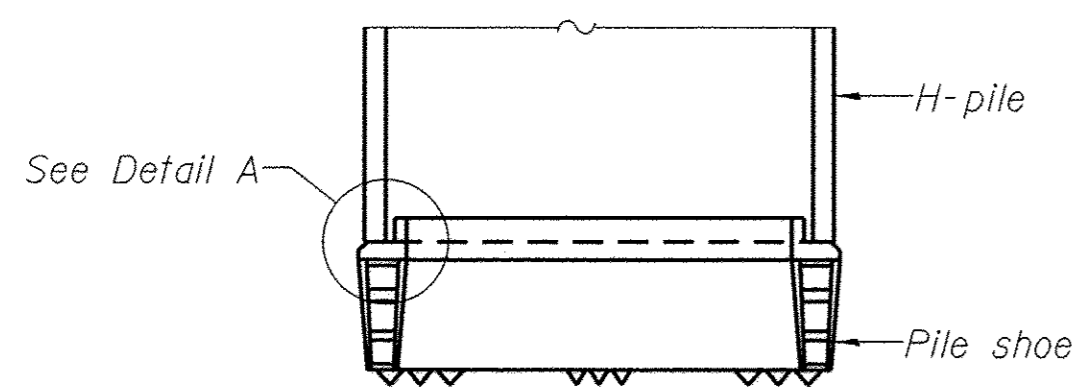
Note:  
Forms for encasement may be omitted when soil conditions permit.



