

06-11-2021 LETTING ITEM 199

INDEX OF SHEETS

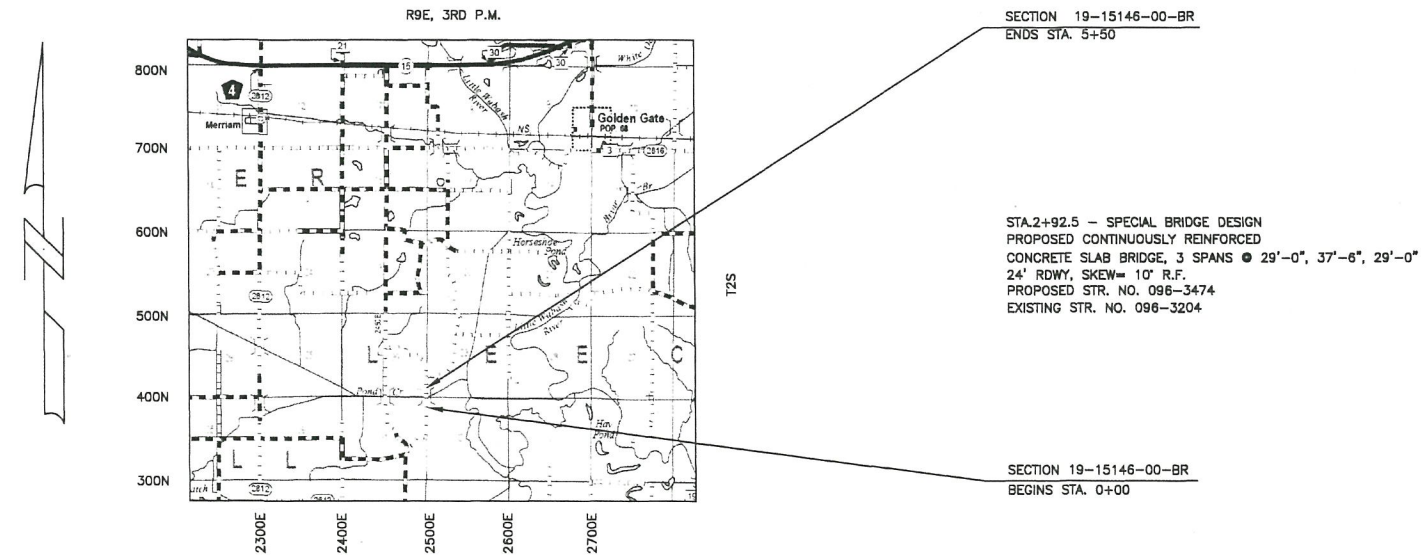
1	COVER SHEET
2	PLAN & PROFILE
2	SUMMARY OF QUANTITIES
3-5	CROSS SECTIONS
6-14	BRIDGE PLANS
15-16	BORINGS

STANDARDS: 515001-04
725001-01
701901-08
BLR 21-9

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PLANS FOR PROPOSED
SURFACE TRANSPORTATION PROGRAM-OFF SYSTEM BRIDGE
WAYNE COUNTY
SECTION 19-15146-00-BR
STRUCTURE NO. 096-3474
TR 558 OVER POND CREEK DRAINAGE DITCH
PROJECT NO. PMOG(569)
JOB NO. C-97-011-22
CONTRACT #95903

SCALES

PLAN 1 INCH = 50 FEET
CROSS SECTIONS 1 INCH = 5 FEET
PROFILE HORZ. 1 INCH = 50 FEET
PROFILE VERT. 1 INCH = 10 FEET



FUNCTIONAL CLASS: RURAL LOCAL ROAD
ADT = 50
DESIGN SPEED = 30 MPH

LOCATION MAP

APPROXIMATE SCALE: 1 INCH = 1 MILE
NET LENGTH = 550.00 FT. = 0.100 MILES

JOHN A. STONE
 062-055012
 LICENSED PROFESSIONAL ENGINEER
 STATE OF ILLINOIS
 04/19/2021
 ILLINOIS REGISTERED PROFESSIONAL ENGINEER # 55012
 LICENSE EXPIRES NOVEMBER 30, 2021
 PROFESSIONAL DESIGN FIRM #184-000832

TOLL FREE JOINT UTILITY LOCATING
INFORMATION FOR EXCAVATORS (J.U.L.I.E.)
TELEPHONE NO. 1-800-892-0123

ILLINOIS DEPARTMENT OF TRANSPORTATION	
APPROVED:	<u>April 12, 2021</u> <i>John A. Stone</i> WAYNE COUNTY ENGINEER
PASSED:	<u>April 20th, 2021</u> <i>Jeffrey M. ...</i> DISTRICT SEVEN ENGINEER OF LOCAL ROADS & STREETS
RELEASING FOR BID BASED ON LIMITED REVIEW	<u>April 20th, 2021</u> <i>Jeffrey M. ...</i> REGION FOUR ENGINEER

Connor & Connor, Inc.
210 East Locust Street
P.O. Box 618
Robinson, Illinois 62454

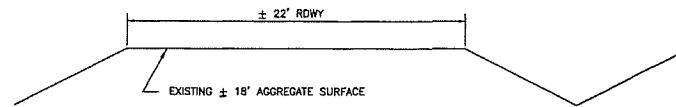
CONNOR & CONNOR
Consulting Engineers
Land Surveyors

Phone: (618) 544-8623
Fax: (618) 544-3012
Design Firm #: 184-000832
www.connorengineers.com

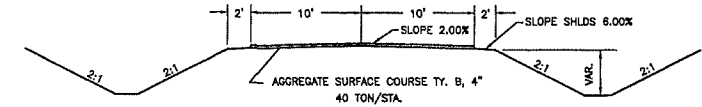
PROJECT NAME: WAYNE COUNTY
SEC. 19-15146-00-BR
LEECH ROAD DISTRICT

COVER SHEET

SHEET NUMBER:
1 OF 16
CONTRACT NUMBER:
95903



TYPICAL CROSS SECTION OF EXISTING ROADWAY

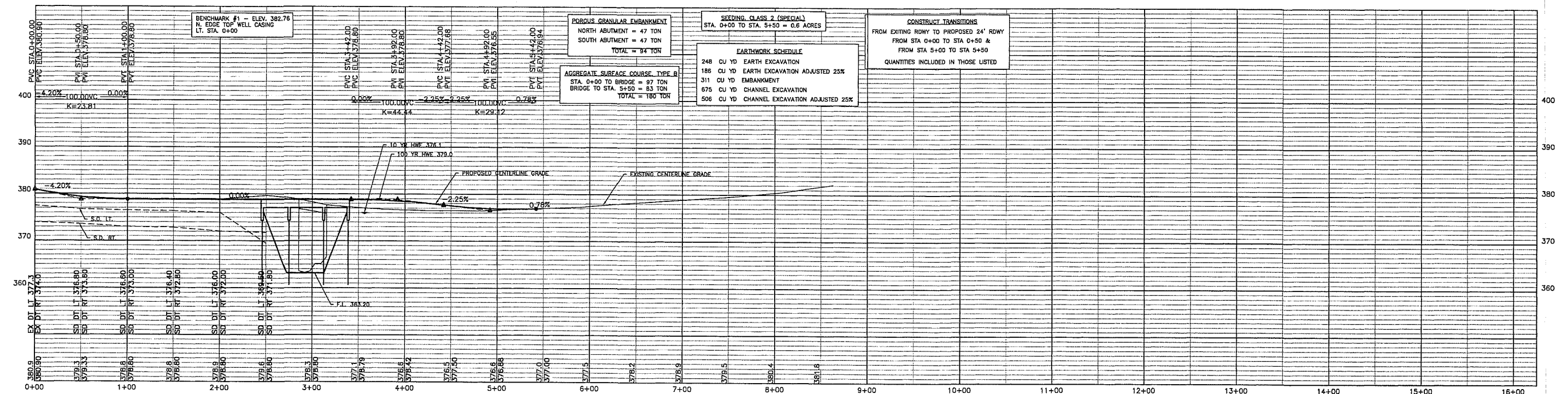
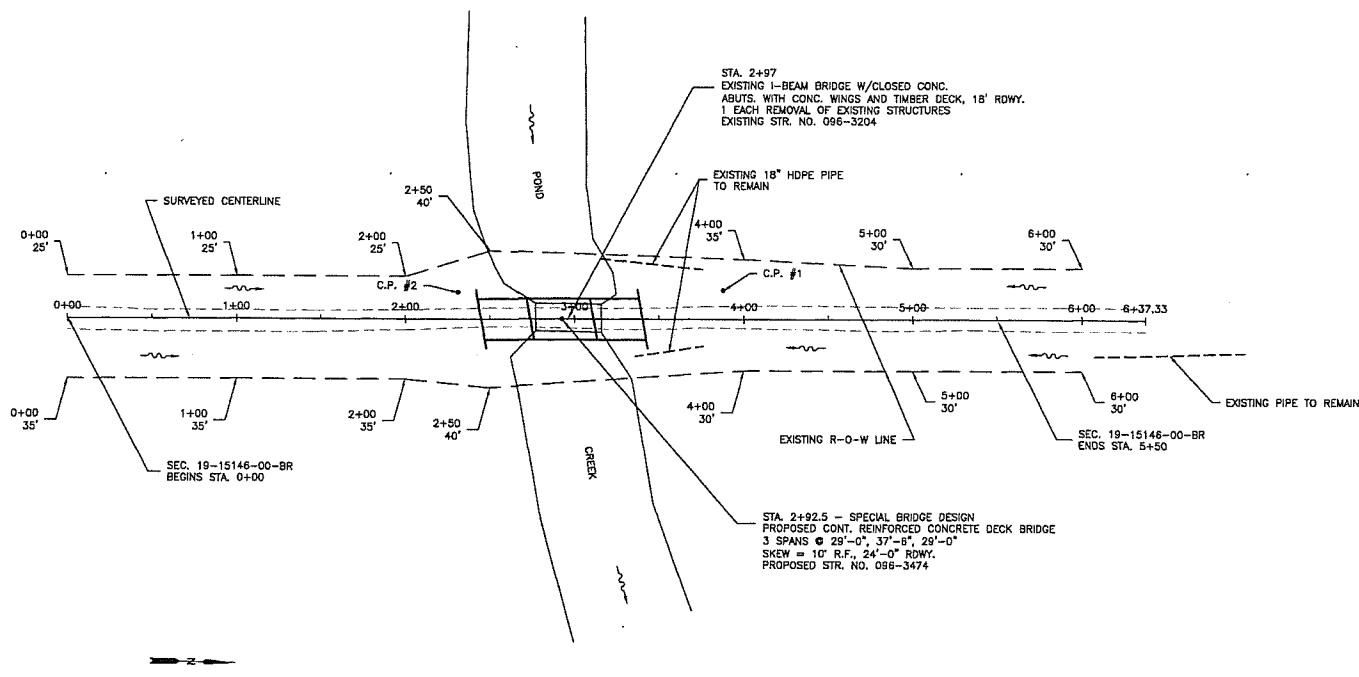


TYPICAL CROSS SECTION OF PROPOSED IMPROVEMENT

SUMMARY OF QUANTITIES

CODE NO.	ITEM	UNIT	TOTAL QUANTITY
X2501000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.6
X7010216	TRAFFIC CONTROL AND PROTECTION, (SPECIAL)	L SUM	1
20200100	EARTH EXCAVATION	CU YD	248
20300100	CHANNEL EXCAVATION	CU YD	675
20700110	POROUS GRANULAR EMBANKMENT	TON	94
28100807	STONE DUMPED RIPRAP, CLASS A4	TON	330
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	180
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50300225	CONCRETE STRUCTURES	CU YD	35.7
50300255	CONCRETE SUPERSTRUCTURE	CU YD	121.2
50300280	CONCRETE ENCASEMENT	CU YD	27.3
50300300	PROTECTIVE COAT	SQ YD	306
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	57,390
50900205	STEEL RAILING, TYPE S-1	FOOT	190
51200957	FURNISHING METAL SHELL PILES 12" X 0.250"	FOOT	710
51202305	DRIVING PILES	FOOT	710
51203200	TEST PILES METAL SHELLS	EACH	2
51500100	NAME PLATES	EACH	1
67100100	MOBILIZATION	L SUM	1
72501000	TERMINAL MARKER - DIRECT APPLIED	EACH	4

* SPECIALTY ITEM



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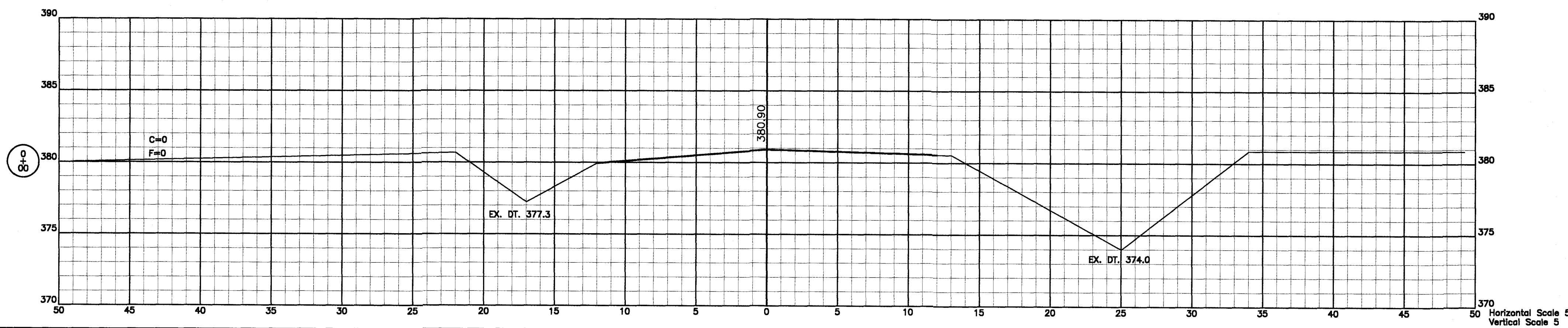
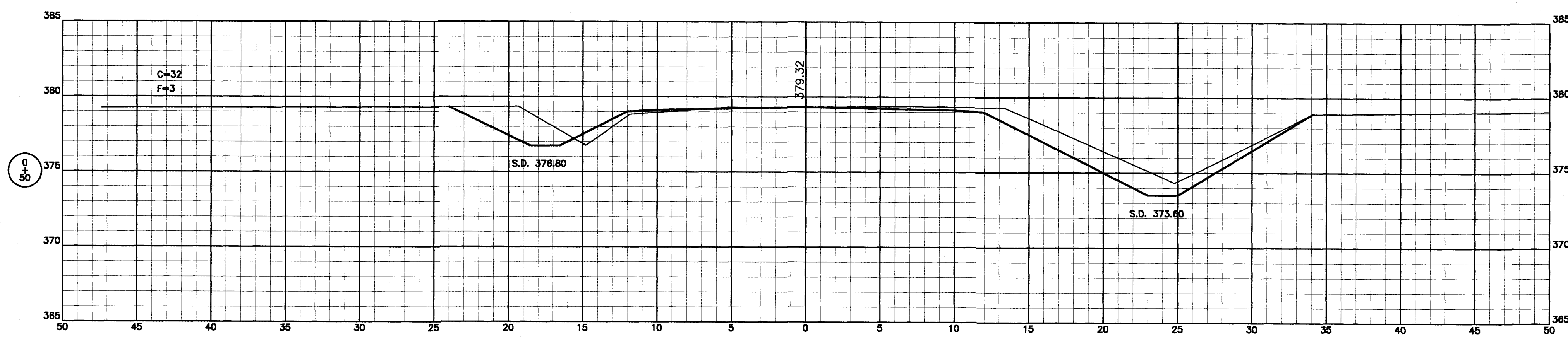
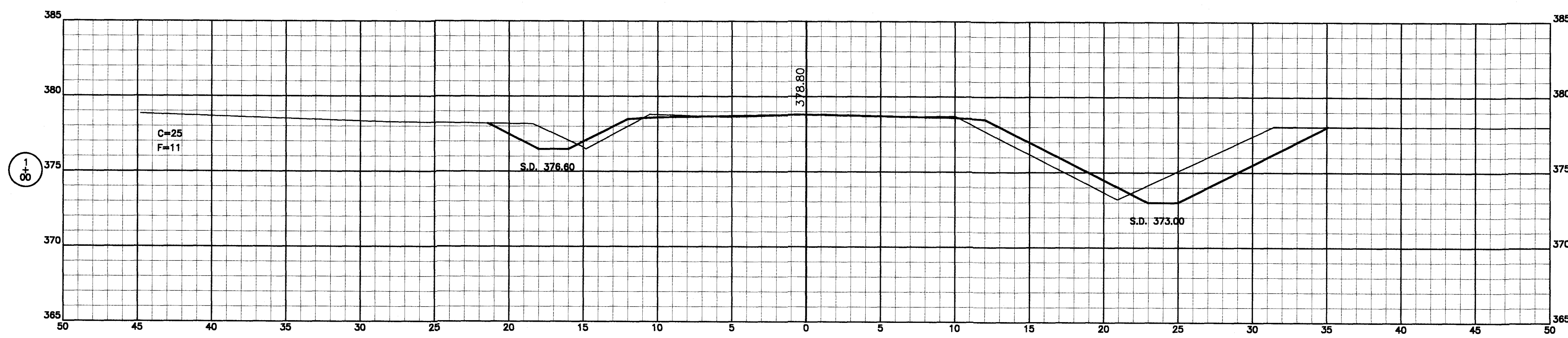
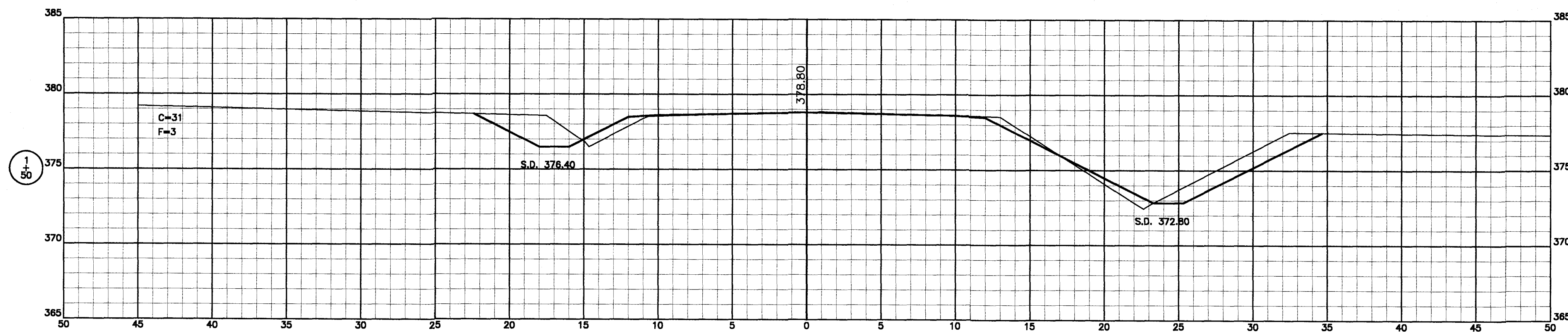
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PROJECT NAME:
WAYNE COUNTY
SEC. 19-15146-00-BR
LEECH ROAD DISTRICT

PLAN - PROFILE SHEET

SHEET NUMBER:
2 OF 16
CONTRACT NUMBER:
95903



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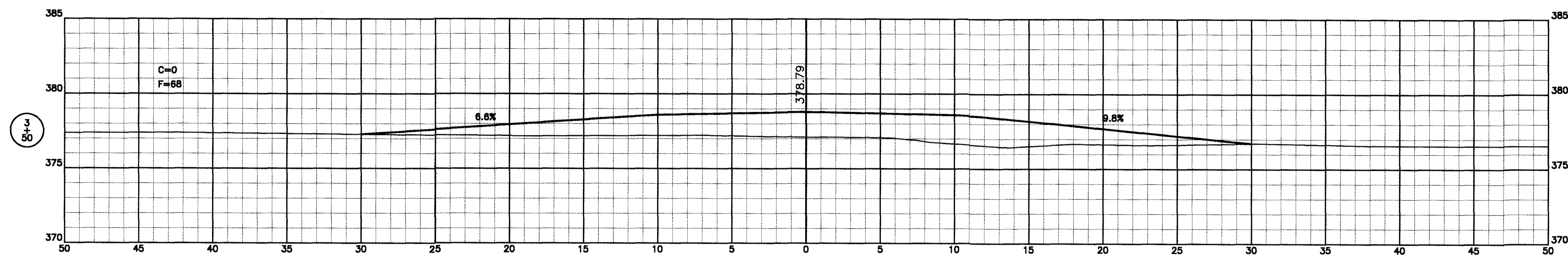
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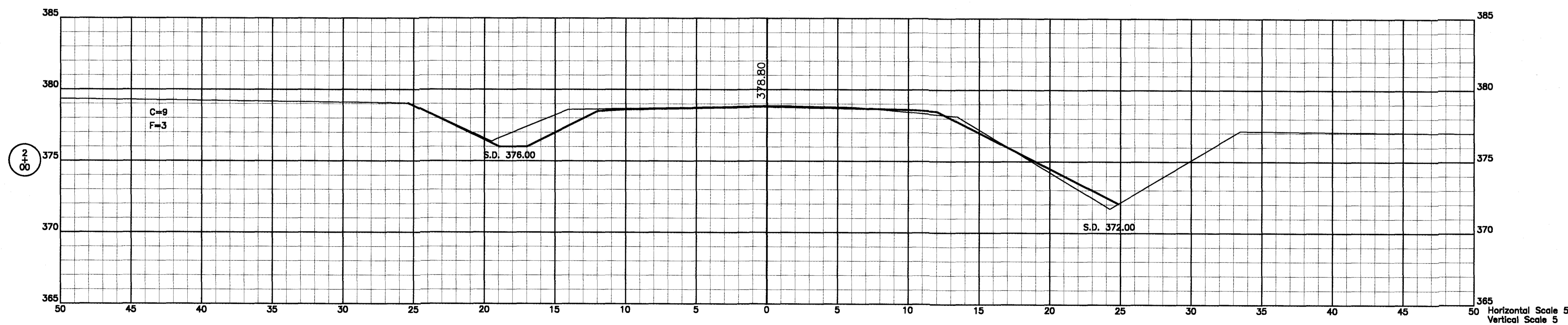
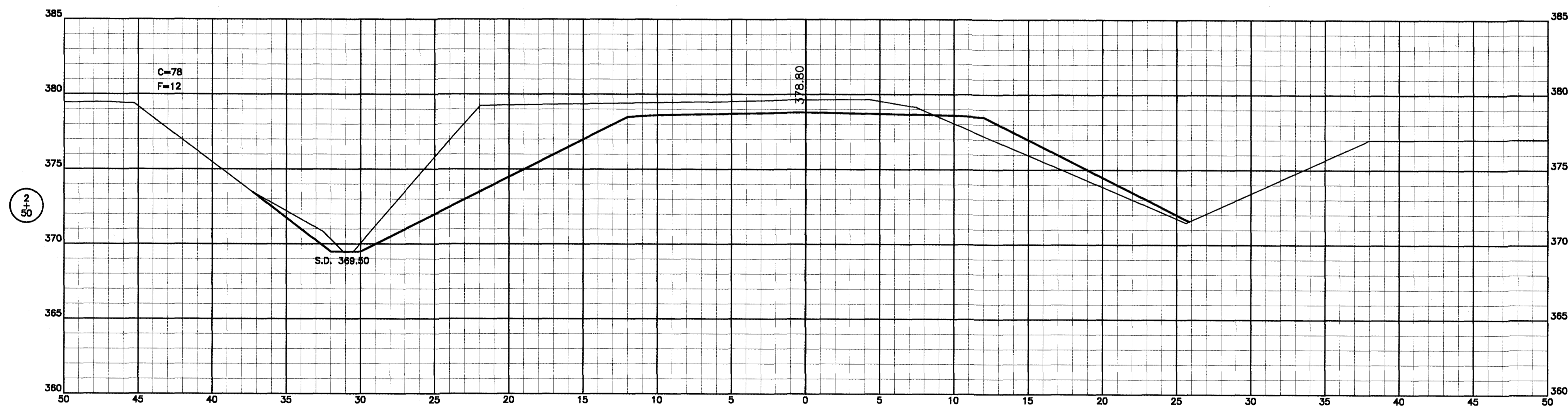
PROJECT NAME:
WAYNE COUNTY
SEC. 19-15146-00-BR
LEECH ROAD DISTRICT

