



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

J. ERIC BOYETTE
SECRETARY

December 16, 2020

Addendum No. 4

Contract No.: DA00492

WBS Element: 16.33001

M/V Sea Level Credit Drydock (CDD)

To Whom It May Concern:

Reference is made to the proposal and plans previously furnished for this project.

The following revision has been made to the proposal and plans:

Pg. 49 – Section 6.5: **Struck thru “but not limited to” and “replace zincs”**

Pg. 50 – Section 7.1: **Struck thru “but not limited to”**

Pg. 51 – Section 7.5: **Struck thru NOTE: TABLE IS FOR REFERENCE ONLY**

Pg. 67 – Section 7.1: **Struck thru “but not limited to, the following”**

Pg. 68 – Changed: The Contractor shall mechanically or by hand prepare and blast and paint the Main Deck and superstructure decks. This includes the curb- structures on the Main Deck.

TO

The Contractor shall mechanically or by power tool cleaning to bare metal, prepare and paint the Main Deck and superstructure decks. This includes the curb- structures on the Main Deck.

Pg. 76 – Changed “items a) through e)”

TO

“items a) through c)”

Pg. 77 – **Added “Vessel total 110 Gallons.” To 21.8 b)**

Pg. 79 – Changed: Bow thruster Tube Exterior painting to be in accordance with section 10 Painting – General of these Special Provisions. Interior of tubes (includes Hull Tubes) to be coated with (Belzona 1341 Supermetalguide) as per manufacturer’s specifications. **CHECKPOINT**

TO

Bow thruster Tube Exterior painting to be in accordance with section 10 Painting – General of these Special Provisions. Interior of tubes (includes Hull Tubes) to be coated with (Belzona 1341 Supermetalguide or ENECON products) as per manufacturer’s specifications. CHECKPOINT

Pg. 81 – Changed: Contractor to install Main Exhaust, Main Generator Exhaust, and Bow Thruster Exhaust with schedule 120 seamless piping and install 45-degree elbows on exterior ends of pipe for exhaust turn downs, NCDOT representative to determine angle.

TO

Contractor to install Main Exhaust, Main Generator Exhaust, and Bow Thruster Exhaust with schedule 120 seamless carbon steel piping and install 45-degree elbows on exterior ends of pipe for exhaust turn downs, NCDOT representative to determine position on vessel.

Pg. 83 – Revised special provision to reference the welds only for “Repair Port and Starboard Cap Rail & Locations in Bulwarks. Revised the description and pay unit under the 25.7 Payment.

Pg. 84 – Changed: Contractor shall mechanically or by hand surface prep, and paint to correct color, refer to Section 10 “Painting-General Special Provisions”.

TO

Contractor shall mechanically or by power tool cleaning to SSPC SP-3, and paint to correct color, refer to Section 10 “Painting-General Special Provisions”.

Pg. 85 – Changed “Duramax Bearing Material”

TO

“Duramax DuraBlue Bearing Material”

Pg. 100 - 103 – **“Bid Form” Changed: the item number, pay units for Line Item #28 from Lump Sum to Linear Feet and removed the reference to #10 locations. This pay item is now Line Item #3**

Additional Drawings

28.1.1 DWG 1-2035 – Global Davit GmbH - Rescue Boat Crane Rhs. 11/3.5

28.1.2 DWG 58301 – Rescue Boat & Davit Foundation

Please replace the Original Pages with the attached Revised Pages and include Additional Drawings where necessary.

The amended EBS File (DA00492.004x) has been uploaded. We apologize for any inconvenience.

Sincerely,

DocuSigned by:

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C. E. Slachta
Division Proposals Engineer

Cc: S. D. Baker, PE
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6.0 MAIN DECK HATCH MAINTENANCE AND REPAIR & 3 MAIN DECK WATERTIGHT DOOR REMOVAL:

6.1 Description:

This section describes the requirements to inspect, repair, and test the main deck hatches. Contractor shall take into consideration work associated with “Open, Clean and Certify Gas Free: Bilges, Holds, and Enclosed Areas” of this section and closely coordinate this work. This section also covers the removal of the 3 watertight doors maintenance and repair on the main deck.

6.2 References:

6.2.1 DWG 09-060 101-01 – Outboard Profile

6.2.2 DWG 09-060 101-02 – General Arrangement

6.2.3 DWG 09-060 167-01 – Schedule of Openings Below Main Deck

6.3 Owner Furnished Equipment:

None

6.4 Hatch Requirements / CHECKPOINT:

The Contractor shall complete the following work on deck hatches:

- a) Contractor shall open and inspect condition of hatch insert rings, hatch gaskets, and hatch operating mechanisms. NCDOT Representative is to provide a list of specific hatches requiring maintenance.
- b) Complete inspections and submit a condition found report no later than five (5) working days after taking control of vessel.
- c) Based on NCDOT’s inspection of vessel, Contractor shall budget to replace [8] ø18” QAWTMH gaskets and [1] 36”x36” QAWTH gasket [DWG 09-060 167-010], as directed by the NCDOT Representative. Gaskets beyond this budgeted amount shall be paid by Supplemental Agreement.
- d) Additional equipment may be recommended to be replaced by Contractor, subject to agreement by NCDOT. These repairs or renewals shall be paid by Supplemental Agreement.

6.5 Watertight Door Removal and Replacement Requirement:

The contractor shall remove the 3 watertight doors on the main deck leading to the CO₂ Containment Area, Tank Room and Engine Room. Once doors are removed, the contractor shall inspect, provide a condition found report and perform any routine maintenance or repair of the doors including ~~but not limited to~~ replacing the gasket, cleaning retaining area, prime and paint, ~~replace zines~~, bushings and pins. Then contractor shall reinstall doors in original locations.

6.6 Tests, Trials and Documentation:

Following refurbishment and re-installation of all hatches and doors, Contractor shall prove all deck hatches watertight when subjected to low pressure or hose wash. Water test all main deck WTD with USCG present. The 3 main deck watertight doors shall be chalk tested for the USCG.

6.7 Payment:

Include all costs associated with repairs and modifications to the various items outlined in this Special Provision in the lump sum contract price for *Generic Ferry Item (Main Deck Hatch Maintenance and Repair)* and *Generic Ferry Item (Remove 3 Main Deck WTD, Maintenance, Repair, and Reinstall)*. No further compensation will be made.

7.0 SEA VALVES:**7.1 Description:**

This section describes the requirements to remove, disassemble, open, clean and inspect **all** the vessel's sea water valves, including ~~but not limited to:~~

- Sea valves
- Overboard discharge valves
- Scupper valves

Contractor shall take into consideration work associated with "Sea Water Cooling Systems Inspection and Maintenance" of this section and closely coordinate this work.

Attention is made to the Contractor to note the valve tag-out procedures described in **Take Control and Dry Dock the [M/V Sea Level]."**

7.2 References

- 7.2.1 DWG 09-060 256-01 – Engine Cooling Piping Schematic
- 7.2.2 DWG 09-060 256-02 – Engine Cooling System Arrangement & Details
- 7.2.3 DWG 09-060 533-01 – Potable Water Schematic
- 7.2.4 DWG 09-060 521-01 – Fire Main System Schematic
- 7.2.5 DWG 09-060 163-01 – Sea Chest
- 7.2.6 DWG 09-060 261-01 – Fuel Oil System Schematic
- 7.2.7 DWG 09-060 264-01 – Lube Oil & Dirty System Schematic
- 7.2.8 DWG 09-060 506-01 – Fills, Vents and Sounds Schematic
- 7.2.9 DWG 09-060 529-01 – Bilge Oily Water Schematic

7.3 Owner Furnished Equipment:

See items a) thru e) in section 7.4

7.4 Requirements

The Contractor shall complete the following work on sea valves, overboard discharge valves and scupper valves:

- a) Disassemble all sea valves, sea chest vent valves and all overboard discharge for USCG and NCDOT Representative inspection of the interior valve body, seats, under bonnet, stem and packing housing for valves over 2". All 2" and below valves condemned by the USCG Inspector or NCDOT Representative shall be replaced or repaired by the NCDOT and returned back to the contractor.

