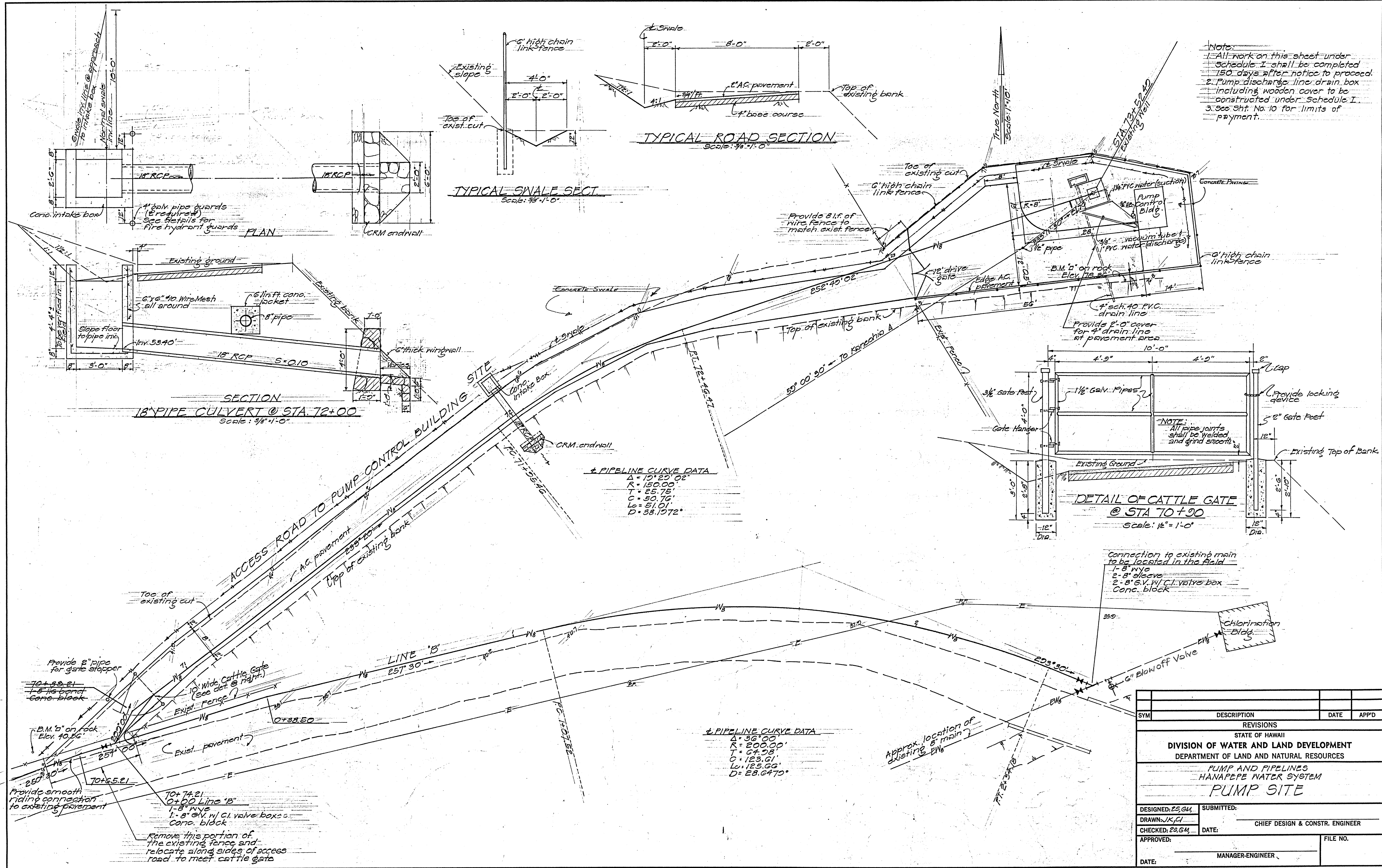


**IFB JOB NO. 23-08**

**APPENDIX K  
HANAPEPE WATER SYSTEM**

**The following 6 pages are a partial set of as-built drawings from  
DOW Job No. 19-L-4R, PUMP AND PIPELINES, HANAPEPE  
WATER SYSTEM**



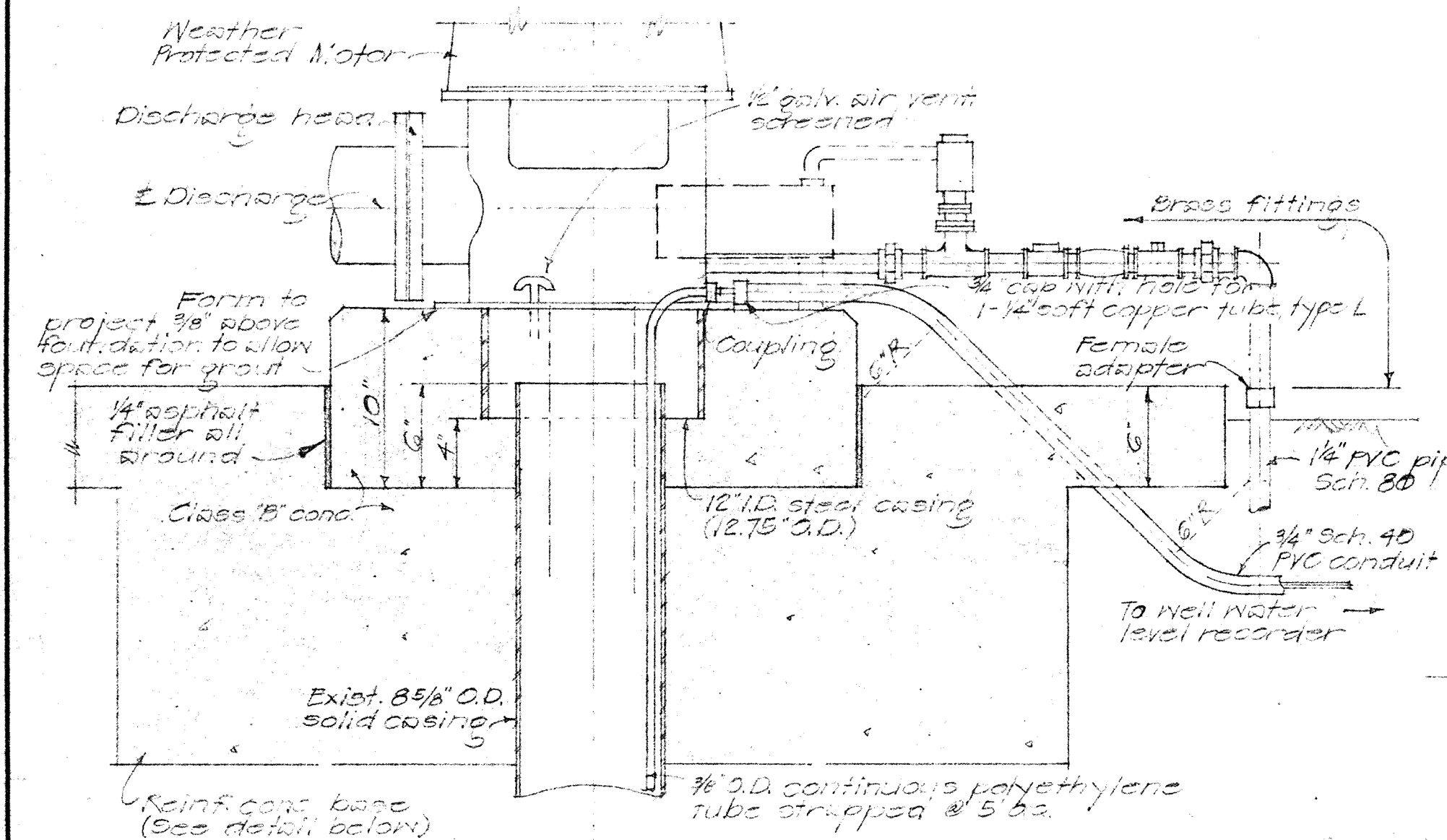
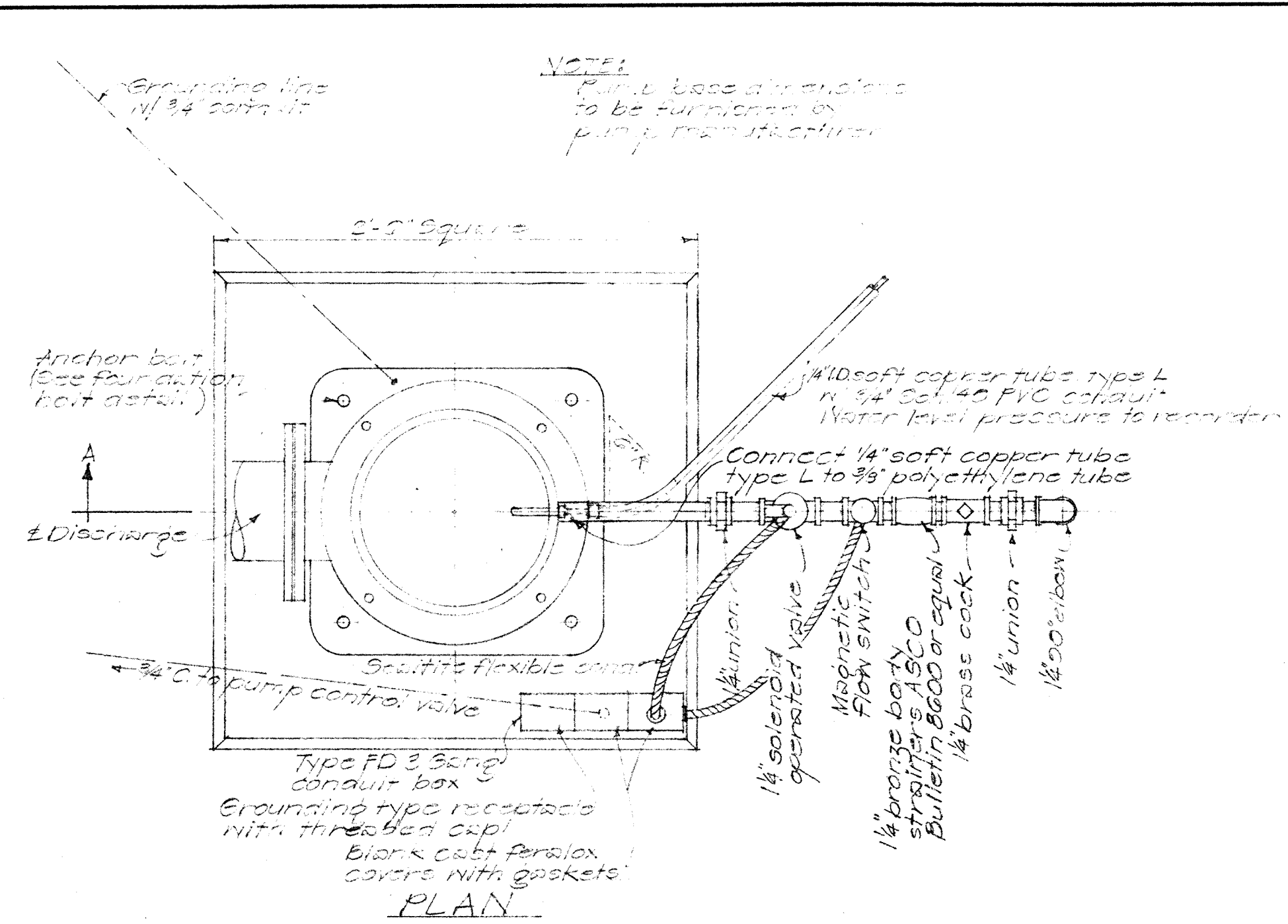
Note:  
 1. All work on this sheet under Schedule I shall be completed 150 days after notice to proceed.  
 2. Pump discharge line drain box including wooden cover to be constructed under Schedule I.  
 3. See Sht. No. 10 for limits of payment.

PIPELINE CURVE DATA  
 $\Delta = 10^{\circ}20'02''$   
 $R = 150.00'$   
 $T = 25.75'$   
 $C = 50.76'$   
 $L = 51.01'$   
 $D = 38.1972^{\circ}$

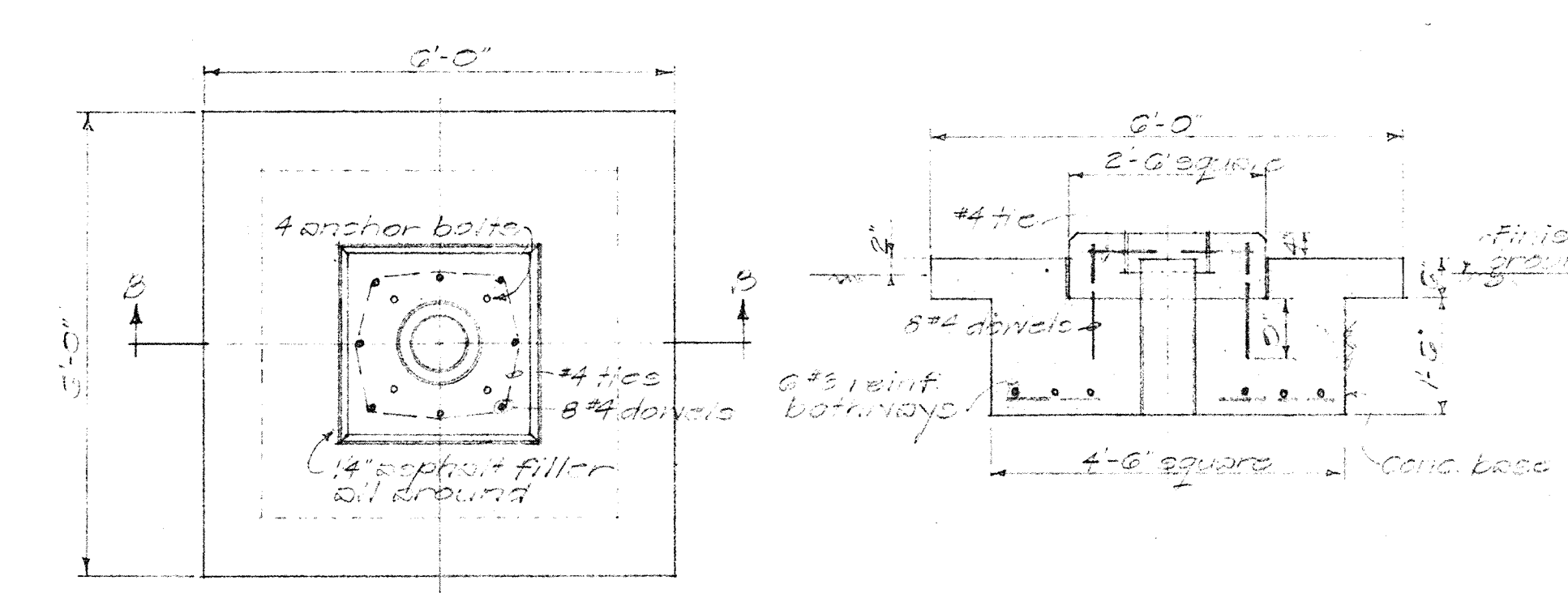
PIPELINE CURVE DATA  
 $\Delta = 36^{\circ}00'$   
 $R = 200.00'$   
 $T = 67.08'$   
 $C = 123.61'$   
 $L = 125.66'$   
 $D = 23.6470^{\circ}$

SYM	DESCRIPTION	DATE	APP'D
REVISIONS			
STATE OF HAWAII			
DIVISION OF WATER AND LAND DEVELOPMENT			
DEPARTMENT OF LAND AND NATURAL RESOURCES			
PUMP AND PIPELINES			
HANAPEPE WATER SYSTEM			
PUMP SITE			
DESIGNED: ES,GM	SUBMITTED:		
DRAWN: JK,CI	CHIEF DESIGN & CONSTR. ENGINEER		
CHECKED: ES,GM	DATE:		
APPROVED:	MANAGER-ENGINEER		FILE NO.
DATE:			

