

ORDER FOR SUPPLIES OR SERVICES

IMPORTANT: Mark all packages and papers with contract and/or order numbers.

1. DATE OF ORDER 07/26/2012		2. CONTRACT NO. (If any) DTMA1H05006		6. SHIP TO: a. NAME OF CONSIGNEE Cape Hudson	
3. ORDER NO. IAS13P2012020		4. REQUISITION/REFERENCE NO. MA-PR617-20120627		b. STREET ADDRESS Interocean American Shipping COTR: Tobin Richmond Pier 50	
5. ISSUING OFFICE (Address correspondence to) U.S. DOT/ Maritime Administration Pacific Div. Acquisition Office MAR 380-4 201 Mission Street Suite 1800 San Francisco CA 94105				c. CITY San Francisco	
				d. STATE CA	e. ZIP CODE 94107-9991
7. TO: Mitch Walker a. NAME OF CONTRACTOR Interocean American Shipping Corporation				f. SHIP VIA	
b. COMPANY NAME				8. TYPE OF ORDER	
c. STREET ADDRESS 302 Harper Dr Ste 200				<input type="checkbox"/> a. PURCHASE REFERENCE YOUR: _____ _____ Please furnish the following on the terms and conditions specified on both sides of this order and on the attached sheet, if any, including delivery as indicated.	<input checked="" type="checkbox"/> b. DELIVERY Except for billing instructions on the reverse, this delivery order is subject to instructions contained on this side only of this form and is issued subject to the terms and conditions of the above-numbered contract.
d. CITY Moorestown		e. STATE NJ	f. ZIP CODE 08057-4701		
9. ACCOUNTING AND APPROPRIATION DATA See Schedule				10. REQUISITIONING OFFICE U.S. DOT/Maritime Administration	

11. BUSINESS CLASSIFICATION (Check appropriate box(es))						12. F.O.B. POINT Destination		
<input type="checkbox"/> a. SMALL	<input checked="" type="checkbox"/> b. OTHER THAN SMALL	<input type="checkbox"/> c. DISADVANTAGED	<input type="checkbox"/> g. SERVICE-DISABLED VETERAN-OWNED					
<input type="checkbox"/> d. WOMEN-OWNED	<input type="checkbox"/> e. HUBZone	<input type="checkbox"/> f. EMERGING SMALL BUSINESS						
13. PLACE OF			14. GOVERNMENT B/L NO.	15. DELIVER TO F.O.B. POINT ON OR BEFORE (Date)		16. DISCOUNT TERMS		
a. INSPECTION Destination		b. ACCEPTANCE Destination						

17. SCHEDULE (See reverse for Rejections)

ITEM NO. (a)	SUPPLIES OR SERVICES (b)	QUANTITY ORDERED (c)	UNIT (d)	UNIT PRICE (e)	AMOUNT (f)	QUANTITY ACCEPTED (g)
	CONFIRMING VERBAL OF 18JULY2012 by phone to Karen Suarez HUDSON DRYDOCK & REPAIRS HUDSON DRYDOCKING PR617-20120627 DRYDOCK IAS-HUD12-1006 A Continued ...					

18. SHIPPING POINT		19. GROSS SHIPPING WEIGHT		20. INVOICE NO.		17(h) TOTAL (Cont. pages)
21. MAIL INVOICE TO:						
SEE BILLING INSTRUCTIONS ON REVERSE	a. NAME MARAD A/P INVOICES				\$2,553,840.00	17(i) GRAND TOTAL
	b. STREET ADDRESS (or P.O. Box) P.O. BOX 25710				\$2,553,840.00	
	c. CITY OKLAHOMA CITY		d. STATE OK	e. ZIP CODE 73125		

22. UNITED STATES OF AMERICA BY (Signature) 			23. NAME (Typed) Debra K. Velmere TITLE: CONTRACTING/ORDERING OFFICER			
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**ORDER FOR SUPPLIES OR SERVICES
SCHEDULE - CONTINUATION**

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ITEM NO. (a)	SUPPLIES/SERVICES (b)	QUANTITY ORDERED (c)	UNIT (d)	UNIT PRICE (e)	AMOUNT (f)	QUANTITY ACCEPTED (g)
0001	<p>REG FEES IAS-HUD12-1003 B REPAIRS IAS-HUD12-1005 B Admin Office: U. S. DOT Maritime Administration Pacific Div. Acquisition Office MAR 380.4 201 Mission Street Suite 1800 San Francisco CA 94105 Accounting Info: 70XR161710.2012.93340HUD00.1261000000.25432. 61006600.7012613340HUD0 Period of Performance: 07/18/2012 to 12/31/2012</p> <p>Drydocking to start on 8/15/12 for 33 days and end on 9/17/12 approximately.</p> <p>COST REIMBURSABLE</p> <p>FY12 M&R DRYDOCK The purpose of this project is to accomplish all work to be completed during the vessel's dry-docking availability period IAW with the approved ship's business plan but excluding any work covered by the FY12 M&R DRYDOCK - Administrative Support and OFM, project and the FY12 M&R DRYDOCK - Sailing to SY in Lieu of Towing, project (if applicable) .</p> <p>Consent to solicit under RFP 12-G-299-106 given effective July 18,2012. See attached 6 attachments documenting solicitation. Subcontract award requires MARAD consent.</p> <p>Ship Manager shall segregate and summarize costs by each Project Line Item (M&R or ESL) in their invoice to MARAD. The Ship Manager may not exceed Total Authorized Project Line Item Amounts stated in the Task Order SUPPLIES/SERVICES Column (b) without written authorization (Task Order Modification SF-30) from the Contracting Officer. Variances to Project sub-Line Item Total Estimates may be authorized by the COTR on a case-by-case Continued ...</p>				2,553,840.00	

TOTAL CARRIED FORWARD TO 1ST PAGE (ITEM 17(H))

\$2,553,840.00

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	<p>basis provided the sum of the Sub-line Item Total Estimates remains within the Total Authorized Project Line Item Amounts for each Project Line Item Number.</p> <p>All completed work shall be in compliance with applicable standards as set forth in the Ship Manager contract at C.6.3, Compliance Documents, and subparagraphs thereto, at the time of acceptance.</p> <p>At conclusion of the current Dry-docking availability period, submit the following in an electronic format in NS5:</p> <ol style="list-style-type: none"> Current dry-dock comprehensive report that includes the initial specifications, bids, bids evaluation, contract award, contract execution, correspondence, condition reports, delivery orders, Quality Deficiency Reports, completion reports, and contract completion. Lessons learned during the current dry-docking contract. Administrative support cost analysis including the costs associated with ROS crew retained during dry-docking and a list of Owner Furnished Technical Representatives including their costs and technical reports. List of owner-furnished equipment, costs and lead delivery times. Revised dry-dock specifications and estimates based on lessons learned for next drydocking. <p>The above tasking shall be completed and submitted to MARAD AD NLT thirty (30) working days after vessel departure from the yard facility.</p> <p>Ship Manager is authorized to create additional SRs/MRs in NS5 to support this Task Order only if the additional SRs/MRs fall within the original scope of the work items described below on this Task Order. SM shall reference the supplemented original SR/MR # under Remarks in each new Continued ...</p>					

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\$0.00

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	<p>SR/MR. Furthermore, the Ship Manager is authorized to modify the description in their RFQ and PO documents, resulting from this Task Order, if required to improve their specification as more information becomes available during the Ship Manager's purchasing process but only if the modified description falls within the scope of work items authorized in this Task Order.</p> <p>Note: The above Project Remarks are applicable to all Project Line Items and Project sub-Line Items on this Project.</p> <p>Project Line Item # 1: M&R M&R Funding is provided for work in the NS5 Accounts Categories - M&R, Support Programs, & Admin, as summarized in the sub- Line items below. Total Authorized Amount Project Line Item # 1 (for Sub-Line Items 1.1 thru 1.9): \$3,098,122.00</p> <p>This Task Order provides Incremental Funding @ \$2,553,840 for M&R DRYDOCK.</p> <p>Total value of this Task Order will be \$3,098,122.</p> <p>The difference of \$544,282, between current funding and total value, is subject to the availability of funds.</p> <p>Any optional items in the SOW are also subject to the availability of funds.</p> <p>Cost Breakdown: 1.1 Drydock Technical Requirements (Account No. 010-006) \$2,318,179 1.2 FY12 Drydock Towing to SY (Account No. 010-006) \$80,000 1.3 FY12 M&R Regulatory Support (Account No. 010-003) \$36,500 1.4 FY12 M&R Repairs (Account No. 010-005) \$259,340 Continued ...</p>					
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ITEM NO. (a)	SUPPLIES/SERVICES (b)	QUANTITY ORDERED (c)	UNIT (d)	UNIT PRICE (e)	AMOUNT (f)	QUANTITY ACCEPTED (g)
	1.9 Drydock Supplemental Growth \$404,103					
	TOTAL \$3,098,122					
	STATEMENT OF WORK 1.1 Drydock Technical Requirements (Account No. 010-006) 1.0 GENERAL SERVICES SECTION 1.01 WHARFAGE (SR 1209231) 1.02 TUG BOATS, PILOTS AND LINE HANDLERS (SR 1209232) 1.03 GANGWAY (SR 1209233) 1.04 SEWER SYSTEM SHORE CONNECTION, TO SUPPORT GALLEY/CREW BERTHING (SR 1209266) 1.05 DECK COVERINGS (SR 1209236) 1.06 OWNER'S REPRESENTATIVE'S OFFICE/TELEPHONE/INTERNET SERVICE (SR 1209238) 1.07 GAS FREE CERTIFICATE; SLUDGE AND BILGE HOLDING TANK WASTE DISPOSAL/CLEANING (SR 1209239) 1.08 CRANE SERVICE (SR 1209240) 1.09 FIRE PROTECTION (SR 1209241) 1.10 BILGE PUMPING AND WASTE DISPOSAL (SR 1209242) 1.11 GARBAGE / TRASH DISPOSAL (SR 1209243) 1.12 TEMPORARY LIGHTING (SR 1209244) 1.13 ELECTRICAL SHORE POWER (SR 1209245) 1.14 STORES GANG (SR 1209246) 1.15 POTABLE WATER, COMPRESSED AIR AND SALT WATER SERVICE FOR COOLING (SR 1209247) 1.16 DOCK TRIALS (SR 1209248) 2.0 DRYDOCKING SECTION 2.01 DRYDOCKING (ABS/USCG REQUIREMENT) (SR 1209249) 2.02 ANCHORS, ANCHOR/AUXILIARY CHAINS AND CHAIN LOCKERS (SR 1209250) 2.03 HULL BLASTING AND COATING (SR 1209251) 2.04 THRUSTER CLEANING AND INSPECTION, GAUGE BEARINGS (ABS) (SR 1209252) 2.05 SEA CHESTS AND SEA NOZZLES (ABS/USCG) (SR 1209253) 2.06 SEA VALVES (ABS, USCG) (SR 1209255) Continued ...					

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	2.07 INSTALL SCUPPER EXTENSION RINGS AND EXTENSIONS (SR 1209256) 2.08 FATHOMETER (SR 1209257) 2.09 SPEED LOG (SR 1209258) 2.10 HULL SACRIFICIAL ANODES (SR 1209259) 2.11 RUDDER - BEARING CLEARANCES, Test and Coating (ABS/USCG) (SR 1209271) 2.12 PROPELLER REMOVAL AND TAILSHAFT TAPER INSPECTION (ABS/USCG) (SR 1209260) 2.13 PROPELLER (ABS/USCG) (SR 1209261) 2.14 TAILSHAFT OIL SEALS; INBOARD AND OUTBOARD; SERVICING AND REPAIRS (SR 1209262) 2.15 TAIL SHAFT REMOVE/REPLACE (SR 1209263) 2.16 HULL IMPRESSED CURRENT CATHODIC PROTECTION SYSTEM (ICCP) - SERVICING (SR 1209264) 2.17 SEA CHEST MARINE GROWTH PREVENTION SYSTEM; SERVICING (SR 1209237) 3.0 HULL AND STRUCTURAL SECTION 3.01 HULL STRUCTURAL UT GUAGINGS; SUPPORT FOR SPECIAL SURVEY REQUIREMENT (ABS) (SR 1209265) 4.0 MAIN PROPULSION SECTION - NOT USED 5.0 AUXILIARY MACHINERY AND RELATED SYSTEMS SECTION - NOT USED 6.0 ELECTRICAL SECTION 6.01 MAIN AND EMERGENCY SWITCHBOARDS CLEANING AND SERVICING (SR 1209268) 7.0 CARGO HANDLING AND DECK MACHINERY SECTION 8.0 NAVIGATION AND SAFETY SECTION 8.01 NOT USED 1.2 FY12 Drydock Towing to SY (Account No. 010-006) 003 TOWING (SR 1209327) FY12 M&R Regulatory Support (Account No. 010-003) (include only if applicable) Funding is provided to accomplish, using shipyard resources during the dry-docking period, necessary, mandatory and essential Phase M regulatory inspections, as identified below. This does not include ABS fees which should be charged to the FY12 Continued ...					
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	<p>M&R Regulatory Fees & Support project. Sub-Line Item Total Estimate: \$36,500.00</p> <p>8.02 LIFEBOATS: RENEW FALLS AND WEIGHT TESTS (ABS/USCG REQUIREMENT) (SR 1209270)</p> <p>FY12 M&R Repairs (Account No. 010-005) (include only if applicable) Funding is provided to accomplish, utilizing shipyard resources during the dry-docking availability period, MARAD approved specific repair work items on the ship's approved business plan as identified below. Sub-Line Item Total Estimate: \$259,340.00</p> <p>3.02 BULKHEAD 219, COFFERDAM REPAIR, FWD HFO DEEP TANK (SR 1208274)</p> <p>3.03 SIDE SHELL FRAMING, FR. 154 AND 155 PORT; REPAIR- ABS 702 (SR 1208399)</p> <p>3.04 OPTIONAL ITEM - AFTER HOUSE EXTERIOR, BLASTING AND COATING (SR 1208901)</p> <p>3.05 OPTIONAL ITEM - VENTILATION LOUVERS; REFURBISH (SR 1208899)</p> <p>3.06 OPTIONAL ITEM - PORT LIGHT AND WINDOW; REPAIRS/REFURBISH (SR 1208643)</p> <p>7.01 STERN RAMP; REPAIRS AND PRESERVATION (SR 1209020)</p> <p>7.02 OPTIONAL ITEM - STERN RAMP HYDRAULIC TUBING CLAMPS SYSTEM; REPAIR AND RENEWAL (SR 1207048)</p> <p>The total amount of award: \$2,553,840.00. The obligation for this award is shown in box 17(i).</p>					
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- 2.01 Fleeting removed 5/16
- 2.07 Scupper Extensions materials as OFM 6/21
- 3.01 Title change 6/21
- 3.02 Title Change 6/21
- 7.01 Tile Change 6/21
- 8.01 Item withdrawn from DD package 6/21

M/V CAPE HUDSON (T-AKR-5066)

SPECIFICATIONS FOR

DRY DOCK / REPAIR AVAILABILITY (RFP # 05-G-2??- 0??)

Specification Revision Date: 21 June 2012

Date RFP Issued: _____

Date Awarded: TBD

Awarded To: TBD

Owned By The:
UNITED STATES GOVERNMENT
DEPARTMENT OF TRANSPORTATION
MARITIME ADMINISTRATION

Operated By:
INTEROCEAN AMERICAN SHIPPING CORPORATION
AS SHIP MANAGER FOR THE MARITIME ADMINISTRATION

MV CAPE HUDSON
 DRY DOCK / REPAIR AVAILABILITY (RFP # 05-G-2??- 0??)

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MV CAPE HUDSON
DRY DOCK / REPAIR AVAILABILITY (RFP # 05-G-2??- 0??)

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MV CAPE HUDSON
DRY DOCK / REPAIR AVAILABILITY (RFP # 05-G-2??- 0??)

VESSEL PARTICULARS

Vessel Particulars

Type: Ro/Ro Cargo Vessel
Building Yard: Kaldnes Mek Verksted A/S
Tonsberg, Norway
Year Built: May 1979
Hull Number: 212
Class: American Bureau of Shipping
Class ID: ABSID 7914866
Official Number: D901127
IMO Number: 7704930
Length Overall 228.50 m
Length between Perp. 210.00m
Breadth Molded 32.36 m
Depth Molded to Upper Deck 20.20 m
Draft on Summer Freeboard 10.80 m

Tonnages:

	Gross	Net
International	21,976 MT	12,006 MT
Suez Canal	42,925 MT	34,331 MT
Panama Canal	43,505 MT	33,860 MT

Displacements:

Loaded	51,810 MT
Lightship	20,159 MT
Deadweight	31,561 MT

MV CAPE HUDSON
DRY DOCK / REPAIR AVAILABILITY (RFP # 05-G-2??- 0??)

Machinery Particulars

Main Engine

1 Akers/B & W Diesel Engine, Type 9K90GF - 2-Stroke Turbocharged 900 mm bore / 1,800 mm stroke
Continuous Output - 20,520 kW (27,900 BHP) at 110 RPM
Max. Continuous Output - 22,580 kW (30,700 BHP) at 114 RPM

Propeller

Manufacturer: Theodor Zeise
5 Blades / Diameter: 6,700 mm / Weight: 34,568 kg
Propeller Nut: Pilgrim type 3-Doncasters Moorside Ltd
Outer Diameter: 920mm

Bow and Stern Thrusters

Manufacturer: AM.Liaaen - Aalesund, Norway
Series B-48 (Stern) B-49 (Bow)
Dia. 2440 mm, 260 RPM
Bow Thruster Motor: NEBB Type QRV 710 db8 1320 kW 895 RPM
Stern Thruster Motor: NEBB Type QFV 560 bd8 1320 kW 890 RPM

Steering Machinery

1 Steering Gear Electric Hydraulic type PORSGRUNN 550-140

Deck Machinery

Windlass and Mooring Winches of NORWICH make:
1 Comb. windlass/auto mooring winch. ... 20 ton pull at 30 m/min
4-20 t. auto mooring winch. 20 ton pull at 30 m/min
4-12 t. auto mooring winch. 12 ton pull at 30 m/min

MV CAPE HUDSON
 DRY DOCK / REPAIR AVAILABILITY (RFP # 05-G-2??- 0??)

Tank Particulars

WATER BALLAST TANKS (100% Full- Sp. Gr. 1.025)

<u>Tank</u>	<u>Frames</u>	<u>Cu.M.</u>	<u>Tons at 1000kg</u>
Fore Peak Tank	237-ST	918.9	941.8
Fwd. Lower Tank	202-218	678.2	695.1
No.2 DB Ballast Tank P	132-164	251.5	257.5
No.2 DB Ballast Tank S	132-164	241.5	247.5
No.3 DB Ballast Tank P	98-128	519.9	532.8
No.3 DB Ballast Tank S	98-128	519.9	532.8
No.4 DB Ballast Tank C	64-%	273.0	279.8
No.4 DB Ballast Tank C	64-%	226.8	232.4
No.1 Lower Wing Tank P	181-202	320.5	338.5
No 1 Lower Wing Tank S	181-202	320.5	338.5
No.2 Lower Wing Tank P	146-178	304.7	312.3
No.2 Lower Wing Tank S	146-178	295.2	302.5
No.3 Lower Wing Tank P	110-142	284.2	291.3
No.3 Lower Wing Tank S	110-142	272.9	279.7
No.4 Lower Wing Tank P	68-104	224.3	229.9
No.4 Lower Wing Tank S	68-104	296.6	304.0
No.1 Upper Wing Tank P	184-237	734.4	752.7
No.1 Upper Wing Tank S	184-237	750.3	769.0
No.2 Upper Wing Tank P	156-176	132.7	136.0
No.2 Upper Wing Tank S	156-176	130.8	134.0
No.3 Upper Wing Tank P	112-140	177.2	181.6
No.3 Upper Wing Tank S	112-140	173.3	177.6
No.4 Upper Wing Tank P	68-98	177.8	182.2
No.4 Upper Wing Tank S	68-98	185.6	190.2
Aft Peak Tank	1-17	771.9	791.1
TOTAL WATER BALLAST		9,102.0	9,412.1

FRESHWATER TANKS (100%- Sp. Gr. 1.000)

<u>Tank</u>	<u>Frames</u>	<u>Cu.M.</u>	<u>Tons at 1000kg</u>
Fwd. Upper Side Tank P	202-218	287.2	287.2
Fwd. Upper Side Tank S	202-218	287.2	287.2
Feed Water Tank	31-34	35.2	35.2
TOTAL FRESH WATER		609.6	609.6

Tank Particulars (cont.)

FUEL OIL TANKS (98% Full- Sp. Gr. 0.95)

<u>Tank</u>	<u>Frames</u>	<u>Cu.M</u>	<u>Tons at 1000kg</u>
Fore Deep Tank P	218-231	570.0	541.5

MV CAPE HUDSON
 DRY DOCK / REPAIR AVAILABILITY (RFP # 05-G-2??- 0??)

Fore Deep Tank S	218-231	579.2	550.2
No.1 DB Tank P	166-202	420.7	399.6
No.1 DB Tank S	166-202	457.2	434.3
No.2 DB Center Tank P	130-166	562.7	534.5
No.2 DB Center Tank S	130-166	517.0	491.1
No.3 DB Center Tank P	96-130	285.5	271.2
No.3 DB Center Tank S	96-130	321.9	305.8
HFO Settling Tank P	20-28	63.0	59.8
HFO Service Tank P	28-35	59.0	56.0
No.5 DB Wing Tank FO	35-64	200.0	190.2
Sludge P			
No.5 DB Wing Tank FO Overflow Drain S	35-64	186.3	176.9
TOTAL FUEL OIL		4,222.5	4,011.3

DIESEL OIL TANKS (100% Full- Sp. Gr. 0.85)

<u>Tank</u>	<u>Frames</u>	<u>Cu.M.</u>	<u>Tons at 1000kg</u>
No.4 DB Wing Tank P	64-94	398.7	338.8
No.4 DB Wing Tank S	64-94	398.7	338.8
DO Settling Tank P	20-24	26.3	22.3
DO Service Tank P	24-27	22.6	19.2
TOTAL DIESEL OIL		846.30	719.10

OTHER TANKS 100% FULL

<u>Tank</u>	<u>Frames</u>	<u>Cu.M</u>	<u>Tons at 1000kg</u>
Lube Oil Sump - Center	35-61	72.3	N/A
Lube Oil Tk. 1 P	56-61	21.2	N/A
Lube Oil Tk. 2 P	56-62	21.2	N/A
Gen. L.O. Storage 1 P	56-62	17.6	N/A
Gen. L.O. Storage 2 P	56-62	16.7	N/A
Cyl. Storage 1 P	56-62	28.6	N/A
Cyl. Storage 2 P	56-62	28.2	N/A
Gen L.O. Drain Tank S	27-31	4.9	N/A
Bilge Tank C	20-31	86.8	N/A
Bilge Water S	60-64	31.4	N/A
F.W. Drain Tank P	62-64	10.0	N/A
Stern Tk. F.W. Cool C	7-20	73.7	N/A
Sewage Tank P	39-40	21.1	N/A
Sewage Tank S	39-40	19.9	N/A
Separated Oil P	35-36	9.5	N/A
Blended Oil Tank P	27-31	35.5	N/A
D.O. For Forklift S	9-13	26.7	N/A

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001 PREAMBLE TO SPECIFICATIONS

1.0 ABSTRACT: This "Preamble" in itself is not intended to describe a specific specification work item. In order to prevent repetition in the work scope items this item serves as a reference document applicable to these Specifications and growth there to as a whole. As such it describes general requirements, workmanship standards, fabrication details, technical details, material details and definitions. It is applicable only to this Specification Package work and associated Growth work. This criterion shall be considered as a minimum and shall not be assumed as a basis for circumventing more stringent standards encompassed by the Marine Industry and its governing regulatory organizations.

2.0 REFERENCES

- 2.1 American Bureau of Shipping (ABS) rules for surveying and maintaining class of vessels (latest version).
- 2.2 U.S. Coast Guard Marine Safety Regulations, including all applicable CFRs and NAVICs, for inspection of vessels.
- 2.3 The Society for Protective Coatings (SSPC) standards available at www.sspc.org
- 2.4 IEEE Standard 45 (1983)
- 2.5 For clarification purposes, most manufacturer instruction books referenced within the Specifications are listed for REFERENCES only and will not be provided with this specification. All instruction books and Dwg.'s will be made available to the Contractor on an "as needed" basis throughout the contract performance period. Where a reference is noted as "Attached" or "Enclosed", it shall be provided as a separate document with these Specifications.

3.0 GENERAL

- 3.1 **REMOVALS:** Should it be necessary to remove or shift any parts of the vessel's fittings, stores, fuel, water, outfit, equipment, or piping for carrying out the work specified or implied, the same shall be accomplished and replaced at Contractor's expense.
- 3.2 **CONFIRMATION:** It shall be the responsibility of the Contractor to confirm with the Owner's Representative or by direction of the Owner's Representative's appointed Ships Staff Officers, all or any sizes, shapes, types, dimensions, colors, materials, parts, technical requirements, data and/or processes required to effectively make associated repairs and/or modifications per specifications.
- 3.3 **PERIPHERAL ACCESS:** All equipment, machinery, systems, tankage, etc. opened in the performance of the specifications, including all interference's, removals, etc., in way of shall be closed-up, reinstalled, replaced, etc., as original with new gaskets, packing, fasteners, etc. including caulking and washers to studs of manholes, access covers, etc. Said equipment, machinery, systems, tankage, etc. shall be tested in accordance with accepted practices to prove tightness and proper operations upon completion of work.

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- 3.4 **STAGING:** Whether a specific item identifies staging requirements or not the Contractor shall provide all staging in place for specification work scopes and shall provide for removal of staging after work scope completions.
- 3.5 **TRACKING – RESTORING:** The Contractor shall maintain a list of loosened, opened, altered fasteners and/or closures and demonstrate tightness of the same upon completion of work to the Owner's Representative. Contractor shall maintain a list of all blanking, plugging, etc., installed for testing purposes and demonstrate removal of same to the Owner's Representative.
- 3.6 **REQUIRED TIDINESS:** All new, disturbed and/or soiled materials, surfaces, equipment, etc., affected by the accomplishment of these specifications shall be properly cleaned, prepared, coated/recoated, re-lagged/re-insulated, etc., as applicable and original. All spaces, equipment, machinery, tanks, accommodations, affected by repairs shall be left in a clean and orderly condition and ready to serve their intended purposes. The vessel shall be delivered in a condition at least equal to when received by the Contractor. A mutual inspection of the entire vessel by the Owner's Representative, and the Contractor, is to be conducted before commencement and upon completion of contract. Owner's Representative shall decide all disputed matters.
- 3.7 **VESSEL EQUIPAGE:** Except when specified in writing from the Owner's Representative, the Contractor shall not use any of the vessel's spare parts, equipage, material, equipment in the performance of specifications, including mooring lines, etc. Any spare parts, equipage, material, etc. authorized for use by the Contractor are to be replaced, at the Contractor's expense, prior to the completion of the contract. The Contractor shall be responsible for all deficiencies and the prompt and proper restoration of same and all deficiencies arising from the Contractor's use of the vessel equipage, machinery, etc.
- 3.8 **SCHEDULE PERFORMANCE:** Four days prior to sea trials, the ship's crew shall begin to light off the plant and activate the vessel. All shipyard repair jobs that would affect the light off of the vessel or interfere with the ship's crew in performing activation of the vessel must be completed prior to this four-day activation period.
- 4.0 **MATERIALS / WORKMANSHIP NOTE:** *"If the contractor is unable comply with material or technical requirements in a particular aspect of the specifications an alternative may be submitted with the bid tendered. Under such circumstances contractor must include with the bid submission: Clarification as to why the alternative is necessary. Cost is not an acceptable clarification. Clearly define the details of the substitution identifying the technical and material merit and impact on scheduling. Indicate on the preliminary production schedules, the impact (+ or -) of the alternative.*
- 4.1 All material, equipment, etc., used in the performance of the specifications shall be at least equal to that of the original, be certified by an established industry-wide recognized firm for marine application and in full compliance with the rules, regulations and requirements of the American Bureau of Shipping (ABS) and U.S. Coast Guard (USCG), where applicable.
- 4.2 Certain items of material may be re-used or held for disposition. All such materials shall be carefully removed, stored, and protected and will remain the property of the Owner.

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- Equipment removed from the vessel as surplus shall be safely stored and returned to the vessel as the property of the Owner. Materials, which require disposal as a hazardous waste, shall be disposed of in accordance with all applicable federal, state and local requirements for disposal of hazardous waste.
- 4.3 Contractor furnished equipment shall come with three- (3) complete lists of manufacturer's recommended spare parts and three (3) copies of all instruction books, for installation and operation. Manuals shall include wiring diagrams, maintenance and repair data, spare parts lists, etc.
- 4.4 Perform all access for work, erection and dismantling of staging, and cleaning in way of repairs necessary for safe burning, welding, etc. Furnish safe access to Owner's Representative for inspections of all work. All interference's necessary to accomplish the specification work, such as paneling, piping, galley, stair tower, etc., shall be removed and replaced.
- 4.5 Work items do not necessarily identify interference's. Provide for the identification and resolution of interference's affecting the installation by temporarily removing, reinstalling or relocating it. This shall include, but not be limited to, duct work, piping, wire ways, fixtures, insulation, joiner linings, equipment, furniture, etc., to facilitate fully operational installations and modifications covered by this Work Package. In the event that piping, ductwork, equipment linings, etc., must be temporarily removed to facilitate installation of new or modified work, subsequently reinstall same in an "as original" condition.
- 4.6 **Steel Workmanship:** All steel allowances are expressed as steel in place not including drops. Edges of burned plates and attached stiffening, that may remain exposed on the vessel, shall be ground smooth and dressed up. Corners of openings resulting from removals shall be rounded and development of notches in structural members avoided. Structure remaining shall be properly faired, boundary bars fitted as required, and supporting members provided where necessary to avoid vibration and deflection. All fitting aids, weld splatter, and surface imperfections, which are detrimental to coating system longevity, are to be removed and ground flush.
- 4.7 **Fit up Inspections:** All pipe and steelwork which involve welding shall be rendered for ABS inspection after fit up and prior to application of the "first pass". Schedule such inspections with the Owner's Representative and concerned parties. Subsequent inspections will be to the satisfaction of the attending ABS Surveyor.
- 4.8 All brackets, piping, pipe supports, foundations, wire hangers, ducting, fittings and appurtenances which are rendered obsolete shall be removed and effected areas refurbished (grinding, prepping and coating). Unused electric cables shall be removed back to the nearest junction box and safe ended.
- 4.9 When specified, Dwg.'s illustrating the complete design of equipment, piping, arrangements and all details of construction and workmanship shall be submitted for the Owner Representative's acceptance prior to fabrication and installation.
- 4.10 Dwg.'s and Reports - Except when otherwise specified, all reports identified as "Deliverables" in specification items shall be delivered to the Owner's Representative within five (5) working days of work completion. All Dwg.'s and reports prepared by the

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Contractor in conjunction with work items shall become the sole property of the Owner, including all design and engineering pertaining thereto. Reports include Test, Condition, Inspection Reports, and Additional Work Requirements, etc.

- 4.11 Unless otherwise specified, stainless steel (CRES or SUS) in this Specification shall mean for interior applications ANSI alloy 304 and for weather locations use ANSI alloy 316.
- 4.12 New gaskets, seals, wicking grommets and/or fasteners shall be installed when closing up manholes, bolted inspection plates and flanges. All gaskets, seals, wicking grommets and fasteners shall comply with the design service requirements (i.e., pressure and temperature) of the systems or components for which they are installed.
- 4.13 All Contractor furnished bolting shall be metric of a grade and type to match original for the application and / or ANSI standards for the application. All new fasteners installed on exterior systems or components shall be stainless steel unless approved as otherwise by the Owner's Representative.
- 4.14 Shims used for motor pump and/or equipment assembly and installations shall be pre-manufactured 316 stainless steel, commercial "kit" type of a suitable size for the intended application.
- 4.15 All stuffing tubes shall be ANSI Alloy 316 stainless steel unless stated otherwise.

5.0 PIPING

- 5.1 New piping shall be led with sufficient joints to facilitate maintenance and renewal. All new piping systems shall be tested to the satisfaction of the Owner's Representative and applicable regulatory bodies. All such takedown joints shall be located in accessible areas and shall be such as to minimize the extent of interference in removals. Piping may pierce most girders, providing these are sufficiently compensated for, where necessary.
- 5.2 Any material or equipment that must be removed or altered so that new piping may be installed or so that repairs may be made shall be removed and altered as required and reinstalled. All systems shall be tested.
- 5.3 New piping installations, except hydraulic shall be fitted with fittings, valves, and traps so those pipes can be drained completely.
- 5.4 Modified steam and returns, potable water, drains and soil lines, and fire main piping systems within the house shall be connected to the same services in the machinery space.
- 5.5 All new piping shall be concealed in accommodation spaces having ceilings and sheathing, except normally exposed piping to fixtures, which shall be kept to a minimum. New piping in other accommodation spaces shall be symmetrically and neatly arranged and installed in the most inconspicuous location practicable. In order to maintain maximum headroom, all new piping shall be kept behind framing and as close as

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- practical to deck beams, bulkheads, and the underside of decks, particularly in stowage spaces and in way of sheathing and ceilings.
- 5.6 Pipes conveying steam or liquids shall not be led overhead through the emergency generator room, battery locker, radio room, or in the vicinity of switchboards, or in food preparation or storage spaces and similar spaces, where avoidable. Where this is not practical, the piping shall be at least Sch. 80 seamless pipe with all joints welded.
- 5.7 All piping subject to mechanical injury shall be adequately protected. Sounding tubes, air escapes, deck and plumbing drain risers, valve operating rods, etc., and shall be kept well behind the face of stiffeners and frames, where practical. All piping supports shall be of sturdy construction such as heavy angles, plates or channels. All guards shall be bolted in place so that they may be removed for repairs to piping.
- 5.8 New overboard shell discharge piping connections shall be of steel casting with heavy shell flanges, fabricated extra heavy pipe, or be fabricated from steel plate of thickness equivalent to extra-heavy pipe, with bracketed spigot passing through the shell and doubler plate, and welded to the shell on both sides.
- 5.9 All new and existing piping, piping appurtenances and applicable equipment shall be thoroughly cleaned after fabrication. After completed shipboard installation, each system shall be thoroughly cleaned and flushed of foreign substances with the applicable system's medium and/or an approved substitute. All new valves, vents and overflows shall be provided with label plates indicating the service. Openings in structural and non-structural members resulting from the removal, modification or re-running of piping shall be closed by using material equivalent in thickness to the material to be closed. Insulation disturbed or removed as a result of modifications, new installations or removals of piping and machinery shall be replaced. Materials shall be equivalent to the existing except non-asbestos insulation shall be provided.
- 5.10 Piping appurtenances such as protective coatings, insulation, lagging, protective covers or guards, chafing and splash plates, drip pans, etc., shall be incorporated as required to fulfill the general intent of these Specifications and the requirements of the Regulatory bodies. Pipe threads shall be well coated with piping compound before attaching threaded flanges.
- 5.11 Pipe Couplings (Dresser Type) - Flexible pipe couplings used in this specification to be Dresser Industries Type 35 or Owner's Representative approved equal with Buna-N seals. Wall thickness: 14", 12", and 10" – 7/16", 8" and 6" – 3/8". Couplings shall be blasted and epoxy coated, inside and out prior to installation.
- 5.12 Pipe Hangers - Where pipe hangers are required in specification items, the following standards shall be adhered to:
- 5.12.1 U-Bolts: U-bolt type pipe hangers shall be manufactured from solid stainless steel bar stock, hot dipped galvanized on weather decks and cadmium plated elsewhere. When expansion is required (cargo, ballast, bunker, deck steam, deck fire main, etc.), the width load bearing surface under pipe shall be no less than 1/3 of pipe diameter. U-bolts shall be installed using double sets of heavy series nuts and washers (four each per hanger) torqued for freedom of

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movement. Teflon pads (1/3 pipe diameter wide and thickness based on pipe diameter – for 8' to 10" dia. pipe 1/2" thick, 5" to 6" dia. pipe 3/8" thick, 3" to 4" dia. pipe 5/16" thick, 2" and 2 1/2" dia. pipe 1/4" thick, 3/4" to 1 1/2" dia. pipe 3/16" thick) shall be installed under the pipelines spanning the bolt patterns. Threaded stock sizes of U bolts sizes shall be as follows: 7/8" for 16" and 14" pipe, 3/4" for 12" and 10" pipe; 5/8" for 8" and 6" pipe; 1/2" for 4" to 2-1/2" pipe; 3/8" for 2" to 1" pipe; and 1/4" for 1" to 1/2" pipe.

- 5.12.2 Saddle-type pipe hangers shall be manufactured from flat bar, blasted and prime coated prior to installation, with two (2) legs per hanger unless directed otherwise. Width of saddles shall be no less than 1/3 of diameter of pipe. Clamping areas shall be lined with Teflon. Size Table for Flat Bar Clamping

Pipe Size	Stock	Fasteners
8 to 10"	2-1/2 x 3/8"	5/8"
5 to 6"	2 x 3/8"	5/8"
3 to 4"	1-1/2 x 5/16"	1/2"
2 and 2-1/2"	1 x 1/4"	3/8"
3/4 to 1-1/2"	3/4 x 3/16"	3/8"

- 5.13 Grease Fittings - weather deck shall be of stainless steel; others shall be zinc coated.

- 5.14 Gauges and Thermometers (New gauges and Thermometers shall not contain Mercury. The following minimum standards shall be adhered to unless otherwise directed by specific items or the Owner's Representative.

- 5.14.1 Gauges (Spec MIL-G-18997B) - White dial, black letters, red set hands, glass lens, phenol turret case, back connected, flush mounting.

5.14.1.1 Steam and H.P. discharge gauge lines shall be equipped with double loop siphons (pigtales). All gauges shall have a pipe tee and plug at the gauge. Steam gauges shall be equipped with flanged isolation valves and complete connecting piping for rated service from the source. Valves shall be ANSI 600 class steel.

5.14.1.2 Low pressure gauge connections shall include bronze or stainless bodied 300-PSI stainless steel trimmed ball isolation valves and complete connecting stainless steel tubing from the source.

5.14.1.3 Thermometers (MIL-S-901C) & MIL-STD-167) - Thermometers will be equipped with bronze or stainless steel thermometer wells suitable for intended service.

- 5.15 Valves: Valve selection shall comply with pressure and temperature and design requirements called out in specification items. Manufactured in the United States, Western Europe, Korea, Japan and Not the People's Republic of China.

6.0 INSULATION

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- 6.1 Insulation, called out in these specifications or which is damaged, disturbed or removed as a result of modification, new installation, or removal of piping and machinery, shall be replaced. Replacement insulating materials shall be calcium silicate or equivalent for high temperature applications.
- 6.2 Asbestos - Existing machinery, piping, deck and compartment insulation and lagging that is to be disturbed, handled, or removed during the performance of this work shall be presumed to be asbestos containing material unless it is established by laboratory analysis or on-site testing that the insulation does not contain asbestos.
- 6.3 Visual inspection is unreliable and shall not be used to conclude that suspect material does not contain asbestos.
- 6.4 As applicable furnish copies of, and be governed by, the Rules of the Occupational Safety and Health Administration, 29 Code of Federal Regulations (CFR) Part 1910.1001, and the Rules of the Environmental Protection Agency, 40 CFR Part 241.
- 6.5 Obtain and maintain in force such permits as are required to remove and dispose of any and all asbestos encountered during this contract, and any extensions thereto, on a no delay basis.
- 6.6 Steam Line / Fitting Insulation Standards: Insulating material(s) with protective and/or confining lagging shall generally be applied to bare metal surfaces attaining temperatures of more than 125°F. Pipe surfaces of 55°F and less during any operational condition shall have an anti-sweat insulation applied. Where surface temperatures are normally between 125°F and 150°F and the omission of insulation shall not adversely affect operational efficiency, non-metallic lagging only may be applied where necessary to protect personnel from contact with hot metal surfaces.
- 6.6.1 Insulation thickness shall be selected so that insulated and fabric-lagged surface temperatures shall not exceed 150°F. Metal or metallic-type lagging surface temperatures should not exceed 125°F when in areas susceptible to personnel contact.
- 6.6.2 Insulation Standards - In conjunction with all repairs/replacements or new installation of insulation shall be carried out as follows. All removals and disposals are to be considered as part of this specification.
- 6.6.3 Furnish removable blankets on flanges that have bolt/stud removal access. Exposed pipes over 2" diameter and/or with 25 PSI and over operating pressure shall be double wrapped with a single layer of temp mat under blankets. Use stainless steel wire and stainless steel Metex (or equal) mesh.
- 6.6.4 Install bonnet pads on valves 2" and over. Thickness required shall be commensurate with temperature of valve's intended service. Pads are to be 1" thick temp mat minimum and silicone impregnated not coated fiberglass cloth.
- 6.6.5 Shaped, block-type insulation shall be utilized on all pipelines.

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- 6.6.6 Piping - Cover with re-wettable fiberglass cloth and paint with two coats Forster 4500 sealant or equal compatibility with R-value and service life. Thickness required shall be commensurate with the temperature of the piping systems intended service.
- 6.7 Ventilation Ducting Insulation: Material Specification: "Delta-6 Marine Insulating Board" manufactured by ROCK WOOL MANUFACTURING COMPANY Leeds, Alabama 35094-0506 U.S.A. 205.699.6121 or Johns Manville manufacture of "Microlite" materials. POB Box 5108 Denver CO 80217-5108; Tel. 1-800-654-3103 ([http:// www.jm.com](http://www.jm.com) or an Owner's Representative approved equal.
- 6.7.1 R Value 10.42
- 6.7.2 Thermally efficient, acoustically proficient, semi-rigid insulation
- 6.7.3 Compliance with USCG 46 CFR 164.007 and 164.009 with an A-60 bulkhead rating as applicable
- 6.7.4 Water wicking resistant and Non-hygroscopic, Moisture Sorption, Vapor (ASTM C 1104) less than 1%
- 6.7.5 Incombustible (ASTM E 136 Test Method)
- 6.7.6 After installation the insulation Board system shall be covered externally with a sealed protective abrasion resistant material. When complete the rating for smoke and fire shall be in compliance with USCG requirements.
- 7.0 ELECTRICAL:** This section of the Specification contains general requirements for electrical installation. All Electrical installations and modifications shall be made in accordance with all recommended practices of IEEE-45-1983, recommended Practice for Electric Installations on Shipboard, and the requirements set forth in the Specification and all applicable Rules of the American Bureau of Shipping and the United States Coast Guard.
- 7.1 All new, power-consuming equipment shall operate satisfactorily with a voltage variation of $\pm 5\%$, and a frequency variation of $\pm 3\%$. Temporary voltage dips during motor starting or speed changing shall not cause damage or interruption of service to equipment.
- 7.1.1 Electrical equipment shall be located so as to be readily accessible for repairs and removal. All terminals and connection boxes shall be in a position of maximum accessibility.
- 7.1.2 Equipment consisting of panel board, transformers, etc. shall be mounted on foundations connected to a single plane of the ship's structure, either a deck or bulkhead, but not both. Lighting power receptacle gang boxes shall be mounted using structural angle iron welded to the structure, with the gang box bolted to the angle. Screwed fasteners shall employ lock washers or lock nuts, and all bolting components, (bolts, nuts, and washers) shall be made from Type 316 Stainless Steel.