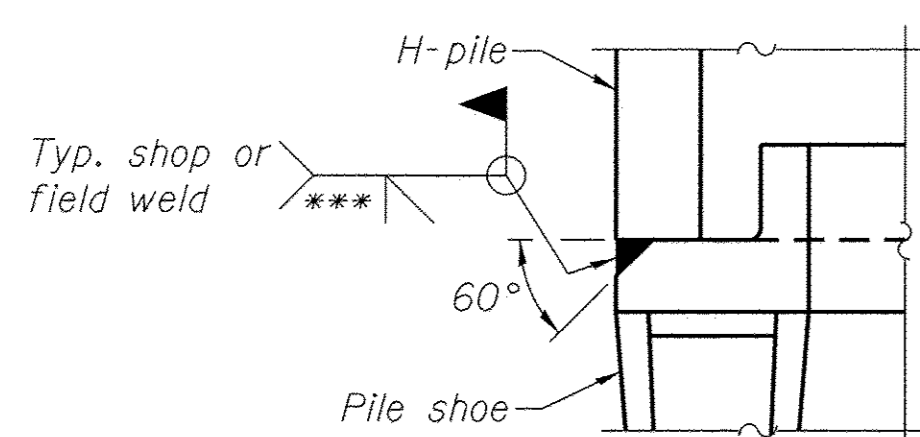
**ELEVATION**



**END VIEW**

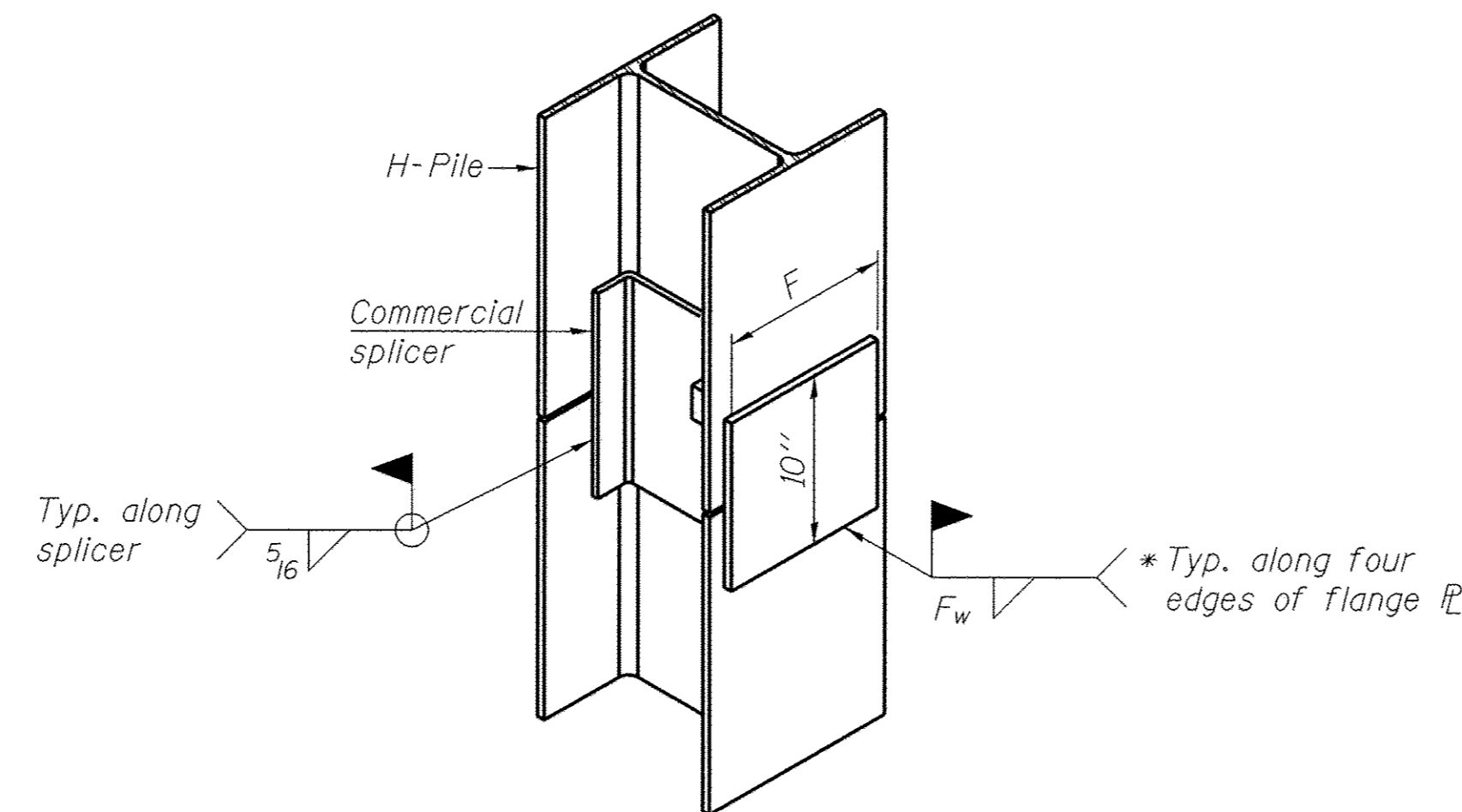


**ELEVATION**



**DETAIL A**

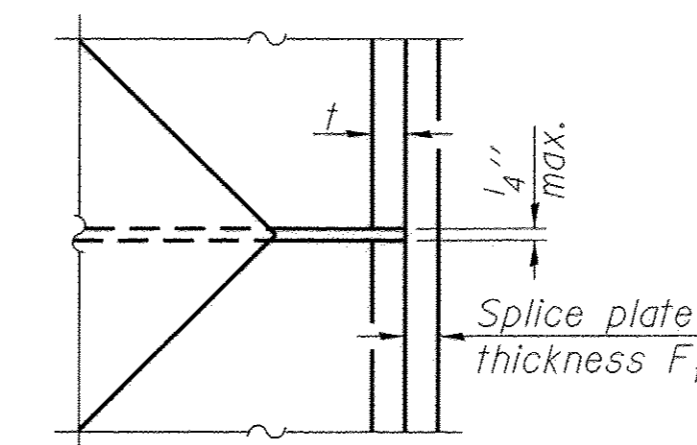
**H-PILE SHOE ATTACHMENT**



**ISOMETRIC VIEW**

**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.).



**DETAIL D**

**WELDED PLATE FIELD SPLICE**

Designation	F	Ft	Fw	W	Wt	Ww
HP 14x117	12 1/2"	1"	7/8"	7 3/4"	5/8"	1/2"
x102	12 1/2"	7/8"	3/4"	7 3/4"	5/8"	1/2"
x89	12 1/2"	3/4"	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"

