

# **TECHNICAL SPECIFICATIONS**

**WASHINGTON STATE  
DEPARTMENT OF TRANSPORTATION  
FERRIES DIVISION**

**M. V. WALLA WALLA DOCKSIDE PRESERVATION  
CONTRACT NO. 00-8316**

**TECHNICAL SPECIFICATION**

**TABLE OF CONTENTS**

<b><u>ITEM</u></b>	<b><u>PAGE</u></b>
1. BERTH VESSEL.....	3
2. TEMPORARY SERVICES.....	3
3. STAIRWAY LANDING MODIFICATION.....	5
4. ROTO SWING DOORS RENEWAL.....	7
5. HEATING AND VENTILATION CONTROLS UPDATE.....	10
6. CAPAC SYSTEM CONTROLLER AND CABLE RENEWAL.....	27
7. WATERTIGHT DOOR REPAIRS.....	28
8. WATERTIGHT DOOR CONTROL UPGRADES.....	33
9. VITAL GENERATOR COOLING WATER PIPING RENEWAL.....	36
10. PILOTHOUSE 24 VDC UPGRADE.....	36
11. WIFI RADIO, ROUTER, AND ANTENNA RELOCATION.....	37
12. BILGE SYSTEM PIPING REPLACEMENT.....	38
13. SEWAGE SYSTEM PIPING REPLACEMENT.....	39
14. VEHICLE DECK PLATE FRACTURE REPAIR.....	41
15. VEHICLE DECK FRAME SKIP WELD FRACTURE REPAIR.....	42
16. UPPER AND LOWER VEHICLE DECK, DECK DRAIN POCKET STEEL RENEWAL.....	43
17. GALLERY DECK STEEL RENEWAL IN WAY OF FIRE SCREEN DOOR RENEWAL.....	44
18. VENT PLENUM AND FLANGE PLATE STEEL RENEWAL.....	45
19. PREPARATION AND PAINTING OF ZONE NO. 4.....	48

20.	PREPARATION AND PAINTING OF ZONE NO. 5.....	50
21.	PREPARATION AND PAINTING OF ZONE NO. 6. (DECKS).....	52
22.	PREPARATION AND PAINTING OF ZONE NO. 7. (STAIRWAYS).....	54
23.	PREPARATION AND PAINTING OF ZONE NO. 8.....	55
24.	PREPARATION AND PAINTING OF ZONE NO. 9, HANDRAILS AND SCREENS.....	56
25.	POWER TOOL CLEANING TO BARE METAL.....	56
26.	APPLICATION OF CAULKING COMPOUND.....	57
27.	EXTERIOR BENCH SEAT PREP AND POWDER COAT.....	57
28.	GUAGE VESSEL STEEL.....	57
29.	VESSEL STEEL REPAIRS – FRAME 18 AFT.....	57
30.	SIDE LIGHT SHIELD & STERN LIGHT FOUNDATION REPLACEMENT..	59

WASHINGTON STATE  
DEPARTMENT OF TRANSPORTATION  
FERRIES DIVISION

M. V. WALLA WALLA DOCKSIDE PRESERVATION  
CONTRACT NO. 00-XXXX

TECHNICAL SPECIFICATIONS

1  
2 For the following Technical Specifications, the Contractor is to provide all labor, material and  
3 equipment to accomplish each and every Bid Item unless otherwise specified.  
4

5  
6  
7  
8 Contractor shall provide Material Safety Data Sheets (MSDS) of the Paint to be used on the  
9 Vessel to WSF Project Engineer prior to any painting on the Vessel. No painting of the Vessel  
10 shall be started until MSDS are provided.  
11

12  
13  
14  
15 For the following Technical Specifications, the Contractor is to provide all labor, material and  
16 equipment to Clean and gas free all spaces including any tanks, piping and reservoirs  
17 associated with the Work, as necessary, and obtain a Marine Chemist certificate for “SAFE  
18 FOR WORKERS”, and “SAFE FOR HOT WORK”. Maintain the certificate during the  
19 course of the Work. Provide fire watches as required.  
20

21  
22  
23  
24 The Specification Item sub-titles in brackets are for WSF internal use only, for Life Cycle  
25 Cost modeling. Bidders should ignore such bracketed sub-titles.  
26

## SUPPLEMENTAL SPECIFICATIONS

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28

**WSF 001, Marine Coating And Color Scheme Specifications: Area Preparation, Grit Blasting, Paint Coatings, and Inspection for Vessel's hull, curtain plates, casing and super structure shall be in accordance with WSF 001, Marine Coating and Color Scheme Specifications, unless otherwise specified in the following Specifications. Revised 01/07.**

**WSF 002, Electrical Installation Specifications: Details of all electrical installations shall be in accordance with WSF 002, Electrical Installation Specifications, unless otherwise specified in the following Specifications. Revised 01/07.**

**WSF 003, General Construction Requirements: Details of all structural and mechanical installations shall be in accordance with WSF 003, General Construction Requirements, unless otherwise specified in the following Specifications. Revised 04/07.**

**Wsf 004, Removal Categories And Requirements: Details of all removal categories shall be in accordance with WSF 004, Removal Categories and Requirements, unless otherwise specified in the following Specifications. Revised 04/07.**

1 **1. BERTH VESSEL**

2 A. Berth the Vessel for the work specified herein and any necessary additional  
3 repairs.

4 M. V. WALLA WALLA Vessel Particulars:

5 Length: 440'-0", Beam: 87'-0", Draft: 18'-0", Gross Tons: 3246.

6 B. The Main Deck has a 6" camber in 86'-10" of beam with no sheer. The Gallery,  
7 Upper Vehicle Deck, Upper Passenger, and Sun Decks are parallel to the Main  
8 Deck.

9 **2. TEMPORARY SERVICES**

10 A. Install one (1) telephone on board in a location designated by the Vessel Staff  
11 Chief Engineer. The telephone is to have one (1) outside line with toll-free access  
12 to Seattle and vicinity and, if different, one (1) line for local numbers. The  
13 telephone shall have touch-tone.

14 B. Provide one (1) high-speed internet connection onboard in a location designated  
15 by the Vessel Staff Chief Engineer.

16 C. Provide and maintain electricity, water, sewage removal, safe lighted gangway  
17 and trash removal services while Vessel is in the Contractor's facility. Estimate  
18 40,000 gallons of accumulated sewage generated while at the Contractor's  
19 facility.

20 D. Provide Safety and Security for the entire Vessel throughout the Contract  
21 performance period until such time as the WSF has accepted redelivery of the  
22 Vessel. Every reasonable precaution shall be taken to protect the Vessel from the  
23 hazards of fire, flooding, pilferage, malicious damage, and other events including  
24 cataclysmic phenomena of nature.

25 E. Provide and maintain comprehensive and effective fire prevention and fire  
26 detection, and fire fighting programs and systems sufficient to ensure the safety  
27 and integrity of the Vessel. Provide personnel trained in shipboard fire fighting  
28 techniques and also trained to cooperate with and assist local fire fighting  
29 organizations. Provide sufficient shore fire lines to ensure an adequate supply of  
30 fire fighting water, at sufficient pressure, and maintain an adequate number of  
31 tested fire-hoses aboard the Vessel to effectively fight fires at any location in the  
32 Vessel.

33 F. Provide and maintain portable fire extinguishers in sufficient quantity, and of the  
34 appropriate type, to combat local fires of any class. Provide sufficient fire  
35 watches, including roving watches as may be required, to ensure that fires that  
36 may be inadvertently started by welding sparks, heat, electrical malfunction or  
37 spontaneous combustion are detected, reported and promptly extinguished.  
38

- 1 G. Clean and gas free all spaces and tanks associated with the Work, as necessary,  
2 and obtain a Marine Chemist certificate for “SAFE FOR WORKERS”, and  
3 “SAFE FOR HOT WORK”. Maintain the certificates during the course of the  
4 Work for all Work Items of this Contract.
- 5 H. Provide portable toilet facilities with hand washing facilities in the vicinity of the  
6 Vessel gang way for the sole use of the Vessel crew, with weekly scheduled  
7 cleaning and maintenance anytime the sanitary water, potable water and or  
8 sewage systems are disabled.
- 9 I. Provide a certified non-contaminated bottle water dispenser with hot and cold taps  
10 in a location designated by the Vessel Staff Chief Engineer. Provide sealed  
11 bottles of water to the location of the dispenser; estimate ten (10) gallons per day.
- 12 J. At all times that welding is being done on board the Vessel while it is water born,  
13 the Contractor shall provide and maintain rigid control of welding and grounding  
14 for the protection of the hull, hull systems, and appendages.
- 15 The Vessel shall be properly grounded throughout the period of the Contract  
16 except when the Vessel is underway for Trials.
- 17 There shall be no welding or air arcing undertaken aboard the Vessel until a hull  
18 corrosion protection system has been installed to the satisfaction of the WSF  
19 Representative and hull ground cables are installed.
- 20 To insure proper control, the Contractor shall adhere to the following  
21 requirements:
- 22 1. Welding power sources used on the Vessel, whether shore-based or placed  
23 on the Vessel shall not be used for any other Vessel or structure.
  - 24 2. Hull ground cables attached to the Vessel shall never be grounded to any  
25 other Vessel or structure. Hull ground cables shall be independent of any  
26 welding return cables.
  - 27 3. All welding cables, electrode, welding return cables, hull grounds or  
28 temporary power cables shall be completely insulated and never permitted  
29 to sag into the water.
  - 30 4. Grounding contact surfaces shall be thoroughly cleaned to bright, bare  
31 metal prior to connection. Grounding lugs shall be secured tightly to  
32 grounding plates and the connections periodically checked to ensure that  
33 they remain tightly bonded and corrosion free. Only one (1) cable per  
34 ground stud shall be allowed, whether its service is hull grounding or  
35 welding return. The total cross-sectional area of hull ground wire shall be  
36 one (1) million circular mils minimum per 1,000 amperes per 100 feet.
  - 37 5. The Contractor shall provide all materials and labor required to install and  
38 maintain temporary passive galvanic corrosion protection needed to  
39 maintain an acceptable hull potential. The Vessel’s active corrosion  
40 protection system will be secured while the Vessel is in the shipyard.  
41

- 1 6. Provide and maintain zinc anodes for hull corrosion protection. Hull  
2 potential shall be in the range of +.75 to .9 V as measured on a certified  
3 U.S. Filter Electro Catalytic corrosion potential meter, silver-silver  
4 chloridem Model 33419-3. This shall be the only meter used to measure  
5 hull potential.
- 6 7. Hull potential readings shall be taken twice daily until satisfactory  
7 potentials have been obtained and at least weekly thereafter. A written log  
8 shall indicate the station at which each reading was taken, the amplitude  
9 and polarity of the reading, the time and date, and the name of the  
10 individual making the readings. This record shall be made available to the  
11 WSF Representative upon request.
- 12 8. Provide a copy of an updated hull potential record to the WSF  
13 Representative in conjunction with progress billings.

14 **NOTE:**

15 **Hull potential shall be maintained in the range of +.75 to .9 V as measured on**  
16 **a certified U.S. Filter Electro Catalytic corrosion potential meter, silver-**  
17 **silver chloridem Model 33419-3. This shall be the only meter used to**  
18 **measure hull potential.**  
19

20 **3. STAIRWAY LANDING MODIFICATION**

- 21 A. Modify the existing No. 1 End port and starboard and No. 2 End starboard vehicle  
22 deck stairway landings as shown on **WSDOT WSF DWG 8100-711-003-10**,  
23 Jumbo Class, Bottom of Lower Staircase Modifications and this Specification.
- 24 B. Remove and reinstall all interferences necessary to complete this Item including  
25 but not limited to insulation, vent ducting, piping and wire ways.

26 **NOTE:**

27 **The bulkheads, overheads, and framing in all spaces below the vehicle deck**  
28 **in way of this work are presently coated with a "KEL-KOTE" Coal Tar**  
29 **compound.**

- 30 C. Modify the existing stairways and landings as shown on **WSDOT WSF DWG**  
31 **8100-711-003-10.**
- 32 D. Clad weld ten (10) pits in the vehicle deck at each landing.
- 33 E. Replace all disturbed structural, thermal, and acoustical insulation and linings to  
34 match original installation.  
35

- 1 F. Prepare new and disturbed surfaces in way of this work to an SSPC-SP 11, power  
2 tool cleaning to bare steel. Apply one (1) coat of Sherwin Williams Corothane I  
3 Galva-Pac Zinc at 3-4 mils (DFT). Apply one (1) stripe coat of Sherwin Williams  
4 Seaguard 6000 red at 3-5 mils (DFT). Apply one (1) coat of Sherwin Williams  
5 Seaguard 6000 Off White at 4-5 mils (DFT). Apply one (1) topcoat of Sherwin  
6 Williams Polysiloxane at 6-7 mils (DFT) to match existing color for the area. All  
7 prepared and coated areas shall extend to the nearest structural member beyond  
8 the new or disturbed areas to provide an appearance that is pleasing to the eye.
- 9 G. Prepare all areas of removed curbing, concrete and the existing non-skidded area  
10 of the vehicle deck landings to SSPC-SP6, Commercial Blast Cleaning with a  
11 track blaster to obtain a 2 to 3 mil profile. Remove all traces of blast beads from  
12 all areas of the Vessel. Areas that are inaccessible to a track blaster shall be  
13 prepared to SSPC-SP11, Power Tool Cleaning to Bare Metal.
- 14 1. Apply one (1) coat, Sherwin Williams Corothane I Galva-Pac Zinc at 3-4  
15 mils (DFT). Apply one (1) coat, American Safety MS 7CZLT, gray, to  
16 obtain 4 to 5 mils (DFT) to all surfaces prepared under above. Apply one  
17 (1) NON-SKID coat, American Safety AS-250, Safety Yellow, to all non-  
18 skidded and landing surfaces prepared above.
- 19 H. Prepare all areas of modified or disturbed curbing to SSPC-SP11, Power tool  
20 cleaning to bare steel.
- 21 1. Apply one (1) coat, Sherwin Williams Corothane I Galva-Pac Zinc at 3-4  
22 mils (DFT). Apply one (1) coat, American Safety MS 7CZLT, gray, to  
23 obtain 4 to 5 mils (DFT) to all surfaces prepared under above. Apply one  
24 (1) NON-SKID coat, American Safety AS-150, Safety Yellow, to all  
25 surfaces prepared under above.  
26

1 **4. ROTO SWING DOORS RENEWAL**

2 A. Renew four (4) passenger deck doors, four (4) sun deck fire screen doors, and  
3 four (4) gallery deck fire screen doors with Pacific Coast Marine Doors. All  
4 doors shall be complete with frames and hardware. Todd Shipyard Corporation,  
5 **Drawing 6605-123-1**, 440' Cross Sound Ferry Door List is provided for  
6 reference.

7 B. Remove and reinstall all interferences including but not limited to underlayment,  
8 bulkhead panels, and ceiling as necessary to complete this Item.

