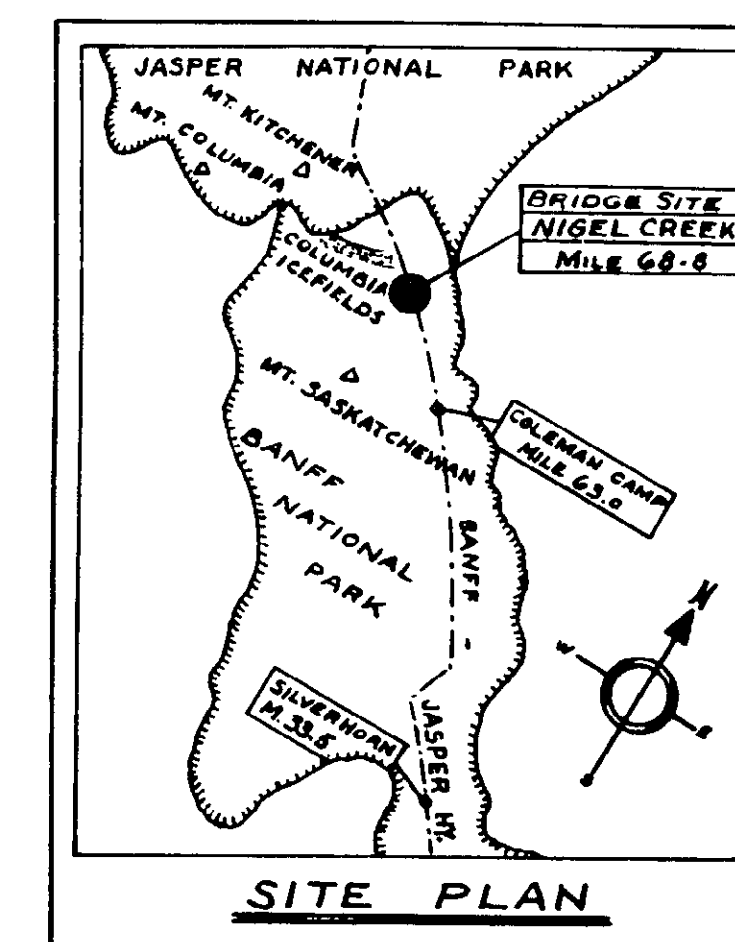


SECTION B-B
Scale 1/8" = 1'-0"

GENERAL NOTES

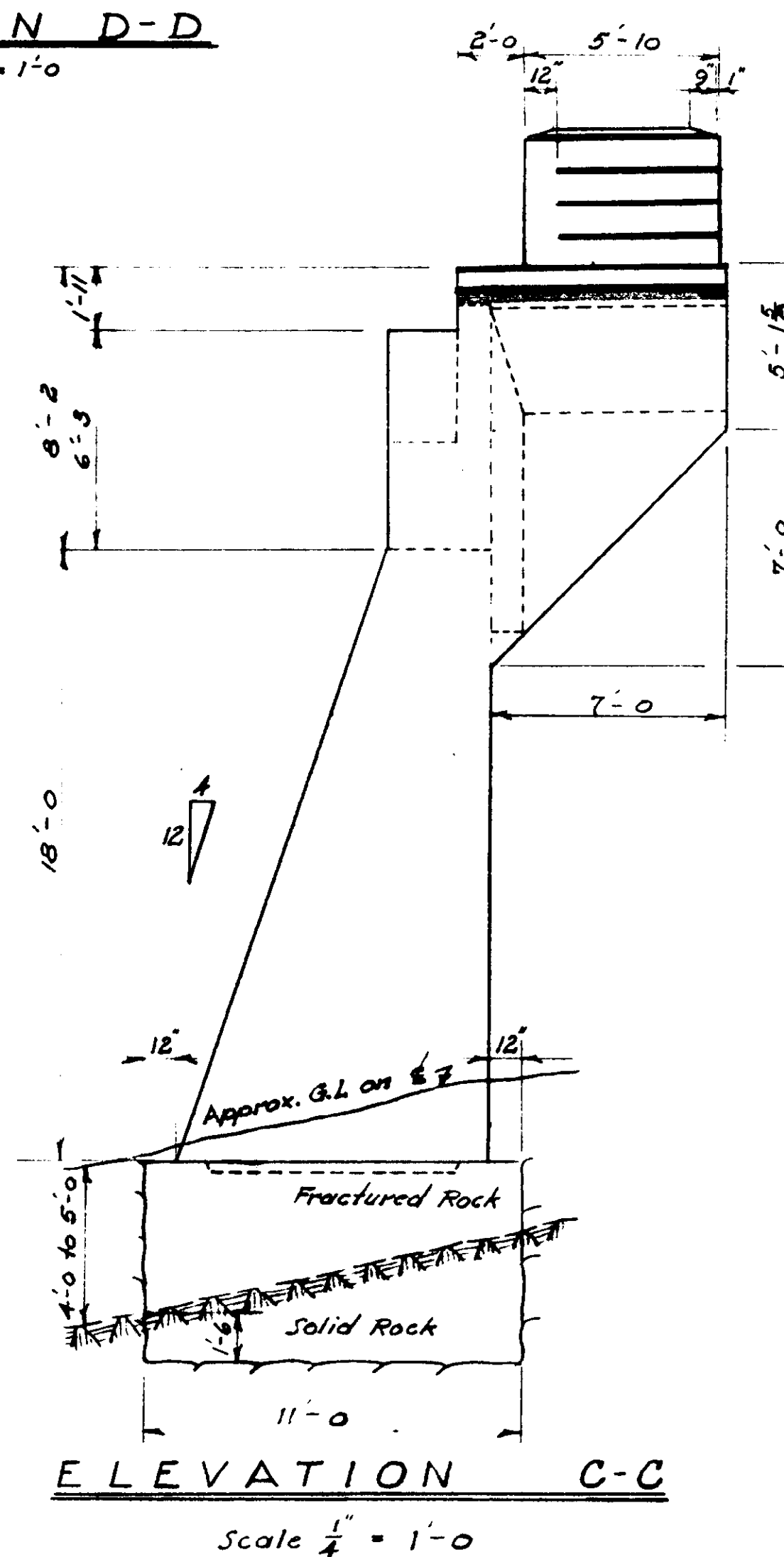
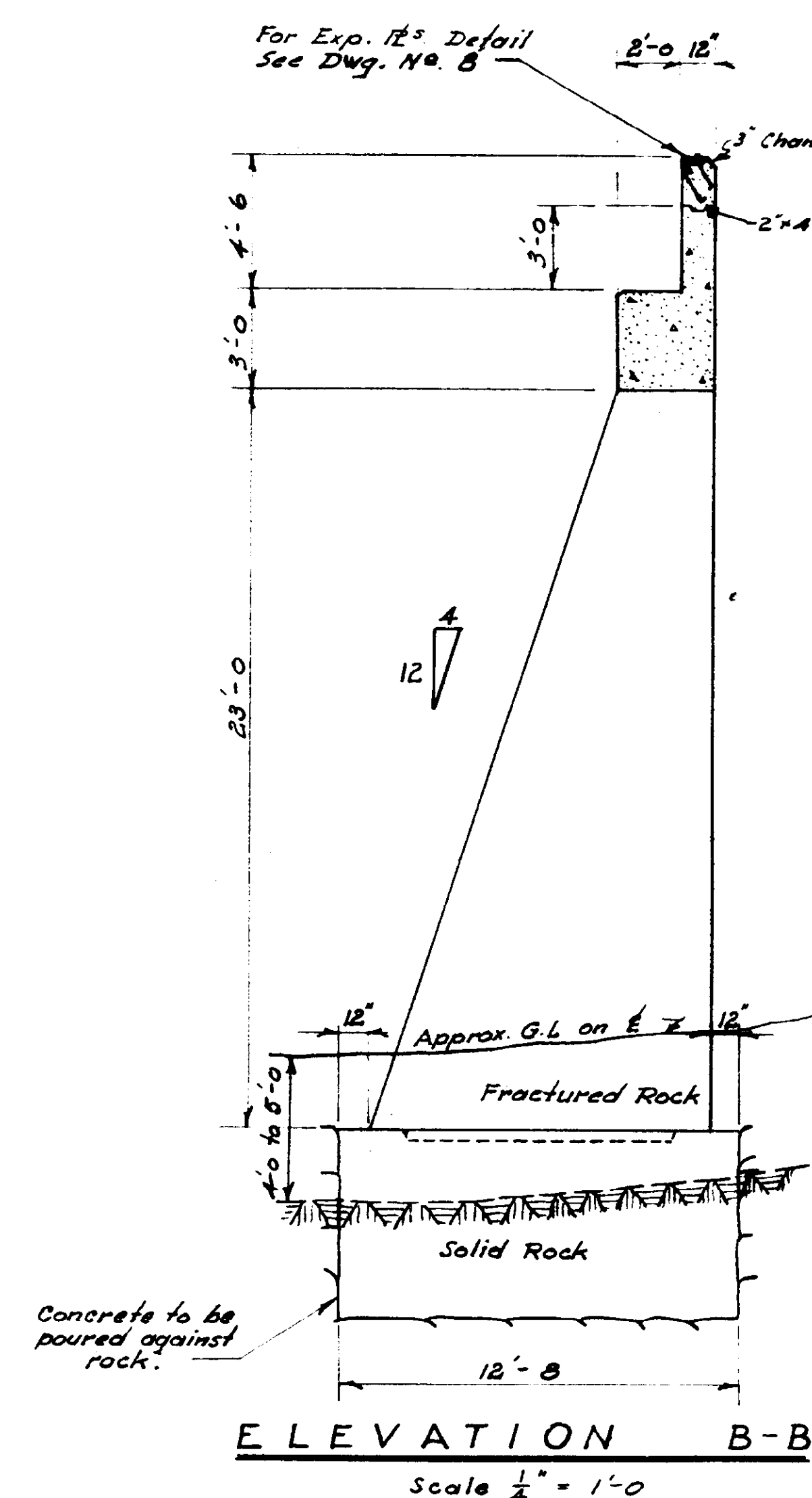
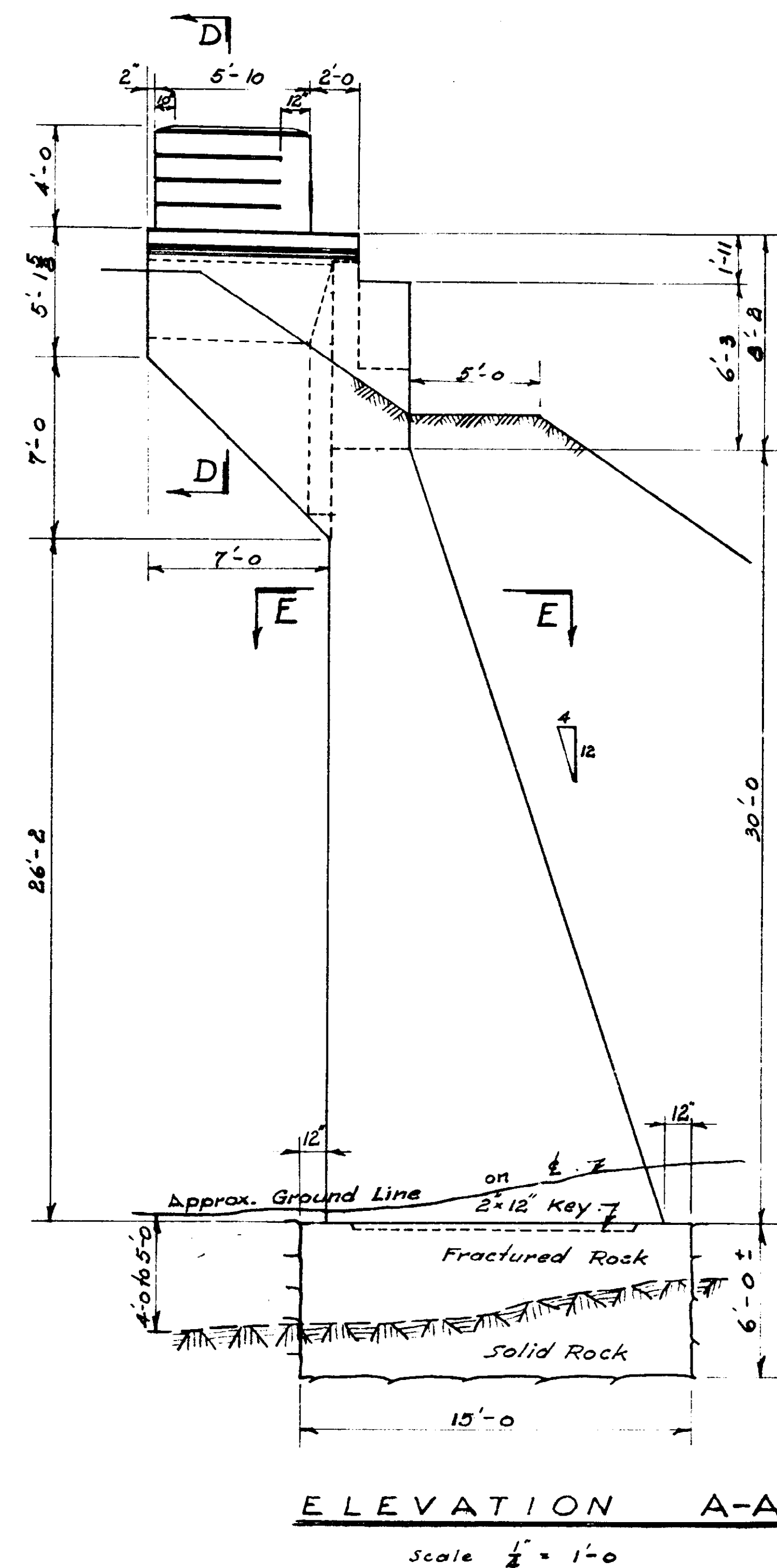
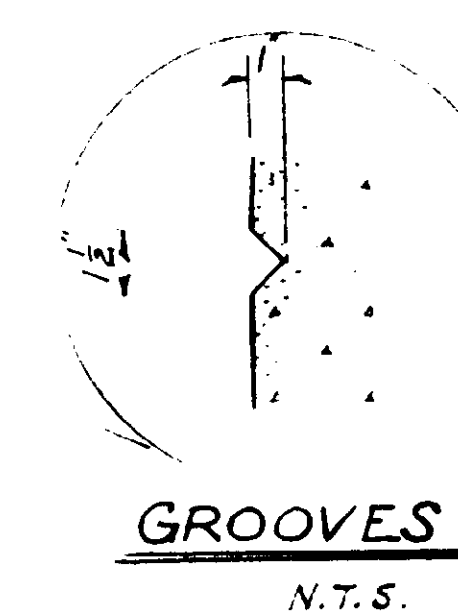
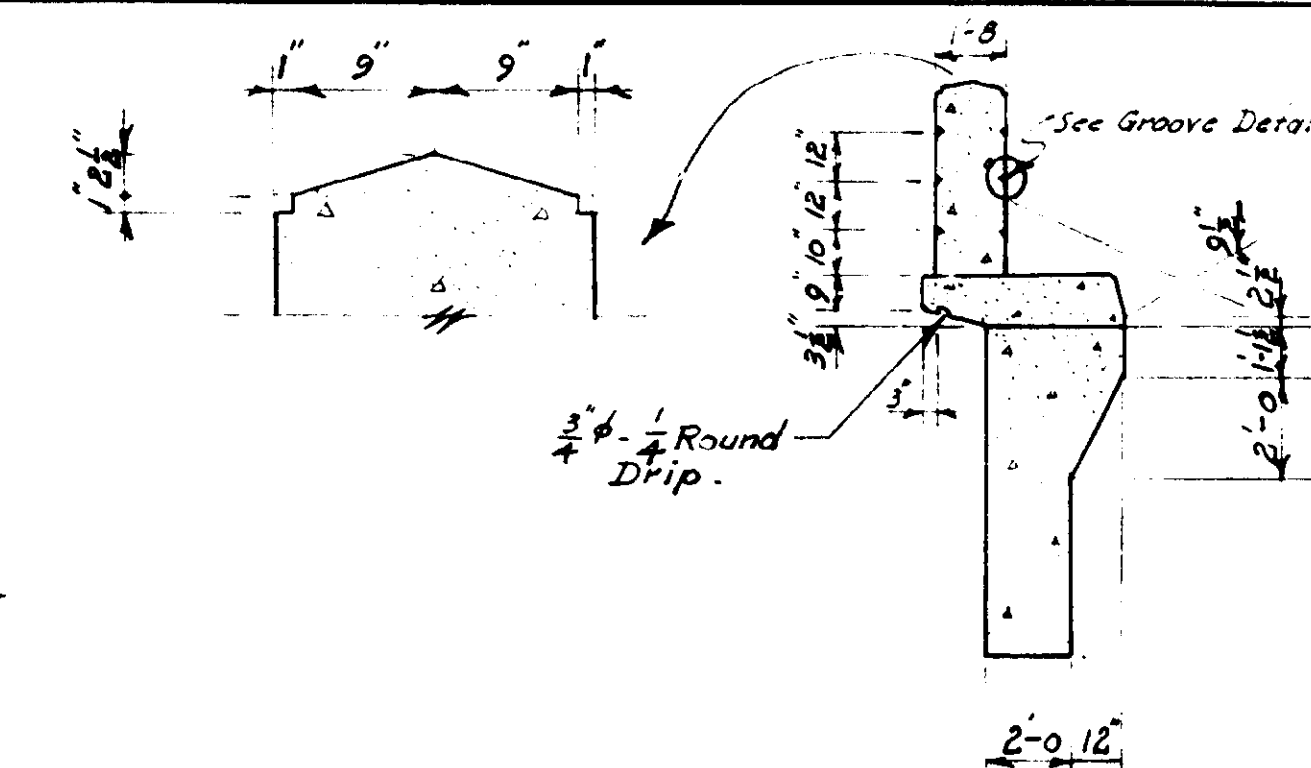
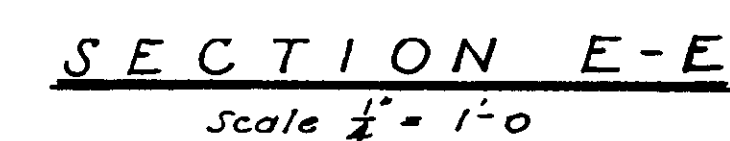
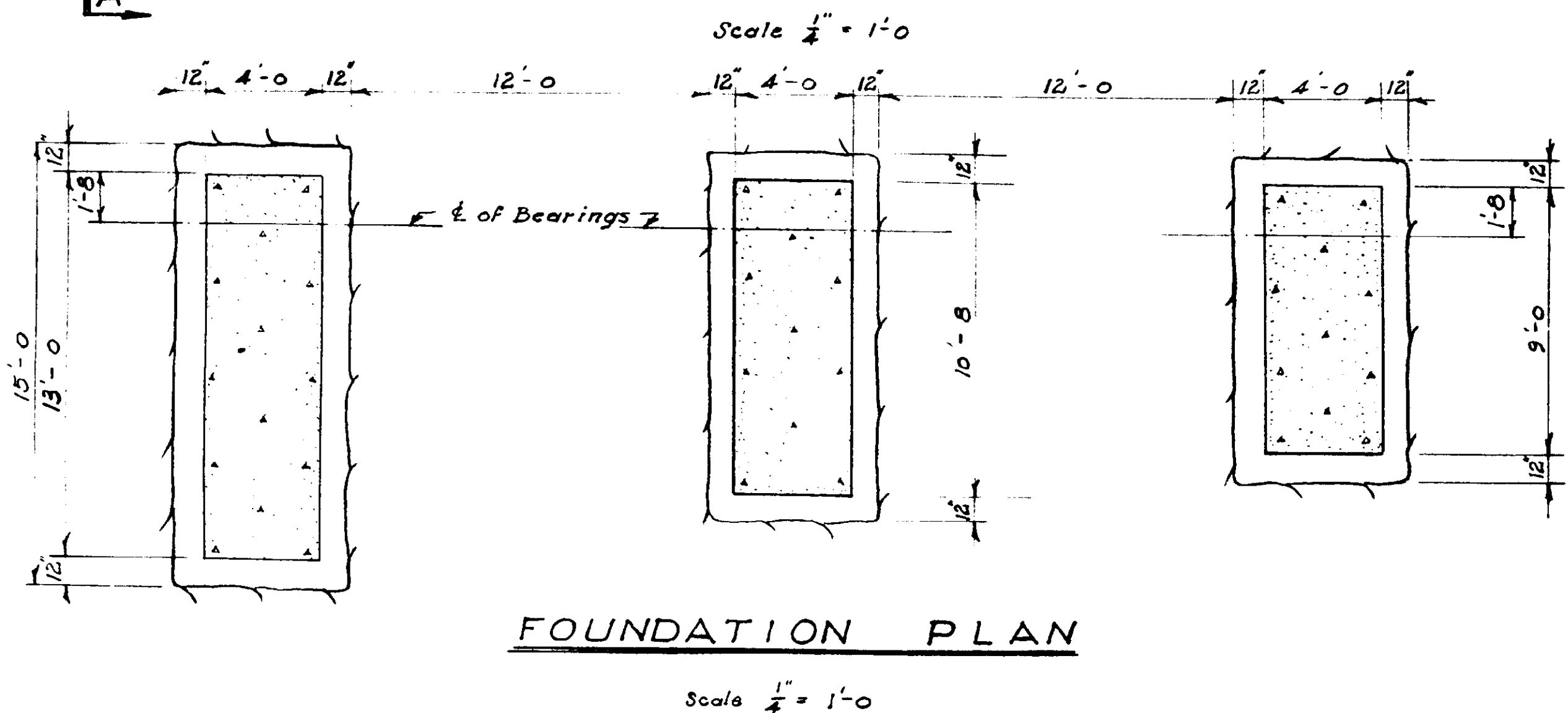
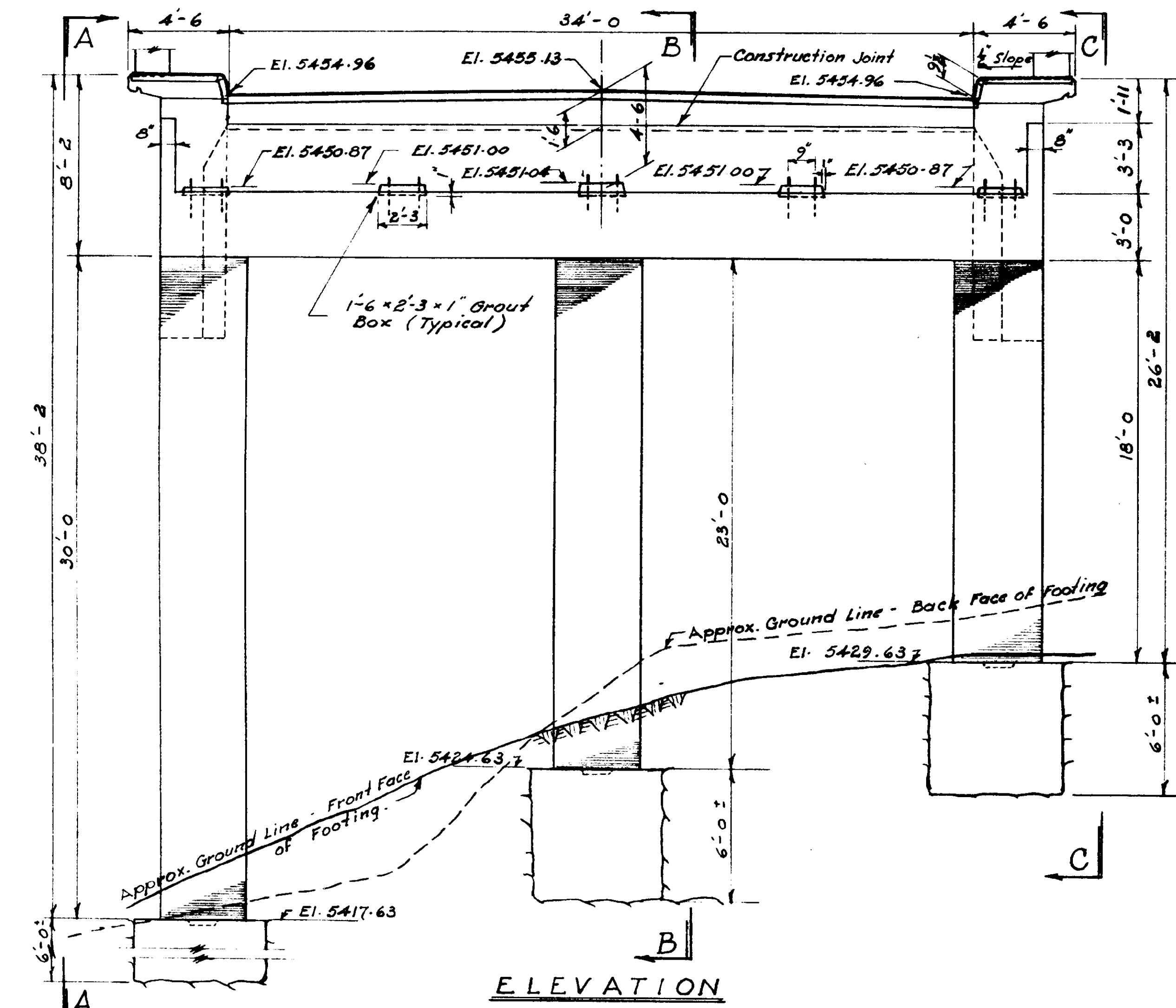
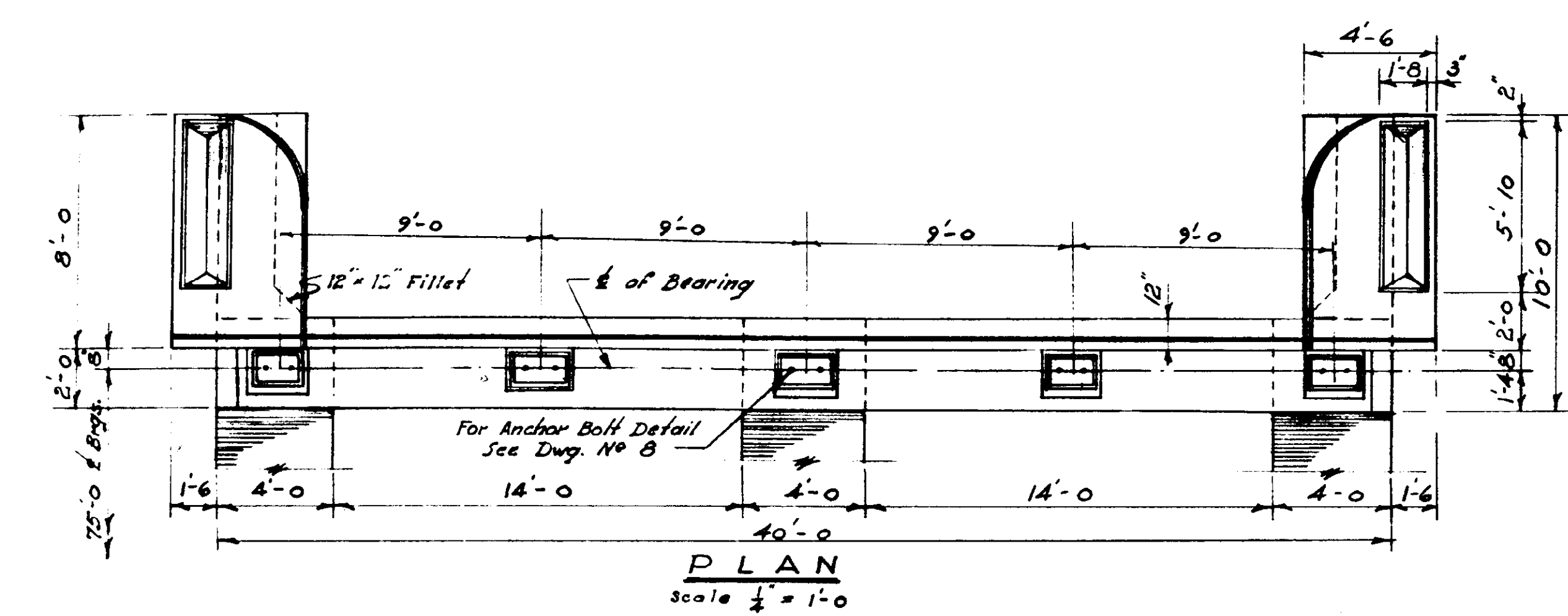
- ① Loading H20-S16
- ② All concrete, except as noted, shall have a minimum compressive strength of 3000 P.S.I. at 28 days.
- ③ Reinforcing steel to be hard grade or intermediate grade rail or billet steel, deformed bars.
- ④ Structural steel shall conform to C.S.A. G40.4. The design fabrication and erection of structural steel shall be in accordance with the C.S.A. specifications for Highway Bridges 56.
- ⑤ All exposed edges to be chamfered 1" unless otherwise noted.
- ⑥ No construction work shall be commenced until permanent bench marks have been established and checked by the Engineer.
- ⑦ No field welding except by permission of the Engineer in writing.
- ⑧ Concrete cover of reinforcing steel shall be 2" except as noted.
- ⑨ No construction joints allowed except those shown on drawings unless approved by the Engineer in writing. All joints to have approved keys.
- ⑩ All bridge approach fill must be well compacted as per specifications for Embankment on Bridge Approaches.
- ⑪ See Highway Division drawings for details of ditch drainage.
- ⑫ No shop welding or tack welds except as shown on drawings.



