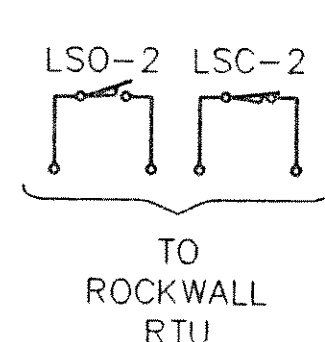
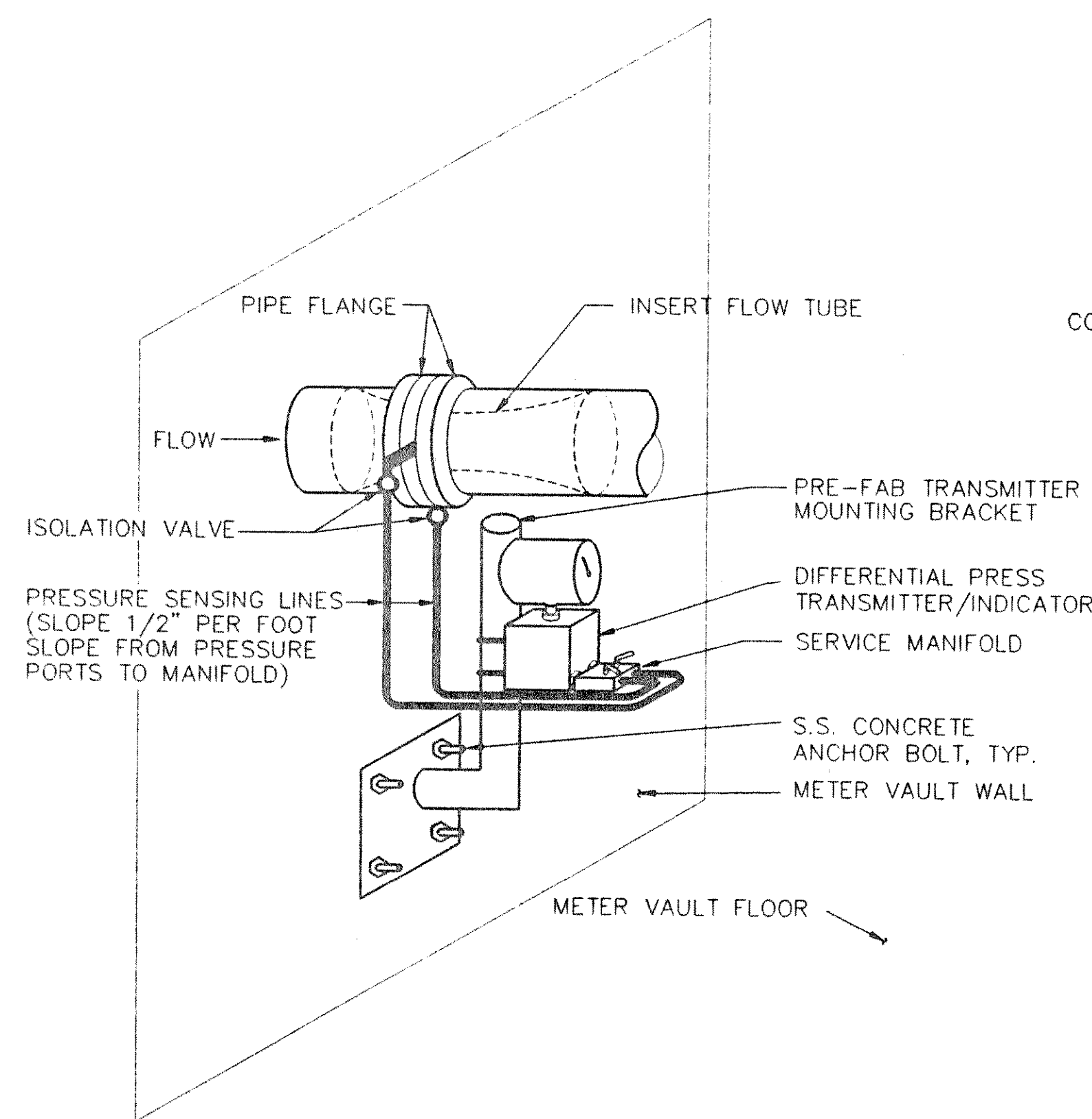