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- 7.1.3 Where equipment is to be installed behind a handrail or storm rail, the rail shall be made portable or replaced with chain of suitable size as to serve as a rail in way of the equipment.
- 7.1.4 Equipment shall be arranged, such that access doors shall be operable without removal of portable rail sections.
- 7.1.5 Cables powering intrinsically safe circuits (fuel oil valves, vent fans) must be spaced at least 51mm from non-intrinsically safe circuits (power and lighting).
- 7.1.6 Connection of ships cables to new, relocated, or refurbished equipment shall use crimp lugs, bolts, nuts, and lock washers. Any sharp edges on these connections shall be filled with putty. All connections shall be insulated by at least 10mm of high quality electrical tape.
- 7.1.7 Connection of ship's cables to equipment with incoming circuit breakers will be connected to the line side of the circuit breakers or enclosure terminal blocks.
- 7.2 The design of the electric plant including new motors and controllers shall be coordinated to ensure that the voltage dip, when starting the motor with the highest starting current shall not exceed 15% of rated voltage.
- 7.3 If required by specifications furnish the Owner's Representative with the final electric equipment loads and shall update the electrical load analysis for submission to regulatory bodies. The updated load analysis shall be submitted to Owner's Representative who will in turn submit the analysis to the regulatory bodies for approval.
- 7.4 Installation of electrical equipment and wiring necessitated by structural, joiner, or machinery work covered in other portions of these specifications shall be provided whether or not specifically called for in these specifications. When new panels or enclosures require bulkhead mounting in way of non-steel wall / partition panel adequate steel framing, which is permanently attached to an existing steel structure shall be provide.
- 7.5 Wiring fittings and fixtures installed in locations exposed to weather, condensation or excessive dampness shall be made of brass or bronze. Exterior hanger material shall be of stainless steel. Fasteners shall be ANSI threaded 316 stainless and if bolted shall be provided with locking washers or nuts.
- 7.6 All new electrical equipment shall be located so as to be readily accessible for repairs and removal, and so as to reduce to a minimum any likelihood that the equipment may be exposed to injury or damage caused by leaking oil, water, or steam or by excessive heat, etc.
- 7.7 All indicator lights added in the wheelhouse, which are normally on during vessel operation at sea shall be fitted with mechanical sector-type dimmers, unless otherwise specified.
- 7.8 New fuses shall be of the non-renewable NEC standard cartridge-type. When more than one set of fuses is used in a circuit, they shall be of sizes progressively larger from the

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load to the supply to localize trouble in the circuit. Over current protective devices shall be coordinated to clear faults (either overload or short circuit) as close as possible to the fault, thereby enhancing the continuity of electrical service to electrical equipment upstream of the fault.

- 7.9 In accordance with IEEE Standard 45, new electrical equipment shall be supplied with new phenolic nameplates on or adjacent at each breaker, box and device effected by these specifications
- 7.9.1 Text; 3/16", black background, engraved white text and screw mounted
 - 7.9.2 Identifying, circuit, amperage and system nomenclature
 - 7.9.3 Owner's representative shall review nameplate plans prior to production / installation.
 - 7.9.4 Any special precaution, maintenance or operational instructions shall be included on the nameplate or on a separate plate attached elsewhere on the equipment.
- 7.10 All new electric cable shall be armored low smoke (LS) cable unless otherwise specified. Cable selection and installation shall be in accordance with IEEE Standard 45. As a minimum feeders for new circuits shall be sized to U.S. Coast Guard demand loads as per 46 CFR 111.60-7.
- 7.10.1 Megger insulation resistance tests (phase-to-phase to ground) shall be conducted on all new power cable installations and cable penetrations following completion of cable installation. The test shall be performed for ten minutes at a minimum of 500 VDC (unless the equipment is not rated for this test voltage), record insulation resistance readings every minute and record the test temperature. Correct insulation resistance reading to 25 °C. Deliver a copy of the corrected insulation resistance test results to the Port Engineer. All equipment, which is modified or installed by this Work Package, shall be bonded and or grounded.
 - 7.10.2 Contractor is responsible for determining sufficient lengths of cable such that cable will be continuous from the source to the connected piece of equipment without splicing. Cables shall be run as directly as practicable, consistent with adequate ventilation of the cable wire-ways and with due care in the avoidance of certain hazardous or otherwise undesirable locations as the following:
 - 7.10.2.1 Excessive heat areas; Excessive moisture areas; Magnetic compass and critical electronic equipment areas; Locations tending to expose the cables to mechanical damage; Locations exposed to interference with machinery removal; Inflammable and explosion producing areas; Inaccessible spaces.
 - 7.10.2.2 All cables shall be continuous between outlet boxes, connection boxes, switchboards, panel boards, etc. They shall enter the box and shall be secured by a clamp or connector to assure a good electrical connection between the cable armor, where fitted, and the box and

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wiring device or the cable armor may be electrically connected to the enclosure by means of a suitable clamp or strap.

- 7.10.2.3 Cable entry into electrical equipment in exposed areas shall generally be from below, unless otherwise noted. At specific locations, where cable entry from below is impractical, cable entry from another direction shall be the subject of approval by the Owner.

- 7.11 Cable ways and or supports: In general, existing cableways shall be used for new cable installation to the maximum extent practicable. New cableways, if required shall meet IEEE Standard 45. Cable splicing, as permitted by the regulatory bodies, shall comply with 46 CFR 111.60.19.

7.11.1 All new cables (routed outside panels) shall be banded with properly sized stainless steel band at an interval not to exceed 400 mm. For horizontal runs where cables are laid in tray plates, individual support brackets or hanger ladders, the distance between fixing points may be up to 900 mm, provided that there supports with maximum spacing, as specified above. This relaxation, however, does not apply to cable runs on weather decks where the forces from sea water washing over the deck are expected. Hose clamps shall not be used for cable banding. Ty-wrap type nylon cable ties are not acceptable in lieu of stainless steel straps.

7.11.2 All new and modified wiring shall be marked with Stainless steel bands identifying the power source. Each cable shall be marked at each end of the cable (source and termination) and at both sides of any bulkhead penetration.

7.11.3 A single layer of cables shall rest on one hanger except that a second layer of smaller cables may be installed to fill in between larger cables to facilitate strapping of cables. If an additional layer of cables is required, it shall be supported on a second hanger bracketed a sufficient distance from the first to permit painting and inspection.

7.11.4 Cable supports shall be spaced not more than 400 mm. Where cables are supported by the strapping, they shall be strapped on every hanger.

7.11.5 When approved by Owner's Representative use of single automatic and welded stud, cup washer, steel spacers and/or adapter plate for mounting of small electrical appurtenances or cable runs is acceptable. Strapping is required on all welded stud supports.

- 7.12 PROTECTION: Isolate and Protect area of work that will be exposed to shipboard/ shipyard environment, i.e. dirt, moisture, water, etc. Upon completion of work each day work area to be covered with a heavy-duty plastic covers (10 mil) minimum or equal.

- 7.13 PENETRATIONS:

7.13.1 Holes in switchboards and panels up to ¼" may be drilled. Holes over ¼" shall be made with a knockout punch and die set. To facilitate the mounting of new components or to facilitate the passage of wires or cables, contractor shall

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prevent the introduction of metal chips into the switchboard interior by providing positive method of catching all metal chips. This method shall be reviewed with and approved by the Owner's Representative. Holes

- 7.13.2 Cable penetrations on decks shall have a minimum 6" high Sch. 80 steel kick - pipe, with well-rounded edges, continuously welded all around the edge of opening. The pipe is to extend through and below the deck and if the underside of deck is insulated or sheathed, it shall extend through such insulation or sheathing, leaving approximately 3/4" of pipe exposed. For weather deck applications each kick pipe or penetration shall be seal welded on both sides.
- 7.13.3 Where cables pass through water / gas tight decks or bulkheads the penetrations shall be fitted with suitable compensation in the form of a doubler plate and water/gas tight stuffing tubes. After the tubes are packed and the caps set up, sealing compound, Dux Seal or equal, shall be used to seal all stuffing
- 7.13.4 Collars filled with caulking compound or other sealing compounds are not an acceptable alternative to stuffing tubes.
- 7.13.5 Built up watertight boxes may be used in lieu of kick-pipes if specifically approved by the Owner. Multi cable transits shall be acceptable as an alternative to stuffing tubes, and shall have minimum 20% spare space.
- 7.13.6 Groups of cables may be installed through lightening holes or in clearance holes provided in non-watertight bulkheads, beams, stiffeners, etc. Holes shall be rounded in shape and collars of not less than 1" x 1/8" steel shall be welded in place to avoid chafing of cables.
- 7.13.7 Where cables enter waterproof motors, watertight control equipment, explosion proof equipment, intrinsically safe equipment, or tops and sides of drip proof cabinets, or covers, approved watertight terminal or stuffing tubes shall be provided. For explosion proof connections, the watertight stuffing tube shall be located on the cable end of the potting head. Elsewhere suitable non-watertight clamp type connectors may be used.
- 7.14 **RESISTANCE TESTING:** All electrical systems, devices, motors, circuits which are disturbed as part of these specifications shall have electrical resistance testing performed prior to disturbing and after installation and prior to having power applied. Digital low resistance ohmmeter readings shall be provided unless allowed otherwise by the Owner's representative. In all cases readings shall be temperature compensated.
- 8.0 COATINGS:** These standards are applicable where a specification items does have surface preparation, coating or refurbishment included in the item text.
- 8.1 All new and disturbed steel affected by these specifications shall be prepared and recoated/ coated as per this coating specification, unless otherwise specified in a specific item (i.e. Hull Coating Items, Internal Tank coating items, etc.). Coatings may be substituted on an "as equal" basis with the Owner's Representative's prior written approval on a product-by-product basis. Note that for clarification this section may be referred to in specific items but these coating

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requirements / standards remain applicable to "ALL" specification items even when not referred to.

- 8.2 Where mechanical preparation is specified in way of repairs and disturbances the surfaces are to be prepared by grinding, grit blasting or mechanical scaling with mechanical needle gun or equivalent as may be specified. At a minimum, surface preparation shall be to SSPC (Steel Structure Painting Council) specification of SP 3.
- 8.3 As a minimum requirement for any painting, including touch-ups of damaged or otherwise affected areas, surfaces shall be prepared free of all loose rust, dirt, oil and grease. Touch-up painting shall be accomplished matching the surroundings to the maximum extent practical. Any existing system or equipment markings shall be protected or re-applied in accordance with the above guidelines.
- 8.4 Steel and pipe Renewals - All new steel and carbon steel pipe used for renewals or new installations shall be grit blasted to "near white" metal (SSPC SP-10) and coated and finished in accordance with the following requirements. Upon completion of steel renewals, disturbed areas of coating shall be wire brushed or mechanically cleaned to "near white" metal, rendered for inspection and, when directed, coated with the same system as the new steel.
- 8.4.1 Primer coat system (2 coats each to 5 mil dft) shall consist of CMP Galbon S-HB
- 8.4.2 Top coating systems (2 coats to 5 mil dft) shall utilize the following CMP systems with colors to match existing and applicable to the environment of exposure.
- 8.4.2.1 Umeguard SX (Decks)
- 8.4.2.2 Evamarine Finish (Mach. & Interior)
- 8.4.2.3 Umeguard SX (Bilges)
- 8.4.2.4 Bannoh 500 (Pump Room)
- 8.4.2.5 Bannoh 500 (Ballast Tanks)
- 8.4.2.6 Epicon T-500 (Cargo tanks)
- 8.5 Where refurbishing of coatings occurs, the new coatings must be compatible to the existing coatings. Existing coatings shall be properly feathered in way of repairs prior to application of over coats. Intermediate and final coats shall be applied to all new and disturbed surfaces
- 8.6 All paint shall be applied in a timely manner after repairs and the proper surface preparation.
- 8.7 All new-galvanized steel shall not be blasted. Galvanized steel shall be cleaned (SSPC-SP-1, solvent cleaned), primed, and coated.

9.0 INSPECTIONS

- 9.1 Establish and maintain strict quality control procedures and staff (including inspection force) as required to ensure that the quality, workmanship and material provided for these specification and related growth. Coordinate and arrange for all inspections as required by these specifications. Tests shall be performed to the approval of the Owner's Representative and the satisfaction of the various regulatory bodies as their interests may apply.
- 9.2 Pending inspections and tests shall be verified applicable by the Contractor's QA department prior to presentation to the Owner's Representative and / or the Regulatory agencies.
- 9.3 The Owner's Representative shall have the authority to reject any material or workmanship whenever found reasonably defective, unsuitable, not in conformity with good shipbuilding practice, or not in accordance with the specifications. Accomplish satisfactory correction and/ or replacement of any rejected item.
- 9.4 Prepare test procedures for all new and modified systems, structure, and equipment and as otherwise specified. Take readings and compile data in accordance with approved procedures, including tank testing, hydrostatic tests, operating tests, etc.
- 9.5 The scheduling of all specification inspection and work-related items that require Regulatory body involvement shall be accomplished to ensure minimizing the number of visits required by the parties concerned.

10.0 CHANGE ORDER REPORT FORMATTING

- 10.1 Change Order Reporting Requirements are defined in Contract Terms and Conditions Article 7- "Changes". This section addresses the contents and format. The Owner's Representative is required to type all Condition found reports and subsequent Change orders into an electronic file. As such the Condition report shall be clearly written. They shall include:
- 10.2 Vessel name, Contract number, date, related work item number (s) and paragraph(s) with an estimated price to complete the recommended repairs identifying man-hours, labor cost, subcontractor cost, material cost and total.
- 10.3 Notification as to whether all work on the item is stopped pending a response. If applicable, a statement regarding how the condition affects other specification item(s) and its impact on the production schedule.
- 10.4 If Applicable any Regulatory considerations such as inspections and / or notifications.

11.0 DEFINITIONS

- 11.1 "As original" - means a condition meeting the original system and manufacturer's design and/or having the original capabilities thereof.

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- 11.2 "As approved" or "to the approval", "for approval" "as directed", or "as required" are used without further qualification and the decision of the Owner's Representative is required. Where an item is required to be submitted for approval, work shall not proceed until notification of approval is received. In the event the item is not approved, rationale shall be proved and work shall not proceed until a satisfactory and mutually agreeable resolution has been resubmitted and accepted.
- 11.3 "Detach" or "disconnect" means to disconnect all attachments to a unit or item to enable the unit or item to be moved. All attachment points shall be tagged, identified, blanked, and protected to facilitate reinstallation. Work items do not necessarily identify interferences. Provide for the identification and resolution of interference's affecting a detachment and subsequent movement.
- 11.4 "Good marine practice" means accepted performance to soundly conceive and engineer detailed working plans, prepared by the Contractor, incorporating the specified components and utilizing recognized shipbuilding, construction, and testing methods to ensure that the completed work performed conforms to specification requirements. Inspection by the Owner's Representative is for the purpose of verifying the proper function of the Contractor's quality assurance measures and is not considered a substitute for "in process" control of quality by the Contractor.
- 11.5 "Provide", "Furnish", "Install", "extend", and "modify" mean that the Contractor shall provide the piece of equipment, material or system to be installed and shall provide the materials structural supports, labor, to attach, connect, and test the equipment or system to effect a finished, fully operational installation complete in all aspects.
- 11.6 "Interference" means that a pipe system, duct work, equipment, joiner bulkhead, lining, wire way, structural member, access opening, other objects(s), equipment, system, or components must be temporarily removed and reinstalled, relocated, modified, or designed around to facilitate the installation of new or modified equipment or systems.
- 11.7 "Labor and materials" means labor, material, plant facilities, supervision, services, equipment, and all other resources required to accomplish the specified work.
- 11.8 "Manifests" are the official shipping document forms originated and signed by the generators, transporters, and operators of the hazardous waste disposal facility as required by federal, state and local regulations.
- 11.9 "MarAd" identifies the United States Department of Transportation, Maritime Administration.
- 11.10 "Owner approval" indicates only that the general method of construction and detailing is satisfactory or acceptable and shall not relieve the Contractor of the responsibility of any error.
- 11.11 "Or equal" means that components or equipment shall be equivalent in terms of performance, services required, compatibility with interrelated systems and arrangements, and support capability over the service life of the components or equipment. In the case of component or equipment substitution for those components or equipment noted in the contract or Work Package. Furnish a written request depicting

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- the design and performance data on both the specified and substituted piece of equipment for Owner approval.
- 11.12 "Refurbish" means to detach, temporarily remove, disassemble, clean, reassemble the unit, equipment or system using new screws, bolts, gaskets, and replacements parts, and to reinstall and test to demonstrate proper function to the manufacturer's tolerances. The reinstalled, refurbished unit, equipment or system shall have its original capabilities and shall be fully operational and complete in all aspects.
- 11.13 "Regulatory body" or "to regulatory body requirements" means the American Bureau of Shipping, a State, Federal or International Regulatory agency or an organization which is authorized by such an agency to perform delegated regulatory functions on its behalf.
- 11.14 "Reinstall" means to provide all material and labor to install a piece of equipment, material, or system after it was temporarily removed, relocated, modified, or refurbished.
- 11.15 "Relocate" means to provide all labor and material to detach a unit, equipment, or system and to reinstall the same at a new or modified location.
- 11.16 "Remove", "Crop out" or "rip out" means to provide all labor and materials to disconnect, detach, and transfer the unit, equipment, materials, or system in its entirety off the vessel. All removed material shall be disposed of in accordance with the Owner's Representative's direction. Part of the removal process shall be to blank openings, remove brackets, hangers, foundations, etc., and to restore all affected areas, including insulation and paint in accordance with enclosure 2.11.1 and consistent with surrounding areas.
- 11.17 "Remove and replace" shall be construed to mean to provide all labor, material and equipment necessary to remove and modify, if required, material and equipment that cause interference in the way of an intended installation or removal path of equipment, and replace or reinstall same in the "as original" condition. The specific work items do not necessarily identify interferences. Contractor is responsible for the identification and resolution of interference's necessary to complete the work required by this Work Package. All open ends left as a result of these removals shall be suitably protected to prevent any and all contaminants from entering the system or piece of equipment.
- 11.18 "Replace" or "renew" means to remove the unit, equipment, or systems including all interferences and to install a new unit, equipment or system, which is either identical or equal to that, which was removed. The installation shall include at a minimum all hook-up, supports, and adapters, which are required to effect a fully operational installation, complete in all aspects.
- 11.19 "Section" means a major part of the Work Package and shall include a group of related work items.
- 11.20 "Tag out," means a procedure to both notify personnel that tagged-out equipment, components, or systems are either isolated or not in a normal operating condition and to prevent injury to personnel, improper operation, or damage to the tagged-out equipment, components or systems. Contractor's "tag out" procedures shall clearly notify all

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personnel that the system which is "tagged out" shall not be energized, pressurized, etc. until the tag has been removed by the same person which originally issued the tag.

- 11.21 "Temporary removal" or "temporarily remove" means to provide all labor, material and equipment to disconnect and move a unit, equipment or system from its initial location and to reinstall the same unit, equipment, or system whether in the same location or elsewhere on the vessel as described in the Work Package.
- 11.22 "Upgrade" means to increase the capability of a unit, equipment or system to the currently accepted level of operation of new items or as designated in the specific work item.
- 11.23 "OFE", "OFM" or "OFS" identify Owner Furnished Equipment, Material and Services are sometimes used interchangeably.

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002 ENGINEERING AND TECHNICAL DOCUMENTATION REQUIREMENTS

1.0 ABSTRACT: This is a reference item, which describes engineering design requirements that are applicable when referred to in specification items. This item itself is not to be priced by the contractor. When referenced as a requirement in a specification item the costs are to be included in the price for that item.

2.0 REFERENCES: NONE

3.0 ITEM LOCATION/ DESCRIPTION: N/A

4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: NONE

5.0 STATEMENT OF WORK

5.1 Numerous References are noted as being available from the vessel. If the contractor chooses to remove these from the vessel this will only be permitted if approved by the Port Engineer after which they shall be logged out with the Chief Engineer. They shall be returned and logged back in in the presences of the Chief Engineer within 72 hours.

5.2 Unless identified otherwise, all owner furnished Dwg.'s in these specifications are for guidance purposes. The Contractor is responsible for verifying applicability. Utilize professional engineers (PE), naval architects, and / or marine engineers to develop Dwg.'s for the work as outlined in the specifications defined herein. This will include the following:

5.2.1 Obtaining regulatory body approval of contractor developed Dwg.'s when they are necessary for executing these specifications. All Dwg.'s are to be submitted to the Owner's Representative or his representative for review and approval prior to submitting to regulatory bodies for approval as applicable. Contractor is responsible for all regulatory body fees incurred during the design and approval processes.

5.2.2 The Contractor shall remain liable for the accuracy of all design and Dwg.'s criteria used in this Contract regardless of the approval process provided by the Owner's Representative or his representative or regulatory bodies. At no time will approval of developed working Dwg.'s constitute Owner's acceptance of liability for design deficiencies.

5.2.3 The contractor shall provide technical information as deemed necessary by the Owner's Representative and / or regulatory bodies.

5.3 Final Dwg. numbers shall be confirmed with the Port Engineer. The intent here is to provide a dominant number within the Lower right hand title box, which integrates into the vessel's original Bethlehem Indexing System. It is understood that other identification blocks containing the Contractors Dwg. information shall be part of the Title block process and will remain on the final Dwg's also.

5.4 All Dwg's, design data, and technical information shall become the property of the Maritime Administration. This data shall be provided by IAS without restrictions for use by the Government or release by the Government to others.

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During the design stage, preliminary sketches will be acceptable for review purposes. Final Dwg.'s, including those subjected to revisions, shall be of professional quality in AUTOCAD format. They shall contain at a minimum the Manufacturer's Dwg. and revision numbers, Dwg. title and the signature of design professional.

- 5.5 The contractor shall furnish six- (6) copies of all final Dwg.'s and/ or documentation folded / cataloged with Regulatory and Contractors stamps as appropriate.
 - 5.6 Maintain CD records of all technical documentation and CAD developed Dwg.'s. A single disk shall be provided and updated each week. The intent is to have all deliverable information of a technical nature available on a single CD. It shall be labeled to identify revision date and projects contained. After all approvals and / or as-builts are accomplished provide three (3) copies of record CD's.
 - 5.7 The contractor shall provide six – (6) copies of all new updated and revised technical manuals and vendor prints to the Owner's Representative.
 - 5.8 A bi-weekly review of Dwg. development shall be provided indicating Dwg. status. An excel spread sheet is sufficient. This shall be extended to the satisfaction of the owner's representative after the availability until the final authority approves the Dwg.'s.
- 6.0 PERFORMANCE CRITERIA / DELIVERABLES:** Dwg.'s, CD records and the progress status as applicable in 5.5
- 7.0 NOTES:** As it is practical to assume that final approvals will occur after the availability the contractor and Owner's representative shall agree mutually on delivery arrangements based on regulatory approval schedule.

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1.0 GENERAL SERVICES SECTION

On Bid submission sheet provide in the space allotted a combined DAILY SERVICE RATE for the daily maintenance aspects of Items 1.01 - 1.15, excluding items 1.02 and 1.14.

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1.01 WHARFAGE

1.0 ABSTRACT: Furnish safe Wharfage suitable for the vessel throughout contract period and vessels ten (10) activation for sea trials. Vessel must be moored Stbd. Side too.

2.0 REFERENCES:

- 2.1 Dwg. 785-101-102; General Arrangement - (attached)
- 2.2 Dwg. 785-101-031; Capacity Plan- (attached)
- 2.3 Dwg, 785-101-120, Tank Arrangement- (attached)

3.0 ITEM LOCATION / DESCRIPTION: NA

4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: NONE

5.0 STATEMENT OF WORK:

- 5.1 Provide a safe pier, which is equipped with all the service facilities as required by the work items contained in this specification package.
- 5.2 The wharf must provide a safe berthing area for the vessel. A safe berthing area constitutes as a minimum, structural integrity of the wharf as well as sufficient depth of water at the pier. Provide the following documentation:
 - 5.2.1 Structural Survey Report of the Pier: The survey must be performed by a reputable naval architecture/marine surveying company. The survey must include all Portions of the pier above and below the water. The survey must be no more than six months old.
 - 5.2.2 Sounding Chart: The Sounding Chart must have been drafted and/or updated within six months prior to award of the contract.
 - 5.2.3 Mooring Plan: a Ship Specific Mooring Plan must be developed and presented to the Owner's Representative within 24 hrs. of Notice to Proceed. An Emergency Heavy Weather Plan must also be developed and submitted with your bid proposal.
- 5.3 A minimum of three (3) feet of water shall be maintained at all times under the vessel's keel over its entire length throughout the duration of the shipyard period.
- 5.4 Provide proper mooring lines and wires with tendering to maintain the proper tension on the mooring lines and wires during all tide and weather changes. The actual mooring arrangement shall be in accordance with the approved mooring plan submitted by the Contractor. All mooring lines must be Contractor-furnished. The ship's mooring lines and wires shall not be used.
- 5.5 Provide and install rat guards on all mooring lines, service lines and hoses greater than 3/4 inch in diameter for the duration of the contract. Maintain the rat guards in good order and correct all deficiencies when required. The wharfage shall be maintained in a safe clean condition for the contract duration.

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6.0 PERFORMANCE CRITERIA / DELIVERABLES: With Bid submission a Structural Survey Report of the Pier / Sounding Chart / Mooring Plan and Heavy Weather Plan.

7.0 NOTES: NONE ADDITIONAL.

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1.02 TUG BOATS, PILOTS AND LINE HANDLERS

1.0 ABSTRACT: Furnish tug boats, pilots, line handlers (manpower), support materials and equipment as required to dock, undock and/or move vessel within contractors facility at arrival, during contract period, during five day activation period and through departure for sea trials.

2.0 REFERENCES: Dwg. 785-101-102; General Arrangement - (attached)

3.0 ITEM LOCATION / DESCRIPTION: NA

4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: NONE

5.0 STATEMENT OF WORK:

- 5.1 Provide all tug boats and line handlers to moor the vessel upon arrival.
- 5.2 Provide all tug boats, pilotage and line handlers to undock and moor the vessel during all shifts within the Contractor's facility. Assume only the 10 man ROS crew is aboard during these activities. Of those only four (4) are available to render verbal assistance onboard. Provide ship board and pier side line handlers
- 5.3 Provide line handlers to cast off the vessel during the final departure.
- 5.4 Furnish all heaving lines and stoppers during the mooring operations.
- 5.5 Provide rat guards on mooring lines.
- 5.6 Prior to dead ship movements furnish a shifting plan for review and approval by Owner's Representative. Shifting plan shall outline schedule for proposed interrupt and re-establishment of services and mooring connections.

6.0 PERFORMANCE CRITERIA / DELIVERABLES: Shifting plan as applicable (5.6)

7.0 NOTES: NONE ADDITIONAL

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1.03 GANGWAY

1.0 ABSTRACT: Contractor furnished safe gangway access to vessel during contract period and vessels five (5) day activation for sea trials.

2.0 REFERENCES:

2.1 Dwg. No. 785-101-102, "General Arrangement - SH 1 And 2"

3.0 ITEM LOCATION / DESCRIPTION: NA

4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: NONE

5.0 STATEMENT OF WORK:

5.1 Provide one (1) lighted gangway with handrails and security nets etc. to allow easy access to and from the vessel and secure in position at all times.

5.2 Gangway travel ways shall be wide enough to allow two way traffic.

5.3 The gangway shall be set up at a location mutually agreed upon with the Owner's Representative.

5.4 Any and all modifications to, removals of, or attachments to the vessel for the purpose of positioning the gangway are to be completely removed and or restored when the gangway is removed, and the area is to be left as original. The ship's gangway will not be used at any time during the shipyard period.

5.5 This gangway shall be contractor rigged immediately at arrival at the contractor's facility.

6.0 PERFORMANCE CRITERIA / DELIVERABLES: NONE

7.0 NOTES: NONE

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1.04 SEWER SYSTEM SHORE CONNECTION, TO SUPPORT GALLEY/CREW BERTHING

1.0 ABSTRACT: The intent of this item is to connect the vessel's sewer system overboard to a shore sewage disposal system during dry-dock period while crew is living aboard.

2.0 REFERENCES: Dwg. No. 785-144-100, "Docking Plan"

3.0 ITEM LOCATION / DESCRIPTION:

3.1 Location: Starboard side port

3.2 Description: Sewage hose, 2", with Cam-Lock fittings

4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: None.

5.0 STATEMENT OF WORK:

5.1 Provide hoses and fittings, make all connections, disconnections and reconnections, and remove and replace all piping, valves, fittings and equipment required to connect the vessel's sanitary system discharge to a Contractor-furnished sewage holding tank or a shore side sewage disposal system. This is required for removal of sanitary waste from the vessel on a 24-hour/day basis for the entire time that the ship is at the Contractor's facility. Sanitary waste shall be disposed of by the Contractor at his expense in accordance with all Federal, State and Local regulations.

5.2 It is to be noted that the vessel's ten (10)man Reduced Operating Status (ROS) crew will be living and working onboard the vessel throughout the duration of the contract. The Contractor shall respect this condition and shall not enter the accommodation or other such non-working area without the prior approval of the Owner's Representative. The Contractor will accordingly not be allowed to use the vessel's facilities (offices, toilets, etc.)

5.3 The Contractor shall provide and maintain segregated toilet facilities on board the vessel for use by Contractor personnel. Vessel facilities will be off-limits to Contractor and their Sub-contractor's personnel.

5.4 The Contractor will not be allowed to use any space that exists on the vessel for administrative purposes. Contractor may load a admin trailer on the No. 4 deck as mutually agreed by both parties.

6.0 PERFORMANCE CRITERIA / DELIVERABLES: NONE

7.0 NOTES: NONE ADDITIONAL

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1.05 DECK COVERINGS

1.0 ABSTRACT: This item describes the requirements for installation and removals of the protective floor coverings and cleaning these areas during the contract.

2.0 REFERENCES: Dwg. No. 785-101-102, "General Arrangement - SH 1 And 2"

3.0 ITEM LOCATION/ DESCRIPTION: Accommodation passageways on 05-06 decks.

4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: NONE

5.0 STATEMENT OF WORK

- 5.1 Install new protective floor covering on the following floors. Deck #5, Passageways, Ship's Offices and conference room (three total).
- 5.2 The covering shall be New Pig Corporation; traffic mat; part number MAT-223 (poly-back) or an equal approved by the Owner's Representative.
- 5.3 Covering is to be securely attached so it does not present a safety hazard and fully covers the passageway floors.
- 5.4 Maintain the newly installed floor covering during the availability. Survey vessel as needed and replace all damaged protective floor covering with same type installed during the entire availability.
- 5.5 One (1) day prior to departure remove and dispose the protective floor covering. Sweep and mop clean all floors where the covering was removed. Allow for inclusion of sea trial preparation of five (5) days.

6.0 PERFORMANCE CRITERIA / DELIVERABLES: Provide sample of substitutes for acceptance by Owner's Representative at vessel's arrival

7.0 NOTES: NONE

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1.06 OWNER'S REPRESENTATIVE OFFICE / TELEPHONE / FACSIMILE SERVICE

1.0 **ABSTRACT:** Communication and office facilities for Contract performance period.

2.0 **REFERENCES: NONE**

3.0 ITEM LOCATION / DESCRIPTION:

3.1 Location:

3.1.1 Shore side offices, for Owner's Representative and staff

3.1.2 Vessels – Captains Office (Dk. 8). The Chief Mates Office, Chief Engineers Office and Conference Room all located on Deck 5.

3.1.3 Shore side office for US Government Representative (MarAd)

3.2 Description: Shore side offices and vessel spaces configured as offices with support materials and equipment

4.0 **OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES:** Ships internal communication system.

5.0 STATEMENT OF WORK

5.1 Administrative Office Support will be provided both onboard and ashore.

5.2 The Owner's representative shall have two- (2) locations for conducting business. One shall be a shore side office provided by the contractor. The other will be the conference room deck #5.

5.3 Phone / Fax / DSL Services: Furnish telephone/ fax /hi speed internet service lines on board the vessel for use by the Owner's Representative and Sr. Officers. Maintain weather protection of exterior connections. Disconnect and re-install the telephone services in conjunction with contract activities (shifts, dock trials etc.).

5.3.1 Two (2) local /long distance lines to tie into the distribution network which serves the three deck No. 5 Offices. Connection is in the vicinity of the deck 5 offices Stbd. Side aft of Life Boat. As part of this arrange provide independent high speed internet to these three offices.

5.3.2 Provide one (1) segregated line with local and long distance, fax, Hi Speed Internet capabilities for the Master's Office.

5.3.3 One of the lines will by-pass the system shall have local phone / data capabilities and will go to the conference room for use as a fax line.

5.4 Provide the following office equipment in the shore side Port Engineer's Office. Maintain these spaces daily in a clean orderly fashion. This shall be a secure space with two separate offices and a common area equipped with:

5.4.1 Bathroom facilities

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- 5.4.2 At least four (4) workstations (desks chairs and accessories).
 - 5.4.3 One (1) combination fax, scanner, printer (2 side of page reproduction). It shall have the capability for automatic multi item feed as well as Transaction, and Activity, Report printing capabilities. The copy aspect must be capable of automatic feed and sorting, enlargement and reduction, and.
 - 5.4.4 Two phone lines with long distance and data capabilities
 - 5.4.5 A third line configured for high-speed Internet network capability with appropriate hardware and services for up to four locations in the office.
 - 5.5 Provide separate office for the US Government (MarAd) Representative. It shall have at least one desk and two – (2) chairs. Include one - (1) long distance phone line and one – (1) high-speed Internet connection capability with appropriate hardware and services in this office.
 - 5.6 Include \$70 / day times the days of performance with bid submission for long distance charges. Actual Long distance charges shall be reconciled by means of a change order supported by an itemized phone bill at or near the close of the performance period. This change order shall reflect additional charges over the \$70 / day allowance or credit due to the Owner (negative change order).
- 6.0 PERFORMANCE CRITERIA / DELIVERABLES:** Reconciliation of phone charges.
- 7.0 NOTES:** These phones / services are not for use by Contractors personnel.

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1.07 GAS FREE CERTIFICATE; SLUDGE AND BILGE HOLDING TANK WASTE DISPOSAL / CLEANING

1.0 **ABSTRACT:** Contractor furnished services of a Certified Marine Chemist and gas freeing to support all contract related work scopes.

2.0 REFERENCES:

- 2.1 Dwg. 785-101-102; General Arrangement - (attached)
- 2.2 Dwg. 785-101-031; Capacity Plan- (attached)
- 2.3 Dwg, 785-101-120, Tank Arrangement- (attached)

3.0 ITEM LOCATION / DESCRIPTION:

3.1 Location: Cargo decks, pipe tunnels, ballast and fuel tanks, cofferdams, and voids throughout vessel.

3.2 Description:

3.2.1 Establish and maintain gas free status for work scope and growth to specifications.

3.2.2 Disposal of contents of and gas freeing of:

3.2.2.1 Sludge Tank, Fr. 35-64 Port.

3.2.2.2 Bilge water holding Tank AFT CL; Fr. 20-31

3.2.2.3 Bilge water holding tank Fwd. Stbd. of CL, ER Fr. 60–64

4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: NONE

5.0 STATEMENT OF WORK:

5.1 At the arrival berth prior to commencement of specified work items provide the services of a Certified Marine Chemist to establish / monitor the gas free state and to issue a gas free certificate "Safe for Men" for all cofferdams, ballast tanks, void spaces, double bottom tanks, deep tanks, pressure vessels, etc., which must be entered or adjacent thereto during the performance of the contract.

5.2 At this berth provide for disposal cleaning as required and venting as necessary to establish a gas free condition.

5.2.1 All Heavy Fuel and Diesel Fuel tanks contain fuel and or fuel residue.

5.2.2 Provide for discharge of the bilge water holding and oil sludge tanks from the ship using contractor furnished equipment. As part of the process to obtain a gas free provide for the following.

5.2.2.1 Sludge Tank disposal and cleaning. Assume 30 M3

5.2.2.2 Bilge water holding tanks (two each) disposal and cleaning combined capacity of 100 M3. Assume the mixture is contaminated with 15% emulsified and free floating oil.

5.2.2.3 Venting of bilge and sludge tank as required.

5.2.2.4 After these operations are complete proceed with the balance of this item.

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- 5.2.3 Contractor is to thieve the tank at arrival in presence of Owner's representative and provide reading to Port Engineer.
- 5.2.4 Clean bilge areas of engine room spaces, pipe tunnels, thruster spaces, etc., necessary to obtain gas free certificate. Remove all access covers to the tanks as necessary in support of specification items and close the covers in good after the work and/or inspections have been completed.
- 5.2.5 Dispose of all waste generated by this item.
- 5.3 Vent spaces as necessary using forced ventilation to establish and maintain the necessary "Safe for Men - Safe for Hot Work" atmosphere required for completing these specifications and growth there to.
- 5.4 Hot work shall not be permitted, until the compartment involved and surrounding areas have received "Safe for Hot Work" certificate issued by the Certified Marine Chemist. Re-certified and update gas free certificates daily or when conditions change in the vicinity of the hot work. A certified shipyard competent person may be used to re-certify a space only if the re-certification falls within the 24-hour limit and conditions have not changed in the space.
- 5.5 Develop and maintain a list that shows the tanks that are open at any given time, especially the ones that are below water line and are critical for watertight integrity of the vessel. The list must include the name and location of the tanks, the date they were opened and closed. In order to ensure the correct reflection of current status, update the list after each and every change. Submit an updated copy of the list correctly showing open tanks to the Owner's Representative on a daily basis.
- 5.6 Three (3) copies of all Gas Free Certificates must be made available; One –(1) copy to Owner's Representative; One –(1) copy at Gangway and One –(1) copy to be posted at the work area.
- 6.0 PERFORMANCE CRITERIA / DELIVERABLES:**
- 6.1 Interface amounts recorded in Para. 5.2.3
- 6.2 Chemist Certificates and list of open tanks including updates.
- 7.0 NOTES:** Vessel will arrive with fuel onboard.
- 7.1 All after Diesel Fuel tanks contain fuel and or fuel residue.
- 7.2 All HFO, settling, service, and overflow tanks contain fuel or fuel residue.

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1.08 CRANE SERVICE

1.0 ABSTRACT: Contractor furnished Crane Services

2.0 REFERENCES: NONE

3.0 ITEM LOCATION / DESCRIPTION: N/A

4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: NONE

5.0 STATEMENT OF WORK:

5.1 Provide the services of crane (s), crane operator (s), and crane tender(s) to assist in the performance of all work items required by the contract, and to assist the ship's crew as directed by the Owner's Representative. The crane and crane operator must be available on a 24-hour per day basis during the entire period of performance of the contract. The crane service must be available to the ship's crew within 45 minutes of notification to the Contractor during normal working hours (8 AM to 5 PM) and 2 hours outside this time frame (includes weekends and Holidays) provided notification is given 12 hours prior.

5.2 All costs incurred by the use of the crane will be the sole responsibility of the Contractor.

5.3 Crane (s) available for supporting the vessel shall be up to 40 ton capacity as needed and a sufficient reach to land a container of this weight close to the edge of main deck on the opposite side from the crane. Furnish all lifting gear (spreader bars, straps, etc.) required to support all crane service.

5.4 The cost for crane services associated with the work specifications shall be included within the line item price for the associated work specification.

5.5 Owner's Crane usage for bidding purposes the contractor shall provide the following documented/ tracked Crane Service for use by the Owner. The Port Engineer and no subordinates shall be the party authorizing such service.

5.5.1 Provide for 40 hours of crane use, on a 2 hour minimum per call out.

5.5.2 At the completion of the shipyard period a change order will be issued to reconcile the actual number of crane hours utilized verses the 40 hours included within the bid price.

5.5.3 Crane service shall include use of the crane, tackle, operator and riggers.

5.5.4 Crane support for Owner will include but not be limited to; downloading and uploading of: fire extinguishers for Regulatory inspections, spare parts etc.

6.0 PERFORMANCE CRITERIA / DELIVERABLES:

6.1 Tracking of usage of 5.5 services on a case by case basis.

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6.2 Standard cost for one four hour session of Crane usage by Owner.

7.0 NOTES: NONE ADDITIONAL

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1.09 FIRE PROTECTION

1.0 ABSTRACT: Provide a comprehensive Fire protection program for the duration of the contract.

2.0 REFERENCES:

- 2.1 Dwg. 785-101-102; General Arrangement - (attached)
- 2.2 Dwg. 785-101-031; Capacity Plan- (attached)
- 2.3 Dwg. 785-101-120, Tank Arrangement- (attached)

3.0 ITEM LOCATION / DESCRIPTION:

- 3.1 Location: Throughout the vessel
- 3.2 Description:
 - 3.2.1 Fire protection program for the duration of the contract taking into consideration that fire main repairs are possible and that the vessel's force will be working during daytime hours only.
 - 3.2.2 Independent designated personnel at all work areas serving as fire watches where hot work is in progress.

