

06-14-13 LETTING ITEM 186

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

PLANS FOR PROPOSED  
HIGHWAY BRIDGE PROGRAM

TOWNSHIP ROUTE 88A (BARTSCH LANE)

SECTION 10-01197-00-BR

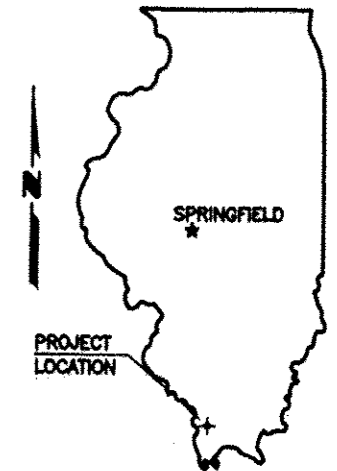
PROJECT NO. BROS-181(55)

JOB NO. C-99-524-11

TRIBUTARY TO CLEAR CREEK

UNION COUNTY

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 88A	10-01197-00-BR	UNION	12	1
PROJECT NO. BROS-181(55)			CONTRACT NO. 99480	



**INDEX OF SHEETS**

- COVER SHEET
- PLAN AND PROFILE
- GENERAL PLAN AND ELEVATION
- 21" X 36" PPC DECK BEAM
- 21" X 36" PPC DECK BEAM DETAILS
- 21" X 48" PPC DECK BEAM
- 21" X 48" PPC DECK BEAM DETAILS
- ABUTMENT
- STEEL RAILING, TYPE S1
- NAME PLATES
- PIILING DETAILS
- CROSS SECTIONS

STANDARDS 000001-06 STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS

280001-07 TEMPORARY EROSION CONTROL SYSTEMS

635006-03 REFLECTOR AND TERMINAL MARKER PLACEMENT

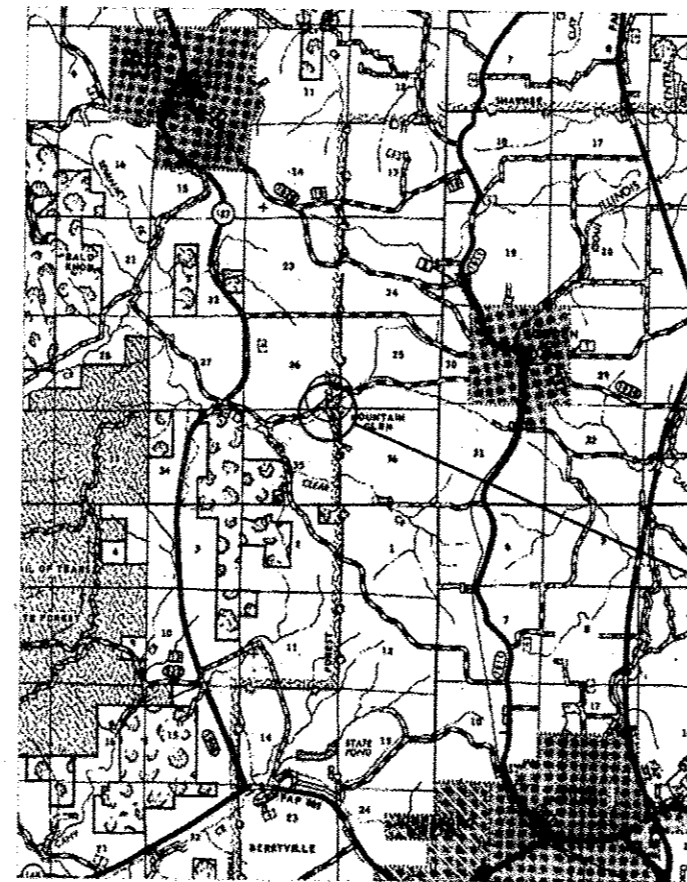
701901-02 TRAFFIC CONTROL DEVICES

BLR 21-9 TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES

**SUMMARY OF QUANTITIES**

CODE NO.	PAY ITEM	UNIT	TOTAL
* X2501000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.1
* Z0065000	SETTING PILES IN ROCK	EACH	8
20100110	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	UNIT	60
20100210	TREE REMOVAL OVER 15 UNITS DIAMETER	UNIT	17
20200100	EARTH EXCAVATION	CU YD	69
* 20300100	CHANNEL EXCAVATION	CU YD	111
* 28100809	STONE DUMPED RIPRAP, CLASS A5	TON	172
* 40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	183
* 50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50200100	STRUCTURE EXCAVATION	CU YD	55
50300225	CONCRETE STRUCTURES	CU YD	22.7
50300280	CONCRETE ENCASEMENT	CU YD	2.7
50400405	PRECAST PRESTRESSED CONCRETE DECK BEAMS (21" DEPTH)	SQ FT	1248
50800105	REINFORCEMENT BARS	POUND	2690
Δ 50900205	STEEL RAILING, TYPE S1	FOOT	106
51201400	FURNISHING STEEL PILES HP10X42	FOOT	112
51500100	NAME PLATES	EACH	1
67100100	MOBILIZATION	L SUM	1
Δ 78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	4

\* SEE SPECIAL PROVISIONS    Δ SPECIALTY ITEMS



LOCATION MAP

SCALE: 1" = 2 MILES

NET LENGTH OF IMPROVEMENT = 263.00 FT. = 0.0498 MILES

CLASSIFICATION : LOCAL ROAD (RURAL)  
ADT : 245  
DESIGN SPEED : 30 MPH

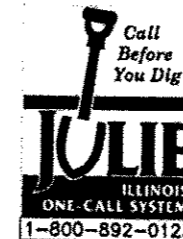
CONTRACT NO. 99480

**E. MILLER ENGINEERING, INC.**  
CONSULTING ENGINEERS  
HARRISBURG, ILLINOIS



*Edward W. Miller*  
Edward W. Miller  
PROFESSIONAL ENGINEER

#062-025277  
EXPIRES NOV. 30, 2013



ILLINOIS DEPARTMENT OF TRANSPORTATION	
Approved	<u>April 2, 2013</u> <i>Thomas Gramma</i> Union County Engineer
Passed	<u>April 10, 2013</u> <i>Don W. Hall</i> District 9 Engineer of Local Roads and Streets
Releasing for Bid Based on Limited Review	<u>April 10, 2013</u> <i>Jeffrey L. Keiser</i> Deputy Director of Highways, Region 5 Engineer Illinois Department of Transportation

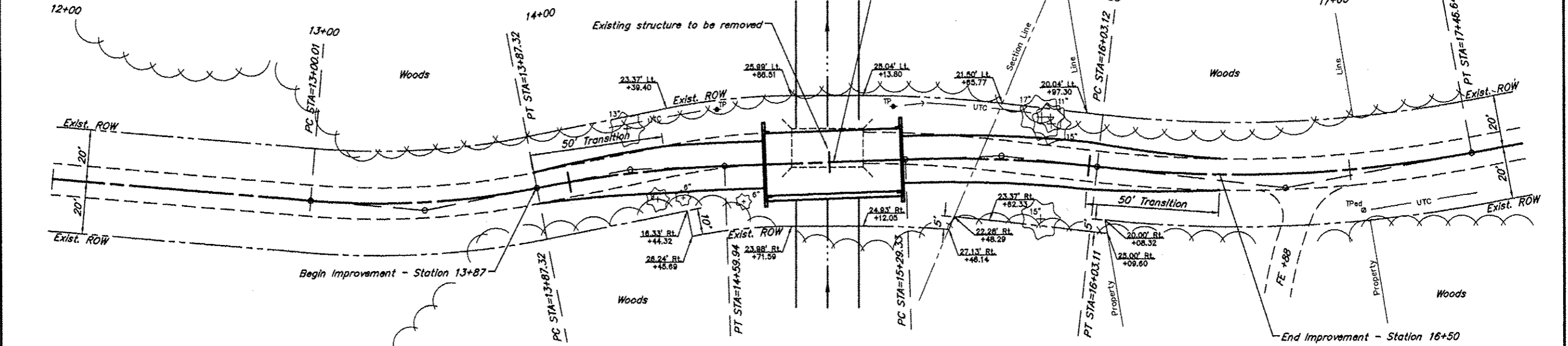
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 88A	10-01197-00-BR	UNION	12	2
PROJECT NO. BROS-0181(055)			CONTRACT NO. 99480	

B.M. - Dbl. Nails in Telephone Pole  
 20' Lt. Sta. 15+25  
 Elev. 455.00

**CURVE DATA - PI STA=13+43.95**  
 $\Delta = 16^{\circ}01'13''$   $T = 43.94'$   
 $D = 18^{\circ}20'58''$   $L = 87.31'$   
 $R = 312.25'$   $E = 3.08'$

**CURVE DATA - PI STA=16+25.42**  
 $\Delta = 17^{\circ}10'09''$   $T = 72.30'$   
 $D = 11^{\circ}57'46''$   $L = 143.52'$   
 $R = 478.95'$   $E = 5.43'$

Existing Structure - Timber deck with steel stringers on one timber and one concrete closed abutment. 14.8' Wide x 27.3' Long



**Tree Removal**

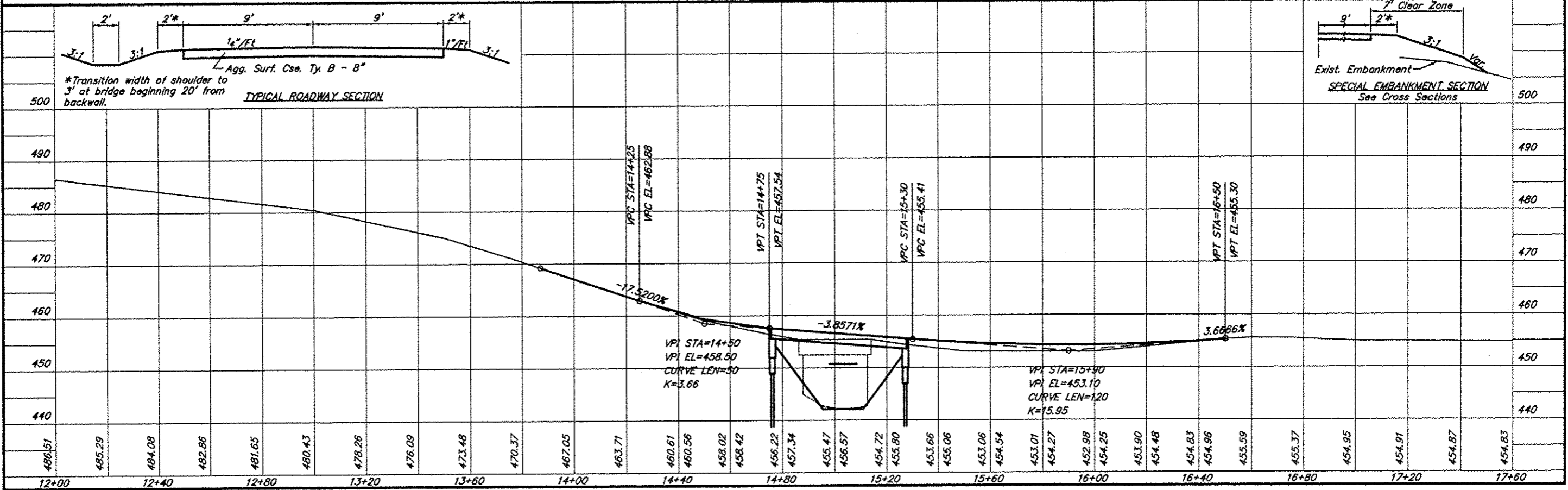
Sta.	Offset	Unit Dia.
14+24	17' Lt.	13
14+33	11' Rt.	9
14+43	11' Rt.	6
14+67	14' Rt.	6
15+81	17' Lt.	17
15+84	17' Lt.	11
15+84	15' Lt.	15

Note: All trees listed are stumps.

