

IFB JOB NO. 23-08

**APPENDIX L
HANAPEPE WELL PUMP REPLACEMENT**

**The following 7 pages are a partial set of as-built drawings from
DOW Job No. 87-5, PUMP REPLACEMENT FOR HANAPEPE
TOWN (NAGOSHI) WELL**

DEPARTMENT OF WATER
COUNTY OF KAUAI

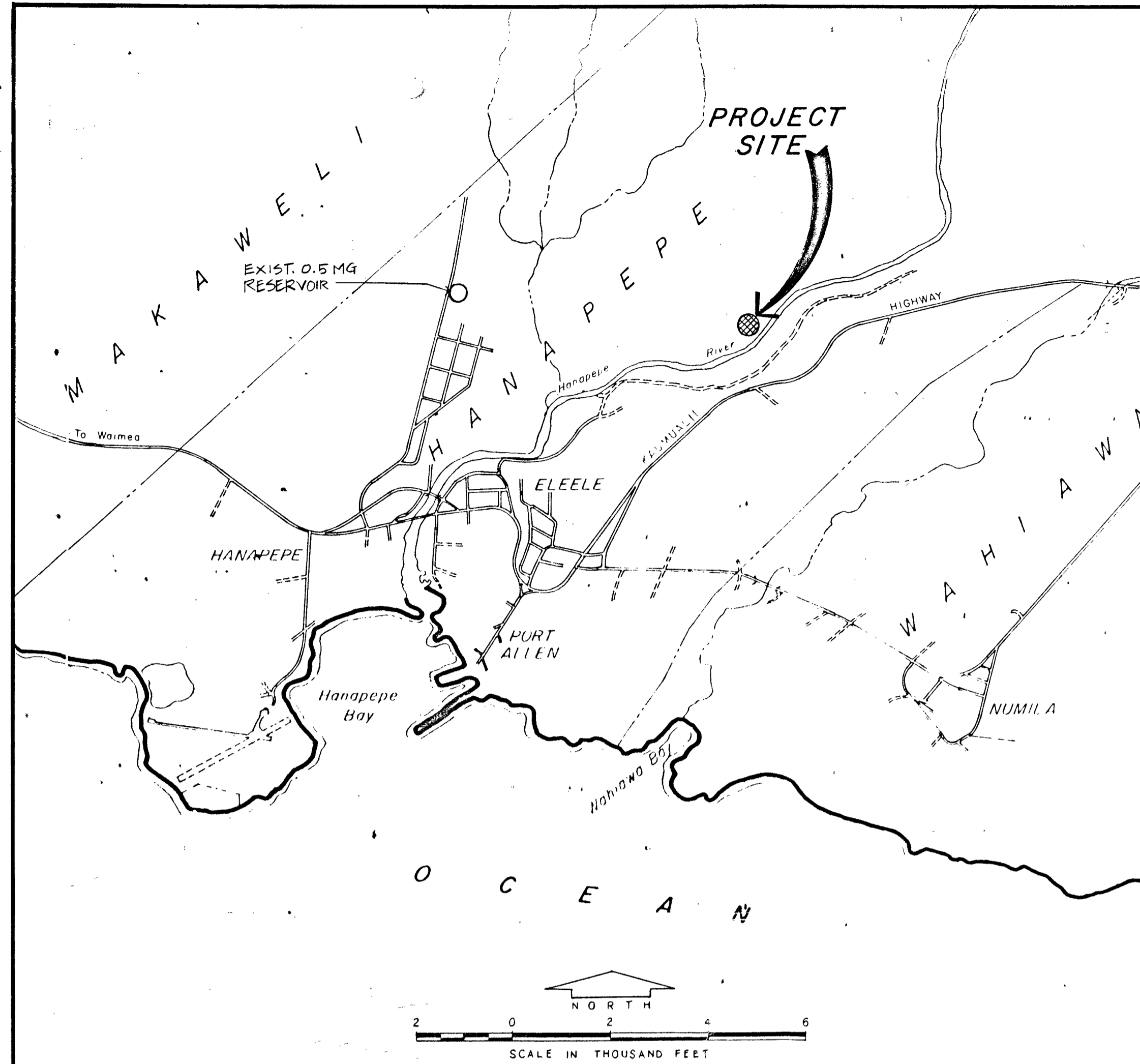
JOB NO. 87-5

**PUMP REPLACEMENT FOR
HANAPEPE TOWN (NAGOSHI) WELL
HANAPEPE WATER SYSTEM**

HANAPEPE, KAUAI, HAWAII

MECHANICAL ENGINEER: W. A. HIRAI & ASSOCIATES, INC.

ELECTRICAL ENGINEER: RONALD N.S. HO & ASSOCIATES, INC.



LOCATION MAP

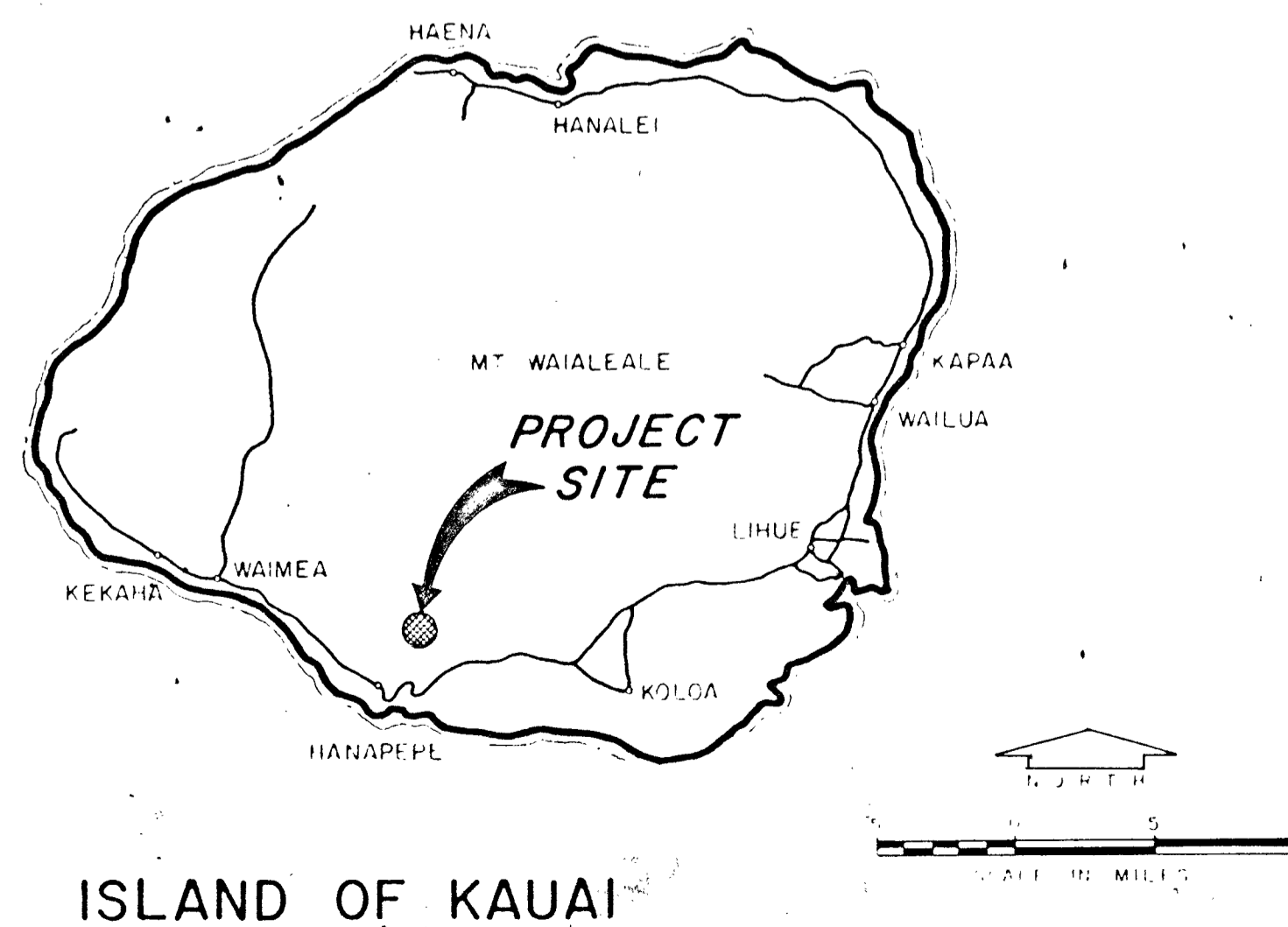
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APPROVED:

DATE: 4-6-90

Ronald N.S. Ho
MANAGER AND CHIEF ENGINEER
DEPARTMENT OF WATER
COUNTY OF KAUAI



ISLAND OF KAUAI

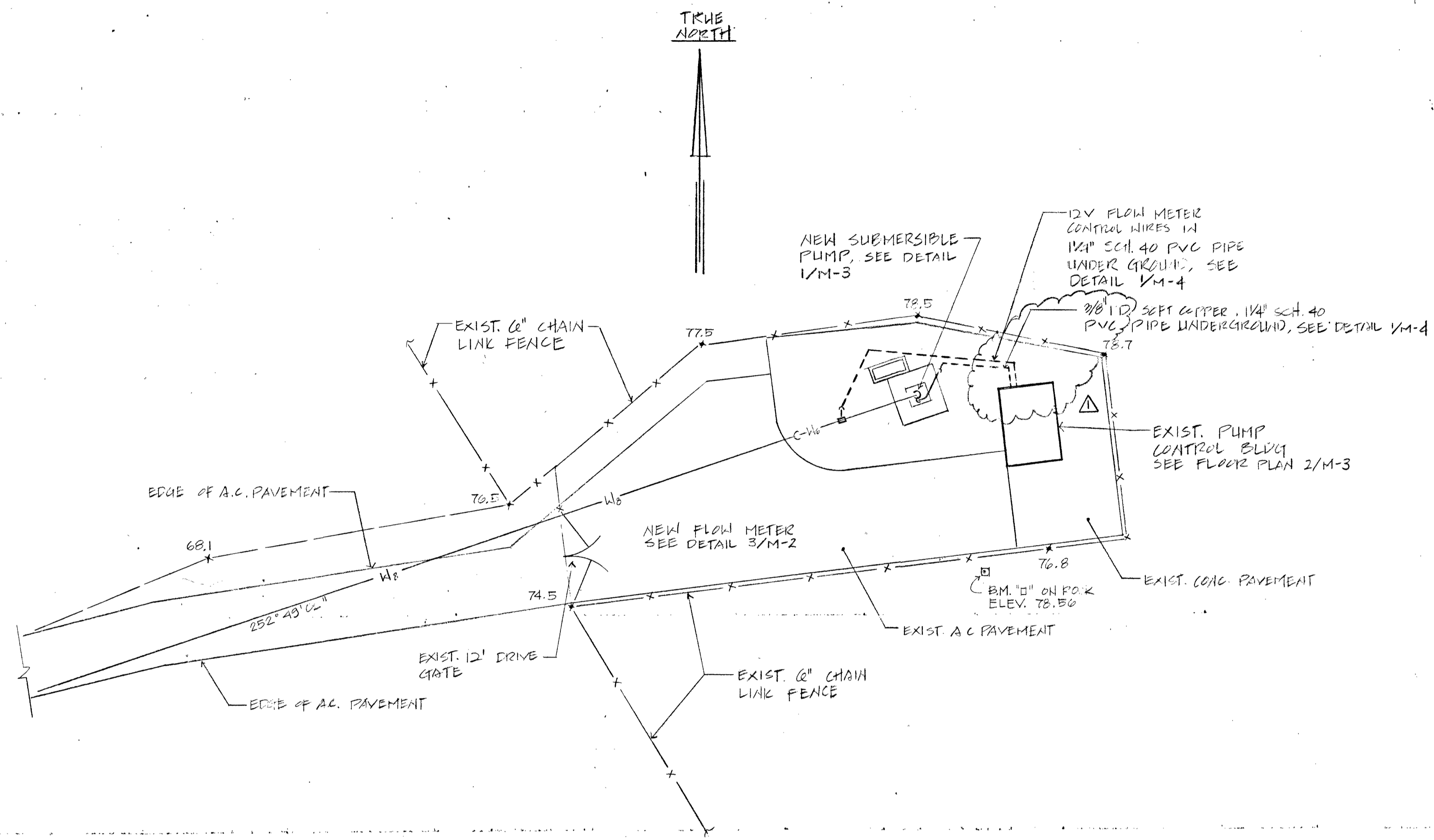
EQUIPMENT SCHEDULE

SUBMERSIBLE PUMP: 150 GPM @ 280 TDH (FT.), 3450 RPM, 15 H.P., 460 V/3P 60 HZ, SEE SPECIFICATION FOR DESCRIPTION. GRUNDFOS, BYRON JACKSON PUMP, LAYNE, BOWLER AND FLOWAY PUMP OR APPROVED EQUAL

AIR COMPRESSOR: 50 PSIG DISCHARGE PRESSURE, 30 PSIG WORKING PRESSURE, 20 GAL. RECEIVER, 1.7 CFM @ 30 PSI, SINGLE STAGE, OIL-LESS, TANK MOUNTED, AIR COOLED RECIPROCATING WITH REFRIGERATED AIR DRYER. 115 V/1P 60HZ, 1/3 HP. HONEYWELL MODEL HOS-022 HP OR APPROVED EQUAL.

