

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 285	18-05126-00-BR	LAWRENCE	14	1
CONTRACT 95855		ILLINOIS	PROJECT C-97-058-19	

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

PLANS FOR PROPOSED  
SURFACE TRANSPORTATION PROGRAM - BRIDGE

SECTION 18-05126-00-BR LAWRENCE COUNTY

PROJECT EC51(795)

JOB NO. C-97-058-19

T.R. 285

CONTRACT NO. 95855

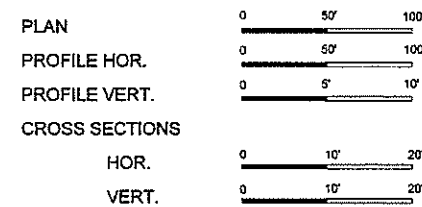
Joint Utility Locating Information for Excavators

JULIE 1-800-892-0123

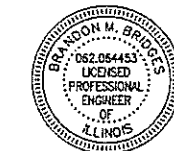
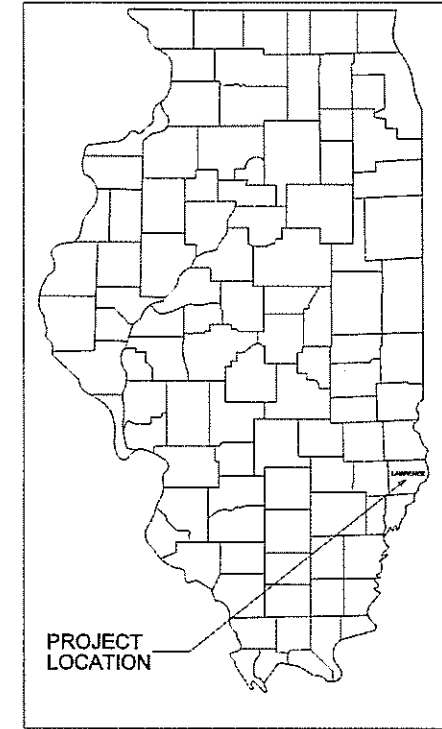
INDEX OF SHEETS

SHEET	ITEM
1	COVER SHEET
2	SUMMARY OF QUANTITIES
3	ROADWAY PLAN AND PROFILE
4	GENERAL PLAN AND ELEVATION
5	SUPERSTRUCTURE
6	SUPERSTRUCTURE DETAILS
7	STEEL RAILING, TYPE S-1
8	STEEL RAILING, TYPE S-1 DETAILS
9	ABUTMENT DETAILS
10	PILE DETAILS
11	BORING LOGS
12-14	CROSS SECTIONS

- STANDARD DRAWINGS
- STANDARD 000001-07
  - STANDARD 260001-07
  - STANDARD 515001-03
  - STANDARD 701901-06
  - STANDARD 725001-01
  - STANDARD BLR 21-9



NOTE: SCALES VALID FOR 24" X 36" SHEETS



*Anderson M. Brock*  
5/14/2019

LICENSE EXPIRES 11/30/2019

**CHARLESTON ENGINEERING, INC.**  
CONSULTING ENGINEERS  
105 NORTH KITCHELL  
P.O. BOX 397  
OLNEY, ILLINOIS 62450  
(618) 392-0736  
ILLINOIS DEPARTMENT OF PROFESSIONAL REGULATION REGISTRATION #154.003513

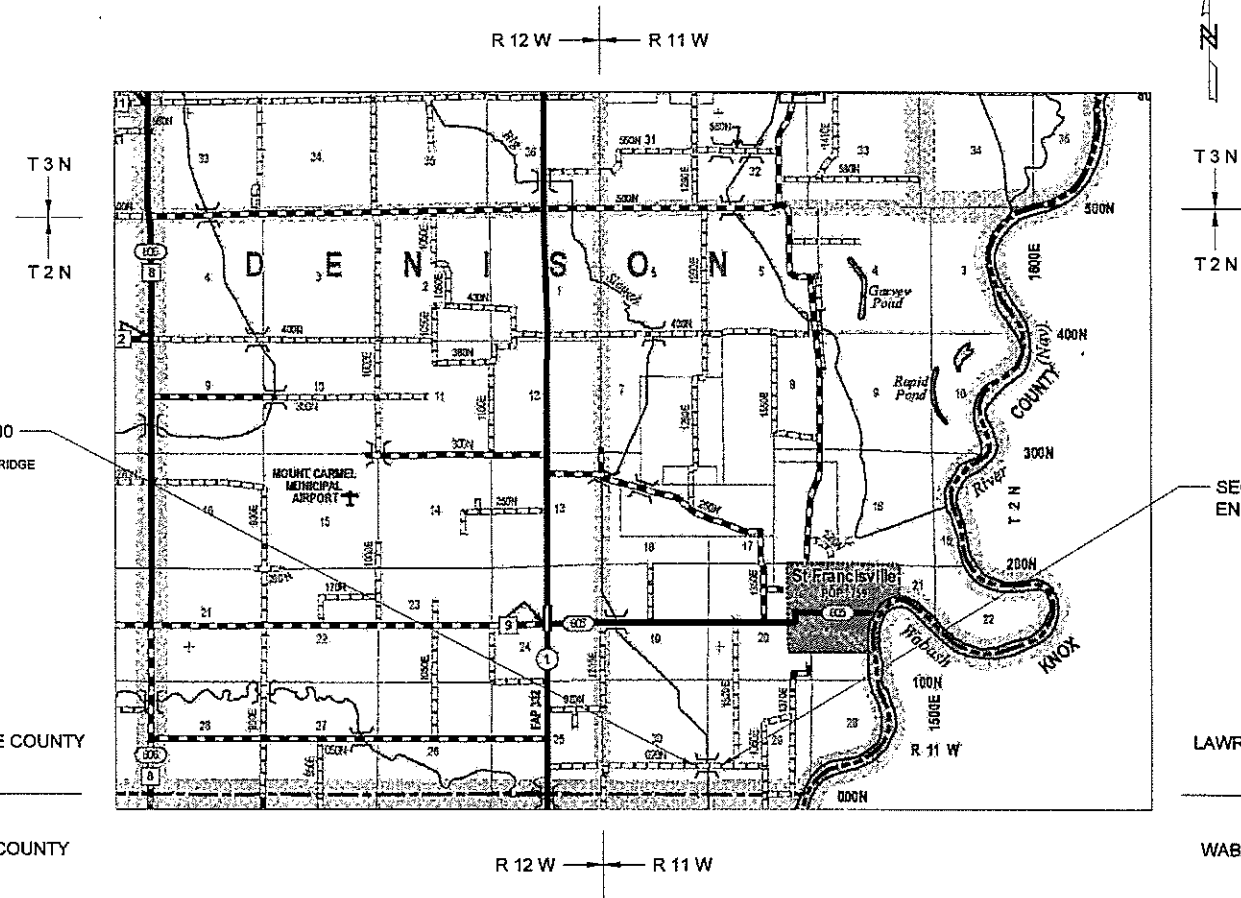
APPROVED *Harold M. ...*  
5/14/2019  
COUNTY ENGINEER

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

PASSED *May 30, 2019*  
*SA Phillips*  
DISTRICT SEVEN ENGINEER OF  
LOCAL ROADS AND STREETS

Releasing For  
Old Based on  
Limited Review

*May 30, 2019*  
*Jeffrey ...*  
REGION FOUR ENGINEER



SECTION 18-05126-00-BR BEGINS STA. 1+00.00

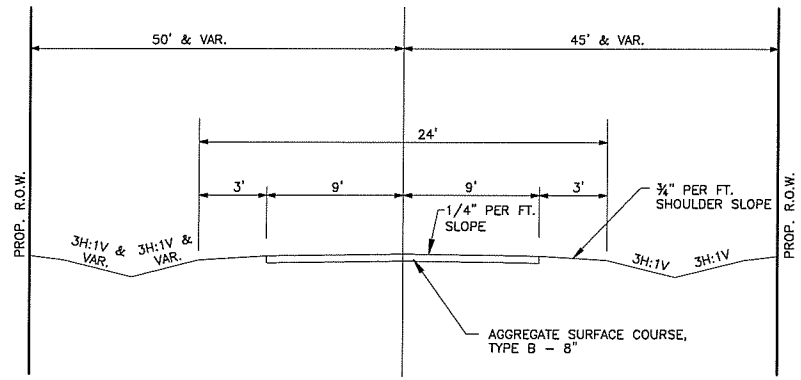
SINGLE SPAN PRECAST PRESTRESSED CONCRETE DECK BEAM BRIDGE  
87'-10" BK.-BK. ABUTMENTS  
STEEL H PILE / SPILLTHROUGH ABUTMENTS  
28" DECK  
EXISTING STRUCTURE NO. 051-3118  
PROPOSED STRUCTURE NO. 051-3305

SECTION 18-05126-00-BR  
ENDS STA. 7+00.00

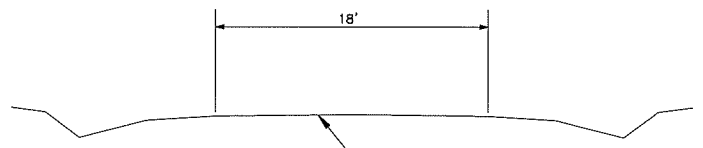
FUNCTIONAL CLASSIFICATION - LOCAL ROAD  
ADT = 50  
DESIGN SPEED = 30 MPH

NET LENGTH SECTION 18-05126-00-BR = 600.00 Ft. = 0.114 Mi.

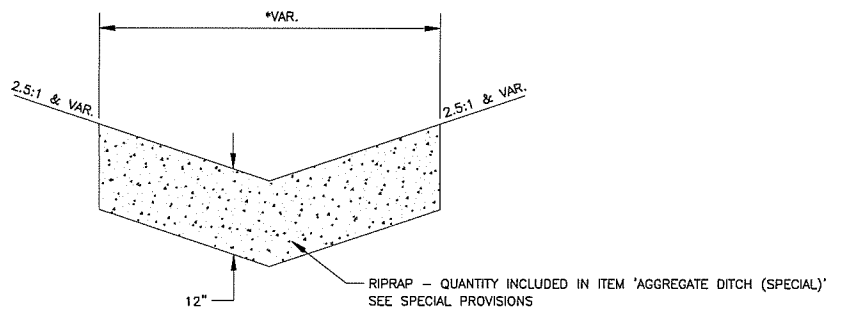
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 285	1B-05126-00-BR	LAWRENCE	14	2
CONTRACT 95855		ILLINOIS	PROJECT C-97-058-19	



TYPICAL SECTION  
PROPOSED



TYPICAL SECTION  
EXISTING

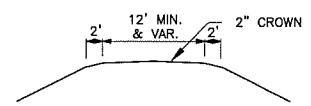
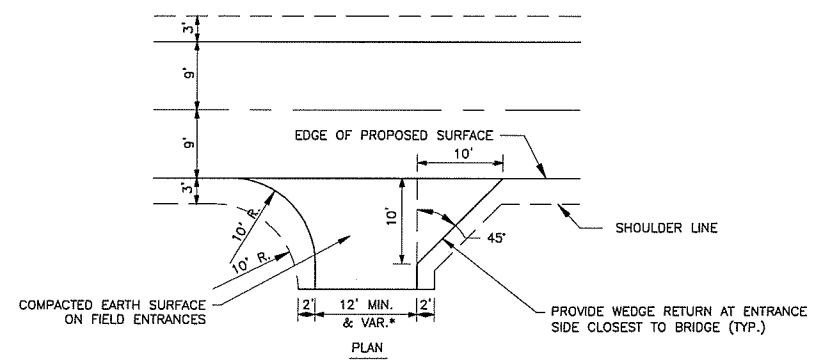


AGGREGATE DITCH DETAIL  
LT. STA. 5+00 TO 6+50

\*VARIABLE WIDTH - SEE SHEETS  
13-14 FOR WIDTHS

DESIGN DATA

LOCAL ROAD  
ADT = 50



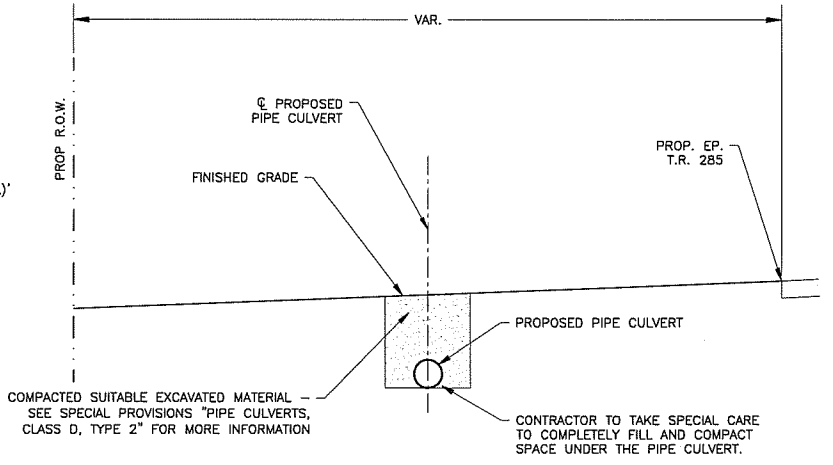
ENTRANCE DETAIL

LT. STA. 3+45  
RT. STA. 3+45  
LT. STA. 4+59  
RT. STA. 4+59

\*SEE SHEET 3 FOR REQUIRED DIMENSION

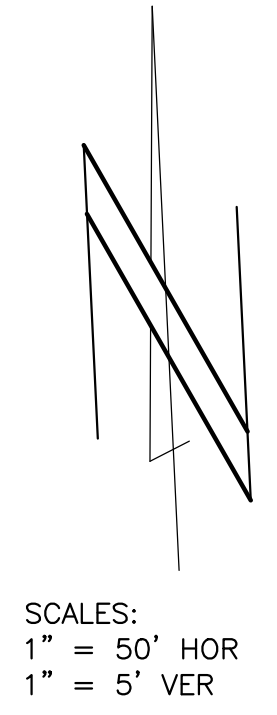
SUMMARY OF QUANTITIES			
CODE NO.	ITEM	UNIT	QUANTITY
X2501000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.60
X2830495	AGGREGATE DITCH (SPECIAL)	TON	220
X7010216	TRAFFIC CONTROL AND PROTECTION, (SPECIAL)	L. SUM	1
20200100	EARTH EXCAVATION	CU YD	515
20300100	CHANNEL EXCAVATION	CU YD	640
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	60
28000400	PERIMETER EROSION BARRIER	FOOT	370
28100807	STONE DUMPED RIPRAP, CLASS A4	TON	560
35101400	AGGREGATE BASE COURSE, TYPE B	TON	80
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	640
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50105220	PIPE CULVERT REMOVAL	FOOT	68
50300225	CONCRETE STRUCTURES	CU YD	32.4
50300280	CONCRETE ENCASEMENT	CU YD	3.5
50400505	PRECAST PRESTRESSED CONCRETE DECK BEAMS (27" DEPTH)	SQ FT	1848
50800105	REINFORCEMENT BARS	POUND	4300
Δ 50900205	STEEL RAILING, TYPE S1	FOOT	136
51201600	FURNISHING STEEL PILES HP12X53	FOOT	765
51202305	DRIVING PILES	FOOT	765
51203600	TEST PILE STEEL HP12X53	EACH	1
51204650	PILE SHOES	EACH	9
51500100	NAME PLATES	EACH	1
54201060	PIPE CULVERTS, CLASS D, TYPE 2 15"	FOOT	68
54201105	PIPE CULVERTS, CLASS D, TYPE 2 60"	FOOT	86
59300100	CONTROLLED LOW-STRENGTH MATERIAL	CU YD	40
67100100	MOBILIZATION	L. SUM	1
Δ 72501000	TERMINAL MARKER - DIRECT APPLIED	EACH	4

Δ SPECIALTY ITEMS



TRENCH DETAIL  
THROUGH GRASS SURFACES

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 285	18-05126-00-BR	LAWRENCE	14	3
CONTRACT 95855		ILLINOIS	PROJECT C-97-058-19	



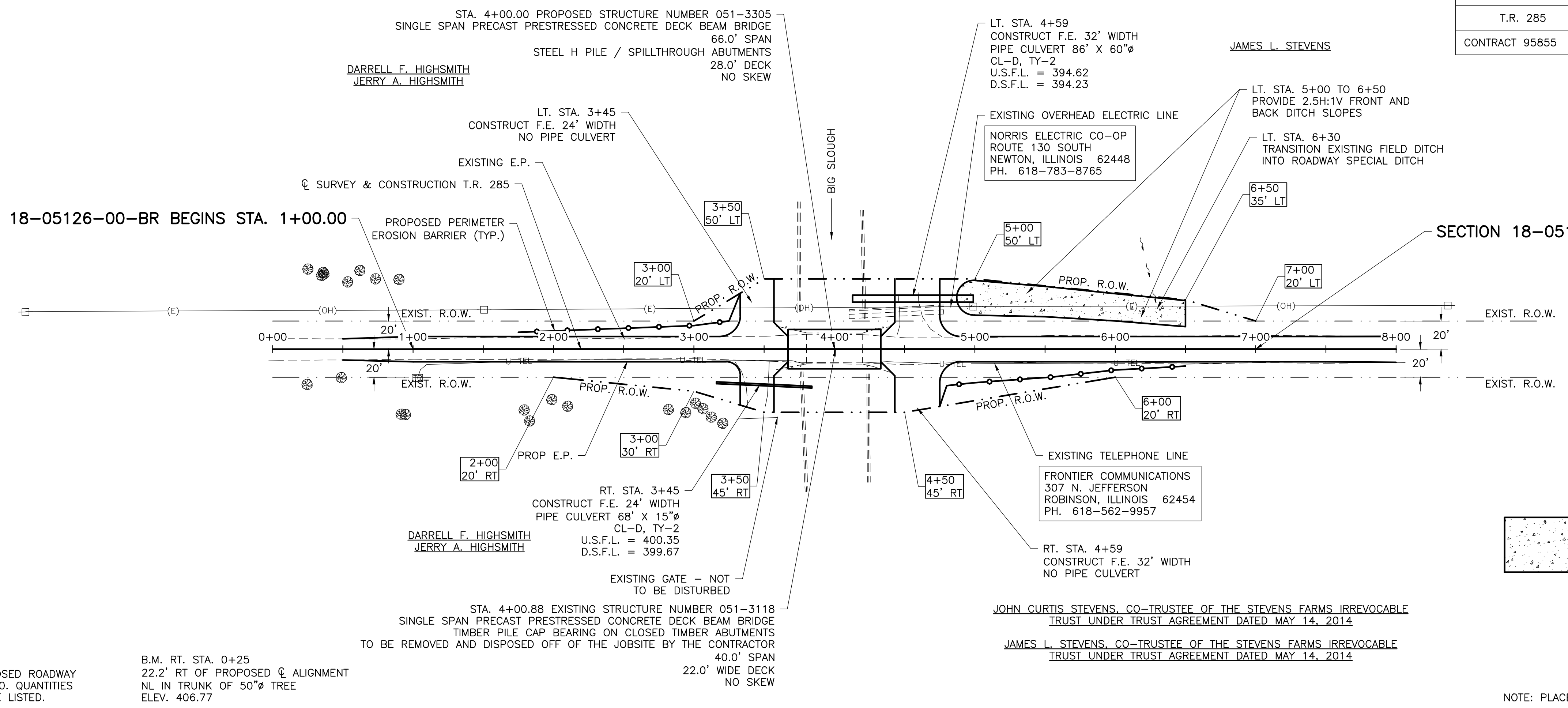
SCALES:  
1" = 50' HOR  
1" = 5' VER

SECTION 18-05126-00-BR BEGINS STA. 1+00.00

SECTION 18-05126-00-BR ENDS STA. 7+00.00

P.O.T. STA. 1+00.00  
N: 694,421.61  
E: 1,174,127.18  
COORDINATES BASED ON NAD83  
ILLINOIS EAST STATE PLANE  
COORDINATE SYSTEM

P.O.T. STA. 7+00.00  
N: 694,418.25  
E: 1,174,727.17  
COORDINATES BASED ON NAD83  
ILLINOIS EAST STATE PLANE  
COORDINATE SYSTEM

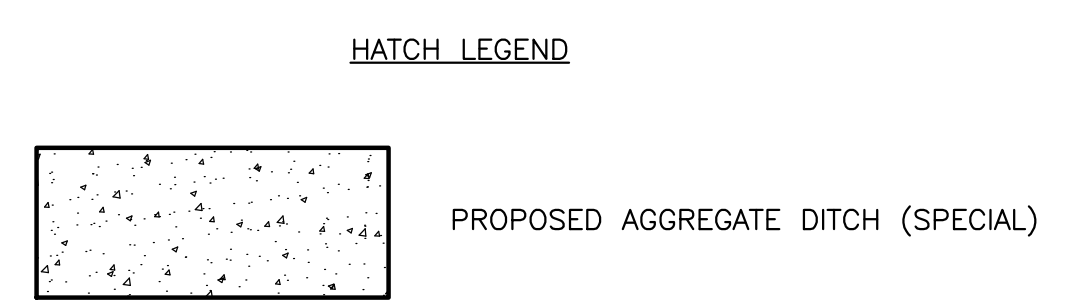


B.M. RT. STA. 0+25  
22.2' RT OF PROPOSED C ALIGNMENT  
NL IN TRUNK OF 50" TREE  
ELEV. 406.77

TRANSITION EXISTING ROADWAY TO PROPOSED ROADWAY  
STA. 0+50 TO 1+00 AND 7+00 TO 7+50. QUANTITIES  
FOR THE ABOVE ARE INCLUDED IN THOSE LISTED.