4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: NONE

5.0 STATEMENT OF WORK

- 5.1 Furnish and install hose manifolds and sufficient fire hose lengths to provide two- (2) fire hoses with nozzles to each part of the vessels weather deck areas. Each manifold must be charged by a 2-1/2 inch fire hose and 2-1/2" x 1-1/2" x 1-1/2" Y-Branch with shutoffs and two 1-1/2 inch fire hoses. An all-purpose nozzle is to be attached to the end of each hose. Place manifolds on the main deck. The manifolds shall be pressurized by a dedicated, shore based, fire pump. The pump shall be capable of delivering 100 GPM. And maintaining 80 PSIG on all of three- (3) nozzles operating simultaneously at the boat deck level.
- 5.2 Establish and maintain fire watches at all work item locations for the duration of the contract. The fire watches must remain in effect until vessels departure. Furnish trained dedicated fire watch (s) at all work sites during specification hot work activities. The fire watch shall have the sole responsibility of fire safety. Any person(s) on a fire watch shall not perform other work while assigned to the fire watch. These fire watches must be equipped with appropriate firefighting equipment and means of communications.
- 5.3 Prepare a Fire Plan that describes Contractors practices and policies for providing fire protection for the vessel during the contract period. Plan shall describe fire watch policy, fire protection measures, and identify contact phone number for a person in charge 24 hours/day and 7 days/week during the availability.

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6.0 PERFORMANCE CRITERIA / DELIVERABLES: Provide a fire plan for the contract period upon notice to proceed.

7.0 NOTES: The vessel's fire main system, hoses, and equipment shall not be used by the contractor for any aspect of this item unless approved by the Owner's representative.

MV CAPE HUDSON
DRY DOCK / REPAIR AVAILABILITY (RFP # 05-G-2??- 0??)

1.10 BILGE PUMPING AND DISPOSAL

1.0 ABSTRACT:

- 1.1 Pumping and disposal of cargo decks, and machinery space bilge water accumulations.
- 1.2 Disposal on arrival of contents of Bilge water holding tank.

2.0 REFERENCES: NONE

3.0 ITEM LOCATION / DESCRIPTION:

- 3.1 Location:
 - 3.1.1 Engine room, auxiliary machinery spaces, pipe tunnels, and cargo decks
 - 3.1.2 Bilge water holding tank Fr. 20 – 31 BL to 6 ft. ABL
- 3.2 Description:
 - 3.2.1 Pumping and disposal of bilge water accumulations.
 - 3.2.2 Disposal of 70 m3 of contents from Bilge water holding tank.

4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: NONE

5.0 STATEMENT OF WORK:

- 5.1 Pump and maintain all bilges (paragraph 3.0) dry for the duration of the contract period. The bilges must be left in a dry condition at the end of each workday. At no time shall the bilge water be allowed to accumulate above the bilge wells.
- 5.2 The vessel will arrive with accumulated bilge water in its bilge water holding tank. Removal and disposal of this bilge water is covered in "Gas Freeing" Item.
- 5.3 Provide oil boom retention as necessary during any oil or slop transfer operations.

6.0 PERFORMANCE CRITERIA / DELIVERABLES: NONE

7.0 NOTES: Vessel's bilge pumping system shall not be used unless authorized by Owner's Representative.

MV CAPE HUDSON
DRY DOCK / REPAIR AVAILABILITY (RFP # 05-G-2??- 0??)

1.11 GARBAGE AND TRASH DISPOSAL

1.0 ABSTRACT: Disposal of garbage, trash, and debris from the vessel for the duration of contract.

2.0 REFERENCES: NONE

3.0 ITEM LOCATION / DESCRIPTION: N/A

4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: NONE

5.0 STATEMENT OF WORK

5.1 The vessel shall be used to house its crew. This shall consist of ten (10) persons 24 / 7 and an additional force of up to six (6) Owner's Representatives and technicians who may eat meals onboard. The waste generated by this force shall be included as part of the requirements of this specification item.

5.2 Remove all garbage, trash, and debris from the ship on a daily basis. Dispose of the garbage, trash, and debris in accordance with local, state and federal regulations. As a minimum, provide one (1) 8 cubic yard dumpster onboard the vessel for use exclusively by the ship's crew. The exact location to place the dumpster will be designated by the Owner's Representative. The dumpster shall be emptied on a daily basis unless mutually agreed between contractor and Owner's representative. The contents must be disposed of in accordance with the aforementioned statement.

5.3 Clean up all specification work sites onboard the ship on a daily basis. As a minimum, the cleanup shall include the removal and disposal of all trash and debris generated by the shipyard personnel. At no time shall the buildup of Contractor generated trash and debris interfere with the movement and operation of the ship's crew. If at any time, the buildup of Contractor generated trash and debris becomes a hindrance or hazard to the ship's crew, the situation must be remedied immediately by the Contractor.

5.4 Note: Before the start of all work, the owner's representative and the contractor's representative shall perform a joint cleanliness inspection of the ship.

5.5 Upon completion of all work, ensure the cleanliness of the ship is equal or better than the original condition found during the initial cleanliness inspection. The Owner's Representative and Contractor's Representative shall perform a final joint inspection of the ship before the vessel departing the berth.

6.0 PERFORMANCE CRITERIA / DELIVERABLES: NONE

7.0 NOTES: NONE

MV CAPE HUDSON
DRY DOCK / REPAIR AVAILABILITY (RFP # 05-G-2??- 0??)

1.12 TEMPORARY LIGHTING

1.0 ABSTRACT: Temporary lighting for the duration of contract.

2.0 REFERENCES: NONE

3.0 ITEM LOCATION / DESCRIPTION: Throughout the vessel as required

4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: NONE

5.0 STATEMENT OF WORK

5.1 Provide and maintain temporary lighting in all habitability spaces where work is to be carried out. The temporary lights shall be installed to support all Contractor related activities, the ship's crew, Regulatory Inspections / Surveys, and Owner's sub-contractors. The Contractor will be responsible to provide and set up temporary lighting as directed by the Owner's Representative. All power supplies are to be connected / disconnected as necessary.

5.2 As a minimum, provide temporary distribution panels (with disconnects) to meet the work scope needs of the Contractor, ship's force and all Owner furnished contractors.

5.3 Remove all temporary lighting when the contract work scope is complete.

6.0 PERFORMANCE CRITERIA / DELIVERABLES: NONE

7.0 NOTES: The Contractor shall not use the ship's electrical lighting distribution system, unless agreed to by the Owner's Representative.

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DRY DOCK / REPAIR AVAILABILITY (RFP # 05-G-2??- 0??)

1.13 SHORE POWER

1.0 ABSTRACT: Provide electrical power to vessels Main distribution panel for the duration of the contract period.

2.0 REFERENCES: NONE

3.0 ITEM LOCATION / DESCRIPTION

3.1 Location: Deck 4 Starboard breezeway

3.2 Description: 800 Amp, 450 volt, 60 Hertz, 3 phase electrical service.

4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: NONE

5.0 STATEMENT OF WORK

5.1 Provide for connection, supply of and maintaining power to the vessels shore power connection. Conductors shall be routed to clear walkways and prevent rainwater intrusion into vessels interior.

5.1.1 Provide an electrical meter to determine KW usage.

5.1.2 For bidding purposes allow for 5500 KWH / day for the performance period of the contract.

5.2 Provide for connecting and disconnecting the shore power in a manner, which minimizes disruption to the ship's electrical supply.

5.3 Verify proper phase rotation each time the shore power has been connected

5.4 Power shall be supplied to the ship on a full 24 / 7 basis. Several Contract activities require temporary disruption of the shore power for safety purposes. Notify Owner's representative of planned disruption.

6.0 PERFORMANCE CRITERIA / DELIVERABLES:

6.1 Cost per KW with bid submission.

6.2 Bi-weekly reconciliation of Electrical bill

6.3 Pro rata cost per KW shall apply to credit for decreases and additional costs for increases and shall be the subject of a change order

7.0 NOTES:

7.1 The vessel's electrical system shall not be used by the Contractor unless agreed to by the Owner's Representative.

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DRY DOCK / REPAIR AVAILABILITY (RFP # 05-G-2??- 0??)

1.14 STORES GANG

1.0 ABSTRACT: Provide labor to handle stores during the contract period.

2.0 REFERENCES: NONE

3.0 ITEM LOCATION / DESCRIPTION: N/A

4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: NONE

5.0 STATEMENT OF WORK

5.1 Provide the services of a minimum three (3) person work force to load and/or off-load Owner furnished stores and equipment onboard the ship. The Owner's Representative will designate when and how many persons will be required for each individual job.

5.2 For bidding purposes allow for 240 man-hours.

5.2.1 Requirements in excess shall be the subject of a change order at posted rates.

5.2.2 Call outs will be for minimum 4 hours per man.

5.3 One person in each call out shall be a leader-man who is fluent in "English". This work force will be assigned to work under a vessel crew member or officer.

6.0 PERFORMANCE CRITERIA / DELIVERABLES: Provide time sheets, which shall have signatures of both to Owner's Representative for reconciliation against allowance.

7.0 NOTES: The per day man-hours required by this work item may exceed 8 hours but no more than 10 hours per person per day. The man-hours may be required during the first, second or third shifts. The leader-man and vessels person in charge shall agree on man-hour expenditures on a daily basis.

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1.15 POTABLE WATER, COMPRESSED AIR AND SALT WATER SERVICE FOR COOLING

1.0 **ABSTRACT:** Furnish potable water, compressed air, salt water services for the duration of contract and provide for offloading, storage and reloading the contents of the ships frozen food.

2.0 **REFERENCES: NONE**

3.0 **ITEM LOCATION/ DESCRIPTION: N/A**

4.0 **OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: NONE**

5.0 STATEMENT OF WORK

5.1 The mechanical services and materials required to supply the services in this item shall be installed and removed as needed to maintain defined conditions. Disconnect and reconnect the compressed air, potable water and salt-water service as required for shifting of vessel or other incidents during the entire availability.

5.2 Potable Water: When directed by Owner's Representative furnish potable water for ship's work and hotel requirements. Connect to the ship's potable connect on the Main deck. This is required for up to ten (10) days prior to scheduled departure. Vessel will top of domestic tanks prior to getting under way. Allow for a total of 300 tons to be loaded in to vessel's storage tanks as needed. Provide a metered record of consumption.

5.3 Compressed Air: Furnish clean dry compressed air at 100 PSI (at shipboard connection) and 200 CFM minimum to the vessel through a 1.5-inch hose for ship's work requirements. Provide a connection to the ship's service air system. Include one (1) 2" 300 PSI, WOG, bronze bodied, globe valve and fittings for isolation. Connect air supplies to the shipboard system upon arrival. The compressed air shall be free of moisture and oil. Demonstrate mechanical means of air treatment to Owner's representative. The Ship's air system / piping shall not be used by the Contractor.

5.4 Cooling water for domestic AC and refrigeration Provide cooling water, supply/return, to ships A/C condensers and domestic refrigeration allowing for strainers and isolation valves to owners satisfaction. Supply shall be a minimum of 150 gpm at 50 psi deck 5 level.

6.0 **PERFORMANCE CRITERIA / DELIVERABLES: NONE**

7.0 **NOTES:** Provisions for compressed air and potable water service shall be considered on a per diem basis. The total cost for the availability shall be submitted as the bid price. In the case of an increase or decrease in the length of the Contract, the cost shall be based on the per diem amount, figured by dividing the bid price by the length of the Contract (in days) as specified.

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1.16 DOCK TRIALS

1.0 ABSTRACT: The intent of this item is to verify sea worthiness of shipboard systems prior to putting to harbor trials and subsequent departure for sea.

2.0 REFERENCES: NONE

3.0 ITEM LOCATION / DESCRIPTION: N/A

4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: Ship's crew to activate and operate shipboard systems.

5.0 STATEMENT OF WORK

- 5.1 Dock trials shall be conducted as preliminary quality control of the work completed by the Contractor on all ship's systems affected by the contract and to verify the general condition of the machinery and systems. The estimated time length of the actual dock trial is one (1) 4 hour period. Crew activities to prepare for and support the dock trial will be approx. 12 hours as the stern ramp must be raised. A successful trial is to be accomplished prior to a harbor trial and subsequent sea trial. The intent is to fully activate the vessel system up to and including an official "STAND_BY Engines command including all pre departure test of the ships systems. The Main Engines will only be "Bumped" as part of this exercise and not have fuel put into the engine.
- 5.2 Provide assistance to the Owner's Representative and ships force to monitor all phases of testing during the dock trials with qualified supervisory personnel to witness and evaluate the testing of all equipment during the dock trial. The intent of the Contractor's presence during the dock trial is to expedite all repairs deemed necessary during the testing of the shipboard equipment.
 - 5.2.1 All deficiencies related the Contract work scope shall be rectified at no burden to the owner.
 - 5.2.2 Deficiencies, which are outside the responsibility of the Contractor, may be addressed via change orders and corrected without delay.
- 5.3 Provide the services of line handlers to allow for doubling up of mooring lines to the satisfaction of the SR. deck officer.
- 5.4 Provide the following skilled personnel to assist the ships engineers for one (1) eight hour shift as directed. This shall exclude delays in redeploying gangway.
 - 5.4.1 Two (2) Marine electricians
 - 5.4.2 Two (2) outside machinist
 - 5.4.3 Two (2) pipe fitters
- 5.5 Raise gangway(s) before dock trial commencement and re-establish afterwards

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6.0 PERFORMANCE CRITERIA / DELIVERABLES: NONE

7.0 NOTES: The actual dock trial (up to turning of engines) will endure for approximately four (4) hours.

2.0 DRY-DOCKING SECTION

MV CAPE HUDSON

DRY DOCK / REPAIR AVAILABILITY (RFP # 05-G-2??- 0??)

2.01 DRY-DOCKING (ABS / USCG)

1.0 ABSTRACT: This item describes the requirements for a dry-docking to be performed in accordance with the ABS special survey and USCG Certificate of Inspection renewal requirements.

2.0 REFERENCES:

- 2.1 Dwg. No. 785-144-100, "Docking Plan"
- 2.2 Dwg. No. 1008-27H-46, "General Arrangement (Display Plan) – SH"
- 2.3 Dwg. No. 785-101-031, "Capacity Plan"
- 2.4 Underwater Outline Plan - SH 1 And 2
- 2.5 MarAd Dry-dock Report Form MA-57 – available on arrival
- 2.6 2007 Dry Docking Blocking Plan - attached

3.0 ITEM LOCATION / DESCRIPTION:

- 3.1 Location: Contractor's Dry-Dock
- 3.2 Description: Dry docking of the vessel. ~~Work scope to include a fleetling evolution in order to provide for full blasting and coating of the ships bottom.~~

4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: NONE

5.0 STATEMENT OF WORK:

- 5.1 Provide a copy of a Current Condition Survey Certificate for the dry-dock Contractor proposes to use, with your bid proposal. Certificates may be certified by the Salvage Association, NAVESA and or certified Regulatory Body. Certificate must be submitted as part of your bid proposal. Prior to coming off dry dock, submit four completed, typed copies of MarAd Dry-Dock Report Form MA-57 (forms will be furnished by the attending Owner's Representative) and Contractor's dry-dock report to the attending Owner's Representative.
- 5.2 Provide the vessel's maximum allowable draft and trim conditions for entering the dry dock (DD) to the Owner's Representative prior to Notice to Proceed (NTP).
- 5.3 Soundings of all tanks are to be taken by the Contractor upon vessel's arrival at their facility, before docking and undocking, and again twenty-four (24) hours prior to departure. Provide two (2) types written copies to the Owner's Representative within twelve (12) hours of each major event.
- 5.4 Provide for four (4) sets of main engine (cold) crankshaft deflections at specific conditions during the project as follows. Ensure that the deflections are taken in a timely manner as detailed below. Crankshaft deflections shall be taken:
 - 5.4.1 Prior to dry docking, vessel free floating.
 - 5.4.2 After being lifted in dry dock and prior to any shaft and bearing work.
 - 5.4.3 In dry dock, after completion of all shaft and bearing.
 - 5.4.4 After dry docking, with the vessel free floating.

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- 5.4.5 A copy of each set of deflections is to be provided to the IAS Port Engineer upon completion. The final set of readings is to be included in the final dry dock report.
- 5.5 Contractor shall study the previous docking plan and assure the position the vessel such that this time the blocks end up at areas that were coated last dry dock period. Thus the areas that remained under the blocks during last dry docking will be accessible this time. Furnish a copy of a Preliminary Docking Plan for Owner's review twenty-four (24) hours prior to vessel's entering dry dock.
- 5.6 Divers are to check the clearance between the vessel and the crush plates on keel blocks and pack up accordingly.
- 5.7 Receive and dry-dock the vessel to accomplish cleaning, repairs, and inspections outlined in these specifications. Set dock blocks under the direct supervision of the dock master in accordance with the docking plans drawn for this vessel. Confirm transducer locations to prevent blocking in way of the same.
- 5.8 ~~NOT USED Provide for fleetling of the vessel as part of the dry docking evolution. All aspects of this evolution are to be clearly identified in all planning documents. The intent of this fleetling operation is to provide for blasting, inspection and application of the full coating system on areas of the hull flat bottom obscured under the blocks of the initial docking. The fleetling impact is to clearly discerned on the project the time line.~~
- 5.9 Before undocking the vessel, arrange for a joint survey by the Owner's representative, Regulatory Body Surveyor's, Coating Representative. Ship Supt. / Yard dock master shall provide a check off list of ALL underwater work carried out and each Item shall be checked as to being satisfactorily completed. All hull openings checked for proper closure, ensure speed log, transducers and cathodic protection cells are ready for service. An official attendance form shall be available for signature and receipt by all parties.
- 5.10 Undock the vessel upon completion of activities on dry-dock and shift to an approved wet berth. During undocking, the vessel shall be partially submerged and all hull penetration isolation valves and sea chests are to be monitored / inspected for leakage. After completion of inspections and when directed by the attending Owner's Representative, the vessel shall be fully floated.

6.0 PERFORMANCE CRITERIA / DELIVERABLES:

- 6.1 As part of Preliminary Dry Dock report forty-eight (48) hours BEFORE vessel's entry into dry dock.
- 6.1.1 Dry-dock certificate as per paragraph 5.1
- 6.1.2 Trim conditions required for entry on dock 5.2
- 6.1.3 Tank sounding reports per paragraph 5.3
- 6.2 Main Engine Deflection reading per 5.5
- 6.3 MarAd Dry-dock Report Form MA-57 per paragraph 5.5

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- 6.4 Final Dry Docking Report forty-eight (48) hours AFTER vessel's departure from dry dock. With all subordinate information summarized in this report.
- 6.5 Clear blocking diagram ~~initial and floated.~~
- 6.6 With bid submission on the line provided provide dry dock rates for
 - 6.6.1 DRYDOCK RATE per 1st Day and Last Day
 - 6.6.2 DAILY DRYDOCK RATE other days
- 7.0 **NOTES:** For planning purpose the Contractor should anticipate the following.
 - 7.1 Fuel oil in the _____ bunker tanks.
 - 7.2 Fresh Water Ballast in _____
 - 7.3 Salt Water Ballast in the _____
 - 7.4 Vessel shall have exclusive use of graving/floating dock during her lift period.

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2.02 ANCHORS, ANCHOR CHAINS AND CHAIN LOCKERS (ABS / USCG)

1.0 ABSTRACT: Work associated with the anchors, anchor chains, anchor chain lockers.

2.0 REFERENCES:

- 2.1 Dwg. No. 785-431-002 Rev A, "Anchor Chain Securement"
- 2.2 Dwg. No. 785-430-300, "Anchor Hawse And Chain Stopper"
- 2.3 Dwg. No. 785-431-001 REV 1, "Arrangement Connection Anchor To Chain A"

3.0 ITEM LOCATION / DESCRIPTION:

- 3.1 Anchors: Two- (2), manufacturer unknown, stockless type, 11,600 KG each,
- 3.2 Anchor Chains: Two- (2), chain size 84 mm, grade U3, 13 shots of chain port, 12 shots of chain starboard

4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: None

5.0 STATEMENT OF WORK:

- 5.1 Range both of vessels forward anchors and chains on the dry dock for specification work and inspections. Disconnect the bitter ends of port and starboard anchor chains and high pressure fresh water wash Anchors and Chains using 4000 psi at no more than 18". Roll as required while abrasively blast cleaning anchors and chains to SSPC SP-6 in their entirety. Roll and blow grit away from links prior to applying a full coat of high solids surface-tolerant epoxy, black, and additional markings as specified below.
- 5.2 Anchor chains shall be examined and gauged by a currently certified ABS gauging technician (s). Chains shall be examined for cracks, stud slackness, excessive wear, distortion, or other defects. Allow for gauging of each of the Port and Starboard shots to the satisfaction of the attending ABS Surveyor. Wear areas to be gauged are to include ten (10) links per shots at two (2) A and two (2) B readings per link. Allow for a total of 440 plus 40 equaling 480 shots total. Provide a report clearly defining findings.
- 5.3 Furnish inspection, gauging and wastage reports to the Owner's Representative, which provides the following in a detailed technical format. Calculate the averages of the ten A and ten B readings per shot. Then calculate average size for each shot by averaging the A and B averages. Note the original size of chain is 84 mm. Calculate percentage of wastage for each shot.
- 5.4 Allow for end for ending the chains. Hammer test all connecting links marking any defective links. Secure and/or re-lead link pins in good order. Allow for replacement of twelve (12) pins (with ABS certificates). Do not end for end unless directed by the Owner's Representative.
- 5.5 Provide a line item price for switching out one (1) shot of chain. Provide all materials (including pins and lead) allowing for reuse of connecting links. This

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will require removal / replacement of eight (8) links. Do not switch unless directed by the Owner's Representative.

- 5.6 Anchor examination; descriptions here are applicable to both Port and Starboard Assemblies:
 - 5.6.1 Crown Pin: Inspect the crown pin holding the anchor flukes to the shank for deterioration and freedom of movement.
 - 5.6.2 D Shackle: Inspect the D shackle and pin securing the chain to the anchor for deterioration at anchors. Allow for the renewal of two pins at D shackles.
 - 5.6.3 Chain Swivel: allow for exposure and close up inspection of the bearing areas of the chain swivels.
- 5.7 Marking of anchor chains: Each shot to be marked with Ensign Red paint on the detachable link. For each successive shot, the links on either side of the red detachable link shall be marked with white paint to designate the number of the shot. For example, Shot #1 would have one white painted link on either side of the detachable link; Shot #2 would have two white links on either side, etc. Additionally, the shots of anchor chain shall be marked by turns of 1" stainless steel banding material appropriately clamped on the studs of certain links. The number of links marked with stainless steel bands shall be counted away from the detachable links in both directions. All links on the next to last shot are to be painted yellow. All links on the last shot are to be painted red.
- 5.8 When directed reconnect bitter ends of port and starboard anchor chains to attachment points in chain lockers, retrieve and stow anchor chain in chain lockers. When anchors are housed, install devil's claw and set riding pawl.
- 5.9 Chain locker cleaning, inspections and preservation:
 - 5.9.1 Open out and high pressure wash all interior surfaces of the port and starboard chain lockers. Cleaning is to include chain plate, the chain locker sump, all interior surfaces of chain lockers and guides. Remove all scale, rust, and foreign matter for survey and preservation coating.
 - 5.9.2 Provide ventilation and assistance as needed to support a survey of the chain lockers by the Owner's Representatives and Regulatory.
 - 5.9.3 Clear and manually de-scale the drain wells and deck areas. Prepare and apply coating system in accordance with 001 Preamble to Specifications Paragraph 8.0 to the lockers and all drain wells.

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- 5.10 Chain Locker Eductor System: Provide for shore side servicing and testing of overboard check valve, port and starboard chain locker suction valves as well as the eductor itself. Clean and reassemble and reinstall all appurtenances (including strainers). Provide a power water supply to eductor root valve isolating it from fire main. Back flush and clear all piping when chains are removed. Fill the chain locker with 2' of water and operationally test chain locker eductor and forward area bilge system to the satisfaction of the attending Owner's Representative and regulatory agencies. Void suction may be tested using a hose to fill the suction wells. Completely dry areas and piping affected by these tests.
- 5.11 Hawse Pipe Wash down nozzles. Provide for close up inspection of the nozzle terminations inside the hawse pipe. Blow the nozzles clear and verify the ends are free of obstructions. Provide a safe means for the Port Engineers representative to climb safely down the pipe and examine the nozzle terminations.
- 5.12 When directed make up all aspects in good order and retrieve the chains back into the lockers and the anchors home.

6.0 PERFORMANCE CRITERIA / DELIVERABLES:

- 6.1 Identification of ABS certified gauging personnel used for this item.
- 6.2 Gauging reports for chains as per paragraph 5.3.
- 6.3 Final close out report for this item with consolidation of all findings.
- 6.4 Line item price for swapping out of one (1) shot of chain. Per Para. 5.5
- 6.5 Adductor testing reports

7.0 NOTES: NONE ADDITIONAL

2.03 HULL BLASTING AND COATING

1.0 ABSTRACT: The intent of this work item is to provide for high pressure washing, joint inspection and abrasive surface preparation as designated and subsequent application of specified coating system(s). The areas to be dealt with are:

- 1.1 The entire submerged and freeboard areas of hull from the keel to gunwale including fashion plates. The freeboard area to be dealt with extends from the deep load line (approx. 10 meters ABL) to the deck rail. This area includes the vertical surfaces to the deck edge, the tops and outer surfaces of all bulwarks and fan houses, the stern area including transom and stern door and frame and the stern area to No. 6 Deck.
- 1.2 The rudder, bilge keels, bow and stern thrusters and tunnels, sea chests, all openings.
- 1.3 Hawse pipes.
- 1.4 The stern ramp beyond the hinge point on at the stern is being addressed under a separate work.

2.0 REFERENCES

- 2.1 Dwg. 785-101-102; General Arrangement; Sht's1 and 2- (attached)
- 2.2 Dwg. 785-101-031; Capacity Plan- (attached)
- 2.3 Dwg, 785-101-120, Tank Arrangement- (attached)
- 2.4 Dwg No. 785-144-100, "Docking Plan"
- 2.5 Dwg No. 1008-27H-46, "General Arrangement (Display Plan)
- 2.6 Daily Paint Report from the Paint Manufacturer's Technical Representative (PMTR) at arrival

3.0 ITEM LOCATION/ DESCRIPTION

- 3.1 Location: Entire underwater and freeboard exterior of vessel
- 3.2 Description: Hull preparation for, and application of hull coatings.

4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES Paint Manufacturer's Technical Representative (PMTR)

5.0 STATEMENT OF WORK

- 5.1 The owner shall provide an on-site Paint Manufacturer's Technical Representative (PMTR). The PMTR shall verify the Contractor's preparation and installation of all coating systems are in accordance with these specifications and the manufacturer's recommendations.
- 5.2 The vessel is being fleeted in order to accommodate blasting and coating of the areas obscured by the blocking. Provide a plan for sequencing of coatings which provides the best long term preservation of the coating system. The final ablative coats are not to be applied until the fleeting is accomplished in order to minimize the out of water period for the maximum area coated.

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- 5.3 The Contractor shall provide quality assurance to the extent that the Paint Manufacturer shall be capable of warranting the coating system by stating: "THE PREPARATION AND SYSTEM EMPLOYED, ARE FREE OF DEFECTS IN BOTH MATERIAL AND WORKMANSHIP AND WILL RESULT IN A FINISHED SURFACE THAT SHALL NOT REQUIRE EXTERIOR MAINTENANCE FOR THE FIRST THREE (3) YEARS IN IDLE AND OPERATING STATUS, FOLLOWING DELIVERY AND ACCEPTANCE. MECHANICAL DAMAGE IS EXCLUDED."
- 5.4 The contractor shall provide all materials for this item. An acceptable CMP system is used as the product line in these descriptions. Provide a full scope of Manufactures product line to be offered with bid submission but as a minimum it shall be equal to or superior to the CMP line listed.
- 5.4.1 The anticorrosive coating materials shall be abrasion resistant epoxy coatings.
- 5.4.2 Provide for anti-fouling coatings which incorporate "tin free self-polishing copolymer" antifouling technology. CMP (Sea GrandPrix), International (Ecoloflex) and Jotun (Seaforce) provide these technologies. To the knowledge of the Port Engineer other US vendors do not offer this technology in their antifouling coating lines marketed in the USA.
- 5.5 General conditions and specifications for painting:
- 5.5.1 All work shall be accomplished to the satisfaction of PMTR and the Owner's Representative.
- 5.5.2 All recommendations of The Society for Protective Coatings (SSPC) and all environmental regulations shall be strictly adhered to.
- 5.5.3 Staging with erection and disassembly and / or man-lifts shall be provided as required.
- 5.5.4 Planning meeting: At least 24 hours prior to vessel's entering dry dock, Contractor shall arrange / schedule a conference between Owner's representative, PMTR, Contractor's personnel (Hull blasting and Coating Supervisor), and the Paint Contractor (if other than the ship yard). The conference will establish criteria and agreements pertaining to surface preparation and painting application. Subjects of discussion at the conference shall include, but shall not be limited to:
- 5.5.4.1 Role of the various parties
- 5.5.4.2 Atmospheric Conditions that will delay or interrupt coating operations. As a rule when winds are encountered that are at 7 knots sustained, coating activities shall cease. Also steel temperature should be a minimum of five (5) degrees Fahrenheit above the dew point.

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- 5.5.4.3 Methods of measuring coating thickness and tracking material consumption
 - 5.5.4.4 Procedures and schedules for inspecting each step in the coating process
 - 5.5.4.5 Surface preparation & quality requirements
 - 5.5.4.6 Summary report format review and compliance with compiling the same
 - 5.5.4.7 Verification of environmental influences that may influence stages of coating application.
 - 5.5.4.8 Establish Volume Control Criteria
 - 5.5.4.9 Other aspects elevating the level of assurances that the coating system will be applied successfully and in accordance with the specifications.
 - 5.5.4.10 The Contractor will provide a preliminary coating schedule for discussion at the meeting with a final copy to follow. It shall outline the procedures, product designations, product data sheets, and dry film thickness for all areas in this item.
 - 5.5.4.11 Take minutes during meeting and furnish a copy to the Owner's Representative within four- (4) hours of meeting completion. All attendees will initial the minutes.
- 5.6 Provide the necessary arrangements to protect the various mechanical, electrical and structural appurtenances of the hull, house, and machinery from abrasive grit blasting and painting residue throughout the entire period of performance of surface preparation and coating until the completion of all such work.
- 5.6.1 Prevent the intrusion of any blasting grit, dirt, removed material, or paint while grit blasting and while painting. Contractor shall temporarily cover, blank, mask, and/or plug all penetrations into the ship.
 - 5.6.2 Protective covers shall be installed and any deterioration due to wind, rain or any other reason shall be corrected immediately. The protected items shall include but not be limited to: port lights, windows, doors, manholes, scuttles, hatches, air escapes, sounding tubes, scuppers, drains, vents, valve stems, winches, windlass, lubricated machinery parts, wire drums, chains, cranes, sheaves, rigging, transducers (fathometer and speed log), zinc anodes, Impressed Current Cathodic Protection system reference cells, anodes and dielectric shields, propeller and exposed parts of tail shaft, thrusters, stern ramp winches, etc...

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- 5.6.3 To prevent grit and paint fume migration into the habitable spaces, schedule activities inside the vessel with the goal of limiting entry to the vessel's interior spaces during periods of grit blasting and spray painting.
- 5.6.4 When directed by the Owner's Representative, and prior to undocking the vessel, remove protective covers and similar arrangements.
- 5.6.5 As protective covers are being removed some fresh coatings may be disturbed or even some missed areas may be noticed. Provide for hand preparation and coating of such disturbed or missed areas to complete coating application.
- 5.7 At all shell penetrations. Remove all sea chest strainers and zinc anodes prior to hull cleaning / blasting and coating. Reinstall after application of coatings providing for anode replacements in accordance with Sea Chests and Sea Nozzles item. Restore coatings disturbed by reinstallation / replacements.
- 5.8 All hull openings including, but not limited to the stern ramp access, ventilation louvers, bow and stern thruster tunnels are to be included in this total area and shall be properly prepared and coated along with all other portions of the underwater hull. Grease and wrap all valve stems and exposed portions of hydraulic cylinders. Install filters on all air intake vents. Install covers on all fuel tank vents.
- 5.9 Provide for a high-pressure fresh water wash with nozzle at no more than 18" from plating using at 4000 to 6000 Psi minimum nozzle outlet pressure within 24 hours of the vessel entering dry dock. Wash the areas defined in Para. 1.1, 1.2 and 1.3. Remove 'ALL' existing marine growth from the 9 M draft line to the keel. The wetted portion of the hull and appurtenances from the 6.5 to 7 meter Draft mark down has extremely heavy marine growth. This area is being taken down to the base metal but has to have chlorides washed clear and growth removed. This may require hand scraping or mechanical cleaning. The entire submerged and freeboard area of the hull shall be washed down. High pressure wash shall be performed from the gunwale to the keel including all appendages but not limited to sea chests, thruster tunnels, strainer plates, bilge keels, propeller and rudder. Continue fresh water washing until sodium chloride levels are lowered to coating manufacturer's requirement. It shall be understood that there is an extensive abrasive blast called out for the underwater portion of the hull. Remove oil, marine growth/slime, grass, tubeworms, barnacles, sodium chloride deposits, loose and defective paint, anti-fouling related depletion layer, other surface contaminants, foreign materials and stains.
- 5.10 All surfaces containing oil or grease are to be thoroughly cleaned if necessary by hand wiping to the requirements of "SOLVENT CLEANING STANDARD SSPC-SP1". Allow for two thousand (2000) square feet of solvent cleaning / washing.
- 5.11 Prior to blasting and immediately after cleaning the PMTR, Owner's Representative and Contractors representative(s) shall make a joint inspection of the hull. This inspection shall identify areas of bare metal, blistered, cracked, peeling paint or paint which is otherwise deteriorated and to assess the overall

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condition of the coating system. Square meters of the areas in addition to the submerged areas which require spot abrasive blasting to SSPC-SP-10 shall be identified for each zone. Digital pictures shall be taken to depict these conditions and incorporated in the deliverable report in section 6 of this item.

- 5.12 Coating preparation shall be accomplished to the satisfaction of the PMTR and shall comply with the following as a minimum.
- 5.12.1 From the 7 Meter draft mark down surfaces shall be 100% prepared using abrasive grit blasting to SSPC-SP10 (Sa 2.5) Near White metal Commercial Blast. Abrasively blast all surfaces from the keel to 7 meters from stem to stern. This shall include but not limited to areas in Para. 1.1, 1.2 and 1.3 which includes but is not limited to, the appendages, sea chests, sea strainers, shell nozzles, hawse pipes, deck scuppers, rudder, etc.
- 5.12.2 All remaining surfaces of hull from 7 meter mark to the cap rail, from stem to stern shall be prepared to "Brush-Off Blast Cleaned", SSPC-SP 7 (Sa 1) to remove all remaining .
- 5.12.3 Any surface that cannot be prepared properly using abrasive grit blasting shall be power tooled to SSPC-SP11 by use of needle guns and/or hand tooling.
- 5.12.4 While the anchor chains are ranged, and in co-ordination with Item 2.02, prepare and coat port and starboard hawse pipes internally by hollow blasting and coating. Remove all traces of grit, abrasive, sediment and debris. Render hawse pipes for inspection by PMTR after each step such as grit blasting, cleaning, in between coats and final inspection. Hawse pipe shall be coated with boot top to cap rail three-coat system.
- 5.12.5 Internal and external weld repairs, including instillation of scupper extension base rings, as required by the attending regulatory bodies and/or this specification, are to be coordinated with this item to prevent damage to applied coatings. At the completion of weld repairs, any surface irregularities at the welds such as "BB"s, sharp edges, slag, flux, etc. shall be ground smooth. If coatings are disturbed, the damaged areas are to be re-blasted to SSPC SP-10 (Sa2.5) and recoated with appropriate full spectrum system called for in Para. 5.14, feathering into surrounding coatings.
- 5.13 Coating application shall not start until surface preparation has been approved by PMTR. The following coating application guidelines shall be adhered to.
- 5.13.1 Confirmation of that coating materials are within usage dates after production. That they are stored in a covered, secure area with restricted access as required preventing damage. Provide for receiving and handling of all coating materials and disposal of waste generated by this item.

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- 5.13.2 Apply all coatings, in strict compliance with the PMTR's recommendations.
- 5.13.3 Staging for painting shall be free of all grit, dirt and debris prior to application of coatings.
- 5.13.4 Coatings shall be applied to bare metal surfaces as soon as possible, after approval of the surface preparation by the PMTR, to prevent oxides from forming on blasted areas. Any hull areas that are permitted to "flash rusting" or re-rust will be grit blasted again.
- 5.13.5 Coatings must be thoroughly mixed prior to and during application to ensure that all high solids inorganic materials are continuously agitated during application and to ensure proper suspension of solids. All coating application is to result in a smooth, evenly applied film. For spot repaired areas, feathering of edges is necessary to achieve this objective. Sags, runs, dry spray and uneven film thickness are to be corrected before over coating. Imperfections in final coats are to be corrected before undocking.
- 5.13.6 Thinning shall only be done in accordance with the paint manufacturers recommendations. Final dry film thickness shall be as designated in Paragraph 5.14. This shall be confirmed in the presence of the PMTR by ultrasonic measuring instruments following each coating application and two (2) copies of all coating reports shall be furnished. Thinners from International Paint product codes GTA007 and GTA220 or an Owner approved equal shall be used.
- 5.13.7 Steel temperature to be a minimum of five (5) degrees Fahrenheit above the dew point of the surrounding air prior to the application of barrier coats and first coat of primer. No application is to be done when condensation is present on the surface. Ballast tanks shall be drained if required to improve drying conditions. Transfer of water shall be the sole responsibility of the Contractor.
- 5.13.8 Apply the coatings at the wet and dry film thickness specified. Dry film thickness (DFT) readings shall be verified by the PMTR. All film thickness deficiencies shall be brought up to the thickness defined in the specifications by additional coat(s). Dry film thickness readings shall be made with Elecometer, Mikrotest, or other approved gauges. All runs, sags, over spray and excessive film buildup shall be corrected.
- 5.13.9 All coatings are to be applied by airless spray using a minimum of 30 to 1 air to supply to pressure ratio pump. Spray line hose shall be no longer than 150 ft. in good weather. Airless spray pumps are to be fitted with fully functional moisture traps.
- 5.14 After acceptance of surface preparations by PMTR and the Owner's Representative, apply coating systems in accordance with the following systems.

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5.14.1 Keel to Bottom of Boot Top (Light Load Line- 6 Meter) - Total Area 105,000 sq. ft.

5.14.1.1 **Surface preparation:**
100% SSPC-SP-10 (Sa2.5) Near white blast 105,000 sq. ft.

5.14.1.2 Coating Application

First coat	100%	of area NZ Primer S	50 µm dft	105,000 sq. ft.
Second coat	100%	of area Bannoh 500 Red	150 µm dft	105,000 sq. ft.
Third coat	100%	of area Bannoh 500 Gray	100 µm dft	105,000 sq. ft.
Fourth coat	100%	of area Seagrandprix 500 Purple	115 µm dft	105,000 sq. ft.
Fifth coat	100%	of area Seagrandprix 500 Black	115 µm dft	105,000 sq. ft.

5.14.2 Bottom of Boot top (Light Load Line- 6 Meter) to Top of Boot Top (Deep Load Line- 10 meter) - Total Area 20,200 sq. ft.

5.14.2.1 Surface preparation:

36-1/3%	SSPC-SP-10 (Sa2.5) Near white blast	6,733 sq. ft.
66-2/3%	SSPC-SP-7 (Sa1) Brush off blast	13,467 sq. ft.

5.14.2.2 Coating Application

First coat	33%	of area NZ Primer S	50 µm dft	6,733 sq. ft.
Second coat	100%	of area Bannoh 500 Red	150 µm dft	20,200 sq. ft.
Third coat	100%	of area Bannoh 500 Gray	100 µm dft	20,200 sq. ft.
Fourth coat	100%	of area Seagrandprix 500 Purple	115 µm dft	20,200 sq. ft.
Fifth coat	100%	of area Seagrandprix 500 Black	115 µm dft	20,200 sq. ft.

5.14.3 Top of Boot Top to Gunwale, Including vertical surfaces to the deck edge, the tops and outer surfaces of all bulwarks, fan houses, ventilation louvers, the stern area including transom and stern door and frame, stern, side shell area to 06 Deck; Total Area 61,250 sq. ft.:

5.14.3.1 Surface preparation:

10%	SSPC-SP-10 (Sa2.5) Near white blast	6,125 sq. ft.
90%	SSPC-SP-7 (Sa1) Brush off blast	55,125 sq. ft.

5.14.3.2 Coating Application

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First coat	10%	of area Bannoh 500 Red	75 µm dft	6,125 sq. ft.
Second coat	100%	of area Bannoh 500 Gray	100 µm dft	61,250 sq. ft.
Third coat	100%	of area Unymarine Haze Gray	50 µm dft	61,250 sq. ft.

5.14.4 Additional areas – Total 2000 sq. ft.

5.14.4.1 Surface preparation:

100% SSPC-SP-10 (Sa2.5) Near white blast 2,000 sq. ft.

5.14.4.2 Coating Application

First coat	100%	of area Bannoh 500 Red	75 µm dft	2,000 sq. ft.
Second coat	100%	of area Bannoh 500 Gray	100 µm dft	2,000 sq. ft.
Third coat	100%	of area Unymarine Haze Gray	50 µm dft	2,000 sq. ft.

5.15 Re-establish the following hull markings boundaries:

5.15.1 Boot top cut line straight with no perceivable undulations.

5.15.2 Draft markings, underwater survey markings, Plimsol marks, etc. applying two full coats Acri 700 white or black as appropriate.

5.15.3 Ship's Name and Port of Registry (Port and Starboard)

5.15.4 Official number (one location) – Acri 700 black.

5.15.5 Thruster Tunnels

5.16 Coat all sea chest and thruster guards in accordance with keel to bottom of boot top system.

5.17 Installation of scupper extension base rings shall take place during the Blasting and Coating, installation of the scupper extensions.

5.18 Install scupper extension base rings during the blasting phase and the scupper extensions as soon as the final coating is dry.

