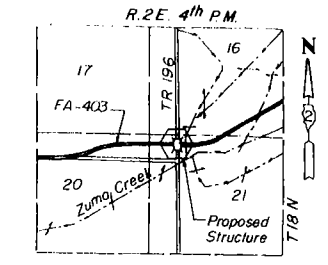




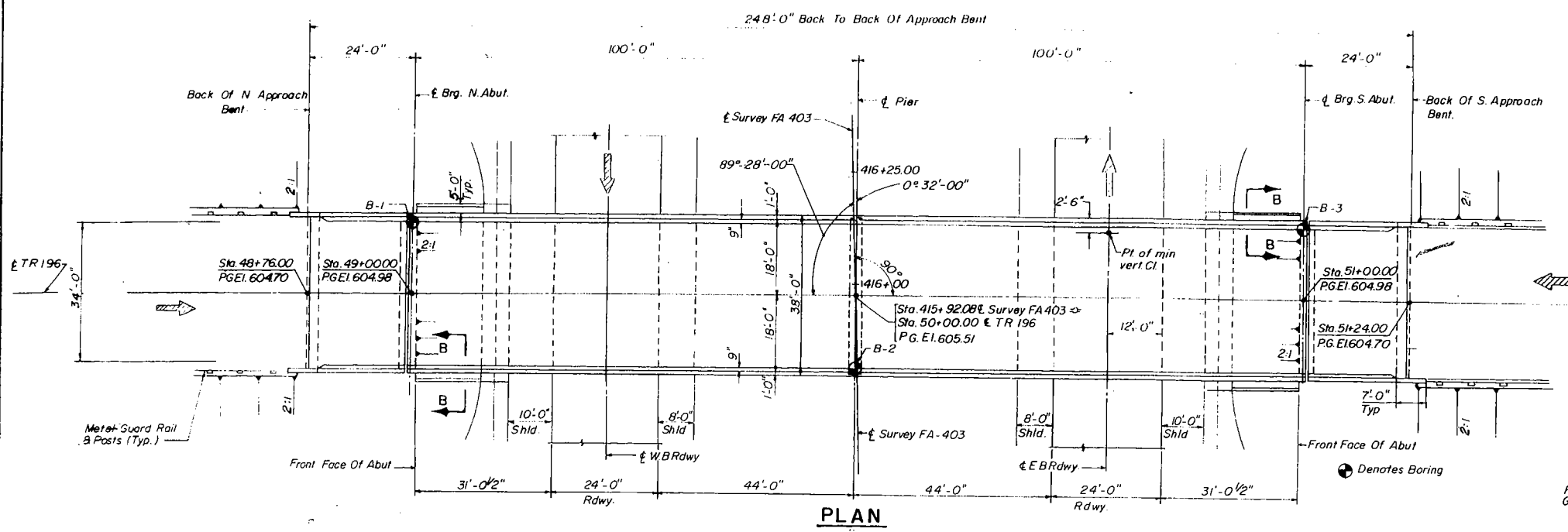
B.M. Spike in west face of PP on east side of TR 196 on 2nd pole north of FA 403
 Survey Elev 57377



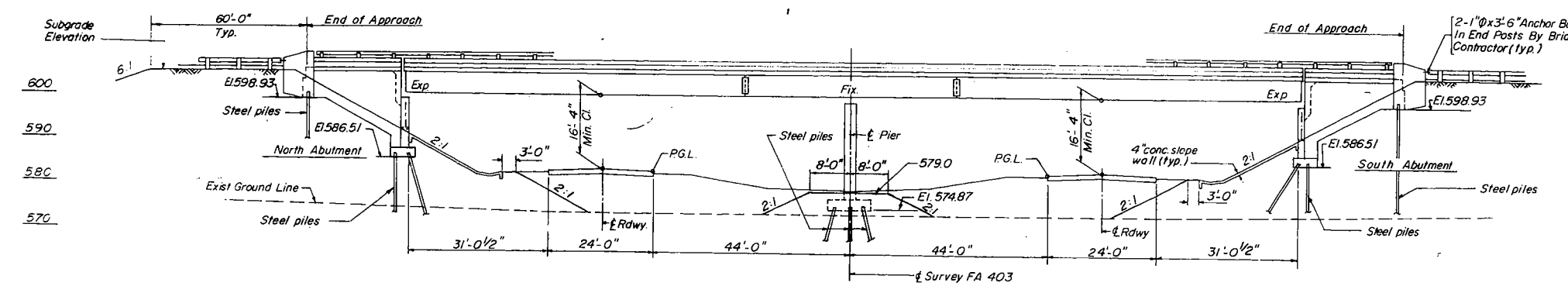
LOCATION MAP

GENERAL NOTES

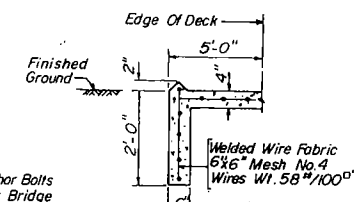
- ALL REINFORCEMENT BARS SHALL BE LAPPED 24 DIAMETERS UNLESS OTHERWISE SHOWN.
- FIELD CONNECTIONS SHALL BE BOLTED USING HIGH STRENGTH BOLTS. BOLTS 3/4" Ø, OPEN HOLES 13/16" Ø, UNLESS OTHERWISE NOTED.
- The main load carrying member components subject to the Supplemental Requirements for Notch Toughness are the flanges, webs, and splice plates of the steel girders or wide flange beams.
- THE BASIC LEAD SILICO CHROMATE PAINT SYSTEM SHALL BE USED FOR SHOP AND FIELD PAINTING OF STRUCTURAL STEEL.
- FIELD WELDING OF CONSTRUCTION ACCESSORIES WILL NOT BE PERMITTED TO THE BOTTOM OF FLANGE OF BEAMS OR GIRDERS NOR TO THE TOP FLANGE FOR A DISTANCE EQUAL TO ONE-FOURTH THE SPAN LENGTH EACH WAY FROM THE PIER SUPPORTS. FIELD WELDING IN OTHER AREAS WILL BE PERMITTED ONLY WHEN APPROVED BY THE ENGINEER.
- ANCHOR BOLTS SHALL BE SET BEFORE BOLTING CROSS FRAMES OVER SUPPORTS.
- SLOPE WALL SHALL BE REINFORCED WITH WELDED WIRE FABRIC 6" x 6" MESH, WEIGHING 58# PER 100 SQ. FT..
- THE EMBANKMENT CONFIGURATION SHOWN SHALL BE THE MINIMUM EMBANKMENT THAT MUST BE CONSTRUCTED PRIOR TO CONSTRUCTION OF THE ABUTMENTS.
- THE CONTRACTOR SHALL DRIVE THREE STEEL TEST PILES IN A PERMANENT LOCATION, ONE EACH AT THE NORTH AND SOUTH ABUTMENTS AND PIER AS DIRECTED BY THE ENGINEER BEFORE ORDERING THE REMAINDER OF THE PILES.
- THE CONCRETE RAIL SECTION ABOVE THE MANDATORY CONST. JOINT AT THE TOP OF THE SLAB SHALL BE CONSTRUCTED OF CLASS X CONCRETE, EXCEPT THE AGGREGATES SHALL CONFORM TO THE REQUIREMENTS OF HANDRAIL CONCRETE.
- PROTECTIVE COAT SHALL NOT BE APPLIED TO SURFACES TO WHICH WATERPROOFING MEMBRANE SYST. IS APPLIED.
- Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of ± 1/8 inch. Adjustment shall be made either by grinding the surface or by shimming the bearing. Two 1/2" adjusting shims, of the dimensions of the bottom bearing plate, shall be provided for each bearing in addition to all other plates or shims.



PLAN



ELEVATION



SECTION B-B

STATION 415+92.08
 BUILT BY
 STATE OF ILLINOIS
 FA 403 SECTION 161-IHB-2
 FA PROJ. EBRF-403-1(7)
 LOADING HS 15

DESIGN DATA

- DESIGN LOADING
 HS 15-44 And Allowance For 25 PSF Future Wearing Surface.
- DESIGN STRESSES:
 $f_c = 1400$ PSI. Except As Follows
 $f_c = 1200$ PSI. For Deck Slab.
 $f_c = 1000$ PSI. For Conc. In Contact With Earth.
 $f_s = 20,000$ PSI. - M/83 Structural Steel.
 $f_s = 20,000$ PSI. - Reinforcement Steel.
 $v = 75$ PSI. Allowable Shear In Footings.
 $n = 10$
 Allowable Live Load Deflection =
 $L/1200$ (Composite)
- DESIGN SPECIFICATIONS:
 AASHTO 1969 As Applicable.

NAME PLATE

SEE STD. 2113

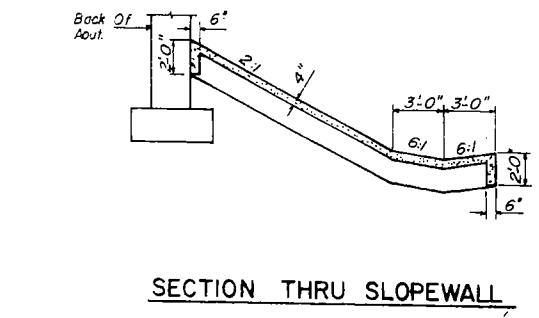
TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER STRUCT.	SUB STRUCT.	TOTAL
PROTECTIVE COAT	SQ. YDS.	327.0		327.0
CLASS X CONCRETE	CU. YDS.	314.6	237.4	552.0
STRUCTURAL STEEL	LSUM	0.13		0.13
ALUMINUM RAILING	LIN. FT.	486		486
REINFORCEMENT BARS	LBS.	70,290	25,420	95,710
STUD SHEAR CONNECTORS	EACH	1,440		1,440
STEEL PILES H.P. 8 x 36	LIN. FT.		1580	1580
TEST PILES HP 8 x 36	EACH		3	3
NAME PLATES	EACH		1	1
SLOPE WALL (4')	SQ. YDS.		280	280
BIT CONC. SURFACE COURSE GLI	TONS	43.0		43
Waterpr. Mem. System	SQ. YDS.	947		947
SAND BACKFILL	CU. YDS.		308	308
PREFORMED JT. SEALER (2")	LIN. FT.	77		77
PERMANENT B.M. TYPE I	EACH	1		1

*CALCULATED WEIGHT OF STRUCTURAL STEEL = 217,560 LBS.

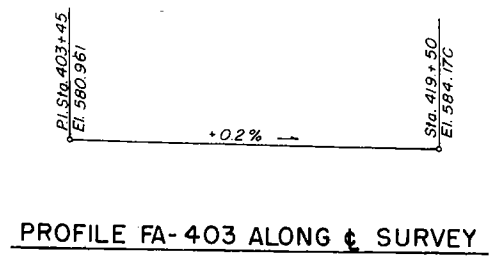
GENERAL PLAN & ELEVATION

FA 403 SECTION 161-IHB-2
 FA 403 UNDER TR 196
 ROCK ISLAND COUNTY
 STATION 415 + 92.08

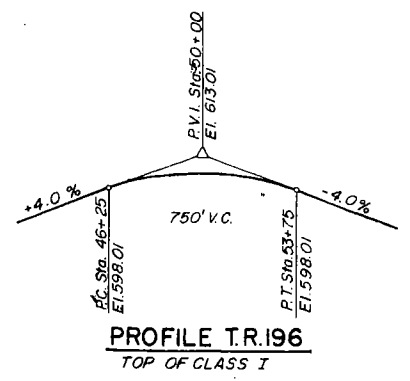


SECTION THRU SLOPEWALL

DESIGNED	B.T.M.
CHECKED	D.M.P.
DRAWN	A.M.
CHECKED	D.M.P.



