

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION 1

PROPOSAL

DATE AND TIME OF BID OPENING: MAY 30, 2018 AT 2:00 PM

CONTRACT ID: DA00418

WBS ELEMENT NO.: 16.33001

FEDERAL AID NO.: STATE FUNDED

COUNTY: DARE

TIP NO.: NONE

MILES: N/A

ROUTE NO.: N/A

LOCATION: DARE COUNTY

TYPE OF WORK: M/V SEA LEVEL CREDIT DRYDOCK (CDD)

NOTICE:

ALL BIDDERS SHALL COMPLY WITH ALL APPLICABLE LAWS REGULATING THE PRACTICE OF GENERAL CONTRACTING AS CONTAINED IN CHAPTER 87 OF THE GENERAL STATUTES OF NORTH CAROLINA WHICH REQUIRES THE BIDDER TO BE LICENSED BY THE N.C. LICENSING BOARD FOR CONTRACTORS WHEN BIDDING ON ANY NON-FEDERAL AID PROJECT WHERE THE OR MORE, EXCEPT FOR CERTAIN SPECIALTY WORK AS DETERMINED BY THE LICENSING BOARD BID IS \$30,000. BIDDERS SHALL ALSO COMPLY WITH ALL OTHER APPLICABLE LAWS REGULATING THE PRACTICES OF ELECTRICAL, PLUMBING, HEATING AND AIR CONDITIONING AND REFRIGERATION CONTRACTING AS CONTAINED IN CHAPTER 87 OF THE GENERAL STATUTES OF NORTH CAROLINA. NOTWITHSTANDING THESE LIMITATIONS ON BIDDING, THE BIDDER WHO IS AWARDED ANY FEDERAL - AID FUNDED PROJECT SHALL COMPLY WITH CHAPTER 87 OF THE GENERAL STATUTES OF NORTH CAROLINA FOR LICENSING REQUIREMENTS WITHIN 60 CALENDAR DAYS OF BID OPENING.

THIS IS A DIVISION LET PROJECT.

5% BID BOND OR BID DEPOSIT REQUIRED.

NAME OF BIDDER

ADDRESS OF BIDDER

**PROPOSAL FOR THE CONSTRUCTION OF
CONTRACT NO. DA00418 IN DARE COUNTY, NORTH CAROLINA
DATE: MAY 10, 2018
DEPARTMENT OF TRANSPORTATION,
RALEIGH, NORTH CAROLINA**

The Bidder has carefully examined the location of the proposed work to be known as Contract No. **DA00418**; has carefully examined the plans and specifications, which are acknowledged to be part of the proposal, the special provisions, the proposal, the form of contract, and the forms of contract payment bond and contract performance bond; and thoroughly understands the stipulations, requirements and provisions. The undersigned bidder agrees to bound upon his execution of the bid and subsequent award to him by the Department of Transportation in accordance with this proposal to provide the necessary contract payment bond and contract performance bond within fourteen days after the written notice of award is received by him. The undersigned Bidder further agrees to provide all necessary machinery, tools, labor, and other means of construction; and to do all the work and to furnish all materials, except as otherwise noted, necessary to perform and complete the said contract in accordance with *the 2018 Standard Specifications for Roads and Structures* by the dates(s) specified in the Project Special Provisions and in accordance with the requirements of the Engineer, and at the unit or lump sum prices, as the case may be, for the various items given on the sheets contained herein.

The Bidder shall provide and furnish all the materials, machinery, implements, appliances and tools, and perform the work and required labor to construct and complete State Highway Contract No. **DA00418** in **Dare County**, for the unit or lump sum prices, as the case may be, bid by the Bidder in his bid and according to the proposal, plans, and specifications prepared by said Department, which proposal, plans, and specifications show the details covering this project, and hereby become a part of this contract.

The published volume entitled *North Carolina Department of Transportation, Raleigh, Standard Specifications for Roads and Structures, January 2018* with all amendments and supplements thereto, is by reference incorporated into and made a part of this contract; that, except as herein modified, all the construction and work included in this contract is to be done in accordance with the specifications contained in said volume, and amendments and supplements thereto, under the direction of the Engineer.

If the proposal is accepted and the award is made, the contract is valid only when signed either by the Contract Officer or such other person as may be designated by the Secretary to sign for the Department of Transportation. The conditions and provisions herein cannot be changed except over the signature of the said Contract Officer or Division Engineer.

The quantities shown in the itemized proposal for the project are considered to be approximate only and are given as the basis for comparison of bids. The Department of Transportation may increase or decrease the quantity of any item or portion of the work as may be deemed necessary or expedient. An increase or decrease in the quantity of an item will not be regarded as sufficient ground for an increase or decrease in the unit prices, nor in the time allowed for the completion of the work, except as provided for the contract.

Accompanying this bid is a bid bond secured by a corporate surety, or certified check payable to the order of the Department of Transportation, for five percent of the total bid price, which deposit is to be forfeited as liquidated damages in case this bid is accepted and the Bidder shall fail to provide the required payment and performance bonds with the Department of Transportation, under the condition of this proposal, within 14 calendar days after the written notice of award is received by him, as provided in the Standard Specifications; otherwise said deposit will be returned to the Bidder.

TABLE OF CONTENTS**COVER SHEET****PROPOSAL SHEET****TABLE OF CONTENTS 3****INSTRUCTIONS TO BIDDERS 4****PROJECT SPECIAL PROVISIONS 5****SPECIAL PROVISIONS FOR VESSEL MAINTENANCE AND REPAIR 21****STANDARD SPECIAL PROVISIONS 91****BID FORM 96****PLANS**

INSTRUCTIONS TO BIDDERS

**PLEASE READ ALL INSTRUCTIONS CAREFULLY
BEFORE PREPARING AND SUBMITTING YOUR BID.**

All bids shall be prepared and submitted in accordance with the following requirements. Failure to comply with any requirement may cause the bid to be considered irregular and may be grounds for rejection of the bid.

For preparing and submitting the bid electronically using the on-line system Bid Express®, refer to Article 102-8(B) of the *2018 Standard Specifications*.

Bidders that bid electronically on Raleigh Central-Let projects will need a separate Digital Signature form Bid Express® for Division Contracts.

ELECTRONIC ON-LINE BID THRU BID EXPRESS:

1. Download entire proposal from Connect NCDOT website. Download EBS file from Bid Express website.
2. Prepare and submit EBS file using Expedite software.
3. Expedite software necessary for electronic bid preparation may be downloaded from the Connect NCDOT website at: <https://connect.ncdot.gov/letting/Pages/EBS-Information.aspx> or from Bid Express.

PROJECT SPECIAL PROVISIONS**BOND REQUIREMENTS:**

(06-01-16)

102-8, 102-10

SPD 01-420A

A Bid Bond is required in accordance with Article 102-10 of the 2018 Standard Specifications for Roads and Structures.

Contract Payment and Performance Bonds are required in accordance with Article 103-7 of the 2018 Standard Specifications for Roads and Structures.

CONTRACT TIME AND LIQUIDATED DAMAGES:

(7-1-95) (Rev. 12-18-07)

108

SP1 G10 A

The date of availability for this contract is **June 25, 2018**

The completion date for this contract is **September 14, 2018**

Except where otherwise provided by the contract, observation periods required by the contract will not be a part of the work to be completed by the completion date and/or intermediate contract times stated in the contract. The acceptable completion of the observation periods that extend beyond the final completion date shall be a part of the work covered by the performance and payment bonds.

The liquidated damages for this contract are **One Thousand Dollars (\$1000.00)** per calendar day.

PROSECUTION OF WORK:

(7-1-95) (Rev. 8-21-12)

108

SP1 G15R

The Contractor will be required to prosecute the work in a continuous and uninterrupted manner from the time he begins the work until completion and final acceptance of the project. The Contractor will not be permitted to suspend his operations except for reasons beyond his control or except where the Engineer has authorized a suspension of the Contractor's operations in writing.

In the event that the Contractor's operations are suspended in violation of the above provisions, the sum of **\$250.00** will be charged the Contractor for each and every calendar day that such suspension takes place. The said amount is hereby agreed upon as liquidated damages due to extra engineering and maintenance costs and due to increased public hazard resulting from a suspension of the work. Liquidated damages chargeable due to suspension of the work will be additional to any liquidated damages that may become chargeable due to failure to complete the work on time.

NO MAJOR CONTRACT ITEMS:

(2-19-02) (Rev. 8-21-07)

104

SP1 G31

None of the items included in this contract will be major items.

NO SPECIALTY ITEMS:

(7-1-95)

108-6

SP1 G34

None of the items included in this contract will be specialty items (see Article 108-6 of the 2018 Standard Specifications).

MINORITY BUSINESS ENTERPRISE AND WOMEN BUSINESS ENTERPRISE**(DIVISIONS):**

(10-16-07)(Rev. 5-15-18)

102-15(J)

SP1 G66

Description

The purpose of this Special Provision is to carry out the North Carolina Department of Transportation's policy of ensuring nondiscrimination in the award and administration of contracts financed in whole or in part with State funds.

Definitions

Additional MBE/WBE Subcontractors - Any MBE/WBE submitted at the time of bid that will not be used to meet the Combined MBE /WBE Goal. No submittal of a Letter of Intent is required.

Combined MBE/WBE Goal: A portion of the total contract, expressed as a percentage that is to be performed by committed MBE/WBE subcontractors.

Committed MBE/WBE Subcontractor - Any MBE/WBE submitted at the time of bid that is being used to meet the Combined MBE /WBE goal by submission of a Letter of Intent. Or any MBE or WBE used as a replacement for a previously committed MBE or WBE firm.

Contract Goal Requirement - The approved participation at time of award, but not greater than the advertised Combined MBE/WBE contract goal.

Goal Confirmation Letter - Written documentation from the Department to the bidder confirming the Contractor's approved, committed participation along with a listing of the committed MBE and WBE firms.

Manufacturer - A firm that operates or maintains a factory or establishment that produces on the premises, the materials or supplies obtained by the Contractor.

MBE Participation (Anticipated) - A portion of the total contract, expressed as a percentage that is anticipated to be performed by committed MBE subcontractor(s).

