

ITB 2025-1200-0074
TECHNICAL SPECIFICATIONS

P/V STIMSON
SHIPYARD
FY-2025

STATE OF ALASKA
ALASKA WILDLIFE TROOPERS
VESSEL SECTION
5700 E. TUDOR ROAD
ANCHORAGE, ALASKA 99507

907/269-0389 OFFICE
907/269-5616 FAX



156' Length
38.0' Breadth
16.0' Depth

413.0 Gross Tons

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Definitions

“Owner”: the State of Alaska, Department of Public Safety

“Owner’s Representative” Ralf Lysdahl, or his designated representative

1.0 TEMPORARY SERVICE

The Temporary Services described in this Section shall be provided for all days of this contract, including when the vessel is berthed or dry-docked, and for all lay-days.

1.1 MOORING

Immediately upon the vessel arriving at the Contractor's facility, the Contractor shall provide adequate moorage, mooring fenders, and mooring lines to secure the 156 foot vessel pier-side throughout the shipyard Contract period. The vessel is to be moored at an assigned berth so that the vessel’s crew, shipyard workers and their materials and equipment have easy access. Appropriate fenders shall be strategically placed so wearing or damage to the vessel does not occur. TIRES SHALL NOT TO BE USED AS FENDERS.

If the Contractor intends to moor the vessel alongside a pier with tidal fluctuations, the Contractor shall ensure that the vessel can safely move up and down through any expected tidal range, without mooring line adjustment. The Captain of the vessel will make the final determination that adequate mooring lines have been provided. Any damage to paint caused by mooring conditions provide by shipyard will be repaired at no cost to the owner.

1.2 SHORE POWER

Immediately upon the arrival of the vessel at the Contractor's facility, the Contractor shall provide shore power hook up for the vessel. The Contractor shall supply 480 VAC three phase, 200 amp service. The vessel has a standard four-prong receptacle.

Electrical shore power is required at all times, including while out of the water, except when the vessel is being shifted. The vessel consumes an average of 30 KW/hr.

1.3 TELEPHONE

This Section not used.

1.4 POTABLE WATER

Contractor shall provide a 1½" fire hose with potable water, so that the vessel's crew may fill the vessel's potable water tanks after work is completed, but prior to the vessel departing the shipyard.

1.5 SHIP'S SERVICE AIR

Contractor shall provide a compressed air hose for use by the crew a ship's service air with a pressure of 125 PSI minimum and a volume of 10.0 CFM.

1.6 GANGWAY

The Contractor shall provide an OSHA approved gangway system to provide personnel access to the main deck of the vessel and adequately safeguard the passage of persons coming and going from the vessel. Vessel access is required at all times, including while the vessel is out of the water, except when the vessel is being shifted.

1.7 FIRE PROTECTION

The Contractor shall provide one 1½" fire hose to the vessel's main deck to charge the vessel's fire-fighting system. In addition, the Contractor shall provide at least one shore based fire station, with a stowed 2½" hose and nozzle that is capable of spraying a large stream of water anywhere on the vessel. Fire main pressure is required at all times, including while the vessel is out of the water, except when the vessel is being shifted.

In addition to fire main pressure, the Contractor shall provide a fire and safety plan to the Captain of the vessel during the Pre-shipyard meeting. This plan shall include 24 hour per day phone numbers for all safety, fire, and emergency response personnel. The plan shall also detail the yard's fire-fighting and safety procedures and capabilities. Emergency services response is required 24 hours per day, seven days per week. Emergency contact information shall be prominently posted by Contractor, on laminated or waterproof paper, at the entry points of the vessel's house and forecastle.

1.8 DECK COVERING

Immediately upon the arrival of the vessel to the Contractor's facility, the Contractor shall provide and maintain, during the entire shipyard period, a protective safe non-slip covering to all areas inside the vessel's main deck, passageways, the wheel-house deck and any other internal areas or paths that will be used by the Contractor's crew. At the end of the shipyard period, the Contractor shall remove and discard the

protective covering. Any internal or exterior areas soiled during the shipyard period are the sole responsibility of, and shall be cleaned and/or repaired by, the Contractor.

1.9 GARBAGE

The Contractor shall provide for one standard size dumpster with regular dumping service for use by the vessel's crew, within 50 yards of the vessel's gangway, during the entire shipyard period.

1.10 PARKING

The Contractor shall provide two assigned parking spaces for use by the crew's rental vehicles at a location near the vessel and convenient for daily use during the entire shipyard period.

1.11 TOILET FACILITIES

The Contractor shall toilet facilities within 200 yards of the vessel's gangway, during the entire shipyard period. If the toilet facilities consist of a portable toilet, Contractor shall provide regular cleaning services for the portable toilet, minimum of once per week.

1.12 TANK ACCESS AND TESTING

The intent of this item is providing a marine Chemists' "Safe for Entry Certificate/Safe for Hot-work Certificate" for the spaces requiring hot work.

The Contractor shall open the following tanks and voids, test the air quality of these spaces, and re-install all covers after work in this specification is completed.

TANKS, VOIDS OR SPACES:

1. Fwd Machinery Space (FR 9 -19)
2. Engine Room (FR 47-63)
3. Sewage Tank (FR 60)
4. Port Fresh Water Tank (FR 55-62)
5. Stbd Fresh Water Tank (FR 55-62)
6. Fwd Ballast Tank (Bow – FR 9)
7. Aft Ballast Tank (FR 73- Stern)
8. Lazzarette (FR 70-FR 73)
9. Fuel tanks only if required for CFR vent repairs.

Prior to certifying a space safe for hot work, Contractor shall empty and dispose of the residual tank contents in accordance with local, State and Federal regulations. For the purposes of this bid, Contractor shall assume 25 gallons of residual liquids in each tank. Any changes to the anticipated amount of liquids shall be handled as a Change Order

Contractor shall remove applicable quick access covers and or bolt down covers on the tanks, voids, and spaces listed above. Contractor shall ventilate and provide a marine Chemists' "Safe for Entry Certificate/Safe for Hot-work Certificate" for the tanks, voids,

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and spaces listed above. This item includes the cost of the Chemist, travel, per diem, and any safety covers/protection, if required. The Contractor shall maintain the voids, tanks, and spaces Safe for Entry / Safe for Hot Work certificates during the contract period unless otherwise indicated in writing by the Owner. If a transfer of the vessel requires new inspections by a marine Chemist, then Contractor is responsible for re-certifying the spaces. At the completion of the contract, or earlier if requested by Owner, Contractor shall reinstall covers with new gasket and existing hardware and visually ensure tanks and voids are properly sealed.

The Contractor is responsible for keeping all water and dirt out of open voids and tanks. Should water, dirt, or sandblast media enter these spaces, the Contractor shall remove it at no additional cost to the owner. The Contractor shall provide suitable safety guards around open covers.

2.0 MISCELLANEOUS ACCOUNTS

The Contractor shall provide the materials, equipment and labor for each of the following subtasks, including any removal of items in providing the following services. The Bidder shall provide cost information for each subtask in the ITB Bid Schedule.

2.1 VESSEL ACCOUNT

This Section not used.

2.2 WELDING ACCOUNT

The Contractor shall provide the services of a certified marine welder and all necessary welding equipment, supplies, and support systems. This item shall be bid as a unit price in dollars per hour for a welder. For purposes of bid comparison, the hourly rate bid on the ITB shall be multiplied by 200, however the actual quantity of welding hours shall be determined during the Contract period by the Owner's Representative. The Owner shall be invoiced only for the actual number of hours of welding, multiplied by the hourly rate shown in the ITB.

The intent of this item is to assist the vessel's crew to accomplish small miscellaneous work projects that may arise during the shipyard period. The Owners' Representative has authority to direct projects from this account.

2.3 GENERAL PAINTING ACCOUNT

The Contractor shall provide the services of at least two skilled painters and all necessary preparing, painting, and cleaning equipment to properly prepare and paint designated areas on the vessel. This item shall be bid as a unit price in dollars per hour for one painter. For purposes of bid comparison, the hourly rate bid on the ITB shall be multiplied by 200, however the actual quantity of painting man-hours shall be determined during the Contract period by the Owner's Representative. The Owner shall be invoiced only for the actual number of man-hours of painting, multiplied by the hourly rate shown in the ITB.

The intent of this item is to assist the vessel's crew in painting small areas of the vessel that are not defined as major painting tasks in Section 5. This work shall consist mostly of power grinding preparation and hand painting with rollers and brushes. These workers shall perform no more than 200 man-hours total for this effort. The Owner's Representative has authority to direct projects from this account.

2.4 CRANE AND/OR BOOM TRUCK SERVICE ACCOUNT

The Contractor shall provide the services of a crane or boom truck to lift gear off and on the vessel. Lifting device (Crane/Boom truck) shall be large enough to pick a 5 ton load from the top deck of the vessel while it is both moored at the Contractor's facility and in dry dock.

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This item shall be bid as a unit price in dollars per hour for crane/boom truck and qualified operator. For the purposes of bid comparison, the hourly rate bid on the ITB shall be multiplied by 10, however the actual quantity of crane-hours shall be determined during the Contract period. The Owner shall be invoiced only for the actual number of man-hours of painting, multiplied by the hourly rate shown in the ITB.

The intent of this item is to assist the vessel's crew in removing and installing large and or bulky items on and off the vessel. The Owner's Representative has the authority to direct projects from this account.

The vessel crew will also require a small 2 man scissor lift placed on the main deck for painting projects and hose replacements on the ships cranes.

3.0 DRY DOCKING

3.1 DRY DOCKING

3.1.1 References

3A) Homeport Marine Services Dwg. D-1 Rev A Docking Plan & Anode Locations
3B) Historical Foss Docking Plan. Accuracy unknown, provided for general information only.

3.1.2 Scope

This work consists of safely lifting the vessel from the water and safely launching the vessel after completion of dry dock related work items. The bid for this section shall include all fees and costs associated with dry docking, lay days, and moving the vessel in and out of the dry dock, including tug fees if required.

The Contractor shall provide labor, material, and equipment, for dry docking and undocking the vessel to accomplish all work described herein. The Contractor is responsible for all docking and un-docking activities and shall thoroughly review the vessel's docking plan with regard to blocking in way of the keel, transducers, keel coolers, propellers, anodes, rolling chocks, and other sensitive areas.

The Contractor shall own, be the primary lessee, or be the secondary lessee of the haul out facility. If the Contractor is the secondary lessee, a statement indicating that the Contractor is the secondary lessee and copy of the lease contract shall be provided with the bid. The secondary lease shall indicate that the Contractor is the primary party responsible for all rights and responsibilities.

The Contractor shall provide the Owner a certificate for the dry dock/lifting facility (i.e. American Bureau of Shipping). Mechanical lifting facilities shall provide certificates indicating size, type, and age of any cables used for lifting or hauling the vessel.

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The location of the docking blocks shall be alternated every other dry docking to ensure that the area under the blocks that do not get painted will get painted every other time the vessel is dry docked. The vessel was last lifted by Vigor, Ketchikan in 2018. Final docking position and any required additional vessel drawings will be provided by vessel owner at contract award.

