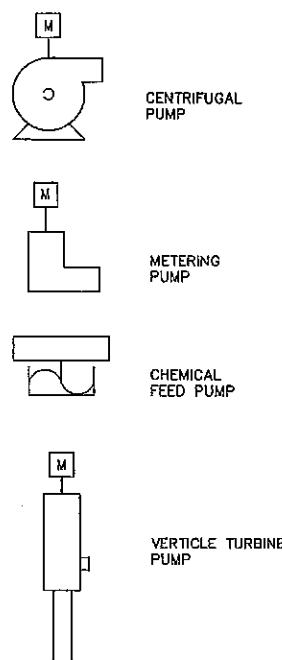


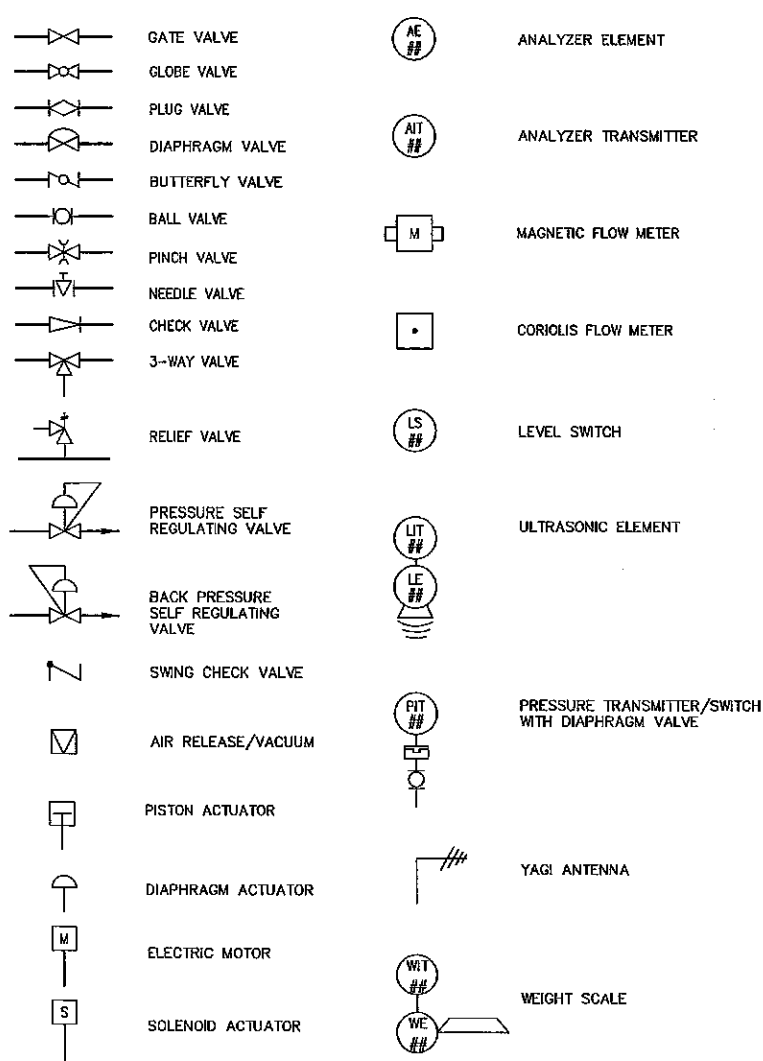
DEVICE IDENTIFICATION LEGEND

FIRST LETTER	MEASURED OR INITIATING VARIABLE		SUCCEEDING LETTERS		
	MODIFIER		READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM	USER'S CHOICE	USER'S CHOICE
B	BURNER, COMBUSTION		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
C	CONDUCTIVITY (ELECTRICAL)		CONTROLLER	CONTROL	CLOSED
D	DENSITY (MASS) OR SPECIFIC GRAVITY	DIFFERENTIAL	DIFFERENTIAL		
E	VOLTAGE (EMF)		PRIMARY ELEMENT		
F	FLOW RATE	RATIO (FRACTION)	RATIO		
G	STATUS OR LEAK		GLASS		
H	HAND (MANUALLY INITIATED)				HIGH
I	CURRENT (ELECTRICAL)		INDICATE		
J	POWER	SCAN			
K	TIME OR TIME-SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT (PILOT)		LOW
M	MOISTURE OR HUMIDITY	MOMENTARY	MOMENTARY		MIDDLE OR INTER-MEDIATE
N	SEQUENCE		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
O	USER'S CHOICE		ORIFICE (RESTRICTION) POINT (TEST CONNECTION)		OPEN
P	PRESSURE OR VACUUM				
Q	QUANTITY	INTEGRATE OR TOTALIZE	INTEGRATE OR TOTALIZE		
R	RADIATION		RECORD OR PRINT		
S	SPEED OR FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION			VALVE, DAMPER, OR LOUVER	
W	WEIGHT OR FORCE		WELL		
X	UNCLASSIFIED	X AXIS	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE, OR PRESENCE	Y AXIS		RELAY OR COMPUTE	
Z	POSITION, DIMENSION			DRIVE, ACTUATOR OR UNCLASSIFIED FINAL CONTROL ELEMENT	