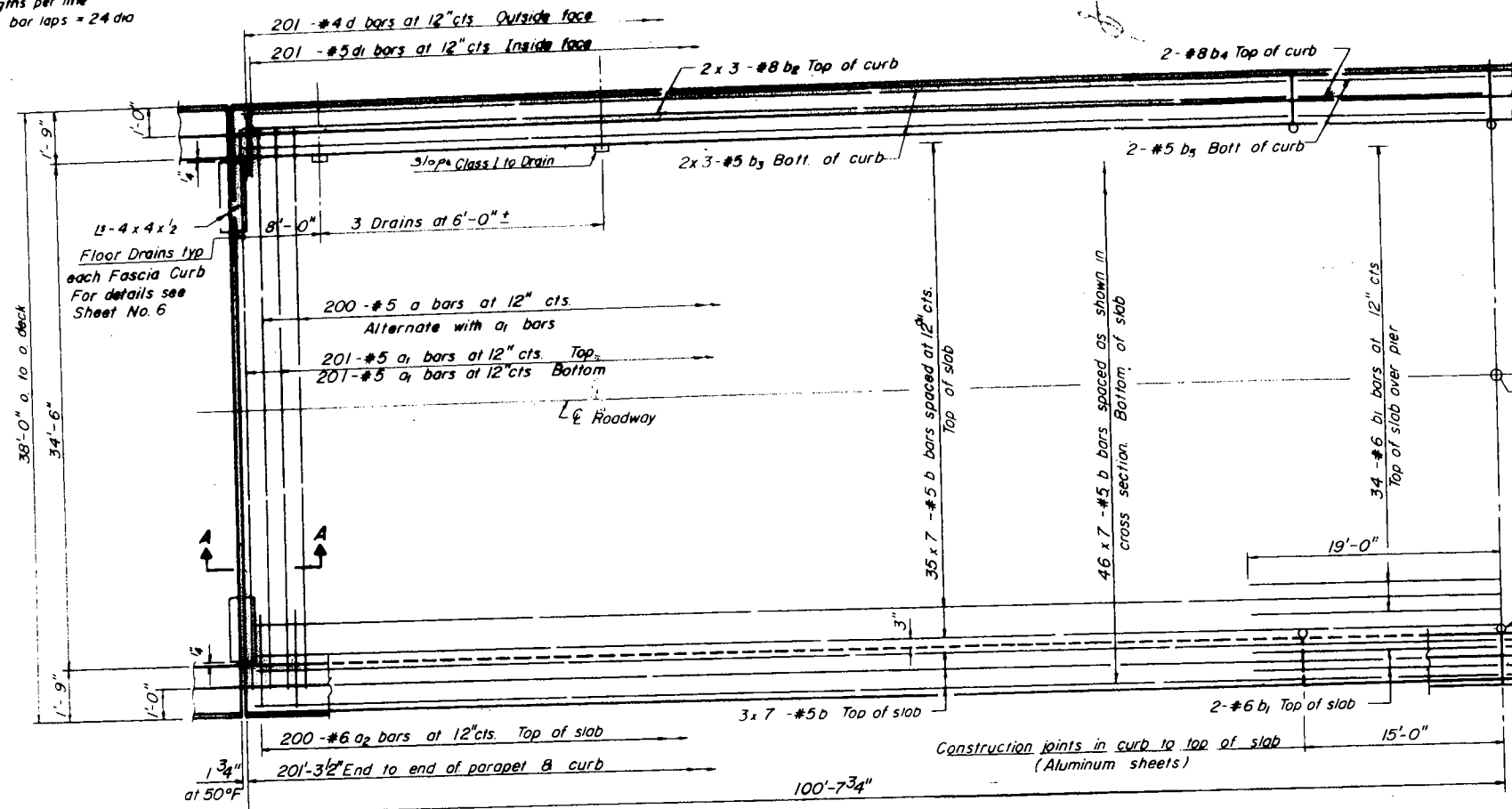
PROFILE FA-403 ALONG SURVEY



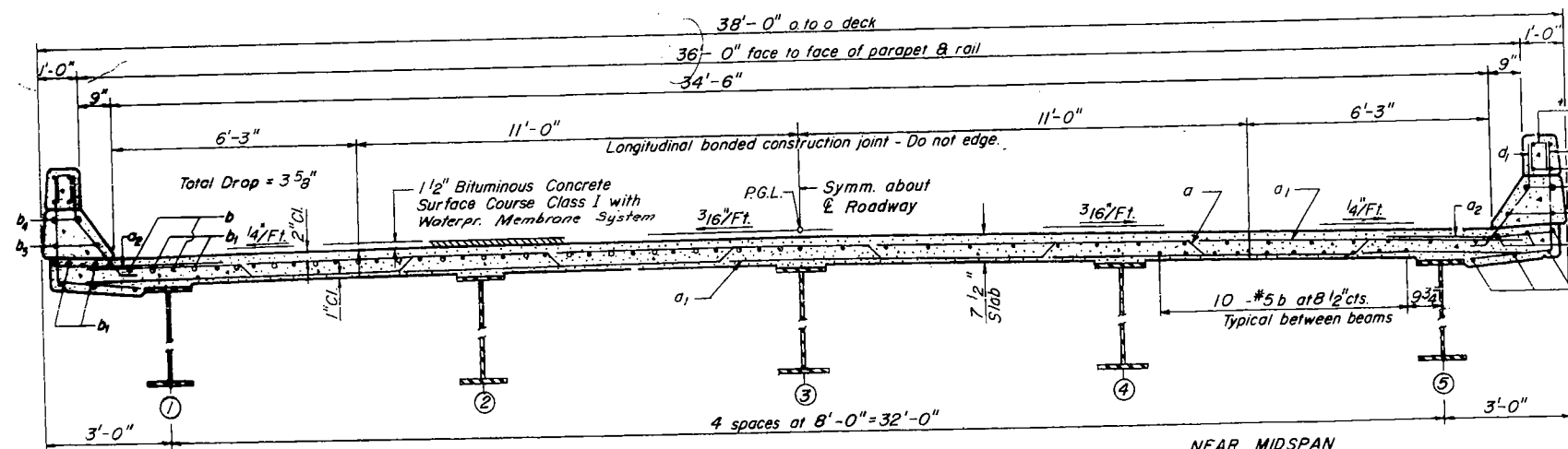
PROFILE T.R.196
 TOP OF CLASS I

Rev. Reinf. Bars Sub from 25,300# to 25,420#, Total from 95,590# to 95,710# 10-16-74 D.D.

NOTE:
Bars indicated thus 20 x 3 - #5 etc
indicates 20 lines of bars with 3
lengths per line
Min. bar laps = 24 dia

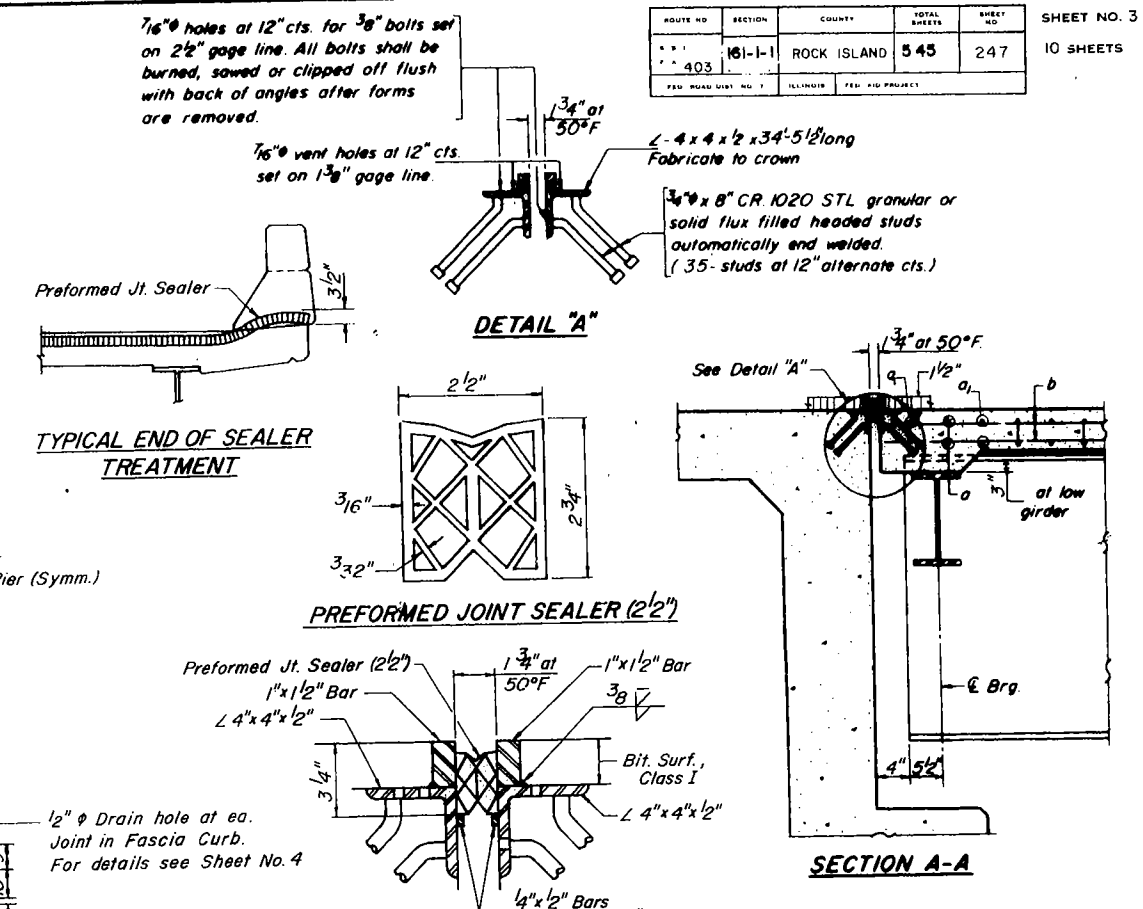
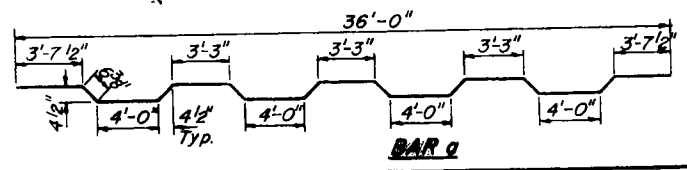


HALF PLAN



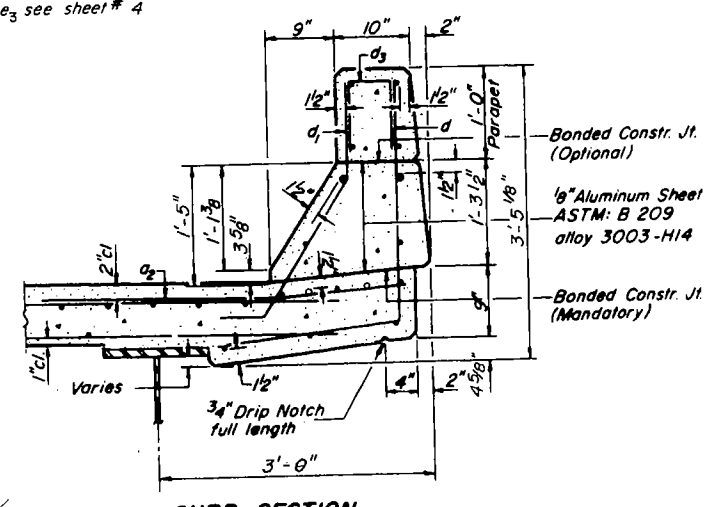
CROSS SECTION

DESIGNED	P.B.
CHECKED	D.M.P.
DRAWN	I.P.
CHECKED	D.M.P.



