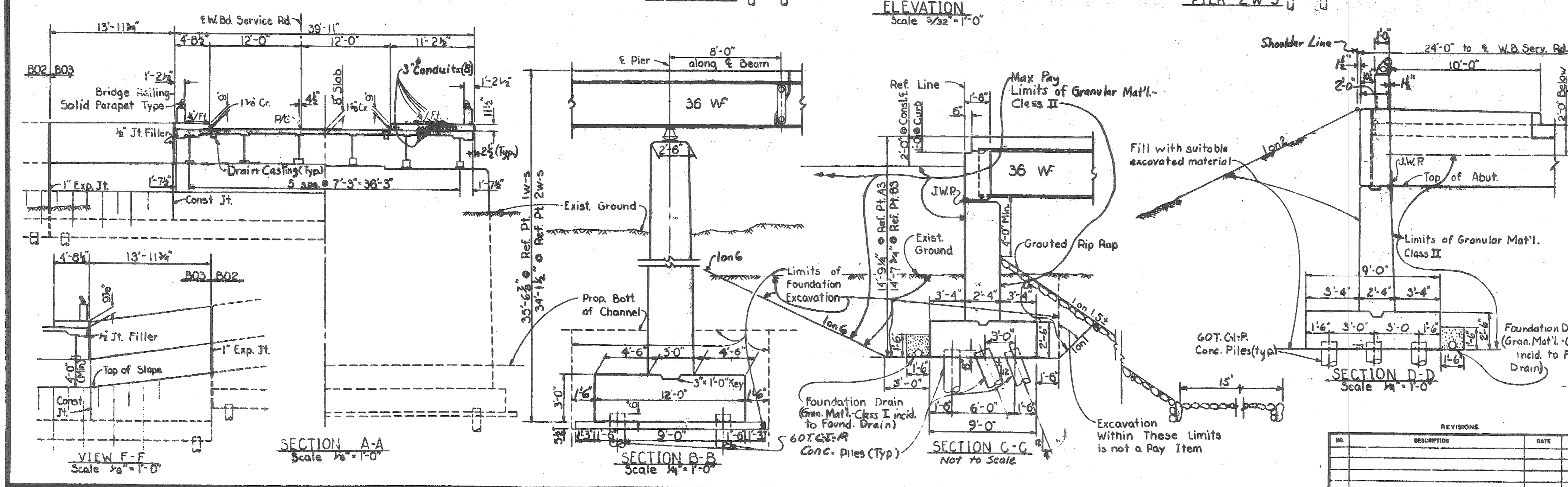


MISCELLANEOUS QUANTITIES		
ITEM	UNIT	AMOUNT
Grouted Rip Rap	Sq. Yds.	4,620
Foundation Drains	Lin. Ft.	220

