

GENERAL NOTES

1. THIS SHIP SHALL BE CONSTRUCTED ACCORDING TO ABS 2001 UNDER 90 METER RULES AS AMENDED AND USCG 1999 CFR. THE SHIP SHALL BE CLASSIFIED **NA1** (A), **NA**AMS, **NA**ACCU, **NA**DPS-1, UNRESTRICTED SERVICE, ICE CLASS CO AND ABS RECORD OF NOTATION CRC FOR COMPLIANCE WITH ABS GUIDE FOR CERTIFICATION OF CRANES (INCLUDING THE REQUIREMENTS OF API 2C). THE SHIP SHALL BE CONSTRUCTED AND CERTIFICATED IN ACCORDANCE WITH 46 CFR, SUBCHAPTER U.
2. THE PRINCIPAL CHARACTERISTICS OF THIS VESSEL ARE LISTED AS FOLLOWS:  
LENGTH OVERALL: 63.6 M  
LENGTH BP: 58.0 M  
BEAM: 15.0 M  
DRAFT: 5.9 M (CENTERBOARD UP)  
9.15 M (CENTERBOARD DOWN)  
MOLDED DEPTH: 8.65 M  
ESTIMATED TONNAGE: 2100
3. PIPING SYSTEM SYMBOLS USED ON THIS DIAGRAM CONFORM TO MARITIME ADMINISTRATION STANDARDS.
4. ALL PIPING MATERIALS AND WORKMANSHIP TO BE IN ACCORDANCE WITH ABS & USCG RULES AND REGULATIONS.
5. ALL PIPING TO HAVE SUFFICIENT FLEXIBILITY TO PREVENT OVER STRESSING OF PIPING MATERIALS, LEAKAGE OF JOINTS OR DISTORTION OF CONNECTED EQUIPMENT.
6. PIPING SHALL BE ARRANGED SO THAT IT WILL NOT NORMALLY BE SUBJECT TO MECHANICAL INJURY AND TO PRECLUDE ITS USE FOR OTHER PURPOSES SUCH AS GRABRODS, STEPPING POINTS AND HANDRAILS.
7. ALL WELDING IS TO BE IN ACCORDANCE WITH ABS & USCG REQUIREMENTS.
8. WHERE REQUIRED, RESILIENT HANGERS SHALL BE INSTALLED BETWEEN RESILIENLY MOUNTED EQUIPMENT AND THE FIRST RIGID PENETRATION.
9. VENTS, OVERFLOWS AND FILL CONNECTIONS SERVING TANKS CONTAINING LUBE OIL OR FUEL OIL SHALL HAVE A FIXED OVERFLOW CONTAINMENT CAPABLE OF HOLDING 1 BARREL (42 GALLONS), OR 150 LITERS.
10. EACH ENGINE SHALL BE EQUIPPED WITH A THERMOSTATICALLY CONTROLLED FUEL SUPPLY HEATER.
11. CARE SHALL BE TAKEN DURING FUELING OPERATIONS TO AVOID OVER FILLING FUEL OIL TANKS. FUEL OIL TANK DB#45 IS THE DESIGNATED OVERFLOW TANK AND SHALL BE THE LAST TANK FILLED.
12. VALVE 541-VL-43 SHALL BE NORMALLY OPEN. VALVE SHALL BE CLOSED DURING OFFLOADING CONDITIONS.
13. M279 ABS APPROVAL DATE 1/21/02.