LIST OF DRAWINGS

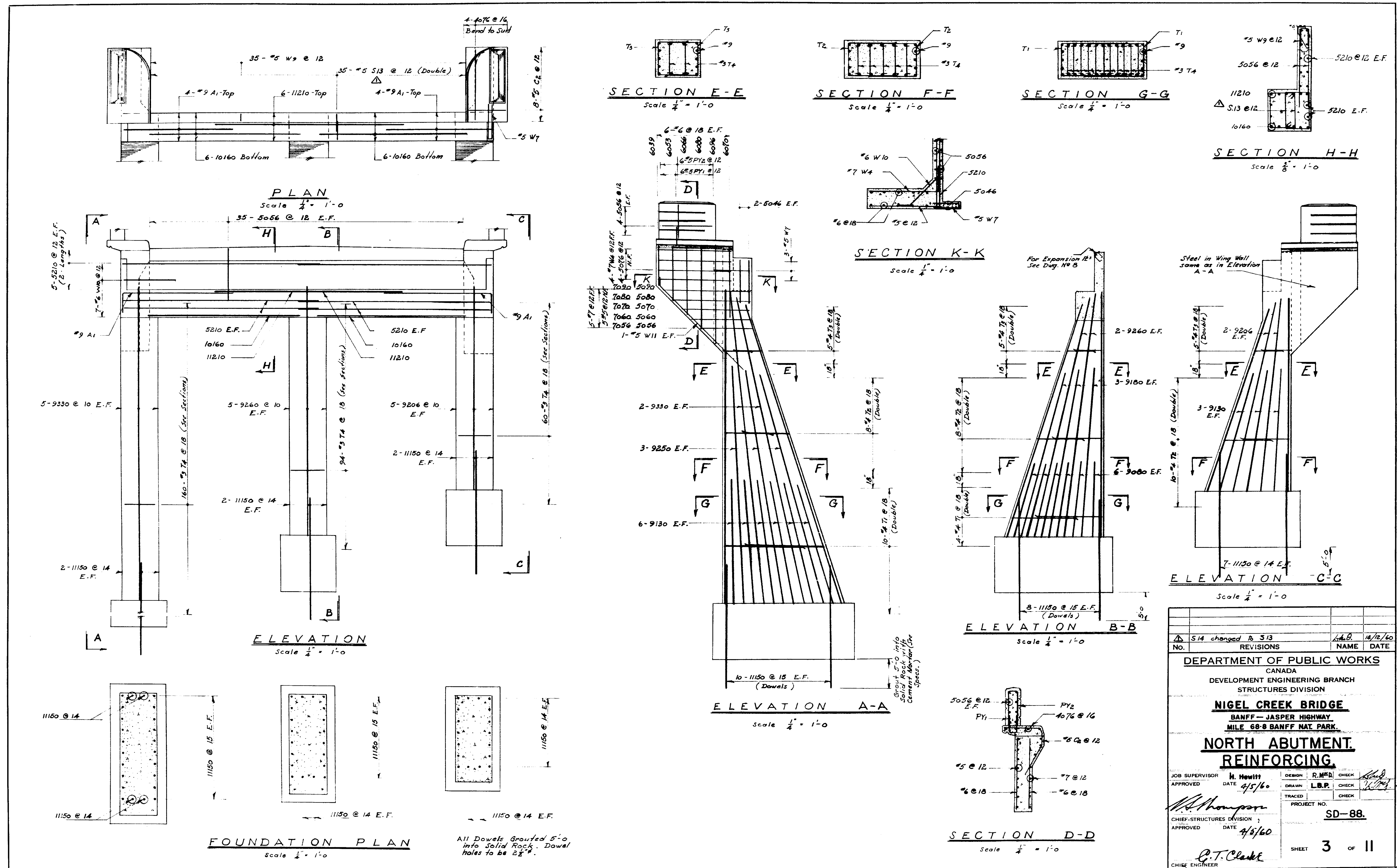
- ① GENERAL LAYOUT
- ② NORTH ABUTMENT
- ③ NORTH ABUTMENT REINFORCING
- ④ SOUTH ABUTMENT
- ⑤ SOUTH ABUTMENT REINFORCING
- ⑥ SKEWBACKS
- ⑦ PIERS & BORE HOLES
- ⑧ BEARINGS & REINFORCING
- ⑨ STRUCTURAL STEEL
- ⑩ DECK
- ⑪ STANDARD HANDRAIL

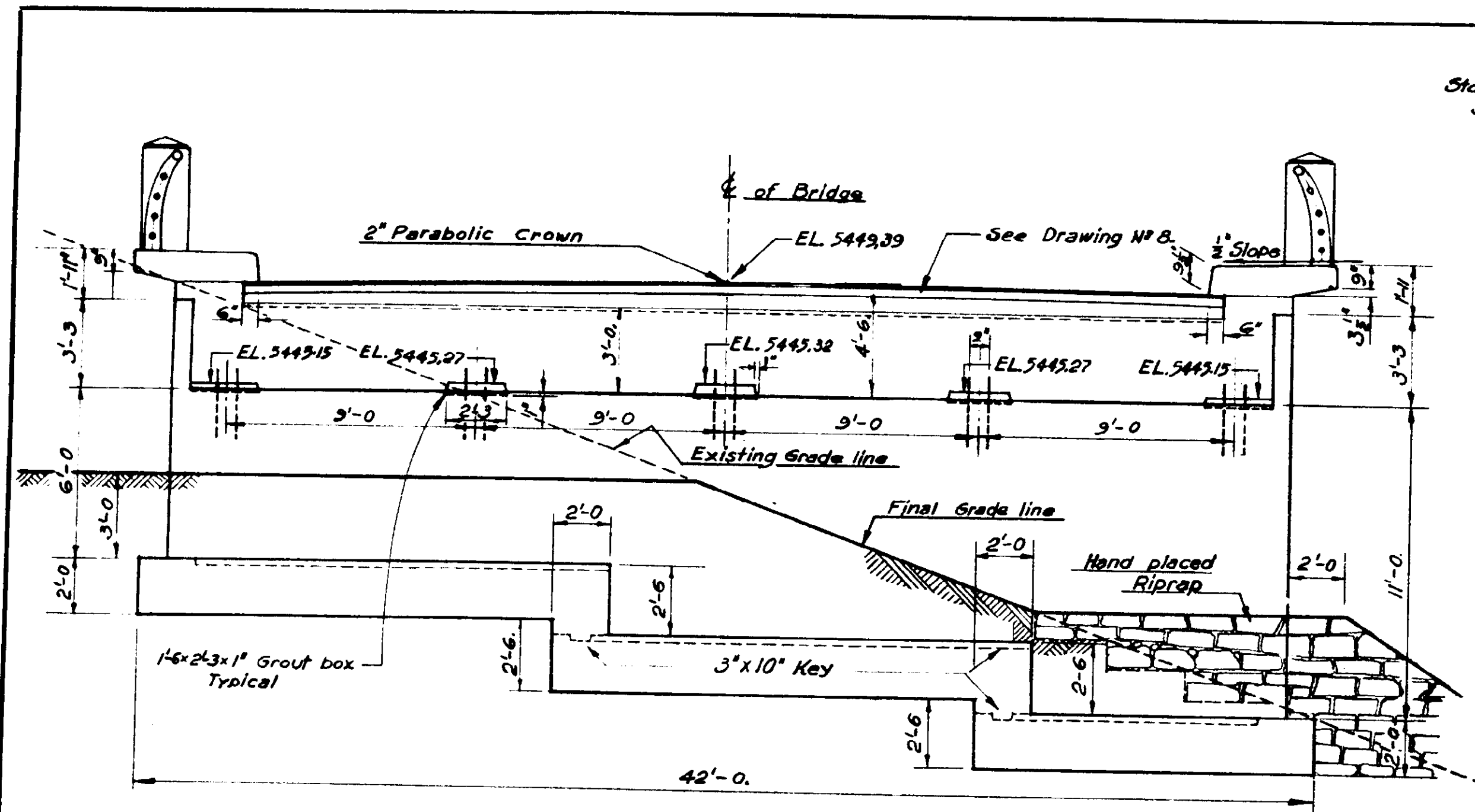
No.	REVISIONS	NAME	DATE
DEPARTMENT OF PUBLIC WORKS			
CANADA			
DEVELOPMENT ENGINEERING BRANCH			
STRUCTURES DIVISION			
NIGEL CREEK BRIDGE			
BANFF - JASPER HIGHWAY			
MILE 68-8 BANFF NAT. PARK			
GENERAL LAYOUT			
JOB SUPERVISOR	H. HEWITT	DESIGN	BLANK/MS
APPROVED	DATE 4/5/60	DRAWN	D.A.S.
CHIEF-STRUCTURES DIVISION	DATE 4/12/60	TRACED	D.A.S.
CHIEF ENGINEER	DATE 4/12/60	PROJECT NO.	SD-88
SHEET 1		OF 11	



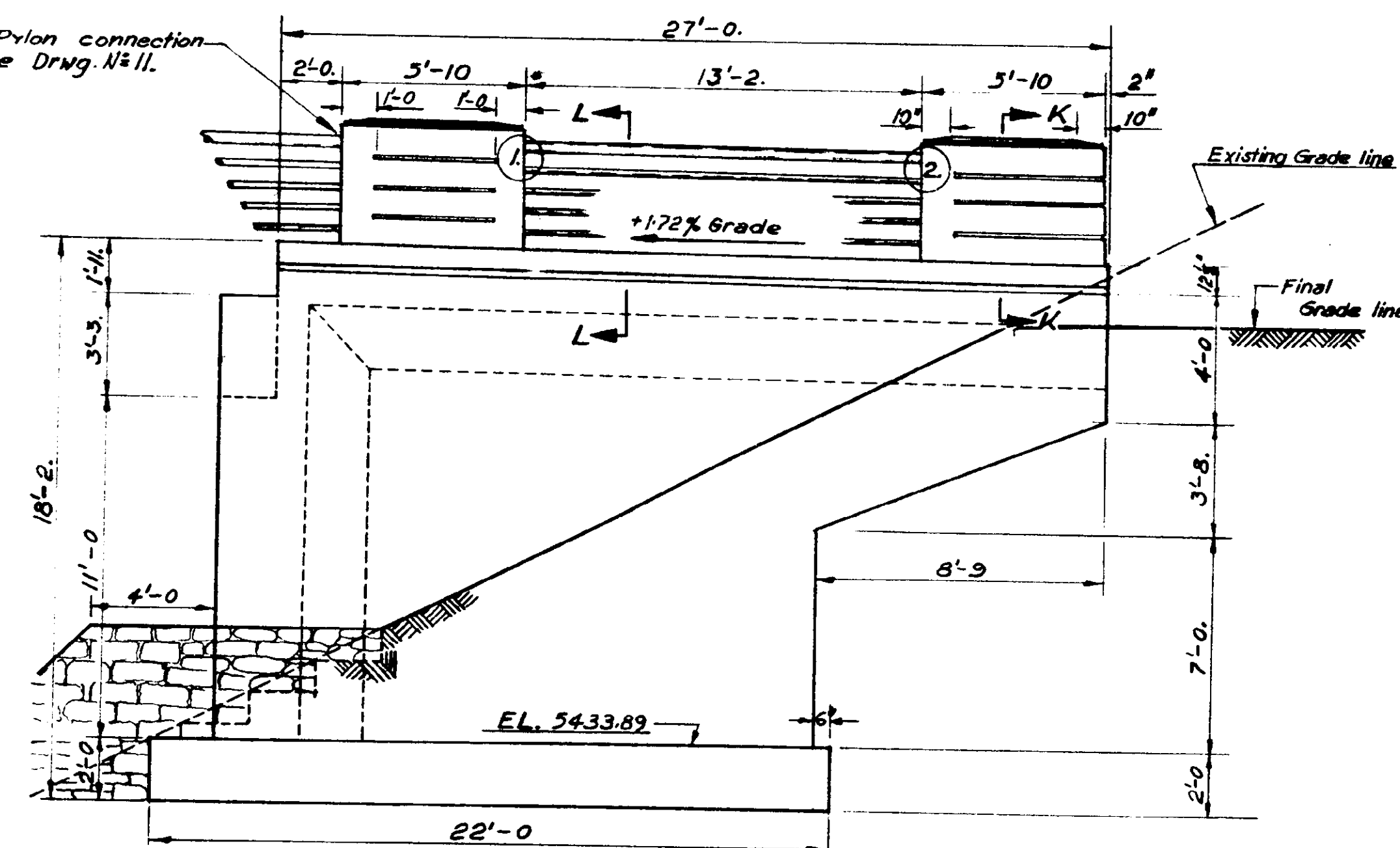
NOTE:-
Footings to be 1'6" into solid rock at lowest level of solid rock surface.

No.		REVISIONS		NAME		DATE	
<u>DEPARTMENT OF PUBLIC WORKS</u>							
CANADA							
DEVELOPMENT ENGINEERING BRANCH							
STRUCTURES DIVISION							
<u>NIGEL CREEK BRIDGE</u>							
<u>BANFF - JASPER HIGHWAY</u>							
<u>MILE 68-8 BANFF NAT PARK</u>							
<u>NORTH ABUTMENT</u>							
JOB SUPERVISOR	H. Hewitt.			DESIGN	R.M.D.	CHECK	<i>[Signature]</i>
APPROVED	DATE	4/5/60.		DRAWN	L.B.P.	CHECK	<i>[Signature]</i> 4/5/60
<i>[Signature]</i>				TRACED		CHECK	
CHIEF-STRUCTURES DIVISION				PROJECT NO. <u>SD-88.</u>			
APPROVED	DATE	4/5/60.		SHEET 2 OF 11			
<i>[Signature]</i>							

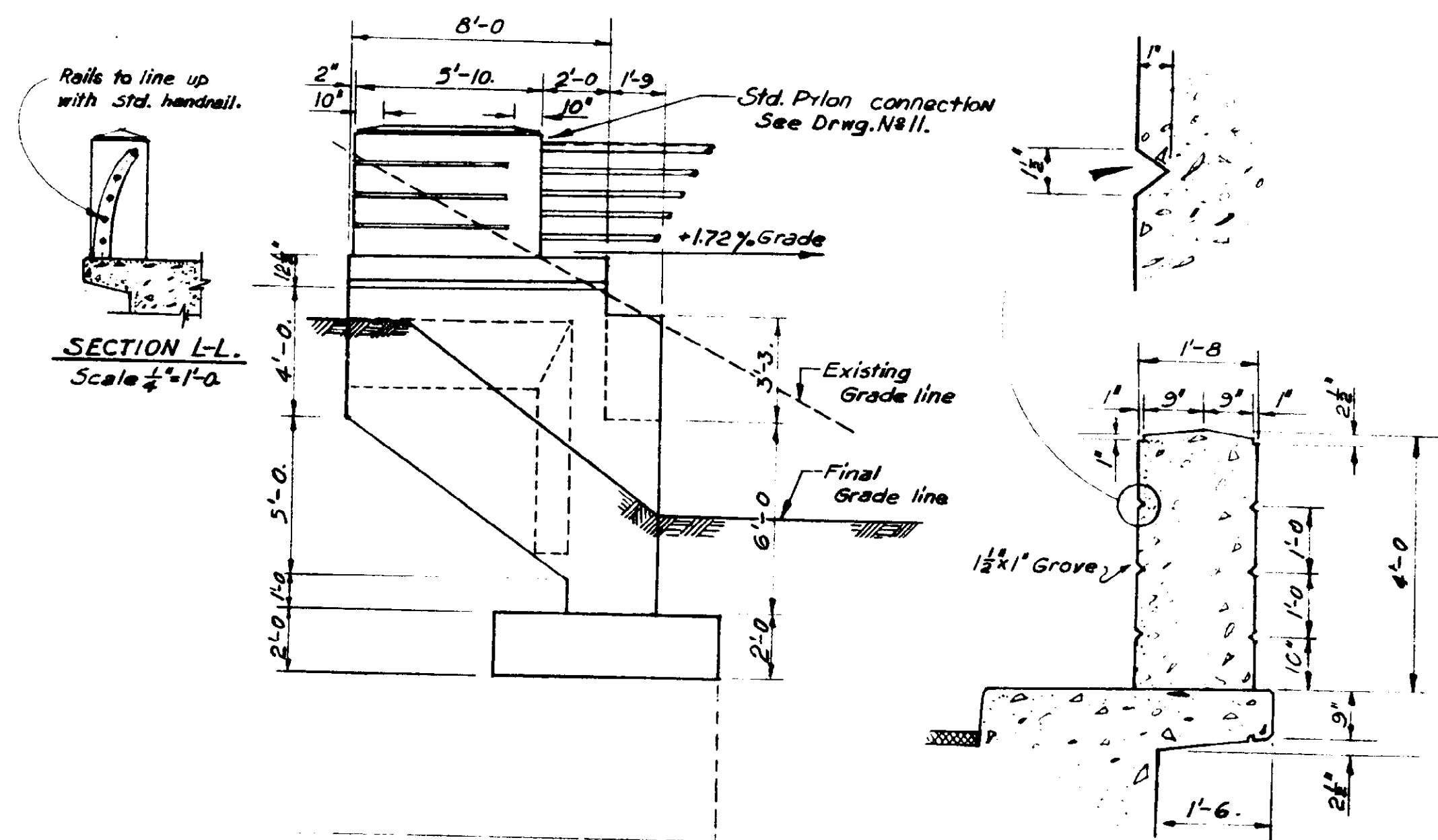




ELEVATION F-F
Scale $\frac{1}{4}$ " = 1'-0"

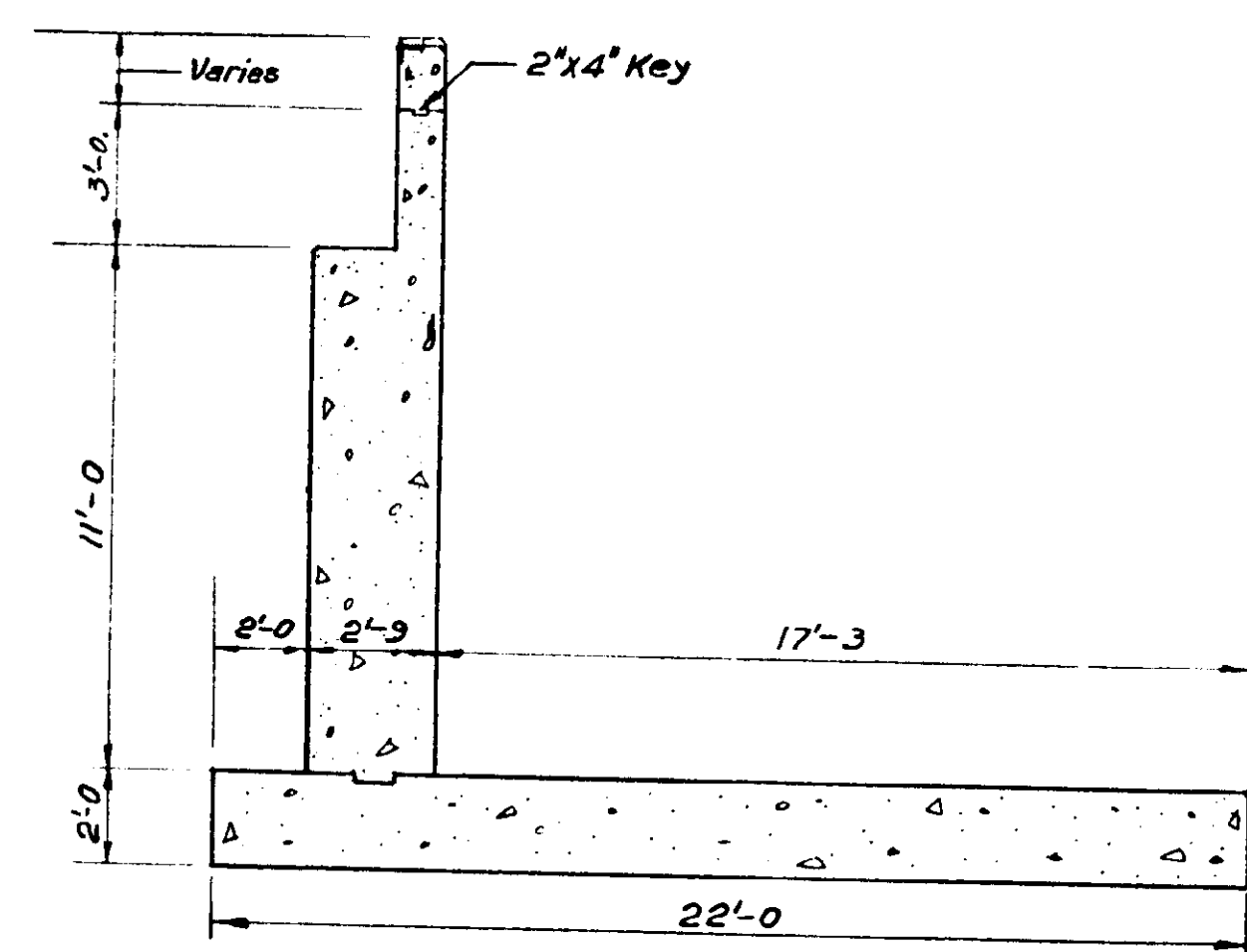


ELEVATION G-G
Scale $\frac{1}{4}$ " = 1'-0"