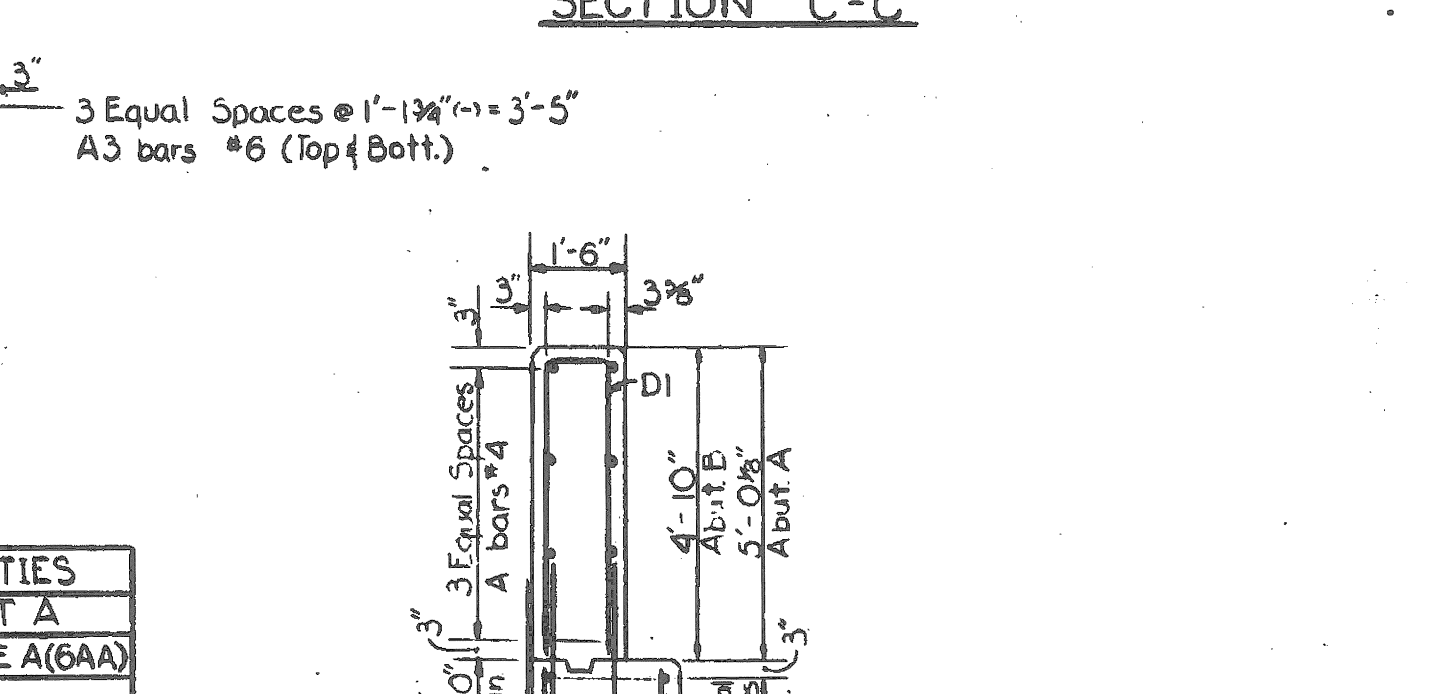
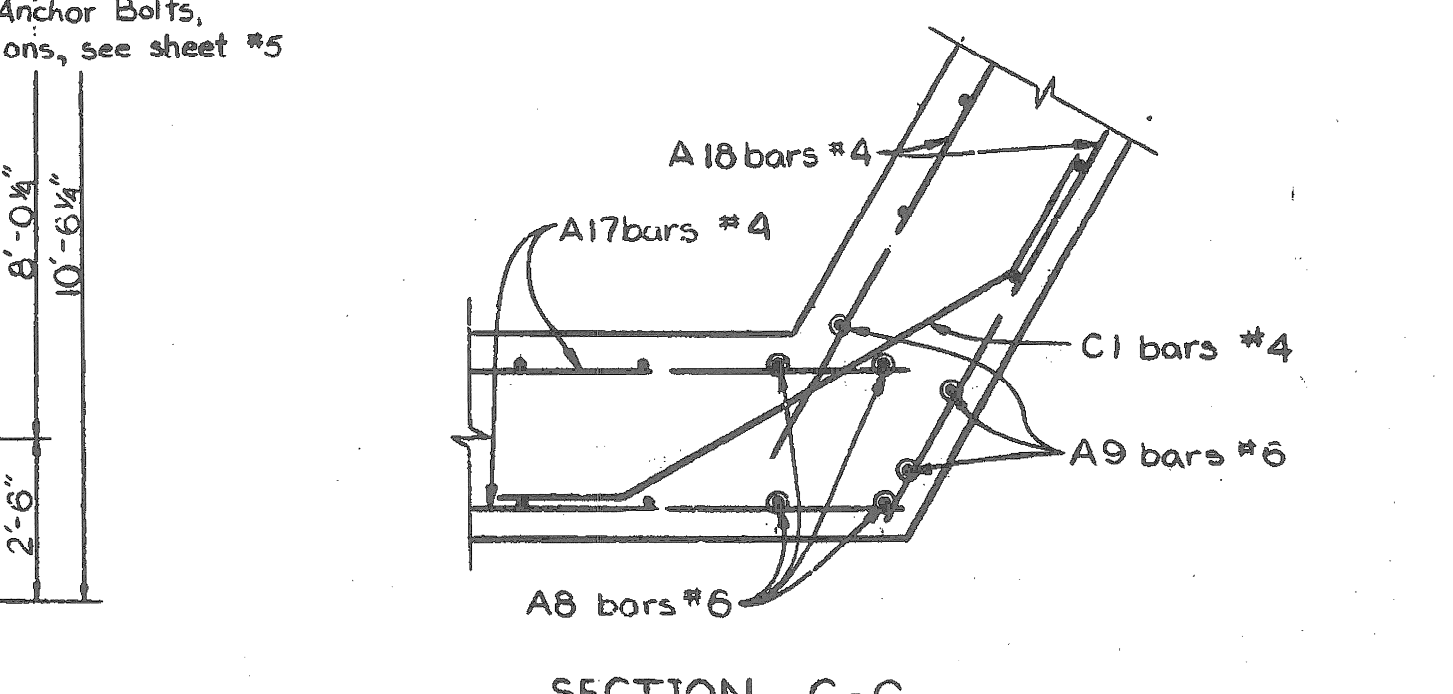
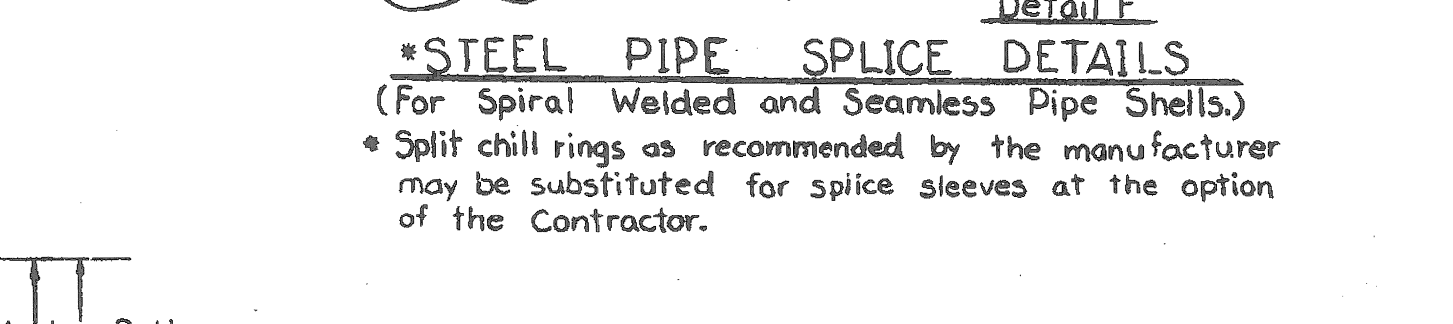
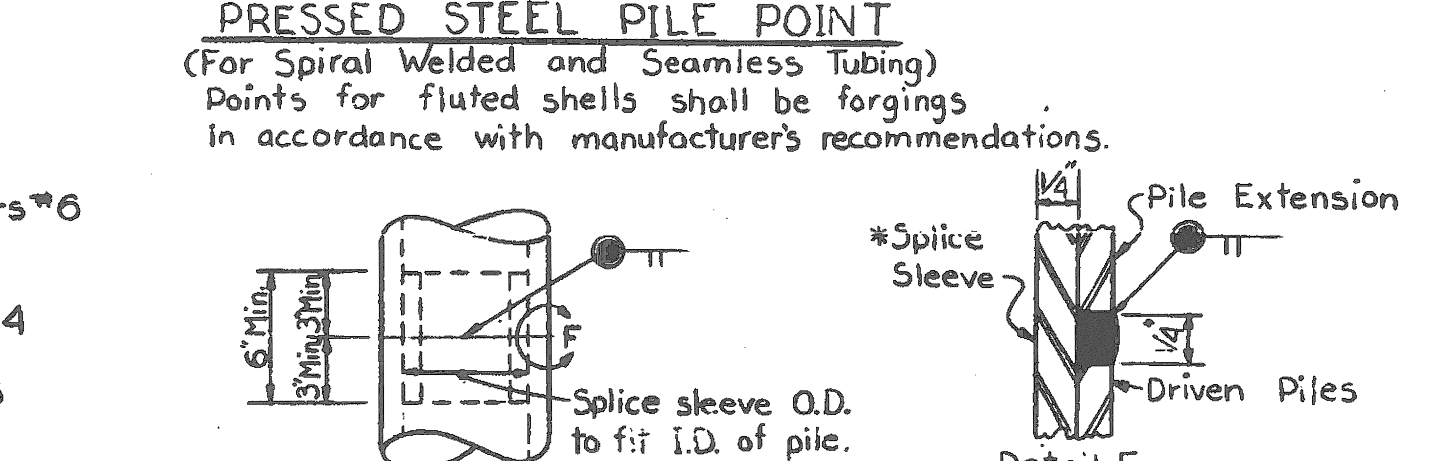
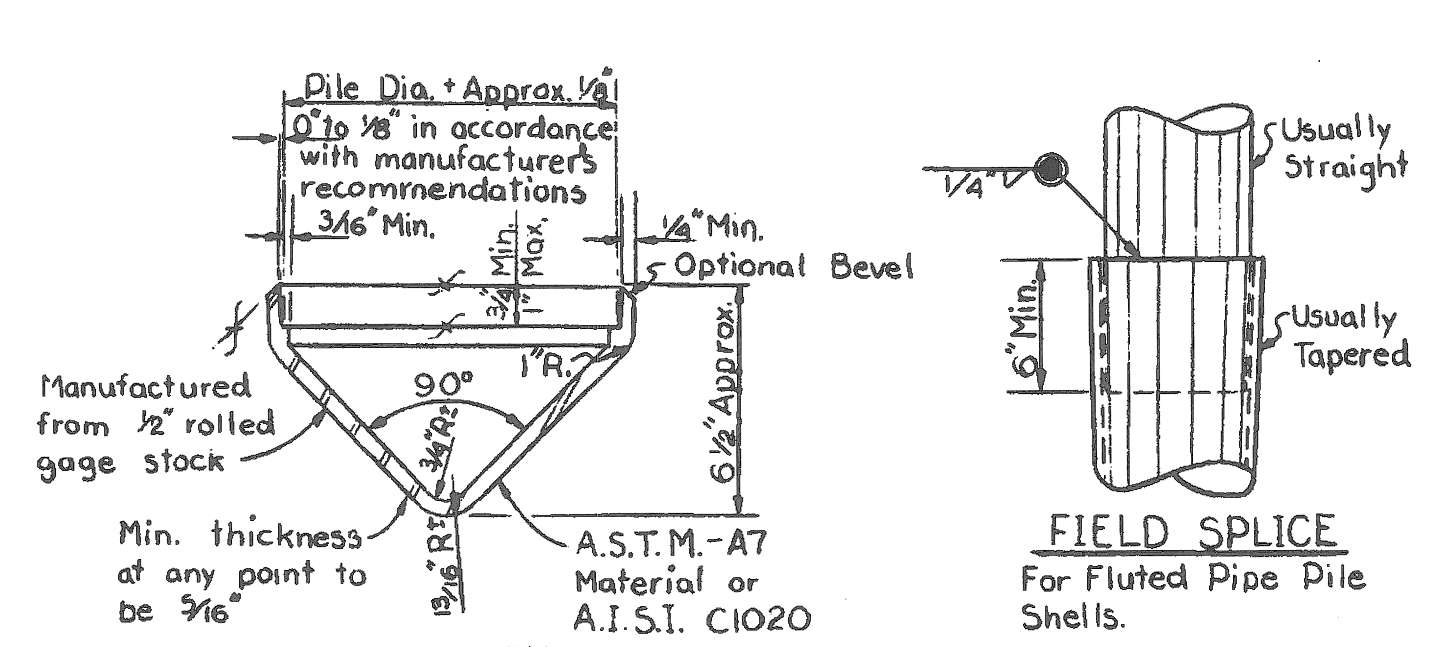
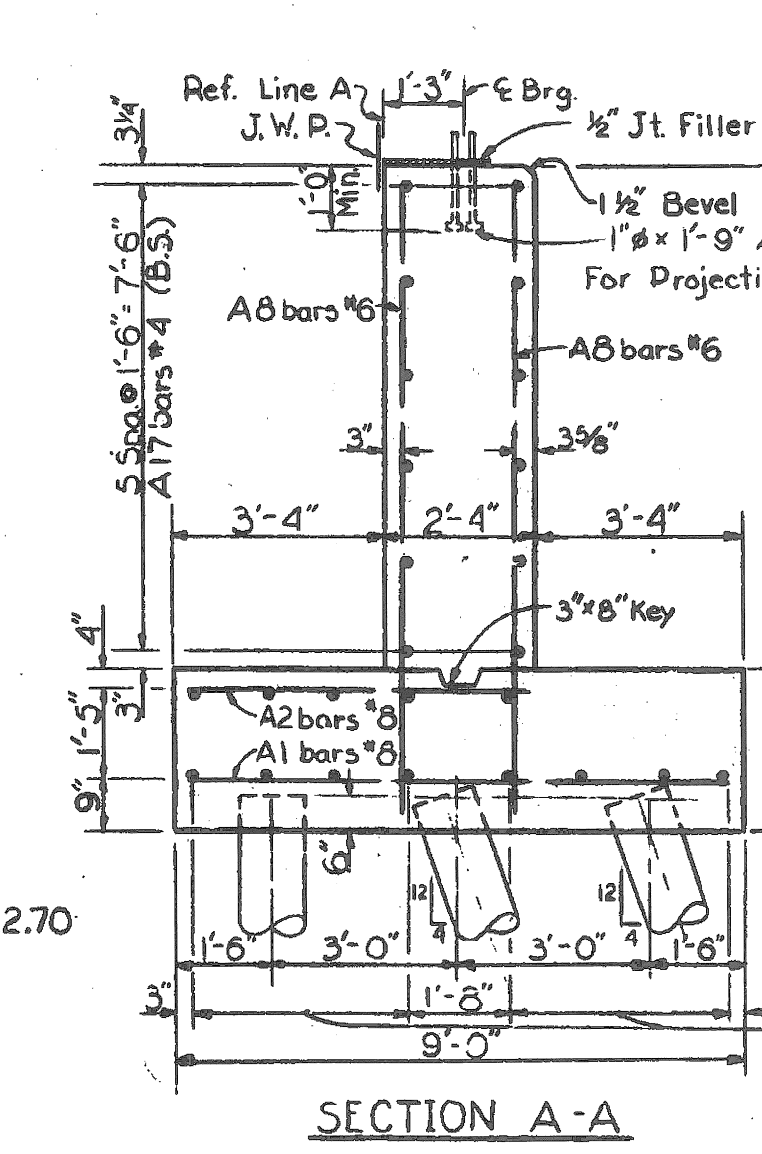
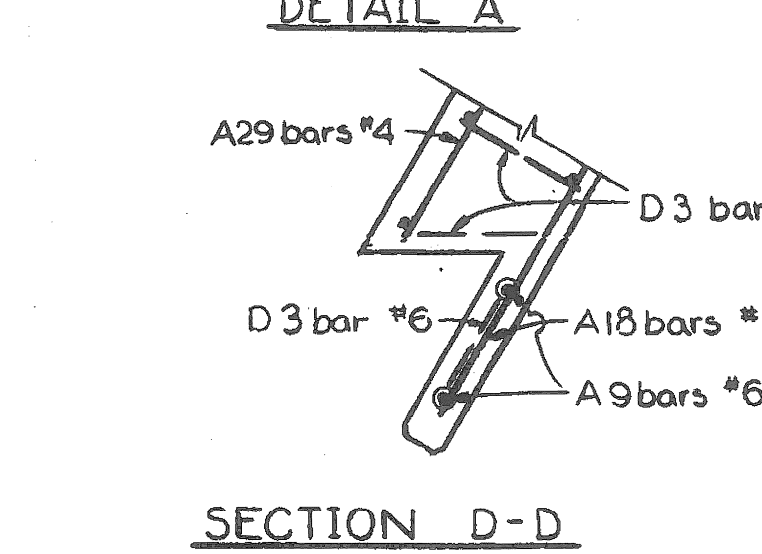
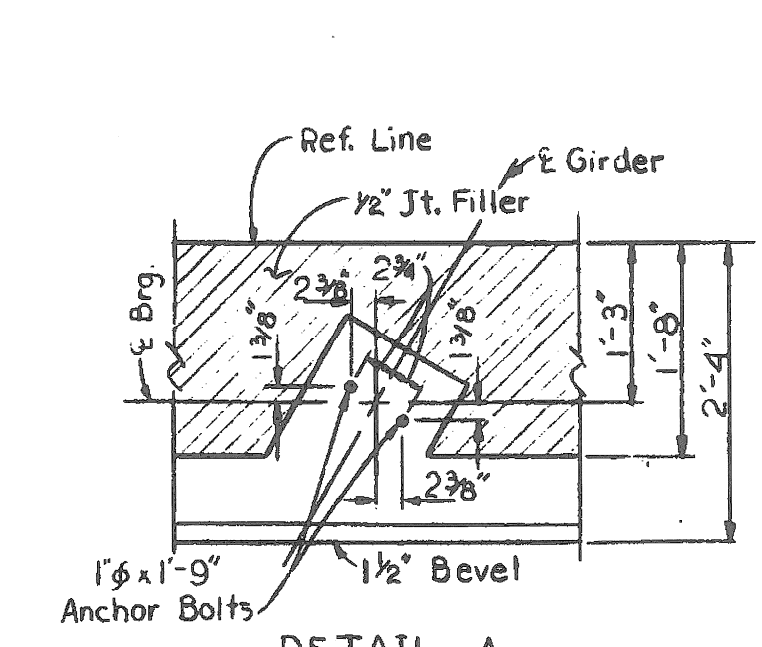
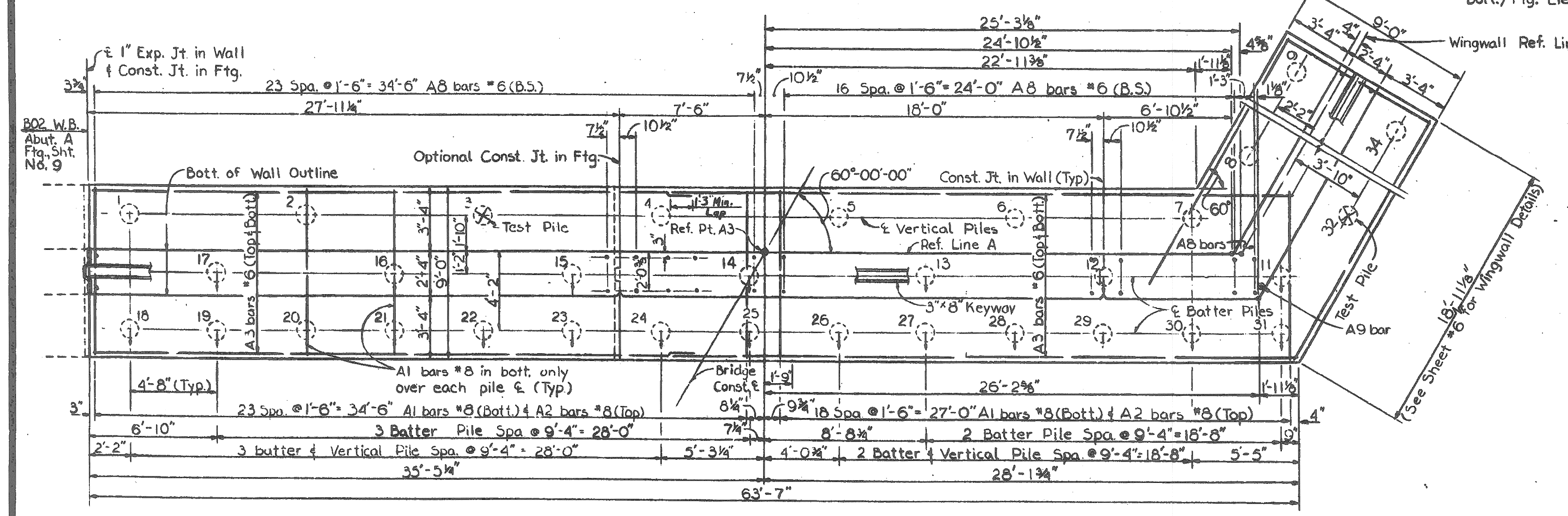
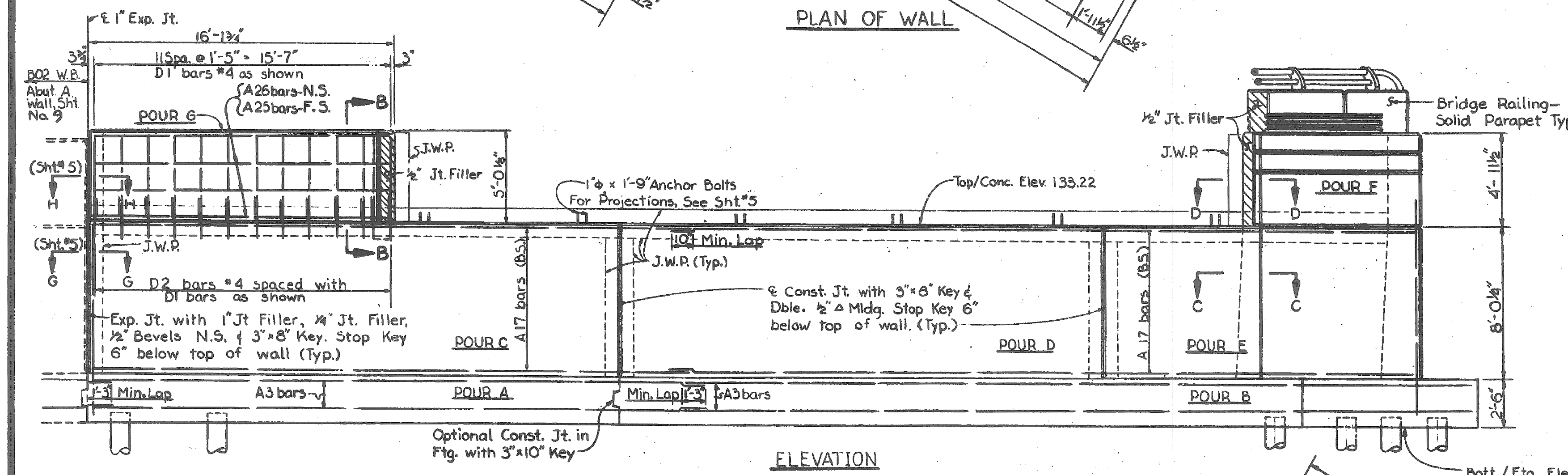
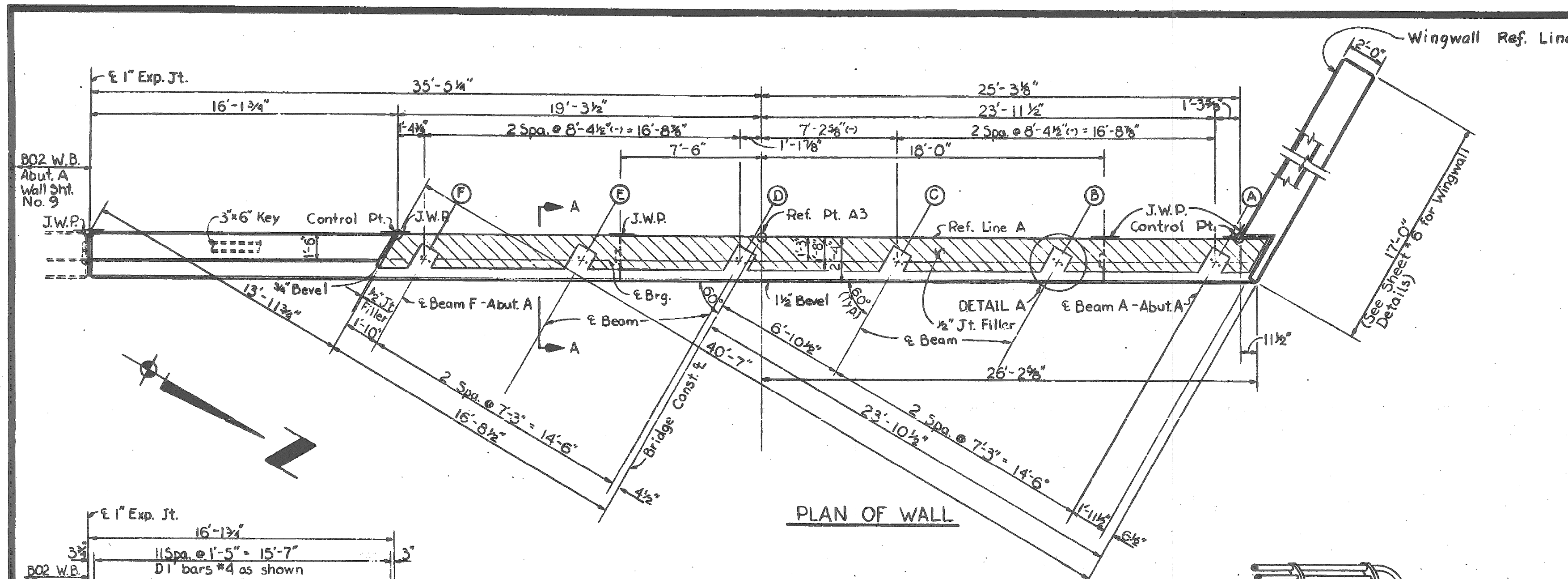