Minority Business Enterprise (MBE) - A firm certified as a Disadvantaged Minority-Owned Business Enterprise through the North Carolina Unified Certification Program.

Regular Dealer - A firm that owns, operates, or maintains a store, warehouse, or other establishment in which the materials or supplies required for the performance of the contract are bought, kept in stock, and regularly sold to the public in the usual course of business. A regular dealer engages in, as its principal business and in its own name, the purchase and sale or lease of the products in question. A regular dealer in such bulk items as steel, cement, gravel, stone, and petroleum products need not keep

such products in stock, if it owns and operates distribution equipment for the products. Brokers and packagers are not regarded as manufacturers or regular dealers within the meaning of this section.

North Carolina Unified Certification Program (NCUCP) - A program that provides comprehensive services and information to applicants for MBE/WBE certification. The MBE/WBE program follows the same regulations as the federal Disadvantaged Business Enterprise (DBE) program in accordance with 49 CFR Part 26.

United States Department of Transportation (USDOT) - Federal agency responsible for issuing regulations (49 CFR Part 26) and official guidance for the DBE program.

WBE Participation (Anticipated) - A portion of the total contract, expressed as a percentage, that is anticipated to be performed by committed WBE subcontractor(s).

Women Business Enterprise (WBE) - A firm certified as a Disadvantaged Women-Owned Business Enterprise through the North Carolina Unified Certification Program.

Forms and Websites Referenced in this Provision

Payment Tracking System - On-line system in which the Contractor enters the payments made to MBE and WBE subcontractors who have performed work on the project.
<https://apps.dot.state.nc.us/Vendor/PaymentTracking/>

DBE-IS Subcontractor Payment Information - Form for reporting the payments made to all MBE/WBE firms working on the project. This form is for paper bid projects only.
<https://connect.ncdot.gov/business/Turnpike/Documents/Form%20DBE-IS%20Subcontractor%20Payment%20Information.pdf>

RF-1 MBE/WBE Replacement Request Form - Form for replacing a committed MBE or WBE.
<http://connect.ncdot.gov/projects/construction/Construction%20Forms/DBE%20MBE%20WBE%20Replacement%20Request%20Form.pdf>

SAF Subcontract Approval Form - Form required for approval to sublet the contract.
<http://connect.ncdot.gov/projects/construction/Construction%20Forms/Subcontract%20Approval%20Form%20Rev.%202018.zip>

JC-1 Joint Check Notification Form - Form and procedures for joint check notification. The form acts as a written joint check agreement among the parties providing full and prompt disclosure of the expected use of joint checks.
<http://connect.ncdot.gov/projects/construction/Construction%20Forms/Joint%20Check%20Notification%20Form.pdf>

Letter of Intent - Form signed by the Contractor and the MBE/WBE subcontractor, manufacturer or regular dealer that affirms that a portion of said contract is going to be performed by the signed MBE/WBE for the estimated amount (based on quantities and unit prices) listed at the time of bid.
<http://connect.ncdot.gov/letting/LetCentral/Letter%20of%20Intent%20to%20Perform%20as%20a%20Subcontractor.pdf>

Listing of MBE and WBE Subcontractors Form - Form for entering MBE/WBE subcontractors on a project that will meet the Combined MBE/WBE goal. This form is for paper bids only.

[http://connect.ncdot.gov/municipalities/Bid%20Proposals%20for%20LGA%20Content/09%20MBE-WBE%20Subcontractors%20\(State\).docx](http://connect.ncdot.gov/municipalities/Bid%20Proposals%20for%20LGA%20Content/09%20MBE-WBE%20Subcontractors%20(State).docx)

Subcontractor Quote Comparison Sheet - Spreadsheet for showing all subcontractor quotes in the work areas where MBEs and WBEs quoted on the project. This sheet is submitted with good faith effort packages.

<http://connect.ncdot.gov/business/SmallBusiness/Documents/DBE%20Subcontractor%20Quote%20Comparison%20Example.xls>

Combined MBE/WBE Goal

The Combined MBE/WBE Goal for this project is **0 %**

The Combined Goal was established utilizing the following anticipated participation for Minority Business Enterprises and Women Business Enterprises:

(A) Minority Business Enterprises **0 %**

- (1) *If the anticipated MBE participation is more than zero*, the Contractor shall exercise all necessary and reasonable steps to ensure that MBEs participate in at least the percent of the contract as set forth above.
- (2) *If the anticipated MBE participation is zero*, the Contractor shall make an effort to recruit and use MBEs during the performance of the contract. Any MBE participation obtained shall be reported to the Department.

(B) Women Business Enterprises **0 %**

- (1) *If the anticipated WBE participation is more than zero*, the Contractor shall exercise all necessary and reasonable steps to ensure that WBEs participate in at least the percent of the contract as set forth above.
- (2) *If the anticipated WBE participation is zero*, the Contractor shall make an effort to recruit and use WBEs during the performance of the contract. Any WBE participation obtained shall be reported to the Department.

The Bidder is required to submit only participation to meet the Combined MBE/WBE Goal. The Combined Goal may be met by submitting all MBE participation, all WBE participation, or a combination of MBE and WBE participation.

Directory of Transportation Firms (Directory)

Real-time information is available about firms doing business with the Department and firms that are certified through NCUCP in the Directory of Transportation Firms. Only firms identified in the Directory as MBE and WBE certified shall be used to meet the Combined MBE/WBE Goal. The Directory can be found at the following link.

<https://www.ebs.nc.gov/VendorDirectory/default.html>

The listing of an individual firm in the directory shall not be construed as an endorsement of the firm's

capability to perform certain work.

Listing of MBE/WBE Subcontractors

At the time of bid, bidders shall submit all MBE and WBE participation that they anticipate to use during the life of the contract. Only those identified to meet the Combined MBE/WBE Goal will be considered committed, even though the listing shall include both committed MBE/WBE subcontractors and additional MBE/WBE subcontractors. Any additional MBE/WBE subcontractor participation above the goal will follow the banking guidelines found elsewhere in this provision. All other additional MBE/WBE subcontractor participation submitted at the time of bid will be used toward the Department's overall race-neutral goals. Only those firms with current MBE and WBE certification at the time of bid opening will be acceptable for listing in the bidder's submittal of MBE and WBE participation. The Contractor shall indicate the following required information:

(A) Electronic Bids

Bidders shall submit a listing of MBE and WBE participation in the appropriate section of Expedite, the bidding software of Bid Express®.

- (1) Submit the names and addresses of MBE and WBE firms identified to participate in the contract. If the bidder uses the updated listing of MBE and WBE firms shown in Expedite, the bidder may use the dropdown menu to access the name and address of the firms.
- (2) Submit the contract line numbers of work to be performed by each MBE and WBE firm. When no figures or firms are entered, the bidder will be considered to have no MBE or WBE participation.
- (3) The bidder shall be responsible for ensuring that the MBE and WBE are certified at the time of bid by checking the Directory of Transportation Firms. If the firm is not certified at the time of the bid-letting, that MBE's or WBE's participation will not count towards achieving the Combined MBE/WBE goal.

(B) Paper Bids

- (1) *If the Combined MBE/WBE Goal is more than zero,*
 - (a) Bidders, at the time the bid proposal is submitted, shall submit a listing of MBE/WBE participation, including the names and addresses on *Listing of MBE and WBE Subcontractors* contained elsewhere in the contract documents in order for the bid to be considered responsive. Bidders shall indicate the total dollar value of the MBE and WBE participation for the contract.
 - (b) If bidders have no MBE or WBE participation, they shall indicate this on the *Listing of MBE and WBE Subcontractors* by entering the word "None" or the number "0." This form shall be completed in its entirety. **Blank forms will not be deemed to represent zero participation.** Bids submitted that do not have MBE and WBE participation indicated on the appropriate form will not be read publicly during the opening of bids. The Department will not consider these bids

for award and the proposal will be rejected.

- (c) The bidder shall be responsible for ensuring that the MBE/WBE is certified at the time of bid by checking the Directory of Transportation Firms. If the firm is not certified at the time of the bid-letting, that MBE's or WBE's participation will not count towards achieving the Combined MBE/WBE Goal.
- (2) *If the Combined MBE/WBE Goal is zero*, entries on the *Listing of MBE and WBE Subcontractors* are not required for the zero goal, however any MBE or WBE participation that is achieved during the project shall be reported in accordance with requirements contained elsewhere in the special provision.

MBE or WBE Prime Contractor

When a certified MBE or WBE firm bids on a contract that contains a Combined MBE/WBE goal, the firm is responsible for meeting the goal or making good faith efforts to meet the goal, just like any other bidder. In most cases, a MBE or WBE bidder on a contract will meet the Combined MBE/WBE Goal by virtue of the work it performs on the contract with its own forces. However, all the work that is performed by the MBE or WBE bidder and any other similarly certified subcontractors will count toward the goal. The MBE or WBE bidder shall list itself along with any MBE or WBE subcontractors, if any, in order to receive credit toward the goal.

MBE/WBE prime contractors shall also follow Sections A and B listed under *Listing of MBE/WBE Subcontractor* just as a non-MBE/WBE bidder would.

Written Documentation – Letter of Intent

The bidder shall submit written documentation for each MBE/WBE that will be used to meet the Combined MBE/WBE Goal of the contract, indicating the bidder's commitment to use the MBE/WBE in the contract. This documentation shall be submitted on the Department's form titled *Letter of Intent*.

The documentation shall be received in the office of the State Contractor Utilization Engineer or at DBE@ncdot.gov no later than 10:00 a.m. of the sixth calendar day following opening of bids, unless the sixth day falls on an official state holiday. In that situation, it is due in the office of the State Contractor Utilization Engineer no later than 10:00 a.m. on the next official state business day.

If the bidder fails to submit the Letter of Intent from each committed MBE and WBE to be used toward the Combined MBE/WBE Goal, or if the form is incomplete (i.e. both signatures are not present), the MBE/WBE participation will not count toward meeting the Combined MBE/WBE Goal. If the lack of this participation drops the commitment below the Combined MBE/WBE Goal, the Contractor shall submit evidence of good faith efforts for the goal, completed in its entirety, to the State Contractor Utilization Engineer or DBE@ncdot.gov no later than 10:00 a.m. on the eighth calendar day following opening of bids, unless the eighth day falls on an official state holiday. In that situation, it is due in the office of the State Contractor Utilization Engineer no later than 10:00 a.m. on the next official state business day.

