X= DIMENSION BELOW DECK ABOVE

PENETRATION LIST

REF	HOLE SIZE	CENTRE OF HOLE DIMENSIONS ATHWARTSHIPS	HEIGHT A/B	LONGITUDINAL	STRUCTURE PENETRATED	LINE DESCRIPTION	PIPE Nº
P1	7"x3"	1'-0" TO PORT	X=1'-3"	FRAME 61	W/T BHD	CONTROL ROOM DISCHARGE MANIFOLD	—
P2	3"	6'-0" TO STBD	X=2'-3"	FRAME 30	W/T BHD	↓	
P3	7"x3"	1'-0" STBD	MAIN DECK	8" FWD FRM #18	MAIN DECK	CO2 TO CONTROL ROOM MANIFOLD AND SIRENS	
P5	13/16" DRILL	7'-6" TO STBD	X=2'-3"	FRAME 30	W/T BHD	CONTROL ROOM SIREN PIPING	
P6	7"x3"	3'-0" PORT	X=1'-0"	FRM #21	G/T BHD	CO2 TO REFRIGERATED CARGO SPACE	
P7	13/16" DRILL	11'-10" STBD	X=1'-10"	FRM #30	W/T BHD	TUBING TO ACTUATORS	
P8	13/16" DRILL	10'-10" STBD	X=1'-10"	FRM #33	BHD		
P9	13/16" DRILL	10'-10" STBD	X=1'-10"	FRM #61	W/T BHD	↓	
P10	7"x3"	3'-0" PORT	MAIN DECK	8" FWD FRM #165	MAIN DECK	CO2 TO BOWTHRUSTER COMPT	
P11	3"	3'-0" PORT	17'-0" FLAT	8" FWD FRM #165	17'-0" FLAT	↓	
P12	7"x3"	3'-0" PORT	X=1'-0"	FRM #5	W/T BHD	CO2 TO STEERING GEAR COMPT	
P13	7"x3"	3'-0" PORT	MAIN DECK	6" FWD FRM #166	MAIN DECK	CO2 TO FORWARD CARGO HOLD	
P14	7"x3"	8'-10" PORT	X=2'-0"	FRM #165	W/T BHD	↓	
P15	13/16" DRILL	16'-11" PORT	X=1'-0"	FRM #3	G/T BHD	CO2 TO CONTROL ROOM SIRENS	
P16	7"x3"	15'-0" PORT	X=1'-0"	FRM #3	G/T BHD	CO2 TO CONTROL ROOM AND GENERAL STORES MANIFOLD	
P17	13/16" DRILL	13'-2" PORT	X=1'-0"	FRM #3	G/T BHD	TUBING TO GENERAL STORES ACTUATOR	
P18	13/16" DRILL	12'-2" STBD	X=1'-10"	FRM #30	W/T BHD	TUBING TO ACTUATORS	
P19	13/16" DRILL	11'-2" STBD	X=1'-10"	FRM #33	BHD	↓	↓

PENETRATION LIST

REF	HOLE SIZE	CENTRE OF HOLE DIMENSIONS ATHWARTSHIPS	HEIGHT A/B	LONGITUDINAL	STRUCTURE PENETRATED	LINE DESCRIPTION	PIPE Nº
P20	13/16" DRILL	11'-2" STBD	X=1'-10"	FRM #61	W/T BHD	PIPING TO ACTUATORS	—
P21	13/16" DRILL	16'-7" PORT	X=1'-0"	FRM #3	G/T BHD	CO2 TO GENERAL STORES SIREN	
P22	13/16" DRILL	12'-10" PORT	X=1'-0"	FRM #3	G/T BHD	TUBING TO CONTROL ROOM ACTUATOR	
P23	13/16" DRILL	6'-9" STBD	X=1'-10"	FRM #146	G/T BHD	3/8" COPPER TUBING TO #4 A/C PLANT RM SIREN	
P24	3"	4'-6" STBD	X=1'-10"	FRM #146	G/T BHD	1/2" PIPE TO #4 A/C PLANT RM NOZZLE	
P25	3"	6'-9" STBD	X=3'-6"	FRM #146	G/T BHD	1/2" PIPE TO #4 A/C PLANT RM HEADER SAFETY	↓

