



REFERENCE DRAWINGS		
NO.	DRAWING TITLE	DRAWING NUMBER
1	GENERAL ARRANGEMENT PLAN	AF6087-89940-01
2	TANK ARRANGEMENT AND CAPACITY PLAN	AF6087-89940-02
3	SEA CHEST ARRANGEMENT	6094-25600-02
4	SANITARY FRESH WATER SYSTEM	AF6087-53000-02
5	BILGE DRAINAGE AND DOWTERING SYSTEM	AF6087-52000-01
6	WATER FIRE EXTINGUISHING SYSTEM	AF6087-55500-03
7	BLACK, GREY AND SANITARY FLUSHING SYSTEM	AF6087-55000-02
8	AIR PIPES AND SOUNDING DIAGRAM	AF6087-50000-02
9	ALARM, MONITORING AND CONTROL SYSTEM - DESCRIPTION AND LIST	AF6087-25200-01
10	STERN TUBE ARRANGEMENT PLAN	AF6087-24400-01
11	REEFER P&ID	6094-51600-01
12	SCHEMATIC PLANS OF HYDRAULIC SYSTEMS FOR THE BOWTHRUSTER, CAPSTANS, TOW LINE REEL, CRAB TRAP, HAULERS AND CRANE	AF6087-55600-01
13	STEERING GEAR ROOM ARRANGEMENT PLAN	AF6087-56100-03
14	COMPRESSED AIR SYSTEM	AF6087-55100-01

PIPE DIMENSIONS					
PIPE CODE	PIPE SIZE	STANDARD	MATERIAL	REMARKS	JOINTS
15	21.3 x 3.2	DIN2448	ST35.8 I	GALVANIZED	
15CN	20 x 1.5	DIN1755T	CuNi10 Fe1.6Mn	-	
15	25.4 x 6.3	DIN2448	ST35.8 I	GALVANIZED CLASS II LR	
20CN	25.0 x 1.5	DIN1755T	CuNi10 Fe1.6Mn	-	
25	33.7 x 6.3	DIN2448	ST35.8 I	GALVANIZED CLASS II LR	
25	33.7 x 8.0	DIN2448	ST35.8 I	GALVANIZED CLASS II LR	
25	33.7 x 3.6	DIN2448	ST35.8 I	GALVANIZED	
25CN	30.0 x 1.5	DIN1755T	CuNi10 Fe1.6Mn	-	
32CN	38.0 x 1.5	DIN1755T	CuNi10 Fe1.6Mn	-	
40	48.3 x 6.3	DIN 2448	ST35.8 I	GALVANIZED	
40CN	44.5 x 1.5	DIN1755T	CuNi10 Fe1.6Mn	-	
40	48.3 x 2.6	DIN2448	ST35.8 I	GALVANIZED	
40	48.3x3.6	DIN 2448	ST35.8 I	GALVANIZED CLASS II LR	
40	48.3x1.83	W&O	CuN	CL200	
50CN	57.0 x 1.5	DIN1755T	CuNi10 Fe1.6Mn	-	
50	60.3 x 3.6	DIN2448	ST35.8 I	GALVANIZED	
50	60.3 x 4	DIN2448	ST35.8 I	GALVANIZED	
65CN	76.0 x 2.0	DIN1755	CuNi10 Fe1.6Mn	-	
65	76.1 x 3.6	DIN2448	ST35.8 I	GALVANIZED	
65	76.1 x 4.0	DIN2448	ST35.8 I	GALVANIZED	
65	76.1 x 4.5	DIN2448	ST35.8 I	GALVANIZED	
65	76.1 x 6.3	DIN2448	ST35.8 I	GALVANIZED CLASS II LR	
65	76.1 x 8.0	DIN2448	ST35.8 I	GALVANIZED CLASS II LR	
80CN	88.9 x 2.5	DIN1755T	CuNi10 Fe1.6Mn	-	
80	88.9 x 3.6	DIN2448	ST35.8 I	GALVANIZED	
100CN	108.0 x 2.5	DIN1755T	CuNi10 Fe1.6Mn	-	
100	114.3 x 8.0	DIN2448	ST35.8 I	GALVANIZED CLASS II LR	
100	114.3x3.6	DIN2448	ST35.8 I	GALVANIZED	
150	168.3 x 6.3	DIN2448	ST35.8 I	GALVANIZED CLASS II LR	
150CN	159.0 x 2.5	DIN1755T	CuNi10 Fe1.6Mn	-	
150	168.3 x 5.0	DIN2448	ST35.8 I	GALVANIZED	
150	168.3 x 8.0	DIN2448	ST35.8 I	GALVANIZED CLASS II LR	
200CN	219.0 x 3.0	DIN1755T	CuNi10 Fe1.6Mn	-	
250CN	267.0 x 3.0	DIN1755T	CuNi10 Fe1.6Mn	-	
250	273.0 x 8.0	DIN2448	ST35.8 I	GALVANIZED CLASS II LR	