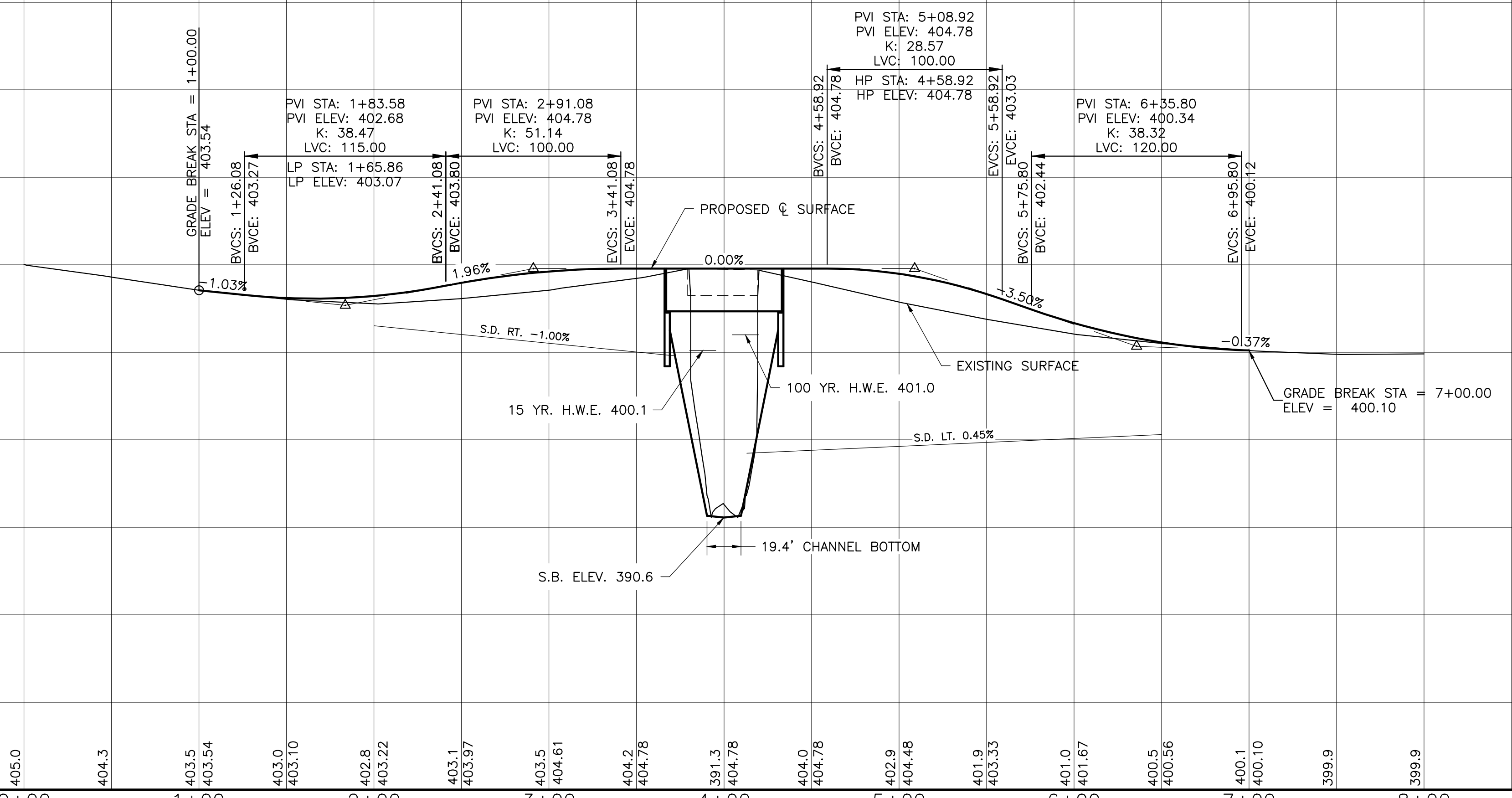
JOHN CURTIS STEVENS, CO-TRUSTEE OF THE STEVENS FARMS IRREVOCABLE  
TRUST UNDER TRUST AGREEMENT DATED MAY 14, 2014

JAMES L. STEVENS, CO-TRUSTEE OF THE STEVENS FARMS IRREVOCABLE  
TRUST UNDER TRUST AGREEMENT DATED MAY 14, 2014



NOTE: PLACE RIPRAP IN DITCHES AFTER EXCAVATION

LINE NO.	DESCRIPTION	UNIT	QUANTITY	REMARKS
420	EARTHWORK	CU YD		
	EARTH EXCAVATION	515*		
	CHANNEL EXCAVATION	640**		
	EMBANKMENT	480		
415	*QUANTITY INCLUDES 80 C.Y. EXCAVATION FOR CONCRETE STRUCTURES. COST OF EXCAVATION FOR CONCRETE STRUCTURES INCLUDED IN ITEM "EARTH EXCAVATION." EARTH EXCAVATION QUANTITY ALSO INCLUDES 135 C.Y. OF OVERDIG FOR RIPRAP DITCHES. VOLUME QUANTITIES SHOWN ON CROSS SECTION SHEETS DO NOT INCLUDE OVERDIG VOLUMES.	ACRE	0.60	SEEDING, CLASS 2 (SPECIAL) STA. 1+00 TO 7+00
410	**IT IS ESTIMATED THAT 50% OF THE CHANNEL EXCAVATION WILL BE SUITABLE FOR USE IN THE EMBANKMENT. UNSUITABLE MATERIAL SHALL BE DISPOSED OF BY THE CONTRACTOR.	TON	220	AGGREGATE DITCH (SPECIAL) LT. STA. 4+88 TO 6+50
405	PIPE CULVERT REMOVAL	FOOT	68	PERIMETER EROSION BARRIER LT. STA. 1+75 TO 3+33 RT. STA. 4+75 TO 6+50
400	PIPE CULVERTS, CLASS D, TYPE 2 15"	FOOT	68	
395	PIPE CULVERTS, CLASS D, TYPE 2 60"	FOOT	86	
				TOTAL 370 FOOT



B.M.—Rt. Sta. 0+25, 22.2' Rt. of Proposed  $\phi$  Alignment, Nail in trunk of 50"  $\phi$  Tree, Elev. 406.77.

Existing Structure — Existing structure No. 051-3118 consists of a single span precast prestressed concrete deck beam bridge bearing on a timber pile cap with closed timber pile bent abutments with timber wingwalls. The bk. to bk. of abutments length is 40.0' and the out-to-out deck width is 22.0'. The existing structure shall be completely removed and disposed off the jobsite. Road closure shall be used during construction.

No Salvage — See Special Provisions; "Removal of Existing Structures." 3'-0" Along  $\phi$  (Typ.)

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 285	18-05126-00-BR	LAWRENCE	14	4
CONTRACT 95855		ILLINOIS	PROJECT C-97-058-19	

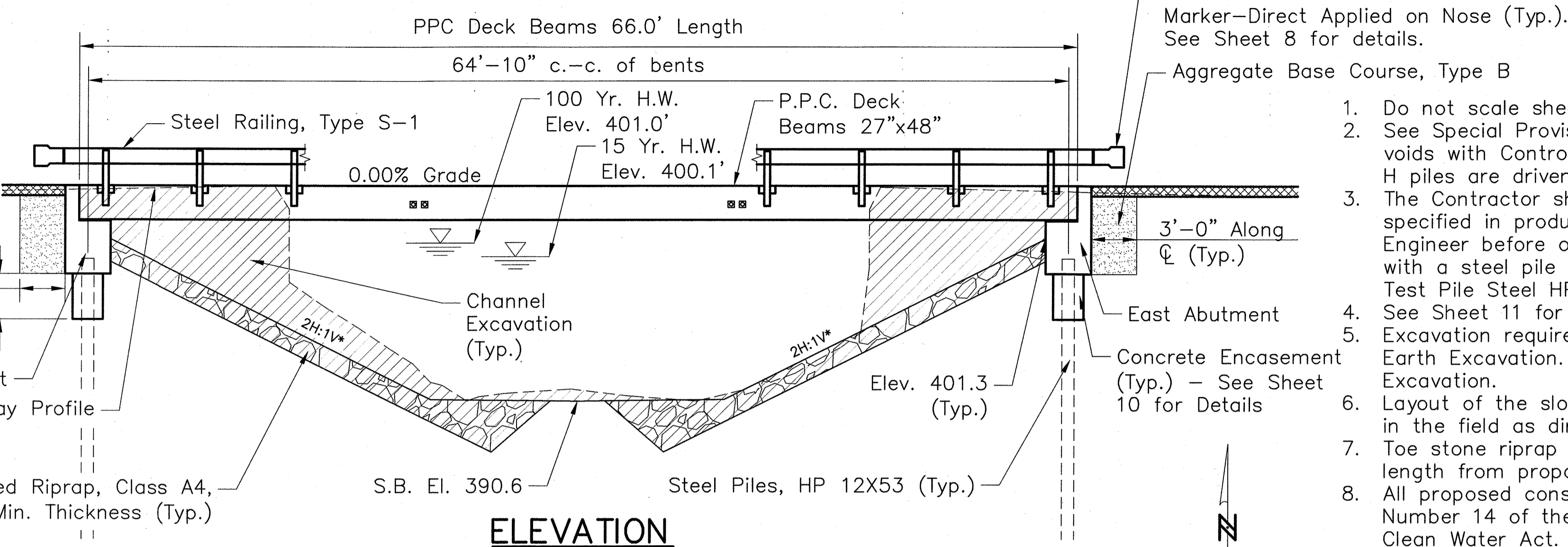
### GENERAL NOTES

- Do not scale sheets 4-11.
- See Special Provisions for removing existing wingwall piles and backfilling pile voids with Controlled Low-Strength Material. Voids shall be filled before any steel H piles are driven.
- The Contractor shall drive the test pile to 110% of the nominal required bearing specified in production locations at the West Abutment or as approved by the Engineer before ordering the remainder of piles. The test pile shall be equipped with a steel pile shoe, and the cost of the pile shoe shall be included in item Test Pile Steel HP 12 X 53.
- See Sheet 11 for boring logs.
- Excavation required to construct the Abutments shall be included in the cost of Earth Excavation. No additional compensation will be allowed for Structure Excavation.
- Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.
- Toe stone riprap treatment as shown in Section B-B shall extend entire channel length from proposed R.O.W. north to proposed R.O.W. south.
- 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.

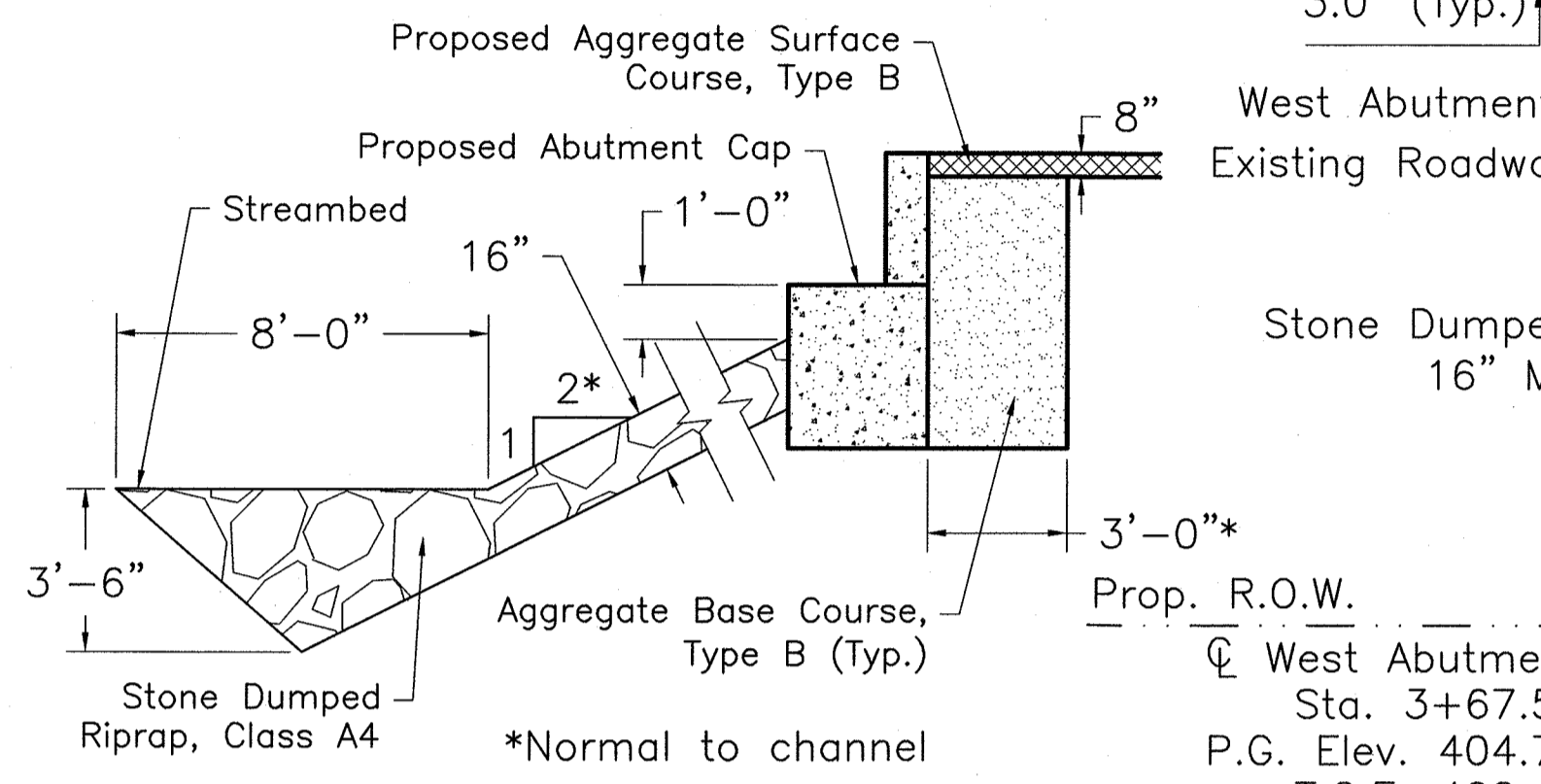
### TOTAL BILL OF MATERIAL

Item	Unit	Super	Sub.		Total
			Piers	Abuts.	
Channel Excavation	Cu. Yd.	-	-	640	640
Stone Dumped Riprap, Class A4	Tons	-	-	560	560
Aggregate Base Course, Type B	Tons	-	-	80	80
Removal of Existing Structures	Each	-	-	-	1
Concrete Structures	Cu. Yd.	-	-	32.4	32.4
Concrete Encasement	Cu. Yd.	-	-	3.5	3.5
Precast Prestressed Concrete Deck Beams (27" Depth)	Sq. Ft.	1848	-	-	1848
Reinforcement Bars	Pound	-	-	4300	4300
Steel Railing, Type S1	Foot	136	-	-	136
Furnishing Steel Piles HP 12 X 53	Foot	-	-	765	765
Driving Piles	Foot	-	-	765	765
Test Pile Steel HP 12 X 53	Each	-	-	1	1
Pile Shoes	Each	-	-	9	9
Name Plates	Each	-	-	1	1
Controlled Low-Strength Material	Cu. Yd.	-	-	40	40
Terminal Marker — Direct Applied	Each	4	-	-	4

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 Standard Specifications for Highway Bridges.

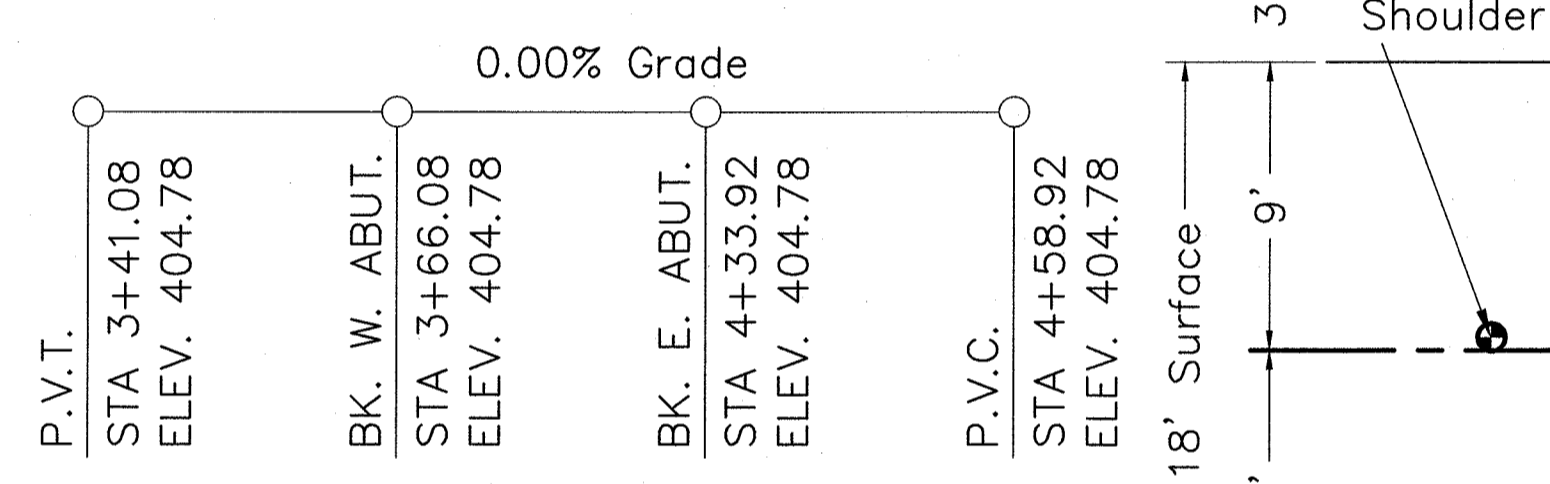


### ELEVATION



### SECTION B-B

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



### PROFILE GRADE

(along  $\phi$  roadway)

### DESIGN STRESSES

- FIELD UNITS**  
f'c = 3,500 psi  
Fy = 60,000 psi (reinforcement)
- PRECAST PRESTRESSED UNITS**  
f'c = 6,000 psi  
f'ci = 5,000 psi  
F's = 270,000 psi (1/2" low relax. strands)  
Fsi = 201,960 psi (1/2" low relax. strands)

### DESIGN SPECIFICATIONS

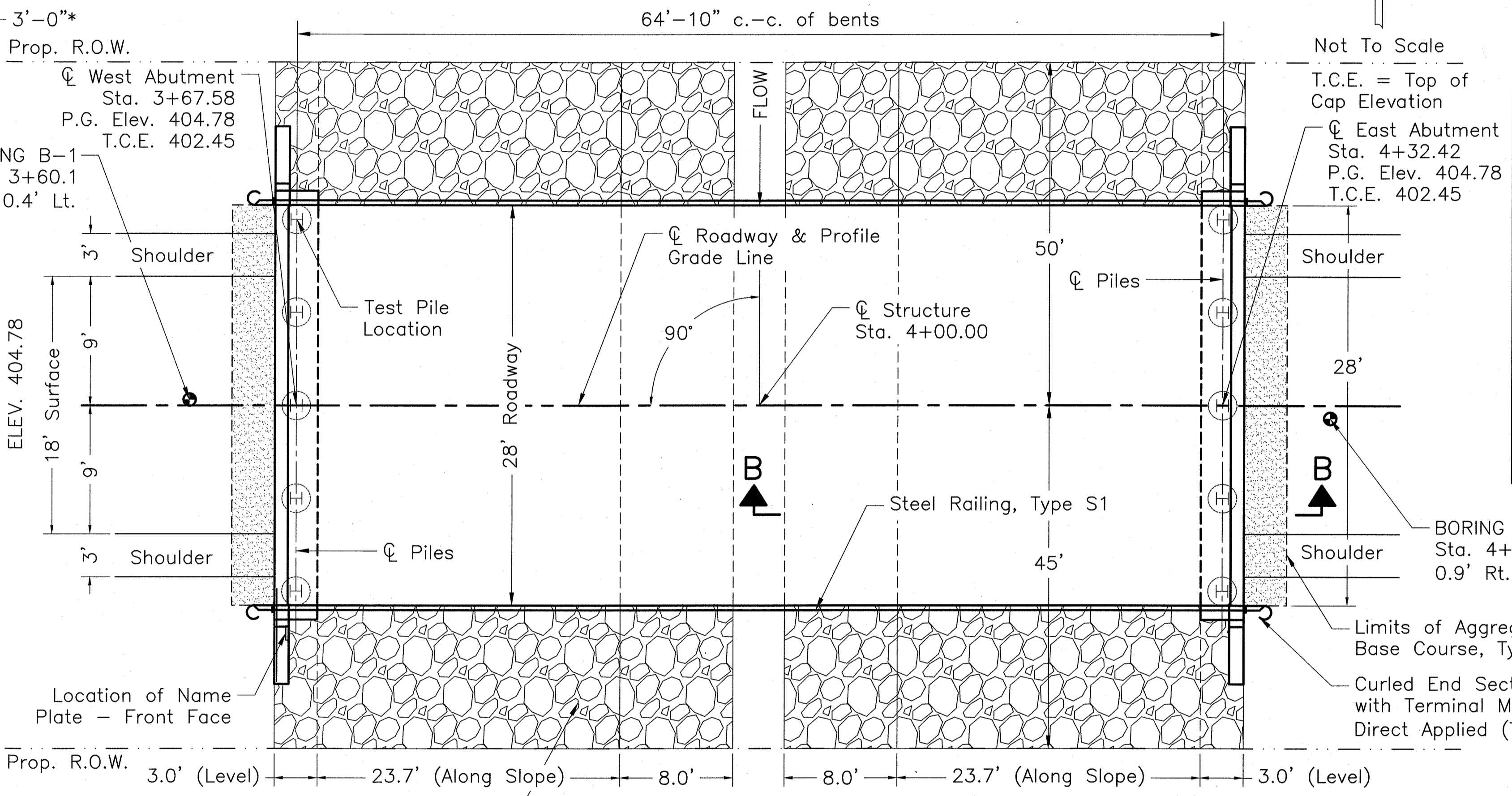
AASHTO LRFD Bridge Design Specifications — 7th edition

### SEISMIC DATA

Seismic Performance Zone (SPZ) = 2  
Design Spectral Acceleration at 1.0 sec. (S<sub>D1</sub>) = 0.238g  
Design Spectral Acceleration at 0.2 sec. (S<sub>D5</sub>) = 0.547g  
Soil Site Class = D

### PILE DATA (2-ABUTS.)

Type	HP 12 X 53
Nominal Required Bearing	418 kips
Factored Resistance Available	230 kips
Estimated Pile Length	85 Feet — East & West Abutments
Number of Production Piles	4 — West Abutment 5 — East Abutment
Number of Test Piles	1 — West Abutment



### PLAN

Skew Angle = 0°

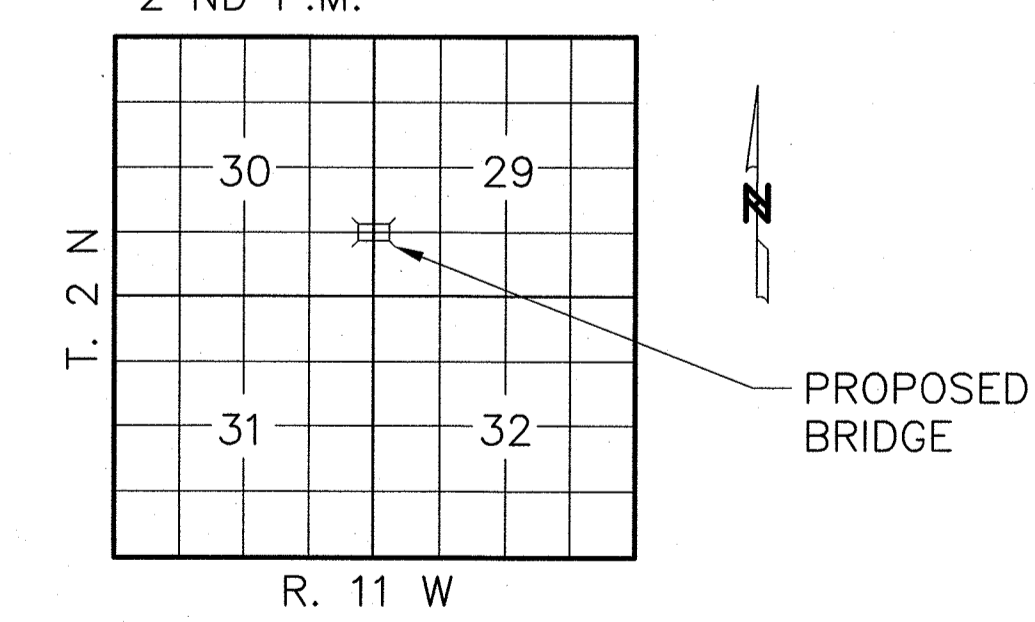
### LOADING HL-93

50#/sq. ft. included in dead load for future wearing surface.

