

Control Number: 400420

LEGEND

40G SCHEDULE 40 PIPE, W/GROOVED FITTINGS  
40T SCHEDULE 40 PIPE, W/THREADED FITTINGS  
40W SCHEDULE 40 PIPE, W/WELDED FITTINGS  
80T SCHEDULE 80 PIPE, W/THREADED FITTINGS  
80W SCHEDULE 80 PIPE, W/WELDED FITTINGS

— SYSTEM PIPING  
--- OPTION PIPING  
- - - ACTUATION LINE

(XX) BILL OF MATERIAL ITEM NUMBER

▷ CONCENTRIC PIPE REDUCER

SELECTOR VALVE (3) (4) (24)

LOCK-OUT VALVE (13)

1/2" PRESSURE REGULATOR, 100 PSI (5)

0-200 PSI PRESSURE GAUGE (10)

SUPERVISORY PRESSURE SWITCH (6)

150/450 PSI SAFETY RELIEF VALVE (7) (8)

DISCHARGE PRESSURE SWITCH (9)

1/2-40T - ACTUATION LINE

SEE STORAGE TANK INSTALLATION  
DETAILS ON SHEET 90759-M07

2 3/4 TON CO2  
STORAGE UNIT (1)

SEE MANIFOLD DETAILS SHEET  
90759-M04 FOR VALVE AND  
COMPONENT LOCATIONS

SITE PLAN

SCALE= 1/8"=1'-0"

GENERAL INSTALLATION NOTES:

- PRIOR TO INSTALLATION, REVIEW ANSUL PREFERRED CO2 TECHNICAL MANUAL AND SPECIFICATIONS FOR GUIDELINES ON THE SYSTEM INSTALLATION.
- THE SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH NFPA STANDARD NOS. 12 AND 72 AS REQUIRED FOR LOW PRESSURE CO2 APPLICATIONS.
- PIPING SHALL BE BLACK OR GALVANIZED ASTM GRADE A106, GRADE A53 SEAMLESS OR ELECTRIC WELDED. THE USE OF ASTM GRADE A120 PIPE OR ORDINARY CAST IRON PIPE IS STRICTLY PROHIBITED.
- PIPE BRANCHES TO NOZZLES SHALL BE TAKEN FROM THE SIDE OR BOTTOM OF THE SUPPLY LINE. TAKE-OFFS TO AUXILIARY DEVICES SUCH AS RELIEF VALVES, ODORIZERS, PRESSURE SWITCHES AND TRIPS SHALL BE FROM THE TOP OF THE DISCHARGE SUPPLY LINE.
- CONCENTRIC REDUCERS OR SWAGGED NIPPLES SHALL BE USED FOR PIPE SIZE REDUCTIONS. FLUSH BUSHINGS SHALL NOT BE USED. WHERE HEX BUSHINGS ARE USED FOR ONE PIPE SIZE REDUCTION, A 3000-LB STEEL BUSHING SHALL BE PROVIDED TO MAINTAIN ADEQUATE STRENGTH. WHERE HEX BUSHINGS ARE USED FOR MORE THAN ONE PIPE SIZE REDUCTION, SEE NOTE 6.
- FITTINGS SHALL BE CLASS 300 MALLABLE OR DUCTILE IRON FOR SIZES TO 3" IPS. LARGER SIZES REQUIRE 1000 LB DUCTILE IRON OR FORGED STEEL FITTINGS. GROOVED FITTINGS SPECIFICALLY FOR CO2 SERVICE ARE ACCEPTABLE. CHILL RINGS, CAST IRON AND 150 LB FITTINGS ARE NOT ACCEPTABLE.
- FOR VALVES OF 3" AND LARGER USE ANSI 300 LB CLASS FLANGES. SEE THE MANUAL FOR CHAMFER REQUIREMENTS WHEN SCHEDULE 80 PIPE IS USED.
- PIPE MUST BE REAMED AND CLEANED IN ACCORDANCE WITH ANSUL PREFERRED CO2 SYSTEM INSTALLATION REQUIREMENTS.
- PROVIDE DIRT TRAP (BLOW-OUT POCKET) APPROXIMATELY 6" LONG BEYOND LAST BRANCH OF MAIN HEADERS AND SUBHEADERS. TERMINATE TRAP WITH A MALLABLE IRON OR DUCTILE IRON THREADED CAP.
- A PRESSURE RELIEF DEVICE IS REQUIRED IN ANY SECTION OF CLOSED PIPE, THAT MAY TRAP CO2 IN THAT PIPE SECTION.
- PIPE SCHEDULE AND FITTING REQUIREMENTS:  
STORAGE TANK TO DISCHARGE VALVE (CONTINUOUS 300PSI)  
SCH. 80 BLACK STEEL PIPE W/EXTRA HEAVY BUTT WELD FITTINGS  
DISCHARGE VALVE TO SELECTOR/ISOLATION VALVE(S) - (CLOSED PIPE)  
(A) SCH. 40 BLACK STEEL PIPE W/WELDED FITTINGS  
(B) SCH. 80 BLACK STEEL PIPE WITH THREADED FITTINGS  
(C) SCH. 40 BLACK STEEL PIPE W/LISTED GROOVED FITTINGS  
DISCHARGE/SELECTOR VALVE TO NOZZLE(S) - (OPEN TO ATMOSPHERE)  
SCH. 40 BLACK OR GALV. STEEL PIPE W/THREADED FITTINGS  
PNEUMATIC ACTUATION PIPE  
SCH. 40 BLACK OR GALV. STEEL W/THREADED FITTINGS

BILL OF MATERIALS

NO.	OPTIONAL				PART NO.	DESCRIPTION	MANUFACTURER
	ZONE 3 QTY.	ZONE 4 QTY.	QTY.				
1	-	-	2		425400	2 3/4 TON CO2 STORAGE UNIT	APCO2
2	-	-	2		425052	4" TANK SHUT-OFF VALVE W/SUPERVISORY SWITCH	APCO2
3	-	-	4		425629	1 1/2" SELECTOR VALVE W/24 VDC SOLENOID	APCO2
4	-	-	8		425636	2" SELECTOR VALVE W/24 VDC SOLENOID	APCO2
5	-	-	2		425259	1/2" PRESSURE REGULATOR	APCO2
6	-	-	4		425733	SUPERVISORY PRESSURE SWITCH	APCO2
7	-	-	4		425251	1/2" SAFETY RELIEF VALVE - 150 PSI	APCO2
8	-	-	10		425253	1/2" SAFETY RELIEF VALVE - 450 PSI	APCO2
9	4	4	8		46250	DISCHARGE PRESSURE SWITCH	APCO2
10	-	-	2		425261	0-200 PSI PRESSURE GAUGE	APCO2
11	1	1	12		423309	WARNING SIGN - DO NOT ENTER	APCO2
12	1	1	6		423310	WARNING SIGN - LEAVE AREA	APCO2
13	-	-	2		428157	2" LOCK-OUT VALVE W/SUPERVISORY SWITCH	APCO2
14	-	-	35		425294	1/2" SR NOZZLE	APCO2
15	4	8	16		425288	1/2" 2-PORT RADIAL NOZZLE	APCO2
16	12	4	21		429696	HORN/STROBE, WEATHERPROOF, 117 CANDELA	APCO2
17	12	4	21		429700	SURFACE BACK BOX, WEATHERPROOF	APCO2
18	4	-	-		428090	FSI-751 IONIZATION SMOKE DET.	APCO2
19	4	-	-		428091	FSP-751 PHOTOELECTRIC SMOKE DET.	APCO2
20	8	-	-		423944	B710LP LOW PROFILE DET. BASE	APCO2
21	2	2	8		427266	SHUTTLE VALVES	APCO2
22	4	4	32		428655	MANUAL RELEASE	APCO2
23	-	8	-		13975	325' HEAT DETECTOR	APCO2
24	8	8	8		425632	3/4" SELECTOR VALVE W/24 VDC SOLENOID	APCO2
25	-	-	-		-	-	APCO2
26	4	-	-		425555	1/2" ORIFICE NOZZLE W/ CAP	APCO2
27	-	-	8		425557	ELECTRONIC HORN	APCO2
28	-	-	2		419404	BE-IQ-396X SYSTEM	APCO2
28a	8	8	42		428098	FMM-101, MINI MONITOR MODULE	APCO2
28b	-	1	24		428097	FMM-1 MONITOR MODULE	APCO2
28c	-	-	4		419563	ICM-4, INDICATING CIRCUIT	APCO2
28d	-	-	2		419564	ICE-4, INDICATING CIRCUIT EXPANDER	APCO2
28e	-	-	6		419565	CRM-4, CONTROL RELAY	APCO2
28f	-	-	6		419566	CRE-4, CONTROL RELAY	APCO2
28g	-	-	2		426513	APS-6R POWER SUPPLY	APCO2
28h	-	-	2		417694	BATERY PACK, 18 AH (2-12 VDC)	APCO2

THIS DRAWING IS  
NOT FOR CONSTRUCTION

THE INTENTION OF THIS DRAWING IS FOR REVIEW AND ACCEPTANCE OF THE CO2 SYSTEM DESIGN CONTAINED HEREIN. UNDER NO CIRCUMSTANCE IS IT INTENDED FOR CONSTRUCTION OR FABRICATION OF THE AFOREMENTIONED SYSTEM.