Contractor shall develop a blocking plan in accordance with Reference 3A) and to meet the requirements of this section. The Contractor shall provide the Owner with calculations which demonstrate the blocking plan and keel and side block pressures will meet the requirements of this section. Contractor shall note that the vessel's keel shoe extends 12 inches below the flat keel plate.

- a) Keel blocks shall be designed to support 85% of total vessel weight. Under no circumstances shall keel block pressure exceed **10** long tons/ft². Keel blocks shall be 4 feet in width (as measured along the transverse axis of the vessel); no less than 2 feet in length (as measured along the longitudinal axis of the vessel); and no less than 4 feet high (as measured above dock floor). Maximum keel block spacing is 10 feet on centers. Keel blocks shall support the vessel over the entire length of the keel.
- b) Side blocks shall be designed to support 25% of total vessel weight. Under no circumstances shall side block pressure exceed **5** long tons/ft². Side blocks shall be 4 feet in width (as measured along the transverse axis of the vessel), and no less than 1-1/2 feet in length (as measured along the longitudinal axis of the vessel). The final position of the side blocks shall be such that the middle portion of the side block is in way of a major vessel longitudinal structural member, located beneath the shell plating of the vessel. The minimum allowable number of side blocks is 3 per side (3 port and 3 starboard). Calculations used to determine the number of needed side blocks shall be approved prior to lifting. Side blocks shall support the vessel over a length not less than one-third of vessel LBP.
- c) The angle of side blocks to dry dock floor shall be such that the average line of force perpendicular to the upper face of the block must pass within the middle third of the block, at the block's base.
- d) Individual blocks shall contact the vessel by at least 75% of the block's bearing area. A block's bearing area shall be assumed to be the entire upper face of the block, unless otherwise stated in the bearing calculations presented at the dry dock meeting. Blocking shall be considered inadequate if more than 1 side block, more than 2 consecutive keel blocks, or more than 3 total keel blocks fail to contact the vessel properly. Shoring of blocks is not acceptable. The Contractor shall immediately refloat the vessel if these requirements are not met.
- e) Block faces must be wood and must be smooth and level (plus or minus 1/4 inch) along the entire bearing length. If necessary, 2 inches of soft wood crush caps may be installed on blocks along the entire bearing length of vessel.

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- f) All docking plugs, sea chests, transducers and other penetrations indicated on the docking plan must be well clear of blocking.

The Contractor shall lift the vessel such that work can occur on all parts of the vessel, including removing and installing propellers, seachests, transducers, and shafts. The vessel shall be lifted such that it is protected from work, dirt, and overspray from adjacent vessels. If the Stimson is impacted from adjacent vessels or vessel work, the Contractor shall remedy any impact, prior to launching.

The contractor shall provide a diver to inspect the vessel to ensure that the vessel is properly landed on the docking blocks and that all appendages and sensitive areas are free and clear prior to lifting the vessel.

3.1.3 Dry Dock Meeting.

A dry dock meeting shall take place at least 2 days prior to the vessel being dry docked. At this time the Dockmaster will present his blocking plan and calculations and describe his plan for docking the vessel including: schedule, weather, the use of engines, tugs, communications, and other relevant items. The Contractor shall assume that the crew and the vessel's propulsion engines will not be available. The Contractor shall present a plan for all waterborne movements of the vessel for review and approval by the Owner. If appropriate, the Contractor shall present, in detail, the plan for land transfer of the vessel.

The Contractor shall notify the Owner a minimum of 48 hours prior to dry docking/undocking the vessel.

The Contractor shall not initiate docking activities without the expressed permission of the Owner. The Contractor may not undock and redock the vessel during the period that the work is in progress on the underwater hull items.

3.2 LAY DAYS

Lay Days is defined as space rental and all necessary expenses to provide a suitable place to perform required construction work on the vessel, while it is out of the water. The bid for this section shall include all fees and costs for the Lay Days required to complete all Definite bid dry dock related items.

Temporary Services described in Section 1.0 if this contract shall be provided for all days of this contract, including when berthed or dry-docked and for all Lay Days.

Lay Days shall not be charged for the day of lifting and the day of launching the vessel.

If a Contingent Item of work is activated, the Contractor shall add the required additional Lay Days to the dry dock period at no additional cost or impact to the Owner, other than the Contingent Item bid cost. The cost of any additional lay days required to complete the Contingent Item shall be included in the items bid cost. It is the Contractor's

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responsibility to plan for all dry dock work items, Definite and Contingent, so that all work occurs during the same dry dock period.

At the dry dock meeting, required in Section 3.1 (above), the Contractor shall provide the Owner with a plan for work while the vessel is on dry dock. This plan shall include the number of Lay Days required by the Contractor to perform the Definite Items and each Contingent Item.

4.0 HULL SERVICES

The Contractor shall submit firm fixed prices for the work contained in each item in this section. The price for each item shall include all material, labor, and equipment costs associated with the work as defined within each item.

4.1 INSPECTION AND CLEANING OF PROPELLERS

4.1.1 Propeller Inspection and Reconditioning

Propellers are to be evaluated by yard personnel and vessel Captain. If propellers are in satisfactory condition they will be lightly buffed by yard personnel and left in place. Propeller zinc will be removed and replaced regardless of condition.

If propellers are deemed to be in need of service beyond light cleaning inspection and reconditioning of propellers shall be conducted by Sound Propeller in Seattle Washington. Each propeller shall be subject to: visual inspections for damage, thorough cleaning, dye penetrant testing of propeller hubs and up 10 inches on blades, weighing, measurements of propeller pitch, balance test, minor pitch adjustments, and polishing. For the purpose of this bid, Contractor shall include up to 2 hours for minor pitch adjustments. Any pitch adjustments requiring more than 2 hours, or any balancing work, shall be the subject of a Change Order. Contractor shall provide a Condition Found Report detailing the condition of the propellers including the actual propeller pitch, propeller balance, and the results of the dye penetrant test. In the Condition Found Report, the Contractor shall propose a method and cost to repair any deficiencies found. Any required repair work on the propellers shall be handled as a Change Order.

Following refurbishment, Contractor shall tag and ship propellers back to Contractor's facility. For shipping, propellers shall be securely mounted on a shipping pallet and enclosed in a plywood box to the satisfaction of the Owner.

4.2 TRANSFORMER TESTING

P/V Stimson has a 480vac to 208vac transformer located in the engine room. This transformer needs to be tested by a licensed electrician to ensure its continued reliability. The crew requests cleaning and inspection of transformer components, as well as megger resistance testing and any other electrical check/ tests recommended by the manufacture and electrician. Any repairs out of this scope will be addressed as a CFR. Known transformer specs as follows: ACME Electric, Cat# T-1A-53315-35 Style G.

4.3 INSTALL CROWS NEST FOR AFT MAST

Existing aft mast has been deemed unsafe for crew maintenance of electronics and navigational lighting. Vessel Captain requests that the mast area be made more

accessible by lowering and and/or installing a small working platform. Final design is to be made on scene with Captain and yard personnel. Contractor shall provide safe marine grade engineering design to Captain for approval, Rough Order of Magnitude pricing is acceptable. Reference picture on page 36.

4.4 ROLLING CHALK BRACE REPAIRS

It was noticed by the vessel crew during the last yard period that some underwater support braces attached to the rolling chinks were bending and showing metal fatigue. For the purposes of this bid item anticipate replacing (10) 2" x 3/4" flat bar supports. All supports are roughly 3' long and some are 2" angle steel not flat bar. After hot work repairs are made these items will be painted in the prescribed manner of the rest of the under haul section addressing bare steel.

4.5 INSTALL NEW FORWARD MAST FLOOD LIGHTS

P/V Stimson currently has 5 high pressure sodium flood lights located on the forward mast. These lights are currently failing and it is desired to replace them with an equivalent LED option. Current lights measure 26"h x 23"w and are of the yellow color to help see in foggy conditions. The LED replacements will be of the same size and color hue.

Also, it is desired to install a total of 7 new lights to match the current light output required by the vessel: 5 shall be medium flood lights, 2 shall be wide spot flood lights. This project will require hot work and bracket and blinder fabrication by shipyard personnel. All brackets and lights will be stainless steel marine grade materials that will operate in harsh marine environments. Existing wiring and associated breakers can be reused if they are found in good working order, however old ballasts (5) shall be removed, and appropriate wiring and connections shall be installed in their place. Reference picture on page 37 through 40.

4.6 ENGINE AIR INTAKE SPACE (FIDDLEY)

This space requires painting maintenance. The crew requests help setting up temporary scaffolding in this space located directly over the engine room. This scaffolding will most likely require minor hot work such as angel iron brackets to install 2 small working platforms; 2"x12" boards approximately 6 foot in length. The crew will conduct all the painting maintenance in this space. Since the scope of work requested from yard personnel is minor this item may be deducted from the allotted welding hours previously mentioned in section 1.14.

4.7 INSPECT AND SERVICE PROPELLER & RUDDER SHAFTS

All shafts should be cleaned, inspected and bearing clearances checked with feeler gauges and report of findings submitted to the owner along with repair recommendations if needed. Shaft packing shall be removed and replaced. Any repairs outside of this scope will be addressed as a CFR. Inspection of shafts is to be completed as early as possible to prevent delays in departing shipyard.

4.8 OILY WATER AND WASTE OIL REMOVAL

4.8.1 References

4C) Tank Arrangement

4.8.2 Scope

The Contractor shall empty and dispose of the contents of the oily water tank, waste oil tank, and the engine room bilge. For purposes of this ITB, the Contractor shall anticipate 3,000 gallons of oil and existing oily water.

4.9 AUTO PILOT REPLACEMENT

P/V Stimson current Auto-pilot system is a Robertson AP 45, with 3 rudder angle indicators with 2 steering stations; the bulk of the electronics are Furuno, which is the preferred electronics. Both the AP45 electronic supply and rudder actuator system's existing voltage is 24VDC. This unit is old and unserviceable and becoming unreliable. Vessel Captain requests replacement of this unit and associated electronics with a new equivalent auto pilot system. Wiring still in good conditions however new wiring should be installed with the new system. Existing heading sources are two satellite compasses, SC50 (old but still functioning) and a new SC70, a magnetic compass can provide heading as well but is not in use. Vessel has an independent hydraulic steering systems with two steering pumps and two DVCs. There are two steering stations (port and starboard) both with jog sticks, however there is only one Autopilot located on the starboard side. The installers of this unit must be a qualified electronics technician and work with the vessels Captain to insure proper and safe operation in all phases. For the purpose of this bid shipyard is expected to locate technicians and materials to the satisfaction of the captain.

4.10 ELECTRICAL GENERATOR MUFFLER REPLACEMENTS

P/V Stimson has 3 ship's generators Caterpillar 3406 and 3 mufflers that produce excessive exhaust noise in the wheelhouse. It is requested that these mufflers located in the stack space be replaced or repaired. The end goal here is to reduce exhaust noise in the wheelhouse, so other alternative repair suggestions such as lengthening exhaust stacks may also be an option. The mufflers may also be repaired if contractor finds unit defects upon inspection. Any technical performance questions should be consulted with a certified Caterpillar mechanical contractor such as NC Machine. If anything other than muffler replacement or repair is required it will be addressed as a CFR. Little is known about the design of these mufflers however the general sizing of these units is as follows: 6" pipe inlet and outlet standard 8 bolt flange. Height flange to flange 64". Reference picture on page 41.