STATION 4+00.00  
BIG SLOUGH  
SEC. 18-05126-00-BR BUILT 201  
DENISON ROAD DISTRICT  
LAWRENCE COUNTY  
LOADING HL-93  
STR. NO. 051-3305

### LETTERING FOR NAME PLATE

Locate Name Plate at SW Corner of Bridge (See Std. 515001)



### LOCATION SKETCH

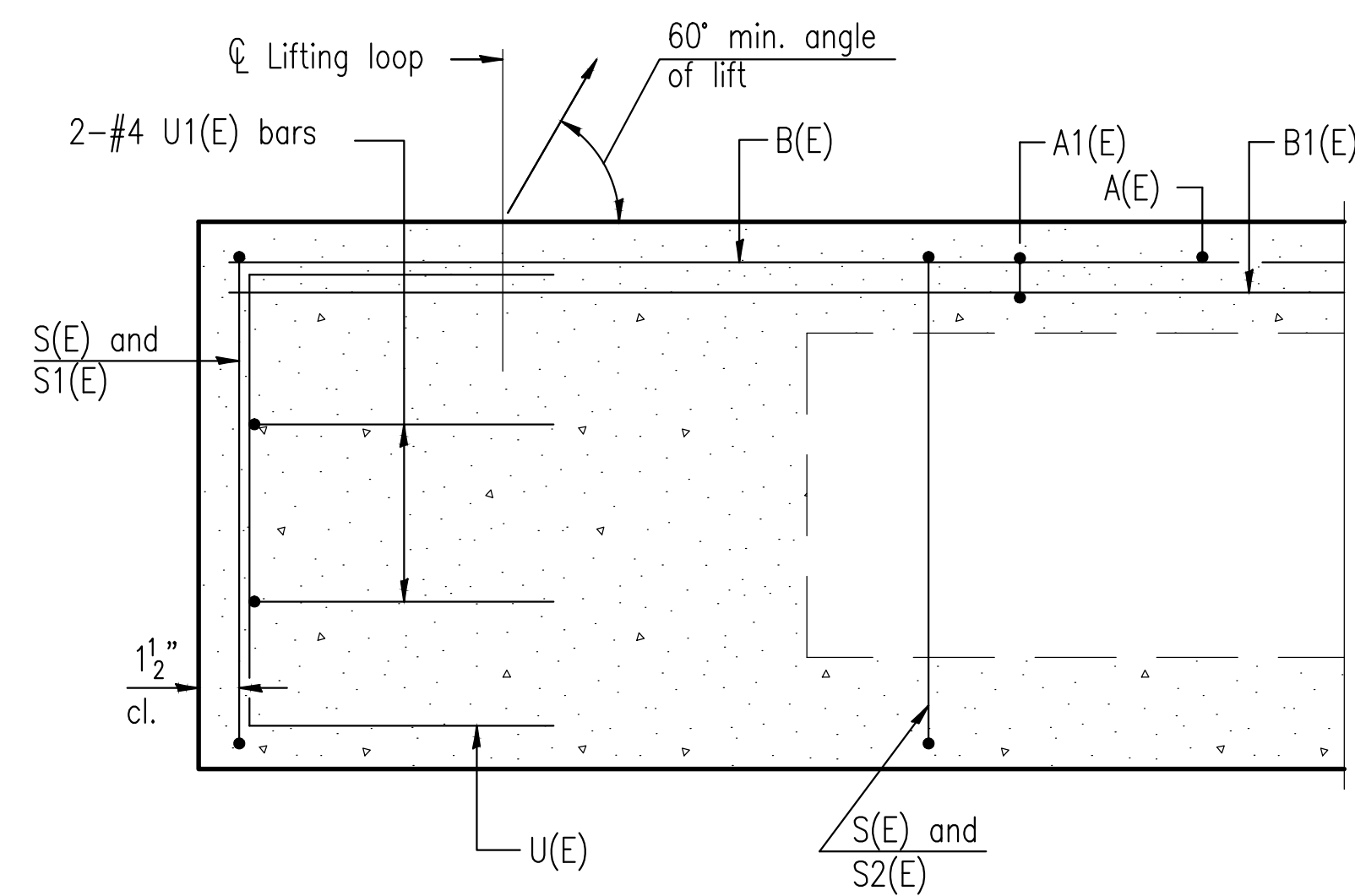
### WATERWAY INFORMATION

Flood	Freq. Yr.	Q. C.F.S.	Opening Sq. Ft.		Nat. H.W.E.	Head — Ft.		Headwater El.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	15	1515	279.5	358.0	400.1	0.0	0.0	400.0	400.1
Base	100	2430	304.4	401.3	401.0	0.0	0.0	400.9	400.9
Overtopping									
Max. Calc.	500								

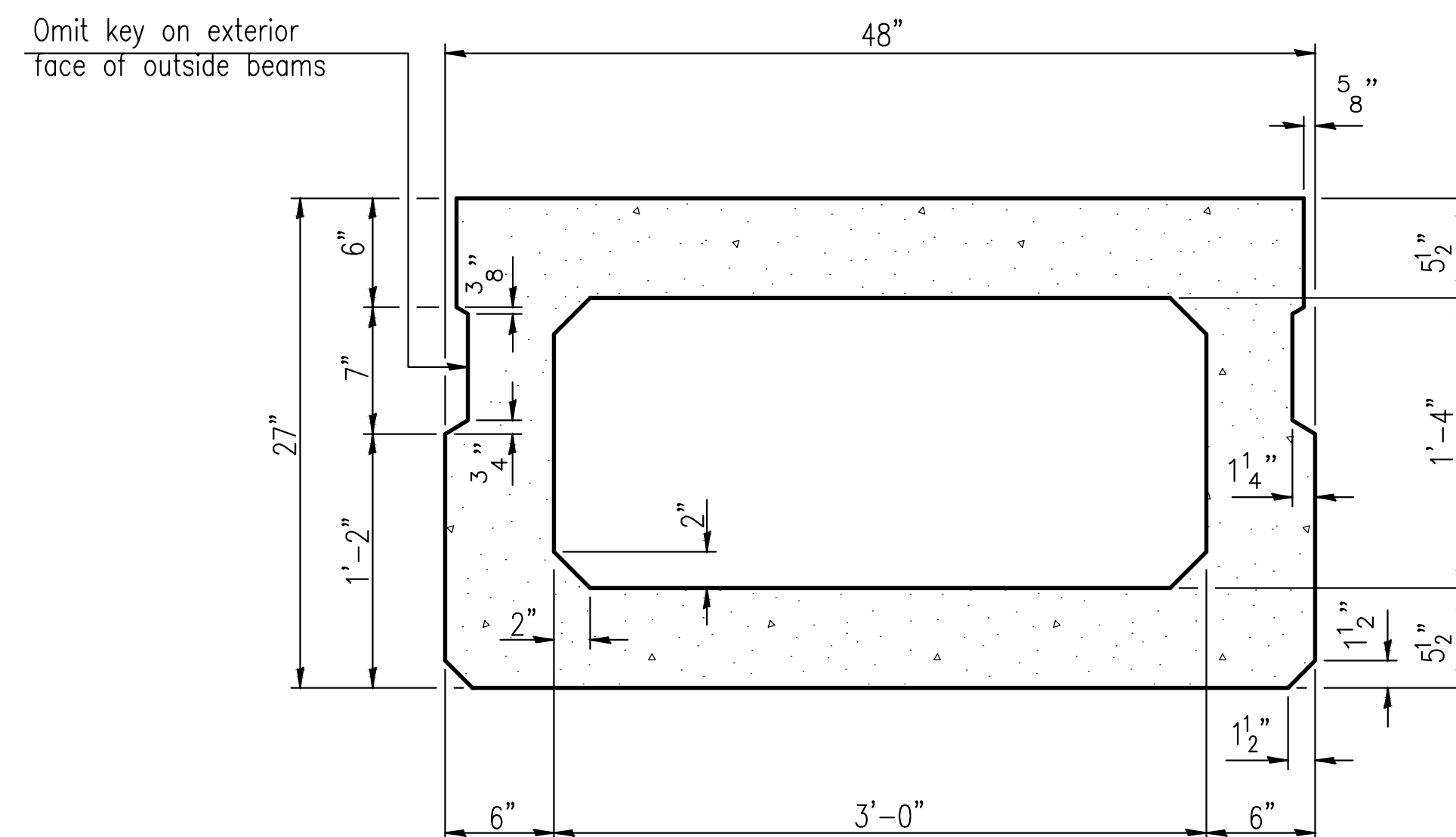
### INDEX OF SHEETS

- General Plan & Elevation
- Superstructure
- Superstructure Details
- Steel Railing, Type S1
- Steel Railing, Type S1 Details
- Abutment Details
- Pile Details
- Boring Logs

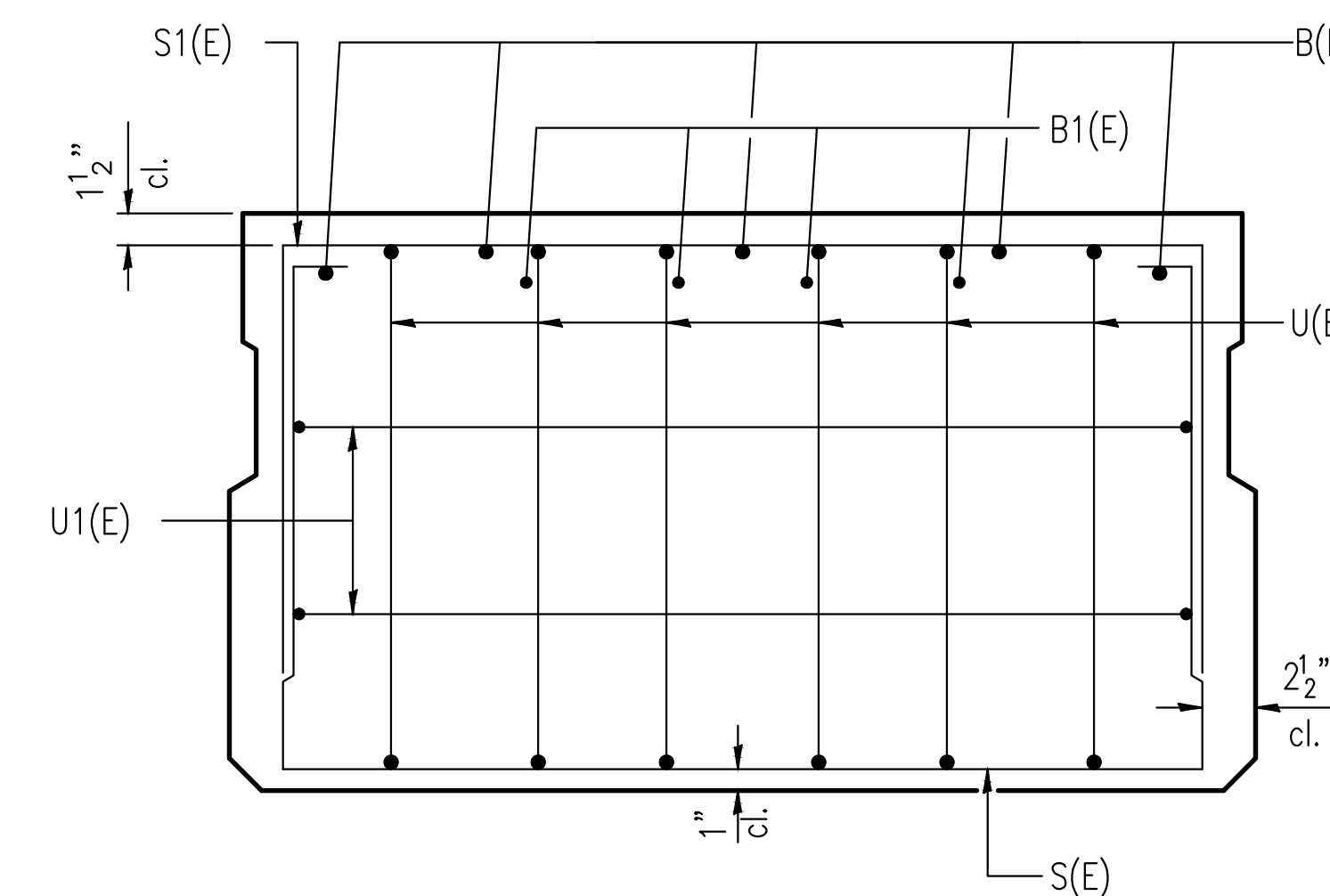
**GENERAL PLAN & ELEVATION**  
STRUCTURE NO. 051-3305  
T.R. 285  
OVER BIG SLOUGH  
SECTION 18-05126-00-BR  
LAWRENCE COUNTY  
STATION 4+00.00



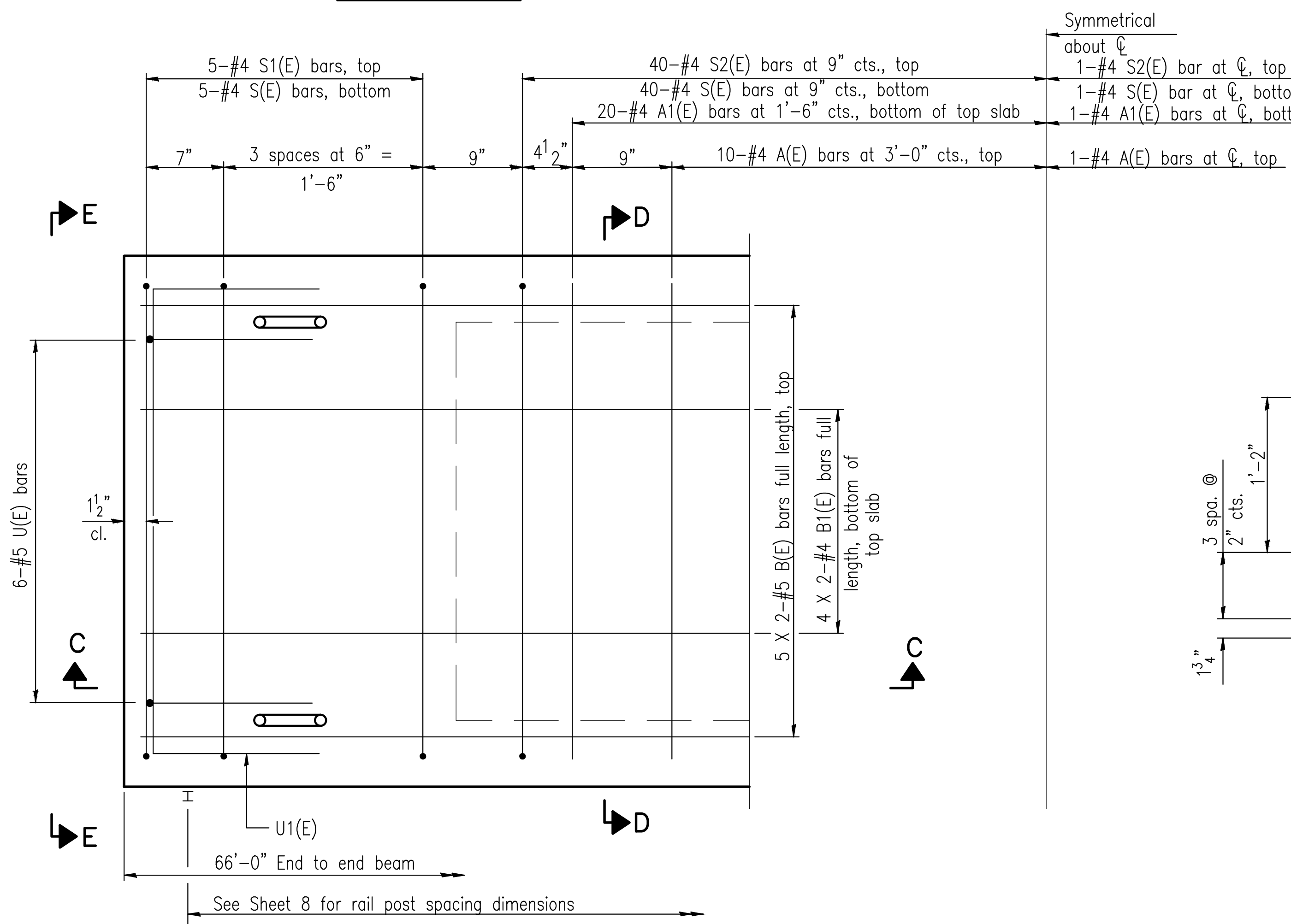
**SECTION C-C**



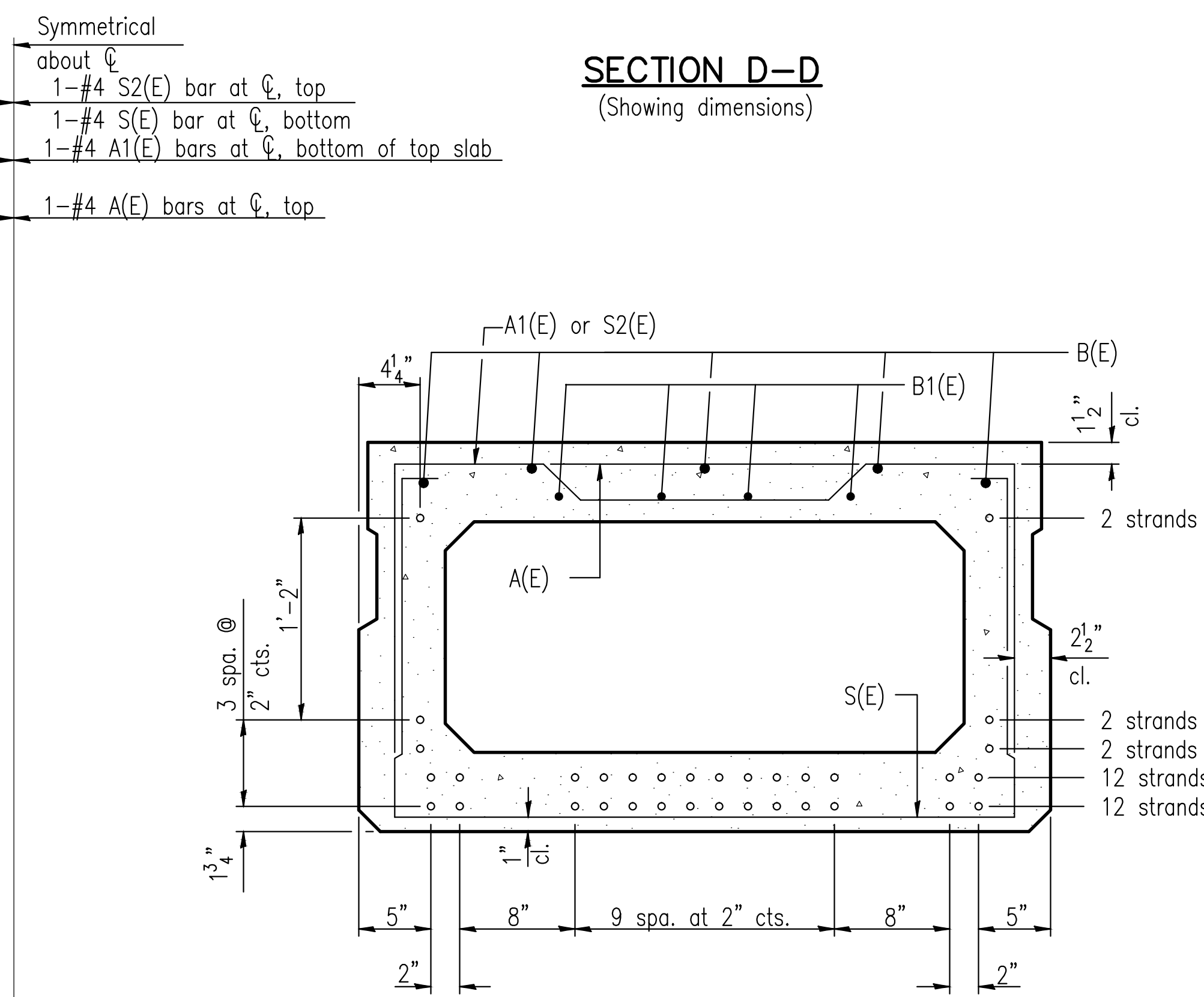
**SECTION D-D**  
(Showing dimensions)



**VIEW E-E**



**PLAN VIEW**



**SECTION D-D**  
(Showing reinforcement and permissible strand locations)

Notes: 30 total strands.  
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)	21	#4	3'-7"	—
A1(E)	41	#4	3'-10"	~
B(E)	10	#5	34'-2"	—
B1(E)	8	#4	34'-2"	—
S(E)	91	#4	8'-5"	⌊
S1(E)	10	#4	6'-11"	⌊
S2(E)	81	#4	7'-2"	⌊
U(E)	12	#5	4'-6"	⌊
U1(E)	4	#4	6'-0"	⌊

Note: See sheet 6 of 14 for additional details and Bill of Material.

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

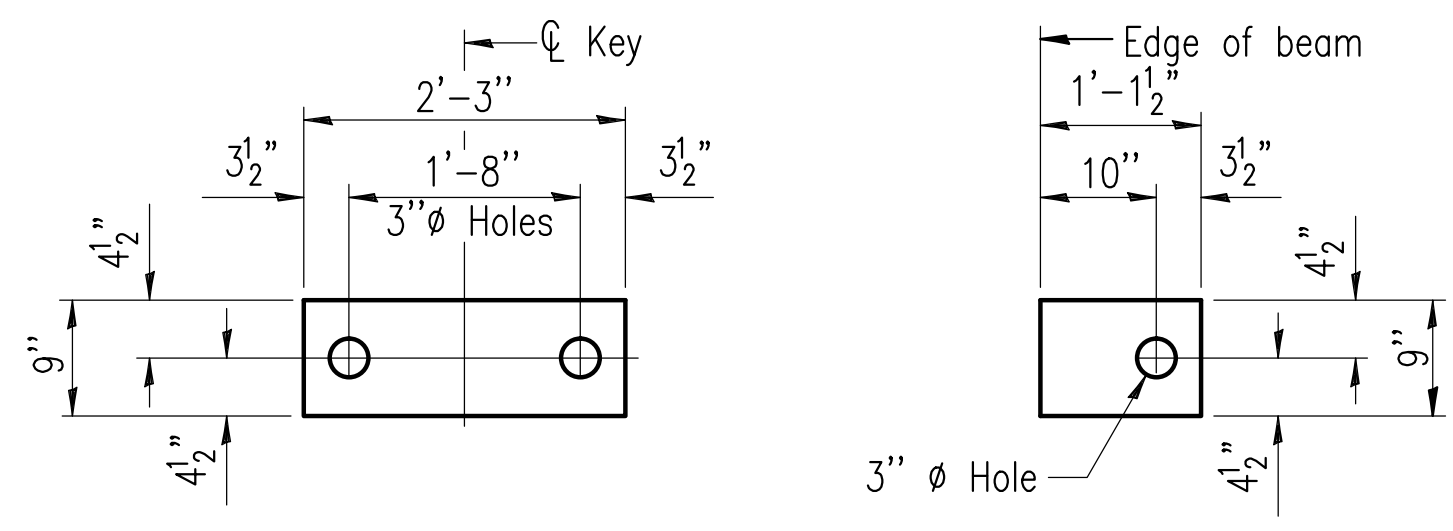
Bars indicated thus: "4 X 2-#4" indicates 4 lines of bars with 2 lengths per line.