9 C. Remove Fire screen doors 31, 32, 35, 36, 81, 82, 83, and 84 in their entirety,  
10 including frames as **Category "B"**.

11 D. Remove doors 47, 48, 49, and 50 in their entirety, including frames as **Category**  
12 **"B"**.

13 E. Upon completion of removals, conduct joint steel survey with the WSF Inspector.

14 **NOTE:**

15 **Steel replacement is covered under separate Item or Change Order.**

16  
17 F. Install new doors. Doors shall be installed by continuous welding on one side and  
18 skip welding on the other. The Contractor shall sequence the weld to minimize  
19 warping of the door frame.

20 G. The four (4) passenger deck doors shall be Pacific Coast Marine Doors PMC-06-  
21 2-28-21-29. Each door shall be complete with all hardware, 2 1/2" x 2 1/2" angle  
22 gasketed frame, 18" x 26" wire inserted glass in top portion, stainless steel kick  
23 plate mounted on inside, stainless steel push pull for opening, Brush steel seal at  
24 center between panels, dead bolt lock at top of each panel, and Norton closer.  
25 Any "or equal" request shall be approved by WSF Project Engineer.

26 H. The four (4) sun deck fire screen doors shall be Pacific Coast Marine Doors PMC-  
27 05-2-28-02-29. Each door shall be complete with all hardware, 2 1/2" x 2 1/2" angle  
28 gasketed frame, 3" x 33" wire inserted glass in top portion, stainless steel kick  
29 plate mounted on inside, stainless steel push pull for opening, panic bar, dead bolt  
30 lock at top of each panel, and Norton closer. Any "or equal" request shall be  
31 approved by WSF Project Engineer. Replace existing sub sills on all four (4)  
32 doors with new 1/8" steel subsills, similar in design to that shown on Detail 21-D  
33 on **DWG 6605-123-1**.  
34

- 1 I. The four (4) gallery deck fire screen doors shall be Pacific Coast Marine Doors  
2 PMC-05-2-28-02-29. Each door shall be complete with all hardware, 2 ½” x 2 ½”  
3 angle gasketed frame, 3” x 33” wire inserted glass in top portion, stainless steel  
4 kick plate mounted on inside, stainless steel push pull for opening, panic bar, dead  
5 bolt lock at top of each panel, and Norton closer. Any “or equal” request shall be  
6 approved by WSF Project Engineer.
- 7 J. All doors shall be provided with integral swing stops and hold backs.
- 8 K. Provide the service of the door manufacturer’s Technical Representative to  
9 conduct final set up and adjustment to the satisfaction of the WSF and USCG  
10 Inspectors. Contact for Pacific Coast Marine is Rick Doty, phone: 425-939-3311.
- 11 L. Repair all deck underlayment that is disturbed.
- 12 M. Flash the new doors to the existing bulkheads and overhead to provide a finished  
13 appearance. Any metal pieces shall be powder coated color to match surrounding  
14 material.
- 15 N. The new doors and frames shall be prepared and coated as follows:  
16 All doors and their frames shall be coated using the conventional spray  
17 application method.
- 18 a) Colors shall be Sherwin Williams Industrial Enamel to match existing  
19 trim.
- 20 b) The doors and frames shall be prepared as follows:
- 21 1) Remove all label plates, frames, kick plates, etc. All removed  
22 Items shall be cleaned and reinstalled with new fasteners upon  
23 completion of coating. Any Item damaged during removal shall be  
24 replaced in kind.
- 25 2) Remove all surface contamination such as oil, grease, loose paint,  
26 mill scale, dirt, foreign matter, rust, mold and mildew to assure  
27 sound bonding to the tightly adhered existing paint.
- 28 3) Scrape all loose, blistered, scratched or otherwise imperfect paint  
29 down to bare metal and sand adjacent tightly adhering paint down  
30 to feather edge.
- 31 4) Degrease and clean surfaces by wet sanding, rinsing with clean  
32 water and wiping down with cleaner as specified by the paint  
33 manufacturer. Rinse with warm water and wipe down with clean  
34 rags until surface is dry.
- 35 5) All hinges, locks, closing devices, striker plates, door stops, etc.  
36 shall be protected from over spray.  
37

- 1                   c)     The coating shall be applied as follows:
- 2                   1)     Apply coating using conventional spray methods.
- 3                   2)     The final appearance shall be “as new factory finish” with a uniform
- 4                   even coating with no ripples or stipples.
- 5                   3)     Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces,
- 6                   or conditions detrimental to formation of a durable paint film.
- 7                   4)     Provide finish coats that are compatible with primers used.
- 8                   5)     Apply primer coat to surfaces that have been cleaned and prepared for
- 9                   finish coating as soon as practicable after preparation and before
- 10                  subsequent surface deterioration.
- 11                  6)     Do not apply succeeding coats until previous coat has cured as
- 12                  recommended by manufacturer.
- 13                  7)     If undercoats, stains, or other conditions show through final coat of
- 14                  paint, apply additional coats until paint film is of uniform finish,
- 15                  color, and appearance. Give special attention to ensure that edges,
- 16                  corners, crevices, welds, and exposed fasteners receive a dry film
- 17                  thickness equivalent to that of flat surfaces.
- 18                  8)     Prime Coats: Before applying finish coats, apply rust inhibitive
- 19                  primer to act as an intermediate coat between existing painted
- 20                  surfaces and new coating.
- 21                  9)     Finish Coats: Completely cover surfaces to provide a smooth, opaque
- 22                  surface of uniform finish, color, appearance, and coverage.
- 23                  Cloudiness, spotting, holidays, laps, brush marks, runs, sags, or other
- 24                  surface imperfections will not be acceptable.
- 25                  10)    Over primer apply a dustcoat of finish paint in order to prevent runs
- 26                  and stop lifting.
- 27                  11)    Apply final coat of paint of uniform film thickness and with a semi
- 28                  gloss, smooth and clean appearance.
- 29           O.     Set up the door closing devices and latches and prove proper operation of the
- 30           doors to the satisfaction of the U.S. Coast Guard and WSF Inspectors.
- 31           P.     Prepare new and disturbed areas in way of this work to an SSPC-SP 11, power
- 32           tool cleaning to bare steel and coated with two (2) coats of contrasting colors,
- 33           applied to 4 - 5 mils (DFT) each, of Sherwin Williams Seaguard 6000.
- 34           Q.     Top coated with one (1) coat of Sherwin Williams Industrial Enamel applied at 4-
- 35           5 mils (DFT), color to match surrounding areas.
- 36           R.     All disturbed non skid areas (minimum of 1 square foot each) shall be prepared to
- 37           an SSPC-SP11 Power Tool Cleaning to Bare Steel. Apply two (2) primer coats,
- 38           American Safety MS 7CZLT, gray, to obtain 4 to 5 mils (DFT) each. Apply one
- 39           (1) NON-SKID coat, American Safety AS-250, to match surrounding.
- 40

1    **5.    HEATING AND VENTILATION CONTROLS UPDATE**

- 2           A.    Modify the existing heating and ventilation controls in fan rooms A, B, C, D, E,  
3           and F as shown on **WSDOT WSF DWG 8102-729-090-03**, M/V Walla Walla,  
4           Heating and Ventilation Control Power Supply Wiring Diagram; **WSDOT WSF**  
5           **DWG 8102-642-095-01**; M/V Walla Walla, Super-Lan/Security & Surveillance  
6           Electrical Installation; **WSDOT WSF DWG 8100-744-003-01**, Jumbo Class, Fan  
7           Room “C” Structural Modifications In Way Of New Intake Louver; Todd  
8           Shipyards Corporation, **Drawing 6605-500-01**, 440’ Cross Sound Ferry, Steam  
9           Heating And Condensate System Piping Diagram; and **DWG 6605-501-01**, 440’  
10          Cross Sound Ferry, Heating & Ventilation Sys Diagram & Equip List, and this  
11          Specification.
- 12          B.    Remove and reinstall all interferences necessary to complete this Item including  
13          but not limited to insulation, vent ducting, piping and wire ways.
- 14          C.    Rip out the existing pneumatic heating and ventilation control piping back to the  
15          first valve in each fan room as **Category “D”**. Cap existing lines.
- 16          D.    Rip out all existing heating and ventilation pneumatic thermostats and controllers  
17          in each fan room as **Category “D”**. All holes left in the existing ventilation  
18          ducting that are not to be reused shall be plugged.
- 19          E.    Rip out all existing heating and ventilation pneumatic steam control valves in  
20          each fan room as **Category “D”**.
- 21          F.    Renew all steam piping, valves and traps at each steam heating coil (duct Heater).  
22          All steam piping shown in Diagram 6 A of **DWG 6605-500-01** shall be replaced  
23          in-kind.
- 24          G.    Remove, thoroughly clean and reinstall all steam heating coils in all the fan rooms  
25          using new gaskets and hardware.  
26

- 1 H. Install new USCG Approved A-30 fire screen door at frame 5, Port side of fan  
2 room D as laid out by the WSF Inspector. The Door shall be manufactured by  
3 MML USA or equal as follows:
- 4 1) 30" x 72" clear opening A-30 fire door complete with frame.
  - 5 2) Door swing shall be as directed by the Vessel Staff Chief Engineer.
  - 6 3) A permanently affixed label plate on the hinge edge identifying the  
7 manufacturer, year of manufacture and statement of compliance.
  - 8 4) All door hardware shall be stainless steel.
  - 9 5) All door/latch hardware shall be 2-<sup>3</sup>/<sub>4</sub>" backset and have <sup>3</sup>/<sub>4</sub>" minimum latch  
10 throw. Lockset shall be; Best Access Systems, 93K7D14D-STK-626 (K9,  
11 Cylindrical, 7 pin core housing, always locked and operated by key  
12 outside and always unlocked and operable by lever handle from inside.
  - 13 6) Door shall have four (4) hinges, which shall be Hager BB 1168NRP 32D  
14 Heavy duty stainless steel, 5 knuckle, ball bearing type with none  
15 removable pins.
  - 16 7) Install door stop as necessary to prevent damage to door.
  - 17 8) Flash the new door to the existing bulkhead lining using material in-kind  
18 to existing linings.  
19

1 I. Provide the service of Johnson Controls, Inc. manufacturer's branch office to  
2 design and install new Heating and Ventilation Control System (HVCS). Johnson  
3 Controls shall provide the materials, installation labor, engineering, software,  
4 programming and training as specified in this Item. Contact person for Johnson  
5 Controls is Steve Douglas, phone 425-398-6936. The system shall be complete in  
6 all aspects.

7 1) CONTROLS

8 1. All work of this Item shall be coordinated and furnished by  
9 Johnson Controls Inc. The Control System shall be installed using  
10 Johnson Controls materials, parts, and devices to the greatest  
11 extent possible.

12 2. All HVCS sensors shall be electronic with electrical actuators.  
13 The Heating and Ventilation system shall be monitored from a  
14 single Network Automation Engine (NAE) connected to a Johnson  
15 Controls provided Operator Interface Device (OID) with a wireless  
16 adaptor to be located in the Control Room. The NAE shall be  
17 connected via a Local Area Network to the individual Field  
18 Equipment Controllers (FEC) located in each Fan Room. Provide  
19 one (1) additional Johnson Controls Operator Interface Device in-  
20 kind to that installed in the Control Room.

21 3. The HVCS shall be a complete system designed for use on  
22 dedicated Ethernet networks. FEC's shall be located in the  
23 existing Fan Rooms and shall be connected to the Vessel Local  
24 Area Network for communication to the NAE as shown on  
25 **WSDOT WSF DWG 8102-642-095-01**. All points of user  
26 interface shall be at the Operator Interface Device in the Control  
27 Room.

28 2) OPERATOR INTERFACE DEVICE (OID)

29 1. The new Operator Interface Device shall provide the primary user  
30 interface with the HVCS and shall be used for central monitoring,  
31 scheduling, alarms, global commands, override commands and  
32 graphic displays. The OID shall be connected to the NAE through  
33 the existing Vessel LAN system as shown on **WSDOT WSF**  
34 **DWG 8102-642-095-01**.  
35

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27

3) OPERATOR INTERFACE

a) General

- 1) The HVCS Operator Interface shall be user friendly, readily understood and make maximum use of colors, graphics, icons, embedded images, text based information and data visualization techniques to enhance and simplify the use and understanding of the HVCS.
- 2) User access to the HVCS shall be protected by flexible and WSF re-definable software-based password access protection. Password protection shall be multi-level to accommodate the varied access requirements of the different user groups. Provide the means to define unique access privileges for each individual authorized user.
- 3) The OID shall incorporate comprehensive support for functions including: User access for information retrieval and control command execution, monitoring and reporting, alarm, non-normal, and return to normal condition annunciation, selective operator override, formatting, display and reporting, means for the controlled re-programming and re-configuration of HVCS operation.
- 4) Provide HVCS displays making maximized use of simple English language descriptions and readily understood icons, symbols, acronyms, abbreviations and the like to assist user understanding and interpretation. All text naming conventions shall be consistent in their use and application throughout the HVCS.

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39

b) Alarms

- 1) Alarms shall be routed directly from the Fan Room DDC controllers to the NAE. The alarm portion of the OID software shall provide the following functions: Log, date and time of alarm occurrence, generate a “Pop-Up” window informing a user that an alarm has been received, allow a user with the appropriate security level to acknowledge or discard an alarm and annunciate diagnostic alarms indicating system failures and non-normal operating conditions.

c) Dynamic Color Graphics

- 1) Values of real time attributes displayed on the graphics shall be dynamic and updated on the displays.
- 2) The user shall be able to change values and states in system controlled equipment directly from the graphic display.
- 3) Provide a color graphic display for the Vessel, indicating location of each Fan Room with a display of each Air Handling Unit, color coded to indicate temperature values and status with all input/output points.
- 4) User shall access the various system schematics and floor plans via a graphical penetration scheme and/or menu selection. User shall penetrate from Vessel floor plan to Fan Room and associated Air Handling Unit graphic.

d) Downloading and Uploading

- 1) Provide the capability to generate HVCS software-based sequences, database Items, associated operational definition information and user-required revisions and the means to download same to the associated controller. Provide the capability to upload HVCS operating software information, database Items, sequences and alarms to the NAE.
- 2) Provide the MS-BTCVT wireless commissioning converter used for servicing the controllers over a wireless connection. The MS-BTCVT shall provide a secure and reliable untethered connection between the Operator Interface Device with wireless adaptor running SCT software and the Metasys system hardware. The 2.4 GHz Bluetooth wireless connection shall allow the user to be up to 33 feet away while servicing the controller.

4. HVCS CONTROLLERS

a) Network Automation Engine (NAE).