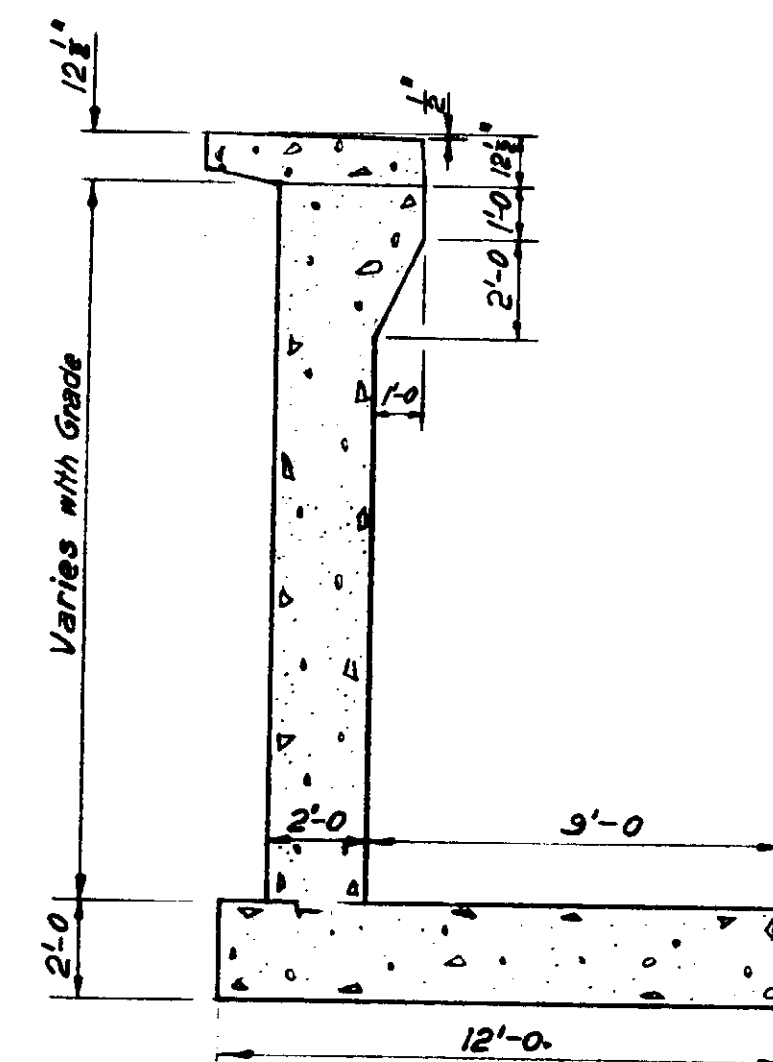


ELEVATION H-H
Scale $\frac{1}{4}$ " = 1'-0"

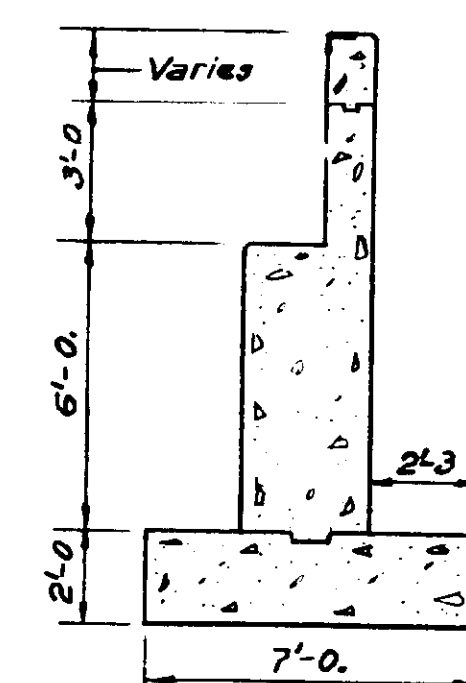
SECTION K-K
Scale $\frac{1}{4}$ " = 1'-0"



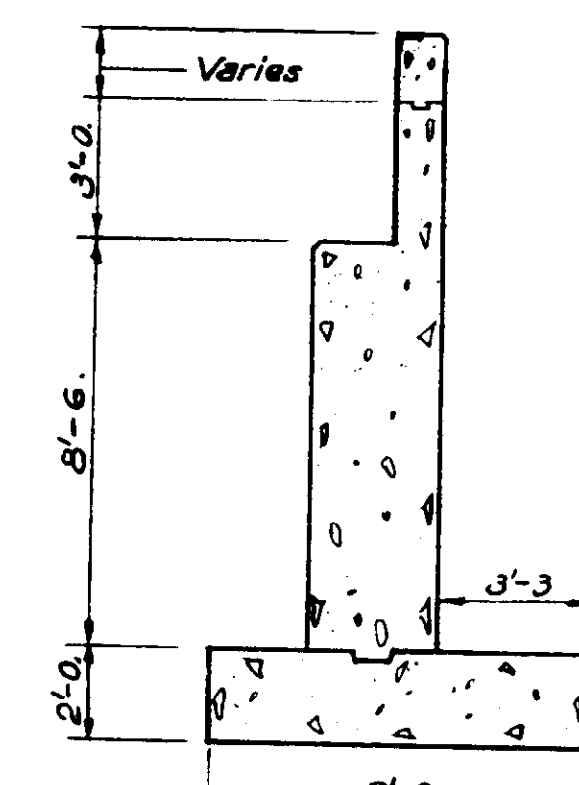
SECTION A-A
Scale $\frac{1}{4}$ " = 1'-0"



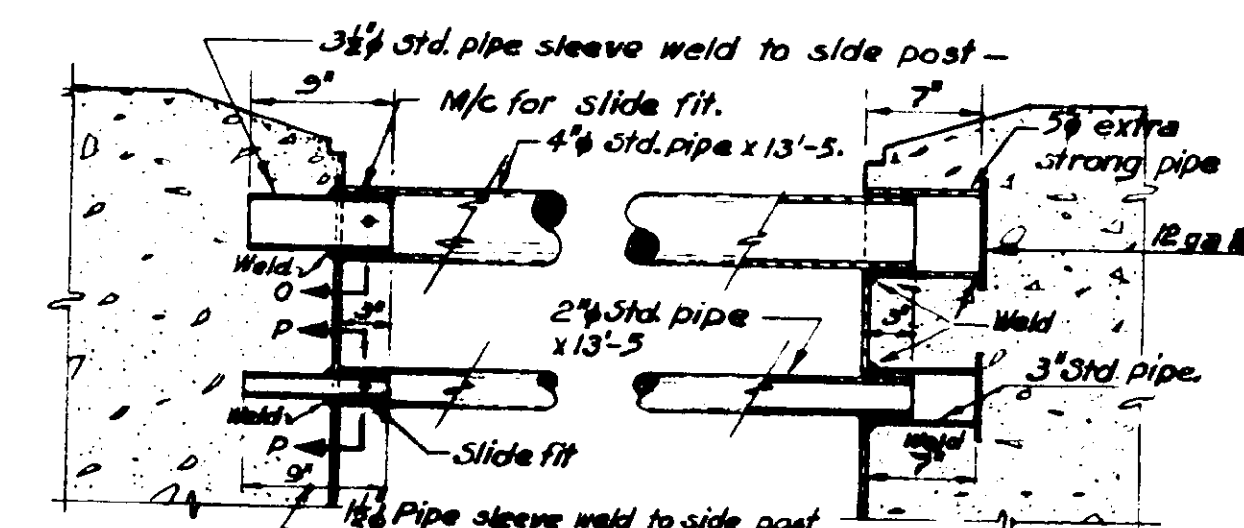
SECTION B-B
Scale $\frac{1}{4}$ " = 1'-0"



SECTION C-C
Scale $\frac{1}{4}$ " = 1'-0"

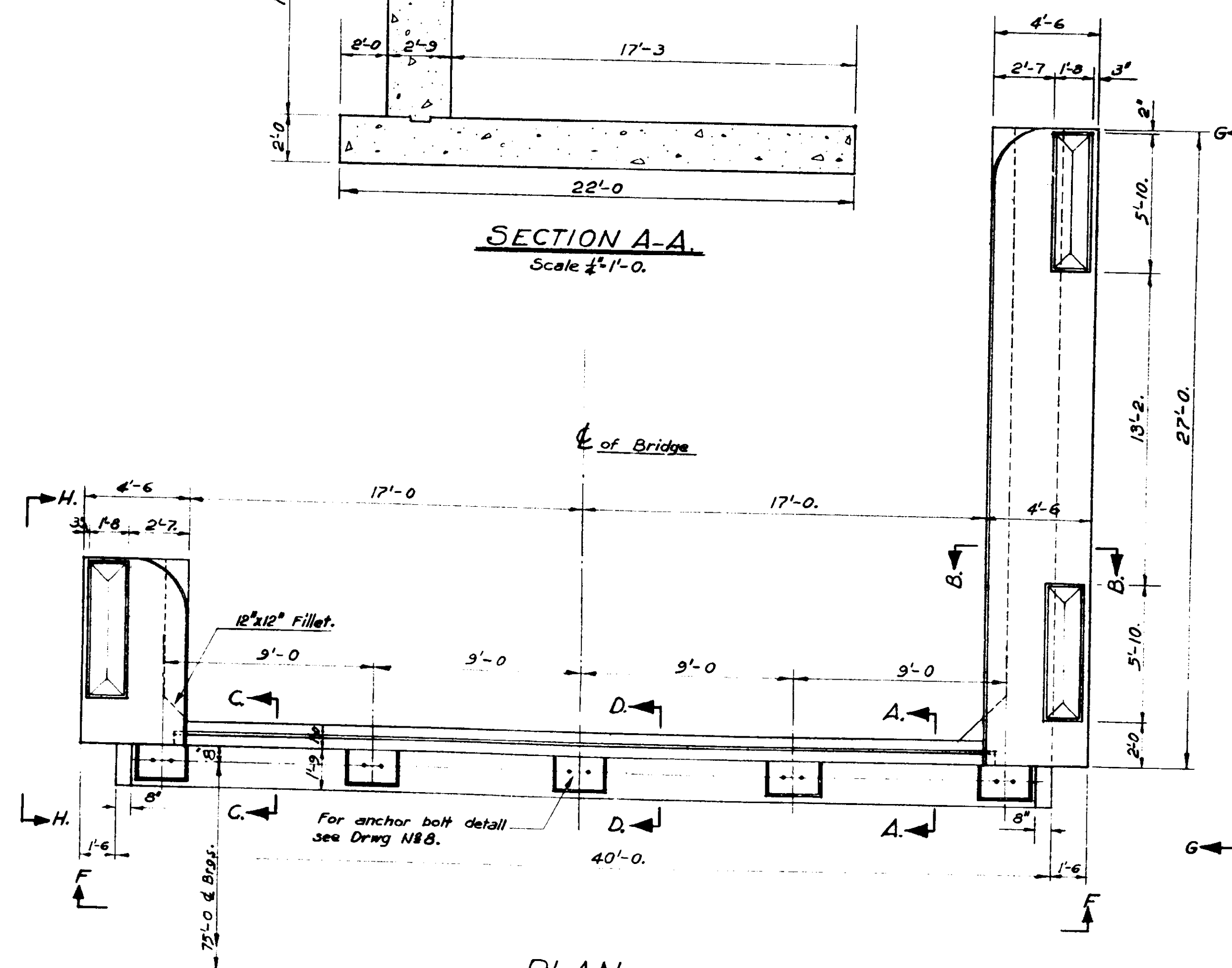


SECTION D-D
Scale $\frac{1}{4}$ " = 1'-0"

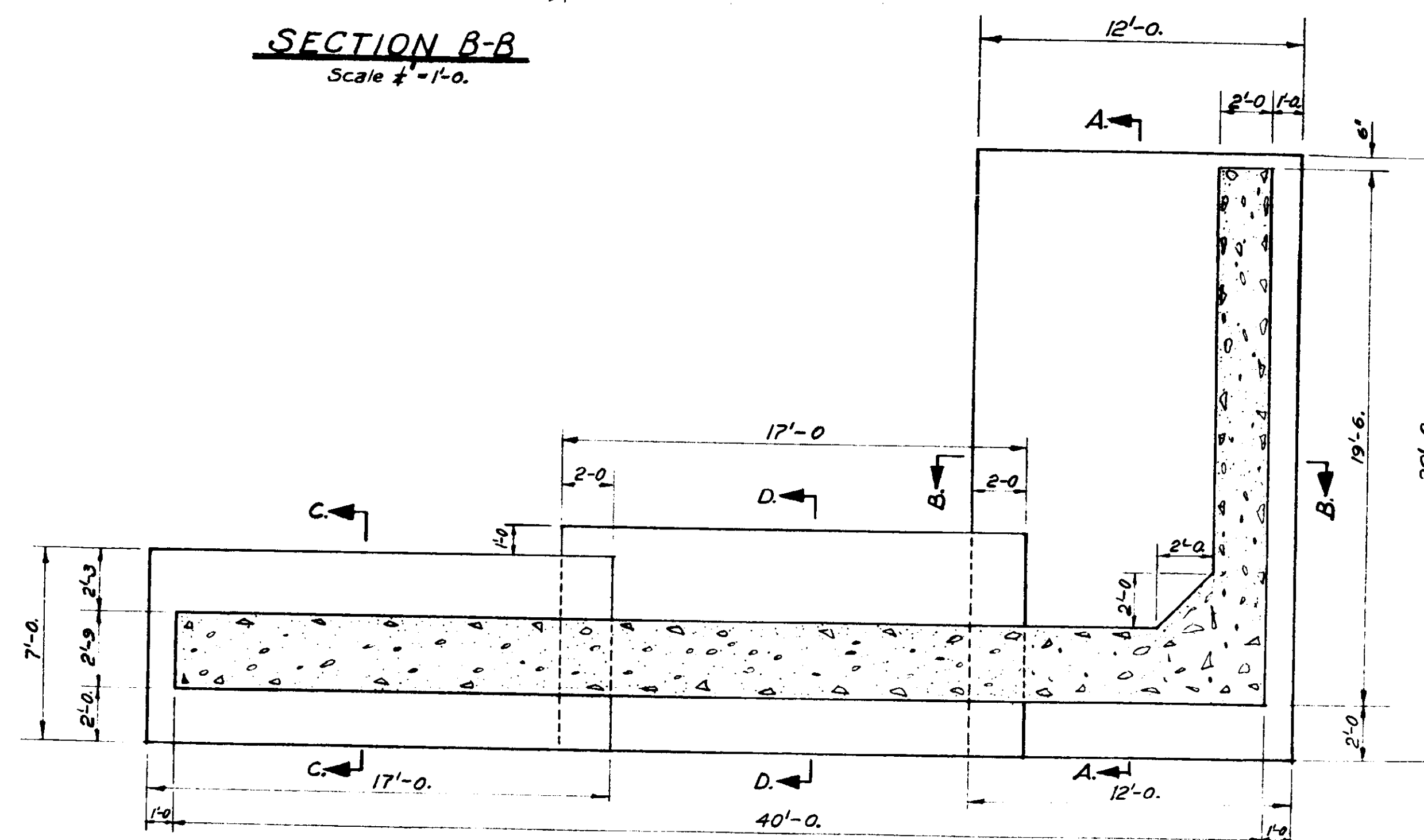


SECTIONS
Scale $\frac{1}{4}$ " = 1'-0"

ADDITIONAL DETAIL OF RAIL CONNECTIONS AT SOUTH ABUTMENT — LONG WING.