INITIALS ☐ ACCEPTED AS DESIGNED  
INITIALS ☐ ACCEPTED AS DESIGNED WITH COMMENT  
INITIALS ☐ CHANGE DESIGN AS STATED AND RESUBMIT

NOZZLES WILL NOT BE ORDERED UNTIL APPROVED DRAWINGS ARE RECEIVED BY ANSUL PREFERRED CO2

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1	CHANGED PER CUSTOMER REQUEST	2dec02		
REV	DESCRIPTION	DATE	DRN BY	CHK BY

DRAWING TITLE:  
LOW PRESSURE CO2 FIRE SYSTEM  
SITE PLAN  
GENERATORS #3 AND #4 OR #5 AND #6  
CUSTOMER:  
JACKSONVILLE ELECTRIC AUTHORITY  
JACKSONVILLE, FL

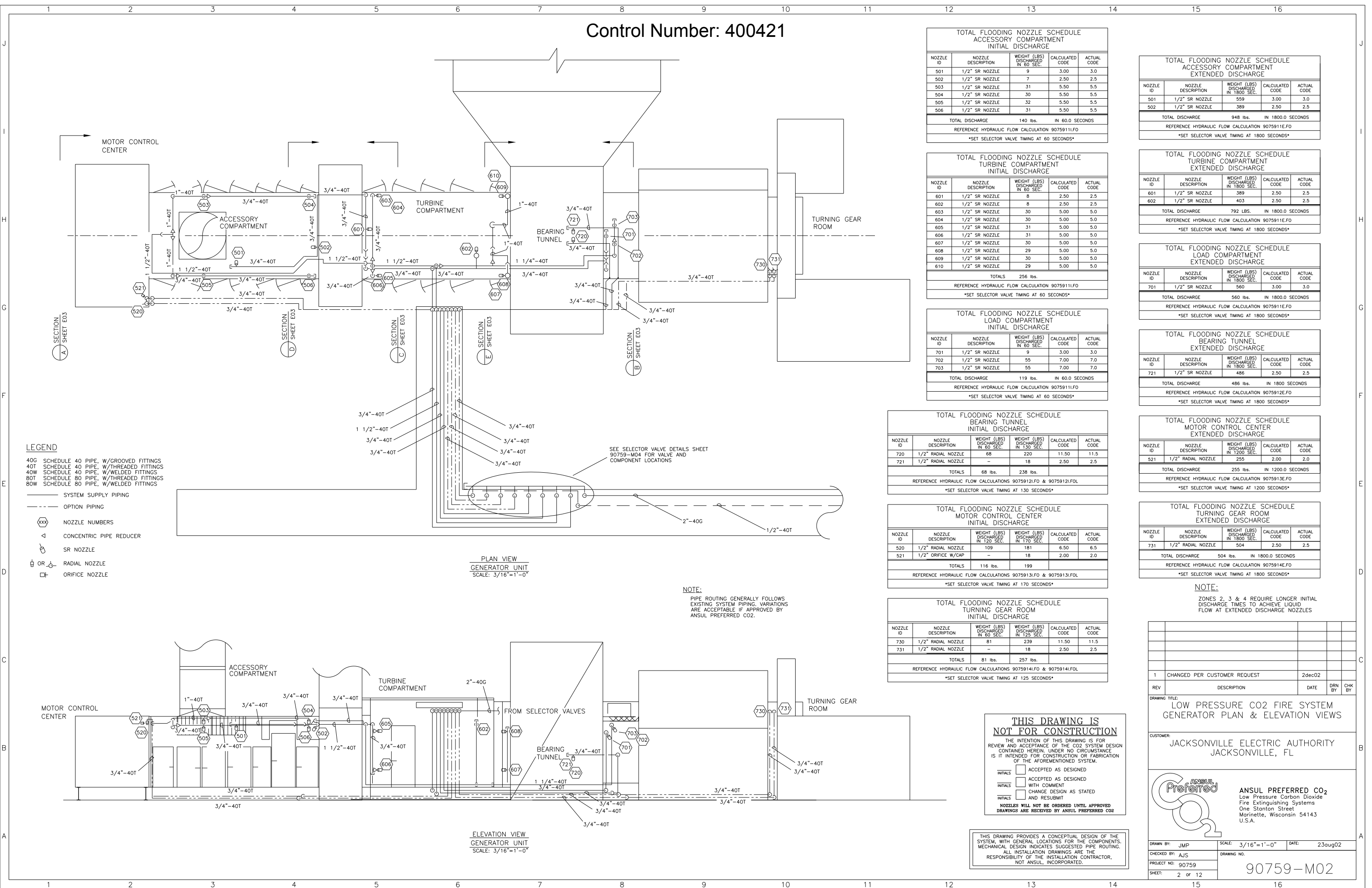


ANSUL PREFERRED CO2  
Low Pressure Carbon Dioxide  
Fire Extinguishing Systems  
One Stanton Street  
Marinette, Wisconsin 54143  
U.S.A.

DRAWN BY: JMP	SCALE: 1/8"=1'-0"	DATE: 23aug02
CHECKED BY: AJS	DRAWING NO.	
PROJECT NO: 90759		
SHEET: 1 OF 12		

90759-M01

Control Number: 400421



TOTAL FLOODING NOZZLE SCHEDULE ACCESSORY COMPARTMENT INITIAL DISCHARGE				
NOZZLE ID	NOZZLE DESCRIPTION	WEIGHT (LBS) DISCHARGED IN 60 SEC.	CALCULATED CODE	ACTUAL CODE
501	1/2" SR NOZZLE	9	3.00	3.0
502	1/2" SR NOZZLE	7	2.50	2.5
503	1/2" SR NOZZLE	31	5.50	5.5
504	1/2" SR NOZZLE	30	5.50	5.5
505	1/2" SR NOZZLE	32	5.50	5.5
506	1/2" SR NOZZLE	31	5.50	5.5
TOTAL DISCHARGE		140 lbs.	IN 60.0 SECONDS	
REFERENCE HYDRAULIC FLOW CALCULATION 9075911.FO				
*SET SELECTOR VALVE TIMING AT 60 SECONDS*				

TOTAL FLOODING NOZZLE SCHEDULE TURBINE COMPARTMENT INITIAL DISCHARGE				
NOZZLE ID	NOZZLE DESCRIPTION	WEIGHT (LBS) DISCHARGED IN 60 SEC.	CALCULATED CODE	ACTUAL CODE
601	1/2" SR NOZZLE	8	2.50	2.5
602	1/2" SR NOZZLE	8	2.50	2.5
603	1/2" SR NOZZLE	30	5.00	5.0
604	1/2" SR NOZZLE	30	5.00	5.0
605	1/2" SR NOZZLE	31	5.00	5.0
606	1/2" SR NOZZLE	31	5.00	5.0
607	1/2" SR NOZZLE	30	5.00	5.0
608	1/2" SR NOZZLE	29	5.00	5.0
609	1/2" SR NOZZLE	30	5.00	5.0
610	1/2" SR NOZZLE	29	5.00	5.0
TOTALS		256 lbs.		
REFERENCE HYDRAULIC FLOW CALCULATION 90759111.FO				
*SET SELECTOR VALVE TIMING AT 60 SECONDS*				

TOTAL FLOODING NOZZLE SCHEDULE LOAD COMPARTMENT INITIAL DISCHARGE				
NOZZLE ID	NOZZLE DESCRIPTION	WEIGHT (LBS) DISCHARGED IN 60 SEC.	CALCULATED CODE	ACTUAL CODE
701	1/2" SR NOZZLE	9	3.00	3.0
702	1/2" SR NOZZLE	55	7.00	7.0
703	1/2" SR NOZZLE	55	7.00	7.0
TOTAL DISCHARGE		119 lbs.	IN 60.0 SECONDS	
REFERENCE HYDRAULIC FLOW CALCULATION 9075911.FO				
*SET SELECTOR VALVE TIMING AT 60 SECONDS*				

TOTAL FLOODING NOZZLE SCHEDULE BEARING TUNNEL INITIAL DISCHARGE					
NOZZLE ID	NOZZLE DESCRIPTION	WEIGHT (LBS) DISCHARGED IN 60 SEC.	WEIGHT (LBS) DISCHARGED IN 130 SEC.	CALCULATED CODE	ACTUAL CODE
720	1/2" RADIAL NOZZLE	68	220	11.50	11.5
721	1/2" RADIAL NOZZLE	—	18	2.50	2.5
TOTALS		68 lbs.	238 lbs.		
REFERENCE HYDRAULIC FLOW CALCULATIONS 90759121.FO & 90759121.FOL					
*SET SELECTOR VALVE TIMING AT 130 SECONDS*					

TOTAL FLOODING NOZZLE SCHEDULE MOTOR CONTROL CENTER INITIAL DISCHARGE					
NOZZLE ID	NOZZLE DESCRIPTION	WEIGHT (LBS) DISCHARGED IN 120 SEC.	WEIGHT (LBS) DISCHARGED IN 170 SEC.	CALCULATED CODE	ACTUAL CODE
520	1/2" RADIAL NOZZLE	109	181	6.50	6.5
521	1/2" ORIFICE W/CAP	—	18	2.00	2.0
TOTALS		116 lbs.	199		
REFERENCE HYDRAULIC FLOW CALCULATIONS 9075913.FO & 9075913.FOL					
*SET SELECTOR VALVE TIMING AT 170 SECONDS*					

TOTAL FLOODING NOZZLE SCHEDULE TURNING GEAR ROOM INITIAL DISCHARGE					
NOZZLE ID	NOZZLE DESCRIPTION	WEIGHT (LBS) DISCHARGED IN 60 SEC.	WEIGHT (LBS) DISCHARGED IN 125 SEC.	CALCULATED CODE	ACTUAL CODE
730	1/2" RADIAL NOZZLE	81	239	11.50	11.5
731	1/2" RADIAL NOZZLE	—	18	2.50	2.5
TOTALS		81 lbs.	257 lbs.		
REFERENCE HYDRAULIC FLOW CALCULATIONS 9075914I.FO & 9075914I.FOL					
*SET SELECTOR VALVE TIMING AT 125 SECONDS*					

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INITIALS

☐ ACCEPTED AS DESIGNED

INITIALS

☐ ACCEPTED AS DESIGNED WITH COMMENT

INITIALS

☐ CHANGE DESIGN AS STATED AND RESUBMIT

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TOTAL FLOODING NOZZLE SCHEDULE ACCESSORY COMPARTMENT EXTENDED DISCHARGE				
NOZZLE ID	NOZZLE DESCRIPTION	WEIGHT (LBS) DISCHARGED IN 1800 SEC.	CALCULATED CODE	ACTUAL CODE
501	1/2" SR NOZZLE	559	3.00	3.0
502	1/2" SR NOZZLE	389	2.50	2.5
TOTAL DISCHARGE		948 lbs.	IN 1800.0 SECONDS	
REFERENCE HYDRAULIC FLOW CALCULATION 9075911E.FO				
*SET SELECTOR VALVE TIMING AT 1800 SECONDS*				

TOTAL FLOODING NOZZLE SCHEDULE TURBINE COMPARTMENT EXTENDED DISCHARGE				
NOZZLE ID	NOZZLE DESCRIPTION	WEIGHT (LBS) DISCHARGE IN 1800 SEC.	CALCULATED CODE	ACTUAL CODE
601	1/2" SR NOZZLE	389	2.50	2.5
602	1/2" SR NOZZLE	403	2.50	2.5
TOTAL DISCHARGE		792 LBS.	IN 1800.0 SECONDS	
REFERENCE HYDRAULIC FLOW CALCULATION 9075911E.FO				
*SET SELECTOR VALVE TIMING AT 1800 SECONDS*				

TOTAL FLOODING NOZZLE SCHEDULE LOAD COMPARTMENT EXTENDED DISCHARGE				
NOZZLE ID	NOZZLE DESCRIPTION	WEIGHT (LBS) DISCHARGED IN 1800 SEC.	CALCULATED CODE	ACTUAL CODE
701	1/2" SR NOZZLE	560	3.00	3.0
TOTAL DISCHARGE		560 lbs.	IN 1800.0 SECONDS	
REFERENCE HYDRAULIC FLOW CALCULATION 9075911E.FO				
*SET SELECTOR VALVE TIMING AT 1800 SECONDS*				