**Notes:**  
 The design of this structure is based on the M.D.S.H. Specifications for the Design of Highway Bridges, 1958 edition and current A.A.S.H.O. Standard Specifications for Highway Bridges H520 and alternate military loading. Live load plus impact deflection equals 1/800 of span length and 1/300 of cantilever arm.  
 The structure provides a waterway area of 2,900 sq. ft. based on the 1925 high water elevation 123.6 down to proposed initial bottom of channel elevation 108.0. Based on the future channel section down to elevation 106.0, a waterway area of 3,200 sq. ft. will be provided to 1925 high water elevation 123.6. The U.S.G.S. estimated the 1947 peak discharge on the River Rouge at Joy Road to be 13,000 c.f.s.  
 The top of roadway slab and tops of sidewalks are parallel to the vertical curve and tangents.  
 Place grouted riprap at the structure to the limits shown.

**MICHIGAN DEPARTMENT OF STATE HIGHWAYS**  
 1-96 OVER ROUGE RIVER IN CITY OF DETROIT  
 WEST BOUND SERVICE ROAD  
**GENERAL PLAN OF STRUCTURE**

APPROVED: *Lawrence O. Clark* 5-15-70  
 ASS'T. DESIGN SUPERVISING ENGINEER  
 APPROVED: *J. S. Traylor* 5-15-70  
 DESIGN SUPERVISING ENGINEER

NO.	DESCRIPTION	DATE	BY



CONCRETE QUANTITIES	
POUR	ABUTMENT A
	GRADE A(6A) GRADE A(6AA)
A	23.3 cu. yds.
B	41.1 cu. yds.
C	19.4 cu. yds.
D	17.7 cu. yds.
E	15.8 cu. yds.
F	3.7 cu. yds.
G	4.4 cu. yds.
TOTAL GRADE A(6A)	64.4 cu. yds.
TOTAL GRADE A(6AA)	63.0 cu. yds.

MISCELLANEOUS QUANTITIES		Abut. A	Abut. B
Joint waterproofing	Sq. Ft.	173	172
1/4\"/>			