SCALES:  
 1" = 40' HOR  
 1" = 20' VER

**CURVE DATA - PI STA=14+23.71**  
 $\Delta = 9^{\circ}08'42''$   $T = 36.39'$   
 $D = 12^{\circ}35'33''$   $L = 72.62'$   
 $R = 455.00'$   $E = 1.45'$

**CURVE DATA - PI STA=15+66.29**  
 $\Delta = 8^{\circ}27'20''$   $T = 36.96'$   
 $D = 11^{\circ}27'33''$   $L = 73.79'$   
 $R = 500.00'$   $E = 1.36'$

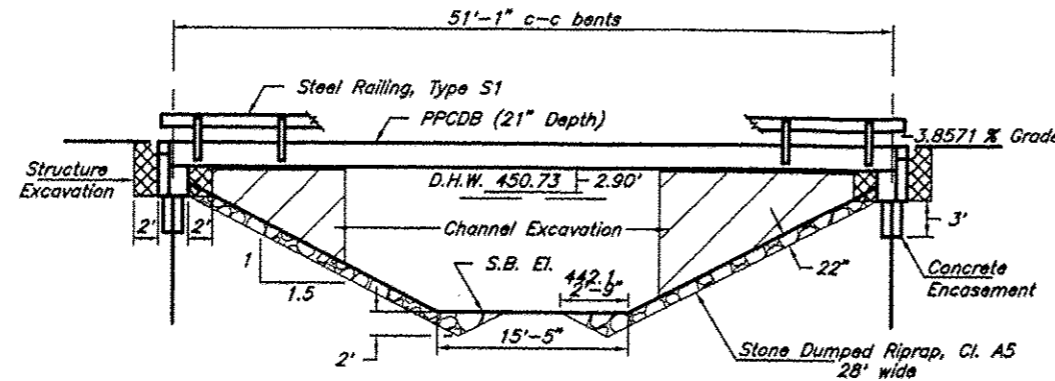


\*Transition width of shoulder to 3' at bridge beginning 20' from backwall.

7' Clear Zone  
 3:1 Slope  
 Exist. Embankment  
**SPECIAL EMBANKMENT SECTION**  
 See Cross Sections

B.M. - Dbl. nail in Telephone Pole  
 20' Lt. Station 15+25  
 Assumed Elev. 455.00

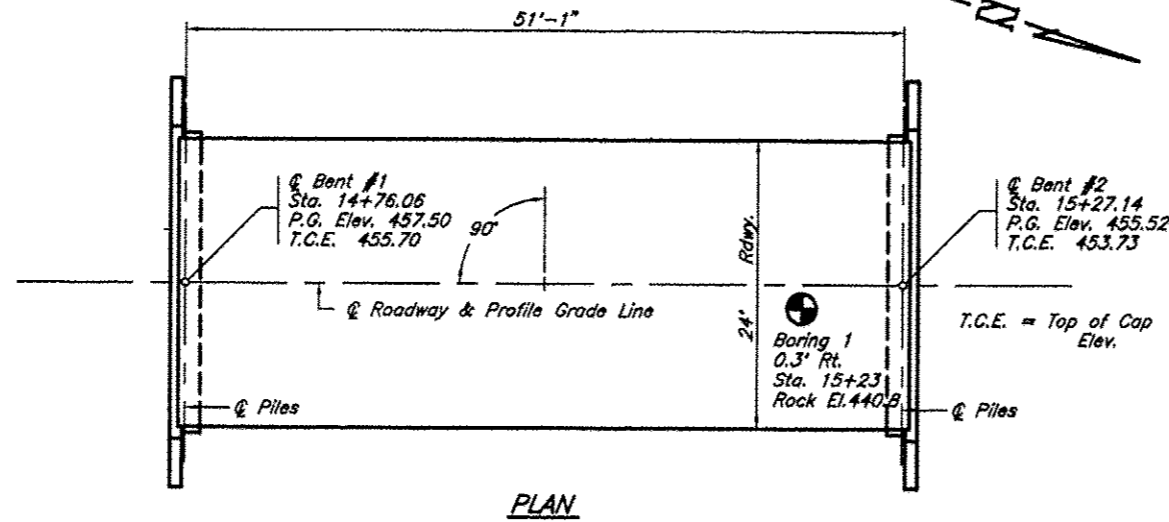
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR BBA	10-01197-00-BR	UNION	12	3
PROJECT NO. BROS-181(55)			CONTRACT NO. 99480	



Existing Structure - Timber deck with steel stringers on one timber and one concrete closed abutment. 14.8' wide x 27.3' long

**GENERAL NOTES**

- Steel H piles shall meet AASHTO M270 Grade 50 specifications.
- See special provisions for boring logs.
- A Corrosion inhibitor, as covered in the Standard Specifications, shall be used in the precast prestressed concrete deck beams.

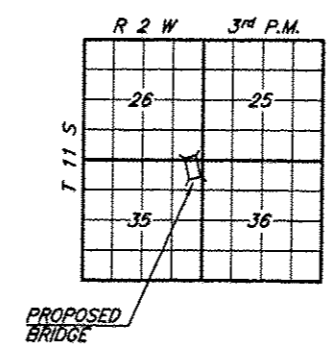


**TOTAL BILL OF MATERIAL**

Item	Unit	Super	Sub.		Total
			Piers	Abuts.	
Channel Excavation	Cu. Yds.			111	111
Stone Dumped Riprap, Cl. A5	Tons			172	172
Removal of Existing Structures	Each				1
Structure Excavation	Cu. Yds.			55	55
Concrete Structures	Cu. Yds.			22.7	22.7
Concrete Encasement	Cu. Yds.			2.7	2.7
P.P. Conc. Dk. Bm. 21" Dp.	Sq. Ft.	1248			1248
Reinforcement Bars	Pound			2690	2690
Steel Railing, Type S1	Foot	106			106
Furnishing Steel Piles HP10X42	Foot			112	112
Setting Piles in Rock	Each			8	8
Name Plates	Each			1	1

TRIBUTARY TO CLEAR CREEK  
 SEC. 10-01197-00-BR BUILT 20\_\_\_\_  
 COUNTY UNIT ROAD DISTRICT  
 UNION COUNTY  
 LOADING HL-93  
 STR. NO. 091-3237

**LETTERING FOR NAME PLATE**  
 Locate Name Plate at southeast  
 Corner of Bridge (See Sheet 8)



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 type of structure and complies with the requirements of the current AASHTO LRFD Specifications.

Zeyn B. Uzman  
 S.E. #81-0745  
 Expires Nov. 30, 2014

**ILLINOIS REGISTERED STRUCTURAL ENGINEER**  
 ZEYN UZMAN  
 4745  
 4/2/13  
 STATE OF ILLINOIS

**PILE DATA (2-ABUTS.)**

Type & Size : HP10X42  
 Nominal Required Bearing : 267 kips  
 Factored Resistance Available : 147 kips  
 Estimated Length : 13 Feet Bent #1, 15 Feet Bent #2  
 Number Required : 8 Set In Rock

**DESIGN SPECIFICATIONS**

2007 AASHTO LRFD Bridge Design Specifications and all applicable interims.

**LOADING HL-93**

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

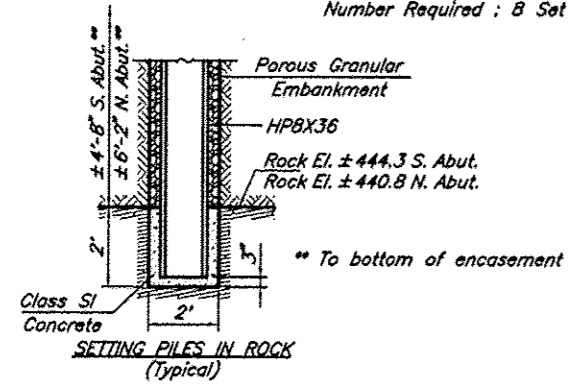
**SEISMIC DATA**

Soil Site Class = D  
 Design Spectral Acceleration at 0.2 sec. (S<sub>gs</sub>) = 1.017  
 Design Spectral Acceleration at 1.0 sec. (S<sub>p1</sub>) = 0.438  
 Seismic Performance Zone (SPZ) = 3

**WATERWAY INFORMATION**

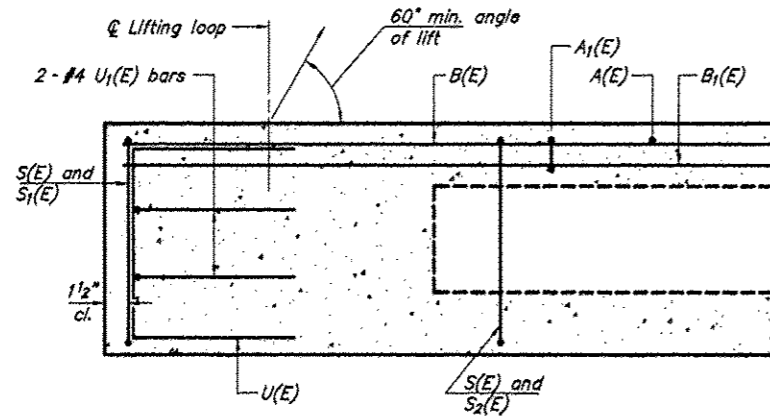
Drainage Area = 3.38 Sq. Mi.		Low Grade Elev. = 454.23		At Sta. 15+92		
Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist. Prop.	Natural H.W.E. Exist. Prop.	Head-Ft. Exist. Prop.	Headwater El. Exist. Prop.
Design	15	1880	195.6 244.1	450.73	1.74 0.30	452.47 451.03
Base	100	2980	237.8 333.3	452.75	1.89 0.70	454.64 453.45
Overtopping	±175	3346		453.30		454.23
Max. Calc.	500					

Over Road Flow (Sq Ft): Exist. 145.1



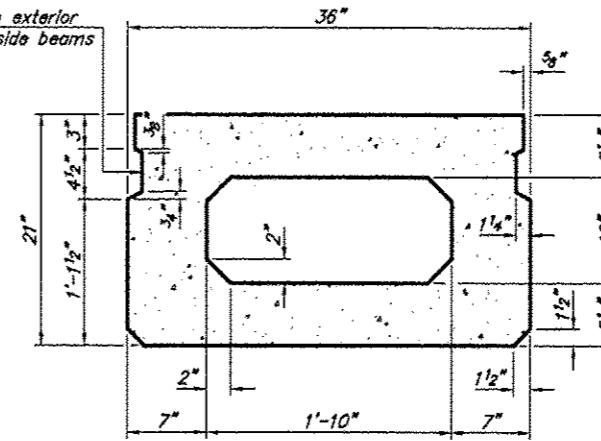
**GENERAL PLAN & ELEVATION**  
 TOWNSHIP ROUTE BBA (BARTSCH LANE)  
 TRIBUTARY TO CLEAR CREEK  
 SECTION 10-01197-00-BR  
 UNION COUNTY  
 STRUCTURE NO. 091-3237

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
TR 88A	10-01197-00-BR	UNION	12	4
PROJECT NO. BROS-181(55)			CONTRACT NO. 99480	