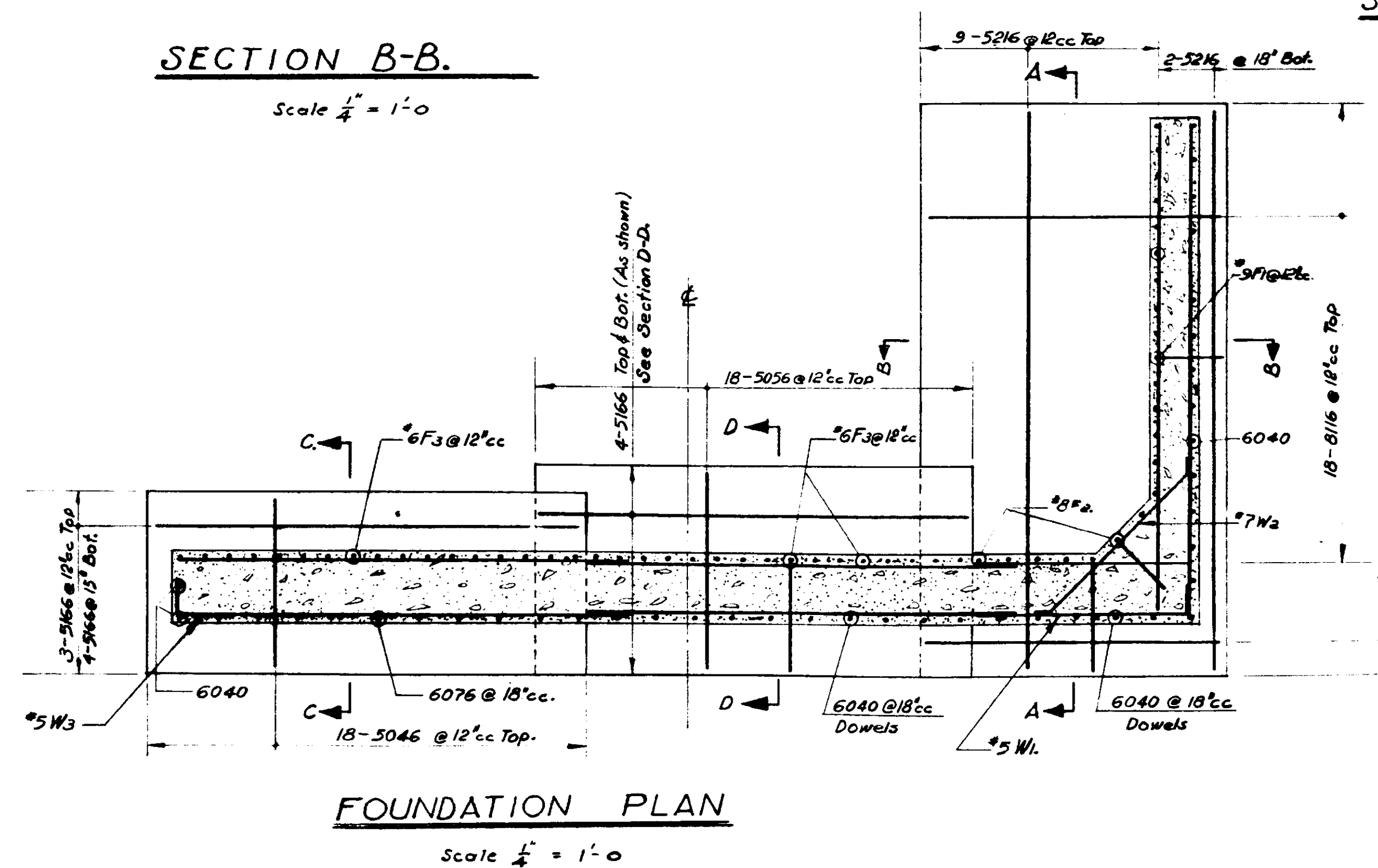
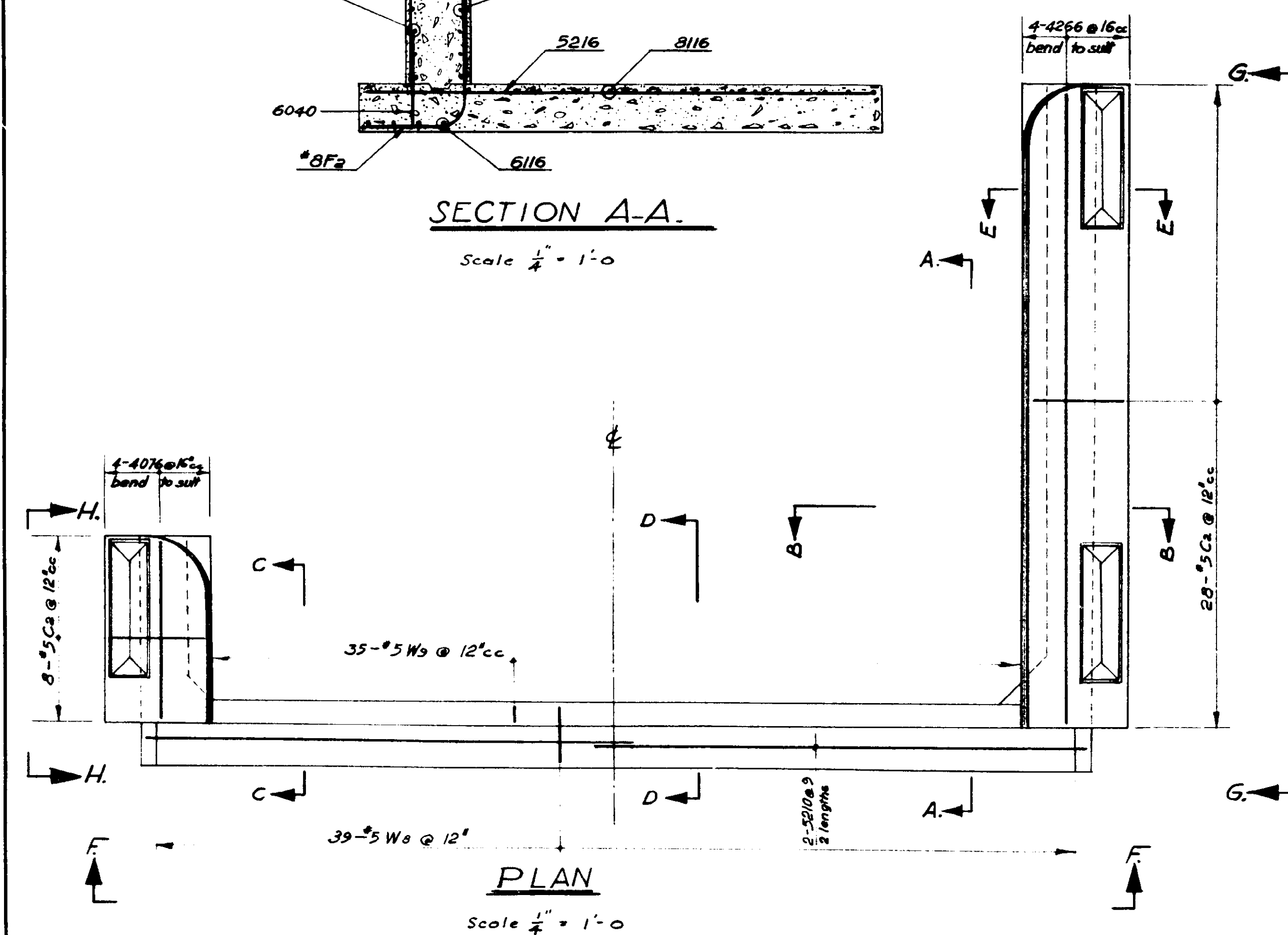
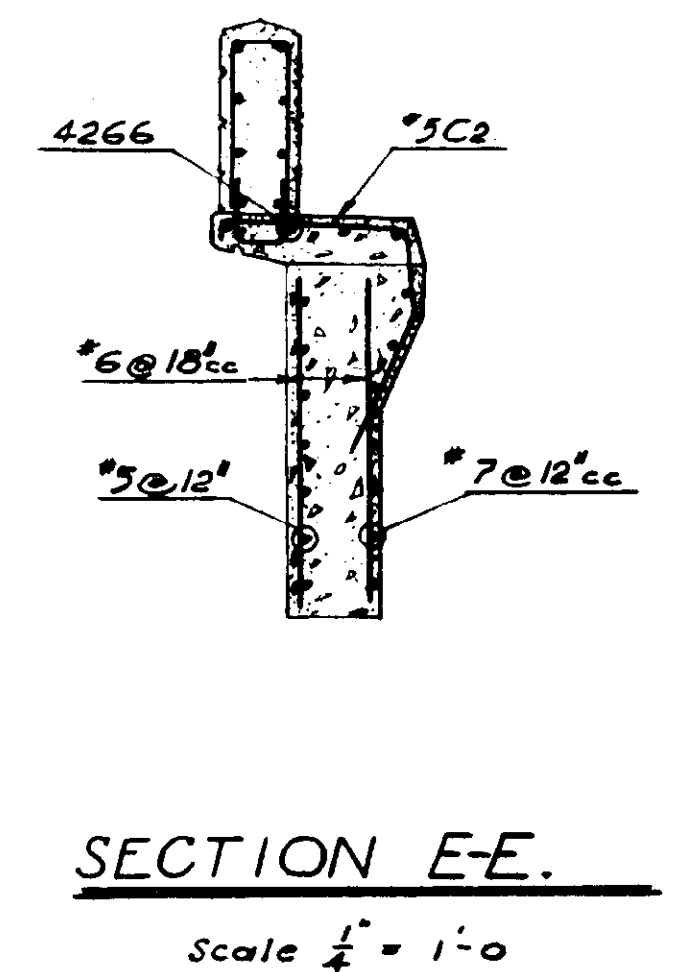
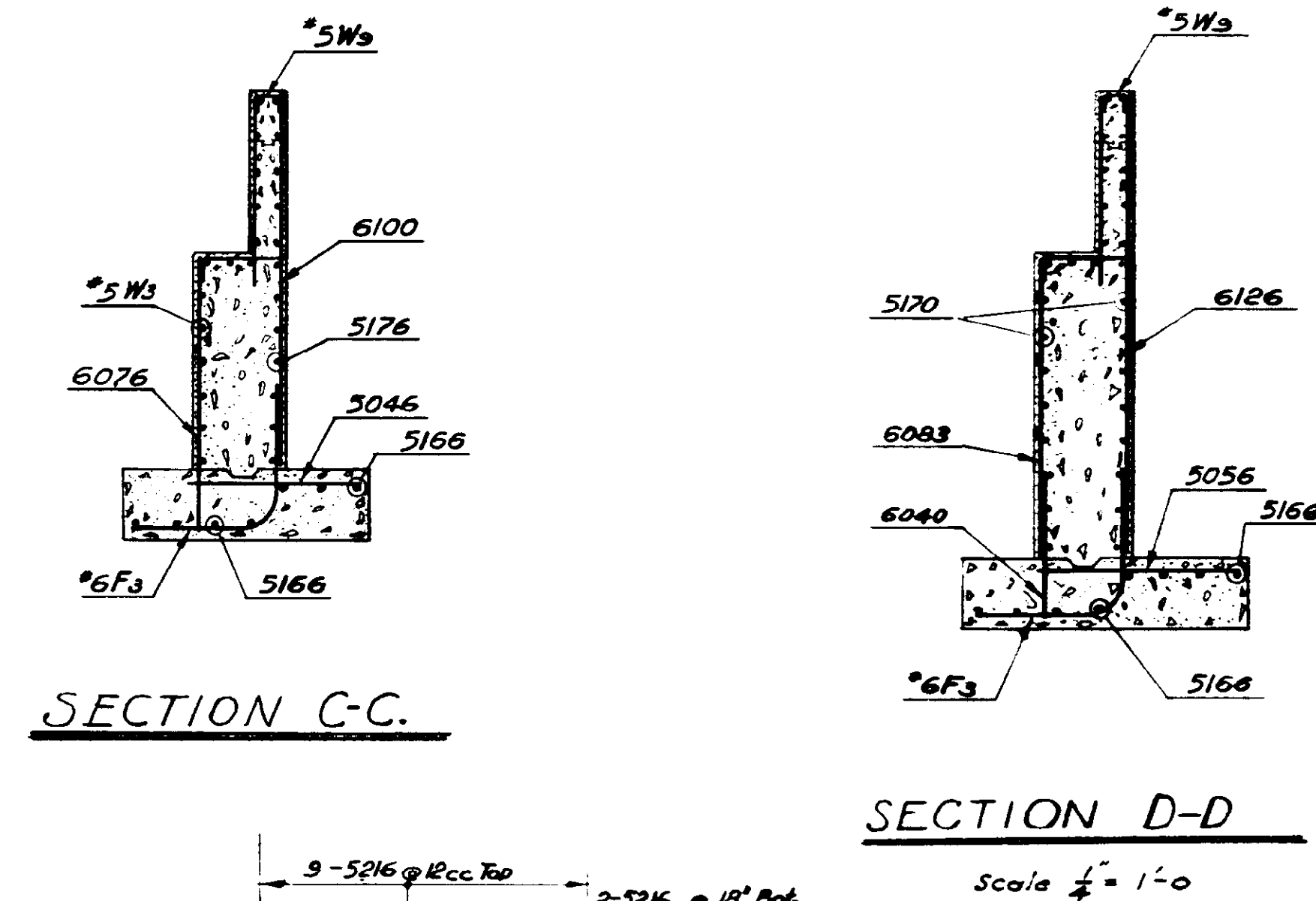
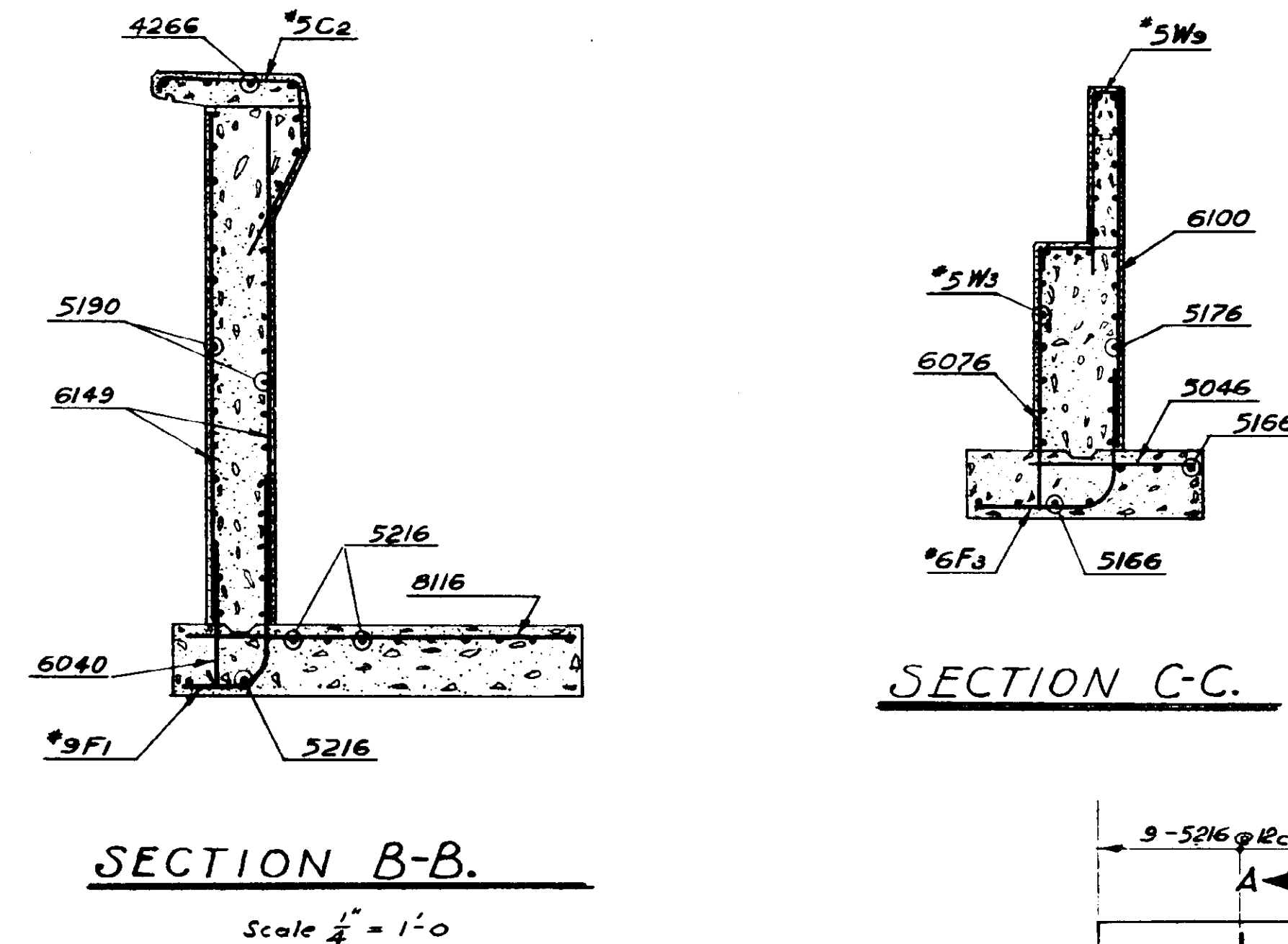
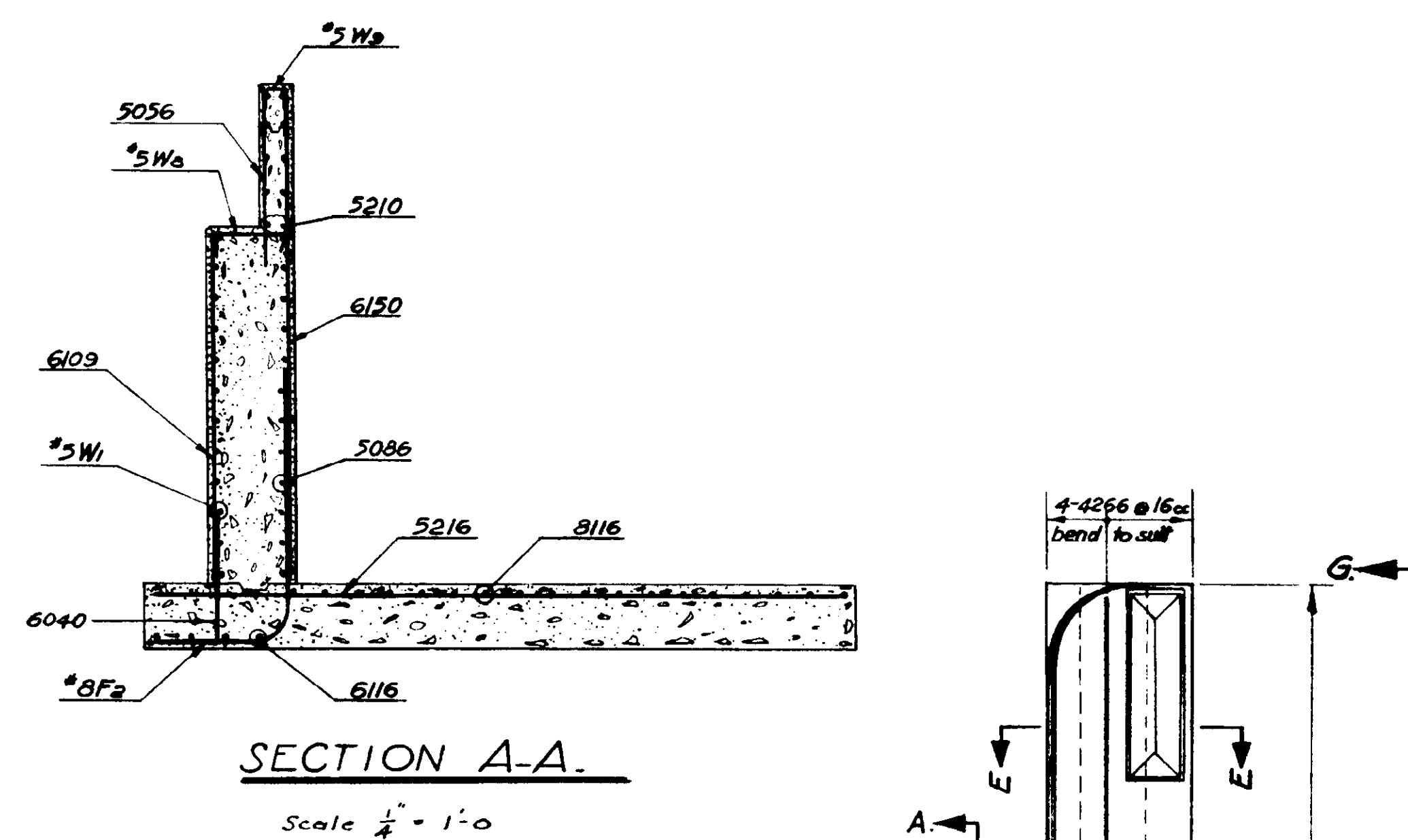
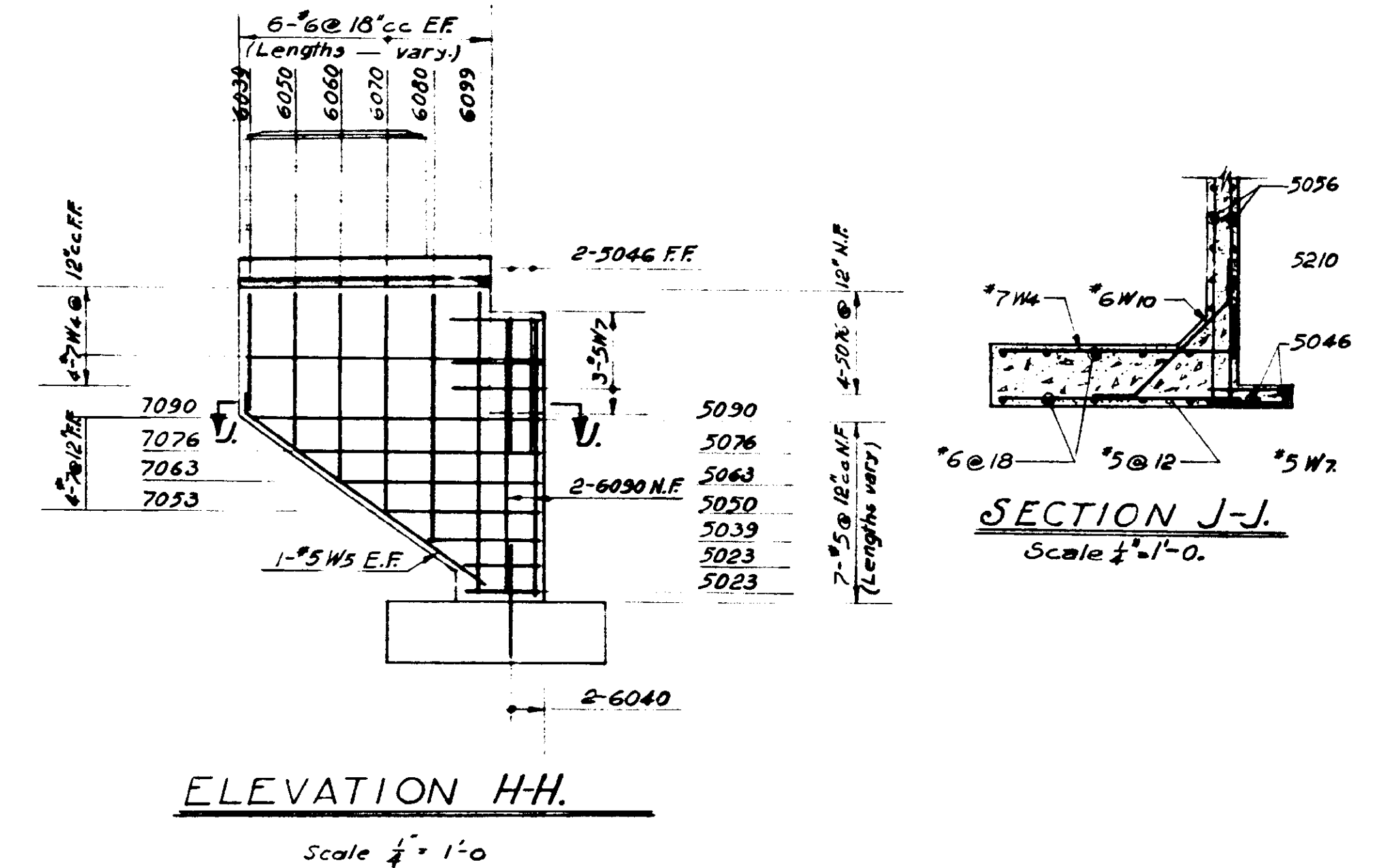
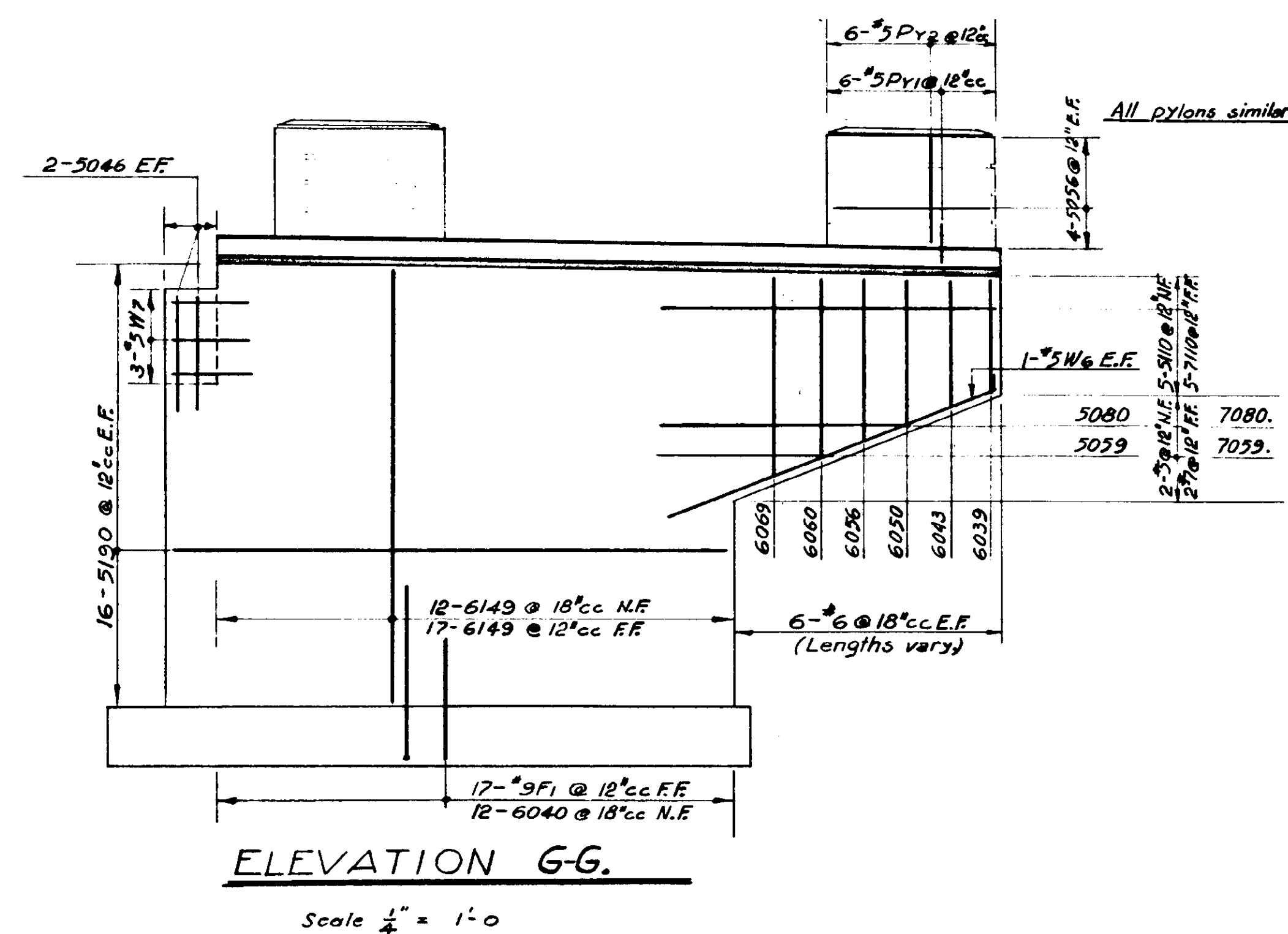
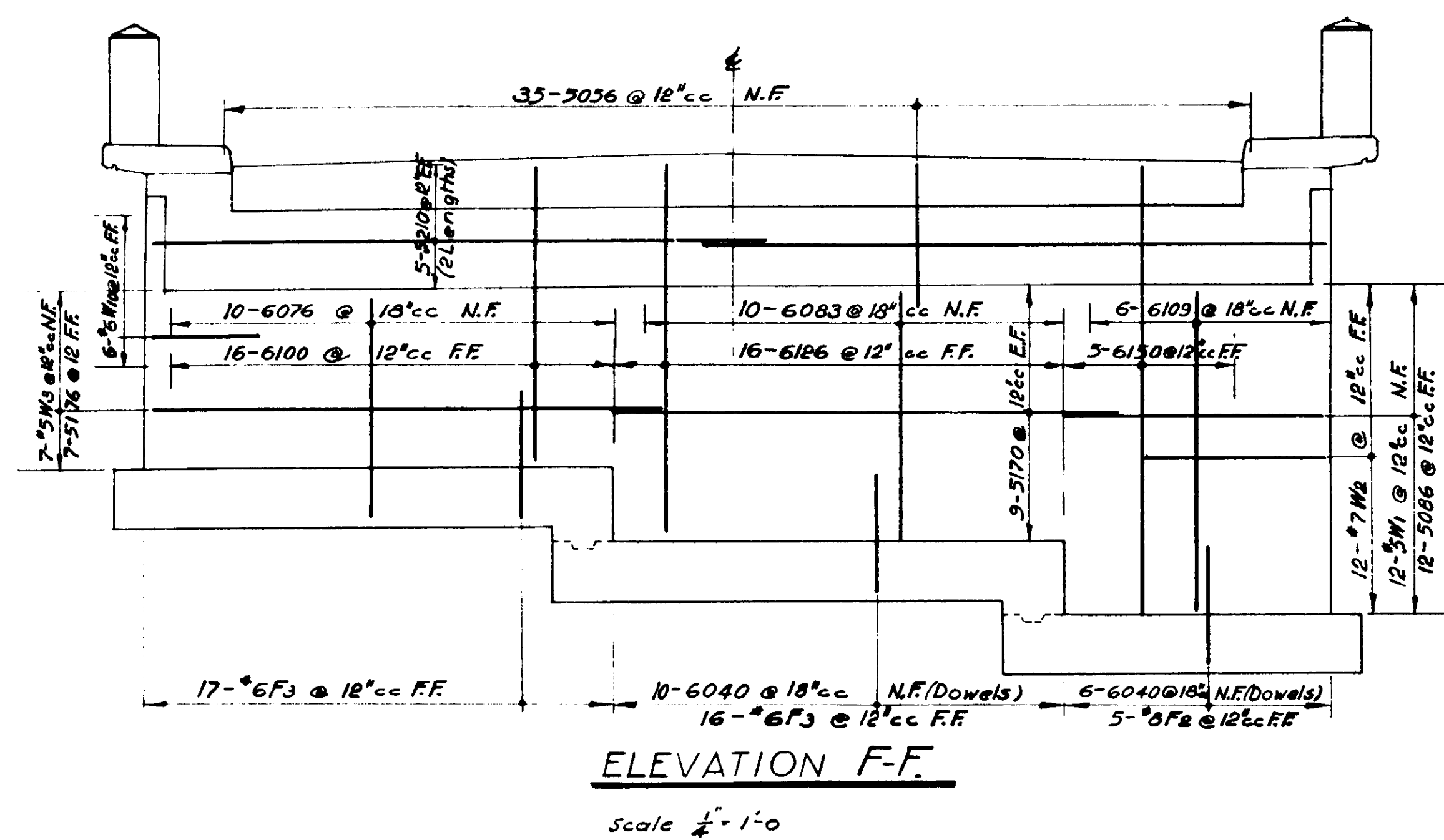


PLAN
Scale $\frac{1}{4}$ " = 1'-0"

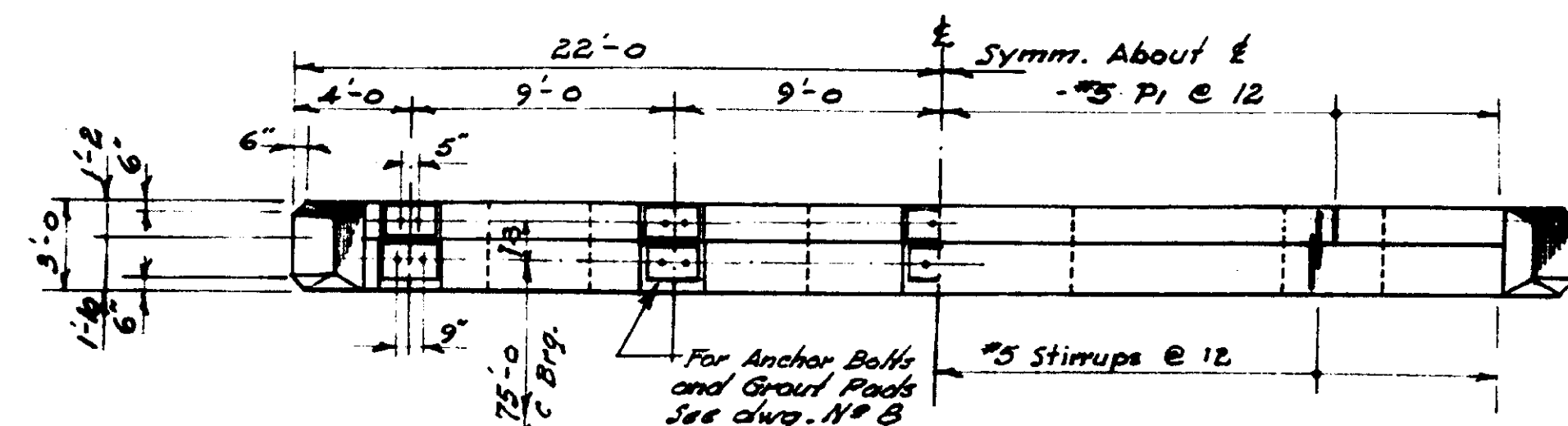


FOUNDATION PLAN
Scale $\frac{1}{4}$ " = 1'-0"

No.	REVISIONS	NAME	DATE
DEPARTMENT OF PUBLIC WORKS CANADA DEVELOPMENT ENGINEERING BRANCH STRUCTURES DIVISION NIGEL CREEK BRIDGE BANFF-JASPER HIGHWAY MILE 68.8 BANFF NAT. PARK SOUTH ABUTMENT.			
JOB SUPERVISOR APPROVED <i>M. Thompson</i> CHIEF-STRUCTURES DIVISION	H. Hewitt. DATE 4/5/60	DESIGN R.M.D. DRAWN S.B. PROJECT NO. SD-88.	CHECK <i>[Signature]</i> CHECK <i>[Signature]</i> SHEET 4 OF 11
CHIEF ENGINEER <i>G.T. Clarke</i>			