CROSS SECTIONS STA. 0+00 TO STA. 1+50

SHEET NUMBER:
3 OF 16
CONTRACT NUMBER:
95903



BRIDGE



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Robinson, Illinois 62454

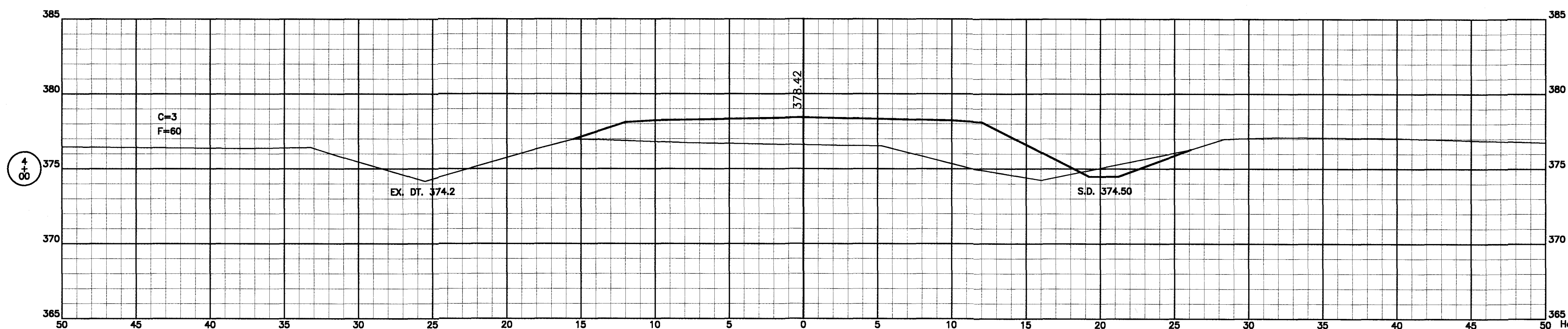
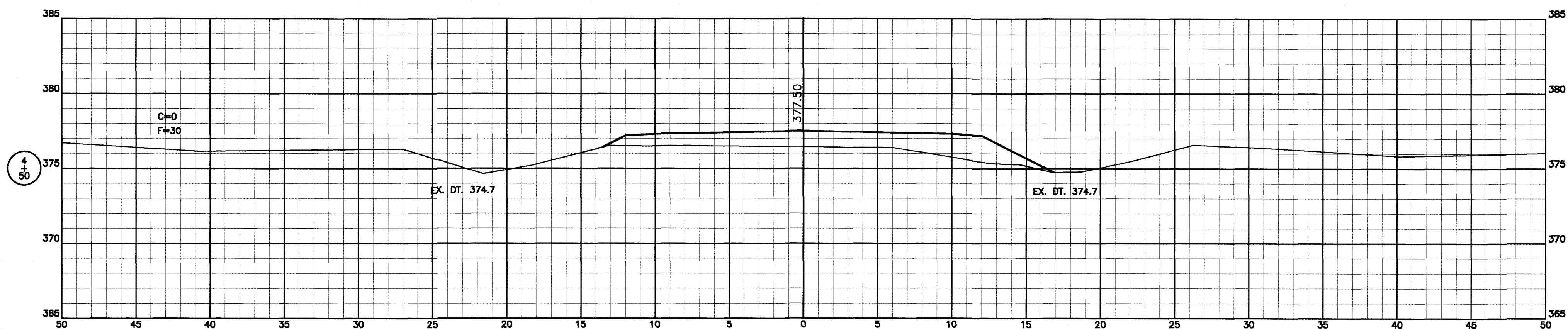
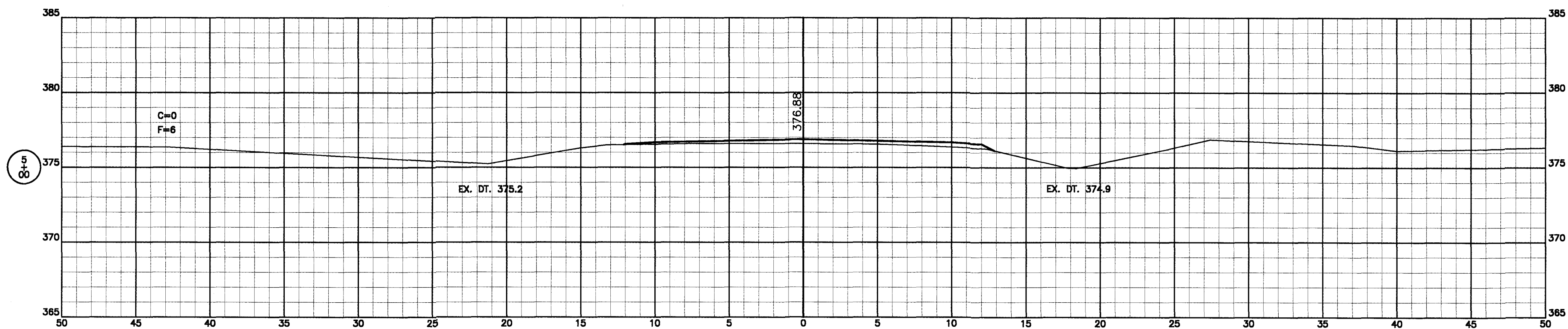
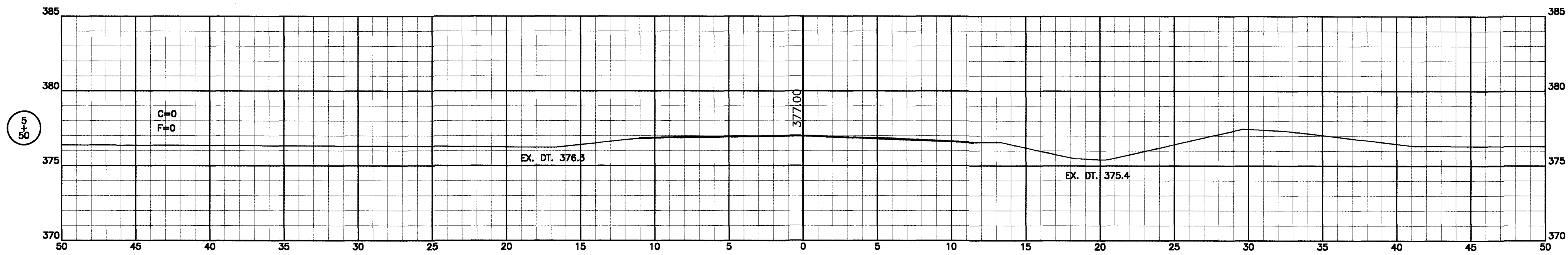
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Fax: (618) 544-3012
Design Firm #: 184-000832
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PROJECT NAME:
WAYNE COUNTY
SEC. 19-15146-00-BR
LEECH ROAD DISTRICT

CROSS SECTIONS STA. 2+00 TO STA. 3+50

SHEET NUMBER:
4 OF 16
CONTRACT NUMBER:
95903



Horizontal Scale 5
Vertical Scale 5

Connor & Connor, Inc.
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PROJECT NAME:
WAYNE COUNTY
SEC. 19-15146-00-BR
LEECH ROAD DISTRICT

CROSS SECTIONS STA. 4+00 TO STA. 5+50

SHEET NUMBER:
5 OF 16
CONTRACT NUMBER:
95903

EXISTING STRUCTURE NO. 096-3204: Sta. 2+97 Existing 1-beam bridge w/closed conc. abuts. with conc, wings and timber deck, 18' rdwy.

Structure closed to traffic during construction.

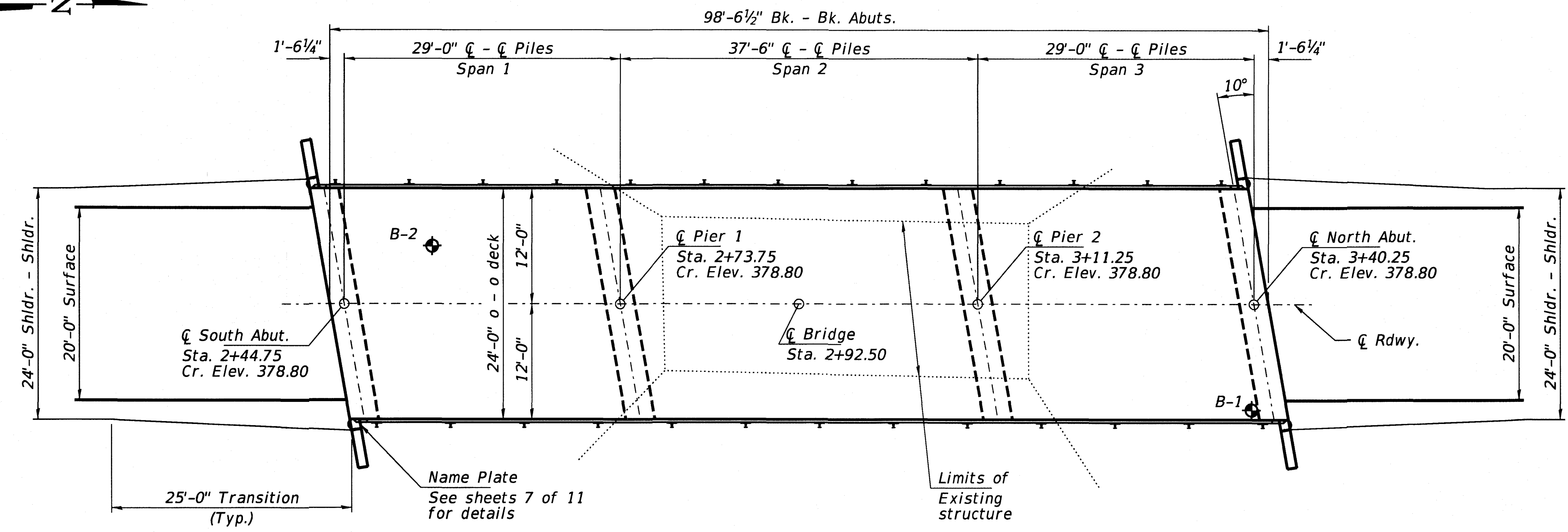
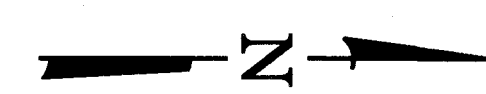
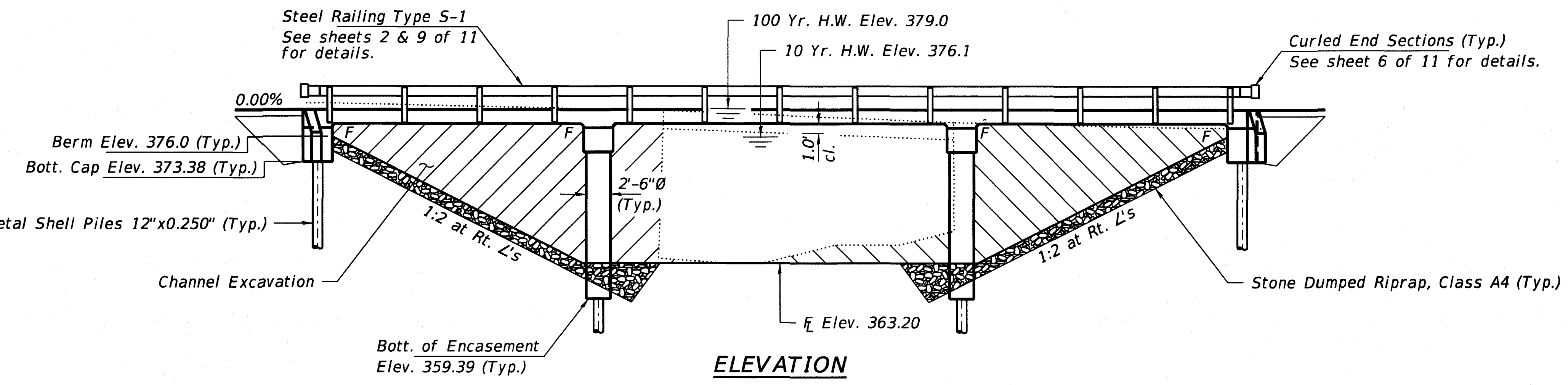
Salvage - See Special Revisions

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 North Abutment and Pier 1 or approved by the Engineer before ordering the remainder of piles.
 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 Contractor shall make allowance for the deflection of forms, shrinkage, and settlement of falsework, in addition to allowance for dead load deflection. Forms for deck slab shall be removed prior to placement of bridge approach slab.
 Protective Coat shall be applied to the top surface and the sides of the concrete deck and wingwalls.
 Reinforcement bars designated (E) shall be epoxy coated.
 Excavation required to construct the Abutments and Piers shall be included in the cost of Concrete Structures. No additional compensation will be allowed for Structure Excavation or Cofferdam Excavation.

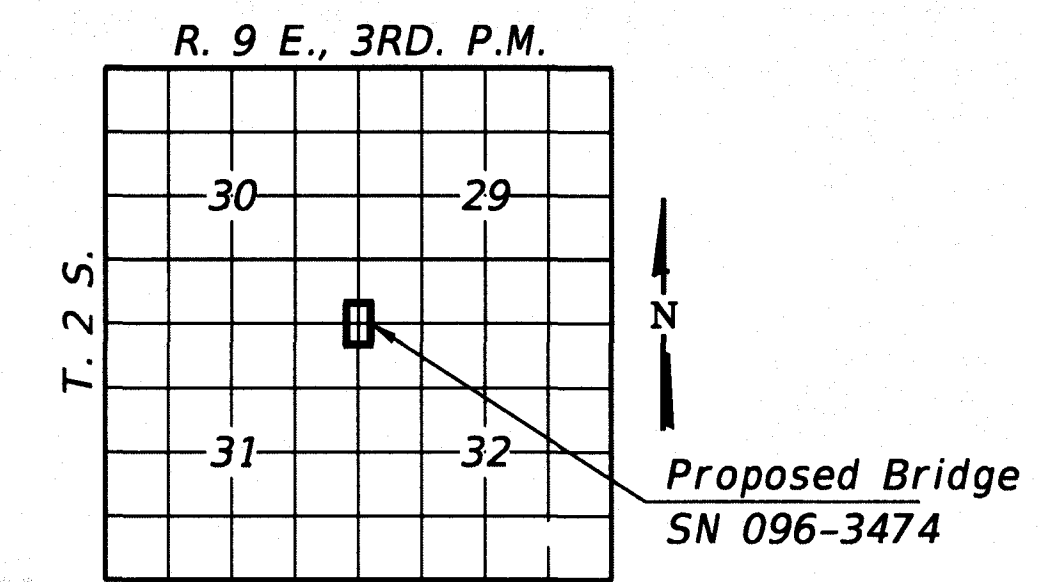
INDEX OF STRUCTURE SHEETS

1. General Plan & Elevation
2. General Details
3. Top of Slab Elevations
4. Superstructure
5. Superstructure Details
6. Steel Railing, Type S-1
7. Abutments
8. Piers
9. Metal Shell Pile Details
- 10-11. Borings



POND CREEK DITCH
 BUILT 202 BY
 WAYNE COUNTY
 SEC. 19-15146-00-BR
 LEECH ROAD DISTRICT
 STR. NO. 096-3474
 LOADING HL-93

NAME PLATE
 See Std. 515001



SEISMIC DATA

Seismic Performance Zone (SPZ) = 2
 Design Spectral Acceleration at 1.0 sec. (SD1) = 0.283g
 Design Spectral Acceleration at 0.2 sec. (SDS) = 0.680g
 Soil Site Class = D

DESIGN SPECIFICATIONS

2020 AASHTO LRFD Bridge Design Specifications, 9th Edition with all interims.

LOADING HL-93

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

DESIGN STRESSES

FIELD UNITS

f'_c = 4,000 psi (Superstructure)
 f'_c = 3,500 psi (Substructure)
 f_y = 60,000 psi (Reinf.)
 f_y = 50,000 psi (Metal Shell Pile) (M270 Gr. 50)

WATERWAY INFORMATION

Drainage Area = 35.84 Sq. Mi. Existing Low Grade Elev. 375.83 @ Sta. 2+97
 Proposed Low Grade Elev. 377.1 @ Sta. 2+92.5

Flood	Freq. Yr.	Q C.F.S.	Opening Exist.	Sq. Ft. Prop.	Nat. H.W.E. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
Design	10	3540	361	796	376.1	-	376.1	376.1
Base	100	6450	367	884	379.0	0.3	379.3	379.4

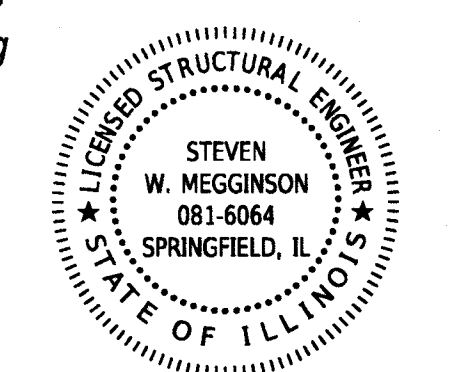
Note: Low water approach grade to remain in place

DESIGN SCOUR ELEVATION TABLE

Event/Limit State	Design Scour Elevations (ft.)				Item 113
	S. Abut.	Pier 1	Pier 2	N. Abut.	
Q100	373.65	374.6	374.6	373.65	5
Q200	373.65	374.6	374.6	373.65	
Design	373.65	374.6	374.6	373.65	
Check	373.65	374.6	374.6	373.65	

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."

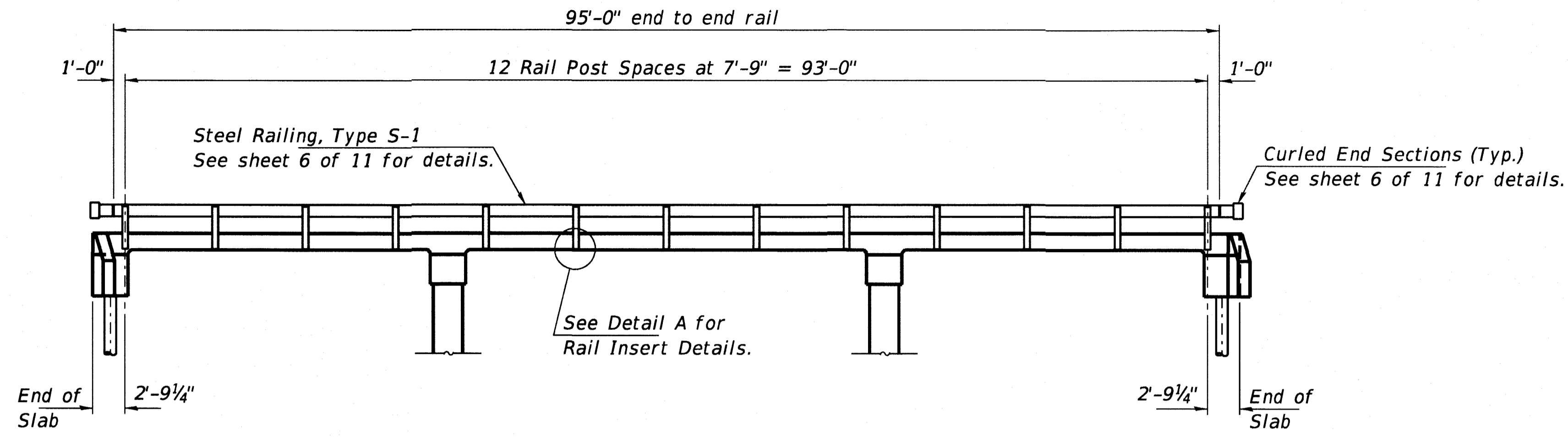
Steven W. Megginson 04/16/2021
 ILLINOIS STRUCTURAL ENGINEER NO. 081-6064



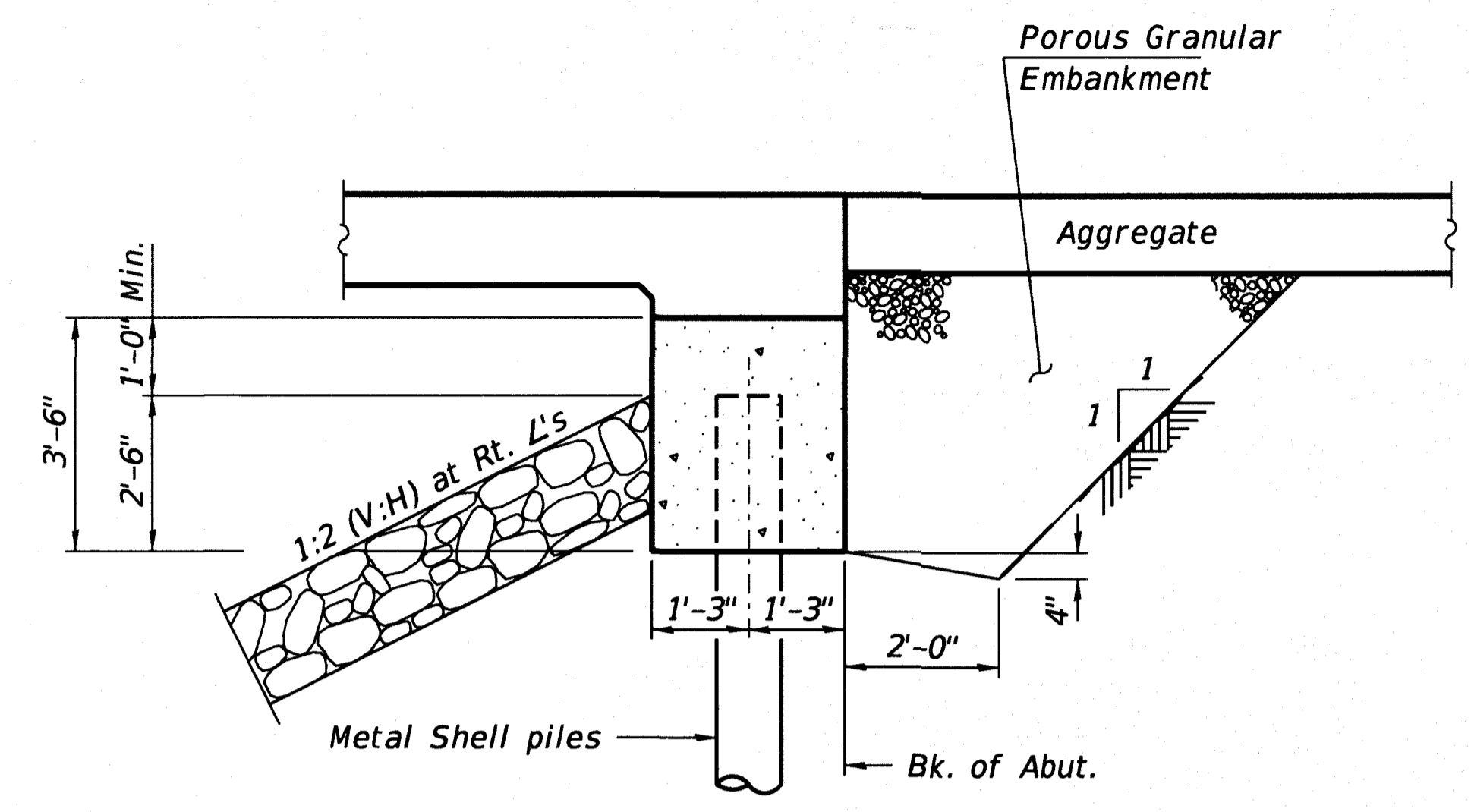
Expires 11-30-2022

GENERAL PLAN & ELEVATION

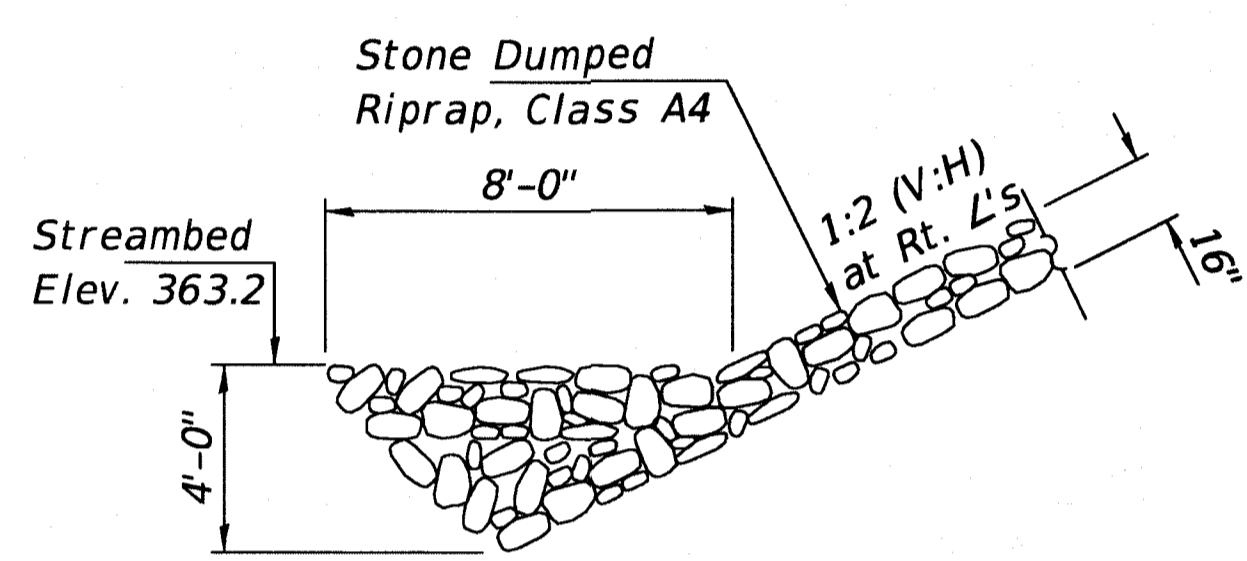
T.R. 558 / LEECH R.D.
 SECTION 19-15146-00-BR
 WAYNE COUNTY
 STATION 2+92.50
 STRUCTURE NO. 096-3474