LIMIT SWITCH	% VALVE OPEN		
	0%	1-99%	100%
LSO-1	X	O	O
LSO-2	X	X	O
LSO-3	O	X	X
LSC-1	O	O	X
LSC-2	O	X	X
LSC-3	X	X	O

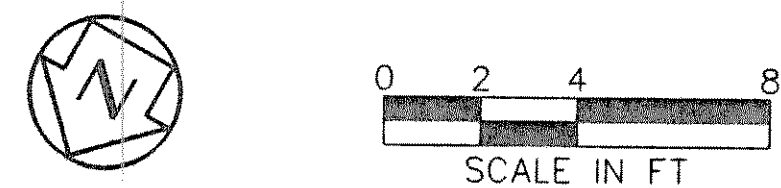
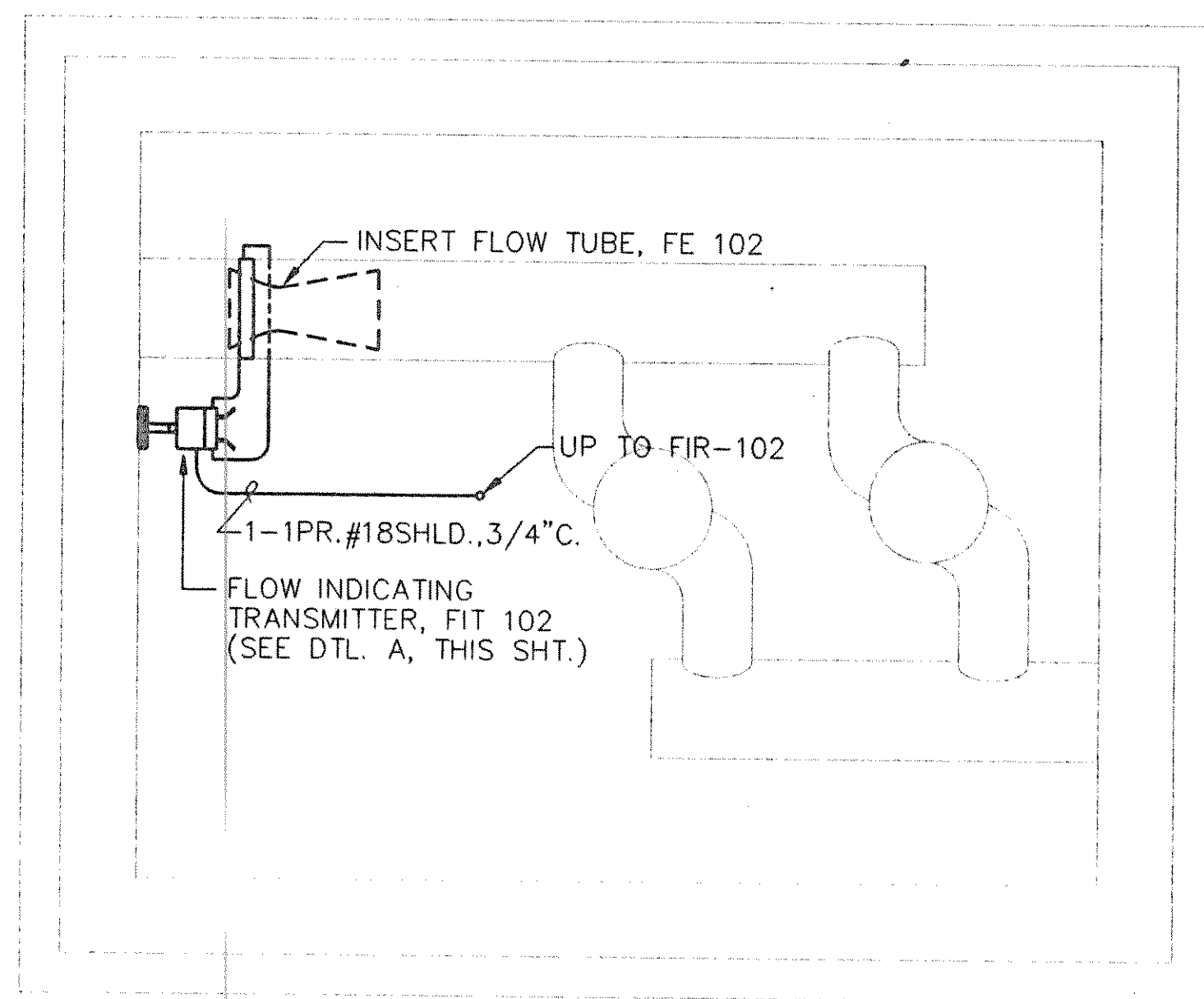
X=CONTACTS CLOSED
O=CONTACTS OPEN