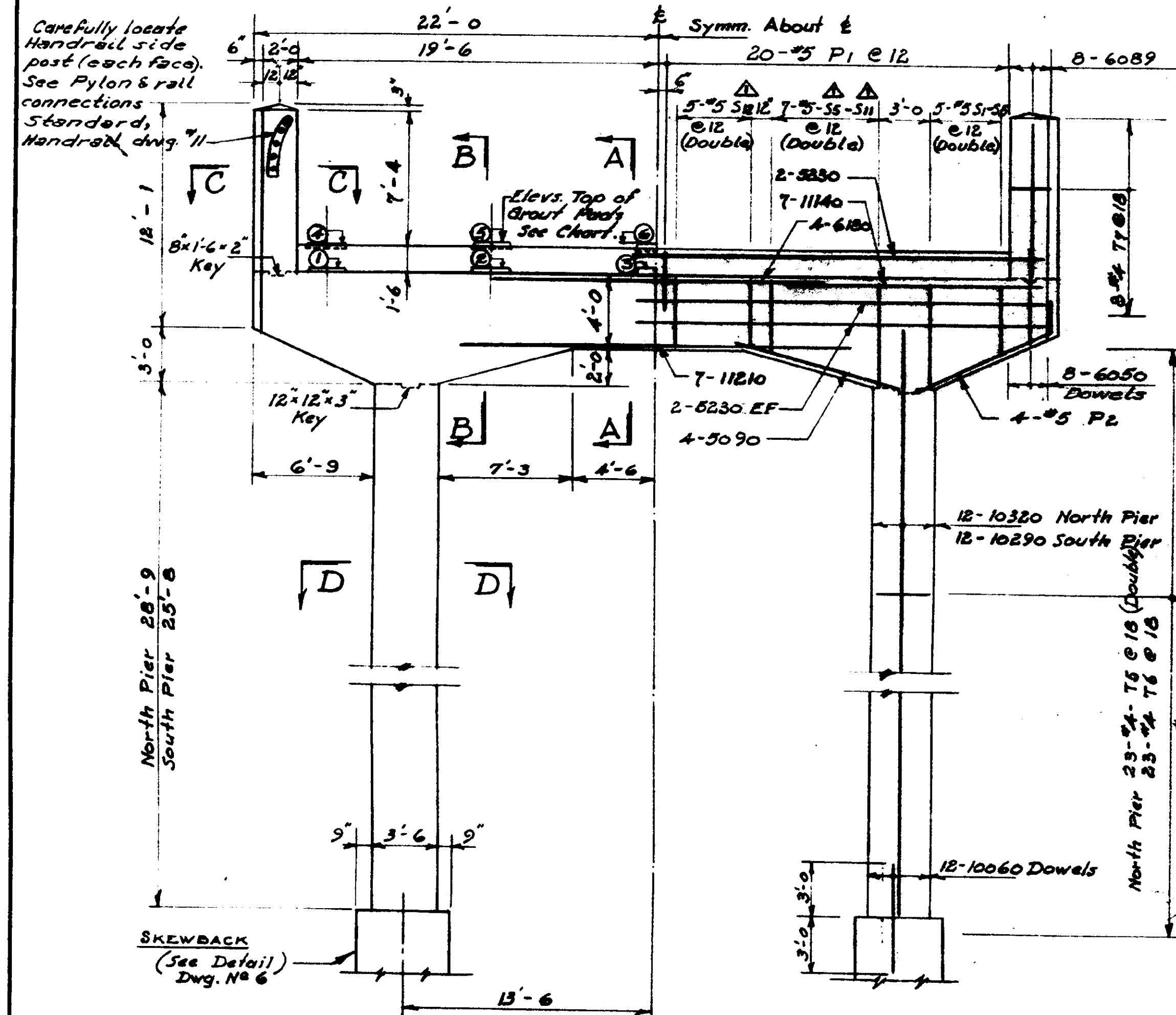


No.	REVISIONS				NAME	DATE	
<p align="center">DEPARTMENT OF PUBLIC WORKS CANADA DEVELOPMENT ENGINEERING BRANCH STRUCTURES DIVISION</p>							
<p align="center"><u>NIGEL CREEK BRIDGE</u> <u>BANFF — JASPER HIGHWAY</u> <u>MILE 60.8 BANFF NAT. PARK.</u></p>							
<p align="center"><u>SOUTH ABUTMENT</u> <u>STEEL REINFORCEMENT.</u></p>							
JOB SUPERVISOR		H.Hewitt		DESIGN	R.M.D.	CHECK	<i>Handwritten initials</i>
APPROVED		DATE 4/5/60.		DRAWN	S.B.	CHECK	<i>Handwritten initials</i> 4/5/60
<i>Handwritten signature: M.S. Thompson</i>				TRACED		CHECK	
				PROJECT NO.			SD-88.
CHIEF-STRUCTURES DIVISION							
APPROVED		DATE 4/6/60					
<i>Handwritten signature: P.T. Clarke</i>							
CHIEF ENGINEER				SHEET 5 OF 11.			



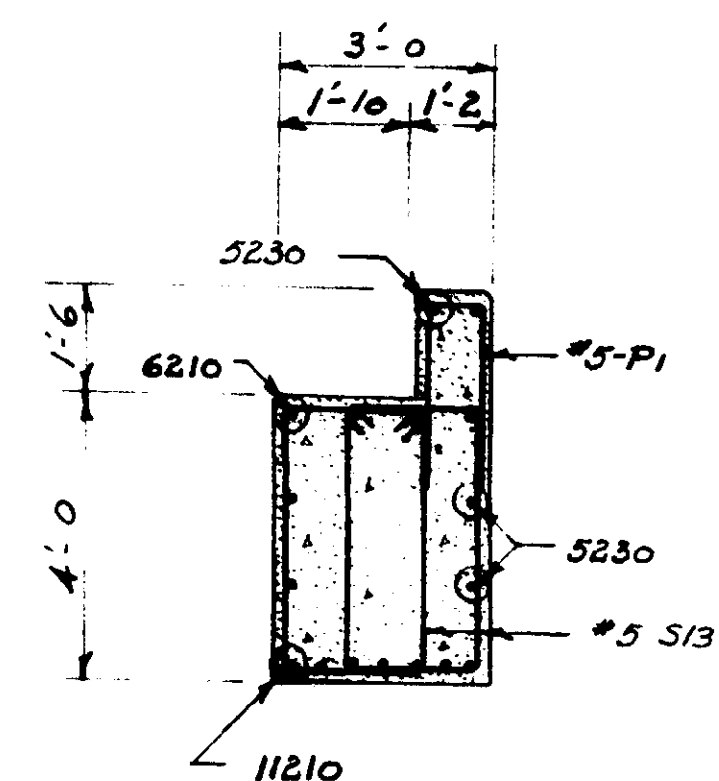
PLAN OF PIERS

Scale $\frac{1}{16}'' = 1'-0''$



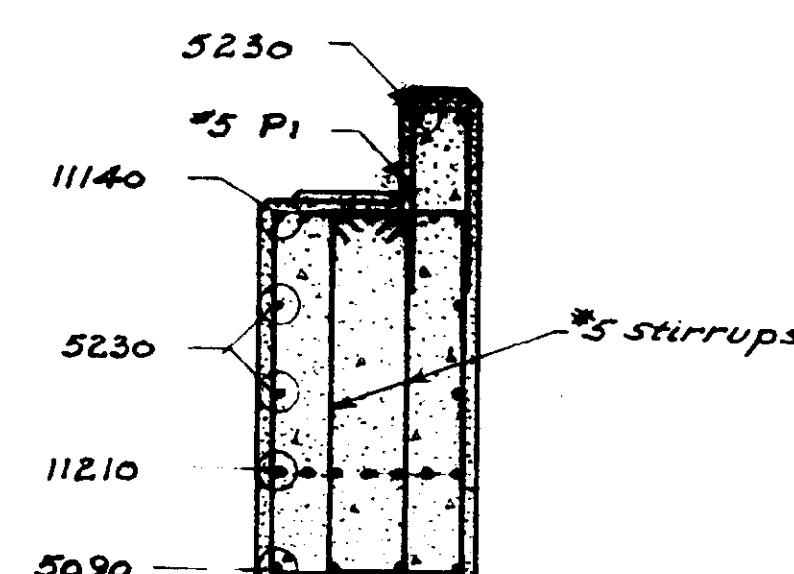
ELEVATION OF PIERS

Scale $\frac{3}{16}'' = 1'-0''$



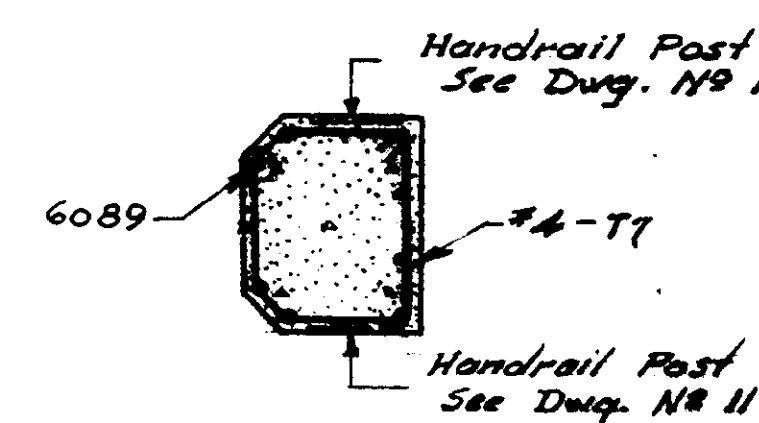
SECTION A-A

Scale $\frac{3}{8}'' = 1'-0''$



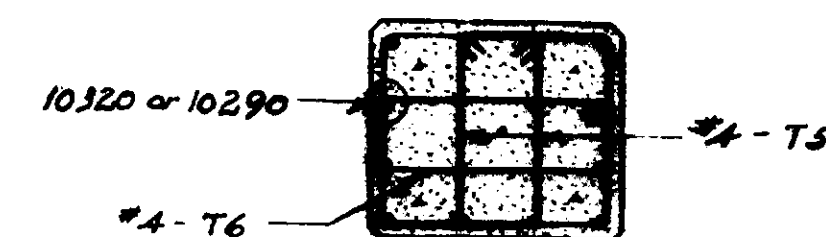
SECTION B-B

Scale $\frac{3}{8}'' = 1'-0''$



SECTION C-C

Scale $\frac{3}{8}'' = 1'-0''$

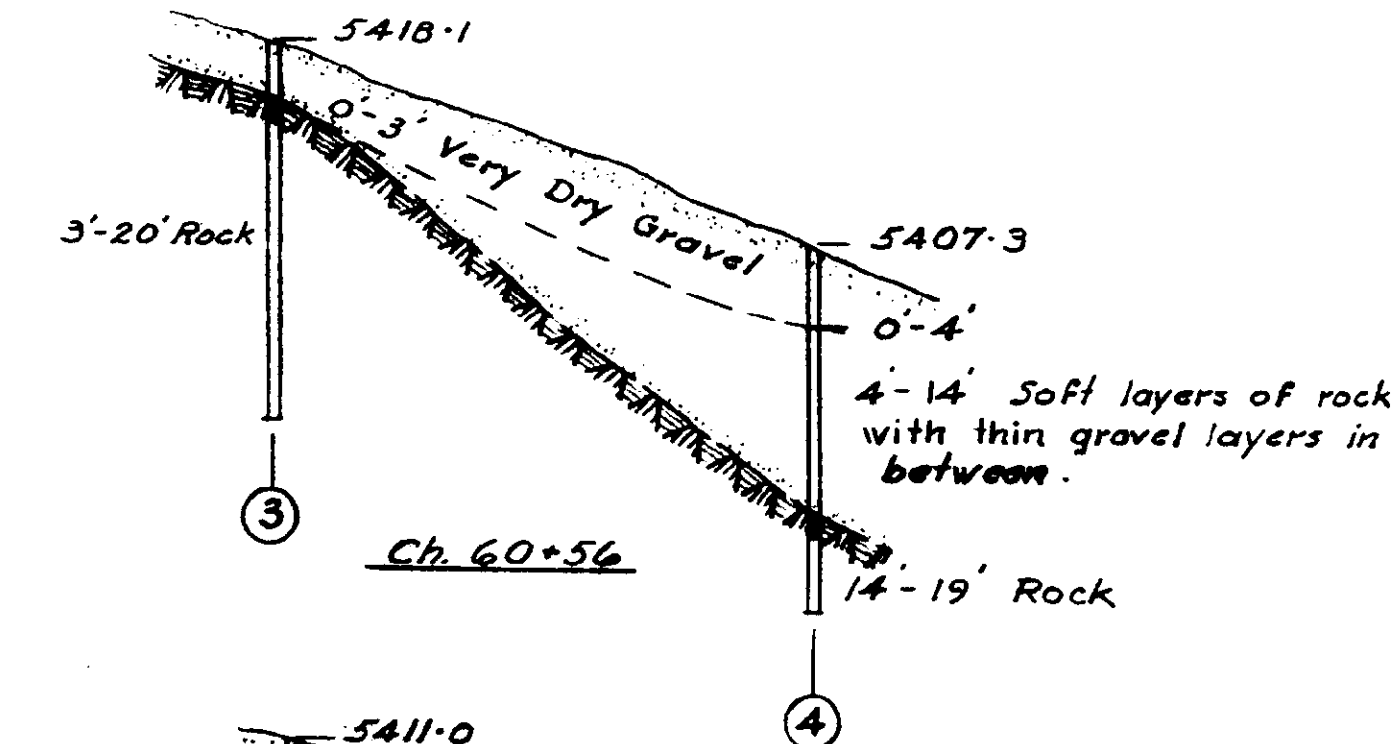
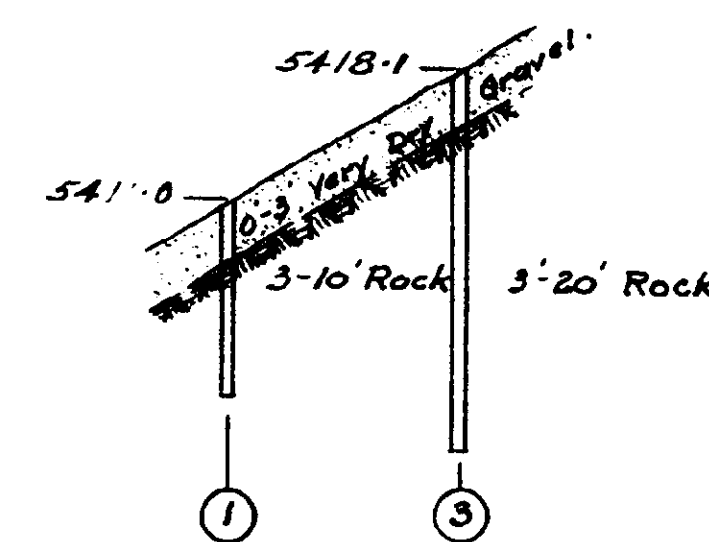


SECTION D-D

Scale $\frac{3}{8}'' = 1'-0''$

All Elevations are Top of Grout Pads.

GROUT PAD NO.	NORTH PIER ELEV.	SOUTH PIER ELEV.
①	5449.64	5446.30
②	5449.76	5446.62
③	5449.81	5446.67
④	5450.91	5447.81
⑤	5451.03	5447.93
⑥	5451.08	5447.98



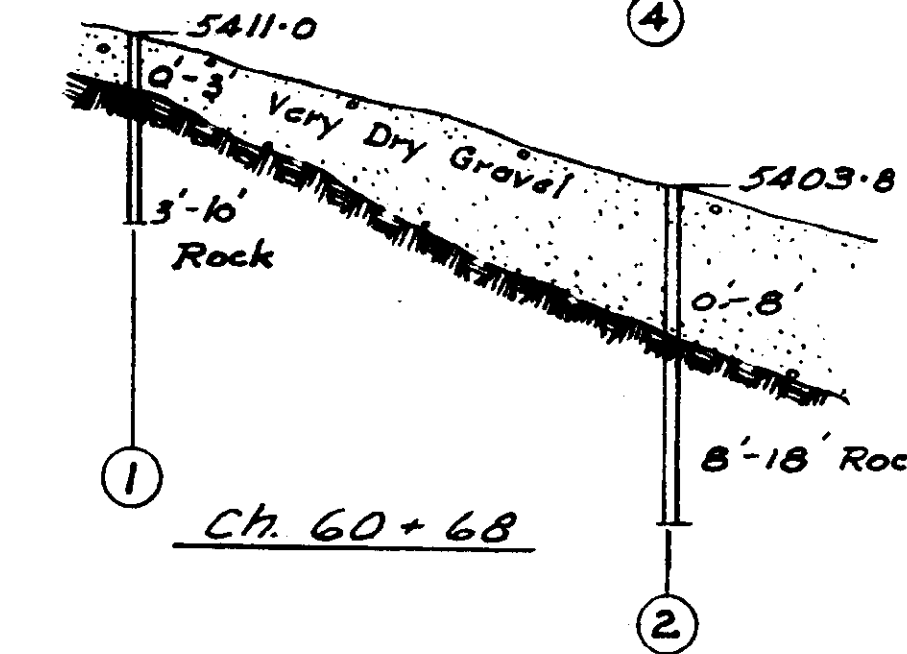
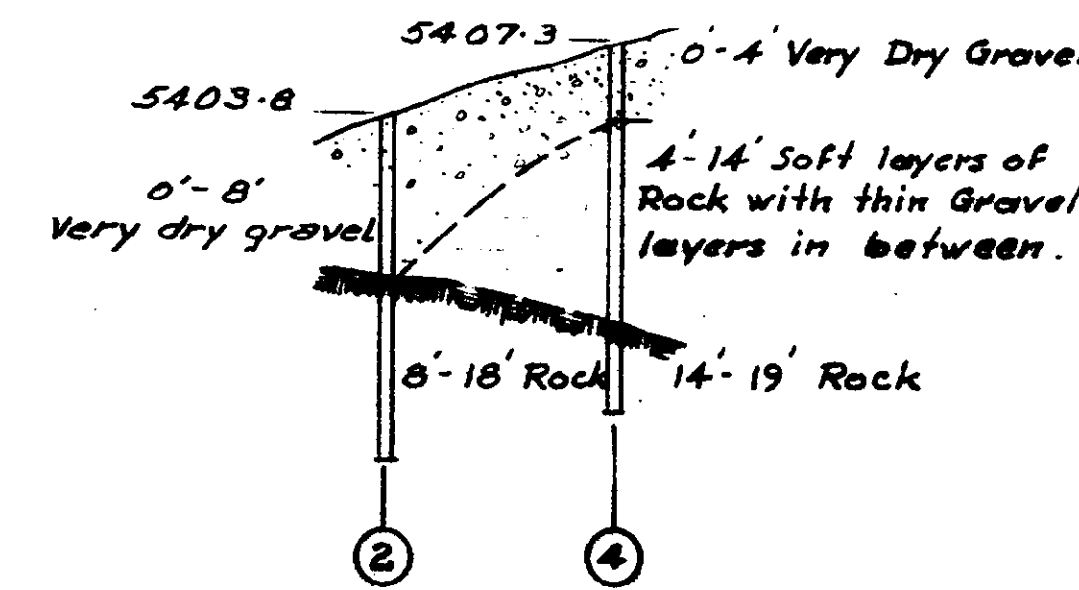
Ground Elev.