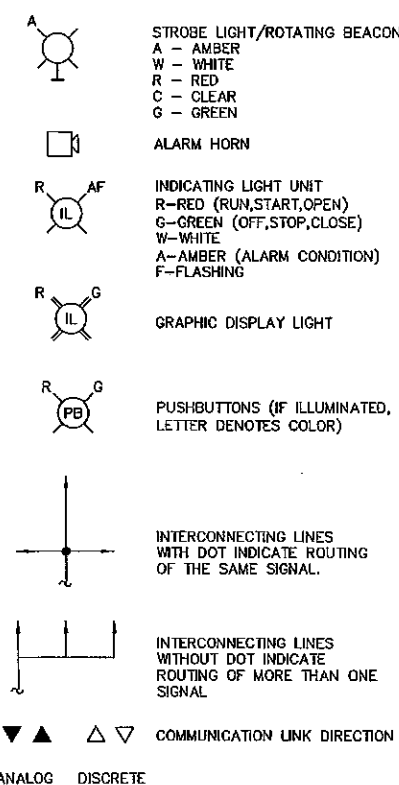
PROCESS SYMBOLS



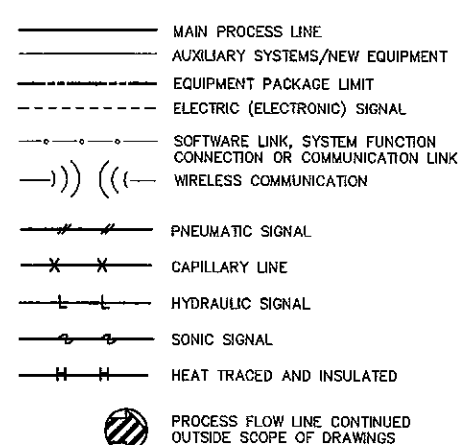
PRIMARY ELEMENTS SYMBOLS



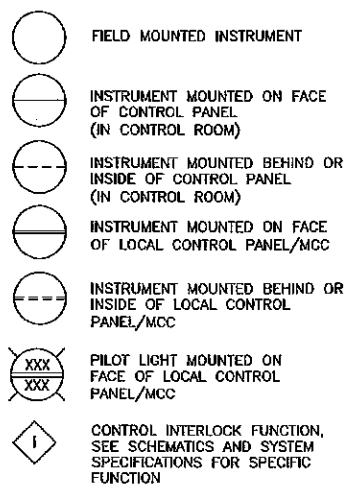
ELECTRICAL SYMBOLS



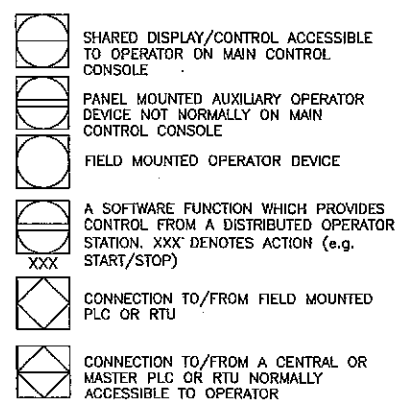
LINE SYMBOLS



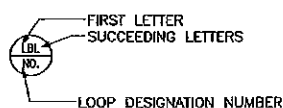
GENERAL INSTRUMENT SYMBOLS



PLC INTERFACE SYMBOLS

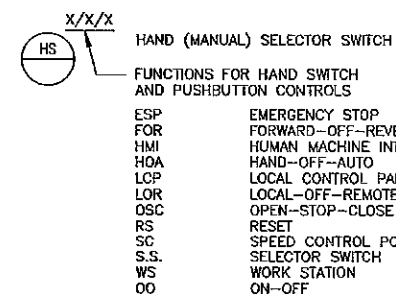


TAG NUMBERS AND ADDITIONAL DESIGNATIONS

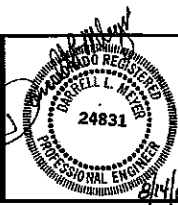


GENERAL NOTES

- IN GENERAL, THE P&ID SYMBOLS AND DEVICE IDENTIFICATIONS ARE BASED ON INSTRUMENT SOCIETY OF AMERICA, STANDARD PRACTICE, ISA-65.1 (1988). SOME MODIFICATIONS, ADDITIONS, AND ALTERATIONS HAVE BEEN MADE AS NEEDED TO ACCOMMODATE THE PROJECT REQUIREMENTS.
- SOME CONTROL AND INTERLOCK REQUIREMENTS WHICH CAN BE MORE CLEARLY ILLUSTRATED ON SCHEMATIC DRAWINGS HAVE BEEN OMITTED FROM THE P&ID DRAWINGS.
- THIS IS A GENERAL LEGEND SHEET. SOME SYMBOLS AND ABBREVIATIONS MAY NOT BE UTILIZED ON THIS SPECIFIC PROJECT.
- PIPING AND EQUIPMENT LEGEND APPLIES TO P&ID SHEETS ONLY AND MAY DIFFER FROM LEGENDS FOR OTHER SHEETS.



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REVISIONS		DATE	REMARKS
NO.	BY	DATE	REMARKS