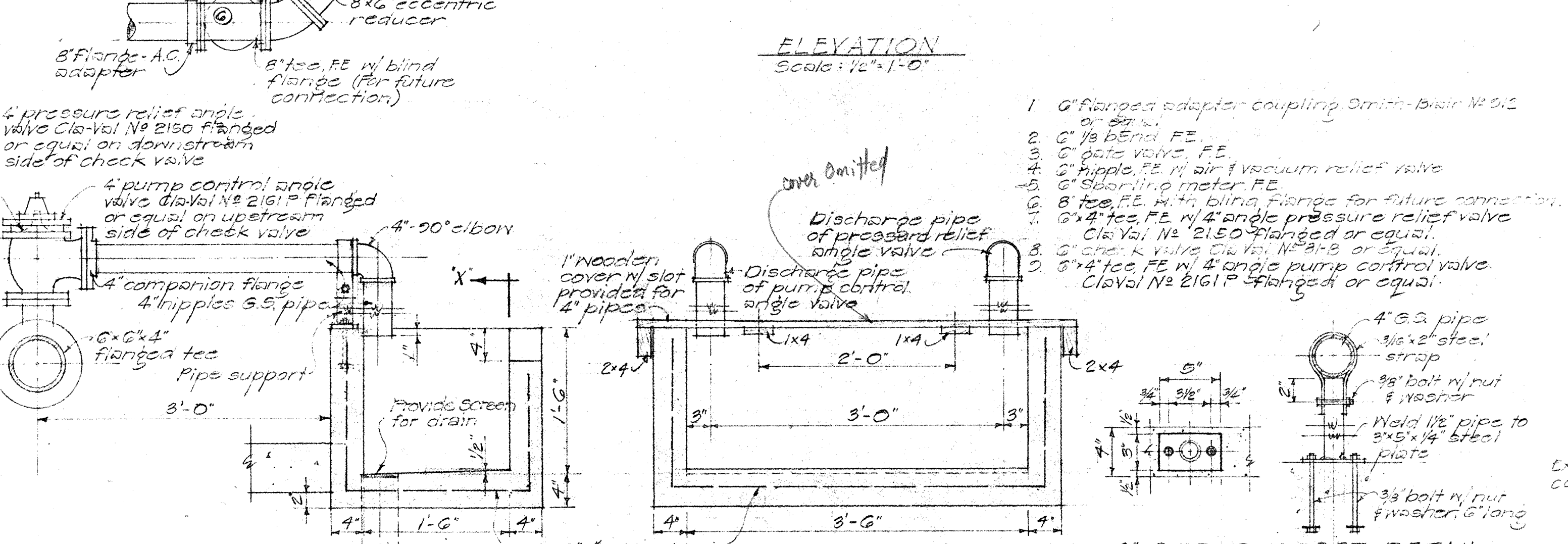
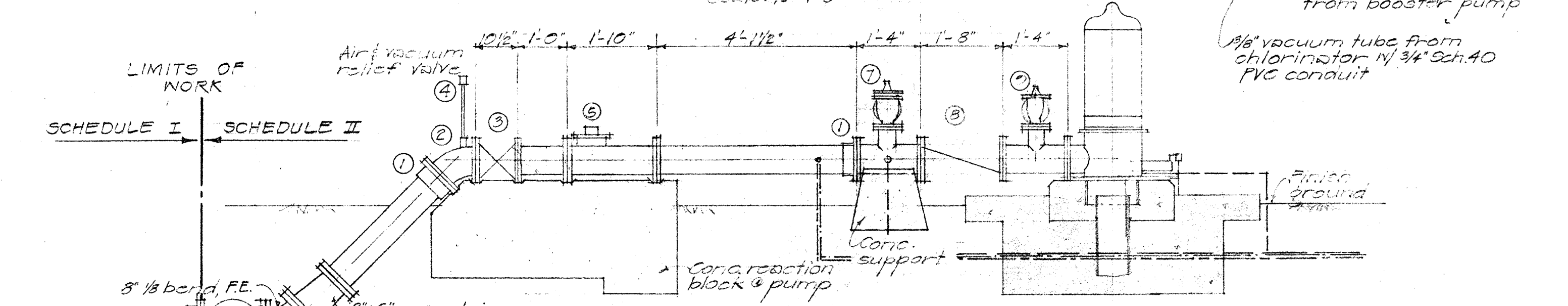
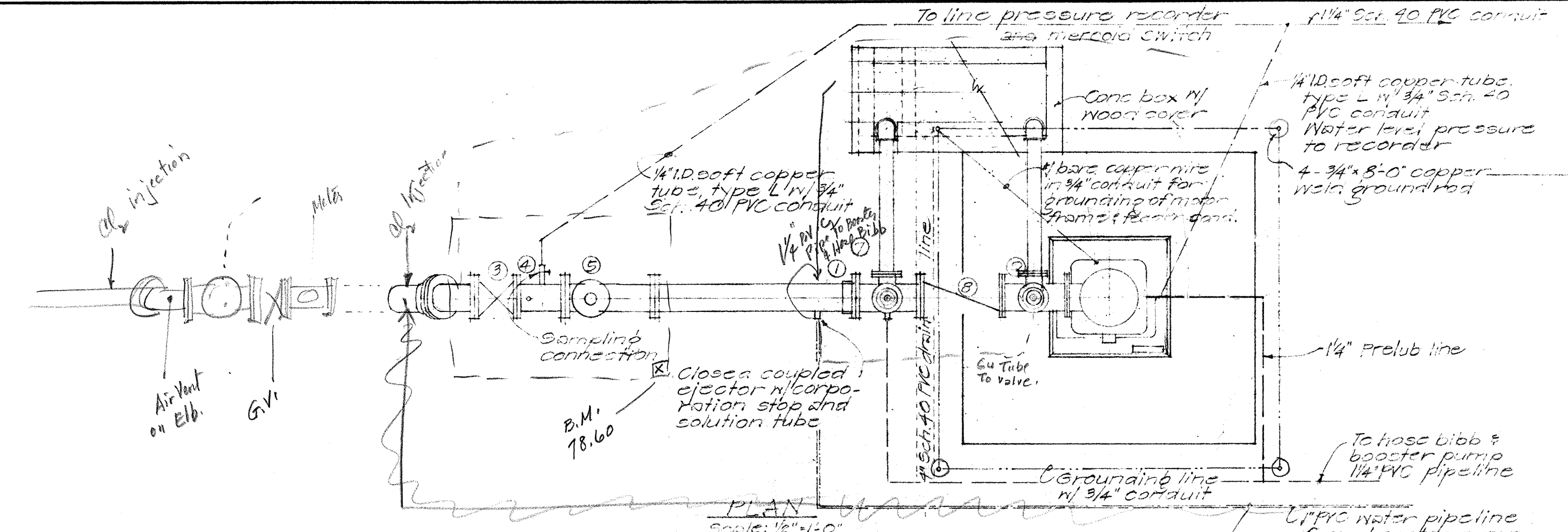




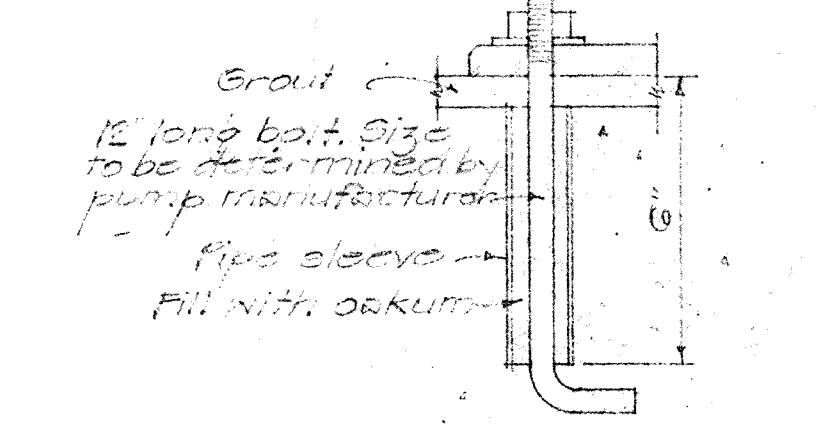
**PUMP FOUNDATION DETAIL**  
Scale: 1/2" = 1'-0"



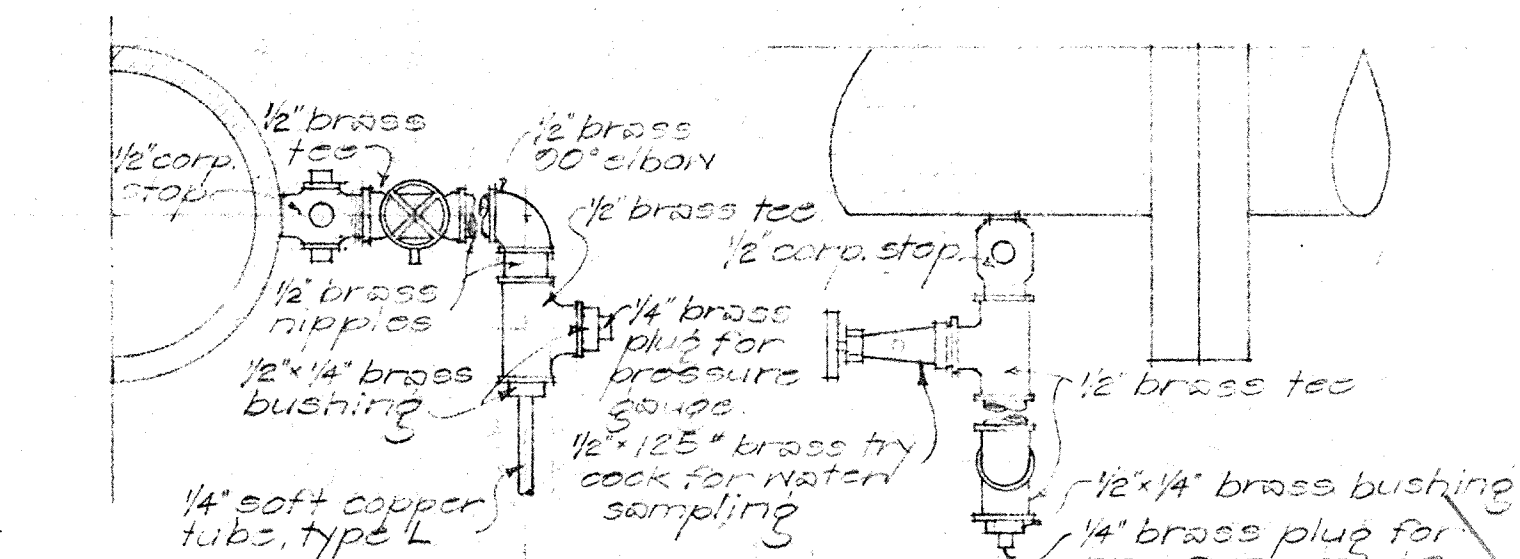
**PUMP BASE REINFORCEMENT DETAIL**  
Scale: 1/2" = 1'-0"



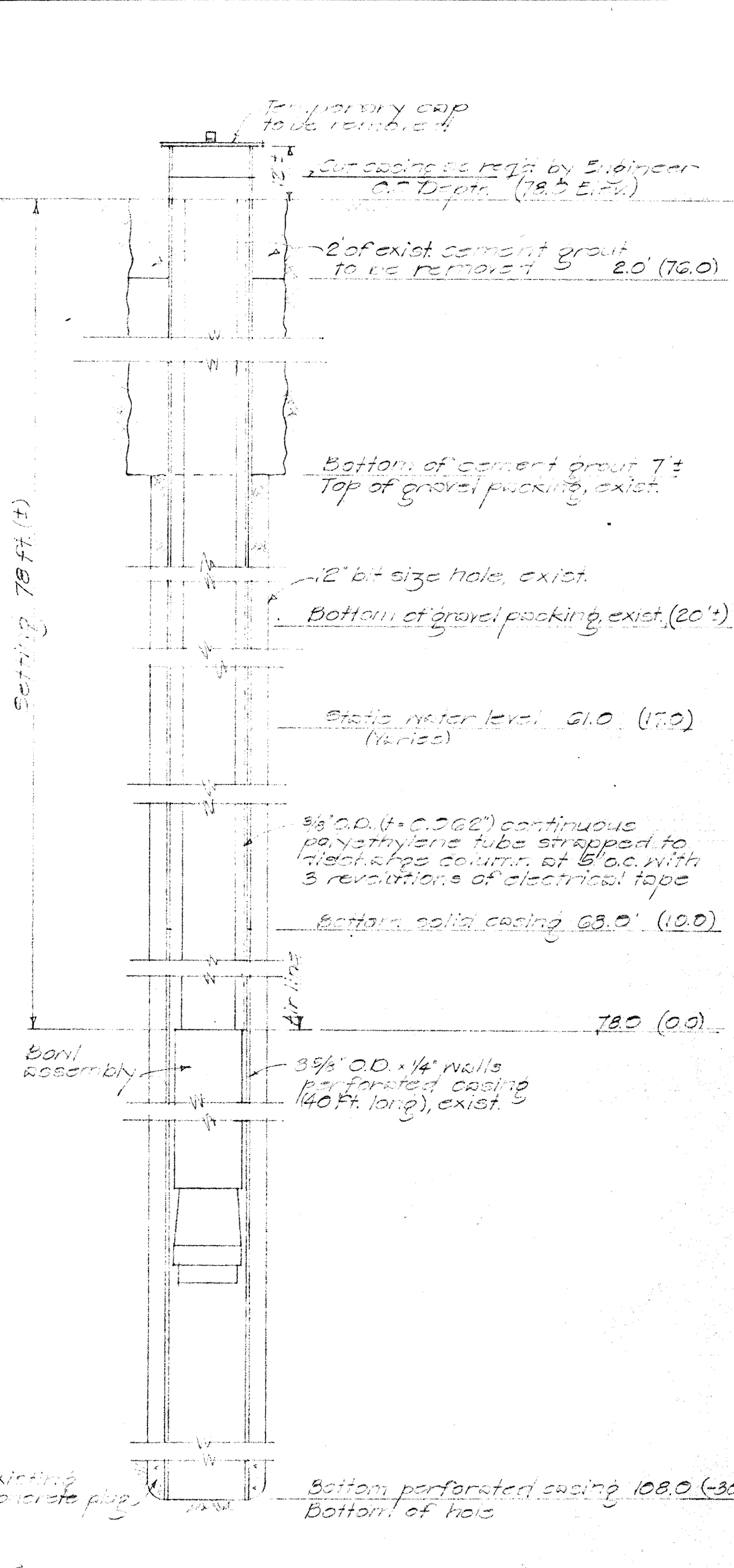
**PUMP DISCHARGE LINE DETAILS**  
Scale: as noted