MATERIAL SCHEDULE											
PIPING SYSTEM	PIPE		TAKEDOWN JOINTS		TYPE	VALVES 3.1		FITTINGS 2		MAXIMUM WORKING CONDITIONS	
	SIZE	MATERIAL	MATERIAL	BOLTING		BODY	TRIM	TYPE & MATERIAL	SYSTEM	PRESSURE	TEMP
FUEL SERVICE & TRANSFER SYSTEM (CLASS 2 PIPING)	50 & BELOW	CARBON STEEL, ASTM A53, GR B SCHEDULE 80 TYPE S OR E	UNION, SWLGD OR THD STEEL, ASTM A105 SOCKET WELD ANSI B16.11 3000#	BOLTS AND STUDS STEEL ASTM A307 GR B ANSI B18.2.1  NUTS STEEL ASTM A563 GR A ANSI B18.2.2	GATE GLOBE ANGLE CHECK BALL BUTTERFLY	SWLGD AND THREADED, 150# STEEL, ASTM A105 OR A216 FLANGED, ASA-395TM	SWLGD OR THREADED, STEEL VALVES STEM, WEDGE/DISC OR SEAT RING CRES, ASTM A 182 GR F8A, HARD FACED SEATS OPTIONAL	SWLGD OR THREADED, STEEL, ASTM A105 ANSI B16.11 CLASS 3000, NPT, S.W.	FUEL SVCE & TRANS SYSTEM	3.4 BAR	50°C
	65 & ABOVE		FLANGE, SLIP-ON, 150# STEEL, ASTM A105 ANSI B16.5	CRES TO BE USED WHEN EXPOSED TO WEATHER OR SALTWATER	FLANGED DUCTILE IRON, ASTM A395, ANSI B16.34 OR STEEL, ASTM A216, GR WCB OR A105 ALL 125# MIN.	FLANGED STEEL OR IRON VALVES STEM, WEDGE/DISC OR SEAT RING CRES, ASTM A 182 GR F8A OR BRONZE, ASTM B61 OR B62  INTEGRAL SEATS SAME AS BODY MATERIAL	BTWLD, STEEL, ASTM A234, GR WPB, ANSI B16.9 EXTRA STRONG				

- MATERIAL NOTES:
1. GAUGE STOP VALVES SHALL BE 2 PIECE BRONZE CATEGORY A.
2. FOR 50 AND BELOW FITTINGS MAY BE ELASTIC STRAIN PRELOAD (ESP) CARBON STEEL 207 BAR RATING, WITH ABS TYPE APPROVAL AND USCG ACCEPTANCE.
3. ALL RESILIENT SEATED VALVES TO BE USCG CATEGORY A.

CONVERSION TABLE	
STANDARD ENGLISH NOM. PIPE SIZE UNITS (IN)	METRIC NOM. PIPE SIZE UNITS (MM)
1/2 IN	15 MM
3/4 IN	20 MM
1 IN	25 MM
1 1/4 IN	32 MM
1 1/2 IN	40 MM
2 IN	50 MM
2 1/2 IN	65 MM
3 IN	80 MM
4 IN	100 MM
5 IN	125 MM
6 IN	150 MM
8 IN	200 MM
10 IN	250 MM
12 IN	300 MM
14 IN	350 MM
16 IN	400 MM

CONVERSION TABLE	
STANDARD ENGLISH PRESSURE UNITS (PSI)	METRIC PRESSURE UNITS (BAR)
50 PSI	3.44 BAR
100 PSI	6.89 BAR
150 PSI	10.34 BAR
200 PSI	13.79 BAR
300 PSI	20.68 BAR
400 PSI	29.58 BAR
500 PSI	34.47 BAR
1000 PSI	68.95 BAR
2000 PSI	137.70 BAR
3000 PSI	206.86 BAR