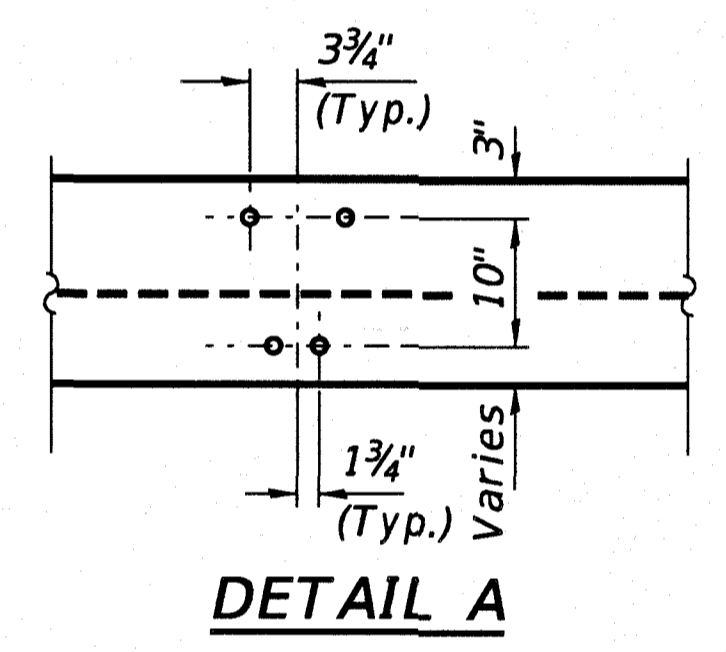
RAILING ELEVATION



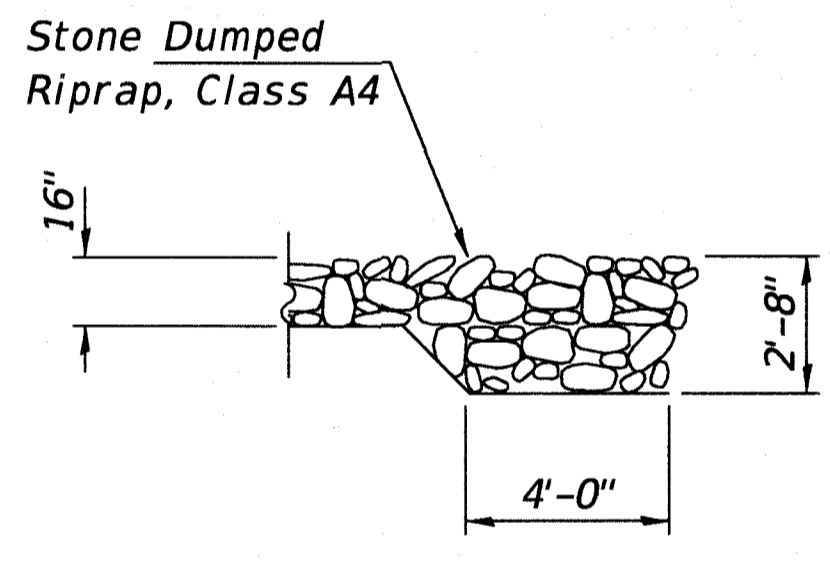
SECTION THRU INTEGRAL ABUTMENT
(Horiz. dim. at Rt. L's)



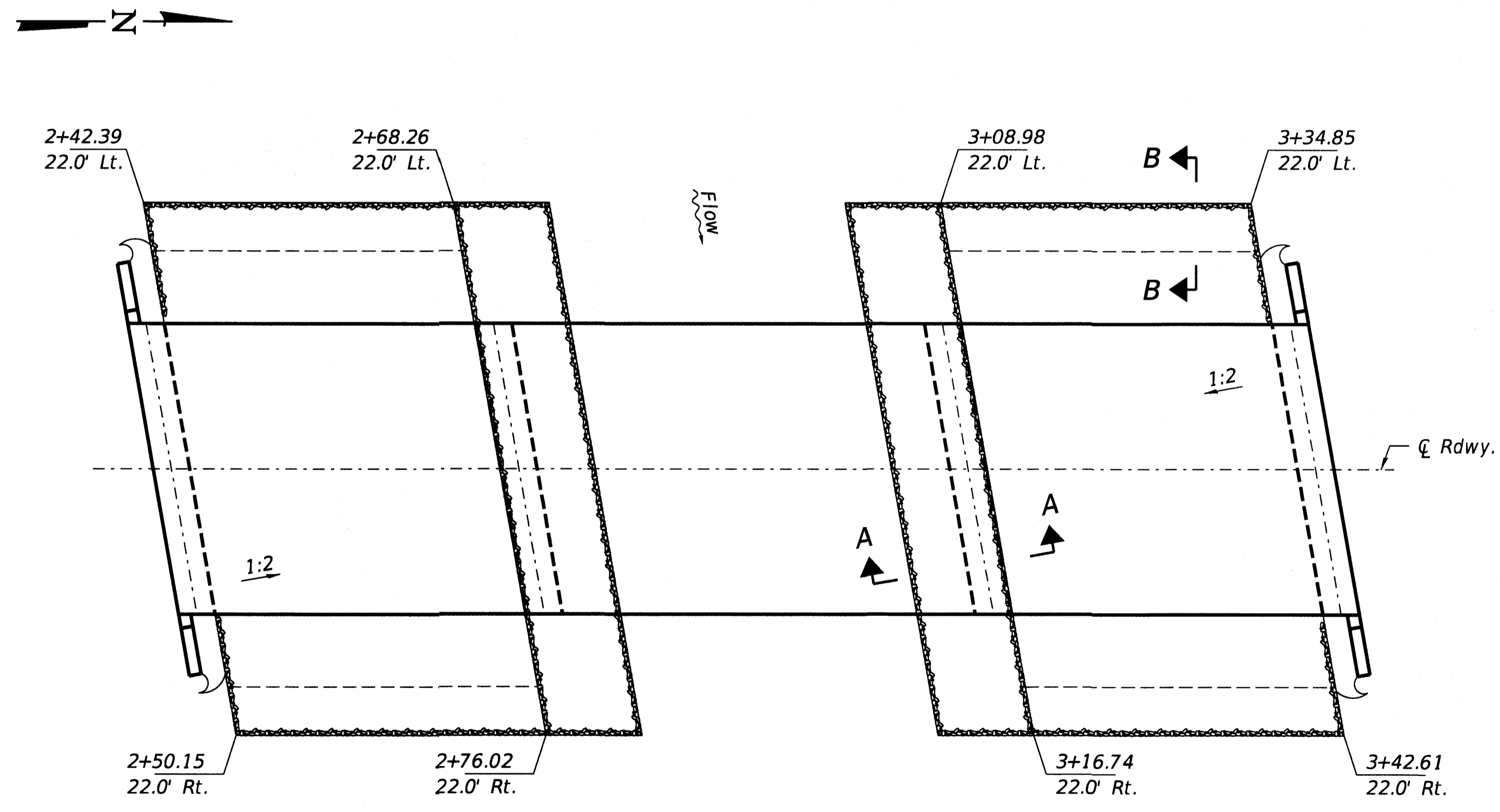
SECTION A-A



DETAIL A



SECTION B-B



RIPRAP PLAN

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	Cu. Yd.			675
Porous Granular Embankment	Ton			94
Stone Dumped Riprap, Class A4	Ton			330
Protective Coat	Sq. Yd.	294	12	306
Removal of Existing Structures	Each			1
Concrete Structures	Cu. Yd.		35.7	35.7
Concrete Superstructure	Cu. Yd.	121.2		121.2
Concrete Encasement	Cu. Yd.		27.3	27.3
Reinforcement Bars, Epoxy Coated	Pound	52,560	4,830	57,390
Steel Railing, Type S1	Foot	190		190
Furnishing Metal Shell Piles 12"x0.250"	Foot		710	710
Driving Piles	Foot		710	710
Test Pile Metal Shells	Each		2	2
Name Plates	Each	1		1
Terminal Marker - Direct Applied	Each	4		4

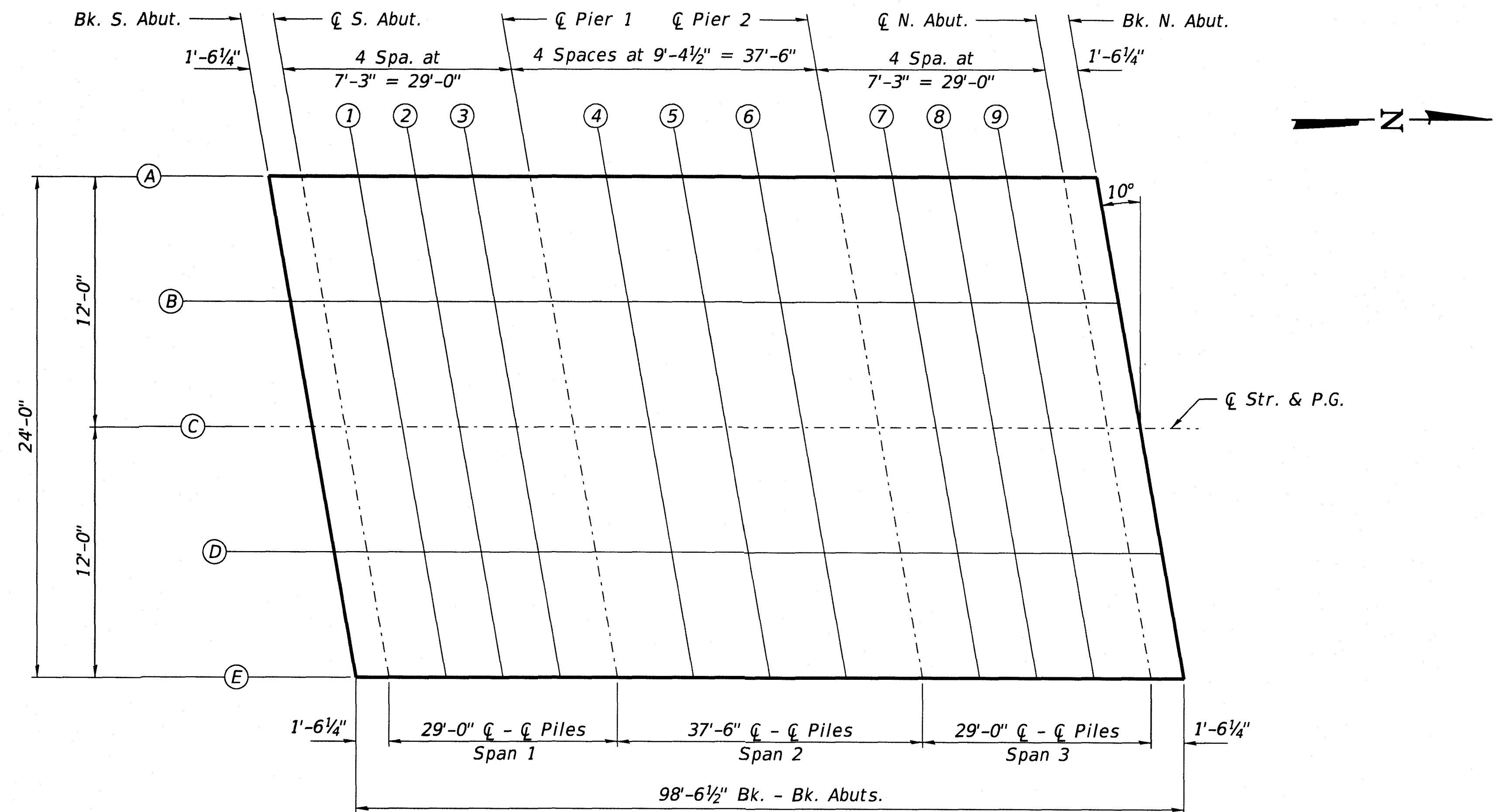
FILE NAME = 200308-ahb-bridge.dgn	USER NAME = rhostok	DESIGNED - P.R.R.	REVISED -
HAMPTON, LENZINI AND RENWICK, INC. 3045 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703	PLOT SCALE = \$SCALES	CHECKED - S.W.M.	REVISED -
ILLINOIS PROFESSIONAL DESIGN FIRM L.S./P.E./S.E. CORP. 184.000652	PLOT DATE = 4/18/2021	DRAWN - R.D.H.	REVISED -
		CHECKED - S.W.M.	REVISED -

STATE OF ILLINOIS
WAYNE COUNTY HIGHWAY DEPARTMENT

GENERAL DETAILS
STRUCTURE NO. 096-3474

SHEET NO. 2 OF 11 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
558	19-15146-00-BR	WAYNE	16	7
LEECH ROAD DISTRICT		CONTRACT NO. 95903		
ILLINOIS FED. AID PROJECT				



PLAN

LOCATION		BK. W.	CL W.	SPAN 1			CL	SPAN 2			CL	SPAN 3			CL E.	BK. E.
LINE	T.	ABUT.	ABUT.	1	2	3	PIER 1	4	5	6	PIER 2	7	8	9	ABUT.	ABUT.
A	ADJ.	378.550	378.550	378.550	378.550	378.550	378.550	378.550	378.550	378.550	378.550	378.550	378.550	378.550	378.550	378.550
	Bott. of Slab	377.133	377.133	377.144	377.144	377.144	377.133	377.154	377.175	377.154	377.133	377.144	377.144	377.144	377.133	377.133

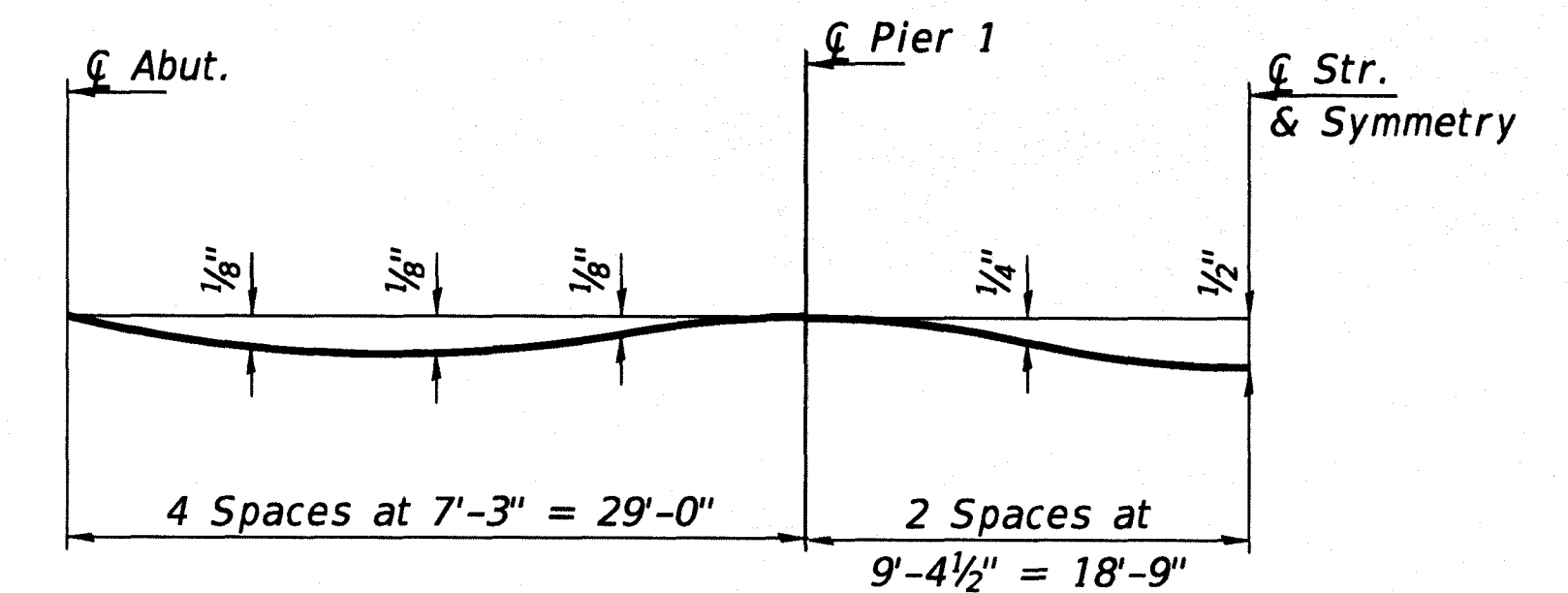
LOCATION		BK. W.	CL W.	SPAN 1			CL	SPAN 2			CL	SPAN 3			CL E.	BK. E.
LINE	T.	ABUT.	ABUT.	1	2	3	PIER 1	4	5	6	PIER 2	7	8	9	ABUT.	ABUT.
B	ADJ.	378.675	378.675	378.675	378.675	378.675	378.675	378.675	378.675	378.675	378.675	378.675	378.675	378.675	378.675	378.675
	Bott. of Slab	377.425	377.425	377.435	377.435	377.435	377.425	377.446	377.467	377.446	377.425	377.435	377.435	377.435	377.425	377.425

LOCATION		BK. W.	CL W.	SPAN 1			CL	SPAN 2			CL	SPAN 3			CL E.	BK. E.
LINE	T.	ABUT.	ABUT.	1	2	3	PIER 1	4	5	6	PIER 2	7	8	9	ABUT.	ABUT.
C	ADJ.	378.800	378.800	378.800	378.800	378.800	378.800	378.800	378.800	378.800	378.800	378.800	378.800	378.800	378.800	378.800
	Bott. of Slab	377.550	377.550	377.560	377.560	377.560	377.550	377.571	377.592	377.571	377.550	377.560	377.560	377.560	377.550	377.550

LOCATION		BK. W.	CL W.	SPAN 1			CL	SPAN 2			CL	SPAN 3			CL E.	BK. E.
LINE	T.	ABUT.	ABUT.	1	2	3	PIER 1	4	5	6	PIER 2	7	8	9	ABUT.	ABUT.
D	ADJ.	378.675	378.675	378.685	378.685	378.685	378.675	378.696	378.717	378.696	378.675	378.685	378.685	378.685	378.675	378.675
	Bott. of Slab	377.425	377.425	377.435	377.435	377.435	377.425	377.446	377.467	377.446	377.425	377.435	377.435	377.435	377.425	377.425

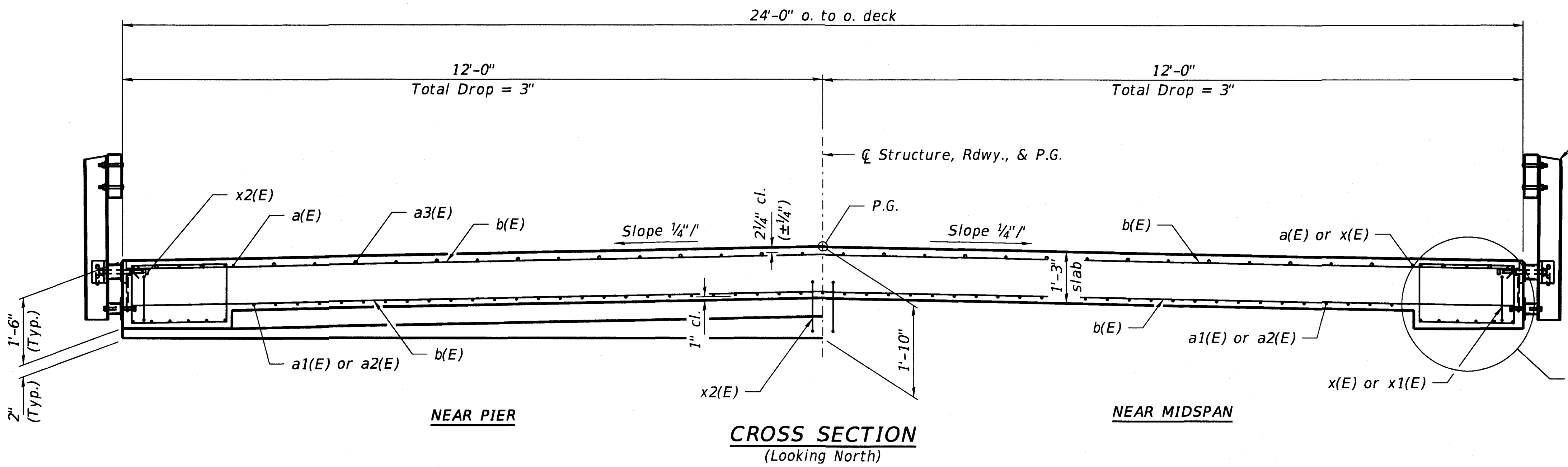
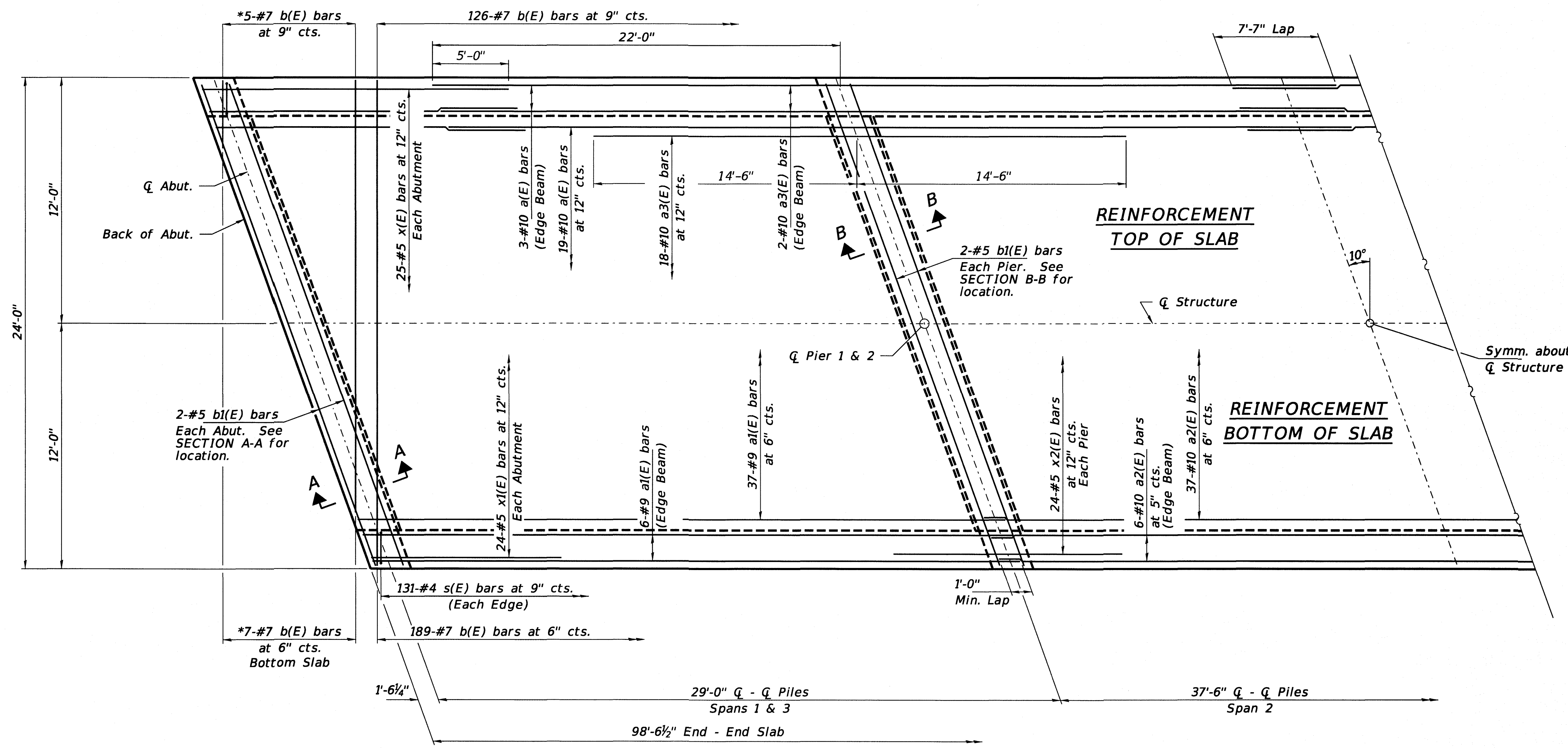
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LINE	T.	ABUT.	ABUT.	1	2	3	PIER 1	4	5	6	PIER 2	7	8	9	ABUT.	ABUT.
E	ADJ.	378.550	378.550	378.550	378.550	378.550	378.550	378.550	378.550	378.550	378.550	378.550	378.550	378.550	378.550	378.550
	Bott. of Slab	377.133	377.133	377.144	377.144	377.144	377.133	377.154	377.175	377.154	377.133	377.144	377.144	377.144	377.133	377.133

T. - Theoretical elevation at top of slab
 Adj. - T adjusted for dead load deflection
 * Bottom of slab elevation equals bottom of edge beam



DEAD LOAD DEFLECTION DIAGRAM
 (Includes weight of concrete only.)