**FOUNDATION BOLT DETAIL**  
Scale: 3/4" = 1'-0"



**CONNECTION FOR SAMPLING**  
Scale: 3/4" = 1'-0"

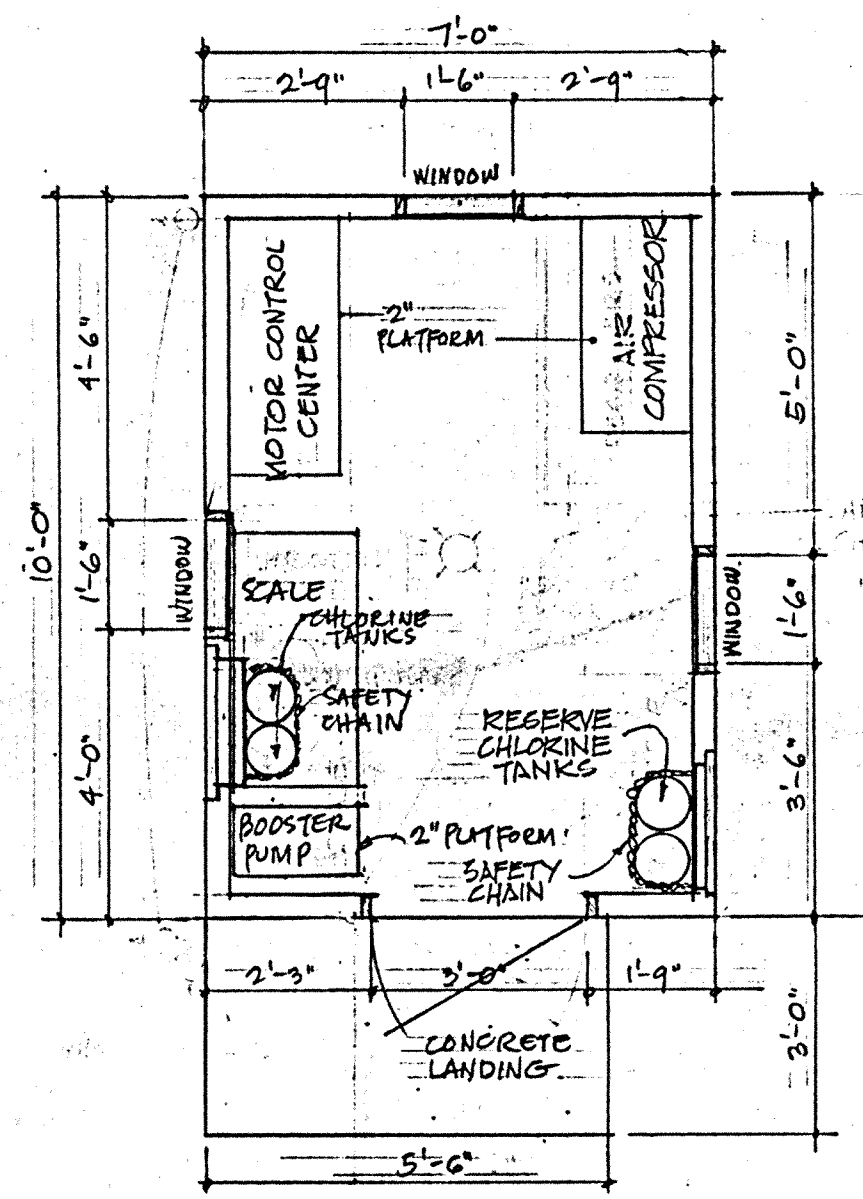


**SECTION THRU DEEP WELL**  
Scale: No. 15

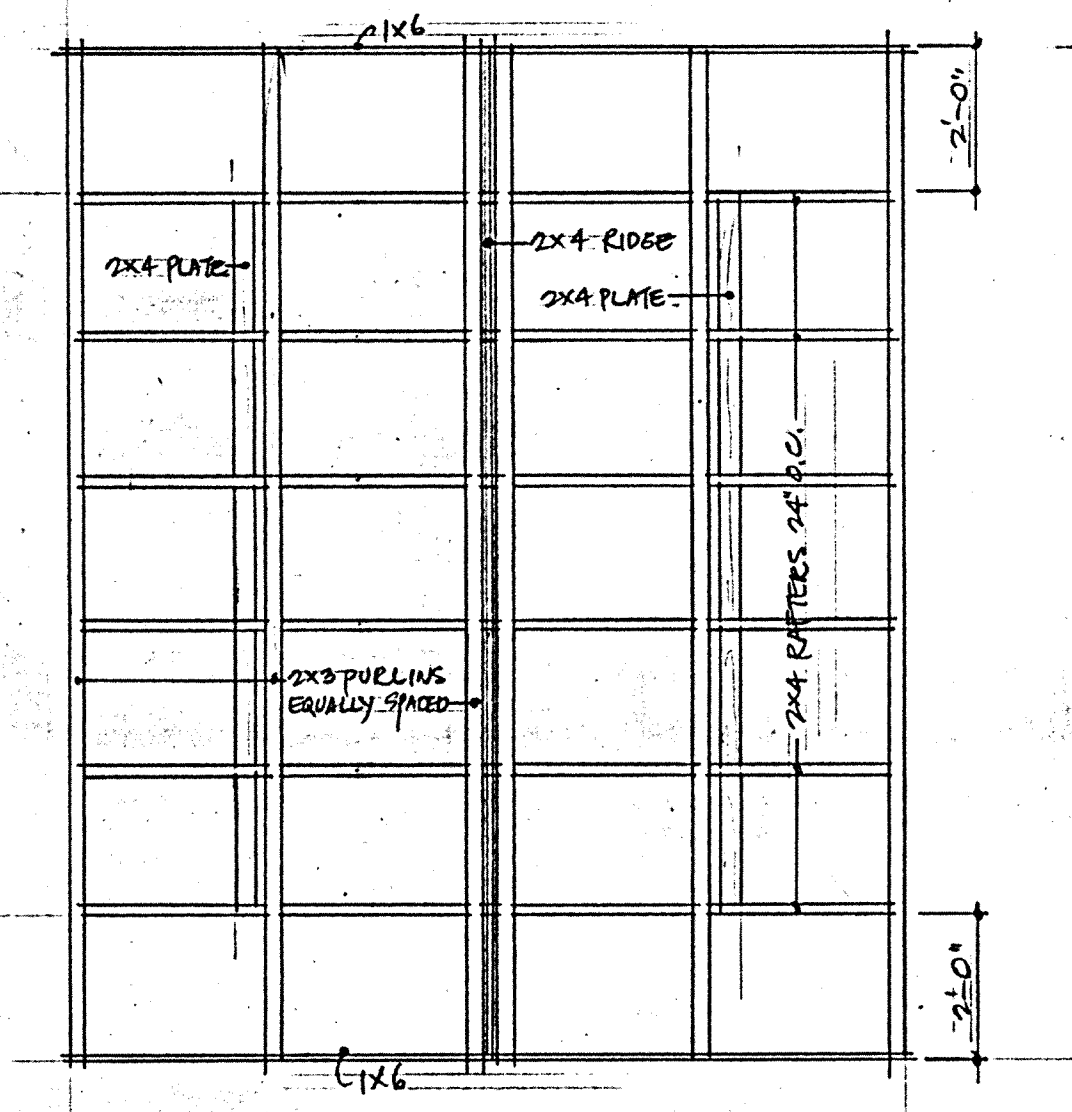
Note: Schedule II Contract shall furnish pump connecting details 30 days after notice to proceed.

SYM	DESCRIPTION	DATE	APP'D
REVISIONS			
STATE OF HAWAII			
DIVISION OF WATER AND LAND DEVELOPMENT			
DEPARTMENT OF LAND AND NATURAL RESOURCES			
PUMP AND PIPELINES			
HANAPOPE WATER SYSTEM			
<b>PUMP AND DISCHARGE LINE</b>			
DESIGNED: ES, EW	SUBMITTED:		
DRAWN: CY	CHIEF DESIGN & CONSTR. ENGINEER		
CHECKED: ES, EW	DATE:		
APPROVED:	MANAGER-ENGINEER		FILE NO.
DATE:			

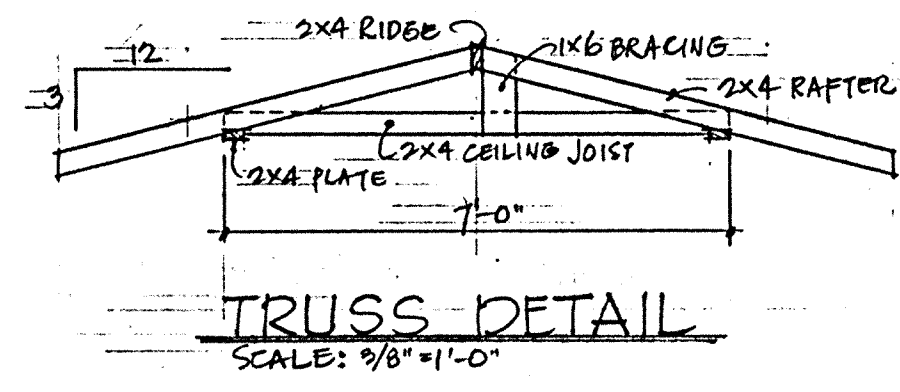




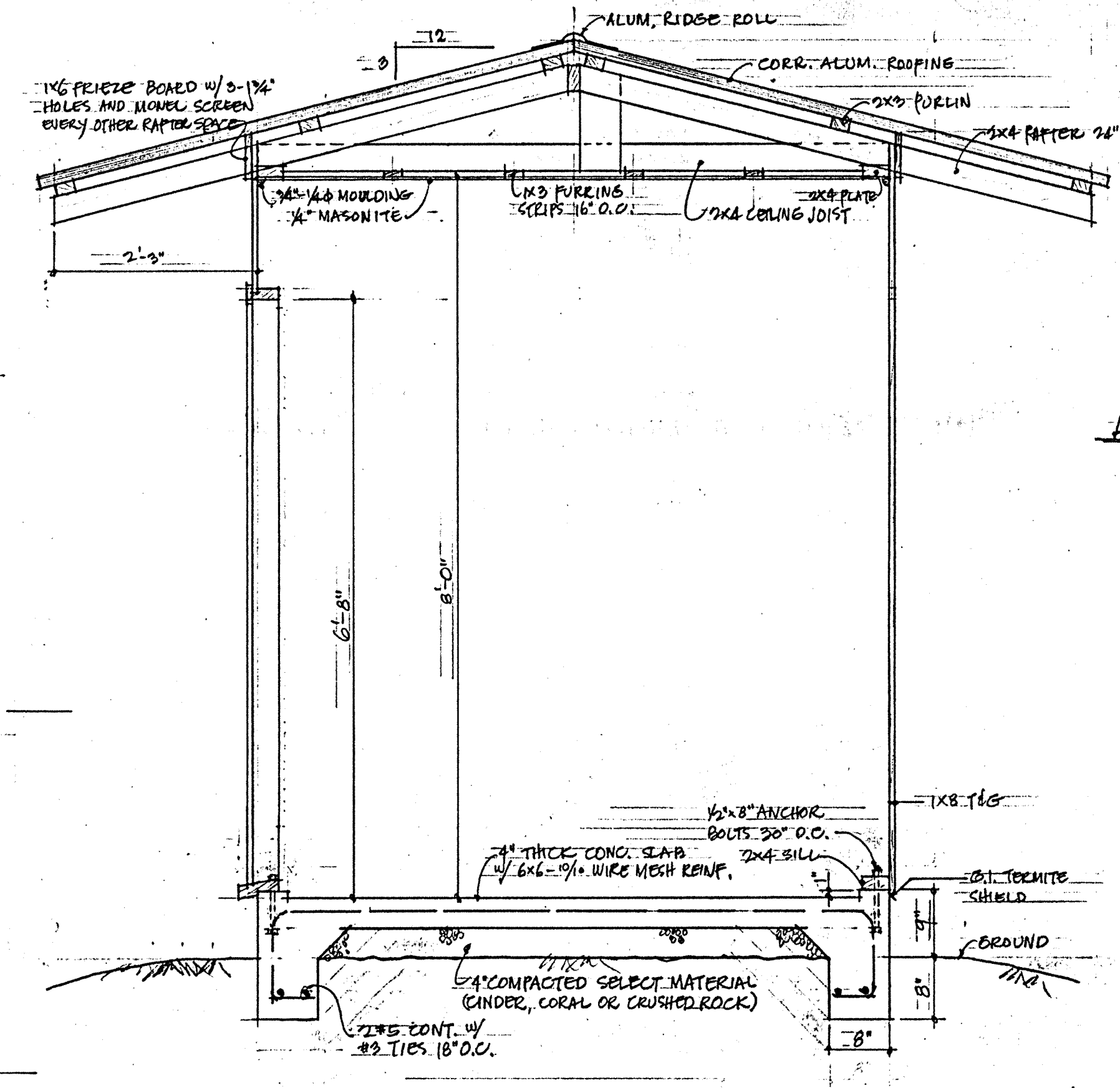
FLOOR PLAN  
SCALE: 3/8"=1'-0"



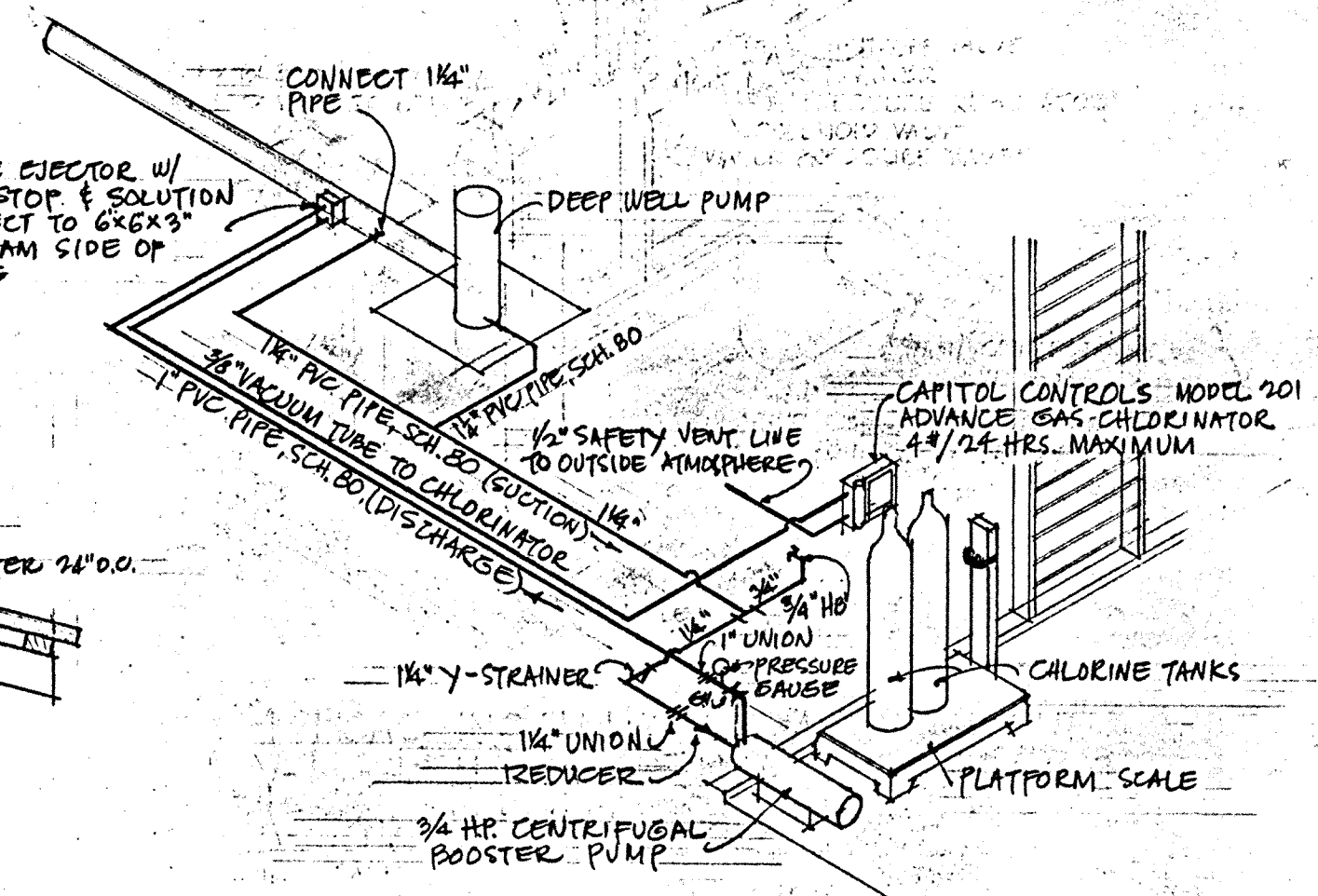
ROOF FRAMING PLAN  
SCALE: 3/8"=1'-0"



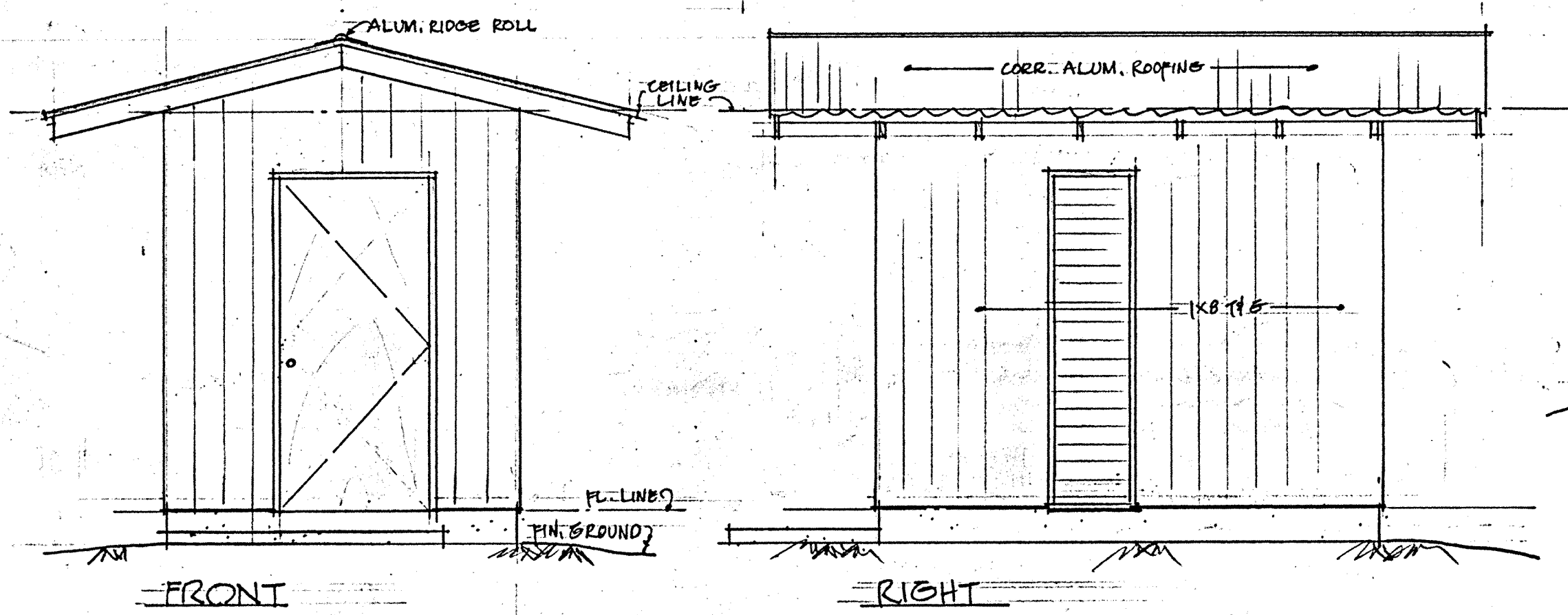
TRUSS DETAIL  
SCALE: 3/8"=1'-0"



CROSS SECTION  
SCALE: 3/4"=1'-0"