6.0 PERFORMANCE CRITERIA / DELIVERABLES

6.1 Planning Meeting Minutes

6.2 Contractor paint selection support documents.

6.3 Daily Logs using reference 2.3 (or Owner Approved equal) submitted to Port Engineer with Contractors signature.

6.3.1 Cost for preparing one hundred (100) sq. ft of hull to SSPC-SP10 (Sa2.5) Near white blast and applying a CMP five (5) coat anti-fouling bottom system in accordance with paragraph 5.14.1

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- 6.3.2 Cost for preparing one hundred (100) sq. ft of hull to SSPC-SP11 power tooled to SSPC-SP11 by use of needle guns and/or hand tooling and applying a CMP five (5) coat anti-fouling bottom system in accordance with paragraph 5.14.1
- 6.3.3 Cost for preparing one hundred (100) sq. ft of hull to SSPC-SP10 (Sa2.5) Near white blast and applying a CMP three (3) system in accordance with paragraph 5.14.3.
- 6.3.4 Cost for preparing one hundred (100) sq. ft of hull to SSPC-SP11 power tooled to SSPC-SP11 by use of needle guns and/or hand tooling and applying a CMP three (3) system in accordance with paragraph 5.14.3.

7.0 NOTES

- 7.1 Renewals of internal structural steel elements are being carried out in other specification items and related growth work. Coatings damaged by hot work in those areas shall be considered in scheduling and carrying out this item. After completion of steel renewals, the damaged coatings shall be repaired to the same standards and seamlessly blend with the adjacent fresh coatings.

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2.04 THRUSTER CLEANING AND INSPECTION, GAUGE BEARINGS (ABS)

1.0 ABSTRACT: The intent of this work item is to clean, inspect, and overhaul the vessel's bow and stern thrusters. Assist the manufacturer's service engineer in performing inspection, overhaul, and operational checks. All work shall be performed under the direction of a Contractor-furnished, owner approved manufacturer's service engineer.

2.0 REFERENCES:

- 2.1 A.M.Liaaen manufacturer's manual – ships library.
- 2.2 Dwg. No. 785-101-151 REV 2, "Side Thrusters Fore And Aft", available in ship's technical library.

3.0 ITEM LOCATION / DESCRIPTION:

- 3.1 Bow Thruster: Fr. 234
 - 3.1.1 Manufacturer- A.M.Liaaen, Aalesund, Norway
 - 3.1.2 Type - TT 92/68 – 250
 - 3.1.3 Installation No. – AMLB 50
 - 3.1.4 Propeller Output - 1,800 HP @ 258 RPM
 - 3.1.5 Propeller Dia. - 2,440 mm
 - 3.1.6 No. of Blades – 4
 - 3.1.7 Motor - NEBB; Type QRV 710 db8; 1320 KW; 895 RPM
- 3.2 Stern Thruster: FR. 23
 - 3.2.1 Manufacturer- A.M.Liaaen, Aalesund, Norway
 - 3.2.2 Type - TT 25/68 – 250
 - 3.2.3 Installation No. – AMLB 51
 - 3.2.4 Propeller Output -1,800 HP @ 258 RPM
 - 3.2.5 Propeller Dia. - 2,440 mm
 - 3.2.6 No. of Blades – 4
 - 3.2.7 Motor - NEBB; Type QFV 560 bd; 1320 KW; 890 RPM

4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: NONE

5.0 STATEMENT OF WORK:

- 5.1 Bow and Stern Thruster Inspection:
 - 5.1.1 All work shall take place under the direction of a Contractor-provided Owner approved manufacturer's service engineer.
 - 5.1.2 All inspections and work to be in accordance with AMERICAN BUREAU OF SHIPPING RULES FOR BUILDING AND CLASSING STEEL VESSELS - CHAPTER 9 Survey Requirements for Additional Systems and Services, SECTION 6 Thrusters and Dynamic Positioning System
 - 5.1.3 The manufacturer's service engineer shall provide a complete report on work performed within two (2) days of completion of work. The report shall be provided to the IAS Engineer in four (4) typewritten copies.

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- 5.1.4 All seals and gaskets required for the overhaul of the thrusters shall be Contractor-furnished.
 - 5.1.5 All parts which are found to require replacement during the course of the thruster inspections shall be subject of a delivery order.
 - 5.1.6 Immediately upon dry docking, erect staging to provide suitable access to perform the cleaning, inspection, and overhaul of the bow and stern thrusters.
 - 5.1.7 High pressure water blast at 3,000 psi (nozzle pressure) the entire surface on the bow and stern thruster blades, hubs, support frames, and tunnels. Remove all marine growth, salt deposits, loose paint, rust, and contaminants.
 - 5.1.8 Prepare the tunnels and painted surfaces to SSPC-SP10 (Near White Blast) or HB2.5. Recoating is covered under a separate work Item entitled "Ship's Hull Cleaning and Painting" detailed elsewhere in this specification package.
 - 5.1.9 Thoroughly clean the bow and stern thrusters to remove all marine growth to the satisfaction of the manufacturer's service engineer and the Owner's Representative. The blades and non-coated hub body surfaces shall be polished using 3M polishing disc or equivalent. Grit, wire brush tools, or abrasive grinding tools will not be used.
 - 5.1.10 The blades and non-coated hub body surfaces shall be polished to a Rupert Scale grade "B."
 - 5.1.11 Provide assistance to the manufacturer's service engineer(s) in completing a survey on both bow and stern thrusters.
 - 5.1.12 Inspect thrusters with hydraulic systems pressurized to determine if seals are leaking. The blades shall be cycled from full ahead to full astern and back again a sufficient number of times to permit a thorough inspection of the propeller hub and all blades for hydraulic leaks and to verify proper operation.
 - 5.1.13 Check that the bearing, gearing, etc. move freely by manually rotating the blades.
 - 5.1.14 Measure all thruster clearances. Check the backlash and the axial clearance of each blade.
 - 5.1.15 Check the pinion shaft axial clearance.
 - 5.1.16 Check thrust bearing clearance
 - 5.1.17 Drain, collect and flush the complete oil system. Contractor shall dispose of all waste generated from this item in accordance with all Federal, State and Local Regulations.
 - 5.1.18 Obtain oil samples from the hydraulic tanks and from the thrusters. Contractor shall send these samples for testing if directed by the IAS Engineer. Provide a report on the results of the oil analysis.
 - 5.1.19 Immediately following completion of the thruster survey, the Contractor shall submit a condition report outlining the as-found condition of the thrusters and the required repairs.
- 5.2 Renew Thruster Seals:
- 5.2.1 Contractor shall remove all interferences required to disassemble the drive shafts of both the stern and bow thrusters.

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- 5.2.2 Clean all surfaces and provide a condition report of findings to the IAS engineer.
- 5.2.3 Contractor shall provide new and install drive shaft seals in both the stern and bow thrusters.
- 5.2.4 Contractor shall renew all propeller blade seals.
- 5.2.5 Following completion seal replacement and when the thrusters are fully reassembled, renew all oil with vessel-furnished oil.
- 5.2.6 Perform a pressure test on the thrusters for checking of seal condition after the new seal installation. The hydraulic system is to be pressurized. The thruster blades are to be cycled from full port to full starboard and back again a sufficient number of times to permit a thorough inspection in way of the hub and all blades for hydraulic leaks and to verify proper operation.
- 5.2.7 Operationally check the hydraulic and control system from all control stations.
- 5.2.8 Verify the blades' pitch to agree with the markings on the scale of the indicator rod.
- 5.2.9 Lubricate the drive motor. Grease the transmission and intermediate shafts.
- 5.2.10 Following completion of all testing and verification of satisfactory repairs, remove all staging and leave thrusters in a condition ready for use.

6.0 PERFORMANCE CRITERIA / DELIVERABLES:

- 6.1 Manufacturer's service engineer report
- 6.2 Oil analysis results
- 6.3 Thruster condition report

7.0 NOTES:

- 7.1 All blasting and polishing shall be completed prior to opening the thrusters for seal changes, inspection and service.
- 7.2 Rolls-Royce is the current OEM for this equipment.

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2.05 SEA CHESTS, SEA NOZZLES AND GRATINGS (ABS / USCG)

1.0 ABSTRACT: Work associated with the sea chests, and sea nozzles (suctions, vents and over-boards) to be performed in accordance with the ABS and USCG requirements. When complete the opening shall have:

- 1.1 ABS inspections completed.
- 1.2 Gauging surveys completed.
- 1.3 Blasting and coating of all portions subject to exposure to the sea.
- 1.4 Zinc Anode renewed installation completed
- 1.5 Minor repairs to sea chests including ABS recommendation 562

2.0 REFERENCES:

- 2.1 Dwg. No. 785-262-010 B.L. 1, "Seawater Intake Grate", - attached.
- 2.2 Dwg. No. 7553-160, "Underwater Road Map & Shell Blanks" - attached
- 2.3 Dwg. No. 1008-27H-40 SH 1 & 2, "Underwater Outline Plan" - attached
- 2.4 Refer to "Sea Valve / Sea Chest Valve Table" for listing of sea chests and sea nozzles (skin connection nozzles). Frames and sizes are approximate and are to be used as a guide only.

3.0 ITEM LOCATION / DESCRIPTION:

- 3.1 Location: Per attached plan
- 3.2 Description:
 - 3.2.1 Hull penetrations for Piping systems
 - 3.2.2 Sea Chest Gratings
 - 3.2.3 Sea Chest Nozzle repairs

4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: NONE

5.0 STATEMENT OF WORK:

- 5.1 Refer to "SEA VALVE / SEA CHEST VALVE TABLE" for listing of sea chests and sea nozzles (skin connection nozzles). All Skin valve connections utilize pipe for hull / sea chest boundary penetrations. Frames and sizes are approximate and are to be used as a guide only. Complete repairs in this item in a matter that allows the applicable coating refurbishment to be completed afterwards.
- 5.2 Provide staging as necessary. Provide safe access for regulatory inspections of sea chest again prior to coating application. After approval by regulatory agencies and Owner's Representative complete internally coat the effected sea chest and shell nozzles up to valve flange and strainers per same specification as the underwater hull paint system.
- 5.3 Strainer Plates: Remove strainer plates, open out the plugged sea nozzles, internally grit blast, inspect, and coat the sea chests, sea nozzles, and strainer plates. Render access for inspection of sea chest conditions before blasting begins. Remove welded retaining clips at the larger strainers used to secure

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them in place, in addition to the regular studs and nuts. Renew retaining clips with similar size and material ones and re-weld at installation of these larger strainer plates.

- 5.4 Grit blast the strainer plates, sea chests and sea nozzles to SSPC SP-10 ("near white") as part of Item 2.04 applying the five part anti corrosive and anti-foulant system called for in the Hull Blasting and Coating Item.
- 5.5 Sea Chest and Nozzles: Sea valves and fittings are being addressed in a separate item. Herein will deal with preservation, inspection and of the piping extensions and sea chest up to the first inboard flange. Any devices unshipped as part of this item is to be reassembled in good order in conjunction with other works scopes after coating application has been approved
 - 5.5.1 Sea Chest and attached Nozzles are to be blasted and coated up to the inboard flange.
 - 5.5.2 On valves that are removed for servicing allow blanking at the flanges.
 - 5.5.3 If valve bodies are left in place provide a positive means at the valve outlet to protect from the blasting and coating process up to the protective means.
 - 5.5.4 The blasting and preparation process is to be continuous and complete to all areas exposed to the sea.
 - 5.5.5 Provide for timely application of prime coat to prevent flashing.
- 5.6 Provide for UT gauging's at locations directed by the Regulatory Body personnel and / or the IAS Port Engineer.
 - 5.6.1 Perform ultrasonic testing (UT) at each sea chest and spool piece connection.
 - 5.6.2 Allow for fourteen (14) UT readings in each sea chest, ten (10) on Nozzles from 6" to 12" and up to six (6) on smaller nozzles.
 - 5.6.3 Provide a closure report for the ABS within 24 hours and incorporate same in the final Dry Docking Report.
- 5.7 Port low main sea chest:
 - 5.7.1 Crop and renew the A/C circulator sea suction nozzle. Nozzle. Allow for a 125 mm diameter, 200 mm L, Sch. 120 metric equivalent w/flange. Existing flange can be reused.
 - 5.7.2 The Sea Blank for this sea chest does not seal. Unshipped from its stowage Deck 2, under ramp to deck 3.
 - 5.7.2.1 Install blank verify fit and provide a detailed priced CFR with findings.
 - 5.7.2.2 Repair same and fit blank with new gasket; provide fasteners to fit to sea chest, install, and air test for tightness.
 - 5.7.2.3 After testing blast and recoat blank, stow blank in original location

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secure for sea.

5.7.2.4 Provide a line item price with bid submission for renewal of the sea chest including fit-up and testing.

5.8 Provide Line Item Prices for renewals of the following sea chest attached flanged pipe nozzles. Actual use shall be the subject of an approved Change Order. Locations shall be verified by joint survey and inspection findings. Nozzles shall be internally coated with the five part system in Item 2.03. The millage may be reduced on the nozzles under 2" OD. For each size allow for metric equivalent Sch. 120, seamless, 1 ft. length pipe and appropriate DIN flange. All materials steel.

5.8.1 2" to 4 "metric equivalent pipe.

5.8.2 6" metric equivalent.

5.9 Allow for renewal of ten (10) wasted brackets attached to sea nozzles. Average size 1' x 1' x 20.4lb plate.

5.10 Allow for renewal of eight (8) wasted brackets attached to sea nozzles. Average size 6" x 6" x 15.3lb plate.

5.11 Replace all strainer plates in good order, renewing any damaged or missing fasteners with 316 stainless steel or better. Fasteners to be drilled for and provided with monel keeper wire or 316 stainless steel split (cotter) pins. Renew wasted securing tabs (clips) for strainer plates. Reinstall any trash bar removals.

6.0 PERFORMANCE CRITERIA / DELIVERABLES:

6.1 Summary of regulatory inspections

6.2 NDT reports

6.3 Para. 5.7.2.4 Line item price for new strainer plate

6.4 Para. 5.8.1 Line item pricing for 2" to 4" sea chest nozzle

6.5 Para. 5.8.2 Line item price for 6" sea chest nozzle.

7.0 **NOTES:** Access to sea chest is required in other specification items.

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2.06 SEA VALVES (ABS, USCG)

1.0 ABSTRACT: Sea valve examination in accordance with the ABS and USCG requirements.

2.0 REFERENCES: NONE ADDITIONAL

3.0 ITEM LOCATION / DESCRIPTION

ITEM	QTY	SERVICE	SIZE	TYPE	LOCATION
1	1	Ballast Suction Stbd. High Sea Chest	500 mm	Angle Globe	Engine Room Frame 62, S
2	1	Ballast Overboard Nozzle, side shell, Stbd.	500 mm	Butterfly	Engine Room Frame 56
3	1	Main S.W. Cooling High Suction, Port Sea Chest	500 mm	Globe	Engine Room Frame 62
4	1	Main S.W. Cooling Low Suction, Port Sea Chest	500 mm	Angle Globe	Engine Room Frame 62
5	1	Main S.W. Cooling Overboard, Nozzle, Port	500 mm	Butterfly	Engine Room Frame 56
6	1	Bilge Pump Overboard	200 mm	Angle Globe	Engine Room
7	1	OWS Overboard	60 mm	Globe	Engine Room
8	1	Fire Pump, Low Suction	150 mm	Angle Globe	Engine Room
9	1	Fire Pump, High Suction	150 mm	Globe	Engine Room
10	1	A/C Plant S.W. Cooling	125 mm	Angle Globe	Engine Room
11	1	Reefer Plant S.W. Cooling	50 mm	Angle Globe	Engine Room
12	1	A/C Plant S.W. Overboard	125 mm	Angle Globe	Engine Room
13	1	Alfa Laval Evap. Suction	100 mm	Angle Globe	Engine Room
14	1	Alfa Laval Evap. Overboard	4"	Globe	Engine Room
15	1	Alfa-Laval Evap. Suction	100 mm	Globe	Engine Room
16	1	Alfa-Laval Evap. Overboard	150 mm	Butterfly	Engine Room
17	1	R.O. Pump Suction	60 mm	Globe	Engine Room
18	1	Emergency Bilge Suction	500 mm	Angle Globe	Engine Room
19	1	Emergency Fire Pump Suction	150 mm	Gate	FWD Bow-Thruster Space
20	3	Sea Chest Vent	50 mm	Angle Globe	Engine Room
21	1	Sea Chest Vent	50 mm	Angle Globe	FWD Bow- Thruster Space
22	3	Sea Chest Steam Out	15 mm	Angel Globe	Engine Room
23	2	Sea Chest Steam Out	15 mm	Angle Globe	FWD Bow-Thruster Space
24	1	Boiler Blow down Overboard	25 mm	Globe	Engine Room
25	1	Drain Cooler Overboard	100 mm	Globe	Engine Room
26	2	Sewage Overboard	150 mm	Globe	Engine Room
27	2	Drain Overboard	150 mm	Swing Check	Engine Room
28	1	Reefer Chamber Overboard	100 mm	Swing Check	Engine Room
29	1	Galley Overboard	100 mm	Swing Check	Engine Room
30	1	Deck 3 Drain Overboard	200 mm	Swing Check	Engine Room
31	1	Deck 4 Scupper Overboard	80 mm	Swing Check	Engine Room
32	1	Hospital Overboard	65 mm	Swing Check	Engine Room
33	1	Pool Drain	80 mm	Swing Check	Engine Room
34	1	Draft Gauge	40 mm	Gate	Engine Room
35	2	Draft Gauge	40 mm	Gate	Mid-ship
36	1	Draft Gauge	40 mm	Gate	FWD Bow- Thruster Space

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4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: NONE

5.0 STATEMENT OF WORK

- 5.1 Immediately upon dry-docking, and in conjunction with sea chest and sea nozzles blasting and coating operations, tag all the sea valves and determine the ones that are going to be removed from vessel.
- 5.2 Develop and maintain a control tracking document (electronic spread sheet) that identifies for each valve the date, time, and person of record for the following activities:
 - 5.2.1 Location, ID number, removal, disassembly / cleaning
 - 5.2.2 Owner's inspection of cleaned and disassembled valve
 - 5.2.3 Recommended repairs (with Condition report number)
 - 5.2.4 Repair execution (with Change Order Number)
 - 5.2.5 Repair acceptance and regulatory inspection. Regulatory representatives are not to be called in until Owner's Representatives have inspected and repairs have been completed to the satisfaction of the Owner's representative.
 - 5.2.6 Coating Inspection
 - 5.2.7 Proper cleanliness and closure inspection of valves refurbished on board.
 - 5.2.8 Hydrostatic testing of the valves refurbished ashore.
 - 5.2.9 Proper installation and operational test of valves and actuators.
 - 5.2.10 Final sign off as the vessel is being floated.
- 5.3 Some valves are serviced in place and some others may be taken to shops ashore. All valves 350mm or less shall be taken ashore. Provide for closure of openings to prevent intrusion of hull blasting and coating media.
- 5.4 Remove and reinstall interferences as required in order to accomplish this work item for all valves listed in table above.
- 5.5 Prior to disassembly of the valves, the Contractor shall test all remote air operated valves with the ship's force operating the actuators.
- 5.6 Contractor shall make a condition report of all defects found prior to further work on the valves.
- 5.7 Valve operators and linkages shall be reattached as per existing arrangements where installed.
- 5.8 Valves shall be disassembled by removing bonnets, discs, gates, and stems. All packing material shall be removed and packing boxes cleaned. Thoroughly clean interiors of the valves of all marine growth, debris, and corrosion. At this stage make the valves available for inspection to Owner's Representative.
- 5.9 Furnish condition reports for necessary repairs such as straightening, building up with welding, machining flanges, bonnets, seats, disks, gates and gate guides as

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- required. Replace parts or complete valves that are deemed beyond repair with similar components.
- 5.10 Cast steel portions to be cleaned to SSPC 7 inside and out. Polish gates, seats, and stems in way of packing glands. Lap in seat to disc on globe valves. Exercise care to prevent damage to seat rings on "Butterfly" type valves. Render cleaned parts for examination by the Owner's Representatives prior to subsequent inspection by the Regulatory Representatives.
 - 5.11 All valves shall be rendered for inspection by the regulatory bodies after repairs and prior to coating and reassembly.
 - 5.12 When directed, coat all interior and exterior surfaces of ferrous valve bodies and bonnets with two coats of a surface tolerant marine grade epoxy allowing manufacturer's recommended drying time between coats. Review coatings and procedures with Owner's Representative. Render coated valve parts for examination by the Owner's Representative.
 - 5.13 Reassemble all valves (reconditioned and new) in good order with new gaskets, packing and fasteners (stainless) rated for applications. Replace grease fittings (with Owner approved type) clearing passages. Make up valves and operators using new approved gaskets and fasteners. Lubricate all operators.
 - 5.14 Valves refurbished in shops ashore shall be hydrostatically tested to 1.5 times the rated working pressure to the satisfaction of the Owner's Representative. Transport back to vessel.
 - 5.15 Valves refurbished in place shall be neatly assembled. A designated vessel's engineer will witness cleanliness and proper assembly before closure. All valves shall be installed with new gaskets, packing, seals, and fasteners as required.
 - 5.16 After installation, cycle all valves in the presence of the Owner's Representative and secure in 'closed' position. This includes demonstration of proper operation of actuators in both directions.
 - 5.17 All sea valves shall be left secured in 'closed' position.
 - 5.18 Provide yard machinists to stand-by while vessel is being partially submerged and as vessel is resting on blocks to carry out inspections and remedy any unusual occurrences associated with the sea valves. After successful completion of inspections on all submerged sea valve at the time and obtaining the permission of the Owner's Representative the vessel shall be allowed to float. While the vessel is still in the dry dock, machinists shall inspect all newly submerged sea valves to the satisfaction of the Owner's Representative.

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6.0 PERFORMANCE CRITERIA / DELIVERABLES:

- 6.1 Control Tracking Document – Para. 5.2 including Regulatory agency inspection sign off report
- 6.2 Condition reports for necessary valve repairs.

7.0 NOTES:

- 7.1 Note that valves of two (2) inches or less in size may be replaced in lieu of overhaul. This will be done only after obtaining specific approval from the IAS Engineer. New valves shall be equivalent to existing valves and meet all regulatory requirements. Valves shall be proposed to and approved for use by the IAS Engineer, ABS Surveyor, and USCG Inspector.

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2.07 INSTALL SCUPPER EXTENSION RINGS AND EXTENSIONS

1.0 ABSTRACT: The intent of this item is to provide and install rubber scupper and drain extensions on the hull to avoid staining the hull.

2.0 REFERENCES: Attachment, JPEG picture of scupper extension installed on Cape Horn "Scupper Extension".

3.0 ITEM LOCATION / DESCRIPTION:

3.1 Location: Scupper drains penetrate side shell approximately 13.5 M above keel, port and starboard, there are (30) 3" drains and (4) 4" drains

3.2 Description: Provide Port Engineer approved rubber scupper drain extensions, base rings, gaskets, and stainless steel fasteners, install in conjunction with hull blasting and coating item

4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: Scupper Extensions soft elbows only.

5.0 STATEMENT OF WORK

5.1 ~~Provide and install the approved~~ Install the OFM scupper extensions after finish coating of the side shell and prior to coming off dock.

5.2 Allow for Installation of these Scupper extensions shall be such they are not damaged as part of hull coatings process but also that the scupper outlet to 12" to 18" inboard and up are prepared and coated with the exterior of the hull.

5.3 Prepare the scupper outlet ports to Install Port Engineer approved, scupper extensions and the base rings during hull blasting and painting. Installation shall be in accordance with Manufactures requirements. Install backing ring and rubber extension after final curing of Hull Top Coat.

6.0 PERFORMANCE CRITERIA / DELIVERABLES: Submit with Bid Submission the Contractors Scupper extensions Tech documents for approval by the Port Engineer.

7.0 NOTES: NONE ADDITIONAL

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2.08 FATHOMETER; SERVICING

1.0 ABSTRACT: Servicing fathometer systems and the transducer compartments. There are two (2) fathometers, one (1) in the forepeak and one (1) in the after peak.

2.0 REFERENCES:

- 2.1 Dwg. 785-101-102; General Arrangement - (attached)
- 2.2 Dwg. No. 785-414-001; "Placement of Transducers for Echo Sounder". Available on Board

3.0 ITEM LOCATION / DESCRIPTION

3.1 Location:

- 3.1.1 After Unit: Fr. 61-63 Bottom plate shell penetration with internal access from inside Bilge Water Holding Tanks.
- 3.1.2 Forepeak unit: Fr. 202-203 Bottom plate shell penetration with internal access from inside Forepeak. There is an amplifier in the Emergency FP Generator space.
- 3.1.3 Communication cables to Bridge
- 3.1.4 Bridge operating station.

3.2 Description: Servicing of the Fathometer transducers (two).

4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: Ships force to assist in locating the fathometer trunks.

5.0 STATEMENT OF WORK

- 5.1 Locate and open out the fathometer trunk inside and at the bottom of the forepeak. Record condition of the closure. Clear the compartment of any standing water, scale, debris; sludge, etc. assume the spaces are each 3 mtr x 3 mtr x 1 mtr. High-pressure fresh water wash (3000Psi) the compartment in its entirety. Remove the residue and dry. Verify that gasket seating surfaces of the trunks are serviceable.
- 5.2 Furnish the service of a Manufacturer's (Raytheon) Service Technician to inspect and service the Fathometer transducers and associated equipment while vessel is in dry dock. These inspections shall be carried with the vessel's officer designated by the Owner's Representative both from the dry-dock and from the transducer compartments. Particular attention shall be paid to the transducer's lower cover gasket leaks.
- 5.3 The Service Technician, in presence of vessel's designated officer, shall electrically test all components of fathometer system for proper operation.
- 5.4 Allow for electrical disconnection, removal of transducer, renewal of hull penetration seals, anodes and testing, cleaning and servicing of the transducers

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and electrical connections. If the fathometer compartment is found with water the source shall be identified and corrective action taken.

- 5.5 The Service Technician, in presence of vessel's designated officer, shall electrically test all components of fathometer system for proper operation.
- 5.6 At completion of inspection and when directed, reassemble in good order leaving ready for floating off dock and service.
- 5.7 Prepare the entire compartment, inside of the trunk, outside of the trunk, and adjacent disturbed areas for coating and apply two (2) coats of a surface tolerant epoxy system in accordance with 001 Preamble to Specifications, Paragraph 8.0.
- 5.8 Trunks shall be left open while the ship is floated off the dry dock. Monitor the fathometer compartment to ensure no leakage by the hull to transducer gasket. Once the vessel has been re-floated and the transducer has been proven leak free, close trunk in good order.

6.0 PERFORMANCE CRITERIA / DELIVERABLES:

- 6.1 Identify Service Company with bid submission and obtain approval of the Owner's Representative.
- 6.2 Service report and condition reports

7.0 NOTES: NONE ADDITIONAL

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2.09 SPEED LOG; SERVICING

1.0 ABSTRACT: Servicing Doppler speed log system.

2.0 REFERENCES:

- 2.1 Speed Log Tech Manual in vessel technical library, tech-manual # 502 – available on board
- 2.2 Dwg. 785-414-016; Arr. VA EL MAGNETISKLOGG- attached

3.0 ITEM LOCATION / DESCRIPTION

- 3.1 Location: Fr. 238-239 with access in the Forward Bow Thruster Space.
- 3.2 Description: Inspection and servicing of Yokogawa Model LS033 Speed Log Systems

4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: Ships force to assist in locating the speed log transducer trunk.

5.0 STATEMENT OF WORK

- 5.1 While vessel is on Dry Dock provide for access to the speed log transducer and render shell penetration for regulatory inspection.
- 5.2 Furnish the service of an Owner Approved Manufacturer's Service Technician to inspect and service the speed log transducer and associated equipment while vessel is in dry dock.
- 5.3 These inspections shall be carried with the vessel's officer designated by the Owner's Representative both from the dry dock and from the internal compartment. Particular attention shall be paid to the transducer's lower cover gasket leaks.
- 5.4 The shell penetration shall be disassembled, the valve serviced as a sea valve and all gaskets renewed. Renew Zinc anode, which is part of system component. Close up system in the presence of Owner's Representative leaving ready for service.
- 5.5 Provide the service report to the Owner's Representative.

6.0 PERFORMANCE CRITERIA / DELIVERABLES:

- 6.1 Identify Service Company with bid submission and obtain approval of the Owner's Representative.
- 6.2 Service report and condition reports

7.0 NOTES: NONE ADDITIONAL

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2.10 HULL SACRIFICIAL ANODES

1.0 ABSTRACT: This item describes the work associated with sacrificial anodes of the hull and rudder.

2.0 REFERENCES

- 2.1 Dwg. No. 785-101-101&2, "General Arrangement" - attached
- 2.2 Dwg. No. 785-278-200 B.L. 1, "Anode Installation Arrangement, Hull"

3.0 ITEM LOCATION/ DESCRIPTION:

- 3.1 Location:
 - 3.1.1 Aft vertical sides of hull
 - 3.1.2 Rudder
 - 3.1.3 Thruster Tunnels
 - 3.1.4 Sea Chests
- 3.2 Description: Replacement of Hull wasting Anodes

4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: NONE

5.0 STATEMENT OF WORK

- 5.1 Staging and other necessary conditions are provided under other items, such as hull blasting and coating, propeller, and rudder items of this specification.
- 5.2 A joint survey shall be conducted with the Port Engineer to determine if any existing anodes are to be retained. For bidding purposes assume only new anodes only will be used.
- 5.3 In accordance with the plan in 2.3 provide for installation of anodes without conflicting with coating applications in accordance with attached Wilson Walton Plan. Crop off and grind off all unused tabs and straps. Do not piggyback new anodes on old straps.
 - 5.3.1 Provide a picture record of installed anodes as part of Dry Docking Report.
 - 5.3.2 For bid purposes allow for installation of the following Wilson Walton anodes. Anodes shall have integral welding straps.
 - 5.3.2.1 Twenty four (24) 75 lb. anodes on the rudder
 - 5.3.2.2 Three (3) 75 lb. anodes at the bottom of the rudder post
 - 5.3.2.3 Sixteen (16) 50 lb. anodes in each thruster tunnels – thirty-two (32) total evenly spaced around inlet and outlet circumferences.
 - 5.3.2.4 Sixteen (16) 50 lb. anodes distributed inside the sea chests.

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5.4 Provide two (2) hard and one electronic copies of Sacrificial Hull Anode Installation Report (final as installed) showing location and anode characteristics; such as model number, composition, weight, dimensions etc.

6.0 PERFORMANCE CRITERIA / DELIVERABLES: Sacrificial Hull Anode Installation Reports.

7.0 NOTES: NONE

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2.11 RUDDER – BEARING CLEARANCES, TEST AND COATING (ABS / USCG)

1.0 ABSTRACT: Rudder bearing clearances and servicing of related aspects.

2.0 REFERENCES: Available onboard for review.

- 2.1 Dwg. No. 785-218-001, "Stern frame and Rudder Reference Drawing" -
- 2.2 Dwg. No. 785-218-002, "Stern frame Rudder Horn"
- 2.3 Dwg. No. 785-218-003, "Stern frame Propeller Post"
- 2.4 Dwg. No. 785-401-001, "Rudder - SH 1 and 2"
- 2.5 Dwg. No. 785-101-150 ALT 2, "Rudder And Propeller Aperture, Booklet"
- 2.6 Dwg. No. 785-401-002, "Rudder Castings"
- 2.7 Dwg. No. 785-402-001, "Rudder Stock"

3.0 ITEM LOCATION / DESCRIPTION:

- 3.1 Location: Frames -5 to 3, outboard at the vessels stern
- 3.2 Description: Rudder, rudder stock lower bearing and pintle bearing.

4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: Oil for steering motor refilling.

5.0 STATEMENT OF WORK:

- 5.1 Provide access for Owner, Regulatory and work scope using staging as required.
- 5.2 Rudder cavity has been treated with and contains Float Coat. Careless removal of a drain plug will result in spillage of Float Coat.
- 5.3 In the presence of Owner's Representative and regulatory agencies, remove the vent plug and observe if the rudder is under vacuum. Then, Only if directed by the Owner's Representative, remove drain plug(s) in order to drain the rudder. Place a clean 55-gallon drum under the drain to capture the spilled liquids. If the plug cannot be replaced in a timely manner to stop the liquid flow, there may be a need for additional clean drums to capture all the liquids.
- 5.4 Provide access for visual inspections of pintle and rudder stock nuts and keepers by removing the access plates. Clean out cavities by hand as much as possible.
- 5.5 Arrange nut and keeper inspections by regulatory bodies and the Owner's Representative. Take and record upper and lower pintle and sediment bearing clearance in the presence of the IAS Engineer, ABS Surveyor, and USCG Inspector. Clearance shall be taken at four (4) points of bushing periphery, spaced 90-degrees apart.
- 5.6 Drain oil from steering motor, discard in accordance with all regulations. When directed refill using Owner furnished oil from stocks onboard in the Cargo holds. Allow for an oil charge of up to 200 gallons.
- 5.7 Remove rudder stock lower packing protective collar, packing housing and rudder packing and seals. Clean and examine the rudder stock sleeve and post bushing.

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- 5.8 Obtain rudder stock lower bearing clearances. After taking clearances, install new Owner approved and Contractor furnished packing and seals. Close up using new stainless steel fasteners and monel keeper wires.
- 5.9 After inspections are completed in the rudder cavities, wire brush and apply a coat of surface tolerant epoxy. Allow for renewal of closure plates and backing strips as required. Close up cavities by welding the closure plates.
- 5.10 Demonstrate the condition of closure plate welds by vacuum box testing or 10 minute 2 Psi air pressure testing. In case of air testing, after completion of the test place a plug in the opening and apply epoxy putty to cover.
- 5.11 Apply Marine epoxy putty to smooth the grooves at closure plate welds and other areas such as seams and lifting lug openings as directed by the Owner's Representative.
- 5.12 At forward of the pintle area, the rudder horn transition from horizontal to vertical shall be inspected by dye penetrant method. The corner area that is to be inspected is about 12" wide and 48" long. Provide a photographic record.
- 5.13 External preparation and coating of the rudder and horn shall be accomplished under hull blasting and coating item.

6.0 PERFORMANCE CRITERIA / DELIVERABLES:

- 6.1 Evaluate options for rudder stock packing and seals. Furnish Technical Engineering Data for same for Owners review.
- 6.2 Rudder inspection / survey and test results and Rudder Bearing Clearance Report
- 6.3 NDT report of Rudder Horn

7.0 NOTES: NONE ADDITIONAL

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2.12 PROPELLER REMOVAL AND TAILSHAFT TAPER INSPECTION (ABS / USCG)

1.0 ABSTRACT:

- 1.1 Removal, inspection, replacement of propeller and inspection of taper on tail shaft to obtain credit for ABS and USCG five year Tail Shaft Survey.
- 1.2 Fabrication and installation of a new Fairwater cap to OEM standards.

2.0 REFERENCES: Available on Board

- 2.1 Dwg. No. 785-218-001, "Stern frame And Rudder Reference Dwg."
- 2.2 Dwg. No. 785-218-002, "Stern frame Rudder Horn"
- 2.3 Dwg. No. 785-218-003, "Stern frame Propeller Post"
- 2.4 Dwg. No. 785-101-150 ALT 2, "Rudder And Propeller Aperture, Booklet"
- 2.5 Dwg. No. 785-631-235, "ROPE GUARD"
- 2.6 Dwg. No. 785-631-215 REV B, "Propeller Shaft"
- 2.7 Dwg. No. 785-631-213, "Limit Ring For Propeller Nut"
- 2.8 Dwg. No. 785-631-211, "Propeller Fairwater Cap Cone"
- 2.9 Dwg. No. 785-631,-250, "Propeller Cone Template"
- 2.10 Dwg. 1/11.2722.0.1 Propeller
- 2.11 Dwg. 1/11.22.22.0.1, Propeller Hub
- 2.12 Spare Propeller on after deck No. 4-1/2 of the Horn

3.0 ITEM LOCATION / DESCRIPTION:

- 3.1 Location: Frames -5 to 3, outboard at the vessels stern
- 3.2 Description:
 - 3.2.1 Propeller nut, pilgrim, type 3, Doncasters Moorside Ltd., outer dia.- 920mm,
 - 3.2.2 Propeller- manufactured by Theodor Zeise, 5 blade, 6.7 M diameter / 34,568 kg.
 - 3.2.3 Stern Tube Seal- Simplex, Compact Type Size 800, Mfg.: Howaldswerke-Deutsche Werft
 - 3.2.4 Stern Tube Bearing- Mfg.: Railko Ltd., Loudwater, England, Type WA 80 H

4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES:

- 4.1 Vessels stern bearing micrometer set; under the custody of the Chief Engineer.

5.0 STATEMENT OF WORK:

- 5.1 Actual sequencing of the requirements of this work scope shall be planned to integrate as necessary with other Specification Items so as to cause no unnecessary disruptions.
- 5.2 **AS PART OF THE BIDDERS INSPECTION VERIFY THAT YARD PERSONNEL CAN IDENTIFY AND LOCATE ALL THE ONBOARD TOOLING FOR THIS ITEM. IF NOT CONTRACTOR SHALL PROVIDE ALL TOOLING NECESSARY TO PERFORM THESE TASKS. TESTING OF ANY AND ALL LIFTING PAD EYES / HULL ATTACHMENTS CURRENTLY IN PLACE AND REQUIRED FOR THIS WORK SCOPE SHALL BE BORNE BY THE CONTRACTOR.**

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- 5.3 Blasting operations shall not be in progress while removing or reinstalling the propeller, tail shaft, or seal. If grit blasting is to be done while the tail shaft is drawn, the Contractor must furnish and install blanks and coverings to protect tail shaft and bearing from contamination and damage.
- 5.4 Work on propeller shall be started as soon as vessel is on blocks and after completing the specified high-pressure fresh water wash in-way-of the stern area. Work shall continue until completed within twenty-four (24) hours of flooding the dock.
- 5.5 The taking of wear down readings shall be performed as soon as possible after the vessel is on dock but before any drive train disconnects or removals and again at the completion of all propeller, seal, and tail shaft related items. Results of such readings shall be included in the final dry dock report.
- 5.6 Provide for staging as soon as practical after the hull is washed down.
- 5.7 Crop off the existing rope guard. Clean the rope guard cavity by hand and particularly the areas around wear down reading ports. As part of closure the Rope guard is to be renewed to original dimensions but to a plate weight 25% higher than the original. Provide for access ports etc.
 - 5.7.1 Open the vent and the drain plug on the tail shaft aft seal box. Drain oil to a container taking two (2) representative samples during the draining process for analysis. Dispose of oil according to all Fed, State, and Local regulations.
 - 5.7.2 In the presence of the Owner's Representative, ABS and USCG Inspectors take and record a complete set of wear-down readings. These readings shall be taken using the owner-furnished gauge. Once satisfactory readings have been taken and recorded, and with the permission of the Owner's Representative, the Contractor shall securely and properly re-seal the wear down access ports.
- 5.8 The Chief Engineer shall record the reading on the record card maintained in the wear down gauge case. The wear down gauge is to remain in possession of the Chief Engineer.
- 5.9 Remove the steel fairwater cap from the propeller and dispose of same. Provide a new Fairwater cap to the standards and matching the OEM design of the attachment in Para. 2.0. When reassembling the propeller system fully fill the fairwater cap with new yellow tallow.
- 5.10 Template the position of the propeller hub on the shaft prior to removal.
- 5.11 Render the propeller nut and keeper for inspections by the Owner's Representative and the regulatory agencies. After inspections remove keeper and propeller nut.

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- 5.12 Remove and suspend propeller using appropriate rigging.
- 5.13 Note: Propeller servicing i.e. NDT and polishing is under a separate item.
- 5.14 The tail shaft taper area shall be thoroughly cleaned and checked for cracks or damage using a non-destructive method of testing (Magnaflux under black light or equal) per ABS/USCG, paying particular attention to the stress relieving spoon area. This is to be carried out in the presence of the Port Engineer, ABS and USCG Inspectors.
- 5.15 Note: Tail shaft is removed and replaced under a separate, optional item.
- 5.16 Note: Stern tube bearing is to be kept protected from any contamination associated with the work requirements of this specification and throughout the dry docking period.
- 5.17 After the reinstallation of the outboard seal assembly, rig the propeller in place and reinstall on a new Contractor-furnished O-ring
- 5.18 Provide a plan for draw up of the propeller for review and approval with bid submission identifying the methodology of this activity.
- 5.19 After completion of tail shaft removal, surveys, repairs and reinstallation position the polished propeller back on tail shaft taper in the presence of the Owner's Representative. The propeller to tail shaft fit shall be checked to ensure a minimum 85% contact prior to final draw up of propeller.
- 5.20 When directed complete the draw up and hardening of the propeller nut in the presence of the Port Engineers and Regulatory parties.
- 5.21 The propeller nut is to be hardened up in the presence of the USCG, ABS & Port Engineer.
- 5.22 Propeller hub to be refilled with preservative according to manufacturer's recommendation.
- 5.23 Install propeller nut keeper and the fairwater cap. Fill fairwater with hot tallow. After settling refill again to prevent any air pockets. Tightly secure plugs. Cover the attaching bolt landing pockets with cement and fair to adjacent surfaces.
- 5.24 Take tail shaft bearing clearances measure record and report.
- 5.25 Re-install the rope guard touching up weld burned areas.
- 5.26 After installation, cover the entire propeller, rope guard, and fairwater cap with heavy-duty plastic sheets to prevent tail shaft bearing and other surfaces from over spray while hull coating is being applied. After completion of hull coatings remove plastic protective covers.

6.0 PERFORMANCE CRITERIA / DELIVERABLES:

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- 6.1 New Fairwater cap furnished by and for use of Contractor.
- 6.2 Propeller nut draw up procedure with Bid submission.
- 6.3 Four (4) copies of reports for each of the following:
 - 6.3.1 Tail shaft bearing clearances before removal of tail shaft
 - 6.3.2 Tail shaft bearing clearances after installation of tail shaft
 - 6.3.3 Propeller nut/keeper examination and torque applied

7.0 NOTES:

- 7.1 Propeller pushed off taper at 9,000#, January, 2007.
- 7.2 Tail shaft was not removed in '07.