NOTES: For Deck Surfacing Detail see sheet # 6
For placement of bars d₃ and e thru e₃ see sheet # 4

Parapet Reinforcement and Class X Concrete are billed on sheet # 4



CURB SECTION

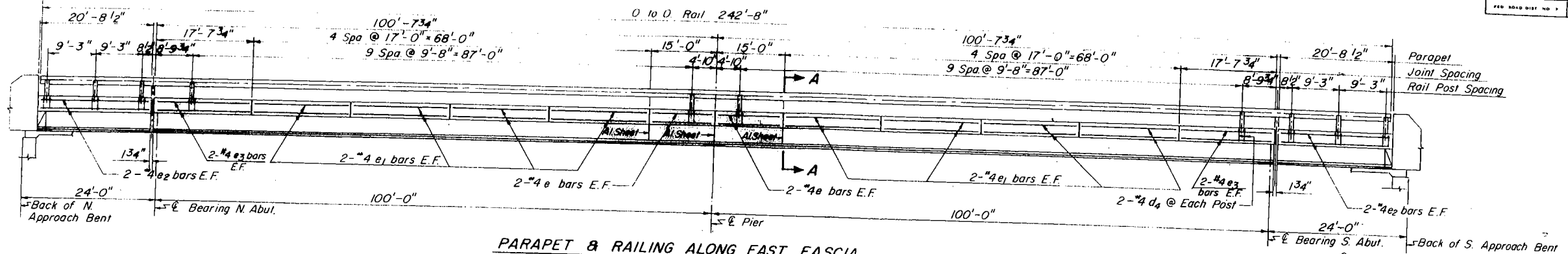
Cost of Aluminum Sheets & Drains shall be incidental to Class X Concrete

BILL OF MATERIAL

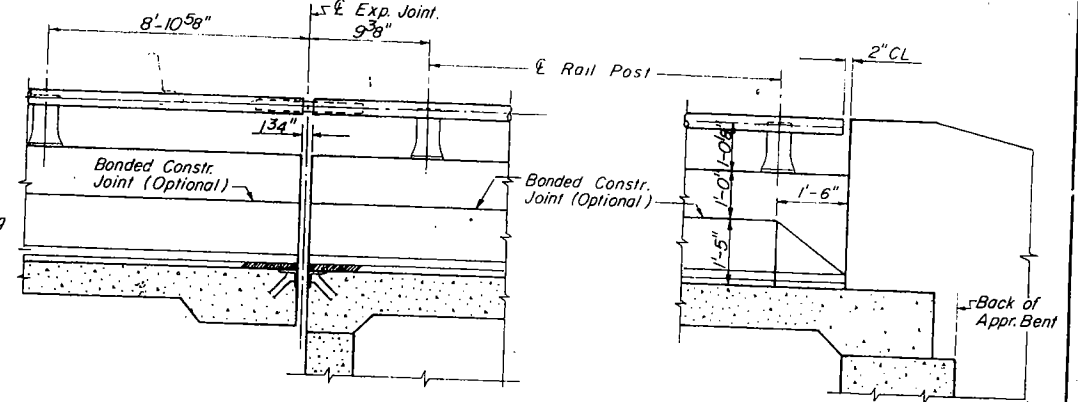
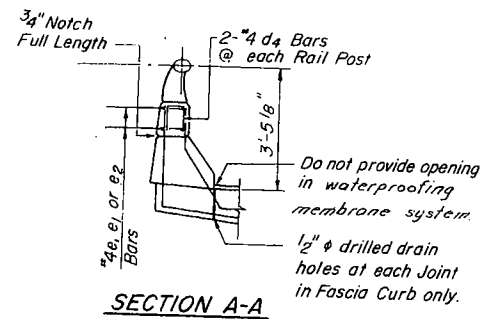
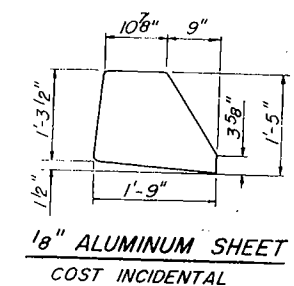
Bar	No.	Size	Length	Shape
a	200	#5	37'-3"	
a ₁	402	#5	36'-0"	
a ₂	400	#6	4'-0"	
b	609	#5	29'-9"	
b ₁	38	#6	38'-0"	
b ₂	24	#8	29'-9"	
b ₃	24	#5	29'-9"	
b ₄	8	#8	14'-9"	
b ₅	8	#5	14'-9"	
d	402	#4	4'-9"	
d ₁	402	#5	3'-7"	
Reinforcement Bars Lbs. 52,200				
Class X Concrete Cu. Yds. 214.8				
Structural steel Lbs. 217,560				
Protective Coat Sq. Yd. 271				
Bituminous Concrete Surface Course Class I (1 1/2\"/> 				
Waterproofing Membrane System Sq. Yds. 772				
Preformed Jt. Sealer 2 1/2\"/> 				

DECK DETAILS
FA 403 SECTION 161-1HB-2
FA 403 UNDER TR 196
ROCK ISLAND COUNTY
STATION 415 + 92.08

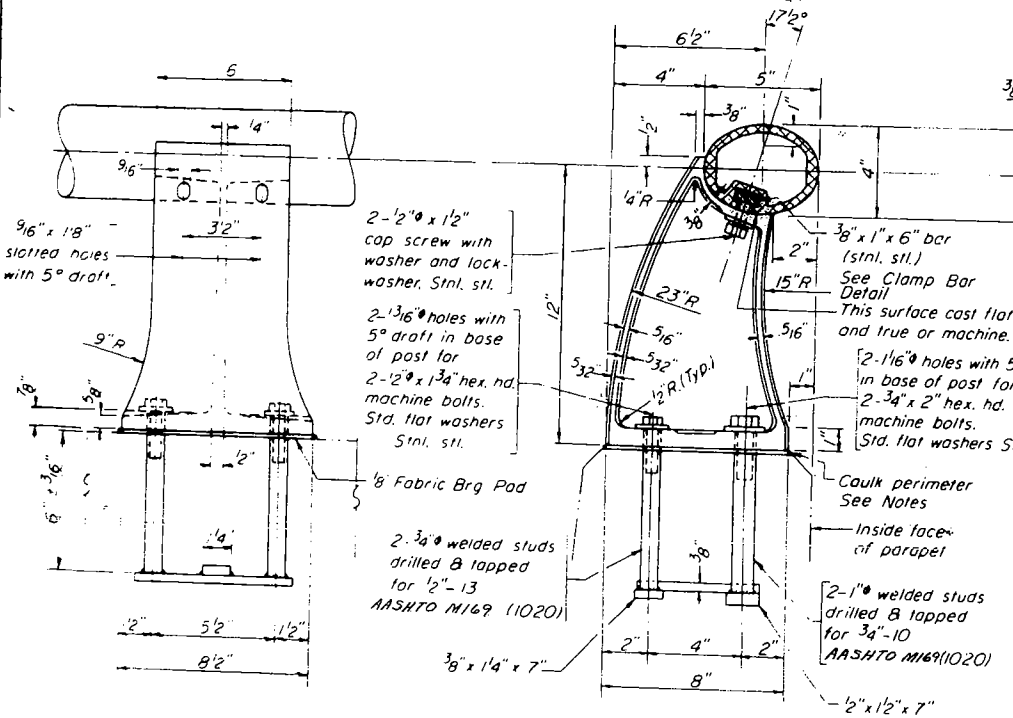
Note: E.F. Denotes each face.



PARAPET & RAILING ALONG EAST FASCIA
(WEST FASCIA SIMILAR)

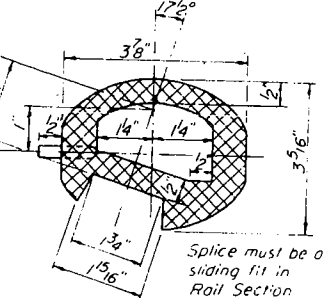
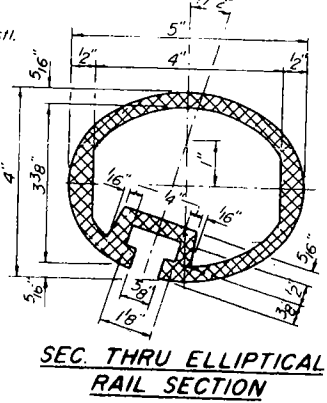


INSIDE VIEW OF PARAPET
(SOUTH END SHOWN, NORTH END SIMILAR)

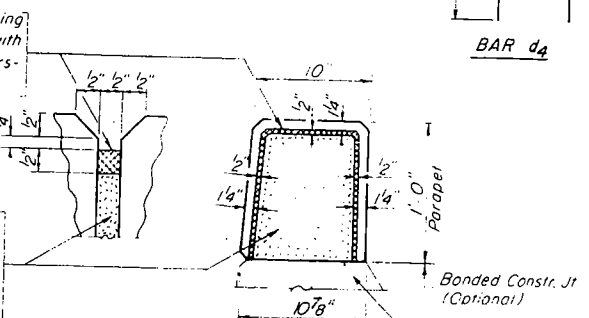


CAST END CAP
DRIVE FIT TYPE
4 Required

RAIL SPLICE



PARAPET JOINT DETAIL



PARAPETS & RAILS
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
d4	104	#4	2'-7"	□
e	16	#4	14'-8"	—
e1	64	#4	16'-8"	—
e2	16	#4	20'-4"	—
e3	16	#4	17'-4"	—
Reinforcement Bars				Lbs. 1420
Class X Concrete				Cu. Yds. 158
Aluminum Railing				Lin. Ft. 486

DESIGNED	H.S.
CHECKED	D.N.
DRAWN	Z.W.
CHECKED	H.S.

NOTES:

All Aluminum Alloy Extruded Rail shall be supplied in modular lengths of 30 feet, except at the end of bridge or over open joints in bridge deck where the rail shall be attached to a minimum of 2 posts. If the rail is on a horizontal curve of 2300 foot radius or less, the modular lengths may be reduced but shall be attached to a minimum of 2 posts.