Notes:
 The deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown.
 The Contractor shall make allowance for the deflection of forms, shrinkage and settlement of falsework in addition to allowance for dead load deflection.



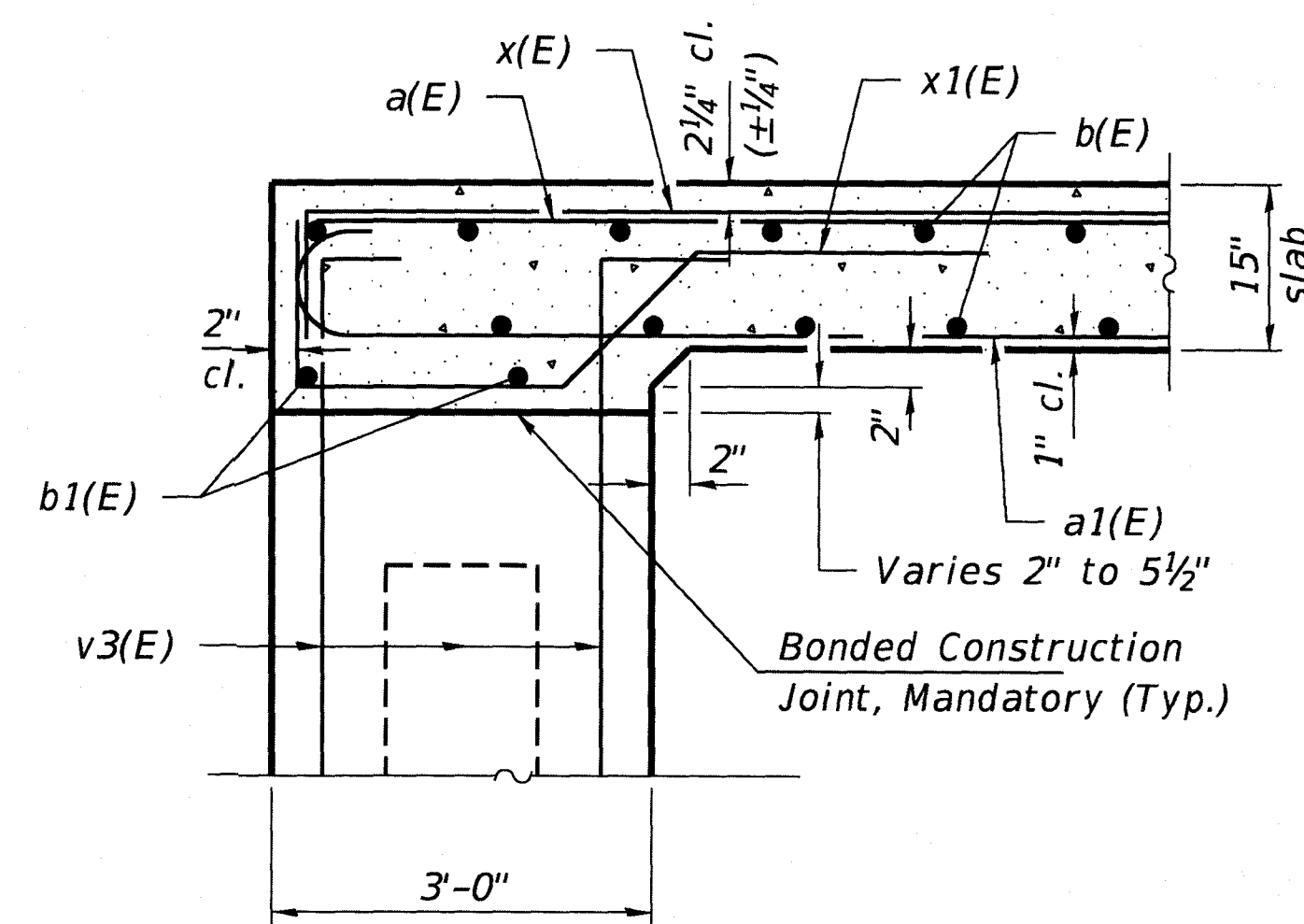
Steel Railing, Type S-1
See sheets 2 & 6 of 11 for details.

Notes:
See sheets 5 of 11 for Superstructure Details and Bill of Material.
See sheet 5 of 11 for SECTION A-A, SECTION B-B and DETAIL A.

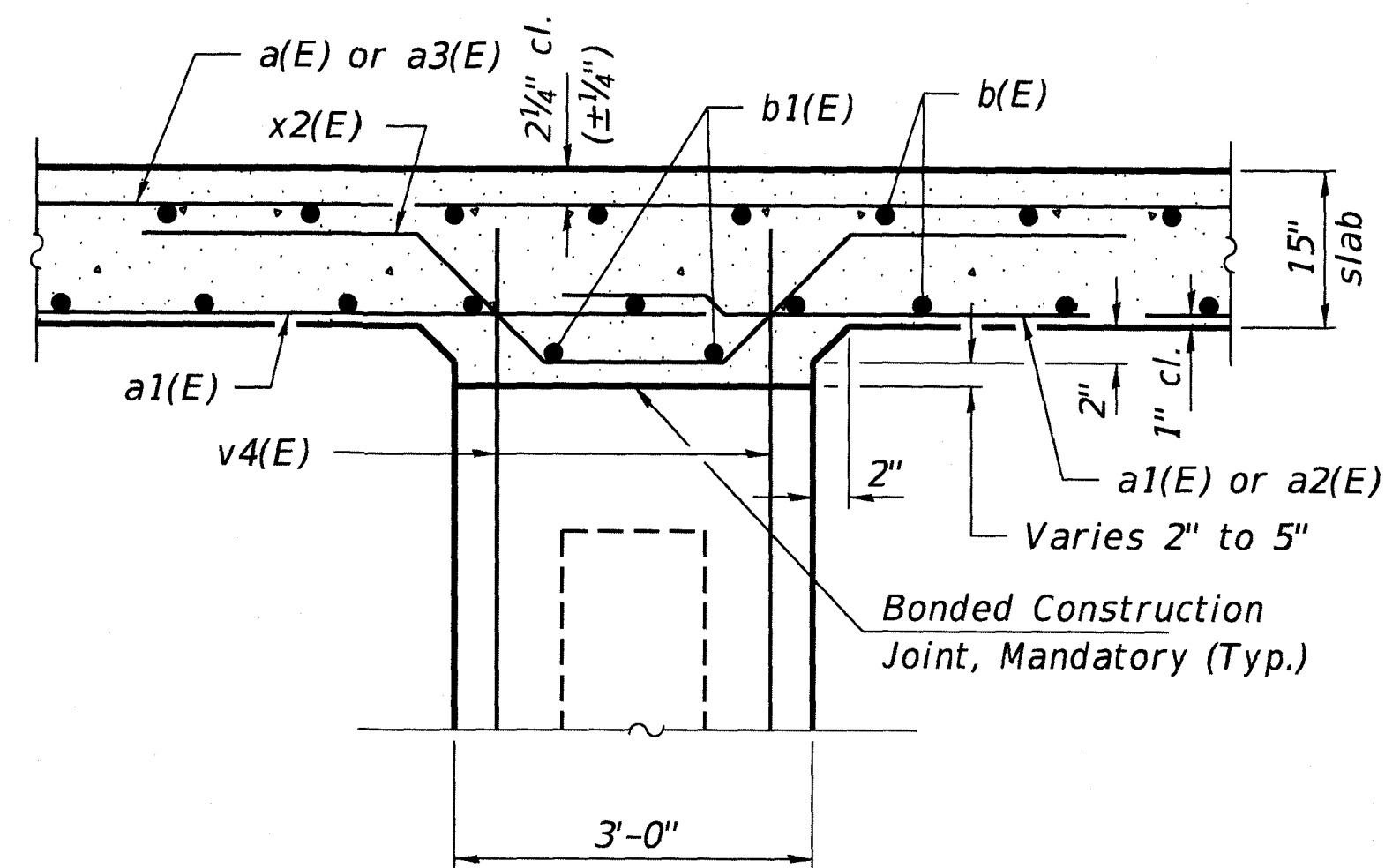
* Order b(E) bars full length. Cut to fit skew and use remainder of bars in opposite end.

MIN. BAR LAP
#10 = 7'-7"

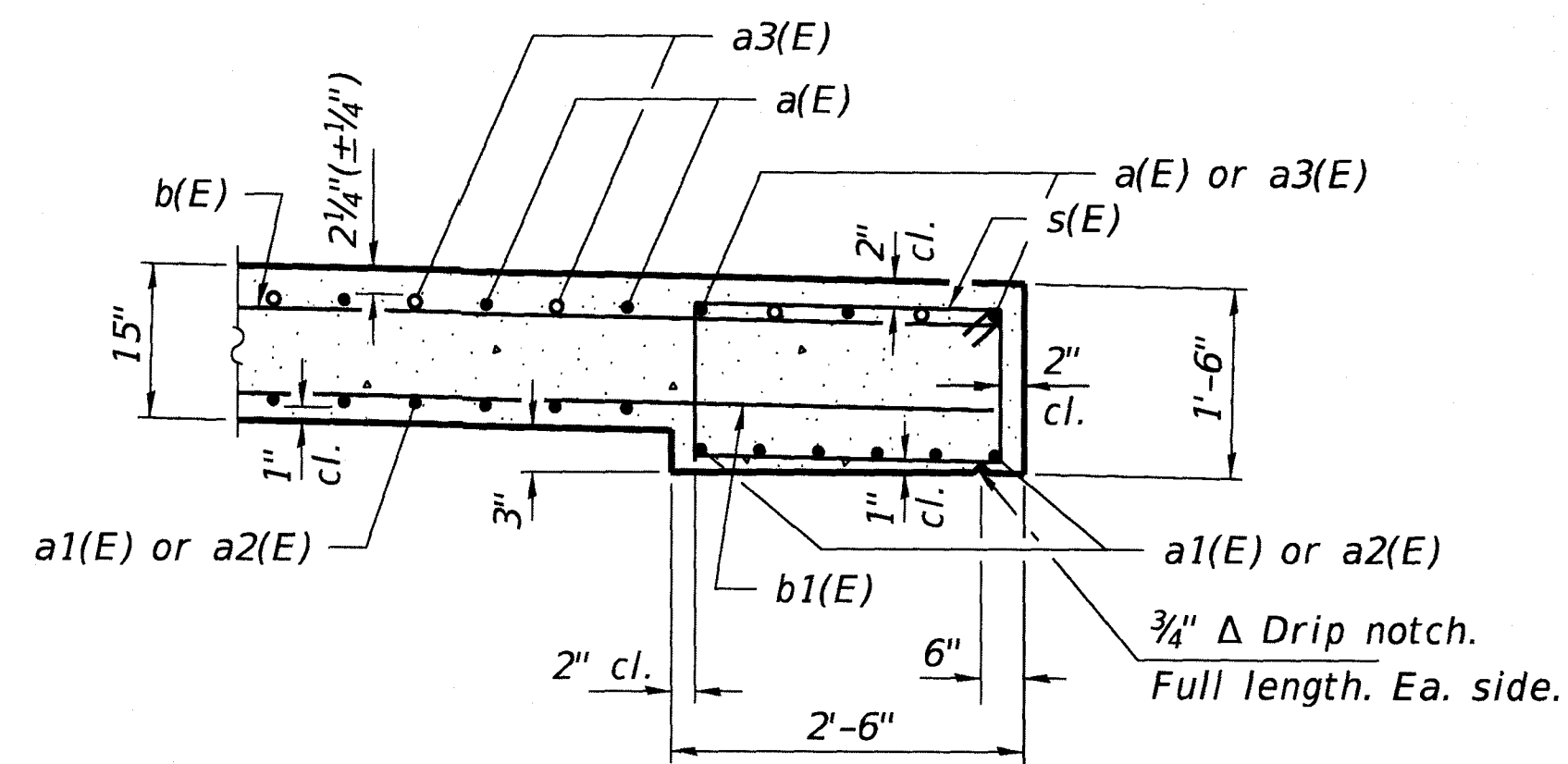
FILE NAME = 200309-ehi-bridge.dgn	USER NAME = rmosick	DESIGNED - P.R.R.	REVISED -	STATE OF ILLINOIS WAYNE COUNTY HIGHWAY DEPARTMENT	SUPERSTRUCTURE STRUCTURE NO. 096-3474	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND RENWICK, INC. 3000 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703	PLOT SCALE = \$SCALES	CHECKED - S.W.M.	REVISED -			558	19-15146-00-BR	WAYNE	16	9
ILLINOIS PROFESSIONAL DESIGN FIRM 131 PE / BE CORP. 184.000659	PLOT DATE = 4/18/2021	DRAWN - R.D.H.	REVISED -			LEECH ROAD DISTRICT		CONTRACT NO. 95903		
		CHECKED - S.W.M.	REVISED -			ILLINOIS FED. AID PROJECT				



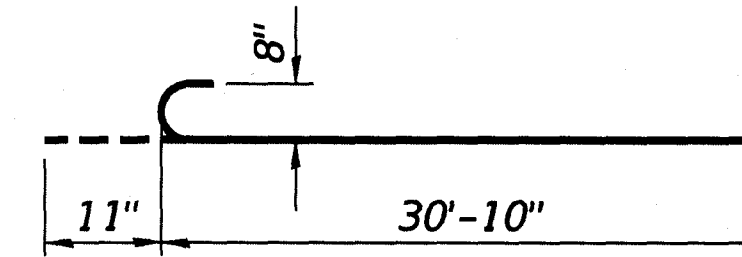
SECTION A-A



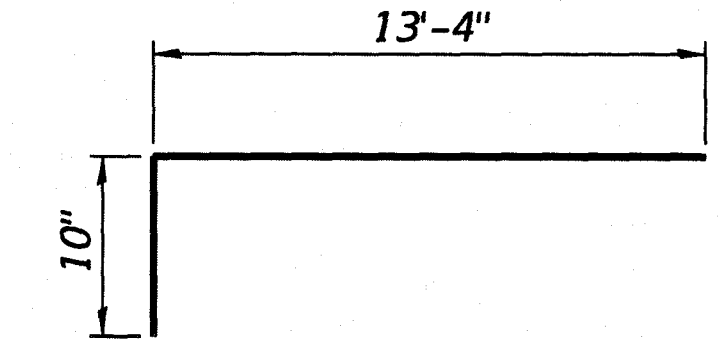
SECTION B-B



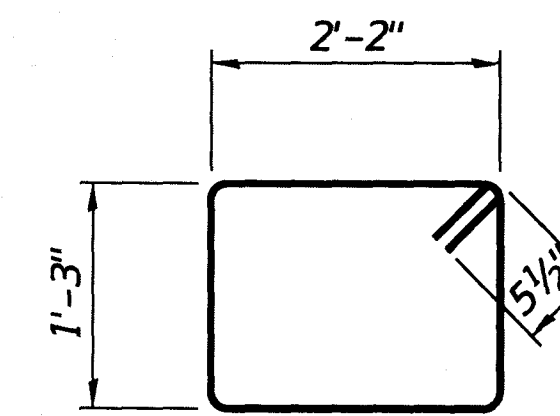
DETAIL A



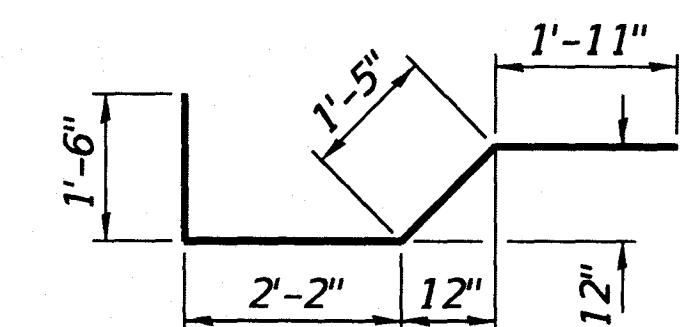
BAR a1(E)



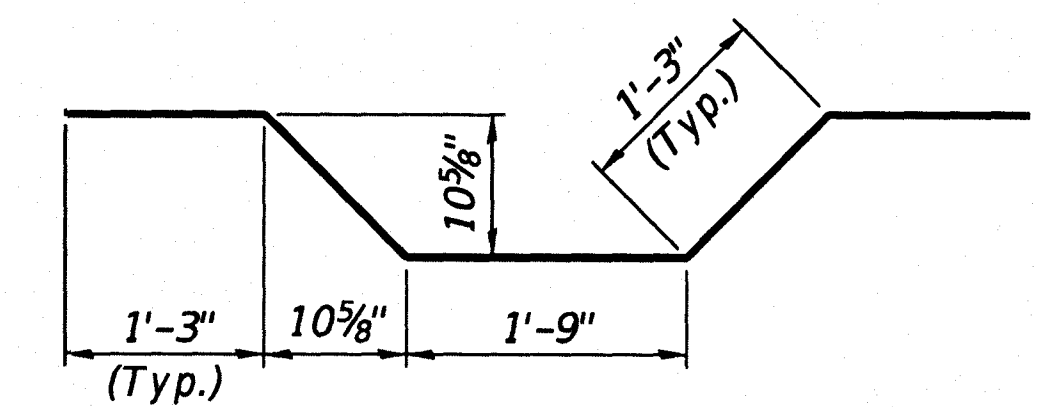
BAR x(E)



BAR s(E)



BAR x1(E)



BAR x2(E)

**SUPERSTRUCTURE
BILL OF MATERIAL**

BAR	NO.	SIZE	LENGTH	SHAPE
a(E)	50	#10	44'-6"	—
a1(E)	98	#9	31'-9"	C
a2(E)	49	#10	38'-6"	—
a3(E)	44	#10	29'-0"	—
b(E)	327	#7	23'-8"	—
b1(E)	8	#5	24'-0"	—
s(E)	262	#4	7'-9"	□
x(E)	50	#5	14'-2"	┌
x1(E)	48	#5	7'-0"	┌
x2(E)	48	#5	6'-9"	┌
Protective Coat			Sq. Yd.	294
Concrete Superstructures			Cu. Yd.	121.2
Reinforcement Bars, Epoxy Coated			Pound	52,560

FILE NAME = 200309-ah-bridge.dgn
 USER NAME = rhoelck
 DESIGNED - P.R.R.
 CHECKED - S.W.M.
 DRAWN - R.D.H.
 CHECKED - S.W.M.

PLOT SCALE = SCALES
 PLOT DATE = 4/18/2021

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

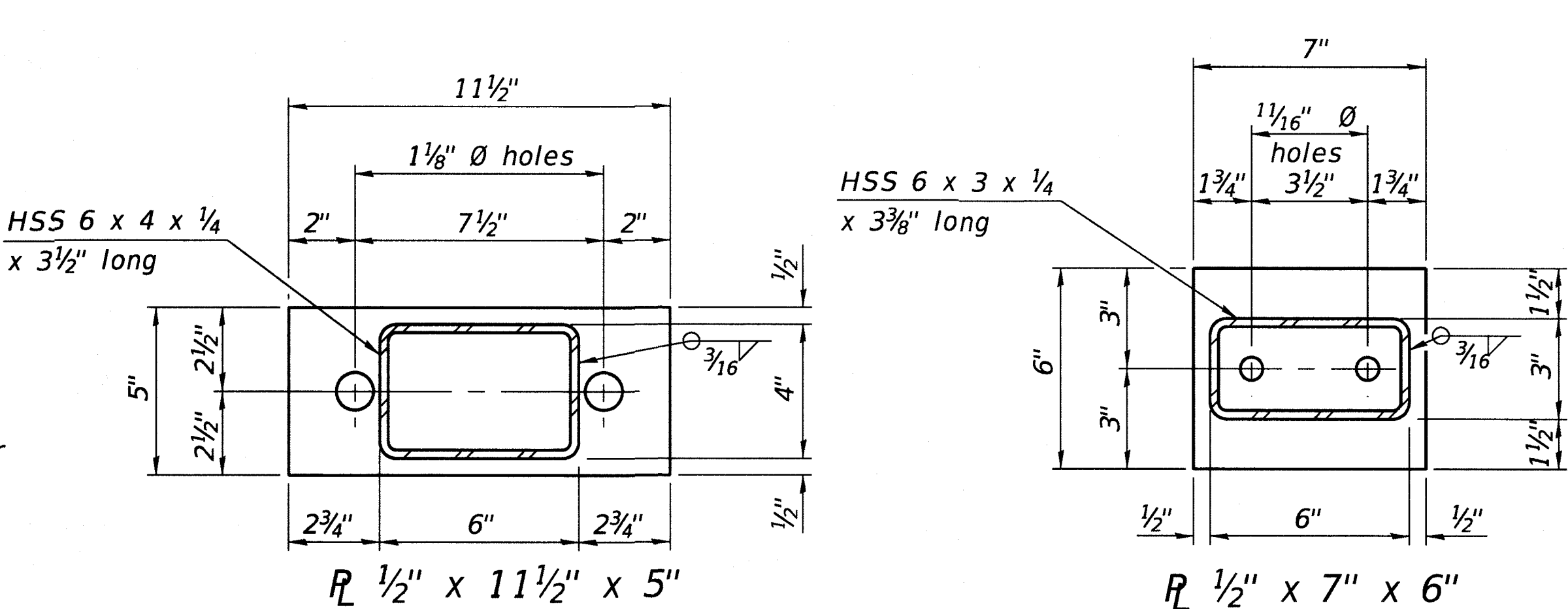
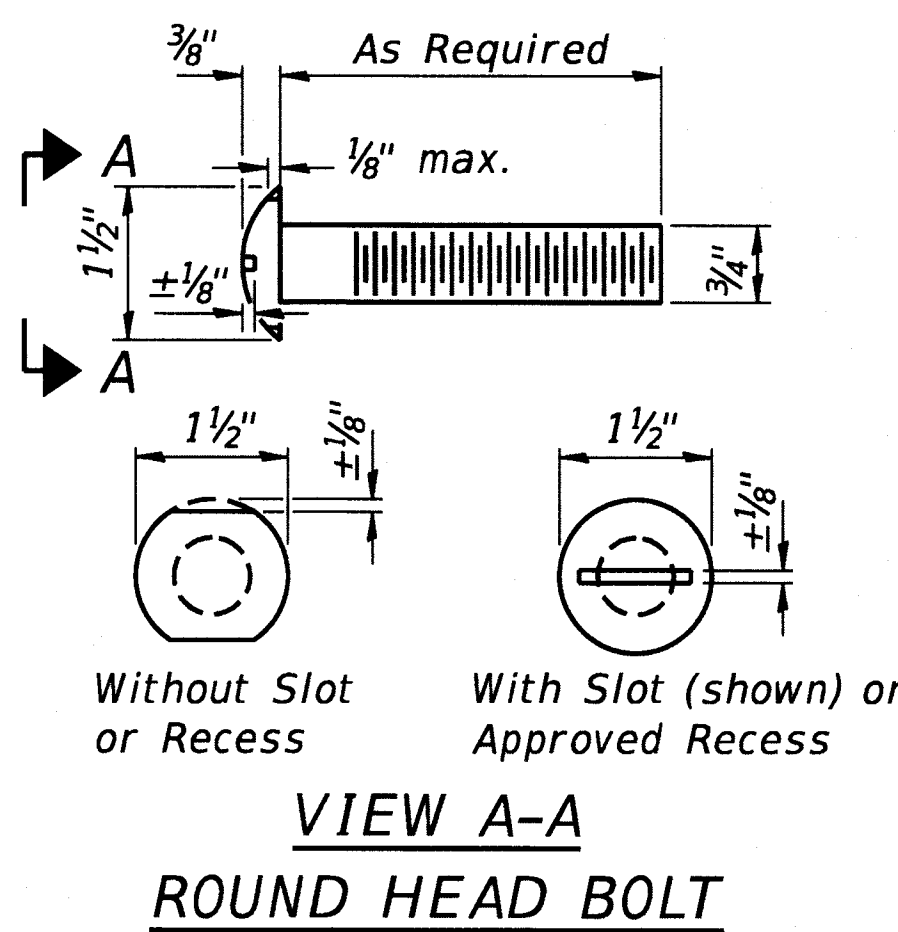
REVISED -
 REVISED -
 REVISED -
 REVISED -