PENETRATION LIST

REF	HOLE SIZE	CENTRE OF HOLE DIMENSIONS ATHWARTSHIPS	HEIGHT A/B	LONGITUDINAL	STRUCTURE PENETRATED	LINE DESCRIPTION	PIPE Nº

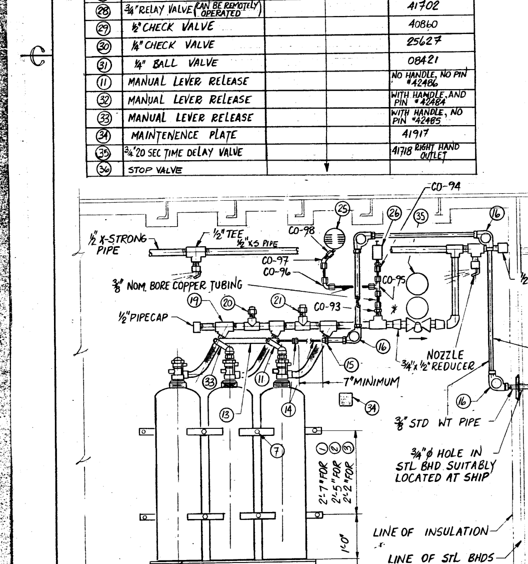
PENETRATIONS MARKED THUS ✓ INDICATE — SEE ARRG'T FOR ORIENTATION OF HOLES

HOLE SIZE

CENTRE OF HOLE DIMENSIONS

LEGEND

REF Nº	NAME OF PART	SUPPLIER	PART Nº
1	100# CO2 CYLINDER	AUTOMATIC SPRINKLER	46244
2	75# CO2 CYLINDER		46242
3	50# CO2 CYLINDER		46240
4	CYLINDER SADDLES		
5	SUPPORT CHANNELS & STRAPS		50lb #45244 & 45120; 75lb #45261 & 45121; 100lb #45245 & 45122
6	CENTRE CLAMPS		45118
7	SINGLE OR DOUBLE ROW BOLTS		75lb #40936 / 100lb #40367
8	100# CYLINDER AP-8 VALVE		42415
9	75# CYLINDER AP-8 VALVE		42415
10	50# CYLINDER AP-8 VALVE		42415
12	REMOTE PRESSURE ATTATCHMENT		42510
13	CONNECTING LINK		(100# CYL 42514) (75# CYL 42511)
14	1/16" CABLE CLAMP c/w MONEL CABLE		45333
15	FLARED END FITTING		40060
16	CORNER PULLEY		42678
17	PULL STATION		45062
18	FLEXIBLE DISCHARGE BEND		42424
19	Y-MANIFOLD		(1/2" MAIN) #40565
20	1/2" NPT VENT PLUG		40309
21	1/2" NPT HEADER SAFETY		40094
22	5lb CO2 ACTUATOR CYLINDER		52043
23	5lb CO2 CYLINDER BRACKET		33813
24	PRESSURE DIRECTION VALVE		46195
25	PRESSURE OPERATED SIREN		43118
26	PNUEMATIC SWITCH		46250
27	3/4" 20 SEC TIME DELAY VALVE		41734 LEFT HAND OUTLET
28	3/4" RELAY VALVE (CAN BE REMOTELY OPERATED)		41702
29	1/2" CHECK VALVE		40860
30	1/4" CHECK VALVE		25627
31	1/4" BALL VALVE		08421
11	MANUAL LEVER RELEASE		NO HANDLE, NO PIN #42486
32	MANUAL LEVER RELEASE		WITH HANDLE AND PIN #42484
33	MANUAL LEVER RELEASE		WITH HANDLE, NO PIN #42485
34	MAINTENENCE PLATE		41917
35	3/4" 20 SEC TIME DELAY VALVE		41718 RIGHT HAND OUTLET
36	STOP VALVE	↓	



DETAIL 16-A

REFERENCE TABLE

AUTOMATIC SPRINKLER SYSTEM Nº	RISK AREA	TYPICAL DETAIL
2	GENERAL STORES AND CONTROL ROOM	DETAIL 3-C
3	REFRIGERATED CARGO HOLD	DETAIL 16-A
4	CARPENTER'S WORKSHOP	
5	HEELING PUMP COMP'T	
6A	BOSUN'S STORE	
6B	FORWARD CARGO HOLD	
7	STEERING GEAR COMP'T	
8	DIVING AND SALVAGE WORKSHOP	
9	Nº5 FAN ROOM	
10	INCINERATOR ROOM	
11	EMERGENCY GENERATOR ROOM	
12	BOW-THRUSTER COMP'T	
13	Nº 2 AND 3 A/C FAN ROOM	
14	INFLAMMABLE STORE AND PAINT ROOM	
16	A/C MACHINERY ROOM	
17	Nº4 A/C FAN ROOM	
18	ELEVATOR MACHINERY RM	↓