MECHANICAL LEGEND AND ABBREVIATION

A.C.	AIR COMPRESSOR
B.P.	BOOSTER PUMP
C.I.	CAST IRON
C.M.U.	CONCRETE MASONRY UNIT
CONC.	CONCRETE
D.I.	DUCTILE IRON
DWGS.	DRAWINGS
EXIST.	EXISTING
EXP.	EXPANSION
FLEX.	FLEXIBLE
FT.	FEET
H.P.	HORSEPOWER
I.D.	INSIDE DIAMETER
M.S.L.	MEAN SEA LEVEL
N.O.	NORMALLY OPEN
O.C.	ON CENTER
THK..	THICK
TYP.	TYPICAL
W/	WITH
⊕	POINT OF CONNECTION OF NEW TO EXISTING
C.C.	CORPORATION COCK
CONT.	CONTINUOUS
DIM.	DIMENSION
F.E.	FLANGE END
GALV.	GALVANIZED
IPT	INTERNAL IRON PIPE THREAD
M.J.	MECHANICAL JOINT
P.O.C.	POINT OF CONNECTION



1 SITE PLAN
M-1 SCALE: 1" = 10'-0"

GENERAL NOTES

- CONTRACTOR SHALL VISIT JOB SITE TO VERIFY EXISTING FIELD CONDITION, DIMENSION, OBSTRUCTIONS AND SIZES PRIOR TO START OF WORK.
- ALL PATCHWORK SHALL MATCH THE EXISTING MATERIAL, INSTALLATION, FINISH AND COLOR UNLESS INDICATED OR SPECIFIED OTHERWISE.
- CONFORM TO ALL LAWS AND REGULATIONS OF STATE OF HAWAII AND COUNTY OF KAUAI AND NFPA STANDARDS. OBTAIN AND PAY FOR ALL PERMIT, LICENCES FOR THE WORK, PAY FOR ALL CONNECTION AND TESTING COST FOR THE WORK.
- INVESTIGATE THE CONTRACT DOCUMENTS AND MAKE PROPER PROVISION TO AVOID INTERFERENCES OF CONSTRUCTION DELAYS, DETERMINE THE EXACT ROUTE OF EACH PIPE, MAKE OFFSETS AND CHANGE IN DIRECTION REQUIRED TO ACCOMMODATE THE STRUCTURE AND EXISTING PIPING.
- DESIGN DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL INTENT OF DESIGN ONLY. CLOSE COORDINATION OF ALL WORK IS CRITICAL, VERIFY EXISTING CONDITIONS PRIOR TO COMMENCEMENT OF NEW WORK, MINOR REARRANGEMENT OF PIPES IS PART OF THIS WORK.

- ALL NUTS AND BOLTS OF EXPOSED SECTION OF THE FOLLOWING SHALL BE SILICON BRONZE IN ACCORDANCE WITH ASTM B98 OR TYPE 302, 303 OR 304 (ASTM A276) STAINLESS STEEL.
 - SURFACE PLATE, FLANGES, ETC.
 - WELL FLANGE

- CONTRACTOR SHALL PROVIDE SHOP DRAWING OF SUBMERSIBLE DEEPWELL PUMP AND SURFACE PLATE.
- CONTRACTOR SHALL PROVIDE PVC PIPES AND CONDUITS USING LONG SWEEP ELBOWS.
- THE EXISTING PUMP CONTROL BLDG. INSIDE AND OUTSIDE AND ALL EXISTING ABOVEGROUND PUMP DISCHARGE PIPING SHALL BE PAINTED. SEE SPECIFICATION.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

12/13/07

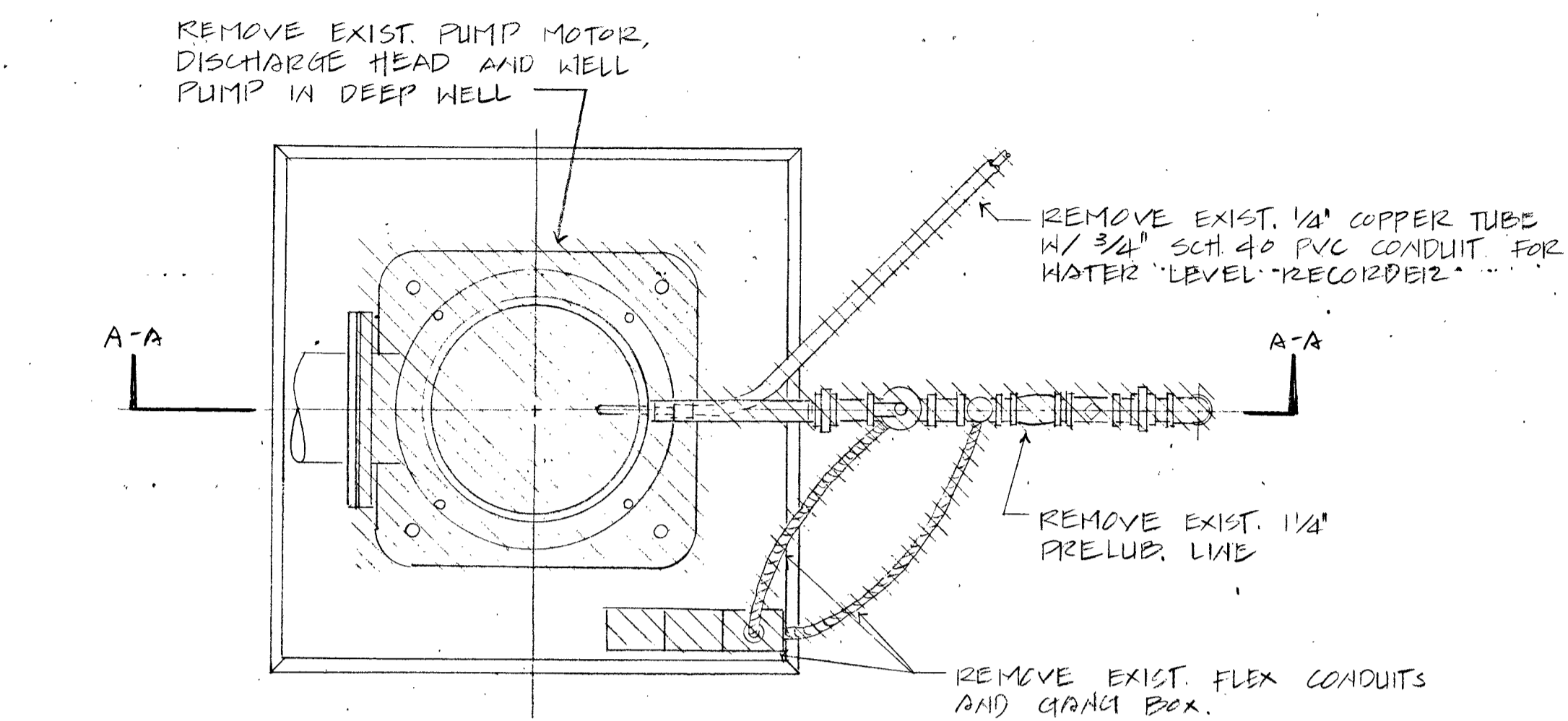
REVISION	DATE	DESCRIPTION	BY	APPROVED
1	6-13-00	REVISED NOTE NO. 7	K.E.	[Signature]
2	6-13-00	REVISED CONTROL BLDG	K.E.	[Signature]

DEPARTMENT OF WATER, JOB NO. 87-5
PUMP REPLACEMENT FOR HANAPEPE TOWN (NAGASHI) HANAPEPE, KAUAI, HAWAII

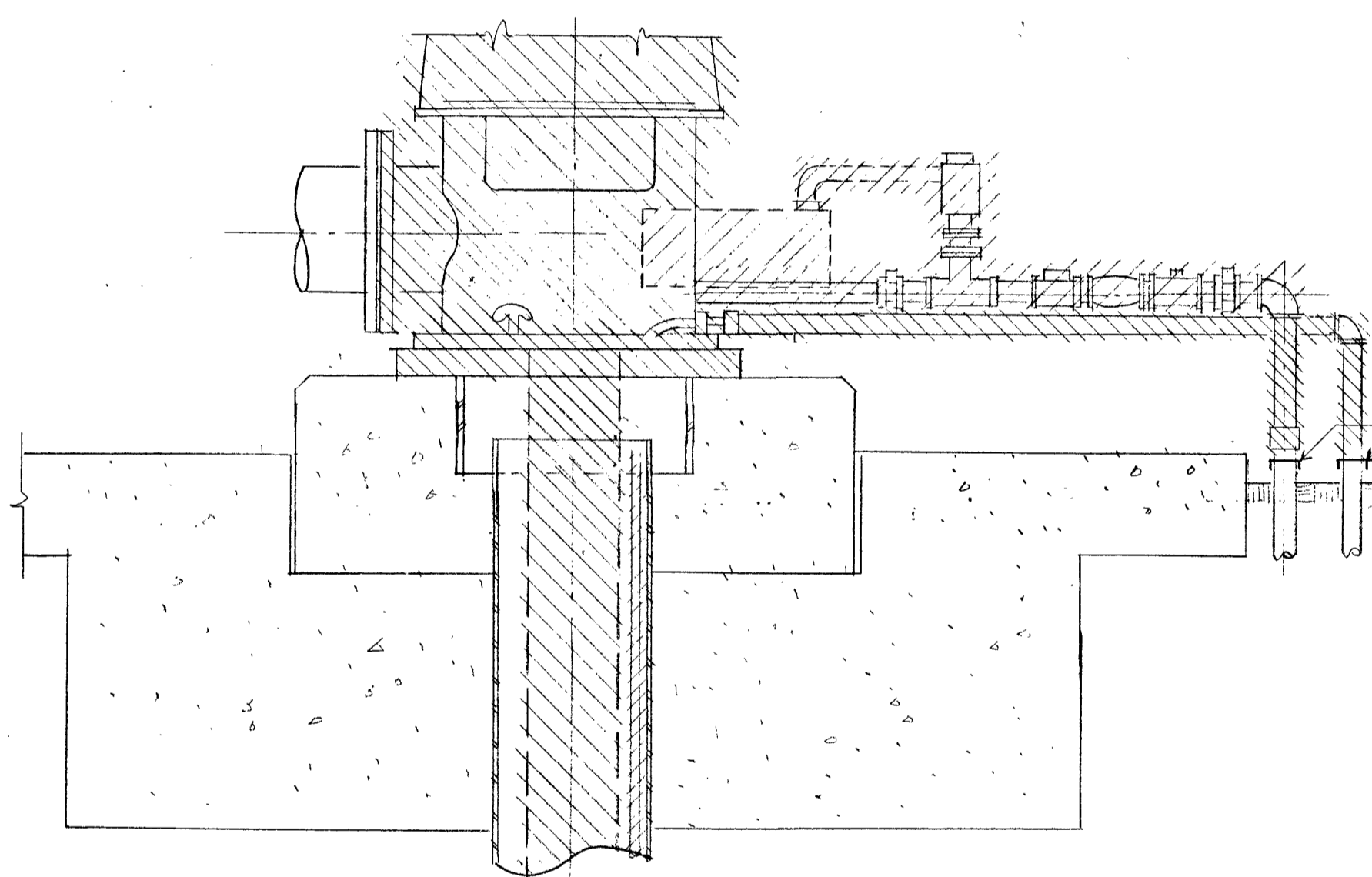
SITE PLAN, MECHANICAL LEGEND AND ABBREVIATION AND GENERAL NOTES

APPROVED: [Signature]
DESIGNED BY: SH
DRAWN BY: AC
CHECKED BY: [Signature]
MANAGING & CHIEF ENGINEER, DEPT. OF WATER, COUNTY OF KAUAI