DES: JY
OWN: JY
CKD: DNA

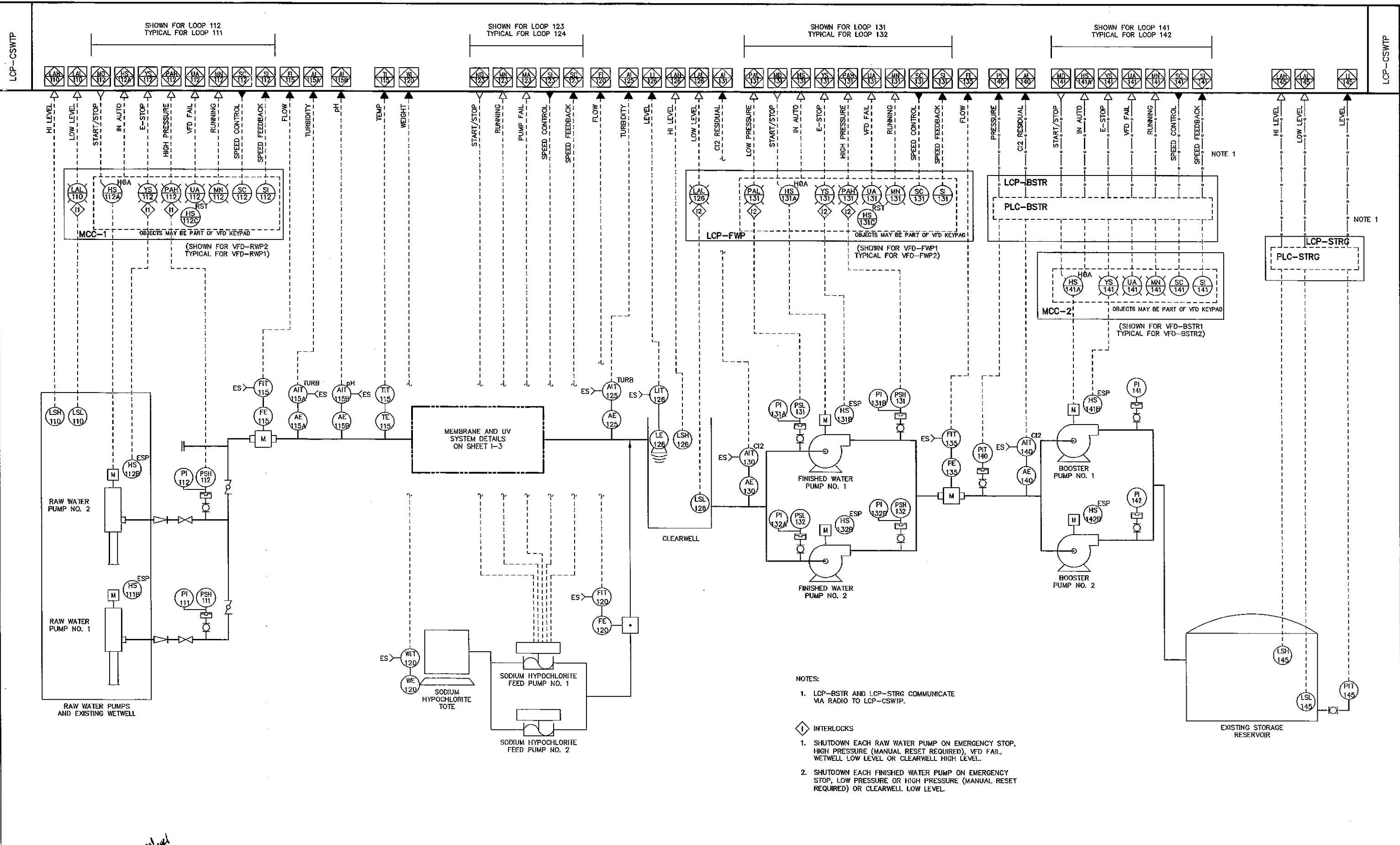


COLORADO CITY METROPOLITAN DISTRICT
COLORADO CITY, COLORADO
COLD SPRING WTP IMPROVEMENTS

INSTRUMENTATION
SYMBOLS AND
LEGEND
SCALE: NOT TO SCALE

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DATE: AUGUST 2009
SHEET 1 OF 5
CAD REF. NO. 64501001

BID PACKAGE



- NOTES:
- LCP-BSTR AND LCP-STRG COMMUNICATE VIA RADIO TO LCP-CSWTP.
- ◇ INTERLOCKS
- SHUTDOWN EACH RAW WATER PUMP ON EMERGENCY STOP, HIGH PRESSURE (MANUAL RESET REQUIRED), VFD FAIL, WETWELL LOW LEVEL OR CLEARWELL HIGH LEVEL.
 - SHUTDOWN EACH FINISHED WATER PUMP ON EMERGENCY STOP, LOW PRESSURE OR HIGH PRESSURE (MANUAL RESET REQUIRED) OR CLEARWELL LOW LEVEL.