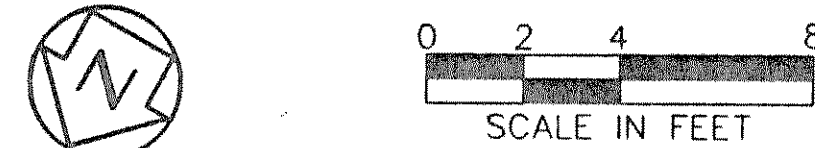
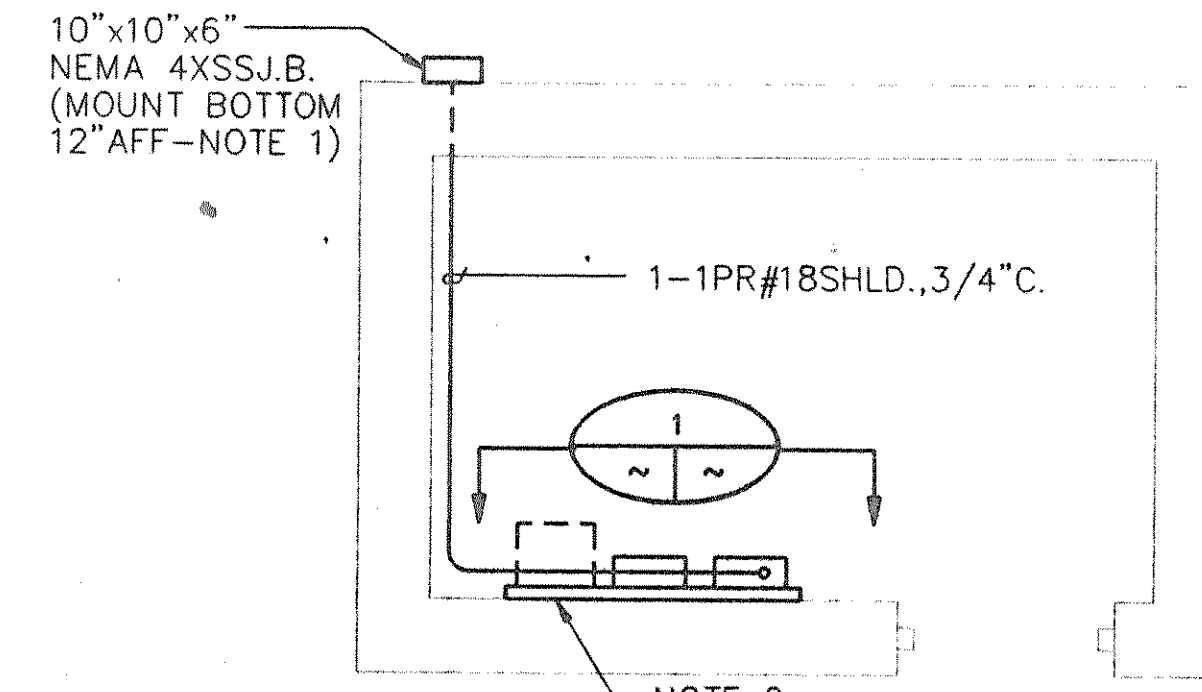
CONTROL SCHEMATIC - FLOW CONTROL VALVE