- 1) The NAE shall manage and direct all information traffic on the network and to the OID.
- 2) The Network Controller (NAE) shall be a fully user-programmable, supervisory controller. The NAE shall monitor the network of distributed Field Equipment Controllers (FEC) and provide global strategy and direction. Provide Johnson Controls Network Automation Engine model NAE 5510-1.
- 3) The NAE shall support BAC net Standard MS/TP Bus Protocol ASHRAE SSPC-135, Clause 9 on the controller network.
- 4) A failure at the NAE shall not cause failures or non-normal operation at any other system controller.
- 5) The NAE shall comply with the following standards: UL Listed, File E107041, CCN PAZX, UL 916, Energy Management Equipment, FCC Compliant to CFR47, Part 15, Subpart B, and Class A.

b) Field Equipment Controllers (FEC)

- 1) The FEC shall be a fully user-programmable, digital controller with local panel mounted LCD and Keypad allowing the user to monitor and adjust set points, issue commands, change schedules, and other important tasks. The FEC shall communicate via BAC net MS/TP protocol to the NAE. Provide Johnson Controls FEC-2620-Series controllers.
- 2) The FEC shall provide both standalone and networked direct digital control. A dedicated FEC shall be configured and provided for each air handling unit.
- 3) Each FEC controller shall retain program, control algorithms, and set-point information in non-volatile memory in the event of a power failure, and shall return to normal operation upon restoration of power.
- 4) The FEC shall report its communication status to the primary controller, and shall provide a system advisory upon communication failure and restoration.

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26

c) Panel Enclosures

- 1) Provide Local Control Panels in each fan room.
- 2) All control panels shall be NEMA 12 factory constructed, incorporating Johnson Controls standard designs and layouts. All control panels shall be UL inspected and listed as an assembly and carries a UL 508 label listing compliance. Control panels shall be fully enclosed, with perforated sub-panel, hinged door, slotted flush latch, and key locked.
- 3) The control panels shall consist of the NAE and FEC controller, display module and I/O devices—such as relays, transducers, and so forth—that are not required to be located external to the control panel due to function. The display module shall be mounted inside the panel enclosure.
- 4) All I/O connections on the FEC shall be provided with fixed screw terminals. Low and line voltage wiring shall be segregated. All terminal strips and wiring shall be UL listed, 300-volt service and provide adequate clearance for field wiring. All wiring shall be neatly installed in plastic trays or tie-wrapped.
- 5) A convenience 120 VAC duplex receptacle shall be provided in each enclosure, fused on/off power switch, re-settable circuit breaker and required transformers for each NAE and FEC.

FIELD DEVICES

5.

a) Input Devices

- 1) Duct Temperature Sensors.
- 2) Sensors and transmitters shall be provided, as outlined in the input/output summary and sequence of operations.
- 3) The temperature sensor shall be of the resistance type, and shall be two-wire 1000 ohm platinum RTD with accuracy of +/- 0.5%. Provide Johnson Controls, TE 6000 series sensors.

b) Controlled Devices.

- 1) Control Valves

c) Control Valves

- 1) All automatic control valves shall be Johnson Controls, fully proportioning with equal percentage flow characteristics. The valves shall be quiet in operation and fail-safe closed. All valves shall operate in sequence with another valve when required by the sequence of operations.
- 2) All control valves shall be sized by the control manufacturer, and shall be guaranteed to meet the heating loads as specified. All control valves shall be suitable for the system flow conditions and close against the differential pressures involved.
- 3) Ball valves shall be used for hot water and steam applications and include stainless steel ball and trim assembly and electric modulating spring return actuators.

d) Automatic Temperature Control Dampers

- 1) Install seven (7) each automatic temperature control intake dampers.
- 2) The Damper shall be Extruded Aluminum airfoil opposed blade damper with silicone blade seals, stainless steel jamb seals, stainless steel bearings, and stainless steel linkage. Provide 215R1. 07 mil clear anodized finish on aluminum blades and frame. Provide Johnson Controls Model VD 1250 or Ruskin Model CD 50.
- 3) Modify the existing ducting as necessary to install the new dampers.

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27

e) Electronic Actuators

- 1) Electronic actuators shall be manufactured by approved Johnson Controls valve manufacturer.
- 2) Each actuator shall have current limiting circuitry incorporated in its design to prevent damage to the actuator.
- 3) Modulating and two-position actuators shall be provided as required by the sequence of operations. Actuators shall provide the minimum torque required for proper close-off against the system pressure for the required application. The actuator shall be sized based on valve and damper manufacturer's recommendations for flow and pressure differential. All actuators shall be spring return as specified in the sequence of operations. The spring return feature shall permit normally open or normally closed positions of the valves and dampers as required. All direct shaft mount rotational actuators shall have external adjustable stops to limit the travel in either direction.
- 4) Modulating Actuators shall accept 24 VAC or VDC and 120 VAC power supply and be UL listed. The control signal shall be 2-10 VDC or 4-20 mA and the actuator shall provide a clamp position feedback signal of 2-10 VDC. The feedback signal shall be independent of the input signal, and may be used to parallel other actuators and provide true position indication. The feedback signal of each valve and damper actuator shall be wired back to a terminal strip in the control panel for trouble-shooting purposes.

- 1 f) Weather Louvers
- 2 1) Renew the eleven (11) Weather Louvers.
- 3 2) Two (2) ea non closable,
- 4 27 inches wide by 22 inches high.
- 5 3) Two (2) ea 4 foot wide by 5 foot 9 inches high.
- 6 4) One (1) ea. 4 foot high by 3 foot 6 inches high.
- 7 5) One (1) ea. 4 foot 3 inches high by 3 foot 6 inches wide.
- 8 6) One (1) ea. 4 foot wide by 4 foot high.
- 9 7) One (1) ea. 4 foot high by 5 foot wide.
- 10 8) One (1) ea. 4 foot high by 5 foot wide.
- 11 9) Two (2) ea. 4 foot high by 3 foot 9 inches wide.
- 12 10) The weather louvers shall be templated from the Vessel and
- 13 constructed of 4" x 4" x 1/4" hot dipped galvanized steel
- 14 frame with 16 gauge galvanized steel J-style blades.
- 15 Louvers shall include drainable heads to channel water to
- 16 the side frames, which channel through vertical downspouts
- 17 and out the bottom of the louver at the sill. Louvers shall
- 18 be closable with two (2) stainless steel sliding bolts to hold
- 19 them open, similar to existing. All louvers shall be hinged,
- 20 using stainless steel hinges of the size and number to
- 21 support the louver when opened without sagging or
- 22 binding. Louvers shall be coated with a Krynar finish to
- 23 protect louver from the effects of salt spray.
- 24 11) Modify six (6) of the new louvers to included housing for
- 25 filters. Housing shall allow the 24" x 24" x 2" filters to be
- 26 firmly held in place while allowing the filters to be changes
- 27 after louvers are swung open.
- 28 12) Modify fan room C louvers support structure as shown on
- 29 **WSDOT WSF DWG 8100-744-003-01.**
- 30 13) Modify fan room C recirculation duct opening as shown on
- 31 **WSDOT WSF DWG 8100-744-003-01.**
- 32

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26

6. PERFORMANCE / EXECUTION / CLOSEOUT

a) Installation Description

- 1) All conduit, wiring, accessories and installation of devices required for the installation of the HVCS Control System, as herein specified, shall be provided by the Contractor under the direction and supervision of the HVCS Contractor. All wiring and installation practices shall comply with this Specifications and Johnson Controls recommendations.
- 2) The sizing and type of cable, conduit, cable trays, and raceways shall be the design responsibility of Johnson Controls and meet the requirements of this Specification.
- 3) The HVCS Contractor shall provide all final terminations at all control devices.

b) Training

- 1) Johnson Controls shall provide sixteen (16) hours of on-site, eight (8) hours upon completion of installation, with eight (8) hours after three (3) months of the Vessel being in service, of Vessel specific orientation/training for each Vessel crew shift by a manufacturer's certified System Technician who is fully knowledgeable of the specific installation details of the project. The training plan shall be developed in conjunction with WSF to meet the unique requirements of WSF personnel.

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21

c) Commissioning

- 1) Fully commission all aspects of the HVCS work.
- 2) Prepare a Test memorandum that includes all points for all functions of the HVCS. Submit the test memorandum to the WSF Representative for approval one (1) month prior to testing.
- 3) Complete the test memorandum for all Items and functions of the HVCS and initial each entry with time/date as record of having fully calibrated and tested the HVCS.
- 4) Submit the test memorandum to WSF. The WSF Representative will use the test memorandum as the basis for acceptance testing with the HVCS Contractor. The test memorandum shall be submitted as documentation of the installation.

d) Software and Software Update

- 1) The HVCS software residing in controllers shall be updated to the latest currently available revision at the start of the Warranty period.
- 2) Provide one (1) licensed copy of Johnson Controls SCT System Configuration Software.

SEQUENCE OF OPERATION

7.

a) Supply and Return Fans

1) The unit and fans shall be energized from the HOA switch located at the MCC panel and will operate continuously unless de-energized from HOA. Provide fan status from differential pressure switch or current sensing switch as applicable to indicate if fans are on or off.

b) Passenger Area Heating and Ventilation Systems

1) SYSTEM OFF:

1. The supply and return fans shall be "off". The outside air and exhaust air dampers shall be closed and the return air damper shall be "open". The steam heating coil valves shall be "closed".

2) SYSTEM RUN:

1. When heating is required as sensed by the discharge air temperature sensor a signal will be sent to the panel mounted Digital controller (FEC). A 0-10vdc output will be sent from the FEC to the steam control valve. The steam control valve will modulate to control the discharge air temperature (DAT) set point. The DAT set point will be reset from 55 deg f to 105 degrees F. as the zone temperature changes from its set point (72 degrees F) adjustable. As the zone temperature increases over set point the DAT will be reset downward to a minimum temperature of 55 degrees F. As the zone temperature decreases under set point the DAT will be reset upward to a maximum set point of 105 degrees F. When the zone temperature is satisfied (at 72 deg F set point) the DAT set point will be 70 deg F. The outside air, return air and exhaust air damper actuators are controlled from a separate 0-10 VDC output and are sequenced with the steam control valve. The DAT will send a signal to the FEC and a 0-10vdc signal will be sent from the FEC to the damper actuators.

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35

The outside air, return air and exhaust air damper actuators will modulate from minimum position to full open to control the discharge air temperature. Heating Mode and Ventilation Mode shall be automatically determined by outside air temperature and be manually adjustable.

3) Heating Mode:

1. When outside air temperature is below 60 Degrees F the supply and return fans shall run continuously on low speed. Outside air and exhaust air dampers shall be positioned to 33-percent (33%) open and return air damper shall be 66-percent (66%) open (adjustable). When the air handling system is started, the heating coil control valves shall modulate to control to return air temperature set-point at 72 Degrees F. the Outside Air Damper and exhaust air damper will be at minimum position and the return air damper will be fully open. The steam control valve will be closed when the outside air temp. is above 60 deg F. The mixed air temperature sensor (MAT) serves as a monitoring point only.
2. Provide discharge air temperature sensor to modulate the steam coil control valves closed if the discharge air temperature exceeds 105 degrees F.

4) Ventilation Mode:

1. When heating is not required and outside air temperature is above 63 Degrees F, the supply and return fans shall run continuously on low speed. The heating coil control valves will close and the Outside Air Dampers will modulate open to maintain DAT set point, the Exhaust Air damper shall track the outside air damper and the return air damper shall modulate inversely with the Outside Air Damper.

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40

- c) Restaurant Area Heating System
  - 1) SYSTEM OFF:
    - 1. The supply fan shall be “off”. The steam heating coil valves shall be “closed”.
  - 2) SYSTEM RUN:
    - 1. Heating Mode and Ventilation Mode shall be automatically determined by outside air temperature and be manually adjustable.
  - 3) Heating Mode:
    - 1. When outside air temperature is below 60 Degrees F, the supply fan shall run continuously on low speed. When the air handling system is started, the heating coil control valves shall modulate to control to return air temperature set-point at 72 Degrees F. Provide discharge air temperature sensor to modulate the steam coil control valves closed if the discharge air temperature exceeds 105 degrees.
    - 2. When heating is required as sensed by the discharge air temperature sensor (DAT) a signal will be sent to the panel mounted FEC controller (FEC). A 0-10vdc output will be sent from the FEC to the steam control valves. The 1/3 steam control valve will open first and modulate to control the discharge air temperature set point. If additional heat is required to maintain the discharge air temperature set point then the 2/3 steam control valve will modulate open. As the DAT increases above set point and less heating is required the 2/3 steam control valve will modulate closed followed by the 1/3 steam control valve. The DAT set point will be reset from 55 deg f to 105 deg F as the zone temperature changes from its set point (72) adjustable. As the zone temperature increases over set point the DAT will be reset downward to a minimum temperature of 55 deg F. As the zone temperature decreases under set point the DAT will be reset upward to a maximum set point of 105 degrees F. When the zone temperature is satisfied (at 72 deg F set point) the DAT set point will be 70 deg F.