STATE OF ILLINOIS
 WAYNE COUNTY HIGHWAY DEPARTMENT

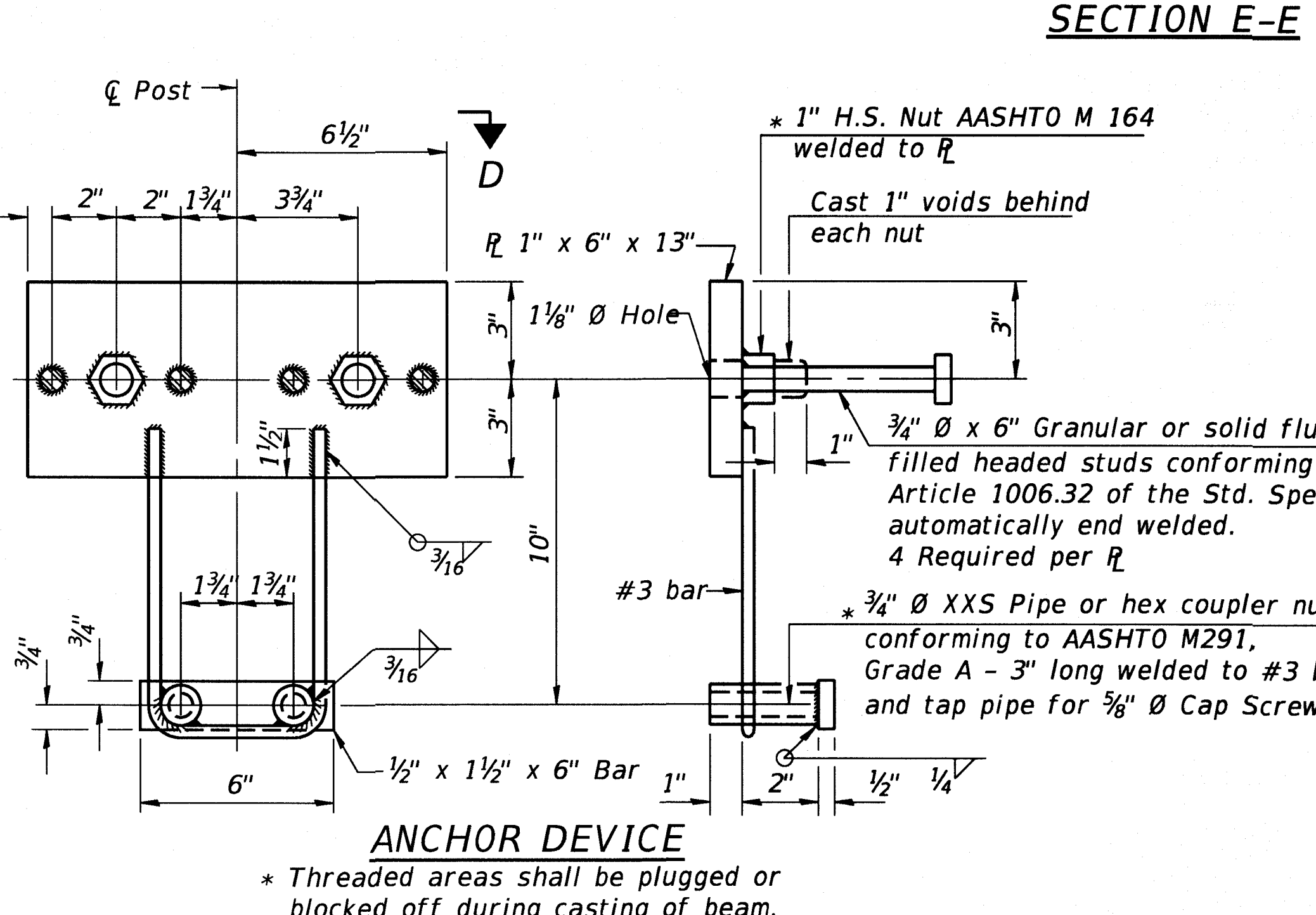
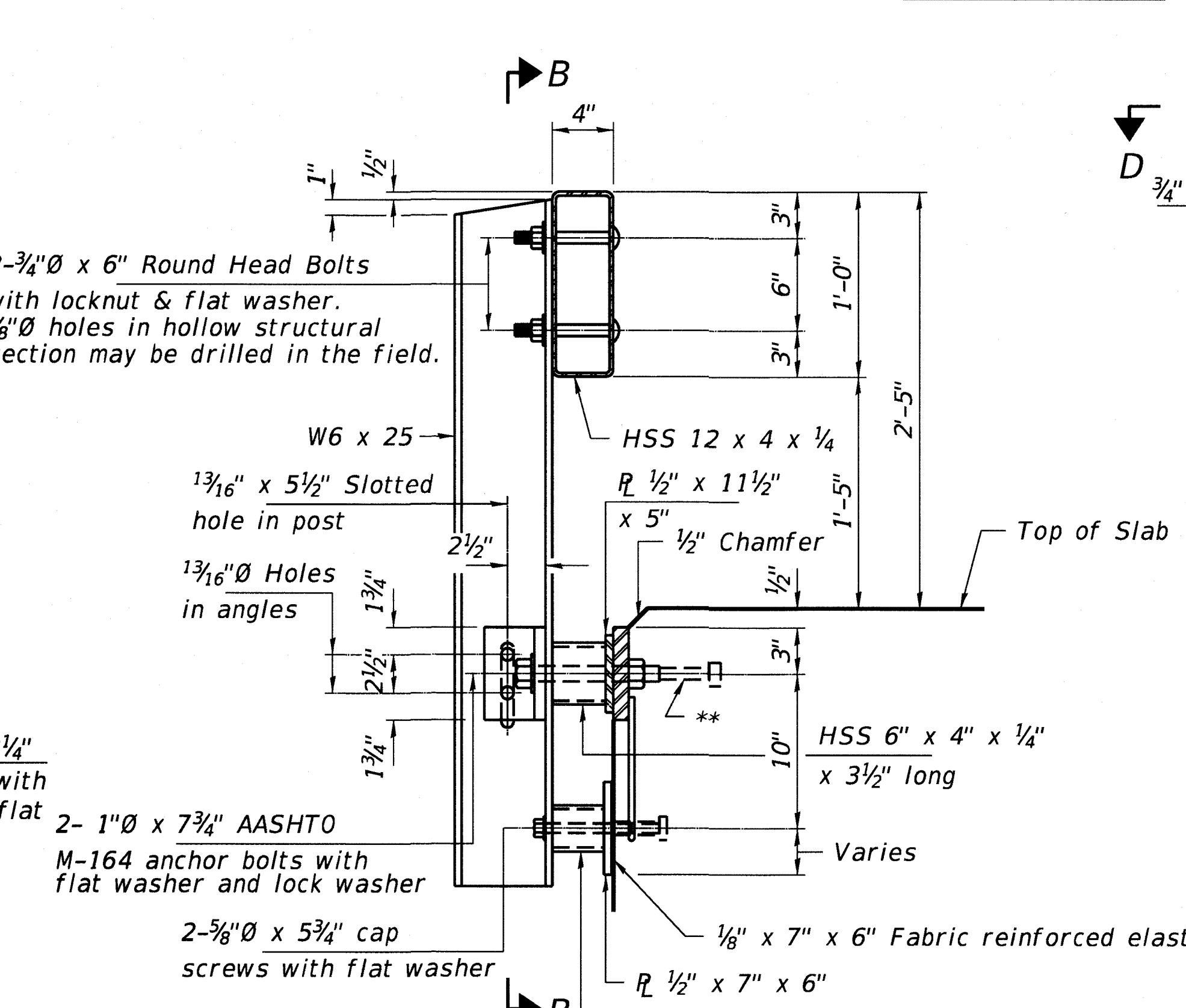
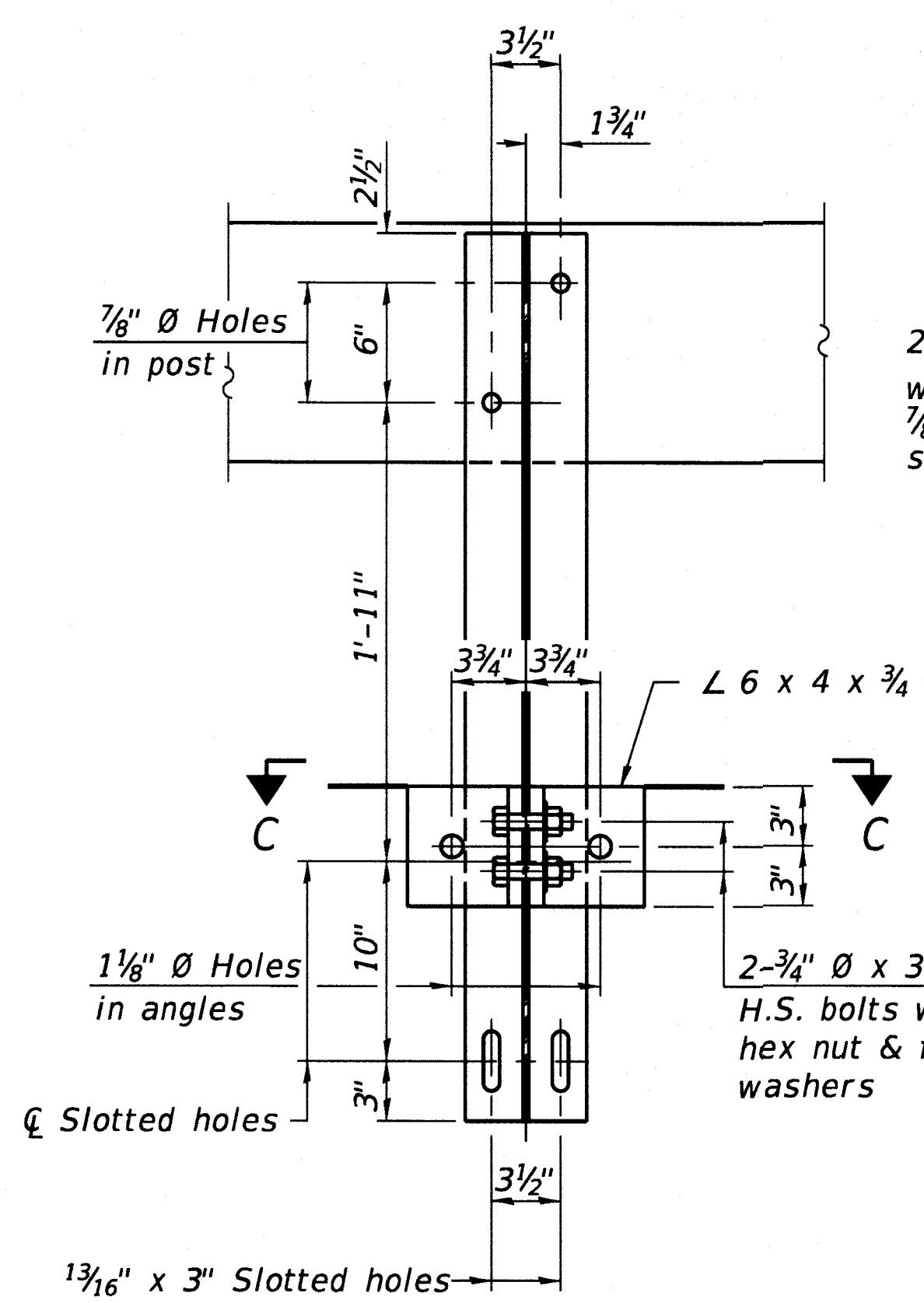
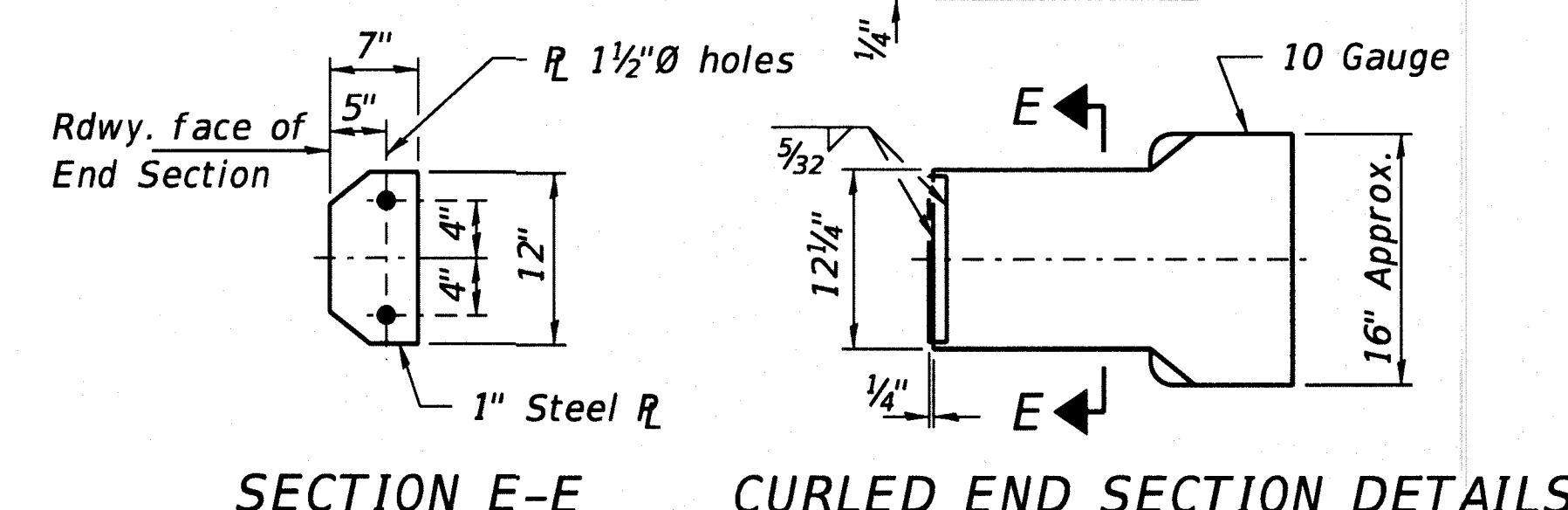
SUPERSTRUCTURE DETAILS
 STRUCTURE NO. 096-3474

SHEET NO. 5 OF 11 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
558	19-15148-00-BR	WAYNE	16	10
LEECH ROAD DISTRICT		CONTRACT NO. 95903		
ILLINOIS FED. AID PROJECT				



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

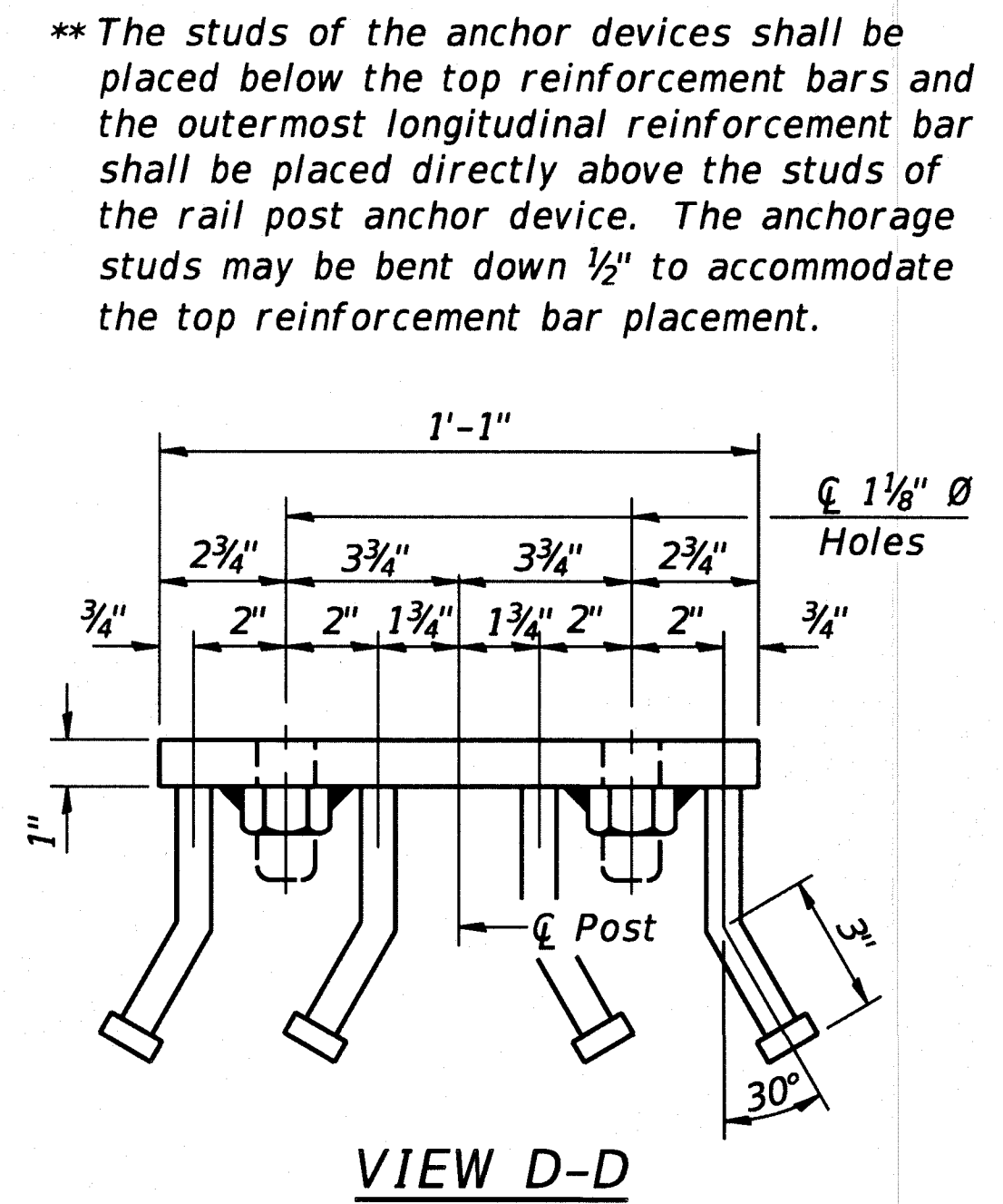
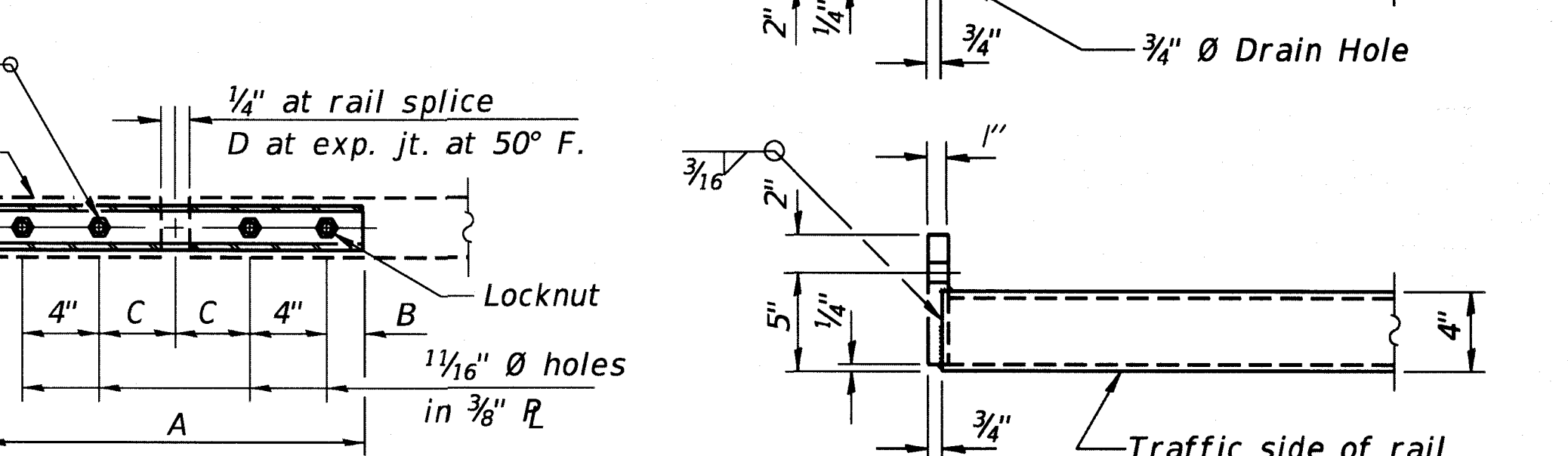
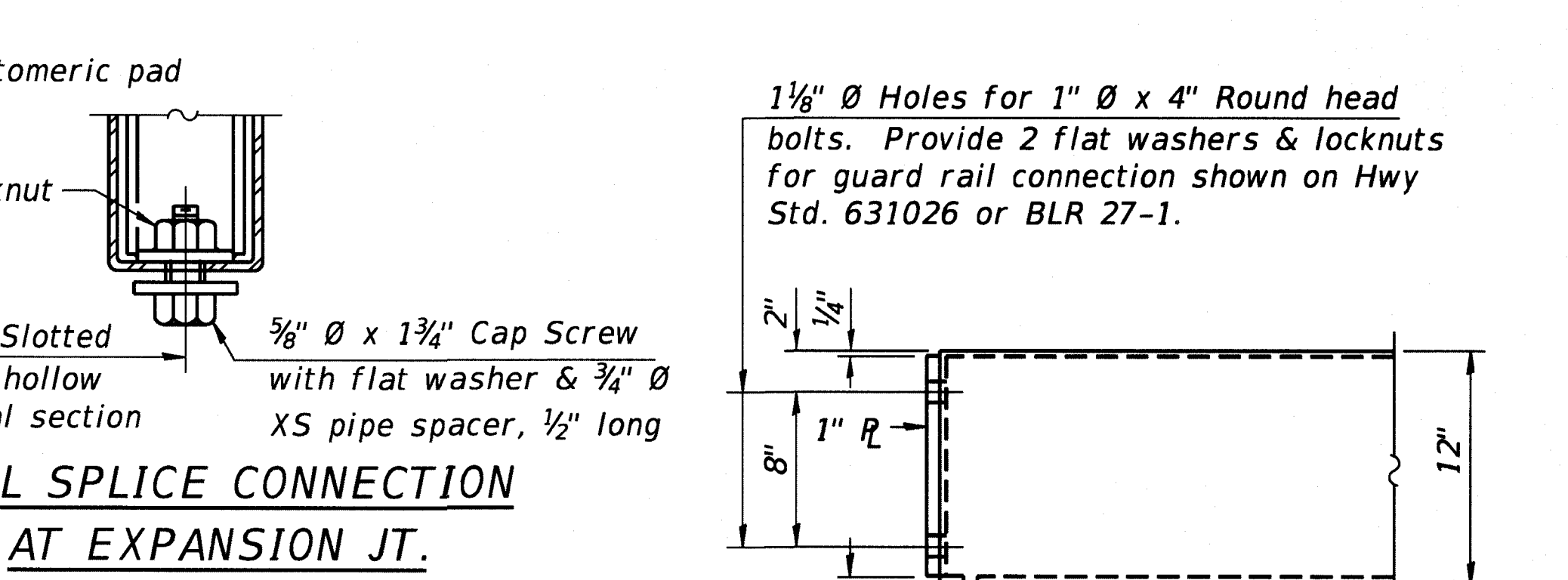
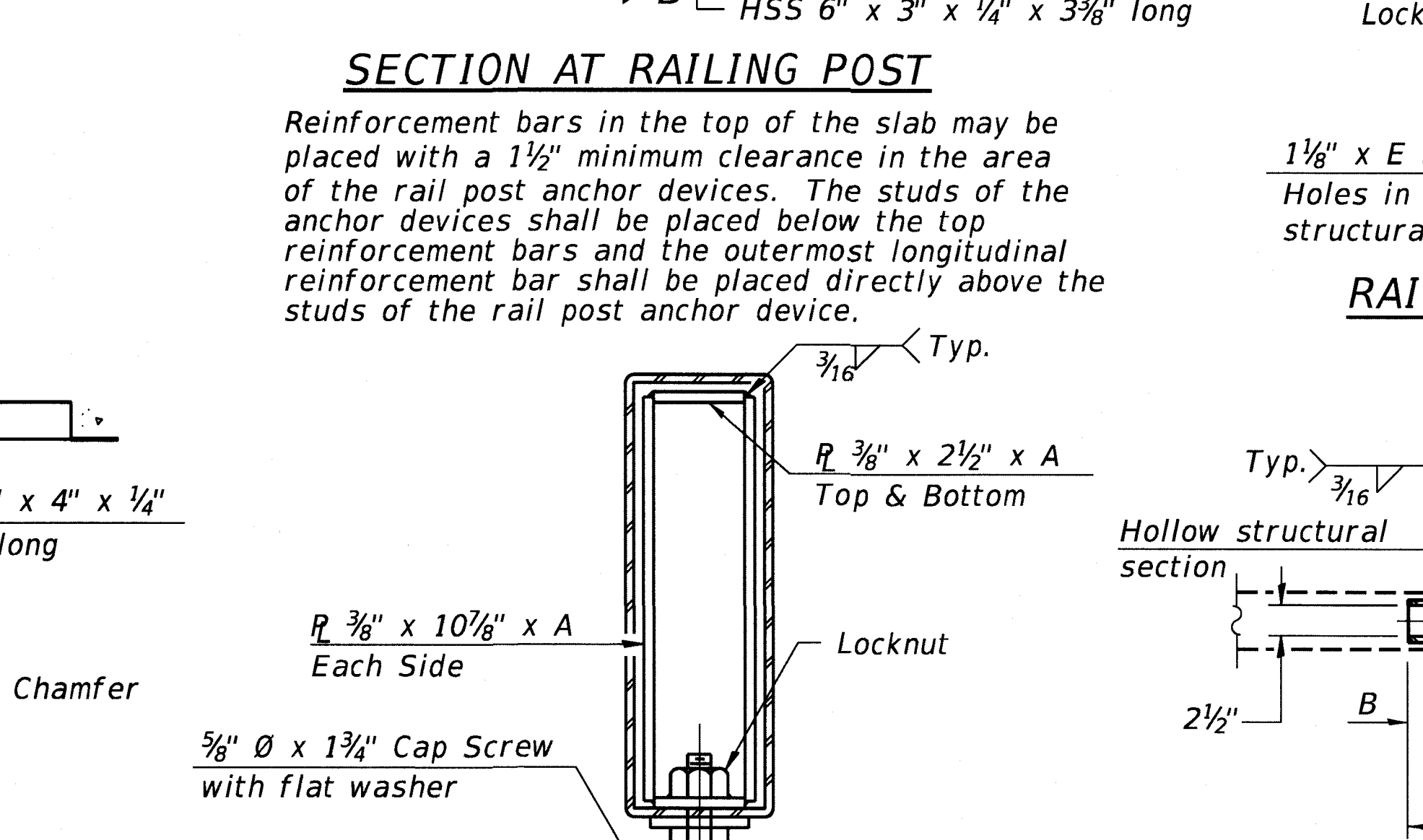
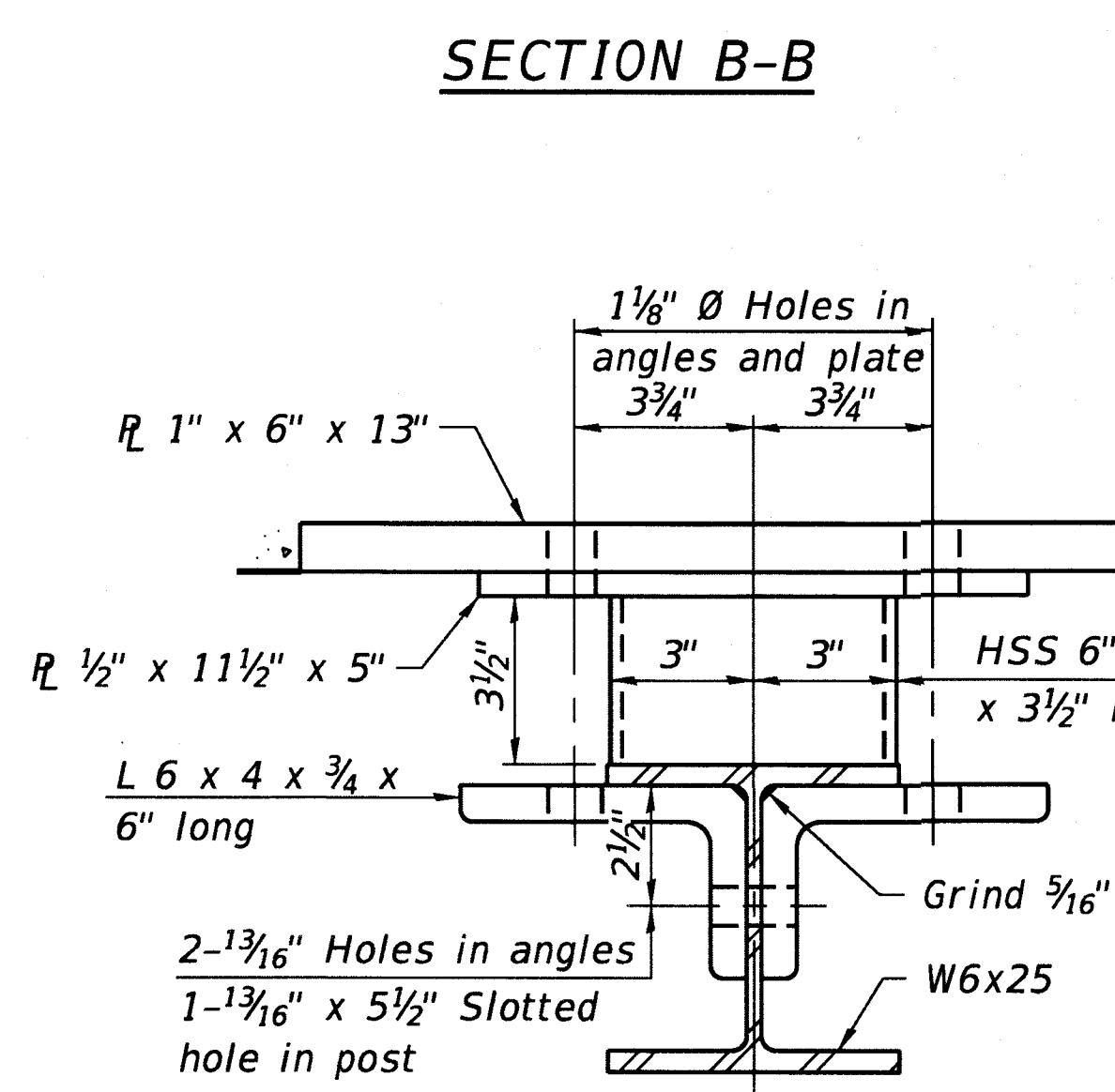