TOTAL FLOODING NOZZLE SCHEDULE BEARING TUNNEL EXTENDED DISCHARGE				
NOZZLE ID	NOZZLE DESCRIPTION	WEIGHT (LBS) DISCHARGED IN 1800 SEC.	CALCULATED CODE	ACTUAL CODE
721	1/2" SR NOZZLE	486	2.50	2.5
TOTAL DISCHARGE		486 lbs.	IN 1800 SECONDS	
REFERENCE HYDRAULIC FLOW CALCULATION 9075912E.FO				
*SET SELECTOR VALVE TIMING AT 1800 SECONDS*				

TOTAL FLOODING NOZZLE SCHEDULE MOTOR CONTROL CENTER EXTENDED DISCHARGE				
NOZZLE ID	NOZZLE DESCRIPTION	WEIGHT (LBS) DISCHARGED IN 1200 SEC.	CALCULATED CODE	ACTUAL CODE
521	1/2" RADIAL NOZZLE	255	2.00	2.0
TOTAL DISCHARGE		255 lbs.	IN 1200.0 SECONDS	
REFERENCE HYDRAULIC FLOW CALCULATION 9075913E.FO				
*SET SELECTOR VALVE TIMING AT 1200 SECONDS*				

TOTAL FLOODING NOZZLE SCHEDULE TURNING GEAR ROOM EXTENDED DISCHARGE				
NOZZLE ID	NOZZLE DESCRIPTION	WEIGHT (LBS) DISCHARGED IN 1800 SEC.	CALCULATED CODE	ACTUAL CODE
731	1/2" RADIAL NOZZLE	504	2.50	2.5
TOTAL DISCHARGE		504 lbs.	IN 1800.0 SECONDS	
REFERENCE HYDRAULIC FLOW CALCULATION 9075914E.FO				
*SET SELECTOR VALVE TIMING AT 1800 SECONDS*				

NOTE:  
ZONES 2, 3 & 4 REQUIRE LONGER INITIAL DISCHARGE TIMES TO ACHIEVE LIQUID FLOW AT EXTENDED DISCHARGE NOZZLES

1	CHANGED PER CUSTOMER REQUEST	2dec02		
REV	DESCRIPTION	DATE	DRN BY	CHK BY
DRAWING TITLE: LOW PRESSURE CO2 FIRE SYSTEM GENERATOR PLAN & ELEVATION VIEWS				
CUSTOMER: JACKSONVILLE ELECTRIC AUTHORITY JACKSONVILLE, FL				
<div><div></div><div>ANSUL PREFERRED CO2 Low Pressure Carbon Dioxide Fire Extinguishing Systems One Stanton Street Marinette, Wisconsin 54143 U.S.A.</div></div>				
DRAWN BY: JMP		SCALE: 3/16"=1'-0"		DATE: 23aug02
CHECKED BY: AJS		DRAWING NO.		
PROJECT NO: 90759		90759-M02		
SHEET: 2 of 12				

Control Number: 400422

LEGEND

40G SCHEDULE 40 PIPE, W/GROOVED FITTINGS  
40T SCHEDULE 40 PIPE, W/THREADED FITTINGS  
40W SCHEDULE 40 PIPE, W/WELDED FITTINGS  
80T SCHEDULE 80 PIPE, W/THREADED FITTINGS  
80W SCHEDULE 80 PIPE, W/WELDED FITTINGS

SYSTEM SUPPLY PIPING

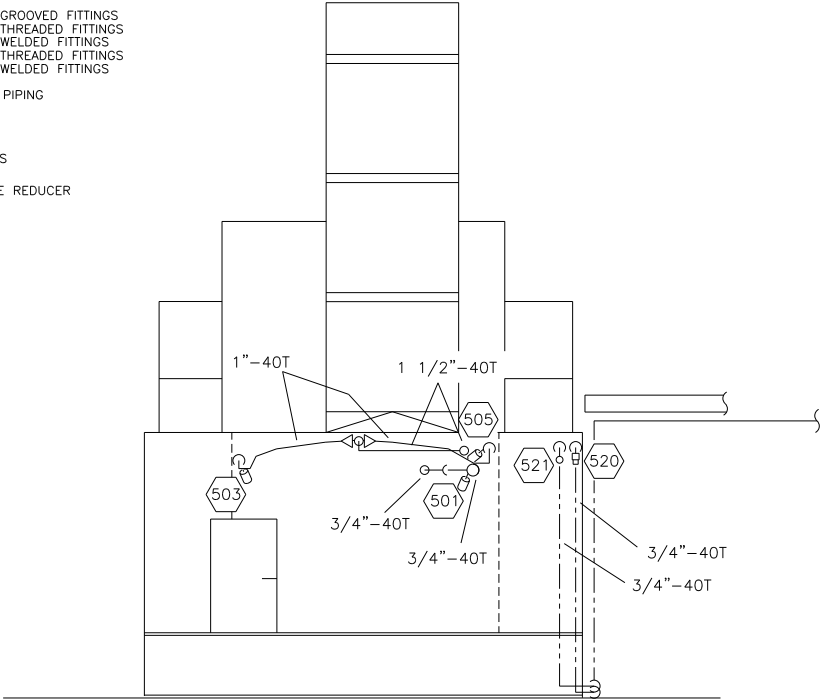
OPTION PIPING

NOZZLE NUMBERS

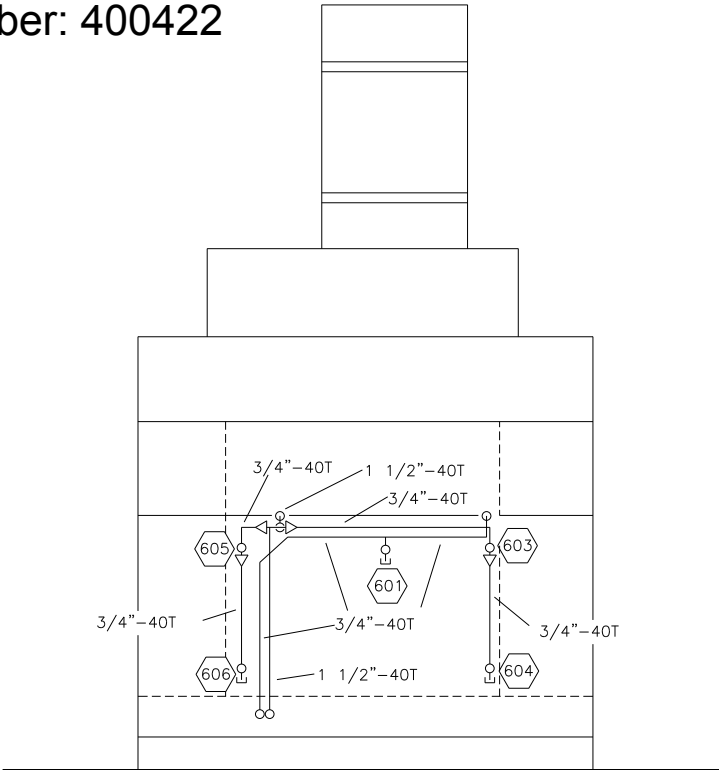
CONCENTRIC PIPE REDUCER

SR NOZZLE

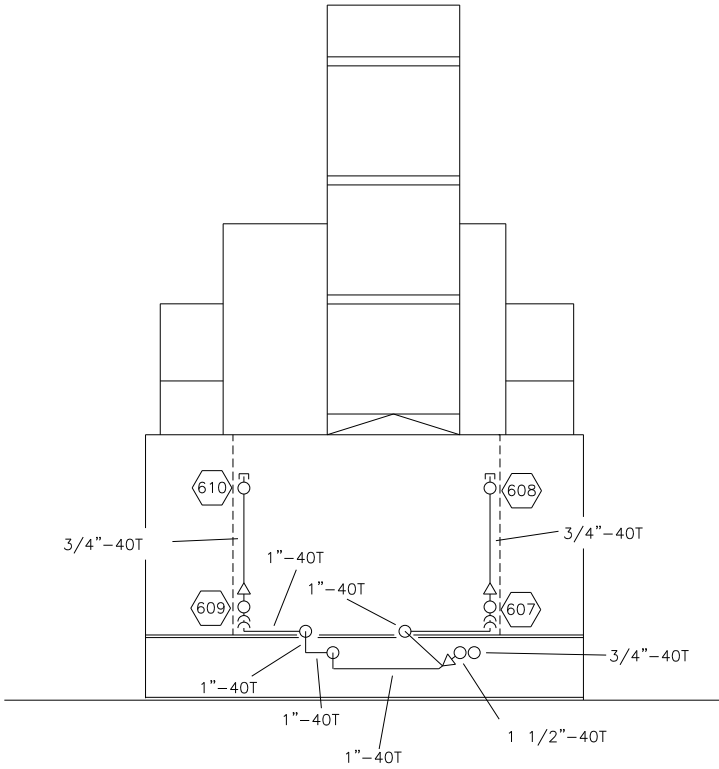
RADIAL NOZZLE



SECTION A  
SCALE= 3/16"=1'-0"



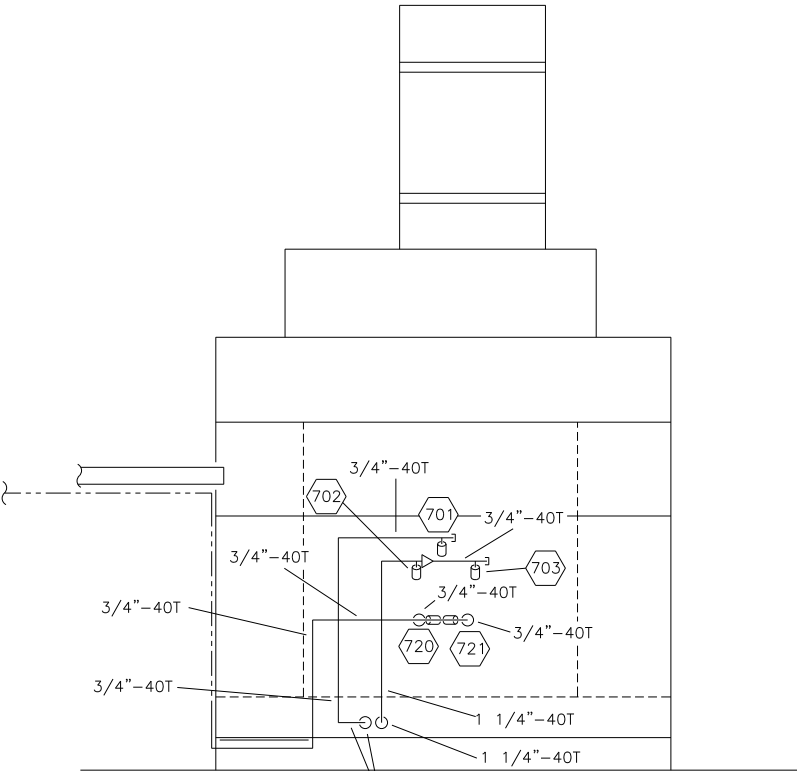
SECTION C  
SCALE= 3/16"=1'-0"