- b) The Contractor shall remove all cover plates in the bulkheads for unrestricted access to the valves and the voids, as indicated in the "Open, Clean and Certify Gas Free Holds and Enclosed Areas" section of these Special Provisions.
- c) Blue the seat contact areas of the discs and perform a blue fit check of the valve seats in the presence of the USCG Inspector and NCDOT Representative.
- d) Following approval of the USCG Inspector and NCDOT Representative, clean the valve components, renew the bonnet gasket or seal, lubricate the valve stem, repack the stem gland and reassemble the valves.
- e) Open and inspect sea water system check valves as listed.
- f) All 3" valves condemned by the USCG Inspector or NCDOT Representative shall be replaced or repaired by the NCDOT and returned back to the contractor.
- g) Upon completion of valve overhaul and prior to installation, hydrostatically test all overhauled and new valves to the satisfaction of USCG and NCDOT Representative. NCDOT will hydrostatically test all valves prior to supplying the contractor with the valve.
- h) Reinstall all valves using new Contractor furnished gaskets (Garlock 3760 or equal) and 316 Stainless Steel fasteners.
- i) Complete inspections and submit report no later than five (5) working days after dry-docking.

7.5 Table of Valves ~~NOTE: TABLE IS FOR REFERENCE ONLY~~

Number	Valve Name	Location	Type
1	Shaft Cooling Sea Chest	Engine Room	1 1/2" Ball Valve
2	Sprinkler Sea Chest	Engine Room	4" Gate Valve
3	Main Fire Pump Overboard	Engine Room	2" Gate Valve
4	Main Fire Pump Overboard	Engine Room	2" Check Valve
5	Main Fire Pump Relief Valve	Engine Room	2" Relief Valve
6	Main Fire Pump Sea Chest	Engine Room	3" Gate Valve
7	Bilge Sea Chest	Engine Room	3" Gate Valve
8	Bilge Overboard	Engine Room	3" Gate Valve
9	Bilge Overboard	Engine Room	3" Check Valve
10	Bilge Manifold - below EOS FWD	Engine Room	3" Stop Check
11	Bilge Manifold - MSD/Tank Rm AFT	Engine Room	3" Stop Check
12	Bilge Manifold - below Galley Void	Engine Room	3" Stop Check
13	Bilge Manifold - Rope Locker	Engine Room	3" Stop Check
14	Bilge Manifold - Bow Thruster Compt	Engine Room	3" Stop Check
15	Bilge Manifold - Forepeak	Engine Room	3" Stop Check
16	Bilge Manifold - Steering Compt	Engine Room	3" Stop Check
17	Bilge Manifold - Shaft Compt	Engine Room	3" Stop Check
18	Bilge Independent - below EOS MID	Engine Room	3" Gate Valve
19	Bilge Independent - below EOS AFT	Tank RM/MSD Compt	3" Ball Valve
20	Forepeak Bilge w/ MN DK remote	Forepeak	3" Gate Valve
21	Steering Compt Bilge	Void 2	3" Gate Valve
22	MSD Overboard	MSD Room	3" Gate Valve

16.4 Requirements

The Contractor shall mechanically or by power tool cleaning to bare metal, prepare and paint the entire superstructure and miscellaneous details including, ~~but not limited to, the following:~~

- Curtain plates and bulwarks
- Inboard and outboard faces.
- Car deck overhead. (Except were Mascoat is present)

In all of the above items, the structure attached to the stated item is to be included with the item. Superstructure painting does not include decks, stack, masts, curbs, passenger stairs, or the Rescue Boat davit.

Decks, windows, the underside of the Pilothouse visor, the stack, masts, curbs, the Rescue Boat davit, and other appropriate areas, equipment, and components shall be protected from overspray. The painting is to include spot repairs of the paint system in the listed areas. The Contractor shall inspect all areas of the vessel to be painted to assess coating condition and surface areas prior to finalizing the bid price.

The Contractor shall clean the surfaces described above as detailed in the Special Provision item "High-Pressure Water Wash - Superstructure." The Contractor shall blast the entire superstructure (excluding areas where MASCOT coating was applied) by abrasive blast, to a SSPC-SP10. AC paint at the perimeter of the blasted areas shall be feathered or otherwise made tight to eliminate paint failure points and present a clean mechanically etched surface for a secure bond with the new Primer applied to the blasted surfaces. After surface preparation, dry the area with clean dry compressed air. Before coating application, the areas shall be free of all dust, debris, salt, moisture, and other contaminants which may have been introduced following the high-pressure water wash. The surface preparation and cleaning shall be inspected and approved by the Paint Manufacturer's Representative before the final coats are applied. Paint shall be applied by conventional industrial airless spray or compressed air spray equipment in accordance with the paint manufacturer's recommendations. The paint coats for the selected areas shall be:

For bulkheads, inboard and outboard faces and the car deck overhead:

- Primer Coat: Amercoat 370 red oxide applied @ 4.0-6.0 Mils DFT
- Stripe Coat: Amercoat 370 grey applied @ 4.0-6.0 Mils DFT
- Third Coat: Amercoat 370 white applied @ 4.0-6.0 Mils DFT
- Finish Coat: PSX-One white applied @ 2.0-3.0 Mils DFT

After washing, blasting and cleaning; Contractor shall apply a fresh finish coat over the entire super structure. New top coat shall match exactly the existing paint schematic on the vessel. Contractor shall remove all existing signage, outdoor seating, and protect all windows, equipment and other sensitive areas from overspray prior to applying the top coat. Once top coat is fully applied and dried, Contractor shall restore all signage to its original condition.

The work outlined in this Special Provision item shall be coordinated with the other Special Provision items.

16.5 Tests, Trials and Documentation:

None

16.6 Payment:

The lump sum contract bid price for *Generic Ferry Item (Blast & Paint - Superstructure)* shall include all costs for paint and blasting to the superstructure, except for the high-pressure water wash. Payment for this item will be based upon the Contractor's unit bid price for (*High-Pressure Water Wash – Superstructure*). No further compensation will be made. Lump Sum prices shall be the total compensation for all labor, equipment, tools and materials to accomplish the work detailed in these Special Provisions. No further compensation will be made.

17.0 BLASTING AND PAINTING – ALL DECKS:

17.1 Description:

This section describes the work required to paint and blast all the exterior decks of the vessel.

17.2 References:

17.2.1 "General Painting Instructions" as part of these Special Provisions:

17.3 Owner Furnished Equipment:

None

17.4 Requirements:

The Contractor shall mechanically or by power tool cleaning to bare metal, prepare and paint the Main Deck and superstructure decks. This includes the curb- structures on the Main Deck.

The Contractor shall blast all deck to a SSPC-SP10, "Near-White Blast Cleaning" and shall be held to the SSPC Surface Preparation Specification No. 10 as defined in Chapter 2 of SSPC Volume 2.

Contractor shall apply a fresh top coat to all exposed decks on the vessel. This includes the Main Deck, the 01 Deck, and the Navigation Deck. Top coat paint shall be per the paint schedule listed in this work item. **NOTE:** Contractor shall remove the curb structure on the main deck prep, paint and reinstall new hardware. The contractor shall also remove all outdoor seating prior to painting and blasting all the deck. No further compensation will be made.