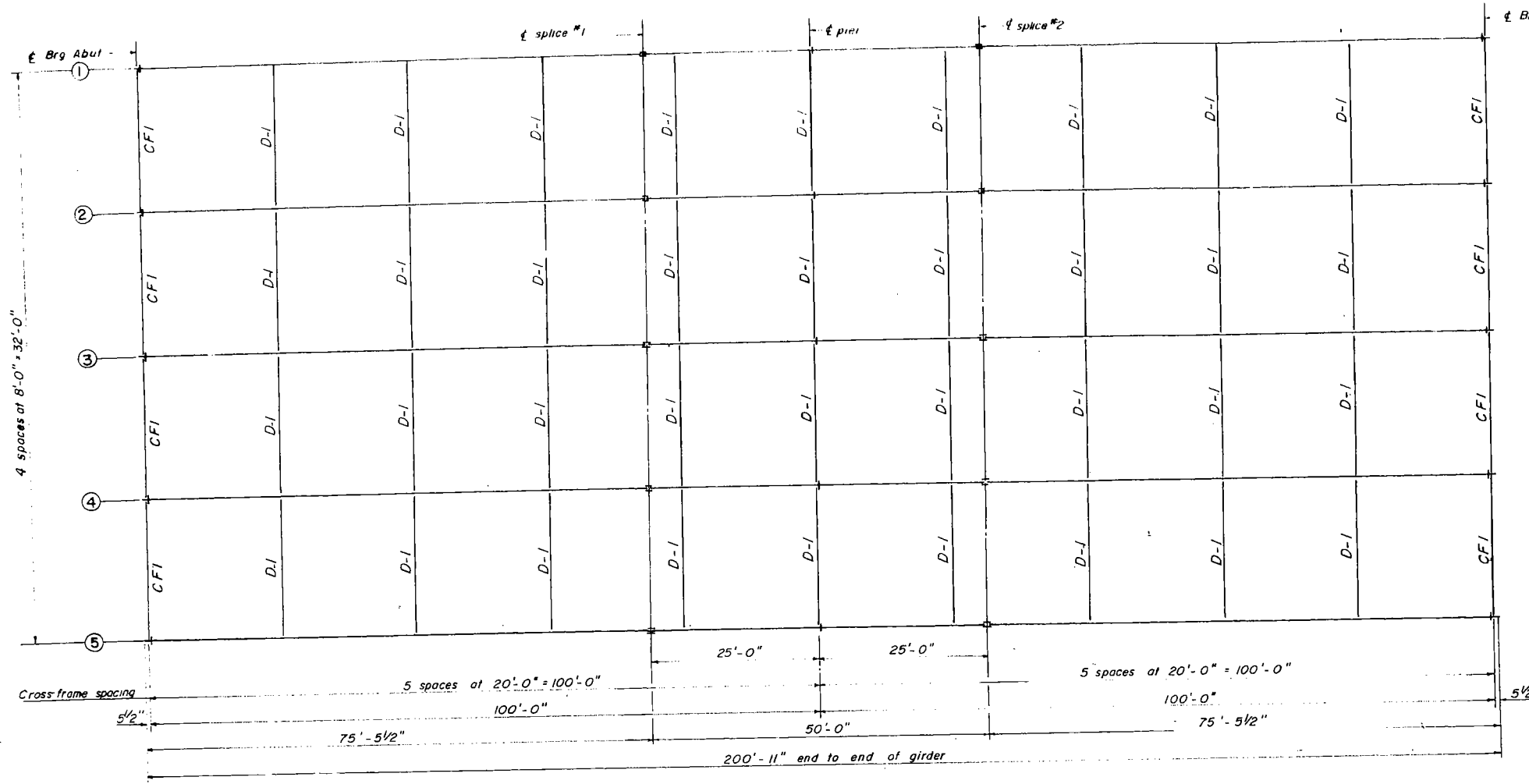
All joints in rail shall be spliced per detail.

Provide 1-8" and 2-1/8" Aluminum Shims for 25% of the Posts. Rail element shall be parallel to Grade - high spots shall be ground and low spots shimmed.

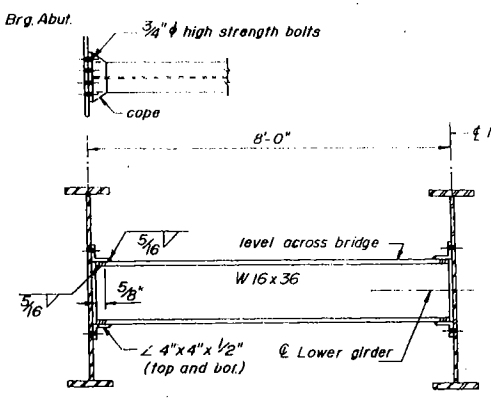
Seal perimeter of base of post to parapet with two component non-staining gray sealing compound with polysulfide liquid polymers, gun grade with primer. Fabric Bearing Pad shall have same dimensions as base of post.

Aluminum alloy rail shall conform to ASTM B221 alloy 6061-T6 or 6351-T5 with min. yield 35 ksi, min. tensile 38 ksi, and elongation of 10% in 2 inches.

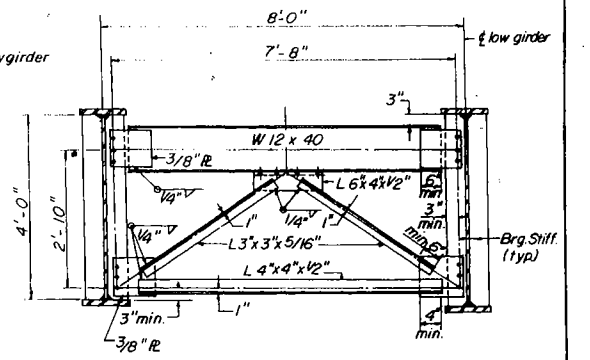
PARAPET AND RAILING
FA 403 SECTION 161-IHB-2
FA 403 UNDER TR 196
ROCK ISLAND COUNTY
STATION 415+92.08



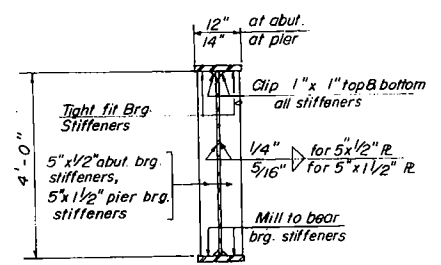
FRAMING PLAN
Scale: Horiz. 3/32" = 1'-0"
Vert. 1/4" = 1'-0"



TYPICAL INTERIOR DIAPHRAGM D-I
Scale: 1/2" = 1'-0"



TYPICAL END CROSS FRAME CF-I
Scale: 1/2" = 1'-0"



TYPICAL SECTION

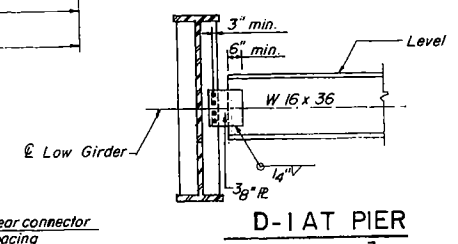
(Composite in Positive Moment Areas Only)

INTERIOR GIRDER MOMENT TABLE		
	0.4 Span I	Pier
Is (in ⁴)	19,900	39,672
Ic (in ⁴)	50,611	—
Ss (in ³)	958.6	1,525.8
Sc (in ³)	1219.5	—
Q (K _f)	1.004	1.113
M _Q (k)	648.3	-1409.1
f _s Q (ksi)	8.5	11.0
S _Q (K _f)	0.470	0.470
M _S Q (k)	360	-496
M _{L+Imp.} (k)	853.1	-644.7
Total (k)	1,213.1	-1,140.7
f _s L (ksi)	10.0	9.0
f _s Total (ksi)	18.5	20.0
VR (k)	45.1	—

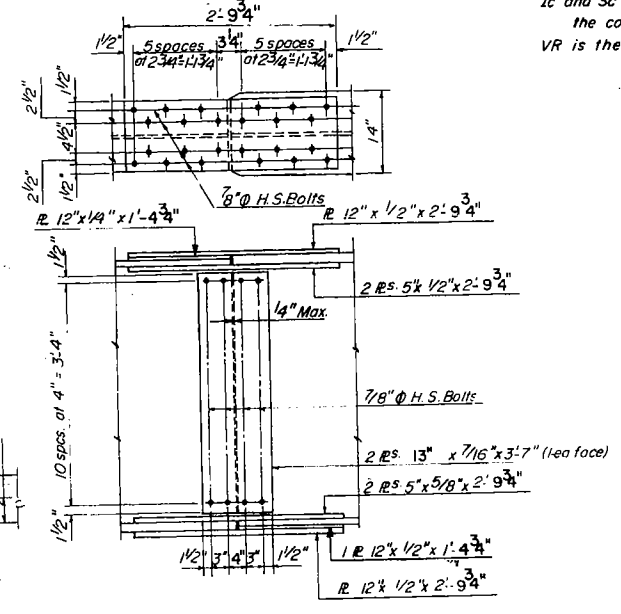
INTERIOR GIRDER REACTION TABLE		
	Abutment	Pier
R _Q (k)	48.6	169.6
R _{L+Imp.} (k)	47.0	72.6
R _{Total} (k)	95.6	242.2

Is and Ss are the moment of inertia and section modulus of the steel section
Ic and Sc are the moment of inertia and section modulus of the composite section used in computing fs
VR is the maximum L + Impact shear range in span.

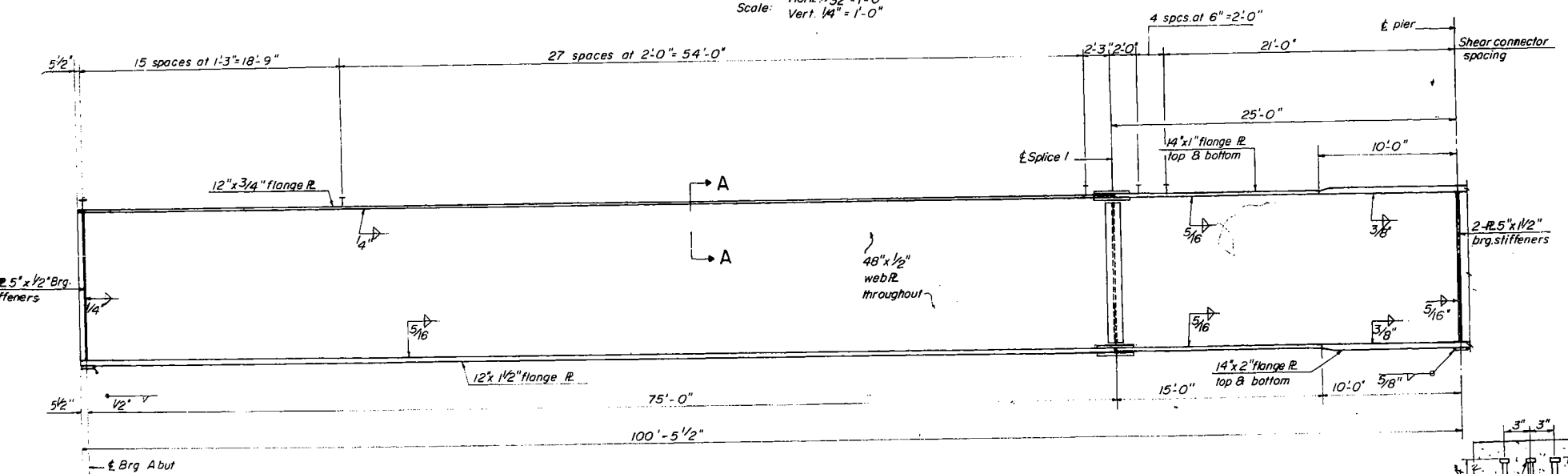
Note: Hardened washers shall be required over 1 1/4" holes in angles.



