CONDENSED PIPE NOTE

(FOR COMPLETE PIPING REQUIREMENTS REFER TO CARDOX MECHANICAL SPECIFICATION - PLATE H-75)

1. **STORAGE UNIT HEADER –**
   A. THE STORAGE UNIT HEADER (VALVE MANIFOLD IS UNDER CONTINUOUS PRESSURE (300 PSIG) AND IS TO BE FABRICATED OF SCHEDULE 80 BLACK STEEL PIPE AND EXTRA HEAVY BUTT-WELDING STEEL FITTINGS. (NO CHILL RINGS PERMITTED).
   B. COMPANION FLANGES FOR VALVES, ETC. SHALL BE 300 POUND STEEL.
2. **DISCHARGE PIPING –**
   A. PIPING BETWEEN MASTER VALVE AND SELECTOR VALVES OR HOSEREELS SHALL BE SCHEDULE 40 BLACK WITH WELDED CONNECTIONS AND STANDARD WEIGHT BUTT-WELDING FITTINGS. (NO CHILL RINGS PERMITTED.) UNLESS OTHERWISE SPECIFIED.
   B. PIPING DOWNSTREAM OF SELECTOR OR MASTER-SELECTOR VALVES IS TO BE SCHEDULE 40, GALVANIZED WITH SCREWED GALVANIZED FITTINGS, 300 POUND DUCTILE IRON OR 300 POUND (STEAM) BANDED MALLEABLE IRON FOR PIPE SIZES 1 INCH AND OVER. 150 POUND DUCTILE IRON OR 125 POUND (STEAM) BANDED MALLEABLE IRON FITTINGS MAY BE USED FOR PIPE SIZES 3/4 INCH AND SMALLER.
3. **VENT PIPING –**
   A. PIPING TO BE SCHEDULE 40, GALVANIZED WITH SCREWED GALVANIZED FITTINGS, 300 POUND DUCTILE IRON OR 300 POUND (STEAM) BANDED MALLEABLE IRON.
4. **PILOT PIPING –**
   A. PIPING BETWEEN VAPOR PRESSURE SUPPLY AND PILOT VALVE, FOR MASTER OR MASTER-SELECTOR VALVES, IS UNDER CONTINUOUS PRESSURE AND IS TO BE SCHEDULE 80 BLACK WITH WELDED JOINTS. FITTINGS TO BE 3000 LB. FORGED STEEL SCREWED TYPE, BACK WELDED, OR SOCKET WELD TYPE. ELBOWS AND COUPLINGS TO BE ELIMINATED WHERE POSSIBLE BY USING BENDS AND JOINTS TO BE BUTT-WELDED. BOTH ENDS OF THE PILOT LINE MUST BE CONNECTED WITH 3000 POUND W. O. G. FORGED STEEL UNIONS, STEEL TO STEEL SEAT AND BACK WELDED.
   B. ALL OTHER PILOT PIPING IS NOT UNDER CONTINUOUS PRESSURE AND IS TO BE SCHEDULE 40 GALVANIZED WITH SCREWED GALVANIZED FITTINGS, 300 POUND DUCTILE IRON OR 300 POUND (STEAM) BANDED MALLEABLE IRON. BOTH ENDS OF EACH PILOT LINE MUST BE CONNECTED WITH 150 POUND (STEAM) MALLEABLE IRON, GALVANIZED UNIONS.
5. **MISCELLANEOUS PIPING –**
   A. PIPING CONNECTIONS, 3/4" AND SMALLER, TO PRESSURE OPERATED RELEASES, PRESSURE SWITCHES, PNEUMATIC-ELECTRIC RELAY CABINETS, ETC. ARE TO BE SCHEDULE 40, GALVANIZED WITH SCREWED GALVANIZED FITTINGS, 300 POUND DUCTILE IRON OR 300 POUND (STEAM) BANDED MALLEABLE IRON.
6. **UNDERGROUND PIPING –**
   A. UNDERGROUND PIPING TO BE SCHEDULE 80 BLACK WITH EXTRA HEAVY BUTT-WELDING FITTINGS. (NO CHILL RINGS PERMITTED.) FOR TESTING, TREATING AND TRENCHING REQUIREMENTS REFER TO CARDOX PLATE H-75, SECTION 9.
7. **DIRT AND BLOW-OUT POCKETS –**
   A. PROVIDE DIRT AND BLOW-OUT POCKETS APPROXIMATELY 30" LONG BEYOND LAST BRANCH OF MAIN HEADERS, SUBHEADERS AND NOZZLE HEADERS.
8. **PIPE REDUCTIONS –**
   A. ALL REDUCTIONS IN PIPE SIZE MUST BE MADE BY USING CONCENTRIC REDUCERS OR SWAGED NIPPLES. REDUCING BUSHINGS ARE NOT PERMITTED.
9. **FABRICATION –**
   A. PIPE TO BE CUT CLEAN AND REAMED THOROUGHLY TO REMOVE ALL BURRS AND RIDGES.
   B. ALL WELDED JOINTS TO BE FREE OF WELD DRIP AND TO HAVE FULL THROAT. JOINTS TO BE POWERED TO LOOSEN SCALE AND DRIP.
   C. ALL PIPE TO BE THOROUGHLY CLEANED AS ASSEMBLED.
10. FILL AND EQUALIZING PIPING.
    PIPE TO BE SCH STD GALVANIZED OR 4 SW FITTINGS TO BE 1000 LB. DUCTILE IRON GALVANIZED SCREWED, OR 300 LB. MALLEABLE IRON GALVANIZED COUPLINGS INCLUDED.