Banking MBE/WBE Credit

If the bid of the lowest responsive bidder exceeds \$500,000 and if the committed MBE/WBE participation submitted exceeds the algebraic sum of the Combined MBE /WBE Goal by \$1,000 or more, the excess will be placed on deposit by the Department for future use by the bidder. Separate accounts will be maintained for MBE and WBE participation and these may accumulate for a period not to exceed 24 months.

When the apparent lowest responsive bidder fails to submit sufficient participation by MBE and WBE firms to meet the advertised goal, as part of the good faith effort, the Department will consider allowing the bidder to withdraw funds to meet the Combined MBE/WBE Goal as long as there are adequate funds available from the bidder's MBE and WBE bank accounts.

Submission of Good Faith Effort

If the bidder fails to meet or exceed the Combined MBE/WBE Goal, the apparent lowest responsive bidder shall submit to the Department documentation of adequate good faith efforts made to reach that specific goal.

One complete set and copies of this information shall be received in the office of the Engineer no later than 2:00 p.m. of the fifth calendar day following opening of bids, unless the fifth day falls on Saturday, Sunday or an official state holiday. In that situation, it is due in the office of the Engineer no later than 10:00 a.m. on the next official state business day.

Note: Where the information submitted includes repetitious solicitation letters, it will be acceptable to submit a representative letter along with a distribution list of the firms that were solicited. Documentation of MBE/WBE quotations shall be a part of the good faith effort submittal. This documentation may include written subcontractor quotations, telephone log notations of verbal quotations, or other types of quotation documentation.

Consideration of Good Faith Effort for Projects with a Combined MBE/WBE Goal More Than Zero

Adequate good faith efforts mean that the bidder took all necessary and reasonable steps to achieve the goal which, by their scope, intensity, and appropriateness, could reasonably be expected to obtain sufficient MBE/WBE participation. Adequate good faith efforts also mean that the bidder actively and aggressively sought MBE/WBE participation. Mere *pro forma* efforts are not considered good faith efforts.

The Department will consider the quality, quantity, and intensity of the different kinds of efforts a bidder has made. Listed below are examples of the types of actions a bidder will take in making a good faith effort to meet the goals and are not intended to be exclusive or exhaustive, nor is it intended to be a mandatory checklist.

- (A) Soliciting through all reasonable and available means (e.g. attendance at pre-bid meetings, advertising, written notices, use of verifiable electronic means through the use of the NCDOT Directory of Transportation Firms) the interest of all certified MBEs/WBEs that are also prequalified subcontractors. The bidder must solicit this interest within at least 10 days prior to bid opening to allow the MBEs/WBEs to respond to the solicitation. Solicitation shall provide

the opportunity to MBEs/WBEs within the Division and surrounding Divisions where the project is located. The bidder must determine with certainty if the MBEs/WBEs are interested by taking appropriate steps to follow up initial solicitations.

- (B) Selecting portions of the work to be performed by MBEs/WBEs in order to increase the likelihood that the Combined MBE/WBE Goal will be achieved.
 - (1) Where appropriate, break out contract work items into economically feasible units to facilitate MBE/WBE participation, even when the prime contractor might otherwise prefer to perform these work items with its own forces.
 - (2) Negotiate with subcontractors to assume part of the responsibility to meet the advertised goal when the work to be sublet includes potential for MBE/WBE participation (2nd and 3rd tier subcontractors).
- (C) Providing interested certified MBEs/WBEs that are also prequalified subcontractors with adequate information about the plans, specifications, and requirements of the contract in a timely manner to assist them in responding to a solicitation.
- (D)
 - (1) Negotiating in good faith with interested MBEs/WBEs. It is the bidder's responsibility to make a portion of the work available to MBE/WBE subcontractors and suppliers and to select those portions of the work or material needs consistent with the available MBE/WBE subcontractors and suppliers, so as to facilitate MBE/WBE participation. Evidence of such negotiation includes the names, addresses, and telephone numbers of MBEs/WBEs that were considered; a description of the information provided regarding the plans and specifications for the work selected for subcontracting; and evidence as to why additional agreements could not be reached for MBEs/WBEs to perform the work.
 - (2) A bidder using good business judgment would consider a number of factors in negotiating with subcontractors, including MBE/WBE subcontractors, and would take a firm's price and capabilities as well as the advertised goal into consideration. However, the fact that there may be some additional costs involved in finding and using MBEs/WBEs is not in itself sufficient reason for a bidder's failure to meet the contract goal, as long as such costs are reasonable. Also, the ability or desire of a prime contractor to perform the work of a contract with its own organization does not relieve the bidder of the responsibility to make good faith efforts. Bidding contractors are not, however, required to accept higher quotes from MBEs/WBEs if the price difference is excessive or unreasonable.
- (E) Not rejecting MBEs/WBEs as being unqualified without sound reasons based on a thorough investigation of their capabilities. The bidder's standing within its industry, membership in specific groups, organizations, or associates and political or social affiliations (for example, union vs. non-union employee status) are not legitimate causes for the rejection or non-solicitation of bids in the bidder's efforts to meet the project goal.
- (F) Making efforts to assist interested MBEs/WBEs in obtaining bonding, lines of credit, or insurance as required by the recipient or bidder.

- (G) Making efforts to assist interested MBEs/WBEs in obtaining necessary equipment, supplies, materials, or related assistance or services.
- (H) Effectively using the services of available minority/women community organizations; minority/women contractors' groups; Federal, State, and local minority/women business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of MBEs/WBEs. Contact within 7 days from the bid opening the Business Opportunity and Work Force Development Unit at BOWD@ncdot.gov to give notification of the bidder's inability to get MBE or WBE quotes.
- (I) Any other evidence that the bidder submits which shows that the bidder has made reasonable good faith efforts to meet the advertised goal.

In addition, the Department may take into account the following:

- (1) Whether the bidder's documentation reflects a clear and realistic plan for achieving the Combined MBE/WBE Goal.
- (2) The bidders' past performance in meeting the contract goal.
- (3) The performance of other bidders in meeting the advertised goal. For example, when the apparent successful bidder fails to meet the goal, but others meet it, you may reasonably raise the question of whether, with additional reasonable efforts the apparent successful bidder could have met the goal. If the apparent successful bidder fails to meet the advertised goal, but meets or exceeds the average MBE and WBE participation obtained by other bidders, the Department may view this, in conjunction with other factors, as evidence of the apparent successful bidder having made a good faith effort.

If the Department does not award the contract to the apparent lowest responsive bidder, the Department reserves the right to award the contract to the next lowest responsive bidder that can satisfy to the Department that the Combined MBE/WBE Goal can be met or that an adequate good faith effort has been made to meet the advertised goal.

Non-Good Faith Appeal

The State Contractual Services Engineer will notify the contractor verbally and in writing of non-good faith. A contractor may appeal a determination of non-good faith made by the Goal Compliance Committee. If a contractor wishes to appeal the determination made by the Committee, they shall provide written notification to the State Contractual Services Engineer or at DBE@ncdot.gov. The appeal shall be made within 2 business days of notification of the determination of non-good faith.

Counting MBE/WBE Participation Toward Meeting the Combined MBE/WBE Goal

(A) Participation

The total dollar value of the participation by a committed MBE/WBE will be counted toward the contract goal requirements. The total dollar value of participation by a committed MBE/WBE will be based upon the value of work actually performed by the MBE/WBE and the

actual payments to MBE/WBE firms by the Contractor.

(B) Joint Checks

Prior notification of joint check use shall be required when counting MBE/WBE participation for services or purchases that involves the use of a joint check. Notification shall be through submission of Form JC-1 (*Joint Check Notification Form*) and the use of joint checks shall be in accordance with the Department's Joint Check Procedures.

(C) Subcontracts (Non-Trucking)

A MBE/WBE may enter into subcontracts. Work that a MBE subcontracts to another MBE firm may be counted toward the anticipated MBE participation. The same holds true for work that a WBE subcontracts to another WBE firm. Work that a MBE/WBE subcontracts to a non-MBE/WBE firm does not count toward the contract goal requirement. It should be noted that every effort shall be made by MBE and WBE contractors to subcontract to the same certification (i.e., MBEs to MBEs and WBEs to WBEs), in order to fulfill the MBE or WBE participation breakdown. This, however, may not always be possible due to the limitation of firms in the area. If the MBE or WBE firm shows a good faith effort has been made to reach out to similarly certified firms and there is no interest or availability, and they can get assistance from other certified firms, the Engineer will not hold the prime responsible for meeting the individual MBE or WBE breakdown. If a MBE or WBE contractor or subcontractor subcontracts a significantly greater portion of the work of the contract than would be expected on the basis of standard industry practices, it shall be presumed that the MBE or WBE is not performing a commercially useful function.

(D) Joint Venture

When a MBE or WBE performs as a participant in a joint venture, the Contractor may count toward its contract goal requirement a portion of the total value of participation with the MBE or WBE in the joint venture, that portion of the total dollar value being a distinct clearly defined portion of work that the MBE or WBE performs with its forces.

(E) Suppliers

A contractor may count toward its MBE/ WBE requirement 60 percent of its expenditures for materials and supplies required to complete the contract and obtained from a MBE or WBE regular dealer and 100 percent of such expenditures from a MBE or WBE manufacturer.

(F) Manufacturers and Regular Dealers

A contractor may count toward its MBE/ WBE requirement the following expenditures to MBE/WBE firms that are not manufacturers or regular dealers:

- (1) The fees or commissions charged by a MBE/WBE firm for providing a *bona fide* service, such as professional, technical, consultant, or managerial services, or for providing bonds or insurance specifically required for the performance of a DOT-assisted contract, provided the fees or commissions are determined to be reasonable and not excessive as compared with fees and commissions customarily

allowed for similar services.