**MINIMUM BAR LAP**  
#4 bar = 1'-11"  
#5 bar = 2'-6"

**CHARLESTON ENGINEERING, INC.**  
CONSULTING ENGINEERS  
105 NORTH KITCHELL  
P.O. BOX 397  
OLNEY, ILLINOIS 62450  
(618) 382-0736  
ILLINOIS DEPARTMENT OF PROFESSIONAL REGULATION REGISTRATION #184.003513

**SUPERSTRUCTURE**  
**STRUCTURE NO. 051-3305**  
**T.R. 285**  
**OVER BIG SLOUGH**  
**SECTION 18-05126-00-BR**  
**LAWRENCE COUNTY**  
**STATION 4+00.00**

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 285	18-05126-00-BR	LAWRENCE	14	6
CONTRACT 95855		ILLINOIS	PROJECT C-97-058-19	

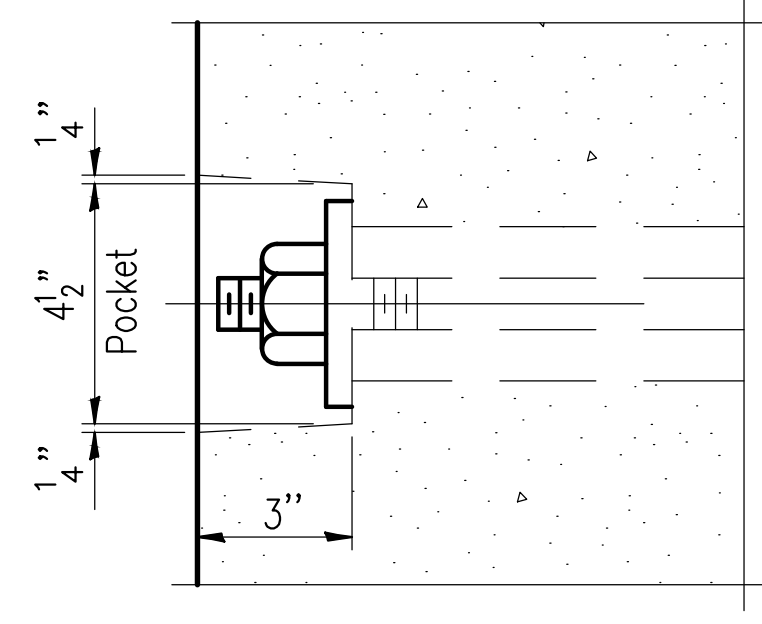


**FABRIC BEARING PAD**  
(Interior)  
12 Required

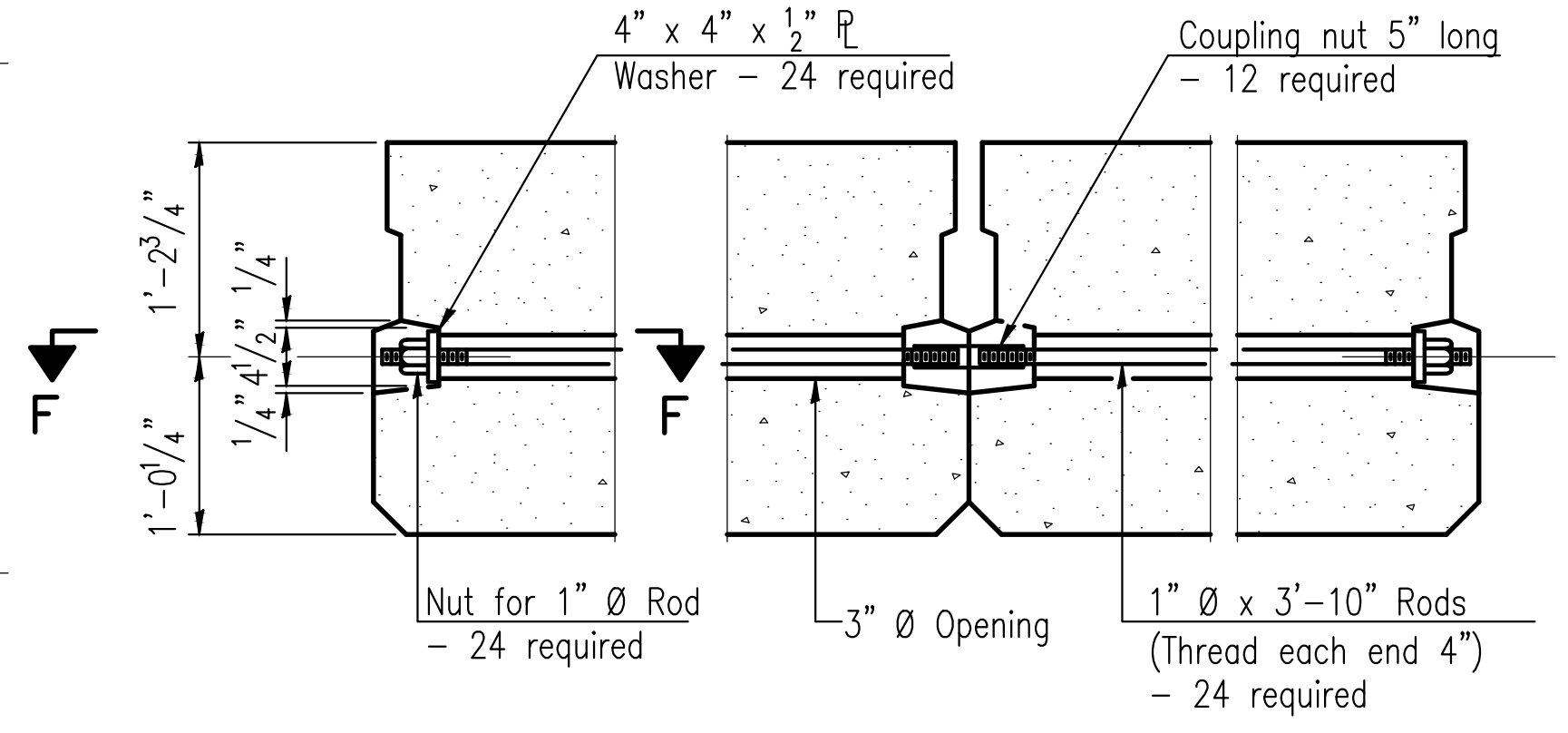
**FABRIC BEARING PAD**  
(Exterior)  
4 Required

**FIXED BEARING**

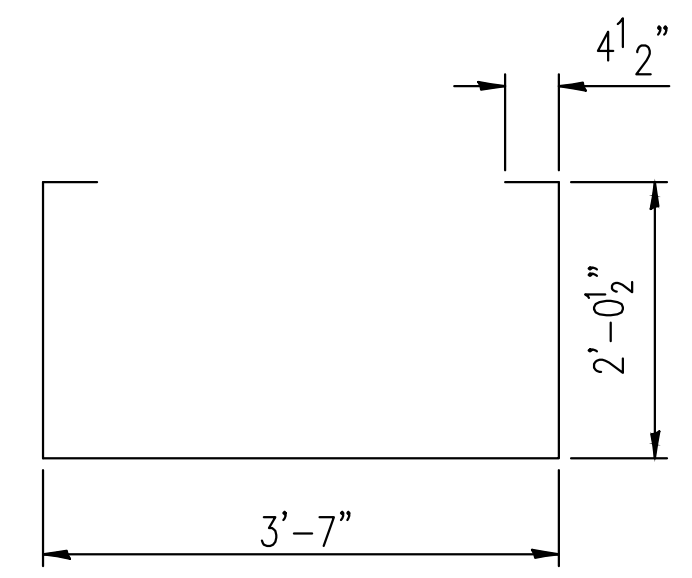
Notes:  
All bearing pads shall be 1" thick.



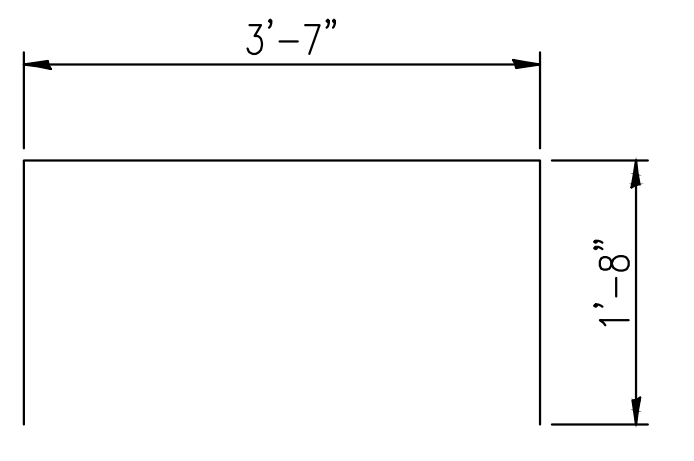
**SECTION F-F**



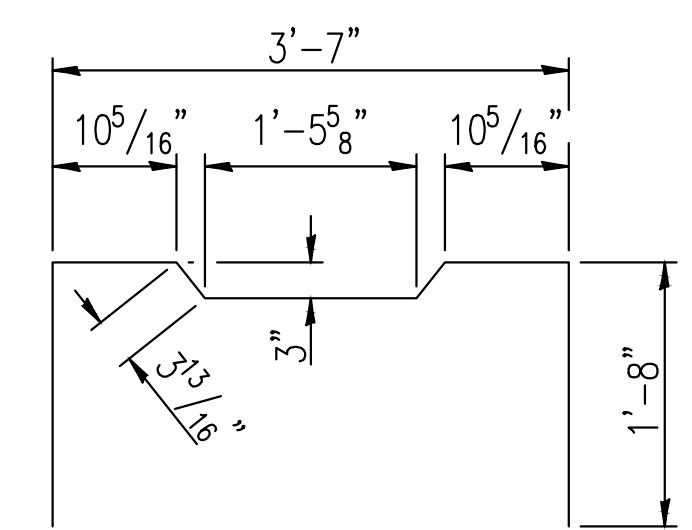
**TYPICAL TRANSVERSE TIE ASSEMBLY**



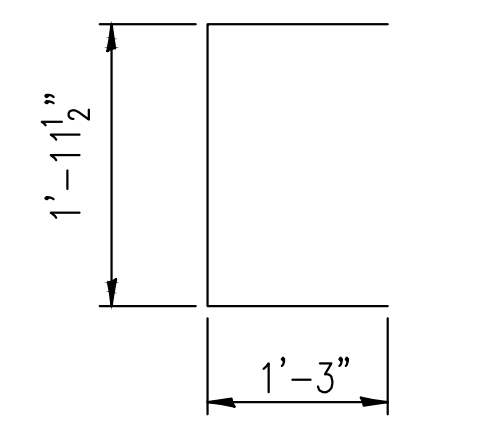
**BAR S(E)**



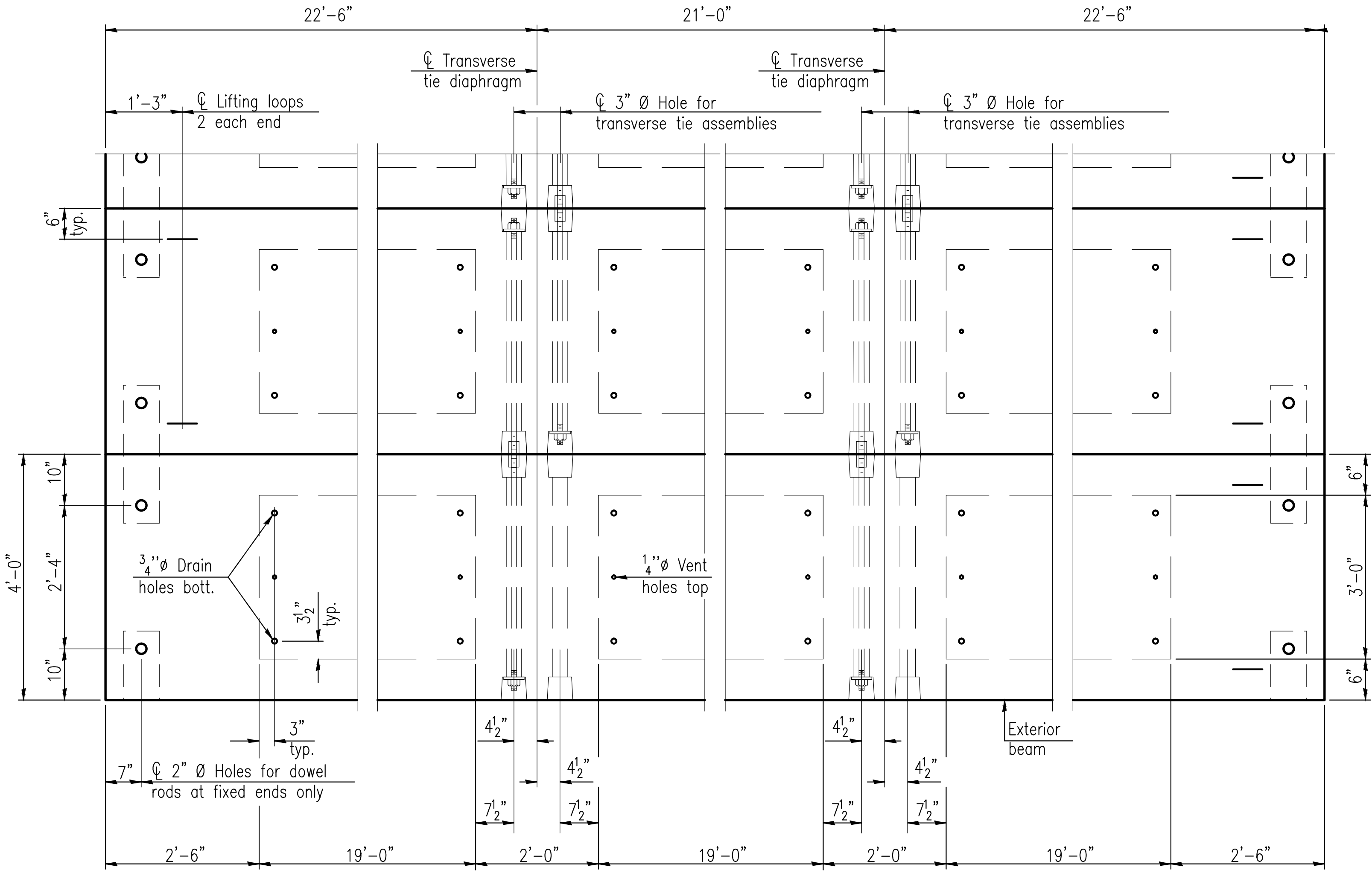
**BAR S1(E)**



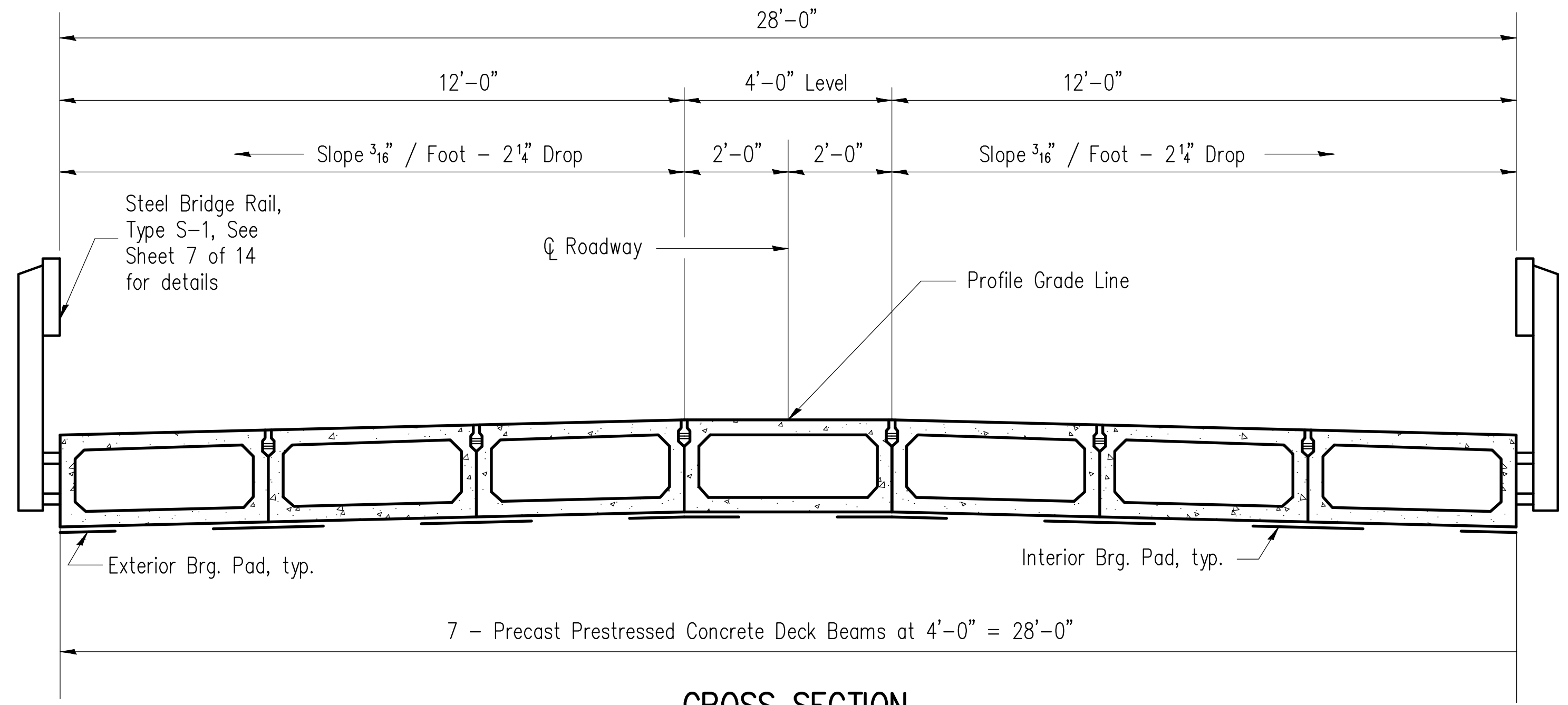
**BAR S2(E)**



**BAR U(E)**



**PLAN VIEW**



**CROSS SECTION**

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.

Reinforcement bars shall conform to ASTM A 706, Grade 60. See Standard Specifications.

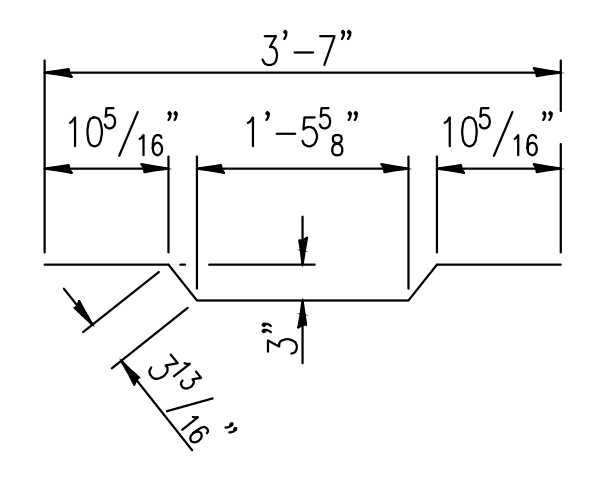
Two 1/8" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.

A minimum 2 1/2" lifting pin shall be used to engage the lifting loops during handling.

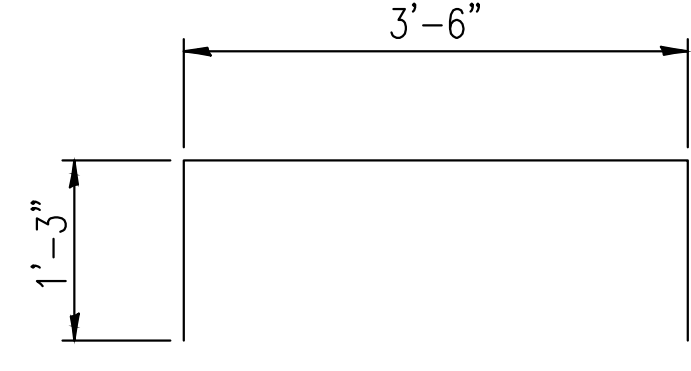
Corrosion Inhibitor, per Article 1020.05(b)(10) and 1021.07 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams.

Compressive strength of prestressed concrete, f'c, shall be 6000 psi.

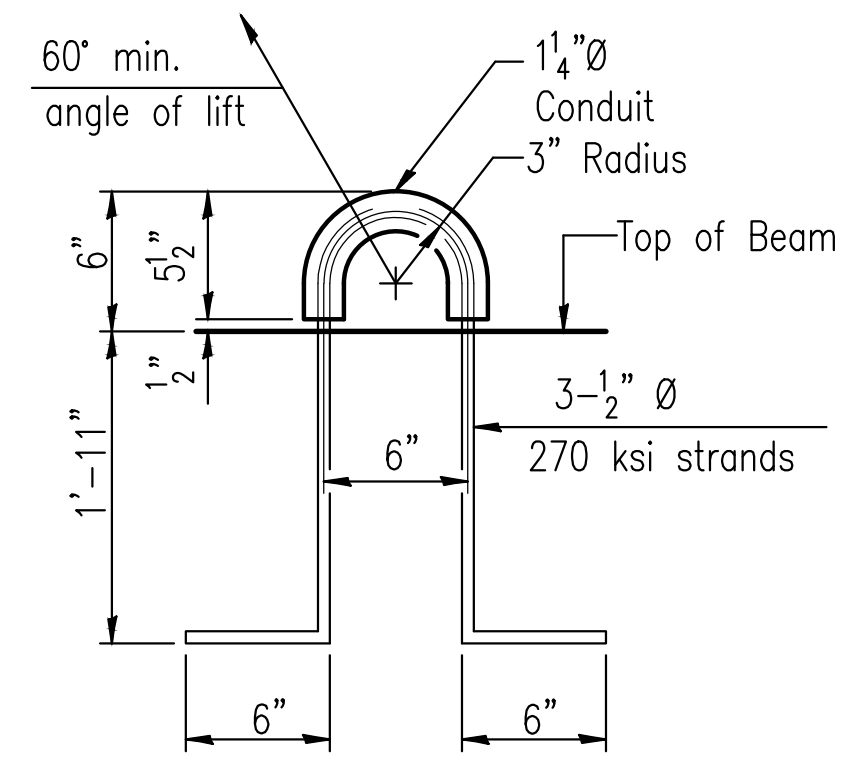
Compressive strength of prestressed concrete at release, f'ci, shall be 5000 psi.



**BAR A1(E)**



**BAR U1(E)**



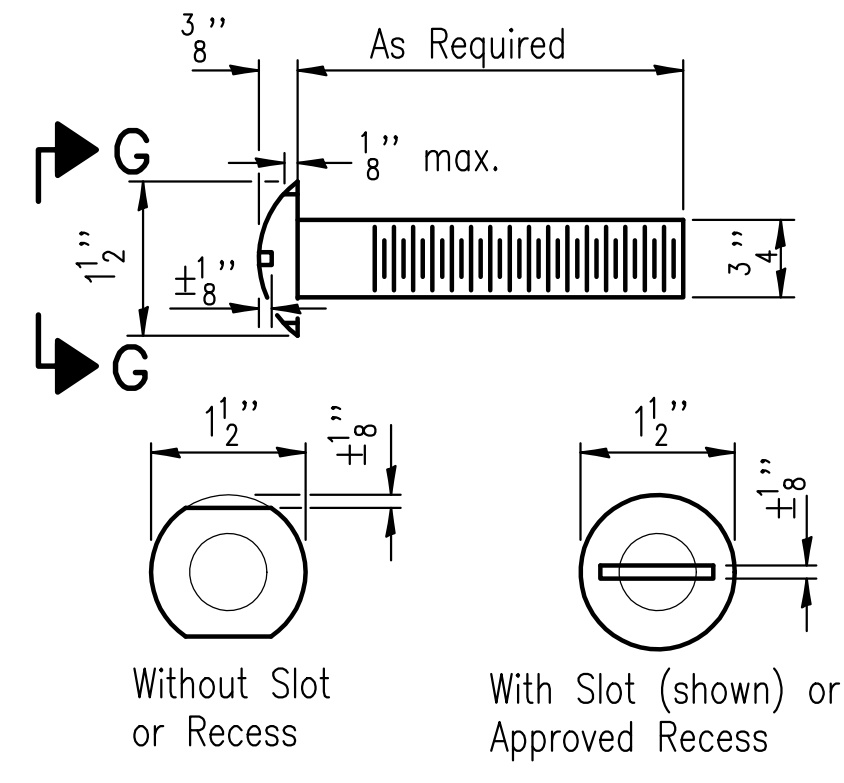
**LIFTING LOOP DETAIL**

**BILL OF MATERIAL**

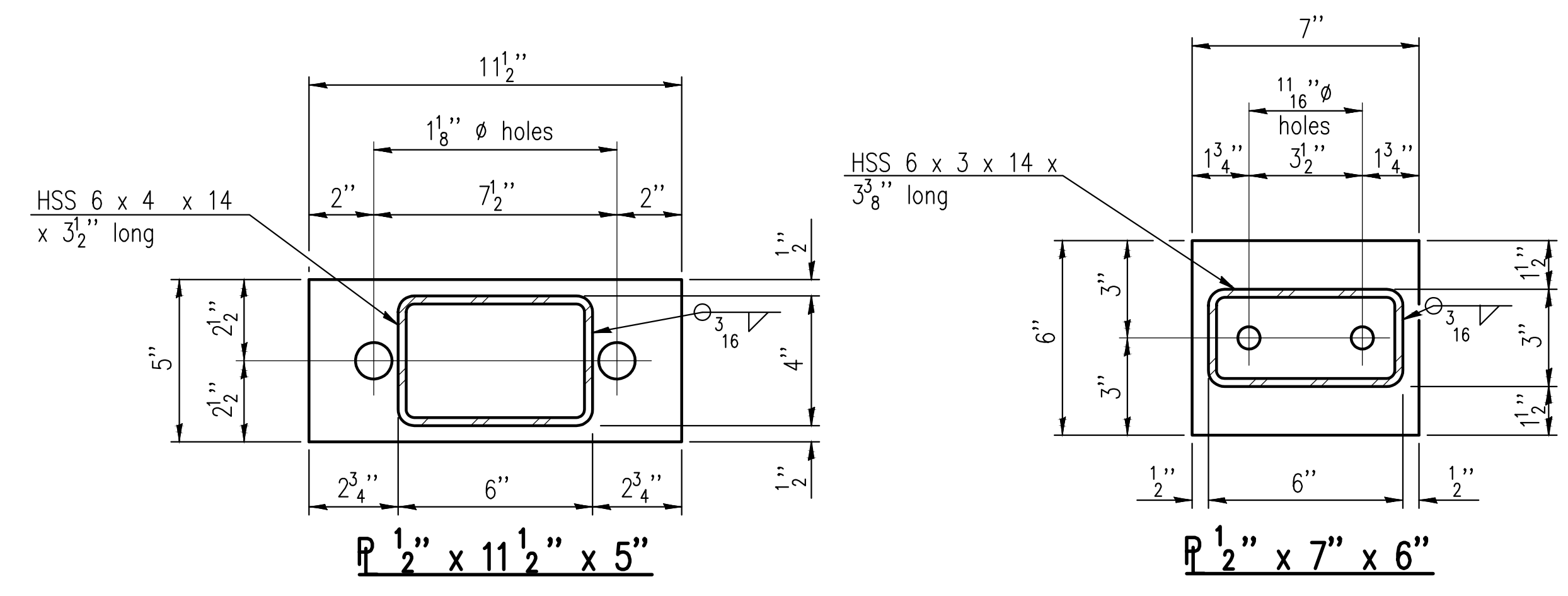
Precast Prestressed Conc. Deck Bms. (27" depth)	Sq. Ft.	1848
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CONSULTING ENGINEERS  
105 NORTH KITCHELL  
P.O. BOX 397  
OLNEY, ILLINOIS 62450  
(618) 282-0736  
ILLINOIS DEPARTMENT OF PROFESSIONAL REGULATION REGISTRATION #184.003513