4.11 AFFF DISPOSAL

P/V Stimson 150 gallons of expired firefighting foam that requires proper disposal. The AFFF is contained in 5 gallon & 50 gallon containers.

4.12 DECK BOARD REPLACEMENT

P/V Stimson currently has an ageing Apitong wood decking on the exterior main deck level. This surface area is approximately 2700 square feet and requires a 1 ½" thick deck board to create a flush deck, matching the fixed steel surfaces. To be clear standard pressure treated wood will not satisfy as a proper deck replacement. Proper hard wood or trex equivalent replacement must be able to withstand icing conditions and provide a safe working surface in inclement weather. Final deck board selection must be approved by the vessel Captain. Old deck boards shall be disposed of by the shipyard and a minimum of 12 of the longest deck boards must be provided as spares to the vessel. The removal of these deck boards will substantially help with the sandblasting called out for in item 5.1.3, however the reinstallation of new decking should be timed so that no damage to new materials is created by other yard projects. Any damage to new decking shall be repaired at the expense of the shipyard.

4.13 BLACK WATER TANK PLUMBING

Contractor shall clean and gas free the ship's black water tank to facilitate replacement of sewage drain line. Anticipate 200 gallons of black water to remove. Once tank is cleaned and gas free, removal of 4" drain line from the wet room over head to the engine room sewage valves may commence. All plumbing is 4" steel sch 40 pipe. Two existing wafer valves are to be replaced with 4" ball flanged ball valves. All plumbing will be welded construction with flanges and new gaskets and stainless steel fasteners provided by contractor to the satisfaction of ship's engineer. Piping needed is approximately 40 liner feet.

4.14 SEA VALVE AND OVERBOARD DISCHARGE VALVE MAINTENANCE

4.14.1 References

– None –

4.14.2 General

The intent of this section is to test or replace the vessel's sea valves and overboard discharge valves while the vessel is on the dry dock. **Valves to be replaced in bold print**

4.14.3 Applicable Valves

The valves applicable to this section are as follows:

SEA VALVES:

- 1) Bow Thruster Fire Monitor Sea Valve (Bow Thruster Room Bilge)
 - 8-inch gate valve, 8 bolt flange
- 2) *SONAR Sea Valve*, (Tank Alley Bilge)
 - 8 inch gate valve, 8 bolt flange, 150#, marine bronze, OKV
- 3) Starboard Crab Pump Sea Chest (Engine Room Bilge)
 - 8-inch gate valve, 8 bolt flange, bronze, 150#
- 4) Port Crab Pump Sea Valve (Engine Room Bilge)
 - 8 inch gate valve, 8 bolt flange, 150#, marine bronze, OKV
- 5) Deck Wash Pump Sea Valve (Bow Thruster Room Bilge)
 - 3-inch gate valve, 4 bolt flange, bronze, 150#, PIMA
- 6) **Bow Thruster Fire Pump Vent (Bow Thruster Room Bilge)**
 - **1½-inch gate valve, NPT, bronze, 150#**
- 7) Aft Engine Room Sea Chest (Engine Bilge)
 - 3-inch gate valve, 4 bolt flange, bronze, 150#, PIMA
- 8) Fire Pump Suction Sea Valve (Engine Bilge, Starboard Crab Pump Sea Chest)
 - 3-inch gate valve, 4 bolt flange, bronze, 150#, PIMA
- 9) **Galley Sink Overboard (Lazarette Overhead)**
 - **1½-inch ball valve, NPT, bronze, 150#**
- 10) **Galley Sink Overboard (Lazarette Overhead)**
 - **1½-inch check valve, NPT, bronze, 150#**
- 11) **Crab tank fill valves (4 total in tank alley)**
 - **8" wafer valve flanged**

4.14.4 Inspect, Remove, Test, and Reinstall Valves

Contractor shall remove valves number 1 (Bow Thruster Fire Pump), 2 (Sonar), 3 (Starboard Crab Pump Sea Valve) and 4 (Port Crab Pump Sea Valve) 5, 7, & 8 from the vessel and move the valves to a clean workshop for "Prussian Blue" testing and lapping.

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The Sonar sea valve (valve 2) does not close with the Sonar in place and inspection/testing of the Sonar sea valve requires that the Sonar be removed. Contractor shall provide a qualified Sonar field service technician to disconnect and remove the Sonar from the sea chest. The Sonar is a Furuno Model CH-250, type CH-254, serial number 4611-1185. The Sonar is installed in a bolted flange on the top of the 8 inch sea chest, as shown in Figure 4.6B. Once removed the Sonar shall be stored in a secure location and protected from weather and shipyard debris. Any damage to the Sonar during removal or storage shall be repaired to like new condition by the Contractor at no cost to the Owner.



Figure 4.6B: Sonar Mounted on an 8 inch Sea Chest in the Tank Alley

Valves 3 and 4 are installed below the vessel's crab pumps, as shown in Figures 4.6C and 4.6D. The vessel's crew will remove the crab pumps after the vessel is drydocked. Contractor shall coordinate with the vessel Owner to schedule the required Contractor's effort for valves 3 and 4. After the crew has removed the port and starboard crab pumps, Contractor shall remove the "T" connections and associated piping between the crab pump and the sea valve. "T" connections and associated piping shall be stored for reinstallation.

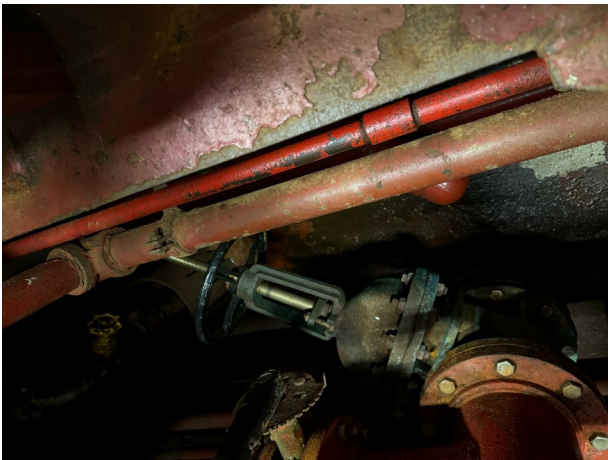


Figure 4.6C: Crab Pump Valve 3

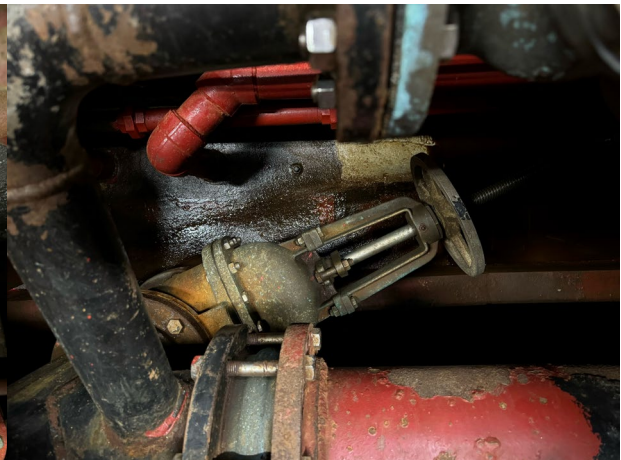


Figure 4.6D: Crab Pump Valve 4

Removed valves shall be moved to a clean workshop and Contractor shall disassemble, clean, visually inspect, and "Prussian Blue" test valve numbers 1, 2, 3 and 4 to ensure

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100% seat contact. Owner's Representative shall witness the results of blue testing. If each valve passes testing, it shall be reassembled with new cloth-inserted gaskets and valve stem packing material. If a valve is in good visual condition but fails the "Prussian Blue" test, the valve shall be lapped with grinding compound for a minimum of 30 minutes and retested with "Prussian Blue". Following inspection and blue testing, Contractor shall provide a Condition Found Report to the Owner detailing the condition of the valve.

If a valve fails the second "Prussian Blue" test, the repair or replacement shall be handled by Change Order. In the Condition Found Report, the Contractor shall propose a method and cost to repair or replace the defective valve. Any costs to reassemble the valve with new gaskets and stem packing material shall not be included in the Change Order as this effort is included in the normal scope of work for this section.

After the valve passes a "Prussian Blue" test and prior to moving the valve to the vessel, Contractor shall hydrostatically bench test the valve at a pressure of 1.5 times the rated valve operating pressure. The hydrostatic test pressure shall be held for a minimum of 15 minutes. All hydrostatic testing shall be witnessed by the Owner's Representative.

After the valves pass the hydrostatic pressure test, Contractor shall reinstall the valves with new gaskets and new marine grade stainless steel nuts, bolts, and washers using marine grade never-seize on all fasteners. The valves shall be in the closed position with the inboard piping off (disconnected) for leak testing in accordance with this section, at the time of undocking.

After reassembly of valve number 2, Contractor shall provide a qualified Sonar field service technician to re-install, reconnect, and commission the Sonar in accordance with the manufacturer's specifications. Since valve 2 cannot be closed with the Sonar installed, a leak test for valve 2 is not required; however a leak test on the reinstalled Sonar assembly is required.

4.14.5 Remove and Replace Valves

Contractor shall remove and replace valves 6, 9, 10, 11 (4 total for item 11).

For each valve, Contractor shall procure a new valve of identical model, material and performance

After replacement valves are procured, Contractor shall install valves. All non-threaded valves shall be installed with new gaskets and new marine grade stainless steel nuts, bolts, and washers using marine grade never-seize on all fasteners. Valves shall be installed in the closed position with the inboard piping loose for leak testing in accordance with this section, at the time of undocking. After the valves pass the leak test, Contractor shall reinstall the inboard piping.

4.14.6 Hydrostatic Leak Testing

In order to complete this item, sea valves and the reinstalled Sonar must pass a hydrostatic leak test (float test) just prior to the vessel being lifted off the dry dock blocks. During undocking, the Dock Master shall hold the vessel within two feet of the waterline as docked, for as long as it takes to examine each sea valve. If a valve fails for any reason, the Contractor shall lift the vessel from the water and correct the defective valve. The Owner shall not be liable for any additional costs, such as docking crews, tugs, etc., which result from this extra time.

4.14.7 Quality Assurance

The Contractor shall insure that the Owner's Representative inspects all phases of this task and that all materials are of good marine grade.

4.14.8 Documentation

The Contractor shall provide a Condition Found Report documenting the condition of all valves and copies of any purchase orders associated with new valves or valve repair components.

4.15 BOW THRUSTER

4.15.1 References

– None –

4.15.2 General

The vessel has a Schottel STT170 bow thruster at Frame 11. This section is intended to clean and inspect the bow thruster propeller. The bow thruster tunnel cleaning and coating is included in Section 5.

4.15.3 Removals

Each bow thruster tunnel grate consists of five horizontal flat bars with bolts on each end of the flat bars as shown in Figure 4.7A. To prevent the bolts from backing off during operation, the nuts are welded to the bolt as shown in Figure 4.7B.