- 1  
2  
3  
4  
5  
6  
7  
8
3. The outside air damper actuator is controlled from a separate 0-10 VDC output and is sequenced with the steam control valve. The DAT will send a signal to the FEC and a 0-10 VDC signal will be sent from the FEC to the damper actuator. The outside air damper actuator will modulate from minimum position to full open to control the discharge air temperature.
- 9 4) Ventilation Mode:
- 10 a) When heating is not required and the outside air  
11 temperature is above 60 degrees F. the steam control valves  
12 will close and the outside air damper will modulate open to  
13 maintain DAT set point.
- 14 8. ALARMS FOR HVCS SYSTEM
- 15 a) Annunciate alarms whenever supply fan or return fan status does  
16 not equal command.
- 17 b) Annunciate alarms when any duct temperature exceeds minimum  
18 and or maximum limits.
- 19 9. SHUTDOWN:
- 20 1) When the unit is shutdown by either a stop command or system  
21 safety the unit shall be set as follows:
- 22 a) Supply fan will be off.
- 23 b) Outside air damper and Exhaust air damper  
24 shall close.
- 25 c) Return air damper shall open.
- 26 d) Heating valve shall close.
- 27 J. After installation, each new or modified system shall be thoroughly cleaned and  
28 flushed of all foreign material utilizing the normal system medium or a WSF  
29 approved substitute.
- 30 K. The Contractor shall provide the following spare parts.
- 31 1. All spare part shall be provided in the manufactures packaging with the  
32 part number and name clearly printed on the outside.
- 33 a) One (1) each FEC.
- 34 b) Two (2) each sensor PT1000.
- 35 c) One (1) each electronic damper/steam valve actuator.
- 36

- 1 L. Balance the entire system to insure adequate outdoor air is provided to maintain  
2 the total Passenger Cabin exhaust airflow requirement. Record system airflows at  
3 each supply and exhaust terminals upon completion of all system modifications.  
4 **DWG 6605-501-01** is provided as reference for designed airflows.
- 5 M. Hydrostatically test all new installations to 150 % of maximum allowed working  
6 pressure to the satisfaction of the attending WSF and US Coast Guard Inspectors.
- 7 N. Insulate the new or disturbed piping in accordance with the requirements of  
8 ASTM F683. Insulating materials shall be USCG Approved for intended service  
9 and location.
- 10 O. Prepare the inside of the first 24” of all vent ducting in way of the removed  
11 weather louvers to an SSPC-SP 11, power tool cleaning to bare steel. Apply one  
12 (1) stripe coat of Sherwin Williams Seaguard 6000 red at 3-5 mils (DFT). Apply  
13 one (1) coat of Sherwin Williams Seaguard 6000 Off White at 4-5 mils (DFT).  
14 Apply one (1) coat of Sherwin Williams Industrial Enamel at 6-7 mils (DFT) to  
15 match existing color for the area. All prepared and coated areas shall extend to  
16 the nearest structural member beyond the new or disturbed areas to provide a  
17 appearance that is pleasing to the eye.
- 18 P. Prepare new and disturbed surfaces in way of this work to an SSPC-SP 11, power  
19 tool cleaning to bare steel. Apply one (1) coat of Sherwin Williams Corothane I  
20 Galva-Pac Zinc at 3-4 mils (DFT). Apply one (1) stripe coat of Sherwin Williams  
21 Seaguard 6000 red at 3-5 mils (DFT). Apply one (1) coat of Sherwin Williams  
22 Seaguard 6000 Off White at 4-5 mils (DFT). Apply one (1) coat of Sherwin  
23 Williams Industrial Enamel at 6-7 mils (DFT) to match existing color for the area.  
24 All prepared and coated areas shall extend to the nearest structural member  
25 beyond the new or disturbed areas to provide an appearance that is pleasing to the  
26 eye.
- 27 Q. For galvanized surfaces; prepare and coat with one (1) coat of Far West Formula  
28 117, at 2-3 mils (DFT). Apply one (1) coat of Sherwin Williams Seaguard 6000  
29 Off White at 4-5 mils (DFT). Apply one (1) topcoat of Sherwin Williams  
30 Industrial Enamel at 6-7 mils (DFT) to match existing color for the area.
- 31 R. Replace all disturbed structural, thermal, and acoustical insulation to match  
32 original installation. Repair all interior finish coatings and linings damaged by  
33 the Work to match original finish and treatment.  
34

1    **6.    CAPAC SYSTEM CONTROLLER AND CABLE RENEWAL**

2           A.    Modify the existing Hull CAPAC system as shown on **WSDOT WSF DWG**  
3               **8102-703-002-03**, M/V Walla Walla, Cathodic Protection Foundation; **WSDOT**  
4               **WSF DWG 8102-729-090-02**, M/V Walla Walla, Hull Cathodic Protection  
5               System Electrical Upgrade; **WSDOT WSF DWG 8102-638-090-01**, M/V Walla  
6               Walla, Electrical One-Line Diagram; **WSDOT WSF DWG 8102-703-002-02**,  
7               Walla Walla, Cathodic Anode Reference Cell Installation, and this Specification.

8               **NOTE:**

9               **The new Reference Cells and thru hull fittings shown on WSDOT WSF**  
10              **DWG 8102-703-002-02, were installed during a recent drydocking. The**  
11              **Contractor shall connect new cabling to the previously installed reference**  
12              **cells**

13            B.    Remove and reinstall all interferences necessary to complete this Item.

14            C.    Rip out entire existing CAPAC system including all cabling from the existing  
15               power panels L1A and P-10 to the J Boxes adjacent to the existing anodes and  
16               reference cell as follows:

17               cabling as **Category “D”** and Power Supply as **Category “B”**.

18               Update the panel index for the L1A panel to show the removed circuit as spare.

19            D.    Rip out the existing CAPAC system Power Supply foundations in their entirety.

20            E.    Install a new foundation as shown on **WSDOT WSF DWG 8102-703-002-03**.

21            F.    Install the new WSF furnished Power Supply, Contractor furnished cabling and  
22               Contractor furnished J Box as shown on **WSDOT WSF DWG 8102-729-090-02**.

23            G.    Test all cables as shown on **WSDOT WSF DWG 8102-729-090-02**.

24            H.    Provide the services of Robert Dhuyvetter to adjust, test, and commission the  
25               system. Contact phone: 707-474-7857.

26            I.    Prepare new and disturbed areas in way of this work to an SSPC-SP 11, power  
27               tool cleaning to bare steel and coated with two (2) coats of contrasting colors,  
28               applied to 4 - 5 mils (DFT) each, of Sherwin Williams Seaguard 6000.

29            J.    Top coated with one (1) coat of Sherwin Williams Industrial Enamel applied at 4-  
30               5 mils (DFT), color to match surrounding areas.

31

1    **7.    WATERTIGHT DOOR REPAIRS**

2           A.    Provide the services of Everett Engineering Inc. to repair the five (5) Electro-  
3           Hydraulic horizontal watertight doors.  Doors that require refurbishment are 116,  
4           117, 118, 119, and 120.  WALZ & KRENZER **DWG D-WK-492-A6**, and  
5           WALZ & KRENZER **DWG D-WK-492-A7**, are provided for reference.  Doors  
6           116, 119 and 120 are 24” x 66”.  Doors 117 and 118 are 36”x 72”.  Contact for  
7           Everett Engineering is Irv Tellesbo, phone: 425-259-3117.

8           B.    Provide the services of a WALZ & KRENZER INC. to conduct final set up,  
9           adjustment and testing of each door.  Contact for WALZ & KRENZER INC. is  
10          Steven Shepstone, phone: 203-267-5712.

11          C.                 Remove and reinstall all interferences necessary to complete this  
12                               Item.

13          D.                 Perform the following repair to the doors;

- 14           1.    Door 116
  - 15               a)    Replace all seals in hydraulic cylinder using Walz & Krenzer seal  
16               kit part # D-WK-406-C1B-SK.
  - 17               b)    Replace all seals in local hand hydraulic pump using Walz &  
18               Krenzer seal kit part # D-WK-437-75-5A-SK.
  - 19               c)    Replace all seals in remote hand hydraulic pump using Walz &  
20               Krenzer seal kit part # D-WK-437-75-6-SK.
  - 21               d)    Disassemble, clean and re-lubricate upper and lower rollers.
- 22           2.    Door 117
  - 23               a)    Repair and machine all brass strips following Walz & Krenzer  
24               Repairing of Brass Sealing Strips for Metal to Metal Sliding WT  
25               Doors, Rev. A procedure.  It is recommended the Contractor  
26               perform a ship check to determine required repairs.
  - 27               b)    Machine and/or shim the wedges to provide proper fit.
  - 28               c)    Adjust stops to provide proper fit.
  - 29               d)    Replace all seals in hydraulic cylinder using Walz & Krenzer seal  
30               kit part # D-WK-406-C1B-SK.
  - 31               e)    Replace all seals in local hand hydraulic pump using Walz &  
32               Krenzer seal kit part # D-WK-437-75-5A-SK.
  - 33               f)    Replace all seals in remote hand hydraulic pump using Walz &  
34               Krenzer seal kit part # D-WK-437-75-6-SK.
  - 35               g)    Disassemble, clean and re-lubricate upper and lower rollers.

- 1                    3.     Door 118
- 2                    a)     Repair and machine all brass strips following Walz & Krenzer
- 3                            Replacement of Brass Sealing Strips for Metal to Metal Sliding
- 4                            WT Doors, Rev. A procedure.
- 5                    b)     Replace all seals in hydraulic cylinder using Walz & Krenzer seal
- 6                            kit part # D-WK-406-C1B-SK.
- 7                    c)     Replace all seals in local hand hydraulic pump using Walz &
- 8                            Krenzer seal kit part # D-WK-437-75-5A-SK.
- 9                    d)     Replace all seals in remote hand hydraulic pump using Walz &
- 10                            Krenzer seal kit part # D-WK-437-75-6-SK.
- 11                    e)     Disassemble, clean and re-lubricate upper and lower rollers.
- 12                    4.     Door 119
- 13                    a)     Replace all seals in hydraulic cylinder using Walz & Krenzer seal
- 14                            kit part # D-WK-406-C1B-SK.
- 15                    b)     Replace all seals in local hand hydraulic pump using Walz &
- 16                            Krenzer seal kit part # D-WK-437-75-5A-SK.
- 17                    c)     Replace all seals in remote hand hydraulic pump using Walz &
- 18                            Krenzer seal kit part # D-WK-437-75-6-SK.
- 19                    d)     Disassemble, clean and re-lubricate upper and lower rollers.
- 20                    5.     Door 120
- 21                    a)     Repair and machine all brass strips following Walz & Krenzer
- 22                            Repairing of Brass Sealing Strips for Metal to Metal Sliding WT
- 23                            Doors, Rev. A procedure. It is recommended the Contractor
- 24                            perform a ship check to determine required repairs.
- 25                    b)     Replace all seals in hydraulic cylinder using Walz & Krenzer seal
- 26                            kit part # D-WK-406-C1B-SK.
- 27                    c)     Replace all seals in local hand hydraulic pump using Walz &
- 28                            Krenzer seal kit part # D-WK-437-75-5A-SK.
- 29                    d)     Replace all seals in remote hand hydraulic pump using Walz &
- 30                            Krenzer seal kit part # D-WK-437-75-6-SK.
- 31                    e)     Disassemble, clean and re lubricate upper and lower rollers.

32                    **NOTE:**

33                    **All replacement, repairs and machining shall be accomplished in accordance**

34                    **with the following WALZ & KRENZER INC. procedures.**

35

# REPAIRING OF BRASS SEALING STRIPS FOR METAL TO METAL SLIDING WT DOORS

## REV. A

1 This work is best done at the door manufacturing plant. However, if it is not practical to ship the  
2 door back to the factory, the work may be done at any factory having the required machinery.  
3 The door panel will definitely need to be sent ashore to get the work done. A very large vertical  
4 milling machine or horizontal boring mill is required. Here's the procedure for making the  
5 repair:  
6

7 1. Check the overlap of the door onto the door frame. The leading edge of the door should  
8 travel between 3/4" and 1-1/4" after the start of engagement with the door frame. If the  
9 overlap of the door on the frame exceeds the 1-1/4" overlap, or is close to the 1-1/4"  
10 maximum, the brass strips are worn too far and should be replaced. If not, continue with  
11 these instructions.

12 2. Remove the door from the frame.

13 3. Place the door with the brass strip down on the bed of the milling machine, supported  
14 level on at least three (3) good points on the brass strips.

15 4. Mill flat spots on the door edge stiffener a known and recorded distance from the face of  
16 the brass that does not show wear or damage.

17 5. Flip the door over.

18 6. Fill in all cracks, gouges, and worn areas with braze.

19 7. Place the door on the bed of the milling machine with the brass strips up and supported  
20 level on the flat spots from step 3. Set the cutter to the recorded distance from step 4.

21 8. Mill the brass flat, do not remove more than .003" of material. For every .001" of  
22 material removed, the door will advance .024" more when closing.

23 9. Reassemble the door on the frame.

24 10. Readjust the stop screws on the door frame if needed. The door closed limit switch must  
25 actuate approx. 1/8" before the door stops against the screws.

26 11. After the stop screws are adjusted, check the door's tightness with a .003" feeler gauge.  
27 The gauge should not be able to penetrate into the sealing edges, adjust the door's stop  
28 screws as necessary to achieve the desired tightness and activation of the limit switch.  
29

# REPLACEMENT OF BRASS SEALING STRIPS FOR METAL TO METAL SLIDING WT DOORS

## REV. B

1 This work is best done at the door manufacturing plant. However, if it is not practical to ship the  
2 door back to the factory, the work may be done at any factory having the required machinery.  
3 The door panel will definitely need to be sent ashore to get the work done. A very large vertical  
4 milling machine or horizontal boring is required. Here's the procedure for making the repair:  
5

6 1. Check the overlap of the door onto the door frame. The leading edge of the door should  
7 travel between  $\frac{3}{4}$ " and 1-1/4" after the start of engagement with the door frame. If the  
8 overlap of the door on the frame exceeds the 1-1/4" overlap, or is close to the 1-1/4"  
9 maximum, the brass strips are worn too far and should be replaced.

10 2. Record the distance that the leading edge of door panel overlaps the frame.

11 3. Remove the door from the frame.

12 4. Place the door with the brass strip down on the bed of the milling machine, supported  
13 level on at least three (3) good points on the brass strips.

14 5. Mill flat spots on the door edge stiffener a known and recorded distance from the face of  
15 the brass.

16 6. Flip the door over and grind off the rivets and brass strip.

17 7. If needed, fill the surface to provide a good seat for the new brass strip and remachine if  
18 required.

19 8. Tap the existing rivet holes for  $\frac{1}{4}$ -28UNF flat head machine screws, the min. thread  
20 depth should be  $\frac{3}{4}$ " deep.

21 9. Fasten the new pieces of brass in place using  $\frac{1}{4}$ -28 UNF x  $\frac{3}{4}$  lg. steel flat head machine  
22 screws. Apply non-permanent loctite on the screw threads.

23 10. Braze the joints at the corners of the brass strips.

24 11. Fill over the screw heads with epoxy.

25 12. Place the door on the bed of the milling machine with the brass strips up and supported  
26 level on the flat spots from step 3.  
27

1 13. Mill the brass flat; matching the total door thickness from step 3, or slightly thicker if the  
2 brass has worn so that the recorded leading edge of the panel's overlap with the frame  
3 was greater than 1". If the overlap was more than one (1) inch, increase the thickness by:

4 
$$\text{Increase} = (\text{measured overlap} - 1") / 24$$

5 Approx. .03125" to .060" of material should be removed. For every .001" of additional  
6 thickness the door will advance .024" less when closing. Do not remove more than .060"  
7 of material.

8 14. Reassemble the door on the frame.

9 15. Readjust the stop screws on the door frame if needed. The door closed limit switch must  
10 actuate approx. 1/8" before the door stops against the screws.

11 **NOTES:**

12 **The door was stress relieved after welding, so if you need to mill the steel (step 5),**  
13 **there shouldn't be any problem with the door changing shape.**

14 16. In order to comply with SOLAS passenger ship requirements and U.S. CFR  
15 requirements, we have changed copper alloys for the sealing strips on the edge of the  
16 door. Both Specifications require that the bulkheads remain watertight after a 1700°F  
17 fire. We now use electrolytic copper, alloy C11000, although there are many other  
18 copper alloys that will also work. Some of the acceptable alloys are; C51100, C55100,  
19 C61900, C63000, C64200, C64210, C65100, and C65400. All of these alloys have  
20 solidus points above 1700°F.

21 a) Prepare new and disturbed areas in way of this work to an SSPC-SP 11, power  
22 tool cleaning to bare steel and coated with two (2) coats of contrasting colors,  
23 applied to 4 - 5 mils (DFT) each, of Sherwin Williams Seaguard 6000.