D-I AT PIER

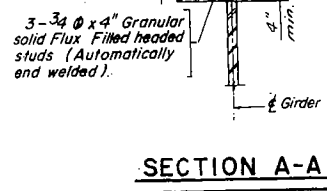


DETAIL OF SPLICE



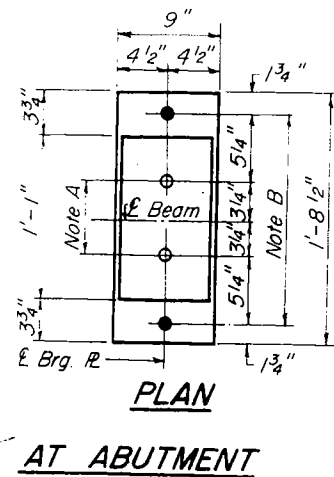
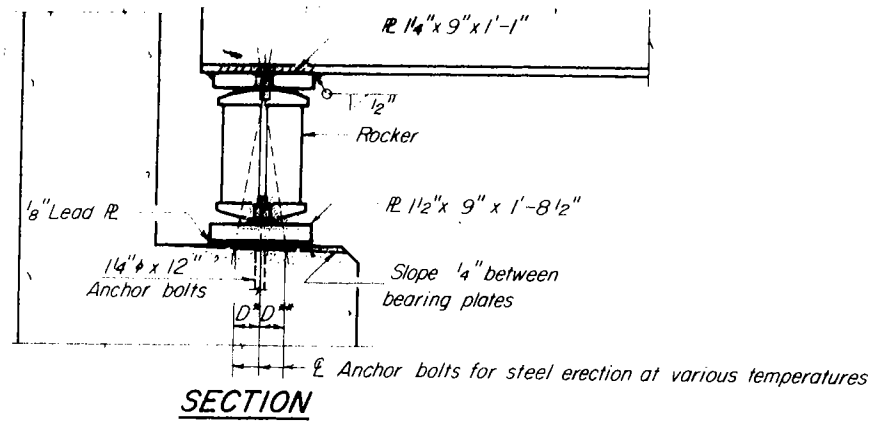
HALF GIRDER ELEVATION
Scale: Horiz. 3/16" = 1'-0"
Vert. 1/2" = 1'-0"

Location	TOP WEB ELEVATIONS				
	Br. N.A.	Splice #1	Pier	Splice #2	Br. S.A.
Girder 1 or 5	604.987	604.416	604.416	604.416	603.987
Girder 2 or 4	604.138	604.567	604.567	604.567	604.138
Girder 3	604.263	604.692	604.692	604.692	604.263

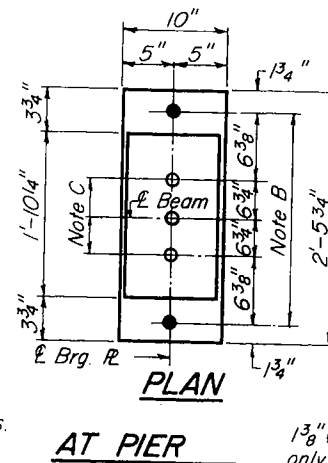
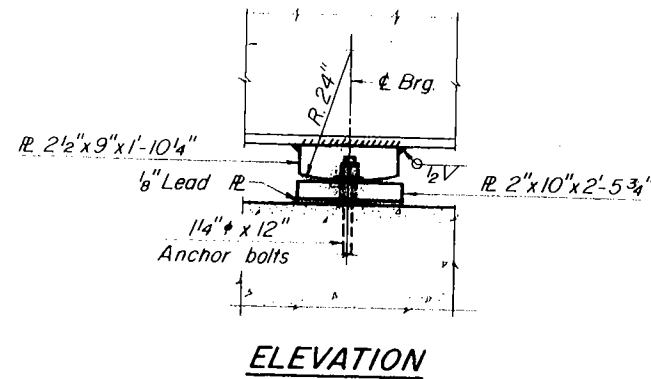


SECTION A-A

DESIGNED	B.T.M.
CHECKED	P.B.
DRAWN	A.M.
CHECKED	B.T.M.

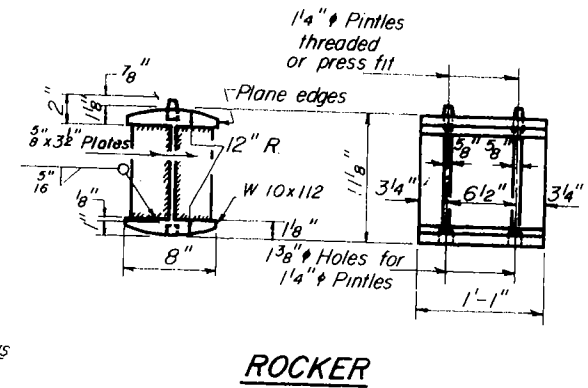
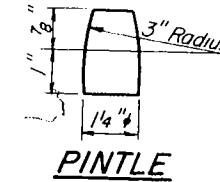


NOTE A
1 3/8\"/>



NOTE B
1/2\"/>

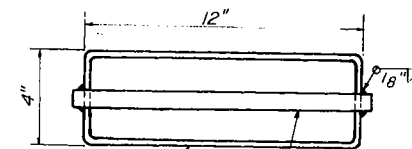
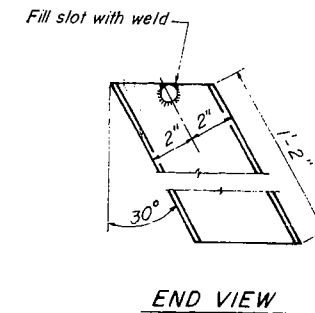
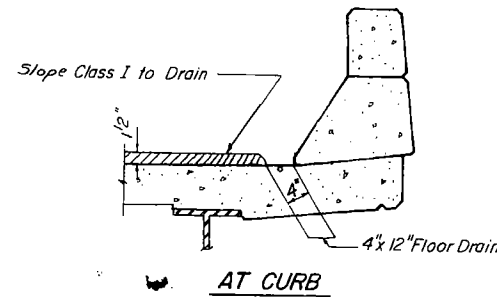
NOTE C
1 3/8\"/>



NOTES ON SETTING OF ANCHOR BOLTS AT EXP. BRGS.

- a) D* (Side of brg. away from fixed brg.)
D* = 1/8" per each 100' of expansion for every 15° fall below the normal temp. of 50°F
- D** (Side of brg. toward fixed brg.)
D** = 1/8" per each 100' of expansion for every 15° rise above the normal temp. of 50°F
- b) After beams have been erected and dimensions D* or D** determined, holes shall be drilled and anchor bolts shall be grouted in place. All fixed anchor bolts may be built into the masonry.

BEARING ASSEMBLY DETAILS



3/16" Aluminum Sheets Welded
A.S.T.M. B209 alloy 6061-T6
or Aluminum Extrusions
A.S.T.M.-B221 alloy 6061-T6

3/4" Ø x 1'-1" Aluminum Bar
A.S.T.M. B-211 alloy 6061-T6

TOP VIEW

FLOOR DRAINS
Cost Incidental

DESIGNED	B.T.M.
CHECKED	D.N.
DRAWN	Z.W.
CHECKED	B.T.M.

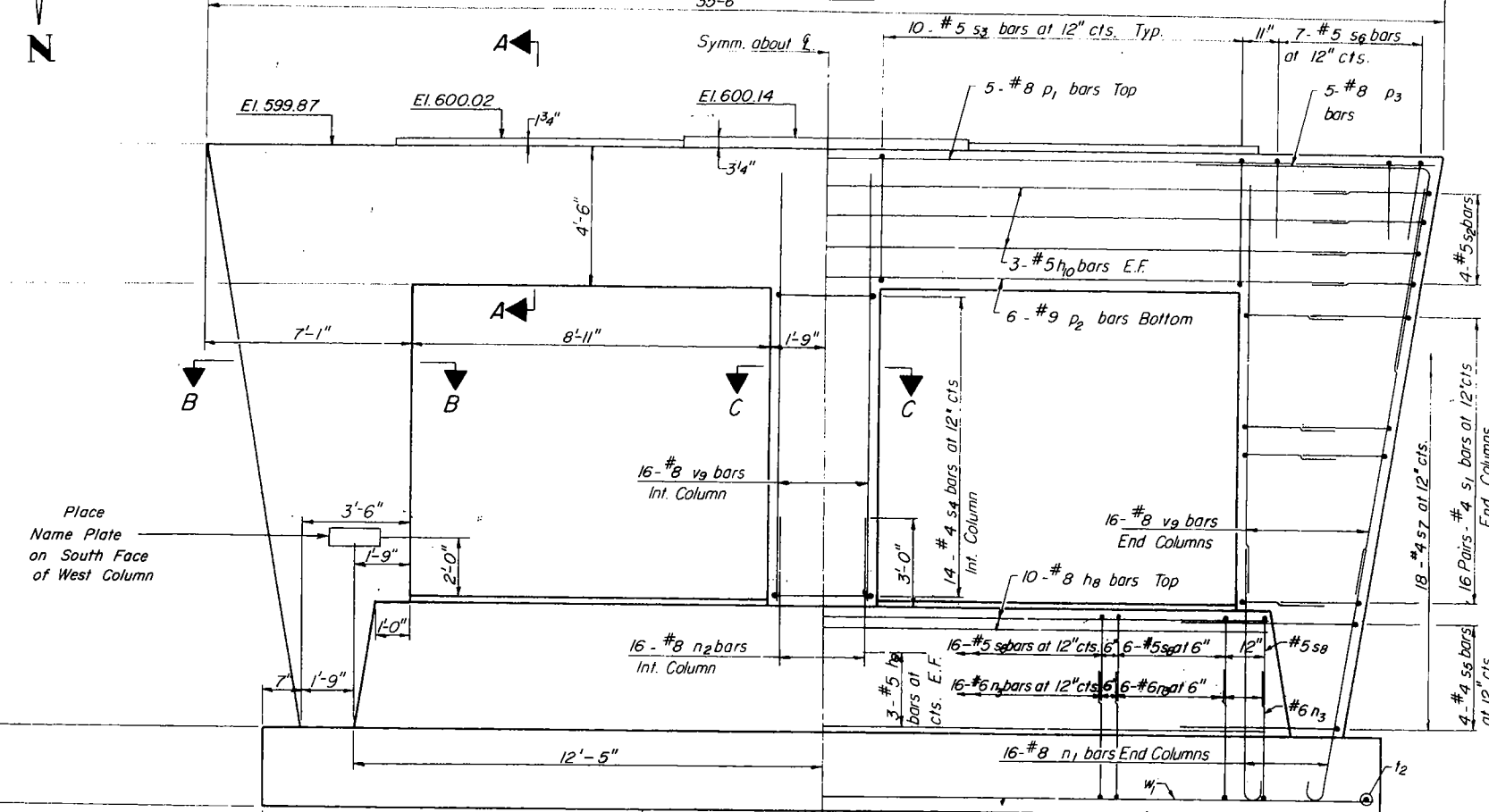
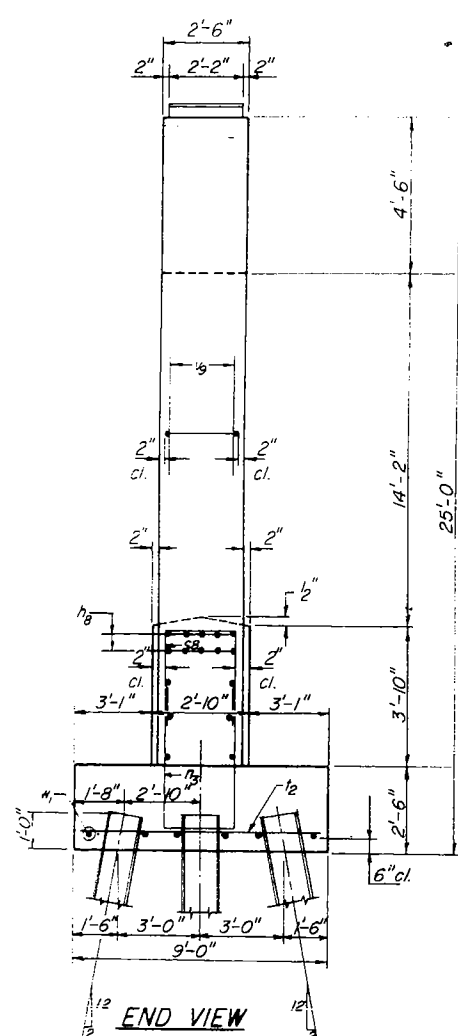
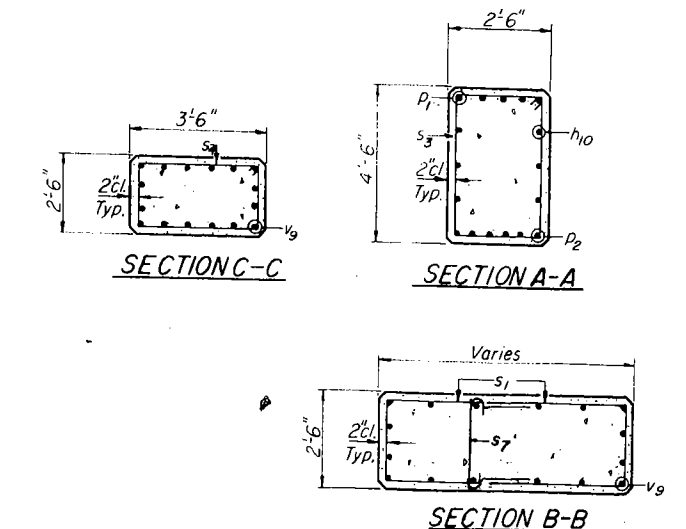
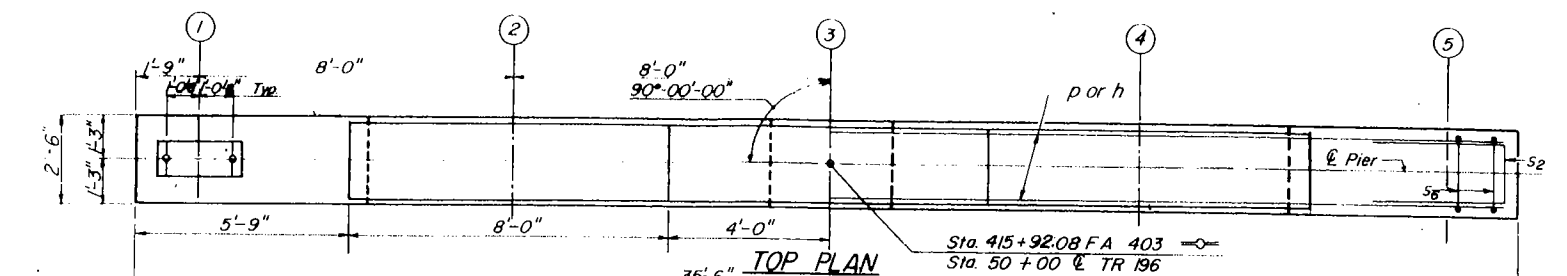
BEARINGS