**MICHIGAN DEPARTMENT OF STATE HIGHWAYS**

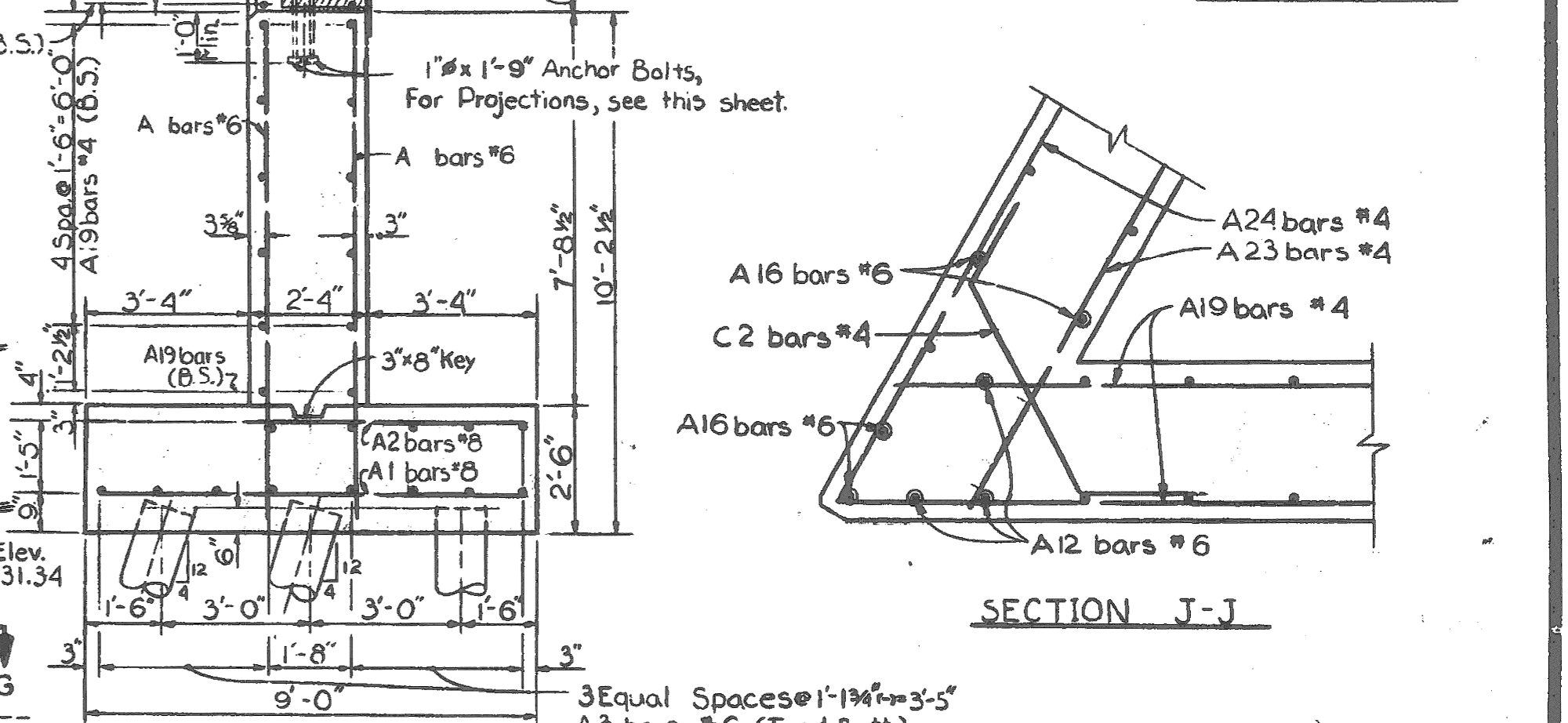
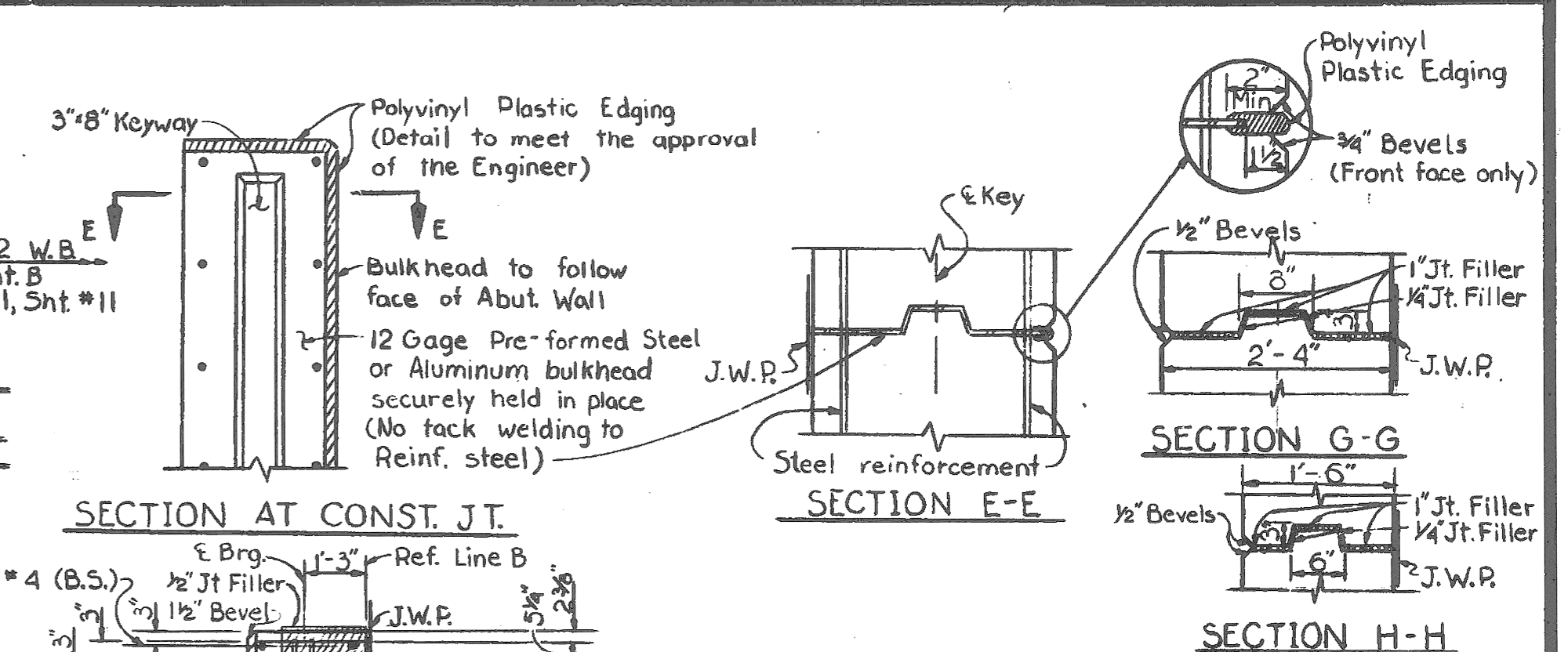
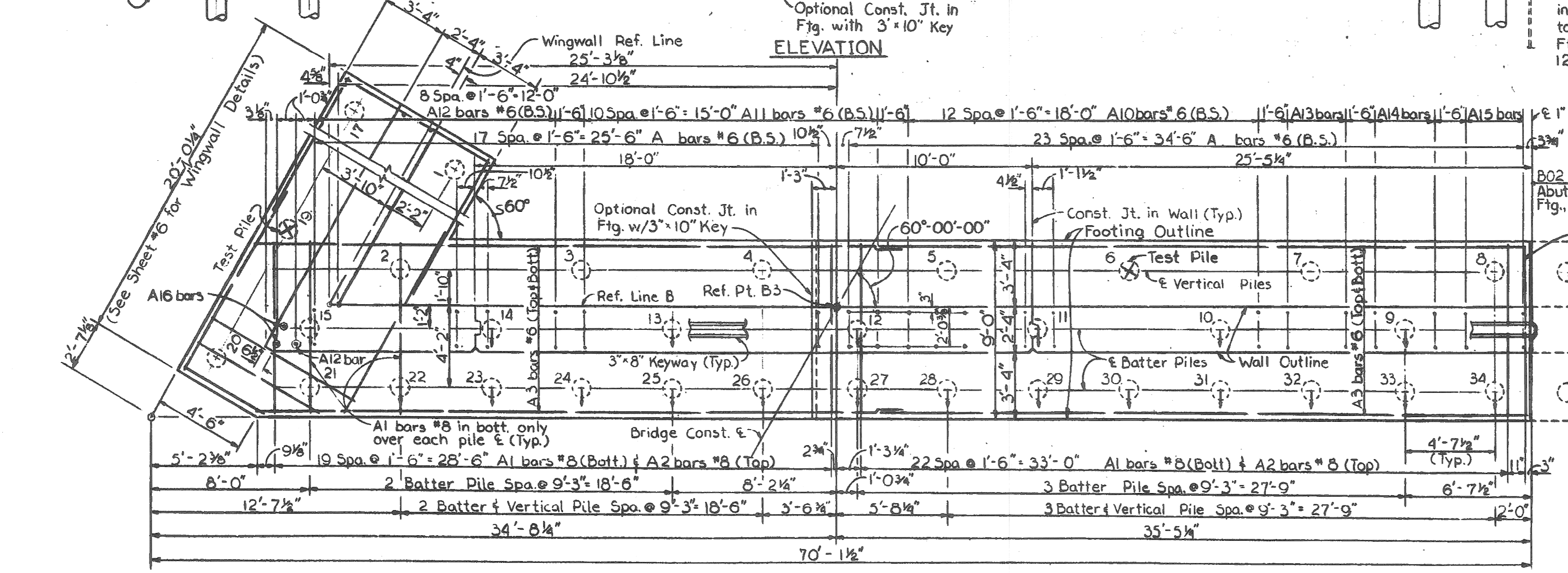
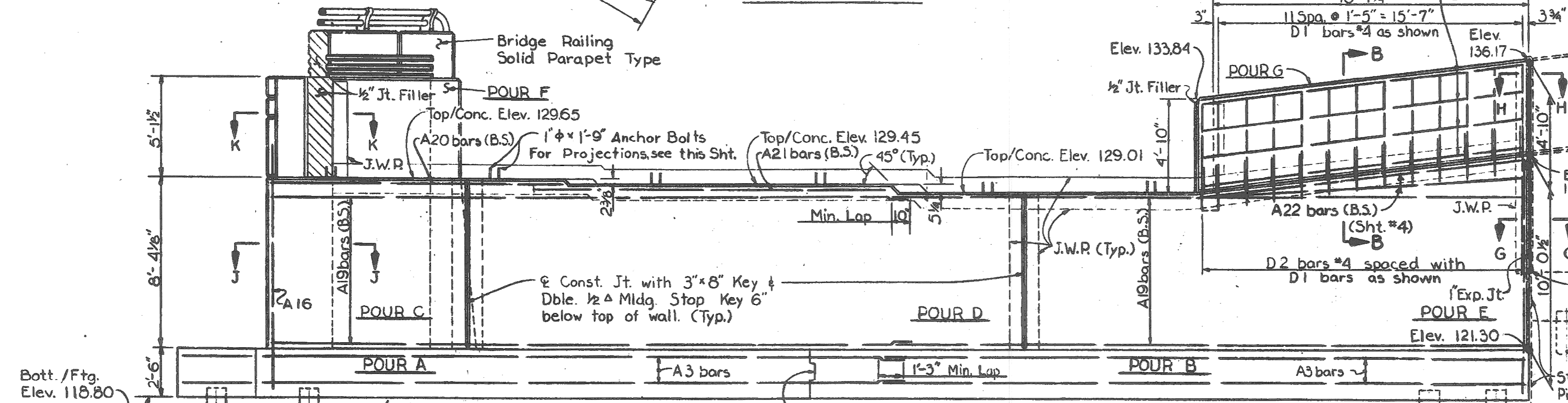
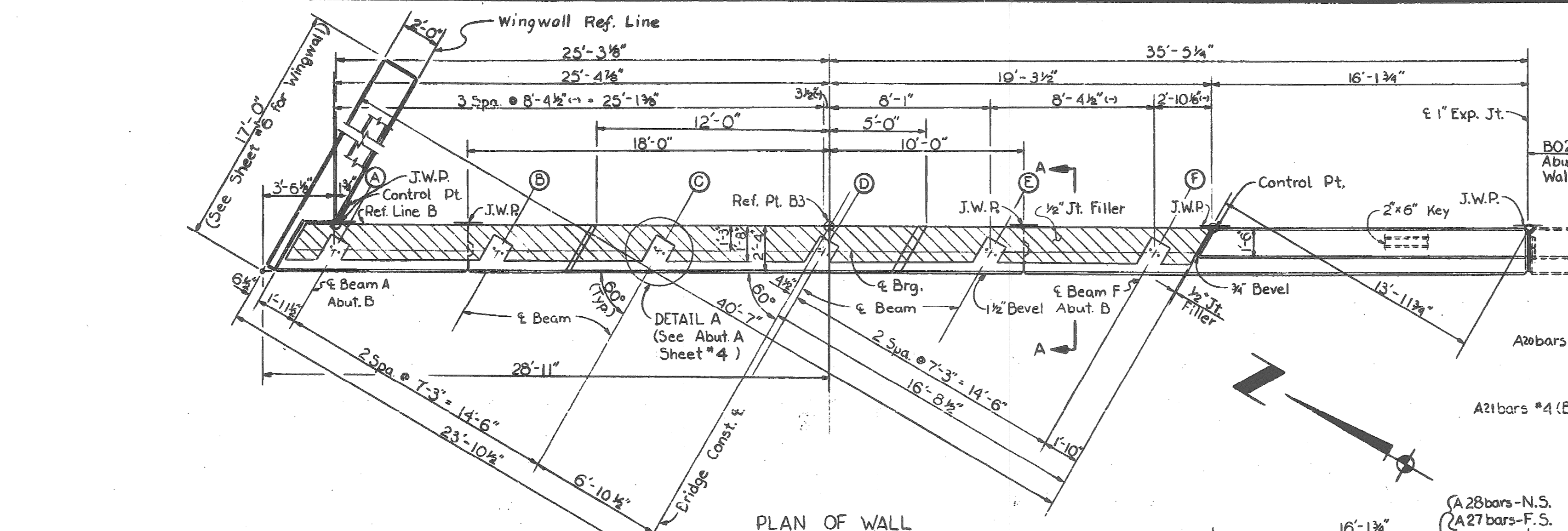
**ABUTMENT A DETAILS**

REVISIONS			
NO.	DESCRIPTION	DATE	BY

DRAWN BY	ALJUNI	5-11-70
DRAWN BY	Doell	10-1-69
TRACED BY	LOTT	3-20-70
CHECKED BY	LOTT	3-20-70
DATE	SHEET 4 OF 16	

**803 of 821221**

Work this sheet with sheets #54 #6.