SPLICE DIMENSIONS

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

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

Notes:
 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.



BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S-1	Foot	190
Terminal Marker - Direct Applied	Each	4

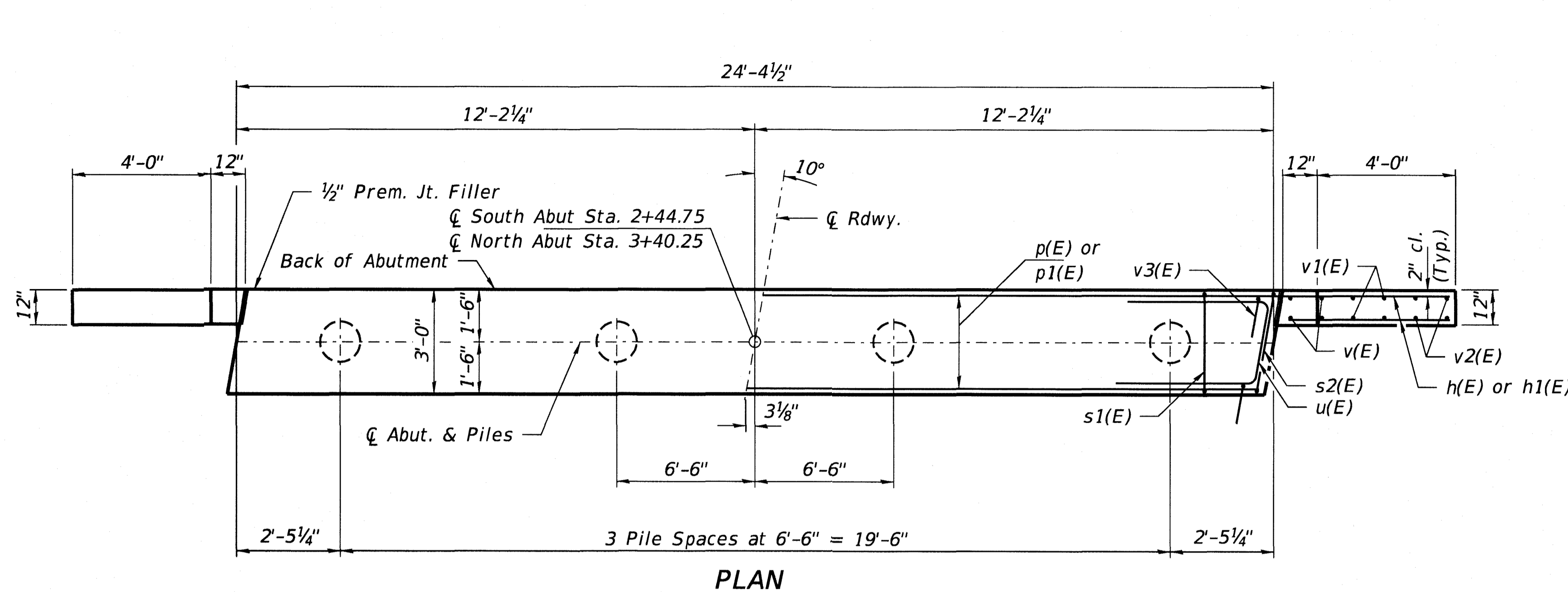
R-23A 2-17-2017 (10'-9" Maximum Post Spacing)

FILE NAME = 200309-shit-bridge.dgn	USER NAME = rhoalck	DESIGNED - P.R.R.	REVISED -
HAMPTON, LENZINI AND RENWICK, INC. 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703	PLOT SCALE = \$SCALES	CHECKED - S.W.M.	REVISED -
ILR ILLINOIS PROFESSIONAL DESIGN FIRM 18 / P.E. / S.E. CORP. 184-000968	PLOT DATE = 4/18/2021	DRAWN - R.D.H.	REVISED -
		CHECKED - S.W.M.	REVISED -

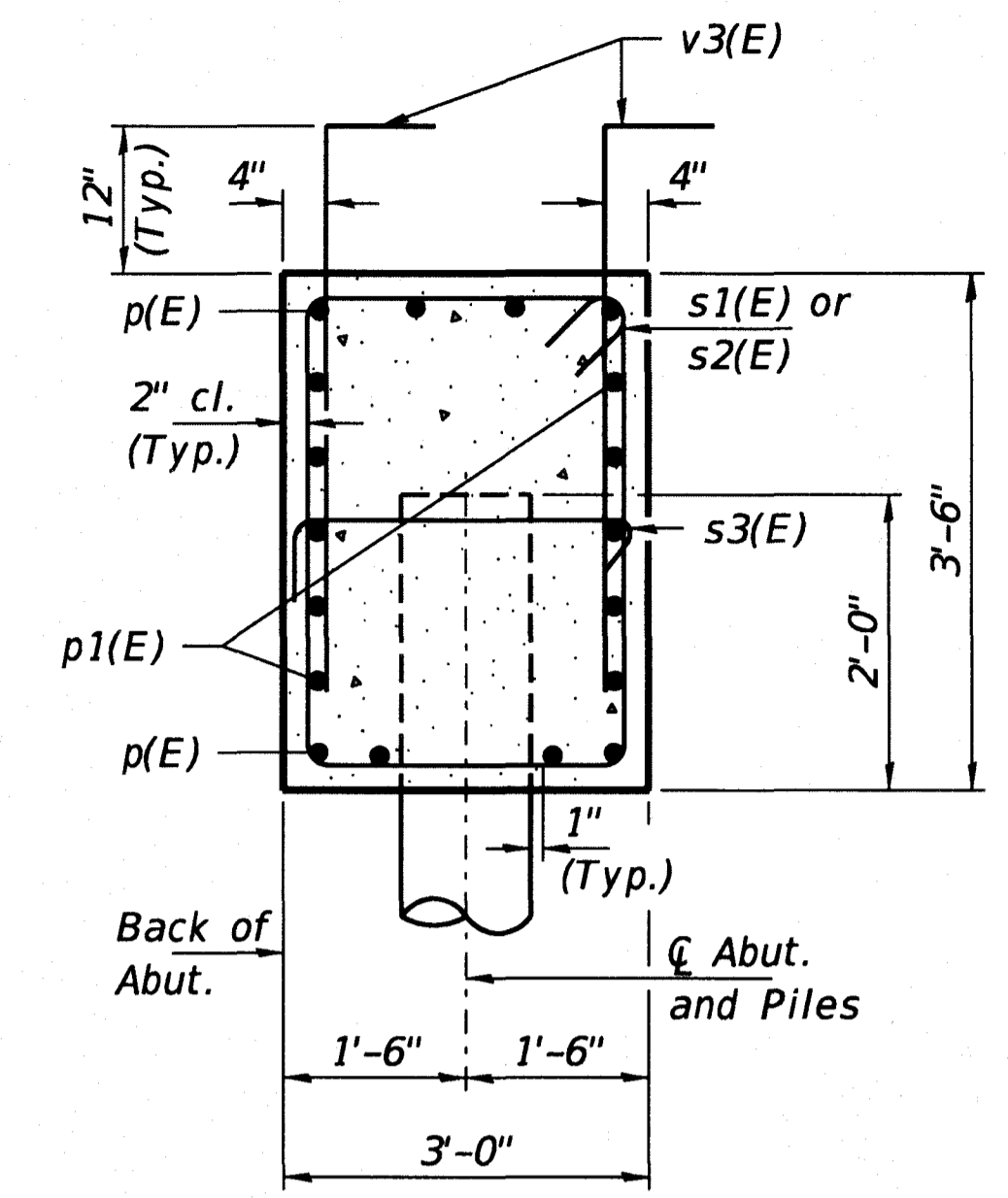
STATE OF ILLINOIS
WAYNE COUNTY HIGHWAY DEPARTMENT

STEEL RAILING, TYPE S-1
STRUCTURE NO. 096-3474
SHEET NO. 6 OF 11 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
558	19-15148-00-BR	WAYNE	16	11
LEECH ROAD DISTRICT		CONTRACT NO. 95903		
ILLINOIS FED. AID PROJECT				

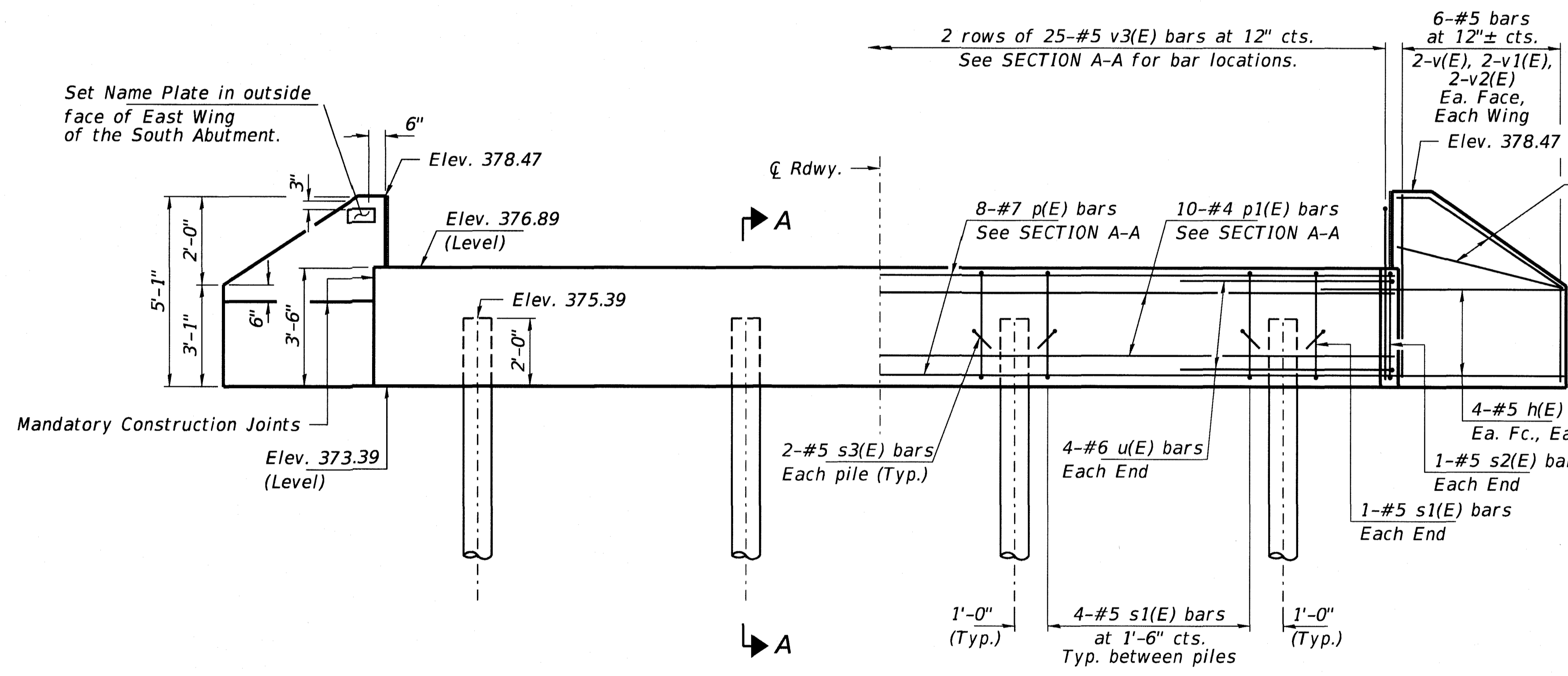


PLAN



SECTION A-A

Dimensions at right angles to abutment.



ELEVATION

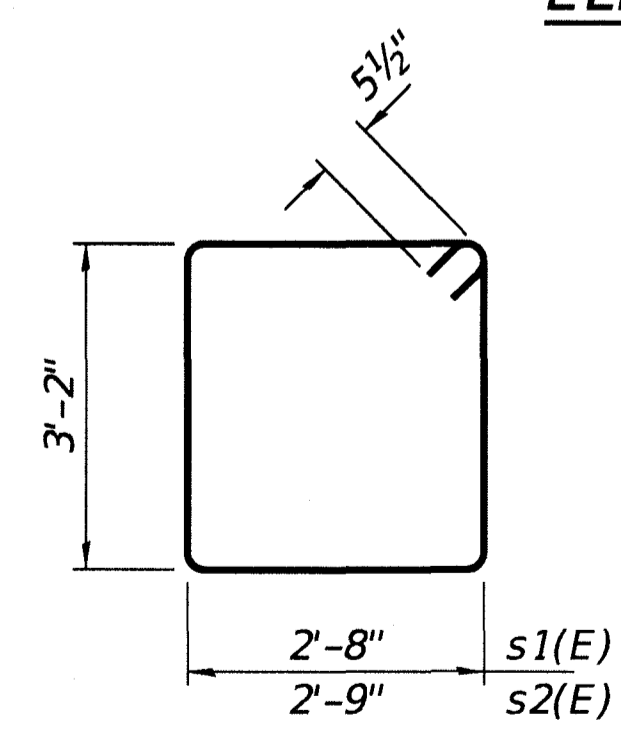
Note: Extend h(E) bars into abutment cap and superstructure.

PILE DATA

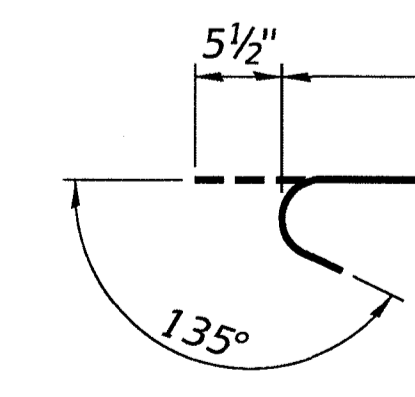
Type: Metal Shell Piles 12"x0.250"
 Nominal Required Bearing: 353 Kips/Pile
 Factored Resistance Available: 172 Kips/Pile
 Est. Length: 50 Ft/Pile
 No. Production Piles: 7
 No. Test Piles: 1

Notes: One test pile shall be driven in a permanent location at the North Abutment.

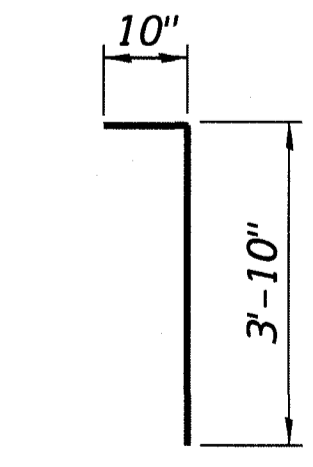
The test pile shall be driven to 110 percent of the Nominal Required Bearing indicated in the pile data information.