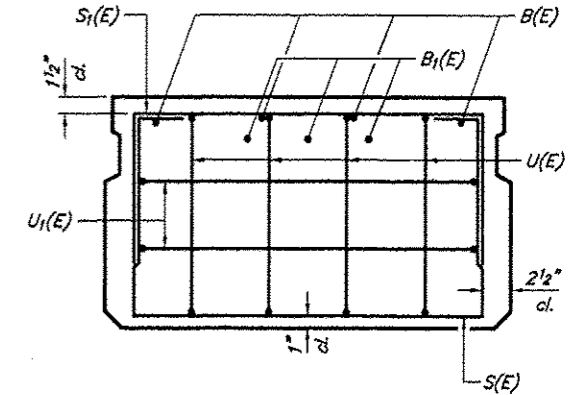


SECTION C-C

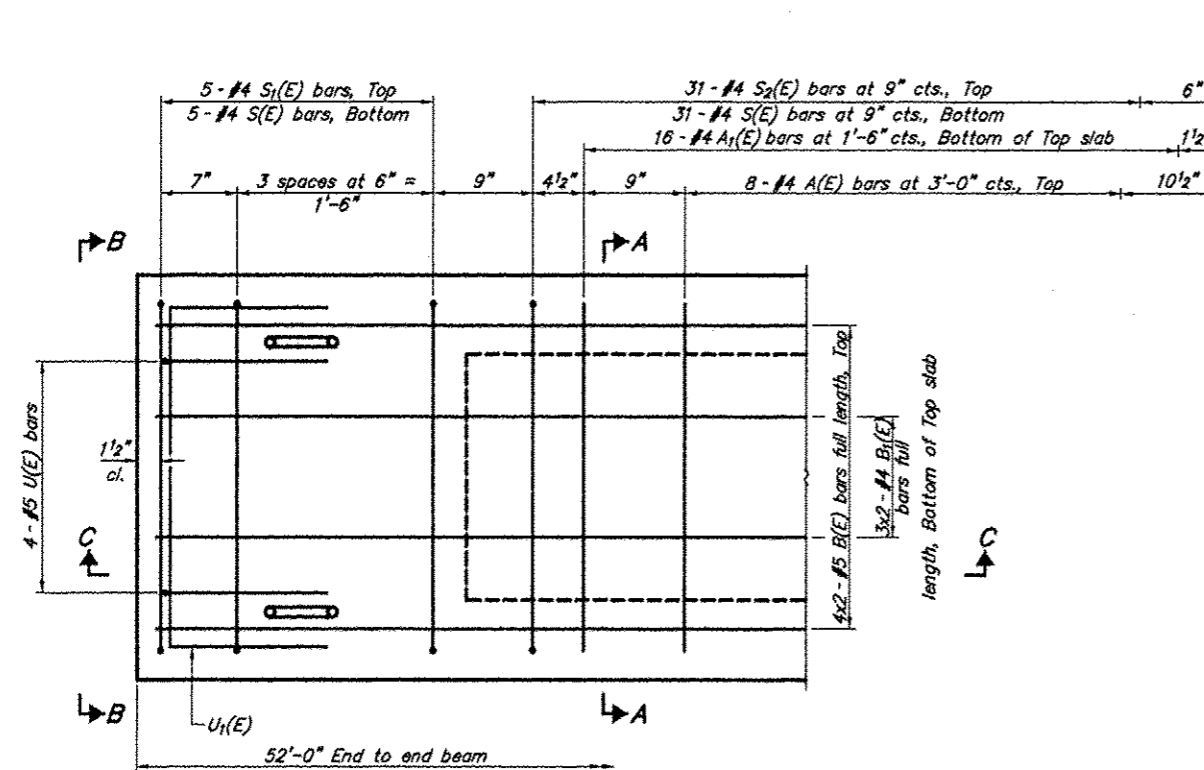
Omit key on exterior face of outside beams



SECTION A-A  
(Showing dimensions)



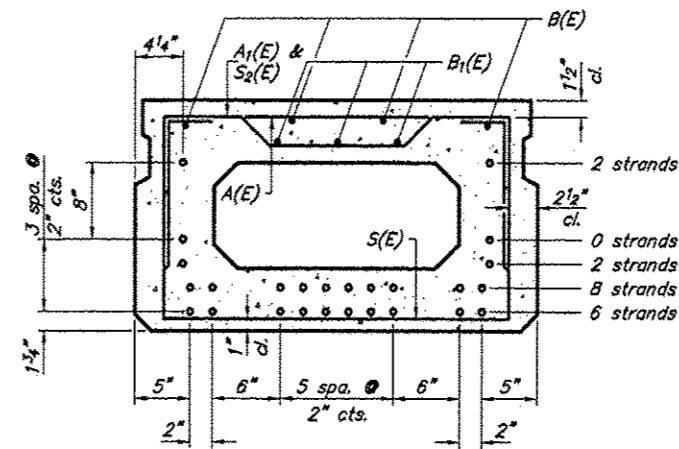
VIEW B-B



PLAN VIEW

Note: Spacing of S(E) and S2(E) bars may be adjusted up to 4\"/>

Symmetrical about Q



SECTION A-A

(Showing reinforcement and permissible strand locations)

Note: Place the number of strands specified in each row symmetrically about the centerline of beam in the permissible strand locations shown.

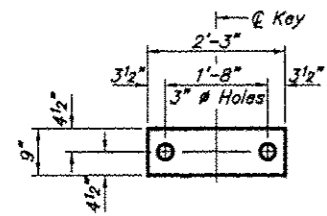
BAR LIST  
ONE BEAM ONLY  
(For information only)

Bar	No.	Size	Length	Shape
A(E)	16	#4	2'-7"	—
A1(E)	32	#4	2'-10"	—
B(E)	8	#5	26'-11"	—
B1(E)	6	#4	26'-8"	—
S(E)	72	#4	6'-5"	□
S1(E)	10	#4	4'-11"	□
S2(E)	62	#4	5'-2"	□
U(E)	8	#5	4'-0"	□
U1(E)	4	#4	5'-0"	□

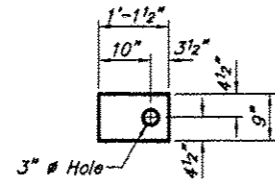
Bar Laps #4 bars = 1'-8"  
#5 bars = 2'-2"

21" X 36" PPC DECK BEAM  
TOWNSHIP ROUTE 88A (BARTSCH LANE)  
TRIBUTARY TO CLEAR CREEK  
SECTION 10-01197-00-BR  
UNION COUNTY  
STRUCTURE NO. 091-3237

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 88A	10-01197-00-BR	UNION	12	5
PROJECT NO. BROS-181(55)			CONTRACT NO. 99480	



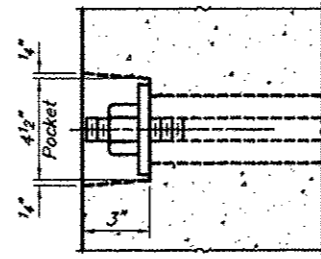
**FABRIC BEARING PAD**  
(Interior)



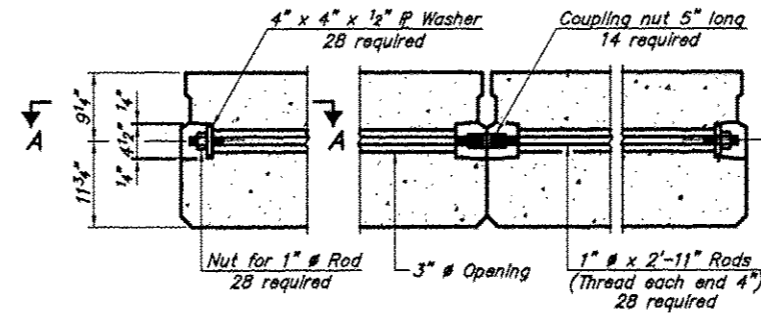
**FABRIC BEARING PAD**  
(Exterior)

**FIXED**

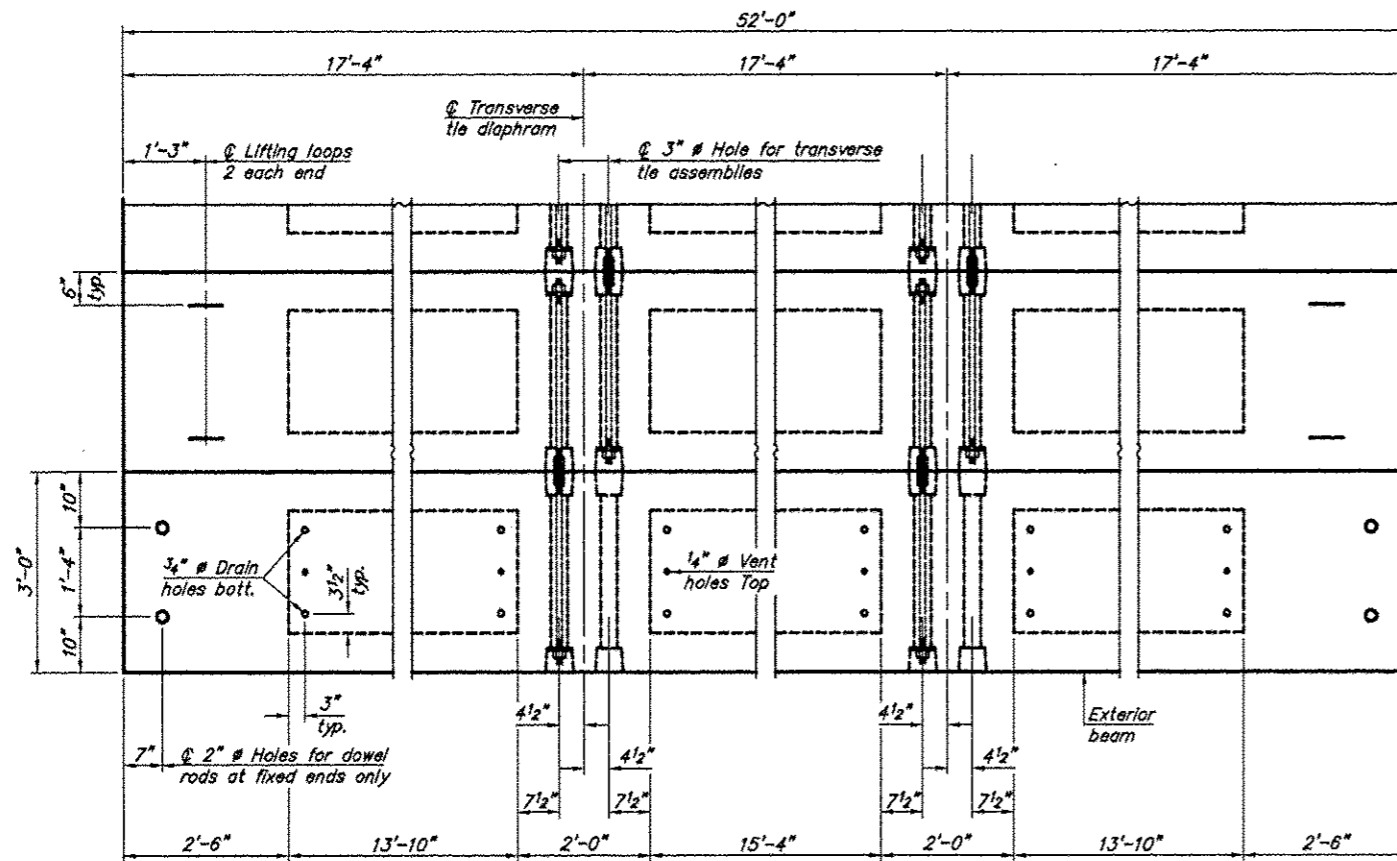
Note: Omit holes when using expansion bearings.



**SECTION A-A**

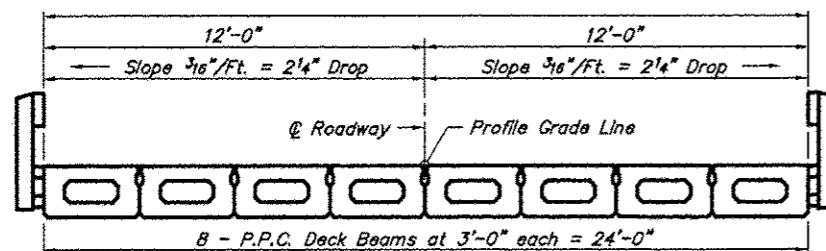


**TYPICAL TRANSVERSE TIE ASSEMBLY**



**PLAN VIEW**

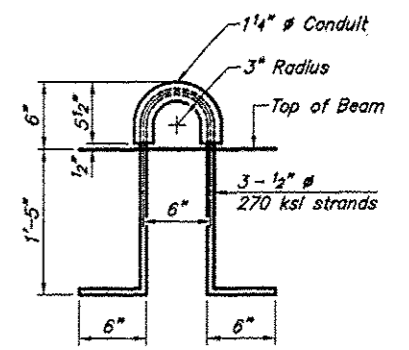
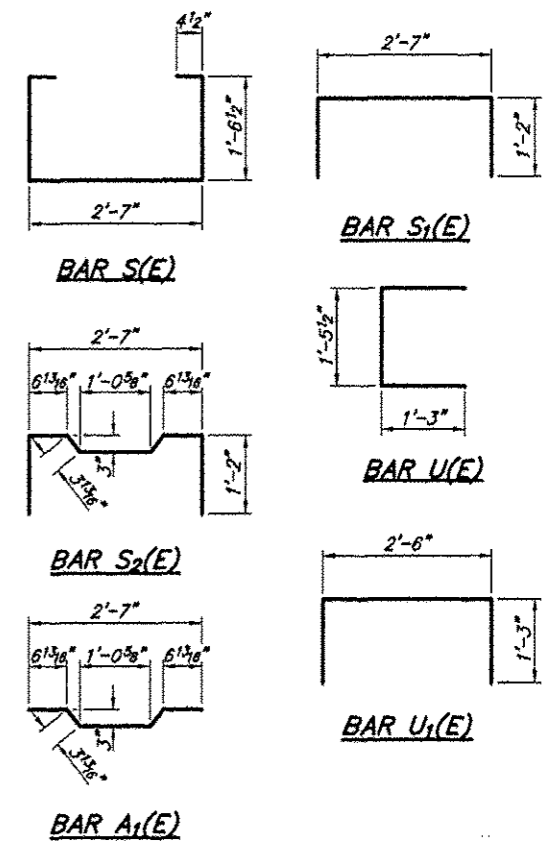
Note: Connect beams in pairs with the transverse tie configuration shown.