On all decks, Contractor shall apply by broadcast method non-skid of a quantity and profile suitable for wet or icy conditions.

After all decks have received a fresh top coat; Contractor shall repaint all existing lines and safety markings on the car deck per Reference 18.2.1. All line paint repair shall be accomplished after the completion of non-skid repair and any other painting work to take place on the super structure. If line paint is damaged or obscured by other work items prior to delivery of vessel, Contractor shall re-paint line paint and safety markings at no additional expense to NCDOT.

21.3 Owner Furnished Equipment:

None

21.4 Requirements:

None

21.5 CHECK POINT:

Drain and dispose of FW cooling fluid from all engine installations. Unbolt and remove keel coolers from the hull. Thoroughly clean and remove all mussels, clams, and other bio-fouling organisms and residue from all external keel cooler surfaces. Using clean fresh water, hydro test the vessel's keel coolers to the manufacturers recommended test of 35 psi.

21.6 NCDOT Representative is also to witness the hydro test of all keel coolers.

Four each main engine keel coolers, Fernstrum model D24135W-ZE1.

Two each generator jacket water keel coolers, Fernstrum model D14184U-ZE1

Two each reduction gear keel coolers, Fernstrum model BN1045B-ZE1

One each bow thruster engine jacket water keel cooler, Fernstrum model D16111U-ZE1

One each bow thruster engine aftercooler and gear, Fernstrum model CN12111C-ZE1

Contractor is to provide NCDOT representative a copy of the keel cooler hydro test results and recommendations on the day of the tests. If hydro test reveals any keel cooler is in need of replacement or repair, NCDOT will supply replacement keel cooler from NCDOT inventory, within two (2) working days of receipt of hydro test report. NCDOT is responsible for all shipping arrangements and costs associated with owner furnished keel coolers.

Contractor shall renew all keel cooler anodes, bonding straps, gaskets, and fasteners. Items a) through c) below are included in this work scope:

Renew all keel cooler anodes, bonding straps, gaskets, and fasteners.

- a) Renew all bolt-on Fernstrum keel cooler zinc anodes.
- b) Renew all keel cooler zincs. Zinc anode renewal shall be done as described in the work item "Zinc Anode Replacement." The price of the replacement of keel cooler anodes shall be included in that bid item
- c) Renew all keel cooler bonding straps. Bonding straps shall be 1/8" diameter stainless steel cable with crimped eyes on each end. Additionally, Contractor shall renew 3/8" stainless steel studs and nuts on hull for bonding connection.

21.7 CHECK POINT:

NCDOT Representative is to inspect and approve installation of all grounding straps immediately following completion of their installation and during the final walk around prior to undocking the vessel. Within 24 hours of completion of this task, Contractor is to schedule NCDOT inspection of the keel cooler bonding straps.

- a) Re-install coolers with new gaskets appropriate for the intended service.

21.8 CHECK POINT:

Prior to purchase and installation of new gaskets, Contractor is to provide NCDOT Representative with cut sheets of proposed gaskets for approval.

- a) Refill each MTU engine cooling system with (2) Drums of MTU POWER COOLANT, 50/50 premixed coolant (Part# 23533532) (4 total).
- b) Refill each Transmission, Generator and Bow Thruster Engine cooling system with Caterpillar ECL (Extend Life Coolant). Vessel total 110 Gallons.

21.9 CHECK POINT:

After fit up of keel coolers but prior to vessel launch, Contractor shall pressure test all keel coolers and FW piping up to the machinery connections. NCDOT Representative shall be present for these tests. Any leaks discovered during this test shall be repaired by the Contractor at no additional expense to the NCDOT.

21.10 Tests, Trials and Documentation:

Upon completion of renewals, repairs, and pressure tests, Contractor is to electrically test the isolation (should be "0") between keel coolers and hull, to ensure that they are electrically bonded.

21.11 CHECK POINT:

NCDOT Representative is to witness the bonding test for all keel coolers. Testing shall be to the satisfaction of the NCDOT Representative.

21.12 Payment:

Include all costs associated with repairs and modifications to the various items outlined in this Special Provision in the lump sum contract price for *Generic Ferry Item (Engine Water Cooling System Inspection and Maintenance)*. No further compensation will be made.

Include all costs associated with high-pressure water washing the sea chests in the lump sum bid item (*High-Pressure Water Wash – Hull Below DLWL*). Include all costs associated with painting the sea chests in the lump sum bid item (*Painting – Hull Below DLWL*).

22.0 BOW THRUSTER REMOVAL AND REPLACEMENT:**22.1 Description:**

This section describes the requirement to install a BERP (Bolted Equipment Removal Path) opening in main deck of the M/V Sea Level for removal and replacement of the Omni Bow Thruster. This section also covers the removal and replacement of the bow thruster and walkway. Finally, this section covers the fabrication and replacement of new port and starboard bow thruster tubes. NCDOT will provide Omni Bow Thruster and butterfly valves, Existing Thruster and butterfly valves will be returned to NCDOT.

NOTE: When Installing new bow thruster the lower bowl might not be oriented correctly. It is the contractor's responsibility to turn the bowl in the current orientation (no additional cost will be provided for turning the bowl and should be included in the unit bid price). Once the new bow thruster is installed properly contractor shall renew all bolts and gaskets as in kind and torque all bolts in accordance to manufacturer's specifications.

22.3.4 Tests, Trials and Documentation:

All valve/flange mating surfaces to be protected during removal and installation. Assure proper fit-up prior to bolting bow thruster. (NCDOT QA Checkpoint)

22.4 Bow Thruster Tubes Removal, Cleaning/Blasting, and Painting

22.4.1 References

23.10.1 Machinery Arrangement	200-01 Rev. 2
23.10.2 Bow Thruster Installation	568-01 Rev. 3

22.4.2 Requirements:

The contractor shall remove/drain all adjacent piping/equipment to allow removal of Bow Thruster Tubes. Contractor to remove existing deck plate foundation grating interfering removal of bow thruster tubes and replace grating back in a removable, bolt-on, configuration.

Contractor shall fabricate new entire port and starboard inboard bow thruster tubes including the transition and both flanges. Once tubes are fabricated, they shall be blasted (inside and out) to SSPC-SP10, "Near-White Blast Cleaning" prior to painting.

CHECKPOINT

Bow thruster Tube Exterior painting to be in accordance with section 10 Painting – General of these Special Provisions. Interior of tubes (includes Hull Tubes) to be coated with (Belzona 1341 Supermetalguide or ENECON products) as per manufacturer's specifications. **CHECKPOINT**

Reinstall bow thruster tubes and renew all bolts and gaskets as in kind and torque all bolts in accordance to manufacturer's specifications.

22.4.3 Tests, Trials and Documentation:

All valve/flange mating surfaces to be protected during removal and installation. Inspect tubes for any suspect areas. Assure proper fit-up prior to bolting bow thruster. (NCDOT QA Checkpoint). Contractor shall ensure that all blast material is removed from the vessel when complete. Painting exterior will be in accordance with section 15 Generic Ferry Item Painting – Hull Above DLWL of these Special Provisions.

Contractor to install Main Exhaust, Main Generator Exhaust, and Bow Thruster Exhaust with schedule 120 seamless carbon steel piping and install 45-degree elbows on exterior ends of pipe for exhaust turn downs, NCDOT representative to determine position on vessel. Transition pipe to be fabricated by contractor. **CHECKPOINT**

Install and weld a ¾" doubler plate to shell. Replace pipe, flange, and doubler plate with ASTM-A-36 material and bolts. Flange gaskets to be replaced with new in kind.