**SUPERSTRUCTURE DETAILS**  
STRUCTURE NO. 051-3305  
T.R. 285  
OVER BIG SLOUGH  
SECTION 18-05126-00-BR  
LAWRENCE COUNTY  
STATION 4+00.00

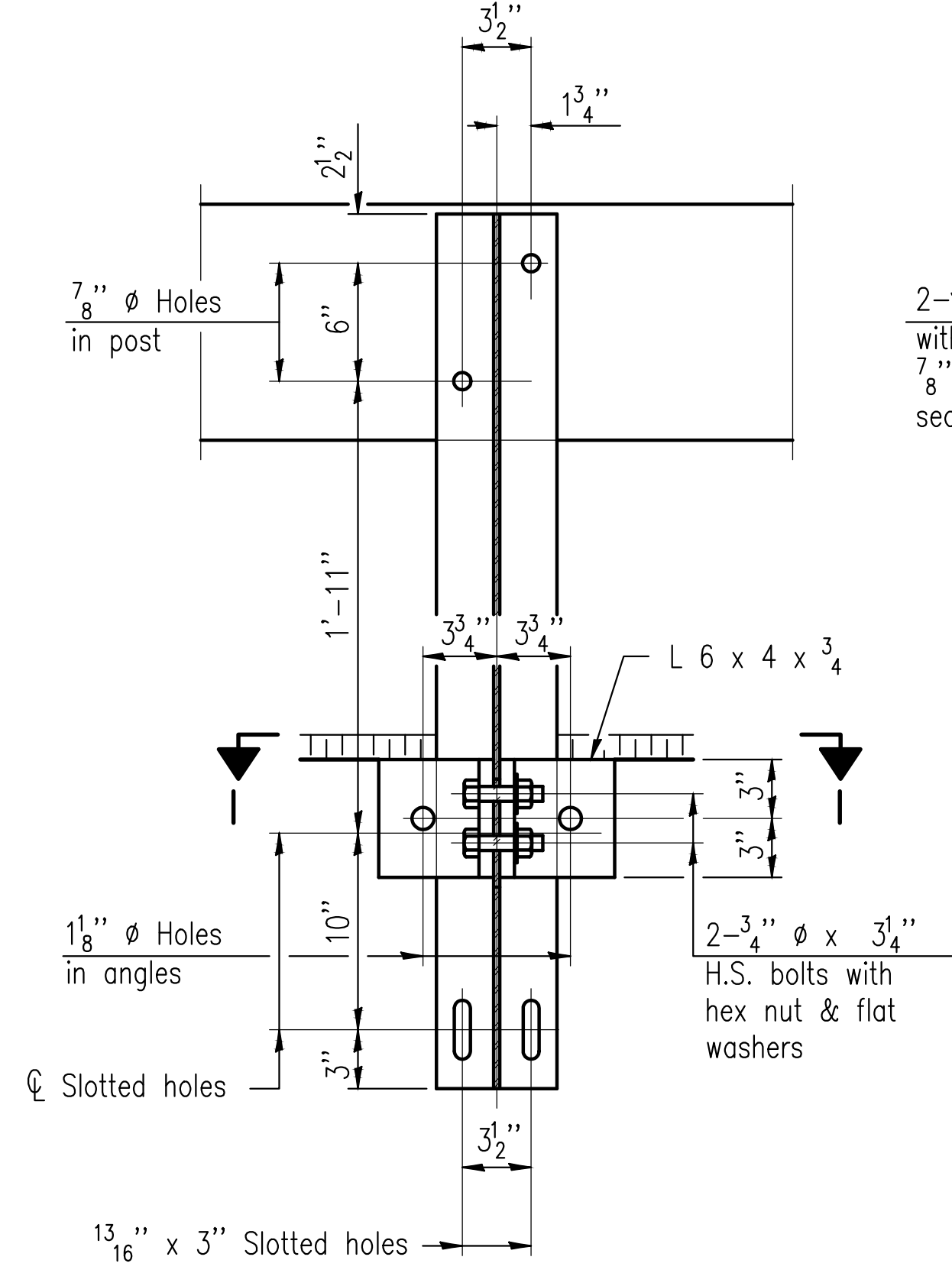


**VIEW G-G  
ROUND HEAD BOLT**

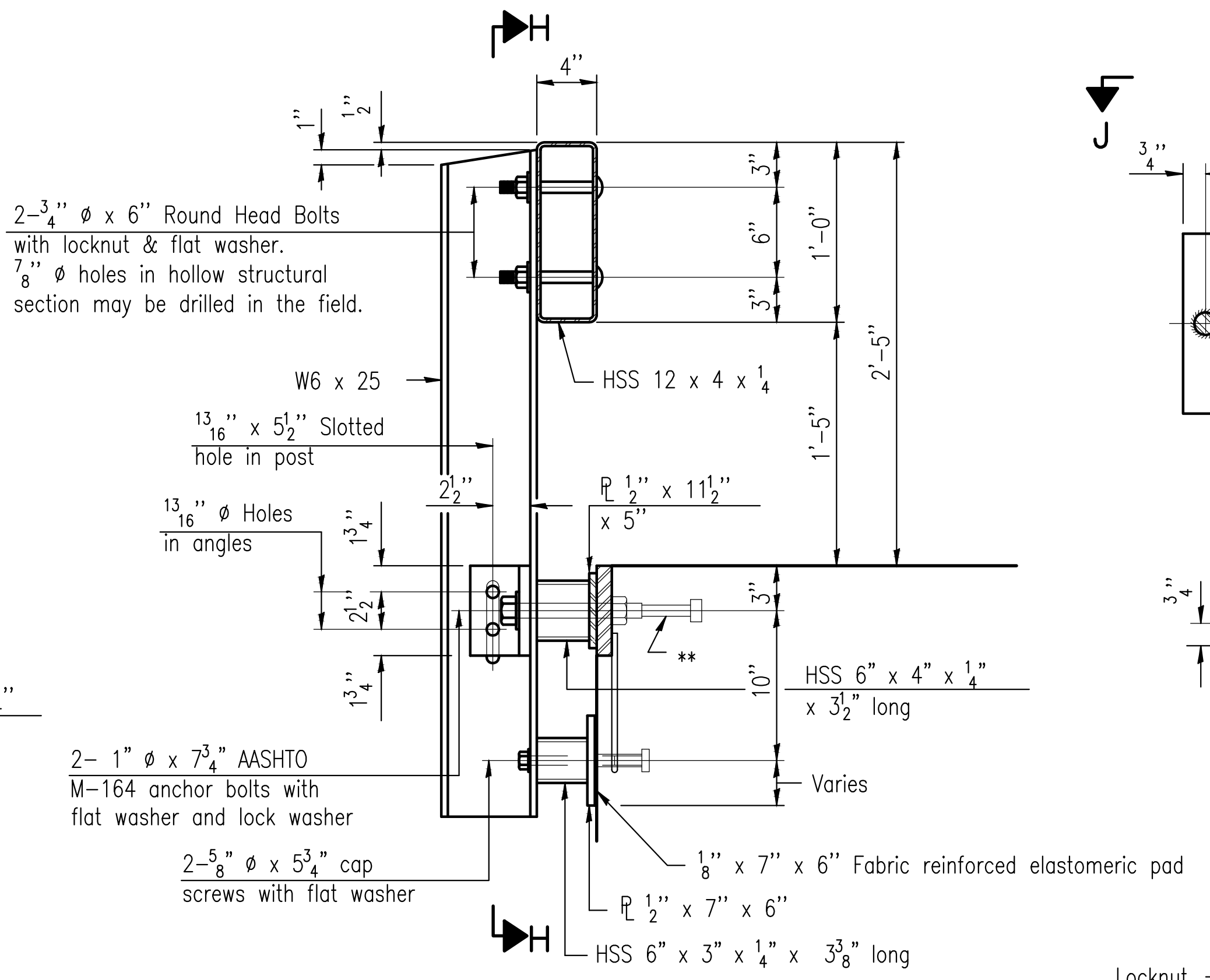


**P 1/2" x 11 1/2" x 5"**

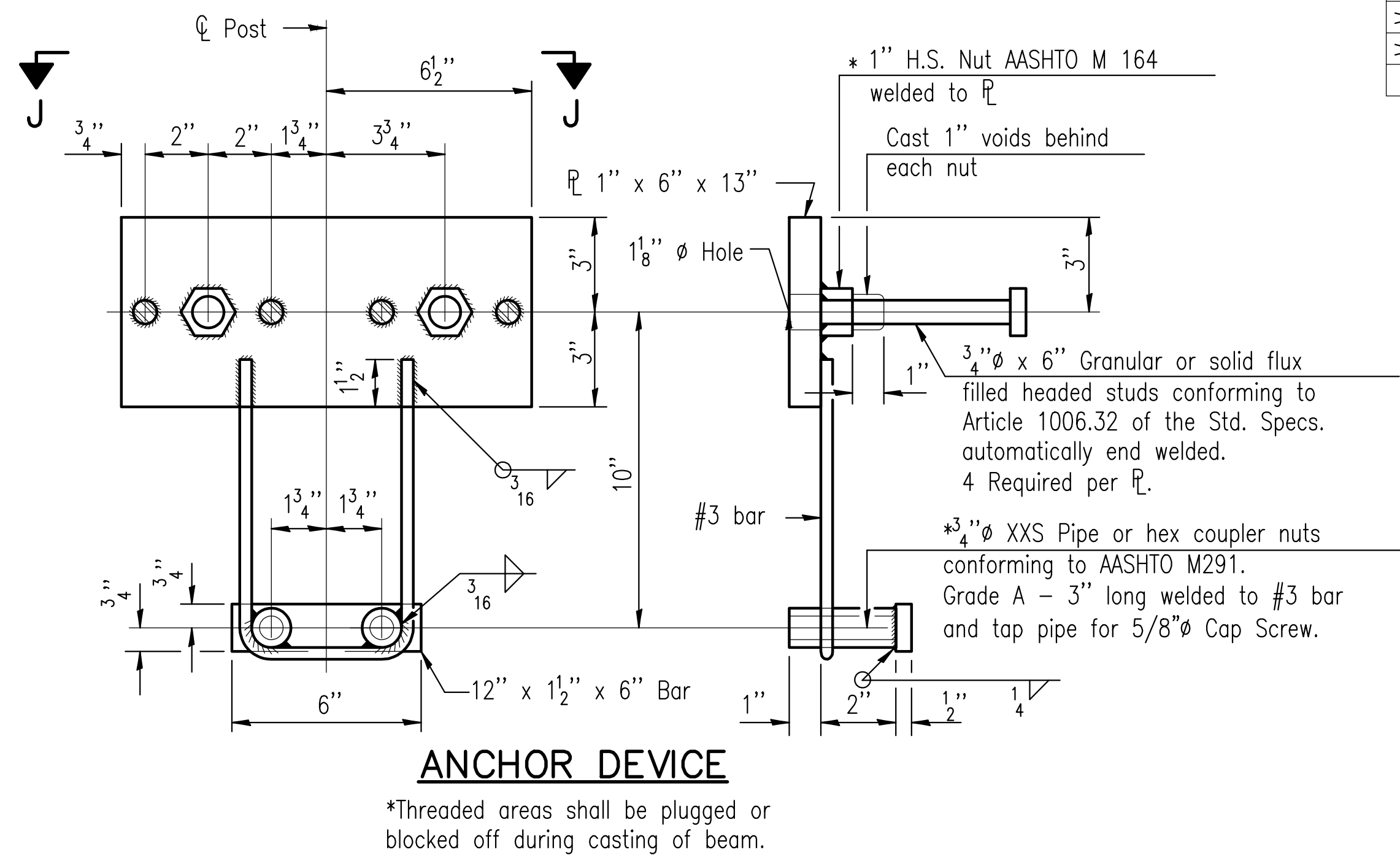
**P 1/2" x 7" x 6"**



**SECTION H-H**



**SECTION AT RAILING POST**



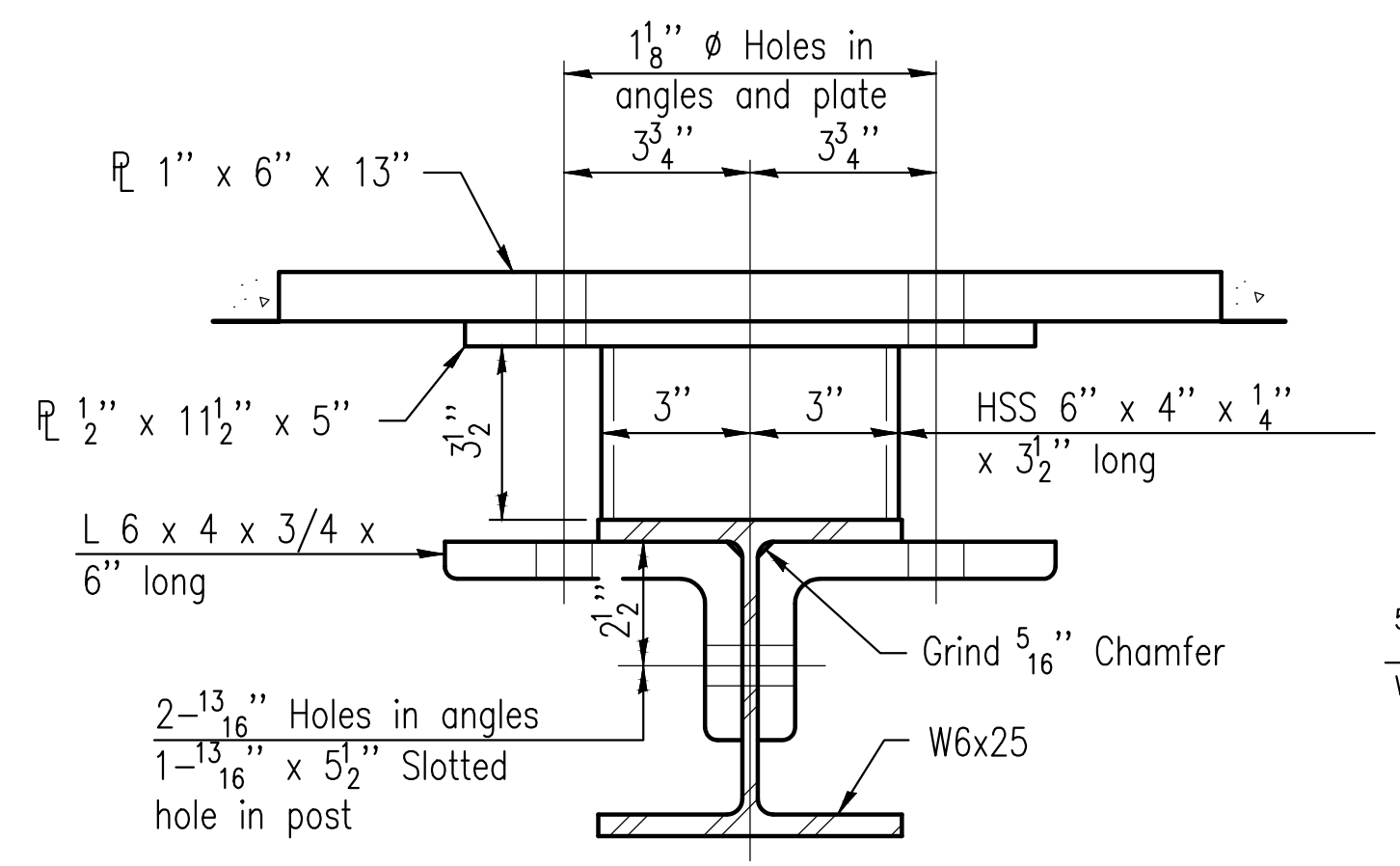
**ANCHOR DEVICE**

**SPLICE DIMENSIONS**

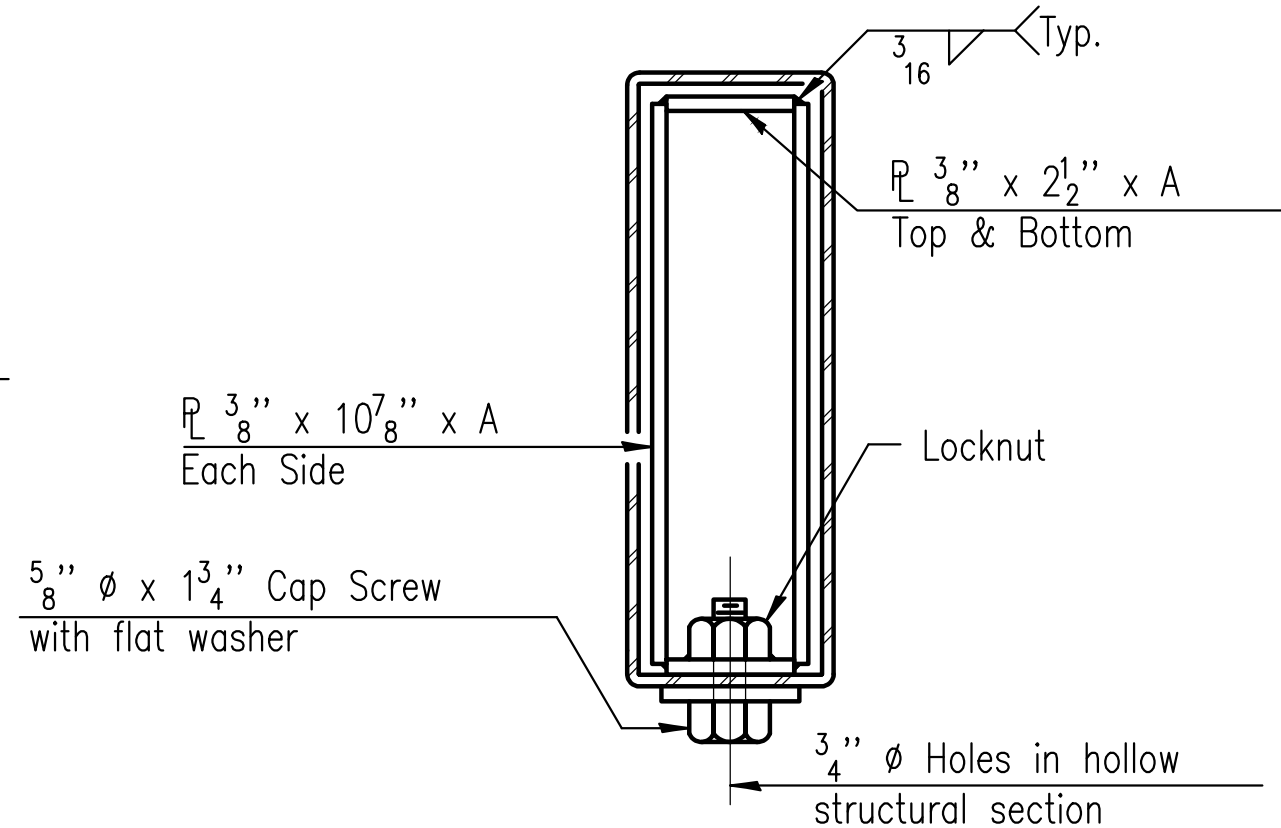
T	D	A	B	C	E
≤ 4"	2 1/2"	1'-8"	2"	4"	2 1/2"
> 4" ≤ 6 1/2"	3 3/4"	2'-0"	2 1/2"	5 1/2"	3 1/2"
> 6 1/2" ≤ 9"	5"	2'-4"	3 1/2"	6 1/2"	9"
> 9" ≤ 13"	7"	2'-10"	4 1/2"	8 1/2"	11"
Rail Splice	1 1/4"	1'-8"	2"	4"	—

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

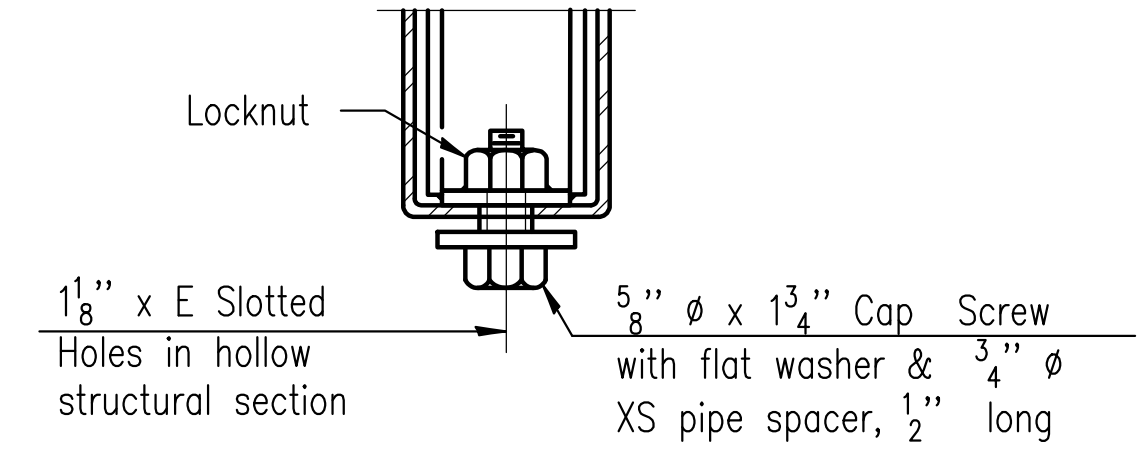
Notes:  
 For multi-span bridges, sufficient 1/4" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with Steel Railing, Type S-1.  
 All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.  
 \*\* 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.