**CROSS SECTION**

**NOTES**

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in. The 1" # rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior faces of bridge shall be filled with grout after transverse tie assembly is in place. Reinforcement bars shall conform to ASTM A 706, Grade 60. (See Special Provisions). Two 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)(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'cl, shall be 5000 psi.



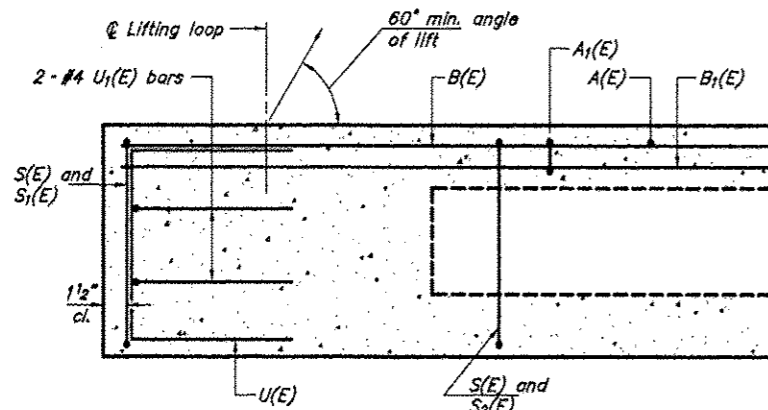
**LIFTING LOOP DETAIL**

**BILL OF MATERIAL**

Precast Prestressed Conc. Deck Bms. (21" depth)	Sq. Ft.	1248
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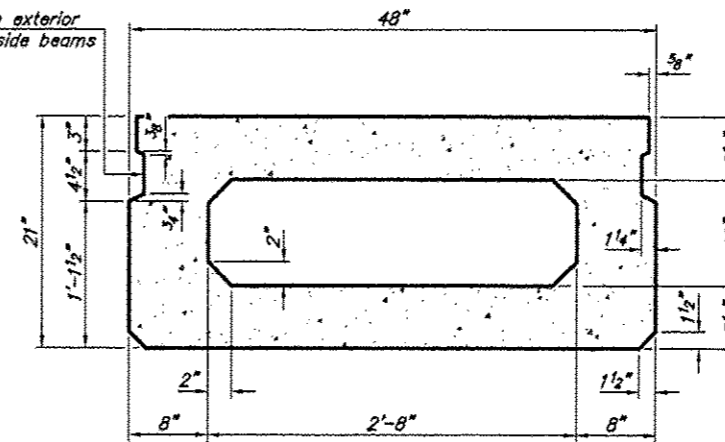
**21" X 36" PPC DECK BEAM DETAILS**  
**TOWNSHIP ROUTE 88A (BARTSCH LANE)**  
**TRIBUTARY TO CLEAR CREEK**  
**SECTION 10-01197-00-BR**  
**UNION COUNTY**  
**STRUCTURE NO. 091-3237**

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
TR 88A	10-01197-00-BR	UNION	12	6
PROJECT NO. BROS-181(55)			CONTRACT NO. 99480	

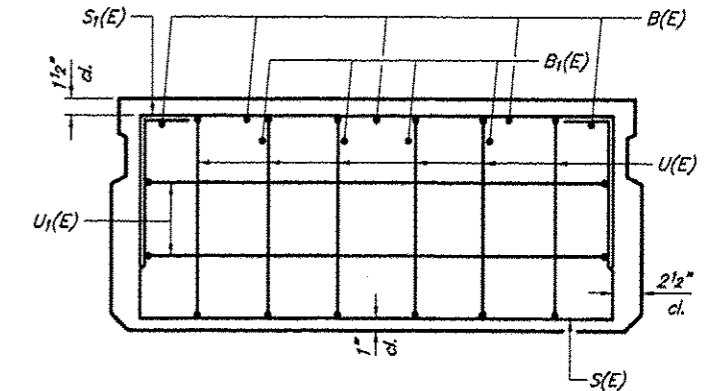


**SECTION C-C**

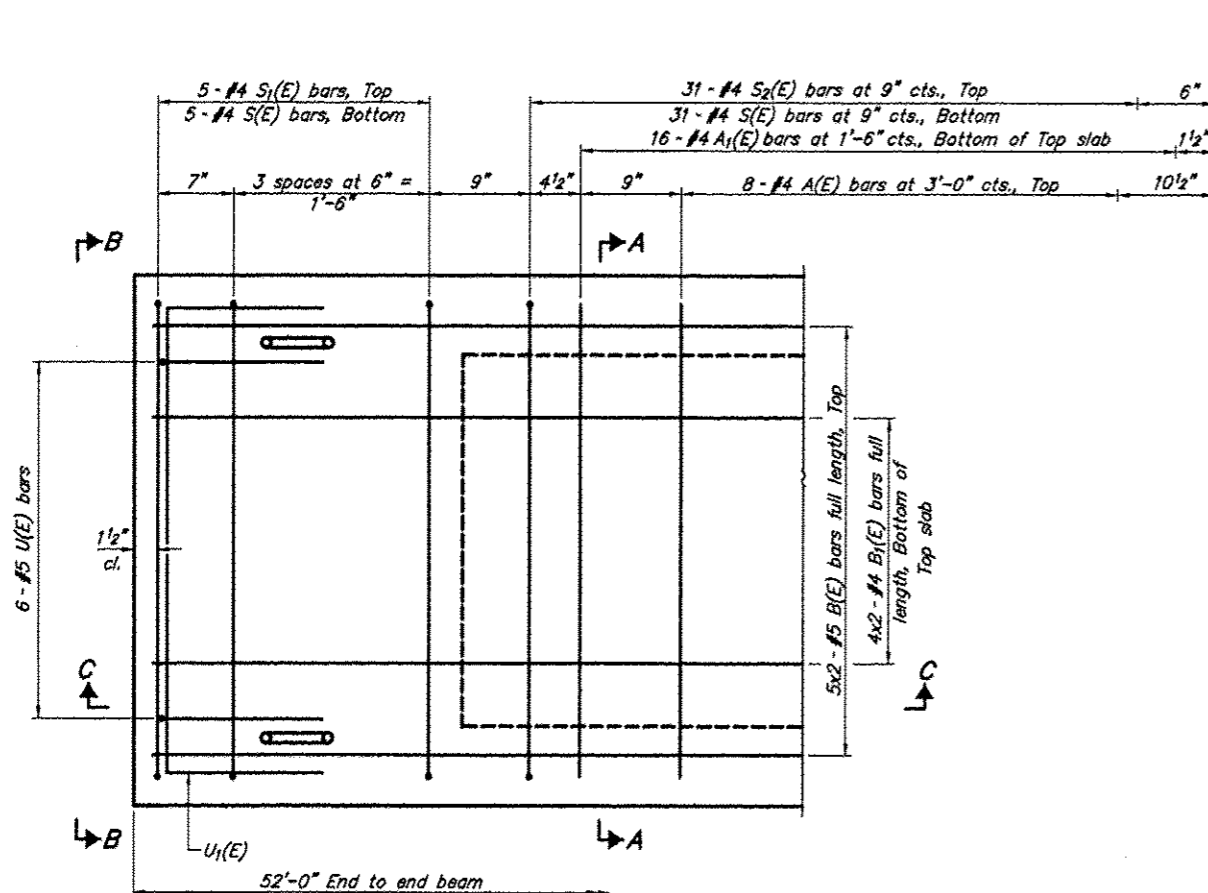
Omit key on exterior face of outside beams



**SECTION A-A**  
(Showing dimensions)



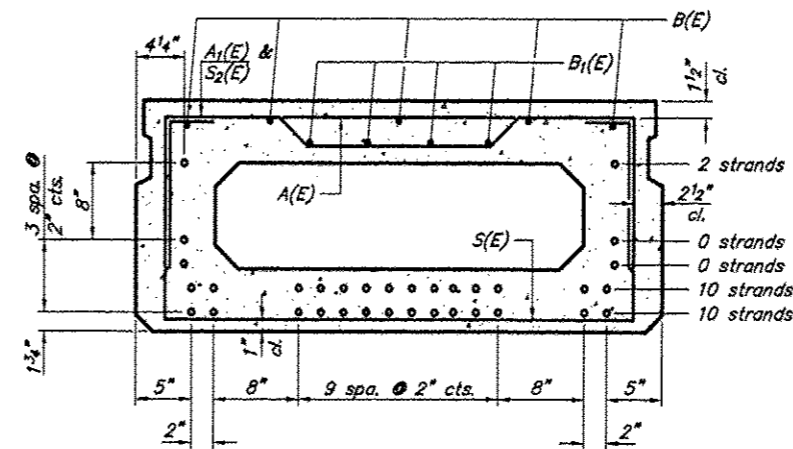
**VIEW B-B**



**PLAN VIEW**

Note: Spacing of S(E) and S<sub>2</sub>(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.

Symmetrical about  $\text{\textcircled{C}}$



**SECTION A-A**

(Showing reinforcement and permissible strand locations)

Note: Place the number of strands specified in each row symmetrically about the centerline of beam in the permissible strand locations shown.

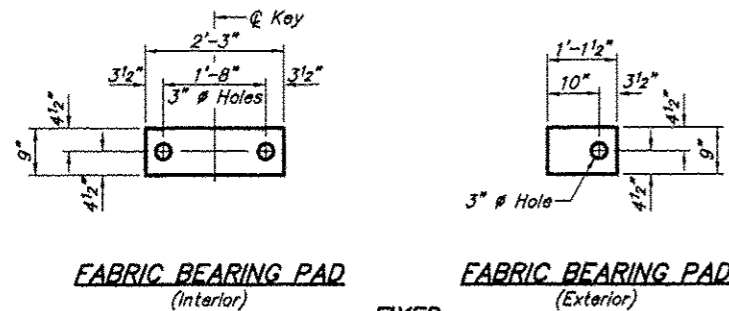
**BAR LIST**  
**ONE BEAM ONLY**  
(For information only)

Bar	No.	Size	Length	Shape
A(E)	16	#4	3'-7"	—
A <sub>1</sub> (E)	32	#4	3'-10"	—
B(E)	10	#5	26'-11"	—
B <sub>1</sub> (E)	8	#4	26'-8"	—
S(E)	72	#4	7'-5"	□
S <sub>1</sub> (E)	10	#4	5'-11"	□
S <sub>2</sub> (E)	62	#4	6'-2"	□
U(E)	12	#5	4'-0"	□
U <sub>1</sub> (E)	4	#4	6'-0"	□

Bar Laps #4 bars = 1'-8"  
#5 bars = 2'-2"

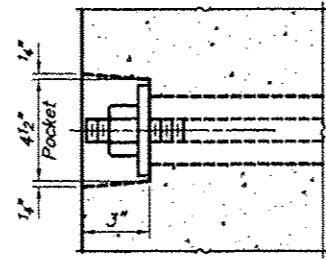
21" X 48" PPC DECK BEAM  
TOWNSHIP ROUTE 88A (BARTSCH LANE)  
TRIBUTARY TO CLEAR CREEK  
SECTION 10-01197-00-BR  
UNION COUNTY  
STRUCTURE NO. 091-3237

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
TR B8A	10-01197-00-BR	UNION	12	7
PROJECT NO. BROS-181(55)			CONTRACT NO. 99480	

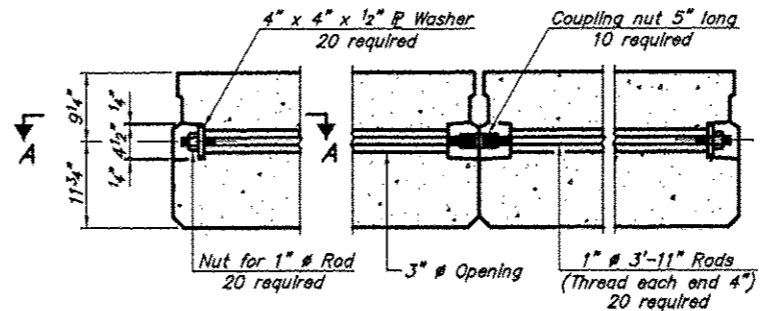


**FABRIC BEARING PAD**  
(Interior) **FIXED**  
**FABRIC BEARING PAD**  
(Exterior)

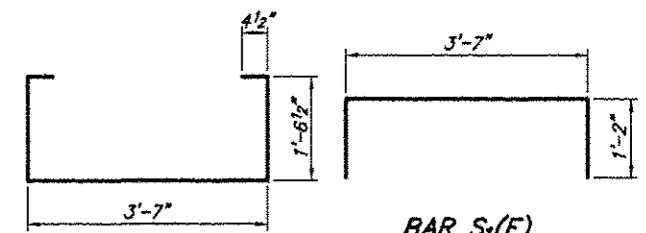
Note: Omit holes when using expansion bearings.