- (2) With respect to materials or supplies purchased from a MBE/WBE, which is neither a manufacturer nor a regular dealer, count the entire amount of fees or commissions charged for assistance in the procurement of the materials and supplies, or fees or transportation charges for the delivery of materials or supplies required on a job site (but not the cost of the materials and supplies themselves), provided the fees are determined to be reasonable and not excessive as compared with fees customarily allowed for similar services.

Commercially Useful Function

(A) MBE/WBE Utilization

The Contractor may count toward its contract goal requirement only expenditures to MBEs and WBEs that perform a commercially useful function in the work of a contract. A MBE/WBE performs a commercially useful function when it is responsible for execution of the work of the contract and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. To perform a commercially useful function, the MBE/WBE shall also be responsible with respect to materials and supplies used on the contract, for negotiating price, determining quality and quantity, ordering the material and installing (where applicable) and paying for the material itself. To determine whether a MBE/WBE is performing a commercially useful function, the Department will evaluate the amount of work subcontracted, industry practices, whether the amount the firm is to be paid under the contract is commensurate with the work it is actually performing and the MBE/WBE credit claimed for its performance of the work, and any other relevant factors. If it is determined that a MBE or WBE is not performing a Commercially Useful Function, the contractor may present evidence to rebut this presumption to the Department.

(B) MBE/WBE Utilization in Trucking

The following factors will be used to determine if a MBE or WBE trucking firm is performing a commercially useful function:

- (1) The MBE/WBE shall be responsible for the management and supervision of the entire trucking operation for which it is responsible on a particular contract, and there shall not be a contrived arrangement for the purpose of meeting the Combined MBE/WBE Goal.
- (2) The MBE/WBE shall itself own and operate at least one fully licensed, insured, and operational truck used on the contract.
- (3) The MBE/WBE receives credit for the total value of the transportation services it provides on the contract using trucks it owns, insures, and operates using drivers it employs.
- (4) The MBE may subcontract the work to another MBE firm, including an owner-operator who is certified as a MBE. The same holds true that a WBE may subcontract the work to another WBE firm, including an owner-operator who is certified

as a WBE. When this occurs, the MBE or WBE who subcontracts work receives credit for the total value of the transportation services the subcontracted MBE or WBE provides on the contract. It should be noted that every effort shall be made by MBE and WBE contractors to subcontract to the same certification (i.e., MBEs to MBEs and WBEs to WBEs), in order to fulfill the participation breakdown. This, however, may not always be possible due to the limitation of firms in the area. If the MBE or WBE firm shows a good faith effort has been made to reach out to similarly certified transportation service providers and there is no interest or availability, and they can get assistance from other certified providers, the Engineer will not hold the prime responsible for meeting the individual MBE or WBE participation breakdown.

- (5) The MBE/WBE may also subcontract the work to a non-MBE/WBE firm, including from an owner-operator. The MBE/WBE who subcontracts the work to a non-MBE/WBE is entitled to credit for the total value of transportation services provided by the non-MBE/WBE subcontractor not to exceed the value of transportation services provided by MBE/WBE-owned trucks on the contract. Additional participation by non-MBE/WBE subcontractors receives credit only for the fee or commission it receives as a result of the subcontract arrangement. The value of services performed under subcontract agreements between the MBE/WBE and the Contractor will not count towards the MBE/WBE contract requirement.
- (6) A MBE/WBE may lease truck(s) from an established equipment leasing business open to the general public. The lease must indicate that the MBE/WBE has exclusive use of and control over the truck. This requirement does not preclude the leased truck from working for others during the term of the lease with the consent of the MBE/WBE, so long as the lease gives the MBE/WBE absolute priority for use of the leased truck. This type of lease may count toward the MBE/WBE's credit as long as the driver is under the MBE/WBE's payroll.
- (7) Subcontracted/leased trucks shall display clearly on the dashboard the name of the MBE/WBE that they are subcontracted/leased to and their own company name if it is not identified on the truck itself. Magnetic door signs are not permitted.

MBE/WBE Replacement

When a Contractor has relied on a commitment to a MBE or WBE firm (or an approved substitute MBE or WBE firm) to meet all or part of a contract goal requirement, the contractor shall not terminate the MBE/WBE for convenience. This includes, but is not limited to, instances in which the Contractor seeks to perform the work of the terminated subcontractor with another MBE/WBE subcontractor, a non-MBE/WBE subcontractor, or with the Contractor's own forces or those of an affiliate. A MBE/WBE may only be terminated after receiving the Engineer's written approval based upon a finding of good cause for the proposed termination. The prime contractor must give the MBE/WBE firm 5 days to respond to the prime contractor's notice of intent to terminate and advise the prime contractor and the Department of the reasons, if any, why the firm objects to the proposed termination of its subcontract and why the Department should not approve the action.

All requests for replacement of a committed MBE/WBE firm shall be submitted to the Engineer for approval on Form RF-1 (*Replacement Request*). If the Contractor fails to follow this procedure, the Contractor may be disqualified from further bidding for a period of up to 6 months.

The Contractor shall comply with the following for replacement of a committed MBE/WBE:

(A) Performance Related Replacement

When a committed MBE/WBE is terminated for good cause as stated above, an additional MBE/WBE that was submitted at the time of bid may be used to fulfill the MBE/WBE commitment to meet the Combined MBE/WBE Goal. A good faith effort will only be required for removing a committed MBE/WBE if there were no additional MBEs/WBEs submitted at the time of bid to cover the same amount of work as the MBE/WBE that was terminated.

If a replacement MBE/WBE is not found that can perform at least the same amount of work as the terminated MBE/WBE, the Contractor shall submit a good faith effort documenting the steps taken. Such documentation shall include, but not be limited to, the following:

- (1) Copies of written notification to MBEs/WBEs that their interest is solicited in contracting the work defaulted by the previous MBE/WBE or in subcontracting other items of work in the contract.
- (2) Efforts to negotiate with MBEs/WBEs for specific subbids including, at a minimum:
 - (a) The names, addresses, and telephone numbers of MBEs/WBEs who were contacted.
 - (b) A description of the information provided to MBEs/WBEs regarding the plans and specifications for portions of the work to be performed.
- (3) A list of reasons why MBE/WBE quotes were not accepted.
- (4) Efforts made to assist the MBEs/WBEs contacted, if needed, in obtaining bonding or insurance required by the Contractor.

(B) Decertification Replacement

- (1) When a committed MBE/WBE is decertified by the Department after the SAF (*Subcontract Approval Form*) has been received by the Department, the Department will not require the Contractor to solicit replacement MBE/WBE participation equal to the remaining work to be performed by the decertified firm. The participation equal to the remaining work performed by the decertified firm will count toward the contract goal requirement.
- (2) When a committed MBE/WBE is decertified prior to the Department receiving the SAF (*Subcontract Approval Form*) for the named MBE/WBE firm, the Contractor shall take all necessary and reasonable steps to replace the MBE/WBE subcontractor with another similarly certified MBE/WBE subcontractor to perform at least the same amount of work to meet the Combined MBE/WBE Goal requirement. If a MBE/WBE firm is not found to do the same amount of work, a good faith effort must be submitted to NCDOT (see A herein for required documentation).

Changes in the Work

When the Engineer makes changes that result in the reduction or elimination of work to be performed by a committed MBE/WBE, the Contractor will not be required to seek additional participation. When the Engineer makes changes that result in additional work to be performed by a MBE/WBE based upon the Contractor's commitment, the MBE/WBE shall participate in additional work to the same extent as the MBE/WBE participated in the original contract work.

When the Engineer makes changes that result in extra work, which has more than a minimal impact on the contract amount, the Contractor shall seek additional participation by MBEs/WBEs unless otherwise approved by the Engineer.

When the Engineer makes changes that result in an alteration of plans or details of construction, and a portion or all of the work had been expected to be performed by a committed MBE/WBE, the Contractor shall seek participation by MBEs/WBEs unless otherwise approved by the Engineer.

When the Contractor requests changes in the work that result in the reduction or elimination of work that the Contractor committed to be performed by a MBE/WBE, the Contractor shall seek additional participation by MBEs/WBEs equal to the reduced MBE/WBE participation caused by the changes.

Reports and Documentation

A SAF (*Subcontract Approval Form*) shall be submitted for all work which is to be performed by a MBE/WBE subcontractor. The Department reserves the right to require copies of actual subcontract agreements involving MBE/WBE subcontractors.

When using transportation services to meet the contract commitment, the Contractor shall submit a proposed trucking plan in addition to the SAF. The plan shall be submitted prior to beginning construction on the project. The plan shall include the names of all trucking firms proposed for use, their certification type(s), the number of trucks owned by the firm, as well as the individual truck identification numbers, and the line item(s) being performed.

Within 30 calendar days of entering into an agreement with a MBE/WBE for materials, supplies or services, not otherwise documented by the SAF as specified above, the Contractor shall furnish the Engineer a copy of the agreement. The documentation shall also indicate the percentage (60% or 100%) of expenditures claimed for MBE/WBE credit.

Reporting Minority and Women Business Enterprise Participation

The Contractor shall provide the Engineer with an accounting of payments made to all MBE/WBE firms, including material suppliers and contractors at all levels (prime, subcontractor, or second tier subcontractor). This accounting shall be furnished to the Engineer for any given month by the end of the following month. Failure to submit this information accordingly may result in the following action:

- (A) Withholding of money due in the next partial pay estimate; or
- (B) Removal of an approved contractor from the prequalified bidders' list or the removal of other entities from the approved subcontractors list.

While each contractor (prime, subcontractor, 2nd tier subcontractor) is responsible for accurate accounting of payments to MBEs/WBEs, it shall be the prime contractor's responsibility to report all monthly and final payment information in the correct reporting manner.

Failure on the part of the Contractor to submit the required information in the time frame specified may result in the disqualification of that contractor and any affiliate companies from further bidding until the required information is submitted.

Failure on the part of any subcontractor to submit the required information in the time frame specified may result in the disqualification of that contractor and any affiliate companies from being approved for work on future DOT projects until the required information is submitted.

Contractors reporting transportation services provided by non-MBE/WBE lessees shall evaluate the value of services provided during the month of the reporting period only.