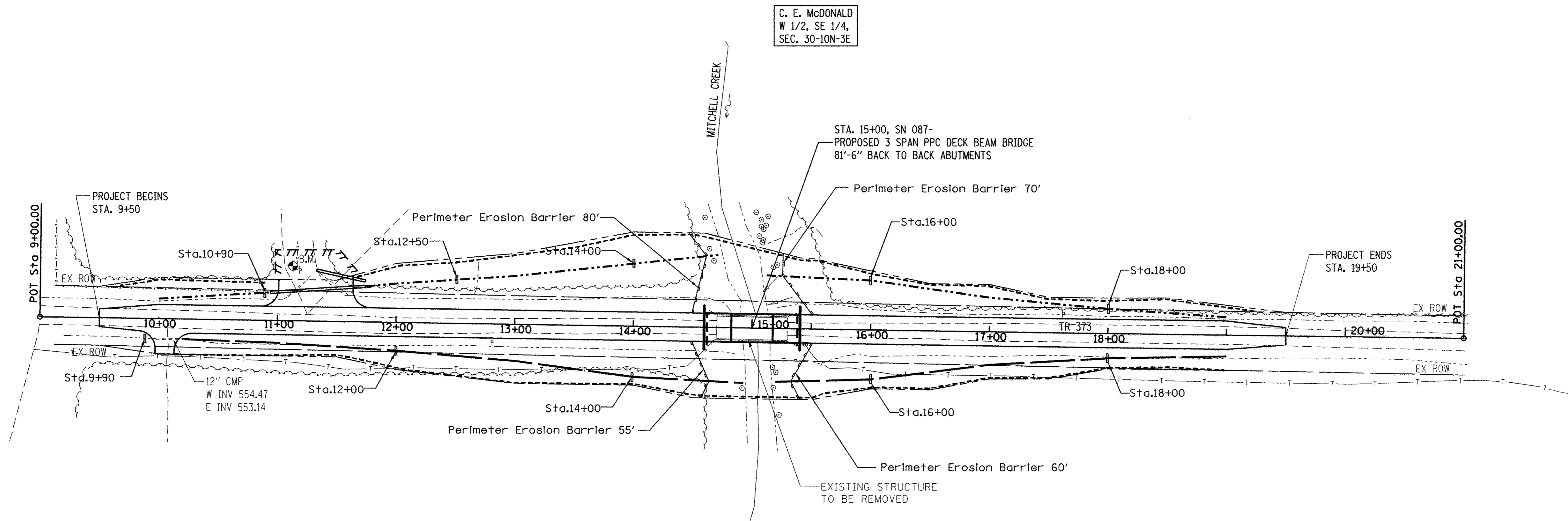
Note:  
The steel H-piles shall be according to AASHTO M270 Grade 50.

F-HP

7-1-10

FILE NAME = 087-3565-001-PileDet.dgn	USER NAME = Stal5	DESIGNED - ALB	REVISED -	<b>LAKEWOOD / DRY POINT TWP SHELBY COUNTY, ILLINOIS</b>	<b>HP PILE DETAILS STRUCTURE NO. 087-3582</b>			RTE. TR373	SECTIONS 12-09120-00,12-05119-00	COUNTY SHELBY	TOTAL SHEETS 19	SHEET NO. 13
12_Pile Details	PLOT SCALE = 1:8000 ' / in.	CHECKED - MJS	REVISED -		SCALE:	SHEET 10 OF 10 SHEETS	STA. TO STA.	ILLINOIS FED. AID PROJECT				
	PLOT DATE = 1/31/2017	DATE - 1-23-2017	REVISED -		CONTRACT NO. 95810							





**GENERAL NOTES:**

1. SEE STANDARD 280001
2. SEEDING CL.2 WITH FERTILIZER AND MULCH WITHIN CONSTRUCTION LIMITS AND ALL DISTURBED AREAS.
3. PERIMETER EROSION BARRIER NEEDS TO BE ERECTED AS DIRECTED BY THE ENGINEER BEFORE ANY WORK BEGINS SEE STD. 280001.
4. MAINTENANCE OF ALL EROSION CONTROL DEVICES WILL BE PERFORMED IMMEDIATELY AFTER A RAIN EVENT OR ANY DISTURBANCE OF THE CONTROL.
5. REMOVAL AND PROPER CLEAN UP OF ALL TEMPORARY EROSION DEVICES WILL BE REQUIRED AFTER PERMANENT EROSION CONTROL IS IN PLACE AND FUNCTIONING.

ESTIMATED RUNOFF COEFFICIENT AFTER CONSTRUCTION:  
 COURSE TEXTURED GRASS  
 SOIL GREATER THAN 40% CLAY  
 MODERATE SLOPE  
 C=0.25

**LEGEND**

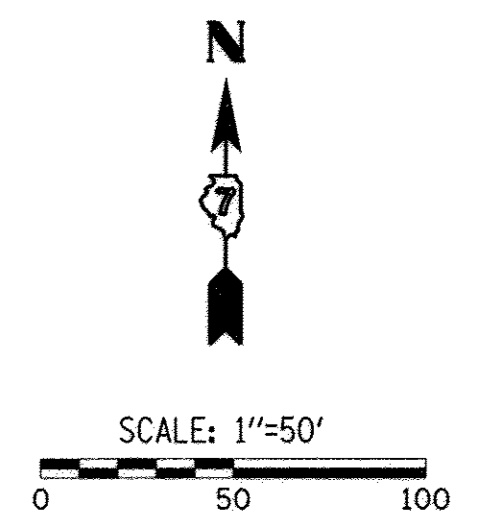
- PERIMETER EROSION BARRIER
- DITCH CHECK