CAST-IN-PLACE CONCRETE PILES									
Location	Type of Pile	No. of Piles	Est. Length (each)	Total Est. Length	Pile Points	Test Piles	Splices		
Abut. A	Vert.	11	40'	440'	11		11		
	Batt.	21	40'	840'	21		21		
	Test	2	50'	100'	2	2	2		
Total - A				1,380'	34	2	32		
Abut. B	Vert.	11	35'	385'	11		10		
	Batt.	21	35'	735'	21		19		
	Test	2	45'	90'	2	2	2		
Total - B				1,210'	34	2	29		
Grand Total				2,590'	68	4	61		

ANCHOR BOLT PROJECTIONS	
ABUT. A	ABUT. B
A 5 1/2"	7 1/2"
B 6"	5 1/2"
C 7 1/2"	6 3/4"
D 8 3/4"	5 1/2"
E 8"	8"
F 7 3/4"	5 1/2"

CONCRETE QUANTITIES	
POUR	ABUTMENT B
GRADE A(GA) GRADE A(GAA)	
A	33.2 cu yds
B	30.6 cu yds
C	16.6 cu yds.
D	19.4 cu yds.
E	18.6 cu yds
F	5.5 cu yds
G	4.4 cu yds
TOTAL GRADE A(GA) = 63.8 cu yds	
TOTAL GRADE A(GAA) = 64.5 cu yds	

Notes:  
 J.W.R. denotes Joint Waterproofing.  
 B.S. denotes Both Sides; N.S. denotes Near Side; F.S. denotes Far Side.  
 For bevel and molding details, see Std. sheet R16.  
 Anchor Bolts shall be accurately set to a template.  
 The Metal Bulkhead may be used as alternate construction joint at contractor's expense.  
 Care is to be used in casting concrete around Bulkhead to prevent dislocation or misalignment of the Bulkhead.  
 Cut holes in Metal Bulkhead for reinforcing steel.  
 All piles shall be driven to a minimum bearing capacity of 60 tons.  
 Pile shells for Cast-in-Place Concrete Piles driven without a removable core shall be a minimum of #3 U.S. Standard Gage (0.230 nominal thickness), 12" O.D., and may be steel pipe of seamless or spiral welded type or fluted pipe as manufactured by the Union Metal Manufacturing Co. or approved equal.  
 Pile points shall be pressed steel of the slip-on type in accordance with the detail shown on the plans. Points shall be attached to pile shells with 3/8" continuous welds.

**MICHIGAN DEPARTMENT OF STATE HIGHWAYS**

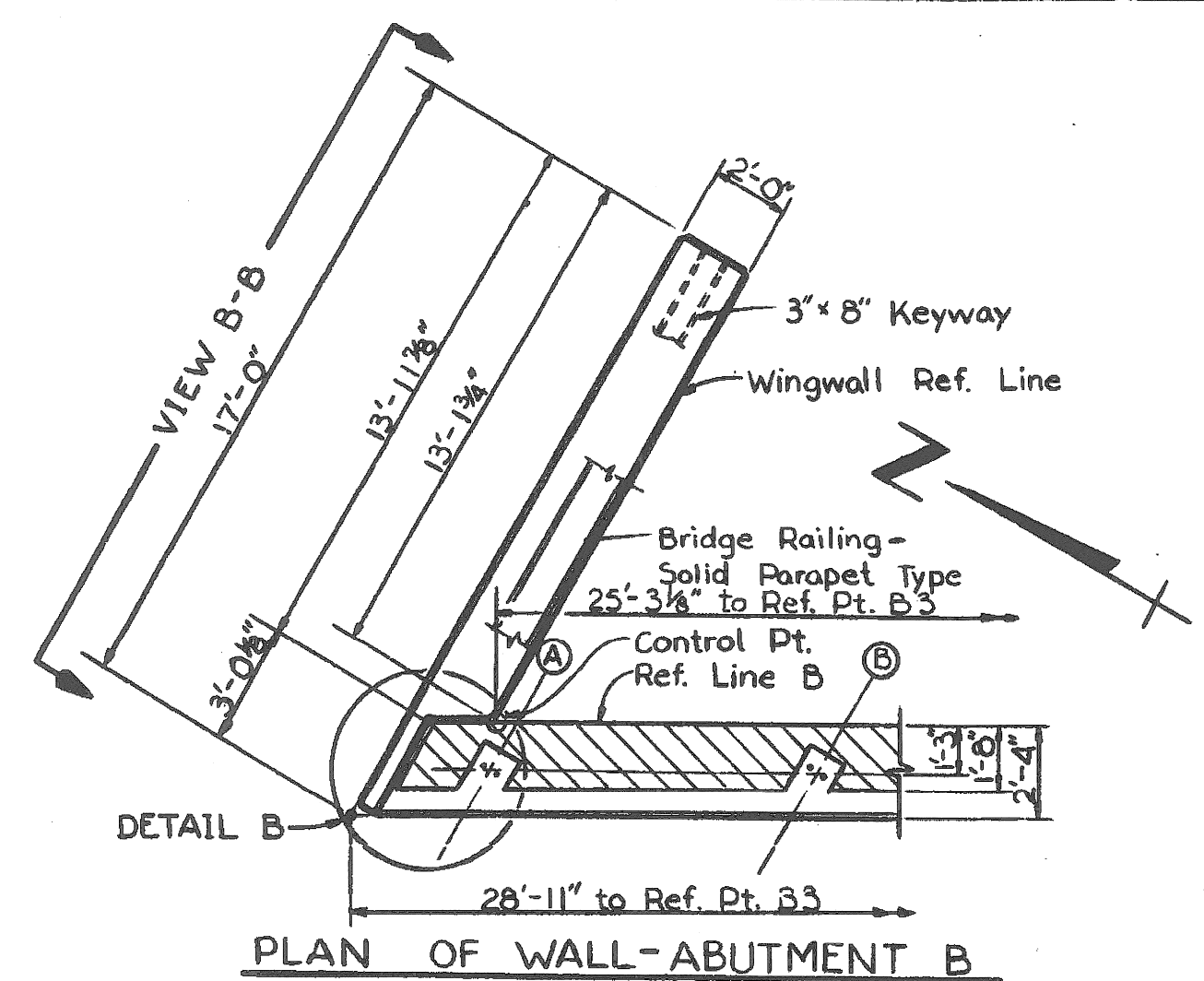
**ABUTMENT B DETAILS**

REVISIONS			
NO.	DESCRIPTION	DATE	BY

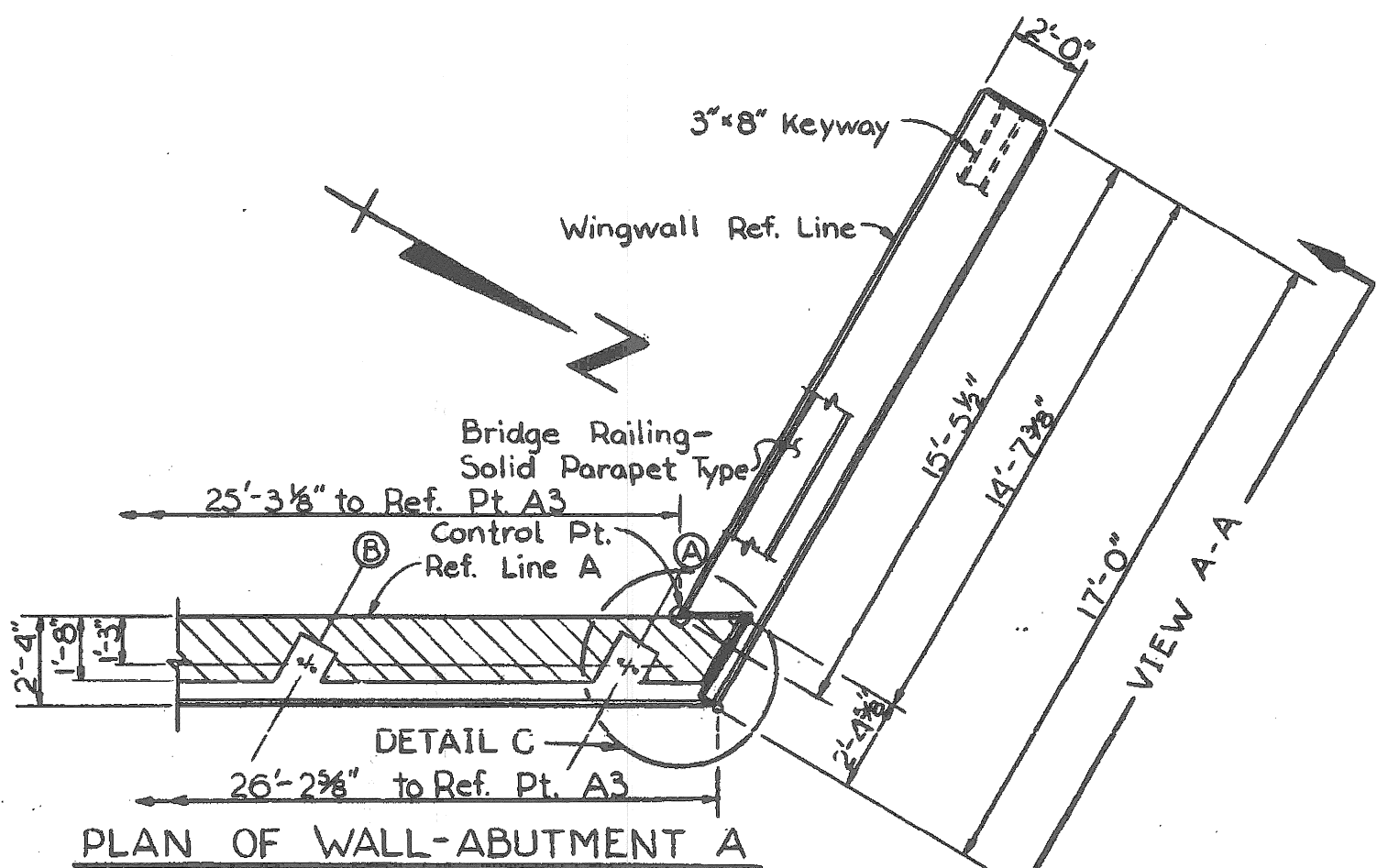
DRAWN BY: A.LUNI 5-11-70  
 CHECKED BY: Doell 10-1-69  
 TRACED BY: LOTT 3-20-70  
 SHEET 3 OF 16