Contractor shall remove the bow thruster grates on both the port and starboard side of the bow thruster tunnel. The flat bar grates shall be retained for reinstallation.

Contractor shall remove the weld-on zincs in accordance with Section 4.8.

4.15.4 Installations and Modifications

Prior to cleaning, Contractor shall protect the bow thruster seals.

Contractor shall high pressure wash the bow thruster tunnel and bow thruster area in accordance with Section 5. Contractor shall remove all marine growth from the bow thruster propeller and bow thruster housing. Then Contractor shall polish the propeller blades from the root to the tip.

Contractor shall visually inspect the bow thruster propeller blades for visible damage. Then Contractor shall use an owner approved nondestructive test method (such as dye penetrant) to check the propeller for cracks. All visual inspections and nondestructive testing shall be witnessed by the Owner's Representative. Contractor shall provide a

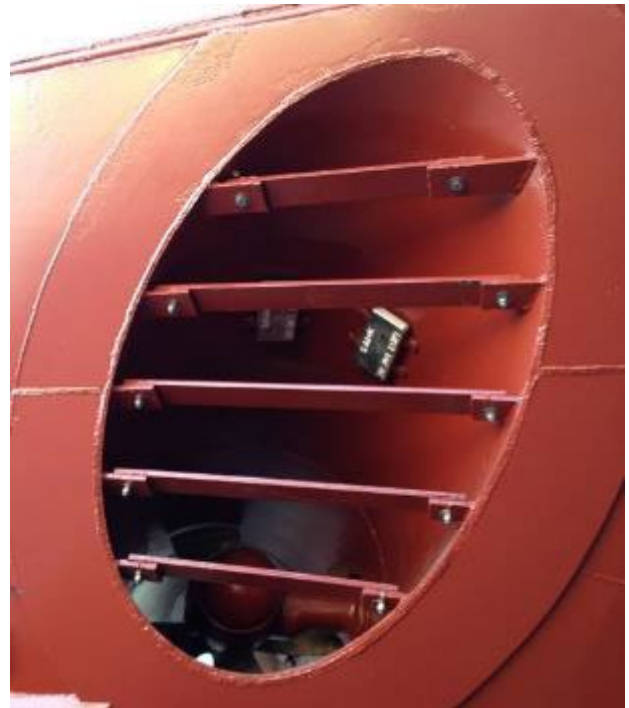


Figure 4.7A: Bow Thruster Grating



Figure 4.7B: Typical Bow Thruster Grating Bolt

Condition Found Report documenting the results of the visual inspections and nondestructive testing on the propeller. Any repairs to the bow thruster propeller shall be handled by a Change Order.

After the hull, tunnel and tunnel grates have been painted in accordance with Section 5 and the new hull bow thruster tunnel zincs are installed in accordance with Section 4.8, Contractor shall reinstall the previously removed bow thruster tunnel grates with new stainless steel hardware, similar to existing. The nuts shall be welded to prevent the bolts from backing off.

4.16 INSPECTION AND REPLACEMENT OF HULL ZINC'S

4.16.1 References

3A) Homeport Marine Service Dwg D-1 Rev A Docking Plan & Anode Locations

4.16.2 General

The vessel has fifty-nine bolt-on hull zincs, 4 weld-on bow thruster tunnel zincs and 2 propeller nut zincs. The intent of this section is to replace all the hull zincs, bow thruster tunnel zincs, and propeller zincs.

4.16.3 Removals

Contractor shall measure the location and size of each hull zinc, and provide measurements to the Owner for purposes of updating the docking plan. Zinc anodes shall be removed prior to the underwater hull coating in Section 5.

Contractor shall remove all hull, bow thruster tunnel, and propeller nut zinc anodes. The majority of the hull zincs are **bolt-on** type, with the exception of the bow thruster tunnel zincs. Removal of the bow thruster zincs requires that the bow thruster grates be removed in accordance with Section 4.7.

Prior to installing new bow thruster zincs, the area where the original zincs were located shall have the welded spots ground and the area shall be recoated as if it were spot blasted.

4.16.4 Installations

The Contractor shall supply the following zinc anodes:

- 1) Quantity 10: bolt-on style, 50#, 5 inch x 24 inch

- 2) Quantity 49: bolt-on style, 23#, 6 inch x 12 inch,
- 3) Quantity 4: weld-on style, 23#, 6 inch x 13 inch, and
- 4) Quantity 2: Propeller nut zincs, sized for a 10" propeller nut

After the underwater hull, rudders, tunnel, and sea chests are coated in accordance with Section 5, the Contractor shall install the fifty-nine bolt-on hull zincs, and four weld-on bow thruster tunnel zincs. Bolt-on zincs shall be installed with new stainless steel hardware. Weld-on zincs shall be installed in the bow thruster tunnel prior to re-installation of the tunnel grates in Section 4.13.

All zincs shall be installed in the same location as the previously removed zinc anodes. After installation, Contractor shall perform a conductivity test on each zinc anode. Conductivity testing shall be witnessed by the Owner's Representative.

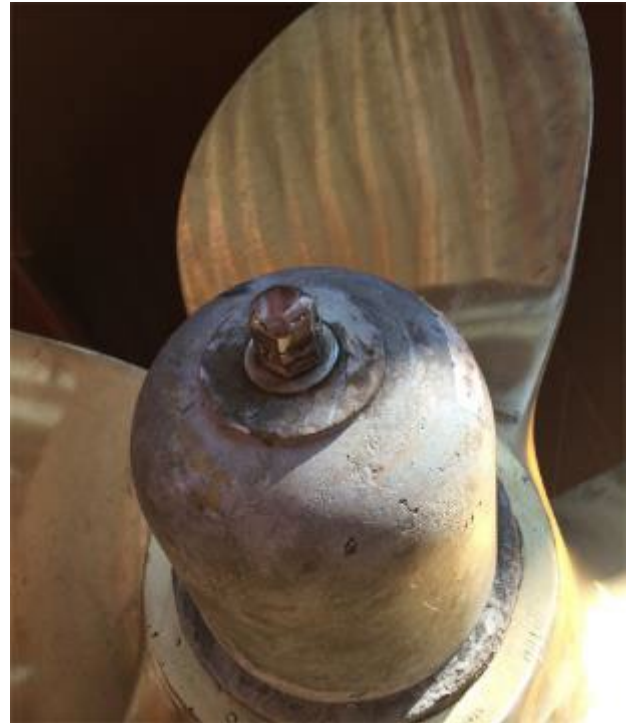


Figure 4.8A: Propeller Nut Zinc

After reinstallation of the propellers, and prior to launching the vessel, Contractor shall install the 2 new propeller zincs. If required, filler (such as Splash zone) approved by the Owner, shall be used to fill any voids between the hub zinc and the propeller nut. The propeller nut zincs shall be installed similar to existing, with nuts welded to a threaded rod, as shown in Figure 4.8A.

4.16.5 Quality Assurance

The Contractor shall insure that the Owner's representative inspects all phases of this Task and all materials are of good marine grade.

4.16.6 Documentation

The Contractor shall provide a Condition Found Report documenting the results of all conductivity tests.

The location of all hull zincs shall be recorded by the Contractor and provided to the Owner for update of the docking plan.

4.17 BILGE CLEANING

Contractor shall accomplish the work in Section 4.8 (Oily Water and Waste Oil Removal) of this specification, prior to accomplishing the work in this section.

Contractor shall provide labor, material and equipment to provide a hot detergent/power wash of the engine room bilge and forward machinery space bilges. Bilge areas are defined as all of the lower areas of the engine room and forward machinery space, below the level of the floor plates.

Prior to starting any cleaning, the Owner's Representative shall approve the detergent selection. Detergent water mix must be such that a soapy residue is not left in bilge spaces.

Contractor is responsible for the pumping and disposal of any liquid generated during the cleaning. Bilges must be clean and dry when Contractor is finished. The intent is that the bilges will be cleaned in a manner that will allow a "Safe for Hot Work" certificate to be obtained from a marine chemist if that is required.

Following completion of the engine room and forward machinery space bilge cleaning, the Contractor shall obtain a "Safe for Hot Work" certificate as required in Section 1.12.

5.0 HULL PAINTING

5.1 PAINT BID ITEMS

The Contractor shall provide all necessary labor, material, and equipment to prepare and paint the vessel as defined in the following bid item sections. The requirements of Sections 5.1.4 (General painting requirements) and 5.2 (Paint schedule) apply to each bid item.

The Contractor shall provide a separate price for the following 3 paint items:

- 5.1.1 Underwater Hull – Power Wash and Paint – Definite Bid Item
- 5.1.2 Underwater Hull – Spot Power Tool Cleaning – Contingent Item
- 5.1.3 Main deck inner bulwarks & deck vents- Definite Bid Item

5.1.1 Underwater Hull - Power Wash and Paint – Definite Bid Item

REFERENCES

05A) Coastwise Dwg. 20024-14-01 Rev – Paint Area Calculation

GENERAL

The intent of this section is to wash the vessel underwater hull and apply new antifoulant. This is a definite bid item.

REQUIRED SURFACES

The surfaces applicable to this item are:

All hull surfaces below the 14 foot waterline, as shown in Reference 05A), including:

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rudders, struts, stern tubs, keels, sea chests, sea chest grates, bow thruster tunnel, bow thruster tunnel grating, and 4 foot boot stripe (from the 10 foot waterline to the 14 foot waterline).

The total required surface area is approximately 8,300 square feet, as shown in Reference 05A).

VESSEL PROTECTIONS

The work in this section shall occur after the hull zinc anodes are removed in accordance with Section 4.8 and the bow thruster grate is removed in accordance with Section 4.7.

Prior to surface preparation, all adjacent or sensitive surfaces shall be fully protected in accordance with this specification. For example: shaft and rudder bearings, sea chest valves, zinc anode studs, transducers, etc.

SURFACE PREPARATION

All required surfaces shall be washed immediately after vessel is hauled with a fresh water high pressure wash (3,500 - 5,000 psi) to remove all salts, contaminants, oils, etc. This includes any marine growth and dirt along the waterline of the vessel, propeller, rudder, strut surfaces, etc.

After the fresh water high pressure wash, Contractor shall manually clean the transducers and sonar eye. Contractor shall conduct cleaning in a manner that does not damage either the sonar eye or the transducer. Any damage to either the sonar eye or transducer from cleaning shall be repaired to like new condition by the Contractor at no cost to the Owner.

After washing, Contractor shall visually inspect the hull (with the Owner's Representative) and report any deficiencies. Inspections shall include thorough inspection of the vessel's channel coolers.

Prior to Coating, Contractor shall layout and mask the waterline to provide a crisp edge. Contractor shall protect the hull sides and house as necessary to protect the surfaces from overspray. Contractor shall coordinate the overspray protections for this section with other protections required in Section 5. The Contractor is responsible for ensuring that all vessel equipment and coated surfaces, not included in the required area, are adequately protected for the prevailing conditions and to the Owner's satisfaction. Any equipment or coating system damaged from overspray shall be repaired to like new condition at no cost to the Owner, as required by Section 5.2.

If other areas of the vessel are over sprayed, Contractor shall remove the overspray and repair the affected coatings to like new at no cost to the Owner, as required by Section 5.