M-1

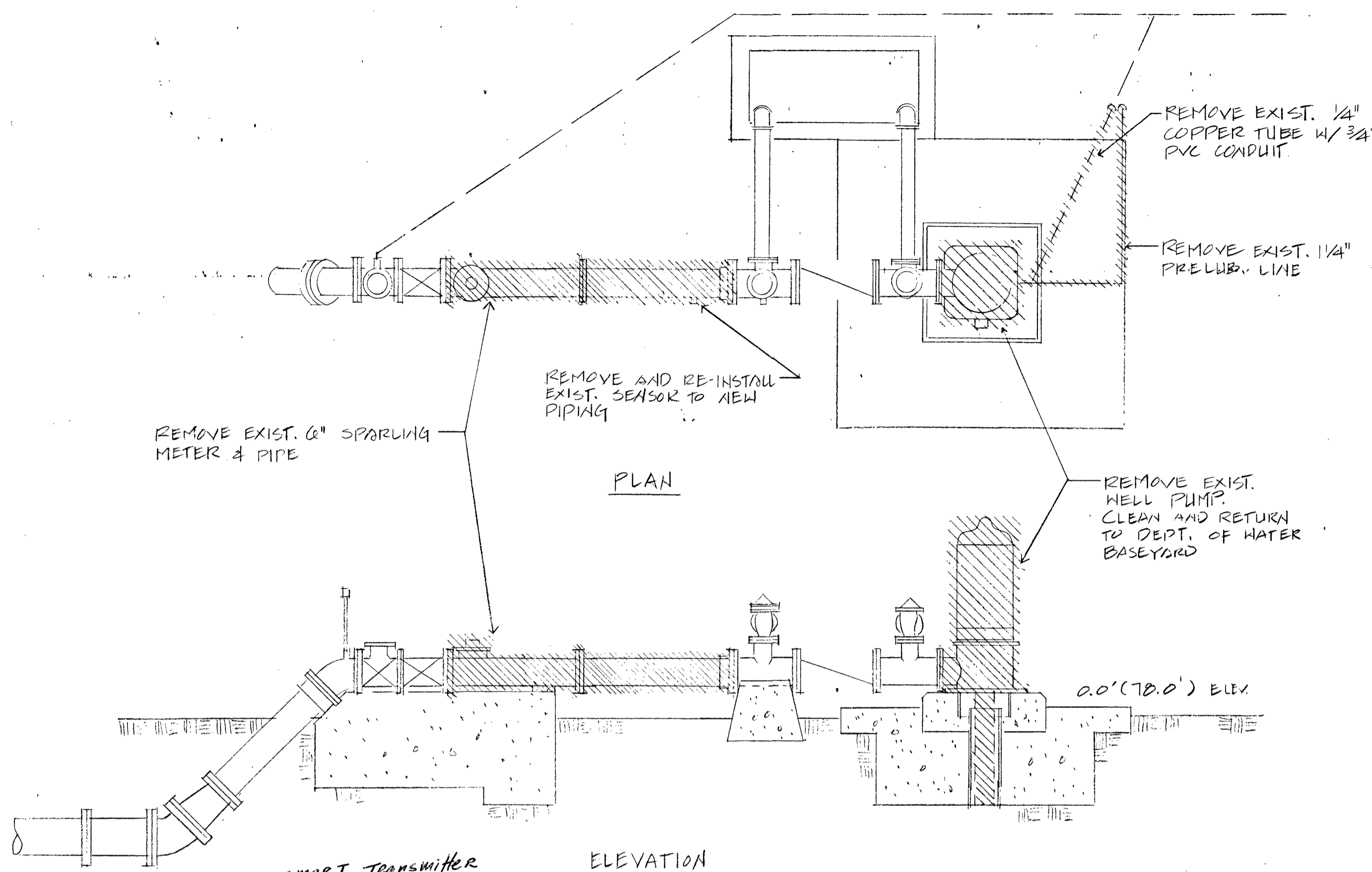


PLAN



SECTION A-A

1 PUMP DEMOLITION DETAIL
M-2 SCALE: 1/2" = 1'-0"

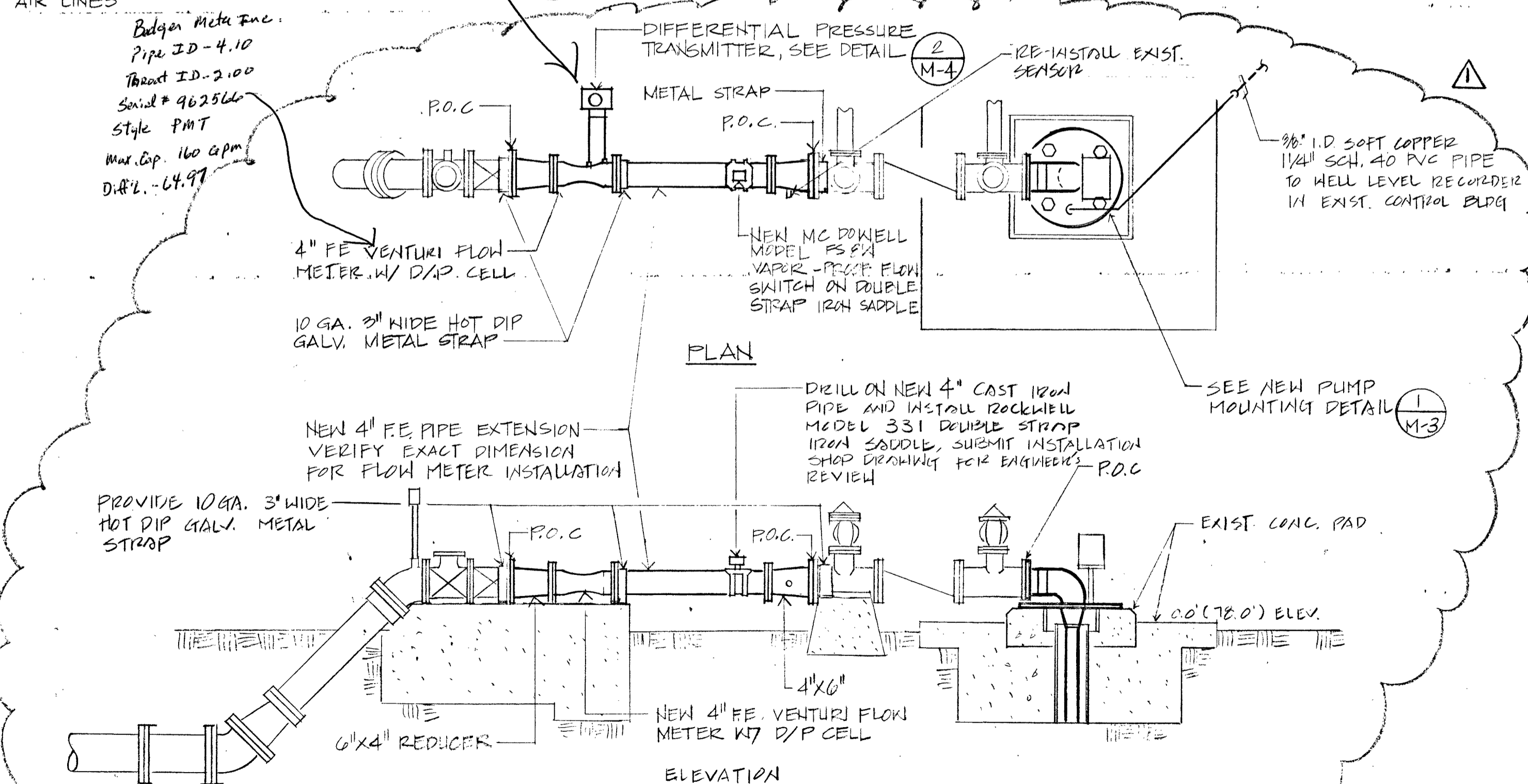


PLAN

ELEVATION

ST3000 SMART TRANSMITTER
MODEL STD 24-A1A-00000
MB.52 S.V. F103-814C
Factory Cal. 0-50 in. H₂O

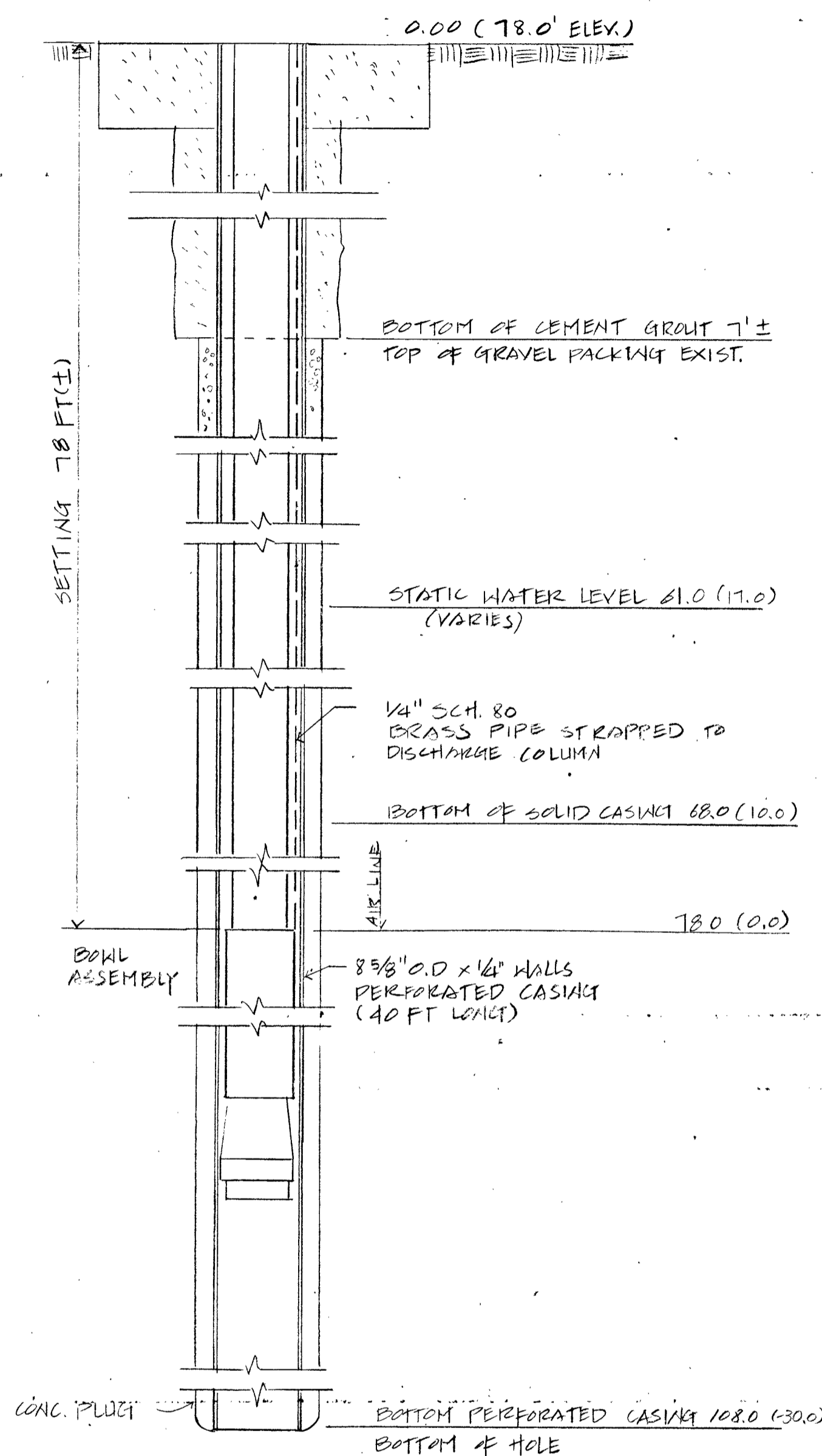
2 PUMP DISCHARGE LINE DEMOLITION DETAIL
M-2 SCALE: 1/2" = 1'-0"



PLAN

ELEVATION

3 NEW PUMP DISCHARGE LINE DETAIL
M-2 SCALE: 1/2" = 1'-0"



3 SECTION THRU EXIST DEEP WELL
M-2

REVISION	DATE	DESCRIPTION	BY	APPROVED
1	6-13-90	REVISED NEW PUMP DISCHARGE LINE DETAIL	K.F.	D.G.S.