VALVE MATERIALS						
NO	NP	TEMP	VALVE TYPE	MATERIAL		L.R. CERT.
				BODY	TRIM	
8	10	40	PRESSURE GAUGE COCK	BRASS	BRASS	NO
15	10	40	BALL VALVE	BRONZE	HARD CHROME PLATED BRASS BALL, BRASS STEM	NO
15	10	40	GLOBE VALVE	BRONZE	BRONZE STEM, DISC AND SEAT	NO
20	10	40	GLOBE VALVE	BRONZE	BRONZE STEM, DISC AND SEAT	NO
20	10	40	SWING CHECK VALVE	BRONZE	AL-BRONZE DISC, NBR DISC RING	NO
20	10	40	GLOBE VALVE	CAST IRON	BRONZE DISC AND SEAT, BRASS STEM	NO
20	10	40	SDNR GLOBE VALVE	BRONZE	BRONZE STEM, DISC AND SEAT	NO
25	10	40	BALL VALVE	BRONZE	HARD CHROME PLATED BRASS BALL, BRASS STEM	NO
25	10	40	GLOBE VALVE	BRONZE	BRONZE STEM, DISC AND SEAT	NO
25	10	40	GATE VALVE	STEEL	ST STEEL WEDGE, STEM AND SEAT	YES
32	10	40	BALL VALVE	BRASS	HARD CHROME PLATED BRASS BALL, BRASS STEM	YES
40	10	40	GLOBE VALVE	DUCTILE IRON	ST STEEL STEM, AL-BZ DISC AND NBR SEAT	YES
40	10	40	SDNR GLOBE VALVE-ANGLED	DUCTILE IRON	BRONZE DISC AND SEAT, BRASS STEM	YES
40	10	40	SWING CHECK VALVE	BRONZE	AL-BRONZE DISC, NBR DISC RING	NO
50	10	40	BUTTERFLY VALVE	DUCTILE IRON	ST STEEL STEM, AL-BZ DISC AND NBR SEAT	NO
65	10	40	BUTTERFLY VALVE	DUCTILE IRON	ST STEEL STEM, AL-BZ DISC AND NBR SEAT	YES
65	10	40	BUTTERFLY VALVE	DUCTILE IRON	ST STEEL STEM, AL-BZ DISC AND NBR SEAT	YES
65	10	40	SDNR GLOBE VALVE	CAST IRON	BRONZE DISC AND SEAT, BRASS STEM	NO
65	10	40	SDNR GLOBE VALVE-ANGLED	DUCTILE IRON	BRONZE DISC AND SEAT, BRASS STEM	YES
65	10	40	SWING CHECK VALVE	BRONZE	AL-BRONZE DISC, NBR DISC RING	NO
80	10	40	BUTTERFLY VALVE	DUCTILE IRON	ST STEEL STEM, AL-BZ DISC AND NBR SEAT	NO
100	10	40	BUTTERFLY VALVE	DUCTILE IRON	ST STEEL STEM, AL-BZ DISC AND NBR SEAT	NO
100	10	40	BUTTERFLY VALVE	DUCTILE IRON	ST STEEL STEM, AL-BZ DISC AND NBR SEAT	YES
100	10	40	GLOBE VALVE	DUCTILE IRON	BRONZE DISC AND SEAT, BRASS STEM	YES
150	10	40	BUTTERFLY VALVE	DUCTILE IRON	ST STEEL STEM, AL-BZ DISC AND NBR SEAT	YES
150	10	40	SDNR GLOBE VALVE-ANGLED	DUCTILE IRON	BRONZE DISC AND SEAT, BRASS STEM	YES
200	10	40	BUTTERFLY VALVE	DUCTILE IRON	ST STEEL STEM, AL-BZ DISC AND NBR SEAT	NO
200	10	40	SWING CHECK VALVE	BRONZE	AL-BRONZE DISC, NBR DISC RING	NO
250	10	40	BUTTERFLY VALVE	DUCTILE IRON	ST STEEL STEM, AL-BZ DISC AND NBR SEAT	NO
250	10	40	BUTTERFLY VALVE	DUCTILE IRON	ST STEEL STEM, AL-BZ DISC AND NBR SEAT	YES