COMPONENT LIST (F.O. SERVICE, 261)				
ITEM NUMBER	SIZE	SERVICE	DESCRIPTION/TYPE	REMARKS
261-VL-01	25	FO SERVICE	VALVE, BALL	
261-VL-02	25	FO SERVICE	VALVE, BALL	
261-VL-03				NOT USED
261-VL-04				NOT USED
261-VL-05	25	FO SERVICE	VALVE, BALL	
261-VL-06				NOT USED
261-VL-07	25	FO SERVICE	VALVE, BALL	N.C. & LOCKED
261-VL-08	25	FO SERVICE	VALVE, BALL	
261-VL-09	25	FO SERVICE	VALVE, BALL	
261-VL-10	40	FO SERVICE	VALVE, BALL	
261-VL-11	40	FO SERVICE	VALVE, BALL	
261-VL-12	40	FO SERVICE	VALVE, GATE	REMOTE ACT. (POSITIVE CLOSING)
261-VL-13	40	FO SERVICE	VALVE, GATE	REMOTE ACT. (POSITIVE CLOSING)
261-VL-14	25	FO SERVICE	VALVE, BALL	
261-VL-15	25	FO SERVICE	VALVE, BALL	
261-VL-16	25	FO SERVICE	VALVE, BALL	
261-VL-17	25	FO SERVICE	VALVE, BALL	
261-VL-18	40	FO SERVICE	VALVE, BALL	
261-VL-19	40	FO SERVICE	VALVE, BALL	
261-VL-20	40	FO SERVICE	VALVE, BALL	
261-VL-21	40	FO SERVICE	VALVE, BALL	
261-VL-22	25	FO SERVICE	VALVE, SWING CHECK	
261-VL-23	25	FO SERVICE	VALVE, BALL	
261-VL-24	25	FO SERVICE	VALVE, BALL	
261-VL-25	25	FO SERVICE	VALVE, SWING CHECK	
261-VL-26	25	FO SERVICE	VALVE, BALL	
261-VL-27	25	FO SERVICE	VALVE, BALL	
261-VL-28	25	FO SERVICE	VALVE, SWING CHECK	
261-VL-29	25	FO SERVICE	VALVE, BALL	
261-VL-30	25	FO SERVICE	VALVE, BALL	
261-VL-31	25	FO SERVICE	VALVE, SWING CHECK	
261-VL-32	25	FO SERVICE	VALVE, BALL	
261-VL-33	25	FO SERVICE	VALVE, BALL	
261-VL-34	25	FO SERVICE	VALVE, BALL	
261-VL-35	25	FO SERVICE	VALVE, BALL	
261-VL-36				NOT USED
261-VL-37				NOT USED
261-VL-38				NOT USED
261-VL-39				NOT USED
261-VL-40	20	FO SERVICE	VALVE, BALL	ROV. (POSITIVE CLOSING)
261-VL-41	15	FO SERVICE	VALVE, BALL	
261-VL-42	15	FO SERVICE	VALVE, SWING CHECK	
261-VL-43	20	FO SERVICE	VALVE, BALL	ROV. (POSITIVE CLOSING)
261-VL-44	15	FO SERVICE	VALVE, BALL	
261-VL-45	15	FO SERVICE	VALVE, SWING CHECK	
261-VL-46				NOT USED
261-VL-47				NOT USED
261-VL-48	25	FO SERVICE	VALVE, BALL	
261-VL-49	25	FO SERVICE	VALVE, BALL	
261-VL-50	25	FO SERVICE	VALVE, BALL	
261-HA-01	25	FO SERVICE	HOSE ASSEMBLY	
261-HA-02				NOT USED
261-HA-03				NOT USED
261-HA-04	25	FO SERVICE	HOSE ASSEMBLY	
261-HA-05				NOT USED
261-HA-06				NOT USED
261-HA-07	25	FO SERVICE	HOSE ASSEMBLY	
261-HA-08	25	FO SERVICE	HOSE ASSEMBLY	
261-HA-09	25	FO SERVICE	HOSE ASSEMBLY	
261-HA-10	25	FO SERVICE	HOSE ASSEMBLY	
261-HA-11	25	FO SERVICE	HOSE ASSEMBLY	
261-HA-12	25	FO SERVICE	HOSE ASSEMBLY	
261-HA-13	25	FO SERVICE	HOSE ASSEMBLY	
261-HA-14	25	FO SERVICE	HOSE ASSEMBLY	
261-HA-15	25	FO SERVICE	HOSE ASSEMBLY	
261-WT-01	40	FO SERVICE	WATER TRAP	
261-WT-02	40	FO SERVICE	WATER TRAP	
261-DS-01	40	FO SERVICE	DUPLEX STRAINER	
261-DS-02	40	FO SERVICE	DUPLEX STRAINER	
261-FP-16		FO SERVICE	FO PURIFIER (2)	2000 L / H CAP. (EACH) SEE REF. 6