DEPARTMENT OF WATER, JOB NO. 87-5
PUMP REPLACEMENT FOR HANAPEPE TOWA (NAGOSHI) HANAPEPE, KAUAI, HAWAII

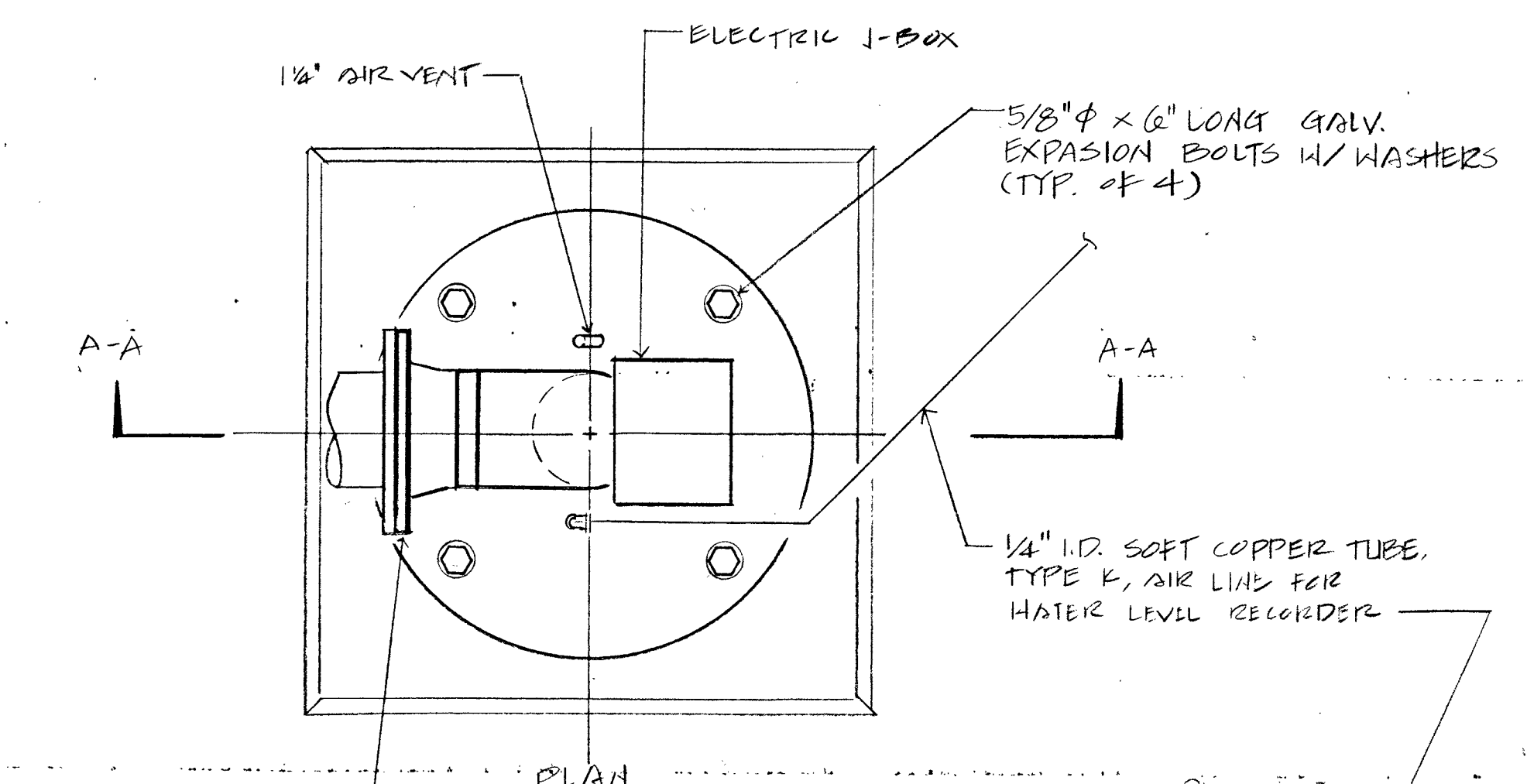
PUMP DEMOLITION DETAIL,
PUMP DISCHARGE LINE DEMOLITION
AND NEW INSTALLATION

APPROVED: *[Signature]* 4-6-90
MANAGER & CHIEF ENGINEER
DEPT. OF WATER, COUNTY OF KAUAI

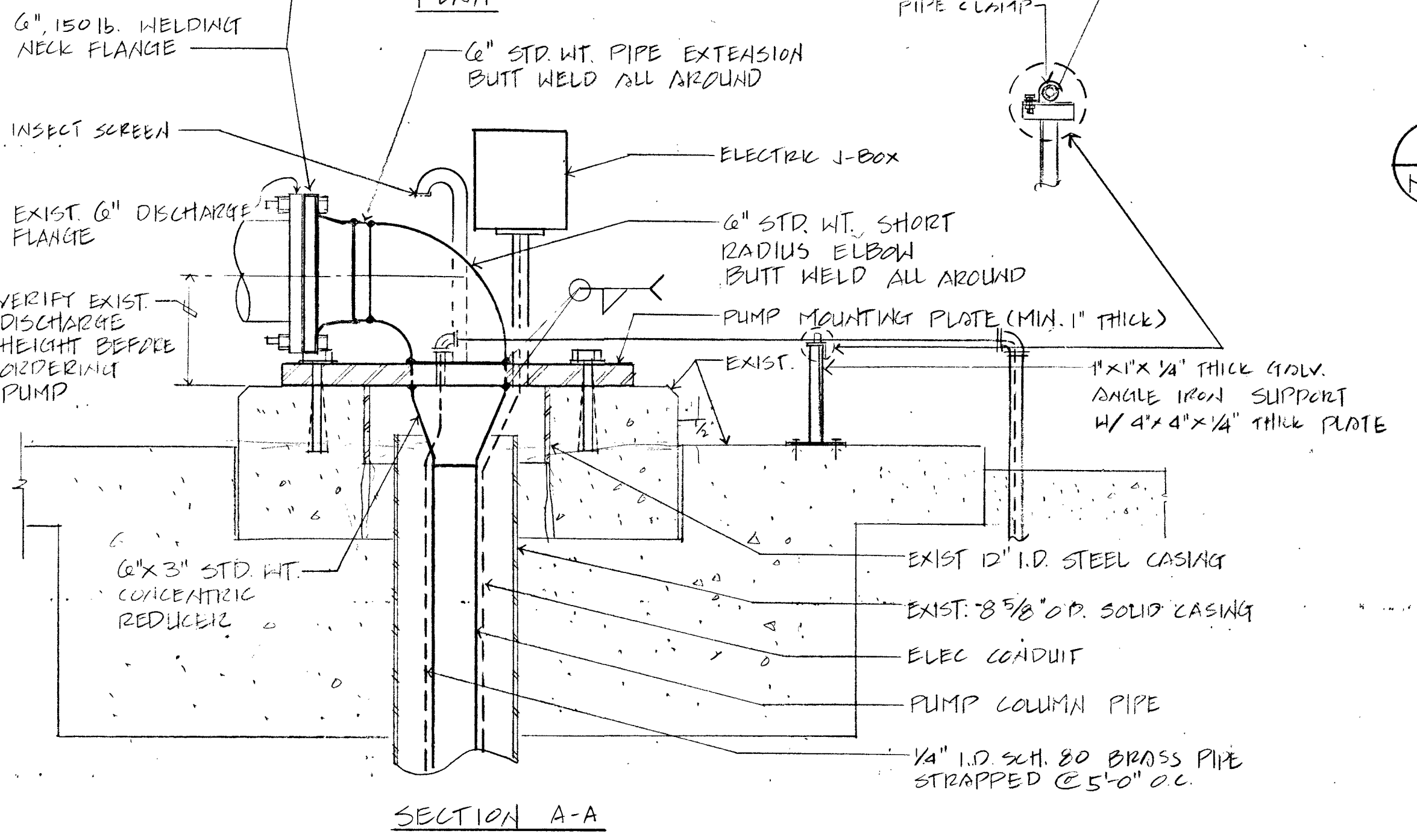
DESIGNED BY: SH
DRAWN BY: AK
CHECKED BY: WAT
SHEET 2
OF 7 SHEETS

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
[Signature]
10/13/88

M-2

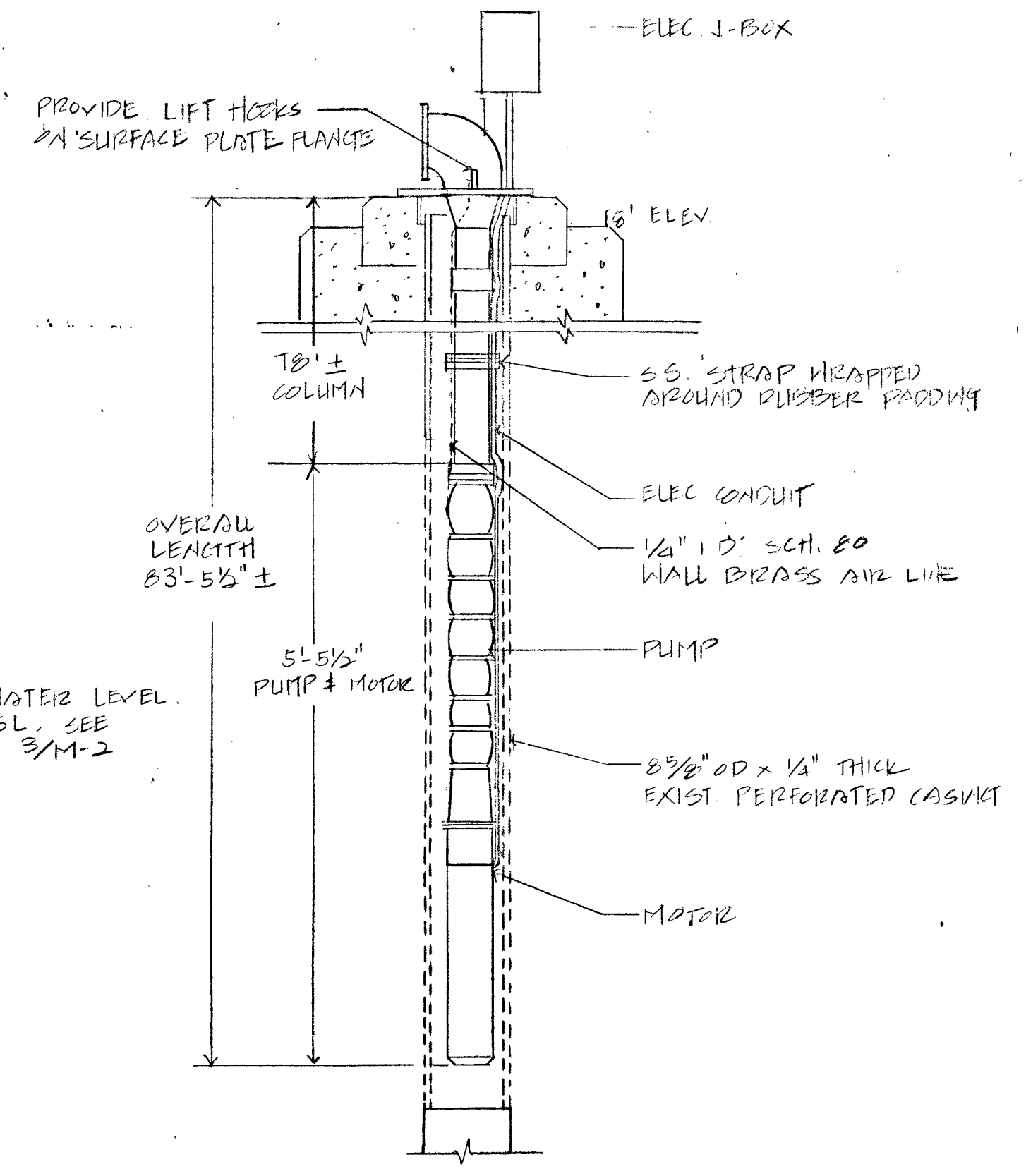


1 NEW PUMP MOUNTING DETAIL
M-3 SCALE: 1 1/2" = 1'-0"