**TEMPORARY DITCH CHECK SCHEDULE**

STATION	LT	RT	LENGTHS
9+90		17'	6'
10+90	23'		6'
12+00		24'	10'
12+50	37'		10'
14+00	53'	43'	10' EACH
16+00	42'	42'	10' EACH
18+00	21'	21'	10' EACH
TOTAL			92 FT

**BILL OF MATERIAL**

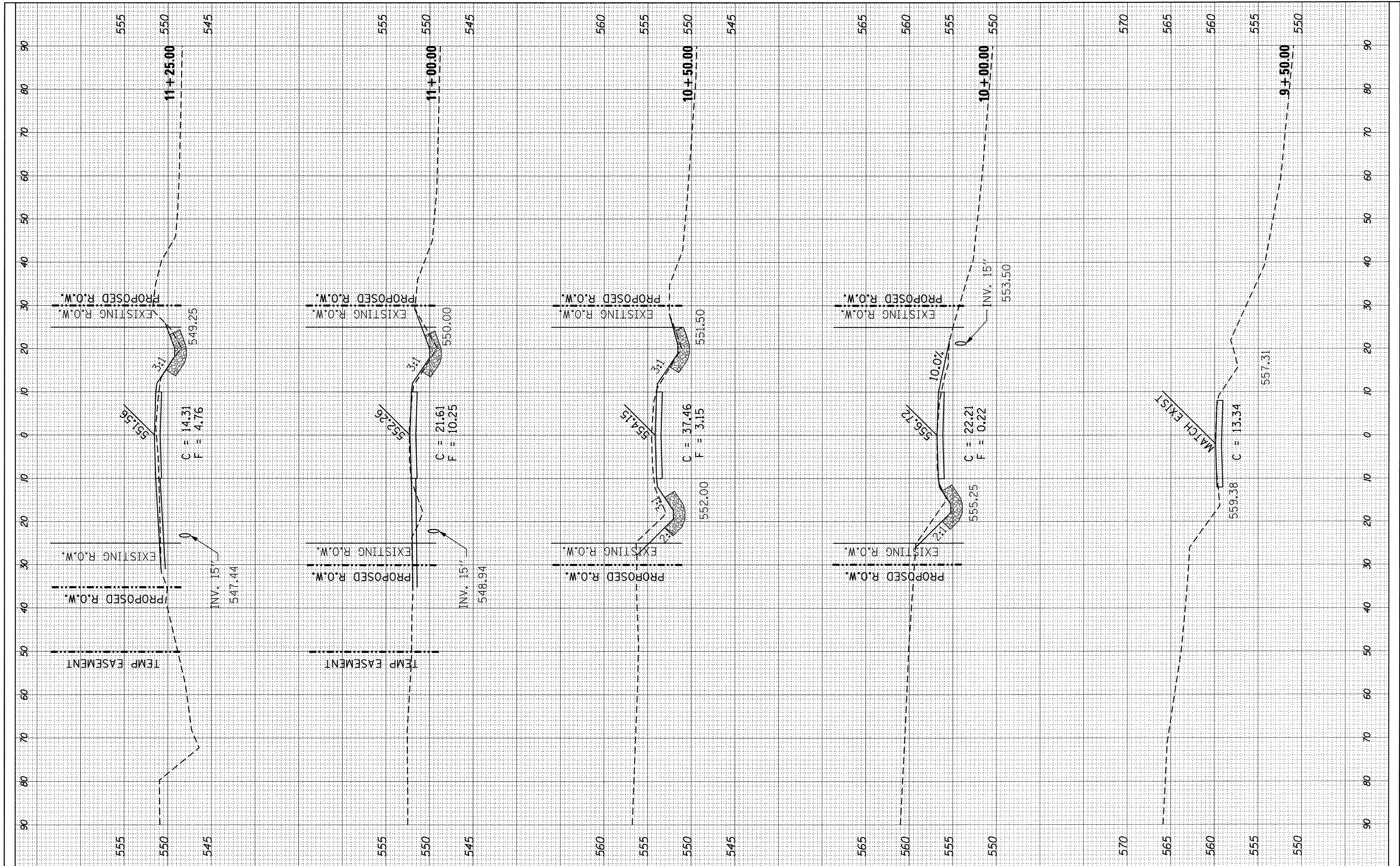
ITEM	UNIT	QTY
TEMPORARY EROSION CONTROL SEEDING	POUND	200
TEMPORARY DITCH CHECKS	FOOT	92
PERIMETER EROSION BARRIER	FOOT	265