24 b) Top coated with one (1) coat of Sherwin Williams Industrial Enamel applied at 4-  
25 5 mils (DFT), color to match surrounding areas.  
26

1    **8.    WATERTIGHT DOOR CONTROL UPGRADES**

2            A.    Modify the existing watertight door control system as shown on **WSDOT WSF**  
3                **DWG 8102-638-096-02**, M/V Walla Walla, PCS Replacement Pilothouse 24  
4                VDC Power Supply System Modifications; **WALZ & KRENZER INC. DWG D-**  
5                **WK-892-23**, Installation Drawing for Sliding WT Door Electrical Upgrade  
6                Equipment for WSF; **WALZ & KRENZER INC. DWG D-WK-892-24**, Electrical  
7                Schematic for WSF WT Sliding Doors; **WALZ & KRENZER INC. DWG D-**  
8                **WK-892-25**, Connection Diagram for WSF WT Sliding Doors; **WALZ &**  
9                **KRENZER INC. DWG D-WK-892-28**, Hydraulic Schematic for WSF WT  
10              Sliding Doors; **WALZ & KRENZER INC. DWG D-WK-892-30**, Motor  
11              Controller for WSF WT Sliding Doors; **WALZ & KRENZER INC. DWG D-**  
12              **WK-892-31**; Motor-pump & Valve Assy for 24 VDC Sliding Door System;  
13              **WALZ & KRENZER INC. DWG D-WK-892-32**, LC1 & LC2 Local Control  
14              Switches for WSF WT Sliding; **WALZ & KRENZER INC. DWG D-WK-892-**  
15              **33**, Junction box for WSF WT Sliding Doors; **WALZ & KRENZER INC. DWG**  
16              **D-WK-892-34**; Limit Switch Assemblies for WSF WT Doors; **WALZ &**  
17              **KRENZER INC. DWG D-WK-892-35**, Master Bridge Control Station for WSF  
18              WT Sliding Doors; **WALZ & KRENZER INC. DWG D-WK-892-36**; Secondary  
19              Bridge Control Station for WSF WT Sliding Doors; **WALZ & KRENZER INC.**  
20              **DWG D-WK-892-37**, Remote Indication Station for WSF WT Sliding Doors;  
21              **WALZ & KRENZER INC. DWG D-WK-892-44**, Motor-Pump Assy. For 24  
22              VDC Sliding Door System; and this Specification.

23                **WSDOT WSF DWG 6605-401-10**, 440' Cross Sound Ferry, Fire Screen & WT  
24                Door Sys CKTS FX & TR Elem & ISOM WD and **WSDOT WSF DWG 8102-**  
25                **638-090-01**, M/V Walla Walla, Electrical One-Line Diagram are provided for  
26                reference only.

27            B.    Remove and reinstall all interferences necessary to complete this Item.

28            C.    Remove the existing No. 1 and No. 2 pilothouse watertight door control panels as  
29                **Category "A"**. Renew the entire joiner panel from the deck to the counter top in  
30                the areas of the removed control panels. Install new wood trim to match the  
31                existing in the areas of the removed control panels.  
32

- 1 D. Remove the following existing equipment from each sliding watertight door as  
2 **Category “A”:**
- 3 1. Motor controller.
  - 4 2. Motor pump and valve assemble.
  - 5 3. Warning horn assemblies.
  - 6 4. Local control station/switches.
  - 7 5. Remote position indicator including Teleflex cables and  
8 hangers.
  - 9 6. Remote close switch.
  - 10 7. Limit switches.
  - 11 8. Removals shall include foundations that are not able to reused for the new  
12 installations.
- 13 E. Install the following new, WSF supplied, Walz & Krenzer, Inc. equipment on  
14 each sliding watertight door:
- 15 1. Motor controller.
  - 16 2. Motor pump and valve assemble.
  - 17 3. Warning horn/strobe assemblies-2 each.
  - 18 4. Local control station/switches-2 each.
  - 19 5. Remote position indicator.
  - 20 6. Remote close switch.
  - 21 7. “J” Box.
  - 22 8. Limit Switches.
  - 23 9. All new equipment shall be installed on new foundations templated from  
24 the equipment and the Vessel.
  - 25 10. Hydraulic piping shall be modified to suit the new  
26 installations.
- 27 F. Install the following new WSF supplied, Walz & Krenzer, Inc. equipment on the  
28 two (2) existing hinged watertight doors:
- 29 1. Limit switches-two (2) each.
  - 30 2. All new equipment shall be installed on new foundations templated from  
31 the equipment and the Vessel.  
32

- 1 G. Install new door disconnect switches:
- 2 1. Disconnect switches shall be Santon, Citadel Series, Submersible, IP68,  
3 with plastic red/yellow lockable external handle, high-speed 3-pole switch  
4 rated for 250VDC/25ADC/5kW, 100mm H x 100mm W x 132mm D.  
5 PN# 04PA/1K8K.
- 6 H. Remove existing cabling with the exception of the existing 120 VDC feeder  
7 circuits 2TE7, 3TE7, 4TE7, 5TE7, and 6TE7. Feeders shall be rerouted to the  
8 new disconnect switches.
- 9 I. Install new WSF supplied, Walz & Krenzer, Inc. watertight door Master Bridge  
10 Station in the No. 1 End pilothouse and Second Bridge station in the No. 2 End  
11 pilothouse similar to the No. 1 End.
- 12 J. Provide new foundations to suit the new control panel's installations.
- 13 K. Install new 24VDC feeder from Power Panel DC24-1(A) using Square "D"  
14 Double Pole 10 amp breaker, QO210, cable to be sized as shown on **WSDOT**  
15 **WSF DWG 8102-638-096-02** and **WALZ & KRENZER INC. DWG D-WK-**  
16 **892-23** through Walz & Krenzer Inc. **DWG D-WK-892-44**.
- 17 L. All weather tight or watertight junction boxes that are opened as part of this work  
18 shall be closed using new gaskets.
- 19 M. Provide the services of a Walz & Krenzer Inc. Representative to conduct final set  
20 up, adjustment and testing of each door. Contact for Walz & Krenzer Inc. is  
21 Steven Shepstone, phone: 203-267-5712.
- 22 N. Provide the services of a Walz & Krenzer Inc. Representative to prove proper  
23 operation of all watertight doors and indicators from all locations to the  
24 satisfaction of the WSF and U.S. Coast Guard Inspectors.
- 25 O. Prepare new and disturbed areas in way of this work to an SSPC-SP 11, power  
26 tool cleaning to bare steel and coated with two (2) coats of contrasting colors,  
27 applied to 4 - 5 mils (DFT) each, of Sherwin Williams Seaguard 6000.
- 28 P. Top coated with one (1) coat of Sherwin Williams Industrial Enamel applied at 4-  
29 5 mils (DFT), color to match surrounding areas.
- 30 Q. Provide the services of a Walz & Krenzer Inc. Representative to provide eight (8)  
31 hours of crew training to the Vessel crew. Training shall cover operation and  
32 trouble shooting of the system.  
33

1    **9.    VITAL GENERATOR COOLING WATER PIPING RENEWAL**

- 2        A.    Modify the existing vital generator saltwater cooling system as shown on  
3            **WSDOT WSF DWG 8102-762-058-01**, M/V Walla Walla, Vital Diesel  
4            Generator S/W Cooling Piping Modifications and this Specification.
- 5        B.    Remove and reinstall all interferences necessary to complete this Item.
- 6        C.    Remove the existing saltwater cooling system as shown on **WSDOT WSF DWG**  
7            **8102-762-058-01** as **Category “D”**.
- 8        D.    The 3” gate valve at the saltwater treatment tank and the 2” overboard discharge  
9            valve shall be padlocked shut with a blank flange installed with a minimum of  
10           four (4) bolts immediately after the system is opened.
- 11       E.    Install new piping, fittings and equipment as shown on **WSDOT WSF DWG**  
12            **8102-762-058-01**.
- 13       F.    Test and flush the new installation as shown on **WSDOT WSF DWG 8102-762-**  
14            **058-01**, to the satisfaction of the WSF Inspector.
- 15       G.    Prepare new and disturbed areas in way of this work to an SSPC-SP 11, power  
16            tool cleaning to bare steel and coated with two (2) coats of contrasting colors,  
17            applied to 4 - 5 mils (DFT) each, of Sherwin Williams Seaguard 6000.
- 18       H.    Top coated with one (1) coat of Sherwin Williams Industrial Enamel applied at 4-  
19            5 mils (DFT), color to match surrounding areas.

20    **10.   PILOTHOUSE 24 VDC UPGRADE**

- 21        A.    Modify the existing 24 volt DC System for Pilot Houses No. 1 and No. 2 as  
22            shown on **WSDOT WSF DWG 8102-638-096-02**, M/V Walla Walla, PSC  
23            Replacement Pilothouse 24VDC Power Supply System Modifications and this  
24            Specification.
- 25        B.    Remove and reinstall all interferences necessary to complete this Item including  
26            but not limited to insulation, vent ducting, piping and wire ways.
- 27        C.    Modify the existing 24VDC power panels DC24-1 and DC24-2 located in the  
28            pilothouse fan spaces as shown in **WSDOT WSF DWG 8102-638-096-02**.
- 29        D.    Install new cables, and equipment as shown on **WSDOT WSF DWG 8102-638-**  
30            **096-02**.
- 31        E.    New power panels DC24-1A and DC24-2A shall be installed on new foundations.  
32            Foundations shall provide support to prevent vibration.
- 33        F.    Install new ground detection systems as shown in **WSDOT WSF DWG 8102-**  
34            **638-096-02**.
- 35        G.    Prepare new and disturbed areas in way of this work to an SSPC-SP 11, power  
36            tool cleaning to bare steel and coated with two (2) coats of contrasting colors,  
37            applied to 4 - 5 mils (DFT) each, of Sherwin Williams Seaguard 6000.

- 1 H. Top coated with one (1) coat of Sherwin Williams Industrial Enamel applied at 4-  
2 5 mils (DFT), color to match surrounding areas.
- 3 I. Replace all disturbed structural, thermal, and acoustical insulation to match  
4 original installation. Repair all interior finish coatings and linings damaged by  
5 the Work to match original finish and treatment.

6 **11. WIFI RADIO, ROUTER, AND ANTENNA RELOCATION**

- 7 A. Relocate the existing WSF WIFI radio, router, and antenna as shown on **WSDOT**  
8 **WSF DWG 8102-642-095-01**, M/V Walla Walla, Super-Lan/Security &  
9 Surveillance Electrical Installation and **WSDOT WSF DWG 8102-742-003-01**,  
10 M/V Walla Walla, WIFI Antenna Mast Foundation Construction Details, and this  
11 Specification.
- 12 B. Remove and reinstall all interferences necessary to complete this Item including  
13 but not limited to insulation, vent ducting, piping and wire ways.
- 14 C. Remove existing WIFI antenna as **Category “D”**.
- 15 D. Remove all existing antenna cable as show on **WSDOT WSF DWG 8102-642-**  
16 **095-01**. All stuffing tubes not reused shall plugged using the stuffing tube  
17 manufacturers recommended procedure and parts.
- 18 E. Remove circuit 11P6 in its entirety as shown on **WSDOT WSF DWG 8102-642-**  
19 **095-01**.
- 20 F. Install new antenna mast foundation and antenna as shown on **WSDOT WSF**  
21 **DWG 8102-642-095-01** and **WSDOT WSF DWG 8102-742-003-01**.
- 22 G. Remove and relocate the WIFI radio and router as shown on **WSDOT WSF**  
23 **DWG 8102-642-095-01**.
- 24 H. Rerack all Items in Security Rack (SR-01A) as shown on **WSDOT WSF DWG**  
25 **8102-642-095-01**.
- 26 I. Install new LAN Shelf and equipment as shown on **WSDOT WSF DWG 8102-**  
27 **642-095-01**.
- 28 J. Prepare new and disturbed areas in way of this work to an SSPC-SP 11, power  
29 tool cleaning to bare steel and coated with two (2) coats of contrasting colors,  
30 applied to 4 - 5 mils (DFT) each, of Sherwin Williams Seaguard 6000.
- 31 K. Top coated with one (1) coat of Sherwin Williams Industrial Enamel applied at 4-  
32 5 mils (DFT), color to match surrounding areas.
- 33 L. Replace all disturbed structural, thermal, and acoustical insulation to match  
34 original installation. Repair all interior finish coatings and linings damaged by  
35 the Work to match original finish and treatment.  
36

1 **12. BILGE SYSTEM PIPING REPLACEMENT**

- 2 A. Replace sections of bilge suction piping in the No. 1 and No. 2 End shaft alleys.  
3 Todd Shipyard Corporation **Drawing 6605-508-2**, 440' Cross Sound Ferry Clean  
4 Bilge System (Outside Machinery Space) Piping Arrangement & Detail, is  
5 provided for reference.
- 6 B. Remove and reinstall all interferences necessary to complete this Item.
- 7 C. Replace the following sections of bilge suction piping:
- 8 1. No. 1 End Motor Room
- 9 a) Three (3) sections from the bilge manifold at approximately frame  
10 47 to 6-inches beyond the WTB at frame 60 as laid out by the WSF  
11 Inspector and Vessel Staff Chief Engineer.
- 12 b) One (1) section from the bilge manifold at approximately frame 47  
13 to 6-inches below the transition from horizontal to vertical at  
14 approximately frame 43 as laid out by the WSF Inspector and  
15 Vessel Staff Chief Engineer.
- 16 2. No. 1 End Shaft Alley
- 17 a) Two (2) sections from 6-inches inside of the WTB at frame 60 to  
18 within 6-inches of the WTB at frame 75 as laid out by the WSF  
19 Inspector and Vessel Staff Chief Engineer.
- 20 3. No. 2 End Motor Room
- 21 a) One (1) section of 2.5 inch from 6-inches inside of the WTB at  
22 frame 42 to 6-inches beyond the WTB at frame 60 as laid out by  
23 the WSF Inspector and Vessel Staff Chief Engineer.
- 24 4. No. 2 End Shaft Alley
- 25 a) Two (2) sections from 6-inches inside of the WTB at frame 60 to  
26 within 6-inches of the WTB at frame 75 as laid out by the WSF  
27 Inspector and Vessel Staff Chief Engineer.
- 28 D. All new piping and fittings shall be schedule 40 galvanized. Take down joints  
29 shall be provided within 12-inches of each WTB.
- 30 E. Flush all new and disturbed piping in their entirety to the satisfaction of the WSF  
31 Inspector.
- 32 F. Hydrostatically test all new piping to 75 PSI to the satisfaction of the US Coast  
33 Guard and WSF Inspector.
- 34 G. Operationally test the new installations to the satisfaction of the US Coast Guard  
35 and WSF Inspector. WSF will assist the Contractor with the lineup and operation  
36 of the system.  
37

- 1 H. Test all disturbed WTB penetrations to the satisfaction of the US Coast Guard and  
2 WSF Inspector.
- 3 I. Saw cut the removed sections of piping in to 6-foot sections to allow inspection  
4 by the WSF Inspector.
- 5 J. All piping shall not be painted with the exception of all welds and or abraded  
6 areas which shall be prepared to a SSPC SP-10 power tool cleaning to bare steel  
7 and coated with one (1) coat of GALVACON GC-243 to 2 mils (DFT).
- 8 K. Prepare new and disturbed areas of the Vessel structure in way of this work to an  
9 SSPC-SP 11, power tool cleaning to bare steel and coated with two (2) coats of  
10 contrasting colors, applied to 4 - 5 mils (DFT) each, of Sherwin Williams  
11 Seaguard 6000.
- 12 L. Top coated with one (1) coat of Sherwin Williams Industrial Enamel applied at 4-  
13 5 mils (DFT), color to match surrounding areas.