FILL AND EQUALIZING LINE NOTE

FILL AND EQUALIZING LINES ARE TO TERMINATE IN A PLUGGED UNION APPROXIMATELY 3'-0" ABOVE GRADE WITH A MINIMUM OF 6" BETWEEN PIPE CENTER LINES. USE 300 POUND (STEAM) A.A.I. GALVANIZED MALLEABLE IRON UNION WITH BRASS TO IRON GROUND SEAT. CONNECT MALE PART OF UNION TO END OF PIPE. PLUG THE FEMALE PART AND ATTACH TO MALE PART. THE UNIONS SUPPLIED WITH THE STORAGE UNIT CAN BE RELOCATED FOR THIS PURPOSE AND REPLACED WITH 300 POUND STEAM MALLEABLE IRON, GALVANIZED UNIONS.

EQUIPMENT LOCATION NOTE

UNLESS OTHERWISE SPECIFIED, CARDOX EQUIPMENT IS TO BE MOUNTED IN ACCORDANCE WITH THE FOLLOWING: THERMOTTOR STATIONS, PILOT CABINETS AND RELAY BOXES TO BE MOUNTED WITH HORIZONTAL CENTERLINE 4'-6" ABOVE FLOOR OR GRADE.
HOSEREELS TO BE MOUNTED WITH CENTERLINE 7'-6" ABOVE FLOOR OR GRADE.

EQUIPMENT SHUTDOWN

ELECTRICAL CONTACTS ARE PROVIDED FOR EACH HAZARD FOR SHUTDOWN OF OWNER'S EQUIPMENT. THESE CONTACTS WILL OPERATE ON SYSTEM ACTUATION AND SHOULD BE WIRED (BY OTHERS) TO CAUSE SHUTDOWN OF ALL FANS, PUMPS, CONVEYORS, ETC., WHICH MAY EFFECT THE CO_2 CONCENTRATION OR ISOLATION OF THE HAZARD.

PIPE LEGEND

80W – SCHEDULE 80 BLACK PIPE WITH WELDING FITTINGS. (PIPE NOTES 1, 4A, 6)
80S – SCHEDULE 80 BLACK PIPE WITH THREADED FITTINGS.
40W – SCHEDULE 40 BLACK PIPE WITH WELDING FITTINGS. (PIPE NOTE 2A)
40S – SCHEDULE 40 GALVANIZED PIPE WITH THREADED GALVANIZED FITTINGS. (PIPE NOTES 2B, 3A, 4B, 5)

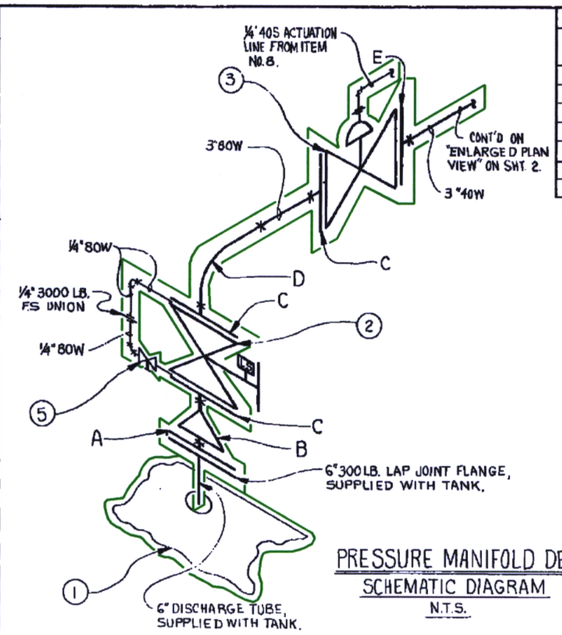
INSTALLATION NOTES:

1. DO NOT PROCEED WITH ANY CONSTRUCTION WORK WITHOUT REVIEW OF CARDOX MECHANICAL INSTALLATION SPECIFICATION H-75 AND ELECTRICAL INSTALLATION SPECIFICATION H-74.
2. USE OF ASTM A-120 PIPE IS PROHIBITED. STEEL PIPE SHALL BE A-53 OR A-106.
3. MECHANICAL INSTALLATION CONTRACTOR SHOULD NOT DEVIATE FROM DESIGN GENERAL ARRANGEMENT OF PIPING WITHOUT PRIOR NOTIFICATION AND APPROVAL OF CHEMETRON FIRE SYSTEMS ENGINEERING DEPT. OR INSTALLATION & TEST REPRESENTATIVE.
4. WHERE PIPE ELEVATIONS ARE GIVEN THEY ARE TO ℄ OF PIPE.
5. PIPE REDUCTIONS MUST BE MADE WITH CONCENTRIC REDUCERS OR SWAGED NIPPLES. THE USE OF REDUCING BUSHINGS IS NOT PERMITTED.

(CONT'D ON NEXT COL.)

INSTALLATION NOTES: (CONTINUED)

6. PURCHASER SHOULD SLEEVE PENETRATIONS. ALL OPENINGS AROUND SLEEVES SHOULD BE SEALED
7. PURCHASER SHALL SEAL ALL ELECTRICAL OPENINGS, DOOR SKIRTS, FLANGES, ETC. WHICH MAY CAUSE EXCESSIVE CO_2 LOSS AND AFFECT THE CONCENTRATION.
8. ⊣▷⊢ DENOTES A CONCENTRIC REDUCER.

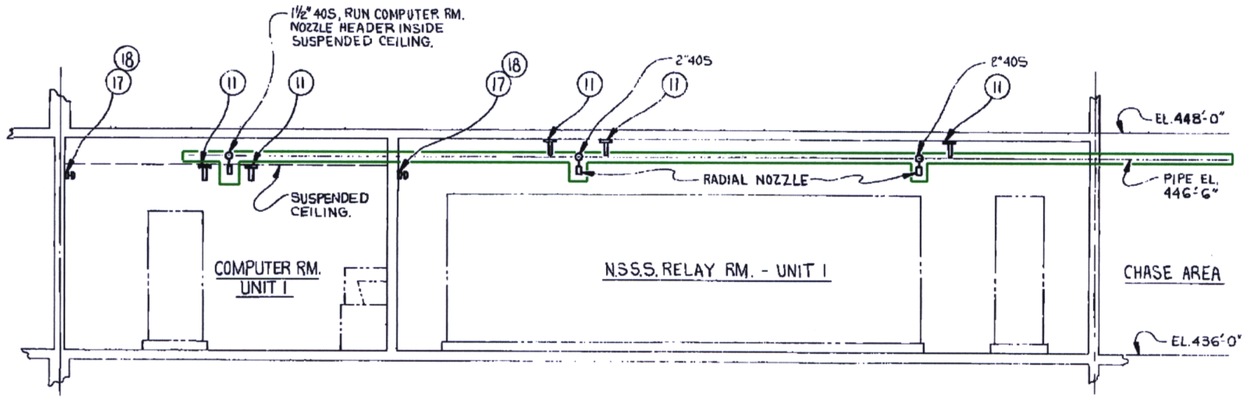


PRESSURE MANIFOLD DETAIL
SCHEMATIC DIAGRAM
N.T.S.