EQUIPMENT TABLE			
ITEM	DESCRIPTION	CHARACTERISTICS	REMARKS
E256101	A.C. UNIT COOLING EL. PUMP	Q=20 m³/h (88 GPM), P=1.5 KW	
E256102	SPRAY NOZZLE	TF FULL CONE 90°, 2" BSP MALE, ST STEEL	
E256103	SPRAY NOZZLE	TF FULL CONE 90°, 1 1/2" BSP MALE, ST STEEL	
E256104	CYCLONE FILTER		THORDON BEARINGS
E256105	SW SERVICE COOLING PUMP	Q=48m³/h; H=2 bar; P=4.6 KW; 60° HZ; 600 V	
E256106	SW PUMP FOR REFRIGERATING SYSTEM	Q=1.13m³/h; H=3.9m; 20W	BRONSWERK
E200021/1	REFRIGERATING UNIT		BRONSWERK
E200021/2	REFRIGERATING UNIT		BRONSWERK
E556001	HPU FOR HYDRAULIC SYSTEM FOR BOWTHRUSTER, WINCHES AND CRANE		
E556002/1	HPU FOR CPP - STB		
E556002/2	HPU FOR CPP - PS.		

TESTS TABLE			
ITEM	DESIGN PRESSURE (bar)	IN WORKSHOP (bar)	ON BOARD (bar)
SUCTION PIPES	1	1.5	1.5
DISCHARGE PIPES	2.5	3.75	3.75
AERATING PIPES	ATMOSPHERIC	WORKING CONDITION	ATMOSPHERIC

MTU CONNECTIONS			
ITEM	DESCRIPTION	SIZE	REMARKS
20.010	RAW WATER OUTLET	ND 150	-
20.014	INLET CONNECTION, RAW WATER PUMP	ND 150	-
20.018	FILLING SCREW, SEA WATER PUMP	-	-
20.028	OUTLET CONNECTION, PREHEATING LINE	ND 20	-
20.029	INLET CONNECTION, PREHEATING LINE	ND 20	-
20.051	OVERFLOW LINE	ND 40	-
20.096	RAW WATER OUTLET TO GEARBOX OIL	ND 40	-
20.191	HEAT EXCHANGER COOLANT TO RAW WATER HEAT EXCHANGER	ND 8	-
20.238	DRAIN, SEA WATER PUMP	-	-

AF 07.12.12

Rev

Client

07.12.12

Date

CANADIAN COAST GUARD

AS FITTED

Description

COOLING WATER SYSTEM

TK

Perform

AF

FP

Check

AF

BF

Appr.

AF

international

contract engineering

IRVING SHIPBUILDING INC.

Scale: NTS

Drawn by: S. Hanganu

Dwg. date: 25/08/2011

Mid-shore Patrol Vessel

Project No: 6097

AF6097-25600-01

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- NOTES:**
- Piping system shall be class III.
 - Piping shall be adequately supported using approved shipyard standards in a manner as not to interfere with its flexibility.
 - Piping shall not be installed in way of hatches. Where such a condition is un avoidable, removable spools shall be provided.
 - Valves in machinery rooms are to be grouped and located in an accessible position.
 - Valves in machinery rooms are to be grouped and located in an accessible position.
 - Lloyd's Register class II valves shall be used in all sea chest and overboard shipside valves.
 - Piping with flanges or coupling joints shall not be permitted in inaccessible or hazardous locations, (i.e. behind or above walls, ceilings and electrical components).
 - Drain plugs are to be fitted at the systems low points where necessary.
 - Valve plugs are to be fitted at the systems high points where necessary.
 - All engines shall be supplied with approved type flexible bellows to connect with associated piping.
 - Pipe penetrations can be either sleeved or flanged, using approved shipyard standards.
 - One fresh water and one raw water pump for main engines will be stored onboard in accordance with LR - Rules and Regulations for the Classification of Special Service Craft, Part 15 Ch.3 - 7.3 "Stand-by Supply".
 - All valves shall have bilingual brass label plates securely attached to them in acc. with ASTM F992-86(2006) Standard Specification for Valve Label Plates.
 - All valves class II LR to be delivered with LR certificate.
 - Ship-side valves will be with flanged ends.
 - All M.E. flexible connections will be provided by MTU.