At any time, the Engineer can request written verification of subcontractor payments.

The Contractor shall report the accounting of payments through the Department's Payment Tracking System.

Failure to Meet Contract Requirements

Failure to meet contract requirements in accordance with Subarticle 102-15(J) of the *2018 Standard Specifications* may be cause to disqualify the Contractor.

CONTRACTOR'S LICENSE REQUIREMENTS:

(7-1-95)

102-14

SP1 G88

If the successful bidder does not hold the proper license to perform any plumbing, heating, air conditioning, or electrical work in this contract, he will be required to sublet such work to a contractor properly licensed in accordance with *Article 2 of Chapter 87 of the General Statutes* (licensing of heating, plumbing, and air conditioning contractors) and *Article 4 of Chapter 87 of the General Statutes* (licensing of electrical contractors).

COOPERATION BETWEEN CONTRACTORS:

(7-1-95)

105-7

SP1 G133

The Contractor's attention is directed to Article 105-7 of the *2018 Standard Specifications*.

The Contractor on this project shall cooperate with any Contractor working within or adjacent to the limits of this project to the extent that the work can be carried out to the best advantage of all concerned.

TWELVE MONTH GUARANTEE:

(7-15-03)

108

SP1 G145

- (A) The Contractor shall guarantee materials and workmanship against latent and patent defects arising from faulty materials, faulty workmanship or negligence for a period of twelve months following the date of final acceptance of the work for maintenance and shall replace such defective materials and workmanship without cost to the Department. The Contractor will not be responsible for damage due to faulty design, normal wear and tear, for negligence on the part of the Department, and/or for use in excess of the design.
- (B) Where items of equipment or material carry a manufacturer's guarantee for any period in excess of twelve months, then the manufacturer's guarantee shall apply for that particular piece of equipment or material. The Department's first remedy shall be through the manufacturer although the Contractor is responsible for invoking the warranted repair work with the manufacturer. The Contractor's responsibility shall be limited to the term of the manufacturer's guarantee. NCDOT would be afforded the same warranty as provided by the Manufacturer.

This guarantee provision shall be invoked only for major components of work in which the Contractor would be wholly responsible for under the terms of the contract. Examples would include pavement structures, bridge components, and sign structures. This provision will not be used as a mechanism to force the Contractor to return to the project to make repairs or perform additional work that the Department would normally compensate the Contractor for. In addition, routine maintenance activities (i.e. mowing grass, debris removal, ruts in earth shoulders,) are not parts of this guarantee.

Appropriate provisions of the payment and/or performance bonds shall cover this guarantee for the project.

To ensure uniform application statewide the Division Engineer will forward details regarding the circumstances surrounding any proposed guarantee repairs to the Chief Engineer for review and approval prior to the work being performed.

OUTSOURCING OUTSIDE THE USA:

(9-21-04) (Rev. 5-16-06)

SP1 G150

All work on consultant contracts, services contracts, and construction contracts shall be performed in the United States of America. No work shall be outsourced outside of the United States of America.

Outsourcing for the purpose of this provision is defined as the practice of subcontracting labor, work, services, staffing, or personnel to entities located outside of the United States.

The North Carolina Secretary of Transportation shall approve exceptions to this provision in writing.

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
FERRY DIVISION

**SPECIAL PROVISIONS FOR
VESSEL MAINTENANCE AND
REPAIR**



JANUARY 2018

SOUND CLASS FERRIES

Special Provisions

Prepared for: NCDOT • Raleigh, NC

Ref: 17029-000-832-0A

Rev. A

January 9, 2018

**Elliott Bay
Design Group**

*Architectural & Engineering Services
for the Marine Industry*

PREPARED BY

Elliott Bay Design Group - North Carolina, PLLC 5305
Shilshole Ave. NW, Ste. 100
Seattle, WA 98107

REVISIONS

REV	DESCRIPTION	DATE	APPROVED
-	Initial Issue	08/11/17	RKW
A	Rev. A:	01/9/18	RKW

- Changed “County” to “NCDOT”, line 776
- Correct miscellaneous spelling and punctuation issues

TABLE OF CONTENTS

	PAGE
General Specifications	26
Introduction	26
Vessel Availability	26
Description of Work	26
Definitions	27
U.S. Coast Guard Inspection	30
Fish and Wildlife, and Ecology Regulations	31
Time for Completion	31
Production Planning and Project Management	31
Welding and Brazing	32
Disposal of Surplus Material	34
Source of Materials	34
Fire Prevention	34
Inspection of Vessel	35
Requests for Information	35
Conditions Affecting the Work and Removals	35
Dry Dock Inspection by The U.S. Coast Guard and NCDOT	37
Technical Specifications	38
1 Take Control and Dry Dock M/V Sea Level	38
2 Dock and Sea Trials	44
3 Lay Days	46
4 Berthing Days	46
5 Open, Clean, and Certify Gas Free: Bilges, Holds and Enclosed Areas	48

6	Main Deck Hatch Maintenance and Repair	50
7	Sea Valves	51
8	Zinc Anode Replacements	54
9	Sewage System - Clean, Inspect, and Perform Maintenance	55
10	Painting—General	56
11	High-Pressure Water Wash – Hull Below DLWL	63
12	High-Pressure Water Wash - Hull Above DLWL	63
13	High-Pressure Water Wash – Superstructure	64
14	Spot Cleaning and Painting - Hull Below DLWL	65
15	Spot Cleaning and Painting - Hull Above DLWL	66
16	Painting - Superstructure	67
17	Painting - Hull Below DLWL	69
18	Exterior Deck Paint Repair	71
19	Tail Shaft & Propeller Removals, Inspections & Shafting Alignments	73
20	Tail Shaft Bearing Replacement (Optional)	77
21	Line Shaft Bearing Replacement (Optional)	78
22	Rudder Removals and Inspections	79
23	Sea Water Cooling System Inspection and Maintenance	83
24	Rebuild Hydraulic Rams	85
25	Bow Thruster System Inspections & Maintenance	87
26	Drawings	--

GENERAL SPECIFICATIONS

INTRODUCTION

The following "Special Provisions" (comprised of both "General Specifications" and "Technical Specifications") applicable to the 2018 Dry-Docking and Repair of the vessel

M/V Sea Level, shall be used in conjunction with the North Carolina Department of Transportation (NCDOT) "NCDOT Standard Specifications" for Vessels, herein referred to as the "Specifications." The Special Provisions are crafted to complement the Specifications. In the event of a conflict, though, the Special Provisions take precedence. The Special Provisions and Specifications, together with drawings, attachments, and all other appendices included with the entire integrated agreement between the Contractor and NCDOT shall be referred to as the Contract Documents. The Contract Documents describe the performance expected for all dry dock and repair work to be completed on the vessel.

VESSEL AVAILABILITY

The ferry [M/V Sea Level] will be available for the work outlined in these Special Provisions between the dates of June 25, 2018 – September 14, 2018. The vessel [M/V Sea Level] must be returned to the NCDOT no later than September 14, 2018 to be placed back in regular service. It is anticipated that the work shall require portion of which shall require the vessel to be in the dry dock.

DESCRIPTION OF WORK

The Contract Documents describe the requirements for dry docking, repairs, and improvements on NCDOT vessel [M/V Sea Level].

The [M/V Sea Level] is a steel-hulled passenger/car ferry operated for service between [Ocracoke and Cedar Island]. The principal characteristics of the vessel are as follows:

Length Overall (molded):	220'-6
Breadth (molded) over guard:	50'-0"
Draft, DLWL:	6'-6"
Displacement, DLWL:	800.25 LT (Long Tons)

The vessel is a U.S. Coast Guard (USCG) inspected and certificated vessel, and maintains a Certificate of Inspection (COI) issued by the USCG. The Contractor shall perform the dry docking, repairs, and improvements as required by the USCG and the Contract Documents and all items directed by the vessel's owner, NCDOT, to make the vessel suitable in all respects for unrestricted service on its USCG certificated route, in all normally encountered sea states and weather conditions, and to improve the vessel's general material condition.

A list of items and activities is included in various sections of the Contract Documents to emphasize major details of the requirements. It remains the responsibility of the Contractor to inspect the vessel and discern the detailed production requirements, including interference removal, before making an offer for this work.

The Contractor shall develop the detail design necessary to complete the work as specified herein. It is not the intent of the Contract Documents to cover every minor detail of construction and equipment. Details and components that are not mentioned but are necessary to complete the installation to function as intended, or are usual and necessary in accordance with good ship repair practice for this class of ship, shall be provided by the Contractor to the satisfaction of NCDOT.

The Contractor shall provide all certificates, documentation, labor, material, equipment, tools, rigging, and staging, transportation, power, and supplies necessary to complete the work in accordance with the Contract Documents. Any material or part whose omission would be detrimental to either the seaworthiness or intended service, the inclusion of which is generally accepted good marine practice, shall be provided by the Shipyard at no additional cost to NCDOT. The Contractor shall complete all work per USCG Regulations, Title 46 Code of Federal Regulations (CFR), Subchapter H. At the completion of the work, demonstrate to the satisfaction of NCDOT that the vessel is complete in all respects, fully equipped, outfitted to the best current marine practice, clean, and ready to engage in unrestricted operations in its intended service, approved and certificated by the U.S. Coast Guard.

Tests and inspections called out in the Contract Documents shall be organized, directed, and documented by the Contractor.

DEFINITIONS

To clarify requirements in the Contract Documents, maintenance terms shall be defined as follows:

ADDITIONAL WORK: Any emergent or new work that is discovered during the course of accomplishing the defined work scopes of this specification.

ADJUST: To manipulate a system or component to conform or correspond to specifications, special provisions, and manufacturer settings and tolerances.

BERTHING DAYS: Days when the vessel must be tied up pier side, in the Contractor's facility, beyond the period initially anticipated and contracted to complete the basic work, in order to accomplish "Additional Work" that requires the vessel to remain at the Contractor's facility. See also the section on "Berthing Days" in the Technical Specification below.

CHECK: To observe, in process or performing its intended function as a part or as a member of an assembly, to determine suitability for continued safe and accurate service, in the capacity intended by the Original Equipment Manufacturer (OEM).