SURFACE COATING:

In way of all required surfaces, Contractor shall apply two coats of anti-foulant paint. Color and thickness shall be as required by Section 5.3.5, *Underwater Hull*.

This specification assumes that the vessel's existing anti-corrosive coats are intact and in good shape. If this is not the case, Contractor should advise Owner with a condition found report and a mutually acceptable solution determined.

In way of the boot stripe, Contractor shall apply one additional coat of antifoulant paint. Color shall be black, thickness shall be as required by the paint schedule in Section 5.3.5, *Underwater Hull*.

Draft marks shall not be coated with anti-fouling paint. After applying anti-fouling paint to all required surfaces, the Contractor shall recoat the vessel's forward and aft draft marks with one coat International 990, white.

5.1.2 Underwater Hull – Spot Power Tool Cleaning – Contingent Bid Item

GENERAL

The intent of this section is to complete spot power tool repairs to the vessel underwater hull anticorrosive coating system. This is a contingent item.

REQUIRED SURFACES

The required surface area is a series of small sections on the applicable hull surface with a cumulative area of no more than 100 square feet. The Owner's Representative will determine the areas on the Underwater Hull to be prepared.

The surfaces applicable to this item are:

All hull surfaces below the bottom paint waterline (14 foot) shown in Reference 05A), including;
 rudders, stern tubes, keels, etc.

The total required surface area is approximately 100 square feet.

VESSEL PROTECTION

All protections required by Section 5.1.1 are assumed to be in place and in good condition. Any repairs to the vessel protection shall be completed by the Contractor at no additional cost to the Owner.

SURFACE PREPARATION

Contractor shall conduct spot commercial grade power tool cleaning, to SSPC-SP-15, to any areas of barnacles, rust, and other areas as designated by Owner. Edges of cleaned areas shall be feathered to tight intact coatings.

Prior to surface coating, all disturbed protection systems shall be repaired by the Contractor and approved by Owner.

SURFACE COATING:

In way of spot commercial grade power tool cleaning, Contractor shall apply two coats of anti-corrosive paint. Color and thickness shall be as required by Section 5.3.5, *Underwater Hull*.

The application of anti-foulant paint is covered in Section 5.1.1.

**5.1.3 Main deck inner Bulwarks and deck vents – Commercial Blast and Coat–
Definite Bid Item**

GENERAL

The intent of this section is to blast the vessel's main deck inner bulwarks and deck vents and apply new coatings. This is a definite bid item.

REQUIRED SURFACES

The surfaces applicable to this item are:

Main deck inner bulwarks from deck level to cap rail

The total required surface area is approximately **1,500** square feet of bulwarks plating and deck vents (**27**), shore tie connections (**7**). All vents and shore tie connections are approximately 2 foot long pipe sections.

REMOVALS PRIOR TO COATING

The vessel has some interference in way of the required surface. Prior to completing the surface preparation and surface coating, Contractor shall address the interferences as follows.

Pot launcher and hydraulic valves

The vessel has a pot launcher and 2 hydraulic valves that will; need to be removed. Reference picture on page 32.

VESSEL PROTECTIONS

Prior to surface preparation, all sensitive surfaces below, adjacent to, or up to 5 feet above the area of work shall be fully protected in accordance with Section 5 and to the satisfaction of the Owner's Representative. Sensitive areas to be protected include vent check valves and associated tanks, tank fill piping, hydraulic equipment, etc.

SURFACE PREPARATION

Contractor shall conduct blast cleaning, to SSPC-SP-6 “Commercial Blast Cleaning” on all the required surfaces. Mechanical cleaning will only be used in small areas that can’t be accessed with commercial sandblasting equipment.

If the Contractor requires a coat of paint to hold the prepared areas, as required in this Contract, the Contractor shall use the *Primer* required by Section 5. Application of a primer hold coat, if required to meet Section 5 shall be included in the Contractor’s bid for this item.

Prior to surface coating, all disturbed protection systems shall be repaired and approved by Owner.

Prior to Coating, Contractor shall protect the vessel’s equipment and coated surfaces from overspray. Contractor shall coordinate the overspray protections for this section with other protections required in Section 5. The Contractor is responsible for ensuring that all vessel equipment and coated surfaces, not included in the required area, are adequately protected for the prevailing conditions and to the Owner’s satisfaction. Any equipment or coating system damaged from overspray shall be repaired to like new condition at no cost to the Owner, as required by Section 5.

If other areas of the vessel are over sprayed, Contractor shall remove the overspray and repair the affected coatings to like new at no cost to the Owner, as required by Section 5.

SURFACE COATING:

In way of all required surfaces, Contractor shall apply anti-corrosive paint coats, broadcast Silica Sand, and apply top coats of paint type, color, and thickness as required by Section 5.1.3.

REINSTALLATIONS

Following approval of all coating completed in this Contract, Contractor shall reinstall the interferences previously removed in this section.

GENERAL PREPARATION AND PAINTING REQUIREMENTS

The Contractor shall accomplish all required painting and paint preparations in accordance with the items in this section. This is not a bid item. Contractor’s bid prices in Section 5 shall capture all required painting costs.

5.1.4 Preparation and Coating of New Steel Prior to Shipment

All new steel shall be prepared to at least “near white” SSPC-SP-10 standard and coated with a two component, weld-through primer at the steel manufacturers’ or suppliers’ facilities prior to shipment to the Contractor’s facility. Interplate Nippe Ceramo NQA997 pre-construction primer is the preferred primer. In this case, the pre-construction primer should be applied at 0.6-1.0 MDFT.

5.1.5 Prerequisites to Coating Application

Welds and piping system joints or connections requiring pressure or water testing or visual inspection shall not be coated until after all tests and inspections are complete and the weld, piping joint or connection has been accepted by the Owner.

Prior to the application of coatings, all surfaces shall be dry and free of foreign matter such as dirt, dust, crayon marks, grease, mill scale, residual abrasive, rust, salt deposits and weld spatter.

Scuppers and drains shall be sealed or extended as required to prevent moisture or water contamination on coated surfaces during the drying period.

Prior to any surface preparation or coating, all adjacent surfaces, fittings, ducts, wiring, components, equipment, etc. shall be fully protected to the satisfaction of the Owner. Protection shall be specifically provided for all bearings, shafts, stocks, transducers, keel coolers, zincs, and any other underwater appendages that may be damaged or affected by preparation or paint. Protection shall be provided for windows, doors, hinges/dogs, hoses, hydraulic fittings, and any machinery or electronic components on the exterior of the vessel that may be damaged or affected by preparation or paint. The Contractor shall protect all interior portions of the vessel at all times from blast grit, dust, and paint. The protection of ventilation systems shall be specifically addressed by the Contractor prior to preparation or painting.

Vessel equipment and sensitive surfaces shall typically be protected from blasting by first wrapping the items with a dust tight plastic layer and then sealing the items with a second layer of wood/rubber to prevent any ingress of blasting grit and damage. After completion of blasting and during removal of protection, the protection shall be inspected by the Owner. If blasting grit penetrated the dust tight plastic layer, Contractor shall refurbish the equipment at no additional cost to the Owner.

Protection from sand blasting shall be inspected and approved by the Owner prior to blasting.

During a multi-day blasting effort, the Contractor shall apply an appropriate primer coat to blasted areas immediately upon completion of the day's sand blasting to avoid rust bloom and staining. Under no circumstances shall a freshly blasted steel surface be left more than six hours without primer. Should freshly blasted steel be left unprimed, the Contractor shall re-blast to the originally required quality, removing all traces of rust bloom.

All welds and weld affected or burned areas not sand blasted shall be power ground to bare metal and prepared and painted in accordance with the paint schedule.

Any delays or damage to the vessel or its systems as a result of poor paint protection, shall be immediately corrected to "like new" status, at no cost to the Owner.

5.1.6 Requirements during Coating Application and Curing

All surfaces shall be kept dry, clean and free of rust and foreign matter at the time of application of any coating and throughout the curing period.

All products shall be applied, mixed, and thinned according to manufacturer's recommendations. All surfaces shall be prepared according to published recommendations from International Paint. Coating application shall be completed in a professional workmanlike manner. All coatings shall be applied to clean, dry surfaces.

Coatings shall be applied under environmental conditions conforming to the manufacturer's recommendations as listed on the manufacturer's published data sheets for the coatings being applied. Coatings shall not be applied at ambient or surface temperatures less than the minimum application temperature recommended by the manufacturer for the particular coating involved. No coating shall be applied when the dew point temperature is equal to or greater than the surface temperature of the surface to be coated.

For each coat applied, the Contractor shall take readings and produce a record of the ambient, surface, and dew point temperature as measured 1) before starting the coat application, 2) upon completion of the application, and 3) for every 4 hours in between (if applicable to the coat). The Contractor shall also take wet and dry film thickness measurements during and following coating applications and maintain records that map these readings to the coated areas and indicate compliance or non-compliance with intended millage (for wet film) and required millage (for dry film).

All paint coats and required thickness of coatings shall be confirmed through spot checks in the presence of the Owner after each coat is applied.

The Contractor shall provide a copy of the temperature and wet film thickness records, including notations regarding compliance and non-compliance with requirements, to the Owner within 24 hours after the coating event. The Contractor shall provide a copy of the dry film thickness measurements, including notations regarding compliance and non-compliance with requirements, to the Owner and review the results with the Owner prior to application of the next coat. Timing between coats shall also be specifically addressed at this time.

Should the Contractor choose to paint hull structures or attachments which may be affected by condensation caused by the vessel being waterborne or another reason, extraordinary care shall be exercised to ensure that surfaces to be painted are thoroughly dry and remain dry throughout the coating and curing periods. Spaces shall be heated and dehumidified to levels in accordance with the paint manufacturer's preparation and application guidelines to obtain and maintain proper application and curing temperatures and prevent the onset of condensation.

A copy of the paint manufacturer's preparation and applications guidelines applicable to each coating system shall be provided to the Owner prior to application of any coatings.

5.1.7 Correction of Damage from Paint Overspray and Grit Blasting

Any paint overspray applied to any of the equipment and surfaces shall be immediately and carefully removed.

Affected spaces and surfaces shall be cleaned free of grit and residue immediately after grit blasting.

Machinery, equipment and surfaces damaged, marred or contaminated shall be promptly repaired, replaced or cleaned to pre-existing condition at the Contractor's expense.

5.1.8 Paint Manufacturer

In order to maintain paint compatibility, all paint used on this project shall be manufactured by the below listed paint manufacturers, unless approved otherwise in writing by the Owner. Paint reducer and accelerator (if necessary) shall also be manufactured by the below listed manufacturers or in accordance with manufacturer's guidelines.

International Paint Representative: PCCI - Nathan Lubetkin
Ph. 206-762-6119 or 206-529-7723

The Contractor shall use the latest paint products in all phases of this item. All stock utilized shall not be more than 6 months old.

5.1.9 Documentation

The Contractor shall provide the following documentation:

- A) Paint manufacturer's preparation and applications guidelines. Have on site for review by Owner.
- B) Paint Application Log. Create and keep on site for review and approval by Owner and submit to Owner after completion of painting. The log shall contain the information required in Section 5 and also specific paint catalog numbers and colors.