REVISIONS			
NO.	BY	DATE	REMARKS

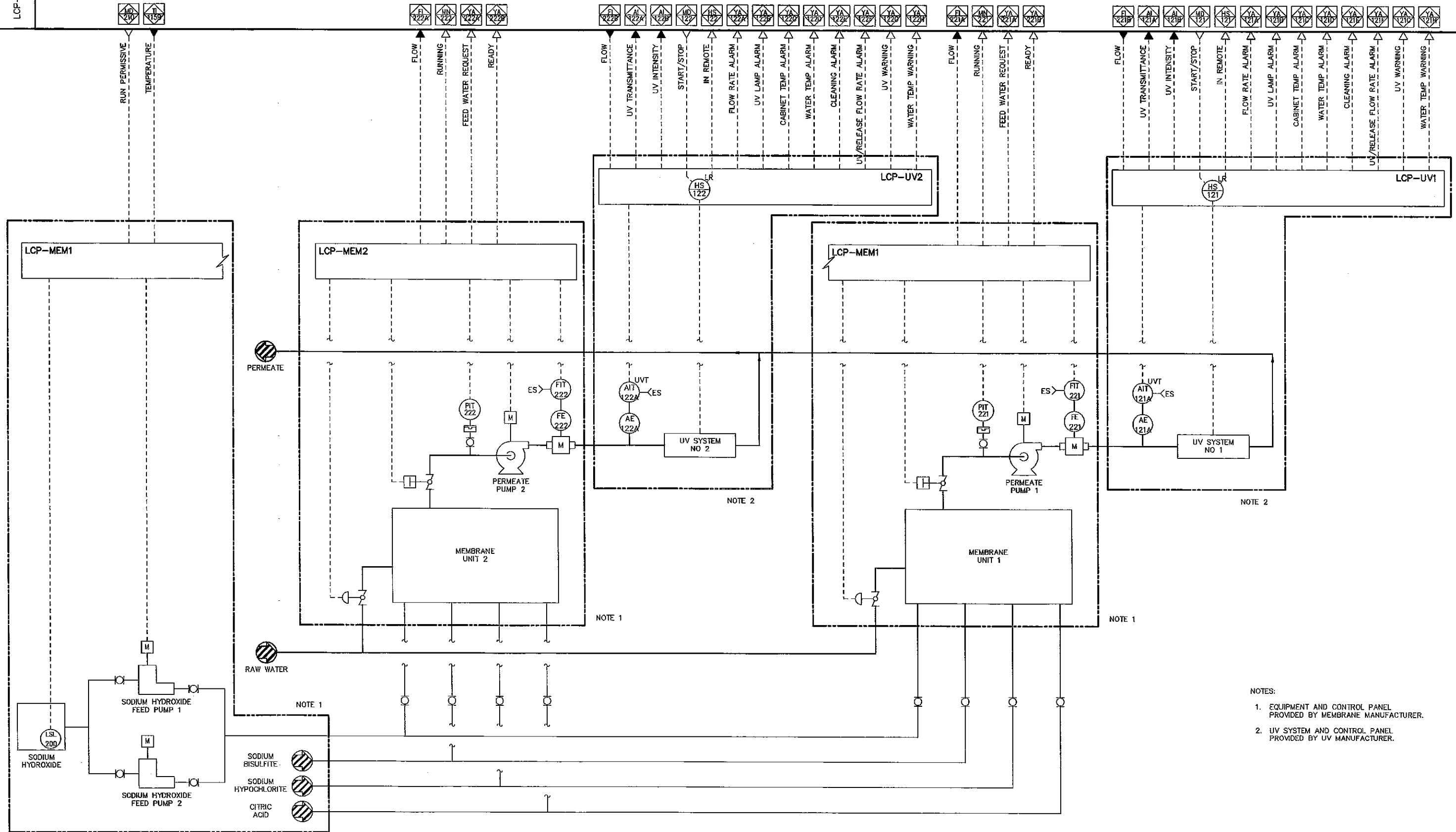


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 COLORADO CITY, COLORADO
COLD SPRING WTP IMPROVEMENTS

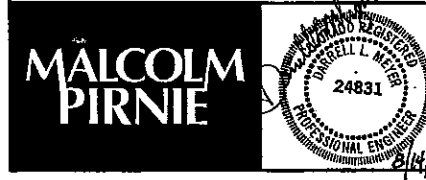
INSTRUMENTATION
COLD SPRING WTP P&ID
 SCALE: NOT TO SCALE

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 CAD REF. NO. 64501002

BID PACKAGE



- NOTES:
- EQUIPMENT AND CONTROL PANEL PROVIDED BY MEMBRANE MANUFACTURER.
 - UV SYSTEM AND CONTROL PANEL PROVIDED BY UV MANUFACTURER.