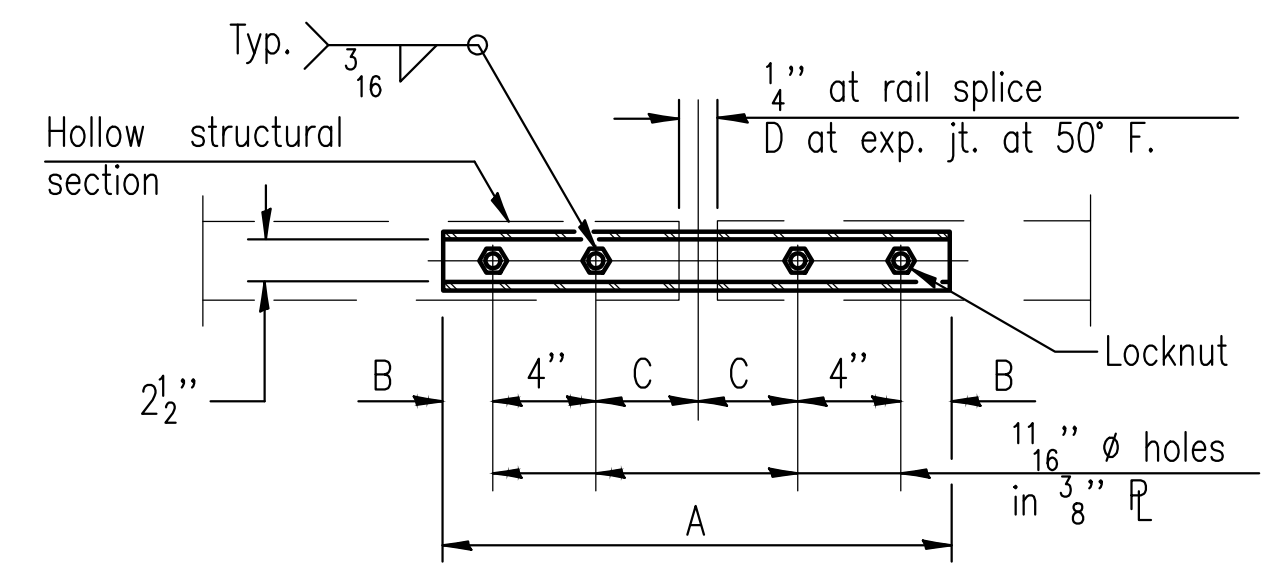
**SECTION I-I**



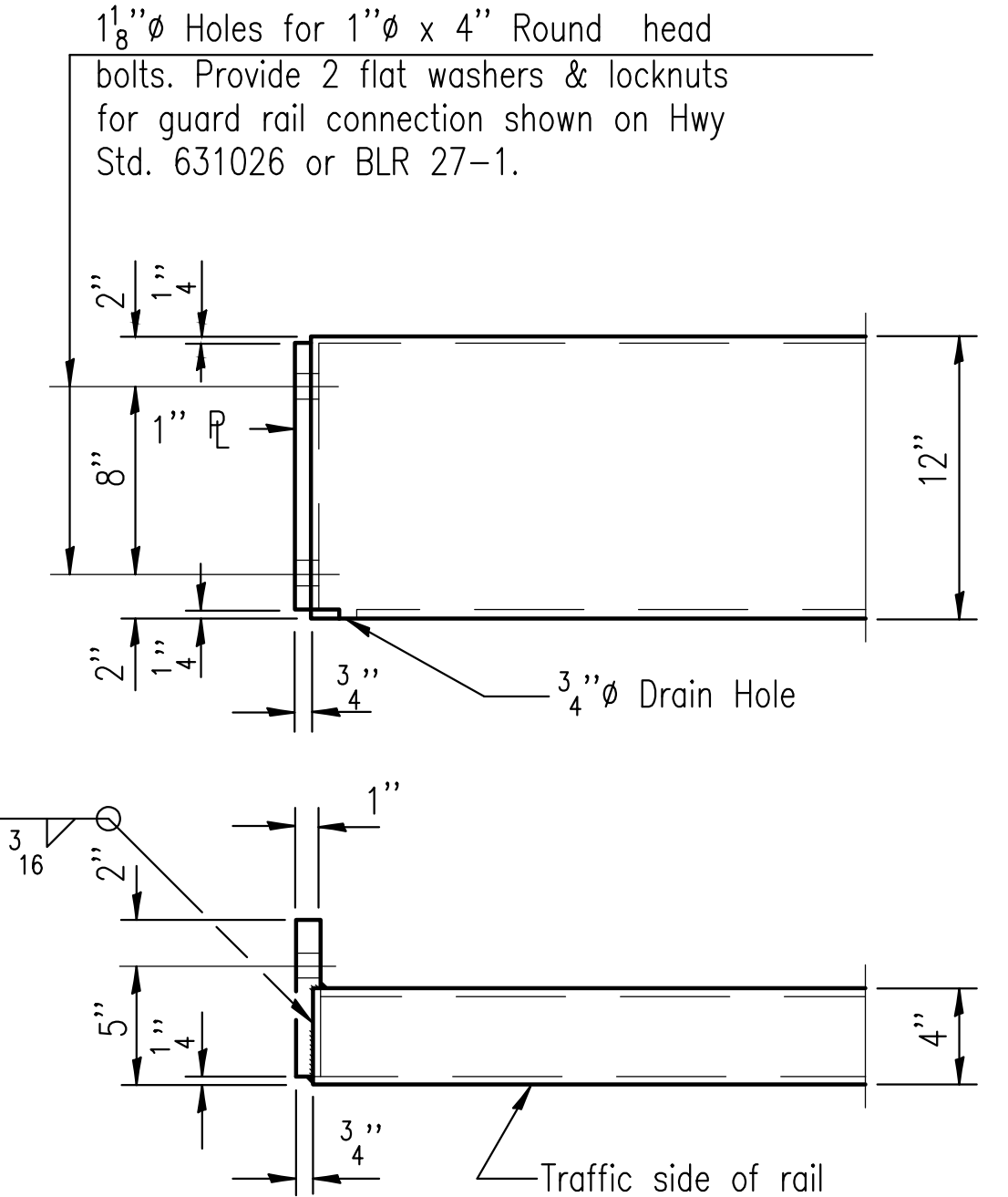
**SECTIONS AT RAIL SPLICE**



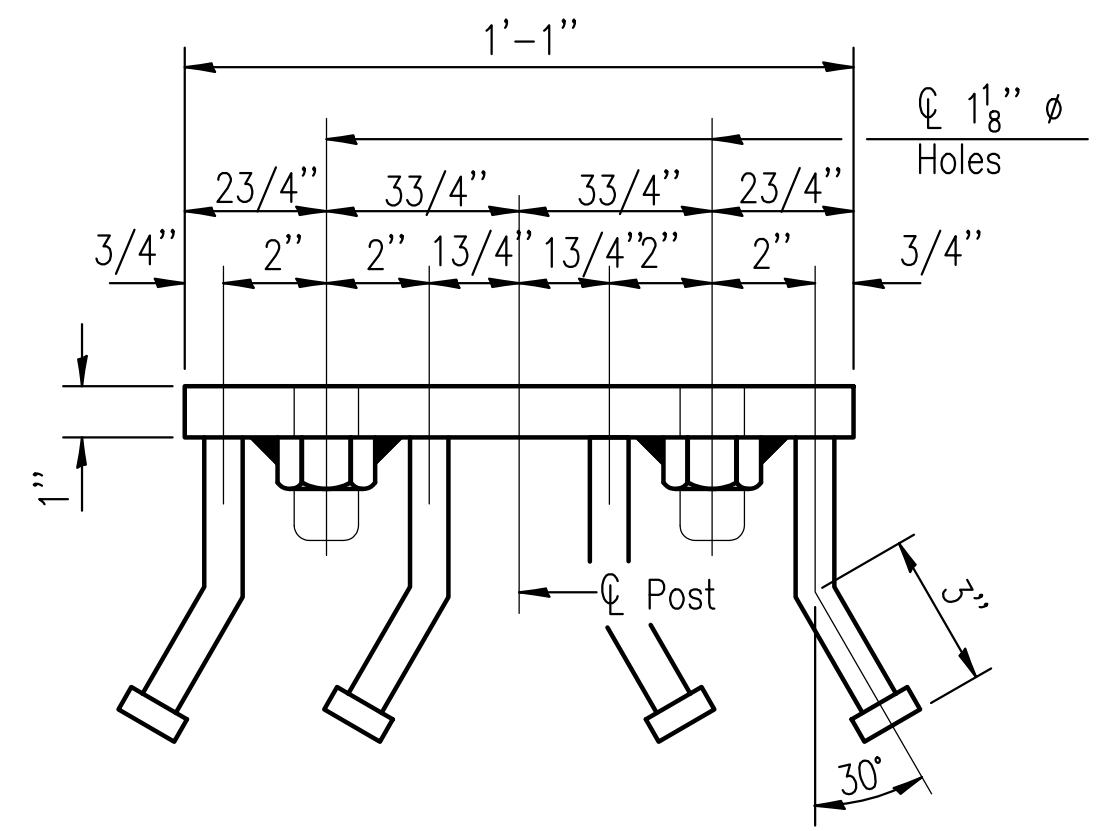
**RAIL SPLICE CONNECTION AT EXPANSION JT.**



**PLAN-BOTT. SPLICE P TYPICAL**



**END OF RAIL DETAILS**



**VIEW J-J**

**BILL OF MATERIAL**

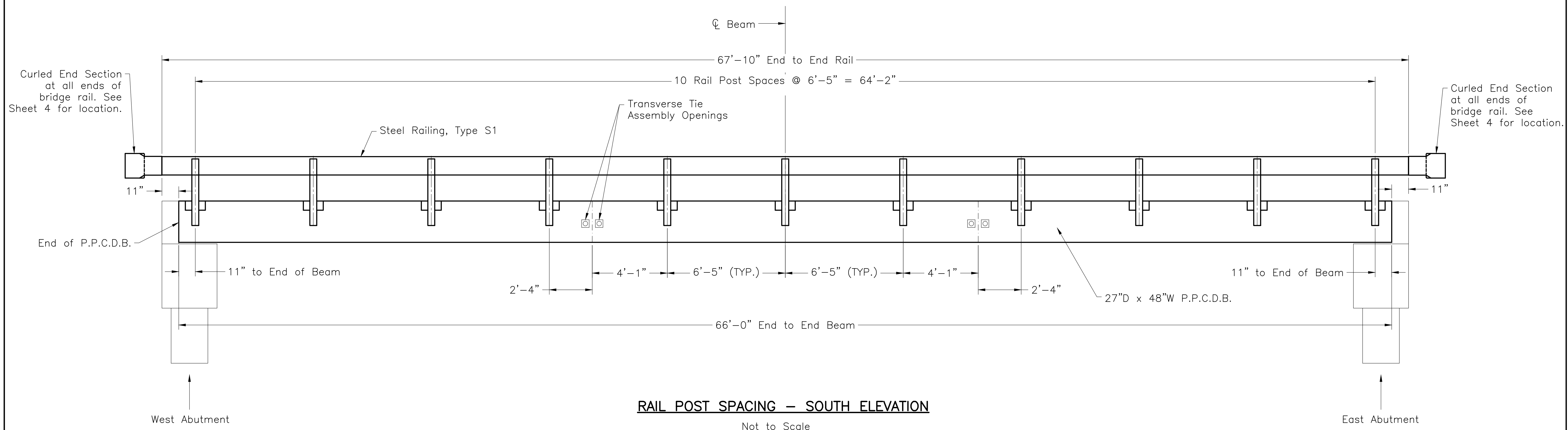
Item	Unit	Quantity
Steel Railing, Type S-1	Foot	136

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 CONSULTING ENGINEERS  
 105 NORTH KITCHELL  
 P.O. BOX 397  
 OLNEY, ILLINOIS 62450  
 (618) 392-0736  
ILLINOIS DEPARTMENT OF PROFESSIONAL REGULATION REGISTRATION #184.003513

**STEEL RAILING, TYPE S-1  
 STRUCTURE NO. 051-3305  
 T.R. 285  
 OVER BIG SLOUGH  
 SECTION 18-05126-00-BR  
 LAWRENCE COUNTY  
 STATION 4+00.00**

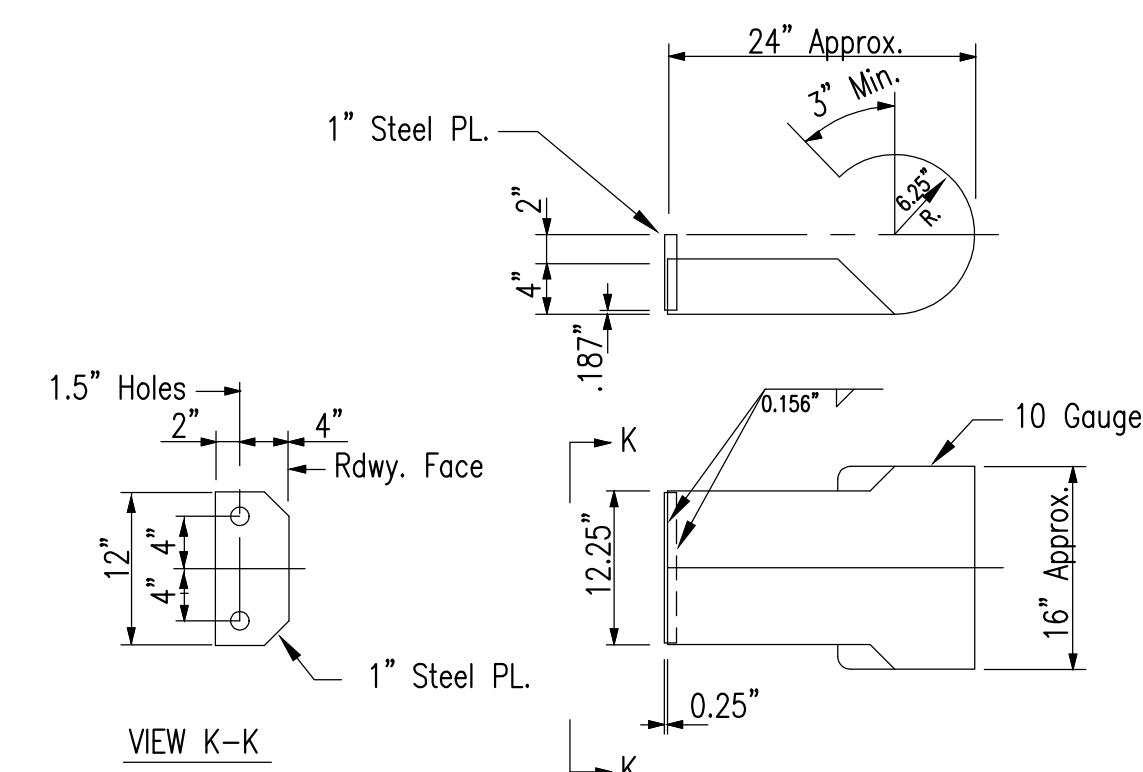
(10'-9" Maximum Post Spacing)

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 285	18-05126-00-BR	LAWRENCE	14	8
CONTRACT 95855		ILLINOIS	PROJECT C-97-058-19	



**RAIL POST SPACING – SOUTH ELEVATION**

Not to Scale



**CURLED END SECTION DETAILS**

4 Required – The cost of the Curled End Sections shall be included the contract unit price per foot for "STEEL RAILING, TYPE S1", and no additional compensation will be allowed.

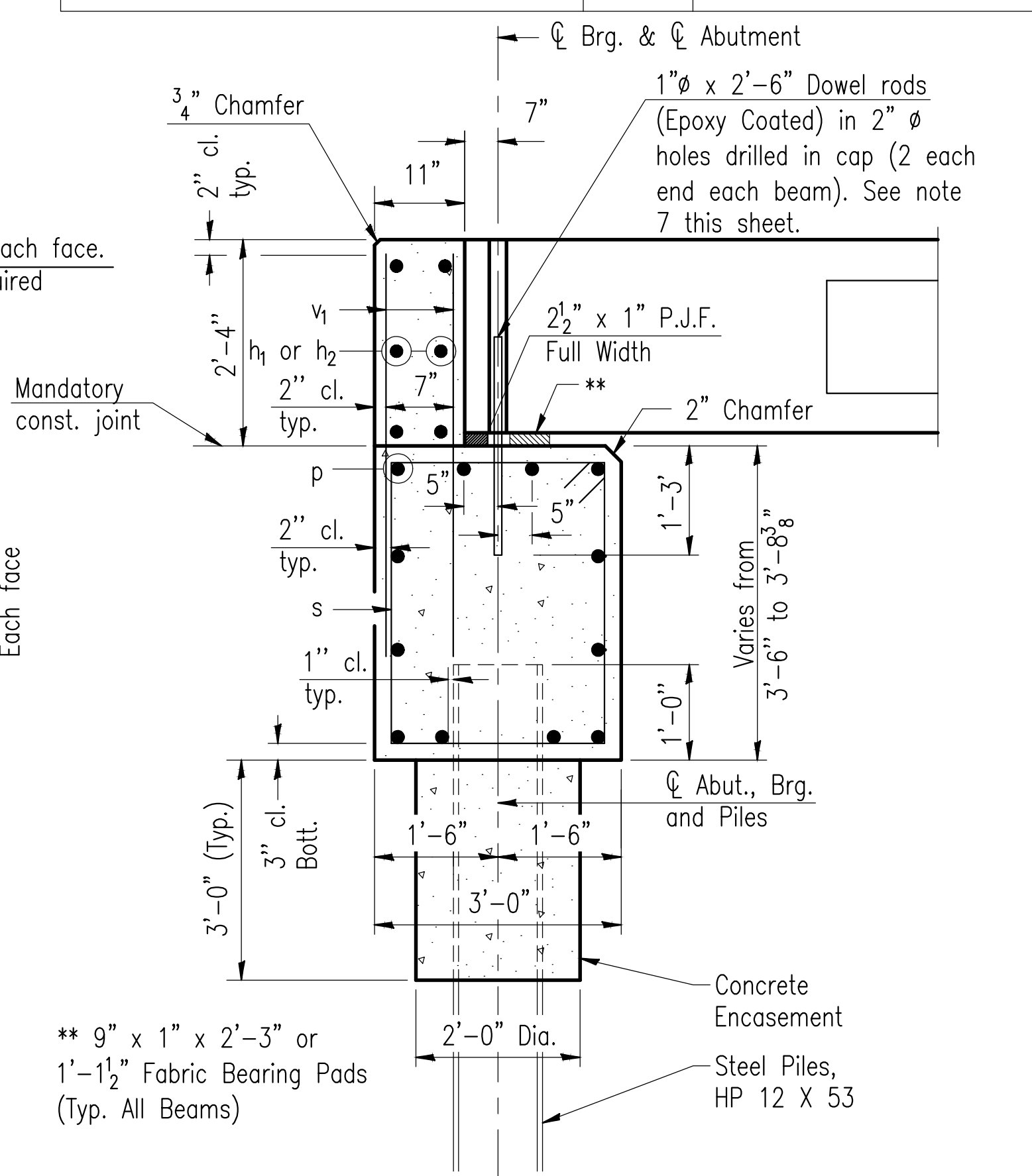
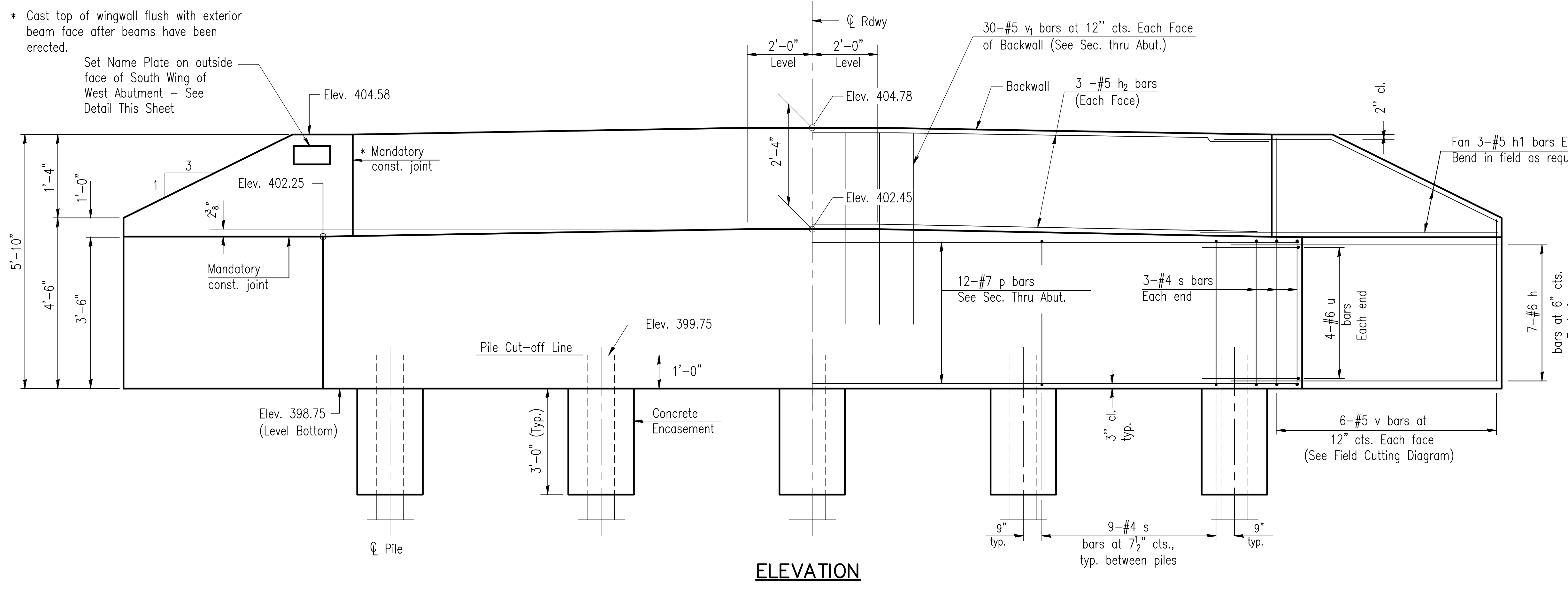
**CHARLESTON ENGINEERING, INC.**  
 CONSULTING ENGINEERS  
 105 NORTH KITCHELL  
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 (618) 392-0736

ILLINOIS DEPARTMENT OF PROFESSIONAL REGULATION REGISTRATION #184.003513

**STEEL RAILING, TYPE S1 DETAILS**  
 STRUCTURE NO. 051-3305  
 T.R. 285  
 OVER BIG SLOUGH  
 SECTION 18-05126-00-BR  
 LAWRENCE COUNTY  
 STATION 4+00.00



ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 285	18-05126-00-BR	LAWRENCE	14	9
CONTRACT 95855		ILLINOIS PROJECT C-97-058-19		



\*\* 9" x 1" x 2'-3" or 1'-1 1/2" Fabric Bearing Pads (Typ. All Beams)

**SECTION L-L**  
(At Right Angles)

**BILL OF MATERIAL - 2 ABUTMENTS**

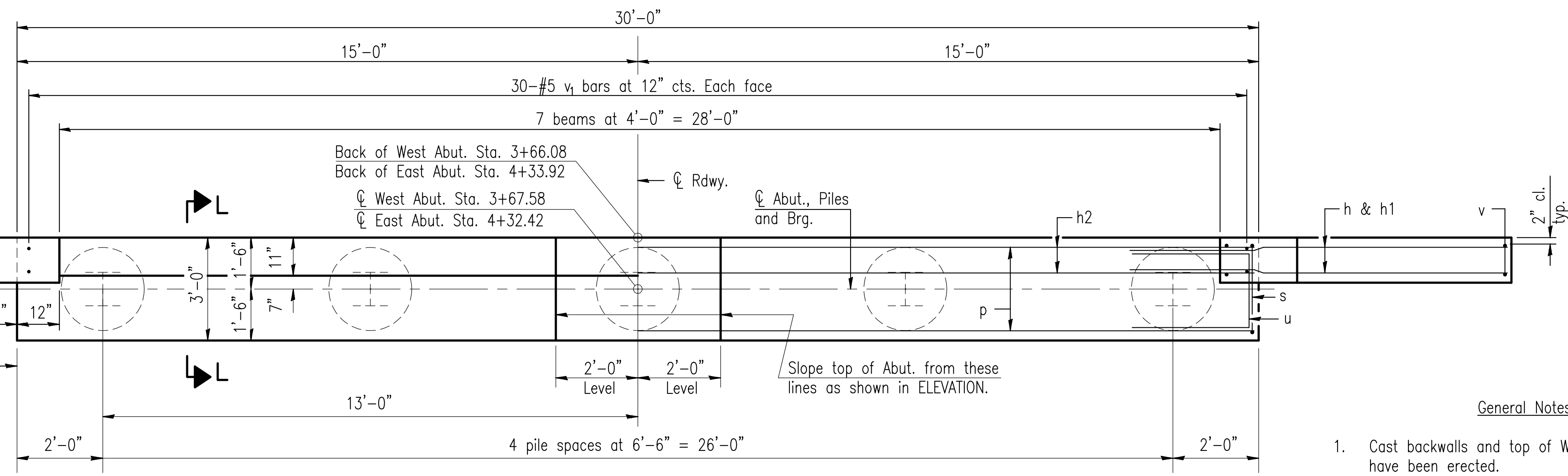
Bar	No.	Size	Length	Shape
h	56	#6	6'-4"	—
h1	24	#5	7'-0"	—
h2	12	#5	29'-8"	—
p	24	#7	29'-8"	—
s	84	#4	12'-1"	□
u	16	#6	11'-7"	—
v	24	#5	9'-6"	—
v1	120	#5	4'-5"	—
Concrete Structures		Cu. Yd.		32.4
Reinforcement Bars		Pound		4300
Furnishing Steel Piles		Foot		765
HP 12 X 53		Foot		765
Test Pile HP 12 X 53		Each		1
Concrete Encasement		Cu. Yd.		3.5
Pile Shoes		Each		9

**General Notes:**

1. Cast backwalls and top of Wingwalls after beams have been erected.
2. The backwalls and the portion of the Wingwalls above the mandatory construction joint shall be cast against the in-place beam.
3. Extend "h" bars into the abutment cap.
4. For details of piles and Concrete Encasement, see sheet 10 of 14.
5. Drawings not to scale.
6. All clearances between rebar and form surface shall be 2" unless otherwise noted.
7. Space reinforcement in cap to miss PPCDB dowel rods.
8. All exposed edges shall have a standard 3/4" chamfer unless otherwise noted or as directed by the Engineer.