Painting of all interior disturbed areas to be in accordance with section 10 – General Painting of these Special Provisions. **CHECKPOINT**

Painting exterior will be in accordance with section 15 Generic Ferry Item Painting – Hull Above DLWL of these Special Provisions.

23.5 Tests, Trials and Documentation:

All Fit-ups, arc outs, and welding to be inspected by contractor per USCG guidance and with a NCDOT Representative present. Contractor shall ensure that all blast material is removed from the vessel when complete.

Following installation of Main Engine Exhaust Piping, Contractor shall prove integrity of fit-up for exhaust leaks. **CHECKPOINT**

Following installation of Main Engine Exhaust Piping and prior to painting, contractor shall prove watertight integrity of hull inserts when subjected to low pressure water wash with USCG present. **CHECKPOINT**

Contractor to provide Mill Certificates for all material used for repair. **CHECKPOINT**

23.6 Payment:

Include all costs associated with the lump sum contract price for *Generic Ferry Item (Replace and Paint Port & Stbd. Main Engine Exhausts From 1st INBD Flange Through Hull)*, *Generic Ferry Item (Replace and Paint Port & Stbd. Main Generator Exhausts From 1st INBD Flange Through Hull)* and *Generic Ferry Item (Replace and Paint Stbd. Bow Thruster Exhausts From 1st INBD Flange Through Hull)* Lump Sum prices shall be the total compensation for all labor, equipment, tools and materials to accomplish the work detailed in these Special Provisions. No further compensation will be made.

Include all costs associated blasting with the lump sum contract price for *Generic Ferry Item (Blast & Paint – Above DLWL)*. Lump Sum prices shall be the total compensation for all labor, equipment, tools and materials to accomplish the work detailed in these Special Provisions. No further compensation will be made.

Include all costs associated painting with the lump sum contract price for *Generic Ferry Item (Blast & Paint – Above DLWL)*. Lump Sum prices shall be the total compensation for all labor, equipment, tools and materials to accomplish the work detailed in these Special Provisions. No further compensation will be made.

25.0 REPAIR PORT AND STARBOARD CAP RAIL & LOCATIONS IN BULWARKS:

25.1 Description:

This section describes the requirement to replace repair the welds in the Cap Rail located at the bow and stern of the vessel. This section also includes bulwark repairs be identified by NCDOT and the Contractor.

Total amount of welds to be repaired for all items equals 500 LF.

25.2 References:

25.2.1 Bulwarks & Curtain Plates 152-032 Rev. 2

25.3 Owner Furnished Equipment:

None

25.4 Requirements:

The Contractor shall repair the failing welds in the existing cap rail. Note: Cap rail is "float coated," so all inaccessible voids shall be gas freed and certified per section 5. Once the welds are repaired the contractor shall reinstall the float coat. Contractor shall blast, surface prep, and paint to correct color, refer to Section 10 "Painting-General Special Provisions".

25.5

The Contractor shall repair the locations identified by NCDOT and the Contractor, remove the weld and build up the locations with new weld. Once this work is complete the contractor shall blast surface prep, and paint to correct color, refer to Section 10 "Painting-General Special Provisions".

25.6 Test, Trials and Documentation:

Contractor shall verify all welds in the company of the NCDOT Representative.

25.7 Payment:

The linear feet unit price for *Generic Miscellaneous Item (Repair Port and Starboard Cap Rail & Bulwark)* shall be the total compensation for all labor, equipment, float coat, tools and materials to accomplish the work detailed in these Special Provisions, including testing and trials. No further compensation will be made.

Include all costs associated gas freeing should be included with the lump sum contract price for *Generic Ferry Item (Open, Clean and Certify Gas Free: Bilges, Holds, and Enclosed Areas)*. Lump Sum prices shall be the total compensation for all labor, equipment, tools and materials to accomplish the work detailed in these Special Provisions. No further compensation will be made.

Include all costs associated painting with the lump sum contract price for *Generic Ferry Item (Blast & Paint – Superstructure)*. Lump Sum prices shall be the total compensation for all labor, equipment, tools and materials to accomplish the work detailed in these Special Provisions. No further compensation will be made.

26.0 SPOT PREP AND PAINT AFT VOID, TANK ROOM, GALLEY KEEL, AND ENGINE ROOM BILGES:

26.1 Description:

This section describes the requirement to prepare and paint location in the various bilge areas.

26.2 References:

~~MV SEA LEVEL - Rudder Stock Housing Replacement_PDF~~

26.3 Owner Furnished Equipment:

None

26.4 Requirements:

The NCDOT Representative and Contractor will identify locations in the bilge areas to be addressed. Locations include:

- Bow Thruster Room: 500 SQ FT
- Foreword Void: 120 SQ FT
- Galley Keel: 120 SQ FT
- Tank Room: 120 SQ FT
- Engine Room: 120 SQ FT
- Aft Void: 3,500 SQ FT
- Steering Compartment 500 SQ FT

Contractor shall mechanically or by power tool cleaning to SSPC SP-3, and paint to correct color, refer to Section 10 "Painting-General Special Provisions".

26.5 Test, Trials and Documentation:

None

26.6 Payment:

The contract unit bid price per each for *Generic Miscellaneous Item (Spot Prep and Paint Bow Thruster, Galley Keel, Tank, Engine, and Exhaust Void's)* shall be the total compensation for removal and replacement of all deck plates, all labor, equipment, tools and new materials to accomplish the work detailed in these Special Provisions, including testing and trials. No further compensation will be made.

27.0 REMOVE AND REPLACE BOTH HUBS AND LOWER BEARINGS ON EACH RUDDER POST:

27.1 Description:

This section describes the requirement to remove and replace both hubs on each rudder post and the lower bearings on each rudder post.

27.2 References:

MV SEA LEVEL - Rudder Stock Housing Replacement_PDF

27.3 Owner Furnished Equipment:

None

27.4 Requirements:**27.4.1 HUBS:**

Contractor shall use attached drawings for new hub installation. Contractor shall remove old hubs from rudder and is required to measure existing hole to cut the material to the correct length. Contractor must cut the outside diameter of Duramax DuraBlue Bearing Material to the correct measurement. **CHECKPOINT:** Contractor must test fit with NCDOT QA present. Once the fit is accepted the Contractor shall proper fit taper to the drawing specs. **CHECKPOINT:** USCG shall observe blue fit of rudder taper. Contractor is to cut keyway per drawing and will reuse original keys from the vessel. **CHECKPOINT:** Contractor shall weld the hub back in proper location and assure proper alignment, contractor will use approved ABS welding procedures.

27.4.2 LOWER BEARINGS:

Contractor shall use above drawings for new lower bearing installation. Contractor shall remove existing set screws and replace with new 304 stainless steel set screws. Contractor shall remove old bearing and clean tube thoroughly. Once clean the outside diameter measurements shall be taken. Contractor to bore out the inside diameter to the manufacture specs (provided by NCDOT). Contractor shall check fit up of inside diameter. **CHECKPOINT:** NCDOT QA will verify cut of outside diameter bearing. **CHECKPOINT:** Contractor will check fit up of outside diameter rudder log with NCDOT QA present. When all work is complete reinstall the bearings with new stainless steel 304 set screws.

27.5 Tests, Trials and Documentation:

All Fit-ups, arc outs, and welding to be inspected by contractor with a NCDOT Representative present.

Contractor to provide Mill Certificates for all material used for repair.

27.6 Payment:

Include all costs associated with the lump sum contract price for *Generic Ferry Item (Remove and Replace Hubs and Lower Bearings on Each Rudder Post)*. Lump Sum prices shall be the total compensation for all labor, equipment, tools, bits, cleaning, fire watch and other materials to accomplish the work detailed in these Special Provisions. No further compensation will be made.