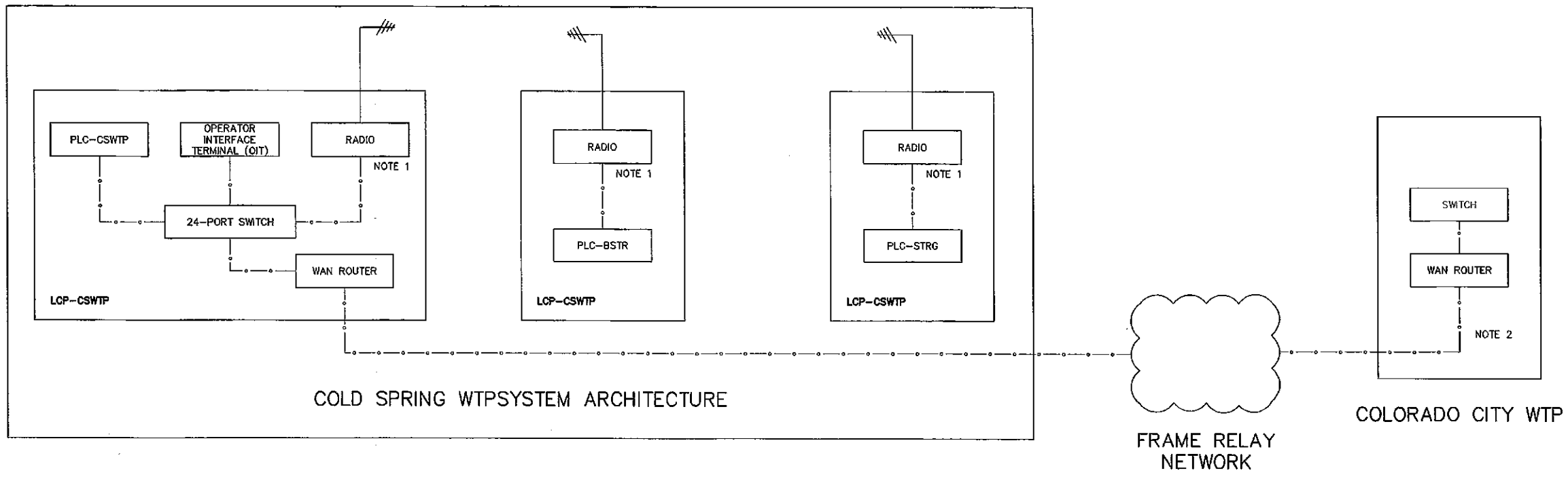
REVISIONS			
NO.	BY	DATE	REMARKS



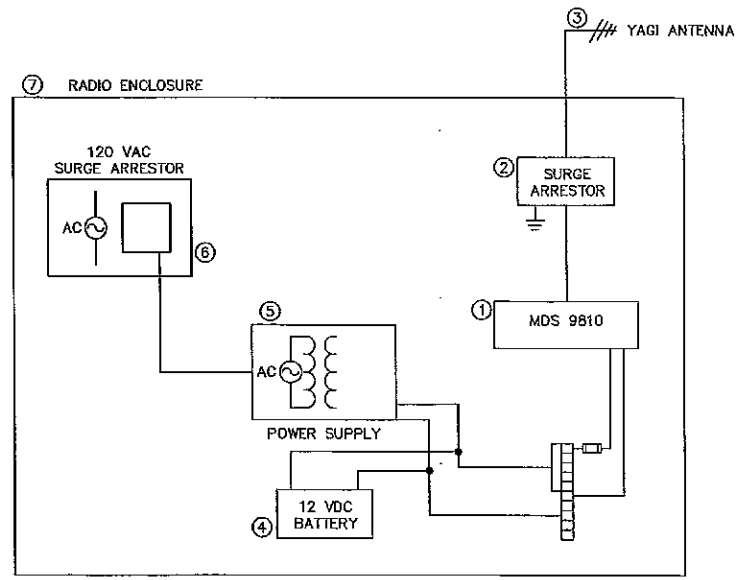
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 COLORADO CITY, COLORADO
**COLD SPRING WTP
 IMPROVEMENTS**

INSTRUMENTATION
**MEMBRANE UNITS
 P&ID**
 SCALE: NOT TO SCALE

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 CAD REF. NO. 64501003



- NOTES:
1. SEE RADIO ENCLOSURE DETAIL.
 2. CONTRACTOR TO COORDINATE WITH THE LOCAL PHONE COMPANY FOR THE FOLLOWING TASKS:
 - INSTALL WAN ROUTER AT COLD SPRING WTP.
 - INSTALL FRAME RELAY NETWORK LINE BETWEEN THE TWO PLANTS.
 - INSTALL THE WAN ROUTER AT THE COLORADO CITY WTP.
 - CONFIGURE AND TEST THE FRAME RELAY NETWORK.

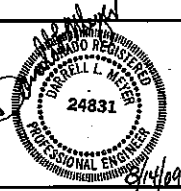