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2.13 PROPELLER (ABS / USCG)

1.0 ABSTRACT: Cleaning, inspecting with dye-check and polishing the main propulsion propeller.

2.0 REFERENCES: Refer to previous Item

3.0 ITEM LOCATION / DESCRIPTION:

3.1 Location: Outboard at vessel's stern.

3.2 Description: Propeller, Nickel Manganese bronze, right handed, solid, five blades. Diameter - 6,700 mm weight 34,568 kg

4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: None

5.0 STATEMENT OF WORK:

5.1 Provide access for this item is required for this item.

5.2 Propeller is being removed and reinstalled under a separate item.

5.3 Prior to removal wash the propeller with fresh water high-pressure wash down and protection against over spray has been provided.

5.4 Propeller is to be surveyed and damages due to impact, erosion and / or cavitation to be recorded and reported to the Owner's Representative.

5.5 Provide for dye penetrant checks of all propeller blade roots, blade edges and other suspect areas. Clean propeller in way of dye penetrant check.

5.6 Furnish the services of specialist propeller polishing company to polish the main propulsion propeller to the standard Rupert "B", 76 micro inches or less.

5.7 After polishing and up to re-floating of vessel maintain a protective covering over the entire propeller with heavy-duty plastic sheets to prevent over spray while hull coating is being applied.

6.0 PERFORMANCE CRITERIA / DELIVERABLES:

6.1 Identify specialist propeller polishing company with bid submission and obtain Owner's approval prior to start of work.

6.2 Two (2) hard and one electronic copies of the dye penetrant inspection report

6.3 Two (2) hard and one electronic copies of propeller polishing report. Incorporate same into final Dry Dock Report

7.0 NOTES: Protect propeller from blasting operations and coating over spray generated by other items throughout the dry-dock period.

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2.14 TAILSHAFT OIL SEAL, OUTBOARD; SERVICING AND REPAIRS (ABS)

- 1.0 ABSTRACT:** Intent is to provide for inspection, survey, and servicing of outboard tail shaft sealing arrangements.
- 2.0 REFERENCES:**
- 2.1 Dwg. No. 785-631-110, "Stern Tube Arrangement"
- 3.0 ITEM LOCATION / DESCRIPTION:**
- 3.1 Location: Frame 9, outboard of ships stern
- 3.2 Description: Simplex - compact type size 800, Mfg. - Howaldswerke-Deutsche Werft.
- 4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES:** All seal components will be Owner furnished, all other material shall be Contractor furnished.
- 5.0 STATEMENT OF WORK:**
- 5.1 Note: Fairwater, propeller and rope guard is removed and replaced under propeller removal and tail shaft taper inspection item.
- 5.2 Drain, remove and dispose of the system's lube oil. Disposal to be accomplished in accordance with applicable federal, state and local environmental regulations.
- 5.3 Provide the services of either of the following to serve as Technical Advisor to supervise / execute this work scope.
- 5.3.1 Dwight Davis (Dwight.davis@wartsila.com), Phone 1-415-378-3195.
- 5.3.2 Richard Thomas of Coastal Seal Service; (silverbronze76@aol.com), Phone 1-630- 267-7431
- 5.4 Open and clean the system's lube oil gravity tank and sump tank. Tanks are to be examined by C/E before closing. Tanks are to be closed with new gaskets. Dispose of all waste generated.
- 5.5 Remove to a clean shop all seal components including the liner for inspection.
- 5.6 Following satisfactory inspection and acceptance, reassemble the oil seal box with Owner furnished new seal parts, as per manufacturer's representative recommendations.
- 5.7 Contractor to check the run out of the seal liner, adjust to acceptable limits. All fasteners shall be lock-wired using Contractor-furnished stainless steel wire with a gauge as per the instructions of the manufacturer's service engineer. After liner bolts to be Loctited with 243, these bolts are not to be wired because the liner has insulating strips to control electrolytic action.
- 5.8 Fill intermediate seal void with Hilton Hyperlube or other product as recommended by technical representative.

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- 5.9 Conduct a system pressure test to ensure seal and system to be properly installed and working using system fluid and pressure. Ship will supply new oil.
- 5.10 Stand-by while vessel is floated off dry dock paying special attention to Seal Installation. Seal Technicians to be present at the stern tube gland during this activity.

6.0 PERFORMANCE CRITERIA / DELIVERABLES:

- 6.1 Identify Seal service technician and affiliation with bid submission
- 6.2 Three copies of Survey / Repair report and findings
- 6.3 Manufacturer's service engineer report

7.0 NOTES: NONE ADDITIONAL

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2.15 OPTIONAL ITEM, TAIL SHAFT REMOVAL, REPLACEMENT AND INBOARD SEAL (ABS / USCG)

1.0 ABSTRACT: The intent of this work item is to draw inward and remove the tail shaft from stern tube. Clean and prepare for regulatory body inspection. After the inspection is completed, reinstall the tail shaft. The work specified within the work item shall be performed under the supervision of Contractor-furnished manufacturer's service engineers. In addition to Regulatory inspection.

- 1.1 Line shaft bearing reaction checks
- 1.2 Interior seal liner to be machined
- 1.3 Install a LO purifier suction from the pipe entry in the forward stern tube to aftermost end.

2.0 REFERENCES:

- 2.1 Dwg. No. 785-631-215 REV B, "Propeller Shaft", available in ship's technical library.
- 2.2 Dwg. No. 785-631-221, "Shaft Support Pad - Sh. 1 of 2", available in ship's technical library.
- 2.3 Dwg. No. 785-631-100, "Shafting Arrangement", available in ship's technical library.
- 2.4 Dwg. No. 0159/18220, "Ship's Shaft Load Bearings", available in ship's technical library.
- 2.5 Dwg. No. 0159/18221, "Ship's Shaft Line Bearings", available in ship's technical library.

3.0 ITEM LOCATION / DESCRIPTION:

- 3.1 Location: Outboard of ships stern
- 3.2 Description: Fwd.-Intermediate Shaft: 9,830 mm length X 578 mm dia. Mid-Intermediate Shaft: 5,000 mm length X 578 mm dia. Tail shaft: 9,933 mm length X 728 mm Dia.

4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES:

- 4.1 Inboard seal parts
- 4.2 Diehl Engineering Service Tech to run strain gauge checks during weighing of line shafting.
DIEHL Engineering Co.
PO Box 1573 / Kingston WA

5.0 STATEMENT OF WORK:

- 5.1 Do not commence this item until confirmed to do so in writing or via electronic message from the Port Engineer of record. Owner reserves the right to cancel this item. Due to the uncertainties of the necessity of completing all the tail shaft related items other than the propeller and the wear down readings this item is optional and is only to be started when so advised in writing by the IAS Port Engineer

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- 5.2 Actual sequencing of the requirements of this work scope shall be planned to integrate as necessary with other Specification Items so as to cause no unnecessary disruptions.
- 5.3 **AS PART OF THE BIDDERS INSPECTION VERIFY THAT YARD PERSONNEL CAN IDENTIFY AND LOCATE ALL THE ONBOARD TOOLING FOR THIS ITEM. IF NOT CONTRACTOR SHALL PROVIDE ALL TOOLING NECESSARY TO PERFORM THESE TASKS. TESTING OF ANY AND ALL LIFTING PAD EYES / HULL ATTACHMENTS CURRENTLY IN PLACE AND REQUIRED FOR THIS WORK SCOPE SHALL BE BORNE BY THE CONTRACTOR**
- 5.4 Any grit blasting and painting shall be terminated while removing or reinstalling the propeller, tail shaft, or seals. All components shall be fully protected at all times from blasting and painting work, such as covering of stern tube while work is not in progress.
- 5.5 During rigging operations, maintain the shafting fully supported from both ends and level to avoid damage to bearings. All bearings including the stern tube bearings must be kept under constant watch to ensure they are not placed under excessive or abnormal force.
- 5.6 Prior to disassembly of the shafting system, the propeller, and the rudder, a check shall be made of the condition of the propulsion shafting system. The and measure the crankshaft deflections of the main engine. The checking of the main engine crankshaft deflections **is also covered in Item 2.01** and the costs of the deflections noted here are not to be duplicated.
- 5.6.1 Crankshaft deflections related to this item: Two (2) cold engine deflection sets shall be taken with the vessel:
- 5.6.1.1 Lifted in dry dock, prior to any shaft and bearing work.
- 5.6.1.2 Lifted in dry dock, after all shaft and bearing work is completed.
- 5.7 Determine the bearing reactions and loads for two (2) line shaft bearings before removal of the Propeller and tail shaft and after reassembly.
- 5.7.1 There are strain gauges currently installed on the shafting **THESE MUST BE PROTECTED** during removal and reinstallation of line shafting.
- 5.7.2 Allow for time as needed for the Owner Furnished Technician (Diehl Engineering) to verify line shaft bearing loading. This will require time to operate the ship's turning gear and Lube oil systems.
- 5.7.3 Loading of bearing will be to the satisfaction of the Owner's Line Shafting Technician.
- 5.7.4 Assume that ABS will attend a final load check.
- 5.8 After the initial readings are concluded proceed with the removal / repair work scope.
- 5.8.1 Remove all interferences, stow as directed.

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- 5.8.2 Unbolt and rig clear two (2) line shaft bearing covers, including any appendages (thermocouples, cooling lines, etc.), out of the way in a clear area of the engine room.
- 5.8.3 Place on wooden pallets and cover with a suitable protective material during the course of this work item.
- 5.8.4 The mid-intermediate and fwd.-intermediate shafts shall be unbolted and raised by chain falls straight up until they clear the line shaft bearing pedestals. Once fully clear of the bearings they shall then be rigged out of the way.
- 5.8.5 Exercise care labeling all bolts to ensure that they are returned to their original locations and radial position relative to the shaft.

- 5.9 The mid and fwd.-intermediate shafts shall be temporarily stored in a secure location in the engine room in order to prevent any damage to the shafting.

- 5.10 The line shaft pedestals shall be properly covered to prevent damage during the course of this work item.

- 5.11 The tail shaft shall then be drawn into the engine room using mounted trolleys located on board the vessel.

- 5.12 Extreme care shall be taken to support the full weight of the shaft, both inside and out, during the entire course of this evolution.

- 5.13 The tail shaft shall be temporarily stored in a secure location in the engine room in order to prevent any damage to the shafting.

- 5.14 Clean and prepare all coupling bolts for inspection. Provide the services of qualified NDT technicians to perform dye penetrant testing of all coupling bolts.

- 5.15 Disassemble the inboard shaft seal and clean all parts.

- 5.16 The forward and aft stern tube bearing are to be cleaned and prepared for inspection. Take measurements of the forward and aft stern tube bearing on inside diameters and of the corresponding areas on the propeller shaft on outside diameters.
 - 5.16.1 On the forward/inboard bearing, the measurements shall be take in three (3) longitudinal locations (forward, center and aft) with two (2) readings (top to bottom and port to starboard side) at each location.
 - 5.16.2 The aft/outboard bearing shall be measured in five (5) longitudinal locations (from forward to aft) with two (2) readings (top to bottom and port to starboard side) at each location.

- 5.17 As part of this servicing provide for removal, machining and reinstallation of the inner seal liner in accordance with the Seal Representatives Requirements. The grooving of the liner is one of the primary reasons for removing the shafting. Provide a report of this machining activity.

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- 5.18 Prepare and submit the readings in report form to the IAS Port Engineer prior to the joint surveys/inspection with ABS, USCG and IAS Engineer. Provide for arrangements and co-ordination with ABS, USCG, and the IAS Engineer for the joint surveys/inspection.
- 5.19 Provide a line item price for installing a 3/4" lube oil purifier suction to the after most end of the stern tube cavity. Currently the Lube Oil purifier suction enters and draws only from the forward end of the stern tube cavity.
- 5.19.1 Material sch. 40 316 stainless.
- 5.19.2 Allow for two (2) 90° elbows, 20' of pipe
- 5.19.3 Pipe straps, up to six (6) each welded to cavity bottom. 1" x 1/4" FB x 6" long formed over pipe. In way of one (1) strap install stops on the top of the pipe to prevent shifting of the pipe.
- 5.19.4 Suction comprised of a 6" long 1/4" wide slot in bottom of the pipe?
- 5.20 Following satisfactory inspection and acceptance, the tail shaft is to be reinstalled. Under the direct supervision of the Simplex Service Technician the inner seal is to be assembled using new Owner furnished soft parts.
- 5.21 Rig the tail shaft into the stern tube using Contractor furnished materials and lifting gear.
- 5.22 During reinstallation of the tail shaft, it is of extreme importance to maintain the shaft on a level plane throughout rigging operations. This is necessary to avoid damage to both the forward or aft stern tube liners and bearing surfaces. Constant checking shall be maintained to ensure that the shaft is not placing undue force on the stern tube liners or bearing surface.
- 5.23 Verify that the shaft is fully seated in the liners and that it does not have an abnormal attitude.
- 5.24 When the tail shaft is seated in a satisfactory position, the intermediate shafts shall then be lowered back into position and bolted to their corresponding shafts.
- 5.25 The outboard tube seal assembly shall be installed as covered by separate specification item.
- 5.26 Fill the stern tube with vessel-furnished new oil. Test the stern tube oil seals with ship's head tank pressure.
- 5.27 Reassemble the two (2) line shaft bearings and associated appurtenances.
- 5.28 Reinstall and restore to original all removed interferences.
- 5.29 Following reinstallation of the complete shafting system, the propeller, and the rudder, a check shall be made of the condition of the propulsion shafting system. The Contractor shall determine the bearing reactions and loads for two (2) line shaft bearings and shall measure crankshaft deflections of the main engine. The

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Contractor shall make adjustments necessary to bring the shafting system within original tolerance.

- 5.30 Prior to re-flooding the dry dock, a report of findings and corrections shall be provided to the IAS Engineer in three (3) copies.

6.0 PERFORMANCE CRITERIA / DELIVERABLES:

- 6.1 Identify Simplex Seal Representative.
- 6.2 Main Engine Crank Shaft Deflections
- 6.3 Report on tail shaft and stern tube bearing condition.
- 6.4 Line item price for Lube oil purifier pipe suction Para. 5.19

- 7.0 NOTES:** No hammering on shaft coupling bolts will be allowed.

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2.16 HULL IMPRESSED CURRENT CATHODIC PROTECTION SYSTEM (ICCP) - SERVICING

1.0 **ABSTRACT:** Inspect and service forward and aft Capac System in accordance with the Manufacturer's Requirements.

2.0 REFERENCES:

- 2.1 Technical manual #495, ships tech library
- 2.2 Dwg. No. 785-101-102, "General Arrangement - SH 1 And 2"

3.0 ITEM LOCATION / DESCRIPTION:

3.1 Location:

- 3.1.1 Controllers: ER CONTROL ROOM /FO'C'SLE
- 3.1.2 Hull below water line fore and aft- Anodes and electrodes
- 3.1.3 Shaft alley
- 3.1.4 Steering gear room

3.2 Description: Impressed Current Cathodic Protection (ICCP) System; Aquamatic III, AQ-CP3-20262, Manufacturer- Wilson Walton International, Inc.

4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: NONE

5.0 STATEMENT OF WORK:

5.1 The entire ICCP system shall be serviced in accordance and under the supervision of Contractor furnished OEM Wilson Walton Service Technician (OEM Tech.).

5.2 Provide for internal and external access and servicing of junction boxes, stuffing tubes, and skin penetrations, reference cells, anodes and all submerged appurtenances of the system.

5.2.1 This will require internal and external staging, internal lighting, and internal ventilation.

5.2.2 Rig portable extension lights to all anode and reference electrodes

5.2.3 Forward unit internal box locations are in the forward tanks.

5.2.4 Aft units are in the machinery spaces.

5.2.5 This includes but is not limited to the following components:

5.2.5.1 150 Amp Anodes, 75 Amp Anodes,

5.2.5.2 Forward and aft Reference Electrodes

5.2.5.3 Propeller shaft slip ring,

5.2.5.4 Bonding cable between rudder stock and ship's structure, 300 Amp and 150 Amp power units,

5.2.5.5 Main computer controller unit, data logger, etc.

5.3 Erect and demobilize staging as required to access all anode shields and reference cells. The OEM Tech Representative shall inspect and ensure that contractor has properly installed approved protective covering on reference cells

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and anodes (prevent damage to the platinum coating on the sleeves) before the sand blasting of hull is permitted.

- 5.4 As directed by the OEM Tech. Representative the damaged / air pocket areas of dielectric shields shall be sand blasted to bare metal to the satisfaction of OEM Tech. Representative. Protect the healthy dielectric shields from stray grit during sand blasting operations.
- 5.5 Lightly grit sweep the 'Capastic' area to remove the calcium deposits and spot blast damaged areas of 'Capastic' to "near white" metal.
- 5.6 Repair dielectric shield areas by applying new 'Capastic' material as directed by the OEM Tech Representative.
- 5.7 Grit blast area surrounding each 150 Amp anode, 10'6" x 18'6" and surrounding each 75 Amp anode is 4'0" x 8'6", each way around the 'Capastic' areas of each. Before the 'Capastic' is cured, apply successive coats of epoxy or approved coating of equal dielectric strength to a thickness of 20 mils wet. Hull underwater coatings to be applied over the top of this newly created basic protection at dielectric shield areas as part of Hull Blasting and Coating item. Consult with and obtain the approval of OEM Tech. Representative before substituting 'Capastic' with other dielectric material.
- 5.8 Remove cover plates from all top hats (cofferdams) at all locations for inspections by the OEM Tech. Representative. After inspections and repairs close the covers in good order using new 1/16" neoprene gaskets. Sealants shall be manufacturer's recommended or urethane underwater sealant whichever is superior as determined by the OEM Tech Representative. Upon completion, prove the tightness of watertight enclosures and conduits with 3-Psi air test.
- 5.9 The shaft grounding assembly shall be serviced. The slip ring and brush assembly shall be cleaned and serviced. Spring tension shall be adjusted to avoid excessive wear
- 5.10 The rudder stock bond shall be checked. The flexible cable shall be checked to confirm that it has not suffered any mechanical damage and that there remains good continuity (less than one ohm) between the vessel's hull and the rudder stock. Check for worn or frayed ends.
- 5.11 TESTING: Stand by while the system is activated and tested the system.

6.0 PERFORMANCE CRITERIA / DELIVERABLES:

- 6.1 Photo record of Hull Anode Protection and post coating of Capastic
- 6.2 Wilson Walton Technician identified with Bid submission
- 6.3 Cost per day for service technician with bid submission.
- 6.4 Manufacturer's service engineer report. Two (2) hard copies and one electronic copy.

7.0 NOTES: NONE ADDITIONAL

2.17 SEA CHEST MARINE GROWTH PREVENTION SYSTEM; SERVICING

1.0 ABSTRACT: The intent of this item is to open out and service the vessel's marine growth prevention system in accordance with the Manufacturer's Requirements. Work shall be performed by a manufacturer's service engineer.

2.0 REFERENCES:

- 2.1 Technical manual – available on board
- 2.2 Dwg. No. 785-101-102, "General Arrangement - SH 1 And 2"

3.0 ITEM LOCATION / DESCRIPTION:

- 3.1 Location: Inside Sea Chests
- 3.2 Description: Impressed Current Cathodic Protection (ICCP) System; Aquamatic III, AQ-CP3-20262, Manufacturer- Wilson Walton International, Inc.

4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: NONE

5.0 STATEMENT OF WORK:

5.1 Provide the services of a manufacturer's service engineer(s) to service and inspect, the vessel's Anfomatic Marine Growth Prevention System.

5.2 Manufacturer's contact information is as follows:

Wilson Walton International, Inc.
Allaire Corporate Center
3349 Route 138
Building B, Suite B
Wall, NJ 07719
Phone: 732-681-0707
Fax: 732-681-6118
Email: sales@wilsonwalton.com

5.3 All work shall take place under the direct supervision of this manufacturer's service engineer.

5.4 Provide daily verification and a formal closure report of work done within two (2) days of completion of work. This report shall be provided electronically.

5.5 Provide support including staging to assist the manufacturer's service engineer(s) to access, inspect, service, and correct deficiencies as found on the permanent mounted Anfomatic Marine Growth Prevention System. System materials beyond those defined in this work scope shall be the subject of a change order Allow for internal and external access and servicing of junction boxes, stuffing tubes, and skin penetrations, reference cells, anodes and all submerged appurtenances of the system.

5.6 The Anfomatic system servicing shall include but not be limited to::

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- 5.6.1 High and low sea suction anodes (four (4) pairs – eight (8) total), power unit, control panel, cabling, junction boxes, etc.
- 5.6.2 The Anfomatic power supply, control panel, and junction boxes shall be serviced. The units shall be shut down and secured. Electrical inputs to the units shall be secured by pulling fusing and/or opening circuit breakers.
- 5.6.3 The units shall be locked out/tagged out. All dust accumulation in the units shall be cleared with dry, clean compressed air. All wire connections shall be checked to ensure that they are tight and free of corrosion. Louvers and air-flow openings are to be checked for obstructions. Following inspection and service, the units shall be restored to operating condition. The hull penetrations and mounting bosses of the anodes shall be checked from both inside and outside of the ship while on dry dock.
- 5.7 Procure and renew all eight (8) Anfomatic system anodes. Two (2) anodes are located in each of the engine room sea chests.
 - 5.7.1 Anodes shall be replaced with Wilson Walton Clearflow type anodes.
 - 5.7.2 Anodes include four (4) total copper alloyed anodes and four (4) total ferrous alloyed anodes, all complete with cofferdams and mounting bosses (rings).
 - 5.7.3 Size of each anode is 4.75 inch x 26.0 inch.
 - 5.7.4 New anodes shall be installed in their respective mounting bosses using new Contractor-furnished stainless steel fasteners with anti-seize compound applied. Anodes shall be connected electrically to the system.
- 5.8 When the vessel is re-floated, Contractor shall ensure that no leaks exist in way of the anodes/hull penetrations/mounting bosses.
- 5.9 Anfomatic System Setting and Testing: Under the supervision of the Manufactures rep.:
 - 5.9.1 The setting and full function test of the Anfomatic system shall be performed following refloating of the vessel and with the vessel waterborne.
 - 5.9.2 Adjust the settings on the system to ensure optimum performance. Note that the vessel maintains two settings on the system – either in-port or underway. Following completion of work the system shall be left on the in-port setting. Ensure and demonstrate the system works in both modes and that the ship's staff is fully trained on how to make the appropriate adjustments.
- 5.10 Following completion of all work, the system shall be left in operation.

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6.0 PERFORMANCE CRITERIA / DELIVERABLES:

- 6.1 Photo record of Anode Installations in each sea chest
- 6.2 Wilson Walton Technician identified with Bid submission
- 6.3 Cost per day for service technician with bid submission.
- 6.4 Manufacturer's service engineer report. Two (2) hard copies and one electronic copy.

7.0 NOTES: NONE ADDITIONAL

3.0 HULL AND STRUCTURAL SECTION

3.01 HULL STRUCTURAL UT GAUGINGS; SUPPORT FOR SPECIAL SURVEY REQUIREMENT (ABS)

1.0 ABSTRACT: Provide safe access for Owner's Gaugers to complete ABS Special Survey Hull Thickness readings.

2.0 REFERENCES: NONE

3.0 ITEM LOCATION / DESCRIPTION:

3.1 Location: Throughout ship

3.2 Description: Provide all required industrial support to complete ABS required ultrasonic gauging surveys.

4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: Gauging Contractor-two man work force

5.0 STATEMENT OF WORK:

5.1 Contractor to provide safe access for completion of the Gauging's in this work scope by Owner's Gauging Contractor. An ABS surveyor (s) shall attend all gauging tasks.

5.2 A pre-survey, pre-inspection meeting will be held between the Owner's Representative, ABS Surveyor and Gauging Technician Supervisor and Contractors Representative prior to start of work. The purpose of the meeting is to ensure planning and co-ordination of inspection tasks in these specifications.

5.3 Provide man lifts staging etc. as required to access the following areas for access by the Gaugers. Allow for six (6) 8 hour days of man lifts or certified baskets capable of carrying two (2) men. The work scopes will include access to:

5.3.1 Keel, A strake and Bottom; noted for record purposes only with foot access for Owner required only when on dock.

5.3.2 Bow; man lift, man basket and/or staging required.

5.3.3 Chain Locker; venting lighting and access internally.

5.3.4 Rake; man lift, man basket and/or staging required.

5.3.5 Side Shell; man lift, man basket and/or staging required.

5.3.6 Main Deck noted for record purposes only with foot access for Owner required.

5.3.7 Wind and Water Strakes: All plating in two wind-and-water strakes port and starboard, full length of the vessel under the direction of the attending ABS Surveyor.

6.0 PERFORMANCE CRITERIA / DELIVERABLES: NONE ADDITIONAL

7.0 NOTES: NONE ADDITIONAL

3.02 BULKHEAD 219, COFFERDAM REPAIR, FWD HFO DEEP TANK- SR 1208274,

1.0 ABSTRACT: Repairs to BHD 219 in way of Port Forward HFO Deep Tank (fwd. side) and cofferdam (after side). **Excluding access cuts allow for 1947#**

2.0 REFERENCES:

- 2.1 ABS REPORT No. 788; BHD 219 FWD PORT FO DP TK
- 2.2 Photo record of damaged structure. Eight (8) each
- 2.3 Dwg. 785-410-01, 01 DECK FRAMES 219-228 -attached
- 2.4 Dwg. 785-421-01, 02 & 03 DECKS FRAMES 219-228 -attached
- 2.5 Dwg. 785-424-01, 02 DECK FRAMES 209-218 -attached

3.0 ITEM LOCATION/ DESCRIPTION

- 3.1 Location: Port Forward HFO Deep Tank (fwd. side) and cofferdam (after side), Transverse Bhd. 219.
- 3.2 Description:
 - 3.2.1 Crop fit up and renew four vertical bulb flats
 - 3.2.2 Repair one crack Renewals and repairs to selected appurtenances as identified; hand grabs, pipe hangers, removal of anodes, etc.

4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: NONE

5.0 STATEMENT OF WORK

- 5.1 The ABS Report 788 indicates there are three (3) frames. This work scope shall be performed on four frames.
- 5.2 Provide a detailed plan for approval by owner's representative prior to commencement of the work scope. Plan shall be ABS compliant before approval is assumed.
 - 5.2.1 It shall identify access and execution process for men, material and services to accomplish this item.
 - 5.2.2 Plan shall be presented to the Owner and who will review prior to presenting to ABS for approval prior to commencing renewals.
- 5.3 Provide all support tasks to accomplish this work in a safe manner. This shall include but not be limited to:
 - 5.3.1 Establishing and maintaining a "Safe for men safe for Hot Work" condition to the satisfaction of the contractors Certified Marine Chemist.
 - 5.3.2 Cleaning as required to permit the work in accordance with the Marine Chemist.
 - 5.3.3 Lighting, ventilation and staging if required.

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- 5.4 Allow for one cropping out and post repair closure of an access cut 24" x 16" in the tank top.
- 5.5 Crop off deformed vertical bhd. stiffeners No. 1, 2, 3 & 4 off CL (when looking from inside the fuel tank), from 5'-0" above Deck No. 2 going up 12'-0", saving the Bhd. plating.
 - 5.5.1 Fit the new stiffeners to the Bhd. plating and draw tight by suitable means (saddles and wedges, pan cake power pack jacks, etc.).
 - 5.5.1.1 The bulkhead plating is 0.39" thick and will move easily.
 - 5.5.1.2 The connection weld of the old stiffeners to the new is to be a full penetration weld.
 - 5.5.1.3 The weld of the stiffeners to the bulkhead is a continuous fillet weld.
 - 5.5.1.4 Allow for 4Pcs. Each 12'-0" long, 370 x 15 bulb flat (885kg or 1947#)
- 5.6 Repair the crack in the existing weld of the bulkhead plating and Deck No. 2.
 - 5.6.1 Gouge out the old weld a minimum of 18" more than the crack on either end.
 - 5.6.2 Gouge into the Bhd. plating on both sides, to make the repair.
 - 5.6.3 Weld a full penetration weld.
 - 5.6.4 Test to the satisfaction of the attending ABS surveyor
- 5.7 There is a possibility of the heel of the brackets between the vertical stiffeners and Deck No. 2 in the Fuel Oil Tank of having fractures.
 - 5.7.1 Clean heel area and provide for dye penetrant testing of all four heels connections.
 - 5.7.2 Provide a price for repairing one 6" crack using gouging out the effected weld and welding for repair.
- 5.8 Upon completion of all welding test the bulkhead repair and the access plate to the satisfaction of the Owner's Rep. and ABS.

6.0 PERFORMANCE CRITERIA / DELIVERABLES

- 6.1 Line item Price for this item with Bid Submission.
- 6.2 Installation plan as per paragraph 5.1
- 6.3 Steel installation/ test reports for item acceptance by Owner's Representative.

7.0 NOTES: NONE ADDITIONAL

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3.03 SIDE SHELL FRAMING, FR. 154 AND 155 PORT; REPAIR- ABS 702-SR 1208399

1.0 ABSTRACT: Repair side shell in No. 2 Lower Port Water Ballast Tank Fr. 154 and 155 are tripped from an apparent side shell impact in the past.

NOTE: THIS ITEM WILL DAMAGE THE EXTERIOR HULL COATING IN WAY OF THE REPAIRS.

2.0 REFERENCES:

2.1 ABS REPORT No. 702; Upset Frames 152 to 156 No. 2 Port Lower Ballast Tk.

3.0 ITEM LOCATION/ DESCRIPTION:

3.1 Location: No. 2 Port Lower Wing Ballast tank Frame 152 to 156.

3.2 Description: Repair frames 153 and 154 in way of side shell inset.

4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: NONE

5.0 STATEMENT OF WORK

5.1 The ABS Report 702 indicates there is a 10 inch inset. On visual inspection it will be evident that the inset is 10 mm. not 10 inches.

5.2 Provide a detailed plan for approval by owner's representative prior to commencement of the work scope. Include a shop / field sketch as part of this process. Plan shall be ABS compliant before approval is assumed. Plan shall be presented to the Owner and who will review prior to presenting to ABS for approval prior to commencing renewals.

5.3 Crop and renew to the satisfaction of the ABS requirements.

5.4 Bay 24, (Fr. 155 to Fr. 154)

5.4.1 In way of lower portion Fr. 155, the side shell plate is set in about 2" to inboard at approx. 24" length. Fr. 155 plating (10mm) is buckled aft about 2 ½" to 3" at its center.

5.4.2 Crop out the transverse bulkhead plate approx. 40" (high) x 12" (wide) with 3" radius corners.

5.4.3 Fit up a new bulkhead plate and template it to the shell plate set in curvature. The new plate shall be the continuation of the existing.

5.4.4 Complete weld out process and testing to the satisfaction of the attending surveyor.

5.5 Bay 25, (Fr. 154 to Fr. 153)

5.5.1 In way of lower portion Fr. 154, the side shell plate is set in about 2" to inboard at approx. 24" length. Fr. 155 plating (10mm) is buckled aft about 3 ½" to 4" at its center.

5.5.2 Crop out the transverse bulkhead plate approx. 40" (high) x 15" (wide) with 3" radius corners.

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- 5.5.3 Fit up a new bulkhead plate and template it to the shell plate set in curvature. The new plate shall be the continuation of the existing.
- 5.5.4 Complete weld out process and testing to the satisfaction of the attending surveyor.

5.6 Refurbish Tank coating system internally in way of repairs.

6.0 PERFORMANCE CRITERIA / DELIVERABLES

- 6.1 Installation plan as per paragraph 5.1
- 6.2 Steel installation/ test reports for item acceptance by Owner's Representative.

7.0 NOTES: NONE ADDITIONAL

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3.04 **OPTIONAL ITEM - AFTER HOUSE EXTERIOR, BLASTING AND COATING SR 1208901**

1.0 ABSTRACT: The intent is to clean, prepare, and coat the areas of the accommodation / after house structure in accessible following areas above the 4 /4 ½ deck. When complete this scope along with Item 2.04 will provide a continuous blasted and haze gray coated scheme for the major vertical surfaces above the boot top.

2.0 REFERENCES:

- 2.1 Dwg. 785-101-102; General Arrangement - (attached)
- 2.2 Dwg. 785-101-031; Capacity Plan- (attached)

3.0 ITEM LOCATION AND DESCRIPTION:

3.1 Location: Frames: – (minus) 15 to 76 from the 4 deck forward and 4 ½ deck to uppermost portions of the vessel.

3.1.1 Port, starboard vertical House surfaces.

3.1.2 Forward house from four deck including Guillotine Door face and navigating bridge front. Port to Starboard

3.1.3 Stack towers (two each) four sides each over their full extent.

3.1.4 Connecting bridge between stack structures top bottoms, fore aft

3.1.5 Frame 20 - After face of the house from 4-1/4 to 6 Decks vertical faces only. Port to Starboard.

3.1.6 Stern Ramp WT Door.

3.1.7 Stack funnels and vents atop Stack houses.

3.2 Description: Preservation of the house exterior vertical and normally inaccessible surfaces including; staging, man lifts, crane cleaning, blasting and coating.

4.0 OWNER FURNISHED EQUIPMENT, MATERIALS, AND SERVICES: NONE

5.0 STATEMENT OF WORK:

5.1 Provide a detailed plan for review and approval by the Port Engineer. The plan is to be provided at NTP. It shall identify access and execution process for men, material and services to accomplish this item. Aspects of this work are to be included as a portion of the overall project planning.

5.2 Provide access of a type which allows effective timely sequencing of the events required to complete this work scope. Access means to be available for Owner's paint inspector and to be available until work is approved as complete.

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-
- 5.3 Provide for mechanical protection of all openings, vents, doors, windows, vents etc. are closed or otherwise protected to prevent abrasive effects of blasting media, entry of compounds, paint etc. into the interior of the vessel and machinery or electrical components. This shall include the entries in the breezeways Work is not to commence until approved by the Port Engineer.
- 5.3.1 The Guillotine door and stern ramp door are to be down during blasting operations.
- 5.4 Provide for a high-pressure fresh water wash at 5000 to 6000 Psi minimum at the nozzle of surfaces in Para.3.2 with GMA 571 or equivalent.
- 5.5 All surfaces containing oil or grease are to be thoroughly cleaned if necessary by hand wiping to the requirements of "SOLVENT CLEANING STANDARD SSPC-SP1". Allow for two thousand (2000) square feet of solvent cleaning / washing
- 5.6 Mechanical surface preparation areas- **excluding** stack top (Para. 3.7). A joint Survey between Owner's PMTR and Yard Coating Rep. to determine applicability of spot blasting
- 5.6.1 **Surface preparation:**
- 5% SSPC-SP3. Power Tool Cleaning (spot preparation)
 - 8% SSPC-SP-10 (Sa2.5) Near white blast
 - 87% SSPC-SP-7 (Sa1) Brush off blast
- 5.6.2 **Coating Application**
- | | | | |
|-------------|------|------------------------------|------------|
| First coat | 13% | of area NZ Primer S | 4 mils dft |
| Second coat | 100% | of area Bannoh 500 Gray | 5 mils dft |
| Third coat | 100% | of area Unymarine Haze Gray. | 4 mils |
- 5.7 Mechanical surface preparation of stack top (Para. 3.7). A joint Survey between Owner's PMTR and Yard Coating Rep. to determine applicability of spot blasting
- 5.7.1 **Surface Preparation:** 100% per tower to SSPC-SP7 / NACE 4 Brush-Off Blast Cleaning.
- 5.7.2 **Coating Application:** First coat and second coats 100% each, high temperature aluminum to 5 mils dft
- 5.8 Paint stack and tower banding as found with MarAd color scheme.
- 5.9 When directed demobilize protective materials and cleaning and collecting all dust and debris leaving house ready for sea.

6.0 PERFORMANCE CRITERIA AND DELIVERABLES:

- 6.1 Provide product lines as part of award process.

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- 6.2 With Bid submission provide line item pricing for accessing, preparing and coating each of the following in accordance with paragraph 5.6.
 - 6.2.1 Port, starboard vertical House surfaces.
 - 6.2.2 Forward house from four deck including Guillotine Door face and navigating bridge front. Port to Starboard
 - 6.2.3 Stern Ramp WT Door.
 - 6.2.4 Stack funnels and vents atop Stack houses; Stack towers (two each) and Connecting bridge between stack structures

7.0 NOTES: NONE ADDITIONAL

3.05 OPTIONAL ITEM - VENTILATION LOUVERS; REFURBISH - SR 1208899

1.0 ABSTRACT: The intent of this item is to re-furbish eighteen (18) steel ventilation louvers, twelve (12) on the Port side and six (6) on the starboard side of the vessel.

2.0 REFERENCES: NONE

3.0 ITEM LOCATION/ DESCRIPTION:

- 3.1 Location: Frames 25 to 70 Port and 55 to 70 located below the house structure
- 3.2 Description: Repair Louvers, size is approximately Four (4) feet wide X eight (8) feet tall.

4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: NONE

5.0 STATEMENT OF WORK

- 5.1 Remove the identified louvers ashore for repair. The method of removal is at the discretion of the contractor. The fasteners holding the louvers in place are badly deteriorated.
- 5.2 Tag out and /or mark the louvers so they return to the same frame location and orientation.
- 5.3 Provide for protection of spaces inside the louver opening(s) from accumulation and/or migration of blasting grit and debris.
- 5.4 The side shell louver frame structure is to be prepared to an SSPC-SP6 (NACE 3) Commercial blast standard inside and out. This is to include the interior or back side of the louver frames to the side shell. Preserve in accordance with Preamble Para. 8.0.
- 5.5 The tapped threaded holes used to secure the louvers are to be thread chased restoring a good thread condition and drilled and tapped as necessary. Provide new 316 SS bolts and lock washers for reinstallation process. For bidding allow for up to sixteen (16) at 10 mm dia. per louver.
- 5.6 The louvers are to be abrasive blasted prepared to SSPC 10 and put through a hot dip galvanized process.
- 5.7 The refurbished louvers are to be installed in the same location using new shims for centering and S/S fasteners.
- 5.8 Refurbish disturbed surfaces not covered above in accordance with Pre Amble.

6.0 PERFORMANCE CRITERIA / DELIVERABLES:

- 6.1 Provide a line item price for fabrication of one (1) new louver as original, fully welded out with a hot dip galvanized coating.

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6.2 Provide a line item price to crop and renewal of louver shell frame – 4 feet of 3/8” x 4” FB including curved profile.

7.0 NOTES: NONE ADDITIONAL

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3.06 OPTIONAL ITEM - PORT LIGHT AND WINDOW; REPAIRS/ REFURBISH SR 1208643

1.0 ABSTRACT: Remove and refurbish thirty eight (38) SELECTED Windows of assorted types and sizes for structural, hardware and gasket repairs on the Port and Starboard and front side of the House.

2.0 REFERENCES: NONE

3.0 ITEM LOCATION/ DESCRIPTION:

3.1 Location: Decks #5, #6, #7, #8 Port, Starboard and front side of the House

3.2 Description: Exterior Port Lights remove / refurbish reinstall

4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: NONE

5.0 STATEMENT OF WORK

5.1 General Description: The vessel house has approximately one-hundred (100) windows on the forward, Port and Starboard sides of varied sizes and types. Approximately:

5.1.1 Seventy Seven (77) small windows of which 44 are hinged / 33 are fixed

5.1.2 Twenty three (23) large, fixed windows.

5.2 **For this work scope** only thirty eight (38) Port and Stbd. Side Shell Windows are to be addressed. These are

5.2.1.1 Twelve (12) large, fixed on Deck No. 6.

5.2.1.2 Twenty six (26) small of which eight (8) are fixed and eighteen (18) are hinged. These are located on decks No's 5, 7 and 8.

5.3 Provide a plan for the removal / repair / reinstallation process for these windows. It is understood that this process may occur in a sequence. The plan is to allow for relocation of crew members to other state rooms and some spaces which cannot be occupied.

5.4 Staterooms are to have floor protection installed equal to or better than item 1.06.

5.5 After approval commence to open out and removal of the window assemblies from the ship; removal will destroy the welded hinges and other fasteners

5.6 Tag out and /or mark each removed window ensuring the window returns to the same frame location and orientation.

5.7 Provide for protection of spaces inside the louver opening(s) from accumulation and/or migration of blasting grit and debris Openings to be blanked immediately upon removal of glass.

5.8 The remnants of the hinges left on the fixed window casing are to be removed and ground flush.

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- 5.9 Provide and install temporary, rigid blanks of plywood or similar material to preclude entry of grit and other debris into the interior of the house.
- 5.10 The house frames and gasket sealing surfaces on all windows are to be mechanically cleaned inside and out removing paint, rust and or scale. The knife edge on the dogged windows are to be hand dressed with a stone or flat file removing minor upsets and the two dog securing clips are to be straightened.
- 5.11 The painted surfaces of the window are to be mechanically cleaned removing paint, rust and or scale. The window glass is to be polished removing salt spray, dirt and paint overspray.
- 5.12 The bronze dogging devices are to be cleaned of paint or other foreign matter, the hinged portion of the dogs is to be freed up allowing the dogs to swivel unobstructed.
- 5.13 The gasket channel of the movable windows is to be cleaned and built up in areas where rust or scale was removed. Provide for:
 - 5.13.1 Preparing the gasket landing channels to SSPC –SP3
 - 5.13.2 Filling, fairing and tooling to true level surfaces using Devcon Plastic Steel® Putty (A) system components.
 - 5.13.3 Provide for Owner's Inspection prior to applying Devcon product.
 - 5.13.4 When complete channel will be painted out and left ready to receive
- 5.14 The rubber gasket approximately 1/4" X 3/16" is to be renewed using a new rubber gasket installed using a contact cement to secure. The split joint of the gasket is to be beveled and at the bottom of the window. Use 3M 22 or owner approved equal to seal the window.
- 5.15 Return the refurbished windows to the same vessel frame for installation. The window gasket is to be targeted to the frame knife edge and new hinges similar in style of those removed welded in position.
- 5.16 Paint the window frame, encasement frame and any disturbed surfaces:
 - 5.16.1 Exterior to match the schedule, materials and standards as that used above the boot top in the hull coating item.
 - 5.16.2 Interior refer to Preamble Para. 8.0.
- 5.17 Provide separate item pricing for each size and type of window in the event other additional windows are included during the repair availability.

6.0 PERFORMANCE CRITERIA / DELIVERABLES:

- 6.1 Provide a line item price for repairs to one fixed Port Light per Para. 5.10 to 5.16 as applicable.
- 6.2 Provide a line item price for repairs to one hinged and dogged Port Light per Para. 5.10 to 5.16 as applicable.

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6.3 Provide a line item price for repairs to one large fixed Deck #6, Mess Hall window per Para. 5.10 to 5.16 as applicable.