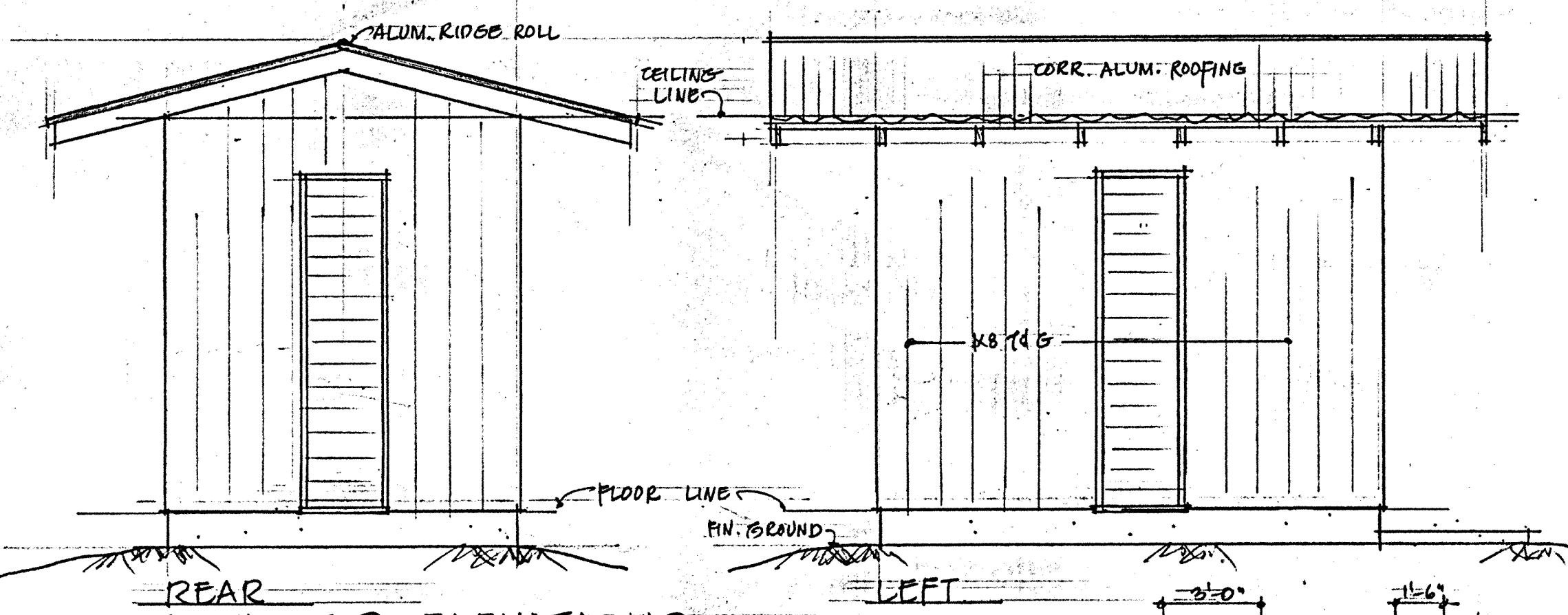


INSTALLATION ARRANGEMENT OF  
ADVANCE GAS CHLORINATOR WITH DEEP PUMP  
NO SCALE



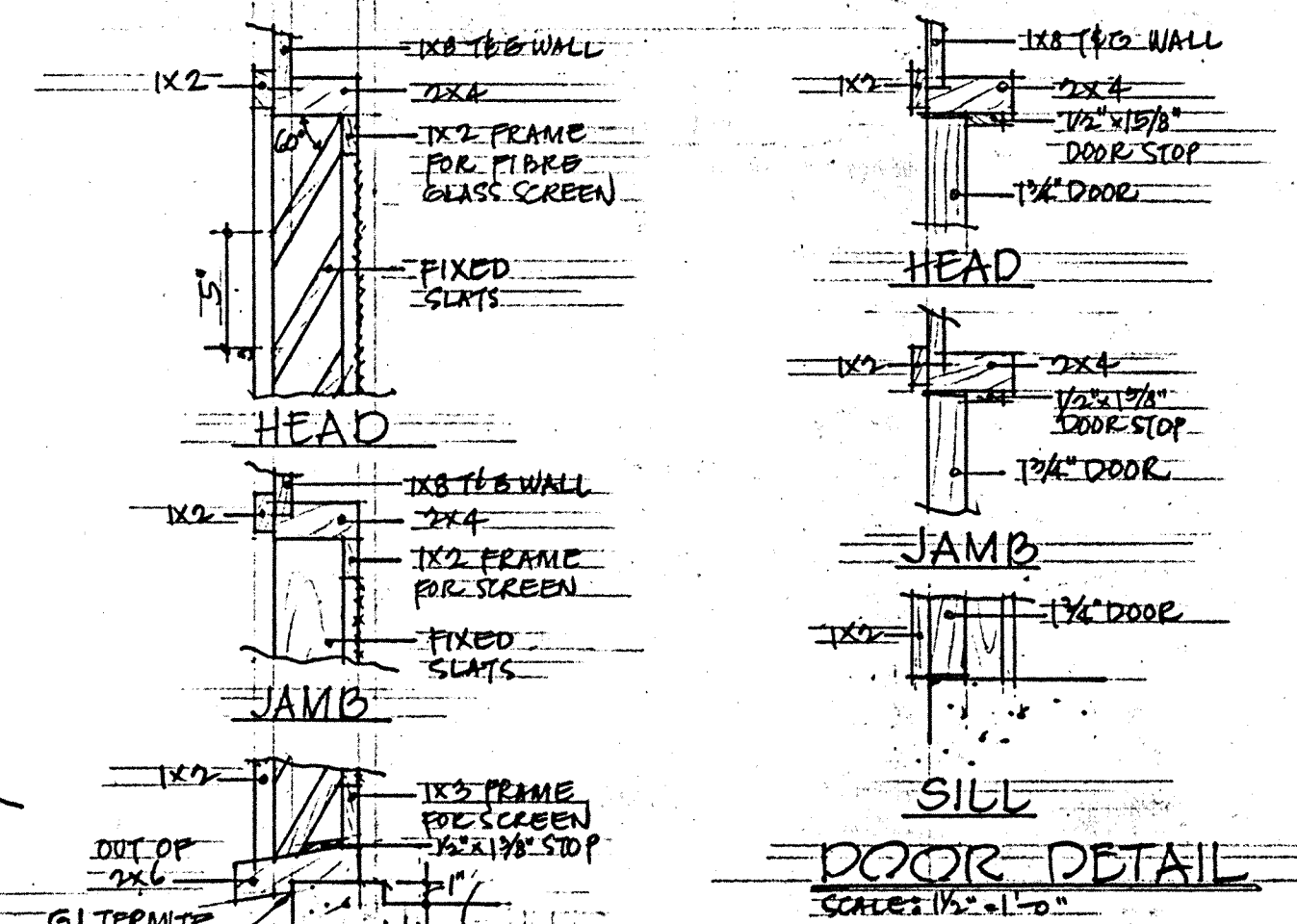
FRONT

RIGHT

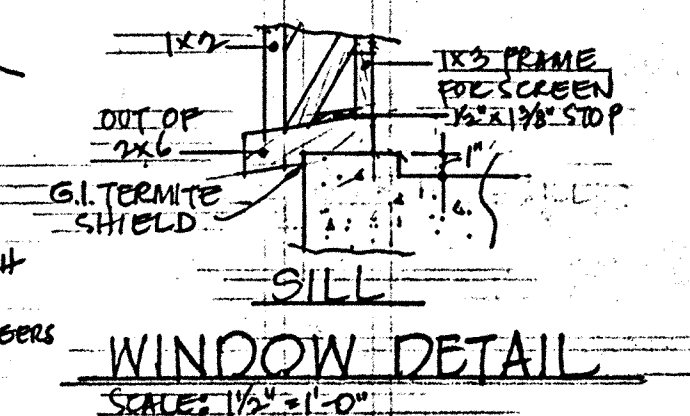


REAR EXTERIOR ELEVATIONS  
SCALE: 3/8"=1'-0"

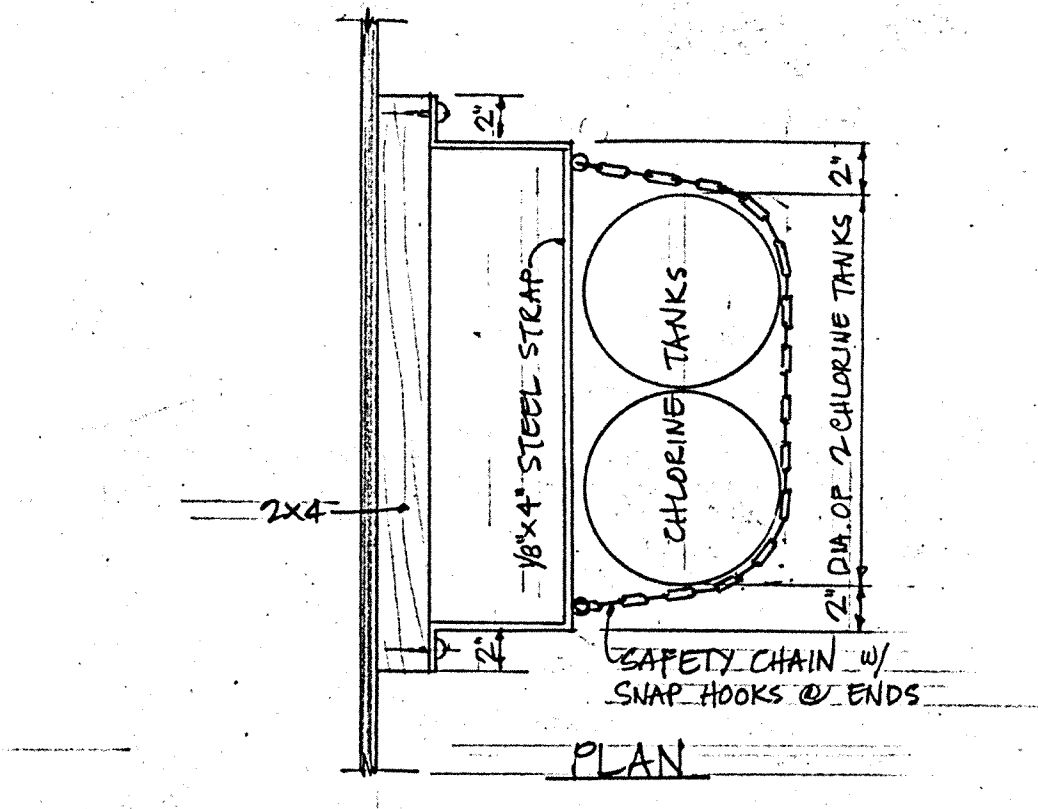
LEFT



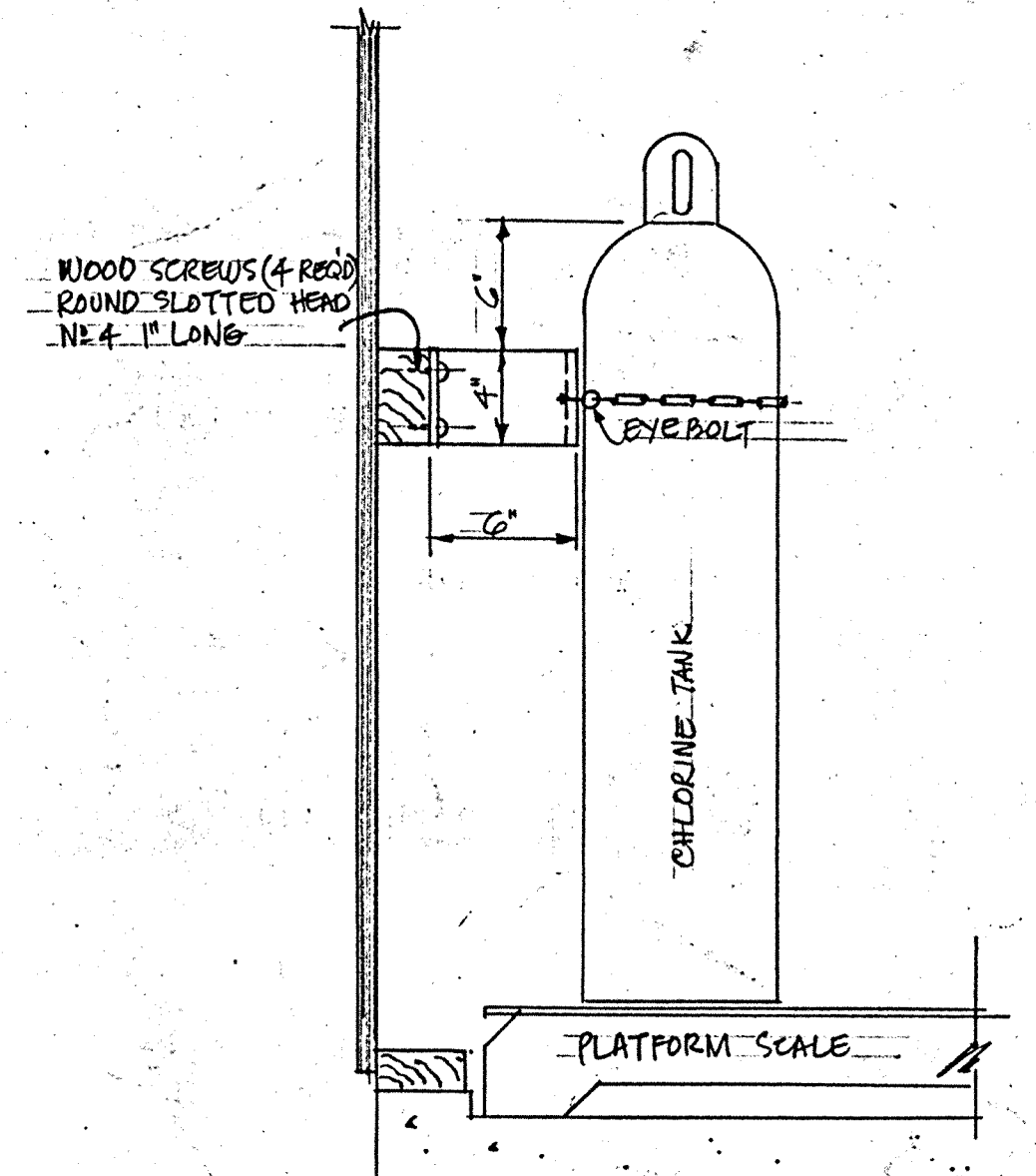
DOOR DETAIL  
SCALE: 1/2"=1'-0"



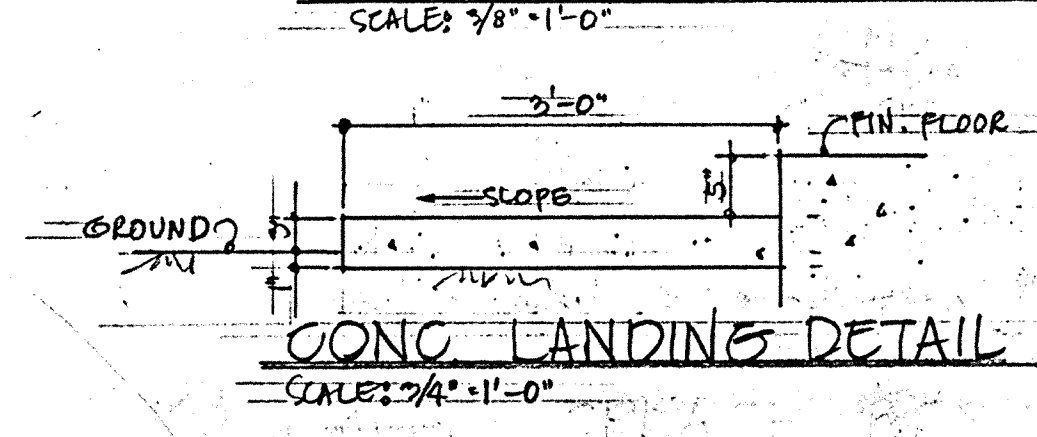
WINDOW DETAIL  
SCALE: 1/2"=1'-0"



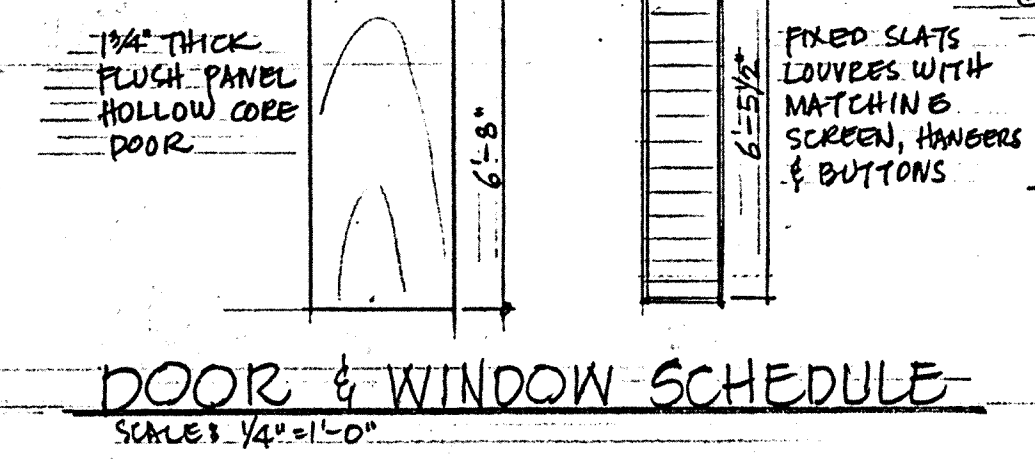
PLAN



ELEVATION  
SAFETY CHAIN  
ATTACHMENT DETAIL  
SCALE: 1/2"=1'-0"