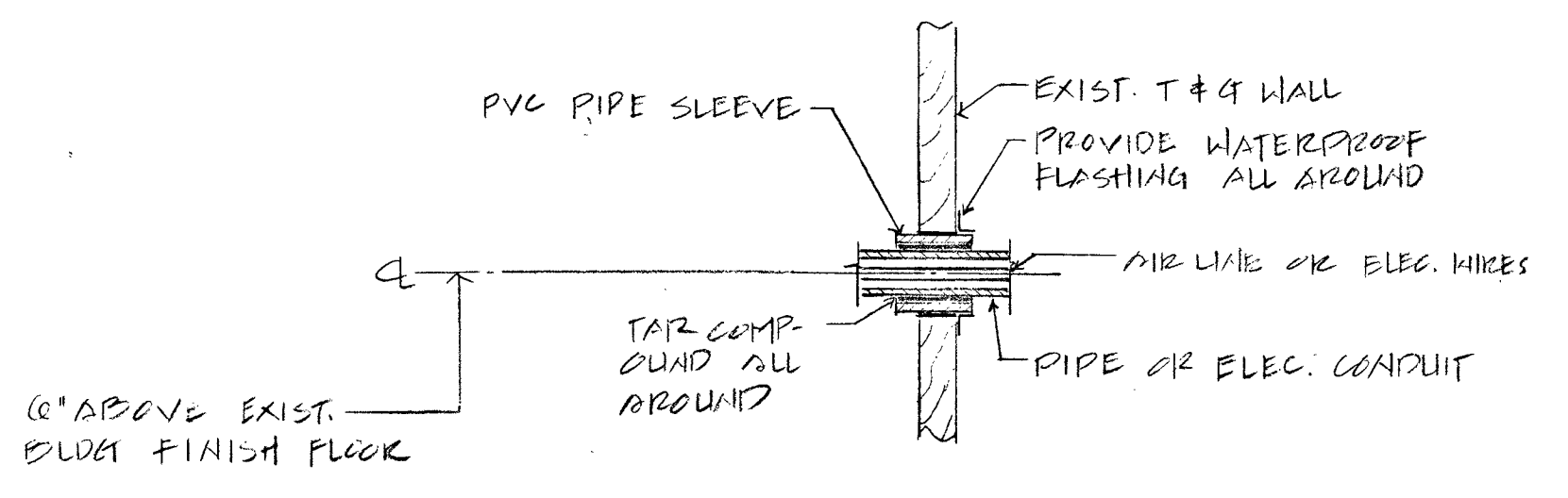


2 EXIST. CONTROL BLDG. FLOOR PLAN
M-3 SCALE: 3/8" = 1'-0"

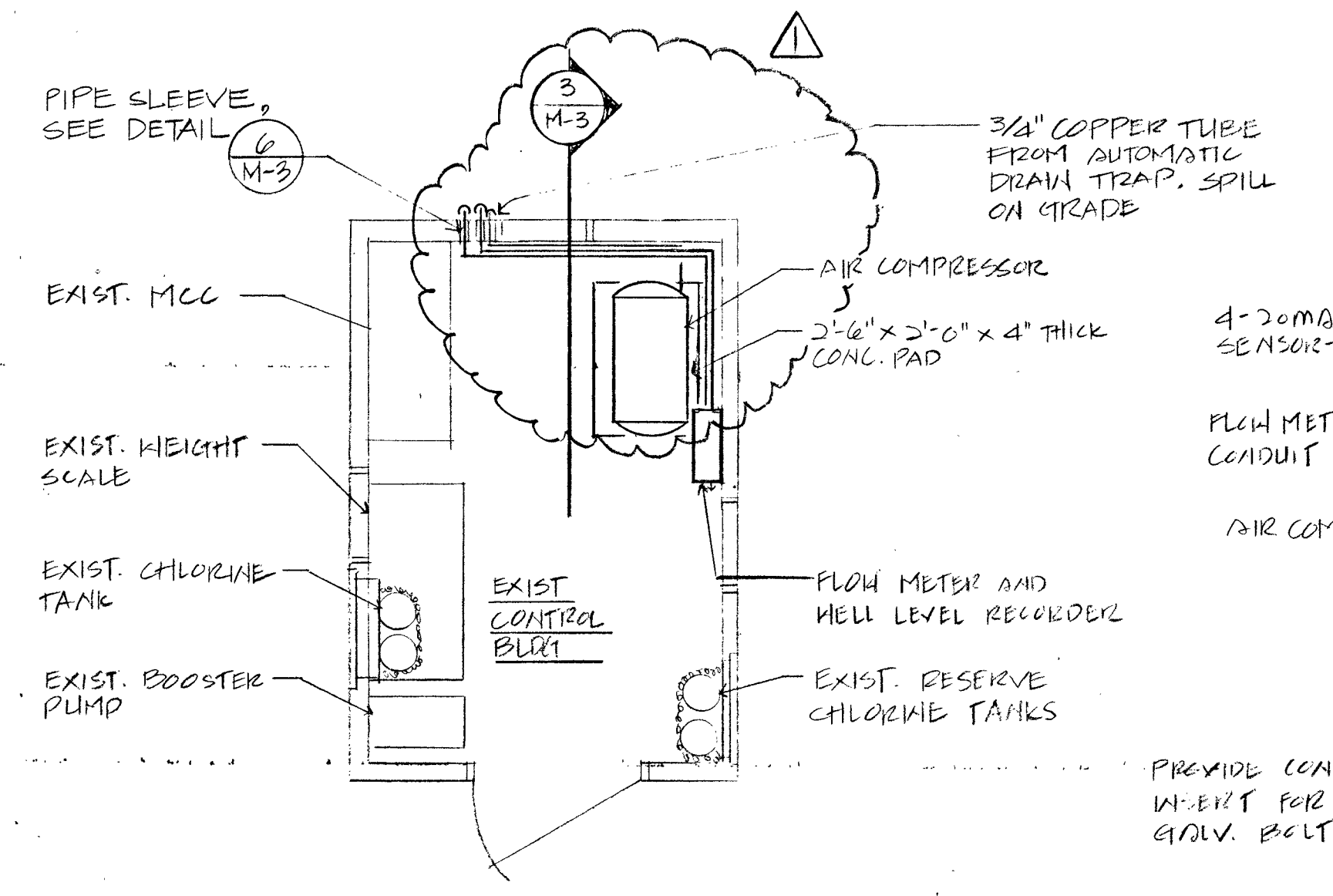
NOTE: STATIC WATER LEVEL AT HT MSL, SEE SECTION 3/M-2



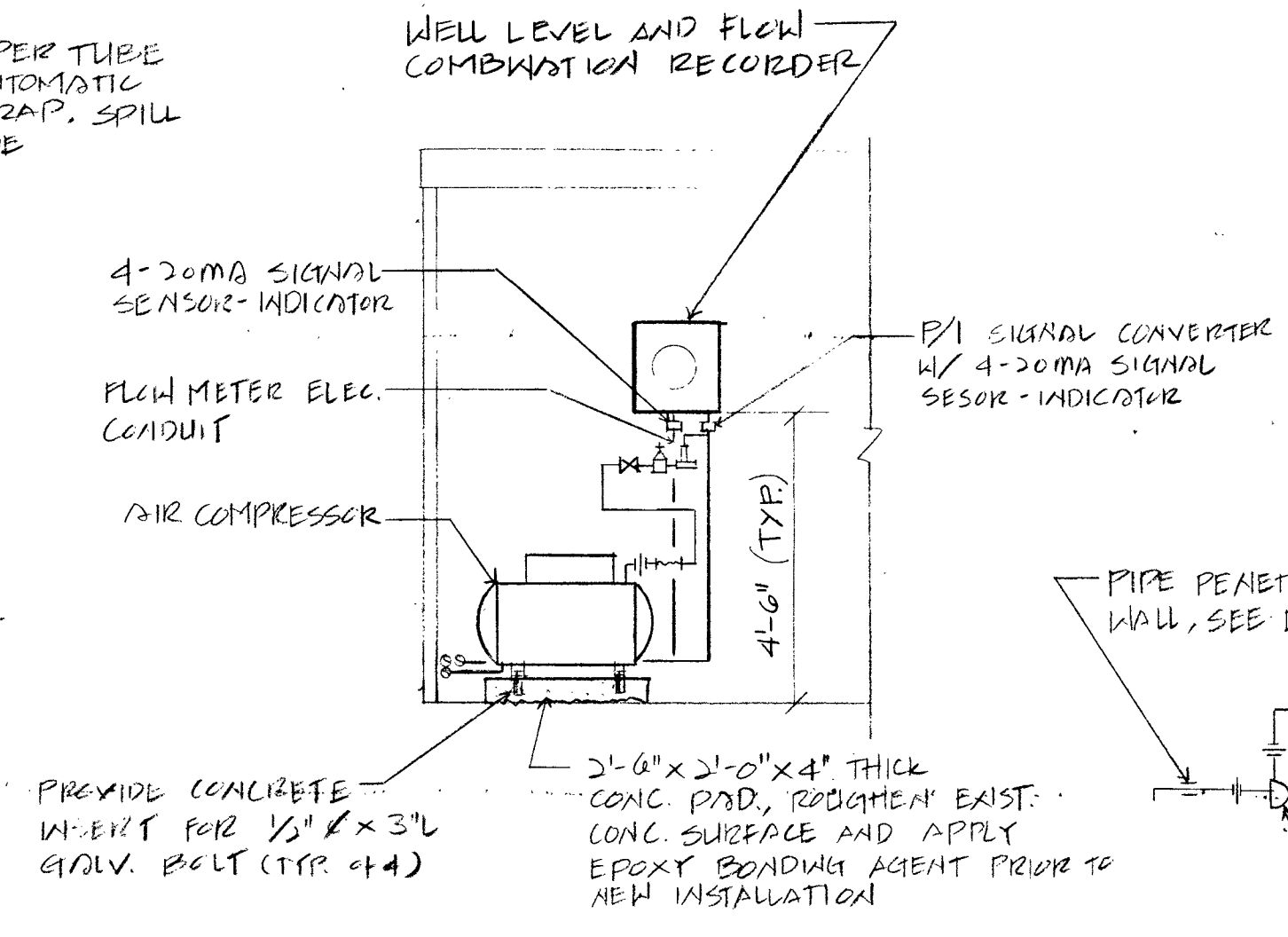
3 SUBMERSIBLE PUMP DETAIL
M-3 NOT TO SCALE



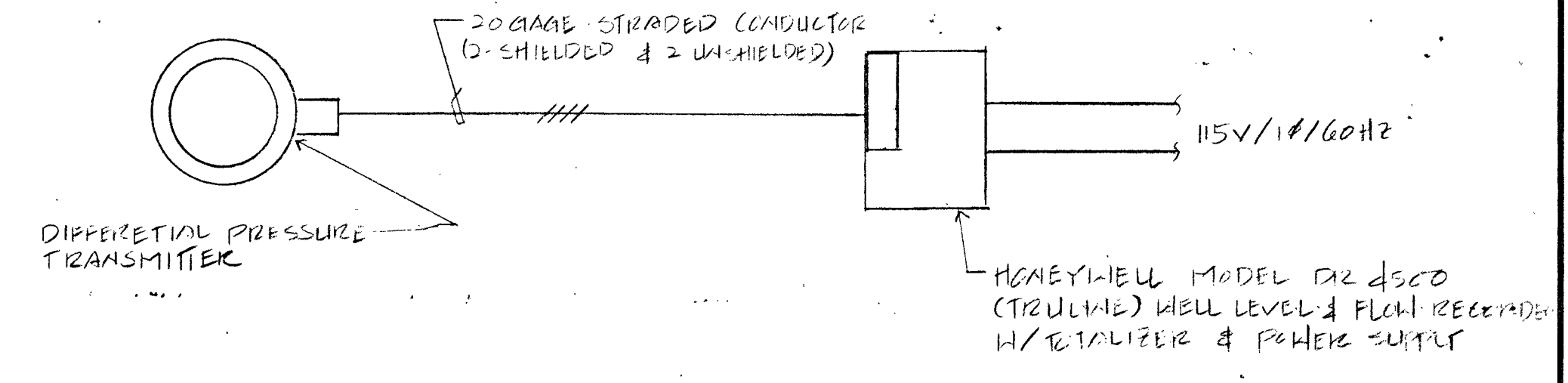
4 PIPE SLEEVE DETAIL
M-3 NOT TO SCALE



5 ELEVATION
M-3 SCALE: 3/8" = 1'-0"



6 COMPRESSED AIR PIPING SCHEMATIC
M-3 NOT TO SCALE



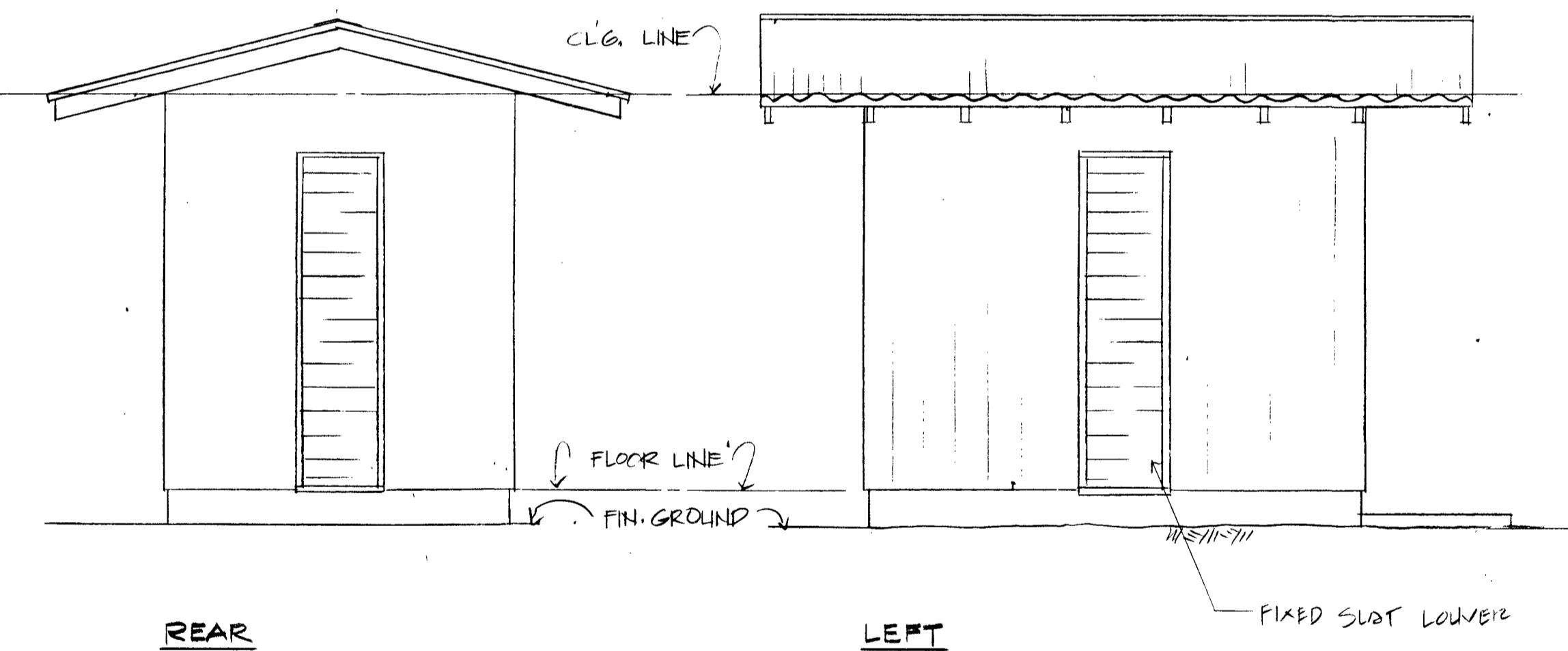
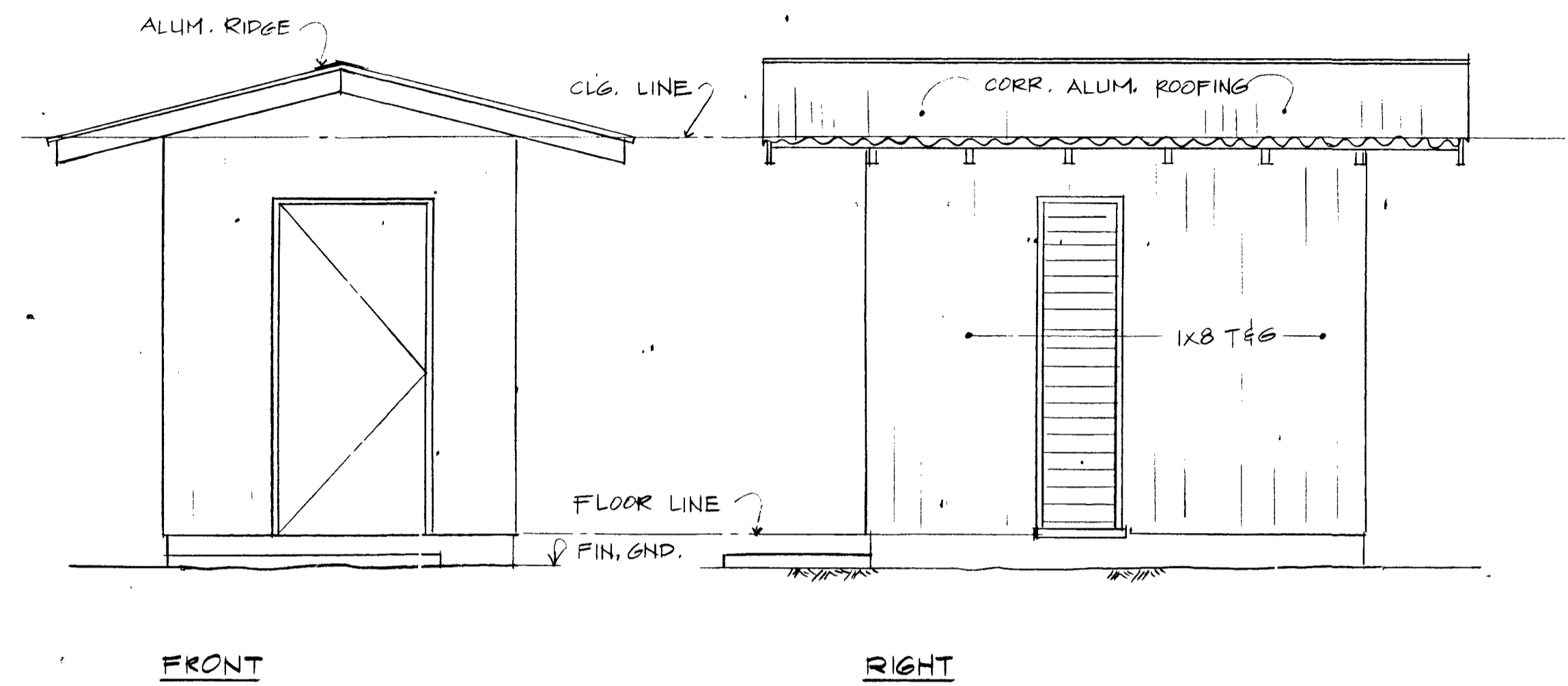
7 FLOW METER CONTROL DIAGRAM
M-3 NOT TO SCALE