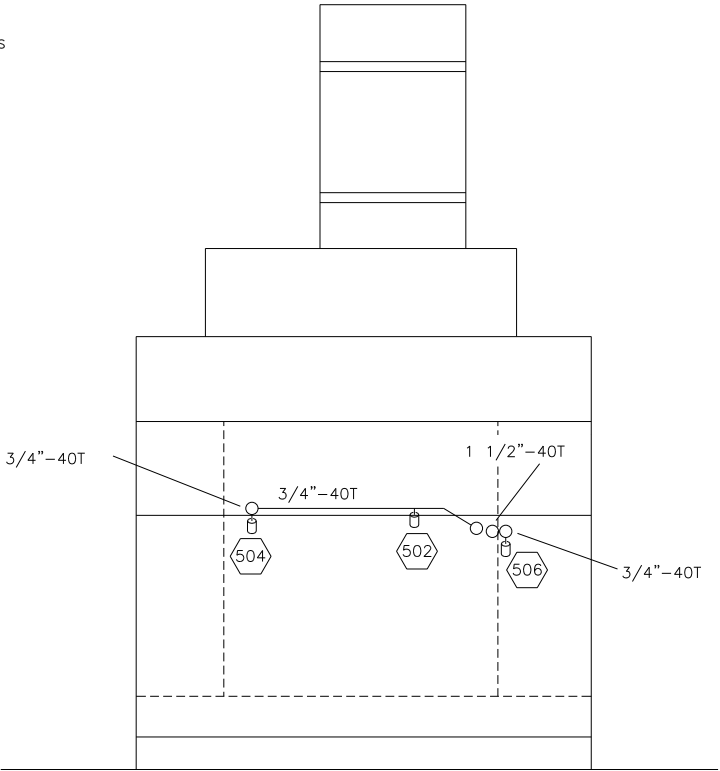
SECTION E  
SCALE= 3/16"=1'-0"

NOTE:

PIPE ROUTING GENERALLY FOLLOWS  
EXISTING SYSTEM PIPING. VARIATIONS  
ARE ACCEPTABLE IF APPROVED BY  
ANSUL PREFERRED CO2.



SECTION B  
SCALE= 3/16"=1'-0"



SECTION D  
SCALE= 3/16"=1'-0"

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WITH COMMENT  
INITIALS ☐ CHANGE DESIGN AS STATED  
AND RESUBMIT

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1	CHANGED PER CUSTOMER REQUEST	2dec02		
REV	DESCRIPTION	DATE	DRN BY	CHK BY

DRAWING TITLE:  
LOW PRESSURE CO2 FIRE SYSTEM  
GENERATOR SECTION VIEWS

CUSTOMER:  
JACKSONVILLE ELECTRIC AUTHORITY  
JACKSONVILLE, FL



ANSUL PREFERRED CO2  
Low Pressure Carbon Dioxide  
Fire Extinguishing Systems  
One Stanton Street  
Marinette, Wisconsin 54143  
U.S.A.

DRAWN BY: JMP	SCALE: 1/8"=1'-0"	DATE: 23aug02
CHECKED BY: AJS	DRAWING NO.	
PROJECT NO: 90759		
SHEET: 3 of 12		

90759-M03



Control Number: 400424

LEGEND

- 40G SCHEDULE 40 PIPE, W/GROOVED FITTINGS  
40T SCHEDULE 40 PIPE, W/THREADED FITTINGS  
40W SCHEDULE 40 PIPE, W/WELDED FITTINGS  
80T SCHEDULE 80 PIPE, W/THREADED FITTINGS  
80W SCHEDULE 80 PIPE, W/WELDED FITTINGS
- SYSTEM PIPING  
— ACTUATION LINE  
— OPTION PIPING

- SELECTOR VALVE  
 150/450 PSI SAFETY RELIEF VALVE  
 CONCENTRIC PIPE REDUCER  
 DISCHARGE PRESSURE SWITCH  
 TANK SHUT-OFF VALVE  
 LOCK-OUT VALVE  
 CONNECTION POINT

MANIFOLD DETAIL  
SCALE= NTS

PIPING ISOMETRIC  
GENERATOR 2 AND 4  
SCALE= NTS

SELECTOR VALVE DETAIL  
SCALE= NTS  
TYPICAL 2 PLACES

AS BUILT

DESIGN, INSTALLATION AND TESTING OF ALL COMPONENTS OF THIS FIRE PROTECTION SYSTEM, TO BE IN ACCORDANCE WITH THE APPLICABLE N F P A CODE

SYMB.	DESCRIPTION	MFG.	PART#	QTY.	SYMB.	DESCRIPTION	MFG.	PART#	QTY.

PIPE	40 / ONLY
FITTINGS	300 lb
MATERIALS	
SYSTEM	
HALON	<input type="radio"/>
CLEAN AGENT	<input type="radio"/>
SECURITY	<input type="radio"/>
FIRE ALARM	<input type="radio"/>
CO <sub>2</sub>	<input type="radio"/>

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**MILTON J. WOOD**  
FIRE PROTECTION

P.O. Box 52031  
Jacksonville, FL 32201  
Tel. (904)353-4055  
Fax (904)353-8486  
www.mjwoodfire.com

GRAPHIC SCALE

NORTH

REVISION	DATE	REVISION DESCRIPTION	DRAWN	CHECKED
0	09/02/05	AS BUILT	GP	DM

JEA Jacksonville, FL			
CO <sub>2</sub> System Piping - From Tank			
REVISION	SYSTEM NUMBER	JOB NUMBER	DRAWING No.
0	-	AH030401	FA1

Control Number: 400425

LEGEND

40G SCHEDULE 40 PIPE, W/GROOVED FITTINGS  
 40T SCHEDULE 40 PIPE, W/THREADED FITTINGS  
 40W SCHEDULE 40 PIPE, W/WELDED FITTINGS  
 80T SCHEDULE 80 PIPE, W/THREADED FITTINGS  
 80W SCHEDULE 80 PIPE, W/WELDED FITTINGS

— SYSTEM PIPING  
 - - - ACTUATION LINE  
 . . . OPTION PIPING

(XX) DENOTES NOZZLE DESIGNATOR AND NODE POINTS  
 ▽ CONCENTRIC PIPE REDUCER  
 [ ] DISCHARGE PRESSURE SWITCH  
 [ ] CONNECTION POINT  
 [ ] RADIAL NOZZLE  
 [ ] SR NOZZLE  
 [ ] ORIFICE NOZZLE

PIPING ISOMETRIC  
 ALL GENERATORS  
 SCALE= NTS

AS B

DESIGN, INSTALLATION AND TESTING OF ALL COMPONENTS OF THIS FIRE PROTECTION SYSTEM, TO BE IN ACCORDANCE WITH THE APPLICABLE N F P A CODE

[illegible]

DISCONNECT SWITCH BY OTHERS

L1

L2

M

T1

T2

MTR

REFRIGERATION COMPRESSOR MOTOR

5FU

6FU

H1

H2

H3

H4

150 VA

(MICRON-B20BT213RB OR EQUAL - NOT REQ'D ON 110 VOLT UNITS)

WHEN USING OPTIONAL HEAT WIRE CIRCUIT USE A MICRON-B20BT213RB/200 VA

(1)

4FU

2 AMP.

X1

120 V.

X2

(WHITE)

(GRN)

GROUND

1

14

11

22

21

(2)

6-18 PSI

255 PSI

ALCO MDL FF215 REFRIGERANT DUAL PRESS. CONTROL (OR EQUAL)

(3)

M

COMPRESSOR MOTOR STARTER

(4)

OFF

295 P.S.I.

DN

305 P.S.I.

(5)

SDI.

(6)

LIQUID SHUT OFF SOLENOID VALVE (SPORLAND MDL. A3S1)

(7)

5

(8)

6

65 WATT HEATER (INDECO CRANKCASE HEATER MDL. 662A-30693-1-31C23-C OR EQ)

OFF

260 P.S.I.

DN

250 P.S.I.

(12)

ALLEN BRADLEY PRESS. SWITCH MDL. B36-A4 (LOW PRESSURE)

(13)

14

(2 CR)

13

PILOT LIGHT-LD CO2 PRESS. (CH 1025011BN C/W 1025011CN (RED LENS) OR EQUAL)

CONTROL RELAY (IDEC MDL. R2P2-UL OR EQUAL)

OFF

305 P.S.I.

DN

315 P.S.I.

(13)

ALLEN BRADLEY PRESS. SWITCH MDL. B36-A4 (HI PRESSURE)

(14)

14

(3 CR)

13

PILOT LIGHT-HI CO2 PRESS. (CH 1025011BN C/W 1025011CN (RED LENS) OR EQUAL)

CONTROL RELAY (IDEC MDL. R2P2-UL OR EQUAL)

1

3

(14)

2 CR

1

3

(14)

9

5

(15)

14

(4 CR)

13

PUSH BUTTON

3 CR

9

1

(16)

4 CR

14

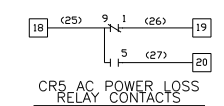
(5 CR)

13

ALARM SILENCE (CH 102501102 C/W 10250153 N.D. OR EQUAL)

CONTROL RELAY (IDEC MDL. RH1B-U OR EQUAL)

ALARM HORN (EDWARDS MDL. 876-N5 OR EQUAL)