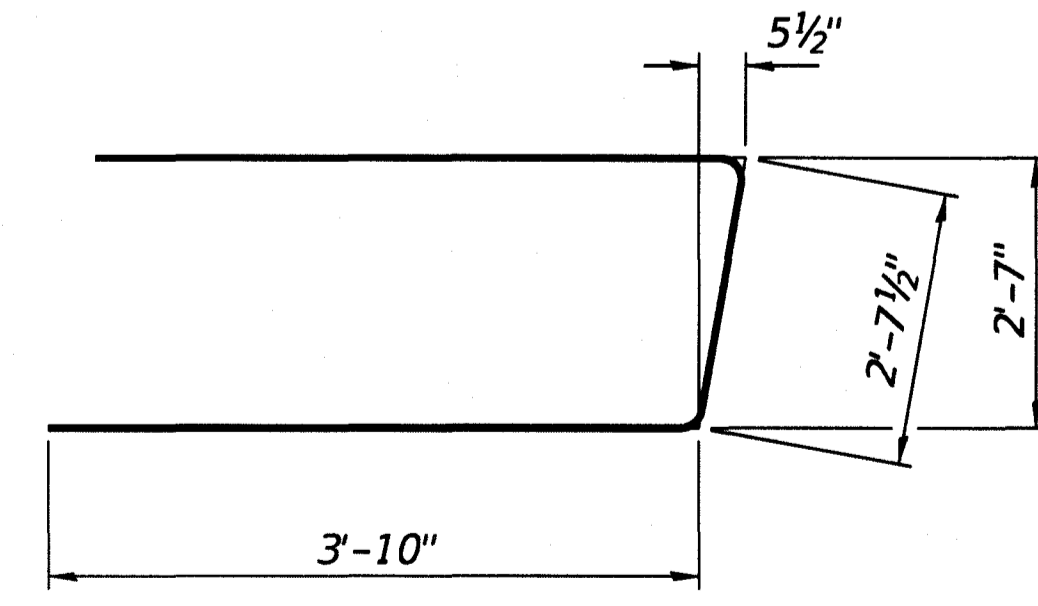
BAR s1(E) & s2(E)



BAR s3(E)



BAR v3(E)

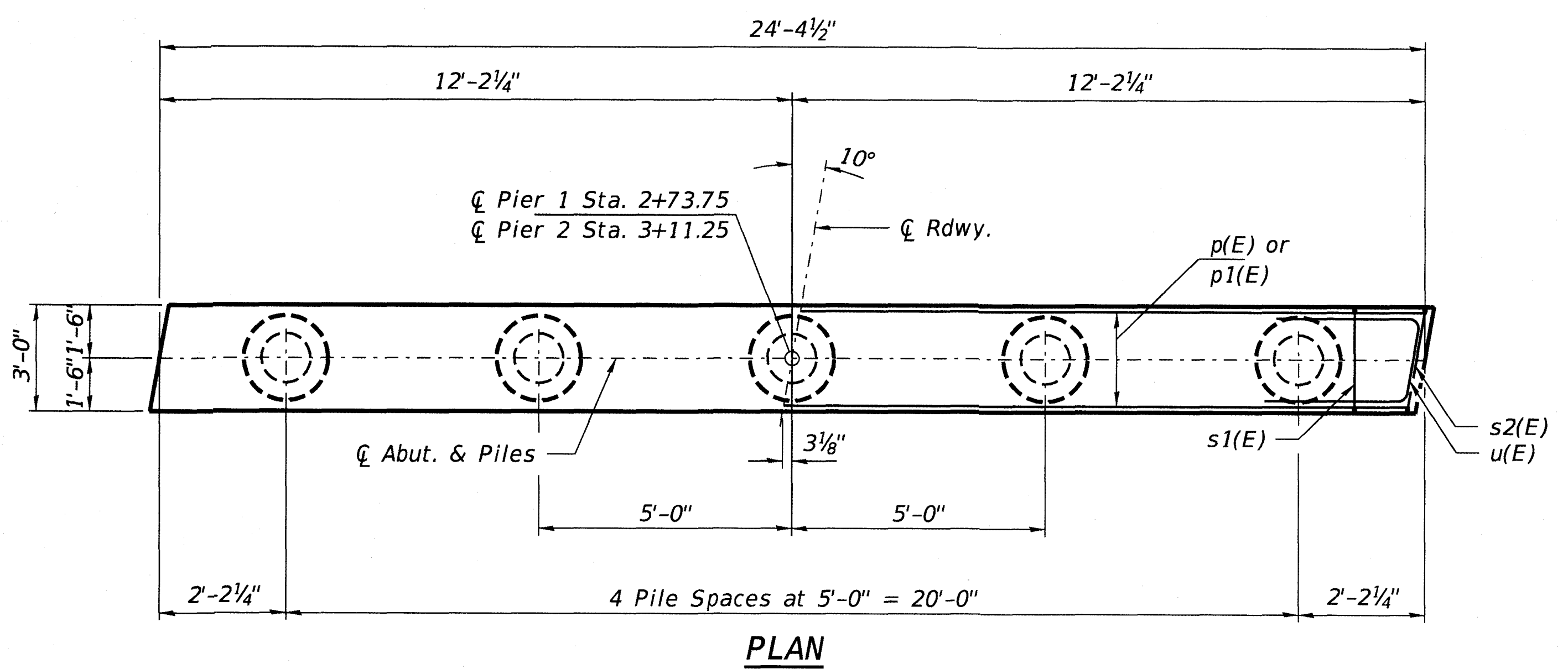


BAR u(E)

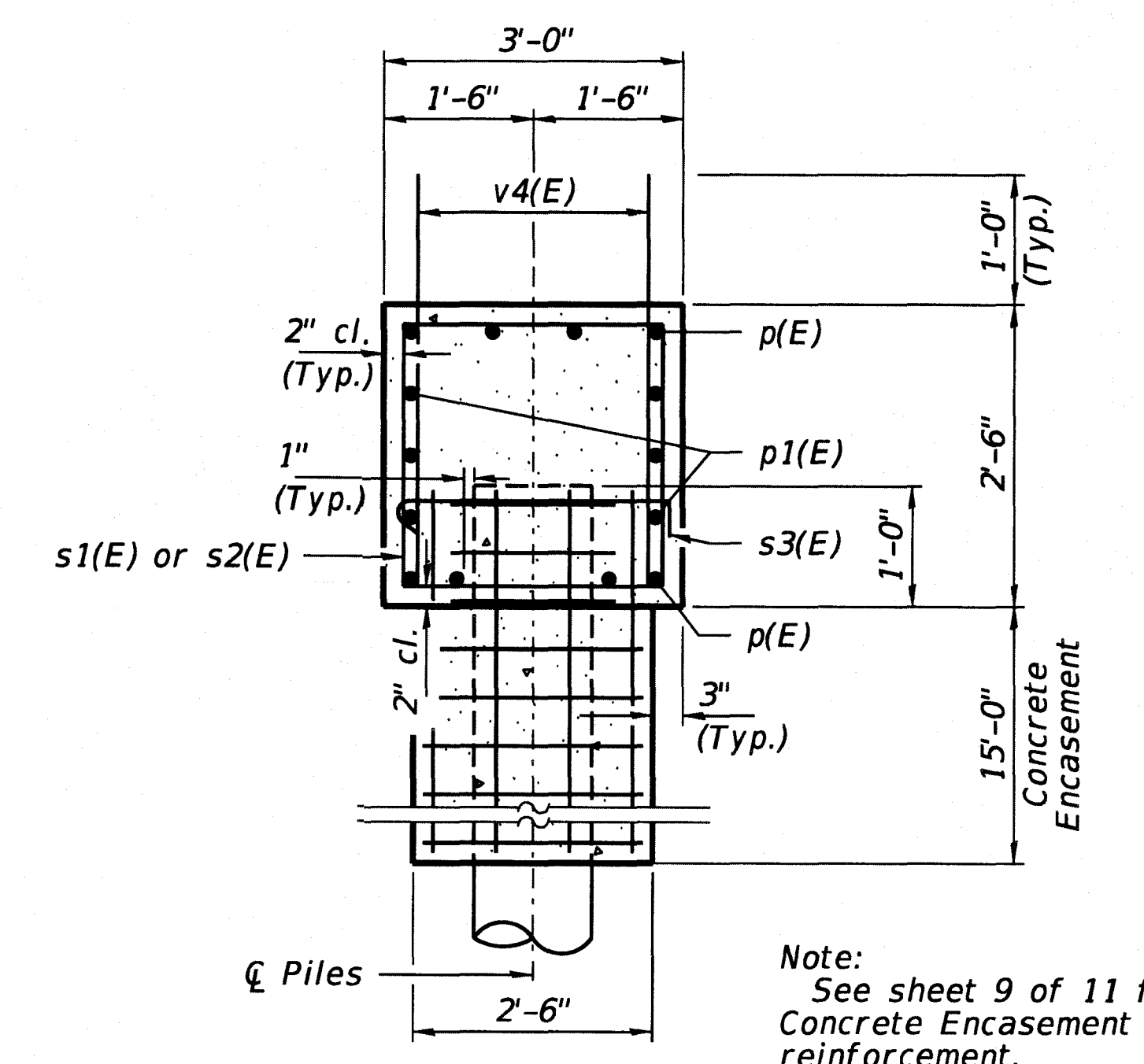
BILL OF MATERIAL - 2 ABUTS.

BAR	NO.	SIZE	LENGTH	SHAPE	
h(E)	32	#5	6'-3"	—	
h1(E)	16	#5	4'-9"	—	
p(E)	16	#7	24'-0"	—	
p1(E)	20	#4	24'-0"	—	
s1(E)	28	#5	12'-7"	□	
s2(E)	4	#5	12'-9"	□	
s3(E)	16	#5	4'-0"	U	
u(E)	16	#6	10'-4"	U	
v(E)	16	#5	4'-7"	—	
v1(E)	16	#5	3'-6"	—	
v2(E)	16	#5	2'-8"	—	
v3(E)	100	#5	4'-8"	—	
Concrete Structures				Cu. Yd.	22.2
Protective Coat				Sq. Yd.	12
Reinf. Bars, Epoxy Coated				Pound	2,800
Metal Shell Piles 12"x0.250"				Foot	350
Driving Piles				Foot	350
Test Pile Metal Shells				Each	1
Name Plates				Each	1

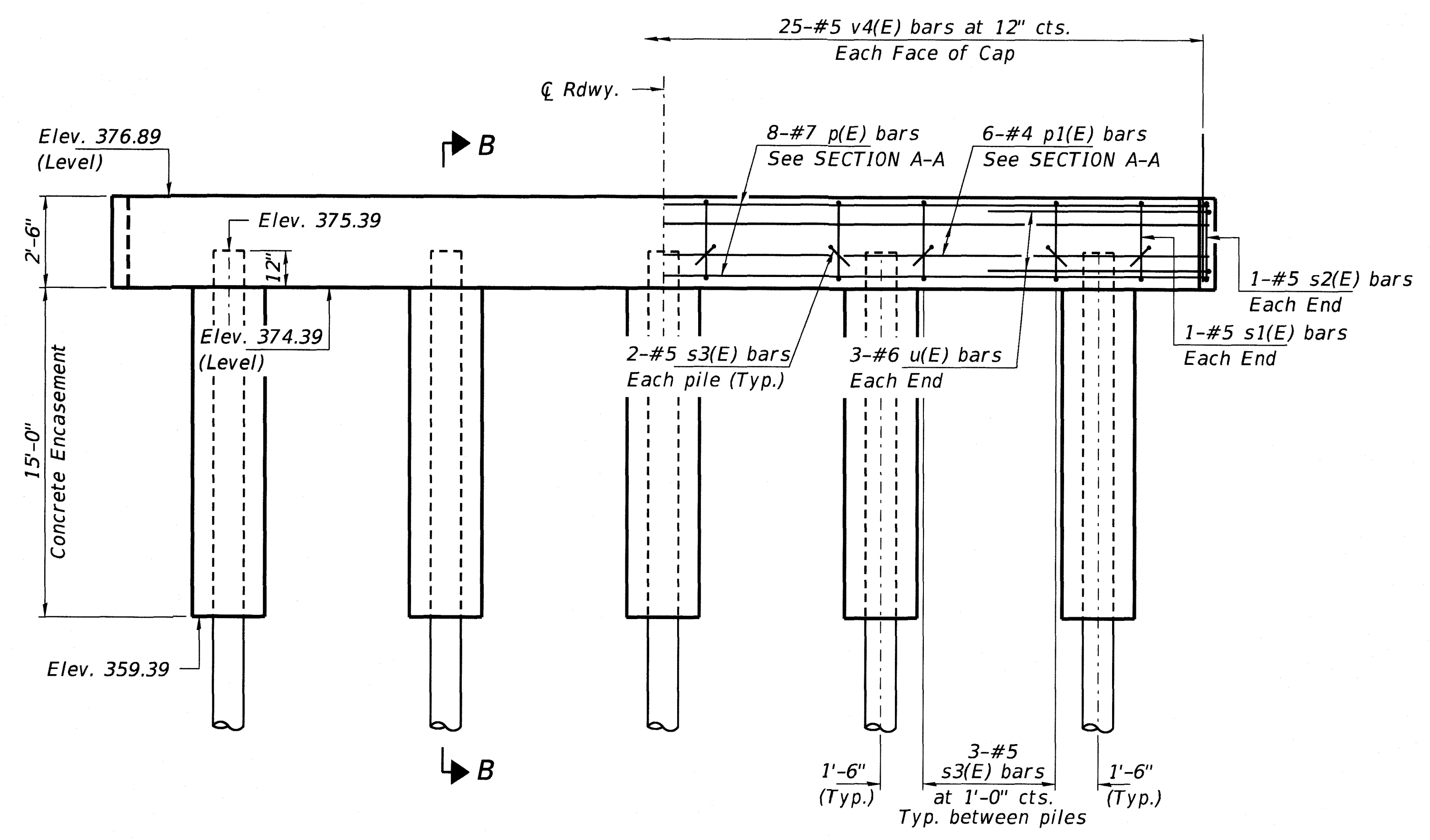
Notes:
 For details of piles, see sheet 9 of 10.
 Bottom of wing shall be poured monolithic with the abutment cap. Entire quantity included with Concrete Structures.
 Extend h(E) bars into abutment cap.



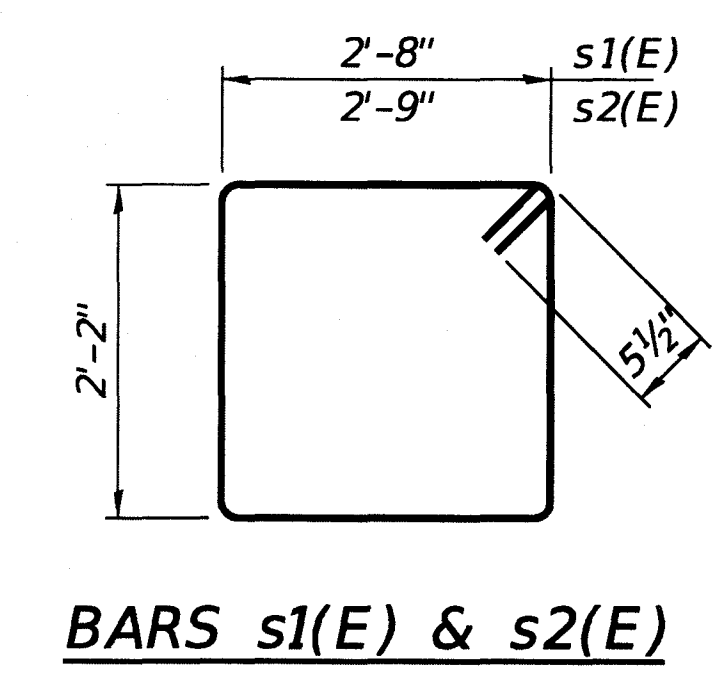
PLAN



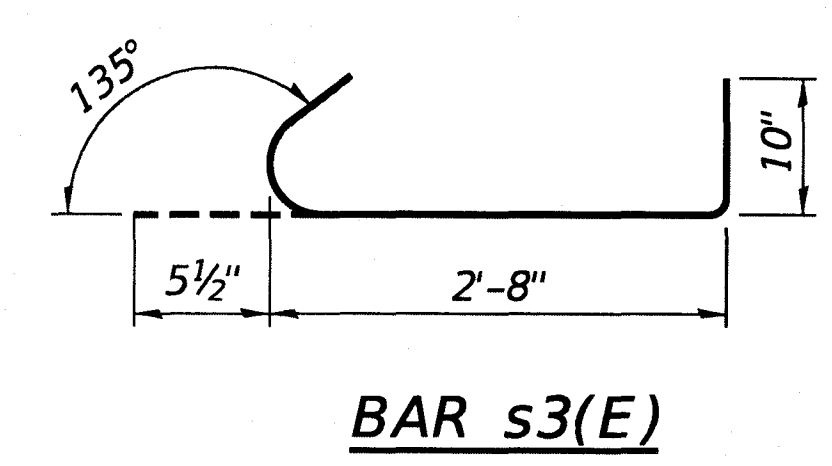
SECTION B-B
Dimensions at right Z's to Pier.
Note: See sheet 9 of 11 for Concrete Encasement reinforcement.



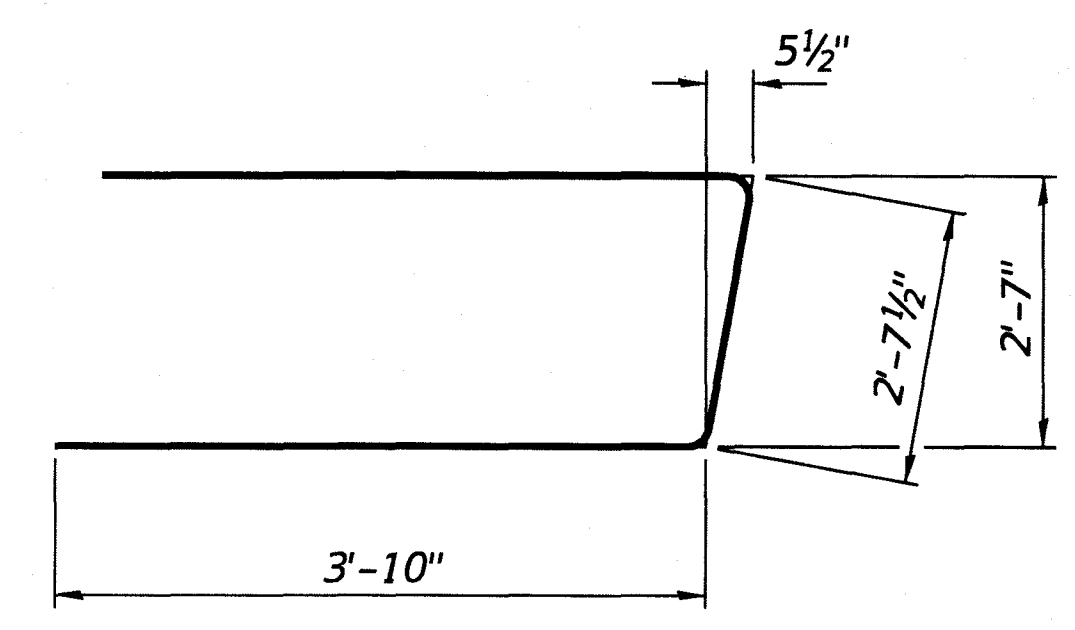
ELEVATION
(Looking North)



BARS s1(E) & s2(E)



BAR s3(E)



BAR u(E)

BILL OF MATERIAL - 2 PIERS

BAR	NO.	SIZE	LENGTH	SHAPE
p(E)	16	#7	24'-0"	—
p1(E)	12	#4	24'-0"	—
s1(E)	28	#5	12'-7"	□
s2(E)	4	#5	12'-9"	□
s3(E)	20	#5	4'-0"	┌
u1(E)	12	#6	10'-4"	—
v4(E)	100	#5	3'-4"	—
Concrete Structures			Cu. Yd.	13.5
Concrete Encasement			Cu. Yd.	27.3
Reinf. Bars, Epoxy Coated			Pound	2,030
Metal Shell Piles 12"x0.250"			Foot	360
Driving Piles			Foot	360
Test Pile Metal Shells			Each	1

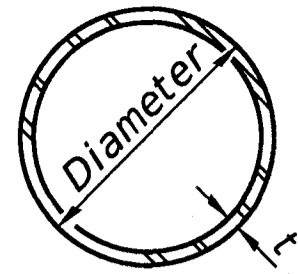
Note: For details of piles, see sheet 9 of 11.

PILE DATA

Type: Metal Shell Piles 12"x0.250"
 Nominal Required Bearing: 353 Kips/Pile
 Factored Resistance Available: 175 Kips/Pile
 Est. Length: 40 Ft/Pile
 No. Production Piles: 9
 No. Test Piles: 1

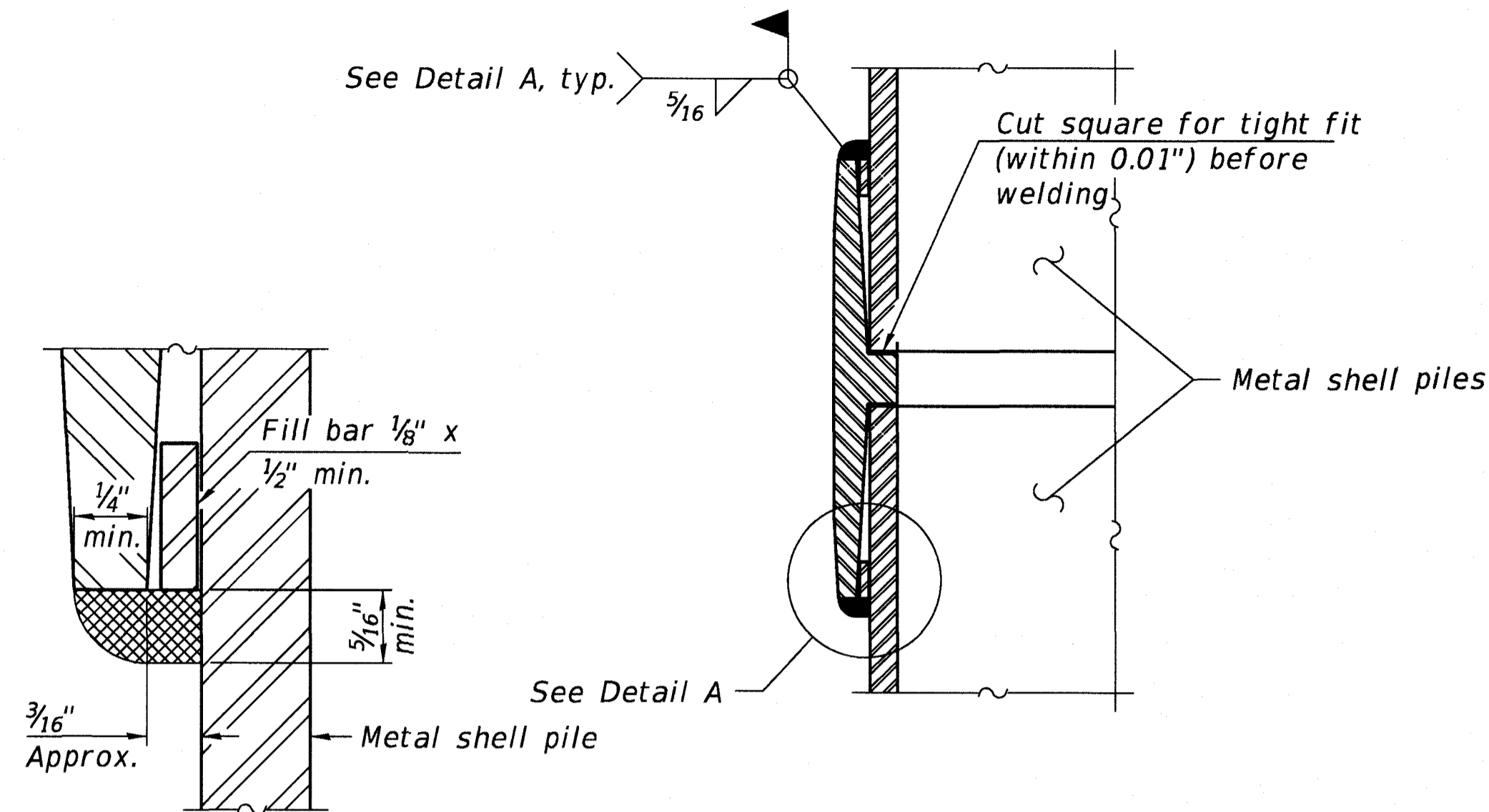
Notes: One test pile shall be driven in a permanent location at the Pier 1.