COMPONENT LIST (F.O. TRANSFER 541)				
ITEM NUMBER	SIZE	SERVICE	DESCRIPTION/TYPE	REMARKS
541-VL-01	50	FO TRANSFER	VALVE, BALL	
541-VL-02	50	FO TRANSFER	VALVE, BALL	
541-VL-03	15	FO TRANSFER	VALVE, BALL GAGE	
541-VL-04	100	FO TRANSFER	VALVE, BUTTERFLY	
541-VL-05	100	FO TRANSFER	VALVE, GATE	
541-VL-06	100	FO TRANSFER	VALVE, GATE	
541-VL-07	15	FO TRANSFER	VALVE, BALL	NORMALLY CLOSED AND LOCKED
541-VL-08	15	FO TRANSFER	VALVE, BALL	
541-VL-09	50	FO TRANSFER	VALVE, GLOBE	FURNISHED WITH MANIFOLD
541-VL-10	50	FO TRANSFER	VALVE, GLOBE	FURNISHED WITH MANIFOLD
541-VL-11	50	FO TRANSFER	VALVE, GLOBE	FURNISHED WITH MANIFOLD
541-VL-12	50	FO TRANSFER	VALVE, GLOBE	FURNISHED WITH MANIFOLD
541-VL-13	50	FO TRANSFER	VALVE, GLOBE	FURNISHED WITH MANIFOLD
541-VL-14	50	FO TRANSFER	VALVE, GLOBE	FURNISHED WITH MANIFOLD
541-VL-15	50	FO TRANSFER	VALVE, GLOBE	FURNISHED WITH MANIFOLD
541-VL-16	50	FO TRANSFER	VALVE, GLOBE	FURNISHED WITH MANIFOLD
541-VL-17	50	FO TRANSFER	VALVE, GLOBE	FURNISHED WITH MANIFOLD
541-VL-18	50	FO TRANSFER	VALVE, GLOBE	FURNISHED WITH MANIFOLD
541-VL-19	50	FO TRANSFER	VALVE, GLOBE	FURNISHED WITH MANIFOLD
541-VL-20	50	FO TRANSFER	VALVE, GLOBE	FURNISHED WITH MANIFOLD
541-VL-21	50	FO TRANSFER	VALVE, GLOBE	FURNISHED WITH MANIFOLD
541-VL-22	50	FO TRANSFER	VALVE, GLOBE	FURNISHED WITH MANIFOLD
541-VL-23	50	FO TRANSFER	VALVE, GLOBE	FURNISHED WITH MANIFOLD
541-VL-24	50	FO TRANSFER	VALVE, GLOBE	FURNISHED WITH MANIFOLD
541-VL-25	50	FO TRANSFER	VALVE, GLOBE	FURNISHED WITH MANIFOLD
541-VL-26	50	FO TRANSFER	VALVE, GLOBE	FURNISHED WITH MANIFOLD
541-VL-27	50	FO TRANSFER	VALVE, GLOBE	FURNISHED WITH MANIFOLD
541-VL-28	50	FO TRANSFER	VALVE, GLOBE	FURNISHED WITH MANIFOLD
541-VL-29	50	FO TRANSFER	VALVE, GLOBE	FURNISHED WITH MANIFOLD
541-VL-30	50	FO TRANSFER	VALVE, GLOBE	FURNISHED WITH MANIFOLD
541-VL-31	50	FO TRANSFER	VALVE, BALL, QUICK CLOSING	REMOTE ACT. (POSITIVE CLOSING)
541-VL-32	50	FO TRANSFER	VALVE, BALL, QUICK CLOSING	REMOTE ACT. (POSITIVE CLOSING)
541-VL-33	50	FO TRANSFER	VALVE, BALL, QUICK CLOSING	REMOTE ACT. (POSITIVE CLOSING)
541-VL-34	50	FO TRANSFER	VALVE, BALL, QUICK CLOSING	REMOTE ACT. (POSITIVE CLOSING)
541-VL-35	50	FO TRANSFER	VALVE, BALL, QUICK CLOSING	REMOTE ACT. (POSITIVE CLOSING)
541-VL-36	50	FO TRANSFER	VALVE, BALL, QUICK CLOSING	REMOTE ACT. (POSITIVE CLOSING)
541-VL-37	50	FO TRANSFER	VALVE, BALL, QUICK CLOSING	REMOTE ACT. (POSITIVE CLOSING)
541-VL-38	50	FO TRANSFER	VALVE, BALL, QUICK CLOSING	REMOTE ACT. (POSITIVE CLOSING)
541-VL-39	50	FO TRANSFER	VALVE, BALL, QUICK CLOSING	REMOTE ACT. (POSITIVE CLOSING)
541-VL-40				NOT USED
541-VL-41	150	FO TRANSFER	VALVE, GATE	ROV
541-VL-42	150	FO TRANSFER	VALVE, GATE	ROV
541-VL-43	125	FO TRANSFER	VALVE, BUTTERFLY	
541-HA-01	50	FO TRANSFER	HOSE ASSEMBLY	
541-HA-02	50	FO TRANSFER	HOSE ASSEMBLY	
541-SR-01	50	FO TRANSFER	STRAINER	
541-PI-01	15	FO TRANSFER	GAGE, PRESSURE	RANGE 0-6 BAR
541-FP-15		FO TRANSFER	FO TRANSFER PUMP	13.63 M3HR, 35M TDM SEE REF 6
541-FM-17		FO TRANSFER	FO MANFOLD	SEE REF 6
541-FA-01		FO TRANSFER	FLOW ALARM	SEE REF 7