- NOTE: CONNECT ALL CONTROL WIRING AS PER MANUFACTURER'S WIRING DIAGRAM
1. FLOW RECORDER SHALL RECORD PUMP DISCHARGE FLOW (GPM) AND TOTAL GALLONS OF WATER PUMPED (TOTALIZER PRINTOUT).
 2. FLOW RECORDER SHALL CONTROL THE RELAY WHICH SENSES NO AND/OR LOW FLOW IN THE DISCHARGE LWS.
 3. RECORDER SHALL RECORD WELL WATER LEVEL IN FEET, & REFERENCED TO BOTTOM OF THE AIR LINE.
 4. P/I SIGNAL CONVERTER SHALL BE VDO MODEL 22/06, AND SENSOR-INDICATOR SHALL BE DEVAR MODEL 18-112-M42.

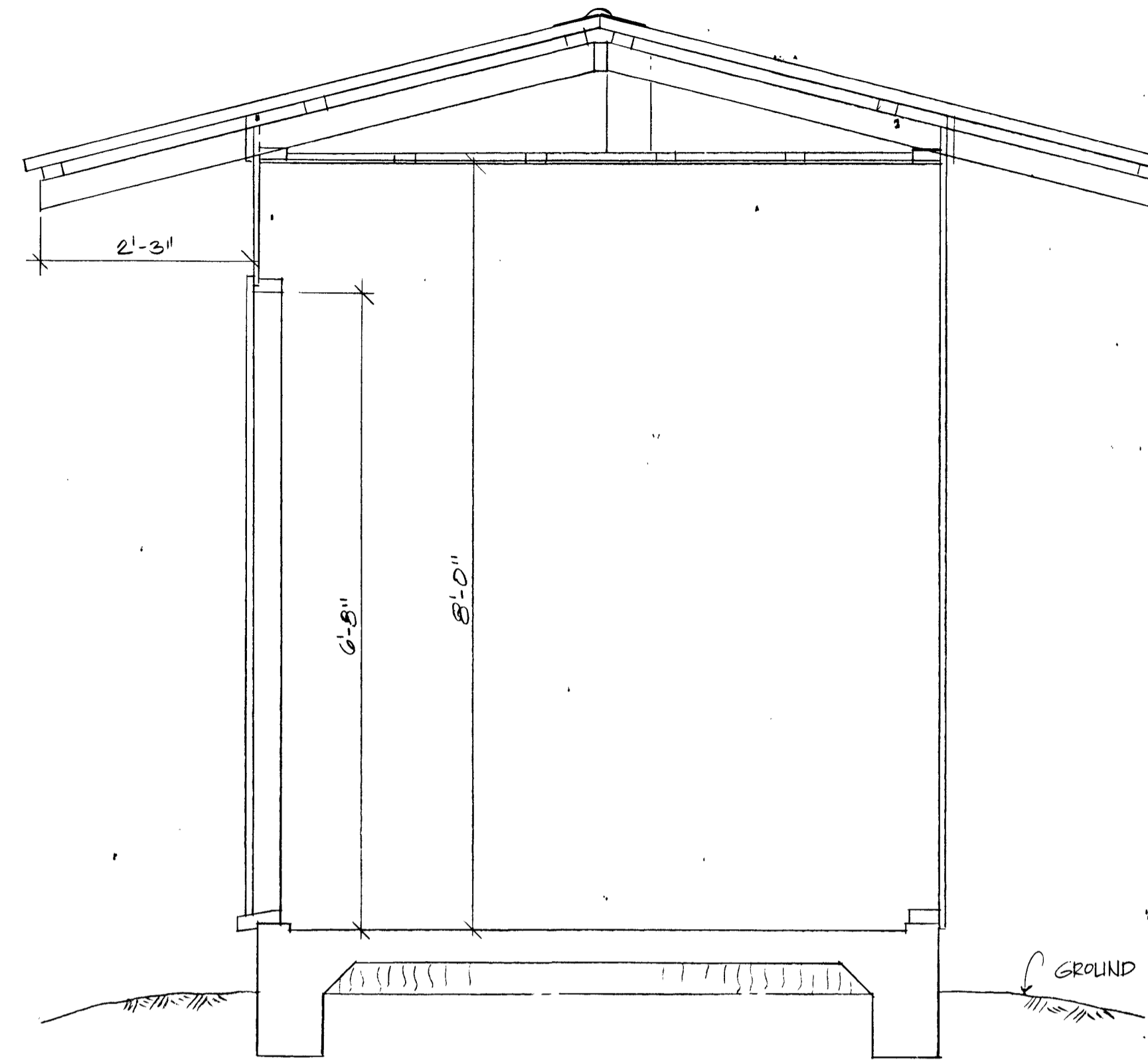
REVISION	DATE	DESCRIPTION	BY	APPROVED
1	6-12-90	REVISION CONTROL SLD	E.E.	REVISION
DEPARTMENT OF WATER, JOB NO. 81-5 PUMP REPLACEMENT FOR HANAPEPE TOWN (NAAGOSHI) HANAPEPE, KAUAI, HAWAII				
PUMP MOUNTING DETAIL, CONTROL BLDG. FLOOR PLAN AND DETAILS				
APPROVED: <i>[Signature]</i>		4-6-90	DESIGNED BY: E.H. DRAWN BY: A.C. CHECKED BY: J.L.H.	SHEET 2 OF 2 SHEETS
MANAGER & CHIEF ENGINEER DEPT. OF WATER, COUNTY OF KAUAI				

M-3

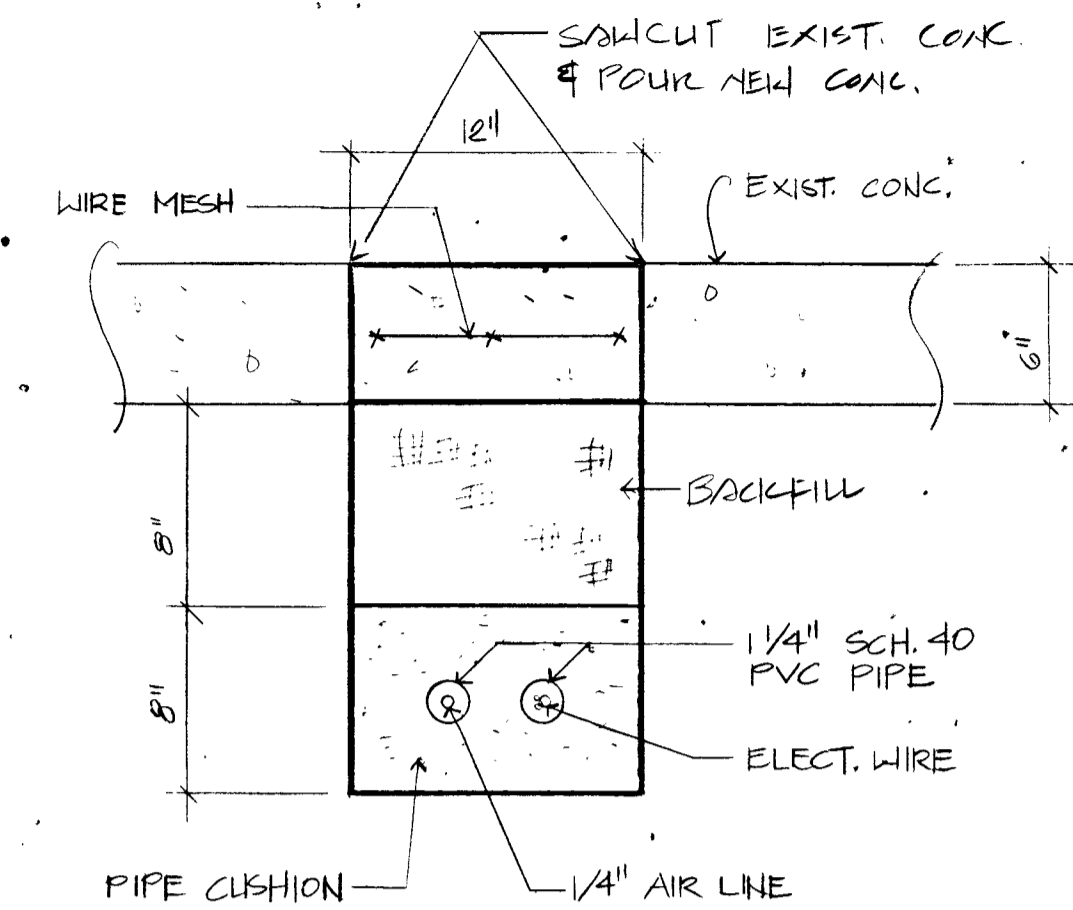
12/2/90



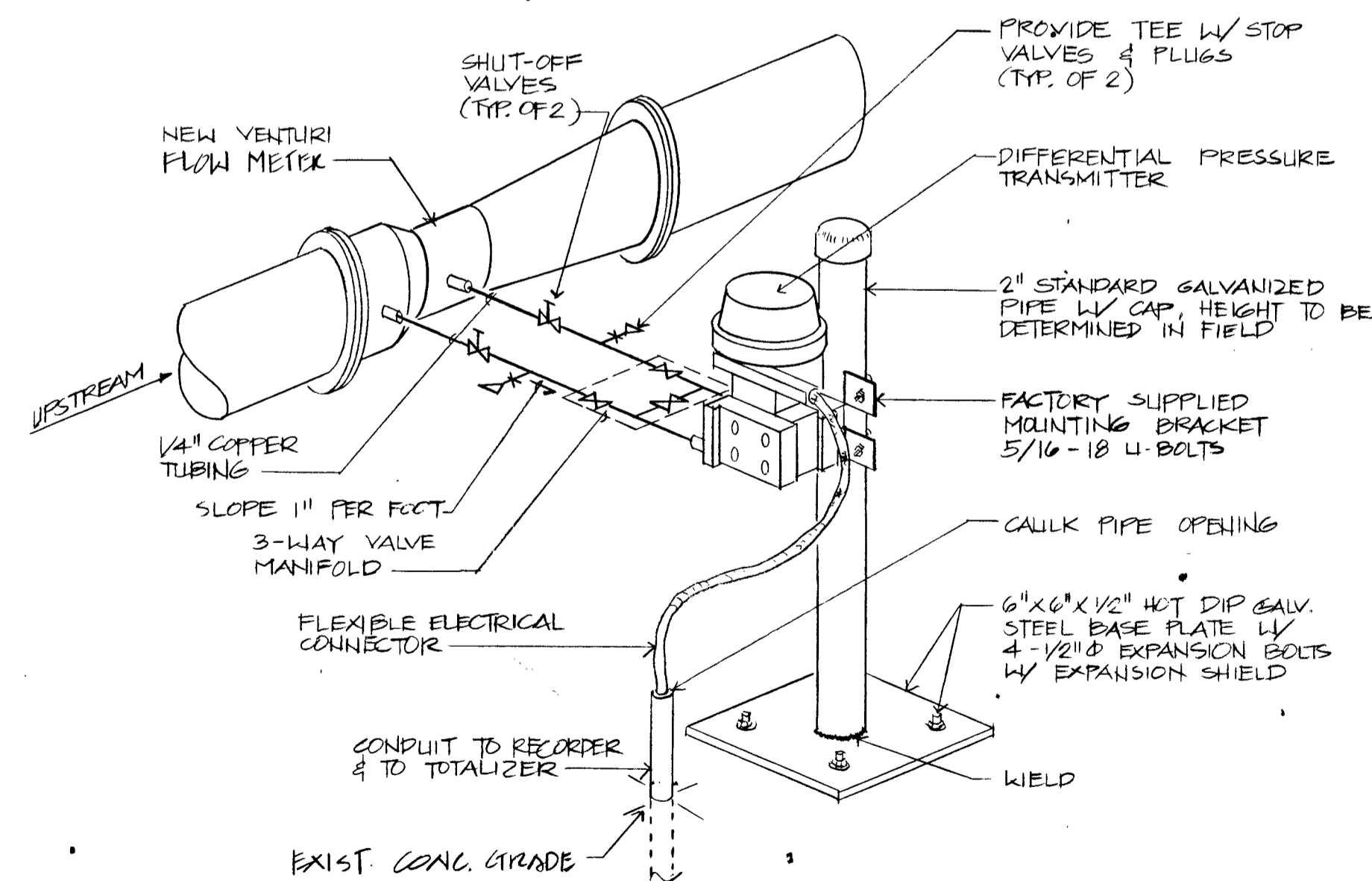
EXISTING CONTROL BLDG ELEVATIONS
SCALE: 3/8" = 1'-0"