5.2 PAINT SCHEDULE

Contractor shall accomplish the required painting in accordance with the following paint schedule. Paint systems are called out by vessel area. All specifications are required and may be changed only with a written permission of the Owner. This is not a bid item. Contractor's bid prices in Section 5 shall capture all required painting costs.

5.2.1 Coating System—Primer

Primer: Apply two full coats of International Paint Intergard 269 at 1.6 mils DFT. Apply at 3.4 mils wet. Thinners shall not be used.

5.2.2 Coating System—Exterior Freeboard, Bulwarks, House, Mast and Cranes

Anti-corrosive: Apply one full coat of International Paint Intershield 300V Bronze color at 5.0-6.0 mils DFT. Apply at 8-9 mils wet. Thin with GTA 415 if needed.

Anti-corrosive: Apply one full coat of International Paint Intershield 300V Aluminum color at 5.0-6.0 mils DFT. Apply at 8-9 mils wet. Thin with GTA 415 if needed.

Top Coat: Apply two full coats of International Paint Interthane 990 at 2-3 mils DFT. Apply at 4.0-5.0 mils wet. Thin with GTA 056 if needed. Colors are as follows:

Freeboard:	Federal Government 595 Colors # 15055 Blue
Handrails, crab pot guards, etc	Federal Government 595 Colors # 15055 Blue
House and forward mast:	White
Forward Slashes and Trim:	Sign Painters 109-L Metallic Gold
Badge Stripe:	Sky Blue 71026
Interior Bulwarks:	Grey
Cap Rail and Guards:	Flat Black
Equipment (crane, davit, etc.)	Flat Black
Aft Mast (on pilothouse roof):	Flat Black

5.2.3 Coating System—Decks

Anti-corrosive: Apply one full coat of International Paint Intershield 300V Bronze color at 5.0-6.0 mils DFT. Apply at 8-9 mils wet. Thin with GTA 415 if needed.

Anti-corrosive: Apply one full coat of International Paint Intershield 300V Aluminum color at 5.0-6.0 mils DFT. Apply at 8-9 mils wet. Thin with GTA 415 if needed.

Non-skid: Broadcast 480 silica sand into above Intershield 300V Aluminum color while coating is still wet.

Anti-corrosive: Apply one full coat of International Paint Intershield 300V Bronze color at 5.0-6.0 mils DFT. Apply at 8-9 mils wet. Thin with GTA 415 if needed.

Top Coat: Apply two full coats of International Paint Interthane 990 at 2-3 mils DFT. Apply at 4.0-5.0 mils wet. Thin with GTA 056 if needed. Colors are as follows:

Decks:	Haze Gray
Foredeck:	Flat Black.

5.2.4 Decal replacement:

Contractor shall remove and reinstall vinyl decals and emblems as follows: two gold badges. Stern Label name, port, and draft letters font selection must be approved by Owner prior to painting or lettering. Instead of painting letters, decals may be applied if approved by the Owner. All decal replacements will be based on condition found at shipyard.

5.2.5 Coating System—Underwater Hull

Anti-corrosive: Apply one full coat of International Paint Intershield 300V Bronze color at 5.0-6.0 mils DFT. Apply at 8-9 mils wet. Thin with GTA 415 if needed.

Anti-corrosive: Apply one full coat of International Paint Intershield 300V Aluminum color at 5.0-6.0 mils DFT. Apply at 8-9 mils wet. Thin with GTA 415 if needed.

Anti-foulant: Apply one full coat of International Paint Interspeed BRA640 Dk Red color Antifouling at 5.0 mils DFT. Apply at 8.0 mils wet. Thin with GTA 007 if necessary.

Anti-foulant: Apply one full coat of International Paint Interspeed BRA642 Dk Black color Antifouling at 5.0 mils DFT. Apply at 8.0 mils wet. Thin with GTA 007 if necessary.

5.2.6 Coating System—Interior Voids

Anti-corrosive: Apply one full coat of International Paint Intershield 300V Bronze color at 5.0-6.0 mils DFT. Apply at 8-9 mils wet. Thin with GTA 415 if needed.

Anti-corrosive: Apply one strip coat of International Paint Intershield 300V Aluminum color at 3.0 mils DFT. Apply at 4 mils wet. Thin with GTA 415 if needed.

Anti-corrosive: Apply one full coat of International Paint Intershield 300V Aluminum color at 5.0-6.0 mils DFT. Apply at 8-9 mils wet. Thin with GTA 415 if needed.

Top Coat: Apply two full coats of International Paint Interthane 990 at 2-3 mils DFT. Apply at 4.0-5.0 mils wet. Thin with GTA 056 if needed. Colors are as follows:

Bilges:	CB110 Cranberry Crush
Voids and tanks:	Haze Grey
Spaces covered with Insulation:	None
Spaces not covered with Insulation:	CB110 Cranberry Crush or Haze Grey

5.2.7 Coating System—Potable Water Tank

Apply one full coat of International Paint Interline 925 White at 16.0 mils DFT.

Note Potable water tank shall be continually mechanically ventilated, heated, and dehumidified for at least seven days immediately following coating application.

5.2.8 For information only, the paint being replaced on the Stimson may be:

Above water line:

Intershield 300V two coats at 5-6 mils DFT and Interthane 990 one coat at 2-3 mils DFT.

Below water line:

Two coats International Intershield 300V at 5 mils DFT each.

Two coats International BEA468/69 or BRA 640/42 (Red/Black) antifouling at 5 mils DFT each.

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Bilges:

One Coat of XO Rust 1267 Red at 1.75 mils DFT

Two Coats Ace Rust Stop 225A114 Regal Red at 2.0 mils DFT each.

6.0 BALLAST AND FRESH WATER TANK INSPECTIONS

6.1 REFERENCES

- 6A) Homeport Marine Services dwg S-3 Frames 5-56&61
- 6B) Homeport Marine Services dwg S-4 Frames 57-73
- 6C) Homeport Marine Services dwg S-6 Longitudinal BHDs & Girders
- 4C) Tank Arrangement

6.2 GENERAL

The vessel has two ballast tanks and two fresh water wing tanks that require inspection. The intent of this item is to provide access and inspect the coating system for these tanks.

Costs for opening manhole covers, certifying the tanks as safe for hot work, maintaining the certificates, and closing manhole covers shall not be included in this section as these costs are included in Section 1.12. On all tanks opened new gaskets are to be installed at time of closure. It should be noted that this standard will apply to any tanks opened by shipyard personnel.

7.0 CRANE REMOVAL AND INSTALLATION

7.1 CRANE REMOVAL AND INSTALLATION

Contractor shall install the new client provided crane (Model number MCT-630), new crane weight approximately 7000 pounds. The old crane, not including the pedestal, will be removed prior to entering shipyard by the state. Installation will be done with manufacturer support to insure warranty of the crane.

All prep work for crane replacement will be completed by the contractor prior to manufacturer support personnel arrive at the location. All prep work will require: Welding and cutting for removal of old pedestal flange and installation of new flange. New flange shall be provided by crane manufacturer. Hoisting new boom sections onto pedestal, prep and paint work of exposed steel areas, hydraulic hose replacement. Hydraulic hoses required: (8) 3/4" x 20' crimped female JIC swives on all ends. Densel taping all exposed hydraulic hose fittings upon successful operational test. P/V Stimson working hydraulic pressure is 2000psi. There is no electrical work. Crane manufacturer will conduct load testing at commissioning of warranty purposes.

Contractor will be required to remove adapter from pedestal, conduct hot work to replace new pedestal and install new crane with manufacturer's personnel supplying supervision. The new Pedestal Adapter Assembly Installation includes welding on adapter plate to the top of the pedestal already in place. Crane will arrive painted but

will require touch up paint to areas exposed by hot work. After installation is complete, all bare or welded surfaces created during the installation will be painted as laid out in Section 5.2.2. Crew will install new spectra line to crane winch upon completion of hot work.

8.0 HULL PLATE AND ENGINE ROOM NDT INSPECTIONS

8.1 GENERAL

The intent of this section is to obtain plate thickness readings in areas which the Owner has identified as potential corrosion concerns due to exposure to standing water.

8.2 CONTRACTOR PROVIDED FIELD TECHNICIAN

Contractor shall obtain the services of an ABS certified Non-Destructive Testing (NDT) field technician to conduct all the work in this section.

8.3 TESTING

Prior to testing, Contractor shall clean the bilges of the forward machinery space and engine room in accordance with Section 4.17.

Contractor Provided Field Technician shall visually inspect and perform NDT to obtain plate thickness readings in the following areas: Engine room, Bow thruster room, Tank alley, Starboard crane. All NDT testing locations will be pointed out by ship's Engineer and vessel Captain. The purpose of these shots is to identify areas of concern that may require CFR repairs. Anticipate 100 individual shots. If additional mapping is required it will be submitted as a CFR.

Contractor shall provide a Condition Found Report detailing the results of both the visual inspections and the NDT testing. If excessive plate wastage is discovered, Condition Found Report shall identify the extent of excessive wastage, propose an area of repair, and provide the cost for the proposed repairs to the Owner for approval. The cost for any repairs to the hull bottom plate shall include the removal and installation of new channel coolers in the area to be repaired. All repairs shall be handled as a Change Order. All testing is to be completed as early as possible to prevent delays in scheduled departure from shipyard.