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

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

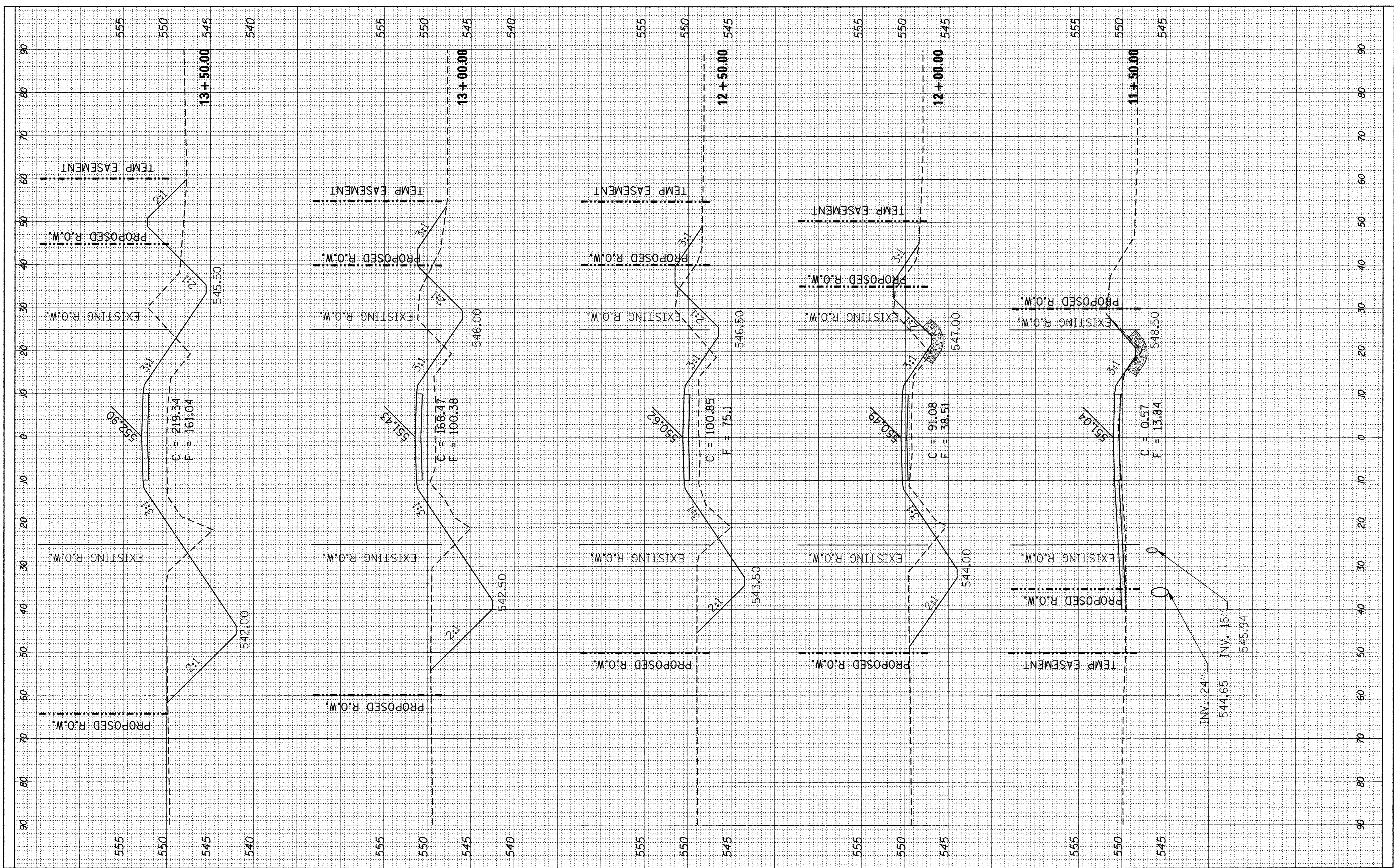


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PLOT SCALE = 10.0000' / 1"	PLOT DATE = 1/31/2017	DRAWN - ALB	REVISED -		SCALE:	SHEET	OF	SHEETS	STA. 9+50.00	TO STA. 11+00.00	CONTRACT NO. 95810		
		CHECKED - MJS	REVISED -		ILLINOIS FED. AID PROJECT								
		DATE - 5-16-2016	REVISED -										