7.0 NOTES: NONE ADDITIONAL

**4.0 MAIN PROPULSION SECTION - NOT
USED**

**5.0 AUXILIARY MACHINERY AND RELATED
SYSTEMS SECTION- NOT USED**

6.0 ELECTRICAL SECTION

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6.01 MAIN AND EMERGENCY SWITCHBOARDS CLEANING AND SERVICING

1.0 ABSTRACT: The intent of this item is to conduct a thorough cleaning and connection tightening of the Main and Emergency electrical distribution switchboards.

2.0 REFERENCES:

- 2.1 Dwg. 785-101-102; General Arrangement - (attached)
- 2.2 Tech Manuals in Ships Library – available on board

3.0 ITEM LOCATION/ DESCRIPTION:

- 3.1 Location:
 - 3.1.1 Engine Control Room (EOS):
 - 3.1.2 Emergency Diesel Generator Room Fr. 20 – 30, 4-1/2 deck aft of house
- 3.2 Description: Cleaning and servicing of;
 - 3.2.1 EOS - Main Switch Board, Group Starter Panel 1A and Group Starter Panel 1B
 - 3.2.2 Emergency Generator Switch Board

4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: Replacement lamps and fuses.

5.0 STATEMENT OF WORK

- 5.1 General Requirements:
 - 5.1.1 Develop plan for cleaning the identified switchboard, electrical distribution, generator switch gear panels, bus system, conductors and attachments. Submit plan as well as details of any solvents/cleaning agents to be used for review and approval of Port Engineer. Plan shall include details of fire protection during cleaning and maintenance of egress lighting. Brush down and vacuum clean all the areas prior to utilizing a liquid solvent.
 - 5.1.2 This item will be accomplished without disrupting other contract work. Contractor shall perform this work scope to commence after steel renewals / repairs.
 - 5.1.3 The ship's crew habitability and Hotel services will be maintained during disruptions. The actual cleaning will occur after normal working hours and meal hours with ample time for morning meal preparation.
 - 5.1.4 Work schedule must be established in advance and conducted in careful coordination with Chief Engineer to minimize disruption to the vessel. Switchboards being cleaned (one at a time) shall be completely secured electrically (DEAD!) and this confirmed and tagged out by Cheng prior to commencement of work. Night work and/or weekend work should be anticipated to avoid disruption.
 - 5.1.5 Soft foxtail, wooden handle brushes shall be used and industrial vacuum

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cleaners. No compressed air shall be utilized to blow components clean.

- 5.1.6 Care shall be taken to ensure no insulation test voltage is applied to electronic components of solid state design. Clear in advance with Chief Engineer.
- 5.1.7 All test instrumentation shall be provided with current valid traceable calibration certification.
- 5.2 Perform a thermo graphic survey of main and emergency switchboard at arrival at ship yard with electrical plant on line; thoroughly inspect all bus bars, cable lugs and terminal blocks for signs of overheating or other damage. Tighten all connections during this process. Inspect all switchboard control wiring, section by section, front and back, looking for insulation damage and loose wiring harnesses. Mark locations of damage, identify damaged circuits and prepare a report for review by Port Engineer.
- 5.3 Manually operate all switchboard breakers and observe proper operation. Submit a condition report of any deficiencies noted.
- 5.4 Submit a condition report identifying initial conditions that require attention. A change order will be issued for work other than servicing in 5.5
- 5.5 After servicing and in accordance with approved cleaning plans thoroughly clean main, main extension, and emergency switchboards with accepted electrical solvent. Check buss and breaker connections for tightness. Pull all fuses cleaning sockets and inspecting connections and fuses block mounts. Renew defective fuses using OFM. Test indicator lamps systems. Clean and dress contacts on all switches and open type breakers. Lubricate all pivot points, hinge pins and door hinges.
- 5.6 Check all buss bar connections, supports and mounting hardware for tightness and damage. Advise the Port Engineer of any damage observed. Connect up all lugs, torque connectors to manufacturer's specifications. Re-tighten fasteners to torque value agreed to by the Port Engineer.
- 5.7 Prepare a report of survey findings and furnish to Port Engineer for review. Perform a thermo graphic survey of main and emergency switch board similar to initial survey prior to vessel departure from yard and with plant on the line.
- 5.8 Provide services of two electricians to standby during testing to assist as required.

6.0 PERFORMANCE CRITERIA / DELIVERABLES: Breaker service reports

7.0 NOTES: NONE ADDITIONAL

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**7.0 CARGO HANDLING AND DECK
MACHINERY SECTION**

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7.01 STERN RAMP; REPAIRS AND PRESERVATION (SR 1209020)

1.0 ABSTRACT: The intent of this item is provide for repairs to structural aspects of the stern ramp in way of the #2 (middle) and #3 (outboard) sections and an overall preservation by restoration of coatings..

2.0 REFERENCES:

- 2.1 Dwg. 30-06269; Stern Ramp, Steel Plan Section #3 - attached
- 2.2 Dwg; 20-00002; Stern Ramp Steel plan of Section #2 - attached
- 2.3 Dwg; 20-00003; Stern Ramp Steel plan of Section #3 - attached
- 2.4 Dwg; 22-00252; Stern Ramp Inter. Hinge (Between Sections 2 and 3) - attached
- 2.5 Dwg; 21-00482; Stern Ramp Inter. Hinge (Between Sections 2 and 3) - attached
- 2.6 Dwg; 21-00483; Stern Ramp Inter. Hinge (Between Sections 2 and 3) - attached

3.0 ITEM LOCATION/ DESCRIPTION

- 3.1 Location: Stern Frame; hinged at 3-1/4 deck Fr. -10 and aft.
- 3.2 Description: All steel allowances are expressed as steel in place not including drops. Entire 33 section is
 - 3.2.1 Repairing / rebuilding the #3 section (Outboard foot with flappers).
 - 3.2.2 Repairing / rebuilding the #2 to #3 Section hinge configuration
 - 3.2.3 Additional minor repairs
 - 3.2.4 Preserving the #1, #2 and #3 sections by blasting and coating.

4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES:

- 4.1 Operators for stern ramp hydraulic systems. This will require 24 hour notice. The actual lowering / raising the ramp requires 4 hour allowance of crew and machinery obligations.

5.0 STATEMENT OF WORK

- 5.1 Provide a detailed plan for review and approval by the Port Engineer. The plan is to be provided at NTP. It shall identify access and execution process for men, material and services to accomplish this item. Aspects of this work are to be included as a portion of the overall project planning. The plan shall include
 - 5.1.1 Time line with impact on overall project.
 - 5.1.2 Vessel access when ramp is out of service.
 - 5.1.3 Arrangements to capture the pin alignment for reassembly.
 - 5.1.4 Narrative outlining the step by step process to gain access to the #2-#3 hinge and under side of the #3 foot.
 - 5.1.5 Plan shall include details of protection for hydraulics and control devices which will be impacted by work scope.

NOTE: THIS WORK SCOPE INDICATES THAT SEPARATION AT THE #1 TO #2 HINGE POINT IS UNDERTAKEN. CONTRACTOR MAY PROPOSE OTHER ALTERNATIVES

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PROVIDED THE OVER ALL INTENT IS NOT COMPROMISED. PORT ENGINEER RESERSERVES THE RIGHT TO APPROVE OF REJECT THE ALTERNATIVES

- 5.2 Provide the services of either of the following OEM technical representative. Allow for two trips and a total of ten days on sight between the two visits. Joe Connolly or Alf Sundsboe.
- TTS MARINE Inc. / 6555 N. Powerline Rd. / Suite 410 / Fort Lauderdale, FL 33309
Phone 954 493-6404
- 5.3 Arrange for Ramp operation with ship's force which will provide for Lowering, securing and support of Section #1 in preparation for removal of sections # 2 and #3.
- 5.4 Prior to disassembly provide for temporary devices which will be used to bring the components back to original design locations when reassembled. These typically are stops or fingers welded to the structure itself. Allow for adjustments with these system as the hinges between #2 to 3 and 3 to the flappers are severely worn and are not representative of the original alignment.
- 5.5 Disassemble the eight (8) hinge pins and unship the No. 2 and 3 sections. Unreeve and stow the W2 wires as part of the process.
- 5.6 Repairs – General;
- 5.6.1 Cracks: Allow for survey and marking of cracks under all three (3) sections. Allow for safe ending, grinding out and welding of twenty four (24) avg. 3" cracks.
- 5.6.2 Stbd. Outboard Walkway: following allowances for renewals. Retain the tubular and FB stanchions. Allow for renewal in post to post lengths; 160 feet of 1" Sch. 40 top rails and 300 feet of ¾" sch. 40 bottom and mid rails.
- 5.6.3 Walkway hand operated winch system. Secure ramp system. Unship the winch and take to a shore side shop. Remove cable taking care not to render unserviceable. Open out winch down to a point where bearing and bushings can be examined. Clean all parts and render for close up inspection. If repairs are required they will be the subject of a change order. When directed reassemble in good order and reinstall onboard. Complete tasks required to leave the system in place for service.
- 5.6.4 Crop off ten (10) obsolete hangers and devices grinding off and smoothing out plating in way of removals. These will be identified on a joint survey.
- 5.6.5 Renew thirty (30) miscellaneous hanger and supports averaging 2 lb. of structural steel at each using SS fasteners (with lock washers) to

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reattach the device carried. These will not be inclusive of the Tubing Clamps in another item.

- 5.7 Accomplish the following activities on the #2 and #3 sections transporting in part or as a whole to the necessary on sight inspection, repair, blasting and coating facilities.
- 5.7.1 Separate the #2 and #3 sections
 - 5.7.2 Crop and renew 4000 #'s or plate and or structural steel under the No.2 and No. 3 ramps excluding hinges. Provide for detachment and reattachment of recoverable scantlings.
 - 5.7.3 Crop and renew the six (6) Intermediate hinge assemblies which connect No. 2 to No. 3 per reference Dwg.'s. The outboard hinge clevises and pins are not in need of renewals but will require disassembly, servicing and reassembly.
 - 5.7.3.1 Recover hinge pins. Allow for 750 #'s of material allowance to restore structure and hinges to original design. This shall include all skilled machinist and support staff to crop and renew plates allowing for five sets of three as per original design.
 - 5.7.3.2 Fair decking in way of leading edges at the
 - 5.7.3.3 Capture alignment references prior to cropping so as to provide accurate positioning of new hinge pieces. Machine / line bore and complete reinstallation of bushings
 - 5.7.3.4 Renew grease systems and tubing (Stainless steel).
- 5.8 Pre -assemble the #2 and #3 machining as required to insert and align hinge pins. Verify the proper hinge action prior to final coating operations. Allow for disassembling to coat all areas of the #2 and 33 sections after hinges have been proven.
- 5.9 As part of reassembly blast and coat all aspects of sections #1, #2 and #3. Coating preparation shall be accomplished to the satisfaction of the PMTR and shall comply with the following as a minimum.
- 5.9.1 Mask off and protect all machinery
 - 5.9.2 Allow for 25% prepared using abrasive grit blasting to SSPC-SP10 (Sa 2.5) Near White metal Commercial Blast.
 - 5.9.3 All remaining surfaces shall be prepared to "Brush-Off Blast Cleaned", SSPC-SP 7 (Sa 1) to remove all remaining .
 - 5.9.4 Any surface that cannot be prepared properly using abrasive grit blasting shall be power tooled to SSPC-SP11 by use of needle

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gunning, power brushing and/or hand tooling.

5.10 When directed reassemble ramp system in good order to satisfaction of OEM representative. Allowing two 8 hour windows for cycling of systems.

6.0 PERFORMANCE CRITERIA AND DELIVERABLES:

6.1 Provide a detailed plan for approval by owner's representative prior to commencement of the work scope. It shall identify access and execution process for men, material and services to accomplish this item.

6.2 Final service report.

7.0 NOTES: NONE ADDITIONAL

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7.02 OPTIONAL ITEM - STERN RAMP HYDRAULIC TUBING CLAMPS SYSTEM; REPAIR AND RENEWAL

1.0 ABSTRACT: Renew the hydraulic tubing clamping system on all stern ramp hydraulic lines. These are all located on the No. 1 section (inboard most).

2.0 REFERENCES: NONE

- 2.1 Tubing Hydraulic Piping Standards, Tube Mac Manufactured. - attached.
- 2.2 Photo record of existing system
- 2.3 Stern Ramp Hydraulic piping clamps; Renew, Pictures.PDF - attached.

3.0 ITEM LOCATION / DESCRIPTION

- 3.1 Location: Stern Ramp No. 1 section aft of Frame #10 when ramp is down.
- 3.2 Description: Renewal of Stern Ramp Hydraulic tubing clamping support system, rail mounted.

4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: NONE

5.0 STATEMENT OF WORK

5.1 General:

- 5.1.1 Provide safe access to work scope locations which include safe guards for possible spillage and debris falling into the water.
- 5.1.2 Adhere to clamping hardware standards in reference 2.2 except as follows. All materials 316 Stainless. The top plate will used on both sides of the clamp. This will place a SS plate between the lower clamp half and the support angle. The bolting will of a diameter to specs and of sufficient length to pass through the clamp halves, both plates, and the support angle. Provide for heavy flat washers, lock washer and nut (or nyloc's with flat washers). .
- 5.1.3 Support tubing to prevent damage as clamps are removed.
- 5.1.4 Anticipate tubing system being exposed to wind and rain when establishing these safe guards.
- 5.1.5 Develop a template if necessary and drill out holes to match new bolting size and locations. Clamp alignment to be true and symmetrical to original standards when complete.

5.2 Crop and scrap out existing clamp system components including hardware, blocking, fasteners and plates. When complete the angle supports will be fully accessible. The arrangement currently is;

- 5.2.1 Thirty five (35) banks of six (6) each, single stacked supporting -1/4" (metric equivalent) SS tubing and steel clamping systems without common base rails.

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- 5.2.2 Twenty six (26) banks of four each, single stacked supporting 1-1/4" (metric equivalent) SS tubing and steel clamping systems without common base rails.
- 5.2.3 One (1) additional 5/16" (metric equivalent) using steel tubing and clamps run piggy backed on 1-1/4" system. This is an add-on sometime in the past and is to be replaced with stacked Stainless steel clamps **AND** tubing system as part of this work scope. Tubing fitting locations to match existing.
- 5.3 Allow for renewal of 10% of the angle cross pieces which the clamps are attached to. Verify locations with Port Engineer.
- 5.4 Prepare and recoat surfaces of piping and brackets.
 - 5.4.1 Prepare surface of brackets- remove loose paint, rust and scale, to SSPC-SP11 "Power Tool Cleaning to Bare Metal". Coat with surface tolerant epoxy prime and top coat, two (2) each to 5 mil DFT. Top color to match surrounding paint color scheme.
 - 5.4.2 Prepare surface of SS tubing in way of old clamps by solvent cleaning. Fair in edges of existing coating system prior to applying new coating system. Take care not to contaminate SS surfaces with ferrous cleaning tools or materials. Coat with surface tolerant epoxy prime and top coat, top coat color to match surrounding paint color scheme.
 - 5.4.3 After new coating system has cured, install new clamping systems in good order.
- 5.5 Remove and replace the two (2) 25mm, 36" long hydraulic hoses (with stainless steel braiding reinforcement) that operate the stern ramp port & Starboard push-out cylinders. Operating pressure is to be assumed to be 210 Bar sustained.
 - 5.5.1 Cap off the hydraulic end fittings at deck and cylinder while hoses are removed. Remove the remnants of the old wasted tubing hangers and coat with epoxy touch paint. New hangers to be pre-blasted & coated. Clamps- polymer type with SS 316 hardware and fasteners. Final painting after installation.
 - 5.5.2 New hose to match existing hoses in size and pressure rating.
 - 5.5.3 After reinstallation of new hoses and pressure testing by vessels crew, install protective tape (Denzo Tape) around end fitting to protect against corrosion and weather.

6.0 PERFORMANCE CRITERIA / DELIVERABLES: NONE

7.0 NOTES: NONE

8.0 NAVIGATION and SAFETY SECTION

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8.01 NOT USED

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8.02 LIFEBOATS: RENEW FALLS AND WEIGHT TESTS (ABS / USCG REQUIREMENT)

1.0 ABSTRACT:

- 1.1 Perform Annual USCG Required Life Boat Davit Servicing and Inspection
- 1.2 Renew Life Boat Falls
- 1.3 Weight test Lifeboat and Davits

2.0 REFERENCES: MV CAPE HUDSON Lifeboat and Davit Manuals on board the vessel.

3.0 ITEM LOCATION/ DESCRIPTION

- 3.1 Location: Port and Starboard No. 5 Deck Fr. 60 to 72
- 3.2 Description:
 - 3.2.1 OEM Supervised Davit Servicing Port and Starboard
 - 3.2.2 Renewal of lifeboat falls on two-(2), boats – four (4) lengths of wire total.
 - 3.2.2.1 Two (2) per boat; one 251 ft. and one 271 ft. length
 - 3.2.2.2 Non-rotating wires, equivalent to ¾" 6x35 IWRC XIP, EIPS Galvanized
 - 3.2.2.3 With closed Spelter socket on one end,
 - 3.2.2.4 Working load of 11,760 pounds (breaking strength of 58,800 pounds).
 - 3.2.3 ABS / USCG Lifeboat and Davit Weight testing. Stbd. Boat Data:
 - MFG. Schat Watercraft Inc.
 - Approval No. 160.035/475/2
 - Serial No. EL - 26 MK III 1170 6 - 92
 - L - 26' .25" B - 8' .85" D - 3' 6"
 - Cond. A ~ 6600 LBS (to be verified by Contractor)
 - Cond. B ~ 14797 LBS (to be verified by Contractor)
 - 44 Persons
 - Date ~ 6 - 92

4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: OEM Techs from;

UOMOE SCHAT HARDING
P.O. Box 27
Anacortes, WA 98221
360 299 4585

5.0 STATEMENT OF WORK

- 5.1 Descriptions herein may alternate from one to two boats but shall be inclusive of two (2) complete Boat, Davit, Winch, Motors and Controller systems with relevant ancillary appurtenances.
- 5.2 For information only. The Owners Schat-Harding technician will perform the annual USCG required survey and maintenance on the Life boat davit systems. This shall be accomplished while Life boats are ashore for Item 8.01

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- 5.3 Provide a detailed plan for approval by owner's representative prior to commencement of the work scope. Owner suggests but does not mandate conferring with an OEM representative to confirm adequacy of the plan. Plan shall be reviewed and approved by ABS / USCG before approval is assumed. It shall include:
 - 5.3.1 Wire Certificates
 - 5.3.2 Weight testing procedures and weight certification processes
- 5.4 Remove and renew the falls. All equipment associated with the wire installation and use is to be examined during the removal of the existing wires and the reinstallation of the new Contractor furnished wires.
 - 5.4.1 All running gear is to be greased while in service.
 - 5.4.2 Minor repairs such as grease fitting renewals are to be completed as a part of this item
 - 5.4.3 The new wires are to be equivalent to the information included with this item.
 - 5.4.4 Verify lengths by laying wires out side by side for witness by Port Engineer.
 - 5.4.5 Allow for close up inspection of blocks by OEM Tech representative.
 - 5.4.6 When directed complete installation. The new wire is to be reinstalled under tension and completely slushed
 - 5.4.7 Scrap out the wires after testing is approved.
- 5.5 Perform a dry weight test on lifeboats in accordance with 46 CFR, U.S. Coast Guard Rules and Regulations, Subchapter D., Section 33.01-27 in the presence of the U.S. Coast Guard Inspector. Lifeboats shall be fully weighted with an evenly distributed U.S. Coast Guard certified dry weight Allow for Regulatory acceptance of weight testing process.
- 5.6 Perform weight test on lifeboat davits in accordance with 46 CFR, U.S. Coast Guard Rules and Regulations, Subchapter D., Section 33.01-27 in the presence of the U.S. Coast Guard Inspector.
- 5.7 After testing remove all weights and re-stow lifeboats in good order leaving ready for service.

6.0 PERFORMANCE CRITERIA / DELIVERABLES:

- 6.1 Wire Certs
- 6.2 Testing Procedures
- 6.3 Testing Reports

7.0 NOTES: NONE ADDITIONAL

APPENDICIES

APPENDIX A: UNIT PRICING

1.0 ABSTRACT: As part of our process in selecting the best value contractor, IAS will consider the potential costs associated with supplemental work. Therefore, we require each offer to quote their costs for additional work or services. Where Line item pricing is called for in specific items those prices will superseded those posted in this item.

1.1 Actual Pricing will be posted on bid submission Schedule "B"

1.2 Invoking of these line item prices shall be documented the contractual condition report process. These condition reports shall identify the unit prices defined by this item to establish the price and the location of the proposed repair.

2.0 REFERENCES: SPECIFICATION ITEMS IN GENERAL.

3.0 ITEM LOCATION / DESCRIPTION: NA

4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: NONE

5.0 STATEMENT OF WORK:

5.1 Include the following aspects in developing the line item prices (refer to specification Item 001).

5.1.1 Gas freeing to "safe for men safe for hot work" per gas freeing item.

5.1.2 Pre-weld preparation such as arc gouging, needle gunning and/or grinding is required.

5.1.3 Access to welding shall be provided up to 12' above baseline for weld repairs with staging herein used for areas above this.

5.1.4 Coating restoration shall be included.

5.1.5 Man-ways and limber-holes are to be restored and not considered in replacement weight allowances. Minimum radiuses on corners of inserts shall be 8".

5.1.6 Include tasks required for detaching/ reattaching all internal scantlings / attachments in accordance with original construction standards including fairing and cleaning.

5.1.7 The requested steel unit pricing involves renewals in spaces already being worked as part of the base specification items. Therefore, access, gas freeing, lighting and ventilation are already established in these spaces.

5.2 **STAGING:** Provide line item pricing for each of the levels of staging below. Include staging erection and removal in compliance with mandated requirements of the contractor's national safety statutes. Average per unit area shall be 25 square feet and include access to and from the work platform. Staging, when erected, shall remain in place until all work, inspections and refurbishing of coatings related to that condition report is accomplished.

5.2.1 Staging tower 8 feet high

5.2.2 Staging tower 18 feet high

5.2.3 Staging tower 24 feet high

5.2.4 Staging tower 40 feet high

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- 5.3 Steel in place Unit pricing – STRAIGHT SECTIONS: Provide unit pricing per Lb. for steel renewals using Grade ‘A’ plate using mild steel sectionals of straight welded construction based at any of the following locations; decks, side shell bottom plating.
- 5.3.1 10 - 101#
 - 5.3.2 101- 501 #
 - 5.3.3 501 – 2501#
 - 5.3.4 2501 – 5001#
- 5.4 Steel in place Unit pricing – SINGLE CURVATURE. Provide unit pricing using the same criteria as 5.4 for single curvature steel
- 5.4.1 101- 501 #
 - 5.4.2 501 – 2501#
 - 5.4.3 2501 – 5001#
- 5.5 Steel in place Unit pricing – DOUBLE CURVATURE steel Provide unit pricing using the same criteria as 5.4 for double curvature steel
- 5.5.1 101- 501 #
 - 5.5.2 501 – 2501#
 - 5.5.3 2501 – 5001#
- 5.6 Steel in place Unit pricing – RESTRICTED AREAS confined spaces including Peak tanks. Provide unit pricing for steel renewals in Inner Bottoms, Ballast tanks; Peak tanks, void spaces, deep tanks and / or chain lockers.
- 5.6.1 0- 101 #'s
 - 5.6.2 101- 501 #
 - 5.6.3 501 – 2501#
- Note: if there is a differential for MSD tanks identify same with bid submission.
- 5.7 FRACTURE REPAIRS: Provide line item pricing for one (1), three (3) foot fracture in place assume ¾” depth.
- 5.8 LINEAR WELDING: Provide a per foot cost for restoring weld seams on the interior and exterior of the hull. Access on the exterior of the hull shall be by man lift. Assume minimum repair is 2 running meters per location
- 5.9 CLAD WELDING: Provide a per square foot line item price for clad welding throughout the vessel. For estimating 1/4” deep x 5” dia.each with post weld surface grinding. Minimum 10 areas per tank or space.
- 5.10 PIPE RENEWALS: Refer to table in schedule “B”. All pipe replacement should be priced as ABS grade, and include allowances for staging, preparation, handling, installation, welding, painting and testing.

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6.0 PERFORMANCE CRITERIA / DELIVERABLES:

- 6.1 Line item price tabulation with bid for paragraphs: 5.2 through 5.10
- 6.2 Steel installation reports for item acceptance by Owner's Representative.

7.0 NOTES: NONE ADDITIONAL

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APPENDIX B: LIST OF REFERENCES; PARAGRAPHS 2.0

As specified by paragraph 2.0 in each item; Note that several of the attachments have index numbers printed on them, which refer to previous contracts. For the purpose of this RFP please refer to this list of attachments for all references.

Numerous References are noted as being available from the vessel. If the contractor chooses to remove these from the vessel this will only be permitted if approved by the Port Engineer after which they shall be logged out with the Chief Engineer. They shall be returned and logged back in in the presences of the Chief Engineer within 72 hours

- 7.1 Dwg. 785-101-102; General Arrangement; Sht's1 and 2- attached
- 7.2 Dwg. 785-101-031; Capacity Plan- (attached)
- 7.3 Dwg, 785-101-120, Tank Arrangement- (attached)
- 7.4 Dwg No. 785-144-100, "Docking Plan"
- 7.5 Dwg No. 1008-27H-46, "General Arrangement (Display Plan)
- 7.6 Dwg No. 1008-27H-40 SH 1 & 2, "Underwater Outline Plan"- attached
- 7.7 MarAd Dry-dock Report Form MA-57 – available on arrival
- 7.8 2007 Dry Docking Blocking Plan - attached
- 7.9 Dwg No. 785-431-002 Rev A, "Anchor Chain Securement" - (available on board)
- 7.10 Dwg No. 785-430-300, "Anchor Hawse And Chain Stopper" - (available on board)
- 7.11 Dwg No. 785-431-001 Rev 1, "Arrangement Connection Anchor To Chain A" - (available on board)
- 7.12 Daily Paint Report from the Paint Manufacturer's Technical Representative (PMTR) at arrival
- 7.13 Thruster Manf. Manual; A.M.Liaaen- (available on board).
- 7.14 Dwg. No. 785-101-151 Rev. 2, "Side Thrusters Fore And Aft"- - (available on board)
- 7.15 Dwg. No. 785-262-010 B.L. 1, "Seawater Intake Grate", - attached.
- 7.16 Dwg No. 7553-160, "Underwater Road Map & Shell Blanks" - attached
- 7.17 Dwg No. 1008-27H-40 SH 1 & 2, "Underwater Outline Plan" - attached
- 7.18 Pictures (jpeg) of deck scupper extension installed on Cape Horn "Scupper Extension".
- 7.19 Dwg No.785-414-001, "Placement of Transducers for Echo Sounder" (available on board).
- 7.20 Speed Log Tech Manual in vessel technical library, tech-manual # 502(available on board)
- 7.21 Dwg No. 785-278-200 B.L. 1, "Anode Installation Arrangement, Hull"
- 7.22 Dwg No. P1943, "Stern Tube Bearing" – attached
- 7.23 Dwg No. 785-218-001, "Stern frame and Rudder Reference Drawing" - (available on board)
- 7.24 Dwg No. 785-218-002, "Stern frame Rudder Horn" - (available on board)
- 7.25 Dwg No. 785-218-003, "Stern frame Propeller Post"- (available on board)
- 7.26 Dwg No. 785-401-001, "Rudder - SH 1 and 2"
- 7.27 Dwg No. 785-401-002, "Rudder Castings" - (available on board)
- 7.28 Dwg. No. 785-402-001, "Rudder Stock"
- 7.29 Dwg No. 785-101-150 ALT 2, "Rudder And Propeller Aperture, Booklet" - (available on board)
- 7.30 Dwg No. 785-631-235, "Rope Guard"- (available on board)
- 7.31 Dwg No. 785-631-215 Rev B, "Propeller Shaft"
- 7.32 Dwg No. 785-631-213, "Limit Ring For Propeller Nut" (available on board)
- 7.33 Dwg No. 785-631-211, "Propeller Fairwater Cap Cone" -

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- 7.34 Dwg No. 785-631,-250, "Propeller Cone Template" -
- 7.35 Dwg. 1/11.2722.0.1, Propeller -
- 7.36 Dwg. 1/11.22.22.0.1, Propeller Hub - (available on board)
- 7.37 Spare Propeller - on after deck No. 4-1/2 of the Horn
- 7.38 Dwg No. 785-631-110, "Stern Tube Arrangement"
- 7.39 Dwg No. 785-631-221, "Shaft Support Pad - Sh. 1of 2 -(available on board)
- 7.40 Dwg No. 785-631-100, "Shafting Arrangement"-
- 7.41 Dwg No. 0159/18220, "Ship's Shaft Load Bearings" - (available on board)
- 7.42 Dwg No. 0159/18221, "Ship's Shaft Line Bearings" - (available on board))
- 7.43 Cathodic Protect Systems-Technical manual #495, - (available on board)
- 7.44 Dwg. 785-410-01,01 DECK FRAMES 219-228 -attached
- 7.45 Dwg. 785-421-01,02 & 03 DECKS FRAMES 219-228 -attached
- 7.46 Dwg. 785-424-01, 02 DECK FRAMES 209-218 -attached
- 7.47 ABS REPORT No. 702; Upset Frames 152 to 156 No. 2 Port Lower Ballast Tk.
- 7.48 Dwg. 30-06269; Stern Ramp, Steel Plan Section #3- attached.
- 7.49 Dwg; 20-00002; Stern Ramp Steel plan of Section 2- attached
- 7.50 Dwg; 20-00003; Stern Ramp Steel plan of Section 3- attached
- 7.51 Dwg; 22-00252; Stern Ramp Inter. Hinge (Between Sections 2 and 3) - attached
- 7.52 Dwg; 21-00482; Stern Ramp Inter. Hinge (Between Sections 2 and 3) - attached
- 7.53 Dwg; 21-00483; Stern Ramp Inter. Hinge (Between Sections 2 and 3 - attached)
- 7.54 Tubing Hydraulic Piping Standards, Tube Mac Manufactured. - attached.
- 7.55 Photo record of existing Hydraulic Tubing Hanger System
- 7.56 Stern Ramp Hydraulic piping clamps; Renew, Pictures.PDF - attached.
- 7.57 MV CAPE HUDSON Lifeboat and Davit Manuals - (available on board)

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DRY DOCK / REPAIR AVAILABILITY (RFP # 05-G-2??- 0??)

APPENDIX C: PARAGRAPH 4.0

APPENDIX C.1: SUMMARY OF SIGNIFICANT OWNER FURNISHED EQUIPMENT (OFE) AND MATERIALS (OFM) – EXCLUDING SERVICES (OFS):

As specified in by paragraph 4.0 in each item. Items here in may require attention for handling and receiving.

- 001 PREAMBLE TO SPECIFICATIONS - NA**

- 002 ENGINEERING AND TECHNICAL DOCUMENTATION REQUIREMENTS**
 - 4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: NONE**

- 1.01 WHARFAGE**
 - 4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: NONE**

- 1.02 TUG BOATS, PILOTS AND LINE HANDLERS**
 - 4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: NONE**

- 1.03 GANGWAY**
 - 4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: NONE**

- 1.04 SEWER SYSTEM SHORE CONNECTION, TO SUPPORT GALLEY/CREW BERTHING**
 - 4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: NONE**

- 1.05 HABITABILITY SUPPORT (A/C , BOTTLED WATER)**
 - 4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: NONE**

- 1.06 DECK COVERINGS**
 - 4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: NONE**

- 1.07 SHIPBOARD ACCESS AND SECURITY**

MV CAPE HUDSON
DRY DOCK / REPAIR AVAILABILITY (RFP # 05-G-2??- 0??)

- 4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: NONE**
- 1.08 OWNER'S REPRESENTATIVE OFFICE / TELEPHONE / FACSIMILE SERVICE**
- 4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES:** Ships internal communication system.
- 1.09 GAS FREE CERTIFICATE**
- 4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: NONE**
- 1.10 CRANE SERVICE**
- 4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: NONE**
- 1.11 BILGE PUMPING**
- 4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: NONE**
- 1.12 GARBAGE AND HAZMAT DISPOSAL**
- 4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: NONE**
- 1.13 TEMPORARY LIGHTING**
- 4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: NONE**
- 1.14 STORES GANG**
- 4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: NONE**
- 1.15 POTABLE WATER, COMPRESSED AIR AND SALT WATER SERVICE FOR COOLING**
- 4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: NONE**
- 1.16 DOCK TRIALS**
- 4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES:** Ship's crew to activate and operate shipboard systems.
- 2.01 DRY-DOCKING (ABS / USCG)**

MV CAPE HUDSON
DRY DOCK / REPAIR AVAILABILITY (RFP # 05-G-2??- 0??)

- 4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: NONE**

- 2.02 ANCHORS, ANCHOR /AUXILIARY CHAINS AND CHAIN LOCKERS (ABS / USCG)**
 - 4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: NONE**

- 2.03 HULL BLASTING AND COATING**
 - 4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES:** Paint Manufacturer's Technical Representative (PMTR)

- 2.04 THRUSTER CLEANING AND INSPECTION, GAUGE BEARINGS(ABS)**
 - 4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: NONE**

- 2.05 SEA CHESTS, SEA NOZZLES AND GRATINGS (ABS / USCG)**
 - 4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: NONE**

- 2.06 SEA VALVES (ABS, USCG)**
 - 4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: NONE**

- 2.07 INSTALL SCUPPER EXTENSION RINGS AND EXTENSIONS**
 - 4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: NONE**

- 2.08 FATHOMETER**
 - 4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES:** Ships force to assist in locating the fathometer trunks

- 2.09 SPEED LOG; SERVICING**
 - 4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES:** Ships force to assist in locating the speed log transducer trunk.

- 2.10 HULL SACRIFICIAL ANODES**

MV CAPE HUDSON
DRY DOCK / REPAIR AVAILABILITY (RFP # 05-G-2??- 0??)

4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: NONE

2.11 RUDDER – BEARING CLEARANCES, TEST AND COATING (ABS / USCG)

4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: Oil for steering motor refilling.

2.12 PROPELLER REMOVAL AND TAILSHAFT TAPER INSPECTION (ABS / USCG)

4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: Vessels stern bearing micrometer set; under the custody of the Chief Engineer.

2.13 PROPELLER (ABS / USCG)

4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: NONE

2.14 STERN TUBE OIL SEAL, OUTBOARD, WORKSHOP, REPORT (ABS)

4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: All seal components will be Owner furnished, all other material shall be Contractor furnished.

2.15 TAIL SHAFT REMOVAL, REPLACEMENT AND INBOARD SEAL (ABS / USCG)

4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES:

4.1 Inboard seal parts

4.2 Diehl Engineering Service Tech to run strain gauge checks during weighing of line shafting.
DIEHL Engineering Co.
PO Box 1573 / Kingston WA

2.16 HULL IMPRESSED CURRENT CATHODIC PROTECTION SYSTEM (ICCP) - SERVICING

4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: NONE

2.17 SEA CHEST MARINE GROWTH PREVENTION SYSTEM; SERVICING

4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: NONE

MV CAPE HUDSON
DRY DOCK / REPAIR AVAILABILITY (RFP # 05-G-2??- 0??)

- 3.01 HULL STRUCTURAL UT GUAGINGS; SUPPORT FOR SPECIAL SURVEY REQUIREMENT (ABS)**
- 4.0 **OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES:** Gauging Contractor- two man work force
- 3.02 OPTIONAL ITEM - BULKHEAD 219, COFFERDAM REPAIR, FWD HFO DEEP TANK- SR 1208274,**
- 4.0 **OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: NONE**
- 3.03 SIDE SHELL FRAMING, FR. 154 AND 155 PORT; REPAIR- ABS 702-SR 1208399**
- 4.0 **OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: NONE**
- 3.04 OPTIONAL ITEM -VENTILATION LOUVERS; REFURBISH - SR 1208899**
- 4.0 **OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: NONE**
- 3.05 OPTIONAL ITEM -PORT LIGHT AND WINDOW; REPAIRS/ REFURBISH SR 1208643**
- 4.0 **OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: NONE**
- 6.01 MAIN AND EMERGENCY SWITCHBOARDS CLEANING AND SERVICING**
- 4.0 **OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES:** Replacement lamps and fuses.
- 7.01 OPTIONAL ITEM - STERN RAMP; REPAIRS AND PRESERVATION**
- 4.0 **OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES:** Operators for stern ramp hydraulic systems. This will require 24 hour notice. The actual lowering / raising the ramp requires 4 hour allowance of crew and machinery obligations.
- 7.02 OPTIONAL ITEM -STERN RAMP HYDRAULIC TUBING CLAMPS SYSTEM; REPAIR AND RENEWAL**
- 4.0 **OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: NONE**

MV CAPE HUDSON
DRY DOCK / REPAIR AVAILABILITY (RFP # 05-G-2??- 0??)

8.01 LIFE BOATS, PORT AND STARBOARD; RELEASE HOOKS, SOLAS UPGRADE (ABS) - SR 1207031

4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES Schat Harding Service Tech. for independent work scope.

UOMOE SCHAT HARDING
P.O. Box 27
Anacortes, WA 98221
360 299 4585

8.02 LIFEBOATS: RENEW FALLS AND WEIGHT TESTS (ABS / USCG REQUIREMENT)

4.0 OWNER FURNISHED EQUIPMENT / MATERIAL / SERVICES: Schat Harding Service Tech. for independent work scope

UOMOE SCHAT HARDING
P.O. Box 27
Anacortes, WA 98221
360 299 4585

APPENDIX C.2: SUMMARY OF OWNER FURNISHED SERVICES (OFS), TECHNICAL REPRESENTATIVES, SPECIALTY CONTRACTORS , ETC.:

As specified in by paragraph 4.0 in each item. Personnel herein are furnished and reimbursed for by the Owner for Owner's use. They are not to be considered as a substitute for those specified as required by the contractor in the work scopes.

1.0 HULL GAUGING TECHNICIAN:

Mr. Dan Voehl - Testing, Inc.
39 Elkland Road / Melville, NY 11747
Tel/Fax 1-631-643-3733 / Home 631-643-5279
danvoehl@aol.com

2.0 DIEHL Engineering Co.
PO Box 1573 / Kingston WA

3.0 UOMOE SCHAT HARDING
P.O. Box 278
Anacortes, WA 98221
1 360 299 4585
POC. David Jones - cell 337-577-6045
davidjones@schathardinginc.com

APPENDIX D: PARAGRAPHS 6.0; DELIVERABLES

As specified in by paragraph 6.0 in each item.

001 PREAMBLE TO SPECIFICATIONS - NA

002 ENGINEERING AND TECHNICAL DOCUMENTATION REQUIREMENTS

6.0 PERFORMANCE CRITERIA / DELIVERABLES: Drawings, CD records and the progress status as applicable in 5.5

1.01 WHARFAGE

6.0 PERFORMANCE CRITERIA / DELIVERABLES: With Bid submission a Structural Survey Report of the Pier / Sounding Chart / Mooring Plan and Heavy Weather Plan.

1.02 TUG BOATS, PILOTS AND LINE HANDLERS

6.0 PERFORMANCE CRITERIA / DELIVERABLES: Shifting plan as applicable.

1.03 GANGWAY

6.0 PERFORMANCE CRITERIA DELIVERABLES: NONE

1.04 SEWER SYSTEM SHORE CONNECTION, TO SUPPORT GALLEY/CREW BERTHING

6.0 PERFORMANCE CRITERIA DELIVERABLES: NONE

1.05 HABITABILITY SUPPORT (A/C , BOTTLED WATER)

6.0 PERFORMANCE CRITERIA DELIVERABLES: NONE

1.06 DECK COVERINGS

6.0 PERFORMANCE CRITERIA / DELIVERABLES: Provide sample of substitutes for acceptance by Owner's Representative at vessel's arrival

1.07 SHIPBOARD ACCESS AND SECURITY

6.0 PERFORMANCE CRITERIA / DELIVERABLES: Original Security Logs to be provided to the IAS Port Engineer's Office daily.

1.08 OWNER'S REPRESENTATIVE OFFICE / TELEPHONE / FACSIMILE SERVICE

6.0 PERFORMANCE CRITERIA / DELIVERABLES: Reconciliation of phone charges.

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DRY DOCK / REPAIR AVAILABILITY (RFP # 05-G-2??- 0??)

1.09 GAS FREE CERTIFICATE

6.0 PERFORMANCE CRITERIA / DELIVERABLES:

- 6.1 Interface amounts recorded in Para. 5.2.3
- 6.2 Chemist Certificates and list of open tanks including updates.

1.10 CRANE SERVICE

6.0 PERFORMANCE CRITERIA / DELIVERABLES:

- 6.1 Tracking of usage of 5.5 services on a case by case basis.
- 6.2 Standard cost for one four hour session of Crane usage by Owner.

1.11 FIRE PROTECTION

6.0 PERFORMANCE CRITERIA / DELIVERABLES: Provide a fire plan for the contract period upon notice to proceed.

1.12 BILGE PUMPING

6.0 PERFORMANCE CRITERIA DELIVERABLES: NONE

1.13 GARBAGE AND HAZMAT DISPOSAL

6.0 PERFORMANCE CRITERIA DELIVERABLES: NONE

1.14 TEMPORARY LIGHTING

6.0 PERFORMANCE CRITERIA DELIVERABLES: NONE

1.15 SHORE POWER

6.0 PERFORMANCE CRITERIA / DELIVERABLES: PERFORMANCE CRITERIA / DELIVERABLES:

- 6.1 Cost per KW with bid submission.
- 6.2 Bi-weekly reconciliation of Electrical bill

1.16 STORES GANG

6.0 PERFORMANCE CRITERIA / DELIVERABLES: Provide time sheets, which shall have signatures of both to Owner's Representative for reconciliation against allowance.