**SECTION A-A**

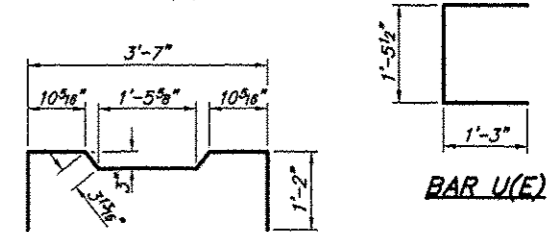


**TYPICAL TRANSVERSE TIE ASSEMBLY**



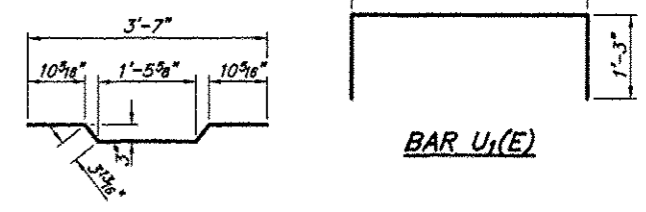
**BAR S<sub>1</sub>(E)**

**BAR S(E)**

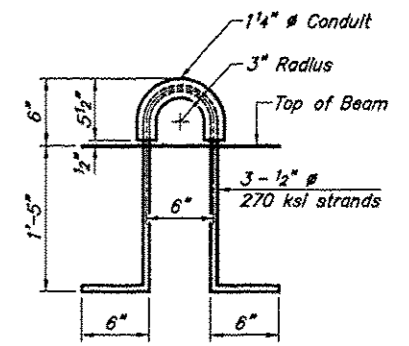


**BAR U<sub>1</sub>(E)**

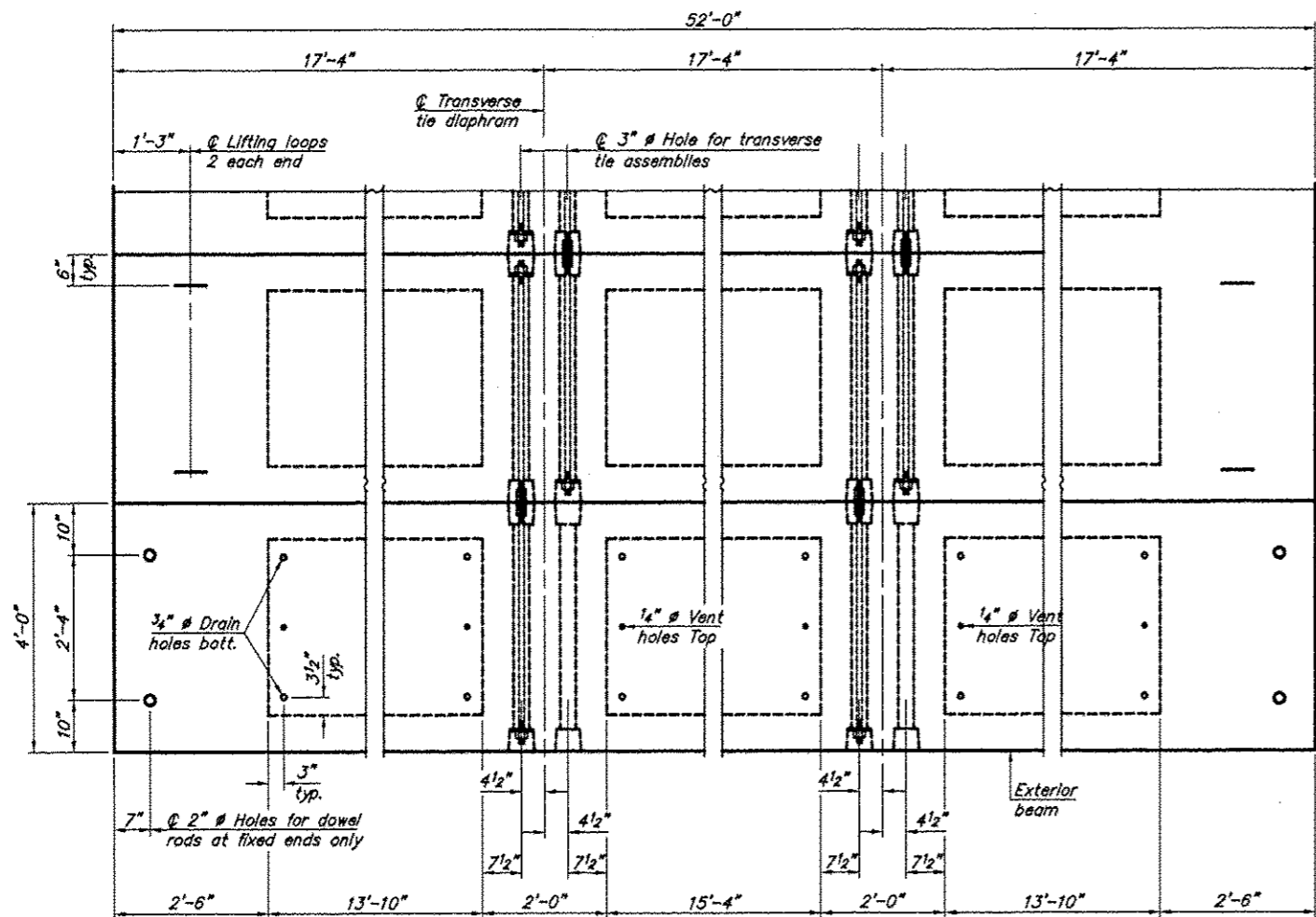
**BAR S<sub>2</sub>(E)**



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

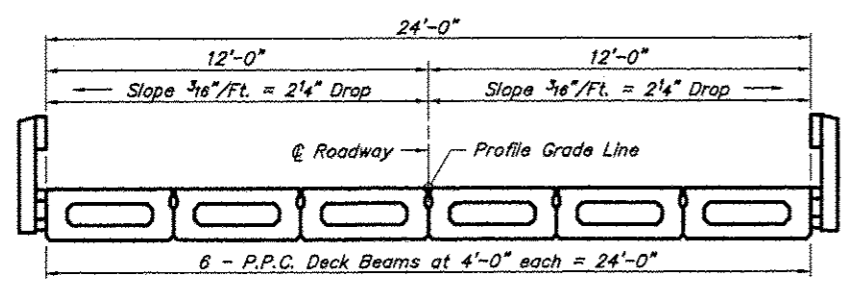


**LIFTING LOOP DETAIL**



**PLAN VIEW**

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



**CROSS SECTION**

**NOTES**

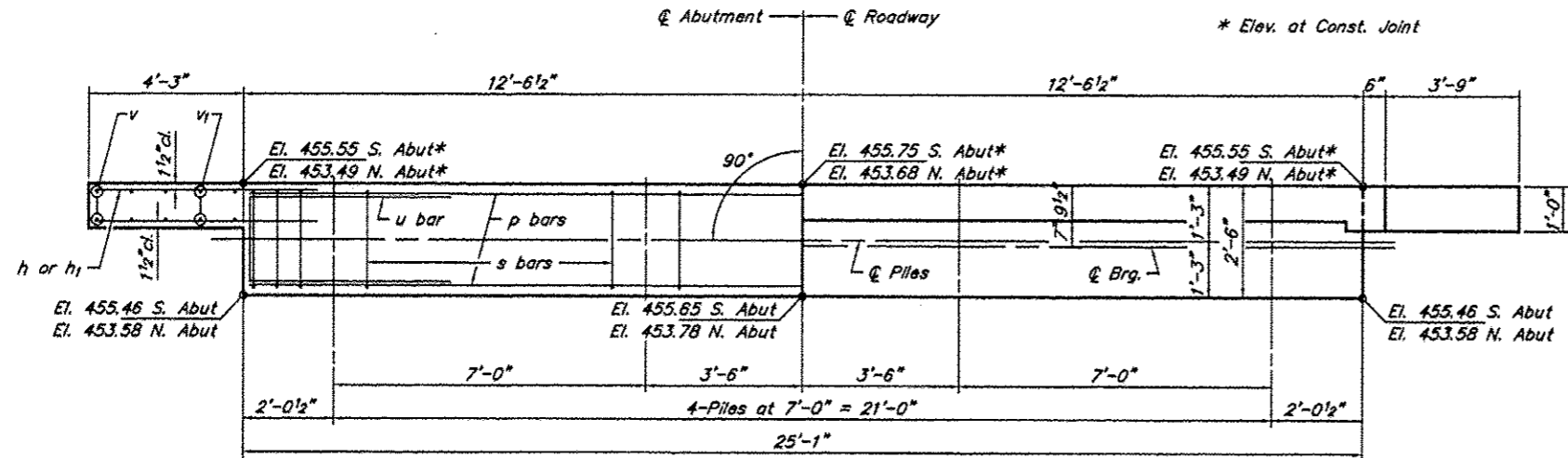
Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in. The 1" rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior faces of bridge shall be filled with grout after transverse tie assembly is in place. Reinforcement bars shall conform to ASTM A 706, Grade 60. (See Special Provisions). Two 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)(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'cl, shall be 5000 psi.