Bore Hole No. 10	5414.5
" No. 11	5414.0
" No. 12	5419.0
" No. 13	5414.5

TYPICAL BORE HOLE

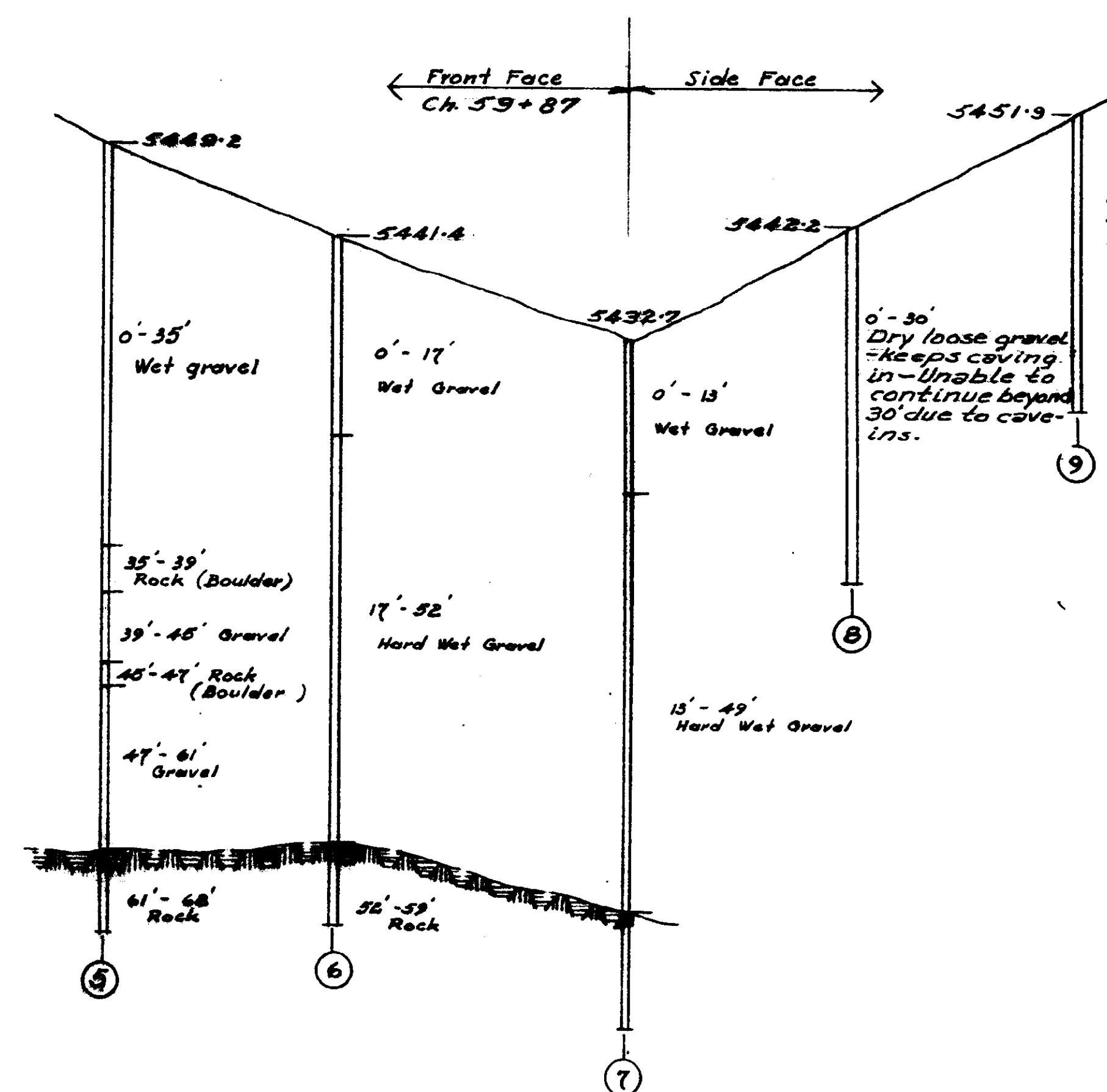
BORE HOLE NOS 10, 11, 12 & 13

Scale $1'' = 10'-0''$



AT SOUTH SKEWBACKS

Scale $1'' = 10'-0''$

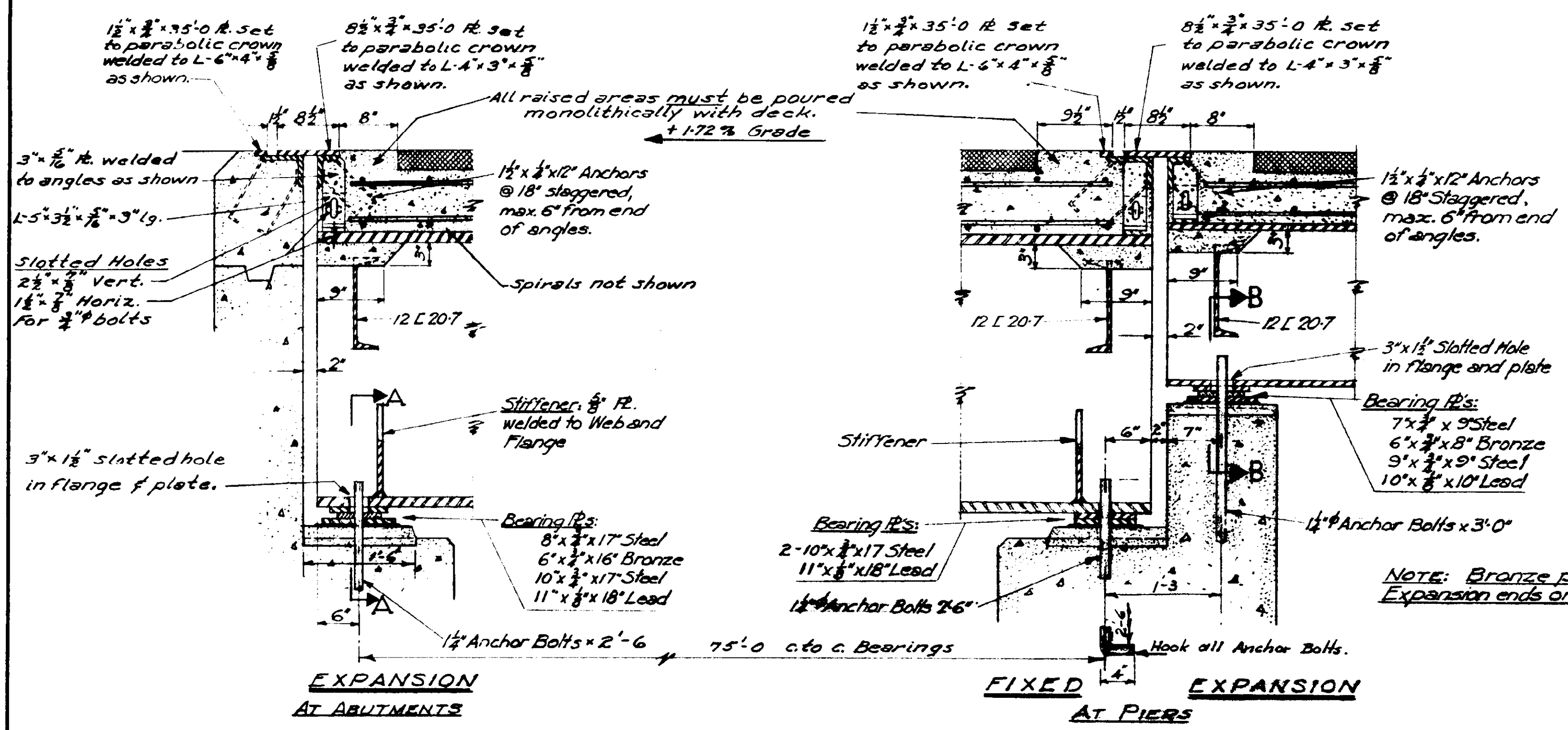


BORE HOLES FOR SOUTH ABUTMENT

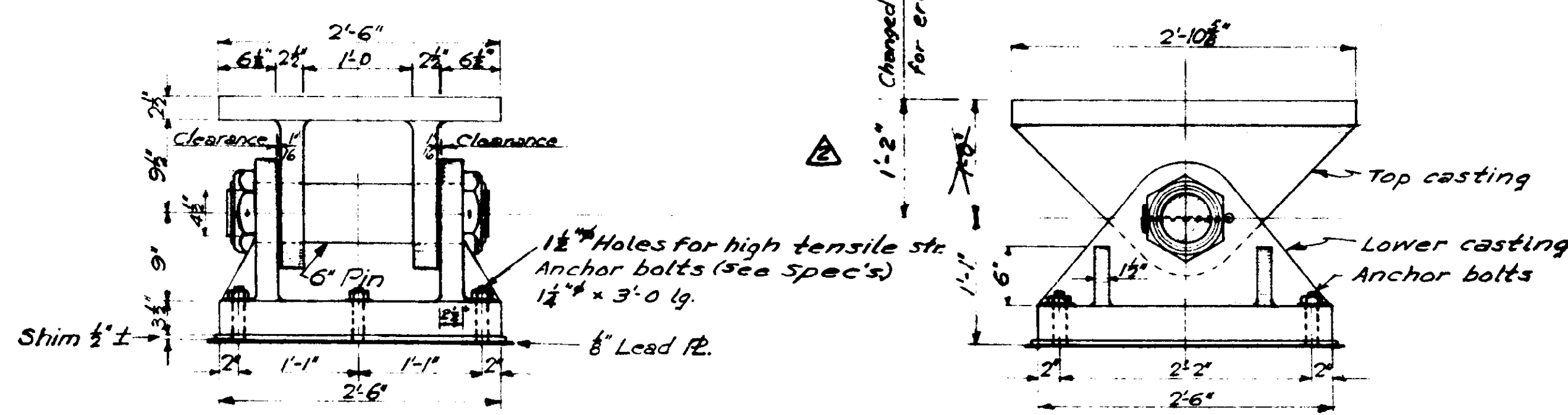
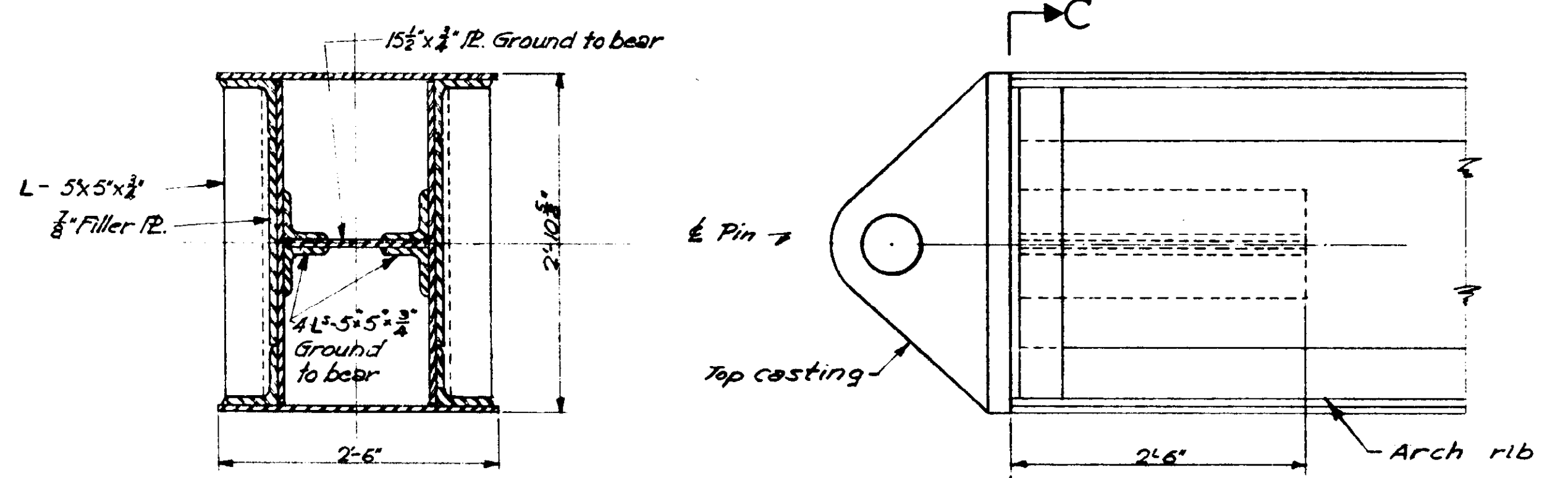
Scale $1'' = 10'-0''$

- NOTE:
- See Dwg. No. 1 for locations of Bore Holes.
 - Interpolation of Profiles between Bore Holes to be considered Approximate.

DEPARTMENT OF PUBLIC WORKS			
CANADA			
DEVELOPMENT ENGINEERING BRANCH			
STRUCTURES DIVISION			
NIGEL CREEK BRIDGE			
BANFF-JASPER HIGHWAY			
MILE 600 BANFF NAT. PARK.			
-PIERS-			
BORE HOLES.			
JOB SUPERVISOR	H. Hewitt	DESIGN	R.M.D.
APPROVED	DATE 4/5/60	DRAWN	L.B.P.
CHIEF-STRUCTURES DIVISION		TRACED	CHECK
APPROVED		DATE 4/6/60	CHECK
P.J. Clark		PROJECT NO. SD-88.	
CHIEF ENGINEER		SHEET 7 OF 11	



BEARINGS
Scale 1" = 1'-0"



NOTES

- All bearings - anchor bolts in piers, skewbacks and abutments to be set by template.
- All grout pads to be 4000 psi. at 28 days, dry packed.
- All bronze plates ASTM B100 phosphorous bronze alloy.
- Basic electric nickel steel for castings and pins.
- Phosphorous - not over 0.03 %
Sulphur " " 0.03 %
Carbon " " 0.15 %
Nickel " 3.00 - 3.50 %
Silicon " 0.35 - 0.45 %
Manganese " 0.60 - 0.80 %
- 6 lbs. of Fe-C-T added per ton; normalized and drawn. Reduction of Area 40% min. Elongation 22% min. Ultimate tensile strength - not less than 75,000 p.s.i. Yield - 40,000 - 45,000 p.s.i.
- Fillets on castings 1/4" radius.

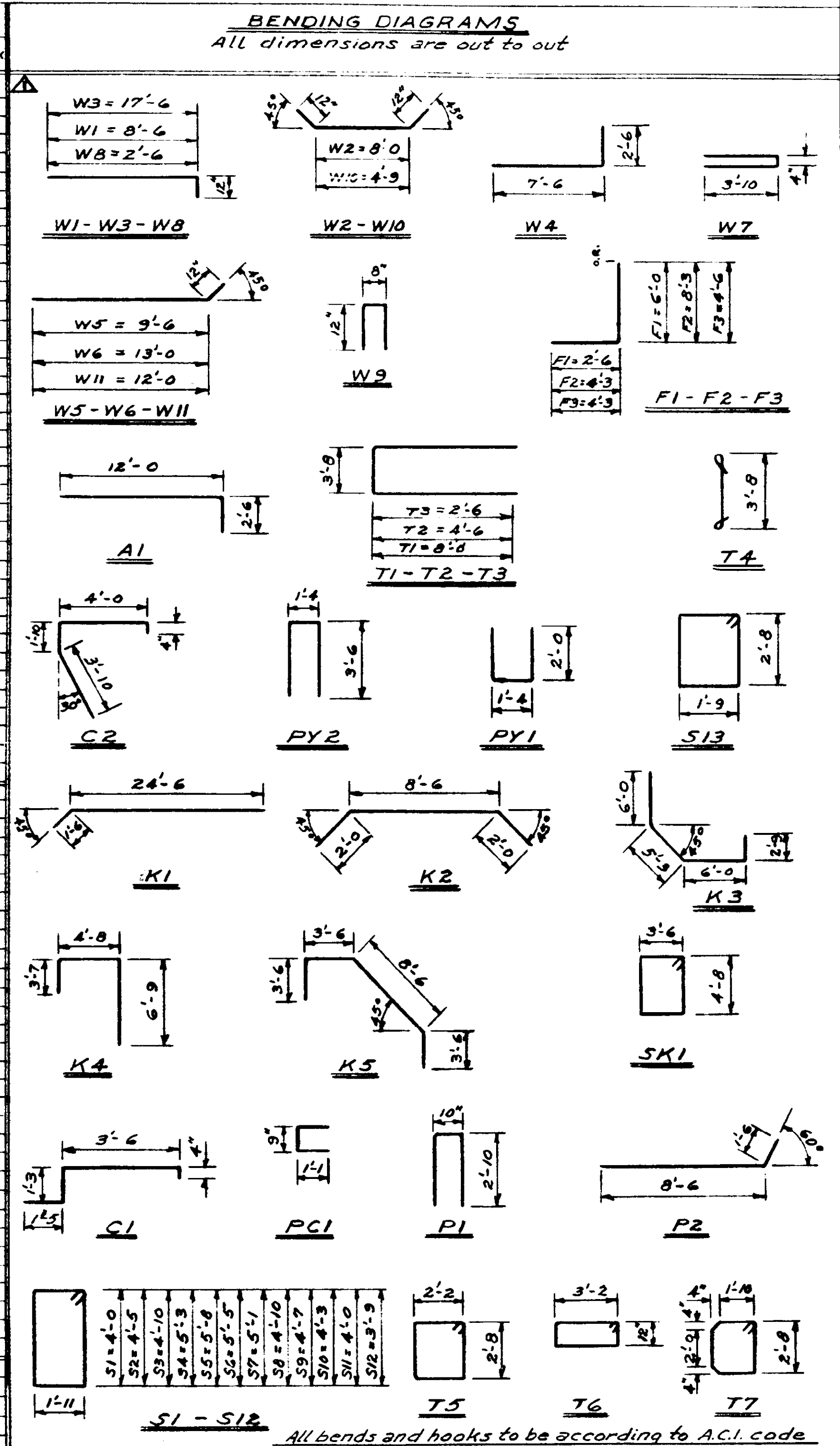
ASTM A352-58T Grade L.C.3 accepted (see letter on file dated 29/12/60.)

LOCATION		Cu Yrs Conc.		LBS. REINF.	
NORTH ABUTMENT		160		17,400	
SKEWBACKS		122		11,170	
PIERS		104		16,180	
DECK		317		73,620	
SOUTH ABUTMENT		120		8,570	

STRAIGHT BARS		BENT BARS	
Nº	Size Length Mark	Nº	Size Length Mark
10	*8 11'-6 8116	17	*9 8'-6 F1
5	*7 11'-0 7110	5	*8 12'-6 F2
1	*8 9'-0 7090	1	*8 10'-0 W2
1	*8 8'-0 7080	1	*7 10'-0 W4
1	*6 7'-6 7076	1	*7 10'-0 W4
1	*6 6'-3 7063	1	*7 10'-0 W4
1	*6 5'-9 7059	1	*7 10'-0 W4
1	*7 5'-3 7053	33	*6 8'-9 F3
5	*6 15'-0 6150		
29	*6 14'-9 6149		
16	*6 12'-6 6126	6	*6 6'-9 W10
4	*6 11'-6 6116		
6	*6 10'-9 6109		
16	*6 10'-0 6100	12	*5 9'-6 W1
2	*6 9'-9 6099	7	*5 18'-6 W3
2	*6 9'-0 6090	2	*5 18'-6 W3
10	*6 8'-3 6083	2	*5 18'-6 W3
2	*6 8'-0 6080	6	*5 18'-6 W3
10	*6 7'-6 6076	39	*5 3'-6 W9
2	*6 7'-0 6070	35	*5 2'-8 W9
4	*6 6'-9 6069		
2	*6 5'-6 6056	35	*5 10'-0 C2
2	*6 5'-0 6050		
2	*6 4'-3 6043		
30	*6 4'-0 6040	18	*5 5'-4 PY1
4	*6 3'-9 6039	10	*5 8'-4 PY2
1	*5 6'-3 5063		
1	*5 5'-9 5059		
77	*5 5'-6 5056		
1	*5 5'-0 5050		
24	*4 4'-6 4046		
1	*4 3'-9 4039		
2	*5 2'-3 5023		
4	*4 26'-6 4266		
4	*4 7'-6 4076		

LOCATION		Cu Yrs Conc.		LBS. REINF.	
NORTH ABUTMENT		160		17,400	
SKEWBACKS		122		11,170	
PIERS		104		16,180	
DECK		317		73,620	
SOUTH ABUTMENT		120		8,570	

STRAIGHT BARS		BENT BARS	
Nº	Size Length Mark	Nº	Size Length Mark
6	*11 21'-0 11210	8	*9 14'-6 A1
22	*11 15'-0 11150	8	*7 10'-0 W4
12	*10 16'-0 10160	14	*6 6'-9 W10
14	*9 33'-0 9330	14	*5 10'-0 C2
14	*8 26'-0 9260	12	*5 10'-0 PY1
6	*8 25'-0 9250	12	*5 8'-4 PY2
6	*8 20'-6 9206	70	*5 10'-0 S/3
18	*8 13'-0 9130	6	*5 8'-0 W7
12	*8 8'-0 9080	35	*5 2'-8 W9
2	*7 9'-0 7090	4	*5 13'-0 W11
2	*7 8'-0 7080	28	*4 19'-8 T1
2	*7 5'-6 7056	32	*4 12'-8 T2
4	*6 9'-6 6096	30	*4 8'-0 T3
4	*6 8'-0 6080	3/4	*3 4'-6 T4
4	*6 7'-0 6070		
4	*6 6'-6 6066		
4	*6 5'-3 6053		
4	*6 3'-9 6039		
29	*5 21'-0 5210		
2	*5 9'-0 5090		
2	*5 8'-0 5080		
8	*5 7'-6 5076		
2	*5 7'-0 5070		
2	*5 6'-0 5060		
88	*5 5'-6 5056		
8	*5 4'-6 5046		
8	*4 7'-6 4076		
8	*4 6'-0 4060		
15	*9 6'-0 9060		
15	*9 4'-6 9046		
2	*8 18'-9 8189		
2	*8 17'-6 8176		
2	*8 17'-0 8170		
2	*8 16'-0 8160		
2	*8 15'-0 8150		
2	*8 14'-6 8146		
4	*8 13'-0 8130		
2	*8 11'-6 8116		
22	*8 11'-0 8110		
2	*8 10'-0 8100		
2	*8 9'-0 8090		
2	*8 8'-6 8086		
20	*8 7'-0 8070		
2	*8 5'-6 8056		
2	*8 5'-0 8050		
2	*8 4'-0 8040		
14	*11 21'-0 11210	80	*5 6'-6 P1
28	*11 14'-0 11140	16	*5 10'-0 P2
24	*10 32'-0 10320	8	*5 12'-8 S1
24	*10 29'-0 10290	8	*5 13'-6 S2
8	*6 18'-0 6180	8	*5 14'-4 S3
32	*6 8'-9 6089	16	*5 15'-2 S4
32	*6 5'-0 6050	8	*5 16'-0 S5
24	*5 23'-0 5230	8	*5 14'-4 S7
16	*5 9'-0 5090	8	*5 13'-4 S9
		8	*5 12'-8 S10
		8	*5 12'-8 S11
		40	*5 12'-8 S12
		176	*4 10'-6 T5
		88	*4 9'-0 T6
		32	*4 10'-0 T7
442	*6 25'-0 4250		
884	*6 20'-6 4206		
442	*6 16'-0 4160		
480	*4 26'-6 4266		
800	*4 20'-0 4200		
16	*4 27'-6 4276	64	*5 6'-6 C1
22	*4 23'-6 4236		
80	*4 17'-6 4176		
212	*3 5'-9 3059	530	*3 3'-0 PC1



CHECKED: *[Signature]* DATE: 4/5/60

REVISIONS:

No.	REVISIONS	NAME	DATE
1	Bearings - Specification Note (B)	1/10/60	24/4/60
2	Bearings - Top casting	1/10/60	24/4/60
3	Schedule - Bar A1 to be 14'-6	1/10/60	18/12/60

DEPARTMENT OF PUBLIC WORKS
CANADA
DEVELOPMENT ENGINEERING BRANCH
STRUCTURES DIVISION

NIGEL CREEK BRIDGE
BANFF - JASPER HIGHWAY
MILE 68-8 BANFF NAT. PARK.

BEARINGS
REINFORCING STEEL SCHEDULE

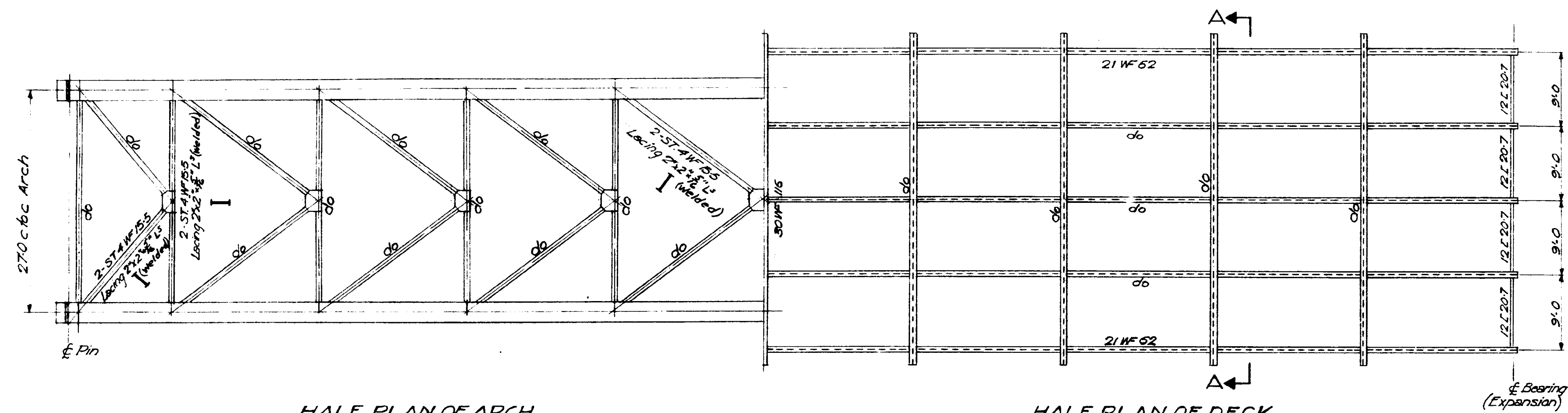
JOB SUPERVISOR: *[Signature]* DATE: 4/5/60

APPROVED: *[Signature]* DATE: 4/5/60

CHIEF-STRUCTURES DIVISION

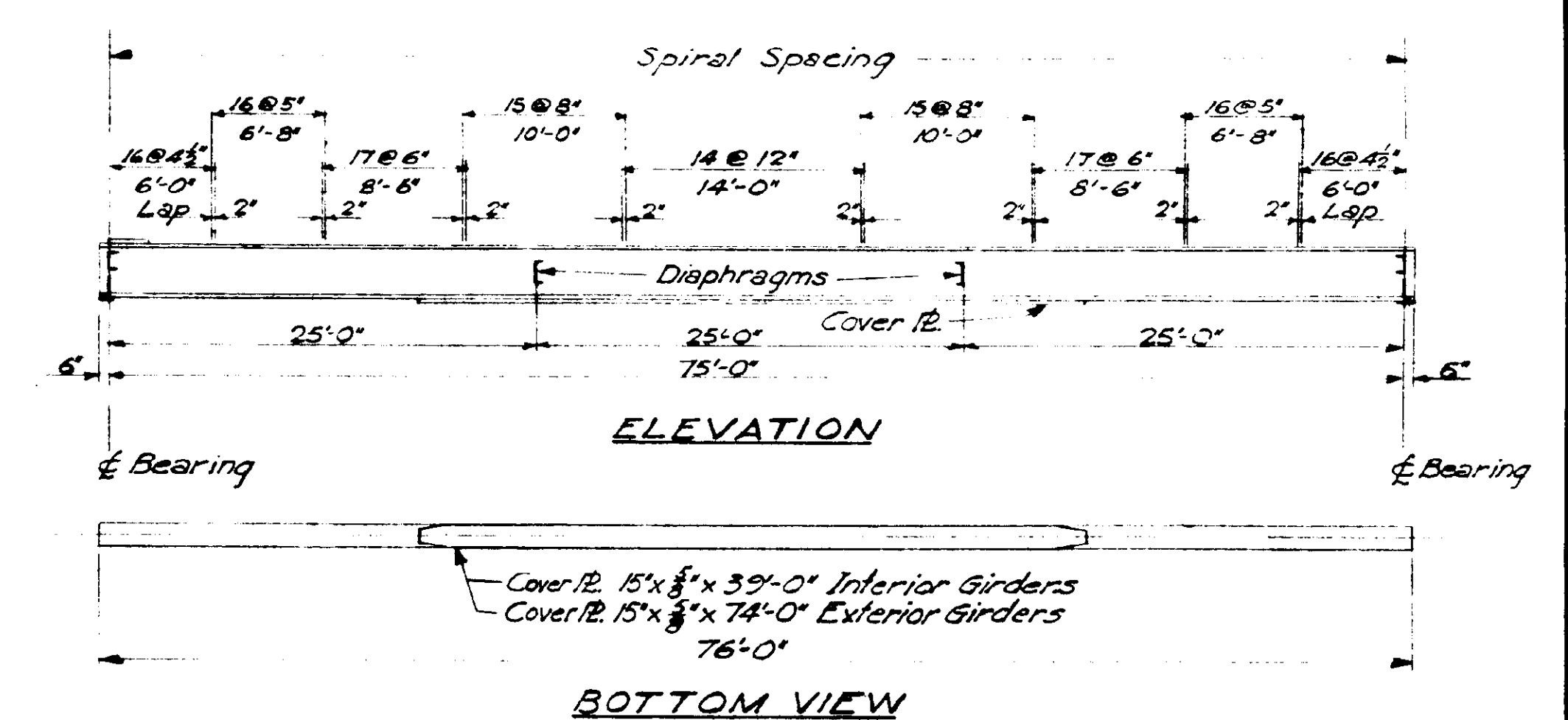
PROJECT NO. **SD-88.**

SHEET **8** OF **11**

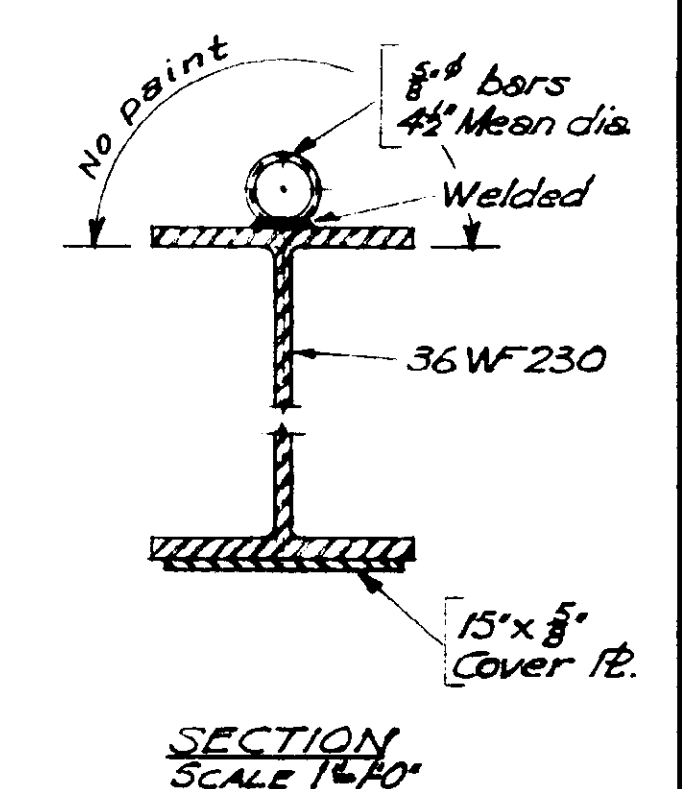


HALF PLAN OF ARCH

HALF PLAN OF DECK

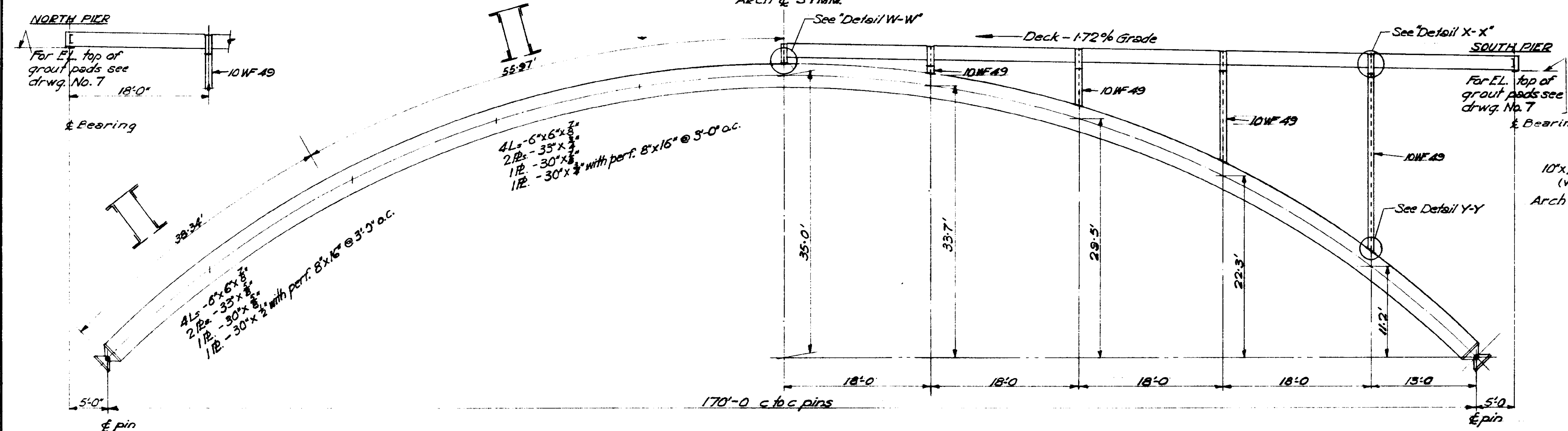


75'-0" - 36 WF 230 GIRDERS
COMPOSITE SPAN
SCALE 1/8" = 1'-0"