County : Dare

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
ROADWAY ITEMS						
0001	0000820000-N	SP	GENERIC MISCELLANEOUS ITEM BERTHING DAYS	5 DAY		
0002	0000820000-N	SP	GENERIC MISCELLANEOUS ITEM LAY DAYS	5 DAY		
0003	0000930000-E	SP	GENERIC MISCELLANEOUS ITEM REPAIR PORT & STARBOARD CAP RA IL & BULWARK	500 LF		
0004	0000950000-E	SP	GENERIC MISCELLANEOUS ITEM SPOT PREP & PAINT BOW THRUSTER , GALLEY KEEL, TANK, ENGINE & EXHAUST V OIDS	5,000 SF		
0005	0001020000-N	SP	GENERIC MISCELLANEOUS ITEM LINE SHAFT BEARING REPLACEMENT	1 EA		
0006	0001020000-N	SP	GENERIC MISCELLANEOUS ITEM ZINC ANODE REPLACEMENTS, KEEL COOLER GUARDS / 12 LB.	60 EA		
0007	0001020000-N	SP	GENERIC MISCELLANEOUS ITEM ZINC ANODE REPLACEMENTS, KEEL COOLERS / BOLT ON PER KEEL COOLER SPECIF ICATIONS	20 EA		
0008	0001020000-N	SP	GENERIC MISCELLANEOUS ITEM ZINC ANODE REPLACEMENTS, RUDDE RS / 6 LB	12 EA		
0009	0001020000-N	SP	GENERIC MISCELLANEOUS ITEM ZINC ANODE REPLACEMENTS, SEA C HEST & BOW THRUSTER - 5.3 LB.	4 EA		
0010	0001020000-N	SP	GENERIC MISCELLANEOUS ITEM ZINC ANODE REPLACEMENTS, VESSE L HULL / 23-24 LB.	109 EA		
0011	0005000000-N	SP	GENERIC FERRY ITEM BLAST & PAINT - ALL DECKS	Lump Sum	L.S.	
0012	0005000000-N	SP	GENERIC FERRY ITEM BLAST & PAINT - SUPERSTRUCTUR E	Lump Sum	L.S.	

County : Dare

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0013	0005000000-N	SP	GENERIC FERRY ITEM CUT, PRE-FABRICATE, INSTALL & PAINT MAIN DECK SOFT PATCH FOR BOW THRUST ER	Lump Sum	L.S.	
0014	0005000000-N	SP	GENERIC FERRY ITEM ENGINE WATER COOLING SYSTEM IN SPECTION AND MAINTENANCE	Lump Sum	L.S.	
0015	0005000000-N	SP	GENERIC FERRY ITEM FABRICATE NEW PORT/STBD INBOAR D BOW THRU STER TUBES, INCLUDING TRANSITI ON & FLANG	Lump Sum	L.S.	
0016	0005000000-N	SP	GENERIC FERRY ITEM GLOBAL DAVIT - REMOVAL & REINS TALLATION	Lump Sum	L.S.	
0017	0005000000-N	SP	GENERIC FERRY ITEM HIGH-PRESSURE WATER WASH, SUPERSTRUCTURE	Lump Sum	L.S.	
0018	0005000000-N	SP	GENERIC FERRY ITEM HIGH-PRESSURE WATER WASH, HULL ABOVE DLWL	Lump Sum	L.S.	
0019	0005000000-N	SP	GENERIC FERRY ITEM HIGH-PRESSURE WATER WASH, HULL BELOW DLWL	Lump Sum	L.S.	
0020	0005000000-N	SP	GENERIC FERRY ITEM MAIN DECK HATCH MAINTENANCE AN D REPAIR	Lump Sum	L.S.	
0021	0005000000-N	SP	GENERIC FERRY ITEM OPEN, CLEAN AND CERTIFY GAS FR EE: BILGES, HOLDS AND ENCLOSED ARE AS	Lump Sum	L.S.	
0022	0005000000-N	SP	GENERIC FERRY ITEM PAINT - HULL ABOVE DLWL	Lump Sum	L.S.	
0023	0005000000-N	SP	GENERIC FERRY ITEM RELOCATE & PAINT MAIN DECK FOR WARD VESTI BULE 18" FREEMAN HATCH & BELOW DECK LADD	Lump Sum	L.S.	