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

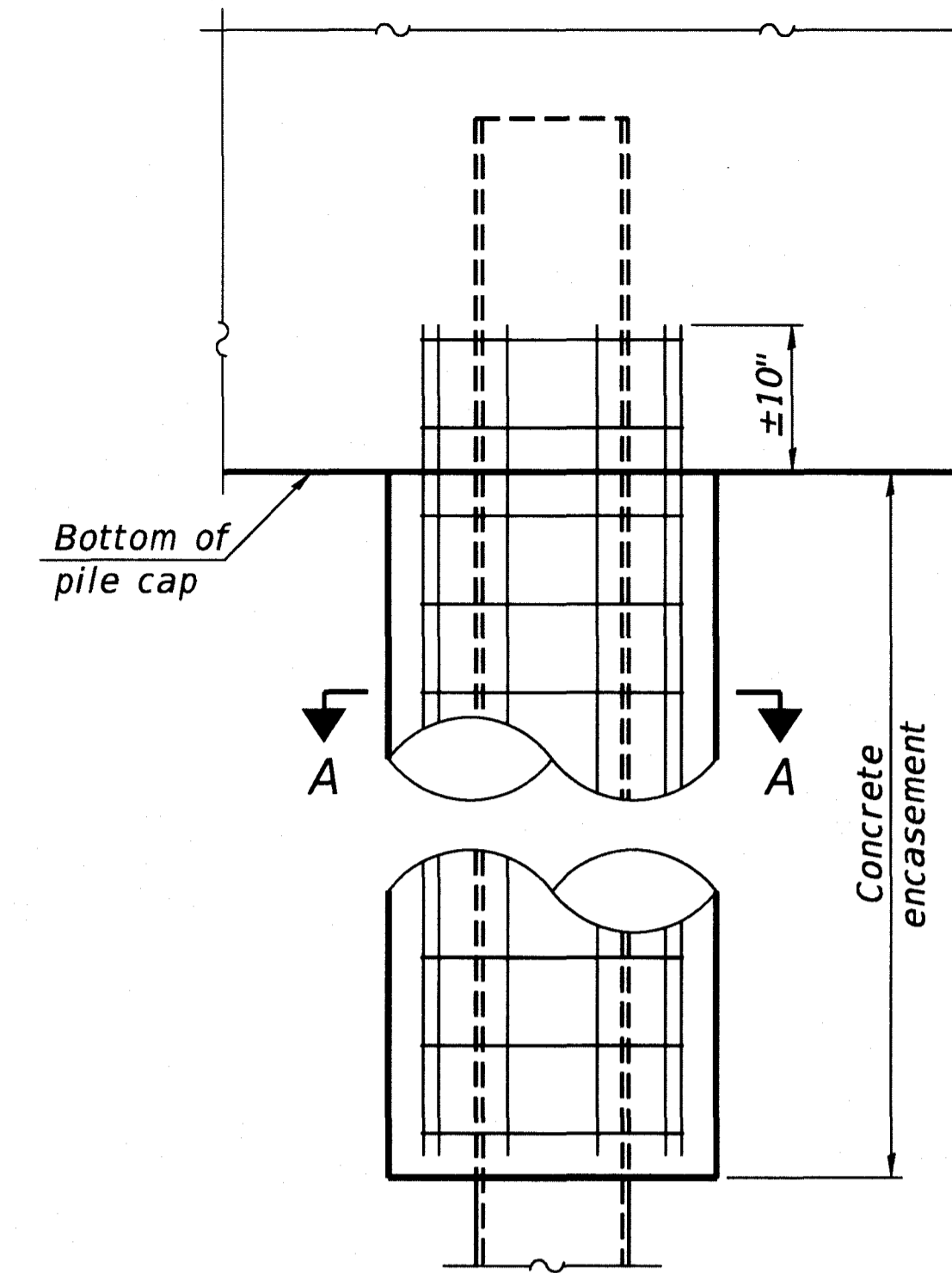


METAL SHELL PILE TABLE

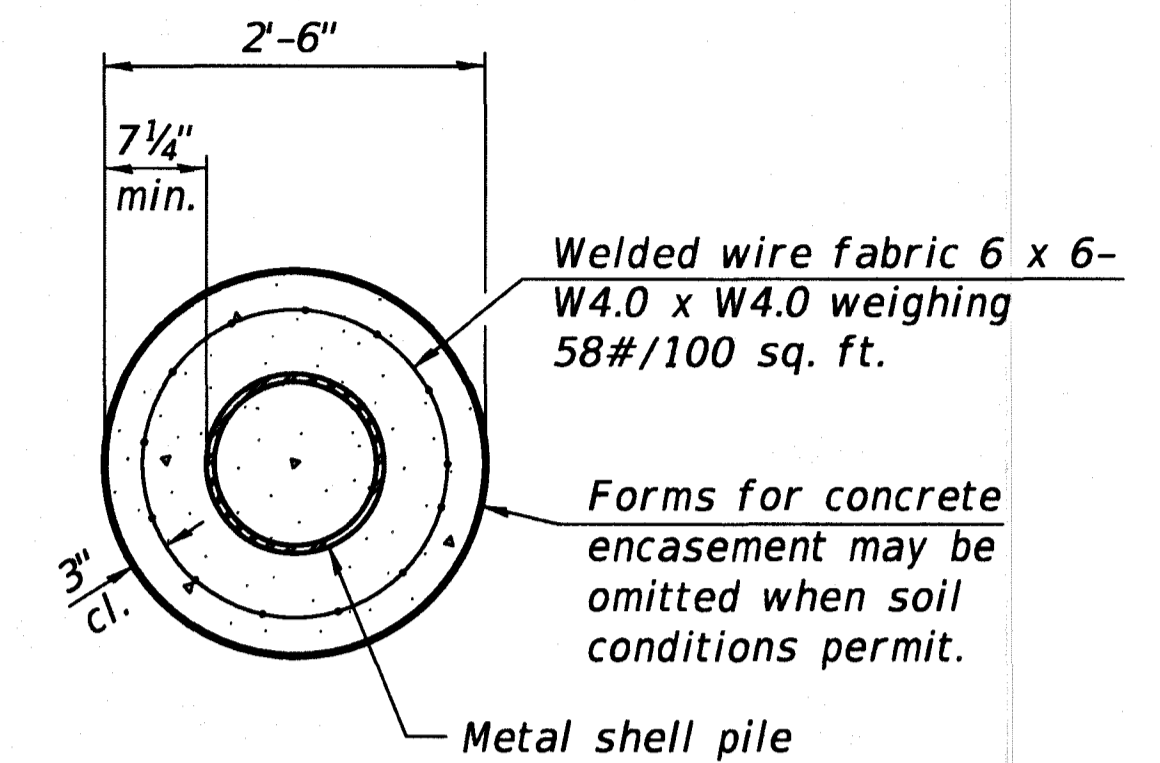
Designation and outside diameter	Wall thickness t	Weight per foot (Lbs./ft.)	Inside volume (yd. ³ /ft.)
PP12	0.250"	31.37	0.0267
PP14	0.250"	36.71	0.0368
PP14	0.312"	45.61	0.0361
PP16	0.312"	52.32	0.0478
PP16	0.375"	62.64	0.0470



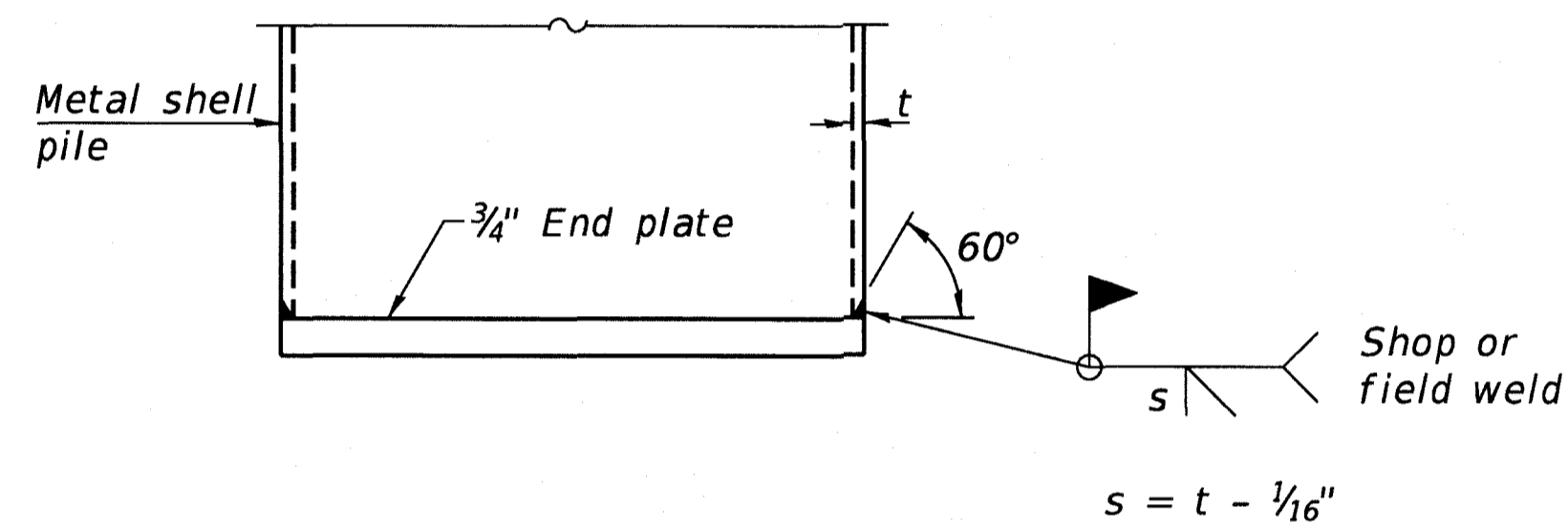
DETAIL A



ELEVATION



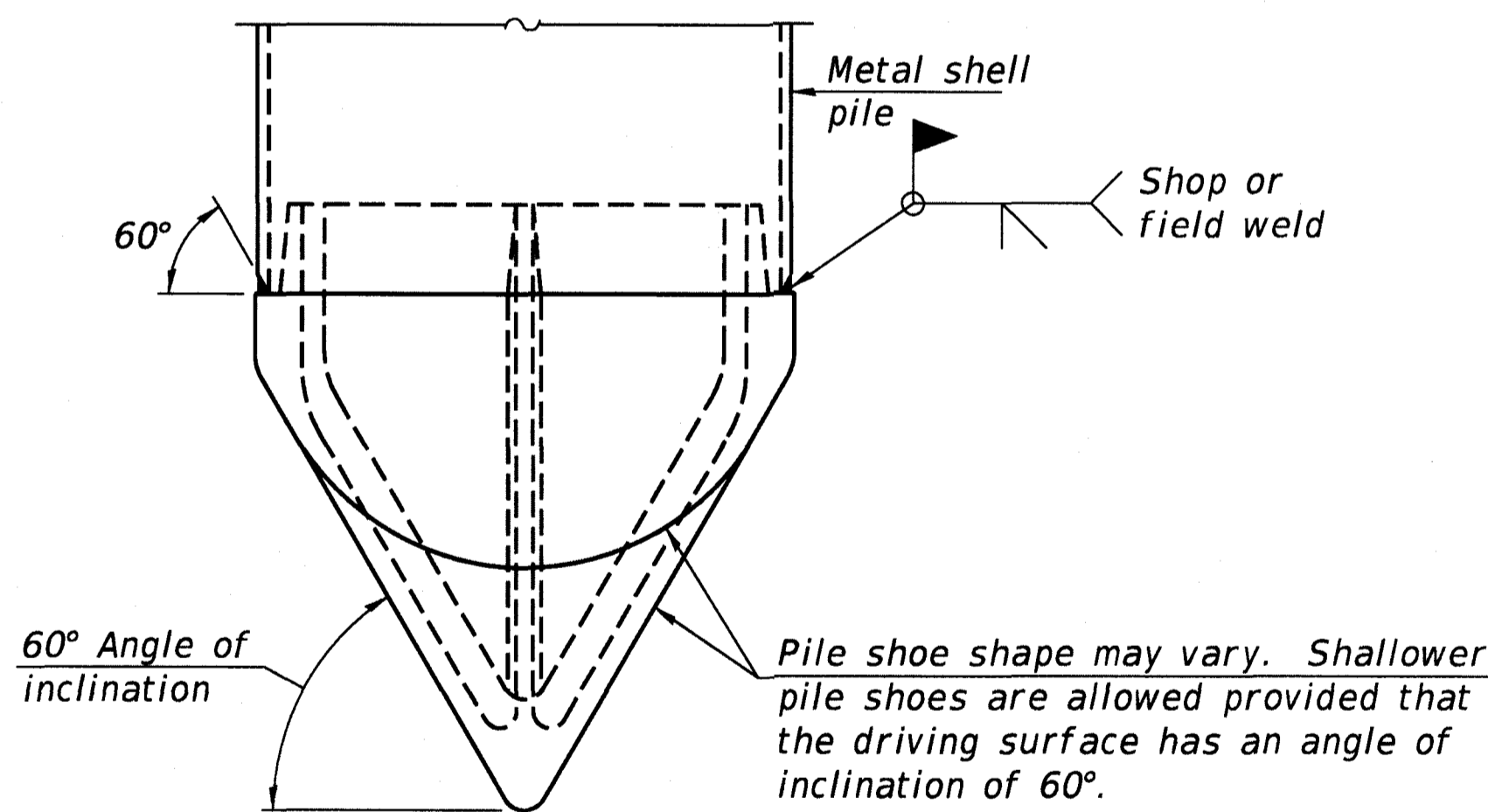
SECTION A-A



END PLATE ATTACHMENT

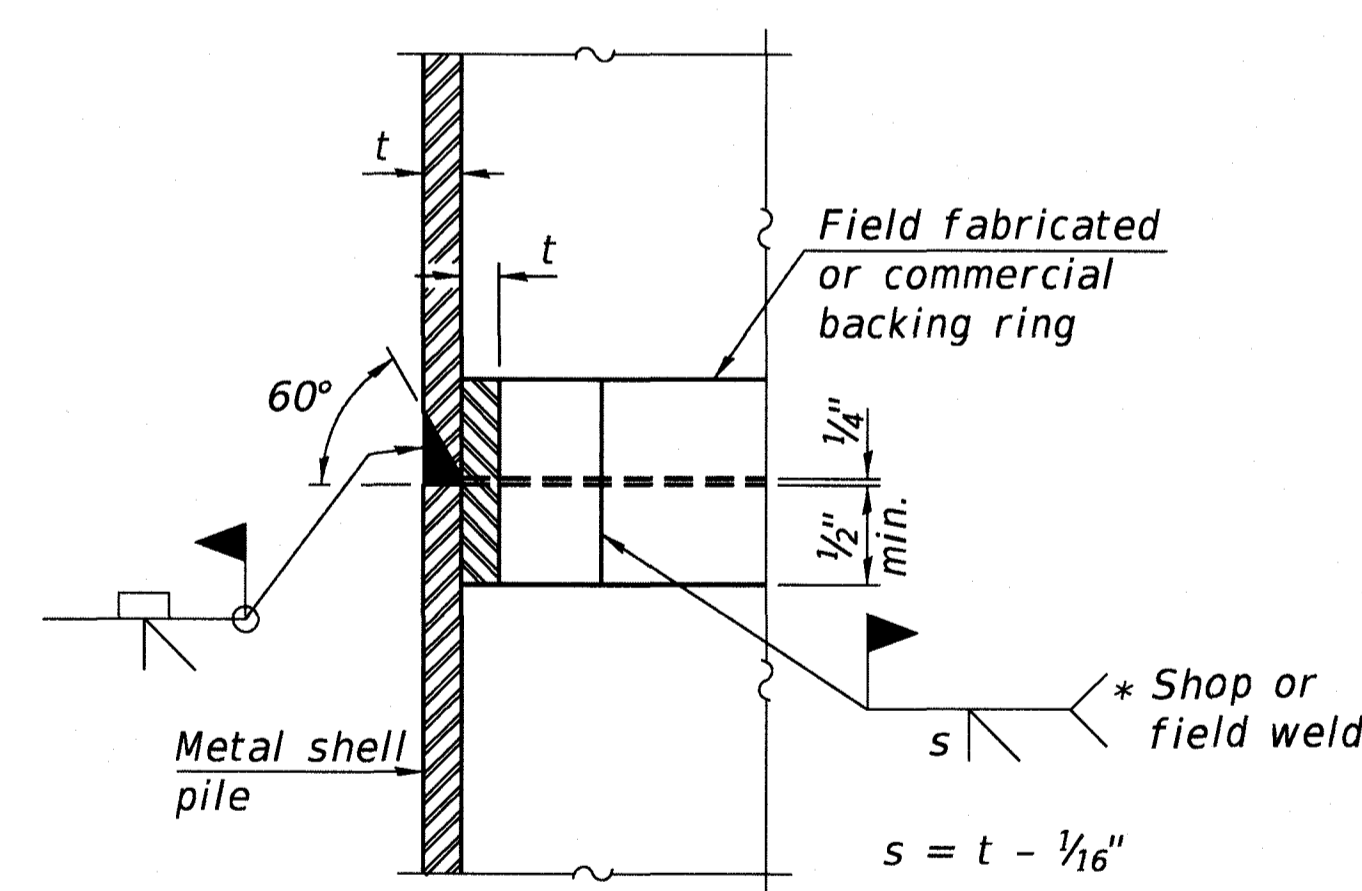
WELDED COMMERCIAL SPLICE

Notes:
 The 1/8" x 1/2" min. fill bar may be constructed of 2 bars with a 1/8" max. gap between them.
 Pile segments shall be driven to solid contact with splicer before welding.



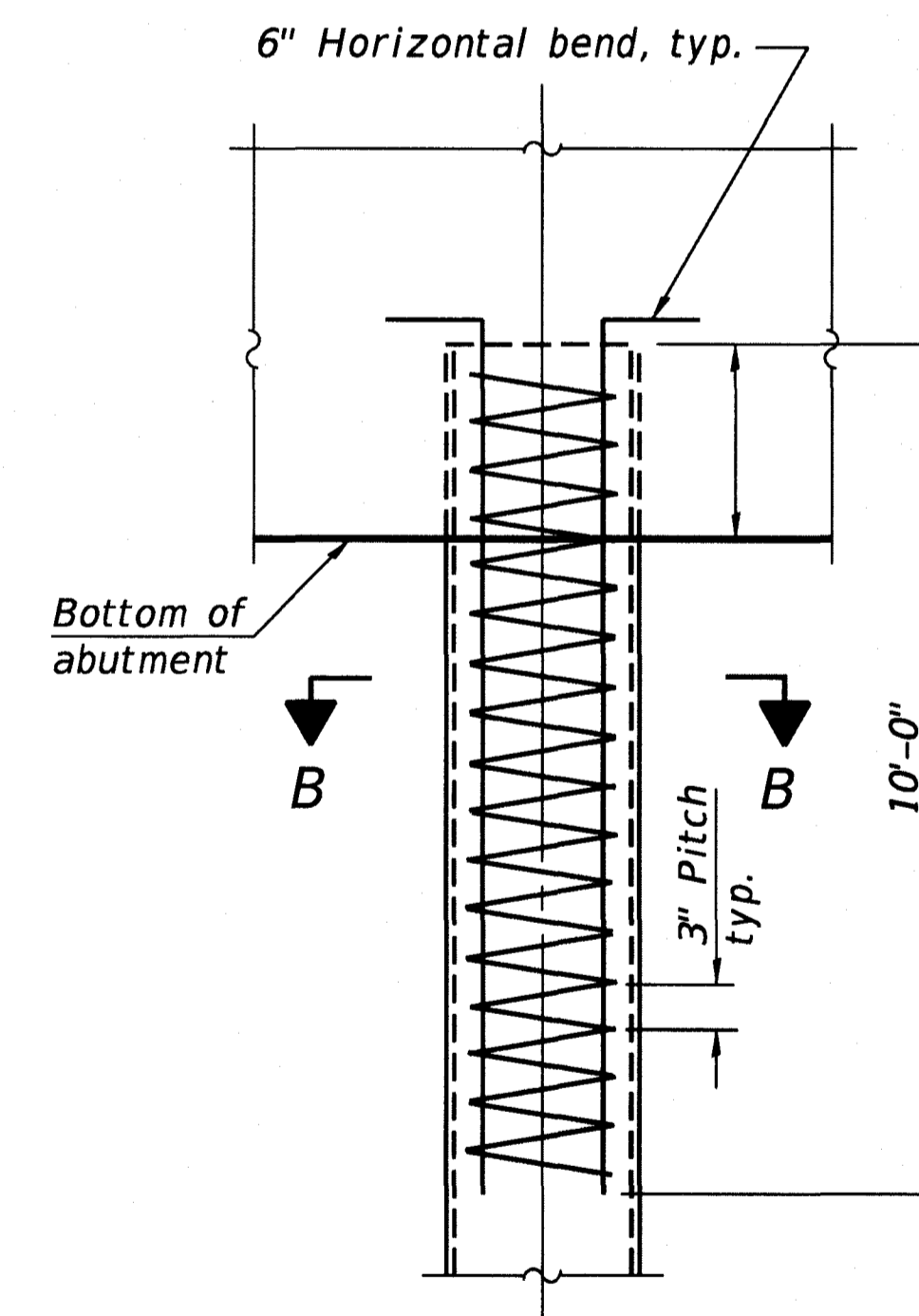
PILE SHOE ATTACHMENT

(When called for on the plans, the Contractor shall furnish metal shell pile shoes consisting of a single piece conical pile point as shown. The pile shoes shall be cast in one piece steel according to either ASTM A 148 Grade 80-50 or AASHTO M 103 Grade 65-35 and shall provide full bearing over the full circumference of the metal shell pile. The pile shoe shall have tapered leads to assure proper alignment and fitting and shall be secured to the pile with a circumferential weld).

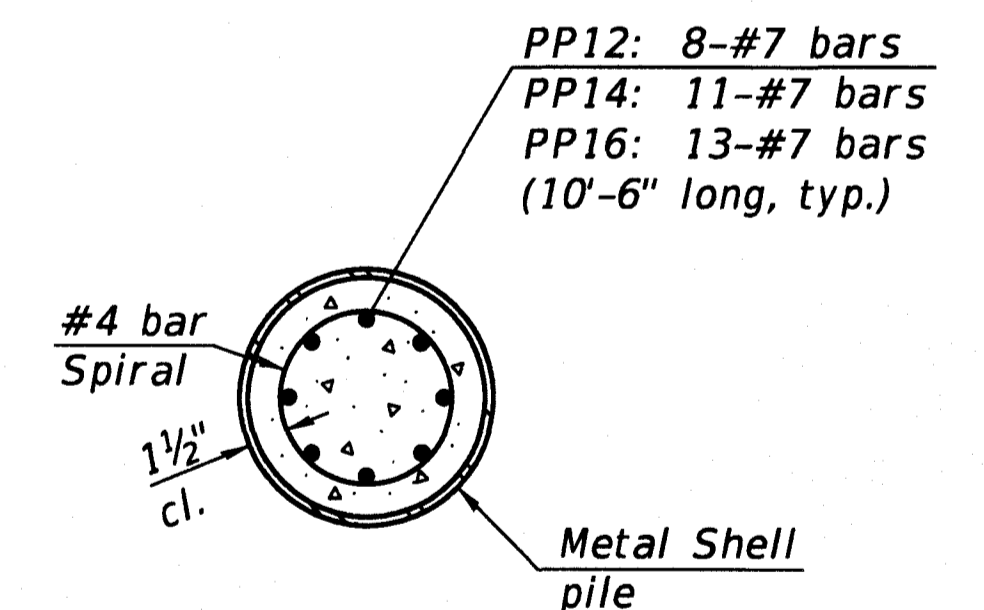


COMPLETE PENETRATION WELD SPLICE

* Field fabricated backing ring may be made from pile shell by removing segment to allow reducing circumference and vertically rejoin with partial joint penetration weld.



ELEVATION



SECTION B-B

REINFORCEMENT AT ABUTMENTS
 (omit when concrete encasement is specified)

Note:
 The metal shell piles shall be according to Article 1006.05 of the Standard Specifications.

F-MS 1-1-2020

FILE NAME = 200309-ah-bridge.dgn	USER NAME = rthoick	DESIGNED - P.R.R.	REVISIONS -	STATE OF ILLINOIS WAYNE COUNTY HIGHWAY DEPARTMENT	METAL SHELL PILE DETAILS STRUCTURE NO. 096-3474	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND RENWICK, INC. 308 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703	PLOT SCALE = \$SCALES	CHECKED - S.W.M.	REVISIONS -			558	19-15146-00-BR	WAYNE	16	14
HLR ILLINOIS PROFESSIONAL DESIGN FIRM L3 / PE / SE CORP. 184-00058	PLOT DATE = 4/18/2021	DRAWN - R.D.H.	REVISIONS -			LEECH ROAD DISTRICT		CONTRACT NO. 95903		
		CHECKED - S.W.M.	REVISIONS -			SHEET NO. 9 OF 11 SHEETS		ILLINOIS FED. AID PROJECT		

HOLCOMB FOUNDATION ENGINEERING INC.
 393 Wood Road 618-529-5262
 Carbondale, Il. 62901 618-457-8991 fax

Bridge Foundation Boring Log

Project: H-19226 Bridge Co. Rd 2500E over Pond Creek Date: 12/31/2019
 Section: 19-15146-00-BR Station 2+96
 Structure: 096-3204 Bored by: D. Russell
 County: Wayne Checked By: T. Holcomb

Boring No. 2 Station: 2+54 Offset: 6' LT	Elevation	N	Qu tsf	w %	Surface Water Elev.	Elevation	N	Qu tsf	w %
Ground Surface	378.5	0							
Brown Mottled Gray Silty CLAY (A-6) with sand									
		6	0.5S	13		-25	2	1.4S	33
		3	0.7S	26		-5	1	0.3B	34
372.5									
Brown Mottled Gray Silty CLAY to Fat CLAY (A-6)		2	0.2S	27		-30	3	--	20
370.0									
Gray Mottled Brown Silty CLAY to Fat CLAY (A-6)		4	1.4S	34					
		6	1.2S	28		-35	17	--	20
365.0									
Gray Silty CLAY (A-6) with sand		3	0.4S	37					
		2	1.4S	33		-40	9	--	14
340.0									
Brown SAND (A-2-4)		2	1.2S	32					
		1	0.6S	40			15	--	21

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

HOLCOMB FOUNDATION ENGINEERING INC.
 393 Wood Road 618-529-5262
 Carbondale, Il. 62901 618-457-8991 fax

Bridge Foundation Boring Log

Project: H-19226 Bridge Co. Rd 2500E over Pond Creek Date: 12/31/2019
 Section: 19-15146-00-BR Station 2+96
 Structure: 096-3204 Bored by: D. Russell
 County: Wayne Checked By: T. Holcomb

Boring No. 2 Station: 2+54 Offset: 6' LT	Elevation	N	Qu tsf	w %	Surface Water Elev.	Elevation	N	Qu tsf	w %
sand (continued)	45								
						-70	30	--	25
						-50	19	--	26
						-75	24	--	15
						-55	18	--	22
						-80	68	--	14
						-60	14	--	20
						-55			
						-65	31	--	14
GRAVEL	315.0								

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

BORING-2