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

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

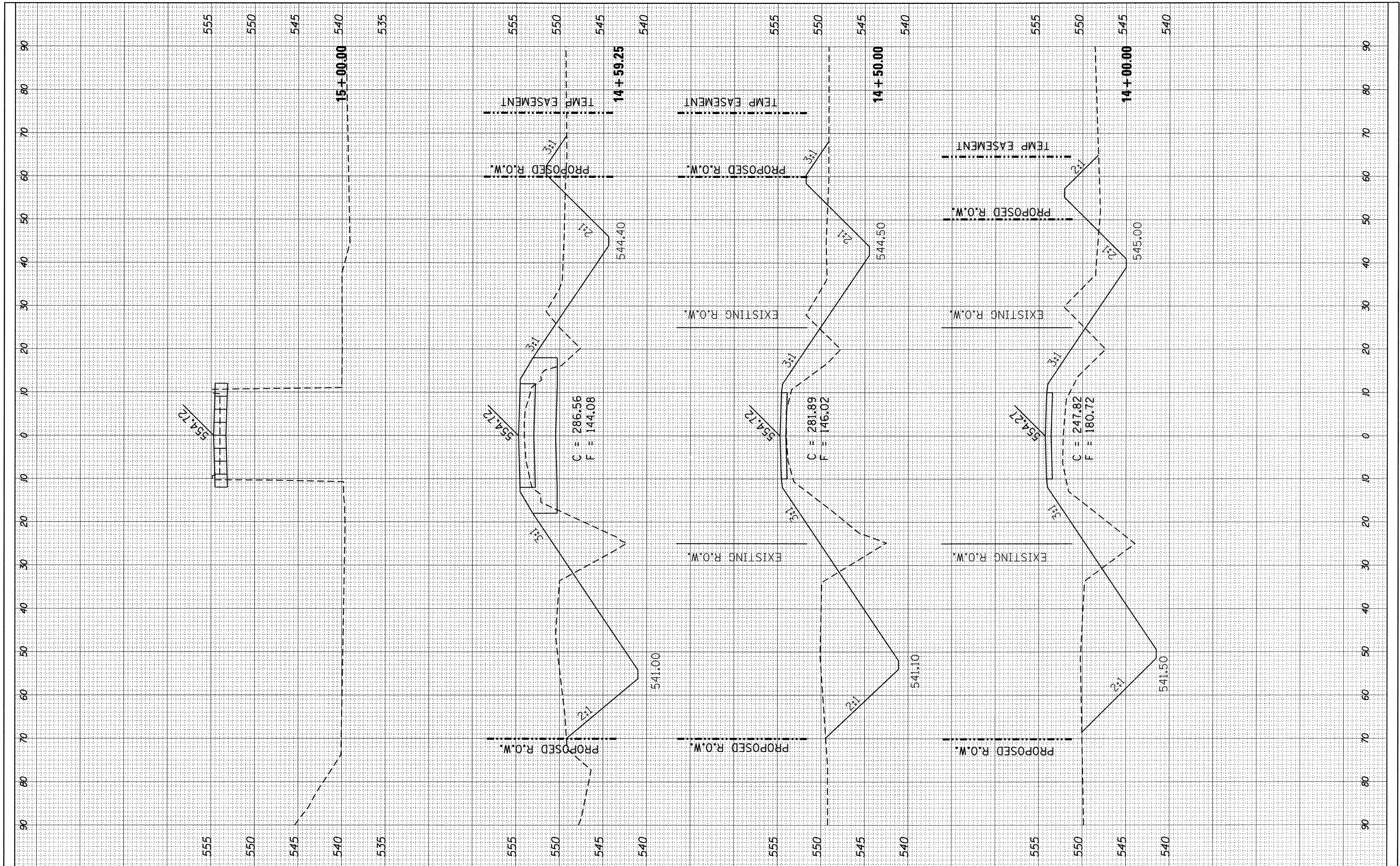


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Default	PLOT SCALE = 18.0000' / 1" / in. PLOT DATE = 1/31/2017			SCALE:	SHEET	OF	SHEETS	STA. 11+50.00	TO	STA. 13+50.00	ILLINOIS FED. AID PROJECT CONTRACT NO. 95810					