County : Dare

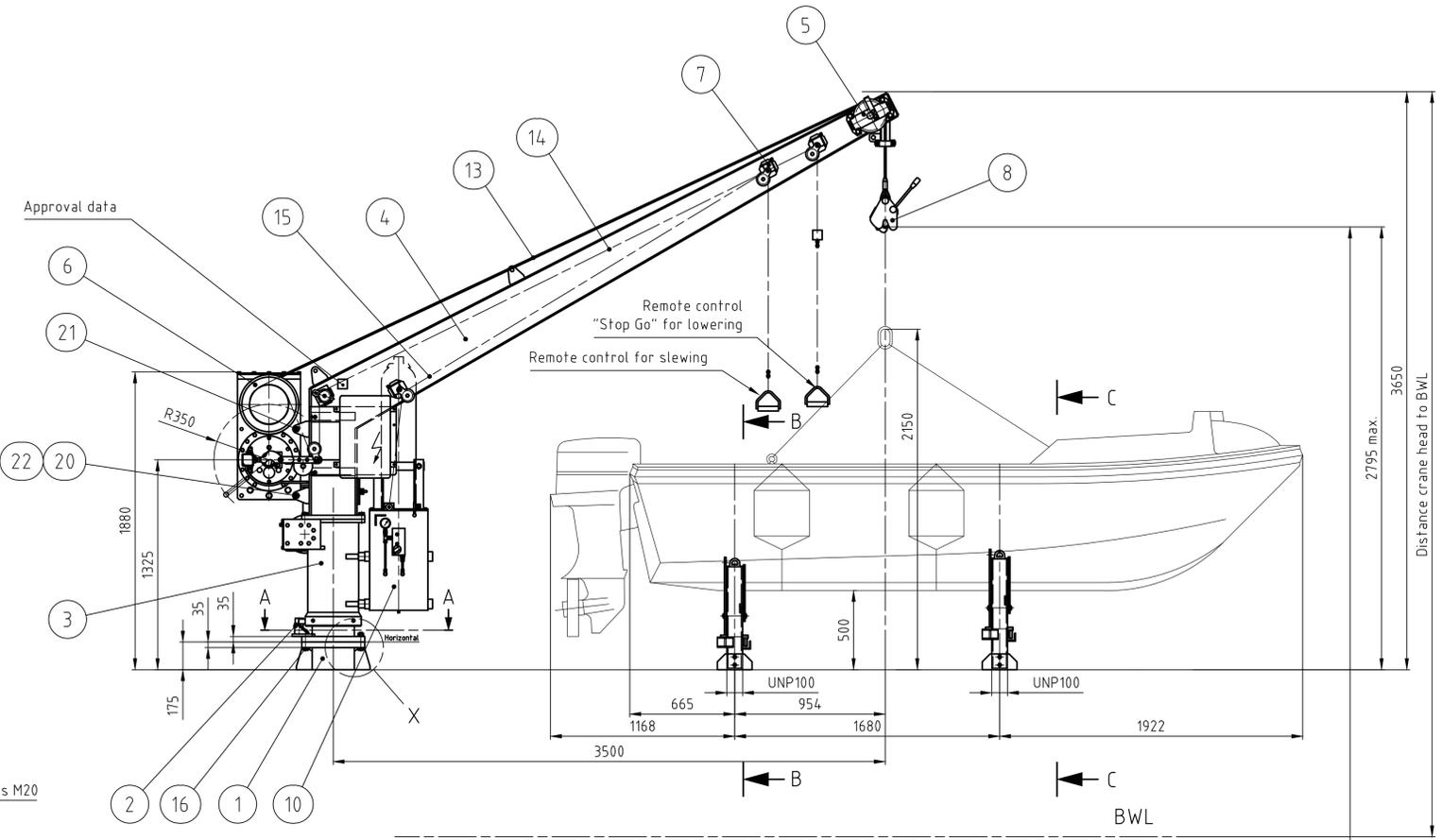
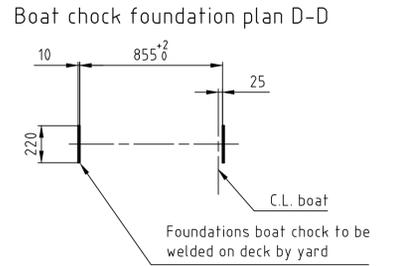
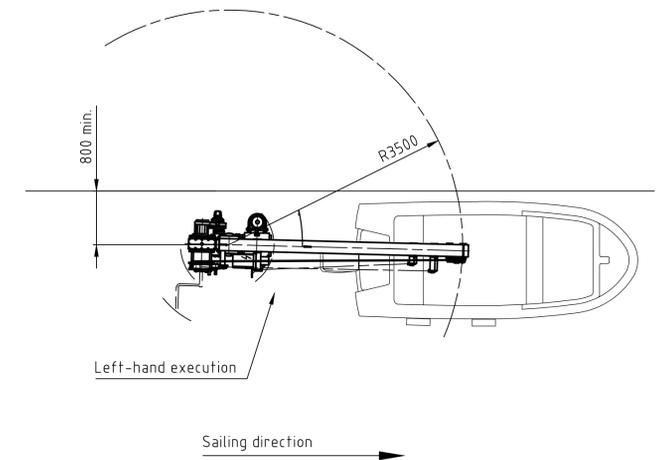
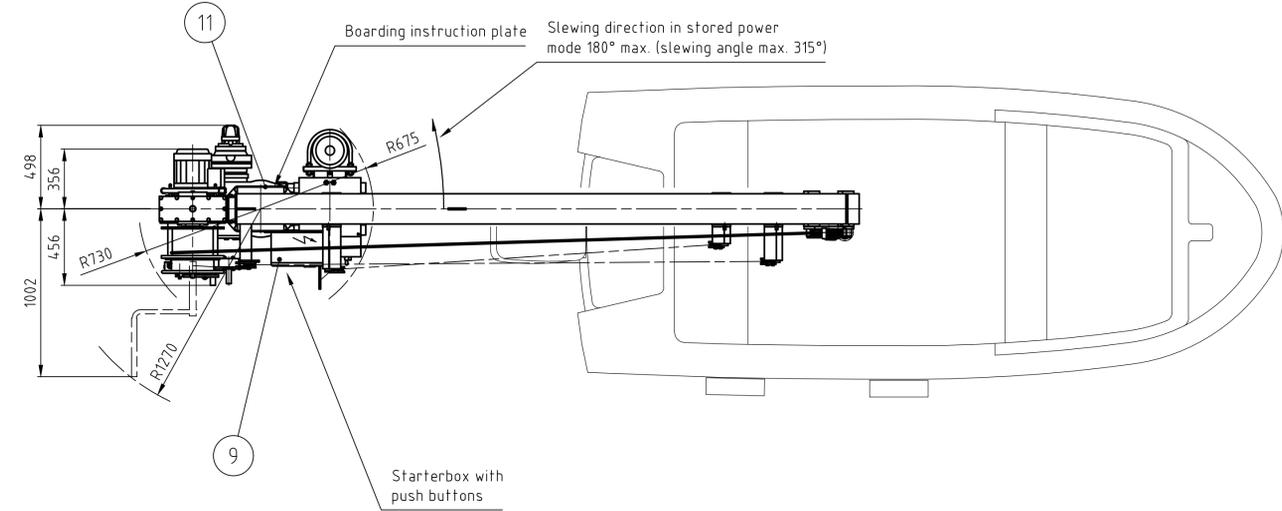
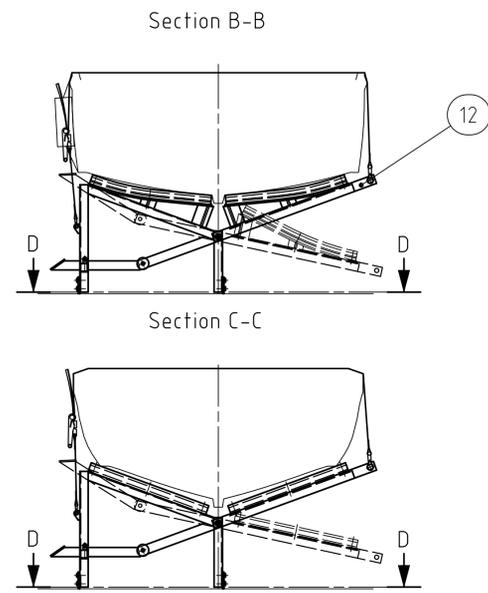
Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0024	0005000000-N	SP	GENERIC FERRY ITEM REMOVE & INSTALL BOW THRUSTER AND WALK WAY	Lump Sum	L.S.	
0025	0005000000-N	SP	GENERIC FERRY ITEM REMOVE 3 MAIN DECK WTD, MAINT ENANCE, REPAIR AND REINSTALL	Lump Sum	L.S.	
0026	0005000000-N	SP	GENERIC FERRY ITEM REMOVE ALL MSD TANK HATCHES - CLEAN, PR EP, PAINT&REPLACE GASKETS&INST ALL 4" FLA	Lump Sum	L.S.	
0027	0005000000-N	SP	GENERIC FERRY ITEM REMOVE AND REPLACE HUBS AND LO WER BEARIN GS ON EACH RUDDER POST	Lump Sum	L.S.	
0028	0005000000-N	SP	GENERIC FERRY ITEM REPLACE & PAINT PORT & STBD MA IN ENGINE EXHAUSTS FROM 1ST INBD FLANGE THROUGH HU	Lump Sum	L.S.	
0029	0005000000-N	SP	GENERIC FERRY ITEM REPLACE & PAINT PORT & STBD MA IN GENERAT OR EXHAUST FROM 1ST INB FLANGE THROUGH H	Lump Sum	L.S.	
0030	0005000000-N	SP	GENERIC FERRY ITEM REPLACE & PAINT STBD BOW THRU STER EXHAUS T FROM 1ST INBD FLANGE THROUGH HULL	Lump Sum	L.S.	
0031	0005000000-N	SP	GENERIC FERRY ITEM RUDDER REMOVALS & INSPECTIONS	Lump Sum	L.S.	
0032	0005000000-N	SP	GENERIC FERRY ITEM SEA VALVES	Lump Sum	L.S.	
0033	0005000000-N	SP	GENERIC FERRY ITEM SEWAGE SYSTEM - CLEAN, INSPECT & PERFORM MAINTENANCE	Lump Sum	L.S.	
0034	0005000000-N	SP	GENERIC FERRY ITEM SPOT BLAST FAILED BLOCKING ARE AS & PAINT - HULL BELOW DLWL	Lump Sum	L.S.	

County : Dare

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0035	0005000000-N	SP	GENERIC FERRY ITEM STARTUP, DOCK AND SEA TRIALS	Lump Sum	L.S.	

0036	0005000000-N	SP	GENERIC FERRY ITEM TAKE CONTROL AND DRY DOCK THE M/V SEA LEVEL	Lump Sum	L.S.	