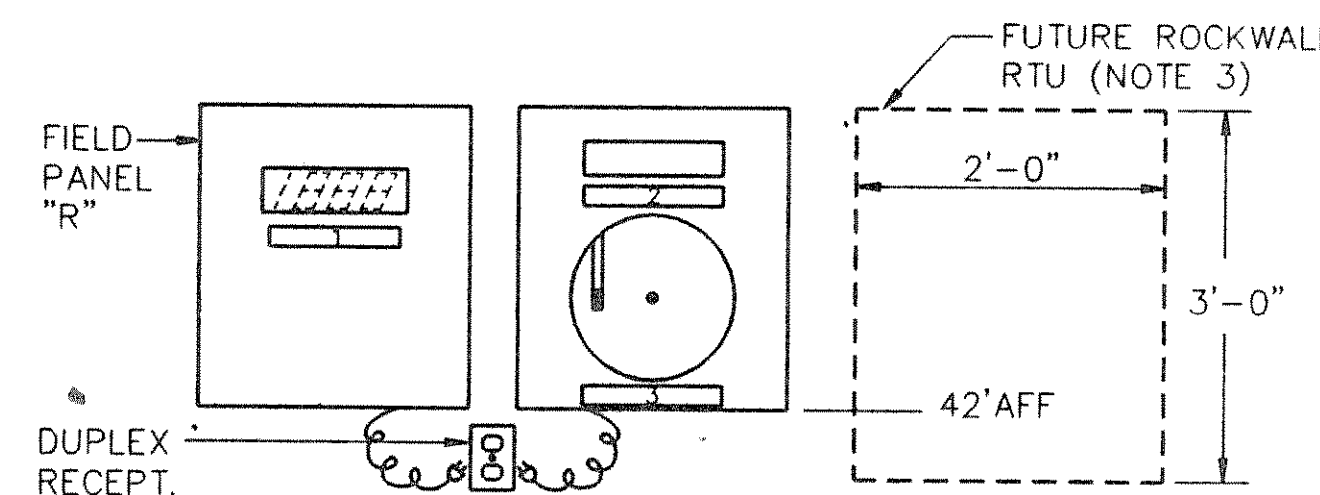
DETAIL A - FLOW TRANSMITTER MOUNTING
N. T. S.