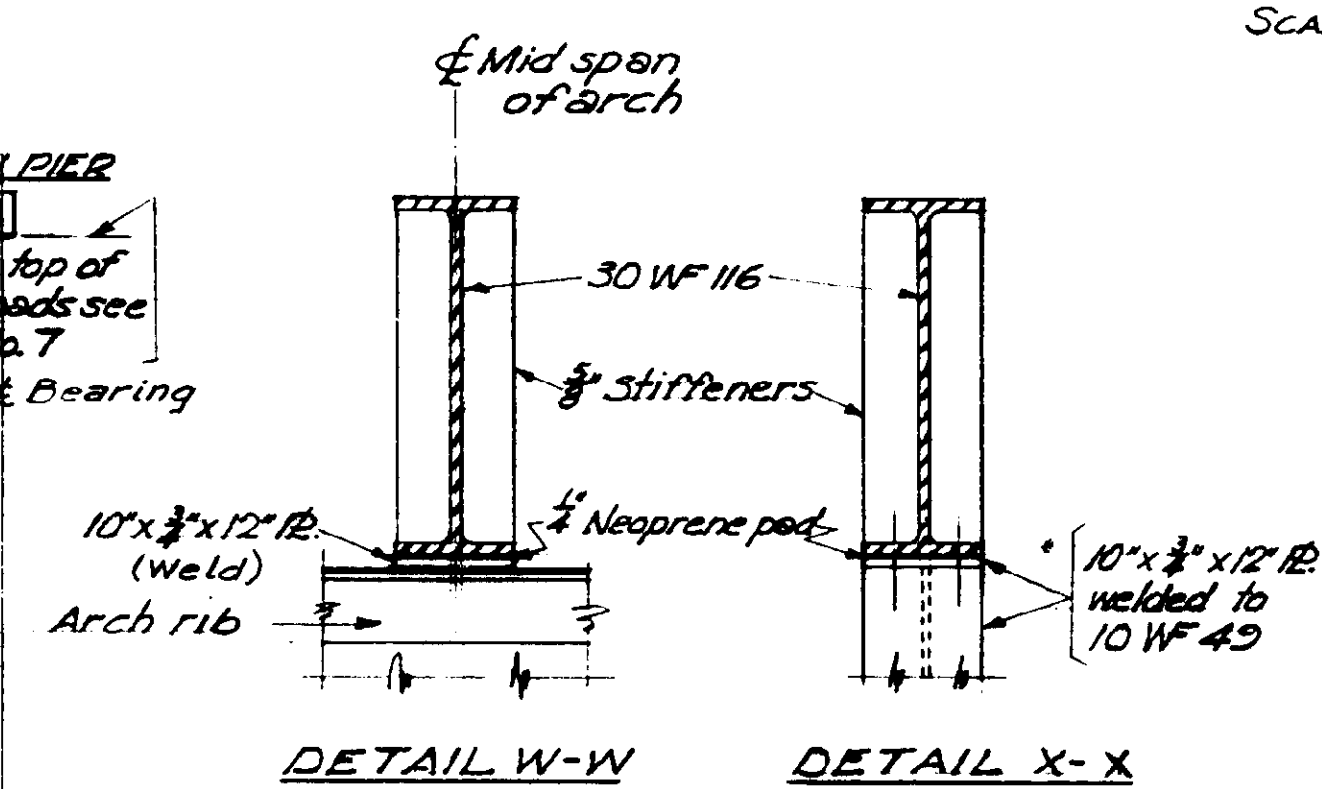


NOTES

- 1 - 3/4" Permanent camber on 36 WF 230 beams. (See Deck dwg. for details.)
- 2 - Surfaces of steel to be in contact with concrete not to be painted.
- 3 - 3/4" bolts to be used through-out. (3/4" high tensile bolts may be used for field connections.)
- 4 - All gusset plates - min. 3/8" thick.
- 5 - All structural steel to conform to C.S.A. specifications 56.

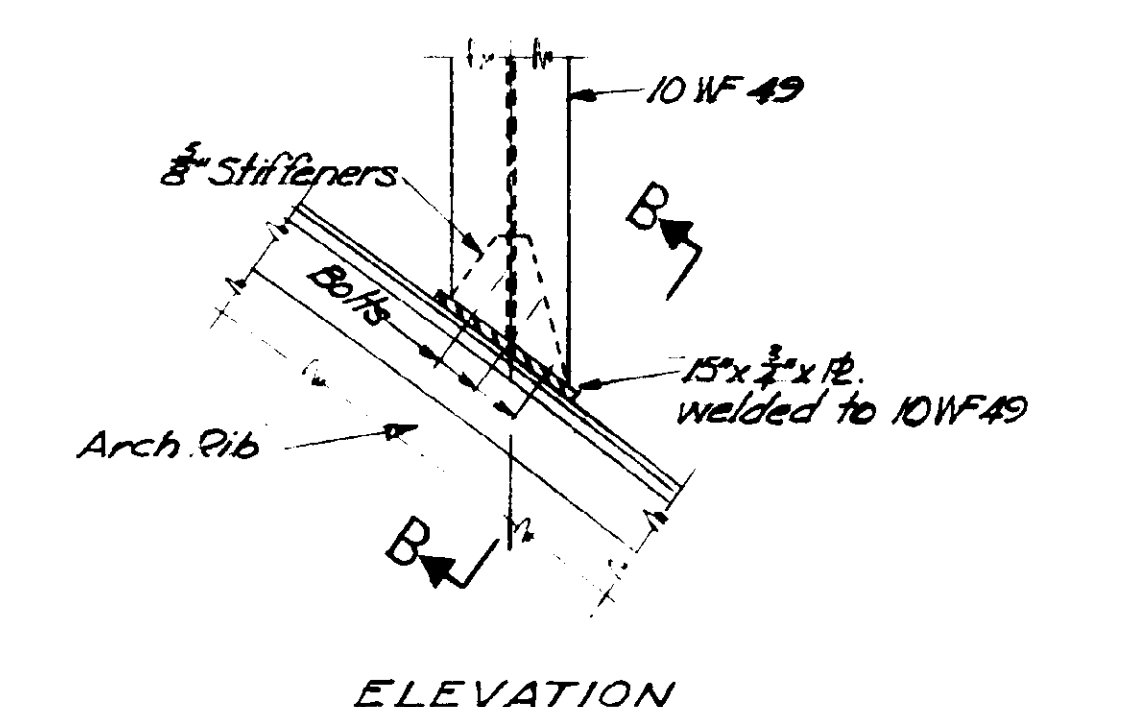


ELEVATION
SCALE 1/8" = 1'-0"

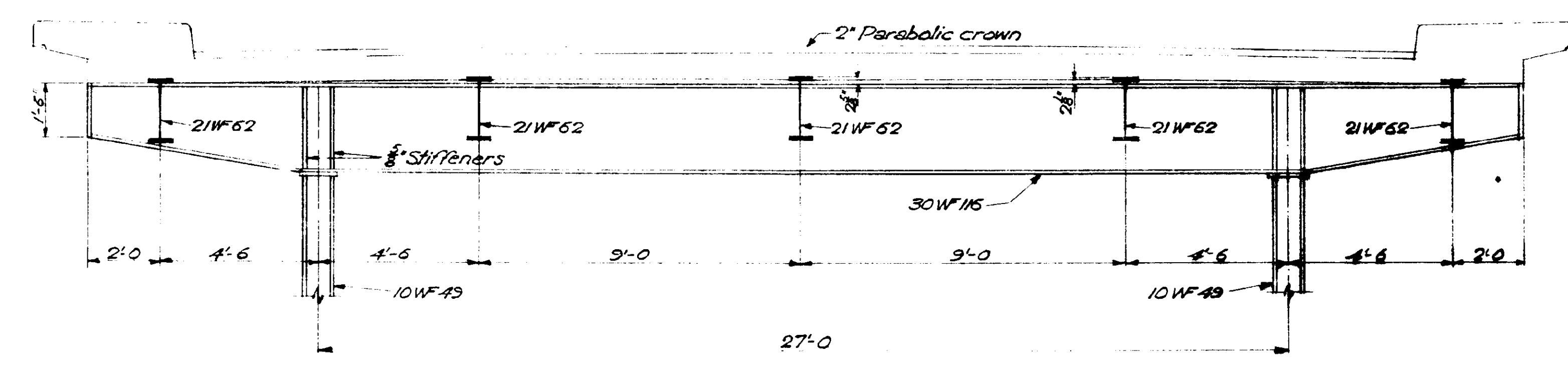


DETAIL W-W

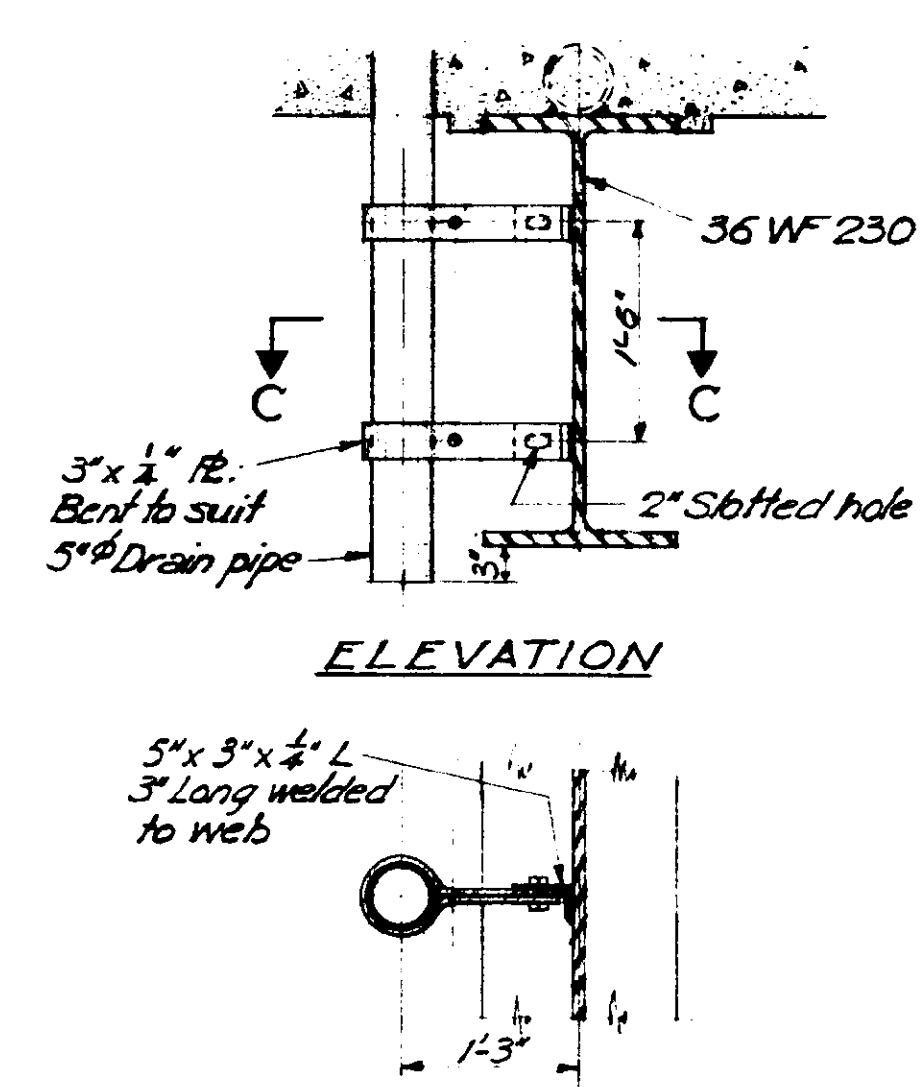
DETAIL X-X



ELEVATION



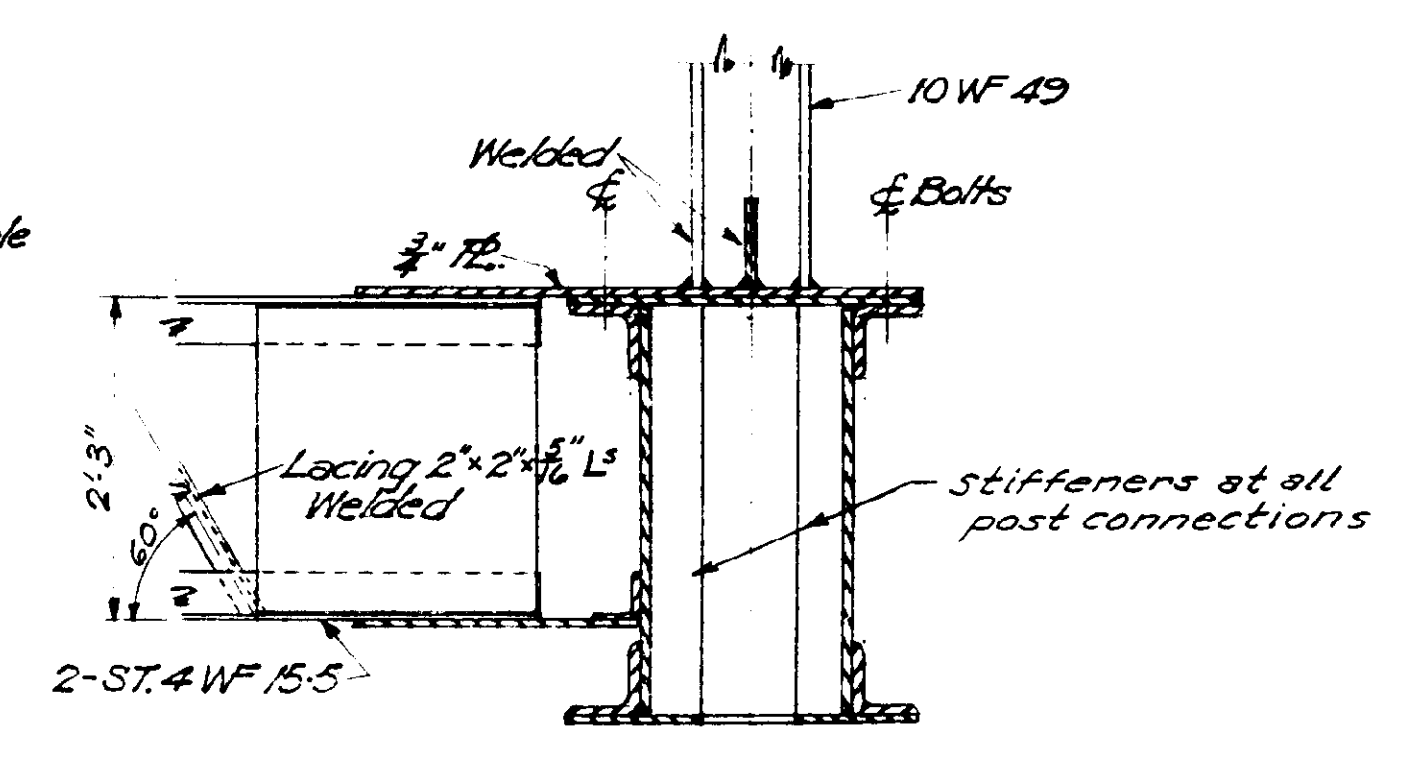
SECTION A-A
SCALE 1/8" = 1'-0"



ELEVATION

SECTION C-C

DRAIN PIPE CONNECTION
SCALE 1/2" = 1'-0"