**BILL OF MATERIAL**

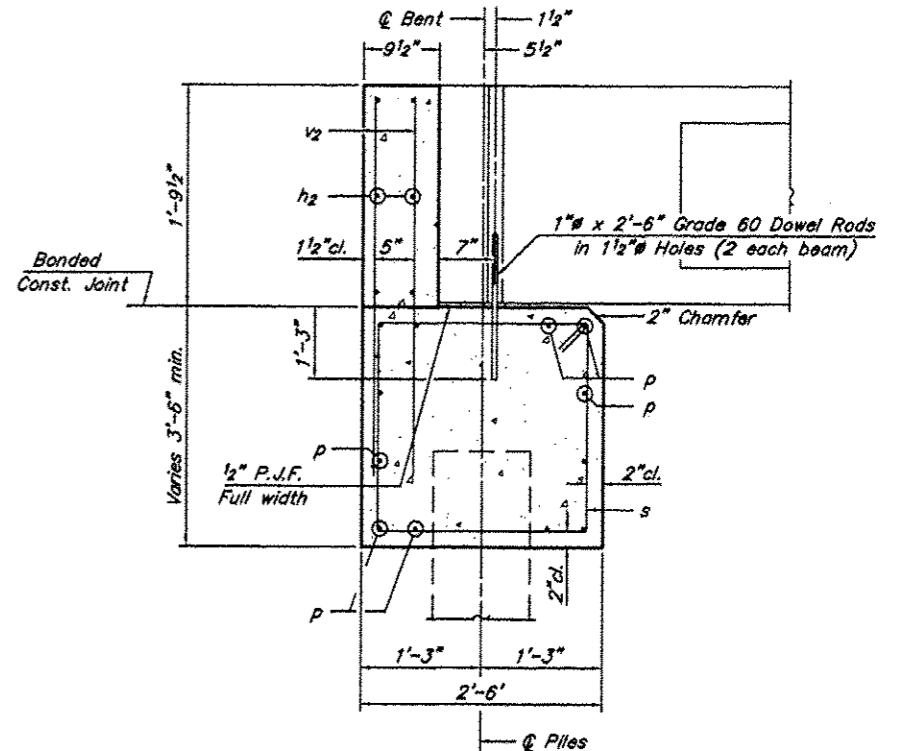
Precast Prestressed Concrete Deck Beams (21" depth)	Sq. Ft.	1248
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**21" X 48" PPC DECK BEAM DETAILS**  
**TOWNSHIP ROUTE 88A (BARTSCH LANE)**  
**TRIBUTARY TO CLEAR CREEK**  
**SECTION 10-01197-00-BR**  
**UNION COUNTY**  
**STRUCTURE NO. 091-3237**

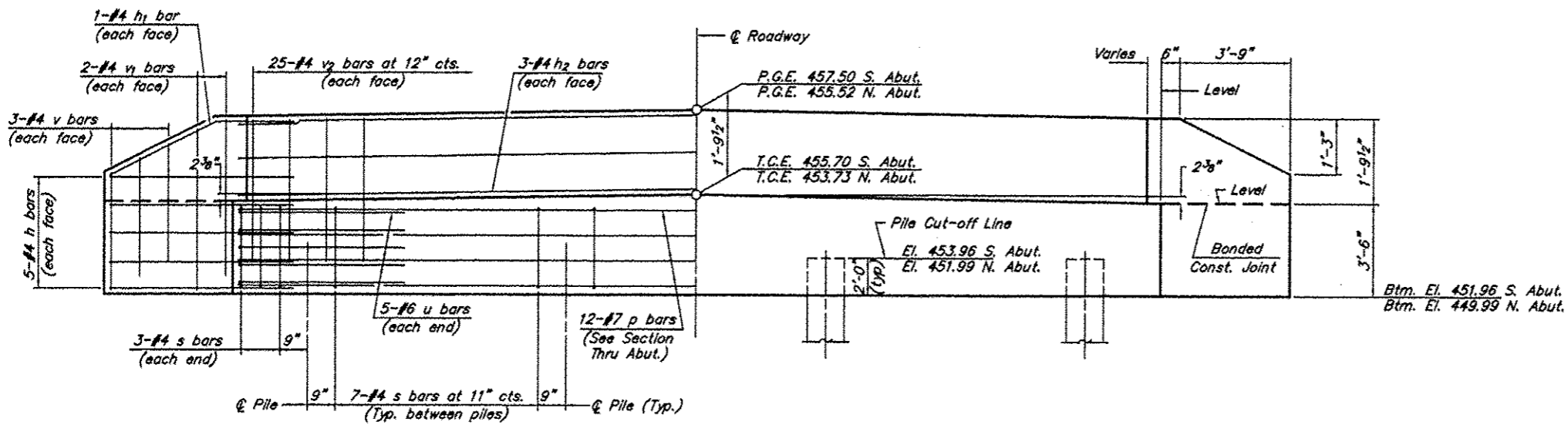
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 88A	10-01197-00-BR	UNION	12	8
PROJECT NO. BROS-181(55)			CONTRACT NO. 99480	



PLAN



SECTION THRU ABUT.  
(At Right Angles)



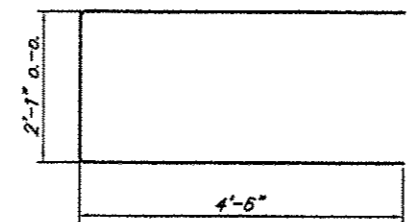
ELEVATION

NOTES

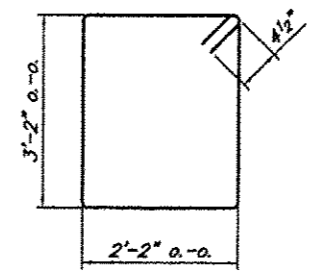
1. The Backwall and the portion of the Wingwalls above the bonded construction joint shall be cast against the in-place beam.
2. Reinforcement bars shall conform to A.A.S.H.T.O. M-31, M-42 or M-53, Grade 60.

DESIGN STRESSES

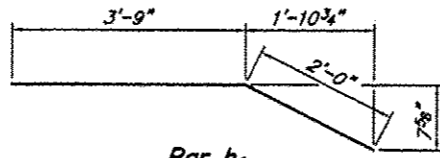
$f'_c = 3,500$  psi  
 $f_y = 60,000$  psi



Bar u



Bar s



Bar h1

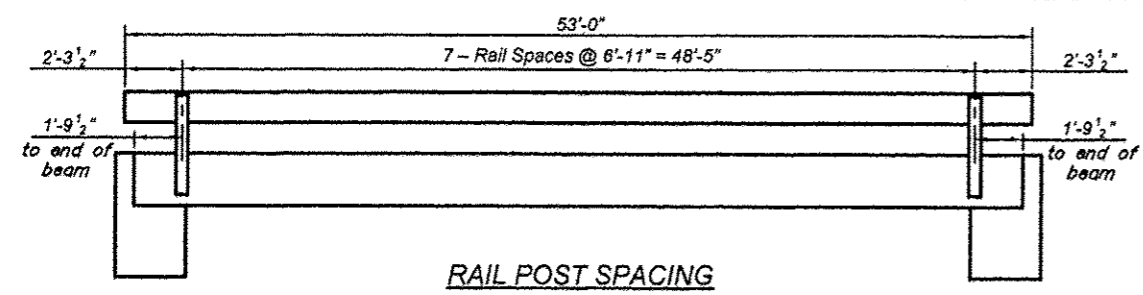
BILL OF MATERIAL FOR ONE ABUTMENT

Bar	No.	Size	Length	Shape
h	20	#4	5'-9"	—
h1	4	#4	5'-9"	—
h2	6	#4	24'-9"	—
p	12	#7	24'-9"	—
s	27	#4	11'-5"	□
u	10	#6	11'-1"	□
v	12	#4	4'-2"	—
v1	8	#4	5'-0"	—
v2	50	#4	3'-5"	—
Concrete Structures			11.35	Cu. Yds.
Reinforcement Bars			1345	Lbs.

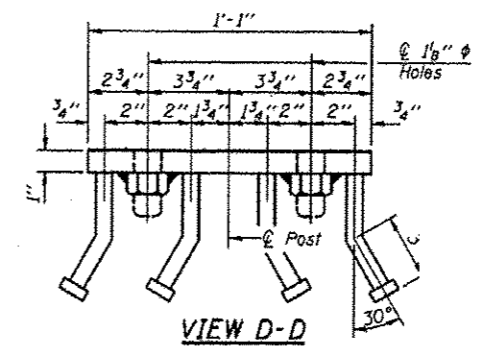
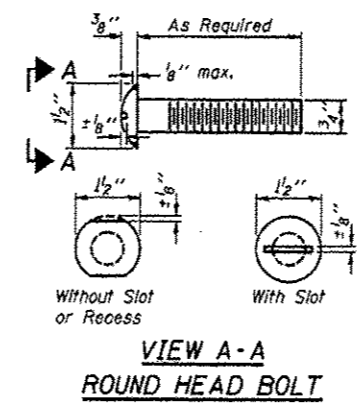
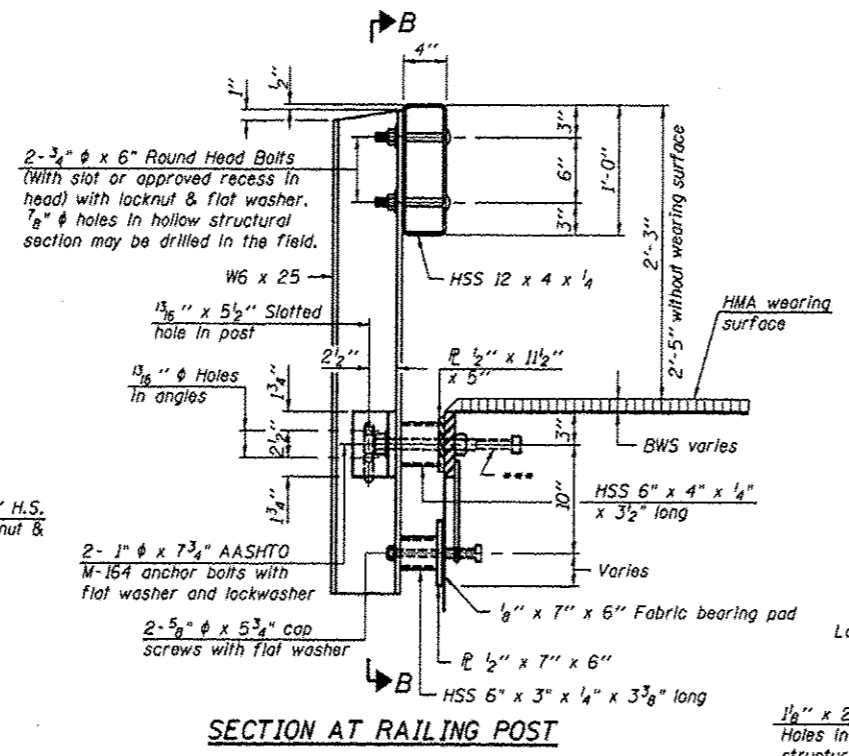
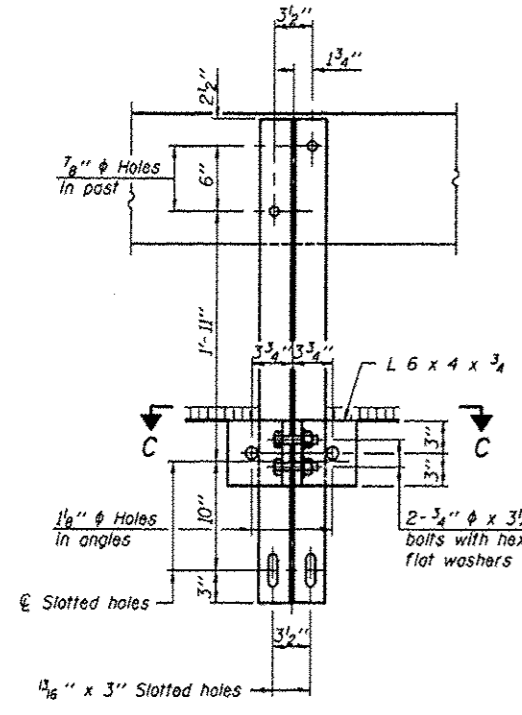
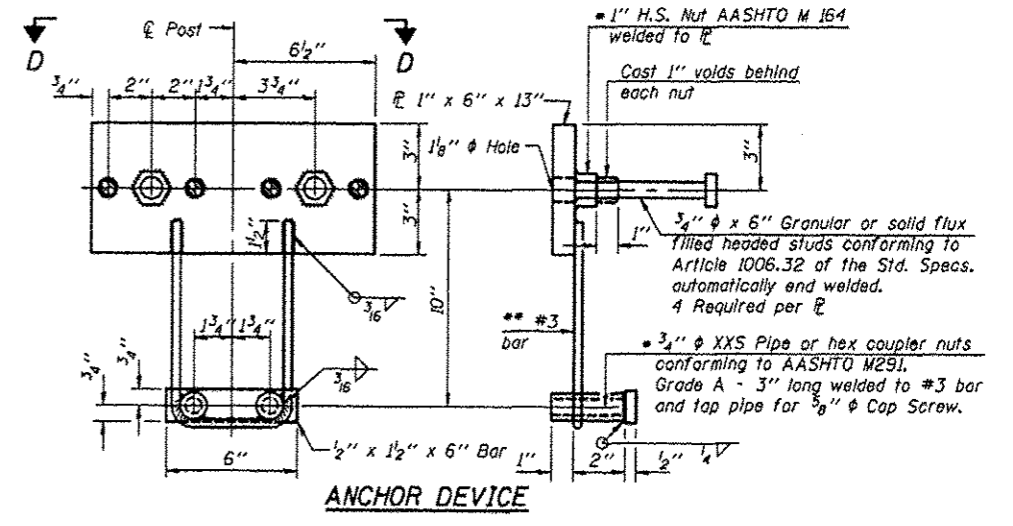
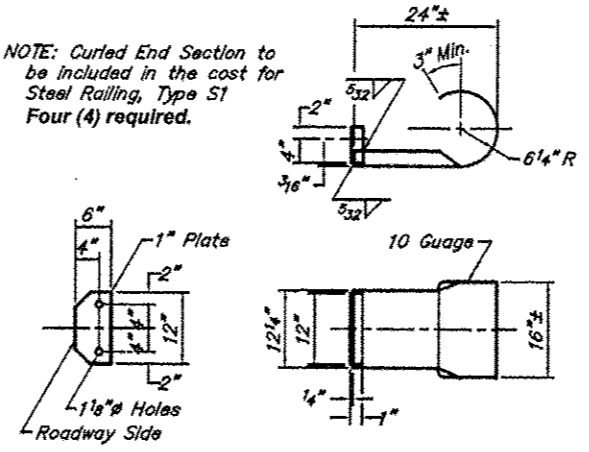
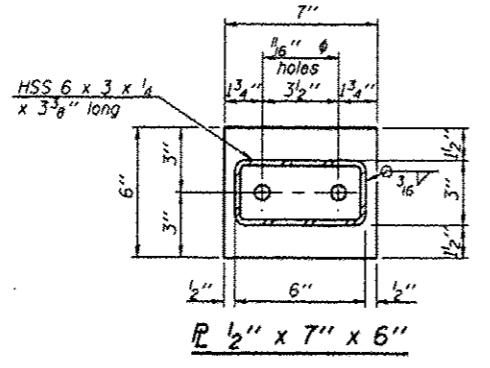
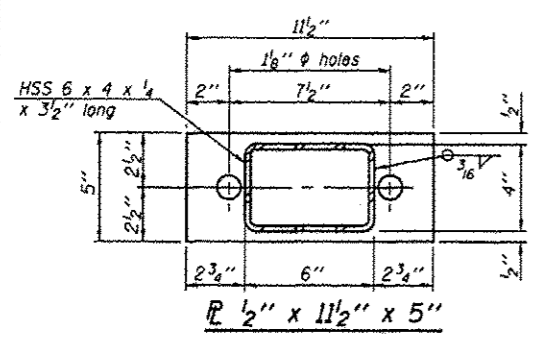
ABUTMENT  
TOWNSHIP ROUTE 88A (BARTSCH LANE)  
TRIBUTARY TO CLEAR CREEK  
SECTION 10-01197-00-BR  
UNION COUNTY  
STRUCTURE NO. 091-3237