PLAN - FLOW TRANSMITTER



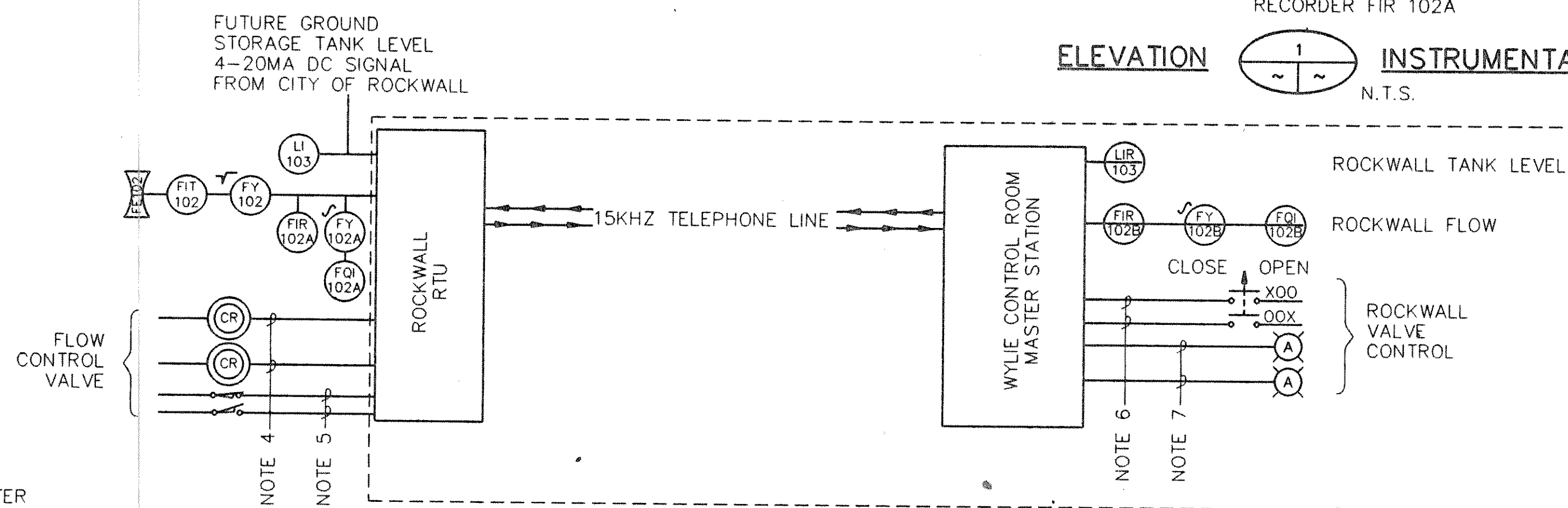
PLAN - ELECTRICAL ROOM INSTRUMENTATION



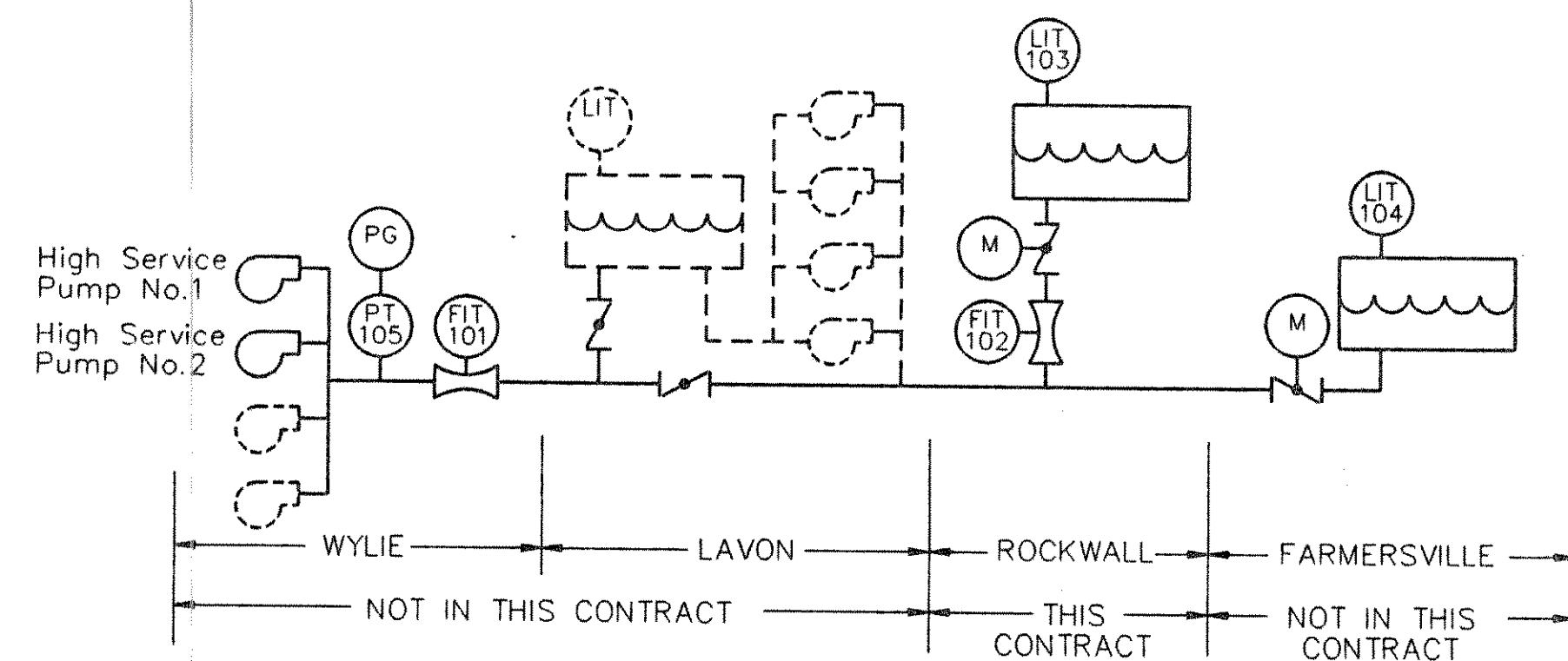
NOTE: CONDUITS NOT SHOWN

- NAMEPLATE ENGRAVING
1. ROCKWALL TANK LEVEL (FT)
 2. ROCKWALL FLOW (x1000=GALS)
 3. ROCKWALL FLOW RATE (MGD)
- INSTRUMENT
- 4-20MA DC LOOP INDICATOR, LI 103
INTEGRATOR FY 102A & TOTALIZER FOI 102A
SQUARE ROOT EXTRACTOR FY 102 AND FLOW RECORDER FIR 102A

ELEVATION INSTRUMENTATION
N.T.S.



INSTRUMENTATION AND CONTROL SYSTEM DIAGRAM



INSTRUMENTATION AND PUMPING DIAGRAM