1012/Dec16/Q5742.0/D139640000/E36			Total Amount Of Bid For Entire Project :			



	Oil lubricated (8.8)		MoS2 lubricated (8.8)	
	210	295	170	240
M16	210	295	170	240
M20	410	580	330	465
M24	710	1000	570	800
M27	1050	1500	840	1200

All connection parts must be galvanized

ITEM	QUANT	DESCRIPTION	MATERIAL	REMARKS	MASS P	MASS S
23	6	Washer A21	St.	DIN 125	437	1047
22	2	Hex nut M20	8	DIN 934		
21	2	Hex screw M20x30	8.8	DIN 933		
20	2	Hex screw M20x55	8.8	DIN 933		
19	23	Washer 21	C45	DIN 6916		
18	12	Hex nut M20	10	DIN 6915	1	
17	9	Hex bolt M20x100	10.9	DIN 6914	3	
16	3	Hex bolt M20x120	10.9	DIN 6914	1	
15	1	Wire rope 4mm, L=5,5m	Stainl.st.			
14	1	Wire rope 4mm, L=26m	Stainl.st.			
13	1	Wire rope 10mm, L=25m	1960 N/mm ²	P17SRS	11	
12	1	Arr. boat chocks, Fassmer RR4,2	2-1637	R.H. exec	13	98
11	1	Boarding instruction plate rescue boat stored power	2-0048	English		
10	1	Hydraulic assembly	ZBM0300	comp.of11600	280	
9	1	Electric assembly	99N01-T01		30	
8	1	Rescue boat hook HR.15	2-0022		1	5
7	1	Arr. remote control H-SG, C05/W02	2-0263		2	16
6	1	Arrangement winch 02E.01.21	3-1766	see D-base	47	313
5	1	Assembly components arm A05	2-0341		1	18
4	1	Davit arm 180x12/8x8 R = 3,5	1-0328			309
3	1	Arrangement column C05H.04.01	2-0447	see D-base	43	247
2	1	Slewing angle limiter 05	3-0090			4
1	1	Pedestal 05/175/gusset	4-0346			37

Static forces on deckfoundation (incl. inclination of 20°/10°)

Mk = 55 kNm
Msl = 18 kNm
Fax = 25 kN

LEFT-HAND EXECUTION IS SHOWN
RIGHT-HAND EXECUTION IS IN OPPOSITE HAND

TEST LOADS (WORKSHOP):

STATIC TEST LIFERAFT:	n.a.
STATIC TEST RESCUE BOAT:	2,2x11 = 24,2 kN
DYNAMIC TEST RESCUE RECOVERY:	1,0x10,35 = 10,35 kN
DYNAMIC TEST INCLINED 20°/10°:	1,1x10 = 11 kN
DYNAMIC TEST WINCH (LOWERING):	1,1x11 = 12,1 kN
ALL STORES HANDLING FUNCTIONS:	n.a.

TEST LOADS (ON BOARD):

DYNAMIC TEST (LOWERING ONLY):	1,1x11 = 12,1 kN
ALL STORES HANDLING FUNCTIONS:	n.a.

DAVIT MAIN DATA:

S.W.L. LIFERAFT:	n.a.
S.W.L. RESCUE BOAT:	11 kN
OUTREACH:	3,5 m
S.W.L. STORE HANDLING:	n.a.
OUTREACH:	- m
SLEWING SPEED - direct power:	n.a.
- stored power:	1 rpm
TOTAL MASS OF SYSTEM:	1400 kg

LIFE SAVING WINCH DATA:

WINCH TYPE:	02E.01
HOISTING SPEED:	21,5 m/min
GRAVITY LOWERING SPEED:	4,0 m/min
WIRE ROPE SIZE:	10 mm
MINIMUM REQUIRED BREAKING LOAD:	65,4 kN
TYPE OF WINCH:	spur gear winch
OIL QUANTITY:	1 l
POWER CONSUMPTION:	6,5 kW
NOMINAL CURRENT:	28 A
STARTING CURRENT:	160 A

STORES WINCH DATA:

WINCH TYPE:	n.a.
HOISTING/LOWERING SPEED:	- m/min
WIRE ROPE SIZE:	- mm
MINIMUM REQUIRED BREAKING LOAD:	- kN
TYPE OF WINCH:	- l
OIL QUANTITY:	- l
POWER CONSUMPTION:	- kW
NOMINAL CURRENT:	- A
STARTING CURRENT:	- A

ELECTRIC MAIN DATA:

VOLTAGE:	208 V
FREQUENCY:	60 Hz
MAX. RATED POWER:	8,3 kW
PROTECTION - on deck:	IP56
- underdeck:	n.a.
INSULATION CLASS:	F
CONTROLS - boat winch:	on starter box
- store winch:	n.a.

HYDRAULIC MAIN DATA:

WORKING PRESSURE:	300 bar
OIL FLOW:	3,0 l/min
TANK CAPACITY:	90 l
ACCUMULATOR VOLUME:	35 l
PRECHARGE PRESSURE:	100 bar
POWER CONSUMPTION:	1,8 kW
NOMINAL CURRENT:	6 A
STARTING CURRENT:	30 A

CRAFT MAIN DATA:

BOAT TYPE:	Fassmer / RR 4,2
DIMENSIONS:	4,23x1,75x0,82 m
MASS OF BOAT WITH EQUIPMENT:	550 kg
ACTUAL BOAT CAPACITY:	6 persons
LOWERING MASS:	1000 kg
RECOVERY MASS:	1000 kg
LIFERAFT CAPACITY:	n.a.
LOWERING MASS:	- kg