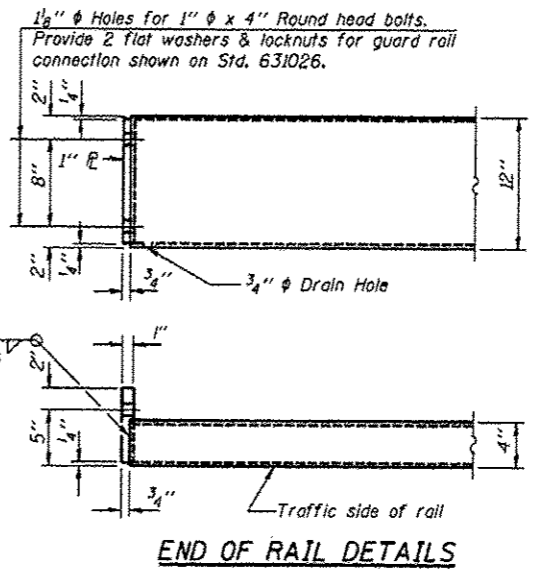
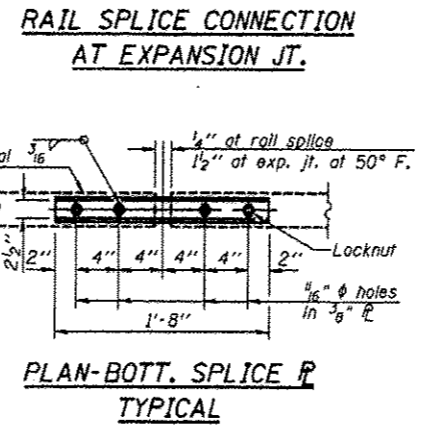
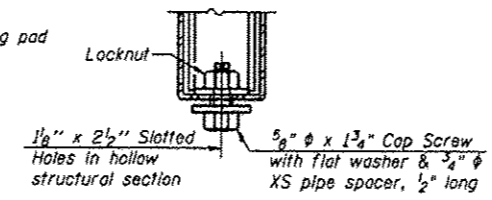
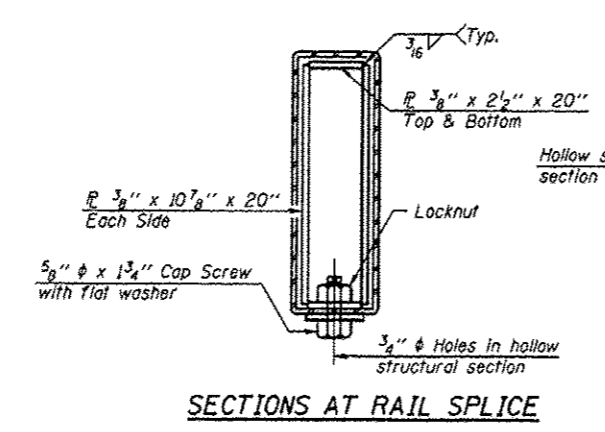
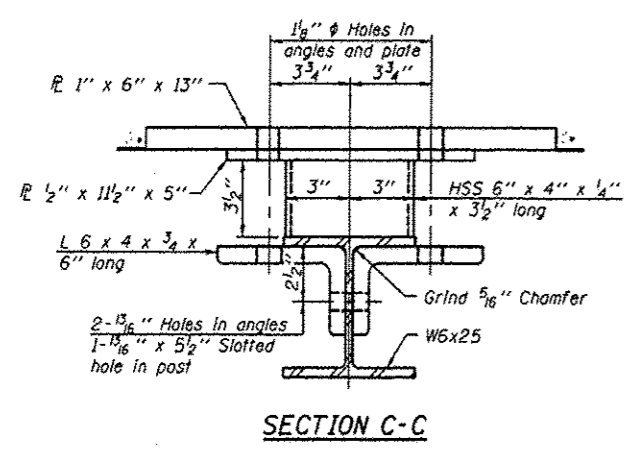
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 88A	10-01197-00-BR	UNION	12	9
PROJECT NO. BROS-181(55)			CONTRACT NO. 98480	



NOTE: Curled End Section to be included in the cost for Steel Railing, Type S1 Four (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" 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.
  - Threaded areas shall be plugged or blocked off during casting of beam.
  - 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".
  - 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.
  - 10'-9" Maximum Post Spacing

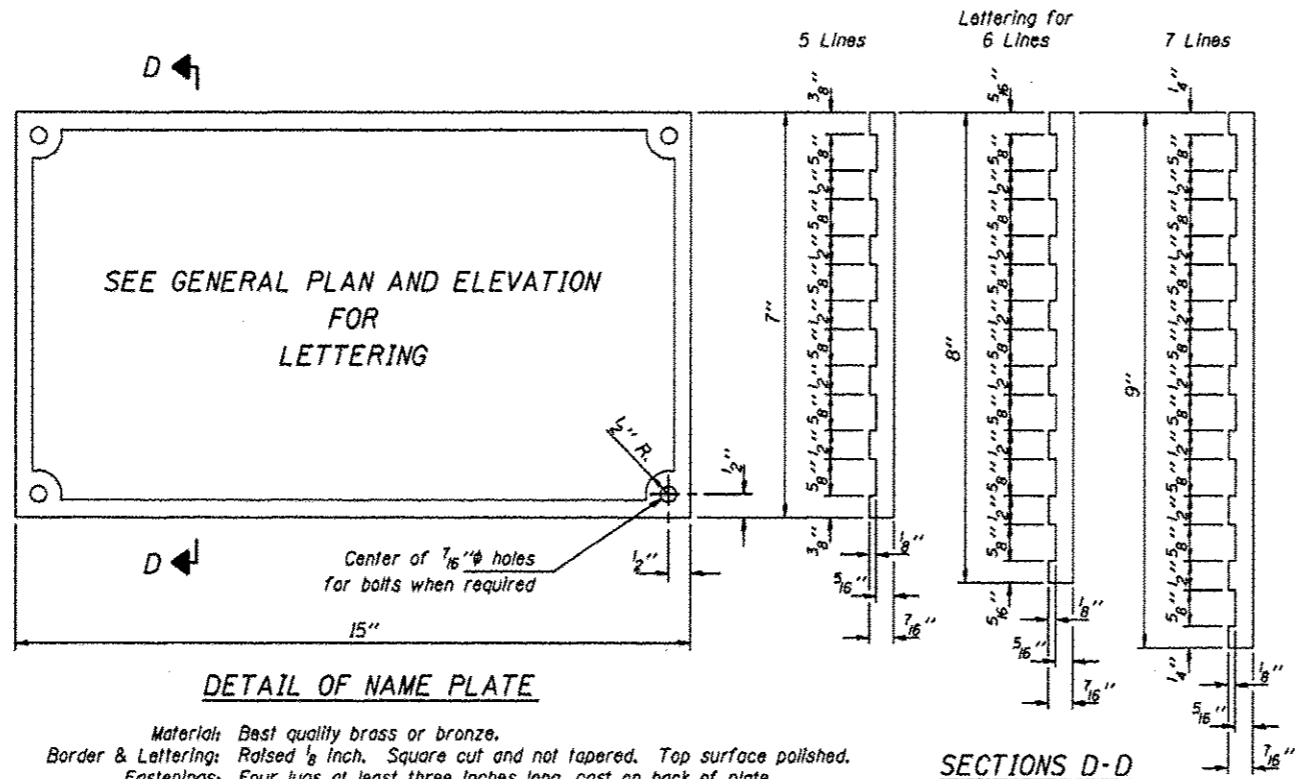


**BILL OF MATERIAL**

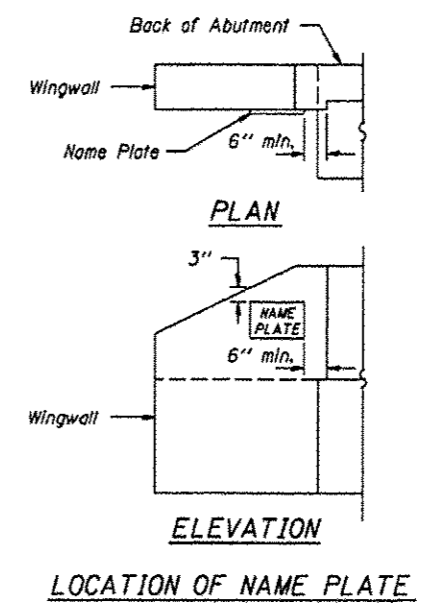
Item	Unit	Quantity
Steel Railing, Type S-1	Foot	106

STEEL RAILING, TYPE S-1  
 TOWNSHIP ROUTE 88A (BARTSCH LANE)  
 TRIBUTARY TO CLEAR CREEK  
 SECTION 10-01197-00-BR  
 UNION COUNTY  
 STRUCTURE NO. 091-3237

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 88A	10-01197-00-BR	UNION	12	10
PROJECT NO. BROS-181(65)			CONTRACT NO. 99480	

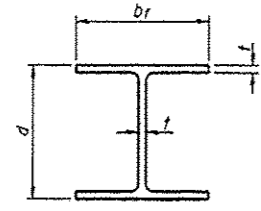


Material: Best quality brass or bronze.  
 Border & Lettering: Raised  $\frac{1}{8}$  inch. Square cut and not tapered. Top surface polished.  
 Fastenings: Four lugs at least three inches long, cast on back of plate.