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

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

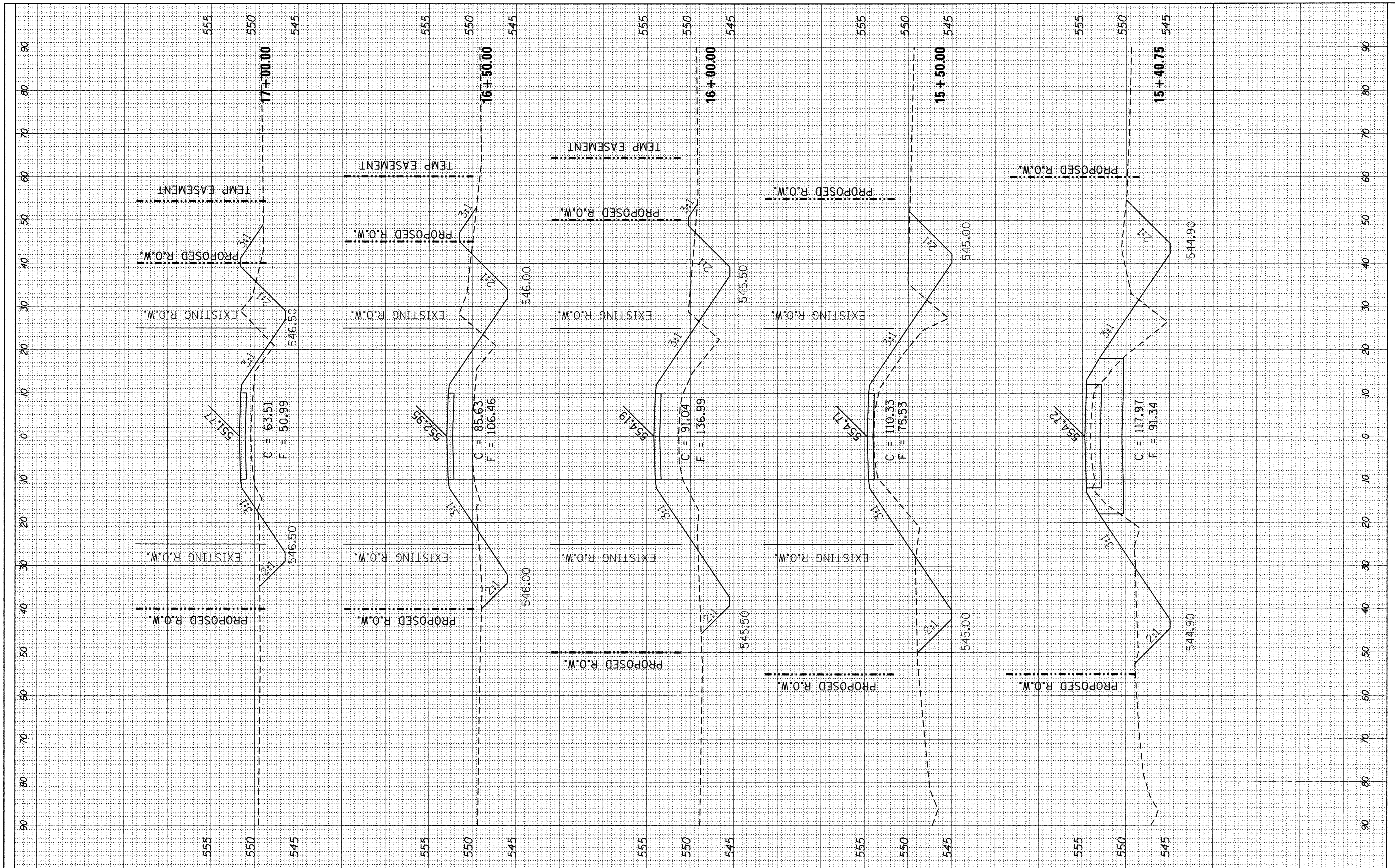


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	PLOT DATE = 1/31/2017	CHECKED - MJS	REVISED -												
		DATE - 5-16-2016	REVISED -												
											CONTRACT NO. 95810		ILLINOIS FED. AID PROJECT		



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

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



FILE NAME = XSSHEET\_3.dgn  
 USER NAME = stel5  
 PLOT SCALE = 10.0000' / in.  
 PLOT DATE = 1/31/2017

DESIGNED -	REVISOR -
DRAWN - ALB	REVISOR -
CHECKED - MJS	REVISOR -
DATE - 5-16-2016	REVISOR -

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**CROSS SECTIONS  
 TR 373 OVER MITCHELL CREEK**