CHECK POINT or INSPECTION: A formal inspection point in the construction process specifically called out in the specification. A brief pause in the ongoing, immediate work scope is typically required to complete a CHECK POINT or INSPECTION. Contractor is required to provide the NCDOT Representative a minimum 1-day advance notice before CHECKPOINTS or INSPECTIONS. All such inspections are to occur between 0800 and 1430 on weekdays. No CHECK POINTS or INSPECTIONS are allowed on weekends or holidays, unless a written request is submitted and approved by the NCDOT Representative, at least 24 hours in advance of the scheduled inspection. Results of all CHECK POINTS or INSPECTIONS are to be summarized in a written report, and provided to the NCDOT Representative on the same day the inspection occurs.

CONTRACTOR: A shipyard or other company/entity/facility that is primarily in charge and responsible for all business activity or work associated with this "Specification."

COMPETENT PERSON: An individual meeting all requirements and capabilities defined in 29 CFR 1915.4 and 1915.7. A COMPETENT PERSON means a person who is capable of recognizing and evaluating employee exposure to hazardous substances or to other unsafe conditions. They are capable of specifying the necessary protection and precautions to be taken to ensure the safety of employees.

DISASSEMBLE: To remove an assembly from a machine and to further deconstruct or take apart an assembly sufficiently to expose completely all running, rotating, sliding, reciprocating, oscillating, or structural components to permit detailed inspection. During disassembly, all soft parts, seals, grommets, non-metallic bushings, plastics, and gaskets should be removed and discarded. All soft parts, seals, grommets, non-metallic bushings, plastics, and gaskets shall be renewed at re-assembly.

EXCHANGE: To trade a worn or unserviceable component for a genuine OEM new or remanufactured component.

INSPECT: To examine closely and compare to a standard, by micrometer measurement, comparator, gauge, visual method, microscopic method, non-destructive chemical analysis, non-destructive liquid penetrant examination, non-destructive mechanical examination, probing, scraping, electrical measurement, non-destructive radiographic examination, non-destructive audio method, or tactile method for the purpose of determining an assembly's or part's suitability for continued service, repair, rebuild, or disposal. This item is intended to allow the contractor to perform advance or routine or contract required inspections of components, machinery and systems without prior notice to the NCDOT Representative. These inspections typically precede CHECK POINTS or formal INSPECTIONS requiring the presence of the NCDOT Representative.

Results of all inspections are to be summarized in a written report, which is to be delivered to NCDOT Representative within 24 hours of the inspection.

INSPECT/REBUILD OR INSPECT/EXCHANGE: Inspect to make a rebuild or exchange decision only.

INTERFERENCE(S): A system, structure, assembly, machine, pipe, fluid system, item of outfit, cargo, furnishing, deck covering, paint, surface finish, protective coating, wall hanging, trim, other solid object, debris, fuel, water, lubricant, or ballast, in way of another, system, structure, assembly, machine, item of outfit, cargo, furnishing, deck covering, paint, surface finish, protective coating, wall hanging, trim, other solid object, debris, fuel, water, lubricant, or ballast such that it impedes, complicates, precludes accomplishment of any work prescribed by these Specifications or the Contract Documents. Any item that must be moved out of the way to efficiently, safely, and competently complete any work prescribed by these Specifications or the Contract Documents is an interference.

LAY DAY: Days in which the vessel is required to be kept in dry dock in order to accomplish Additional Work that requires the vessel to remain on the dry dock. See also the section on Lay Days, in the Technical Specification below.

LUBRICATE: To apply lubricant of sufficient quality and quantity, as specified, to reduce or eliminate friction wear and heat between two solid surfaces in contact or nearly in contact with one another, where the parts normally operate with motion relative to one another.

NCDOT REPRESENTATIVE: An on-site representative of NCDOT authorized to inspect work, review reports and advise NCDOT on any Additional Work and change orders.

OFFICIAL NUMBER: (O.N.) Official Number as assigned to the vessel by USCG.

OPTIONAL ITEM: A work scope item all Contractors must bid on, but that NCDOT is not obligated to accept, approve, or incorporate into the larger project. An OPTIONAL ITEM may be accepted and approved by NCDOT, at which time the CONTRACTOR must incorporate it into their production plan, for the fixed bid price submitted.

REASSEMBLE: To return a structure, system, assembly, or component to its pre-disassembled or inspected condition: preserved, protected, secured, intact in all respects and ready to perform its intended function. To restore a structure, system, or assembly, using the same components found in the structure, system, or assembly during disassembly. Re-assembly includes restoration, reconstruction, and reconstitution, completely, of all running, rotating, sliding, reciprocating, oscillating, structural components, or pipe to permit the structure, system, or assembly to operate or exist in the state it was found in at disassembly, except, during re-assembly all soft parts, seals, grommets, non-metallic bushings, plastics, and gaskets shall be renewed at re-assembly without further requirement in the Specifications or Special Provisions. "Reassemble" is generally used to describe restoration of disassembled, inspected, or checked machinery and equipment.

REBUILD: To repair a structure, assembly, or discreet component by installing new or remanufactured parts, during reconstruction or assembly.

RENEW or REPLACE: To install a new structure, assembly or component, as specified, in place of an existing or removed assembly or component (also referred to as "replace with new").

RESTORE: To return a structure, system, assembly, or component to its pre-disassembled or inspected condition preserved, protected, secured, intact in all respects and ready to perform its intended function. To restore a structure, system, or assembly, using the same components found in the structure, system, or assembly during disassembly. Re-assembly includes complete restoration, reconstruction, and reconstitution of all running, rotating, sliding, reciprocating, oscillating, and structural components or pipe to permit the structure, system, or assembly to operate or exist in the state it was found in at disassembly, except all soft parts, seals, grommets, non-metallic bushings, plastics, and gaskets shall be renewed at re-assembly without further requirement in the Specifications or Special Provisions. Generally used to describe restoration and reconstruction of removed structure, fluid systems, insulation, outfit, surface finish, deck covering, paint, cargo, furnishing, protective coating, wall hanging, trim, other solid object, fuel, water, lubricant, or ballast.

TEST: To conduct a procedure per an OEM, industry, or regulatory standard or description to certify a structure's, assembly's, or component's suitability for continued service, prove the integrity of a new, restored, or reassembled structure, assembly, or component, and to validate satisfactory performance for its intended service.

WORKING DAY: Any day except Saturday and Sunday or one of the following holidays: January 1, the third Monday of January, the third Monday of February, Memorial Day, July 4, Labor Day, November 11, Thanksgiving Day, the day after Thanksgiving, and Christmas Day. When any of these holidays fall on a Sunday, the following Monday shall be counted a nonworking day. When the holiday falls on a Saturday, the preceding Friday shall be counted a nonworking day. The days between December 25 and January 1 will be classified as nonworking days.

NON-HAZARDOUS AND HAZARDOUS WASTE: Materials either removed from the vessel or produced during the repair process. Examples include but are not limited to run off from sand or water blasting of the vessel, paint, oil, fuel, joiner materials, steel, pipe, wiring or other materials associated with vessel repairs.

U.S. COAST GUARD INSPECTION

The Contractor shall call out; schedule and coordinate Coast Guard inspections, and have all work inspected and approved by the U.S. Coast Guard (USCG). The Coast Guard Inspector must approve all USCG-inspected work before the NCDOT Representative will accept it.

Payment

Fees for certificates, including associated inspection fees and expenses of regulatory bodies shall be paid by the Contractor and shall be incidental to the unit contract prices of the various bid items in this project and no further payment will be made.

FISH AND WILDLIFE, AND ECOLOGY REGULATIONS

Throughout the work, the Contractor shall comply with all applicable state and federal regulations. Any one of these regulatory departments may, without prejudice to NCDOT, add rules as needed to protect game, fish, or the environment.

Payment

Work required by other agencies to comply with environmental and/or water quality standards, shall be considered incidental to the unit contract price of the various bid items in this project and no further payment will be made.

TIME FOR COMPLETION

This project shall be completed in accordance with the provisions of the Specifications.

In the event that the project is delayed beyond the above-specified time limit, the Contractor shall be liable for Liquidated Damages, in accordance with NCDOT's "Specifications."

Liquidated Damages shall be collected for any delays that cannot be demonstrated to have been caused by Additional Work beyond the Contractor's control.

PRODUCTION PLANNING AND PROJECT MANAGEMENT

Concurrent with the requirements of the "Specifications," the Contractor shall prepare a production plan that sequences and schedules all work detailed in the Contract Documents, in accordance with the generally accepted practices for project management. The Contractor shall prepare and submit a time-phased/resource loaded Gantt chart to the NCDOT Representative at the pre-construction conference. The initially submitted plan shall reflect all work included in the project at the time of Contract Award. The Contractor shall decompose the awarded activities indicated in the Contract Documents, down to a sufficient number of tasks, to adequately control and monitor the work and to clearly report progress for the duration of the project. Provide a network diagram indicating the critical path, duration, free float, and total float for each task on the Gantt chart. Indicate all predecessor and successor dependencies for each task. Specifically indicate the number of days on dry dock required to accomplish the work detailed in the Contract Documents.

The Contractor shall schedule and chair a weekly progress meeting, starting the first week, with the NCDOT Representative and the Contractor's key production persons. The Contractor shall provide an updated Gantt chart, a progress report (expressed as a percentage of work complete) by Activity in a tabular form, and a list of completed milestones. The updated Gantt chart shall reflect opened optional items, additional work, deleted work, and modifications, in addition to work progress and completions. At the second progress meeting, the Contractor shall prepare

and submit an Open Task Report. The Contractor shall update and submit the Open Task Report at each subsequent weekly progress meeting and then, daily starting the first day of the last week of the scheduled performance period.

Payment

All costs for scheduling, controlling, and monitoring the project per these requirements shall be incidental to the unit contract bid prices of the various bid items in this project and no further payment will be made.