ITEM	PART NO	DESCRIPTION	QTY
1	MDS-9810	902-92B TELEMETRY RADIO	3
2	ISS0-NX-C2	TRANSECTOR SURGE ARRESTOR	3
3	LAIRD Y8963	890 TO 970 MHz 8.15 dBi (6 dBd) YAGI ANTENNA	3
4		7 AHR BATTERY	3
5	STEP-PS-100-240AC/12DC-3	PHOENIX DIN-RAIL POWER SUPPLY, AC IN, 12 DC OUT, 3 AMP	3
6	1BLOK2-0	POWER STRIPS - AC SURGE PROTECTION	3
7	DDB NEMA BOX-WCU-B14	14x14.5x14	3
	MDS DIAG	DIAGNOSTICS FOR MDS 9810	3
	L4A-PNMNM-3	ANDREW SUREFLEX 1/2" X 3' JUMPER, N(M) TO N(M)	6
	LDF4-50A	ANDREW 1/2" COAXIAL CABLE - ESTIMATED LENGTHS	225
	L4TNM-PS	N MALE POSITIVE STOP CONNECTOR	3
	GKS-12	1/2" GROUND KIT	3
	GECLB62BC-10	GROUNDING LUGS	3
	HARGER 588	5/8x8 FT COPPER CLAD STEEL GROUND ROD	3
		MISC SUPPLIES - FUSES, FUSE BLOCKS, GROUND WIRE	3