**B03 of 82122I**

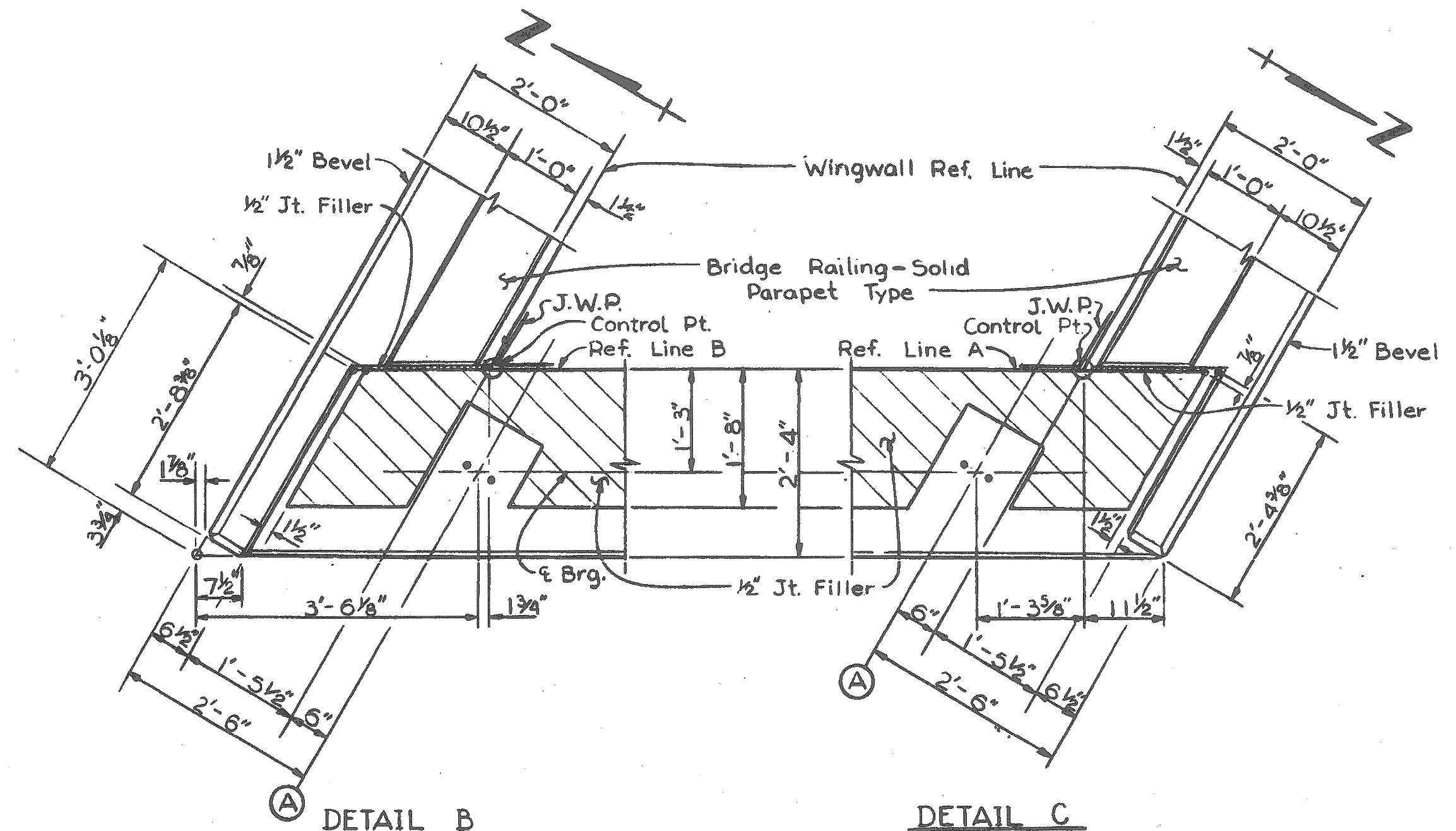
Work this sheet with sheets #4 & 6.