WELDING AND BRAZING

Welding and silver brazing shall be done by properly trained and qualified personnel. The Contractor shall use only welders and welding operators that are qualified to the satisfaction of American Bureau of Shipping (ABS), USCG, or USN, and the Owner (at no expense to the Owner) for the type of material(s) and welding process(es) being used. Where applicable, welders shall be position and procedure qualified for the areas of construction and system requirements to which they are working.

The Contractor shall accomplish all welding in accordance with ABS, American Welding Society (AWS) USCG, or United States Navy (USN) approved welding processes and procedures, as applicable. The procedures shall identify type and size of electrode or filler metal, weld size and arrangements, amperage and voltage, shielding gas and other details of welding and silver brazing processes and procedures, as they relate to the work being addressed.

Structural welding will be carried out in such sequence as to:

- a) Compensate for shrinkage as the work progresses
- b) Prevent locked in stresses
- c) Hold distortion to an acceptable minimum

Structural steel may be manual or machine welded, depending on the Contractor's standard practice.

Peening of weld material will not be allowed except as specifically approved by USCG and the Owner. Steel to be welded shall be kept entirely free of paint or oil other than "weld-through" primers.

All welds shall be neatly finished, with all spatter and slag removed and ground flush where required.

New welds will be inspected as necessary to satisfy the Owner and regulatory bodies. Should the regulatory bodies or the Owner deem it necessary to increase the area of inspection because of the discovery of unsatisfactory welding, all such additional inspections will be at the Contractor's expense.

Weld inspections shall occur prior to any painting of welds and shall be made by either visual, radiographic, ultrasonic, hydrostatic, air or magnetic tests, separately or in combination, as required by USCG or the Owner. All weld inspection equipment, inspection equipment operators and materials shall be furnished by the Contractor, at no expense to the Owner. No weld inspection shall take place without 24-hour notification of same.

Any internal/external defects or other welding deficiencies found to be unsatisfactory to USCG or the Owner, will be corrected by the Contractor and re-inspected/tested (the test method to be determined by either USCG and/or the Owner), at the Contractor's expense.

Continuous welding for sealing purposes shall be performed on both sides of all new structure and attachments exposed to the weather.

Welding Onboard Vessel

- a) All welding, brazing, and allied processes shall be in accordance with the requirements 46 CFR Subchapter H, Subchapter F, and/or ABS Rules for Steel Vessels Under 90 meters.
- b) Welding shall only be permitted while the vessel is out of the water. Welding machines and other welding power sources shall have both cables connected only to the ship hull structure where welding is done. The return ground cable shall never be grounded to anything but the ship's hull structure it is servicing, and shall always be grounded to structure in the immediate vicinity (as close as reasonably feasible) to where the welding is taking place. The total cross-sectional areas of the return ground cable shall be at least one million circular mils per 1,000 amperes per 100 feet, but not less than 85,000 circular mils. The ground cable shall be securely fastened to grounding plates or to an integral part of the ship's hull structure, with contact areas thoroughly cleaned to bare metal.
- c) When welding on equipment, machinery, pressure vessels, or piping, the return ground cable to the welding machine shall be connected in the immediate vicinity (as close as practical) of the work to ensure that current does not flow through bearings, pipehangers, machinery, electrical power distribution boxes and controller, or other areas where arcing or high resistance paths exist. Welding leads/cables shall not be run next to (within 3 feet) ship's electrical cable ways, communication, electronic, and DC Control system cables or components.
- d) Coordinate with NCDOT Representative to open circuit breakers to ship sensitive equipment including: 12/24 VDC system: Navigation equipment, communication systems, Pilothouse 12/24 VDC components; Engine Room: 24 VDC power to main engine controls, steering controls, and engine 24 VDC Alarm Panel.

While under the Contractor's control, the Contractor shall maintain circuit breaker tag-out procedures as detailed in the "Take Control and Dry Dock the [M/V Sea Level]" section of the Specifications.

Contractor is required to maintain the vessel's onboard Bilge and Fire Alarms in "power on - operational status" during the entire time the vessel is located inside the shipyard's facilities. To accomplish this, electrical leads for other circuits in the engine 24 VDC alarm panel will need to be lifted and disconnected.

Payment

All costs for welding and brazing per these requirements shall be incidental to the unit contract bid prices of the various bid items in this project and no further payment will be made.

DISPOSAL OF SURPLUS MATERIAL

NCDOT will not provide a waste site for the disposal of excess materials and debris, however all valves 3" or larger, and all equipment made from non-ferrous materials, and other rebuildable equipment, as indicated and approved by the NCDOT Representative, shall be returned to NCDOT with the vessel. Except as otherwise noted above and elsewhere in the Contract Documents, all waste material not claimed by the NCDOT Representative shall become property of the Contractor and shall be disposed of at the Contractor's expense, in accordance with all local, state, and federal laws.

The Contractor shall be solely responsible for obtaining all required permits at his/her expense for the disposal of waste materials and shall comply with all state, federal and/or local requirements with regard to waste disposal. The Contractor shall provide copies of all hazardous waste shipping documents and disposal receipts to the NCDOT Representative.

Payment

Costs for disposal of surplus material, per these requirements, shall be incidental to the unit contract bid prices for the appropriate bid items involved and no further payment will be made.

SOURCE OF MATERIALS

With only a couple of exceptions and except as explicitly stated in the appropriate specification sections below, there are no Owner Furnished materials for this project. The Contractor shall provide all materials, equipment, parts, and consumables required to complete the work detailed in the Contract Documents.

Payment

The Contractor shall provide all materials to complete all work detailed in the Contract Documents. All costs of acquiring, producing, and placing this material in the finished work shall be incidental to the unit contract bid prices for the appropriate bid items involved and no further payment will be made.

FIRE PREVENTION

The Contractor shall provide and maintain a water pump or pumps, fire extinguishers, and associated equipment adequate for use in fire suppression on the project at all times. This requirement does not relieve the Contractor of his/her responsibility as outlined in these Specifications.

Payment

All costs and expense to the Contractor incurred for such provisions shall be incidental to the unit contract bid prices for the appropriate bid items in this project and no further payment will be made.

INSPECTION OF VESSEL

A mandatory pre-bid conference will be held at the Swan Quarter Ferry Operations, on the date and time specified below, in order to provide all interested bidders an opportunity to inspect the vessel. The vessel will be located at:

Swan Quarter Ferry Division, North Carolina Department of Transportation
748 Oyster Creek Street
Swan Quarter, NC 27885

Pre-Bid Conference

May 17, 2018 @ 11:00 AM

NOTE: Bidders are required to notify the NCDOT Representative in writing (contact information provided below) no later than May 16, 2018 to indicate their intent to attend the mandatory pre-bid conference.

NCDOT Representative

Jon P. Mathias – Planning/Scheduler Supervisor jpmathias@ncdot.gov (252) 423-5016 Ferry Division, North Carolina Department of Transportation
8550 Ferry Road
Manns Harbor, NC 27953

Bidders' Representatives inspecting the vessel do so at their own risk and NCDOT takes no responsibilities for loss or injury suffered by Bidders' Representatives while onboard a NCDOT vessel.

REQUESTS FOR INFORMATION

Requests for information concerning vessel plans or other related information may be submitted to: NCDOT POC:

Joe Waldrep - Marine Engineer jdwaldrep@ncdot.gov (252) 423-5104) or
Brent Jones – Engineering Technician btjones@ncdot.gov (252) 423-5105) Ferry Division, North Carolina Department of Transportation
8550 Ferry Road
Manns Harbor, NC 27953

CONDITIONS AFFECTING THE WORK AND REMOVALS

The Contractor acknowledges that it has conducted its own ship check and satisfied itself

regarding all of the onboard conditions affecting the work indicated in the Contract Documents and affecting the Contractor's production plan. In particular, the Contractor acknowledges:

- a) That it has assessed the regulatory requirements for work indicated in the Contract Documents and has considered those requirements in its bid,
- b) That it has inspected the compartments where the work will be accomplished and considered physical restrictions and interferences that will require removal and reinstallation to accomplish the work,
- c) The availability of human resources, indicated materials, and indicated parts and equipment necessary to accomplish the work and considered these constraints in its bid and its production schedule,
- d) The integration of all the work indicated in this package and how one task may impact another task and considered that impact in its bid and its production schedule,
- e) The Contractor shall not design or install a system or feature that will change the vessel's service orientation or capacity indicated in the Contract Documents or on the vessel's current Certificate of Inspection.

The Contractor shall make all removals necessary, including but not limited to interferences, to carry out all the work directed in the Contract Documents. The Contractor shall restore all removed or disturbed work, including but not limited to interferences (except debris) to its original condition unless otherwise directed by the Contract Documents. Coating of all disturbed work shall be equal to or better than that of the original and adjacent areas. The Contractor shall dispose of all debris, removed as interference, in accordance with all local, state, and federal regulations.

Disturbed piping systems, mechanical and electrical systems and associated equipment shall be tested, first at dock, then underway; to prove that each has been returned to design specifications. These dock trials and sea trials shall be conducted on all disturbed systems as indicated below.

The Contractor shall dispose of removed equipment that is not to be re-used after approval by the NCDOT Representative, except as expressly indicated otherwise in the Contract Documents.

Upon completion of the work under this contract, the Contractor shall remove all of its equipment and debris and shall leave the vessel clean and fit for immediate operation.

Payment

All costs and expense to the Contractor for removal work, disposing of removed items, and reinstallation of removed items, as detailed in the Contract Documents and Special Provisions, shall be incidental to the unit contract bid prices for the various bid items in this project and no further payment will be made.

DRY DOCK INSPECTION BY THE U.S. COAST GUARD AND NCDOT

The vessel shall be dry docked by the Contractor to allow for the necessary inspection of the underwater body and appendages, valves, shafting, rudders, propellers, bow thruster tunnels, sea chests, steering gear, and all other areas of the vessel to meet the USCG requirements for renewal of the COI. The inspection will be carried out under the supervision of the USCG Inspector, and will require access to all hull voids and compartments. The Contractor shall inform the NCDOT Representative a minimum 72 hours in advance of all USCG inspections.

The Contractor shall be responsible for removing any equipment, fastenings, interferences, or enclosures and providing access to any areas as directed by the USCG Inspector or the NCDOT Representative. After inspection, repairs, re-inspection, and with the approval of the NCDOT Representative and Coast Guard Inspector, the Contractor shall restore all equipment, fastenings, interferences, or enclosures as required by the NCDOT Representative.