1.17 POTABLE WATER, COMPRESSED AIR, SALT WATER, & REFRIGERATED STORES

6.0 PERFORMANCE CRITERIA DELIVERABLES: NONE

1.18 DOCK TRIALS

6.0 PERFORMANCE CRITERIA DELIVERABLES: NONE

2.01 DRY-DOCKING (ABS / USCG)

6.0 PERFORMANCE CRITERIA / DELIVERABLES:

- 6.1 As part of Preliminary Dry Dock report forty-eight (48) hours BEFORE vessel's entry into dry dock.
 - 6.1.1 Dry-dock certificate as per paragraph 5.1
 - 6.1.2 Trim conditions required for entry on dock 5.2
 - 6.1.3 Tank sounding reports per paragraph 5.3
- 6.2 Main Engine Deflection reading per 5.5
- 6.3 MarAd Dry-dock Report Form MA-57 per paragraph 5.5
- 6.4 Final Dry Docking Report forty-eight (48) hours AFTER vessel's departure from dry dock. With all subordinate information summarized in this report.
- 6.5 Clear blocking diagram – initial and fleeted.
- 6.6 With bid submission provide dry dock rate schedule.

2.02 ANCHORS, ANCHOR /AUXILIARY CHAINS AND CHAIN LOCKERS (ABS / USCG)

6.0 PERFORMANCE CRITERIA / DELIVERABLES:

- 6.1 Identification of ABS certified gauging personnel used for this item.
- 6.2 Gauging reports for chains as per paragraph 5.3.
- 6.3 Final close out report for this item with consolidation of all findings.
- 6.4 Line item price for swapping out of two (2) shots per chain. Per Para. 5.5
- 6.5 Eductor testing reports

2.03 HULL BLASTING AND COATING

6.0 PERFORMANCE CRITERIA / DELIVERABLES

- 6.1 Planning Meeting Minutes
- 6.2 Contractor paint selection support documents.
- 6.3 Line item prices requested in section 7.0 of this item.
- 6.4 Daily Logs using reference 2.3 (or Owner Approved equal) submitted to Port Engineer with Contractors signature.

2.04 THRUSTER CLEANING AND INSPECTION, GAUGE BEARINGS(ABS)

6.0 PERFORMANCE CRITERIA / DELIVERABLES:

- 6.1 Manufacturer's service engineer report

- 6.2 Oil analysis results
- 6.3 Thruster condition report

2.05 SEA CHESTS, SEA NOZZLES AND GRATINGS (ABS / USCG)

6.0 PERFORMANCE CRITERIA / DELIVERABLES:

- 6.1 Summary of regulatory inspections
- 6.2 NDT reports
- 6.3 Line item price for new strainer plate
- 6.4 Line item pricing for 2" to 4" sea chest nozzle
- 6.5 Line item price for 6" sea chest nozzle.

2.06 SEA VALVES (ABS, USCG)

6.0 PERFORMANCE CRITERIA / DELIVERABLES:

- 6.1 Control Tracking Document – Para. 5.2 including Regulatory agency inspection sign off report
- 6.2 Condition reports for necessary valve repairs.

2.07 INSTALL SCUPPER EXTENSION RINGS AND EXTENSIONS

6.0 PERFORMANCE CRITERIA / DELIVERABLES: Submit with Bid Submission the Contractors Scupper extensions Tech documents for approval by the Port Engineer.

2.08 FATHOMETER; SERVICING

6.0 PERFORMANCE CRITERIA / DELIVERABLES:

- 6.1 Identify Service Company with bid submission and obtain approval of the Owner's Representative.
- 6.2 Service report and condition reports

2.09 SPEED LOG; SERVICING

6.0 PERFORMANCE CRITERIA / DELIVERABLES:

- 6.1 Identify Service Company with bid submission and obtain approval of the Owner's Representative.
- 6.2 Service report and condition reports

2.10 HULL SACRIFICIAL ANODES

6.0 PERFORMANCE CRITERIA / DELIVERABLES:

- 6.1 Sacrificial Hull Anode Installation Report.

2.11 RUDDER – BEARING CLEARANCES, TEST AND COATING (ABS / USCG)

6.0 PERFORMANCE CRITERIA / DELIVERABLES:

- 6.1 Evaluate options for rudder stock packing and seals. Furnish Technical Engineering Data for same for Owners review..
- 6.2 Rudder inspection / survey and test results and Rudder Bearing Clearance Report
- 6.3 NDT report of Rudder Horn

2.12 PROPELLER REMOVAL AND TAILSHAFT TAPER INSPECTION (ABS / USCG)

6.0 PERFORMANCE CRITERIA / DELIVERABLES:

- 6.1 New Fairwater cap furnished by and for use of Contractor.
- 6.2 Propeller nut draw up procedure with Bid submission.
- 6.3 Four (4) copies of reports for each of the following:
 - 6.3.1 Tail shaft bearing clearances before removal of tail shaft
 - 6.3.2 Tail shaft bearing clearances after installation of tail shaft
 - 6.3.3 Propeller nut/keeper examination and torque applied

2.13 PROPELLER (ABS / USCG)

6.0 PERFORMANCE CRITERIA / DELIVERABLES:

- 6.1 Identify specialist propeller polishing company with bid submission and obtain Owner's approval prior to start of work.
- 6.2 Two (2) hard and one electronic copies of the dye penetrant inspection report
- 6.3 Two (2) hard and one electronic copies of propeller polishing report.
Incorporate same into final Dry Dock Report

2.14 STERN TUBE OIL SEAL, OUTBOARD, WORKSHOP, REPORT (ABS)

6.0 PERFORMANCE CRITERIA / DELIVERABLES:

- 6.1 Identify Seal service technician and affiliation with bid submission
- 6.2 Three copies of Survey / Repair report and findings
- 6.3 Manufacturer's service engineer report

2.15 OPTIONAL ITEM, TAIL SHAFT REMOVAL, REPLACEMENT AND INBOARD SEAL (ABS / USCG)

6.0 PERFORMANCE CRITERIA / DELIVERABLES:

- 6.1 Identify Simplex Seal Representative.
- 6.2 Main Engine Crank Shaft Deflections
- 6.3 Report on tail shaft and stern tube bearing condition.

2.16 HULL IMPRESSED CURRENT CATHODIC PROTECTION SYSTEM (ICCP) - SERVICING

6.0 PERFORMANCE CRITERIA / DELIVERABLES:

- 6.1 Photo record of Hull Anode Protection and post coating of Capastic
- 6.2 Wilson Walton Technician identified with Bid submission
- 6.3 Cost per day for service technician with bid submission.
- 6.4 Manufacturer's service engineer report. Two (2) hard copies and one electronic copy.

3.01 HULL STRUCTURAL UT GAUGINGS; SUPPORT FOR SPECIAL SURVEY REQUIREMENT (ABS)

6.0 PERFORMANCE CRITERIA DELIVERABLES: NONE

3.02 OPTIONAL ITEM - BULKHEAD 219, COFFERDAM REPAIR, FWD HFO DEEP TANK-SR 1208274,

6.0 PERFORMANCE CRITERIA / DELIVERABLES

- 6.1 Line item Price for this item with Bid Submission.
- 6.2 Installation plan as per paragraph 5.1
- 6.3 Steel installation/ test reports for item acceptance by Owner's Representative.
- 6.4 Line item price for welding up one crack in 5.7 for use as a Condition Report price as needed.

3.03 OPTIONAL ITEM - SIDE SHELL FRAMING, FR. 154 AND 155 PORT; REPAIR- ABS 702-SR 1208399

6.0 PERFORMANCE CRITERIA / DELIVERABLES

- 6.1 Installation plan as per paragraph 5.1
- 6.2 Steel installation/ test reports for item acceptance by Owner's Representative.
- 6.3 Line item price for welding up one crack in 5.7 for use as a Condition Report price as needed.

3.04 OPTIONAL ITEM - AFTER HOUSE EXTERIOR, BLASTING AND COATING

6.0 PERFORMANCE CRITERIA AND DELIVERABLES: Provide product lines as part of award process.

3.05 OPTIONAL ITEM - VENTILATION LOUVERS; REFURBISH - SR 1208899

6.0 PERFORMANCE CRITERIA / DELIVERABLES:

MV CAPE HUDSON
DRY DOCK / REPAIR AVAILABILITY (RFP # 05-G-2??- 0??)

- 6.1 Provide a line item price for fabrication of one (1) new louver as original, fully welded out with a hot dip galvanized coating.
- 6.2 Provide a line item price to crop and renewal of louver shell frame – 4 feet of 3/8” x 4” FB including curved profile.

3.06 OPTIONAL ITEM - PORT LIGHT AND WINDOW; REPAIRS/ REFURBISH SR 1208643

6.0 PERFORMANCE CRITERIA / DELIVERABLES:

- 6.1 Provide a line item price for fabrication of one (1) new louver as original, fully welded out with a hot dip galvanized coating.
- 6.2 Provide a line item price to crop and renewal of louver shell frame – 4 feet of 3/8” x 4” FB including curved profile.

6.01 MAIN AND EMERGENCY SWITCHBOARDS CLEANING AND SERVICING

6.0 PERFORMANCE CRITERIA DELIVERABLES:

- 6.1 Condition reports
- 6.2 Breaker service reports

7.01 STERN RAMP; REPAIRS AND PRESERVATION

6.0 PERFORMANCE CRITERIA AND DELIVERABLES:

- 6.1 Provide a detailed plan for approval by owner’s representative prior to commencement of the work scope. It shall identify access and execution process for men, material and services to accomplish this item.
- 6.2 Final service report.

7.02 STERN RAMP HYDRAULIC TUBING CLAMPS SYSTEM; REPAIR AND RENEWAL

6.0 PERFORMANCE CRITERIA DELIVERABLES: NONE

8.01 LIFE BOATS, PORT AND STARBOARD; RELEASE HOOKS, SOLAS UPGRADE (ABS) - SR 1207031

6.0 PERFORMANCE CRITERIA DELIVERABLES: NONE

8.02 LIFEBOATS: RENEW FALLS AND WEIGHT TESTS (ABS / USCG REQUIREMENT)

6.0 PERFORMANCE CRITERIA DELIVERABLES:

- 6.1 Wire Certs
- 6.2 Testing Procedures

MV CAPE HUDSON
DRY DOCK / REPAIR AVAILABILITY (RFP # 05-G-2??- 0??)

6.3 Testing Reports



**INTEROCEAN AMERICAN
SHIPPING CORPORATION**

OWNER'S TERMS & CONDITIONS

**CAPE HUDSON
2012 DRY-DOCKING
RFP No: 12-G-299-106**

**AWARDED TO:
TBD**

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**CONTRACT FOR THE:
CAPE HUDSON FY 12 DRYDOCKING
RFP/CONTRACT No.: 12-G-299-106**

This CONTRACT is made and entered into as of the XX day of TBD, 2011 by and between Shipyard Name Here - TBD (hereinafter "**Contractor**"), with its principal place of business located at Shipyard address here and **Interocean American Shipping Corporation (IAS)** with offices located at 302 Harper Drive, Suite 200, Moorestown, NJ 08057 (hereinafter "**Owner/Ship Manager**").

WHEREAS, Owner/Ship Manager is the operator/manager who has been appointed to manage and conduct the business of the CAPE HUDSON hereinafter, "**Vessel**") for the **US DEPARTMENT OF TRANSPORTATION, MARITIME ADMINISTRATION** (hereinafter "**Shipowner**").

WHEREAS, Owner/Ship Manager desires to contract for the repair (hereinafter the "**Contract Work**") of the Vessel in compliance with the requirements of the Shipowner, American Bureau of Shipping (hereinafter "**the Society**"), United States Coast Guard (hereinafter "**USCG**"), applicable government regulations, (hereinafter "**the Regulations**"), this Contract, the Specifications (hereinafter referred to as the "**Specifications**"), and all attachments thereto (hereinafter defined);

WHEREAS, Contractor desires and is willing to undertake and perform the Contract Work at the repair facility (hereinafter "**Shipyard**") located onboard the vessel at Alameda, CA - Alameda Point Pier 3, and Owner/Ship Manager agrees to accept redelivery of the Vessel and pay for the Contract Work.

NOW, THEREFORE, in consideration of the mutual covenants contained herein and other good and valuable considerations, the adequacy and receipt of which is hereby acknowledged, Owner/Ship Manager and Contractor agree as follows.

TERMS & CONDITIONS
ARTICLES

NOTE: Underlined portions of certain text in the following articles highlight Contractor deliverables required to be submitted to the Owner/Ship Manager or the Owner/Ship Manager's Representative at specified periods.

ARTICLE 1 - SCOPE OF WORK

(a) The Contractor shall, at its own risk and expense, assume custody of the vessel at Notice To Proceed (NTP)/ Commencement of Work . Form IAS-O-CON-005, entitled "**Custody Transfer / Ship Deliver /Commencement of all Work Certificate**", shall be completed at time of NTP/Turnover to document same. In addition, Contractor shall, at its own risk and expense, furnish all facilities, labor, materials, except those materials set forth on Schedule "A" attached hereto, which shall be furnished by the Owner/Ship Manager (hereinafter "**Owner/Ship Manager Furnished Materials**"), drawings, schedules, supplies and equipment, and shall perform the Contract Work in strict accordance with (i) Specifications which are hereby incorporated into and made a part of this Contract by reference thereto; (ii) Rules and regulations of the Society and the USCG and (iii) The Regulations.

(b) The Contractor shall do everything agreed to or required of the Contractor pursuant to the

terms of this Contract and the Specifications, including the development of working plans, drawings, specifications and procedures, etc. for the performance of any work required to be performed in accordance with this Contract. It is understood that the Contractor alone is responsible for proper procurement of all equipment and materials, except that of Owner/Ship Manager Furnished Materials, necessary to complete the Contract Work in a timely manner.

(c) The Contract Work shall be commenced in a timely manner and shall be prosecuted with due diligence. Contractor agrees to perform all of its obligations under this Contract, including, but not limited to, all engineering, labor, materials, except Owner/Ship Manager Furnished Materials, supplies and equipment necessary for the completion of the Contract Work, all as provided in the Contract and the Specifications, so that the Vessel will be completed and redelivered to Owner/Ship Manager on or before **TBD** calendar running days after Contractor's acceptance of the Vessel. Said date for redelivery may be modified pursuant to the terms of Article 7, 9 and 10, herein said date for redelivery is to be referred to as the "Redelivery Date".

Dredocking period will be **TBD calendar running days, and is included within total days stated above.**

(d) When the Contract Work is completed in accordance with this Contract, the Vessel shall be redelivered by Contractor to Owner/Ship Manager at the specified redelivery point, unless otherwise agreed by Owner/ Ship Manager and Contractor, with not less than seven days prior notice to Owner/Ship Manager of such date. In the event that the Contract Work is not finished on the Redelivery Date, Owner/Ship Manager, in addition to any other rights it may have under this Contract, shall have the option, if it in its sole discretion deems the Vessel fit for service, to take redelivery and treat all unfinished work as Guarantee Deficiencies as defined in Article 10. **The redelivery of the Vessel upon completion of the Contract Work, or as otherwise provided for in this paragraph, shall be referred to as the "Redelivery".**

(e) In no event shall Redelivery be delayed or withheld because of disputes between Contractor and Owner/Ship Manager.

COMPUTATION OF TIME

(a) All periods of time set forth in this contract shall be computed by including Saturdays, Sundays and Holidays, except where otherwise provided herein.

ARTICLE 2 - SPECIFICATIONS AND OTHER REQUIREMENTS

(a) Contractor warrants and represents that it has reviewed the Specifications to its own satisfaction prior to the execution of this Contract, and the Specifications are in sufficient detail for it to be able to perform the Contract Work by the Redelivery Date at the total contract price set forth in Article 14. Contractor acknowledges that it has had sufficient time to examine the Vessel for the purpose of determining that it can complete the Contract Work by the Redelivery Date. No change shall be made to the Specifications except by written Change Order pursuant to Article 7. Details of sizes and materials given in the Specifications are for Contractor's guidance and estimating purposes only. Contractor acknowledges and agrees that Contractor shall take its own particulars and dimensions for each and every item and shall be fully responsible for same. Contractor is not responsible for taking the particulars and dimensions of Owner/Ship Manager Furnished Materials listed in the attached **Schedule A** of this contract.

(b) For Contractor's work obligations within the Specification, the approval of all agencies charged with enforcing the Regulations (said agencies to be referred to hereafter as the "Agencies") will be obtained by Contractor so that the Vessel will, upon completion, comply with and be certified to all the applicable provisions and standards of the rules and regulations of the Society, the USCG and the applicable Government Regulations (FAR).

(c) Contractor agrees to perform all of its obligations under this Contract in accordance with "good shipbuilding practice" which is defined to mean that the work done by the Contractor shall (i) be in compliance with soundly conceived and engineered detailed work to meet the Specifications; and (ii) utilize construction and testing methods to ensure the Vessel will comply with the Specifications. The Contractor shall use its best efforts, as acceptable to the Owner/Ship Manager, Society and USCG, in the care and maintenance of the Vessel, equipment materials and Owner/Ship Manager-supplied equipment against theft, vandalism and other damage-causing sources.

ARTICLE 3 - ORDER OF PRECEDENCE

(a) Any provision and/or requirement contained in the Specification is, to the extent inconsistent with the Contract, superseded by this Contract. In the event either Contractor or Owner/Ship Manager, during the performance of the Contract Work, discover inconsistencies within the Specifications, such inconsistencies shall be made known to the other party in writing, and specific direction shall be given in writing by the Owner/Ship Manager to the Contractor within three (3) days after such inconsistency has been made known to or discovered by the Owner/Ship Manager.

(b) Should there be any inconsistencies or contradictions between this Contract and those Federal Acquisition Regulations incorporated into this contract, said Federal Acquisition Regulations shall govern.

(c) The drawings and Specifications are considered to explain each other and together constitute the complete technical requirements for the Contract Work. Anything included in one and not the other shall be deemed to be included in both. Should there be any inconsistencies or contradictions between the drawings and the Specifications, the Specifications shall govern.

ARTICLE 4 - SCHEDULE OF EVENTS / REPORTING REQUIREMENTS

(a) Contractor shall furnish the Owner/Ship Manager with a complete schedule (hereinafter referred to as the "Schedule") showing how and when it intends to perform the contract work (and **DRYDOCK/REPAIR AVAILABILITY**, if applicable). This schedule shall be presented to the Owner/Ship Manager three (3) days prior to the vessel's arrival in the Shipyard. The schedule shall be reviewed by the Owner/Ship Manager. Owner/Ship Manager shall notify contractor, without obligation, if the schedule is unreasonable or inconsistent with other Contract work. Owner/Ship Manager and Contractor shall work together in good faith to agree upon an acceptable schedule.

(b) Upon commencement of contract work, a bi-weekly progress meeting between the Owner/Ship Manager's Representative and the Contractor shall be held. At that time, Contractor shall submit reports to the Owner/Ship Manager's Representative which, at a minimum, shall:

(i) Summarize the work performed during the previous week. Chart(s) shall be presented reflecting planned project accomplishments verses actual accomplishments in terms

of time.

(ii) Detail significant findings, problems, delays, inclusions, events, trends, etc., of the reporting period which result from or affect the performance of the Contract Work.

(iii) Outline the remaining work to be performed under the Contract. If slippage has occurred from Contractor's original schedule or any previously revised production schedule, the Contractor shall submit a recovery production schedule and/or critical path chart demonstrating the action planned to complete the remaining work by the Redelivery Date.

(iv) Describe (1) the services provided by subcontractors or other parties and the charges therefore; (2) the supplies or materials delivered and the charges therefore.

(c) Contractor shall timely provide a list of all equipment that is to be demonstrated and/or tested, and the operating range of that demonstration and/or test during in-shipyard tests, dock trials and sea trial.

(d) Contractor shall also furnish the Owner/Ship Manager with subcontractors' and Contractor's suppliers' testing schedule for all pre-delivery and/or delivery testing.

ARTICLE 5 - APPOINTMENT OF OWNER/SHIP MANAGER'S REPRESENTATIVE(S)

(a) The designated and authorized Owner/Ship Manager's Representative(s) in attendance at the Shipyard shall be: Mr. Gary Hunsberger

(b) Authority to negotiate prices, make changes, give directions, comments, approvals, disapprovals, notifications, or advice under this Contract and to actions taken by the Contractor in the performance of the work covered herein shall be vested in such Representatives (**hereinafter "Owner/Ship Manager's Representative(s)"**) as Owner/Ship Manager may designate in writing to Contractor. Contractor shall have no obligation to follow any changes, directions, comments, approvals, notifications or advice, *except those which shall be in writing having the signature of an Owner/Ship Manager's Representative so authorized*. Any person so authorized shall be deemed an Owner/Ship Manager's Representative within the terms of this Contract until designation to act as such shall be revoked in writing.

(c) Owner/Ship Manager shall have the right to appoint surveyors, at its expense, to keep itself continuously informed about the state and the performance of work in the offices, in the shipbuilding shops, and on board the Vessel through personal examination (**hereinafter "Owner/Ship Manager's Surveyor(s)"**).

(d) The Owner/Ship Manager's Representatives, Owner/Ship Manager's Surveyors, Owner/Ship Manager's officers, crew and their agents, Shipowner's Representatives and the Representatives of the Society, the USCG and the Agencies (collectively the "Representatives") shall have the right to enter the Vessel at any time during the day or night, provided such entrance shall not unreasonably interfere with Contractor's performance and its obligations thereunder.

ARTICLE 6 - INSPECTION

(a) All materials and workmanship shall be subject to inspection by the Representatives at any and all reasonable times during manufacture and performance of the Contract Work at any and all places where such manufacture and performance of Contract Work are carried on.

(b) Contractor shall give reasonable notice to the Representatives prior to the date or dates on which testing of materials or inspections of work are scheduled. Owner/Ship Manager shall have the right, but not the obligation, to inspect, approve or reject the work at that time. In the event that Owner/Ship Manager does inspect the work, Owner/Ship Manager's Representative(s) shall use their best efforts to approve or reject all work and material supplied by Contractor in order that no delay will result in the Contract Work. In the event that any work or materials is rejected by any of the Representatives for just cause, or fails to pass the tests or inspections, Contractor, at no expense to Owner/Ship Manager, shall correct such defects and perform such additional tests or inspection in reasonable form and number as may be required to demonstrate that such defects have been corrected.

(c) Neither Owner/Ship Manager's acceptance, nor Owner/Ship Manager's failure, to object to any material or work shall relieve Contractor of any of its obligations under this Contract, which includes the Specifications. Defects appearing in any stage of the work shall be cause for rejection, even though the work in question may have previously been passed as satisfactory.

ARTICLE 7 - CHANGES

(a) The Contractor shall not depart from the requirements of the Contract and the Specifications or make any changes in the Contract Work required by the Contract and Specifications except in writing as provided herein. Owner/Ship Manager shall not be liable for any costs incurred by the Contractor in the performance of work outside of the scope of the Contract Work unless a written Change Order has been signed by the Owner/Ship Manager's Representative for such work. With respect to any Change Order, Contractor shall specify a written price utilizing the established agreed rates as listed in attached Schedule "B", and shall specify any change in the Redelivery Date.

(b) Owner/Ship Manager shall be at liberty, at any time, to request alterations, additions, deletions or changes to be made to the Contract Work and/or to the Vessel. Only the Owner/Ship Manager's Representative at the Shipyard shall be authorized to delete, alter, amend or change any item contained in the Specifications. Owner/Ship Manager will not accept liability for costs incurred by Contractor as a result of requests or instructions from any other source without the prior written consent of Owner/Ship Manager. Contractor shall furnish Owner/Ship Manager a written fixed price for all additions, deletions or alterations within twenty-four (24) hours from the time the Contractor was notified thereof. No work shall be undertaken unless Contractor's fixed price has been approved in writing by an authorized Owner/Ship Manager's Representative. Contractor must immediately advise Owner/Ship Manager in writing of any addition, deletion, alternation or change, which may result in an extension of the Redelivery Date. If Owner/Ship Manager is not agreeable to the Contractor's fixed price for a change or to the extension in the Redelivery Date required by the Contractor to perform the change, Owner/Ship Manager may direct Contractor not to perform such change and the Redelivery Date shall remain unchanged.

(c) The Contractor shall have the right to propose to Owner/Ship Manager in writing any change in the Contract Work. The Contractor shall transmit to Owner/Ship Manager its Change Order request, accompanied by a fixed price for the change and a statement of the effect of the change on the Redelivery Date, if any, of the Vessel. If the Contractor and Owner/Ship Manager agree in writing

to the change proposal, the Contractor shall proceed to perform the change.

ARTICLE 8 - DEFAULTS / CANCELLATION / LIQUIDATED DAMAGES

DEFAULT OF CONTRACTOR

(a) The following shall constitute "Events of Default" by the Contractor under this Contract:

(i) The failure of the Contractor to prosecute the Contract Work with due diligence and in such a manner as will enable it to complete the Contract Work on or before the Redelivery Date, as such date may be extended under Articles 7, 9 and/or 10; provided, however that in order for Owner/Ship Manager to declare an Event of Default under this paragraph prior to the Redelivery Date, Owner/Ship Manager must give the Contractor written notice of its pending failure, and the Contractor shall have seven (7) days from the date of receipt of such notice, to show that it has taken positive steps to remedy the failure.

(ii) The failure of the Contractor in any other respect to perform any of the covenants, agreements, or undertakings on its part to be performed under this Contract, including, but not limited to, its agreement to make prompt payment for all labor, materials, services, and other charges which are to be paid by the Contractor and which will adversely affect Redelivery, and provided that Owner/Ship Manager shall give written notice to the Contractor as to such failure, and the Contractor shall not, within seven (7) days after being so notified, have shown that it has taken positive steps to correct such failure, and thereafter proceed in good faith to complete all such work or cure such failure.

(iii) The Contractor making a general assignment for the benefit of its creditors, the filing by the Contractor of a petition in voluntary bankruptcy, a petition for reorganization, other relief under any bankruptcy or insolvency law, the filing of a petition by the Contractor at common law or in equity for the appointment of a receiver in any court, or the filing against the Contractor by one or more of its creditors of a petition seeking their appointment of a receiver of the Contractor's assets, whether temporary or permanent, or a petition seeking relief under any bankruptcy or insolvency law, which petition shall not have been dissolved within a period of ten (10) days from the date of the filing of the petition in that court.

(b) In the event that any one or more of the Events of Default specified in paragraph (a) shall have occurred, Owner/Ship Manager may terminate this Contract.

(c) If an Event of Default occurs and if Owner/Ship Manager shall elect to have all or part of the Contract Work completed elsewhere, the Contractor shall assign such subcontractors and orders for material, services, and supplies to be used in the performance of said Contract Work to Owner/Ship Manager or as Owner/Ship Manager may direct.

(d) If an Event of Default occurs, Owner/Ship Manager shall at any time have the right to take possession of the Vessel and related items as described in this Article under Cancellation (b)(v), which shall not constitute Redelivery as defined in Article 1(d).

(e) If an Event of Default occurs, Owner/Ship Manager shall have the right to receive from the Contractor reimbursement for payments theretofore made by Owner/Ship Manager to the Contractor on account of the Vessel for the cost of material supplied by Owner/Ship Manager, if any,

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and not reclaimed and recovered by Owner/Ship Manager.

(f) The rights conferred upon Owner/Ship Manager under the terms of this Article shall be cumulative (unless clearly inconsistent) and in addition to, and not in substitution of, any rights which Owner/Ship Manager would otherwise have in either law or equity. The failure of Owner/Ship Manager to exercise the rights conferred upon it hereunder in any one or more instances of the occurrence of an Event of Default, as hereinbefore defined, shall not constitute a waiver of any of its rights at any subsequent time.

(g) Notwithstanding the foregoing provisions of this Article, the Contractor shall not be in default for any impermissible delay in the Redelivery Date if Contractor notifies Owner/Ship Manager (**hereinafter** the "Delay Notice") at least fourteen (14) days prior to the Redelivery Date (i) that such delay is expected to occur; (ii) the anticipated duration of such delay; (iii) the reasons for such delay and the action being taken to minimize the duration of the delay; (iv) that Contractor elects to pay liquidated damages, as set forth in this Article, and (v) during the period of delay all such payments are made. Failure to make such payments of liquidated damages shall be deemed an immediate default.

(h) If the delay continues for more than thirty (30) days, the Owner/Ship Manager shall have the option to exercise all rights and remedies specified in this Contract, or to permit the Contractor if the Contractor so agrees, to continue to pay liquidated damages.

(i) It is understood by the parties that if the Vessel is not redelivered by the date set forth in a Delay Notice, the Owner/Ship Manager shall have all rights as provided in this Contract.

DEFAULT OF OWNER/SHIP MANAGER

(a) The Owner/Ship Manager shall be deemed to be in default of performance of its obligations under this Contract in the following cases:

(i) If the Owner/Ship Manager fails to pay the Contractor within ten (10) business days after receipt of notice that any such installment became due and payable under the provisions of Article 15.

(ii) If the Owner/Ship Manager fails to take Redelivery of the Vessel when the Vessel is duly tendered for redelivery by the Contractor under the provisions of Article 1 (d).

(b) Effect of Owner/Ship Manager's Default

(i) If any default by the Owner/Ship Manager occurs as defined in Paragraph (a) of this subpart [Default of Owner/Ship Manager], the Redelivery date shall be automatically postponed for a period of continuance of such default by the Owner/Ship Manager.

(ii) If any such default by the Owner/Ship Manager continues for a period of ten (10) business days, the Contractor may, at its option, notify Owner/Ship Manager of Contractor's intention to cancel the Contract. If Owner/Ship Manager does not remedy the default within thirty (30) business days after receipt of such notice, Contractor may cancel this Contract by giving notice to such effect to the Owner/Ship Manager.

In the event of such cancellation of this Contract, the Contractor shall be entitled to

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retain any installment or installments previously paid by the Owner/Ship Manager to the Contractor on account of this Contract.

(iii) Owner/Ship Manager shall not, under any circumstances, be responsible or liable to Contractor, its contractors or subcontractors, for any consequential or special losses, damages or expenses including, but not limited to, loss of time, loss of profit or earnings, whether directly or indirectly arising out of this Contract.

(iv) Notwithstanding any other provision of this Contract, if the Owner/Ship Manager fails to accept redelivery of the Vessel when the Vessel is duly tendered for Redelivery by the Contractor under the provisions of Article 1 (d), the Contractor shall recover from Owner/Ship Manager all applicable tariff and utility charges for berthing the Vessel for each day the Vessel remains at the shipyard.

CANCELLATION

(a) Notwithstanding any other provision of this Contract, the performance of the Contract Work may be canceled before or during performance of the Contract Work, in whole or from time to time in part, by Owner/Ship Manager in accordance with this Article if (i) Contractor fails to perform the Contract Work in accordance with the terms of the Contract and/or the Specifications in a good workmanlike manner, as acceptable to the Owner/Ship Manager, the Society and the USCG, with good shipbuilding practice as defined in Article 2 (c), or (ii) for the convenience of the Owner/Ship Manager at its sole discretion. Cancellation of work hereunder shall be effected by delivery to Contractor of a Notice of Cancellation specifying the extent to which performance of work under the Contract is canceled and the date upon which such cancellation becomes effective.

(b) After receipt of a Notice of Cancellation and except as otherwise directed by Owner/Ship Manager, Contractor shall:

(i) Stop work under the Contract on the date and to the extent specified in the Notice of Cancellation;

(ii) Place no further orders or subcontracts for materials, services, or facilities except as may be necessary for completion of such portions of the work under the Contract as may not be canceled.

(iii) Cancel all orders and subcontracts to the extent that they relate to the performance of any work canceled by the Notice of Cancellation;

(iv) Settle all outstanding liabilities and all claims arising out of such cancellation of orders and subcontracts;

(v) To the extent, in the manner and at the times directed by Owner/Ship Manager, transfer title and deliver to Owner/Ship Manager (A) the fabricated or un-fabricated parts, work in progress, completed work, supplies and other material produced as a part of, or acquired in connection with the performance of, the work canceled by the Notice of Cancellation, and (B) the completed or partially completed plans, drawings, information, and other property which, if the Contract had been completed, would required to be furnished to Owner/Ship Manager

(vi) Use its best efforts to sell in the manner, to the extent, at the time and at the price or prices directed or authorized by Owner/Ship Manager, any property of the types referred to in (v) above; provided, however, that Contractor (A) shall not be required to extend credit to any purchaser, and (B) may acquire any such property under the conditions prescribed by and at a price or prices approved by Owner/Ship Manager; and provided further that the proceeds of any such transfer or disposition shall be applied in reduction of any payments to be made by Owner/Ship Manager to Contractor under this contract or shall otherwise be credited to the price or cost of work covered by this Contract or paid in such other manner as Owner/Ship Manager may direct;

(vii) Complete performance of such part of the Contract Work as shall not have been canceled by the Notice of Cancellation; and,

(viii) Take such action as may be necessary or as Owner/Ship Manager may direct for protection and preservation of the property related to this Contract which is in the possession of Contractor and in which Owner/Ship Manager has or may acquire an interest.

(c) After receipt of a Notice of Cancellation, Owner/Ship Manager, in the event of cancellation pursuant to paragraph (a) (i) of this subpart, must submit to the Contractor its cancellation claim with supporting documentation. Such claim shall be submitted promptly, but not later than thirty (30) days from the effective date of cancellation, unless one or more extensions (in writing) are granted within such 30-day period or authorized extensions thereof. Owner/Ship Manager or the Contractor, as the case may be, shall pay to the other the amount so determined. Contractor and Owner/Ship Manager may agree upon the whole or any part of the amount(s) to be paid by reason of the total or partial cancellation of work pursuant to this Article. If the Contractor is not in agreement with Owner/Ship Manager's determination of its claim, the dispute shall be referred to Arbitration under Article 22 (b) herein.

LIQUIDATED DAMAGES

(a) Contractor acknowledges that in the event that Redelivery is delayed beyond the Redelivery Date, Owner/Ship Manager will suffer damages as a result of loss of revenue, good will, and related expenses. If Redelivery is delayed beyond the Redelivery Date, Contractor shall pay to Owner/Ship Manager as liquidated and agreed damages, and not as a penalty, for each calendar day (on a prorated, hourly basis) the amount of **\$19,192.00.**

(b) Should Liquidated Damages be invoked, the maximum will not exceed 15% of the total contract value at the time Liquidated Damages are assessed. Should the Contractor reach the maximum amount of Liquidated Damages, Contractor may be automatically subject to an event of default as specified in this Article, thereby resulting in the termination of this contract.

(c) Damages suffered from Guarantee Deficiencies (as defined in Article 10), and extra costs incurred by Owner/Ship Manager as a result of poor workmanship by the Contractor, are in addition to the liquidated damages referred to above.

ARTICLE 9 - FORCE MAJEURE & CAUSES OF DELAY

(a) If at any time the Contract Work or any performance required under this Contract as a prerequisite of Redelivery is, or may be, delayed (provided Contractor has exerted all reasonable

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efforts to diminish or reduce the consequences of any delay) due to (i) acts of princes or rulers; (ii) acts of God (other than abnormal weather conditions); (iii) abnormal weather conditions (meaning abnormal rain, snow, sub-freezing temperature, temperature, hail, sleet, winds, or combination thereof, which shall cause the Contractor to suspend work for periods not in excess of a suspension normally required by a similarly situated prudent contractor); (iv) acts of the Owner/Ship Manager (which delay is not caused by the Contractor's failure to perform the Contract work pursuant to the requirements of this Contract); (v) war; (vi) the act of civil, naval or military authorities; (vii) arrests and restraints of rulers and people or government authorities; (viii) blockage; (ix) sabotage; (x) insurrection; (xi) floods; (xii) fires; (xiii) epidemics; then in the event of delays due to the happening of any of the aforementioned contingencies, the time for Redelivery of the Vessel under this Contract shall be extended for a period of time corresponding to the actual number of days lost to the Contractor by reason of such causes.

(b) Regardless of the foregoing, Contractor shall use its best efforts to mitigate the results of delay in order to effect timely Redelivery. Delays as a result of Contractor's negligence, strikes by worker's union and normal weather conditions for the month(s) of the season **shall not** be an event of Force Majeure.

In addition to the above, high winds of a Beaufort Force 8 equivalent to (39) to (46) MPH (a Gale) sustained for a period of sixteen (16) hours or less which may cause Contractor to cease crane operations shall not be an event of Force Majeure. If, however, said winds are sustained for a period greater than sixteen (16) hours, Contractor may consider said winds as an event of Force Majeure, but only to the extent of which loss of crane service directly effects a specification item(s). The sixteen (16) hour duration period is based on a weekly aggregate total. The aggregate amount of hours of delay must exceed sixteen (16) hours within a one (1) week period for the Contractor to be entitled to a day of Force Majeure (weekly is defined as five (5) consecutive days, with two (2) shifts per day). These items, and only these items, shall then be granted an extension of redelivery time as agreed to between Owner/Ship Manager's Representative and Contractor, pursuant to the terms of paragraph (c) below.

(c) Within two (2) working days from the date of commencement of any delay for which the Contractor claims he is entitled to an extension of time for Redelivery, the Contractor shall advise the Owner/Ship Manager, in writing, the date such delay commenced and the reason thereof. Likewise, within two (2) working days after such delay ends, the Contractor shall advise the Owner/Ship Manager, in writing, the date that such delay ended, and shall also specify the period of time by which the date for Redelivery is extended by reason of such delay. Failure of the Contractor to give notice as aforesaid shall constitute a waiver of its right to extension of the Redelivery Date. Failure of the Owner/Ship Manager to acknowledge or contest the Contractor's notification of any claim for extension of the Redelivery Date within two (2) working days after receipt by the Owner/Ship Manager of such written notification shall be deemed to be a waiver of its right to object to such extension.

(d) The Contractor shall not be entitled to any extension of the Redelivery Date for any delay resulting from a cause of delay in existence on the date of this Contract.

(e) If the delay in Redelivery of the Vessel due to delays as specified in Paragraph (a) of this Article and all other delays, but excluding: (i) delays due to acts, negligence, failure or omission on the part of the Owner/Ship Manager; and (ii) adjustment of the Redelivery Date due to modification or changes in the Specifications made pursuant to Article 15 should continue for a period of more than thirty (30) days, the Owner/Ship Manager may, in such an event, terminate this Contract by serving upon the contractor a written notice of termination. Such termination shall be effective as of the date the notice thereof is received by the Contractor. The Contractor may, at any time after the expiration of the aforementioned thirty (30) day period of delay in Redelivery, if the Owner/Ship Manager has not

served notice of termination as above provided, demand in writing that the Owner/Ship Manager shall make an election, in which case the Owner/Ship Manager shall, within seven (7) days after such demand is received by the Owner/Ship Manager, either notify the Contractor of its intention to terminate or consent to the Redelivery of the vessel at an agreed future date, it being understood by the parties that, if the Vessel is not redelivered by such future date, the Owner/Ship Manager shall have the same right to termination upon the same terms as herein above provided. Failure by the Owner/Ship Manager to reply to such demand shall be deemed as consent to the proposed future date of Redelivery. A termination hereunder shall be treated as a cancellation pursuant to Article 8 with the rights and remedies set forth therein, except that the notice of termination referred above shall take the place of the Notice of Cancellation referred to in Article 8.

(f) Delays on account of the causes set forth in paragraphs (a) and/or (e) of this Article shall be understood to be permissible delays and are to be distinguished from unauthorized delays on account of which the Redelivery date is not subject to adjustment.

ARTICLE 10 - GUARANTEE DEFICIENCIES

(a) Notwithstanding any action or inaction by Owner/Ship Manager, the Society or any of the Agencies in connection with the Contract Work or the inspection of work, if at any time within the Guarantee Period, which shall be a period of **90 days** from the actual date of Redelivery, plus any extension provided for herein unless there shall appear, arise, exist or occur, any Guarantee Deficiency which is any deficiency or defect in the work performed by the Contractor, such Guarantee Deficiency, whether discovered during the Guarantee Period or whether it is established that the deficiency was present during the Guarantee Period, shall be made good, at the contractor's expense, to the requirements of the Specifications and this Contract; provided, however, the Contractor shall not be responsible for the cost of correcting any such Guarantee deficiency to the extent that such Guarantee Deficiency is due to ordinary wear and tear. Any work required to be performed pursuant to the provisions of this Article shall be carried out, if practicable and at Owner/Ship Manager's option, at the Shipyard. The Contractor may, with the concurrence of Owner/Ship Manager, have such Guarantee Deficiencies corrected by its subcontractors or at any other shipyard. Owner/Ship Manager may, however, have such Guarantee Deficiencies corrected at sea or by a shipyard or ship repair yard at any port satisfactory to it on condition that Contractor has received prior notice of the Guarantee Deficiency, together with (if available) an estimate of the cost of such repairs, and that the Guarantee Deficiency is repaired in a sound and workmanlike manner, and in that event the Contractor shall be liable to Owner/Ship Manager for the expense thereof at reasonable straight time ship repair yard rates prevailing at the shipyard, including the cost of drydocking the Vessel (if necessary) within the limitations of paragraph (c) hereof. Alternatively, in the event that the repairs are performed by Owner/Ship Manager, the Contractor shall be liable for all reasonable costs incurred by Owner/Ship Manager in performing the repairs.

(b) Owner/Ship Manager shall notify the Contractor in writing of any Guarantee Deficiency for which the Contractor is liable pursuant to Paragraph (a) above within thirty (30) days after its discovery. Whenever Owner/Ship Manager discovers a Guarantee Deficiency and decides to correct it, Owner/Ship Manager shall promptly give Contractor notice thereof, and whenever practical (taking into consideration the necessity of keeping the vessel performing its commitments) the Contractor shall be given an opportunity to inspect the Guarantee Deficiency or damage before it is remedied. Owner/Ship Manager shall have the burden of proving that any such Guarantee Deficiency occurred within the Guarantee Period. Whenever practicable (taking into consideration the necessity of keeping the Vessel

performing its commitments), the Contractor shall be given complete access to the Vessel and to all records of Owner/Ship Manager relating thereto for the purpose of verifying the existence of the Guarantee Deficiency and of determining the contractor's obligation to correct it.

(c) For the determination of any underwater Guarantee Deficiencies, Owner/Ship Manager, at Owner/Ship Manager's expense, may drydock the Vessel or carry out an underwater survey within six (6) months after the Guarantee Period. In the event underwater Guarantee Deficiencies are discovered during the Guarantee Period, and such deficiencies are corrected, Owner/Ship Manager shall pay, at its expense, the haul day and any lay days required to accomplish the Vessel's normal drydocking maintenance; provided, however, that if a Guarantee Deficiency is discovered, the correction of which requires additional drydocking time, the Contractor, in addition to the cost of the correction of the Guarantee Deficiency as provided in this Article, shall be responsible for the cost of additional drydocking time.