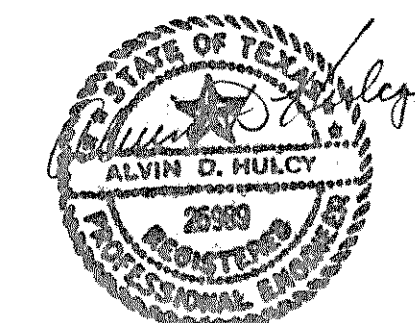
NOTES

1. FOR FUTURE CONNECTION OF GROUND STORAGE TANK LEVEL SIGNAL TO PANEL "R" TERMINATE CABLE ON TERMINAL STRIP.
2. 3/4 INCH "A-D" EXTERIOR PLYWOOD WITH "A" SIDE EXPOSED. PAINT WITH PRIMER AND TWO COATS GRAY ALKYD ENAMEL.
3. PROVIDE SPACE SHOWN ON PLYWOOD BACKBOARD.
4. RTU PROVIDES CONTACT CLOSURE TO FLOW CONTROL VALVE OPERATOR
5. FLOW CONTROL VALVE OPERATOR PROVIDES CONTACT CLOSURE TO RTU.
6. CONTACT CLOSURES TO MASTER STATION.
7. MASTER STATION SOURCES 24 VDC TO LAMP.