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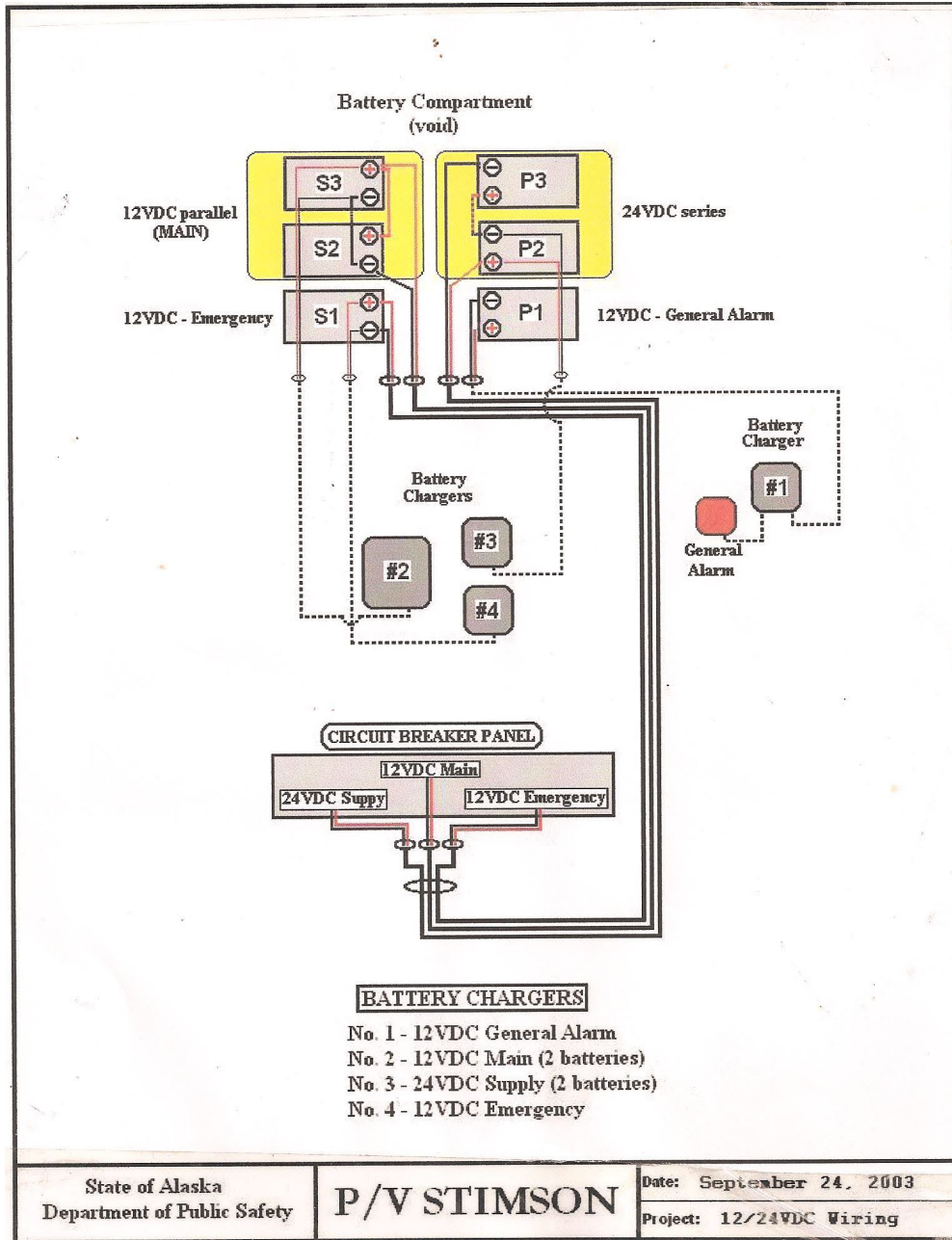
Existing aft mast to be altered as per section 4.3. White painted surface is the area requiring alteration.

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Existing forward mast flood lights as per section 4.5.

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Battery One Line as per section 4.5

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PV Stimson Electrical Isolation List

FOCSLE PWR PNL	
12 Fwd Pk pwr recp 20a	11 B/T Exh 25a
10 Gas Pump 15a	9 Focsle Its 15a
8 4 plex recp 20a	7 Crane cntls 20a
6 Bait Locker 30a	5 Bench recp 20a
4 Stick Welder	3 XMT Welder
2 220v 1ph 50a	1 220v 1ph 50a

BOW THRUSTER PWR PNL	
1 Saftey Lt 15a	2 Spare15a
3 Wood Room 15a	4 B/T room Its 15a
5 Stbd #1 Tank 30a	6 Forespeak 15a
7 Ext Lt 15a	8 Heater
9 Hydro cooler 15a	10 208v 3ph
11 Port #1 Tank 30a	12 40a
13 Bait Reefer	14 B/T recp 30a
15 220v 1ph 20a	16 Boom Its
17 Emergency Its 15a	18 208v 1ph 15a

WET ROOM PWR PNL	
1 Wet Room aft	
2 Heater 30a	
3 Wet Room fwd	
4 Heater 30a	
5 Frz heat tape 20a	
6	
7	
8	

E.R. LIGHT PWR PNL	
1 Stbd ER Its 15a	2 Port ER Its 15a
3 Pyro recp 15a	4 Pyro recp 15a
5 Emer Its 15a	6 #1 gen batt charger 15a
7 Aft passage recp 15a	8 Emer shutdown 15a
9 Aft passage Its 15a	10 Fwd passage recp 15a
11 UPS feed 15a	12 Fwd passage Its 15a
13 Air phone Lt 15a	14 Gym Htr 15a
15 Cntr gen hotstart 15	16 Boiler outlet 15a
17 Stbd gen hotstart 15a	18 Space htr 15a
19 Stbd MDE hotstart	20 Port MDE hotstart
21 208v 1ph 20a	22 208v 1ph 20a
23 Saftey Its 15a	24 Port gen hotstart 15a

E.R. 208V PWR PNL	
1 Port SW pump	2 Diesel DK pump 20a
3 208v 1ph 20a	4 Spare 20a
5 Stbd SW pump	6 Lube Oil wlr
7 208v 1ph 20a	8 Pump 208v
9 #1 water heater	10 3ph 20a
11 208v 1ph 40a	12 stbd P/W pump
13 Flood LT PNL	14 208v 1ph 20a
15 208v 3ph	16 #2 water heater
17 80a	18 208v 1ph 40a
19 #1 P/W pump	20 Spare
21 208v 1ph 20a	22 208v 3ph
23 Main DK LT	24 20a
25 PNL 208v	26 Bridge Lt
27 3ph 100a	28 PNL 208v
29 ER LT PNL	30 3ph 70a
31 208v 3ph	32 B/T Lt
33 90a	34 PNL 208v
35 Air dryer 20a	36 3ph 60a
37 Wet room PNL	38 Focsle Lt
39 208v 1ph	40 PNL 208v
41 Blank	42 3ph 100a
43 Poop Deck Panel	
45 208v 3ph	
47 125a	

MAIN DECK LIGHT PWR PNL	
1 Galley/Pantry Its 15a	2 Galley/Mess recp 30a
3 Mess hall Its 15a	4 Range fan 15a
5 Main DK ext Its 15a	6 Under Sink recpt 20a
7 Refrigerator 15a	8 WetRm dryer
9 Head vent 20a	10 208v 1ph 30a
11 Passage& head Its30	12 Microwave 20a
13 Mess Dk heaters	14 Galley emer Its 30a
15 208v 1ph 30a	16 Freezer door htr 20a
17 Walkin/WetRm,ErEmg Its20a	18 Warming trays
19 Cooler door htr 20a	20 208v 1ph 30a
21 Cooler timer	22 Freezer timer
23 208v 1ph 15a	24 208v 1ph 20a

PORT	
Steering gear #1 25a	Bilge/ Fire Pump 20a
E.R. Vent 40a	Fuel XFER #1 15a
Centrifuge 15a	Range 60a
Air Comp #1 20a	Walkin Refer 15a
HYD. Unit #1 90a	HYD. Unit #3 90a
B/T Vent fan 15a	Bearthing vent 25a

Berthing DECK PWR PNL	
1 Qtrs Its 15a	2 Head/ Trp. RM Lts 15a
3 Qtrs recp 15a	4 Head&Trp. rm recp 15a
5 Passage Its 15a	6 Aft hall heater #2
7 Washer 15a	8 208v 1ph 20a
9 Spare 15a	10 Dryer
11 Head heat 20a	12 208v 1ph 40a
13 Spare 15a	14 FWD hall heater #1
15 BO1 room heater	16 208v 1ph 20a
17 208v 1ph 20a	18 Trooper Rm Heater
19 Engineers's Heater	20 208v 1ph 20a
21 208v 1ph 20a	22 Males heater
23 Ext 100w Its 15a	24 208v 1ph 20a
25 Spare 15a	26 Emergency Its 15a
27 Spare 15a	28 Battery rm Its 15
29 Spare 15a	30 Head Hot water htr 15a

MAIN SWITCHBOARD 480V 3PH	
Steering gear #2 25a	Bilge Pump 20a
Deck wash pump 15a	Fuel XFER #2 15a
Welder 70a	Walkin Freezer 15a
Air Comp #2 20a	Dirty Oil Pump 15a
HYD. Unit #2 90a	HYD. Unit #4 90a
Sewage 15a	Spare 25a

STBD	
Steering gear #2 25a	Bilge Pump 20a
Deck wash pump 15a	Fuel XFER #2 15a
Welder 70a	Walkin Freezer 15a
Air Comp #2 20a	Dirty Oil Pump 15a
HYD. Unit #2 90a	HYD. Unit #4 90a
Sewage 15a	Spare 25a

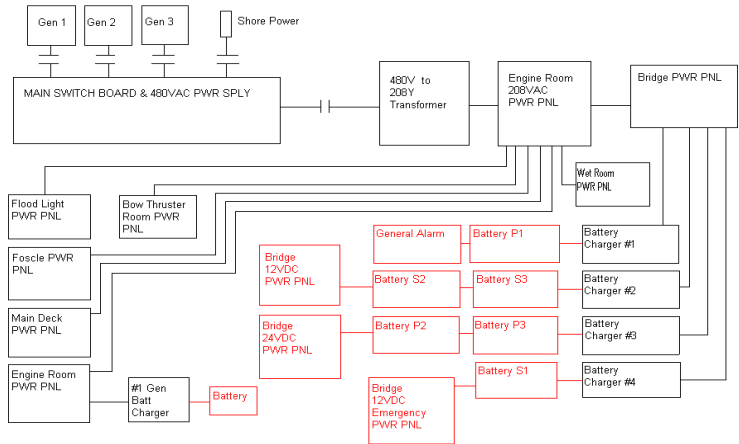
BRIDGE DECK LIGHT PWR PNL	
1 Pilot house Its 15a	2 Qtrs Its 20a
3 NAV panel 15a	4 Qtrs recp 15a
5 Head vent fan/ htr 15a	6 Bridge htr #1
7 Capt & office htr	8 208v 1ph 20a
9 208v 1ph 30a	10 Bridge htr #2
11 Stbd Radar Ant.	12 208v 1ph 20a
13 208v 3ph	14 Bridge htr #3
15 20a	16 208v 1ph 20a
17 Bridge dk ext Its 20a	18 Batt charger #1 20a
19 Steering cntl 20a	20 Batt charger #2 20a
21 Defrost recp #3 20a	22 Batt charger #4 15a
23 Defrost recp #4 20a	24 Batt room Its 15a
25 Port side outlet 30a	26 Stbd radar disp 15a
27 Port radar disp 15a	28 Skippers Seaclear
29 Batt charger #3 15a	30 208v 1ph 20a

FLOOD LIGHT PWR PNL	
1 AFT mast Port/Stbd sodium	2 Aft Mast aft sodium
208v 1ph 20a	208v 1ph 20a
3 Fwd HP sodium Port	4 Fwd HP sodium Center/Stb Inboard
208v 1ph 20a	208v 1ph 20a
5 Fwd HP sodium Port Inboard	6 Fwd HP sodium Stb Outboard
208v 1ph 20a	208v 1ph 20a
7 Fwd Quartz	8 Aft Quartz
208v 1ph 15a	208v 1ph 20a
9 SSB 110v 15a	10 Port Spotlight

24VDC PWR PNL	
1 Port Spotlight	2 A to Pilot
3 FA-100S AIS	4 A GPS
5 Sndr A	6 S are
7 SC 50	8 Compass LT
	9 S are
	10 Stbd Spotlight
	11 Spare
	12 STBD GPS