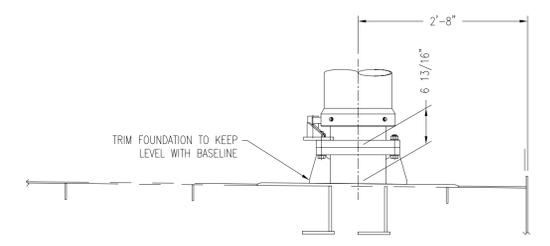
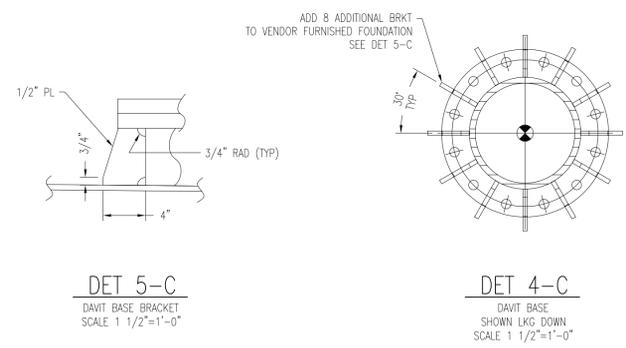
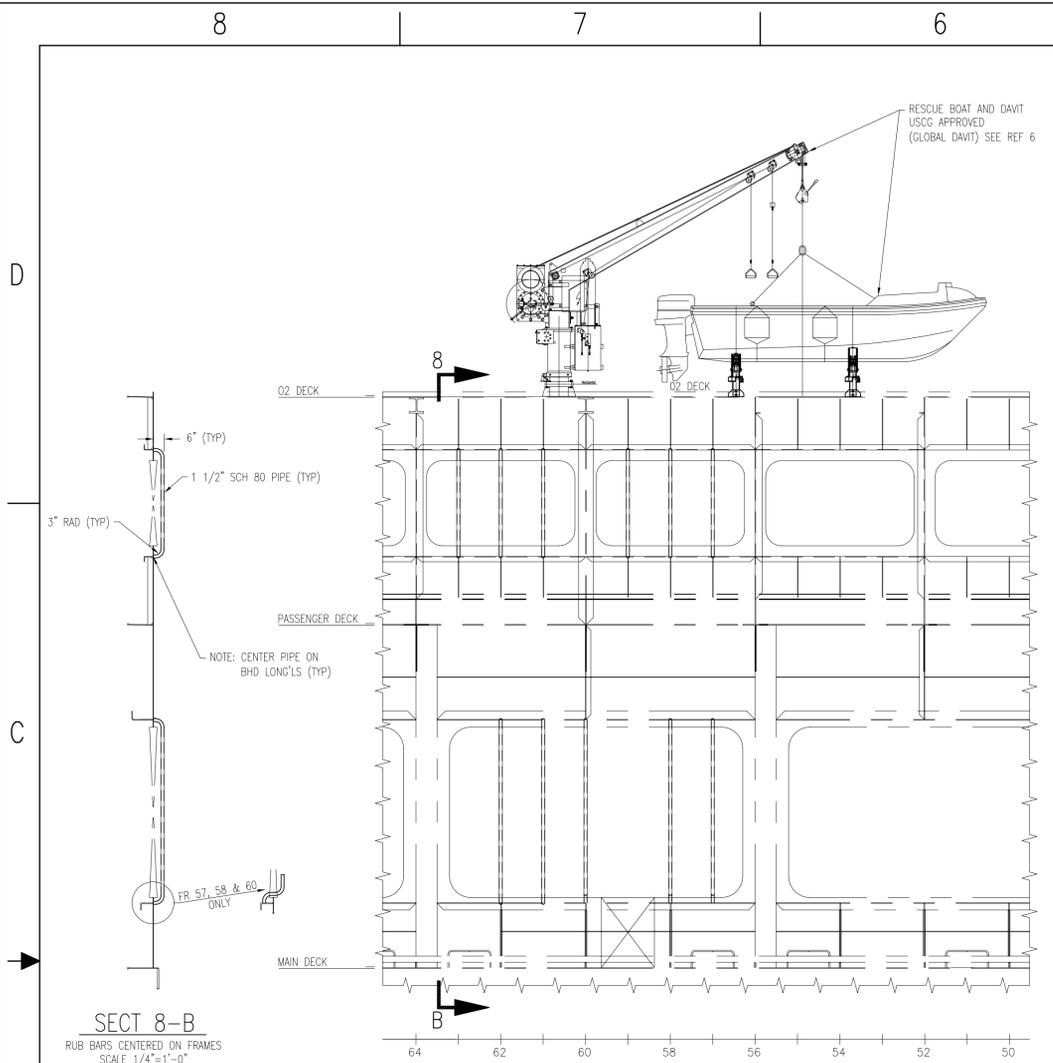
Global Davit GmbH
Survival- & Deck Equipment

Rescue boat crane Rhs.11/3,5
General arr. North Carolina DOT Ferry System, hull

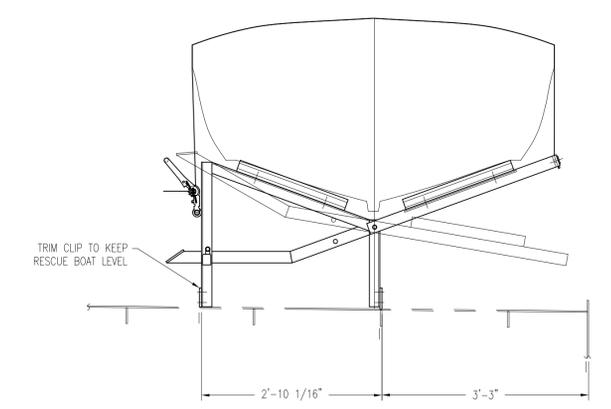
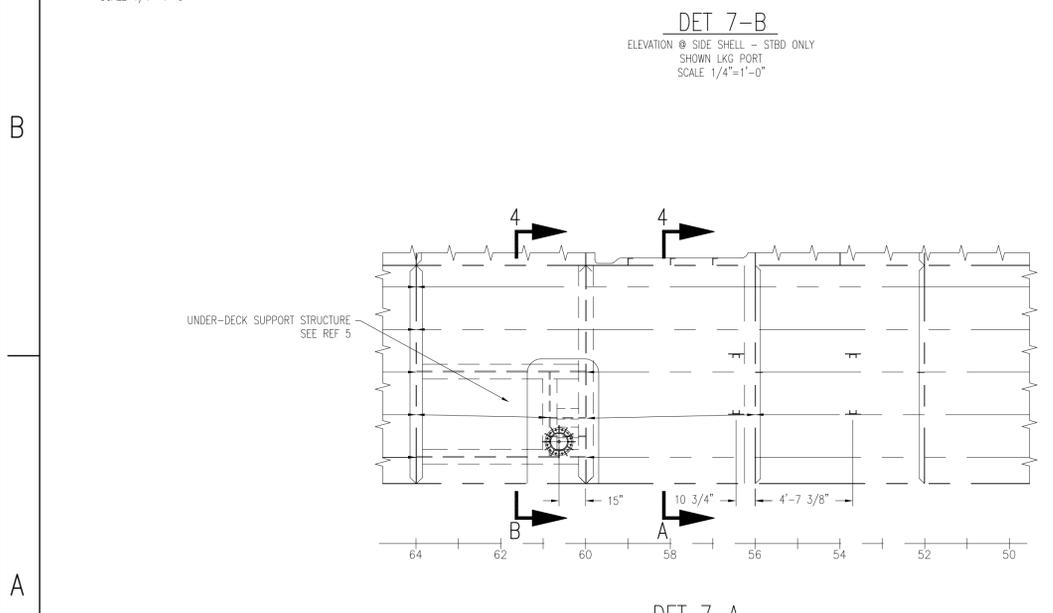
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DATE: 14-06-2006
NAME: HS
CHECKED: 1-2035
REPLACING: 06-133
COPY OF: 1-2010A

REVISED 12/16/2020

REVISIONS			
REV	ZONE	DESCRIPTION	DATE



NOTE: FOUNDATION PROVIDED BY VENDOR



NOTE: CRADLE AND CLIPS PROVIDED BY VENDOR

GENERAL NOTES
 1. THIS DRAWING SHOULD NOT BE USED TO DIRECTLY SCALE NC PARTS OR PREPARE 3D MODELING.
 2. ALL MATERIAL SHALL BE ABS GR. A OR EQUIVALENT EXCEPT AS NOTED.

NO.	REFERENCES	DWG NO.
6	RESCUE BOAT CRANE RHS.13/3,5 (VENDOR DWG) GLOBAL DAVIT GmbH	1-3531
5	O2 DECK AND BHDS BELOW	153-01
4	BULWARKS AND CURTIAN PLATES	152-02
3	MOLD LINE CONVENTION	101-03
2	GENERAL ARRANGEMENTS	101-02
1	OUTBOARD & INBOARD PROFILE	101-01

ORANGE
 Shipbuilding Co., Inc.
 A CONRAD INDUSTRIES CO.
 710 MARKET STREET-ORANGE, TEXAS 77630
 PHONE 409-883-6666 FAX 409-882-0609

GUARINO & COX, LLC
 19399 HELENBERG RD, SUITE 203
 COVINGTON LA. 70433

ORANGE SHIPBUILDING CO. INC.
 NORTH CAROLINA DOT FERRY DIVISION
 NEW SOUND CLASS FERRY

RESCUE BOAT AND DAVIT FOUNDATION

DRAWN BY: BMB	DATE: 12-3-10	DWG NO. 583-01
CK'D BY: KHK	HULL No. 413	SHT 1 OF 1
SCALE: AS NOTED	G&C Job No. 09-060	REV. 0