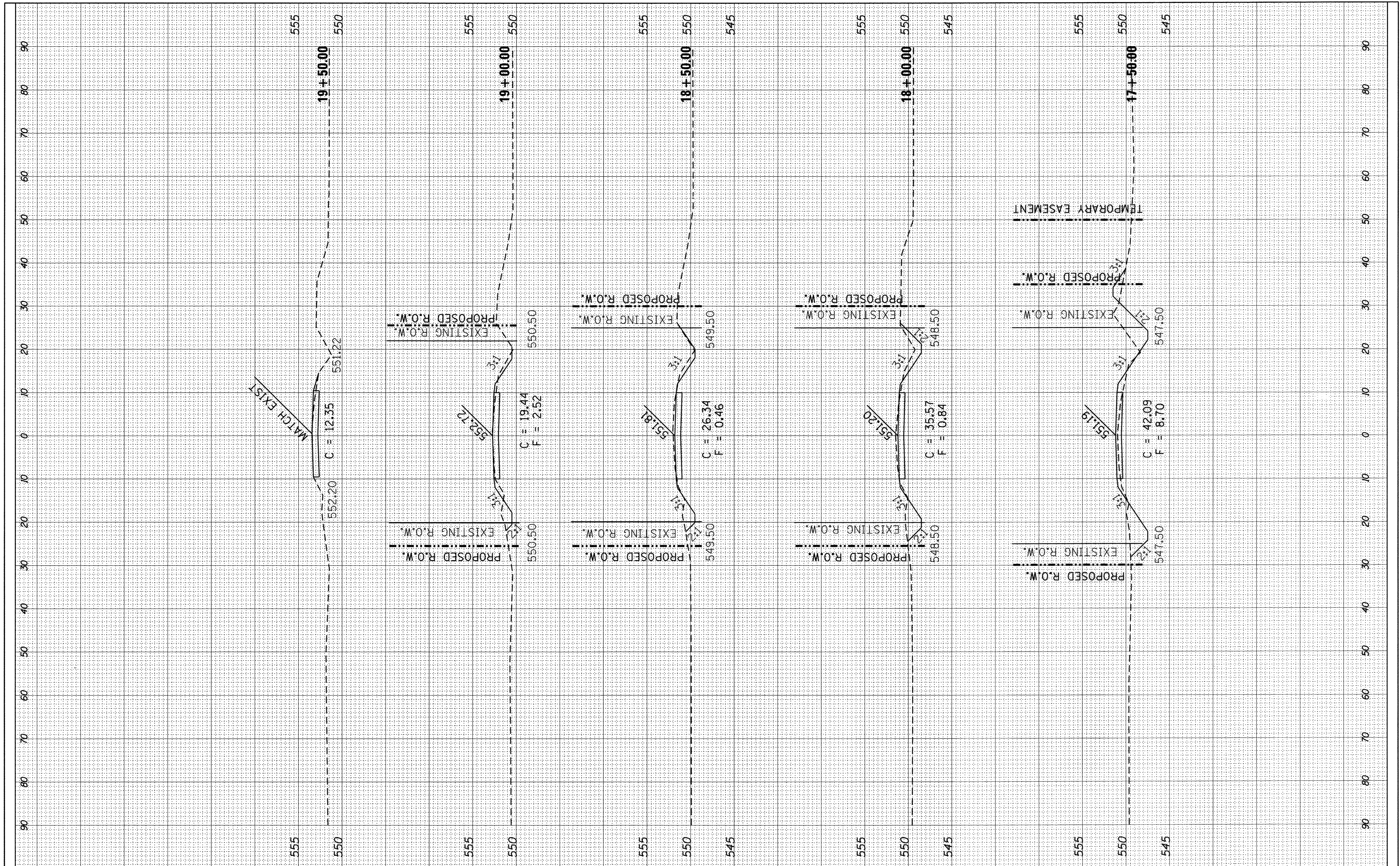
SCALE: SHEET OF SHEETS STA. 15+40.75 TO STA. 17+00.00

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR373	12-09120-00,12-05119-00	SHELBY	19	18
CONTRACT NO. 95810				
ILLINOIS FED. AID PROJECT				



FINAL SURVEY NO.	SURVEYED	BY	DATE
	PLOTTED		
	TEMPLATE		
	AREAS CHECKED		

ORIGINAL SURVEY NO.	SURVEYED	BY	DATE
	PLOTTED		
	TEMPLATE		
	AREAS CHECKED		



FILE NAME = XSSHEET_3.dgn	USER NAME = Stc15	DESIGNED -	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>CROSS SECTIONS TR 373 OVER MITCHELL CREEK</b>			F.A. RTE. TR373	SECTION 12-09120-00,12-05119-00	COUNTY SHELBY	TOTAL SHEETS 19	SHEET NO. 19
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	PLOT DATE = 1/31/2017	CHECKED - MJS	REVISED -								CONTRACT NO. 95810	
		DATE - 5-16-2016	REVISED -									