RADIO ENCLOSURE DETAIL

RADIO ENCLOSURE BILL OF MATERIALS

MALCOLM PIRNIE



REVISIONS		NO.	BY	DATE	REMARKS

DES JY
DWN JY
CKD DNA

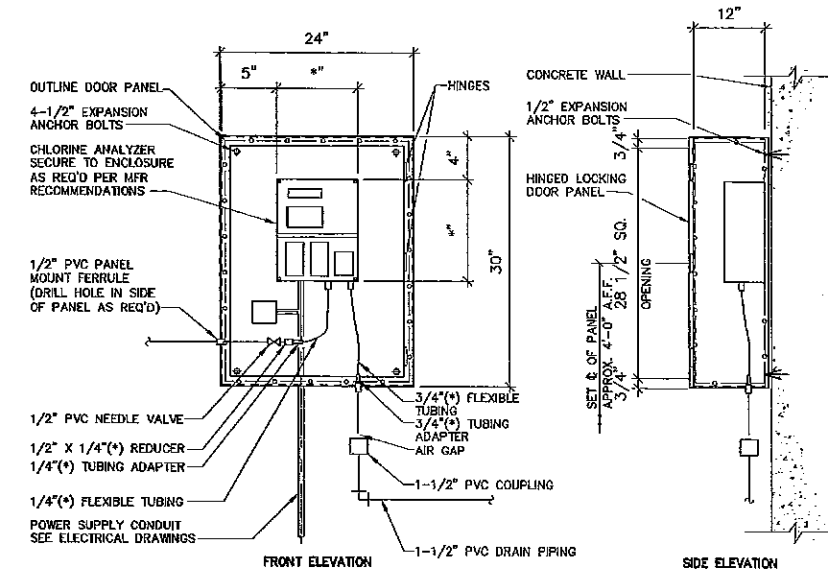
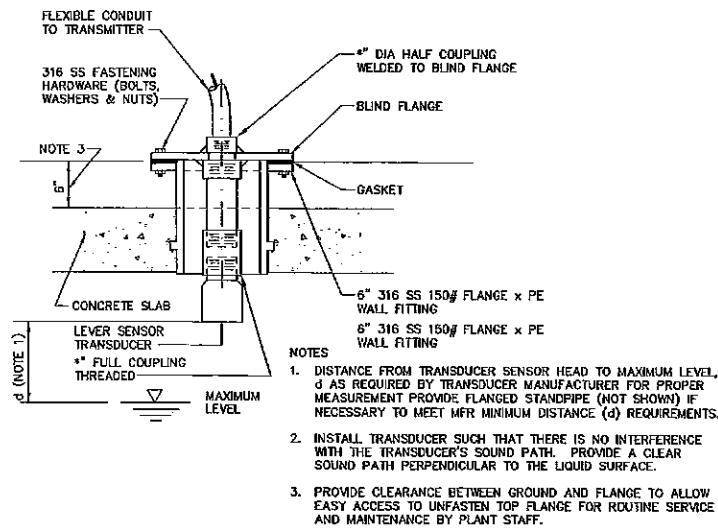
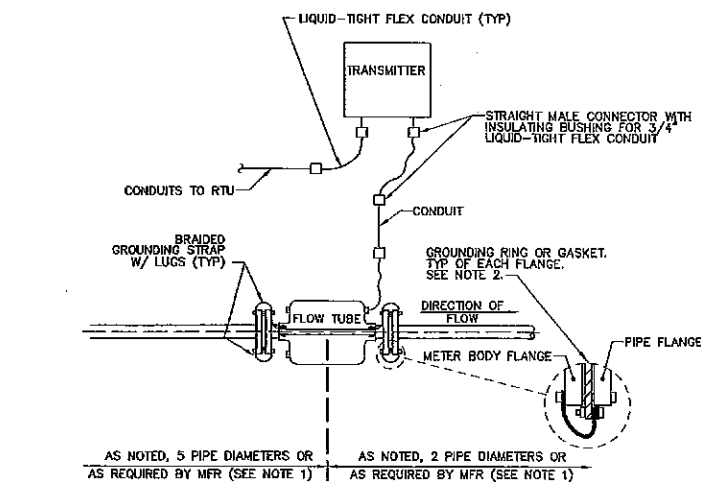
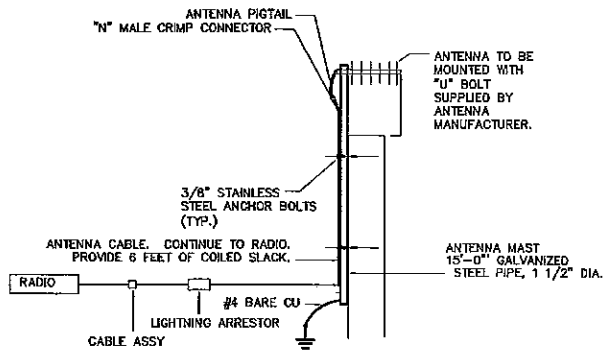
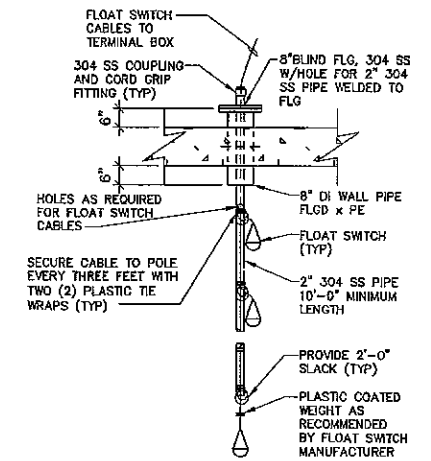
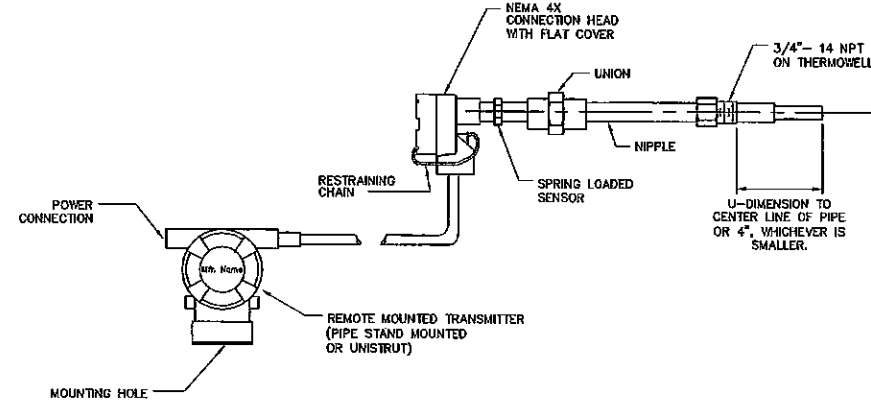
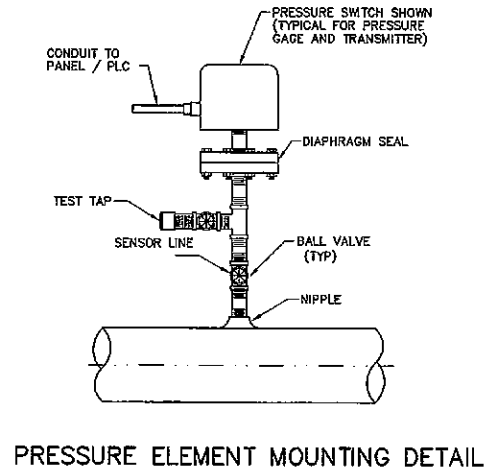
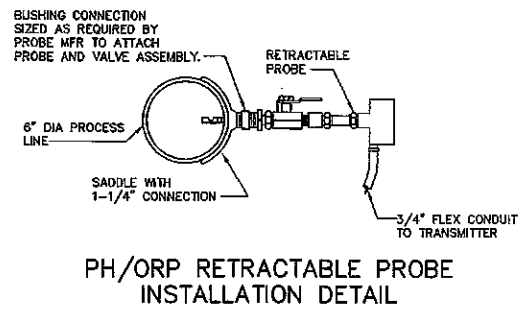


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COLORADO CITY, COLORADO
COLD SPRING WTP IMPROVEMENTS

INSTRUMENTATION
SYSTEM ARCHITECTURE
AND RADIO DETAIL
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CAD REF. NO. 64501004

BID PACKAGE



NOTES:

- CONSULT MFR'S RECOMMENDED INSTALLATION PRACTICES. REQUIREMENTS MAY VARY.
- PROVIDE GROUNDING GASKET AND STRAPS FOR NONCONDUCTIVE OR LINED PIPE.

MALCOLM PIRNIE



REVISIONS			
NO.	BY	DATE	REMARKS

DES JY
OWN JY
CKD DNA



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COLORADO CITY, COLORADO
COLD SPRING WTP IMPROVEMENTS

INSTRUMENTATION
INSTALLATION DETAILS

SCALE: NOT TO SCALE

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BID PACKAGE