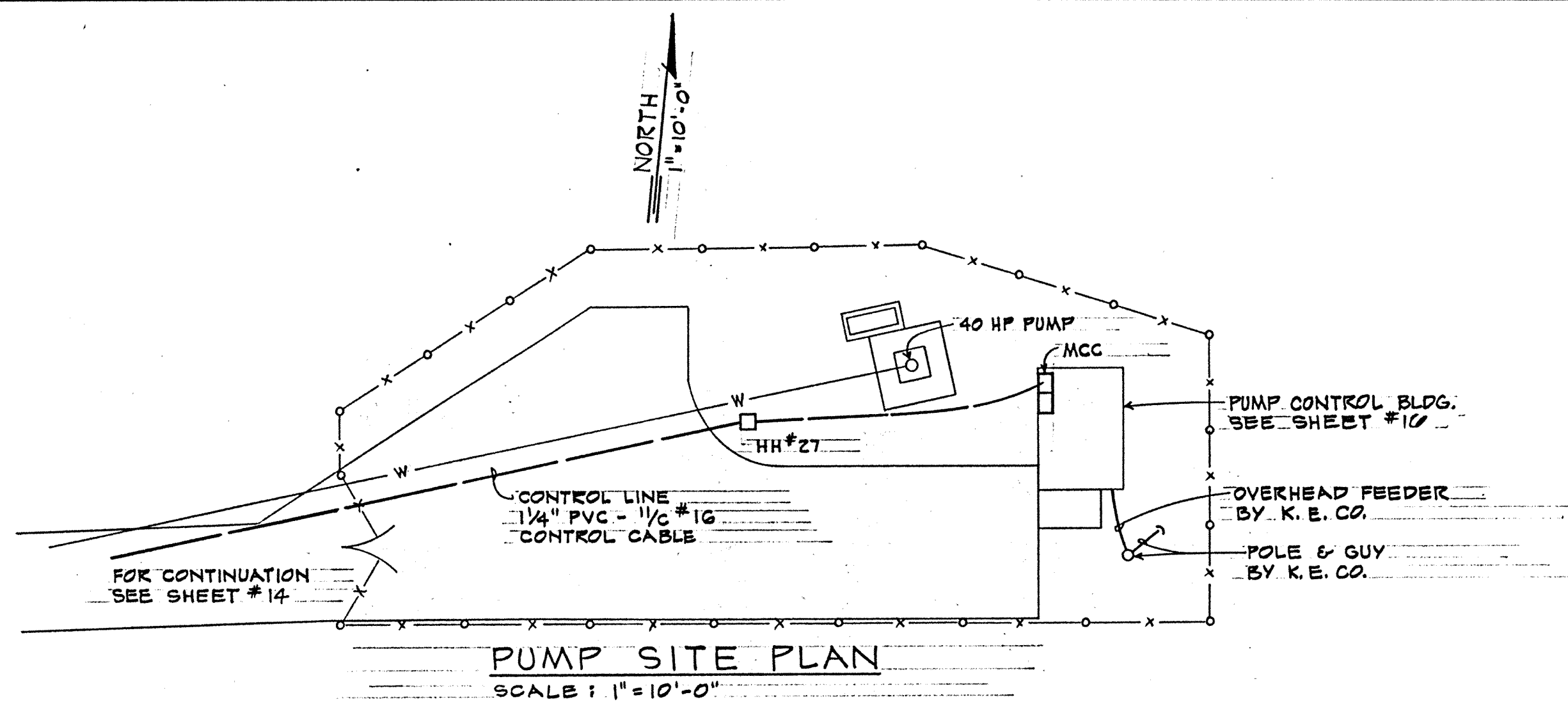
CONC. LANDINGS DETAIL  
SCALE: 3/4"=1'-0"



DOOR & WINDOW SCHEDULE  
SCALE: 1/4"=1'-0"

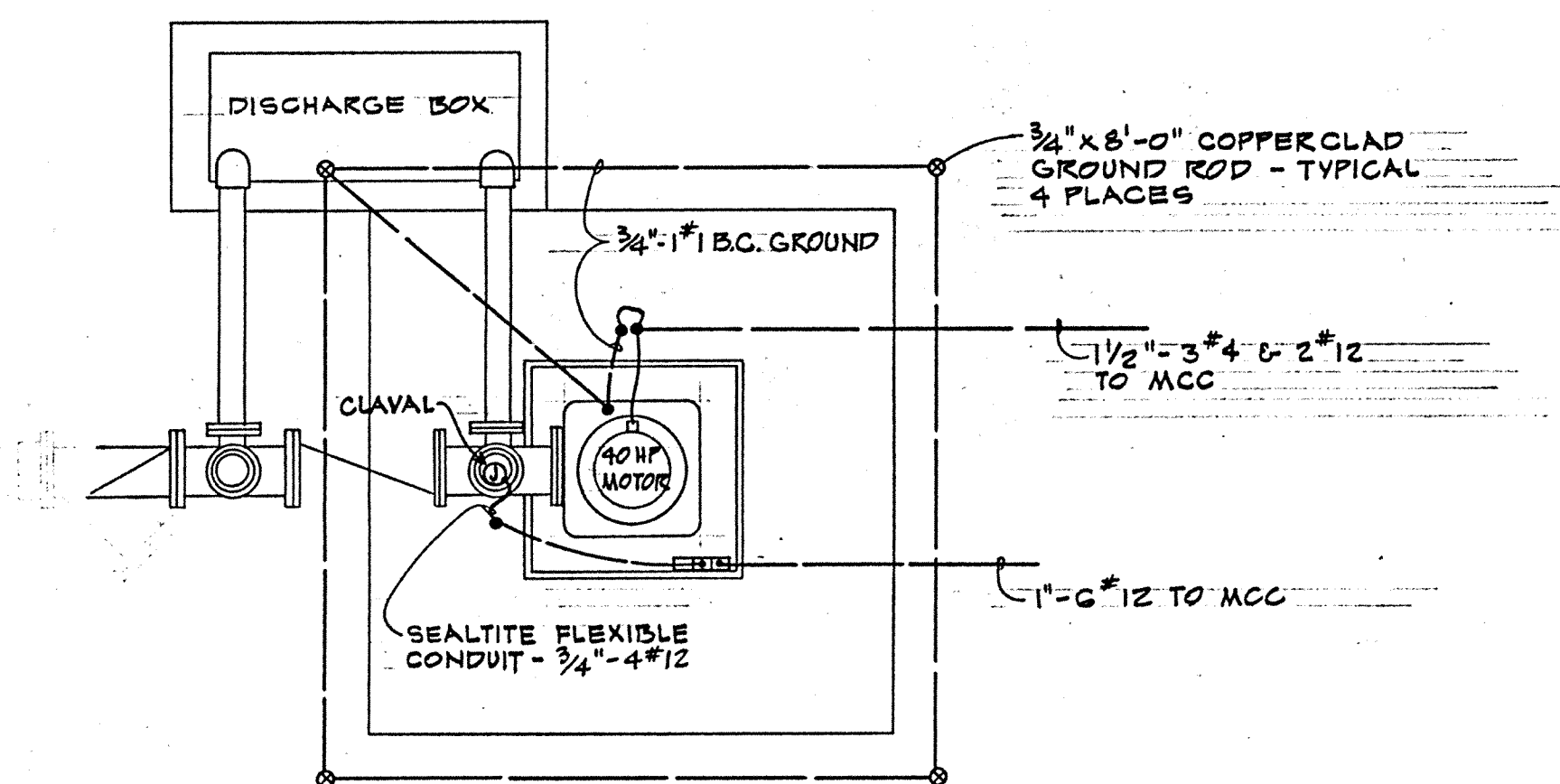
ALL SCHEDULE II

SYM	DESCRIPTION	DATE	APP'D
REVISIONS			
STATE OF HAWAII			
DIVISION OF WATER AND LAND DEVELOPMENT			
DEPARTMENT OF LAND AND NATURAL RESOURCES			
PUMP AND PIPELINES HANAPEPE WATER SYSTEM			
PUMP CONTROL BUILDING			
DESIGNED: ZS	SUBMITTED:		
DRAWN: CI	DATE: _____		
CHECKED: ZS/HS	CHIEF DESIGN & CONSTR. ENGINEER		
APPROVED: _____	FILE NO. _____		
DATE: _____	MANAGER-ENGINEER		



PUMP SITE PLAN

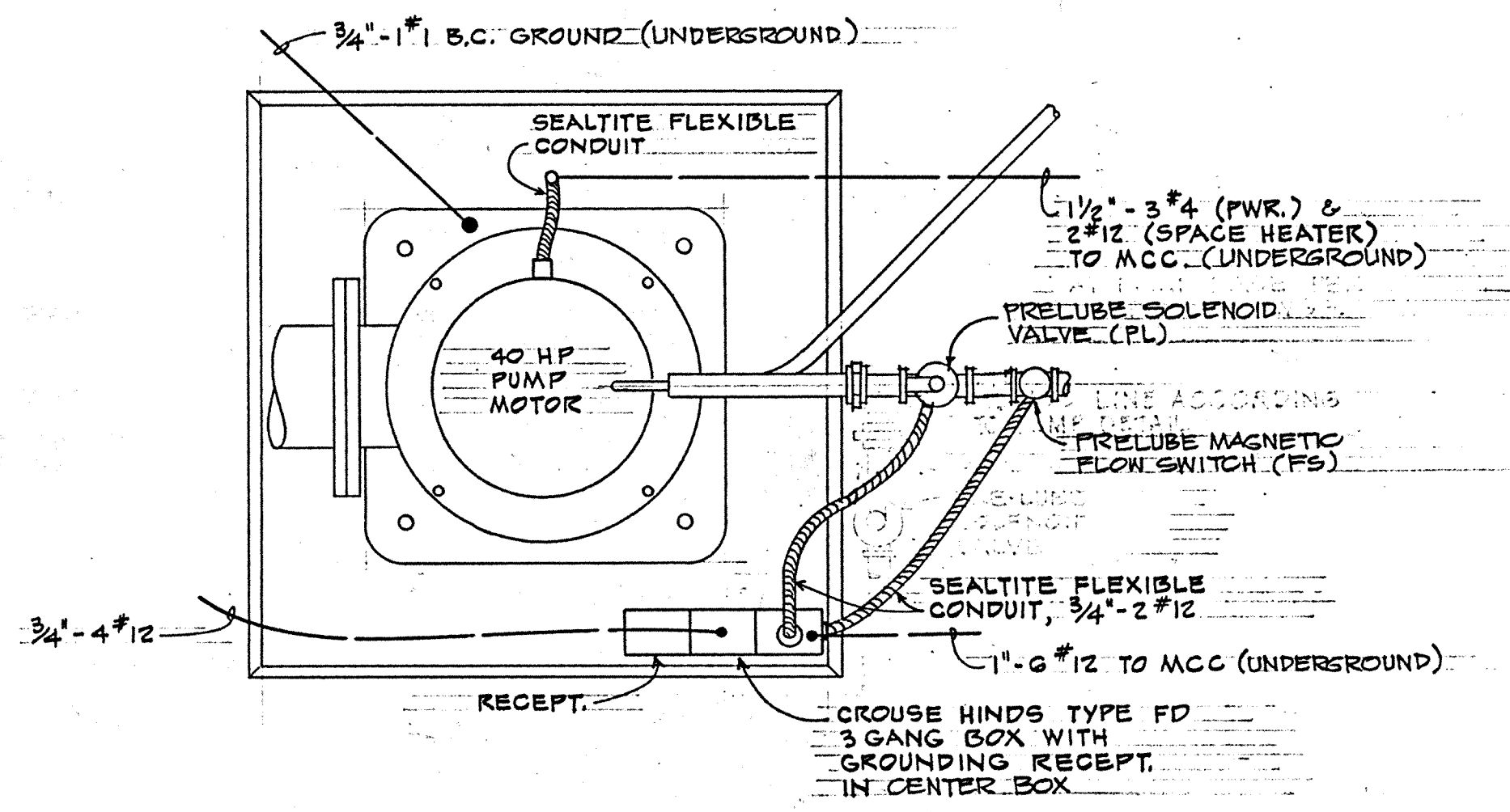
SCALE: 1" = 10'-0"



PUMP PLAN

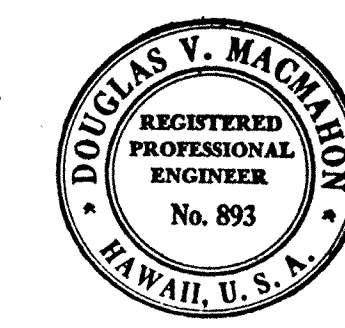
SCALE: 1/2" = 1'-0"

- NOTE:
1. ALL STUB UPS SHALL BE PER SHOP DRAWINGS FOR PUMP INSTALLED.
  2. ALL FINAL CONNECTIONS TO VALVES AND MOTOR SHALL BE WITH SEALTITE FLEXIBLE CONDUIT.