FA 403 SECTION 161-1HB-2
FA 403 UNDER TR 196
ROCK ISLAND COUNTY
STATION 415+92.08

NOTES

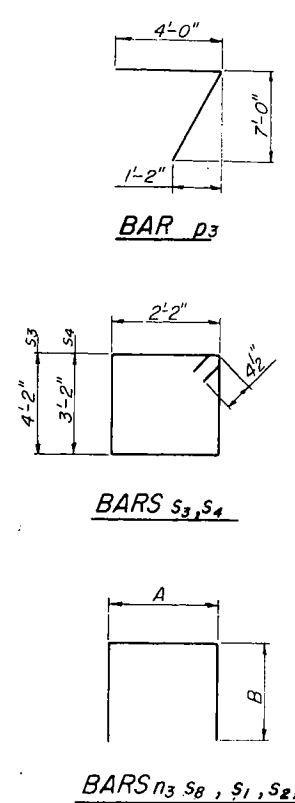
Space reinforcement in cap to miss anchor bolts.
 All edges shall have standard 3/4" chamfers except as noted.
 Pour steps monolithically with cap.
 All bars shall be lapped 24 dia unless noted.
 Batter of battered piles is 2" per foot.
 When location of n or n₁ bars interfere with piles, put these bars on top of piles.

PROJECT NO.	161-403	SECTION	1-1	TOTAL SHEETS	545	SHEET NO.	251
ROCK ISLAND COUNTY				STATION 415+92.08			



BILL OF MATERIAL

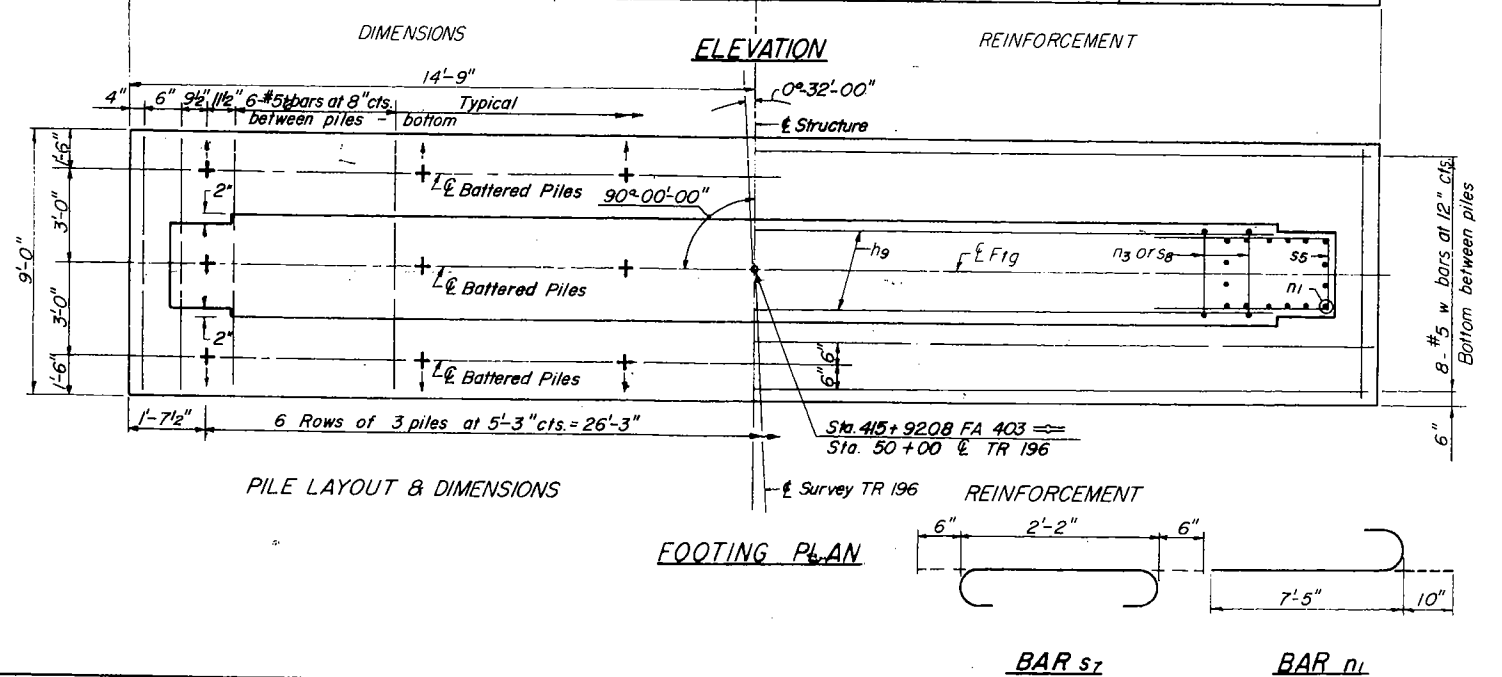
Bar	No.	Size	Length	Shape
h ₈	10	#8	23'-0"	—
h ₉	6	#5	23'-0"	—
h ₁₀	6	#5	30'-0"	—
n ₁	32	#8	8'-8"	—
n ₂	16	#8	5'-0"	—
n ₃	30	#6	8'-0"	—
p ₁	5	#8	35'-0"	—
p ₂	6	#9	30'-0"	—
p ₃	10	#8	11'-0"	7
s ₁	56	#4	10'-8"	□
s ₂	8	#5	11'-2"	□
s ₃	20	#5	13'-5"	□
s ₄	14	#4	11'-5"	□
s ₅	8	#4	11'-2"	□
s ₆	14	#5	7'-2"	□
s ₇	36	#4	3'-2"	□
s ₈	30	#5	8'-6"	□
t ₂	34	#6	8'-6"	□
v ₉	48	#8	17'-6"	—
w ₁	8	#5	29'-0"	—
Class X Concrete			Cu. Yds.	69.20
Reinforcement Bars			Lbs.	7,940
Name Plate	Each			1
HP 8 x 36 Steel Piles	Lin. Ft.			272
Test Pile (steel)	Each			1



PILE DATA

Type	HP 8 x 36
Capacity	Refusal
Est. Length	16'-0"
No. Required	18 Piles (including 1 test pile)

DESIGNED	D.N.
CHECKED	P.B.
DRAWN	Z.W.
CHECKED	P.B.



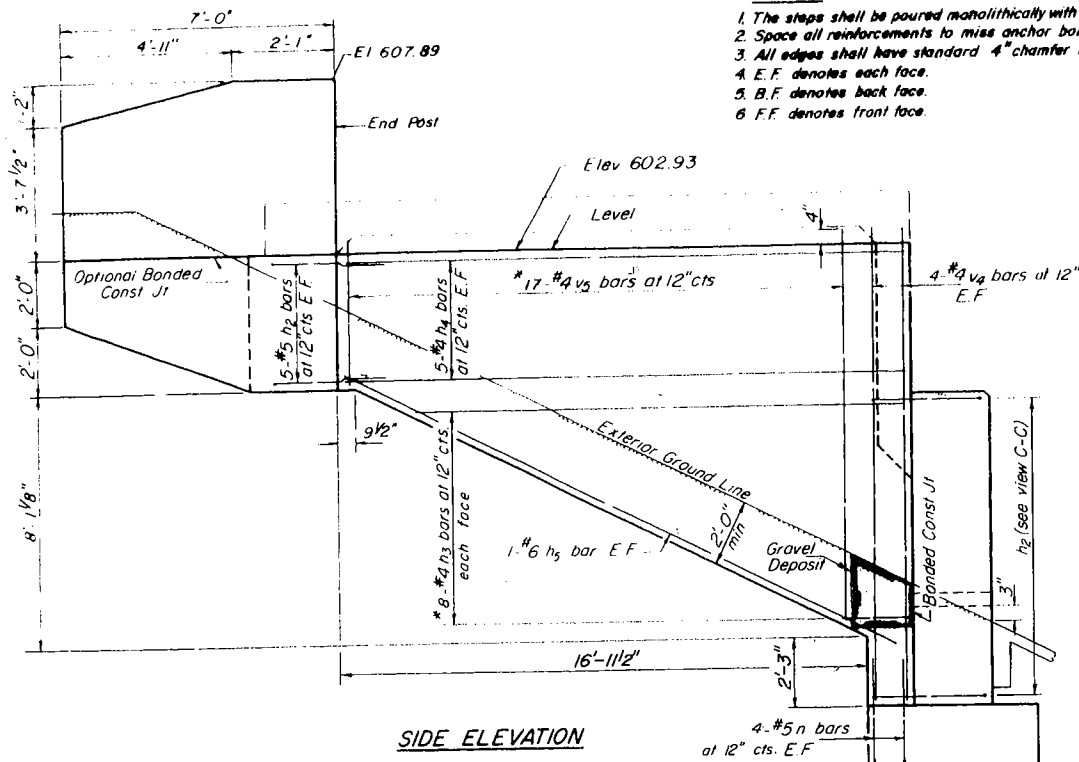
A&B DIMENSIONS

Bar	A	B
n ₃	2'-6"	2'-9"
s ₈	2'-6"	3'-0"
s ₁	2'-2"	4'-3"
s ₂	2'-2"	4'-6"
s ₅	2'-2"	4'-6"
s ₆	2'-2"	2'-6"