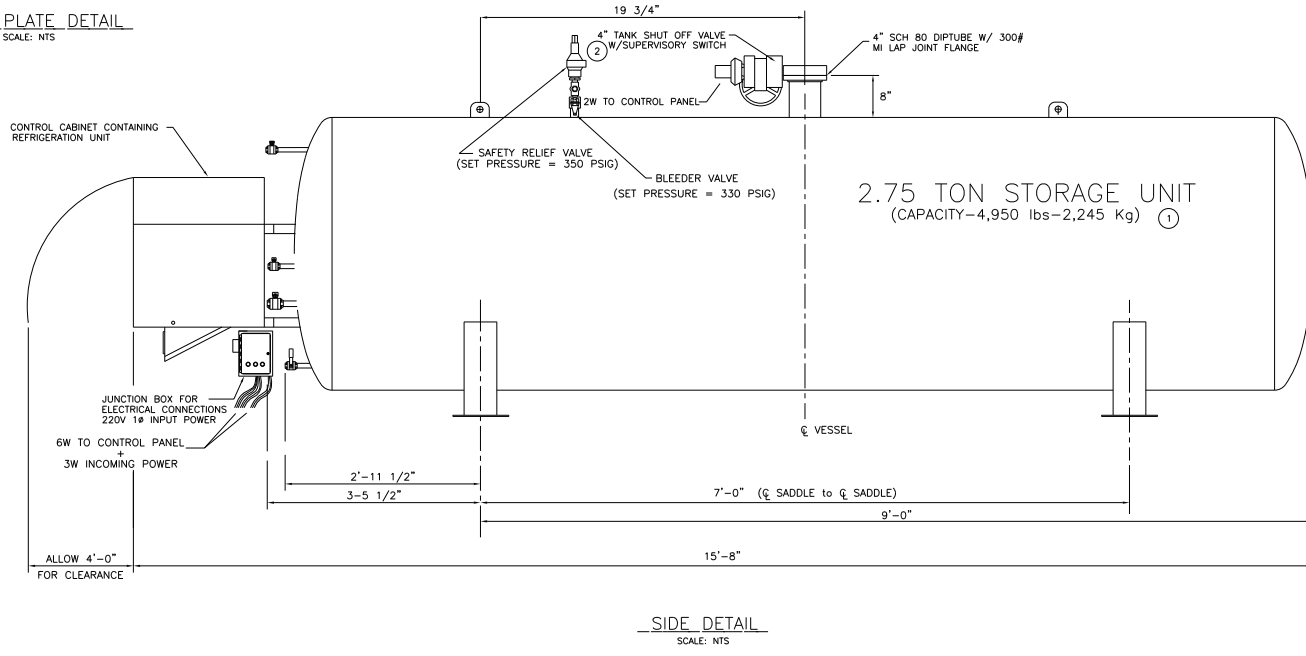
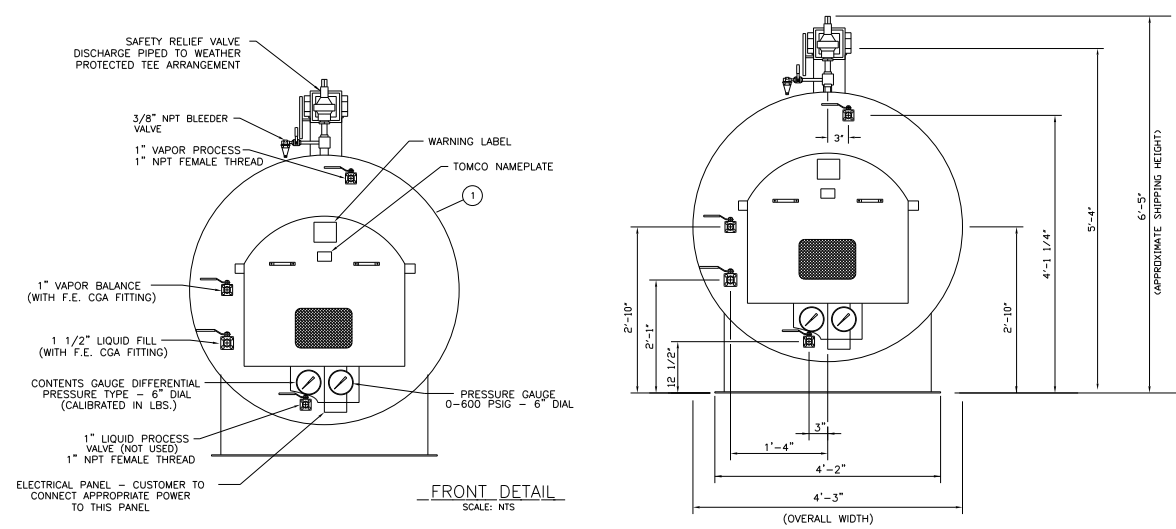



CONDUIT CONNECTION HOLE  
(TO BE PROVIDED BY INSTALLER)  
LOCATE 2" FROM REAR AND 2" FROM  
RIGHT SIDE OF BOX OR OTHER SUITABLE  
LOCATION ON BOX

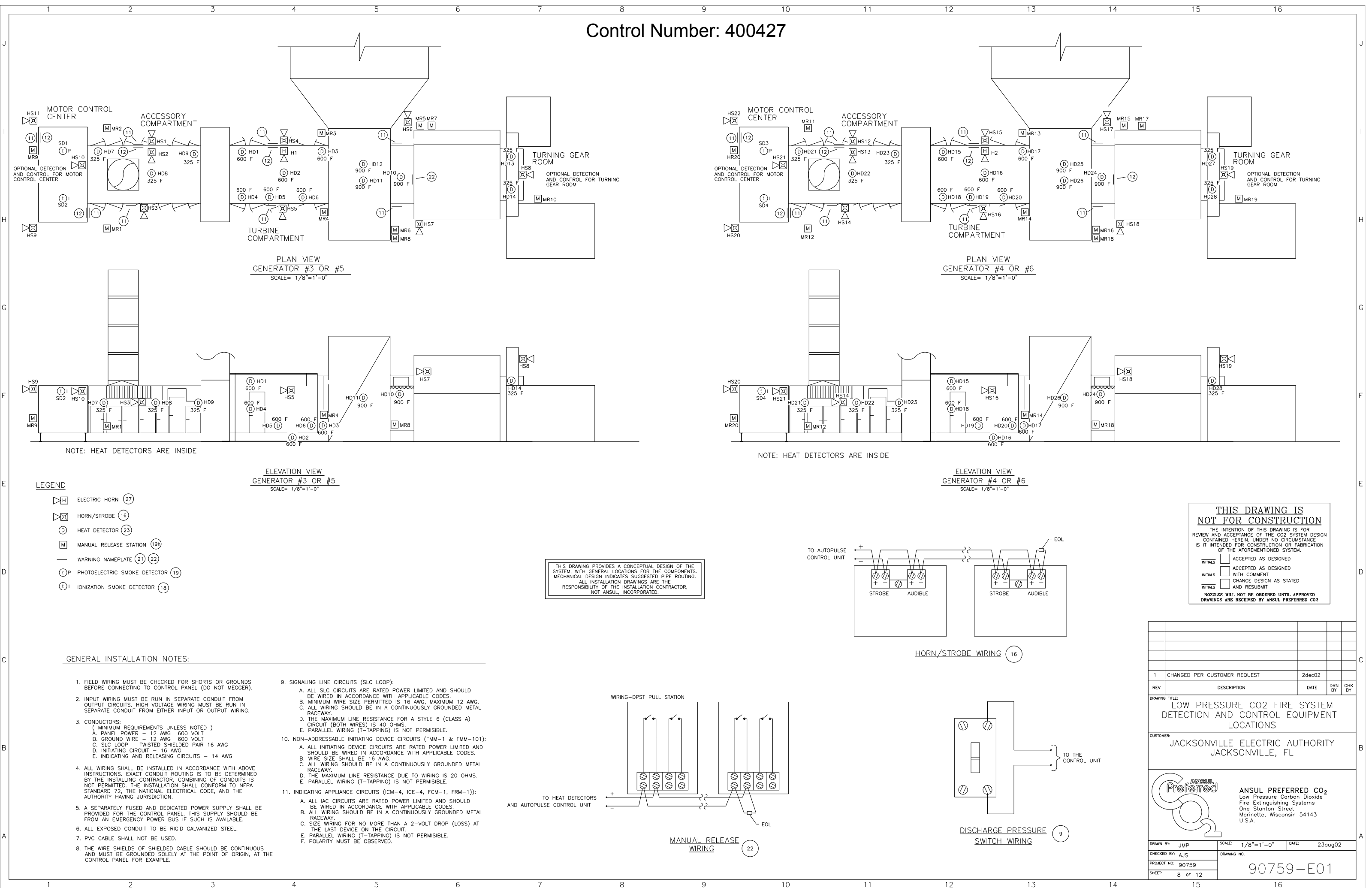


TANK CONTROL BOX  
WIRING SCHEMATIC  
SCALE: NTS

- | FOUNDATION SCHEDULE    |                  |                           |                           |       |       |    |        |   |   |
|------------------------|------------------|---------------------------|---------------------------|-------|-------|----|--------|---|---|
| VESSEL CAPACITY (TONS) | SADDLE SPACING A | B<br>TRANSVERSE TO VESSEL | C<br>TRANSVERSE TO VESSEL | E     | F     | G  | H      | TOP & BOTTOM REINF.<br>(TRANVERSE<br>(C DIRECTION)) | TOP & BOTTOM REINF.<br>LONGITUDINAL<br>(B DIRECTION)) |
| 2 3/4                  | 7'-0"            | 10'-0"                    | 6'-0"                     | 1'-0" | 2'-1" | 8" | 6 1/4" | 7-#4 BARS<br>(16 1/4" C/C SPCG.)                    | 4-#4 BARS<br>(16 1/2" C/C SPCG.)                      |



1	CHANGED PER CUSTOMER REQUEST	2dec02							
REV	DESCRIPTION	DATE	DRN BY	CHK BY					
DRAWING TITLE: LOW PRESSURE CO2 FIRE SYSTEM TANK CONNECTION POINT DETAIL									
CUSTOMER: JACKSONVILLE ELECTRIC AUTHORITY JACKSONVILLE, FL									
 <div style="float: right; padding-left: 20px;"> <b>ANSUL PREFERRED CO<sub>2</sub></b>            Low Pressure Carbon Dioxide            Fire Extinguishing Systems            One Stanton Street            Marinette, Wisconsin 54143            U.S.A.         </div>									
DRAWN BY: JMP		SCALE: NO SCALE		DATE: 23aug02					
CHECKED BY: AJS		DRAWING NO.  90759-M07							
PROJECT NO: 90759									
SHEET: 7 of 12									



PLAN VIEW  
GENERATOR #3 OR #5  
SCALE= 1/8"=1'-0"

PLAN VIEW  
GENERATOR #4 OR #6  
SCALE= 1/8"=1'-0"

ELEVATION VIEW  
GENERATOR #3 OR #5  
SCALE= 1/8"=1'-0"

ELEVATION VIEW  
GENERATOR #4 OR #6  
SCALE= 1/8"=1'-0"

- LEGEND
- ELECTRIC HORN (27)
  - HORN-STROBE (16)
  - HEAT DETECTOR (23)
  - MANUAL RELEASE STATION (19)
  - WARNING NAMEPLATE (21) (22)
  - PHOTOELECTRIC SMOKE DETECTOR (19)
  - IONIZATION SMOKE DETECTOR (18)

GENERAL INSTALLATION NOTES:

- FIELD WIRING MUST BE CHECKED FOR SHORTS OR GROUNDS BEFORE CONNECTING TO CONTROL PANEL (DO NOT MEGGER).
- INPUT WIRING MUST BE RUN IN SEPARATE CONDUIT FROM OUTPUT CIRCUITS. HIGH VOLTAGE WIRING MUST BE RUN IN SEPARATE CONDUIT FROM EITHER INPUT OR OUTPUT WIRING.
- CONDUCTORS:
  - ( MINIMUM REQUIREMENTS UNLESS NOTED )
  - A. PANEL POWER - 12 AWG 600 VOLT
  - B. GROUND WIRE - 12 AWG 600 VOLT
  - C. SLC LOOP - TWISTED SHIELDED PAIR 16 AWG
  - D. INITIATING CIRCUIT - 16 AWG
  - E. INDICATING AND RELEASING CIRCUITS - 14 AWG
- ALL WIRING SHALL BE INSTALLED IN ACCORDANCE WITH ABOVE INSTRUCTIONS. EXACT CONDUIT ROUTING IS TO BE DETERMINED BY THE INSTALLING CONTRACTOR. COMBINING OF CONDUITS IS NOT PERMITTED. THE INSTALLATION SHALL CONFORM TO NFPA STANDARD 72, THE NATIONAL ELECTRICAL CODE, AND THE AUTHORITY HAVING JURISDICTION.
- A SEPARATELY FUSED AND DEDICATED POWER SUPPLY SHALL BE PROVIDED FOR THE CONTROL PANEL. THIS SUPPLY SHOULD BE FROM AN EMERGENCY POWER BUS IF SUCH IS AVAILABLE.
- ALL EXPOSED CONDUIT TO BE RIGID GALVANIZED STEEL.
- PVC CABLE SHALL NOT BE USED.
- THE WIRE SHIELDS OF SHIELDED CABLE SHOULD BE CONTINUOUS AND MUST BE GROUNDED SOLELY AT THE POINT OF ORIGIN, AT THE CONTROL PANEL FOR EXAMPLE.
- SIGNALING LINE CIRCUITS (SLC LOOP):
  - A. ALL SLC CIRCUITS ARE RATED POWER LIMITED AND SHOULD BE WIRED IN ACCORDANCE WITH APPLICABLE CODES.
  - B. MINIMUM WIRE SIZE PERMITTED IS 16 AWG. MAXIMUM 12 AWG.
  - C. ALL WIRING SHOULD BE IN A CONTINUOUSLY GROUNDED METAL RACEWAY.
  - D. THE MAXIMUM LINE RESISTANCE FOR A STYLE 6 (CLASS A) CIRCUIT (BOTH WIRES) IS 40 OHMS.
  - E. PARALLEL WIRING (T-TAPPING) IS NOT PERMISSIBLE.
- NON-ADDRESSABLE INITIATING DEVICE CIRCUITS (FMM-1 & FMM-101):
  - A. ALL INITIATING DEVICE CIRCUITS ARE RATED POWER LIMITED AND SHOULD BE WIRED IN ACCORDANCE WITH APPLICABLE CODES.
  - B. WIRE SIZE SHALL BE 16 AWG.
  - C. ALL WIRING SHOULD BE IN A CONTINUOUSLY GROUNDED METAL RACEWAY.
  - D. THE MAXIMUM LINE RESISTANCE DUE TO WIRING IS 20 OHMS.
  - E. PARALLEL WIRING (T-TAPPING) IS NOT PERMISSIBLE.
- INDICATING APPLIANCE CIRCUITS (ICM-4, ICE-4, FCM-1, FRM-1)):
  - A. ALL IAC CIRCUITS ARE RATED POWER LIMITED AND SHOULD BE WIRED IN ACCORDANCE WITH APPLICABLE CODES.
  - B. ALL WIRING SHOULD BE IN A CONTINUOUSLY GROUNDED METAL RACEWAY.
  - C. SIZE WIRING FOR NO MORE THAN A 2-VOLT DROP (LOSS) AT THE LAST DEVICE ON THE CIRCUIT.
  - E. PARALLEL WIRING (T-TAPPING) IS NOT PERMISSIBLE.
  - F. POLARITY MUST BE OBSERVED.

THIS DRAWING PROVIDES A CONCEPTUAL DESIGN OF THE SYSTEM, WITH GENERAL LOCATIONS FOR THE COMPONENTS. MECHANICAL DESIGN INDICATES SUGGESTED PIPE ROUTING. ALL INSTALLATION DRAWINGS ARE THE RESPONSIBILITY OF THE INSTALLATION CONTRACTOR, NOT ANSUL, INCORPORATED.

**THIS DRAWING IS NOT FOR CONSTRUCTION**

THE INTENTION OF THIS DRAWING IS FOR REVIEW AND ACCEPTANCE OF THE CO2 SYSTEM DESIGN CONTAINED HEREIN. UNDER NO CIRCUMSTANCE IS IT INTENDED FOR CONSTRUCTION OR FABRICATION OF THE AFOREMENTIONED SYSTEM.

INITIALS ☐ ACCEPTED AS DESIGNED  
INITIALS ☐ ACCEPTED AS DESIGNED WITH COMMENT  
INITIALS ☐ CHANGE DESIGN AS STATED AND RESUBMIT

**NOZZLES WILL NOT BE ORDERED UNTIL APPROVED DRAWINGS ARE RECEIVED BY ANSUL, PREFERRED CO2**


1	CHANGED PER CUSTOMER REQUEST	2dec02		
REV	DESCRIPTION	DATE	DRN BY	CHK BY

DRAWING TITLE:  
**LOW PRESSURE CO2 FIRE SYSTEM  
DETECTION AND CONTROL EQUIPMENT  
LOCATIONS**

CUSTOMER:  
**JACKSONVILLE ELECTRIC AUTHORITY  
JACKSONVILLE, FL**

**ANSUL Preferred**

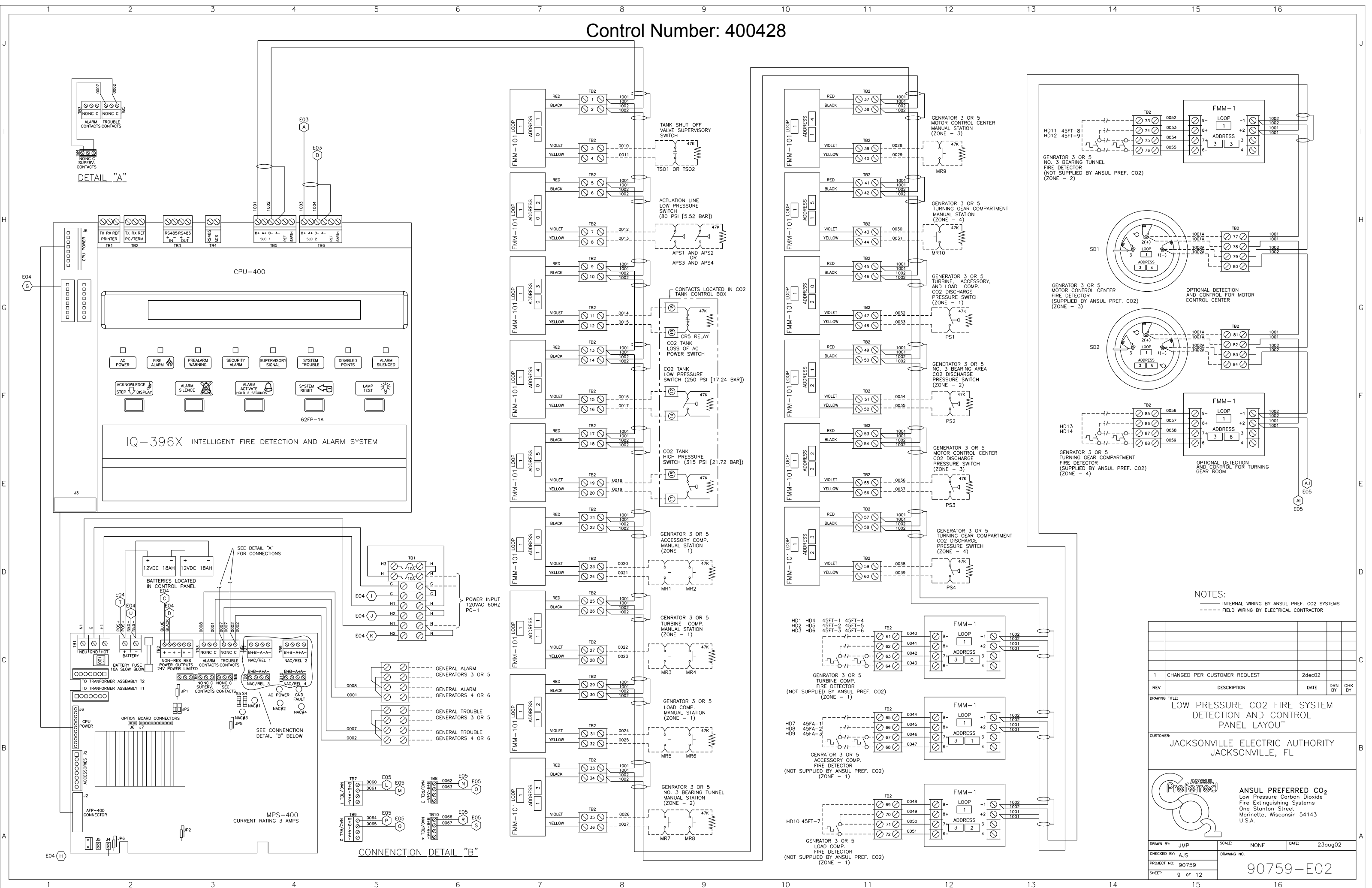
**ANSUL PREFERRED CO2**  
Low Pressure Carbon Dioxide  
Fire Extinguishing Systems  
One Stanton Street  
Marinette, Wisconsin 54143  
U.S.A.

DRAWN BY: JMP	SCALE: 1/8"=1'-0"	DATE: 23aug02
CHECKED BY: AJS	DRAWING NO.	
PROJECT NO: 90759		
SHEET: 8 of 12		

90759-E01



Control Number: 400428




DETAIL "A"