TABLE A

ITEM	SIZE	DESCRIPTION	*TUBE TURNS NO.
A	6"	300 LB. WELDING NECK FLANGE, BORE SCH. 80.	31
B	6"X3"	EXTRA STRONG CONCENTRIC REDUCER	91
C	3"	300 LB. WELDING NECK FLANGE, BORE SCH. 80.	31
D	3"	EXTRA STRONG LG. RADIUS ELBOW	2
E	3"	300 LB. WELDING NECK FLANGE, BORE SCH. 40	31

NOTE: EQUIVALENT QUALITY FITTINGS MAY BE USED WHERE "TUBE TURNS" IS SPECIFIED.



SECTION "D"-"D" (ON SHT. 3)
ELEVATION VIEW
SCALE: 1/4 - 1'-0"

PLEX Drawing TR00160-004

QUAN.	QUAN.	DRAWING NO.	ITEM	DESCRIPTION	STOCK NO.
			30		
			29		
			28		
			27		
	1	CI-037-0608	26	RADIAL NOZZLE, STYLE 3, CODE 18.51, 1" F.N.P.T.	1-037-0608
	2	CI-037-0608	25	RADIAL NOZZLE, STYLE 3, CODE 17.32, 1" F.N.P.T.	1-037-0608
	2	CI-037-0608	24	RADIAL NOZZLE, STYLE 3, CODE 17.01, 1" F.N.P.T.	1-037-0608
	1	CI-037-0608	23	RADIAL NOZZLE, STYLE 3, CODE 16.56, 1" F.N.P.T.	1-037-0608
	3	CI-037-0608	22	RADIAL NOZZLE, STYLE 3, CODE 16.2, 1" F.N.P.T.	1-037-0608
	1	CI-037-0606	21	RADIAL NOZZLE, STYLE 3, CODE 8.43, ½" F.N.P.T.	1-037-0606
	1	NOT BY CARDOX	20	3 POLE - FUSIBLE SAFETY SWITCH	
	2	NOT BY CARDOX	19	2 POLE - FUSIBLE SAFETY SWITCH	
	3	N/N	18	GONG MODEL A10 - 10"	7-003-0063
	3	N/N	17	"VIBRATONE" VIBRATING BELL	7-003-0059
			16		
			15		
			14		
	39	FS-23756	11	THERMOSTATS - 140°F. SETTING.	1-050-0117
	1	FL-22425-3, SHT. 2	10	ELECTRIC CONTROL CABINET ASSEMBLY	1-010-0468
	1	DI-010-0427	9	ELECTROMANUAL PILOT CABINET (NDE)	1-010-0427
	1	DI-010-0422	8	ELECTROMANUAL PILOT CABINET (NE)	1-010-0422
	3	FD-24304, G1	7	PUSHBUTTON - MOMENTARY CONTACT	1-043-0171
	1	AT-061-0128	6	¼" BALL VALVE w/LIMIT SWITCH	7-061-0128
	1	A-18239	5	¼" MANUAL BY-PASS VALVE, THREADED	1-061-0185
	1	DI-061-0733	4	3" PRESS. OPER. SELECTOR VALVE, FLANGED	1-061-0733
	1	DI-061-0733	3	3" PRESS. OPER. MASTER VALVE, FLANGED	1-061-0733
	1	FB-24800, G4	2	3" TANK SHUT-OFF VALVE, FLANGED	1-061-0082
	1	SIMILAR TO FD-18256, GA	1	5 TON STORAGE UNIT - MODIFIED	9-048-0042

CARDOX JOB NO. FL-22425-3
CARDOX PROPOSAL NO. L-3642, REV. 1

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CHEMETRON Fire Systems
Division of Chemetron Corporation

DRAWING LEGIBILITY CLASS 2
SCE&G CAD ENHANCED

NO.	DATE	BY	REVISION	CKD. BY	LC APPROVAL
4	08/15/96	AVN	REVISED PER MRF-22725	MGR	MSB

LOW PRESSURE CO_2 FIRE EXTINGUISHING SYSTEM
SCHEMATIC ARRANGEMENT
VENDOR/DRAWING NO.: CHEMETRON FL-22425-3, SH. 1
DESIGN ENGINEERING
V. C. SUMMER NUCLEAR STATION - JENKINSVILLE, S. C.
DRAWN: A.V.N. | CHECKED: M.G.R. | LC APPROVAL: M.S.B.
SCALE: NO SCALE
DRAWING NUMBER: 1MS-55-040
SHT. NUMBER: 1
REV: 4

1/4"= 1'-0" (6' 5' 10' 15' 20')

D-27