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



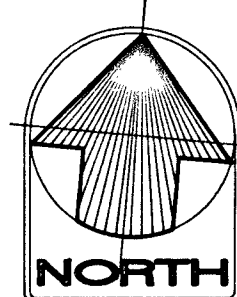
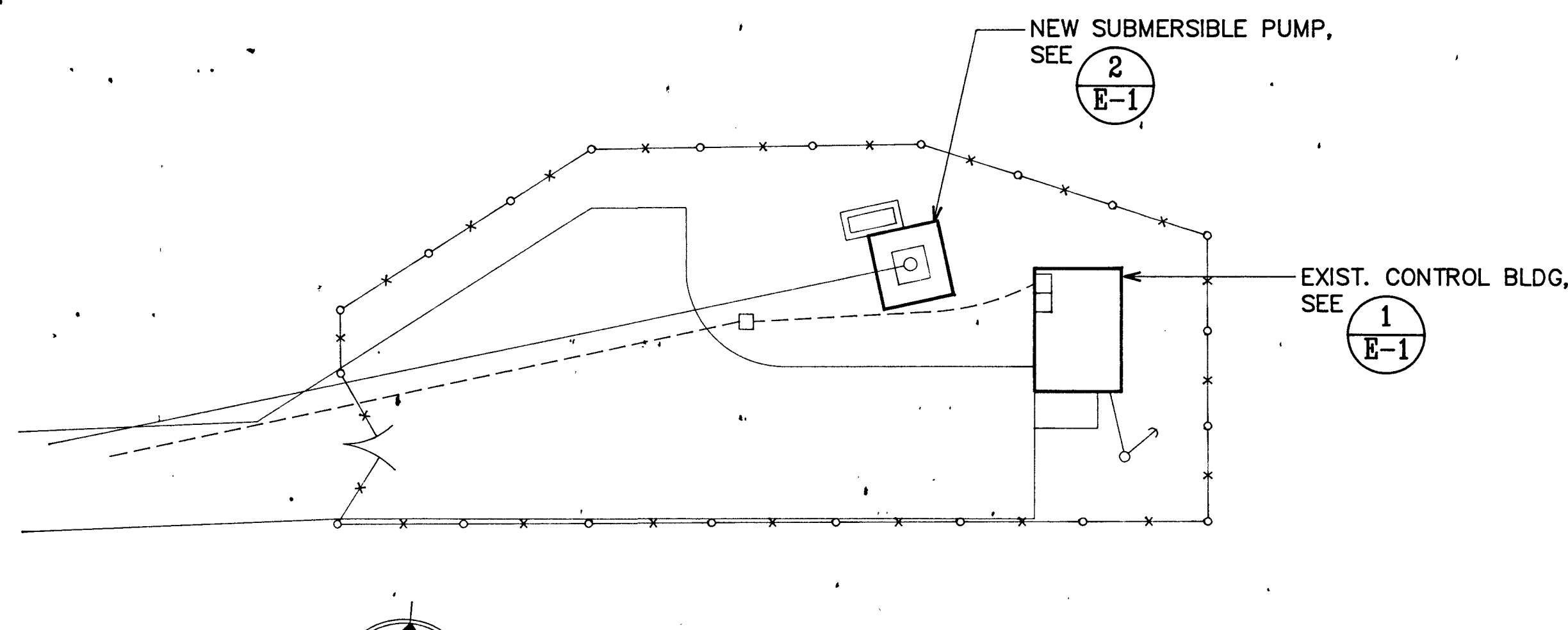
1 UNDERGROUND PIPE TRENCH DETAIL
SCALE: 1/2" = 1'-0"



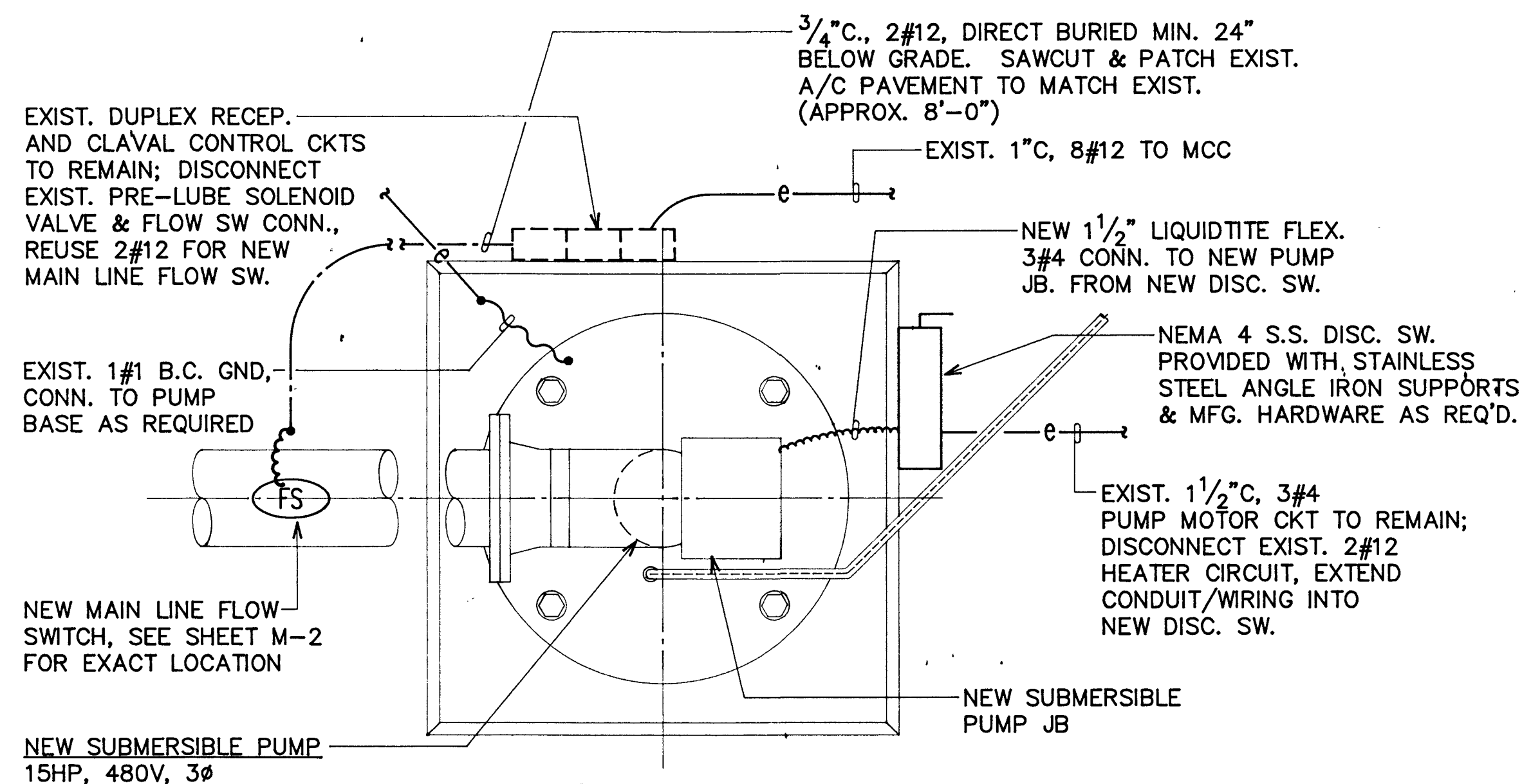
2 TRANSMITTER HOOK-UP & MOUNTING BRACKET DETAIL
SCALE: NOT TO SCALE

REVISION	DATE	DESCRIPTION	BY	APPROVED
DEPARTMENT OF WATER JOB NO. 87-5 PUMP REPLACEMENT FOR HANAPEPE TOWN (NAGOSHII) WELL HANAPEPE, KAUAI, HAWAII				
CONTROL BLDG ELEVATIONS AND DETAILS				
APPROVED: <i>Richard H. King</i> 12/13/87 MANAGER & CHIEF ENGINEER DEPT. OF WATER, COUNTY OF KAUAI		DESIGNED BY: SH DRAWN BY: AC CHECKED BY: KAH SHEET 5 OF 7 SHEETS		

M-4

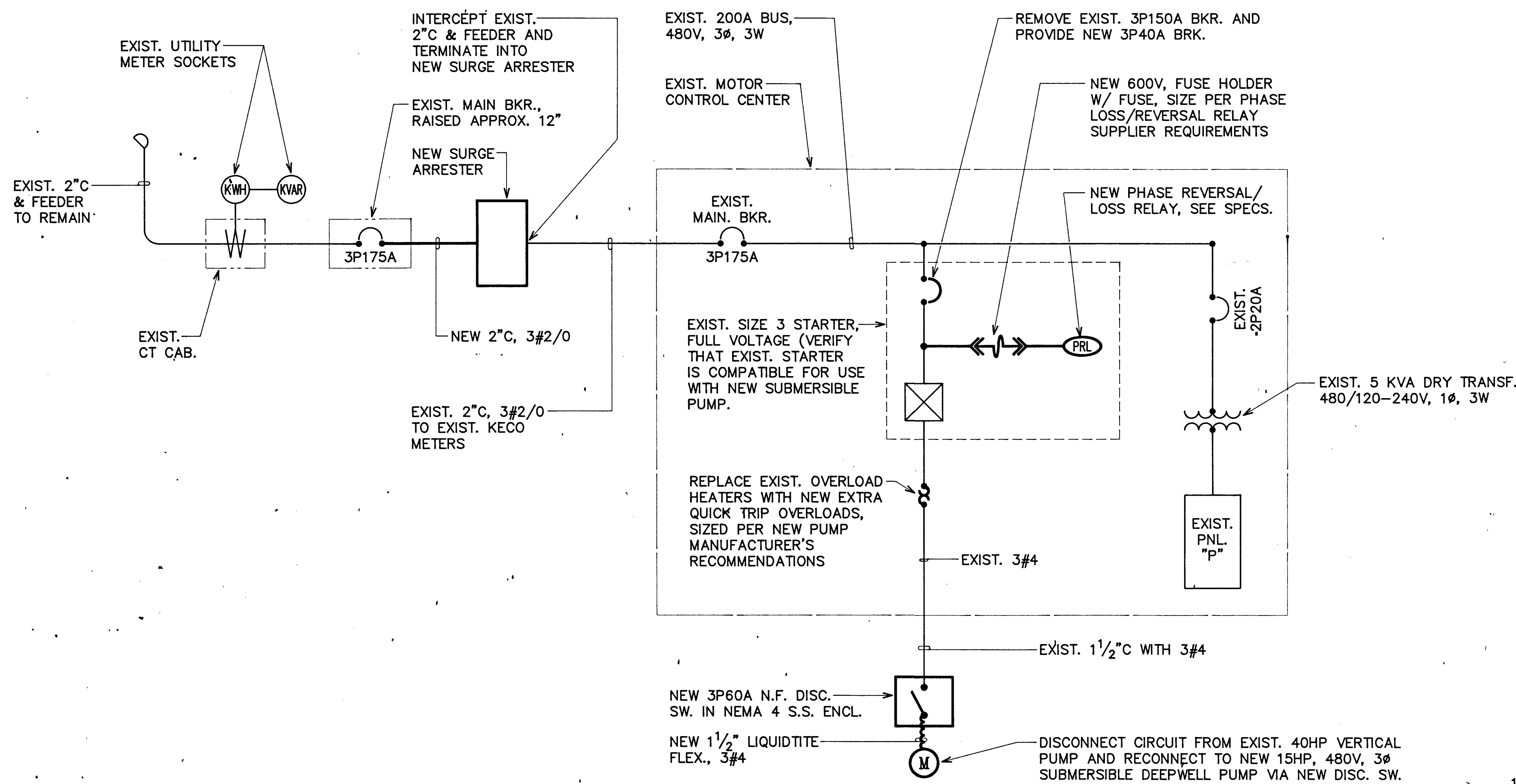


ELECTRICAL SITE PLAN
SCALE: 1"=10'