123-100-XX  
LINE NUMBER  
LINE SIZE  
LINE SWBS  
LINE NO. IDENTIFICATION

123-AB-XX  
COMPONENT NUMBER  
COMPONENT TYPE (SEE COMPONENT LIST)  
COMPONENT SWBS  
COMPONENT NO. IDENTIFICATION

10	REACH ROD SCHEDULE	M282-500-FL03
9	GAUGE, THERMOMETER & MISC. INSTRUMENTATION LIST	M282-500-FL05
8	COMPRESSED AIR SYSTEM DIAGRAM	M282-550-PP07
7	ALARM AND CONTROL POINTS LIST	M282-202-FE25
6	MACHINERY ARRANGEMENT	M282-201-FA03
5	PIPING STANDARD DETAILS	M282-505-PP25
4	LUBE OIL TRANSFER & SERVICE SYSTEM DIAGRAM	M282-262-FP12
3	OILY WASTE & WASTE OIL SYSTEM DIAGRAM	M282-593-FP11
2	FRESH & POTABLE WATER SYSTEM DIAGRAM	M282-533-PP03
1	VENTS AND SOUNDS SYSTEM DIAGRAM	M282-506-PP02
NO.	TITLE	DRAWING NUMBER
REFERENCES		

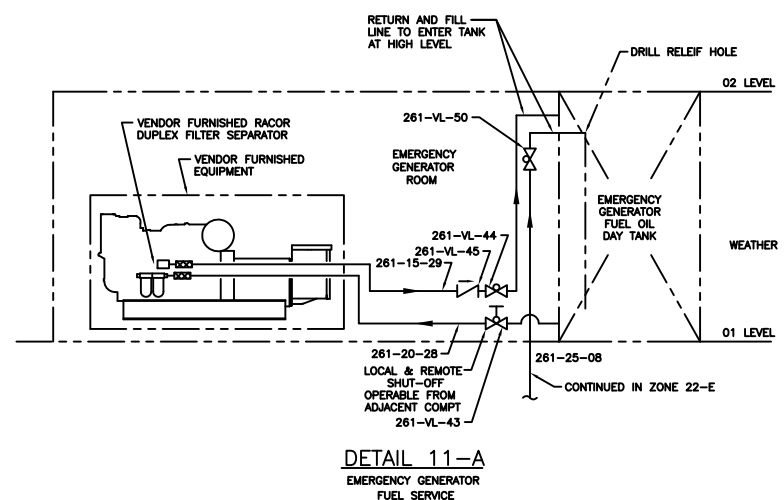
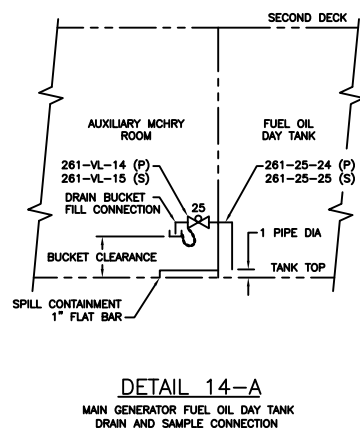
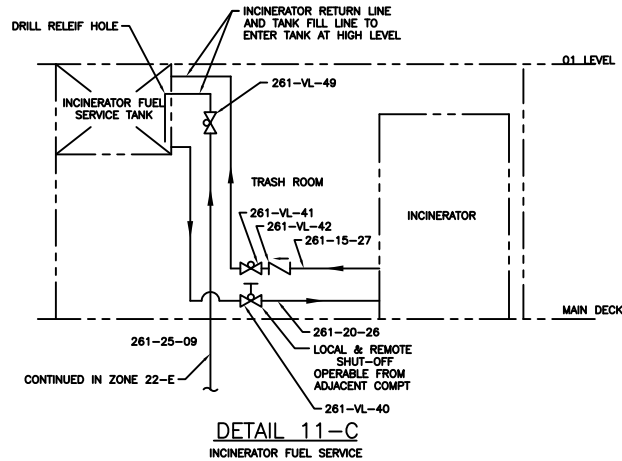
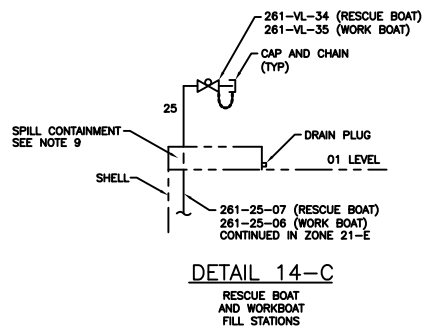
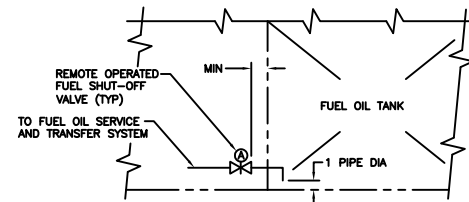
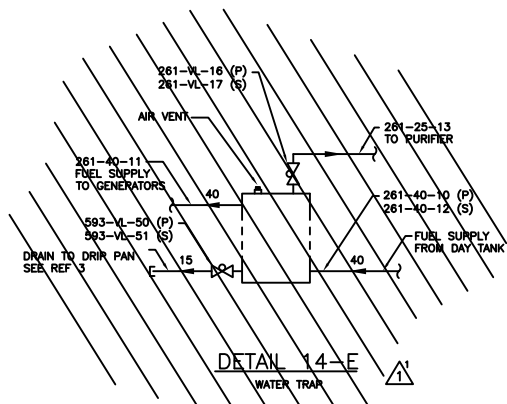
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APPLICABILITY BLOCK				DRAWING DATA											
JOB: M282	HULL: 1953			TRAFFIC: SSV		U									
JOB: M283	HULL: 1956			PRODUCTION ISSUE						(1)	1	1			
JOB: M284	HULL: 1957			HPG PC						1	1	1	1		
				ISSUED BY		B C D D R									
						1									

DOCUMENT DISTRIBUTION RECORD											
ISSUE DATE	12/12/03										
REV #	0	1	2	3	4						
NOAA	1	1									
PROG MGR	1										
PROJ ENG	1										
HMP PC	12	12	12	1	1						
NOISE CNTRL	1	1									
CHAND LLC	1	1									
JOINER	0										
HVAC	0										
PROP SSV	0										
TRAWL SSV	0										
PRODUCTION DESIGN	1	1	1	1	1						
HPG PC	1	1	1	1	1						
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DWG NO. M282-541-FP04-B1

A



FILE NO.	1953	DATE CODE	38196	SIZE	F	JOB NO.	M282	ITEM	541	DELIVERABLE	FP04	SHEET	2	REV	1
ESTIMATE NO.	00-104	SCALE	NONE			FILE	FP04-002-00					SHEET	2	OF	3

DWG NO. M282-541-FP04 B12