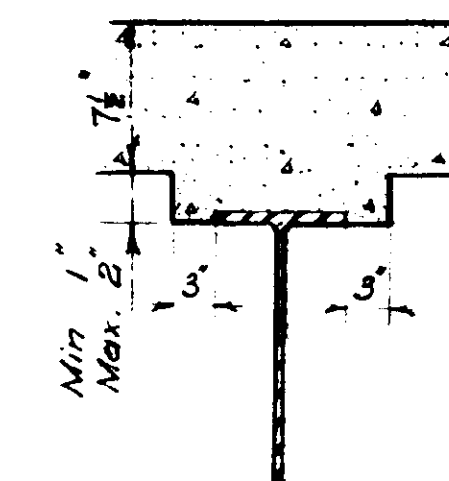
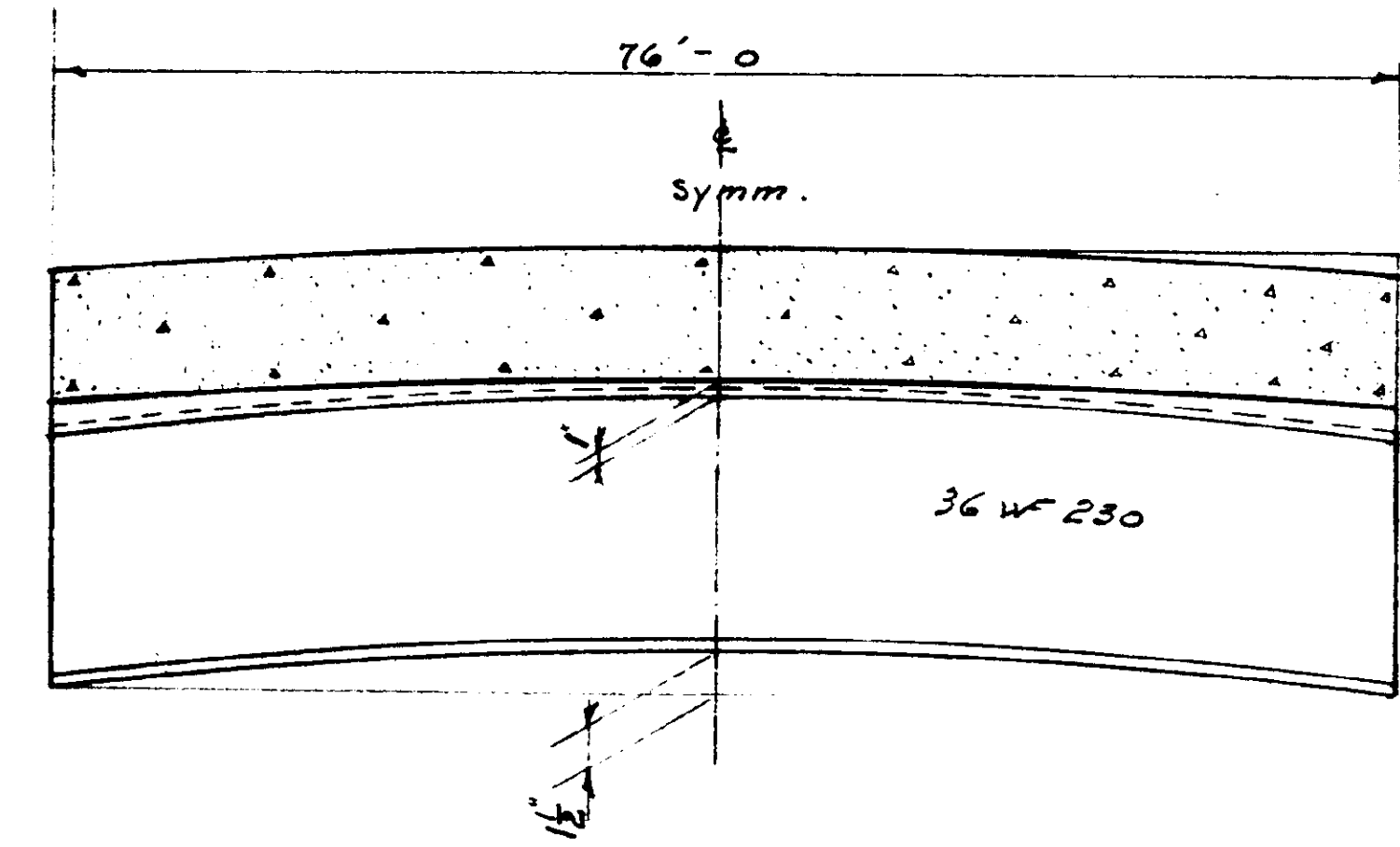
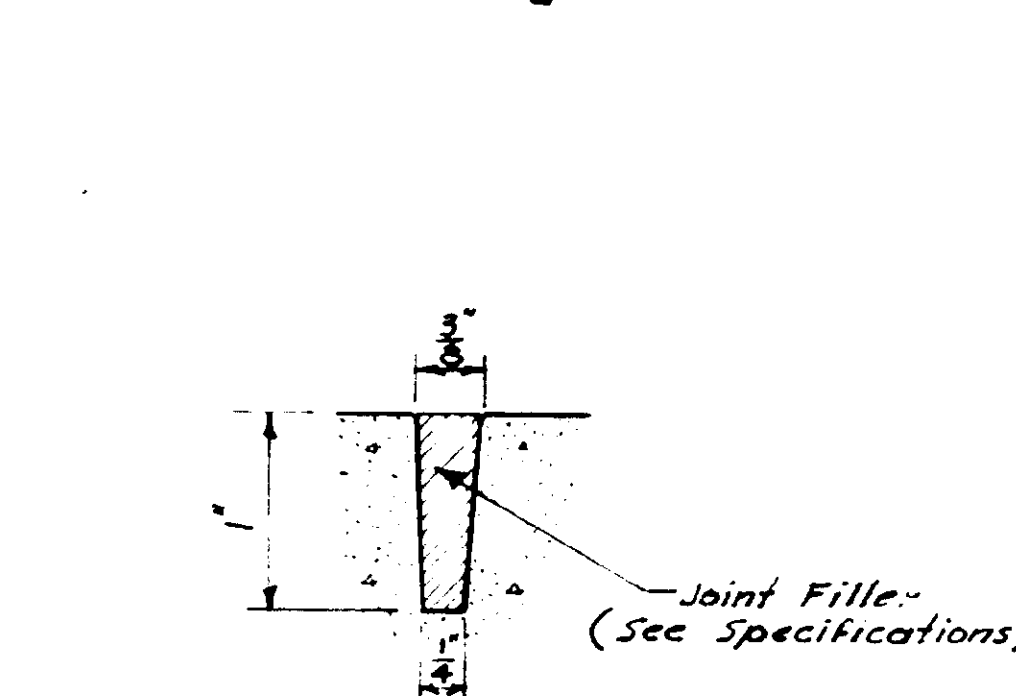
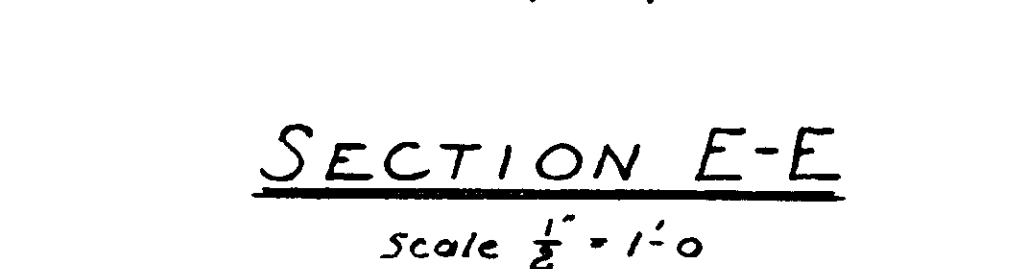
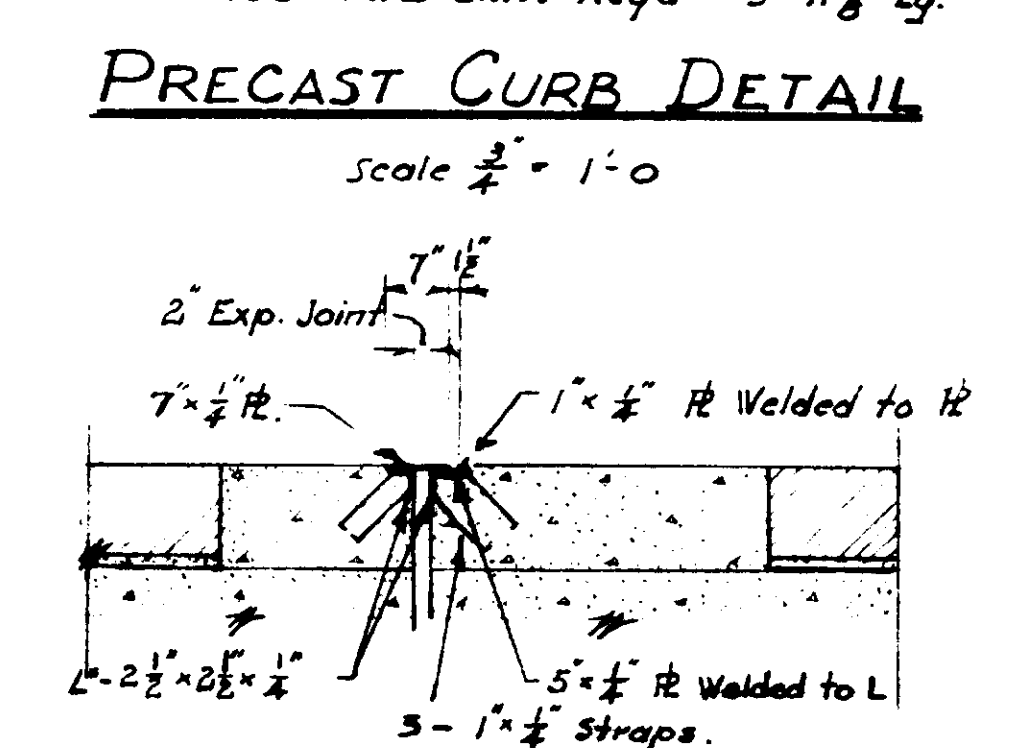
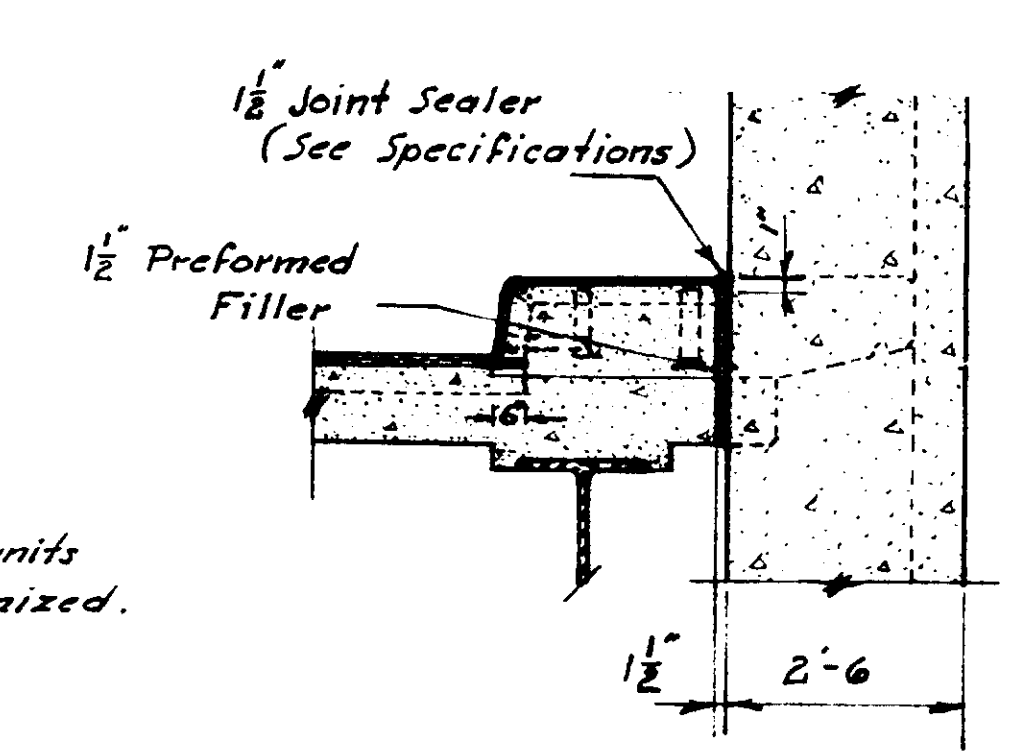
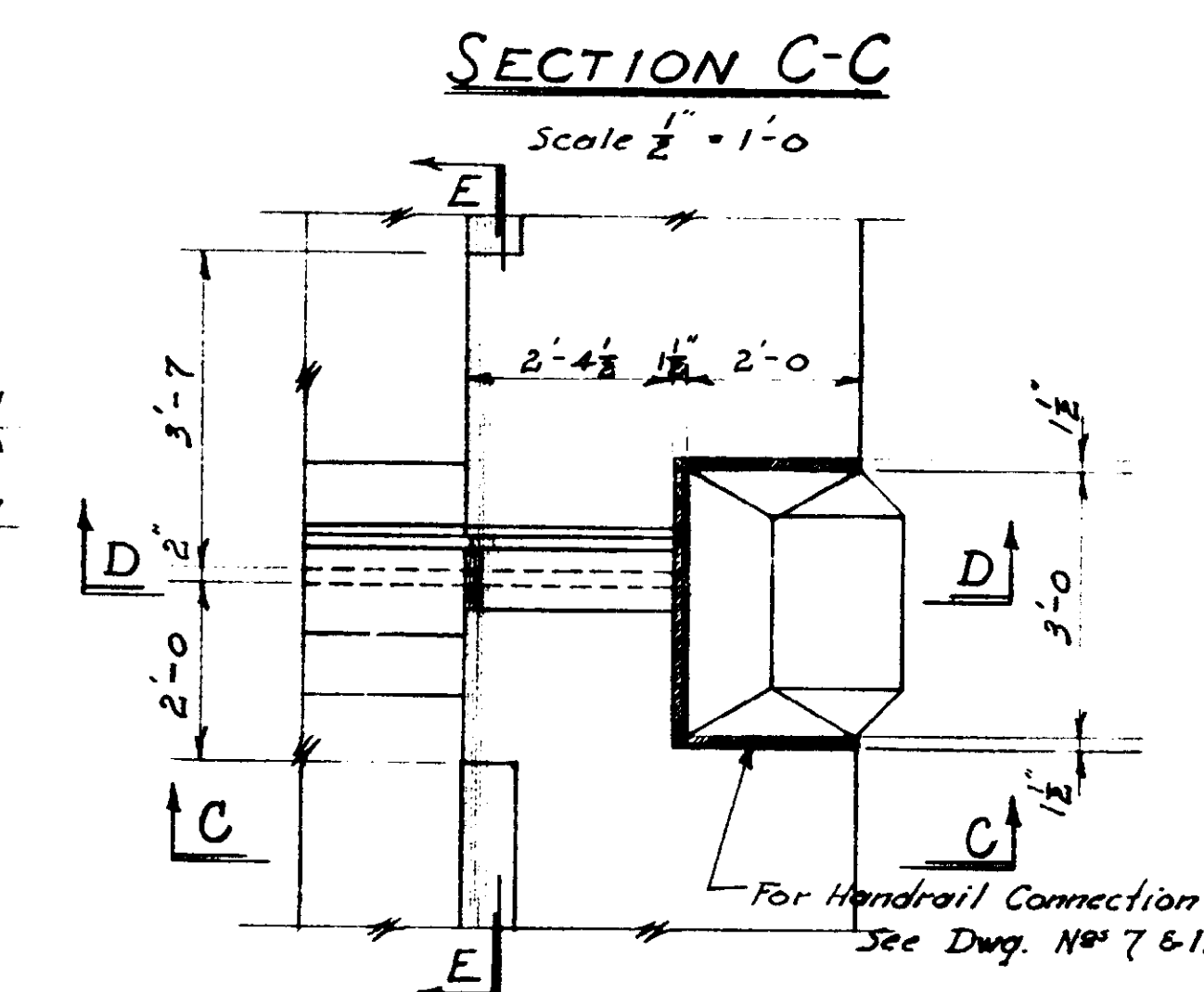
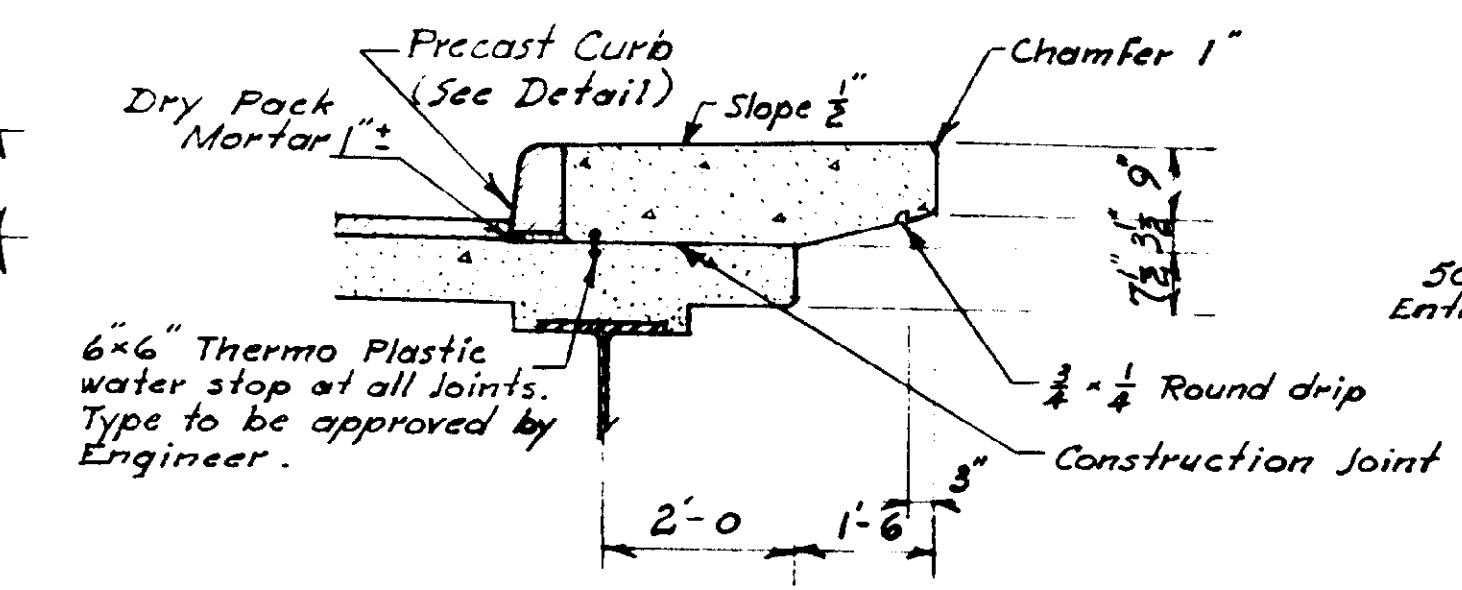
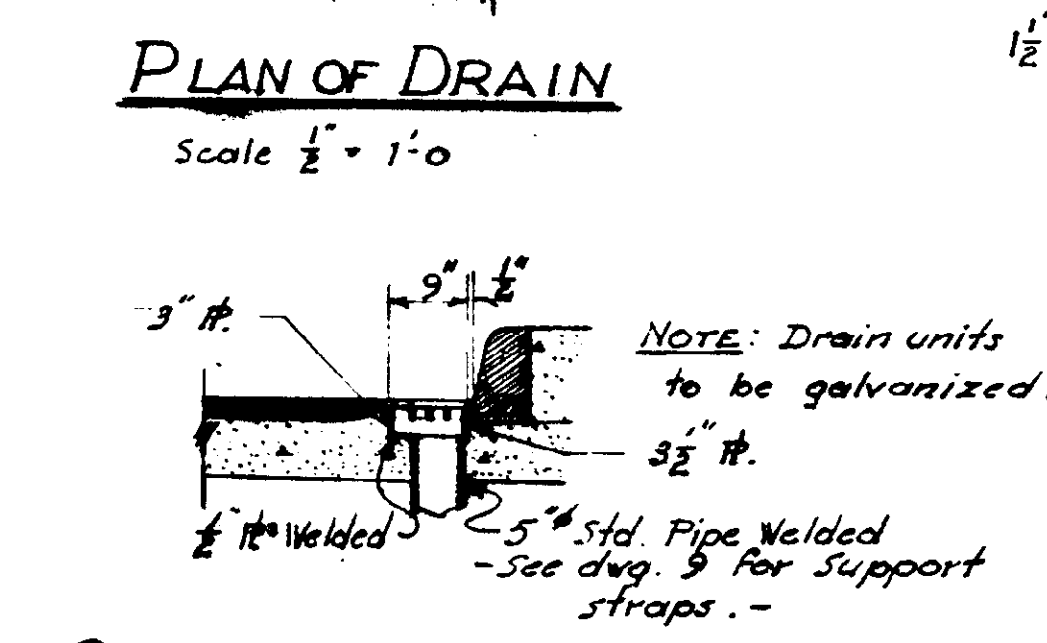
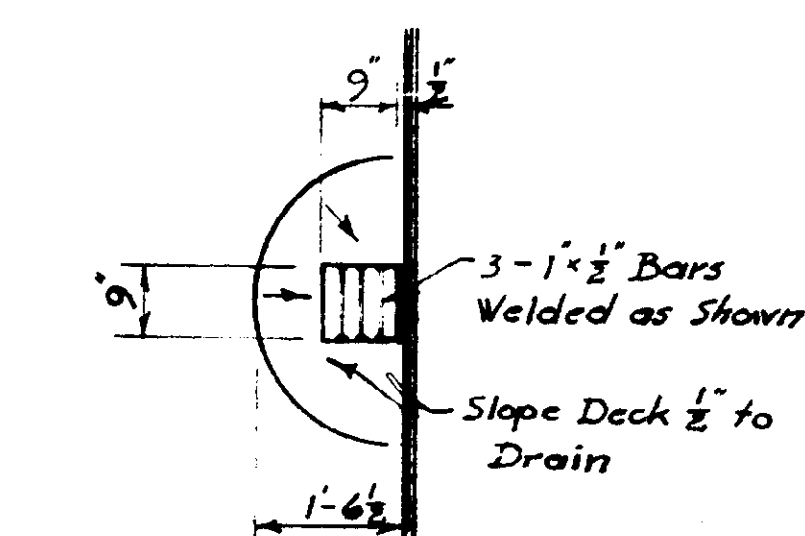
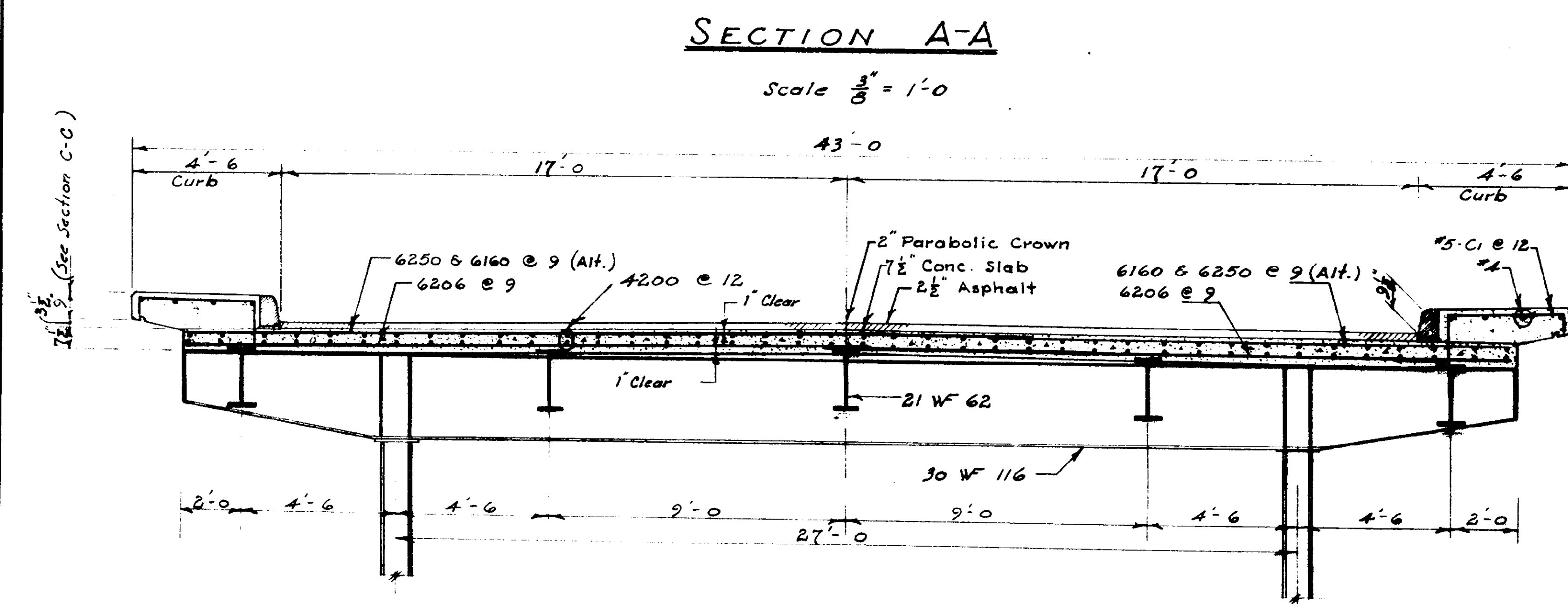
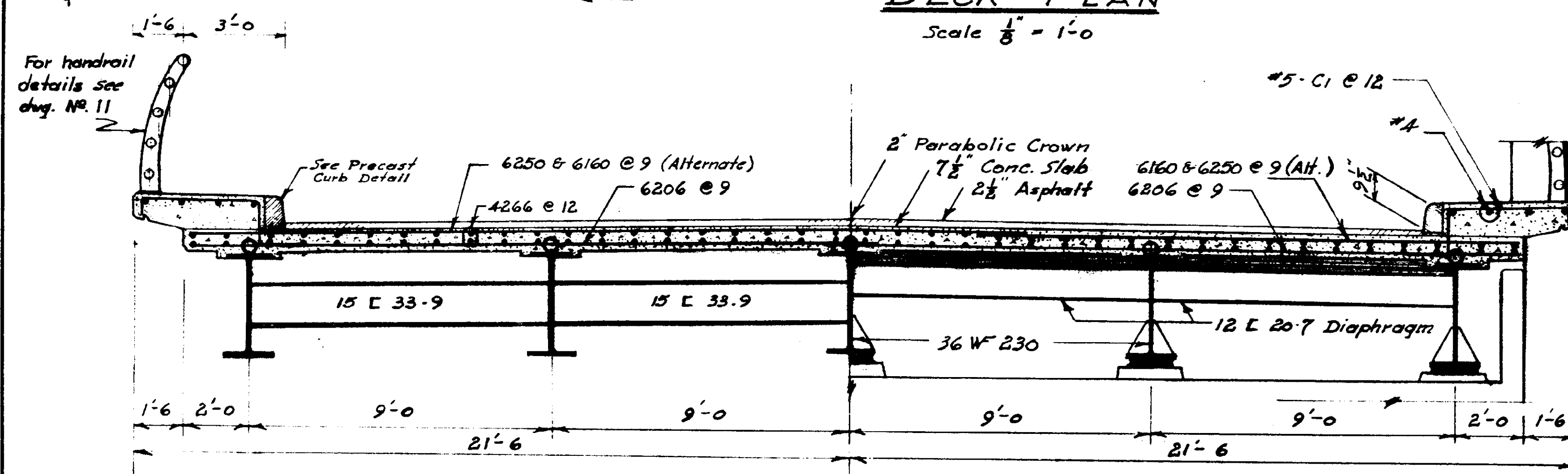
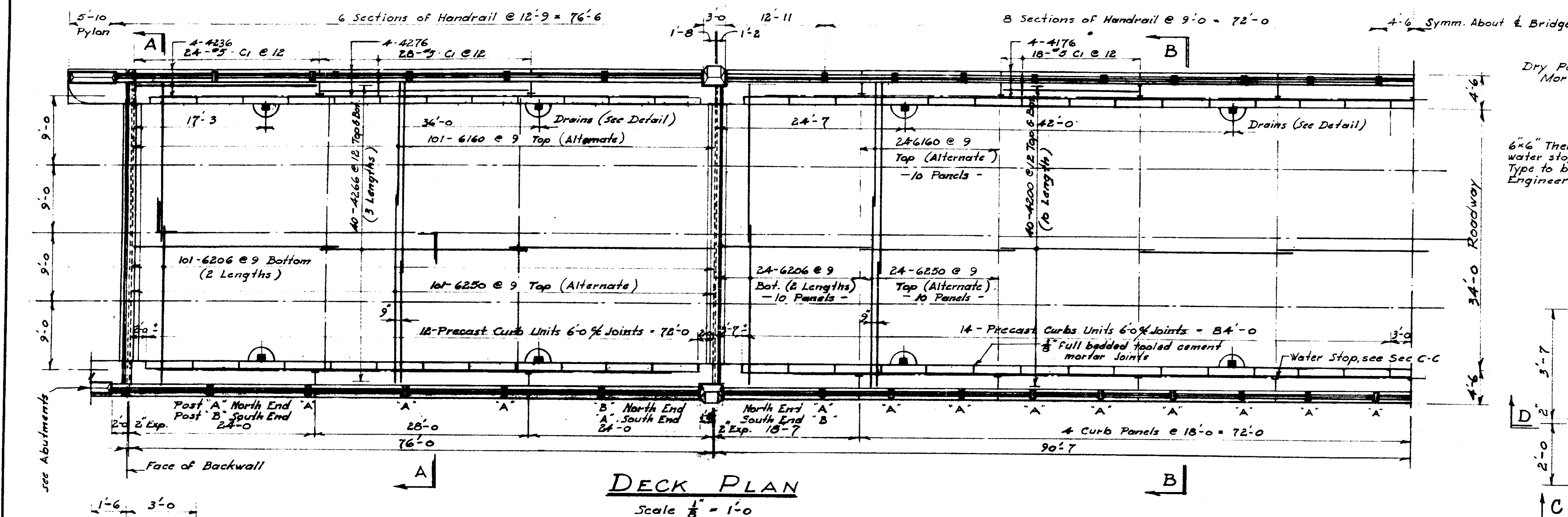


SECTION B-B

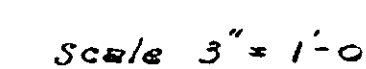
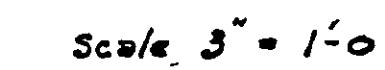
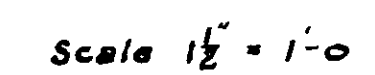
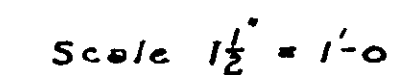
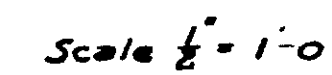
DETAIL Y-Y
SCALE 1/2" = 1'-0"

NOTE: For connection to 21 WF 62 the distance between clip angles to be 1'-0".

No.	REVISIONS	NAME	DATE
DEPARTMENT OF PUBLIC WORKS CANADA DEVELOPMENT ENGINEERING BRANCH STRUCTURES DIVISION NIGEL CREEK BRIDGE BANFF - JASPER HIGHWAY MILE 68.8 BANFF NAT. PARK			
STRUCTURAL STEEL			
JOB SUPERVISOR	DESIGN	G.L.	CHECK
APPROVED	DATE 4/5/60	DRAWN	CHECK
CHIEF-STRUCTURES DIVISION		TRACED	CHECK
APPROVED		PROJECT NO. SD-88	
DATE 4/5/60		SHEET 9 OF 11	
P.T. Clarke CHIEF ENGINEER			



No.	REVISIONS	NAME	DATE
<p align="center"><u>DEPARTMENT OF PUBLIC WORKS</u> <u>CANADA</u> <u>DEVELOPMENT ENGINEERING BRANCH</u> <u>STRUCTURES DIVISION</u></p>			
<p align="center"><u>NIGEL CREEK BRIDGE</u> <u>BANFF — JASPER HIGHWAY</u> <u>MILE 68-8 BANFF NAT. PARK.</u></p>			
<p align="center"><u>DECK.</u></p>			
JOB SUPERVISOR	H. Hewitt.		
APPROVED	DATE 4/5/60		
<p><i>H. Thompson</i></p>			
CHIEF STRUCTURES DIVISION	DATE 4/6/60		
APPROVED	DATE 4/6/60		
<p><i>P. T. Clarke</i></p>			
CHIEF ENGINEER			
DESIGN	G.L.	CHECK	<i>[Signature]</i>
DRAWN	L.B.P.	CHECK	<i>[Signature]</i>
TRACED		CHECK	
PROJECT NO.			
<u>SD-88.</u>			
SHEET	10	OF	11



- NOTES**
1. All posts and pylons to be vertical.
 2. All rails and tops of pylons to be parallel to grade (1.72%)
 3. All pylon connections to be as shown above except for South Abutment - Long Wing (See Drwg. N^o 4)

4/5/60