14 **13. SEWAGE SYSTEM PIPING REPLACEMENT**

- 15 A. The Contractor shall provide the service of International Inspection to perform  
16 eight (8) hours of non-destructive, "Single Pass Ultrasonic Pipe Scanning", on  
17 areas of the Sewage System piping, as directed by the WSF Staff Chief Engineer.  
18 The Contractor shall provide a written report of test results to the WSF Inspector  
19 within one (1) working day of the date of testing.

20  
21 International Inspection, Inc.  
22 Mr. Duncan McClure  
23 3229 South 148<sup>th</sup> St.  
24 SeaTac, WA 98168  
25 Tel: (206) 766-8189  
26 Fax: (206) 766-8186  
27 Mobile: (206) 890-4169  
28

- 29 B. Within one (1) working day of WSF receipt of the Contractor's written report of  
30 test results, the WSF Project Engineer will either direct the Contractor to proceed  
31 with the scope of work detailed in paragraphs "C" through "J" of Work Item 13,  
32 or provide a revised scope of work. The Contract will be adjusted upward or  
33 downward to account for the scope of work authorized by the WSF Project  
34 Engineer.
- 35 C. **For the purposes of estimating:** The Contractor shall include pricing for  
36 replacement sewage discharge piping on the No. 1 End from the first valve  
37 downstream of the sewage pump discharge to the main deck discharge end. Todd  
38 Shipyard Corporation. **Drawing 6605-505-5**, 440' Cross Sound Ferry Sewage  
39 Discharge Piping Arrangement & Detail is provided for reference.
- 40 D. Remove and reinstall all interferences necessary to complete this Item.
- 41 E. Replace the entire length of piping from approximately frame 47.5 to  
42 approximately frame 88 including all valves.

- 1 F. All new piping and fittings shall be schedule 40 galvanized.
- 2 G. Test the new installations to the satisfaction of the US Coast Guard and WSF  
3 Inspector.
- 4 H. All piping contained in the voids shall not be painted with the exception of all  
5 welds and or abraded areas which shall be prepared to a SSPC SP-10 power tool  
6 cleaning to bare steel and coated with one (1) coat of GALVACON GC-243 to 2  
7 mils (DFT).
- 8 I. Prepare new and disturbed areas of the Vessel structure in way of this work to an  
9 SSPC-SP 11, power tool cleaning to bare steel and coated with two (2) coats of  
10 contrasting colors, applied to 4 - 5 mils (DFT) each, of Sherwin Williams  
11 Seaguard 6000.
- 12 J. Top coated with one (1) coat of Sherwin Williams Industrial Enamel applied at 4 -  
13 5 mils (DFT), color to match surrounding areas.  
14

1   **14.   VEHICLE DECK PLATE FRACTURE REPAIR**

2           A.    Gouge and weld fractures in the port and starboard upper vehicle decks as laid out  
3                    by the WSF Inspector.

4  
5                    **NOTE:**  
6                    **For bidding purposes assume 20 lineal feet of gouging and welding. The**  
7                    **Contract Price will be adjusted upward or downwards to reflect any**  
8                    **difference in area completed.**

9  
10          B.    Test all new welds to the satisfaction of the USCG and the WSF Inspector.

11          C.    All disturbed areas shall be prepared to an SSPC-SP11 Power Tool Cleaning to  
12                   bare steel, and coated with two (2) coats of contrasting colors, applied to 4 - 5  
13                   mils (DFT) each, of Sherwin Williams Seaguard 6000 and a top coated to match  
14                   surrounding areas and renew any safety stripes that may have been disturbed.

15          D.    All disturbed non skid areas (minimum of 1 square foot each) shall be prepared to  
16                   an SSPC-SP11 Power Tool Cleaning to Bare Steel. Apply one (1) coat, Sherwin-  
17                   Williams Seaguard 6000, to obtain 4 to 5 mils (DFT). Apply one (1) coat,  
18                   American Safety MS 7CZLT, gray, to obtain 4 to 5 mils (DFT). Apply one (1)  
19                   NON-SKID coat, American Safety AS-250, Dark Gray.

20          E.    Develop sketches showing the exact locations of all steel repairs by frame  
21                   numbers and square footage. Provide four (4) copies of all sketches to the WSF  
22                   Inspector.

23

1 **15. VEHICLE DECK FRAME SKIP WELD FRACTURE REPAIR**

2 A. Gouge and weld under deck frame to deck connection skip weld fractures in  
3 various areas of the upper vehicle decks as laid out by the WSF Inspector.

4  
5  
6  
7  
8  
9

**NOTE:**

**For bidding purposes assume 200 lineal feet of gouging and welding. The Contract Price will be adjusted upward or downwards to reflect any difference in area completed.**

- 10 B. Test all new welds to the satisfaction of the USCG and the WSF Inspector.
- 11 C. All disturbed areas shall be prepared to an SSPC-SP11 Power Tool Cleaning to  
12 bare steel, and coated with two (2) coats of contrasting colors, applied to 4 - 5  
13 mils (DFT) each, of Sherwin Williams Seaguard 6000 and top coated to match  
14 surrounding areas and renew any safety stripes that may have been disturbed.
- 15 D. All disturbed non skid areas (minimum of 1 square foot each) shall be prepared to  
16 an SSPC-SP11 Power Tool Cleaning to Bare Steel. Apply one (1) coat, Sherwin-  
17 Williams Seaguard 6000, to obtain 4 to 5 mils (DFT). Apply one (1) coat,  
18 American Safety MS 7CZLT, gray, to obtain 4 to 5 mils (DFT). Apply one (1)  
19 NON-SKID coat, American Safety AS-250, Dark Gray.
- 20 E. Develop sketches showing the exact locations of all steel repairs by frame  
21 numbers and square footage. Provide four (4) copies of all sketches to the WSF  
22 Inspector.  
23

1 **16. UPPER AND LOWER VEHICLE DECK, DECK DRAIN POCKET STEEL**  
2 **RENEWAL**

- 3 A. Open all upper and lower vehicle deck, deck drain pockets for inspection by the  
4 WSF Inspector. Todd Shipyard **Drawing 6605-510-1**, 440', Cross Sound Ferry  
5 Weather Deck Drains Piping Arrangement and Detail, is provided as reference.
- 6 B. Crop out and renew various lower vehicle deck, deck drain pockets steel as laid  
7 out by the WSF Inspector.

8 **NOTE:**

9 **For bidding purposes assume twelve (12) complete drain pockets, including**  
10 **vehicle deck and vertical pocket sides will require renewal. The Contract**  
11 **Price will be adjusted upward or downward to reflect any difference in area**  
12 **completed. The Curbing in these areas may be filled with foam.**

- 13 C. Provide ABS mill certification, and ASTM certification for all new steel prior to  
14 moving steel onboard.
- 15 D. Remove and replace all interferences as required to complete this Work Item.
- 16 E. Test all new welds to the satisfaction of the USCG and the WSF Inspector.
- 17 F. New steel shall be grit blasted to SSPC-SP 10, Near-White Blast Cleaning, and  
18 coated with an appropriate weld through primer, prior to installation on the  
19 Vessel.
- 20 G. All disturbed areas shall be prepared to an SSPC-SP11 Power Tool Cleaning to  
21 bare steel, and coated with two (2) coats of contrasting colors, applied to 4 - 5  
22 mils (DFT) each, of Sherwin Williams Seaguard 6000 and a top coated to match  
23 surrounding areas and renew any safety stripes that may have been disturbed.
- 24 H. All disturbed non skid areas (minimum of 1 square foot each) shall be prepared to  
25 an SSPC-SP11 Power Tool Cleaning to Bare Steel. Apply one (1) coat, Sherwin-  
26 Williams Seaguard 6000, to obtain 4 to 5 mils (DFT). Apply one (1) coat,  
27 American Safety MS 7CZLT, gray, to obtain 4 to 5 mils (DFT). Apply one (1)  
28 NON-SKID coat, American Safety AS-250, Dark Gray.
- 29 I. Develop sketches showing the exact locations of all steel repairs by frame  
30 numbers and square footage. Provide four (4) copies of all sketches to the WSF  
31 Inspector.
- 32 J. Chase all drain pocket cover mounting bolt holes and reinstall using new counter  
33 sunk 316 stainless steel fasteners. All fasteners shall be installed using LOCTITE  
34 Nickel Anti-Seize Lubricant.  
35

1 17. **GALLERY DECK STEEL RENEWAL IN WAY OF FIRE SCREEN DOOR**  
2 **RENEWAL**

3 A. Crop out and renew various areas of Gallery deck and bulkhead steel in way of  
4 the Fire Screen Door Renewal as laid out by the WSF Inspector.

5 **NOTE:**

6 **For bidding purposes assume 10 sq ft of 10.2 # Corten deck plate and 6 sq ft**  
7 **of 7.65 # bulkhead plate will require renewal at each door. The Contract**  
8 **Price will be adjusted upward or downward to reflect any difference in area**  
9 **completed.**

10 B. Provide ABS mill certification, and ASTM certification for all new steel prior to  
11 moving steel onboard.

12 C. Remove and replace all interferences as required to complete this Work Item.

13 D. Test all new welds to the satisfaction of the USCG and the WSF Inspector.

14 E. New steel shall be grit blasted to SSPC-SP 10, Near-White Blast Cleaning, and  
15 coated with an appropriate weld through primer, prior to installation on the  
16 Vessel.

17 F. All disturbed areas shall be prepared to an SSPC-SP11 Power Tool Cleaning to  
18 bare steel, and coated with two (2) coats of contrasting colors, applied to a  
19 minimum of 5 mils (DFT) each, of Sherwin Williams Seaguard 6000 and top  
20 coated to match surrounding areas and renew any safety stripes that may have  
21 been disturbed.

22 G. All disturbed non skid areas (minimum of 1 square foot each) shall be prepared to  
23 an SSPC-SP11 Power Tool Cleaning to Bare Steel. Apply one (1) coat, Sherwin-  
24 Williams Seaguard 6000, to obtain 4 to 5 mils (DFT). Apply one (1) coat,  
25 American Safety MS 7CZLT, gray, to obtain 4 to 5 mils (DFT). Apply one (1)  
26 NON-SKID coat, American Safety AS-250, Dark Gray.

27 H. Develop sketches showing the exact locations of all steel repairs by frame  
28 numbers and square footage. Provide four (4) copies of all sketches to the WSF  
29 Inspector.

30 I. This Item shall be completed in conjunction with the **Gallery Deck Fire Screen**  
31 **Door Renewal Item.**

32

1 **18. VENT PLENUM AND FLANGE PLATE STEEL RENEWAL**

2 A. Crop out and renew areas of wasted steel of the Vent Plenum bulkhead steel and  
3 Flange Plate at approximately frame 58 on the No 2 End as shown on **WSF**  
4 **Sketch 001** as laid out by the WSF Inspector.

5 **NOTE:**

6 **Provide ABS mill certification, and ASTM certification for all new steel prior**  
7 **to moving steel onboard.**

8 B. Remove and replace all interferences as required to complete this Work Item.

9 C. Test all new welds to the satisfaction of the USCG and the WSF Inspector.

10 D. New steel shall be grit blasted to SSPC-SP 10, Near-White Blast Cleaning, and  
11 coated with an appropriate weld through primer, prior to installation on the  
12 Vessel.

13 E. All disturbed areas shall be prepared to an SSPC-SP11 Power Tool Cleaning to  
14 bare steel, and coated with two (2) coats of contrasting colors, applied to a  
15 minimum of 5 mils (DFT) each, of Sherwin Williams Seaguard 6000 and top  
16 coated to match surrounding areas and renew any safety stripes that may have  
17 been disturbed.

18 F. All disturbed non skid areas (minimum of 1 square foot each) shall be prepared to  
19 an SSPC-SP11 Power Tool Cleaning to Bare Steel. Apply one (1) coat, Sherwin-  
20 Williams Seaguard 6000, to obtain 4 to 5 mils (DFT). Apply one (1) coat,  
21 American Safety MS 7CZLT, gray, to obtain 4 to 5 mils (DFT). Apply one (1)  
22 NON-SKID coat, American Safety AS-250, Dark Gray.

23 G. Develop sketches showing the exact locations of all steel repairs by frame  
24 numbers and square footage. Provide four (4) copies of all sketches to the WSF  
25 Inspector.

26 H. This Item shall be completed prior to **Preparation And Painting Of Zone No. 4**  
27 **Item.**

28

# TOPSIDE PAINTING

## Zone Descriptions for Topside Painting

1 M/V WALLA WALLA is divided into nine (9) Zones for inspection, surface  
2 preparation, painting, and bidding purposes. Not all areas in each Zone may require  
3 Work by these Specifications. Each Specification Item stands alone.

4 **NOTE:**

5 **Prior to commencing surface preparation the Contractor will present all areas for**  
6 **inspection of protective measures taken to prevent harm or damage to Vessel's**  
7 **equipment, other surfaces and systems.**

8

9 **Zone No. 1** Sun Deck exterior surfaces beginning at the top edge of the Curtain Plate  
10 above the passenger cabin windows and extending to the top of the Masts.  
11 All exterior surfaces and tops of No. 1 and No. 2 End Pilotheuses, Texas  
12 house (Crews Quarters), Solariums (Exterior/Interior), Midship house,  
13 Stairway shelters, exhaust stacks, doors, vent louvers (interior/exterior),  
14 vent trunks, ladders, passenger benches, deck edge coaming, vestibules,  
15 Masts and all other appurtenances.

16 **Zone No. 2** Upper Deck (Passenger Deck) exterior surfaces (outside of the Passenger  
17 cabin) from the Upper Deck (Passenger Deck) level to the top edge of the  
18 Curtain Plate above the Passenger cabin windows and below the Texas  
19 Deck handrail screens includes all weather surfaces of both the Port &  
20 Starboard Passenger Cabin exteriors, troughs and safety handrails below  
21 the windows, overhang above the windows, drain pipes and hangers, Nos.  
22 1 and No. 2 End Promenade exteriors, Nos. 1 and 2 End Promenade  
23 interiors, No. 1 and No. 2 End Pickleforks areas, all attachments and  
24 appurtenances, ladders, overhangs, bulkheads, fire stations, doors and  
25 passenger seating.