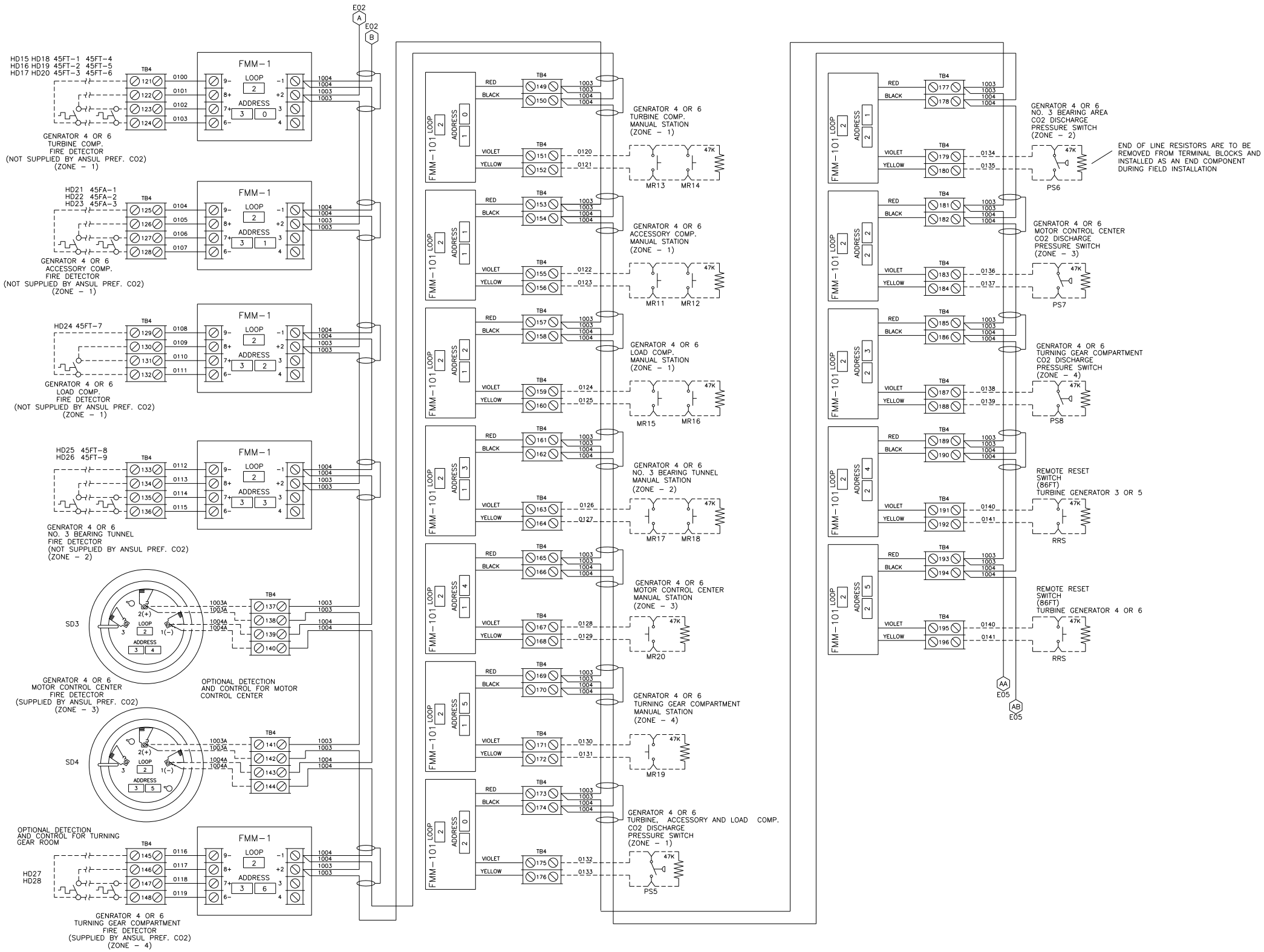
CONNENCTION DETAIL "B"

NOTES:


- INTERNAL WIRING BY ANSUL PREF. CO2 SYSTEMS
- FIELD WIRING BY ELECTRICAL CONTRACTOR

1	CHANGED PER CUSTOMER REQUEST	2dec02			
REV	DESCRIPTION	DATE	DRN BY	CHK BY	
DRAWING TITLE:					
LOW PRESSURE CO2 FIRE SYSTEM DETECTION AND CONTROL PANEL LAYOUT					
CUSTOMER:					
JACKSONVILLE ELECTRIC AUTHORITY JACKSONVILLE, FL					
					
ANSUL PREFERRED CO <sub>2</sub> Low Pressure Carbon Dioxide Fire Extinguishing Systems One Stanton Street Marinette, Wisconsin 54143 U.S.A.					
DRAWN BY: JMP		SCALE: NONE		DATE: 23aug02	
CHECKED BY: AJS		DRAWING NO.			
PROJECT NO: 90759		90759-E02			
SHEET: 9 OF 12					

Control Number: 400429

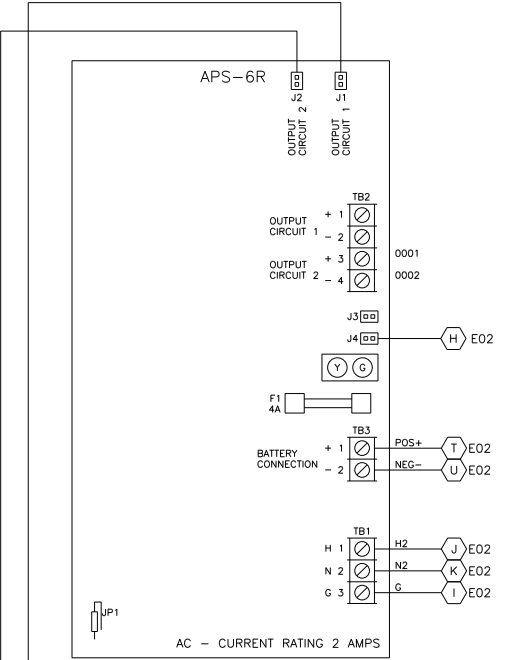
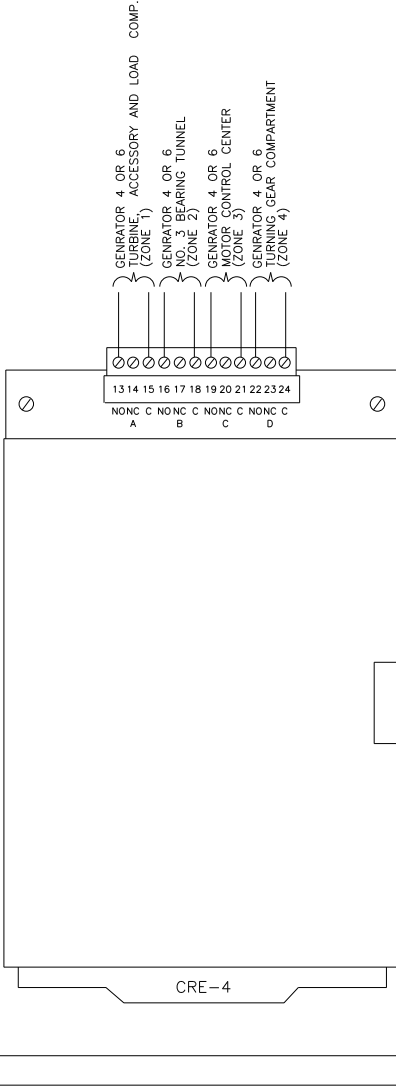
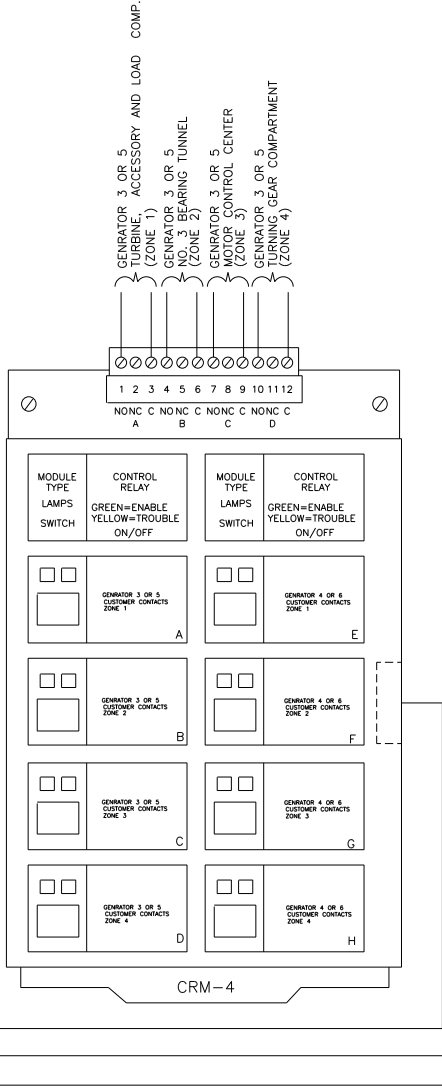
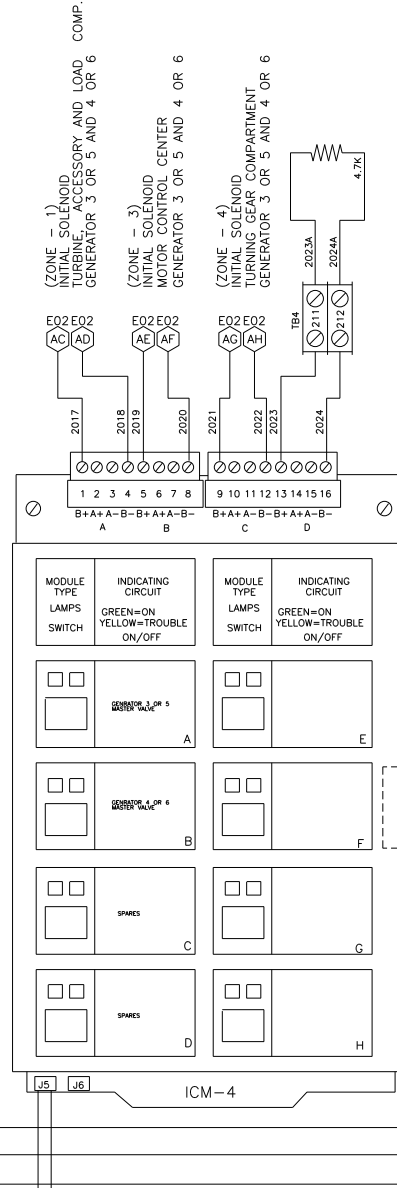
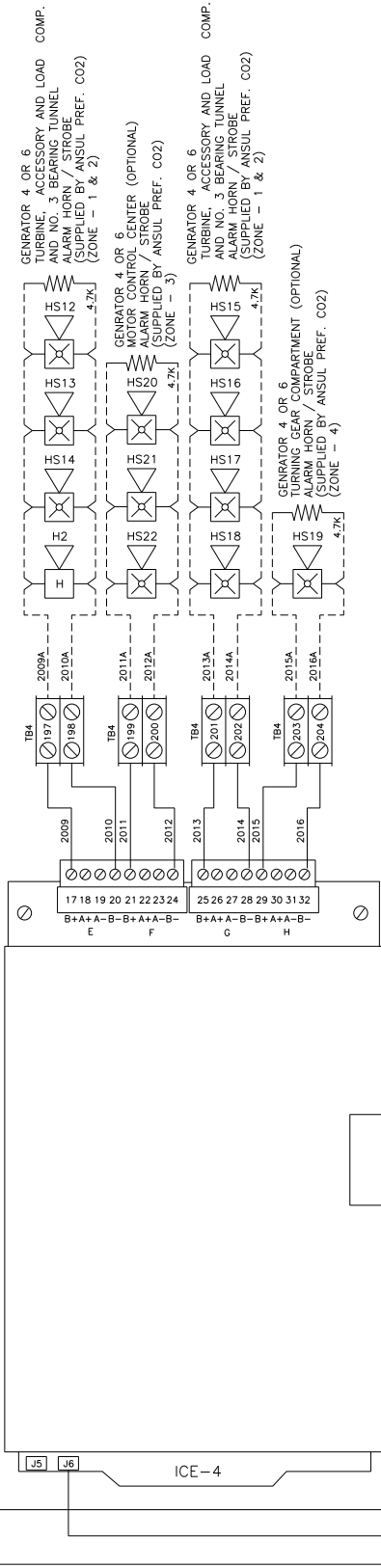
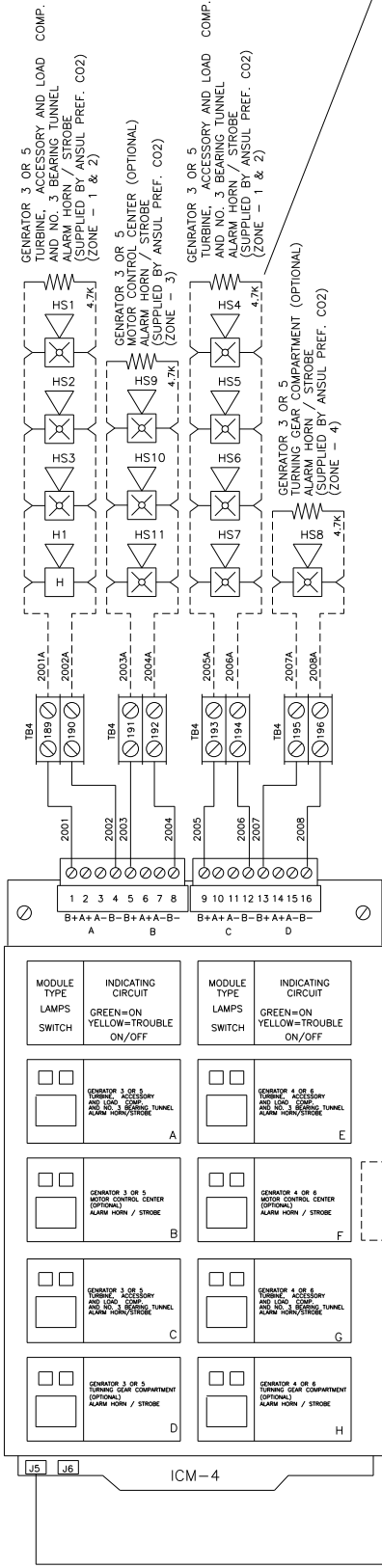