PUMP BASE PLAN

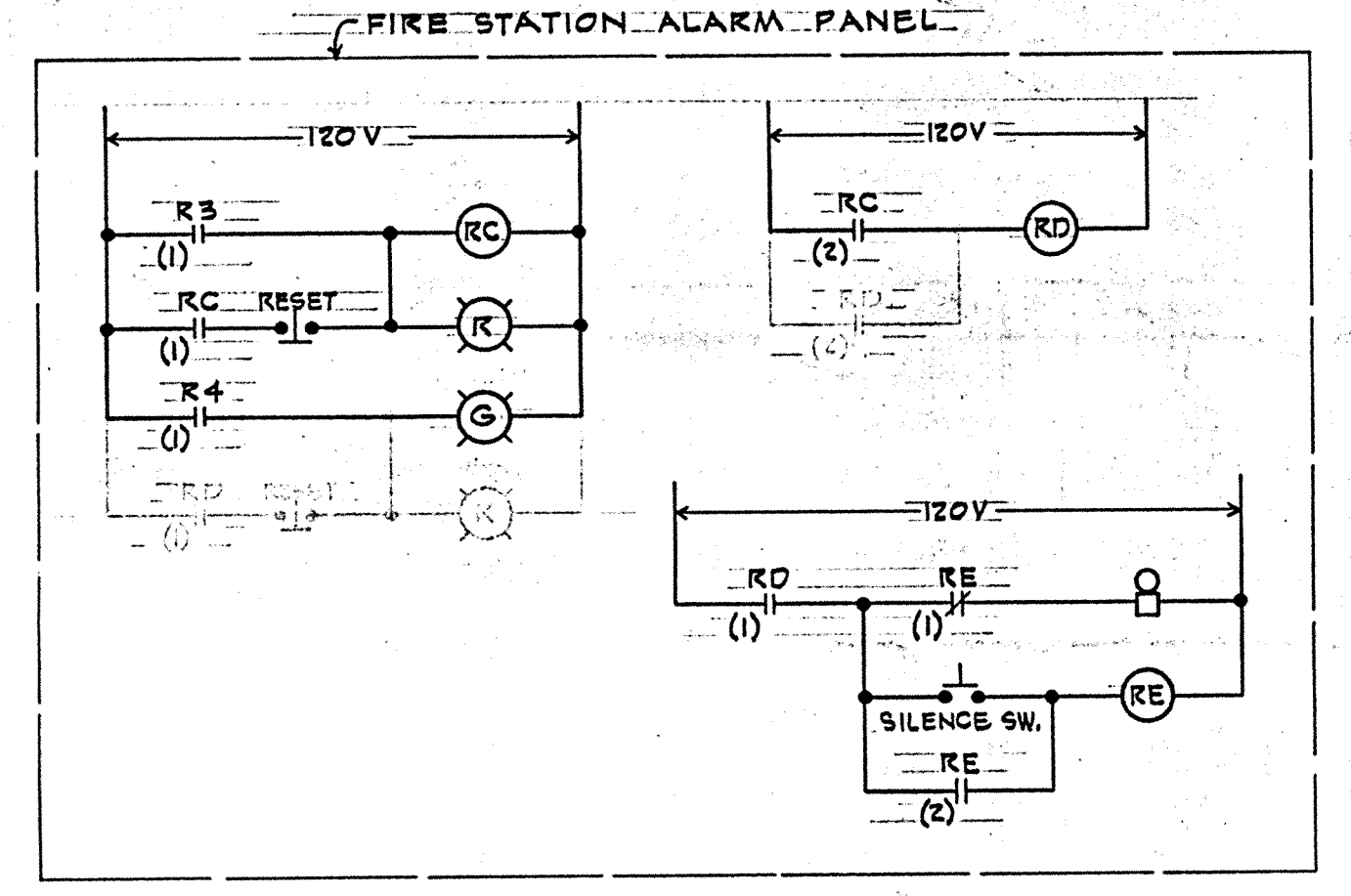
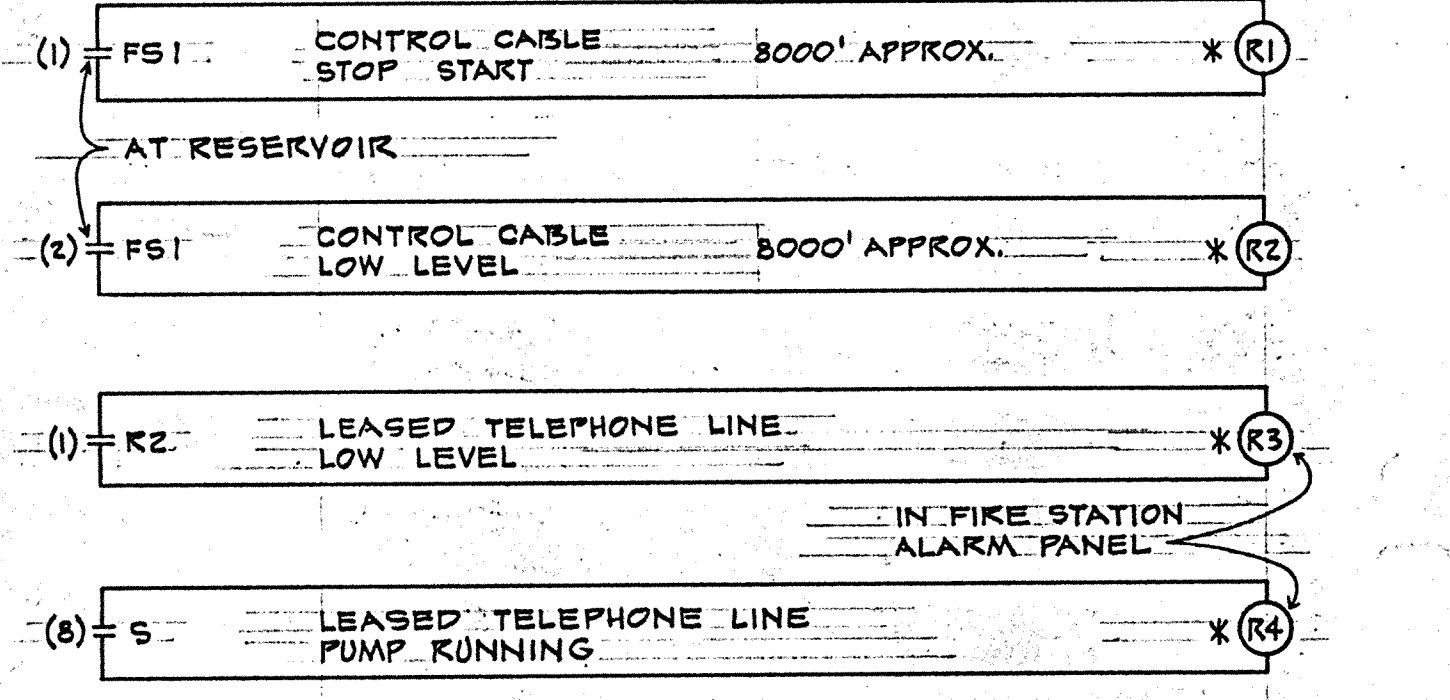
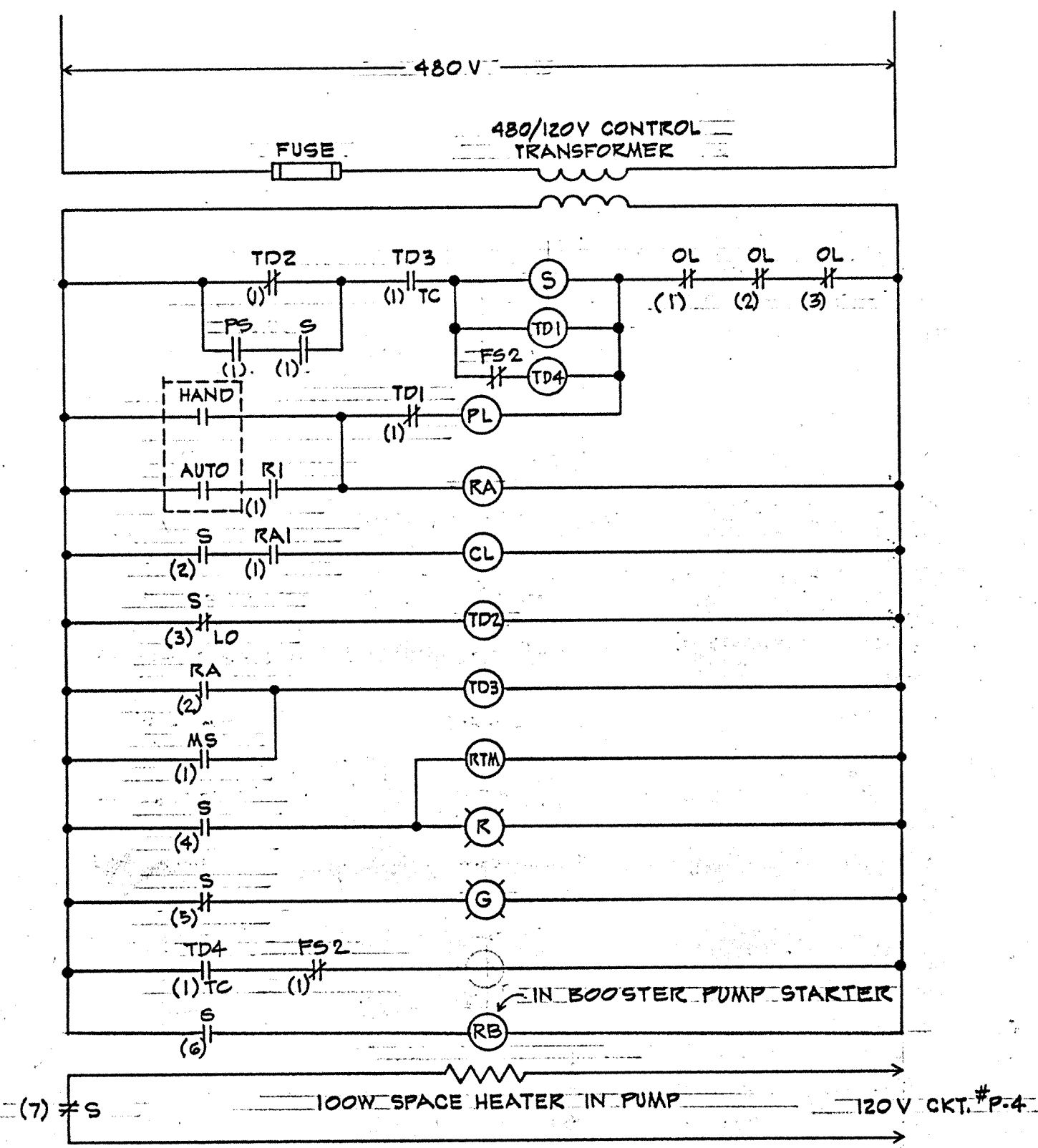
SCALE: 1/2" = 1'-0"



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.  
*Douglas V. Mackinnon*

SYM	DESCRIPTION	DATE	APP'D
REVISIONS			
STATE OF HAWAII			
DIVISION OF WATER AND LAND DEVELOPMENT			
DEPARTMENT OF LAND AND NATURAL RESOURCES			
PUMP DETAILS - ELECTRICAL			
DESIGNED: J.S.A.	SUBMITTED:		
DRAWN: T.M.B.	CHIEF DESIGN & CONSTR. ENGINEER		
CHECKED: D.V.M.	DATE:		
APPROVED:	MANAGER-ENGINEER		FILE NO.
DATE:			

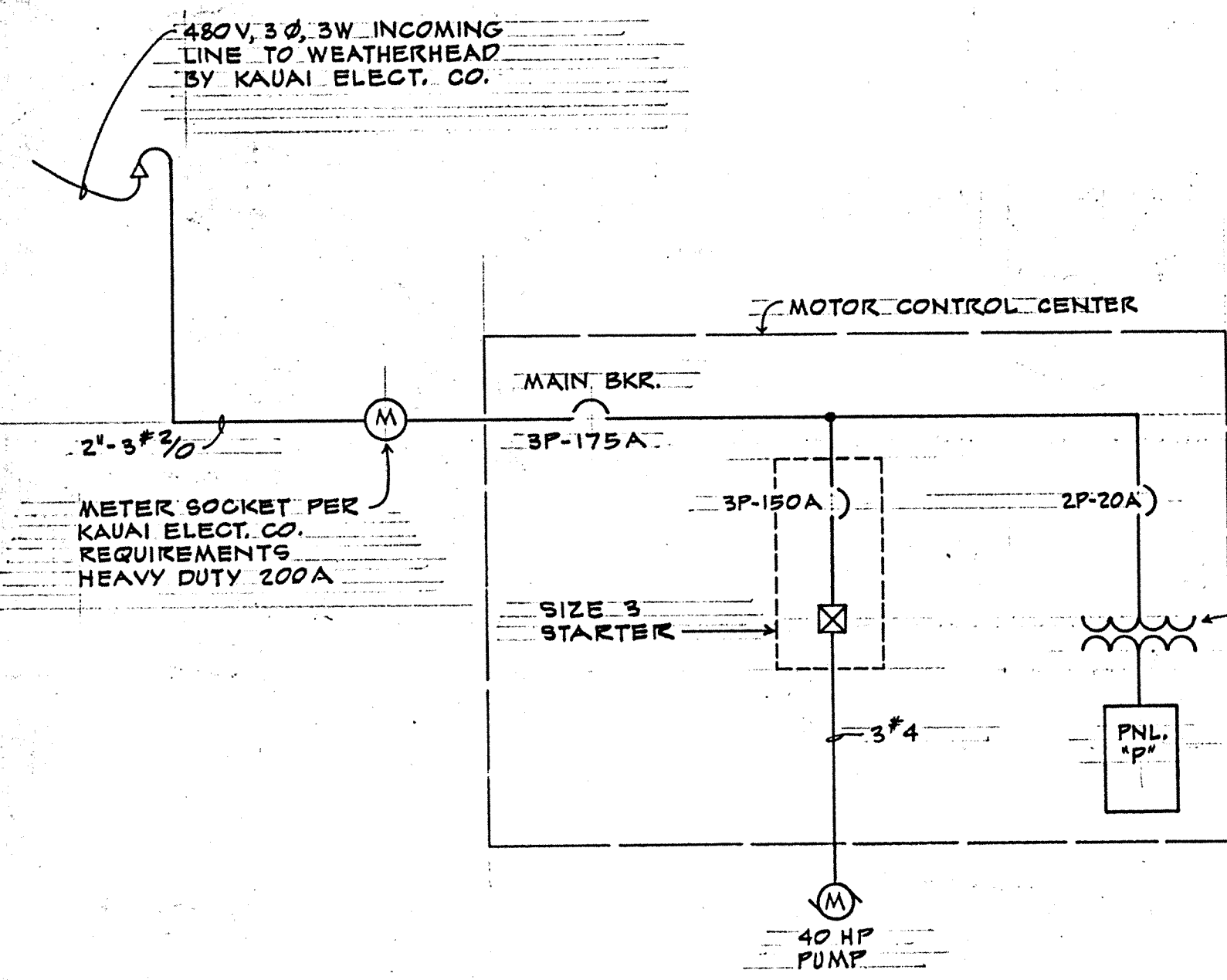




CONTROL SCHEMATIC

SYMBOLS FOR CONTROL SCHEMATIC

- OL OVERLOAD CONTACT
- S MAIN STARTER COIL
- S MAIN STARTER CONTACT
- TD1 TIME RELAY CUTLER HAMMER #10337 H102 PRELUDE TIMER
- TD2 TIME RELAY CUTLER HAMMER #10336 H28-3 CLAVAL TIMER
- TD3 TIME RELAY CUTLER HAMMER #10337 H102 DELAY ON STARTER
- PL PRELUDE SOLENOID VALVE
- TC TIMED CLOSE CONTACT
- LO LATE OPENING CONTACT
- RTA RUNNING TIME METER
- R RED LIGHT
- G GREEN LIGHT
- CL CLAVAL SOLENOID VALVE
- MS CLAVAL MICRO SWITCH
- RA RELAY
- RB CHLORINATOR RELAY
- R1 RESISTANCE SENSITIVE RELAY, CUTLER HAMMER #13535H08 STOP START
- R2 RESISTANCE SENSITIVE RELAY, CUTLER HAMMER #13535H08 LOW LEVEL
- R3 RESISTANCE SENSITIVE RELAY, CUTLER HAMMER #13535H08
- R4 RESISTANCE SENSITIVE RELAY, CUTLER HAMMER #13535H08
- FS1 MAGNETROL FLOAT SWITCH AT RESERVOIR
- RC RELAY
- RD RELAY
- RE RELAY
- FS2 FLOW SWITCH ON PRELUDE LINE
- FS PRESSURE SWITCH ON DISCHARGE LINE
- TD4 TIME RELAY CUTLER HAMMER #10337 H102 PRELUDE FLOW
- \* REQUIRES 120 V. POWER



POWER SCHEMATIC

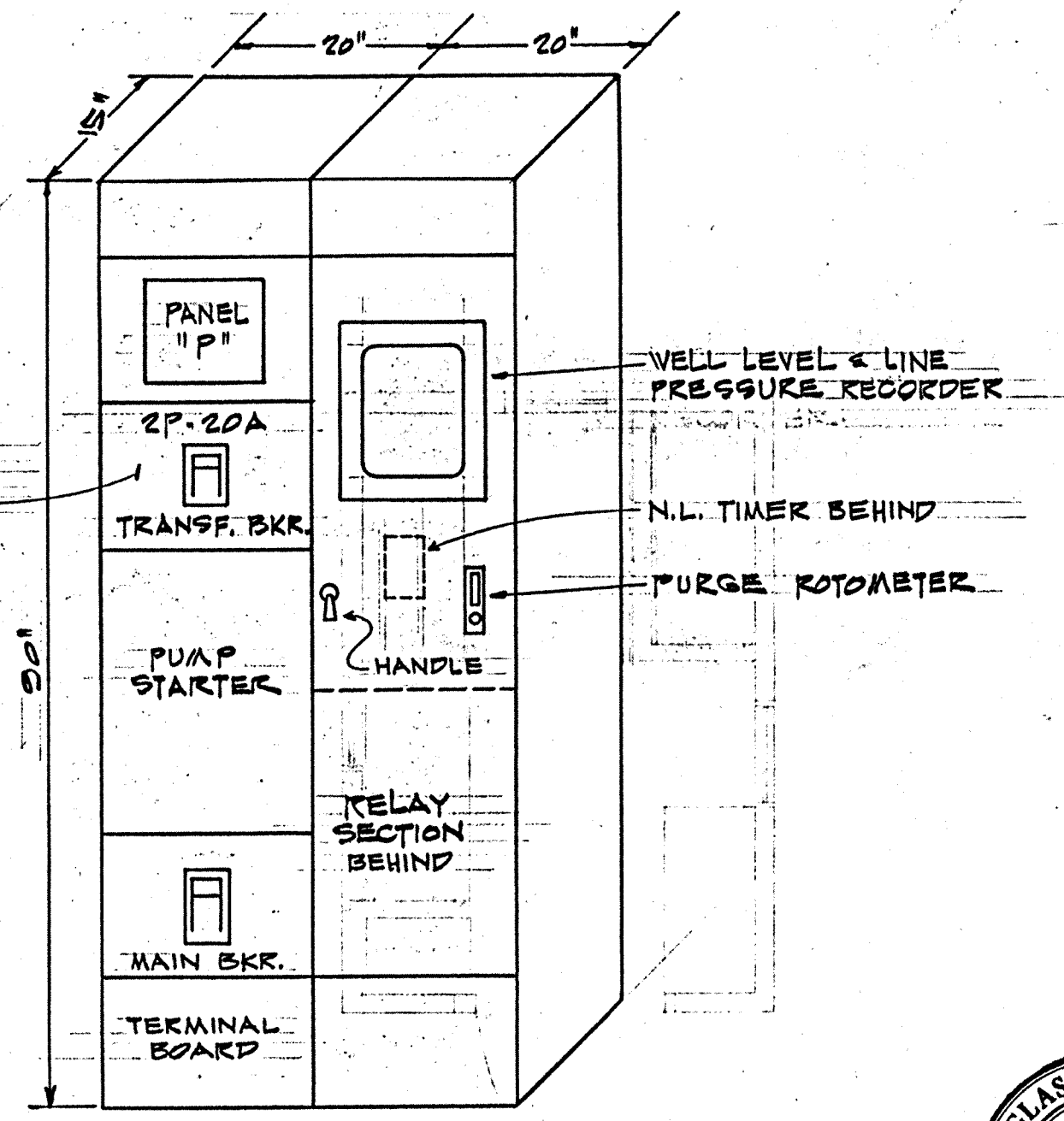
PANEL "P"