26 **Zone No. 3** Port & Starboard Curtain Plating from the outboard top edge of the guard  
27 to the Upper Deck (Passenger Deck) level and from the Curtain Plate  
28 extremes at No. 1 and No. 2 End, including the anchor stowage area and  
29 anchor, fixtures, vents and louvers (interior/exterior).  
30



1    **19.    PREPARATION AND PAINTING OF ZONE NO. 4**

2    **NOTE:**

3    **The Contractor is advised to exercise care and caution to assure that all insulation,**  
4    **light fixtures, speakers, security equipment, MES & associated equipment, cabling,**  
5    **alarms and appurtenances are protected and not damaged during the course of this**  
6    **Work.**

7    A.    Temporarily remove or lower and support all light fixtures, speakers, security  
8        equipment, and all other panels and controllers to ensure that the faying surfaces  
9        are properly prepared and coated in way of 100% preparation areas. Remove the  
10       MES's as **Category "C"**. Raise all cables in the strap type hangers to allow all  
11       surfaces to be prepared and coated. All Items removed or lowered shall be  
12       reinstalled using 316L stainless steel hardware. All raised cables shall be  
13       reinstalled using new rubber and stainless steel banding.

14   B.    Remove and reinstall interferences as necessary to complete this Item.

15   C.    Perform a Low Pressure Water Cleaning (LP WC) at 3,000 - 5,000 PSI to achieve  
16       a condition of SC-1 IAW Table 2 (Non-visual Surface Preparation Definitions) in  
17       SSPC-SP 12/NACE 5 Publication, in Zone No. 4. The wand shall be held no  
18       more that twelve-inches (12") from surface being washed. The intent of this  
19       Work Item is to wash all surfaces in Zone No. 4 as described in the Zone  
20       Description for Topside Painting.

21   D.    Perform an inspection of the entire fresh water washed areas to the satisfaction of  
22       the WSF Inspector prior to proceeding with any preparation for painting, or  
23       painting.

24   E.    Grit blast the entire Zone including inboard and outboard curbing and out  
25       approximately eighteen-inches (18") of the deck area from No. 1 End to No. 2  
26       End extremes, to SSPC-SP 6, Commercial Blast Cleaning. Work includes raising  
27       of cables in the strap type hangers and grit blasting of these wire ways.  
28

- 1 F. Coat the vertical and overhead areas of Zone No. 4 as follows:
- 2 1) Apply one (1) coat of Sherwin-Williams, Corothane I Galva-Pac Zinc,  
3 Gray, 3-4 mils (DFT) to all surfaces prepared to a SSPC –SP6.
- 4 2) The back sides, corners and sharp edges of all angles, rat holes, scallops  
5 and beams shall be hand-stripped, using the brush method, with an  
6 additional 3-4 mils (DFT) of Sherwin-Williams, Seaguard 6000 red.
- 7 3) Apply one (1) full coat of Sherwin Williams Seaguard 6000 Off White, to  
8 4-5 mils (DFT) to all surfaces.
- 9 4) Apply one (1) full top coat of Sherwin Williams Polysiloxane SW XLE-80  
10 to all surfaces, of proper color, to 6-7 mils (DFT). Colors shall be as  
11 detailed in IFB Volume II, Supplemental Special Provisions, **WSF 001**,  
12 Marine Coating and Color Scheme Specifications.
- 13 G. Coat the safety striping, stencils that are non skidded in Zone No. 4 as follows:
- 14 1) Apply one (1) coat of Sherwin-Williams, Corothane I Galva-Pac Zinc,  
15 Gray, 2-3 mils (DFT). to all surfaces prepared to a SSPC –SP6.
- 16 2) Apply one (1) primer coat, American Safety MS 7CZLT, gray, to obtain 4  
17 to 5 mils (DFT) 1 day prior to applying non-skid.
- 18 3) Apply one (1) NON-SKID coat of American Safety AS-150, Safety  
19 Yellow.
- 20 H. Coat the curbing in Zone No. 4 as follows:
- 21 1) Apply one (1) coat of Sherwin-Williams, Corothane I Galva-Pac Zinc,  
22 Gray, 2-3 mils (DFT) to all surfaces prepared to a SSPC –SP6.
- 23 2) Apply one (1) primer coat, American Safety MS 7CZLT, gray, to obtain 4  
24 to 5 mils (DFT).
- 25 3) Apply one (1) NON-SKID coat of American Safety AS-150, Safety  
26 Yellow.  
27

1   **20.    PREPARATION AND PAINTING OF ZONE NO. 5**

2   **NOTE:**

3   **The Contractor is advised to exercise care and caution to assure that all insulation,**  
4   **light fixtures, speakers, security equipment, cabling, alarms and appurtenances are**  
5   **protected and not damaged during the course of this Work.**

6    A.    Temporarily remove or lower and support all light fixtures, speakers, security  
7           equipment, and all other panels and controllers to ensure that the faying surfaces  
8           are properly prepared and coated in way of 100% preparation areas.   Raise all  
9           cables in the strap type hangers to allow all surfaces to be prepared and coated.  
10           All Items removed or lowered shall be reinstalled using 316L stainless steel  
11           hardware. All raised cables shall be reinstalled using new rubber and stainless  
12           steel banding.

13   B.    Remove and reinstall interferences as necessary to complete this Item.

14   C.    Perform a Low Pressure Water Cleaning (LP WC) at 3,000 - 5,000 PSI to achieve  
15           a condition of SC-1 IAW Table 2 (Non-visual Surface Preparation Definitions) in  
16           SSPC-SP 12/NACE 5 Publication, in Zone No. 5. The wand shall be held no  
17           more that twelve-inches (12") from surface being washed. The intent of this  
18           Work Item is to wash all surfaces in Zone No. 5 as described in the Zone  
19           Description for Topside Painting.

20   D.    Perform an inspection of the entire fresh water washed areas to the satisfaction of  
21           the WSF Inspector prior to proceeding with any preparation for painting, or  
22           painting.

23   E.    Grit blast the entire zone including inboard and outboard curbing and out  
24           approximately eighteen-inches (18") of the deck area from No. 1 End to No. 2  
25           End extremes, to SSPC-SP 6, Commercial Blast Cleaning.

26   F.    Coat the vertical and overhead areas of Zone No. 5 as follows:

27           1)    Apply one (1) coat of Sherwin-Williams, Corothane I Galva-Pac Zinc,  
28                   Gray, 3-4 mils (DFT) to all surfaces prepared to a SSPC –SP6.

29           2)    The back sides, corners and sharp edges of all angles, rat holes, scallops  
30                   and beams shall be hand-striped, using the brush method, with an  
31                   additional 3-4 mils (DFT) of Sherwin-Williams, Seaguard 6000 red.

32           3)    Apply one (1) full coat of Sherwin Williams Seaguard 6000 Off White, to  
33                   4-5 mils (DFT) to all surfaces.

34           4)    Apply one (1) full top coat of Sherwin Williams Polysiloxane SW XLE-80  
35                   to all surfaces, of proper color, to 6-7 mils (DFT). Colors shall be as  
36                   detailed in IFB Volume II, Supplemental Specifications, **WSF 001**,  
37                   Marine Coating and Color Scheme Specifications.

- 1           G.     Coat the safety striping, stencils that are non skidded in Zone No. 5 as follows:
- 2                 1)     Apply one (1) coat of Sherwin-Williams, Corothane I Galva-Pac Zinc,  
3                         Gray, 2-3 mils (DFT). to all surfaces prepared to a SSPC –SP6.
- 4                 2)     Apply one (1) primer coat, American Safety MS 7CZLT, gray, to obtain 4  
5                         to 5 mils (DFT) 1 day prior to applying non-skid.
- 6                 3)     Apply one (1) NON-SKID coat of American Safety AS-150, Safety  
7                         Yellow.
- 8           H.     Coat the curbing in Zone No. 5 as follows:
- 9                 1)     Apply one (1) coat of Sherwin-Williams, Corothane I Galva-Pac Zinc,  
10                         Gray, 2-3 mils (DFT). to all surfaces prepared to a SSPC –SP6.
- 11                 2)     Apply one (1) primer coat, American Safety MS 7CZLT, gray, to obtain 4  
12                         to 5 mils (DFT).
- 13                 3)     Apply one (1) NON-SKID coat of American Safety AS-150, Safety  
14                         Yellow.
- 15

1   **21.    PREPARATION AND PAINTING OF ZONE NO. 6. (DECKS)**

2  
3       A.     The intent of this Item is to prepare and paint various deck areas in Zone No. 6 as  
4       follows:

- 5           1)                    No. 1 and No. 2 End Passenger Deck Pickleforks.  
6                                Areas of corrosion under stairs leading to Texas deck, approximately 25  
7                                sqft in each of four (4) areas.  
8           2)                    Entire Texas deck.  
9           3)                    Entire upper and lower outboard vehicle decks including  
10                                the ramps.  
11          4)                    Entire center vehicle deck.  
12          5)                    Stairways from main deck to door at upper vehicle deck.

13  
14       **NOTE:**

15       **Video, map out and record all of the deck stencils, marks, labels, signs,**  
16       **walkways and safety striping in way of the Work in Zone No. 6, using color**  
17       **photos which clearly show locations and legible text. Provide one (1)**  
18       **complete copy of this record, in booklet form to the WSF Inspector prior to**  
19       **any removals, blasting and painting.**

- 20  
21       B.     Remove and reinstall interferences as necessary to complete this Item.  
22       C.     Remove all deck covering from all stairway steps from the main vehicle deck to  
23       the door at the upper vehicle deck.  
24       D.     Perform a Low Pressure Water Cleaning (LP WC) at 3,000 - 5,000 PSI to achieve  
25       a condition of SC-1 IAW Table 2 (Non-visual Surface Preparation Definitions) in  
26       SSPC-SP 12/NACE 5 Publication, in Zone No. 6. The wand shall be held no  
27       more that twelve-inches (12") from surface being washed. The intent of this  
28       Work Item is to wash all surfaces in Zone No. 6 as described in the Zone  
29       Description for Topside Painting.  
30       E.     Perform an inspection of the entire fresh water washed areas to the satisfaction of  
31       the WSF Inspector prior to proceeding with any preparation for painting, or  
32       painting.  
33       F.     Grit blast all areas of Zone No. 6 as defined in **Paragraph A** of this Item to  
34       SSPC-SP 6, Commercial Blast Cleaning.  
35

- 1 G. Coat the Texas deck as follows:
- 2 1) Apply one (1) coat of Sherwin-Williams, Corothane I Galva-Pac Zinc,  
3 Gray, 2-3 mils (DFT) to all surfaces prepared to a SSPC –SP6.
- 4 2) Apply one (1) primer coat, American Safety MS 7CZLT, gray, to obtain 4  
5 to 5 mils (DFT) 1 day prior to applying non-skid.
- 6 3) Top coat non-skidded areas with one (1) NON-SKID coat of American  
7 Safety AS-250, Haze Gray.
- 8 4) Top coat areas that are not non-skidded with one (1) coat of Sherwin  
9 Williams Hi-solids Polyurethane 3-4 mils (DFT) color to match non-skid.
- 10 H. Coat the Pickle fork deck in the prepared areas as follows:
- 11 1) Apply one (1) coat of Sherwin-Williams, Corothane I Galva-Pac Zinc,  
12 Gray, 2-3 mils (DFT). to all surfaces prepared to a SSPC –SP6.
- 13 2) Apply one (1) primer coat, American Safety MS 7CZLT, gray, to obtain 4  
14 to 5 mils (DFT) 1 day prior to applying non-skid.
- 15 3) Top coat non-skidded areas with one (1) NON-SKID coat of American  
16 Safety AS-250, Haze Gray.
- 17 4) Top coat areas that are not non-skidded with one (1) coat of Sherwin  
18 Williams Hi-solids Polyurethane 3-4 mils (DFT) color to match non-skid.
- 19 I. Coat the Stairway decks as follows:
- 20 1) Apply one (1) coat of Sherwin-Williams, Corothane I Galva-Pac Zinc, Gray,  
21 2-3 mils (DFT). to all surfaces prepared to a SSPC –SP6.
- 22 2) Apply one (1) primer coat, American Safety MS 7CZLT, gray, to obtain 4 to  
23 5 mils (DFT) 1 day prior to applying non-skid.
- 24 3) Top coat non-skidded areas with one (1) NON-SKID coat of American Safety  
25 AS-250, Haze Gray.
- 26 4) Top coat areas that are not non-skidded with one (1) coat of Sherwin  
27 Williams Hi-solids Polyurethane 3-4 mils (DFT) color to match non-skid.
- 28 J. Coat the Vehicle decks as follows:
- 29 1) Apply one (1) coat of Sherwin-Williams, Corothane I Galva-Pac Zinc, Gray,  
30 2-3 mils (DFT) to all surfaces prepared to a SSPC –SP6.
- 31 2) Prime all non-skidded areas with one (1) coat, American Safety MS 7CZLT,  
32 gray, to obtain 4 to 5 mils (DFT) 1 day prior to applying non-skid.
- 33 3) Top coat non-skidded areas with one (1) NON-SKID coat of American Safety  
34 AS-250, Dark Gray.
- 35 4) Safety striping and signage shall be top coated with one (1) coat of Sherwin  
36 Williams Hi-solids Polyurethane 3-4 mils (DFT) color to match existing.
- 37 K. Install new Wooster Products 500BY3 Aluminum stair treads in all stairways  
38 previously prepared.

1    **22.    PREPARATION AND PAINTING OF ZONE NO. 7. (STAIRWAYS)**

2            A.    Temporarily remove or lower and support all light fixtures, speakers, security  
3                   equipment, and all other panels and controllers to ensure that the faying surfaces  
4                   are properly prepared and coated in way of 100% preparation areas.    Raise all  
5                   cables in the strap type hangers to allow all surfaces to be prepared and coated.  
6                   All Items removed or lowered shall be reinstalled using 316L stainless steel  
7                   hardware. All raised cables shall be reinstalled using new rubber and stainless  
8                   steel banding.

9            B.    Remove and reinstall interferences as necessary to complete this Item.

10           C.    Perform a Low Pressure Water Cleaning (LP WC) at 3,000 - 5,000 PSI to achieve  
11                   a condition of SC-1 IAW Table 2 (Non-visual Surface Preparation Definitions) in  
12                   SSPC-SP 12/NACE 5 Publication, in Zone No. 7. The wand shall be held no  
13                   more than twelve-inches (12”) from surface being washed. The intent of this  
14                   Work Item is to wash all surfaces in Zone No. 7 from the main deck to the door at  
15                   the upper vehicle deck.

16           D.    Perform an inspection of the entire fresh water washed areas to the satisfaction of  
17                   the WSF Inspector prior to proceeding with any preparation for painting, or  
18                   painting.