NOTES:  
—— INTERNAL WIRING BY ANSUL PREF. CO2 SYSTEMS  
----- FIELD WIRING BY ELECTRICAL CONTRACTOR

1	CHANGED PER CUSTOMER REQUEST	2dec02		
REV	DESCRIPTION	DATE	DRN BY	CHK BY
DRAWING TITLE: LOW PRESSURE CO2 FIRE SYSTEM DETECTION AND CONTROL PANEL LAYOUT				
CUSTOMER: JACKSONVILLE ELECTRIC AUTHORITY JACKSONVILLE, FL				
<div><div>ANSUL PREFERRED CO<sub>2</sub> Low Pressure Carbon Dioxide Fire Extinguishing Systems One Stanton Street Marinette, Wisconsin 54143 U.S.A.</div></div>				
DRAWN BY: JMP		SCALE: NONE	DATE: 23aug02	
CHECKED BY: AJS		DRAWING NO.  90759-E03		
PROJECT NO: 90759				
SHEET: 10 of 12				

Control Number: 400430

END OF LINE RESISTORS ARE TO BE REMOVED FROM TERMINAL BLOCKS AND INSTALLED AS AN END COMPONENT DURING FIELD INSTALLATION



NOTES:

- INTERNAL WIRING BY ANSUL PREF. CO2 SYSTEMS
- FIELD WIRING BY ELECTRICAL CONTRACTOR

1	CHANGED PER CUSTOMER REQUEST	2dec02		
REV	DESCRIPTION	DATE	DRN BY	CHK BY

DRAWING TITLE:

LOW PRESSURE CO2 FIRE SYSTEM  
DETECTION AND CONTROL EQUIPMENT  
LOCATIONS

CUSTOMER:

JACKSONVILLE ELECTRIC AUTHORITY  
JACKSONVILLE, FL

ANSUL Preferred

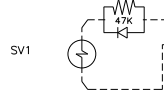
ANSUL PREFERRED CO2  
Low Pressure Carbon Dioxide  
Fire Extinguishing Systems  
One Stanton Street  
Marinette, Wisconsin 54143  
U.S.A.

DRAWN BY:	JMP	SCALE:	NONE	DATE:	23aug02
CHECKED BY:	AJS	DRAWING NO.			
PROJECT NO:	90759				
SHEET:	11 OF 12				

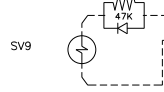
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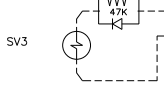
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TURBINE, ACCESSORY AND LOAD COMP.  
GENERATOR 3 OR 5



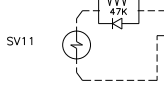
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GENERATOR 4 OR 6



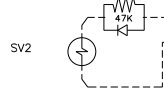
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GENERATOR 3 OR 5



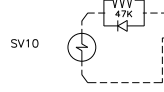
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NO. 3 BEARING TUNNEL  
GENERATOR 4 OR 6



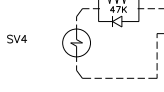
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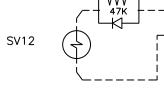
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GENERATOR 4 OR 6



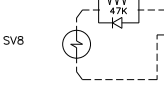
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NO. 3 BEARING TUNNEL  
GENERATOR 3 OR 5



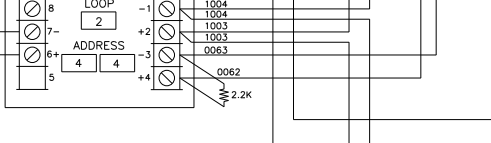
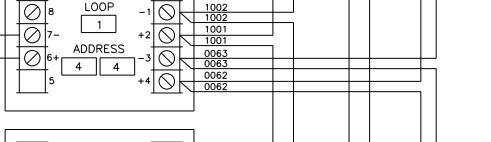
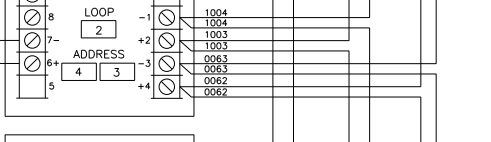
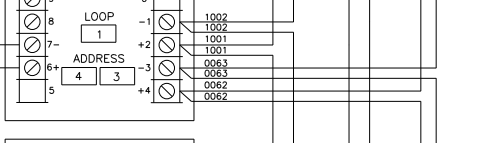
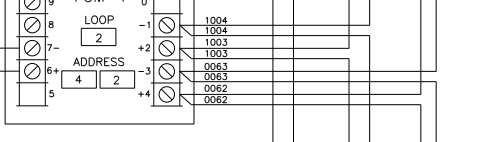
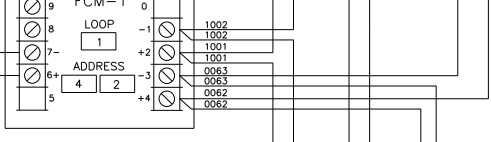
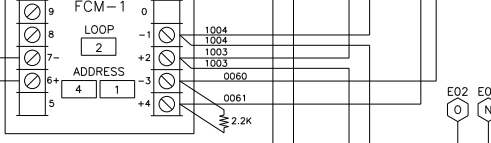
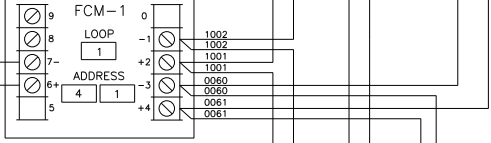
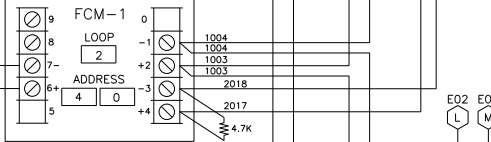
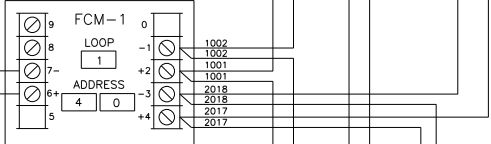
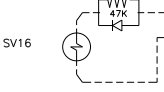
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GENERATOR 4 OR 6



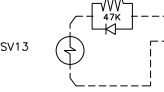
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GENERATOR 3 OR 5



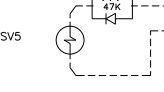
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GENERATOR 4 OR 6



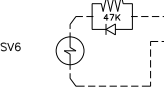
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GENERATOR 4 OR 6



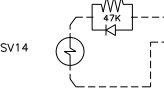
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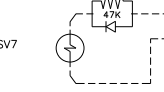
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GENERATOR 3 OR 5



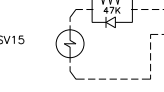
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MOTOR CONTROL CENTER  
GENERATOR 4 OR 6



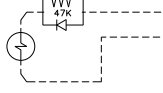
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TURNING GEAR COMPARTMENT  
GENERATOR 3 OR 5



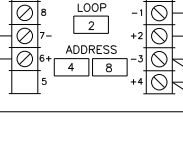
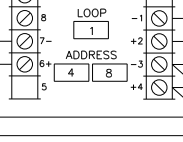
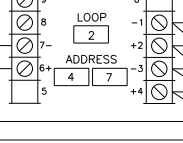
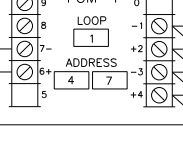
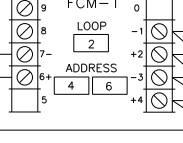
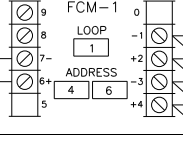
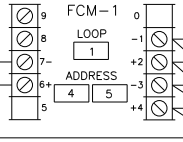
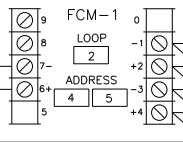
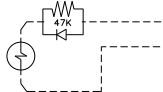
(ZONE - 4)  
INITIAL SOLENOID  
TURNING GEAR COMPARTMENT  
GENERATOR 4 OR 6




MASTER VALVE  
GENERATORS 3 OR 5  
MV3  
OR  
MV1



MASTER VALVE  
GENERATORS 4 OR 6  
MV4  
OR  
MV2



1	REDESIGNED	14jan03		
REV	DESCRIPTION	DATE	DRN BY	CHK BY
DRAWING TITLE: LOW PRESSURE CO2 FIRE SYSTEM DETECTION AND CONTROL PANEL LAYOUT				
CUSTOMER: JACKSONVILLE ELECTRIC AUTHORITY JACKSONVILLE, FL				
<div><div>ANSUL Preferred CO<sub>2</sub></div><div>Low Pressure Carbon Dioxide Fire Extinguishing Systems One Stanton Street Marinette, Wisconsin 54143 U.S.A.</div></div>				
DRAWN BY: JMP		SCALE: NONE	DATE: 23aug02	
CHECKED BY: AJS		DRAWING NO.  90759-E05		
PROJECT NO: 90759				
SHEET: 12 of 12				