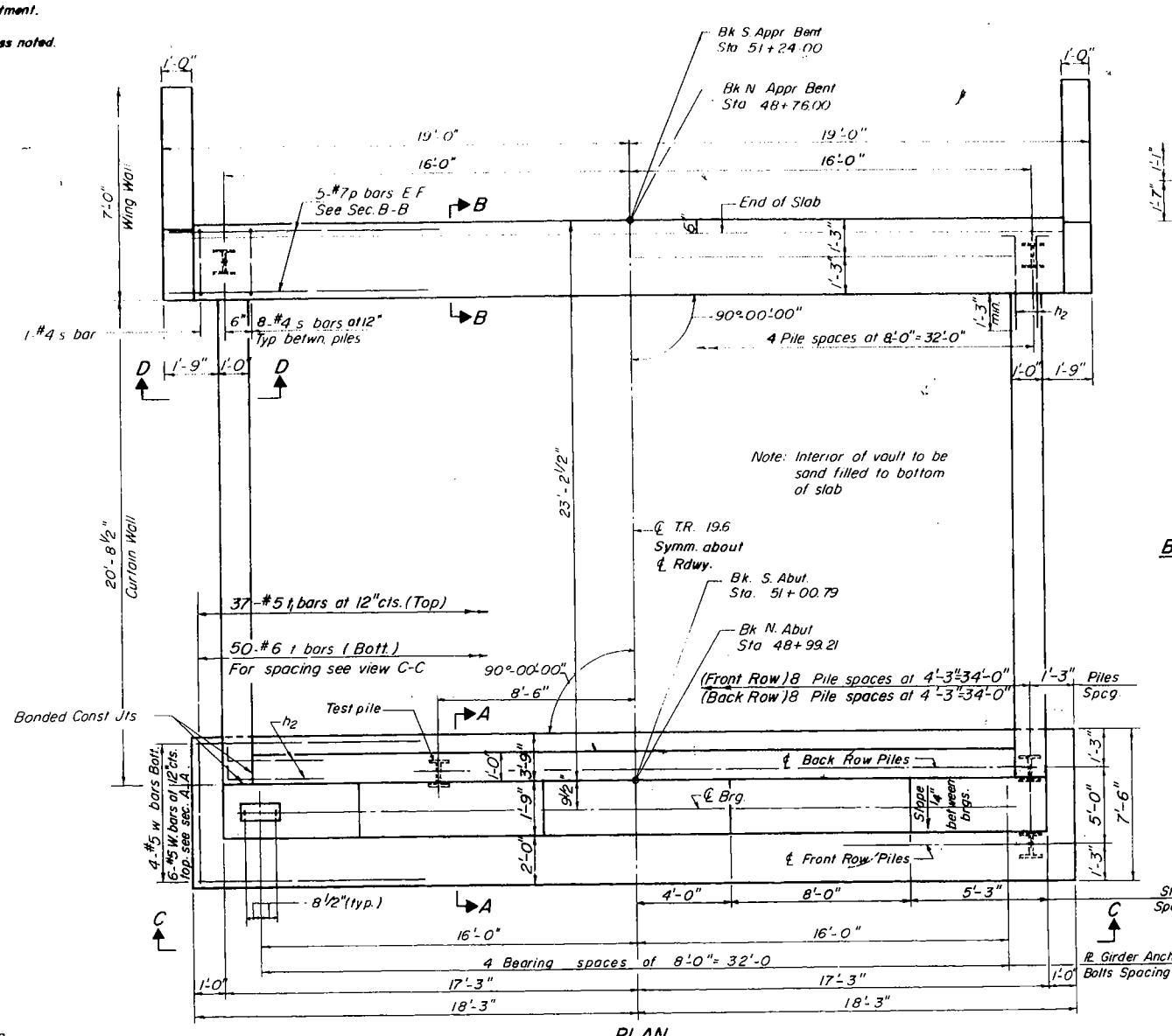
PIER
 FA 403 SECTION 161-IHB-2
 FA 403 UNDER TR-196
 ROCK ISLAND COUNTY
 STATION 415+92.08

NOTES

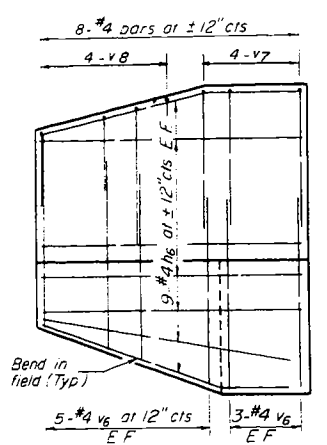
- The steps shall be poured monolithically with abutment.
- Space all reinforcements to miss anchor bolts.
- All edges shall have standard 4" chamfer unless noted.
- E.F. denotes each face.
- B.F. denotes back face.
- F.F. denotes front face.



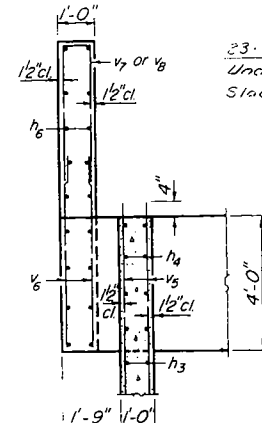
SIDE ELEVATION



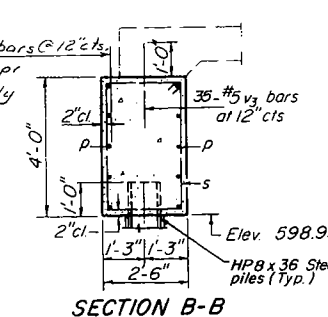
PLAN



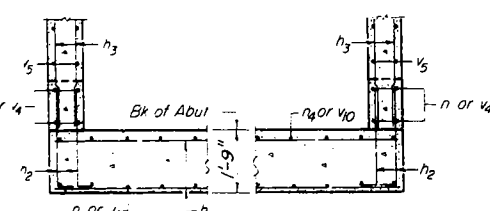
WING WALL REINFORCEMENT



SECTION D-D



SECTION B-B



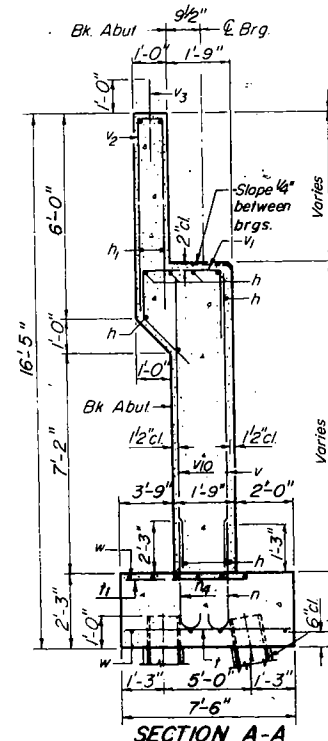
SECTION E-E

ABUT.-PILE DATA

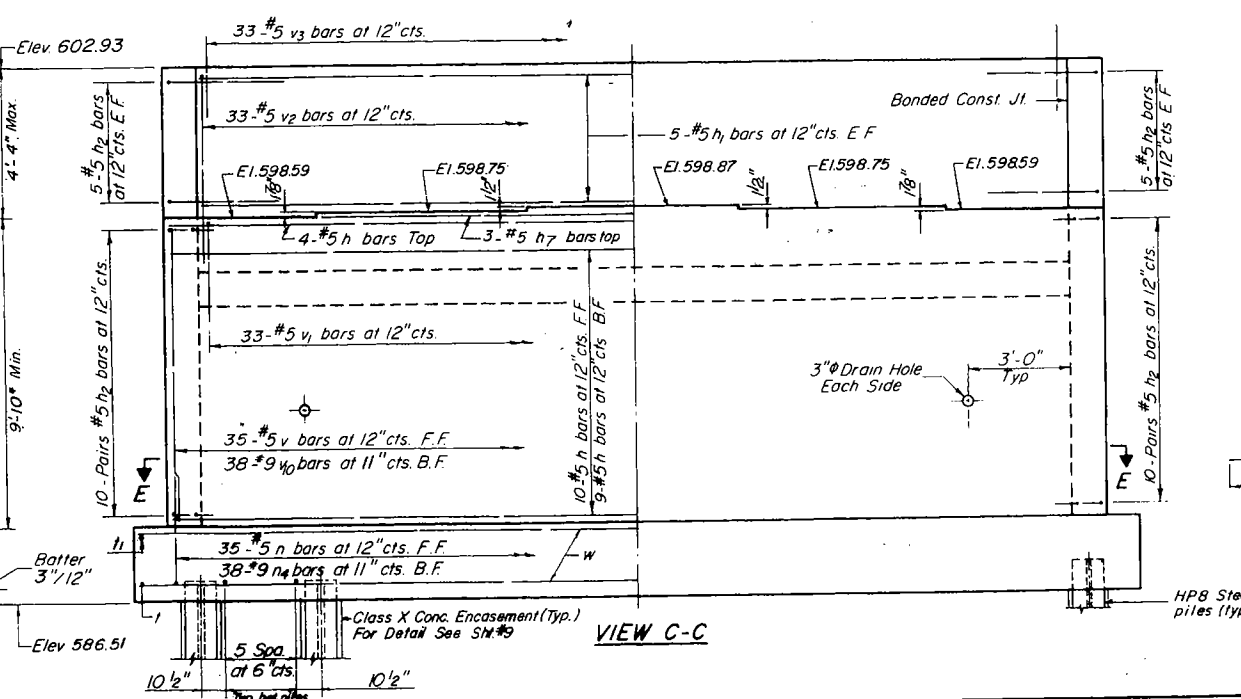
Type	HP 8x36 steel piles
Capacity	Refusal
Est. Length	25' N. Abut. 29' S. Abut.
No. Req'd.	17 Each Abut.
Test pile	1 Each Abut.

APPR. BENT.-PILE DATA

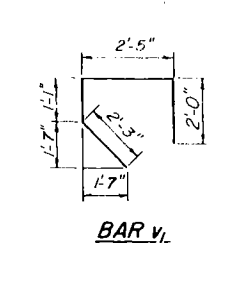
Type	HP 8 x 36 steel piles
Capacity	Refusal
Est. Length	37' N. Abut. 41' S. Abut.
No. Req'd.	5 Each Abut.



SECTION A-A



VIEW C-C



FIELD CUTTING DIAGRAM
Order h₃ & v₅ bars full length. Cut to fit as shown and use remainder of bars in other face.