VOLTAGE: 120/240V, 1Ø, 3W	TYPE: BOLT-ON	MOUNTING: SWITCHBRD.					
MAINS: 100 A	MAIN BKR: NONE	MIN. A.I.C: 5,000					
CKT. NO.	USE	LOAD	AMPS	BKR.	POLES	CON.	WIRE
1	LIGHTS	740W	6.2	20A	1	¾"	2#12
2	RECEPT. IN BLDG.	200W	1.7				
3	RECEPT. AT PUMP	200W					
4	SPACE HEATER	100W	0.8				
5	RELAY POWER	100W					
6	SPACE	500W	4.2				
7							
8							
9							
10							
11	AIR COMPRESSOR	½ HP	0.8	30A		¾"	2#12
12	BOOSTER PUMP	¾ HP	13.8	40A			
TOTAL WATTS: 9290		TOTAL AMPS: 22					
DEMAND FACTOR: 60%		DEMAND AMPS: 13.2					

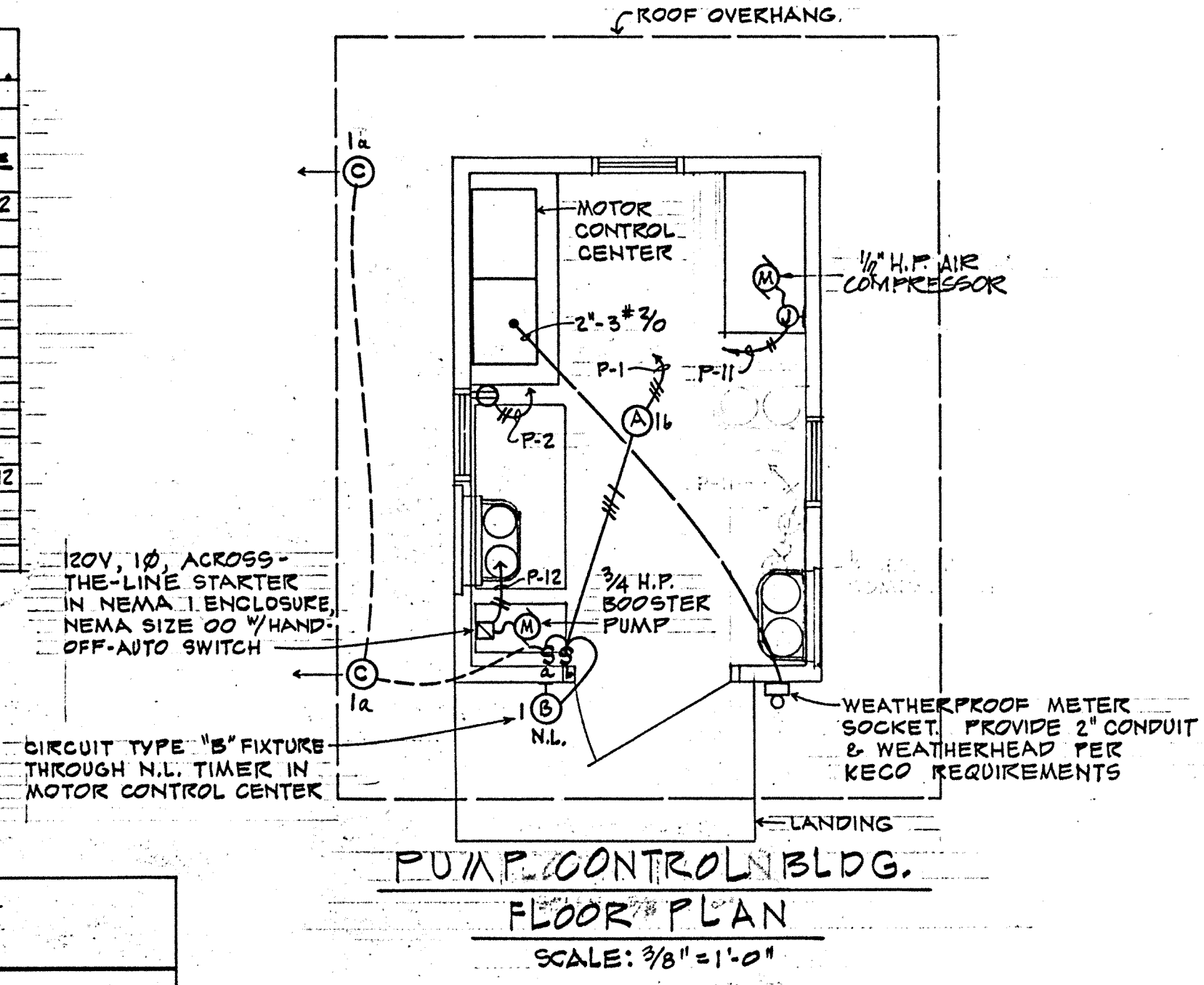
\* WITH PUMP POWER FEEDER  
\*\* IN M.C.C.

LIGHT FIXTURE SCHEDULE

TYPE	LAMP	DESCRIPTION	MOUNTING
A	4-60W I.F.	INCANDESCENT CEILING DRUM W/OPAL GLASS GLOBE PRESCOLITE # 7012	SURFACE
B	100W I.F. 130V	INCANDESCENT WALL BRACKET W/OPAL GLASS GLOBE PRESCOLITE # W2-2	WALL + 7'-0"
C	150V PAR 38 FLOOD	INCANDESCENT CAST ALUMINUM LAMP HOLDER SHALDA # 103	UNDER EDGE OF ROOF OVERHANG

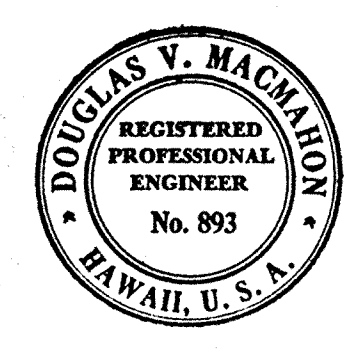


MOTOR CONTROL CENTER  
SCALE: ¾" = 1'-0"



PUMP CONTROL BLDG.  
FLOOR PLAN  
SCALE: ¾" = 1'-0"

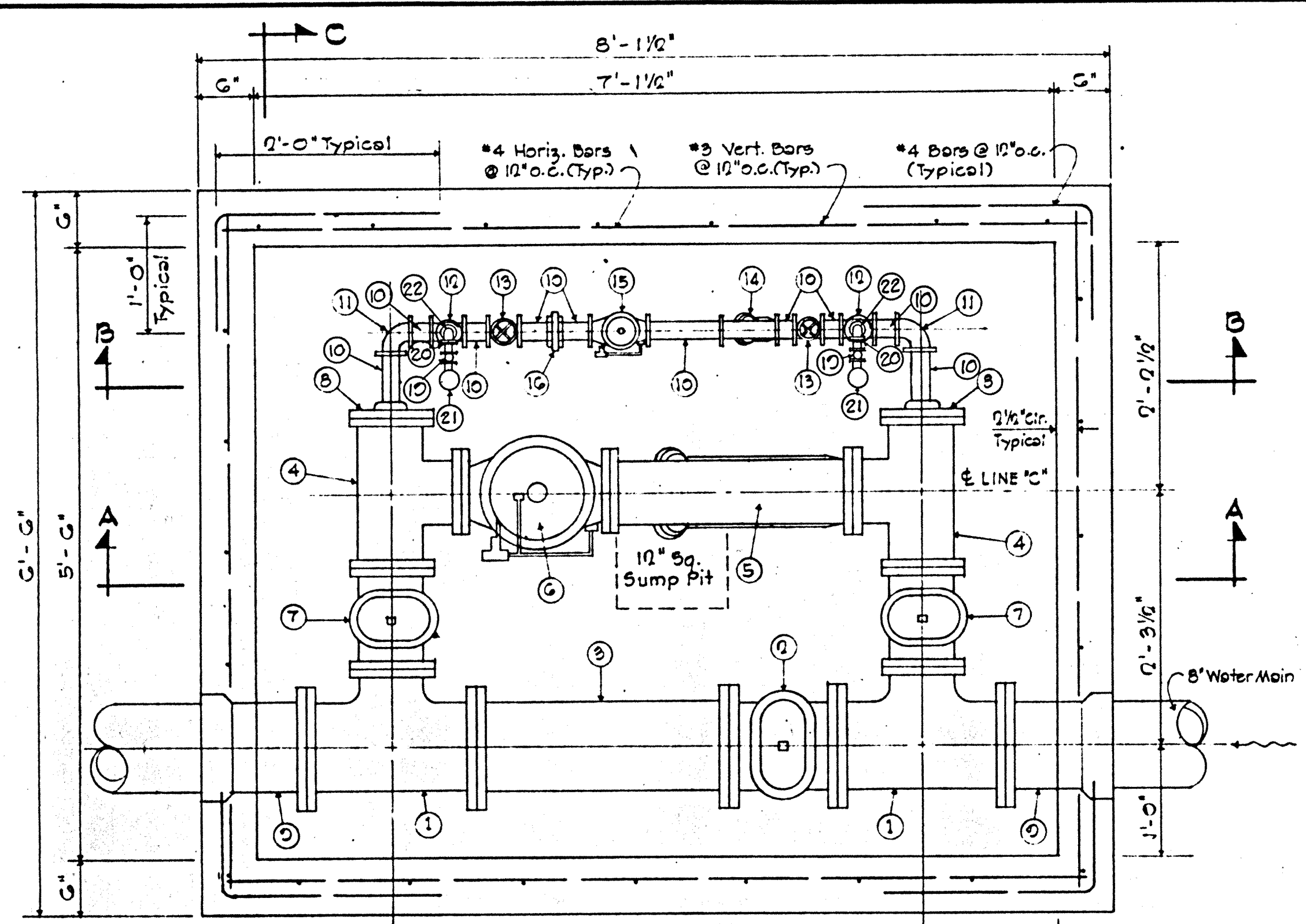
- SYMBOLS
- N.L. NIGHT LIGHT
  - M.C.C. MOTOR CONTROL CENTER
  - (A) INCANDESCENT LIGHT FIXTURE, CEILING MTD., TYPE "A"
  - (B) INCANDESCENT LIGHT FIXTURE, WALL MTD., TYPE "B"
  - CONDUIT CONCEALED IN WALL OR CEILING, ¾"-2#12 UNLESS NOTED
  - CONDUIT CONCEALED IN FLOOR OR UNDERGROUND, ¾"-2#12 UNLESS NOTED
  - CONDUIT EXPOSED, ¾"-2#12 UNLESS NOTED
  - HOMERUN TO PANEL "P", CKT #1, ¾"-2#12 UNLESS NOTED
  - (J) JUNCTION BOX
  - (M) MOTOR
  - (S) SINGLE POLE SWITCH
  - (P) DUPLEX RECEPTACLE, NEMA GROUNDING TYPE



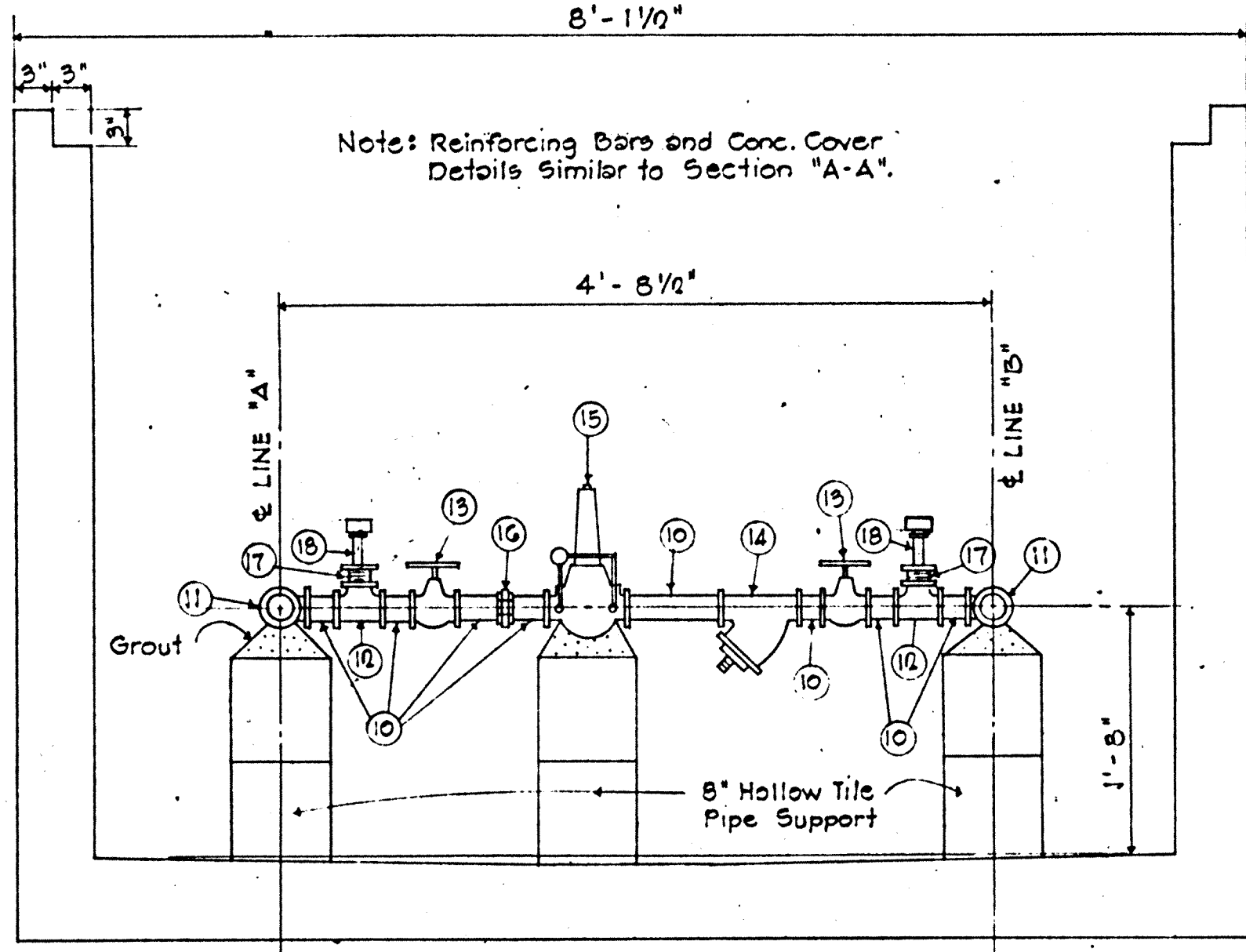
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.  
Douglas V. Macdonald

SYM	DESCRIPTION	DATE	APP'D
REVISIONS			
STATE OF HAWAII			
DIVISION OF WATER AND LAND DEVELOPMENT			
DEPARTMENT OF LAND AND NATURAL RESOURCES			
DESIGNED: J.S.A.		SUBMITTED:	
DRAWN: T.M.B.		CHIEF DESIGN & CONSTR. ENGINEER	
CHECKED: D.V.M.		DATE:	
APPROVED:		FILE NO.	
DATE:		MANAGER-ENGINEER	