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ILLINOIS DEPARTMENT OF PROFESSIONAL REGULATION REGISTRATION #184.003513

**ABUTMENT DETAILS**  
**STRUCTURE NO. 051-3305**  
**T.R. 285**  
**OVER BIG SLOUGH**  
**SECTION 18-05126-00-BR**  
**LAWRENCE COUNTY**  
**STATION 4+00.00**



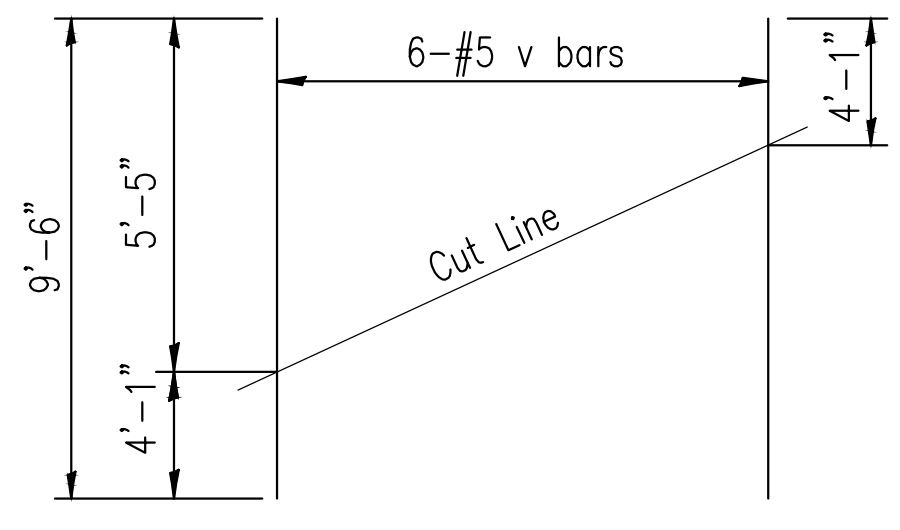
**PLAN**

**PILE DATA WEST ABUTMENT**

Type: Steel HP 12 X 53  
Nominal Required Bearing: 418 kips  
Factored Resistance Available: 230 kips  
Est. Length: 85 Feet  
No. Production Piles: 4  
No. Test Piles: 1

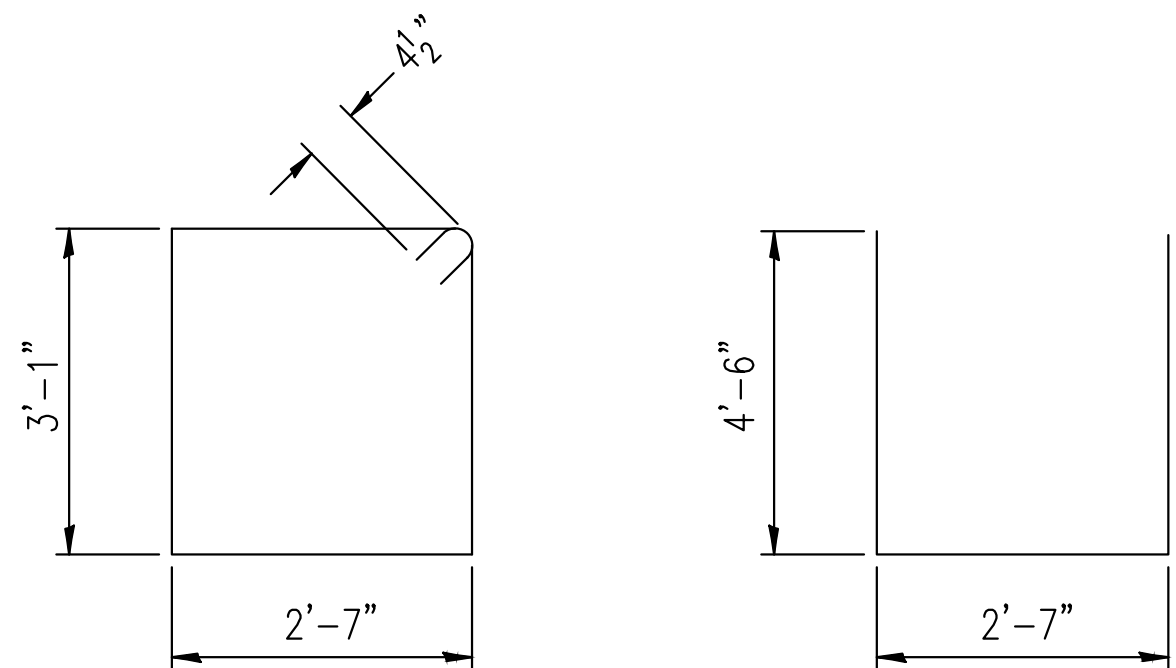
**PILE DATA EAST ABUTMENT**

Type: Steel HP 12 X 53  
Nominal Required Bearing: 418 kips  
Factored Resistance Available: 230 kips  
Est. Length: 85 Feet  
No. Production Piles: 5  
No. Test Piles: 0



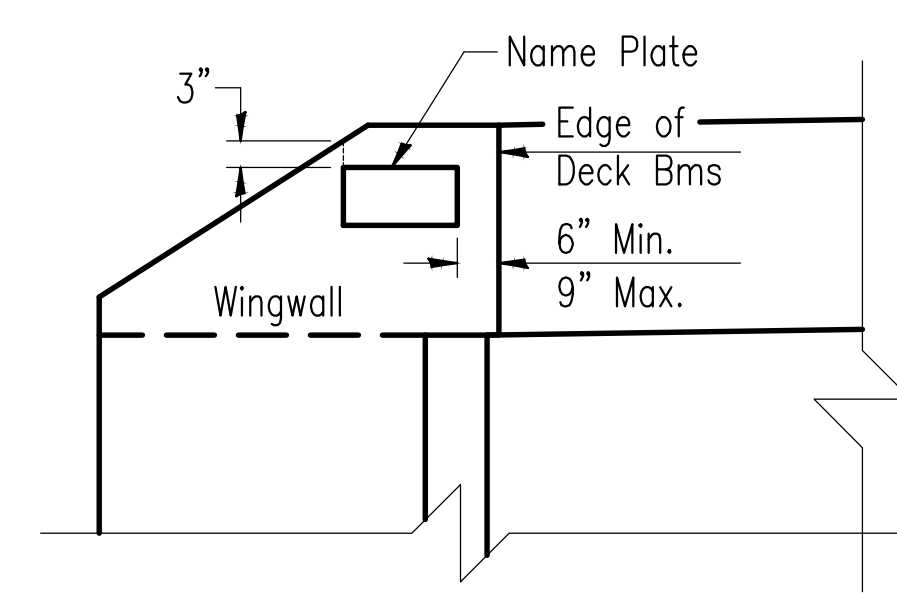
**FIELD CUTTING DIAGRAM**

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



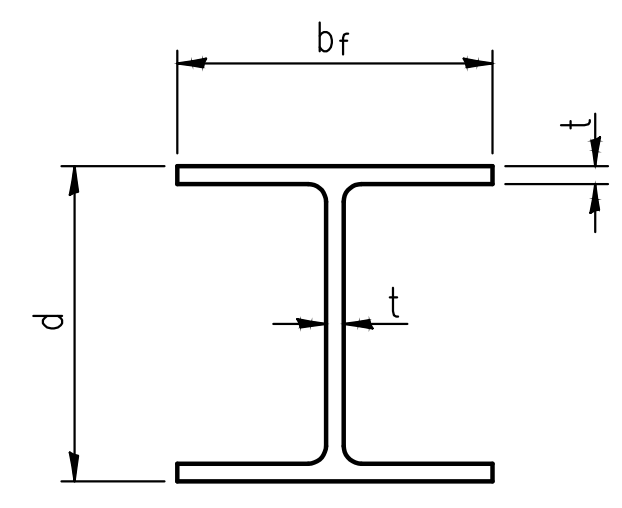
**BAR s**

**BAR u**



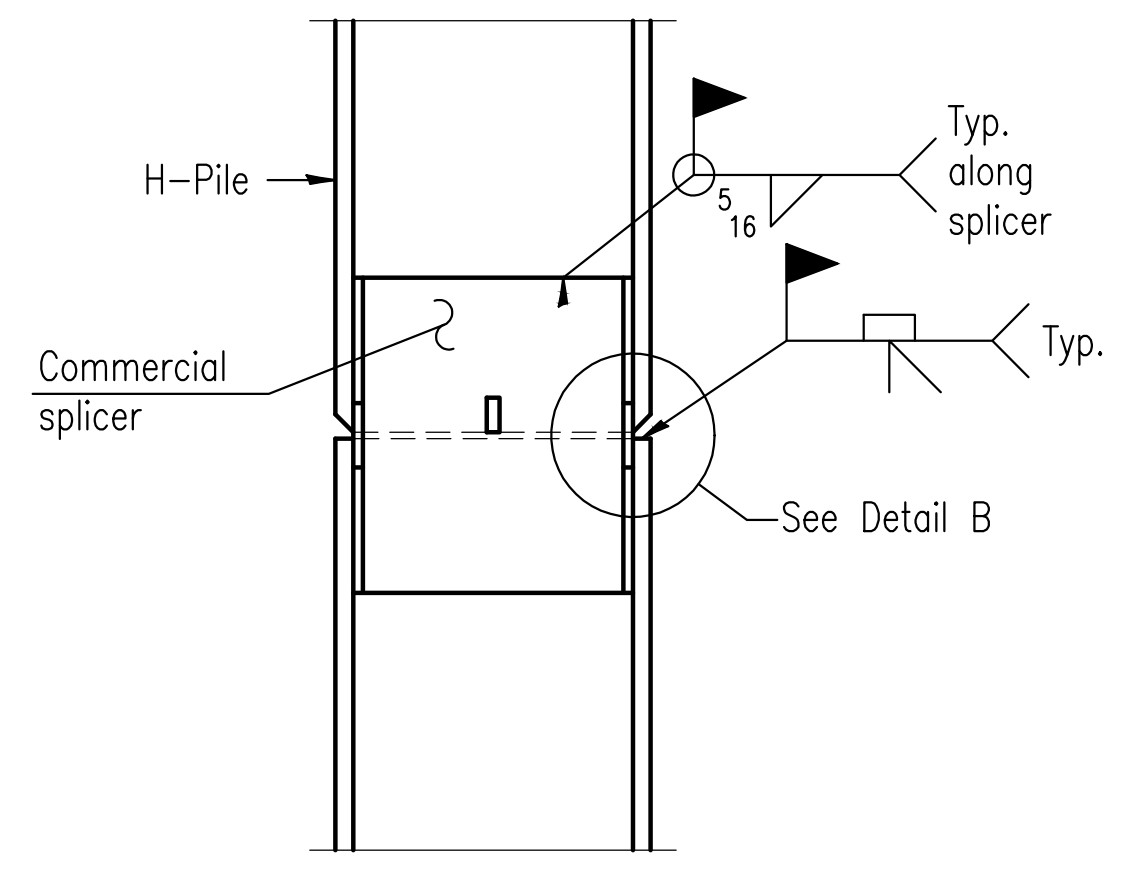
**NAME PLATE PLACEMENT**

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 285	18-05126-00-BR	LAWRENCE	14	10
CONTRACT 95855		ILLINOIS	PROJECT C-97-058-19	

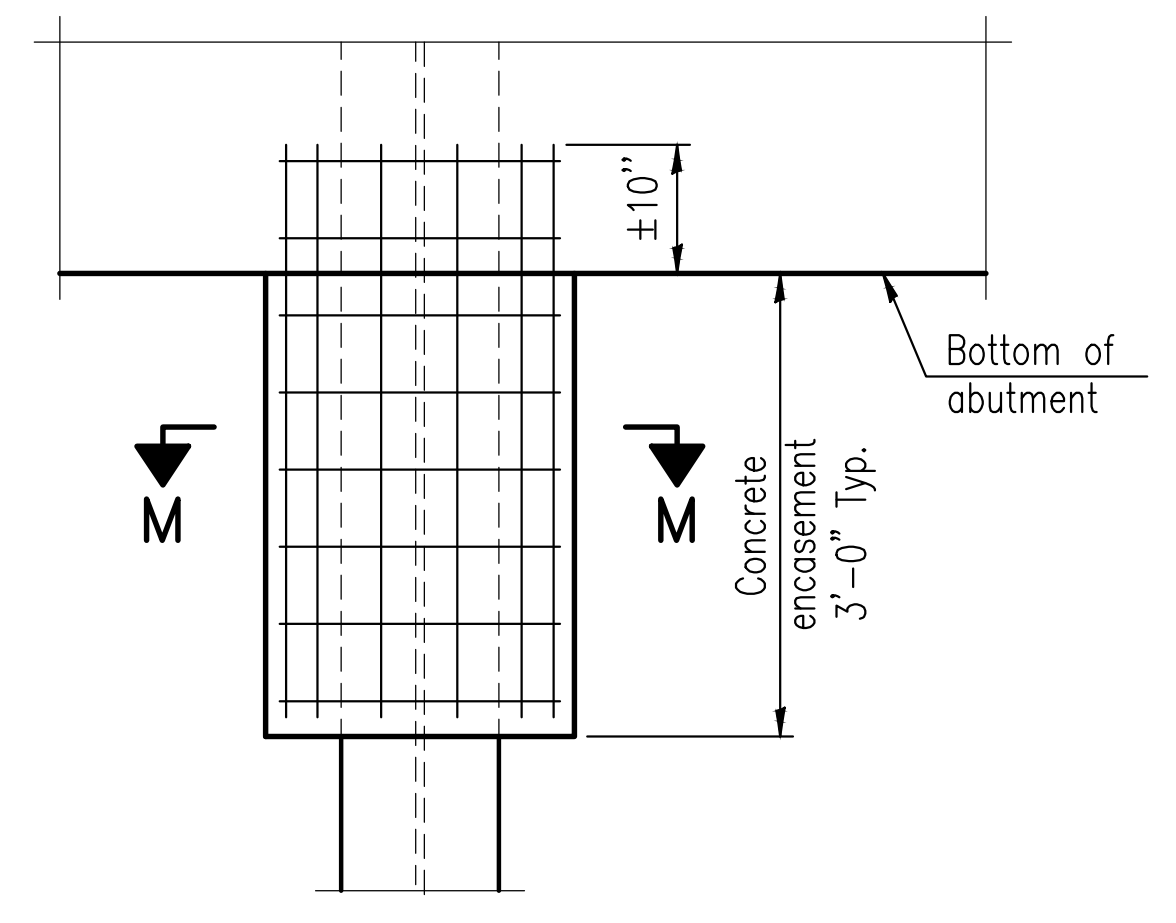


**STEEL PILE TABLE**

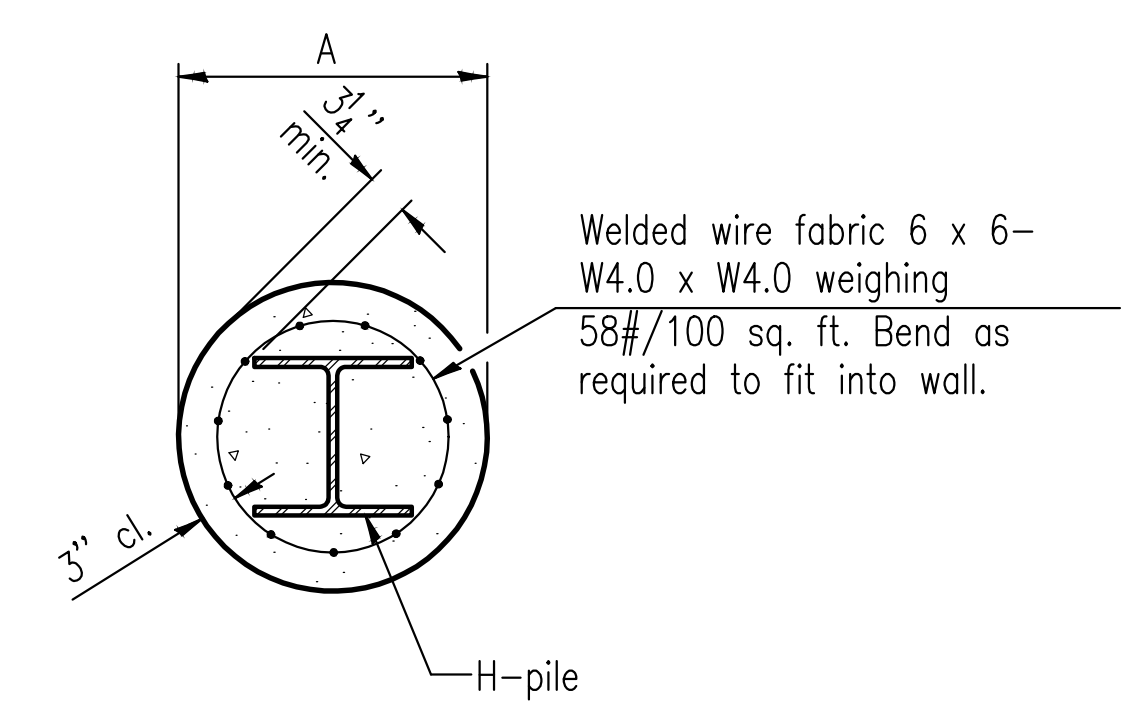
Designation	Depth d	Flange width bf	Web and Flange thickness t	Encasement diameter A
HP 12x53	11 <sup>3</sup> / <sub>4</sub> "	12"	7 <sup>7</sup> / <sub>16</sub> "	24"



**ELEVATION**



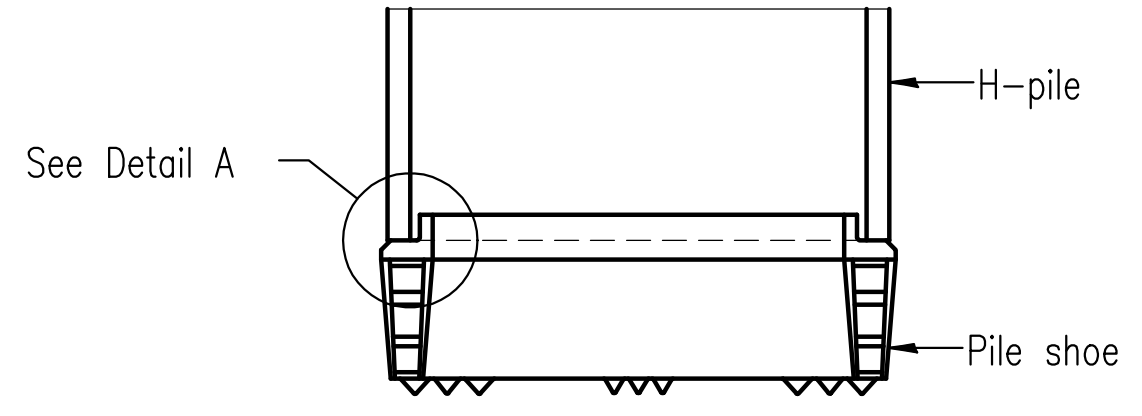
**ELEVATION**



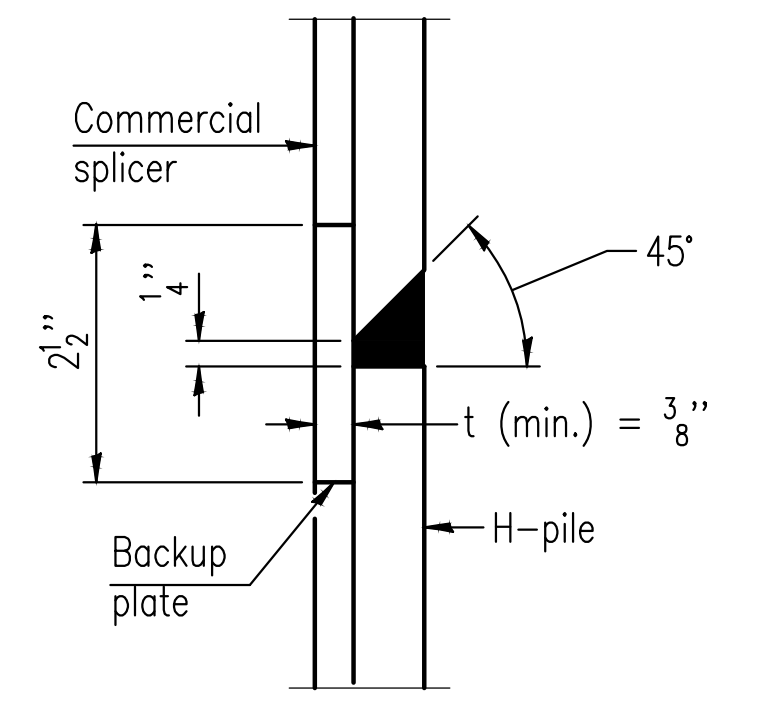
**SECTION M-M**

**PILE ENCASEMENT**

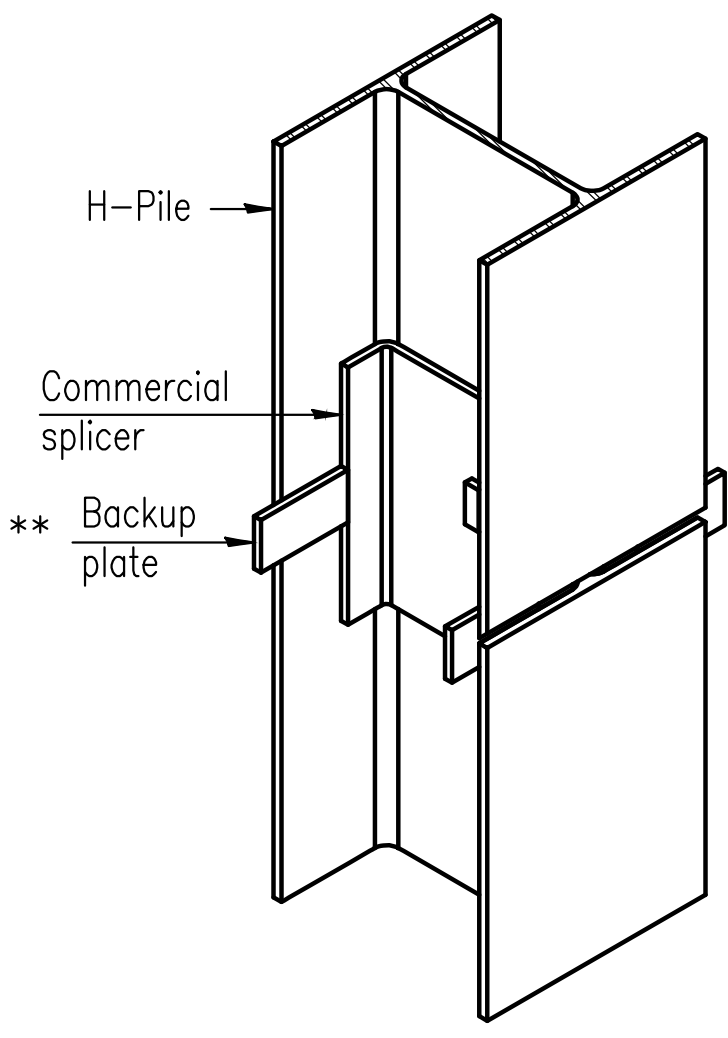
Note: Forms for encasement may be omitted when soil conditions permit.