ONE ABUTMENT BILL OF MATERIAL

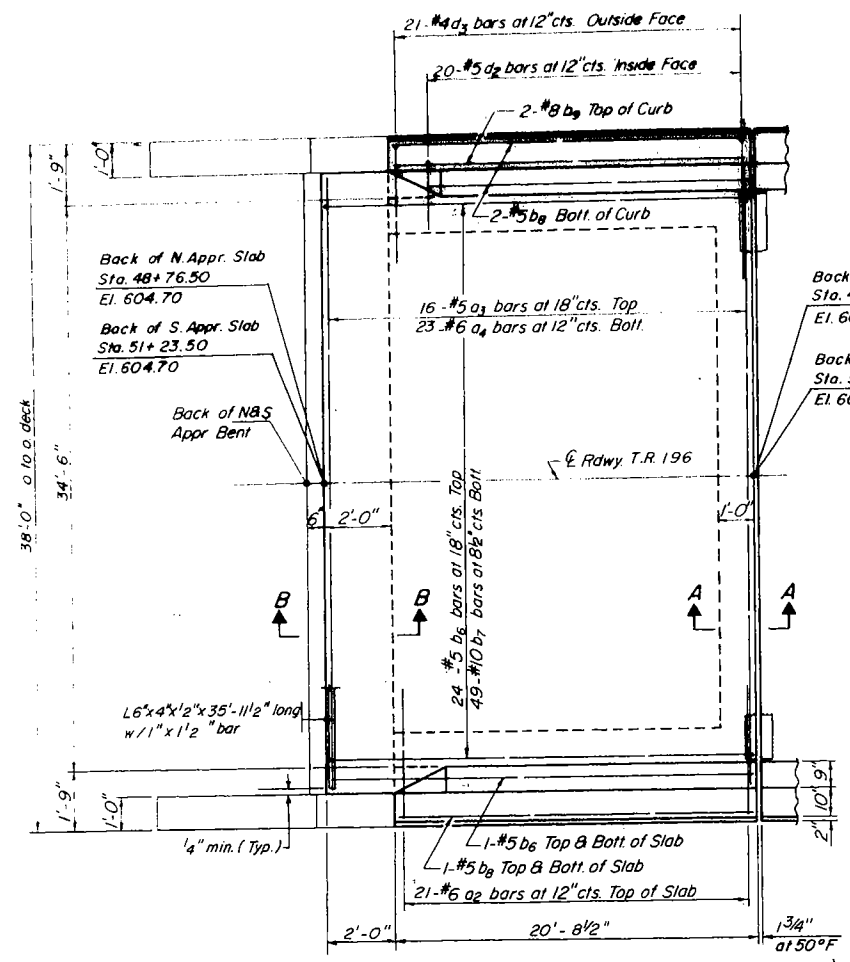
Bar	No	Size	Length	Shape
h	23	#5	34'-2"	
h ₁	10	#5	32'-2"	
h ₂	80	#5	5'-6"	J
h ₃	18	#4	21'-10"	
h ₄	20	#4	20'-4"	
h ₅	4	#6	20'-0"	
h ₆	36	#4	6'-8"	
h ₇	3	#5	23'-8"	
n	51	#5	3'-7"	
n ₄	38	#9	5'-3"	
p	10	#7	37'-8"	
s	34	#4	12'-5"	
t	50	#6	7'-2"	
l ₁	37	#5	5'-6"	
v	35	#5	9'-6"	
v ₁	33	#5	7'-9"	
v ₂	33	#5	12'-1"	
v ₃	91	#5	2'-6"	
v ₄	16	#4	14'-8"	
v ₅	34	#4	16'-1"	
v ₆	32	#4	5'-3"	
v ₇	8	#4	9'-5"	
v ₈	8	#4	7'-1"	
v ₁₀	38	#9	9'-6"	
w	10	#5	36'-2"	
Reinforcement Bars			Lbs	8740
Class X Concrete			Cu. Yds.	84.1
* Steel piles HP 8 x 36			Lin. Ft.	698
* Test pile HP 8 x 36			Each	1
Sand Backfill			Cu. Yds.	154

- NOTES:**
- The bill of material shown is for one abutment only.
 - Work this sheet with sheet No 9.
 - Steel piles shown are for south abut. North abut. length 610 Lin. Ft.

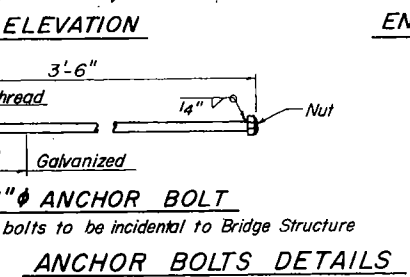
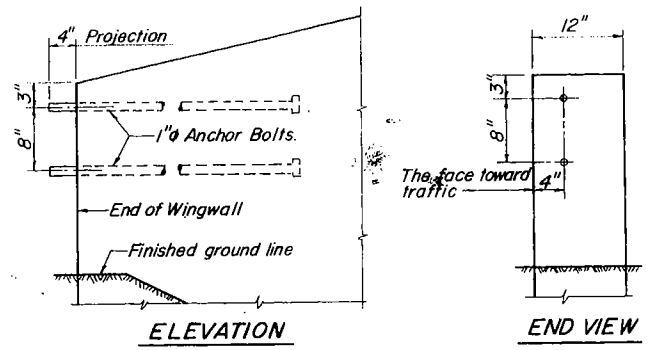
ABUTMENTS

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DESIGNED	H.S.
CHECKED	BTM.
DRAWN	Z.W.
CHECKED	H.S.

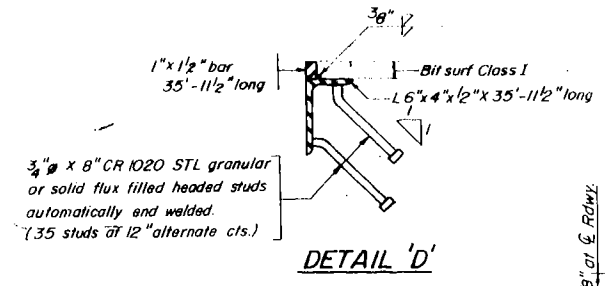


**PLAN - NORTH APPROACH
SOUTH APPROACH TYPICAL**

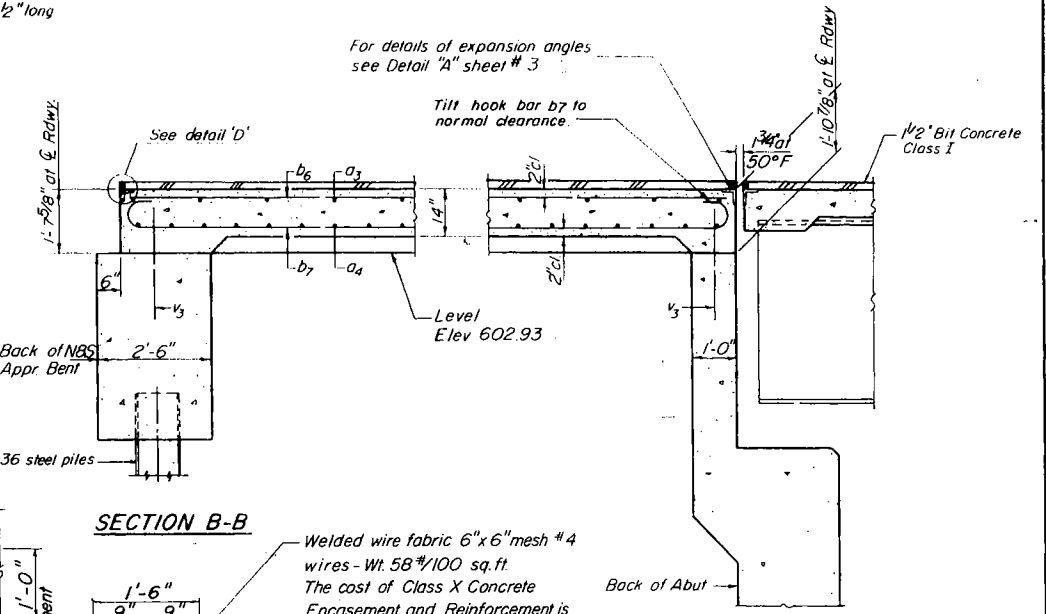


Cost of bolts to be incidental to Bridge Structure

ANCHOR BOLTS DETAILS



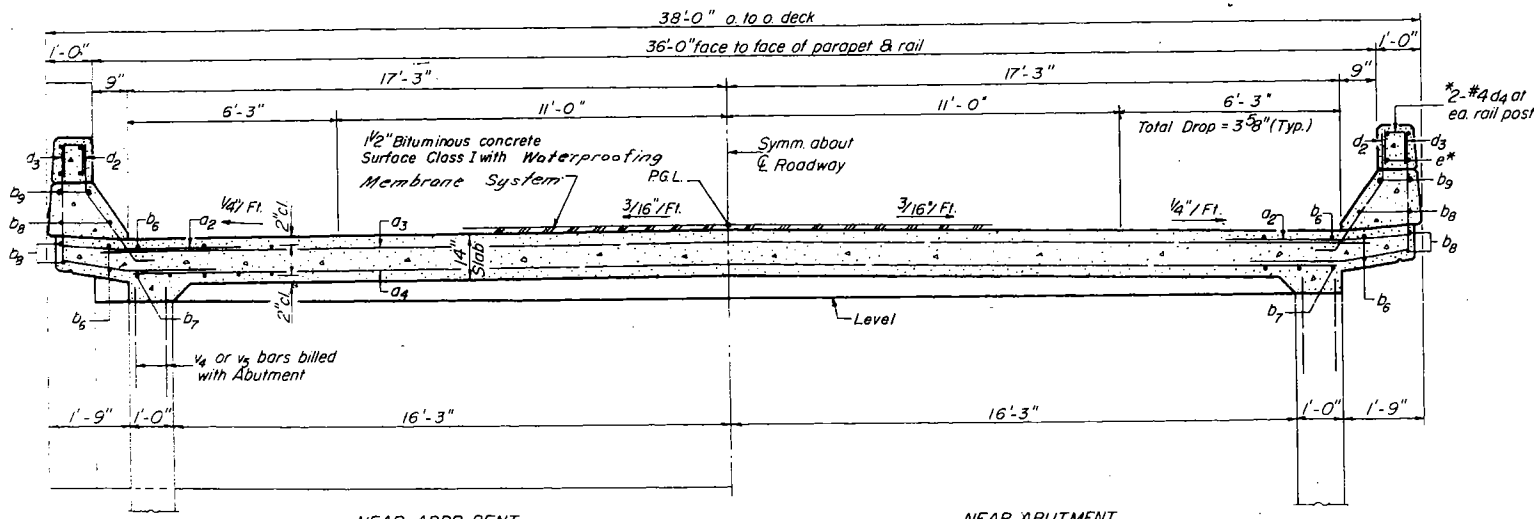
DETAIL 'D'



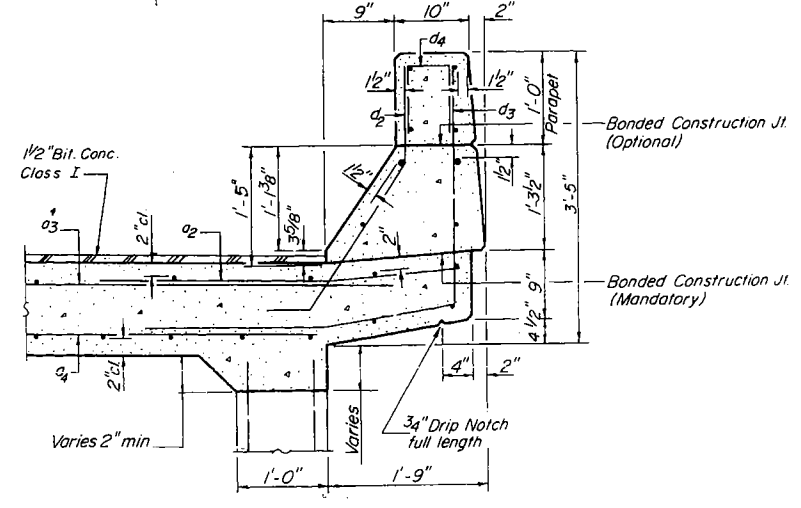
SECTION B-B

SECTION C-C

PILE ENCASEMENT DETAIL



CROSS SECTION



CURB SECTION

*Parapet Reinforcement and Class X Concrete are billed on sheet # 4

**TWO APPR. SLABS
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a2	84	#6	4'-0"	—
a3	32	#5	35'-6"	—
a4	46	#5	34'-6"	—
b6	56	#5	22'-4"	—
b7	98	#10	25'-2"	—
b8	16	#5	20'-4"	—
b9	8	#8	20'-4"	—
d2	80	#5	3'-6"	—
d3	84	#4	6'-1"	—
Reinforcement Bars		Lbs.	16,670	
Class X Concrete		Cu. Yds.	84.0	
Protective Coat		Sq. Yds.	56	
Bit. Conc. Course Class I		Ton	8	
Waterpr. Mem. Syst.		Sq. Yds.	175	

Work this sheet with sheet No. 8

DESIGNED	H. S.
CHECKED	B. T. M.
DRAWN	A. M.
CHECKED	H. S.

APPROACH SLAB
FA 403 SECTION 161 - 1HB-2
FA 403 UNDER TR 196
ROCK ISLAND COUNTY
STATION 415 + 92.08