PLAN OF WALL-ABUTMENT B

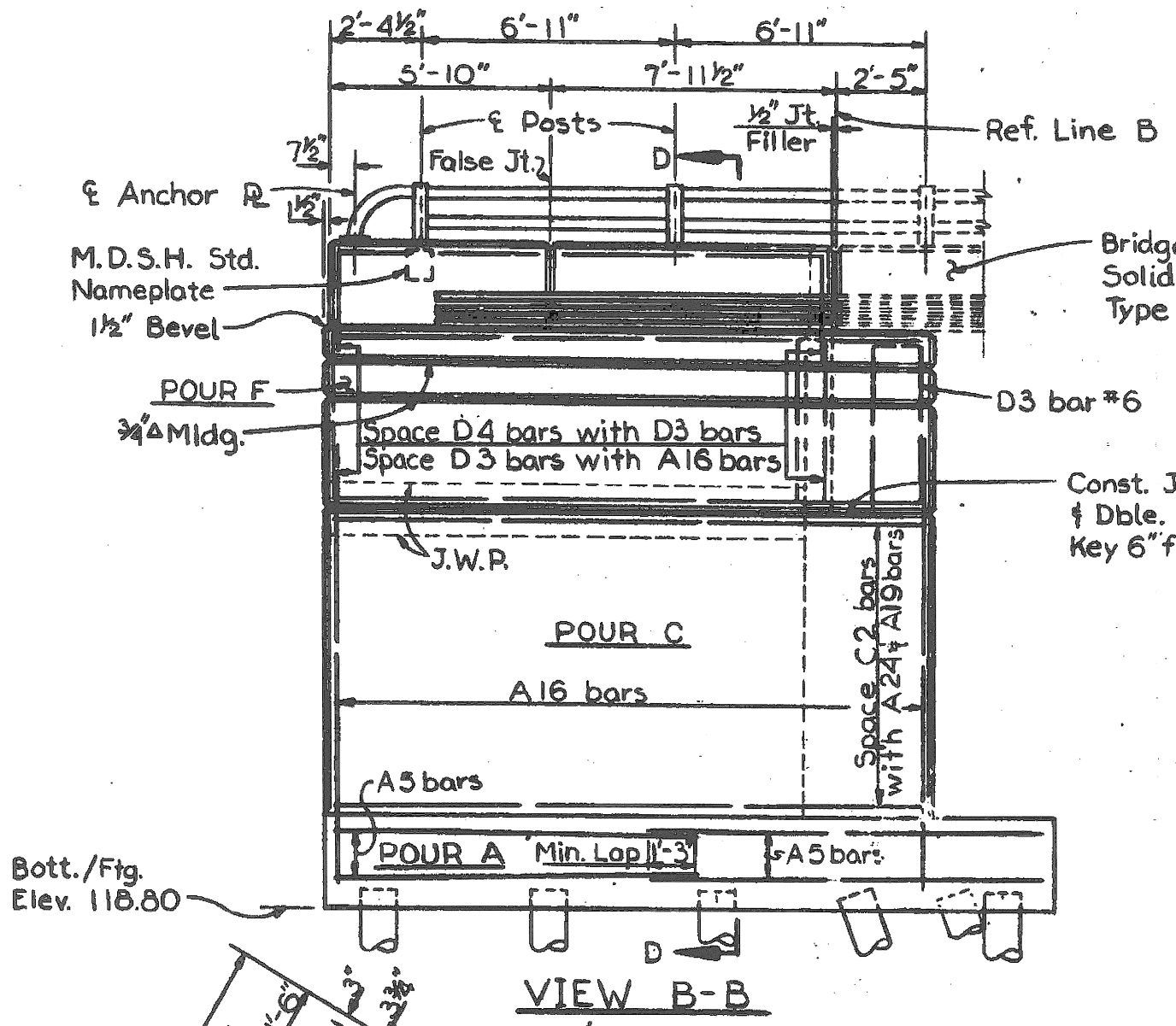


PLAN OF WALL-ABUTMENT A

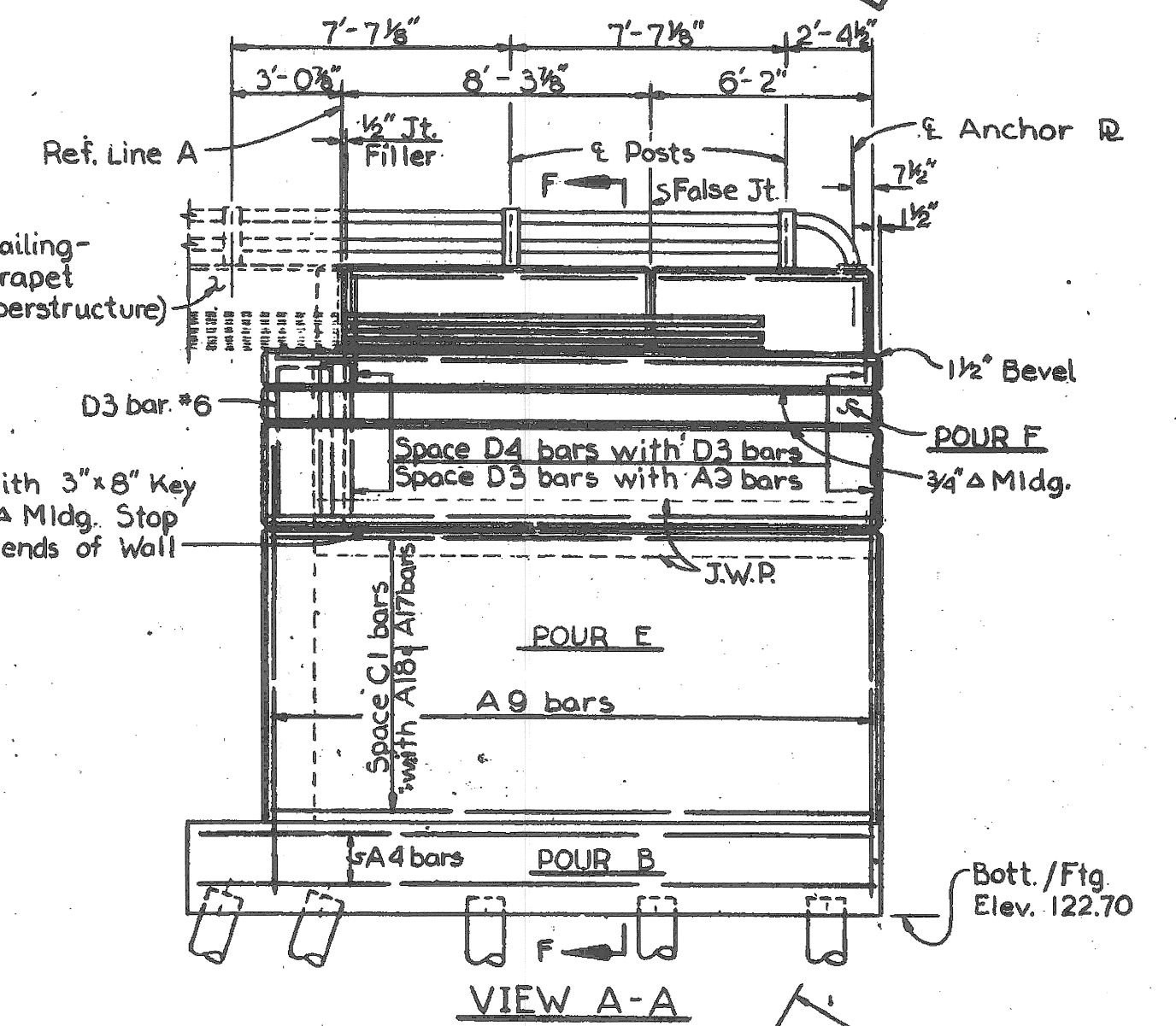


DETAIL B

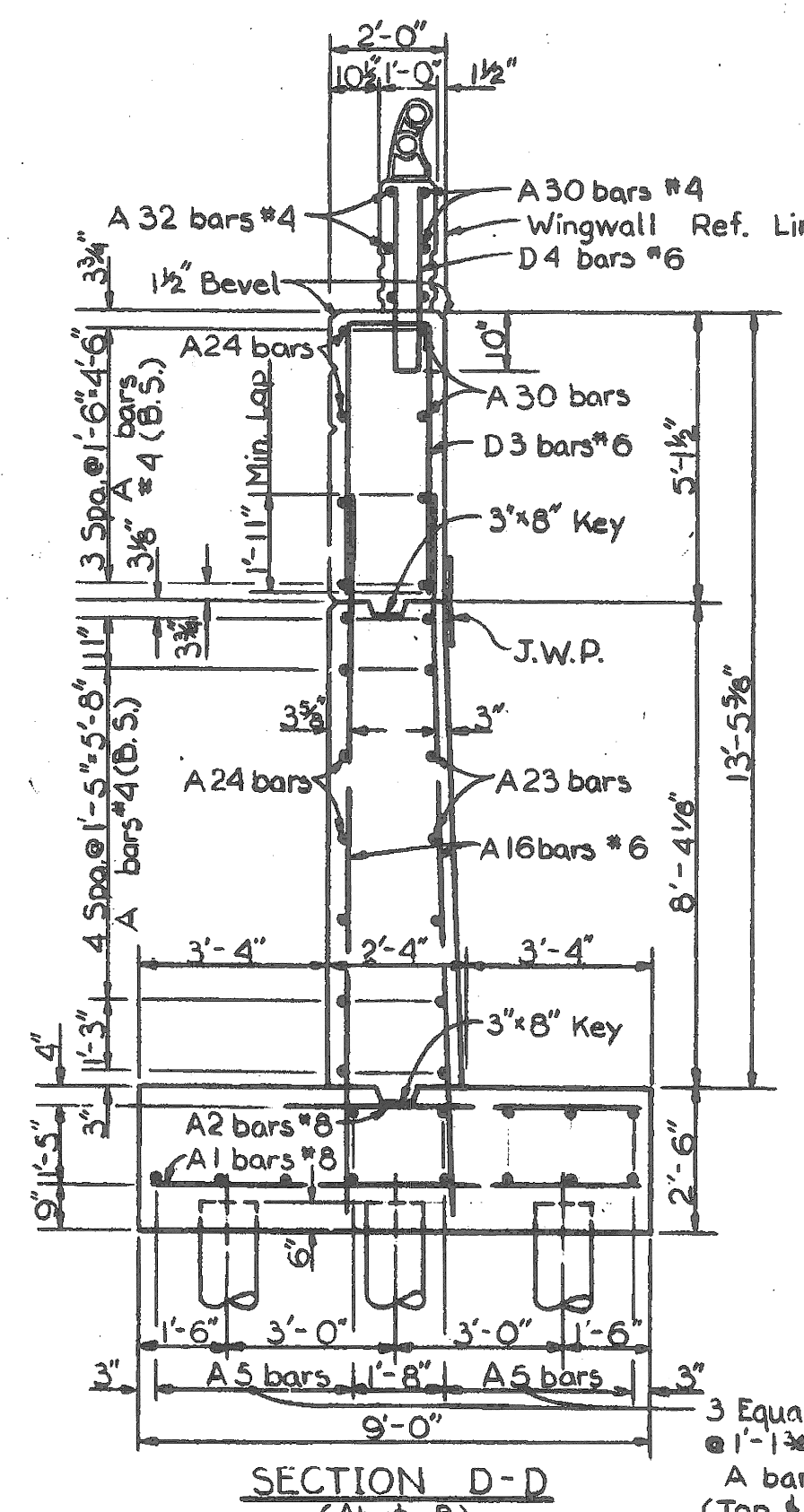
DETAIL C



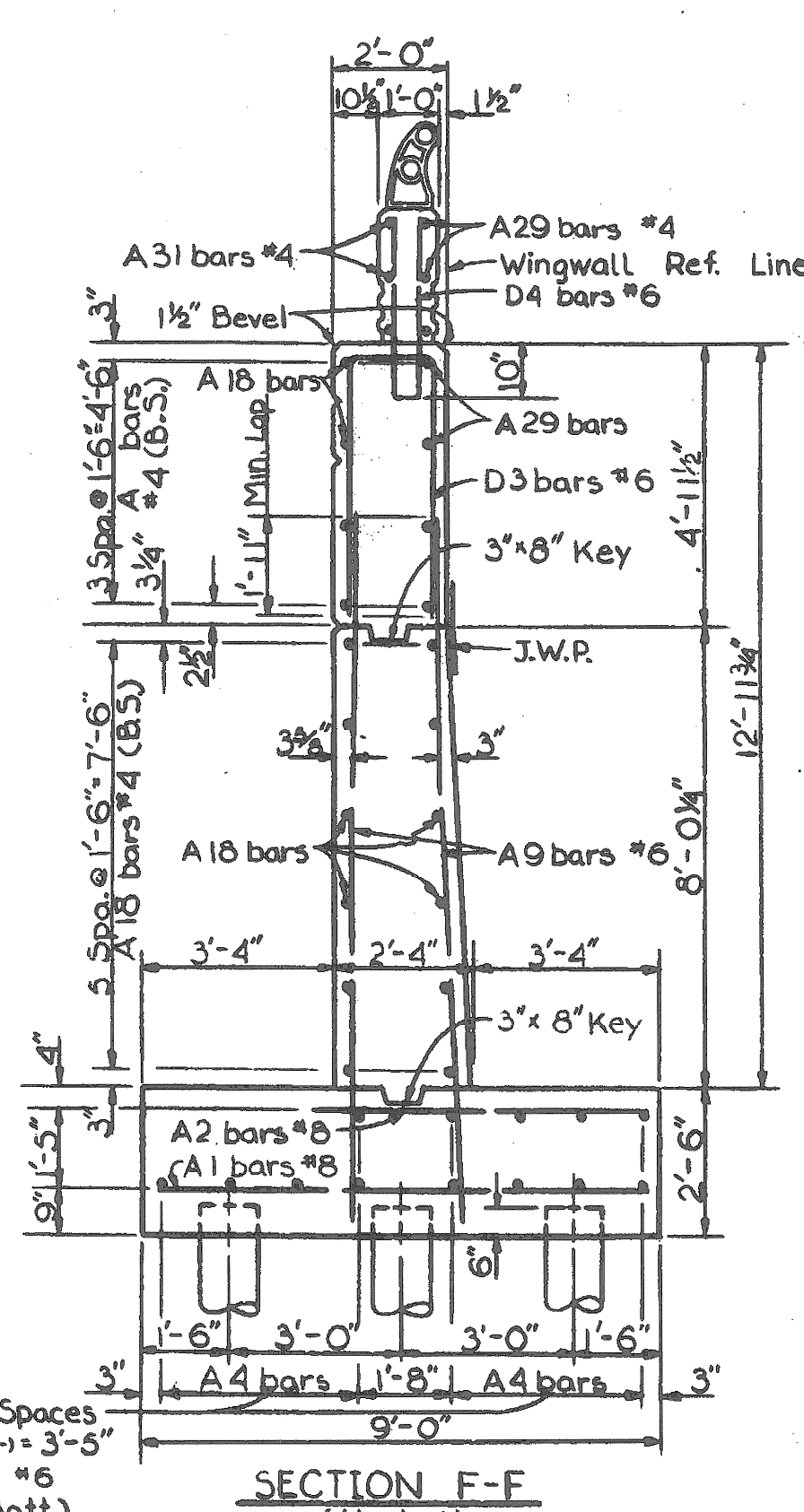
VIEW B-B



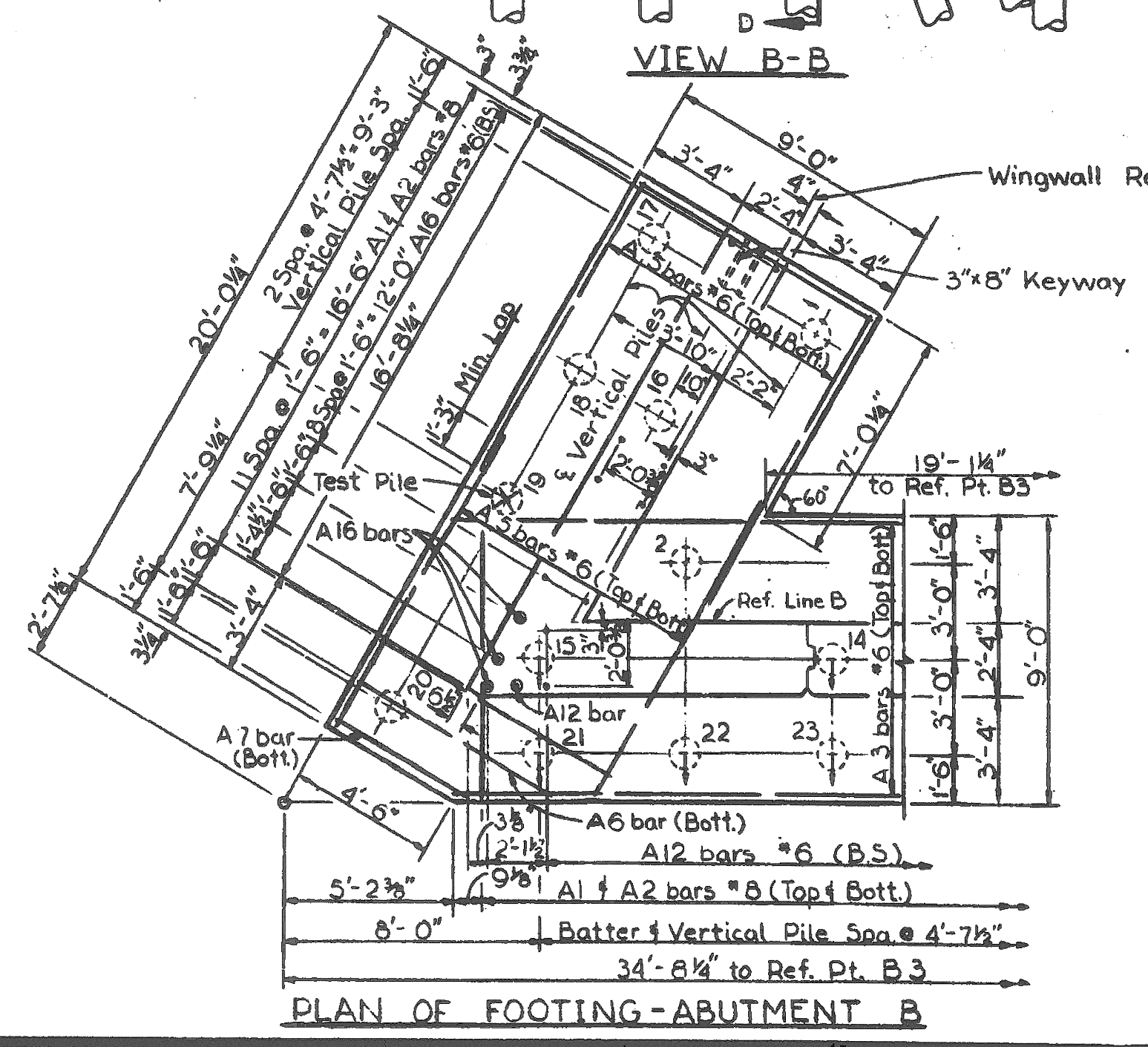
VIEW A-A



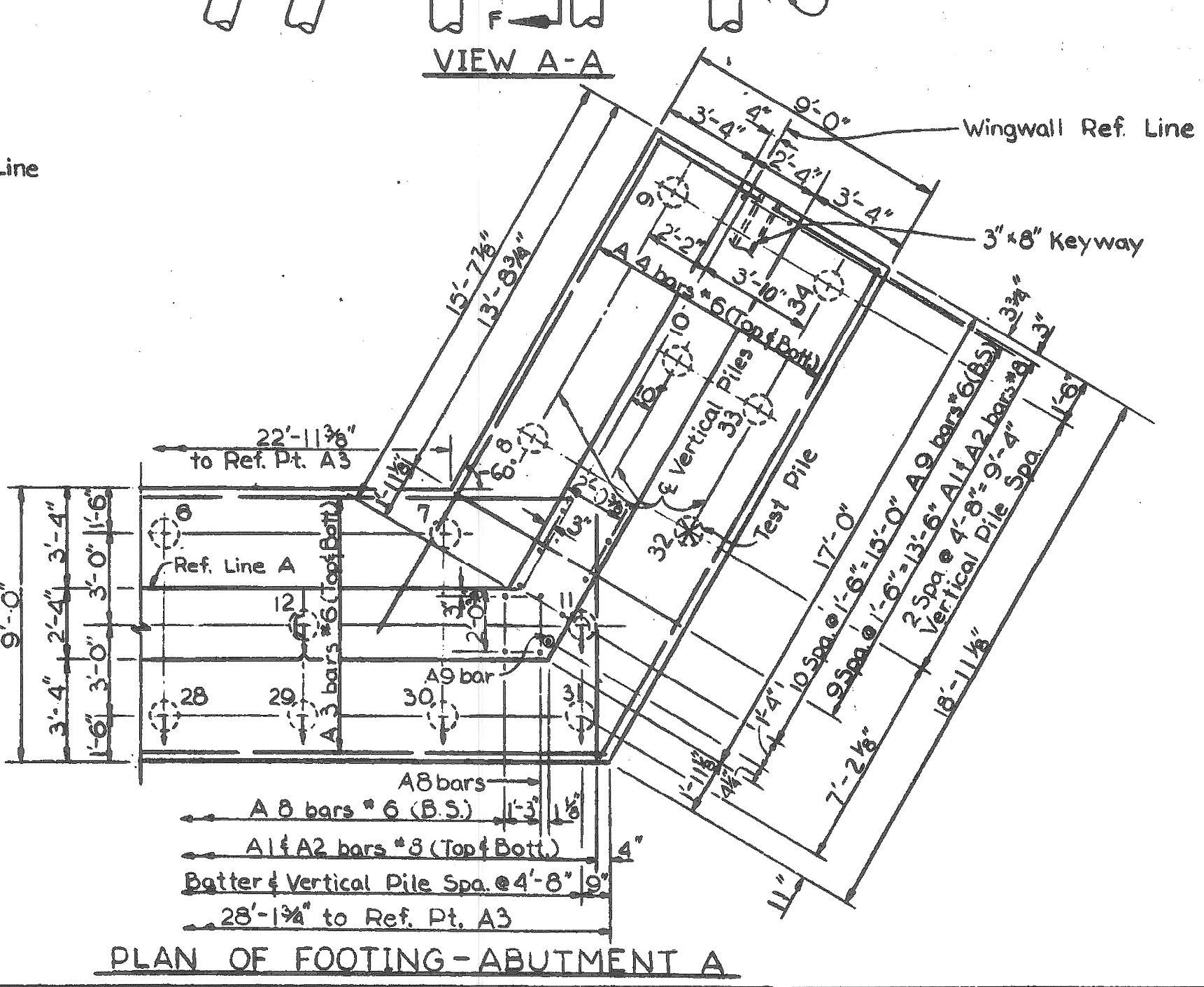
SECTION D-D (Abut. B)



SECTION F-F (Abut. A)



PLAN OF FOOTING-ABUTMENT B



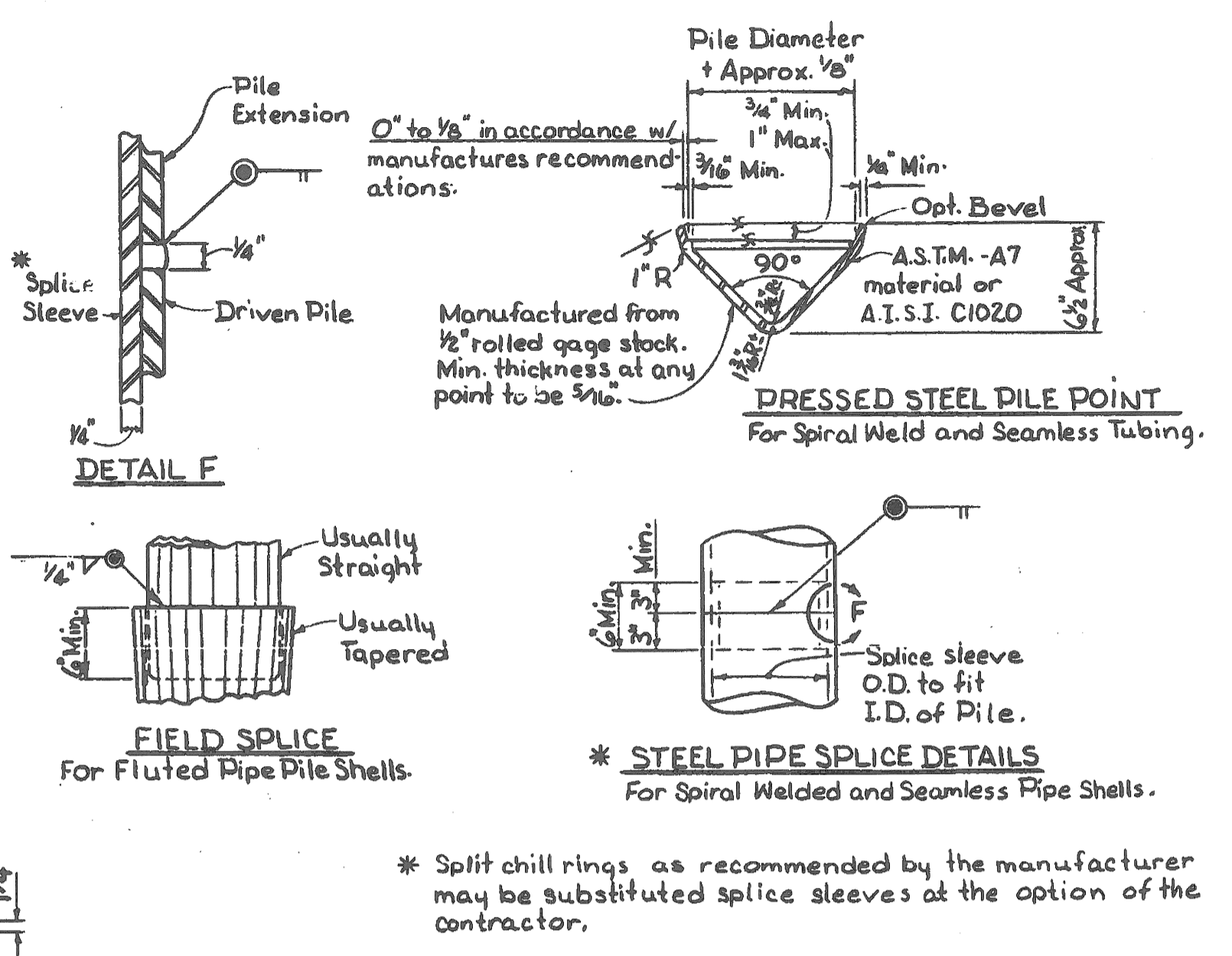
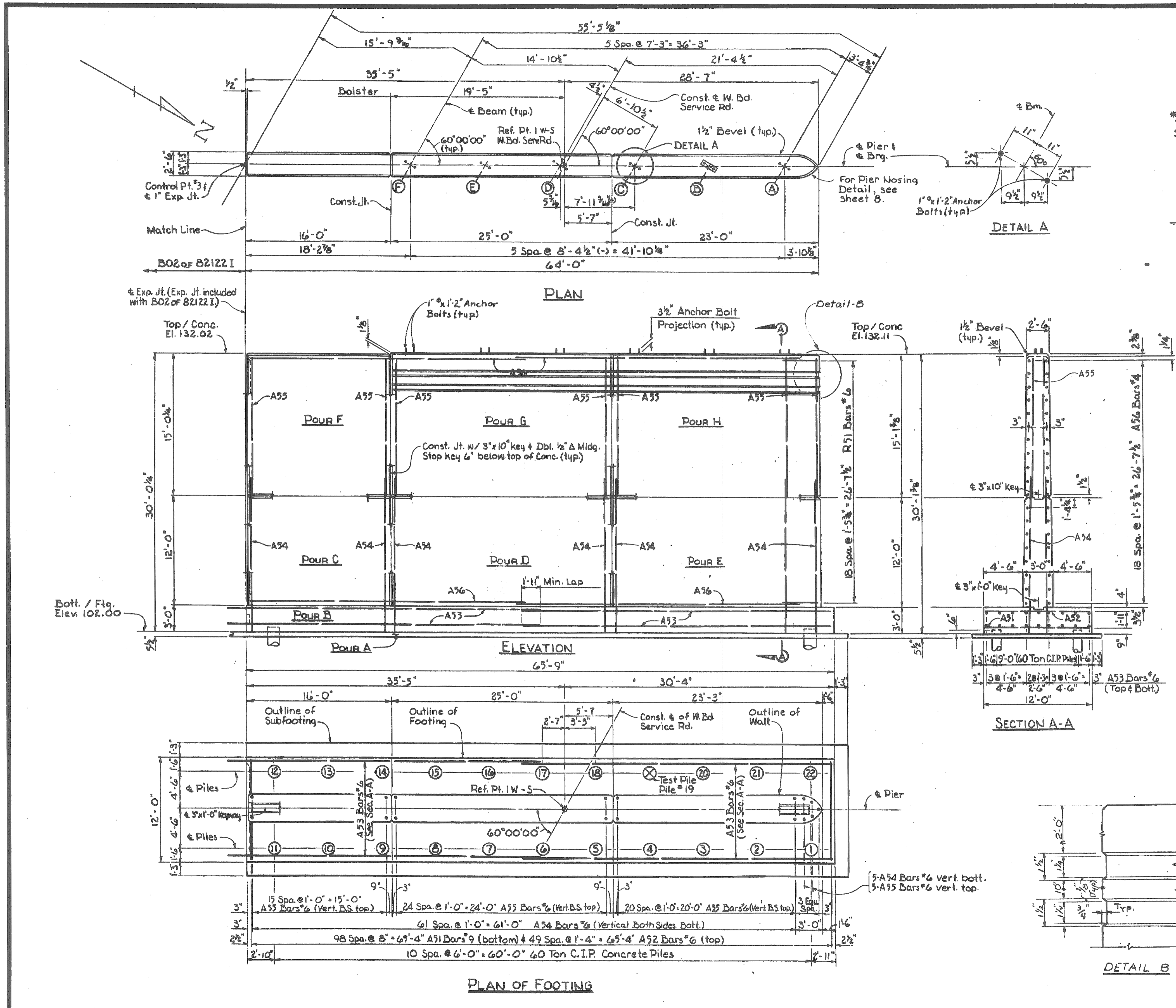
PLAN OF FOOTING-ABUTMENT A

MICHIGAN DEPARTMENT OF STATE HIGHWAYS  
ABUTMENT DETAILS

REVISIONS			
NO.	DESCRIPTION	DATE	BY

DESIGNER	AJLUNJ	5-11-70
DRAWN BY	Dzell	2-16-70
CHECKED BY	LOTT	3-20-70
SHEET 6 OF 16		
<b>B03 of 821221</b>		

Work this sheet with sheets 4 & 5.



**CAST-IN-PLACE CONCRETE PILES**

Location	Type of Pile	No. of Piles	Est. Length (ea)	Total Est. Length (ea)	Pile Pts. (ea)	Test Piles (ea)	Splices (ea)
Pier 1	Vert.	21	18'	378'	21	1	9
	Test	1	28'	28'	1	1	9