NOTES

1) PART Nºs REFERENCED TO LEGEND IN ZONE 16
2) NOTES ON DWG #68-2430-1 "ARRGT OF CO2 SYSTEM - ENGINE ROOMS" APPLY TO THIS DRAWING.

ALTERATIONS

REV.	ZONE	DESCRIPTION	DATE	APP.	OWNER DATE	OWNER APP.
A	3,6	REFRIGERATED CARGO HOLD CO2 BOTTLE WAS ON PORT OUTBOARD FACE OF ESCAPE TRUNK	30/3/82			
	15	EMERGENCY GENERATOR ROOM CO2 BOTTLES RE-POSITIONED	10/3/82			
	—	NOZZLE CODES ADDED AND DRAWING UPDATED TO AUTOMATIC SPRINKLER	12/3/82			
	—	STEERING GEAR COMPARTMENT, FORWARD CARGO HOLD AND GENERAL STORES CO2 BOTTLES WERE IN RISK AREA. TIME DELAYS ADDED TO ALL SYSTEMS. STOP VALVES ADDED ON ALL SYSTEMS OVER 300# CAPACITY. MODIFIED AS PER C.S.I. COMMENTS	21/5/82	GP		
D	5	HEADER SAFETY AND VENT ADDED TO SYS #3				
B	—	FORWARD CARGO HOLD, STEERING GEAR COMPARTMENT AND GENERAL STORES NOZZLE SIZES ADDED. THIS REMOVES RESERVATION #1	4/6/82			
	—	HEADER VENTS (20), AND HEADER SAFETYS (21) ADDED TO ALL SYSTEMS WITH TIME DELAYS	4/6/82			
	5,9	SYSTEMS 7, 12 AND 6B - STOP VALVE WAS BEFORE PNEUMATIC SWITCH AND SIREN HEADER CONNECTIONS	4/6/82			
	—	ALL 3/8" NOM BORE COPPER TUBING (TYPE "K", ASTM-B-88) WAS 1/4" X-STRONG SMLS GALVANIZED STL PIPE. PENETRATIONS MODIFIED TO SUIT	4/6/82			
	3	PULL STATIONS ADDED TO DETAIL 3-C	4/6/82			
	—	HANDED TIME DELAYS ADDED AND LEVER RELEASES MODIFIED AT AUTOMATIC SPRINKLERS REQUEST	4/6/82	GP		
C	12,13,14	SYSTEMS 13 AND 17 BOTTLES RE-POSITIONED (23) (24) (25) ADDED				

REFERENCES

No.	TITLE	DRG. No.

RESERVATIONS

No.	
E	AS FITTED 16-9-82
	~~1) FORWARD CARGO HOLD, STEERING GEAR COMPARTMENT AND GENERAL STORES CO2 SYSTEMS IN ABEYANCE PENDING LINE SIZE CONFIRMATION FROM "AUTOMATIC SPRINKLER".~~

C.G.S.I APPROVAL OF CO2 SYSTEM IS REQUIRED BEFORE INSTALLATION IS COMMENCED. DATE OF APPROVAL - 13/5/82

PORT WELLER DRY DOCKS
AS FITTED DRAWING

PRINT ISSUE

APPROVALS: OWNER 26/4/82; LLOYDS 6 AUG 82; A.B.S.; C.S.I. 13/5/82; AUTOMATIC SPRINKLER 21/4/82

DRG. No. 68-2430-3 ALT. E

ARRANGEMENT OF CO2 SYSTEM - O.M.S.

SCALE: NONE A/C 2430

HULL No. 68

DRAWN BY: H NEUFELD DATE: 12/3/82

APPROVED BY: G. Perry

PORT WELLER DRY DOCKS
A DIVISION OF UPPER LAKES SHIPPING LTD.
ST. CATHARINES ONTARIO L2R 7C1

DRG No. 68-2430-3 O.M.S.