NAME PLATES  
 TOWNSHIP ROUTE 88A (BARTSCH LANE)  
 TRIBUTARY TO CLEAR CREEK  
 SECTION 10-01197-00-BR  
 UNION COUNTY  
 STRUCTURE NO. 091-3237

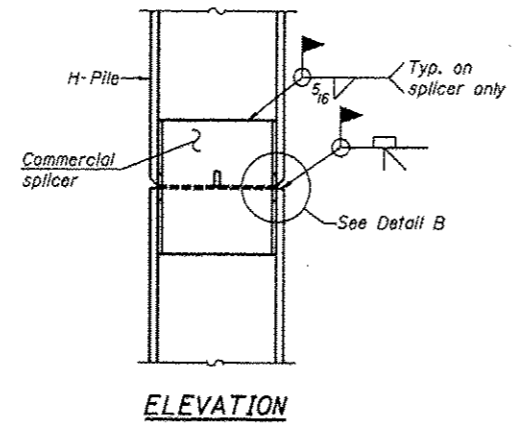
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 88A	10-01197-00-BR	UNION	12	11
PROJECT NO. BROS-101(55)			CONTRACT NO. 09480	



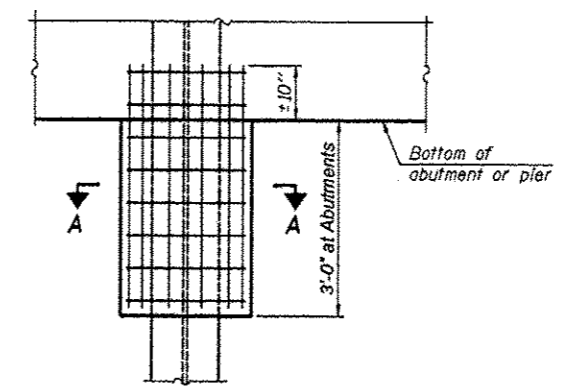
**STEEL PILE TABLE**

Designation	Depth d	Flange width br	Web and Flange thickness t	Encasement diameter A	Encasement Quantity/Ft. C.Y.
HP 14x117	14 1/4"	14 7/8"	1 1/8"	30"	0.173
x102	14"	14 3/4"	1 1/8"	30"	0.174
x89	13 7/8"	14 3/4"	5/8"	30"	0.175
x73	13 5/8"	14 5/8"	1/2"	30"	0.176
HP 12x84	12 1/4"	12 1/4"	1 1/8"	24"	0.110
x74	12 1/8"	12 1/4"	5/8"	24"	0.111
x63	12"	12 1/8"	1/2"	24"	0.112
x53	11 3/4"	12"	7/16"	24"	0.112
HP 10x57	10"	10 1/4"	9/16"	24"	0.112
x42	9 3/4"	10 1/8"	7/16"	24"	0.113
HP 8x36	8"	8 1/8"	7/16"	18"	0.063

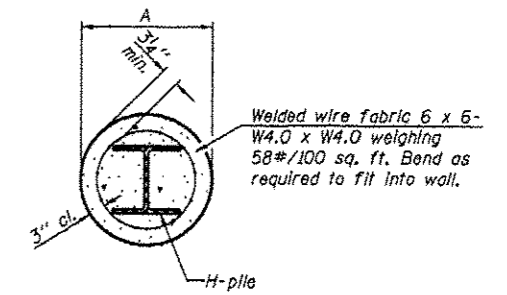
Note: The steel H-piles shall be according to AASHTO M270 Grade 50.



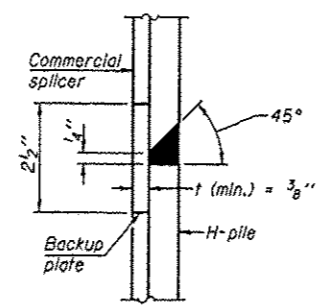
**ELEVATION**



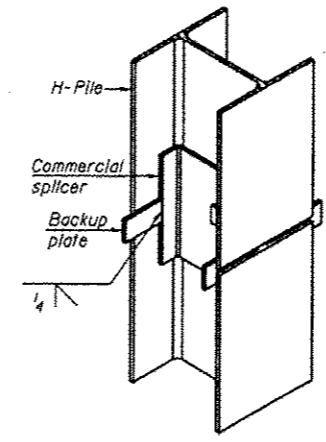
**ELEVATION**



**SECTION A-A**

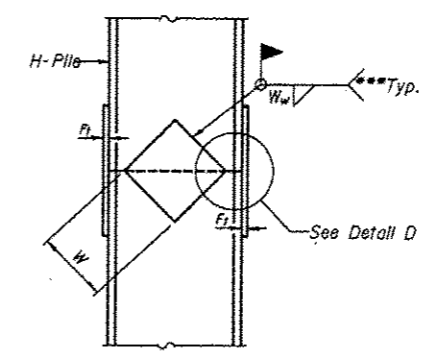


**DETAIL "B"**

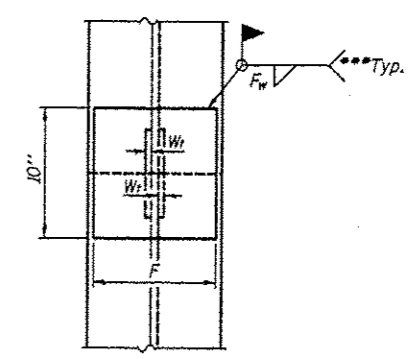


**ISOMETRIC VIEW**

**WELDED COMMERCIAL SPLICE**

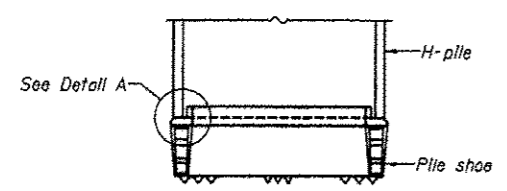


**ELEVATION**

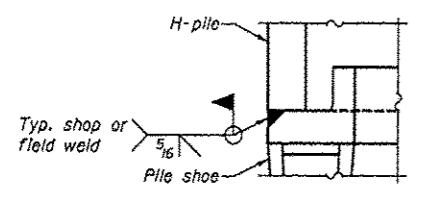


**END VIEW**

**PILE ENCASEMENT**

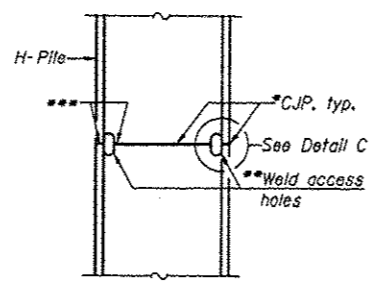


**ELEVATION**

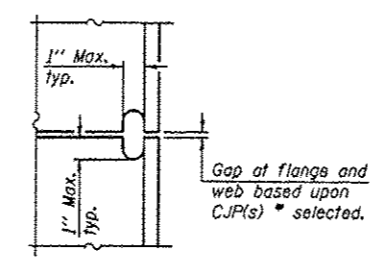


**DETAIL A**

**H-PILE SHOE ATTACHMENT**

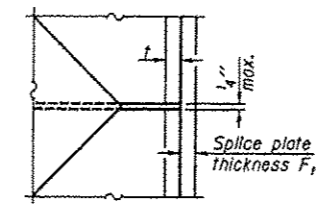


**ELEVATION**



**DETAIL C**

**COMPLETE PENETRATION WELD SPLICE**



**DETAIL D**

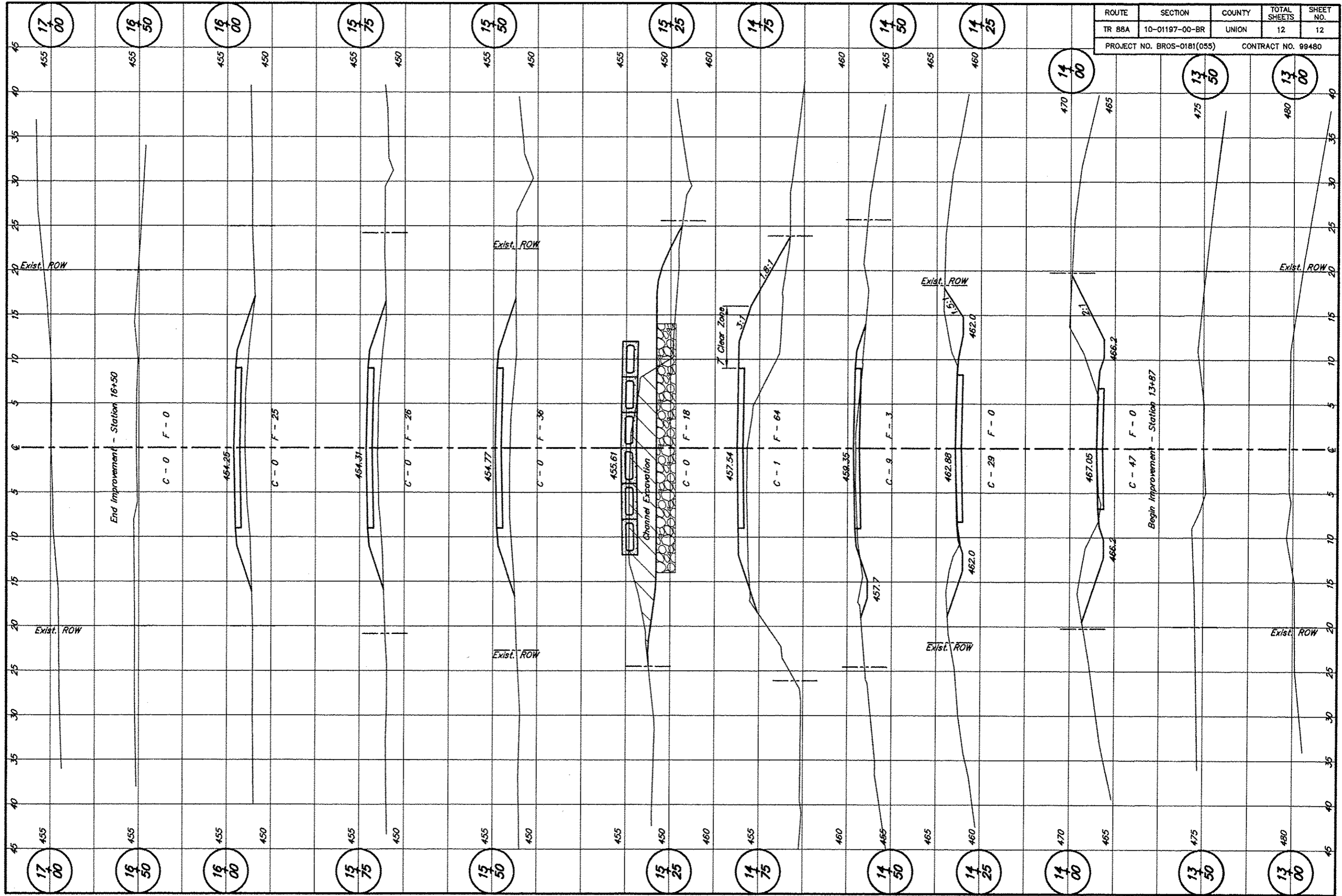
**WELDED PLATE FIELD SPLICE**

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

\*Use joint conforming to Figure 3.4 in AWS D1.1, Structure Welding Code - Steel.  
 \*\*Preparation per Fig. 5.2 in AWS D1.1, Structure Welding Code - Steel.  
 \*\*\*Interrupt welds 1/4" from end of each pile.

**PILING DETAILS**  
 TOWNSHIP ROUTE 88A (BARTSCH LANE)  
 TRIBUTARY TO CLEAR CREEK  
 SECTION 10-01197-00-BR  
 UNION COUNTY  
 STRUCTURE NO. 091-3237

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 88A	10-01197-00-BR	UNION	12	12
PROJECT NO. BROS-0181(055)			CONTRACT NO. 99480	



17  
00

16  
50

16  
00

15  
75

15  
50

15  
25

14  
75

14  
50

14  
25

14  
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