19           E.    Grit blast the entire stairways from the main deck to the door on the upper vehicle  
20                   deck, to SSPC-SP 6, Commercial Blast Cleaning. Work includes raising of cables  
21                   in the strap type hangers and grit blasting of these wire ways.

22           F.    Coat the vertical and overhead areas of Zone No. 7 as follows:

- 23                   1)    Apply one (1) coat of Sherwin-Williams, Corothane I Galva-Pac Zinc,  
24                   Gray, 3-4 mils (DFT) to all surfaces prepared to a SSPC –SP6.
- 25                   2)    The back sides, corners and sharp edges of all angles, rat holes, scallops  
26                   and beams shall be hand-striped, using the brush method, with an  
27                   additional 3-4 mils (DFT) of Sherwin-Williams, Seaguard 6000 red.
- 28                   3)    Apply one (1) full coat of Sherwin Williams Seaguard 6000 Off White, to  
29                   4-5 mils (DFT) to all surfaces.
- 30                   4)    Apply one (1) full top coat of Sherwin Williams Polysiloxane SW XLE-80  
31                   to all surfaces, of proper color, to 6-7 mils (DFT). Colors shall be as  
32                   detailed in IFB Volume II, Supplemental Specifications, **WSF 001**,  
33                   Marine Coating and Color Scheme Specifications.

34

1   **23.    PREPARATION AND PAINTING OF ZONE NO. 8**

2           A.    Video, map out and record all of the Vessel stencils, marks, labels, signs,  
3           placards, operating instructions, and safety striping in way of the Work in Zone  
4           Nos. 4, 5, and 7, using color photos which clearly show locations and legible text.  
5           Provide one (1) complete copy of this record, in booklet form to the WSF  
6           Inspector prior to any removals, blasting and painting.

7           B.    The Contractor is responsible for replacing, with Contractor provided new, all  
8           stencils, marks, labels, signs, placards, placard holders, sign frames, operating  
9           instructions, and safety striping, when the painting is completed. Such stencils,  
10          marks, labels, signs, placards, operating instructions, and safety striping are to be  
11          located, shaped, colored, and sized exactly as they were when the Vessel arrived  
12          at the Contractor's facility.

13          C.    Remove all stencils, marks, labels, signs, placards and operating instructions that  
14          are fastened to the surfaces of Zone Nos. 4, 5, and 7 after mapping is completed,  
15          and prior to commencing the fresh water wash. Ensure all glue, adhesive, and  
16          tape is removed from the surfaces prior to the fresh water wash.

17  
18           **NOTE:**  
19           **Masking of stencils, marks, labels, signs, placards, operating instructions,**  
20           **and safety striping will not be allowed without prior written approval by the**  
21           **WSF Inspector.**

22  
23          D.    Manufacture, procure, and/or paint all new stencils, marks, labels, signs, sign  
24          frames, placards, placard holders, operating instructions, safety striping and  
25          dadoes. Paint used for stencils, marks, labels, signs, placards, operating  
26          instructions, safety striping and dadoes must be compatible with the top coat on  
27          the surface where it is applied, without wrinkling, peeling, or lifting. All labeling  
28          attached with fasteners, shall have those fasteners replaced with new, Contractor  
29          furnished, Type 316 stainless steel fasteners.

30

1 **24. PREPARATION AND PAINTING OF ZONE NO. 9, HANDRAILS AND**  
2 **SCREENS**

- 3 A. Remove all screens in Zones Nos. 4, 5, and 7 including all transverse  
4 passageways between the outer and center vehicle decks.
- 5 B. Prepare all screens to SSPC-SP6, "Commercial Blast Cleaning".
- 6 C. Prepare all handrails to SSPC-SP6, "Commercial Blast Cleaning".
- 7 D. Apply one (1) coat of Far West Formula 117, at 2-3 mils (DFT) to all galvanized,  
8 aluminum, or stainless steel surfaces. Apply one (1) coat of Sherwin-Williams,  
9 Corothane I Galva-Pac Zinc, Gray, 2-3 mils (DFT) to all steel surfaces.
- 10 1) Apply one (1) coat of Sherwin Williams Seaguard 6000 off white, to 4-5  
11 mils (DFT) to all prepared surfaces.
- 12 2) Apply one (1) coat of Sherwin Williams Seaguard 6000 red, to 4-5 mils  
13 (DFT) to all prepared surfaces.
- 14 3) Apply one (1) top coat of Sherwin Williams Polysiloxane SW XLE-80 to  
15 all prepared surfaces to 6-7 mils (DFT). Colors shall match surrounding.
- 16 E. Reinstall screens using new 316L stainless steel fasteners.

17 **25. POWER TOOL CLEANING TO BARE METAL**

- 18 A. Prepare various areas throughout Zone Nos. 1 - 9 to an SSPC-SP 11, Power Tool  
19 Cleaning to bare steel as directed by the WSF Inspector.

20 **NOTE:**

21 **For bidding purposes, assume that a total of 1,000 Square Feet (SF) shall**  
22 **require SSPC-SP 11, Power Tool cleaning to bare steel. The Contract will be**  
23 **adjusted upwards or downwards to account for the actual area authorized by**  
24 **the WSF Inspector.**

- 25 B. Areas prepared in **Paragraph A** of this Item shall be coated with the following:
- 26 1) Apply one (1) coat of Sherwin Williams Seaguard 6000 off white, to 4-5  
27 mils (DFT) to all prepared surfaces.
- 28 2) Apply one (1) coat of Sherwin Williams Seaguard 6000 red, to 4-5 mils  
29 (DFT) to all prepared surfaces.
- 30 3) Apply one (1) top coat of Sherwin Williams Polysiloxane SW XLE-80 to  
31 all prepared surfaces to 6-7 mils (DFT). Colors shall match surrounding.  
32

1    **26.    APPLICATION OF CAULKING COMPOUND**

2    **NOTE:**

3    **Caulking compound shall be Sherwin-Williams, Stampede 1, color to match**  
4    **surrounding. Caulking compound is to be applied in accordance with the Sherwin-**  
5    **Williams recommendations related to surface preparation, thickness, width, and**  
6    **proper cure time prior to top coating with paint.**

7    A.    Apply caulking compound to all non-welded areas between all skip welds where  
8        the existing caulking is removed by preparation in pervious Items or missing.

9    B.    Caulking shall be applied after the application of the Sherwin Williams  
10        Polysiloxane topcoat.

11    **NOTE:**

12    **For bidding purposes, assume that 20,000 Lineal Feet (LF) of caulking shall**  
13    **be required for this Work Item. Upon completion of the preparation and**  
14    **painting, the Contract will be adjusted upward or downward to account for**  
15    **the actual area authorized by the WSF.**

16    **27.    EXTERIOR BENCH SEAT PREP AND POWDER COAT**

17    A.    Remove all Sun Deck Exterior bench seats and all Sun Deck Solariums bench  
18        seats from the Vessel. Todd Shipyards Corporation, **Drawing 6605-612-05,**  
19        Arrangement Sun Deck & Above, is provided for reference.

20    B.    Remove all existing coatings, prepare, and powder coat all surfaces, color to be  
21        **WSF Green.**

22    C.    Coating shall be for exterior exposed locations. Fish eyes in the coating will not  
23        be accepted.

24    **NOTE:**

25    **Some disassembly maybe required to prepare and powder coat the benches.**  
26    **The Contractor shall be responsible for all disassembly and reassembly.**  
27    **Reassembly shall be accomplished using new Contractor provided;**  
28    **manufacturer’s recommended fasteners, powdered coated to match.**

29    C.    Reinstall all benches using new 316L stainless steel fasteners and dielectric  
30        gaskets between the bench and the deck.

31    **28.    GUAGE VESSEL STEEL**

32    A.    Provide labor, materials and equipment to perform an ultrasonic survey of the  
33        Vessel’s steel plating thickness:

34        **200 shots** as designated by the Staff Chief Engineer and the WSF Inspector.  
35

36  
37    **29.    VESSEL STEEL REPAIRS – FRAME 18 AFT**

1  
2  
3  
4  
5  
6  
7  
8  
9

- A. The Contractor shall clean and gas free all spaces associated with the Work, as necessary, and obtain a Marine Chemist certificate for “SAFE FOR WORKERS” and “SAFE FOR HOT WORK”. Maintain the certificate during the course of the Work.
- B. The Contractor shall remove the two (2) gas cylinders and mounting brackets, located in the Engineer’s Workshop at frame 18 Aft (see photo 32-A).



**Photo 32-A**

10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40

- C. The Contractor shall plug weld the four (4) 3/8” clearance holes drilled through the bulkhead to mount the gas cylinder holding straps. The Contractor shall grind the welds flush to the steel plate on both sides of the bulkhead.
- D. The Contractor shall fabricate two (2) “U” shaped bracket mounts made of 1 1/2” x 1/4” steel flat bar, pre-drilled to match the hole patterns of the gas cylinder mounting brackets. The mounts shall be fabricated to stand away from the bulkhead enough to leave sufficient room between the mount and the bulkhead to install fasteners.
- E. The Contractor shall weld the newly fabricated brackets to the bulkhead in the pre-existing locations of the gas cylinder mounting brackets.
- F. The Contractor shall test all new welds to the satisfaction of the USCG and the WSF Inspector.
- G. All disturbed areas shall be Contractor prepared to an SSPC-SP11 Power Tool Cleaning to bare steel, and coated with two (2) coats of contrasting colors, applied to a minimum of 5 mils (DFT) each, of Sherwin Williams Seaguard 6000 and top coated to match surrounding areas.
- H. The Contractor shall reinstall the two (2) gas cylinders and gas cylinder holding straps.
- I. The Contractor shall secure the two (2) gas cylinder holding straps using new 316L stainless steel fasteners.

1

2 **30. SIDE LIGHT SHIELD AND STERN LIGHT FOUNDATION REPLACEMENT**

3

4

A. Using the vessel Tag-out/Log-out system, in cooperation with the Staff Chief Engineer, The Contractor shall de-energize and tag out the electrical power supplies to the Navigation Light Panels located in the Pilothouses on No. 1 and No. 2 Ends.

8

9

B. The Contractor shall disconnect and remove the existing Side Light fixtures (4 each) and the existing Stern Light fixtures (2 each) as Category "C" items (detailed in Supplement Specification WSF-004).

10

11

12

C. The Contractor shall template the existing Side Light shields and Stern Light foundations for fabrication of new Contractor fabricated, replacement shields and foundations.

13

14

15

16

D. The Contractor shall fabricate new Side Light shields and Stern Light foundations using new materials equal in all aspects to the existing shields and foundations.

17

18

19

20

E. The Contractor shall remove the existing Side Light shields and Stern Light foundations and grind smooth connecting surfaces, all remaining shield and foundation pieces and welds to the satisfaction of the WSF Inspector.

21

22

23

24

F. The Contractor shall replace the existing kick pipes and stuffing tubes for the No. 1 and No. 2 End side lights.

25

26

27

G. The Contractor shall prepare new and disturbed areas in way of this work to an SSPC-SP 11, power tool cleaning to bare steel and coated with two (2) coats of contrasting colors, applied to 4 - 5 mils (DFT) each, of Sherwin Williams Seaguard 6000.

28

29

30

31

32

H. The Contractor shall top coat with one (1) coat of Sherwin Williams Industrial Enamel applied at 4-5 mils (DFT), color to match surrounding areas.

33

34

35

I. The inside of the side light shields shall be top coated by the Contractor with compatible mat black paint, in accordance with the US Coast Guard 1972-Colregs, Annex 1 (International) Section 5.

36

37

38

39

J. The Contractor shall reinstall and reconnect the existing Side Light fixtures (4 each) and the existing Stern Light fixtures (2 each), previously removed and retained as Category "C" items in paragraph "B" of this work item Specification.

40

41

42

43

K. In cooperation with the Staff Chief Engineer, the Contractor shall remove the electrical tags and reenergize the electrical power supplies to the Navigation Light Panels located in the Pilothouses on No. 1 and No. 2 Ends.

44

45

46

47

1  
2  
3  
4  
5  
6  
7  
8  
9

L. The Contractor shall perform an operational test of the reinstalled Side Light fixtures 4 each) and the reinstalled Stern Light fixtures (2 each), in the presence of the vessel Staff Chief Engineer, WSF Inspector and the U.S. Coast Guard.

**( END )**

Change Orders		VESSEL:	Walla Walla	Group
		CONTRACT NO:	00-8316	
		PROJECT:	Dockside	
ITEM NO.	ITEM			
25	Power Tool Cleaning To Bare Metal (100% credit, was not required)			
CO-1	Prep and Paint Sun Deck			
CO-2	3) Prep and Paint of Handrails and Screens			
VCR-2	Tow from EH to Vigor Everett			
VCR-6 T&M	Exterior Bench Repair			
CO-3	Prep and Paint Promenades			
VCR-9 T&M	Cable Clip Replacement			
VCR-10 T&M	Steel Repairs			
Vigor-14	Vehicle Deck mounted void fan/motor replacement			
WSF-7	Pilothouse spot paint (offset (15K) by Texas Deck reduced scope)			
WSF-8/Vigor-23	Steel Deck Inserts			
WSF-4/Vigor-5	Misc T&M at the direction of WSF Inspector			
CO-4	Repairs to water tight doors (#116, 117, 118, 119 & 120).			
Vigor-13	Reroute electrical cables			
Vigor-19	Promenade Bench Recoat			
Vigor-21	Galvanizing of Car Deck Louvers			
Vigor-24	Steam Coils - Hydro and Flush			
Vigor-25	Junction Boxes for Watertight Doors (4&5)			
Vigor-26	#2 End - Crew Head Deck Steel Renewal			
TBD	Tow back to EH (actual cost)			
TBD	Vigor Requested Lay Days (10/13 - 10/24) / Propose paying 10/13 - 10/15 as there was concurrent work up to 10/31 that was not impacted by steel work			
TBD	Vigor's proposed Compensation to WI (Vigor reduced from WI's requested \$219,965.18. I feel WI was impacted by steel work but not to \$112K, propose to offer \$82K)			
TBD	WI request for added caulk (Randy agreed that this request for \$19,998,00 should not be granted. WI's estimates included welds and areas that did not need or receive caulk in the center VD)			
TBD	1/3 cost of passenger deck area cleaning (DB agreed, as crew and MD had some contribution to the need for cleaning)			
TBD	1/3 cost of passenger deck floor cleaning and waxing. (DB agreed, as crew and MD had some contribution to the need for waxing. Also stripping and waxing was needed in non-traffic areas that were not disturbed by the work)			
TBD	Cost of WK return to sell WTDs to USCG and train A&B crews. (Timing did not work to conduct all when work was completed)			
TBD	Replacement of Walk off mats on pax deck (existing too short due to new Door Sills)			
TBD	Capac fuses (Walla Walla and Spares for Walla Walla and Spokane)			

Amount negotiated down from Vigor's initial request