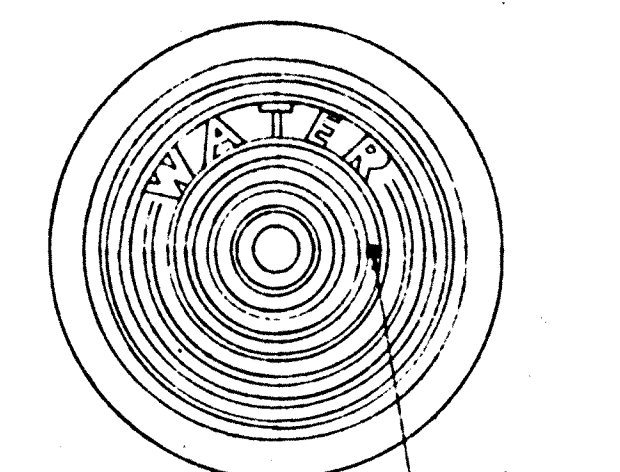




**PLAN**  
PRESSURE REDUCING VAULT ASSEMBLY  
Not to Scale

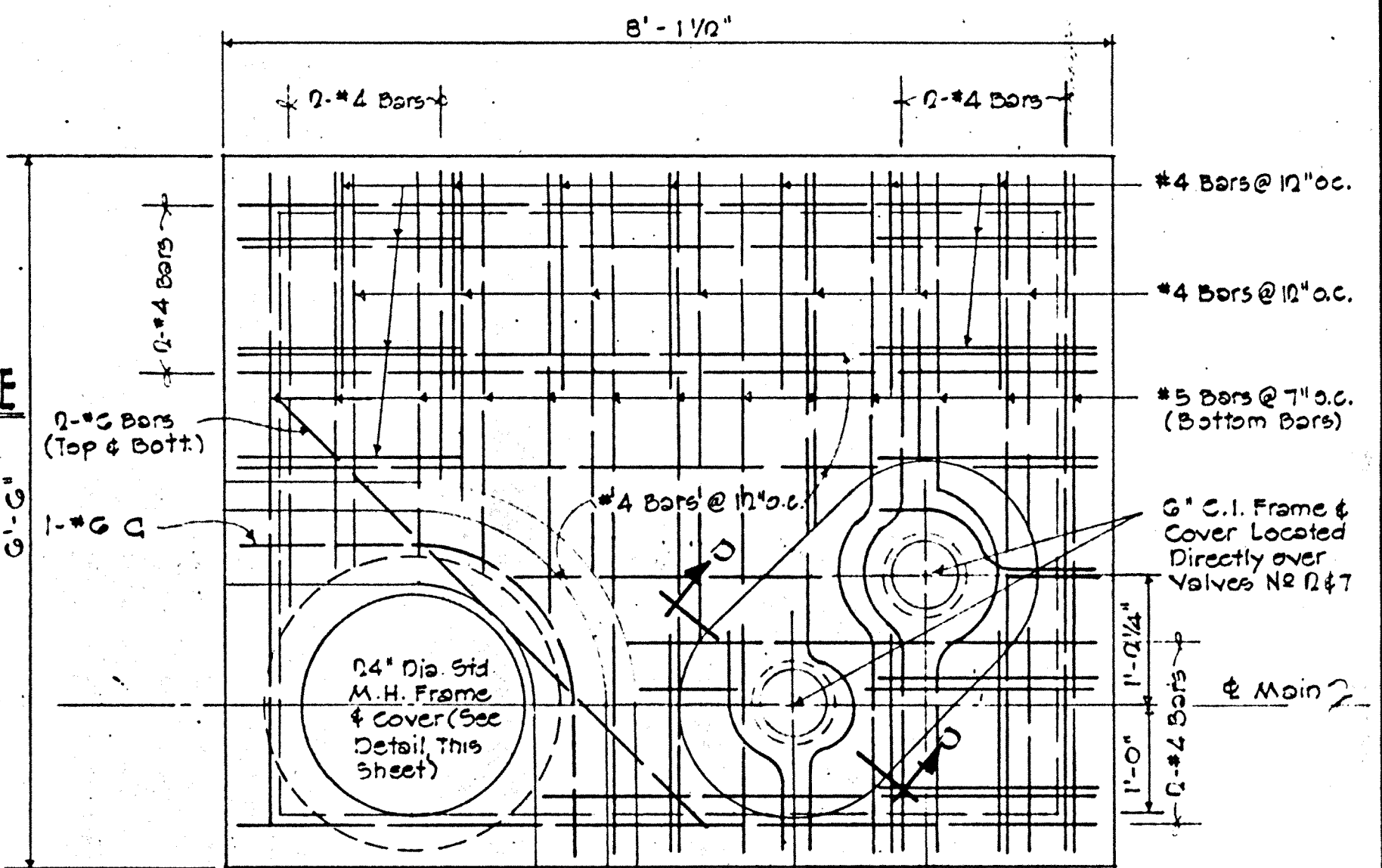


**SECTION "B-B"**  
Not to Scale

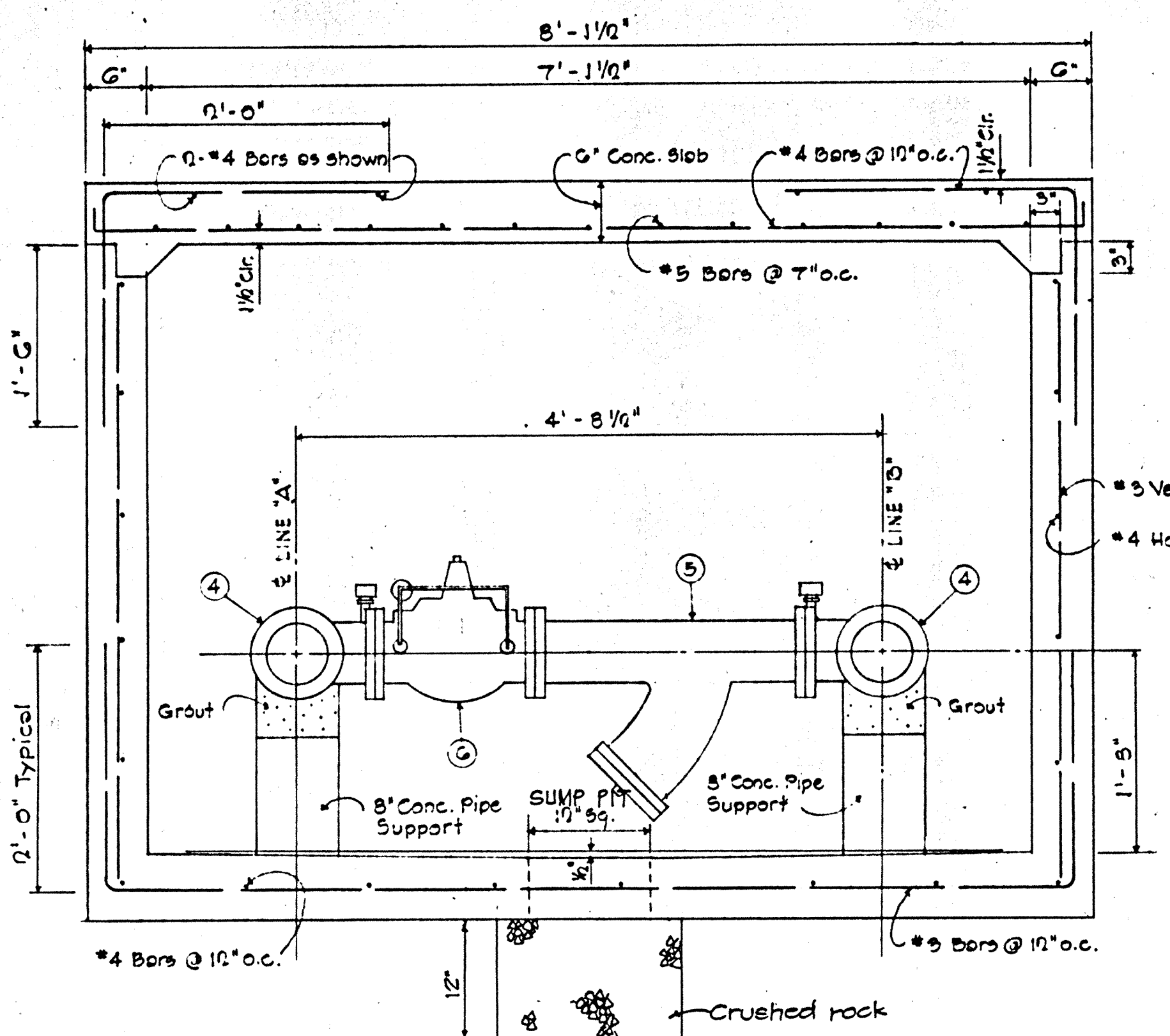


**DET. OF 24" MANHOLE FRAME and COVER**  
Not to Scale

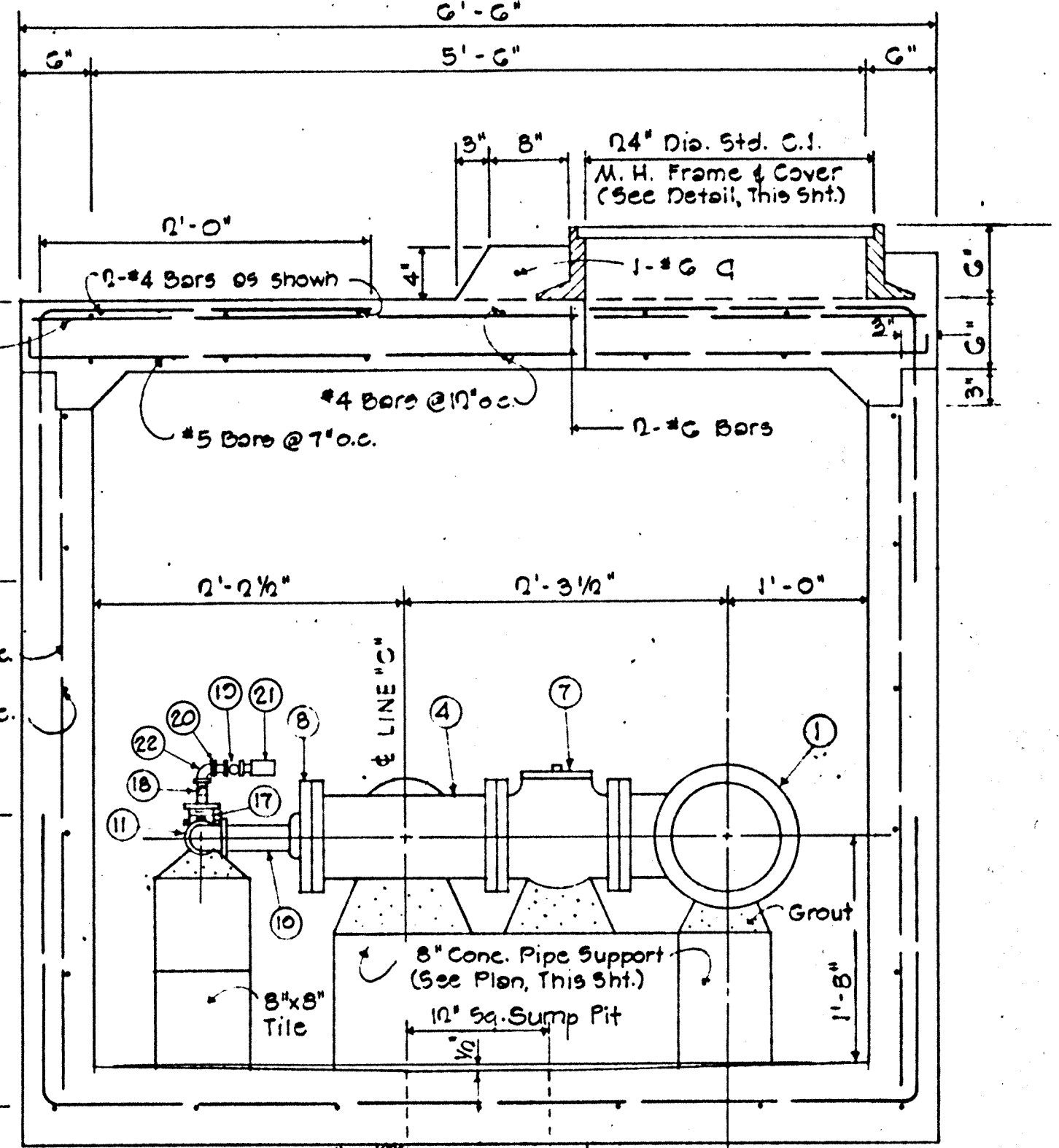
ITEM NO.		QTY.	DESCRIPTION
1	Q	1	C.I. Tee, 8" x 8" x 6", Flange
2	1	1	8" Gate Valve, Flange
3	1	1	8" C.I. Pipe, 07" Length - Flange Both Ends
4	Q	Q	6" x 6" x 6" C.I. Tee, Flanged
5	1	1	6" C.I. Strainer, "CRANE" 080 1/2 F & D
6	1	1	6" Pressure Reducing Valve, "Cia-Val" No 90, 10 to 40 psi Range, 125 ASA Flanged
7	Q	Q	6" Gate Valve
8	Q	Q	Reducing Companion Flange, O.D. of Flange = 11.00", Tapped 1/2" IPT
9	Q	Q	8" C.I. Adapter, Slip x Flange
10	10	10	Galv. 1/2" Nipples, Threaded - Length as Required
11	Q	Q	Galv. 1/2" Elbow
12	Q	Q	Galv. 1/2" Tee
13	Q	Q	1/2" Gate Valve
14	1	1	1/2" C.I. Strainer, "CRANE" 080 1/2 Screwed
15	1	1	1/2" Pressure Reducing Valve, "Cia-Val" No 90 B, Screwed Ends, 10 to 40 psi Range
16	1	1	Galv. 1/2" Union
17	Q	Q	Galv. Bushing, 1" x 3/4"
18	Q	Q	3/4" Galv. Nipple
19	Q	Q	Lever handle union cock, 1/4" Marsh Type 35
20	Q	Q	3/4" x 1/2" Bushing
21	Q	Q	Pressure Gauge 3 1/2" Dial, 0 to 200 psi, Marsh Std. Gauge Type I
22	2	2	3/4" 90° elbow



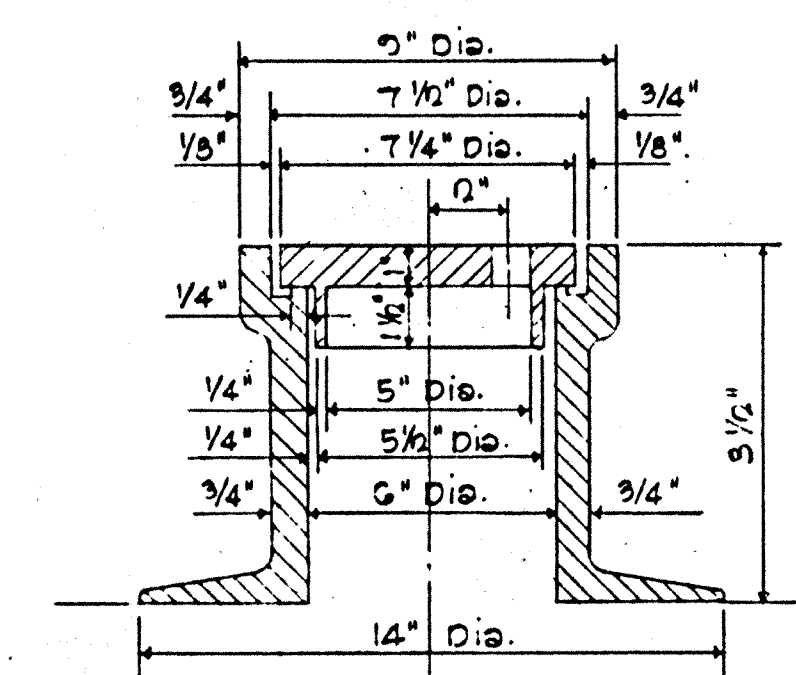
**6" CONC. SLAB COVER DET.**  
Scale: 3/4" = 1'-0"



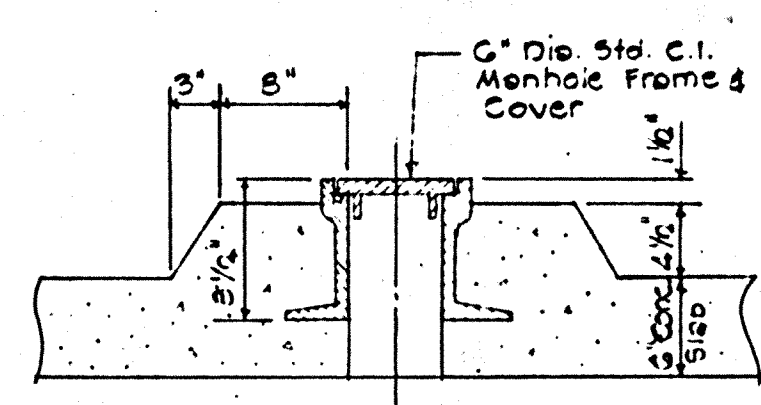
**SECTION "A-A"**  
Not to Scale



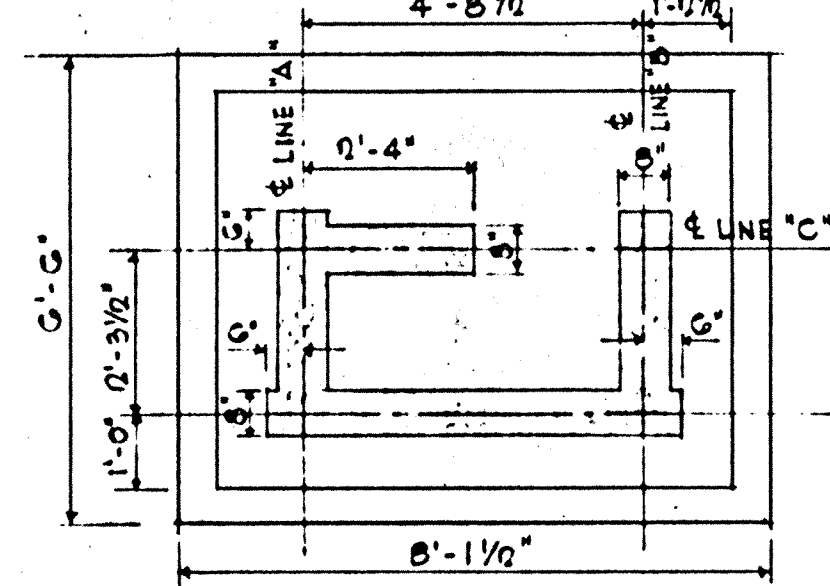
**SECTION "C-C"**  
Not to Scale



**DET. OF 6" C.I. M.H. FRAME and COVER**  
Not to Scale



**SECTION "D-D"**  
Scale: 1" = 1'-0"



**8" CONC. PIPE SUPPORT**  
Scale: 3/8" = 1'-0"

REV.	DATE	DESCRIPTION	BY	APPROVED
BOARD OF WATER SUPPLY COUNTY OF KAUAI				
<b>8" TRANSMISSION MAIN</b>				
<b>PRESSURE REDUCING VAULT ASSEMBLY</b>				
APPROVED:		APPROVED:		DRAWN BY:
MR. CHIEF ENGINEER, BWS		REGISTERED ENGINEER		CHECKED BY:
SHEET 17 OF 12 SHEETS				