Pier 2	Vert.	21	18'	378'	21	1	9
	Test	1	28'	28'	1	1	9
<b>Total</b>				<b>812'</b>	<b>44</b>	<b>2</b>	<b>18</b>

**MISCELLANEOUS QUANTITIES**

Item	Unit	Pier 1	Pier 2	Total
Unclassified Excavation	Cu. Yds.	242	242	484

**Pile Notes**

All piles shall be driven to a minimum bearing capacity of 60 tons.

Pile shells for Cast-in-Place Concrete Piles driven without a removable core shall be a minimum of #3 U.S. Standard Gauge (0.230" nominal thickness), 12" O.D., and may be steel pipe of seamless or spiral welded type or fluted pipe as manufactured by the Union Manufacturing Co. or approved equal.

Pile points shall be press of the slip-on type in accordance with the detail shown on the plans. Points shall be attached to pile shells with  $\frac{3}{8}$ " continuous weld.

Work this sheet with sheet #8.

**MICHIGAN DEPARTMENT OF STATE HIGHWAYS**

**PIER 1 DETAILS**

REVISIONS

NO.	DESCRIPTION	DATE	BY

DRAWN BY: AJLUNI 5-11-70  
 CHECKED BY: GILLER 9-23-69  
 SHEET: 7 of 78  
**B03 of 82122I**