(d) In computing the Guarantee Period, there shall be excluded any time that any such Guarantee Deficiency is being corrected, whether or not the Vessel is taken out of service, on account of any Guarantee Deficiency for which the Contractor is responsible.

(e) At the end of the Guarantee Period, the Contractor agrees to transfer and assign to Owner/Ship Manager, as to any item of material, equipment and machinery installed in the Vessel, the guarantee rights of the Contractor against the vendor's obligations extended for a period beyond the Guarantee Period; provided, that the Contractor may exclude from such assignment any rights against the vendor in favor of the Contractor for corrective work performed for Owner/Ship Manager without charge.

(f) The Contractor shall save and hold Owner/Ship Manager harmless with respect to any taxes, ad valorem duty or similar duty imposed or assessed on any payment made in connection with the correction of a Guarantee Deficiency; provided however the liability of the Contractor for the correction of a Guarantee Deficiency shall be the cost thereof at the Vessel's location or the cost thereof plus any taxes, ad valorem duty or similar duty, imposed or assessed on any payment made in connection with the correction of the Guarantee Deficiency, whichever is the lesser amount.

ARTICLE 11 - SAFETY REQUIREMENTS

(a) Contractor shall continuously provide adequate protection of the Contract Work, and Owner/Ship Manager's property and take all necessary precautions to free the work place from recognized hazards which are likely to cause death, illness, or injury to persons or damage to the property. Contractor shall cause all its employees, subcontractors, agents, and others under Contractor's control entering the Vessel to perform the Contract Work or in connection therewith, to comply with all applicable health, safety and environmental laws, ordinances, rules and regulations bearing on or relating to the Contract Work. The rules and regulations shall include, but are not limited to, applicable standards of Occupational Safety and Health Administration (OSHA), USCG, International Maritime Organization and the Owner/Ship Manager. Owner/Ship Manager shall not be required to police Contractor to comply with any of the fire, safety, health or environmental rules, laws, regulations, or orders generally referred to herein. Owner/Ship Manager shall not be deemed to establish or confirm any obligations on the part of Contractor under any such rules laws regulations, or orders.

(b) **The vessel may have within its construction asbestos bearing insulation and other materials.** Unless otherwise indicated, all lagging, deck coverings, joiner bulkheads, ceiling panels, etc., must be assumed to be asbestos-bearing. Prior to starting Contract Work on any item that may contain asbestos, precaution must be taken to protect all persons from exposure. Unless otherwise permitted by Owner/Ship Manager's Representative, Contractor shall schedule any asbestos removals, sealing, or any other such abatement during the late night to early morning hours so as not to disturb the continuity of the daytime shift workers. All of the work shall be performed in strict compliance with all applicable federal, state and local regulations, standards, and codes governing asbestos, asbestos abatement, and any other trade work done in conjunction with asbestos and asbestos abatement. The schedule for such is to coincide with the next day Contract Work. Unless express written permission is obtained from Owner/Ship Manager's Representative, any asbestos-bearing material which has been removed to facilitate Contract Work shall be replaced with a non-asbestos-bearing material. Where feasible, the replacement shall be clearly marked as being non-asbestos bearing material.

(c) All confined spaces including tanks, with limited natural ventilation are to be provided with forced ventilation prior to entry. These spaces must be certified Safe for Workers by a certified chemist before entry. If hot work is performed, the chemist shall certify that the space is safe for hot work.

(d) Other Hazardous Materials. The Contractor must recognize that Shipowner's vessels often contain hazardous materials whose handling is required in the performance of work. In addition to asbestos, other hazardous materials which may frequently be encountered include, but are by no means limited to, mercury, certain hydraulic oils, liquid cargo products, lead, and lead-based anti-foulants. Safe, proper and lawful handling, including disposal, of such material is the Contractor's responsibility, whether or not it is identified in this Contract. If a suspected hazardous material/substance can not be clearly identified or documented, it shall be the Contractor's responsibility to take necessary samples for proper identification/documentation of the substance(s). The resultant analysis shall dictate the Contractor's specific handling requirements as per all Federal, state and local regulations. Additional charges for the handling of hazardous materials **will not** be allowed for those items specifically identified in the Contract/Specification.

(e) **Scrap.** All salvage, scrap and other materials removed shall remain the property of the Owner/Ship Manager, unless the Owner/Ship Manager or Owner/Ship Manager's Representative directs otherwise. All such scrap and other material which remain the property of the Owner/Ship Manager as aforesaid are to be temporarily stored in Contractor's yard or on board, as directed by the Owner/Ship Manager or Owner/Ship Manager's Representatives. Owner/Ship Manager will advise disposition of shoreside scrap at time of contract settlement.

ARTICLE 12- SUBCONTRACTORS

(a) Contractor shall supply to the Owner/Ship Manager a list of all subcontractors and sublettors and include their respective responsibilities associated with this Contract. Owner/Ship Manager shall furnish a list of owner/ship manager furnished technicians being supplied (with Specification numbers) to Contractor for its guidance/file.

(b) Owner/Ship Manager recognizes that Contractor may elect to subcontract, and/or subcontractors to sublet, totally or in part, work to be performed hereunder. However, Owner/Ship Manager retains the right of approval as to each such subcontractor and the contract with each such subcontractor (as well as all suppliers of material to be used in connection with the Contract Work who shall be deemed subcontractors for purposes of this Article), and the extent of Contract Work to be

sublet. Said approval shall not be unreasonably withheld. In the event of any such subletting, or purchase of material, all obligations imposed by this Contract on the Contractor with respect to, or in connection with, the Contract Work which is sublet, or the material purchased, shall be assumed by such subcontractor and becomes obligations of the subcontractor, but no such subletting shall relieve Contractor of any such obligations, and Contractor shall always remain liable therefore. All subcontractors must warrant their work and/or materials at least to the same extent as provided in this Contract. Such warranties shall expressly provide that Owner/Ship Manager is a third party beneficiary of such warranty. All subcontractors shall acknowledge that they are not third party beneficiaries of this Contract.

(c) Contractor, as a condition of employment of a subcontractor, agrees to cause the subcontractor to indemnify and hold harmless the Owner/Ship Manager and Shipowner in terms similar to that provided in Article 8, Subpart Default of Owner/Ship Manager hereof, substituting "Subcontractor" for "Contractor" whenever such terms appears in the said Article. Contractor shall furnish Owner/Ship Manager a copy of each such indemnification by a subcontractor at the time of subcontractors' assignment.

ARTICLE 13 - EMPLOYMENT OF OTHERS

(a) Owner/Ship Manager shall be permitted to employ any of its employees, officers, crew or direct labor subcontractors or other personnel in any work, at any time, upon the Vessel, provided: (i) the Contractor shall have previously received notification of such employment; (ii) such work does not interfere with the performance of the Contract Work by the Contractor; and (iii) said individuals comply with Contractor's safety requirements. Owner/Ship Manager shall not be required to pay to the Contractor any penalty premium or other sum for the exercise of this right.

(b) The Contractor hereby further undertakes to provide to Owner/Ship Manager, or its said employees, officers, crew or direct labor subcontractors referred to above, all necessary services and assistance required by them to carry out their work in order that the work is substantially completed upon the Vessel no later than the Redelivery date. Any assistance over and above what is called for in the Specifications shall be at the agreed rates as listed in attached **Schedule "B"**.

(c) The Owner/Ship Manager requires Contractor to have in attendance a Ship Superintendent(s) during all shifts and overtime period activity (if applicable) for the conduct of all Contract Work.

ARTICLE 14 - TOTAL CONTRACT PRICE

(a) Owner/Ship Manager agrees to pay Contractor the following sum as the total contract price for the Contract Work: **\$XXXXXX TBD**.

(b) Computation of unit prices shall be determined by dividing the quantity of units stipulated within the specification item by the Contractor's total item bid price, if applicable.

(c) The total contract price shall be amended to reflect any changes authorized pursuant to Article 7 and as modified by additions or cancellations of Contract Work if invoked by the Owner/Ship Manager (hereinafter as amended, the "contract price").

ARTICLE 15 - TERMS OF PAYMENT

- (a) Except for payment change(s) authorized pursuant to Article 7, Owner/Ship Manager shall pay Contractor the Total Contract Price set forth above for the Contract Work in the following manner:
- (i) 90% of the total contract price thirty (30) days after acceptance of Contract Work and Redelivery of Vessel to Owner/Ship Manager.
 - (ii) Remaining 10% of the total contract price, plus/minus the difference between total contract price and the agreed settlement price, shall be paid at the end of the guarantee period pursuant to Article 10. *Owner/Ship Manager may waive this requirement and withhold a fixed amount the Owner/Ship Manager deems appropriate for the Contract Work.* The final amount shall be subject to any liquidated damages under the provisions of Article 8, Subpart Liquidated Damages.
- (b) Owner/Ship Manager *may* consider authorizing the submission of bi-weekly progress payments and shall only authorize such in writing to the Contractor. **Contractor shall be paid thirty (30) days after receipt of each agreed-to invoice.**
- (c) Contractor's invoices must be reviewed and approved by the Owner/Ship Manager's onsite Representative. Upon approval, invoices shall be submitted to:

For Owner/Ship Manager: Ms. Karen Suarez, Contracting Officer
INTEROCEAN AMERICAN SHIPPING CORPORATION
302 Harper Drive, Suite 200
Moorestown, NJ 08057
Phone: (856) 770-5620 / Fax: (856) 770-1633
Email: karen.suarez@iashipping.net

For Contractor: — Mr. POC
SHIPYARD NAME HERE
Street
Bldg
City, State and zip code
Phone: 000-000-0000 / Fax: 000-000-0000

NOTICES

Unless Owner/Ship Manager or Contractor notifies the other in writing of a change of address, in which event any notice shall be mailed, telegraphed, facsimiled or delivered to the changed address, any notice under this Contract shall be in writing or facsimile addressed to the above noted Representatives.

TAXES

Contractor shall pay, as a cost to the Contractor which must be included in the total contract price, the cost of all taxes imposed by the authorities of the country/state in which the Shipyard is located and the country/state in which the Contractor is incorporated and other taxes, assessments, users fees assessed prior to or in connection with the Redelivery against the Vessel, Owner/Ship Manager and Shipowner, and material used or to be used in the performance of this Contract arising out of the performance of the Contract Work and the Contract.

ARTICLE 16- INDEMNITIES

(a) Contractor hereby agrees to indemnify and hold harmless Owner/Ship Manager, Shipowner, their employees, officers and agents, against all claims, demands, or causes of action by all persons whomsoever and whatsoever including (but without limitation) Contractor's employees, Owner/Ship Manager's or any of its subcontractor's employees, officers and agents, and all third persons, based on personal injury or death or property damage or destruction (collectively a "**Claim Event**") which Claim Event occurred prior to the acceptance by and redelivery to Owner/Ship Manager of the Vessel arising out of or in any way related to the actions of Contractor, including the performance by Contractor of work hereunder, if such Claim Event is caused by the negligence or fault of Contractor or its employees, officers, subcontractors or agents.

(b) Owner/Ship Manager hereby agrees to indemnify and hold harmless Contractor, and Contractor's officers, directors, shareholders, agents, independent contractors, subcontractors, and representatives against all claims, demands or causes of action by all persons whomsoever, and whatsoever including (but without limitation) Owner/Ship Manager, Shipowner, their employees, officers and agents based on personal injury or death or property damage or destruction (collectively a "Claim Event") which Claim Event occurred prior to the acceptance by and redelivery to Owner/Ship Manager of the Vessel arising out of or in any way related to the actions of Owners/Ship Manager, if such Claim Event is caused by the negligence or fault of Owner/Ship Manager or its employees, officers or agents.

(c) Contractor, at its own expense, will pay all employee taxes or contributions imposed by law or governmental regulations with respect to or measured by the compensation (wages, salary or other paid to employees of Contractor for or in connection with the work to be performed hereunder), and Contractor agrees to indemnify and hold harmless Owner/Ship Manager and Shipowner from any liability for any and all such taxes and contributions, as well as interest and damages for failure to make prompt payment of same.

(d) Contractor hereby agrees to indemnify and hold harmless Owner/Ship Manager, Shipowner, their employees, officers and agents, against any and all claims, demands, or causes of action based on any asserted infringement of trade marks, patents or any other protected rights, arising out of or in any way related to contractor's performance of work hereunder or the equipment, materials, machinery or methods employed therein by Contractor.

ARTICLE 17 (A) - INSURANCE

(a) Contractor shall procure and maintain at Contractor's sole cost while the Vessel is in Contractor's custody and until Redelivery, the insurance described below with liability limits not less than those indicated.

(b) Before commencing work under this contract, the Contractor shall certify to the Owner/Ship Manager in writing that the required insurance has been obtained. The policies evidencing required insurance shall contain an endorsement to the effect that any cancellation or any material change adversely affecting the Owner/Ship Manager/Shipowner's interest shall not be effective (1) for such period as the laws of the State in which this contract is to be performed prescribe, or (2) until thirty (30) days after the insurer or the Contractor gives written notice to the Owner/Ship Manager, whichever period is longer.

Contractor shall insert the substance of this clause, including this paragraph (c), in subcontracts under this contract that require work on the Owner/Ship Manager/Shipowner's property, and shall require subcontractors to provide and maintain the insurance required in this Contract. The Contractor shall maintain a copy of all subcontractors' proof of required insurance, and shall make copies available to the Owner/Ship Manager upon request.

(d) Certificate(s) of Insurance - Prior to award, Contractor shall furnish Owner/Ship Manager with Certificates of Insurance from its insurer(s) evidencing the following:

(i) Workmen's Compensation Insurance, incl. Longshoremen & Harbor Worker's Act - To cover all agents, servants, borrowed servants, statutory employees of Contractor for all compensation and other benefits required by applicable state and Federal law or by government authority on account of injury, death, sickness or disease. *Minimum Coverage Requirements:* **Statutory - No Minimum.**

(ii) Employers Liability - To cover both injury and death resulting from accident, sickness or disease. *Minimum Coverage Requirements:* **\$5 million bodily injury by accident, each accident; \$5 million bodily injury by disease, each accident; \$5 million bodily injury by disease, in the aggregate.**

(iii) Maritime Employers Liability (Jones Act) - To cover both injury and death resulting from accident, sickness or disease. *Minimum Coverage Requirements:* **\$5 million for each person, per occurrence, and \$5 million in the aggregate.**

(iv) Comprehensive General Liability - To include coverage for (but not limited to) products and completed operations liability, property damage liability and contractual liability. *Minimum Coverage Requirements:* **\$5 million combined single per occurrence limit for bodily injury and property damage, and \$5 million in the aggregate.**

(v) Ship Repairers Legal Liability - Coverage to be provided under the standard London or American Institute form or their equivalent. *Minimum Coverage Requirements:* **\$5 million per vessel, per occurrence or such other amount as may be requested.**

(vi) Pollution - To cover sudden and accidental liability. *Minimum Coverage Requirements:* **\$5 million per occurrence.**

(e) The pollution insurance may be a separate policy or part of the Comprehensive General Liability policy, but the coverage must be specifically shown on the required conformation of insurance. Excess liability and umbrella liability policies may be used in the excess of primary policies to meet the minimum limit requirements. **The Owner/Ship Manager and the United States of America shall be**

an listed as additional assured in the Ship Repairers Legal Liability policy, Comprehensive General Liability Policy and Pollution Policy. Such policies shall contain a clause stating that there is no recourse against the Owner/Ship Manager and the United States of America for payment of premium.

(f) The Contractor shall have its insurance broker provide a detailed certificate of insurance, cover note or policy confirming the above required coverages. The confirmation shall name the Contractor as an assured and conform the types of coverage, policy forms, policy periods, deductibles (if any) and underwriters with their percentage of participation. The N.Y. Suable Clause or Service of Suit USA Clause must be confirmed for any London or other approved foreign underwriter placements. The policy amounts, terms and conditions, deductibles and underwriters shall at all times be satisfactory to the Owner/Ship Manager/Shipowner.

(g) All such insurance shall be subject to the approval of the Owner/Ship Manager/Shipowner, and will contain thirty (30) calendar days advance notice of cancellation or of any non-renewal which is the option of the insurance. Acceptance or approval of any insurance certificate procured by the Contractor is not to be construed as relieving the Contractor of any obligation it has assumed under any other provision of this Contract.

ARTICLE 17 (B) - PHYSICAL LOSS OR DAMAGE TO THE VESSEL OR OTHER GOVERNMENT PROP

(a) Except as set forth in this clause or any guarantee or warranty provision in the contract, the Maritime Administration, part of the United States Department of Transportation, in its capacity as Owner of the vessel (hereinafter "Owner" or "Marad", assumes the risk of physical loss or damage to any part of the vessel, its machinery, equipment, stores, and other property, including cargo, if owned by the Government, during a dry docking or shipyard availability except to the extent that such loss or damage is caused by the negligence, fault, error, or act or omission of the shipyard, its servants, agents, or employees ("Subcontractor"), or the Subcontractor's lower-tier Subcontractors, or the servants, agents, or employees of the lower-tier Sub-contractors, all of which risks are assumed by the Subcontractor.

The burden of proving freedom from responsibility under the foregoing sentence shall be borne by the Subcontractor.

(b) Limit of Liability - Except as set forth below, the Subcontractor's liability under this clause shall not exceed \$5,000,000 per incident per vessel.

(c) The Ship Manager and Owner do not assume any risk with respect to loss or damage compensated for by insurance or otherwise or resulting from risks with respect to which the Subcontractor has failed to maintain insurance as required by this contract.

(d) The Ship Manager and Owner do not assume the risk and will not pay for any costs of the following:
(1) Inspection, repair, replacement, or renewal of any defects in the vessel or material and equipment due to:

(i) Defective workmanship performed by the Subcontractor or any lower-tier Subcontractor.

(ii) Defective materials or equipment furnished by the Subcontractor or any lower-tier

subcontractor; or

(iii) Workmanship, materials, or equipment that does not conform to the requirements of the contract, whether or not the defect is latent or whether or not the nonconformance is the result of negligence.

(2) Loss, damage, liability, or expense caused by, resulting from, or incurred as a consequence of gross negligence or willful misconduct of the Subcontractor.

(e) No party other than the Ship Manager shall have any right to proceed directly against the Owner or join the Owner as a codefendant in any action.

(f) In the event of loss of or damage to the vessel, material, or equipment which exceeds the limit of liability set forth in paragraph (2) above, the Subcontractor shall promptly notify the Ship Manager, both verbally and in writing, of the loss or damage and await direction from the Ship Manager

ARTICLE 18 - TITLE

This is a "public vessel" and NOT subject to Maritime Liens. All material and equipment purchased to perform the work required by this Contract shall become the property of Owner/Ship Manager upon placement on the Vessel. Owner/Ship Manager shall have title thereto free and clear of any lien and/or encumbrances subject only to payment of the Total Contract Price (as it may be modified pursuant to the terms of this Contract) due. Contractor shall promptly pay all indebtedness for labor, materials, tools, equipment and any other items used by Contractor in the performance of the Contract Work. Contractor shall advise all subcontractors that neither the Owner/Ship Manager nor Master nor any other person has the power or authority to order supplies or services on the credit of the public vessel as referenced under this contract or to create any liens on said vessel. Failure of the Contractor to properly advise any lower tier subcontractors or providers from whom you obtain supplies or services that the vessel is a "public vessel" shall NOT result in a lien against the vessel but instead will result in the Contractor being required to indemnify the United States for all costs associated with defending an action brought in rem against the vessel or in personam against the vessel's Owner/Ship Manager by any such lower tier subcontractor or provider. Contractor is required to fax Notice of Prohibition On Liens – Public Vessel, to any/all lower tier subcontractors or providers from who you obtain supplies or services for the vessel (Reference Attachment No. 1 to Contract Terms and Conditions.

At Redelivery, Contractor shall deliver to Owner/Ship Manager a Warranty of Freedom of Liens for such indebtedness with affidavit to show that all bills for labor, materials, tools, equipment, etc., incurred in the work shall be paid within a reasonable time line after contract completion

ARTICLE 19 - ASSIGNMENT OF AGREEMENT

This Contract shall inure to the benefit of Contractor and Owner/Ship Manager and their successors and assigns and shall be binding upon Contractor and Owner/Ship Manager and their successors and assigns. Owner/Ship Manager may at any time sell the Vessel and/or assign this Contract. Contractor agrees that such a sale and/or assignment shall not be grounds for termination of the Contract provided that the Contractor has adequate assurance that the Total Contract Price (as it may be modified pursuant to the terms of this Contract) will be paid.

ARTICLE 20 - JOINT PROVISIONS

All prior understandings and agreements heretofore entered into between Owner/Ship Manager and Contractor, whether written or oral, are superseded by and merged in the Contract which alone fully and completely expresses the agreement between Owner/Ship Manager and Contractor, and the Contract may not be changed orally, nor may it be modified or varied in any manner, except in a writing signed by both parties. The failure of any party to insist upon strict compliance shall not constitute a waiver or the abrogation of such provision, nor shall it constitute a waiver of compliance or performance in any other instance. No course of dealing between the parties shall operate as a waiver by either party, and no delay on the part of either party in the exercise of any right hereunder, shall operate as a waiver of any right of such party. In the event any provision of this Contract is found to be invalid, illegal or unenforceable, it shall be deemed severed from the contract, which shall then be construed and enforced as though such illegal, invalid or unenforceable provision has never been a part thereof. All Article headings are for identification purposes only.

ARTICLE 21 - NO ARRESTS OR ATTACHMENTS

(a) The contractor waives any rights it has or may have under this Contract, or the law, or otherwise in rem against the Vessel or any other vessel owned or operated by Owner/Ship Manager and Shipowner, and shall not arrest or attach the Vessel, or any other vessel owned or operated by Owner/Ship Manager and Shipowner, in connection with any dispute or claim arising under or in connection with this Contract for purposes of obtaining security or jurisdiction with respect to any such claim, provided, however, that should the Contractor obtain a judgment or an arbitration decision in Contractor's favor against Owner/Ship Manager, and should that judgment remain unsatisfied or enforcement remain unstayed for 30 days, the Contractor shall have the right to arrest or attach any vessel owned or operated by Owner/Ship Manager, so far as permitted by applicable law, for the purpose of enforcing the judgment.

(b) The Contractor shall be responsible for making certain that equivalent restrictions on the enforcement of in rem rights are included in all of its contracts with subcontractors and suppliers and will indemnify and hold harmless Owner/Ship Manager and Shipowner from any such claims, demand or causes of action attending such rights.

ARTICLE 22 - GOVERNING LAW AND JURISDICTION

(a) This Contract shall be governed by and construed in accordance with the laws of the State of New York without regard to conflict of laws.

(b) Any and all claims, controversies and disputes of whatsoever nature arising out of this Contract shall be decided by arbitration in the City of New York, pursuant to the Rules of the Society of Maritime Arbitrators, Inc., before a board of three persons, consisting of one (1) arbitrator to be appointed by Owner/Ship Manager, one (1) by Contractor and one (1) by the two so chosen. The decision of two of the three on any point or points shall be final. Either party hereto may call for such arbitration by service upon the other, within one hundred twenty (120) days after the claim, dispute or controversy has arisen, of a written notice specifying the name and address of the arbitrator chosen by the first moving party and a brief description of the disputes or differences which such party desires to put to arbitration. If the other party shall not, by notice served upon the first moving party within twenty

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(20) days of the service of such first notice, appoint its arbitrator to arbitrate the disputes or differences specified, then the first moving party shall have the right without further notice to appoint a second arbitrator, who shall be a disinterested person, with precisely the same force and effect as if said second arbitrator had been appointed by the other party. In the event that the two arbitrators fail to appoint a third arbitrator within twenty (20) days of the appointment of the second arbitrator, either arbitrator may apply to the Society of Maritime Arbitrators, Inc., for the appointment of a third arbitrator, and the appointment of such arbitrator on such application shall have precisely the same force and effect as if such arbitrator had been appointed by the two arbitrators. Until such time as the arbitrators finally close the hearings, either party shall have the right by written notice served on the arbitrators and on the other party to specify further disputes or differences under this Contract for hearing and determination. Awards made in pursuance to this Article may include costs, including a reasonable allowance for attorneys' fees, and judgment may be entered upon any award made hereunder in any court having jurisdiction in the premises. The arbitrators shall be commercial persons experienced in the maritime industry.

SPECIAL PROVISIONS

52.252-2 Clauses Incorporated by Reference

The following Federal Acquisition Regulation clauses are hereby incorporated by reference or full text into, and made part of, this Contract. Contractor is responsible for complying with the terms and conditions of these clauses as if they were provided in full text (which shall be made available to Contractor upon request and or may be accessed electronically by going to the following address: <https://www.acquisition.gov/far/>)

FAR 52.244-6 Subcontracts for Commercial Items

As prescribed in [44.403](#), insert the following clause:

SUBCONTRACTS FOR COMMERCIAL ITEMS (DEC 2010)

(a) *Definitions.* As used in this clause—

“Commercial item” has the meaning contained in Federal Acquisition Regulation [2.101](#), Definitions.

“Subcontract” includes a transfer of commercial items between divisions, subsidiaries, or affiliates of the Contractor or subcontractor at any tier.

(b) To the maximum extent practicable, the Contractor shall incorporate, and require its subcontractors at all tiers to incorporate, commercial items or nondevelopmental items as components of items to be supplied under this contract.

(c)(1) The Contractor shall insert the following clauses in subcontracts for commercial items:

(i) [52.203-13](#), Contractor Code of Business Ethics and Conduct (Apr 2010) (Pub. L. 110-252, Title VI, Chapter 1 ([41 U.S.C. 251 note](#))), if the subcontract exceeds \$5,000,000 and has a performance period of more than 120 days. In altering this clause to identify the appropriate parties, all disclosures of violation of the civil False Claims Act or of Federal criminal law shall be directed to the agency Office of the Inspector General, with a copy to the Contracting Officer.

(ii) [52.203-15](#), Whistleblower Protections Under the American Recovery and Reinvestment Act of 2009 (Jun 2010) (Section 1553 of Pub. L. 111-5), if the subcontract is funded under the Recovery Act.

(iii) [52.219-8](#), Utilization of Small Business Concerns (Dec 2010) ([15 U.S.C. 637\(d\)\(2\)](#) and (3)), if the subcontract offers further subcontracting opportunities. If the subcontract (except subcontracts to small business concerns) exceeds \$650,000 (\$1.5 million for construction of any public facility), the subcontractor must include [52.219-8](#) in lower tier subcontracts that offer subcontracting opportunities.

(iv) [52.222-26](#), Equal Opportunity (Mar 2007) (E.O. 11246).

(v) [52.222-35](#), Equal Opportunity for Veterans (Sep 2010) ([38 U.S.C. 4212\(a\)](#));

(vi) [52.222-36](#), Affirmative Action for Workers with Disabilities (Oct 2010) ([29 U.S.C. 793](#)).

(vii) [52.222-40](#), Notification of Employee Rights Under the National Labor Relations Act (DEC 2010) (E.O. 13496), if flow down is required in accordance with paragraph (f) of FAR clause [52.222-40](#).

(viii) [52.222-50](#), Combating Trafficking in Persons (Feb 2009) ([22 U.S.C. 7104\(g\)](#)).

SCHEDULE "A"
OWNER/SHIP MANAGER-FURNISHED MATERIAL LIST
TO THE CONTRACT DATED
BETWEEN IAS & AFOREMENTIONED CONTRACTOR

The following shall be provided by the Owner/Ship Manager in support of this contract:

The following list of **Owner/Ship Manager-furnished materials** shall be provided:

- Seal parts

The following list of **Owner/Ship Manager-furnished technical representatives** shall be provided:

- Gauging Specialist to perform gauging's
- Paint representative
- Shaft Alignment specialist to verify line shaft bearing loads

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SCHEDULE "B"
ITEMIZED PRICES

TO THE CONTRACT DATED

BETWEEN IAS & AFOREMENTIONED CONTRACTOR

Contract must complete this section in its entirety, quoting number of performance running days, and unit prices (where/if applicable), and total job costs.

SEE ATTACHED EXCEL SPREADSHEET TITLED: "SCHEDULE 'B' PRICING SHEET.

Contractor's shall submit pricing in accordance with this file and return same via electronic means at the time and date specified in the solicitation cover letter.

SCHEDULE "C"
CONTRACT DELIVERABLES

TO THE CONTRACT DATED

BETWEEN IAS & AFOREMENTIONED CONTRACTOR

Any omission of a deliverable from this list does not release the Contractor from the responsibility of submitting that deliverable. Each noted Article must be read in full text.

ART.	DELIVERABLE	TIME OF SUBMISSION
1	Form IAS-O-CON-005 - Custody Transfer / Ship Delivery Certificate	Notice to Proceed (NTP)/Turnover
4 also Spec Preamble	Production Schedule	3 days prior to arrival in Shipyard
	Estimated Manning Schedule	Prior to award
	Contractor/Subcontractor testing schedule; List of equipment to be demonstrated/tested	Pre-delivery/Delivery or As Applicable
	Progress Reports in accordance with Article requirements	Weekly
12 also Spec Preamble	List of Subcontractors and Subletors, including respective responsibilities	Prior to award
	Subcontractor Indemnification	Time of Subcontractor Assignment
17	Insurance Certificates in accordance with Article requirements	Prior to Award
Spec Preamble	Welder Certifications	Prior to Welder Performing Work on Vessel
	List of Access Cuts	Prior to Making Cuts
	Material Control Schedule	At Notice to Proceed and Weekly Afterwards
	Quality Contract Manual	At Notice to Proceed
	Written Notification for Owner Inspections	24 hours Prior to Inspection

NOTE: THE ABOVE LIST DOES NOT RELIEVE THE CONTRACTOR OF ITS RESPONSIBILITY TO SATISFY ALL REQUIRED SPECIFICATION DELIVERABLES, WHICH SHALL ALSO INCLUDE THOSE AS LISTED IN THE SPECIFICATION.

ATTACHMENT J-20

NOTICE OF PROHIBITION ON LIENS
PUBLIC VESSEL

This Notice is being transmitted to you as a provider or potential provider of supplies or services to the:

CAPE HUDSON

Name of Public Vessel

The above vessel is a “public vessel” owned by the United States Department of Transportation, Maritime Administration (“MARAD/Owner”). The vessel is managed by a Ship Manager:

Interocean American Shipping Corporation

Name of Ship Manager

The Maritime Commercial Instruments and Lien Act (MCILA) specifically prohibits maritime liens against public vessels. 46USC § 31342. In addition, the contract between the above Ship Manager and MARAD contains a “Prohibition on Liens” clause which prohibits liens against the above vessel in the event of the Ship Manager or another’s failure to pay,

You are hereby notified that neither the Ship Manager nor the Master nor any other person has the power or authority to order supplies or services on the credit of the above public vessel or to create any liens on said vessel. You must look only to the credit of the entity requesting the supplies or services for payment, not to the credit of the above vessel or its Owner. You are on notice that your provision of supplies or performance of services for the above vessel a the request of the Ship Manager, the Master, or any other person cannot result in a lien against the vessel, *in rem*, or a claim against the Owner, the United States, in *personam*, in the event of the Ship Manager or another’s failure to pay for same. If you bring suit against the United Sates contrary to the provisions of this notice, you shall be required to indemnify the United States for all costs associated with defending such action, including but not limited to attorney’s fees.

Further, you are **required** to fax this notice to any lower tier-subcontractors or providers from who you obtain supplies or services for the vessel. Failure to properly notify such persons of this “Notice of Prohibition on Liens” shall NOT result in a lien against the vessel but instead will result in your being required to indemnify the United States for all costs associated with defending an action brought *in rem* against the vessel or in *personam* against the vessel’s Owner by any such lower-tier subcontractor or provider.

**MV CAPE HUDSON - Dry-dock - RFP/CONTRACT NO.: 10-G-21X-0??
ESTIMATE Dry-dock**

US WEST COAST- Unit Pricing

ITEM #	UNIT PRICING	UNITS	UNIT PRICE
1.13	Para. 6.3 6.3 cost per KW		
2.02	Para. 6.4:Line item price for swapping out of one (1) shot of chain. Per Para. 5.5		
2.03	Para 6.3.1: Cost for preparing one hundred (100) sq. ft of hull to SSPC-SP10 (Sa2.5) Near white blast and applying a CMP five (5) coat anti-fouling bottom system in accordance with paragraph 5.14.1		
	Para. 6.3.2: Cost for preparing one hundred (100) sq. ft of hull to SSPC-SP11 power tooled to SSPC-SP11 by use of needle guns and/or hand tooling and applying a CMP five (5) coat anti-fouling bottom system in accordance with paragraph 5.14.1		
	Para 6.3.3: Cost for preparing one hundred (100) sq. ft of hull to SSPC-SP10 (Sa2.5) Near white blast and applying a CMP three (3) system in accordance with paragraph 5.14.3.		
	Para. 6.3.4: Cost for preparing one hundred (100) sq. ft of hull to SSPC-SP11 power tooled to SSPC-SP11 by use of needle guns and/or hand tooling and applying a CMP three (3) system in accordance with paragraph 5.14.3.		
2.05	Para. 6.4: Line item price for new strainer plate in accordance with Para. 5.7.2.4		
	Para. 6.5: Line item pricing for 2" to 4" sea chest nozzle in accordance with Para. 5.8.1		
	Para. 6.6: Line item price for 6" sea chest nozzle in accordance with Para. 5.8.2		
2.15	Para. 6.4 : Line item price for Lube oil purifier pipe suction Para. 5.17		
2.16	Para. 6.3: Cost per day for service technician with bid submission.		

**MV CAPE HUDSON - Dry-dock - RFP/CONTRACT NO.: 10-G-21X-0??
ESTIMATE Dry-dock**

US WEST COAST- Unit Pricing

2.17	Para. 6.3: Cost per day for service technician with bid submission.		
3.04	Para. 6.2: With Bid submission provide line item pricing for accessing, preparing and coating each of the following in accordance with paragraph 5.6.		
	Para. 6.2.1: Port, starboard vertical House surfaces.		
	Para. 6.2.2: Forward house from four deck including Guillotine Door face and navigating bridge front. Port to Starboard		
	Para. 6.2.3: Stern Ramp WT Door		
	Para. 6.2.4: Stack funnels and vents atop Stack houses; Stack towers (two each) and Connecting bridge between stack structures		



INTEROCEAN AMERICAN SHIPPING CORPORATION

CUSTODY TRANSFER / SHIP DELIVERY AND OR COMMENCEMENT OF ALL WORK CERTIFICATE

THIS FORM TO BE COMPLETED AT NOTICE TO PROCEED (NTP) or COMMENCEMENT OF ALL WORK

<u>Name of Ship</u> CAPE HUDSON RFP #: 12-G-299-106 (FY) 2012 DRYDOCKING	<u>Location of Delivery (Commencement of work)</u> TBD <u>Pier located at:</u> (TBD)
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<u>NTP to commence on/about:</u> On / about August 2012	<u>Delivery Time</u> EST CST PST GMT (Circle One)
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Reason for Transfer or Commencement of Work:

() Topside Repairs () Lay-Up () Other (*Specify*)

(**XXX**) Drydocking () Sale

VESSEL CONDITION AT NTP				
Draft		Fuel/Water/Oil		
Fwd:		Fuel on Board:	Heavy F.O. Diesel F.O.	(Bbls) (Bbls)
Aft:		Water on Board:	Distilled Potable	(Tons) (Tons)
Mean:		Lube Oil on Board:	Bulk Storage Cylinder Oil (<i>Diesel Only</i>)	(Gal) (Gal)

Remarks

I CERTIFY THAT THE ABOVE IS INFORMATION IS CORRECT

	Transferor	Transferee
<u>Signature</u>		
<u>Name/Title</u>	Mr. Gary Hunsberger, Port Engineer	TBD
<u>Company</u>	INTEROCEAN AMERICAN SHIPPING CORP.	TBD



INTEROCEAN AMERICAN SHIPPING CORPORATION

CUSTODY TRANSFER / SHIP RE-DELIVERY AND OR COMPLETION OF ALL WORK CERTIFICATE

THIS FORM TO BE COMPLETED AT RE-DELIVERY or COMPLETION OF ALL WORK

<u>Name of Ship</u> CAPE HUDSON RFP #: 12-G-299-106 (FY) 2012 DRYDOCKING	<u>Location of Delivery (Commencement of work)</u> TBD <u>Pier located at:</u> (TBD)
--	--

<u>Date of Re-Delivery/Completion of All Work:</u> On/about September 2012	<u>Re-Delivery Time</u> EST CST PST GMT (Circle One)
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Reason for Transfer or Commencement of Work:
 Topside Repairs Lay-Up Other (*Specify*)
 Drydocking Sale

VESSEL CONDITION AT RE-DELIVERY				
Draft		Fuel/Water/Oil		
Fwd:		Fuel on Board:	Heavy F.O. Diesel F.O.	(Bbls) (Bbls)
Aft:		Water on Board:	Distilled Potable	(Tons) (Tons)
Mean:		Lube Oil on Board:	Bulk Storage Cylinder Oil (<i>Diesel Only</i>)	(Gal) (Gal)

Remarks

I CERTIFY THAT THE ABOVE IS INFORMATION IS CORRECT

	Transferor	Transferee
Signature		
Name/Title	TBD.	Mr. Gary Hunsberger, Port Engineer
Company	TBD	INTEROCEAN AMERICAN SHIPPING CORP.



INTEROCEAN AMERICAN SHIPPING CORPORATION

302 HARPER DRIVE
SUITE 200
MOORESTOWN, NJ 08057

TEL: (856) 770-5620
FAX: (856) 770-1633

DATE: June 5, 2012 (Sent via email)

ATTENTION: Offeror's:

**SUBJECT: REQUEST FOR PROPOSAL
CAPE HUDSON
(RFP#: 12-G-299-106)
2012 DRY-DOCKING**

1. Under the terms and conditions of INTEROCEAN AMERICAN SHIPPING'S (IAS) contract with the U.S. Department of Transportation, Maritime Administration (MARAD), IAS maintains ships of the Ready Reserve Force (RRF) in a state of readiness to support National defense objectives. Vessels are maintained to standards set by MARAD and the U.S. Navy, fully-classed by the ABS, and must possess a current U.S. Coast Guard Certificate of Inspection.
2. Your proposal is solicited in anticipation of awarding a subcontract pursuant to Federal Acquisition Regulation (FAR) 52.244-2 SUBCONTRACTS in accordance with our company's contract with MARAD. The subcontract awarded as a result of this Request for Proposal will be between the awardee and IAS. The subcontract will include specific flowdown clauses required by the FAR or by MARAD under the terms of our contract with MARAD. In addition to the terms and conditions set forth in the attached, please base your proposal on full compliance with all listed flowdown clauses.
3. This solicitation is being sent to you via electronic means. The following attachments are included for your review and response:
 - a) Solicitation Cover Letter
 - b) IAS Bid Form *(attached to RFP cover letter)*
 - c) Offerors Acceptance Of Terms and Conditions Form *(attached to RFP letter)*
 - d) Owners Contract Terms and Conditions *(includes Schedules A – C)*
 - Schedule A – Owner-Furnished Materials
 - Schedule B – Itemized Prices *****(see below)***
 - Schedule C – Deliverables
 - e) Specification (WORD document)
 - f) Schedule 'B' (Bid Pricing Sheet)

INTEROCEAN AMERICAN SHIPPING

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CAPE HUDSON
2012 DRY-DOCKING
RFP No. 12-G-299-106

4. **PROPOSAL'S MUST BE:**

- (A) Submitted **via electronic mail transmission**, with subject line clearly marked with vessel name and RFP number.

The following information must be submitted electronically and must be received at IAS no later 10:00 am MONDAY JUNE 29, 2012 (day of bid submission):

- Completed Bid Form
 - Completed Bidders Acceptance of Contract Terms and Conditions
 - Schedule "B" – Pricing Sheet (**must be submitted in EXCEL format**)
 - Preliminary Work Plan / Schedule
 - Proposed Subcontractors list (if applicable).
- (B) Sent to: **INTEROCEAN AMERICAN SHIPPING CORP.**
ATTN: Ms. Karen Suarez, Contracting Officer
Via Email: karen.suarez@iashipping.net
- (C) All proposal's received in accordance with the standards set forth in this letter will be reviewed for evaluation.
5. A proposal may be withdrawn at any time prior to the time designated for the proposal opening stated above. Such withdrawals must be submitted in writing (*via email and or facsimiles, which are also permitted for withdrawal notification*).
6. Proposals shall be subjected, but not limited to, the following evaluation criteria: pricing format (completion of **all** requested information), quoted performance days, past performance, bidders acceptance of contract terms, line item (and/or unit) pricing of all items, and total contract price reasonableness. Totals of such criterion will be considered in awarding the contract. Award will be determined on best value. The Owner reserves the right to reject any and all bids, and for any reason whatsoever, in the Owner's sole discretion, may accept any other bid with such modifications thereof as may be mutually agreed upon.

INTEROCEAN AMERICAN SHIPPING

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CAPE HUDSON
2012 DRY-DOCKING
RFP No. 12-G-299-106

Further, if the Owner determines that the number of proposals received that would otherwise be in the competitive range exceeds the number at which an efficient competition can be conducted, the Owner reserves the right to limit the number of proposals in the competitive range to the greatest number that will permit efficient competition and evaluation among the most highly rated proposals.

7. **VESSEL LOCATION:**

The vessel is currently located at Pier 50, San Francisco, CA

8. **VESSELS AVAILABILITY:**

Anticipated vessels availability is to commence on/about August 15, 2012

9. **QUESTIONS**

Any questions regarding this RFP and all attachments thereto must be presented to IAS in writing no later than Monday, June 25, 2012. Please submit all inquires to karen.suarez@iashipping.net.

10. Article 17 of the Contract specifies the required insurance coverage; Contractor's Certificate of Insurance must be submitted **prior to award** of any contract resulting from this Request for Price.

11. Any award to be made based on the above referenced RFP is subject to the availability of funding as received from the Owner. The Owner also reserves the right to cancel this RFP in whole or in part at any time.

We look forward to your response.

Sincerely,

INTEROCEAN AMERICAN SHIPPING CORP.
(document transmitted via email)

KAREN SUAREZ, IAS Contracting Officer

Documents sent via email
cc: IAS P.E. / MARAD ACO / MARAD COTR