**ELEVATION**

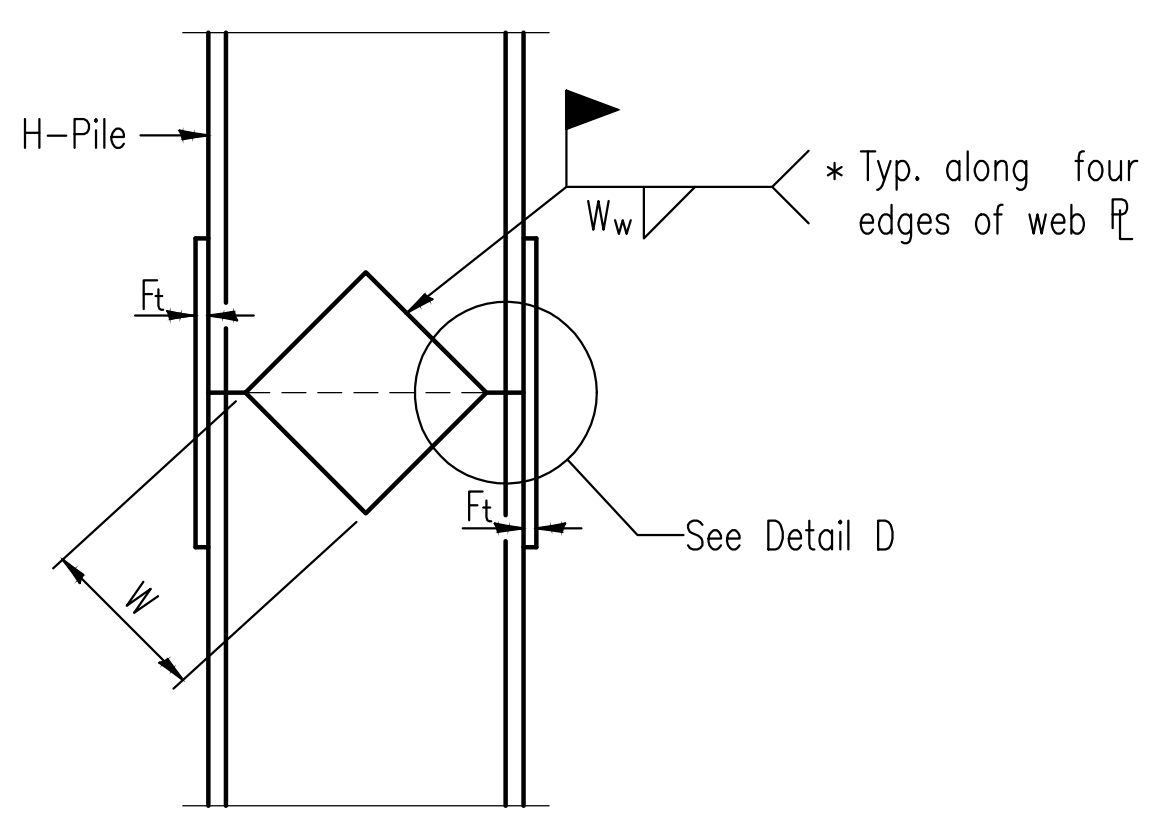


**DETAIL "B"**

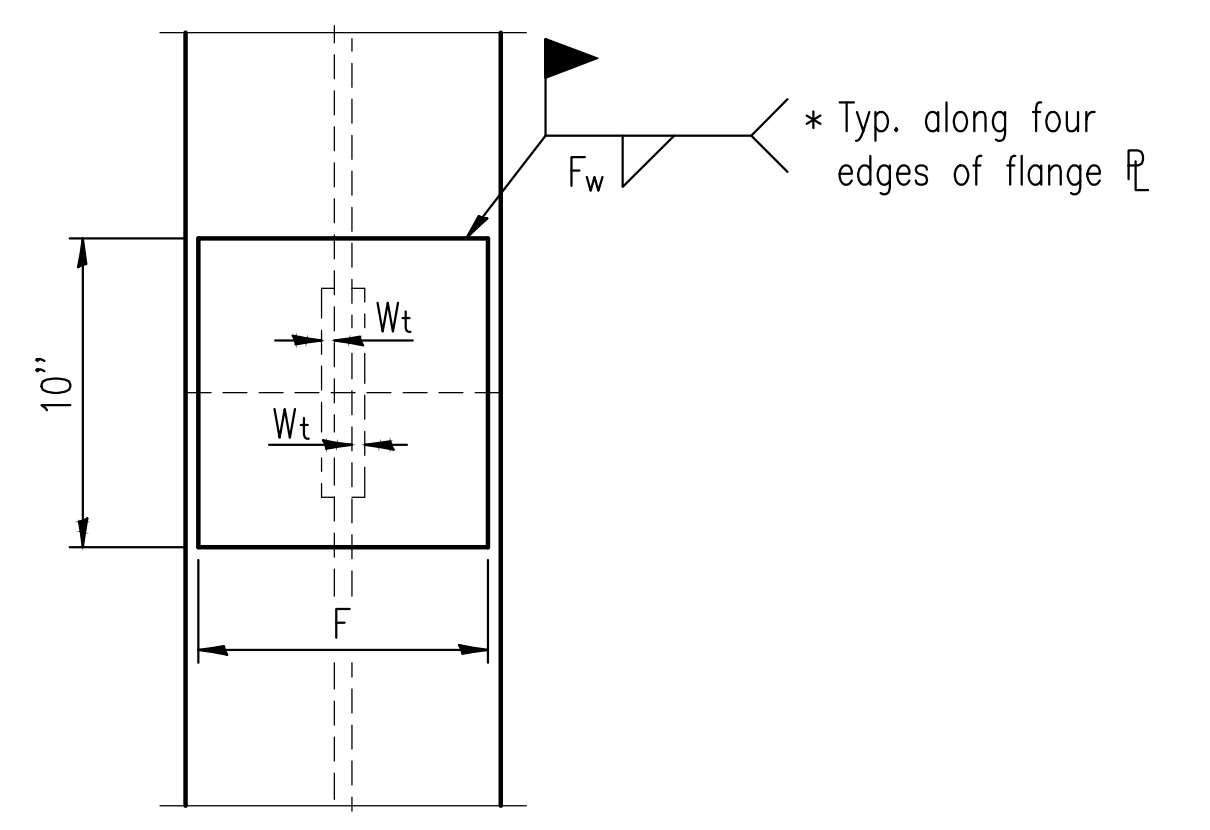


**ISOMETRIC VIEW**

**WELDED COMMERCIAL SPLICE**

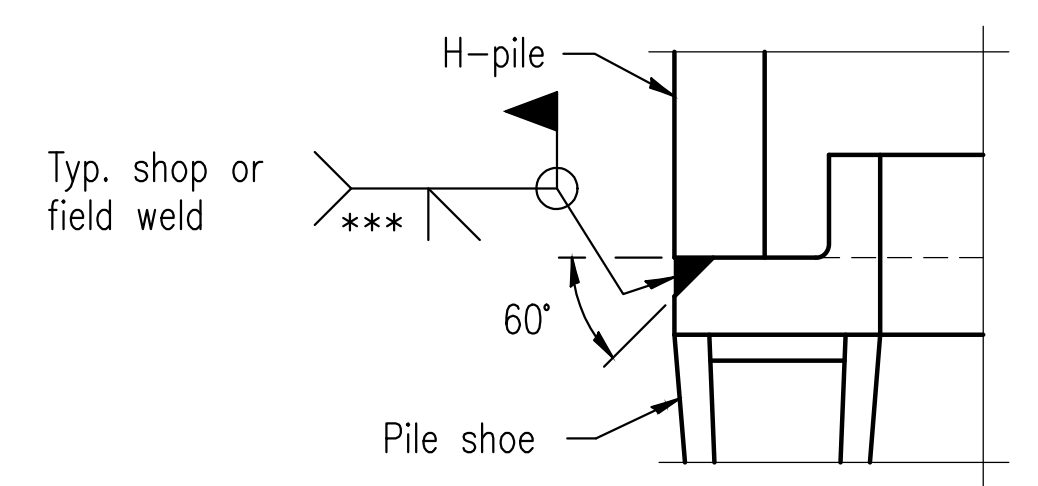


**ELEVATION**



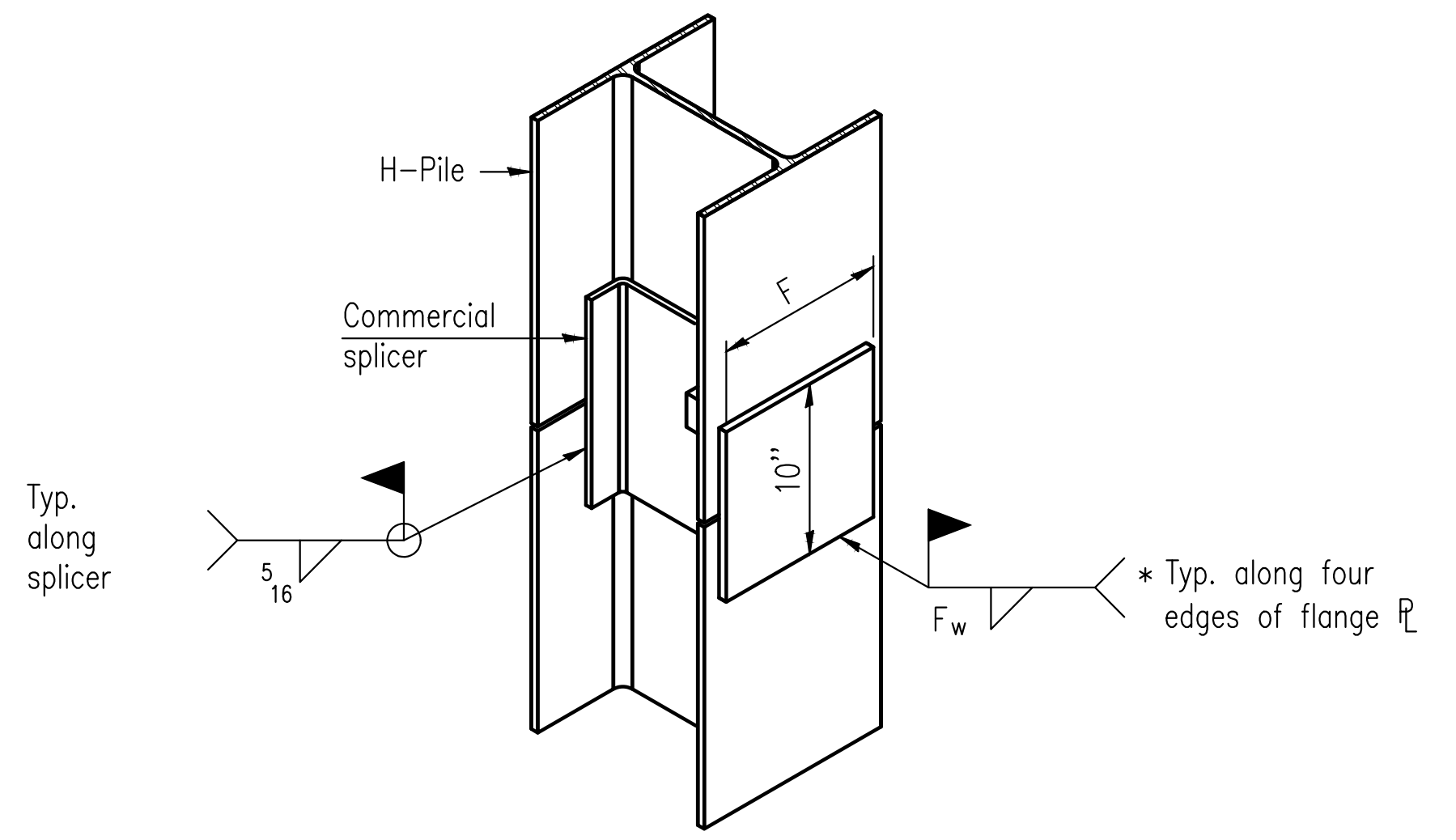
**END VIEW**

Designation	F	F <sub>t</sub>	F <sub>w</sub>	W	W <sub>t</sub>	W <sub>w</sub>
HP 12x53	10"	5 <sup>3</sup> / <sub>8</sub> "	1 <sup>1</sup> / <sub>2</sub> "	6 <sup>1</sup> / <sub>2</sub> "	1 <sup>1</sup> / <sub>2</sub> "	3 <sup>3</sup> / <sub>8</sub> "



**DETAIL A**

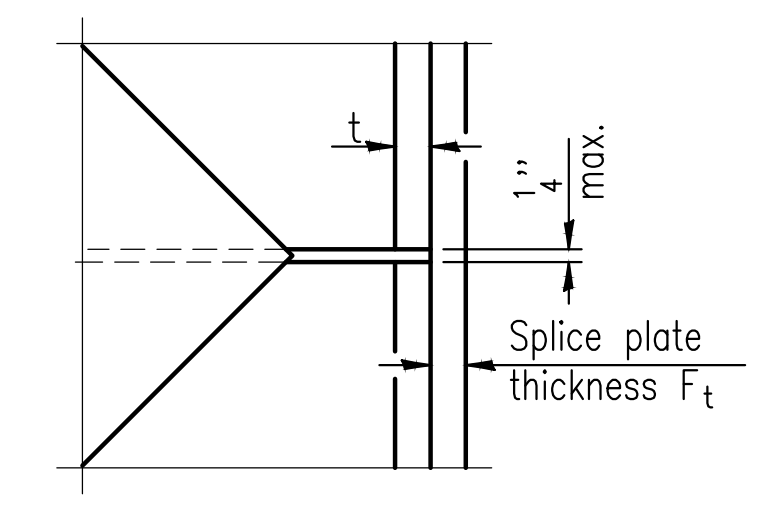
**H-PILE SHOE ATTACHMENT**



**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**

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

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CONSULTING ENGINEERS  
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OLNEY, ILLINOIS 62450  
(618) 392-0736  
ILLINOIS DEPARTMENT OF PROFESSIONAL REGULATION REGISTRATION #184.003513

**PILE DETAILS**  
**STRUCTURE NO. 051-3305**  
**T.R. 285**  
**OVER BIG SLOUGH**  
**SECTION 18-05126-00-BR**  
**LAWRENCE COUNTY**  
**STATION 4+00.00**

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 285	18-05126-00-BR	LAWRENCE	14	11
CONTRACT 95855		ILLINOIS	PROJECT C-97-058-19	

<b>NOBLE</b>											
ENGINEERING CONSULTANTS			County: Lawrence, IL			BORING No. B-1			water level reading		
Client: Charleston Engineering			Weather: Sunny			Sheet No. 1 of 3			1st encounter: 13'		
Driller: Noble Engineering Consultants			Date Start: 8-6-18			Temperature: 80's			water level reading		
Location: Sec. #18-05126-00-BR			Date Finished: 8-6-18			Surface Elevation: 404.7 **			@completion Dry Cave		
						Driller: Tony Schocker			Backfill: Soil cuttings		
Depth	Sample No.	Sample Depth	N-Value	Blow Count	Recovery (%)	Qp (tsf)*	Soil Description	USC Class.	Elev.**		
1							0.0'-0.8' Gravel-FILL		403.7		
2	SS-1	1.0'-2.5'	24	26-14-10	30		0.8'-6.0' Silt, Clay, Etc. FILL	FILL	402.7		
3									401.7		
4	SS-2	3.5'-5.0'	16	9-9-7	50			FILL	400.7		
5									399.7		
6	SS-3	6.0'-7.5'	9	2-4-5	0		6.0'-14.0' SILTY FINE TO COARSE SAND, trace to some gravel, loose, moist to saturated below 13', brown	SM	398.7		
7									397.7		
8									396.7		
9	SS-4	8.5'-10.0'	8	2-4-4	10			SM	395.7		
10									394.7		
11									393.7		
12									392.7		
13									391.7		
14	SS-5	13.5'-15.0'	18	4-7-11	100	0.9	14.0'-41.0' SILTY CLAY, trace to some sand, occasional wet sand seams below 27', medium stiff, gray	CL	390.7		
15									389.7		
16									388.7		
17									387.7		
18									386.7		
19	SS-6	18.5'-20.0'	10	3-4-6	100	0.8		CL	385.7		
20									384.7		
21									383.7		
22									382.7		
23									381.7		
24	SS-7	23.5'-25.0'	12	4-5-7	100	0.9		CL	380.7		
25									379.7		
26									378.7		
27									377.7		
28									376.7		
29									375.7		
30	SS-8	28.5'-30.0'	10	4-4-6	100	0.8		CL	374.7		
Drilling Method: HSA (2-1/4" id) comments: * Qp test is an estimate of the unconfined compressive strength performed by a compact calibrated spring loaded cylinder											
Depth: 0' to 80.3' by a compact calibrated spring loaded cylinder											
Drill Rig: Mobile B-47 ** ground surface elevation at boring location is estimated from bridge deck 404.7 and is not surveyed											
Sampling: split-spoon (SS)											

<b>NOBLE</b>											
ENGINEERING CONSULTANTS			County: Lawrence, IL			BORING No. B-1			water level reading		
Client: Charleston Engineering			Weather: Sunny			Sheet No. 2 of 3			1st encounter: 13'		
Driller: Noble Engineering Consultants			Date Start: 8-6-18			Temperature: 80's			water level reading		
Location: Sec. #18-05126-00-BR			Date Finished: 8-6-18			Surface Elevation: 404.7			@completion Dry Cave		
						Driller: Tony Schocker			Backfill: Soil cuttings		
Depth	Sample No.	Sample Depth	N-Value	Blow Count	Recovery (%)	Qp (tsf)*	Soil Description	USC Class.	Elev.**		
21									373.7		
22									372.7		
23									371.7		
24	SS-9	33.5'-35.0'	12	4-5-7	100	0.9		CL	370.7		
25									369.7		
26									368.7		
27									367.7		
28									366.7		
29	SS-10	38.5'-40.0'	10	4-4-6	100	0.7		CL	365.7		
30									364.7		
31									363.7		
32									362.7		
33									361.7		
34	SS-11	43.5'-45.0'	7	3-3-4	100	0.8	41.0'-77.0' CLAY, fat, occ. wet sand seams, trace to some gravel, medium stiff to stiff, gray	CH	360.7		
35									359.7		
36									358.7		
37									357.7		
38									356.7		
39	SS-12	48.5'-50.0'	6	2-3-3	100	0.6		CH	355.7		
40									354.7		
41									353.7		
42									352.7		
43									351.7		
44	SS-13	53.5'-55.0'	7	3-3-4	100	0.7		CH	350.7		
45									349.7		
46									348.7		
47									347.7		
48									346.7		
49	SS-14	58.5'-60.0'	9	4-4-5	100	0.8		CH	345.7		
50									344.7		
Drilling Method: HSA (2-1/4" id) comments: * Qp test is an estimate of the unconfined compressive strength performed by a compact calibrated spring loaded cylinder											
Depth: 0' to 80.3' by a compact calibrated spring loaded cylinder											
Drill Rig: Mobile B-47 ** ground surface elevation at boring location is estimated and is not surveyed											
Sampling: split-spoon (SS)											

<b>NOBLE</b>											
ENGINEERING CONSULTANTS			County: Lawrence, IL			BORING No. B-1			water level reading		
Client: Charleston Engineering			Weather: Sunny			Sheet No. 3 of 3			1st encounter: 13'		
Driller: Noble Engineering Consultants			Date Start: 8-6-18			Temperature: 80's			water level reading		
Location: Sec. #18-05126-00-BR			Date Finished: 8-6-18			Surface Elevation: 404.7			@completion Dry Cave		
						Driller: Tony Schocker			Backfill: Soil cuttings		
Depth	Sample No.	Sample Depth	N-Value	Blow Count	Recovery (%)	Qp (tsf)*	Soil Description	USC Class.	Elev.**		
61									343.7		
62									342.7		
63									341.7		
64	SS-15	63.5'-65.0'	7	2-3-4	70	0.8	41.0'-77.0' CLAY, fat, occ. wet sand seams, trace to some gravel, medium stiff to stiff, gray	CH	340.7		
65									339.7		
66									338.7		
67									337.7		
68									336.7		
69	SS-16	68.5'-70.0'	22	9-10-12	100	1.2		CH	335.7		
70									334.7		
71									333.7		
72									332.7		
73									331.7		
74	SS-17	73.5'-75.0'	29	8-10-19	100	1.9		CH	330.7		
75									329.7		
76									328.7		
77									327.7		
78									326.7		
79	SS-18	78.5'-80.0'	100+	59-100/3'	0	-	77.8'-80.3' HIGHLY WEATHERED ROCK		325.7		
80							AR 80.3'		324.7		
Drilling Method: HSA (2-1/4" id) comments: * Qp test is an estimate of the unconfined compressive strength performed by a compact calibrated spring loaded cylinder											
Depth: 0' to 80.3' by a compact calibrated spring loaded cylinder											
Drill Rig: Mobile B-47 ** ground surface elevation at boring location is estimated and is not surveyed											
Sampling: split-spoon (SS)											

<b>NOBLE</b>											
ENGINEERING CONSULTANTS			County: Lawrence, IL			BORING No. B-2			water level reading		
Client: Charleston Engineering			Weather: Sunny			Sheet No. 1 of 3			1st encounter: 14'		
Driller: Noble Engineering Consultants			Date Start: 8-6-18			Temperature: 80's			water level reading		
Location: Sec. #18-05126-00-BR			Date Finished: 8-6-18			Surface Elevation: 404.7 **			@completion Dry Cave		
						Driller: Tony Schocker			Backfill: Soil cuttings		
Depth	Sample No.	Sample Depth	N-Value	Blow Count	Recovery (%)	Qp (tsf)*	Soil Description	USC Class.	Elev.**		
1							0.0'-0.7' Gravel-FILL		403.7		
2	SS-1	1.0'-2.5'	21	18-12-9	20		0.7'-6.0' Silt, Clay, Etc. FILL	FILL	402.7		
3									401.7		
4	SS-2	3.5'-5.0'	14	11-7-7	50			FILL	400.7		
5									399.7		
6	SS-3	6.0'-7.5'	10	4-5-5	0		6.0'-14.0' SILTY FINE TO COARSE SAND, trace to some gravel, loose, moist to saturated below 14', brown	SM	398.7		
7									397.7		
8									396.7		
9	SS-4	8.5'-10.0'	9	3-4-5	10			SM	395.7		
10									394.7		
11									393.7		
12									392.7		
13									391.7		
14	SS-5	13.5'-15.0'	19	5-9-10	100	0.9	14.0'-42.0' SILTY CLAY, trace to some sand, occasional wet sand seams below 38', medium stiff to stiff, gray	CL	390.7		
15									389.7		
16									388.7		
17									387.7		
18									386.7		
19	SS-6	18.5'-20.0'	10	3-4-6	100	0.9		CL	385.7		
20									384.7		
21									383.7		
22									382.7		
23									381.7		
24	SS-7	23.5'-25.0'	17	6-8-9	100	1.0		CL	380.7		
25									379.7		
26									378.7		
27									377.7		
28									376.7		
29									375.7		
30	SS-8	28.5'-30.0'	14	4-6-7	100	1.0		CL	374.7		
Drilling Method: HSA (2-1/4" id) comments: * Qp test is an estimate of the unconfined compressive strength performed by a compact calibrated spring loaded cylinder											
Depth: 0' to 79.4' by a compact calibrated spring loaded cylinder											
Drill Rig: Mobile B-47 ** ground surface elevation at boring location is estimated from bridge deck 404.7 and is not surveyed											
Sampling: split-spoon (SS)											

<b>NOBLE</b>											
ENGINEERING CONSULTANTS			County: Lawrence, IL			BORING No. B-2			water level reading		
Client: Charleston Engineering			Weather: Sunny			Sheet No. 2 of 3			1st encounter: 14'		
Driller: Noble Engineering Consultants			Date Start: 8-6-18			Temperature: 80's			water level reading		
Location:											