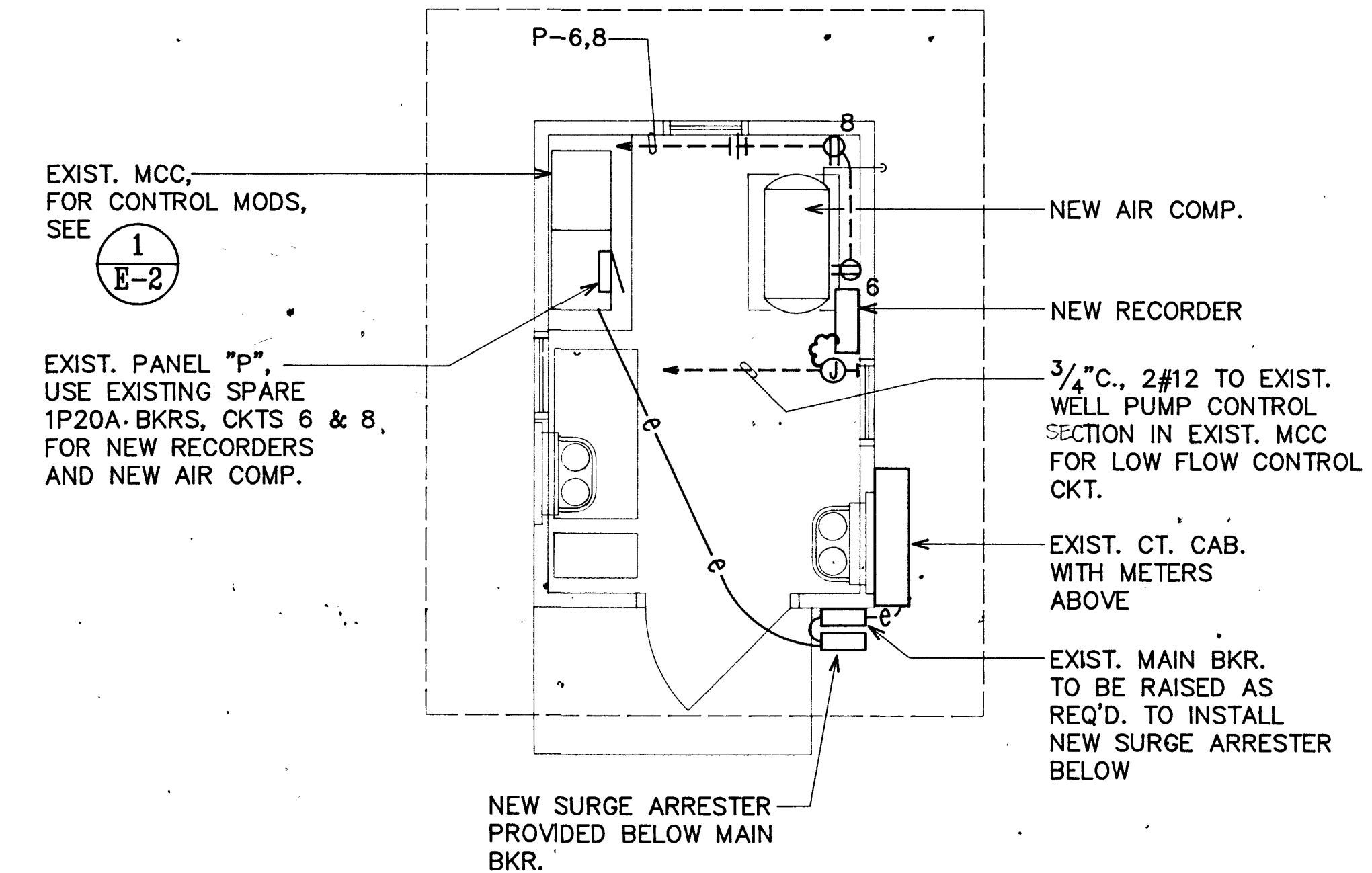


2 E-1 PUMP ELECTRICAL PLAN
N.T.S.

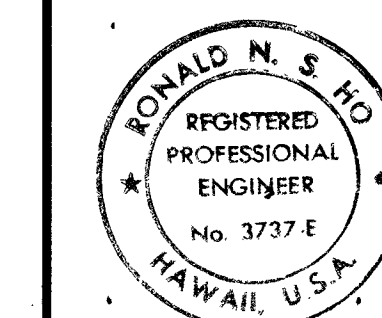
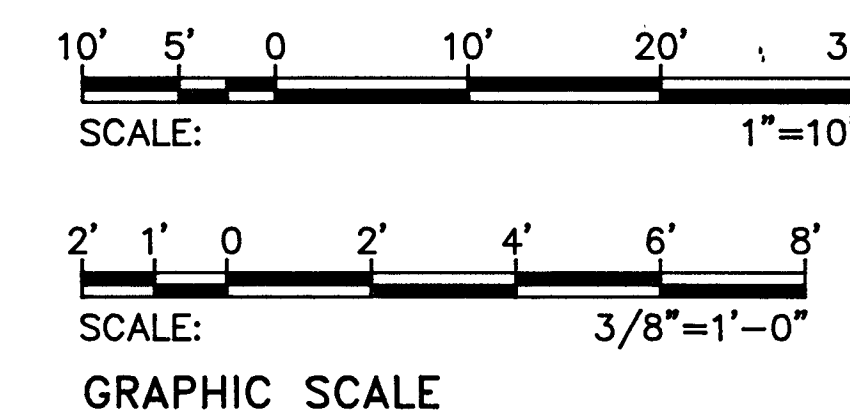
ELECTRICAL SYMBOLS	
SYMBOL	DESCRIPTION
	DUPLEX RECEPTACLE, NEMA 5-15R, 120V, MTD. +48" OR AS NOTED
	FLEXIBLE CONDUIT, LIQUIDTITE
	EXPOSED CONDUIT ABOVE REF. FL., 3 WIRES WITH GND
	EXISTING CONDUIT AND WIRES



EXISTING ONE-LINE DIAGRAM WITH MODIFICATION



1 E-1 CONTROL BLDG. ELEC. PLAN
SCALE: 3/8"=1'-0"



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

APPROVED: *Ronald N. S. Ho*
3/19/90

REVISION	DATE	DESCRIPTION	BY	APPROVED

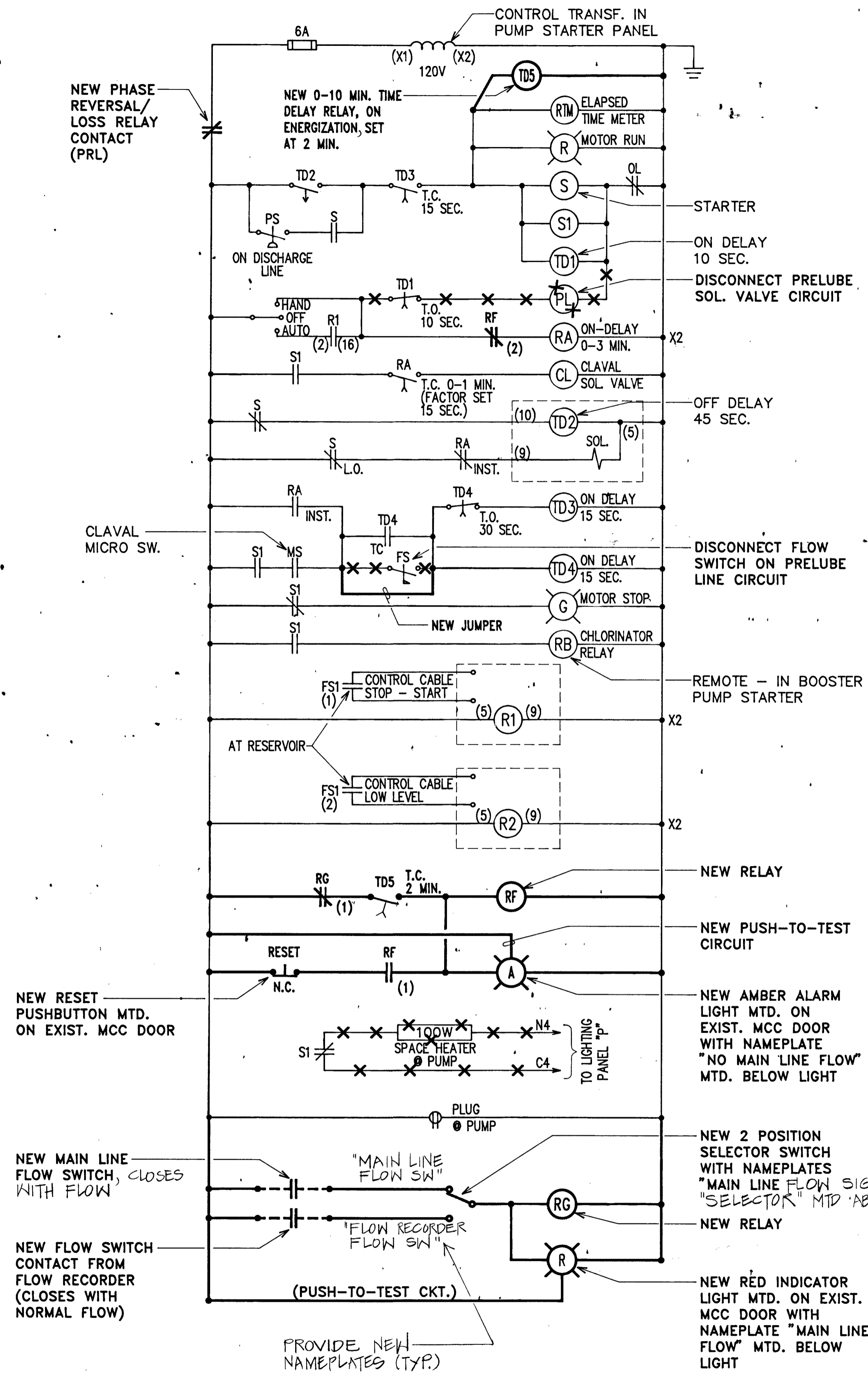
DEPARTMENT OF WATER, JOB NO. 87-5
PUMP REPLACEMENT FOR HANAPEPE TOWN (NAGOSHI)
HANAPEPE, KAUAI, HAWAII

ELECTRICAL PLANS, SYMBOLS

APPROVED: *Ronald N. S. Ho* 4-6-90
MANAGER & CHIEF ENGINEER
DEPT. OF WATER, COUNTY OF KAUAI

DESIGNED BY: A.M.
DRAWN BY: C.V.
CHECKED BY: R.H.
SHEET 6 OF 7 SHEETS

E-1



CONTROL SCHEMATIC SYMBOLS

- OL OVERLOAD CONTACT
- (S) MAIN STARTER COIL
- S MAIN STARTER CONTACT
- TD1 TIME DELAY RELAY
- TD2 TIME DELAY RELAY
- TD3 TIME DELAY RELAY
- TD4 TIME DELAY RELAY, PRELUBE FLOW
- TC TIMED CLOSE CONTACT
- LO LATE OPENING CONTACT
- RTM 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, STOP START
- R2 RESISTANCE SENSITIVE RELAY, LOW LEVEL
- R3 RESISTANCE SENSITIVE RELAY
- R4 RESISTANCE SENSITIVE RELAY
- FS1 MAGNETROL FLOAT SWITCH AT RESERVOIR
- RC RELAY
- RD RELAY
- RE RELAY
- FS FLOW SWITCH ON PRELUBE LINE
- PS PRESSURE SWITCH ON DISCHARGE LINE
- PL PRESSURE SOLENOID VALVE

NOTE: "X" THRU SYMBOL INDICATES EXISTING EQUIPMENT AND WIRING TO BE REMOVED/DISCONNECTED.

1
E-2 **EXISTING DEEPWELL PUMP CONTROL SCHEMATIC WITH MODIFICATIONS**

E-2

RONALD M. S. NG
REGISTERED PROFESSIONAL ENGINEER
No. 3737-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Ronald M. S. Ng
3/19/90

REVISION	DATE	DESCRIPTION	BY	APPROVED

DEPARTMENT OF WATER, JOB NO. 87-5
PUMP REPLACEMENT FOR HANAPEPE TOWN (NAGOSHI)
HANAPEPE, KAUAI, HAWAII

EXISTING DEEPWELL PUMP CONTROL SCHEMATIC WITH MODIFICATIONS, SYMBOLS

APPROVED: *Raymond P. King*
4-6-90
MANAGER & CHIEF ENGINEER
DEPT. OF WATER, COUNTY OF KAUAI

DESIGNED BY: A.M.
DRAWN BY: G.N.
CHECKED BY: R.H.
SHEET 7
OF 7 SHEETS