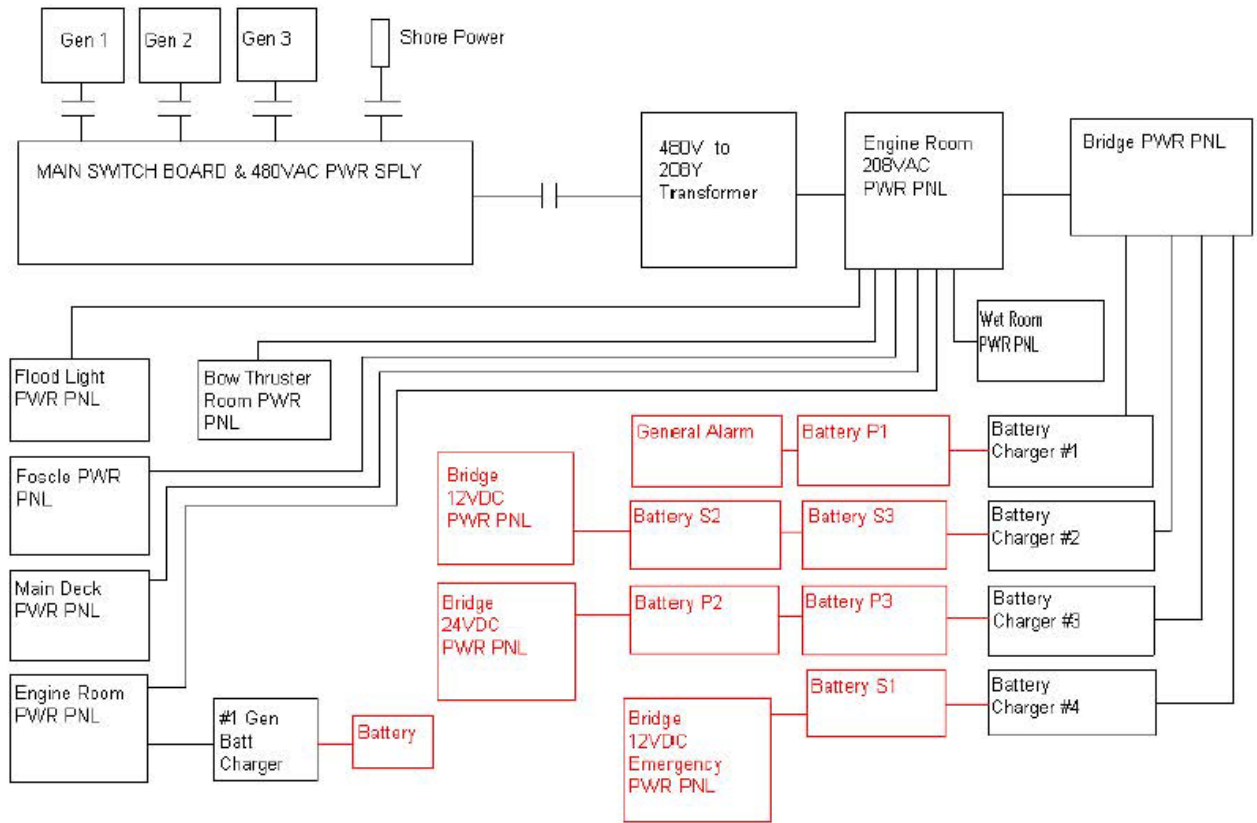
EMERGENCY 12VDC PWR PNL		MAIN 12VDC PWR PNL	
1 SC 70	2 Spare	1 Sonar	2 Spare
2 Spare	3 AFT VHF	3 Aircraft/Police radio	4 Garmin VHF
3 AFT VHF	4 JRC SSB	5 Loudhailer	6 Horn
4 JRC SSB	5 Bridge watch	7 Sailor VHF	8 Iridium
5 Bridge watch	6 Furuno SSB	9 Spare	10 Spare
6 Furuno SSB	7 Head Phones	11 SMDR B	12 FL Pnl Lts
7 Head Phones	8 E.R. Intercom	13 Air Phone	14 STBD Radar
8 E.R. Intercom		15 Port GPS	16 Spare

Main Emer Switch



EIL Electrical Panel List as per section 4.5

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Electrical Distribution as per section 4.5



Generator Mufflers as per section 4.10

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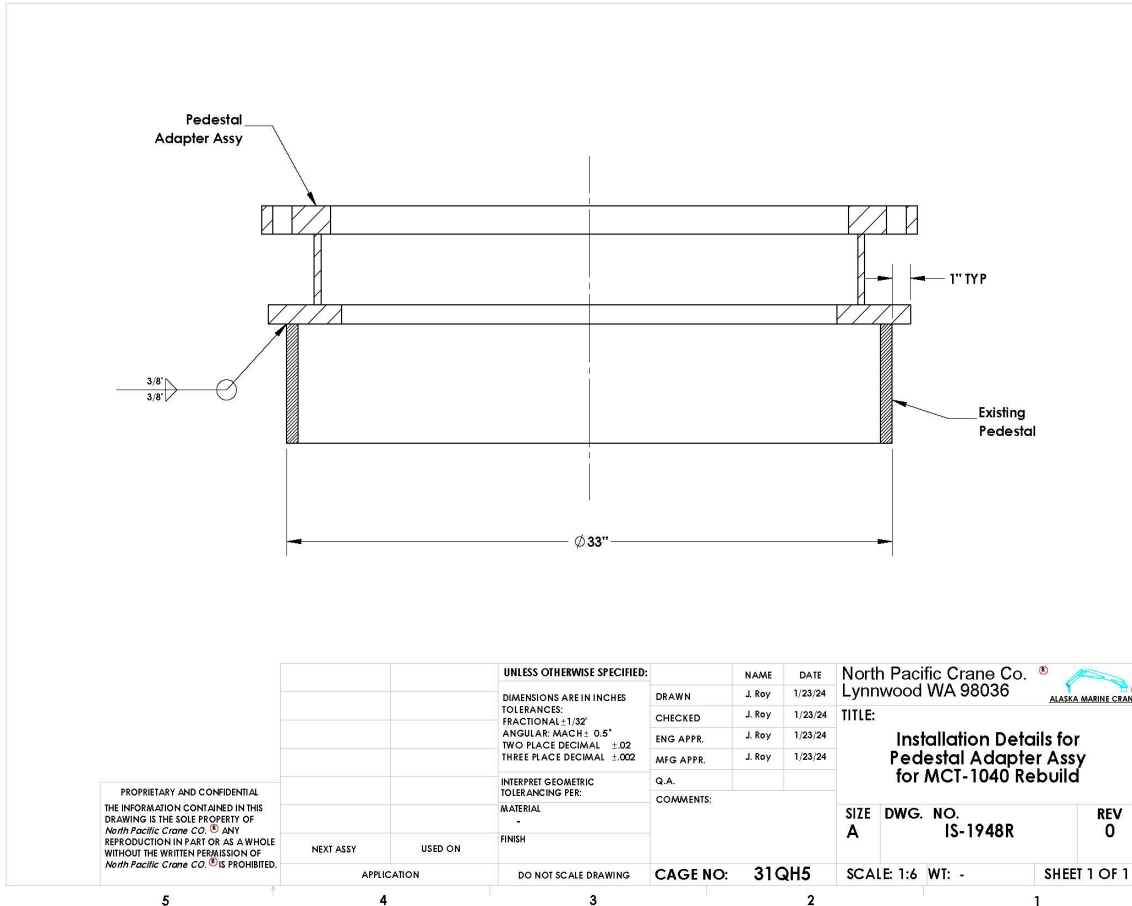
Hydraulic interferences to be removed as per section 5.1.3

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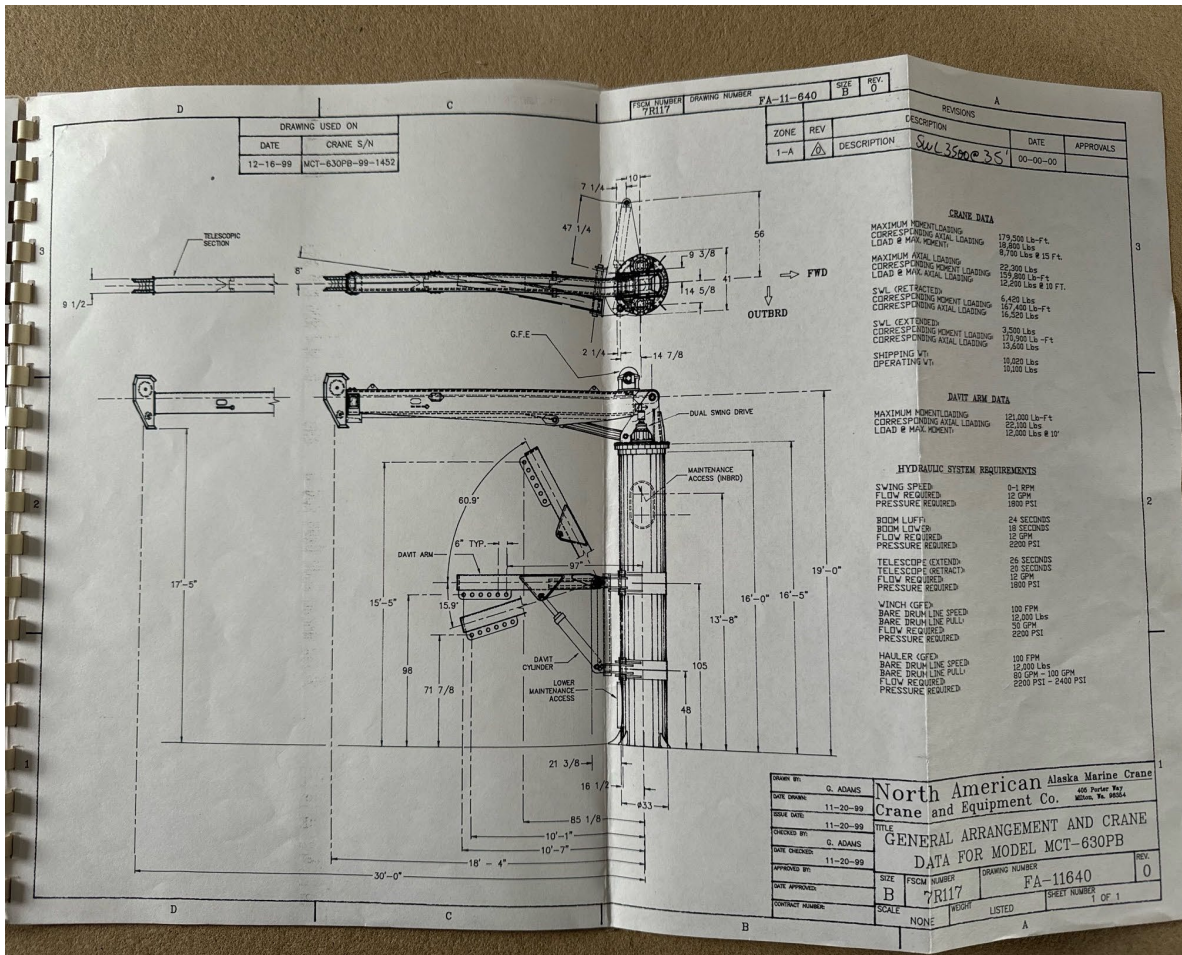
Crane to be installed as per section 7.1

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Crane Pedestal Adapter Assembly as per section 7.1

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Crane to be installed as per Section 7.1