LEGEND

- | | | | |
|---------|----------------------------------------------------|--|---------------------------------------------------------------------|
| A | AMP | | TRANSFORMER |
| A/C | AIR CONDITIONING | | GROUND |
| AFF | ABOVE FINISHED FLOOR | | MAINTAINED CONTACT SWITCH
X=CONTACTS CLOSED
O=CONTACTS OPENED |
| BKR | BREAKER | | SURGE CAPACITOR |
| C. | CONDUIT | | LIGHTNING ARRESTOR |
| CKT | CIRCUIT | | SWITCH |
| EL. | ELEVATION | | WEATHERPROOF SWITCH |
| GAL. | GALLON | | WEATHERPROOF RECEPTACLE |
| GND. | GROUND | | 240V RECEPTACLE |
| HP. | HORSEPOWER | | WIRE IN OR NOT IN CONDUIT IN GROUND |
| KVA | KILO VOLT AMPERES | | WIRE IN OR NOT IN CONDUIT EXPOSED |
| KW | KILLOWATT | | CONCEALED WIRE IN OR NOT IN CONDUIT |
| LSC | LIMIT SWITCH CLOSED | | WIRE IN OR NOT IN CONDUIT ATTACHED TO UNDERSIDE OF FLOOR |
| LSO | LIMIT SWITCH OPEN | | CONDUIT BENDS TOWARD OBSERVER |
| MA | MILLIAMPERES | | CONDUIT BENDS AWAY FROM OBSERVER |
| MGD | MILLION GALLONS PER DAY | | CONDUIT RUN, NUMBER OF WIRES AS INDICATED |
| MIN. | MINIMUM | | HOT, NEUTRAL, SWITCHLEG, AND GROUND |
| P | POLE | | LIGHT FIXTURE |
| RECEPT. | RECEPTACLE | | LIGHT FIXTURE |
| RTU | REMOTE TERMINAL UNIT | | FLOW SENSING ELEMENT (FLOW TUBE) |
| SHLD | SHIELD | | FLOW TRANSMITTER |
| SS | STAINLESS STEEL | | FLOW FUNCTION AS DESIGNATED |
| SSJ.B. | STAINLESS STEEL JUNCTION BOX | | FLOW INDICATING RECORDER |
| V | VOLTS | | FLOW INDICATOR |
| VDC | VOLTS DC | | LEVEL INDICATING TRANSMITTER |
| W. | WITH | | TOTALIZER |
| W | WATTS OR WIRE | | LEVEL INDICATING RECORDER |
| WP | WEATHERPROOF | | FIELD MOUNTED INSTRUMENT |
| Ø | PHASE | | BACK OF PANEL MOUNTED INSTRUMENT |
| | MOTOR CONTACTOR | | FRONT OF PANEL MOUNTED INSTRUMENT |
| | TIMING RELAY | | VENTURIS OR FLOW TUBE |
| | ELAPSED TIME METER | | SQUARE ROOT EXTRACTOR |
| | AC CONTROL RELAY | | INTEGRATOR |
| | DC CONTROL RELAY | | PUMP |
| | NORMALLY OPEN CONTACTS | | WATER STORAGE TANK |
| | NORMALLY CLOSED CONTACTS | | |
| | OVERLOADS | | |
| | THERMAL SWITCH | | |
| | NORMALLY CLOSED MOMENTARY CONTACT SWITCH | | |
| | NORMALLY OPEN MOMENTARY CONTACT SWITCH | | |
| | LIMIT SWITCH | | |
| | TORQUE SWITCH | | |
| | TIMING RELAY CONTACTS | | |
| | INDICATING LAMP
R=RED, G=GREEN, A=AMBER, B=BLUE | | |
| | FUSE | | |
| | TERMINAL | | |
| | NODE | | |

RECORD DRAWING
Date 4/29/94 By JLB



9-27-90

ACAD/B/90
DWG/1/28/94/UNLOCKED.DWG

DESIGNED	DATE	JOB NO.	NTD88047
DRAWN	DATE	DATE	
TRACED	DATE	SCALE	AS SHOWN
CHECKED	DATE		

FRESE AND NICHOLS, INC.
CONSULTING ENGINEERS
FORT WORTH-ARLINGTON-AUSTIN, TEXAS

NORTH TEXAS MUNICIPAL WATER DISTRICT
WYLIE - ROCKWALL - FARMERSVILLE PIPELINE

METER VAULT - ELECTRICAL
INSTRUMENTATION AND CONTROL

SH. 24
OF 28