NCDOT Inspection Representative POC:

Marshall Coleman – QA Specialist mccoleman2@ncdot.gov (252) 423-5110 or George Emerson – QA Inspector gaemerson@ncdot.gov (252) 423-5119
Ferry Division, North Carolina Department of Transportation 8550
Ferry Road
Manns Harbor, NC 27953

The Contractor shall ensure that the NCDOT Representative is informed of and copied on all communications and correspondence with the USCG, including but not limited to inspections.

The Contractor shall schedule all USCG required inspections between 0800 and 1430 on normal business weekdays (Monday through Friday).

Payment

All costs and expense to the Contractor for removing and replacing equipment, fastenings, interferences, and enclosures, and any other work as outlined in this section shall be included in the lump sum contract bid price for *Generic Ferry Item (Take Control and Dry-Dock the M/V Sea Level)* and no further payment will be made.

TECHNICAL SPECIFICATIONS

1 TAKE CONTROL AND DRY DOCK M/V SEA LEVEL

1.1 Description

This section describes the requirements for the Contractor to receive, take complete control of, dry dock and undock the vessel, and redeliver the vessel to the NCDOT when all work indicated in the Contract Documents is complete.

1.2 References

1.2.1 DWG 09-060 997-010 [M/V Sea Level] Docking and Anode Plan

1.3 Owner Furnished Equipment

None

1.4 Requirements

The Contractor shall fill out and submit (with the bid) one copy of the "Dry Dock Certification" form furnished by the NCDOT, an example of which is shown in the bid proposal documents of the Contract Documents. The Contractor shall present a U.S. Navy or American Bureau of Shipping certificate for the lifting facility, at the block inspection called out in this section. If a mechanical lifting facility is utilized, certificates indicating size, type and age of any cables used for lifting or hauling the vessel will be provided to the Owner prior to dry docking the vessel.

The NCDOT vessel operator will move the vessel from the vessel mooring to the Contractor's shipyard and, upon completion of all work and re-delivery to the NCDOT will return it to the vessel's typical mooring at NCDOT expense.

Upon arrival at the Contractor's facility, the Contractor shall provide line handlers and moor the ship safely as detailed in this section. While moored but before ships power is secured and the vessel placed on shore power, NCDOT and the Contractor shall cycle the various systems on board the vessel and prove their operation. Contractor shall provide a written record of this trial to the NCDOT Representative, particularly noting any systems not performing to their design level. If this documentation is not provided to the NCDOT Representative, Contractor shall be liable to repair any malfunctioning systems prior to returning the vessel to NCDOT at no additional cost to NCDOT.

After proving systems, the vessel will be shut down, with sea valves closed, and the keys to the vessel will be presented to the Contractor by the vessel Master. The Contractor shall immediately take control of the vessel, assume responsibility for the vessel's security per the Contract Documents, and start work as directed by the NCDOT Representative. The Contractor and the NCDOT Representative shall conduct a walk-through of the vessel and inventory all major valuables when the Contractor receives the vessel and when the vessel is returned to the owner. During the walk through, the Contractor and the NCDOT Representative shall observe and record details about the general cleanliness and material condition of the vessel. At the completion of all work detailed in the Contract Documents, the Contractor shall restore all removed interferences and restore all disturbed areas and surfaces to their pre-arrival material

condition, or better. All areas where paint or surface finishes are disturbed due to Contractor work shall be touched up to pre-arrival aesthetic appearance and preservation integrity, or better.

While under the Contractor's control, the Contractor shall maintain valve tag-out procedures. All valves, regardless of system or function, which are operated by the Contractor or his sub-contractors, from their original position at time of delivery to the Contractor shall be red tagged. The Contractor shall maintain a log to be located in the Engine Room that will note the original valve position, location and purpose of the red-tagged valve and date and time it is either opened or closed each time it is operated. The valve tags and log shall be maintained for the entire duration of the contract. Upon returning the vessel to the owner's control, all valves shall be returned to their original position at the time the Contractor took possession of the vessel.

The Contractor shall provide a heated/air conditioned private office, with desk and one (1) ergonomic swivel/rolling desk chair, two (2) guest chairs, two (2) phone lines, a secure 2mb/sec or faster internet connection, and building power (minimum one (1) convenience outlet per wall or equivalent power strip) for the NCDOT Representative for the duration of the project. The office space shall be located as near the vessel dry dock as possible or in the office complex normally provided for the shipyard customer's port engineers. Provide two (2) marked reserved parking spaces, inside the shipyard, for the duration of the project.

The Contractor shall dry dock the vessel within twenty-four (24) hours of its arrival at the Contractor's facility. If the vessel is not immediately taken into the dry dock when it arrives at the Contractor's facility, the Contractor shall provide all labor, material, and equipment, including tugboats as necessary, to secure the vessel to the Contractor's moorings and to move the vessel to the dry dock when appropriate. Except where specifically indicated otherwise by these Specifications, the vessel will be delivered to the Contractor with minimal fuel and all temporary items removed such as hand radios, binoculars, personal items, food, and trash. The Contractor shall be responsible for any lightering, ballast operation, or liquid load transfer necessary to accommodate the dry dock capacity or complete any work called out in the Contract Documents. The ship will be received with the same amount of fuel onboard as it was delivered to the Contractor.

The Contractor shall, plan, budget, and provide a number of days in dry dock as required to complete the work in these Special Provisions. The dry docking schedule shall be provided to the NCDOT Representative prior to the dry-docking of the vessel. Except for emergency situations (prior docking commitments on the part of the Contractor do not constitute emergency situations), once the vessel is docked, any deviation in the dry-docking schedule or dry-docking evolutions (undockings and re-dockings of the vessel) must be requested and submitted in writing to the NCDOT Representative, at least ten (10) days in advance of the proposed change.

The Contractor shall provide adequate docking facilities, soft fenders and mooring lines for the vessel which shall accommodate the vessel's draft and will allow the vessel to safely rise and fall with the tide so no damage occurs to the vessel while it is moored to the Contractor's facilities. Mooring lines shall be sized and configured to accommodate the vessel and all reasonably anticipated weather occurrences for the Contractor's facility.

The Contractor shall provide shore power for the vessel during its entire stay at the Contractor's facility. It shall be the Contractor's responsibility to provide a suitable shore connection and supply shore power to the vessel. The shore power connection for the vessel is [208 VOLTS] VAC, [200 AMPS] Amp, [3] Phase.

The Contractor shall be responsible for the physical security of the vessel including its contents and equipment from the time the Contractor takes physical control of the vessel until the completion of the contract and the return of the vessel to the NCDOT's control after the vessel is accepted by the NCDOT vessel operator and the work is accepted by the NCDOT Representative. Provide and install fireproof temporary deck covering in the Pilothouse and Passenger Cabin suitable to protect against normal maintenance and repair traffic. (Engine Room deck protection is specified in the Engine Overhaul section of these Special Provisions.) The Contractor shall provide, as a minimum fire protection posture, the following equipment and practice:

- a) Two (2) fully charged fire hoses capable of simultaneously delivering a high velocity, fog fire stream at a minimum nozzle pressure of 75 psi at any point on the ferry.
- b) Ten (10) each fully functional and recently inspected portable CO₂ or Dry Chemical Fire Extinguishers for use by fire watches at hot work sites.
- c) Fire watches assigned at all times in the immediate vicinity of ongoing hot work; fire watches shall remain on station for 30 minutes after hot work cessation or until the affected structure falls below 140°F, as demonstrated by temperature indicating crayon or heat gun. All fire watches shall be Competent Persons and trained in fire prevention, detection, and firefighting procedures.

The Contractor shall meet with the NCDOT Representative at least eight (8) hours before the dry-docking and jointly inspect the dry dock and block arrangement. At this joint inspection, the Contractor shall finalize the time and date of the dry-docking and demonstrate the following:

- a) Blocks are set per Reference 1.2.1, [M/V Sea Level] "Docking and Anode Plan," within the tolerances detailed in this section. This shall include discussion and inspection of the following: the height of reference plane for setting the blocks, the physical reference on the dry dock used to set block heights, height and location of keel blocks, height and location of side blocks, and any special block arrangements to accommodate hull projection, openings, or underwater body work directed by the Contract Documents. Where a floating dry dock will be used to dry dock the ferry, the Contractor shall demonstrate by discussion, engineering drawing, or actual inspection that the blocks, and the ferry, will land on significant structure beneath the caisson deck. If deviations from the blocking plan described in Reference 1.2.1 are proposed, the Contractor shall supply the NCDOT Representative with calculations justifying the deviation no less than 2 normal business days prior to the dry-docking of the vessel. If these calculations are not provided and/or this calculation review period is not met, the NCDOT has the right to delay the docking of the vessel in order to accomplish the calculation review.

- b) Details of the Contractor's docking plan and procedure will cause the ship to land in accordance with Reference 1.2.1. The Contractor shall display the system intended to indicate the ship's fore and aft and athwartships position (for landing) over the dry dock. This shall include fore and aft centering marks or devices, square marks or devices to position the ferry ends, and divers' visual aids.
- c) The dry dock is structurally sound and pumping systems (if applicable) are in good condition, and that the dry dock is as declared in the Dry Dock Certificate submitted with the Contractor's bid.
- d) There is an adequate communications system between all persons at all docking stations, tugs, and the vessel.
- e) Estimated side clearance for the ship.
- f) A visual gauge system for measuring the height of the water over the blocks.

Keel blocks shall be built-up timbers or composite blocks and set to lie within $\pm 1/4$ " of the horizontal plane established as the block height. Side blocks shall be built up and located to land the ship so the line of force, perpendicular to the upper face of the block, will pass through the middle third of the side block, at the block's base. The line perpendicular to the face of the side block shall land within $1/2$ " of the half-breadth called out in Reference 1.2.1. Keel blocks shall be finished with new softwood caps. Keel block softwood caps shall be a minimum of 2" thick and a maximum of 6" thick. Side blocks shall be finished with new softwood caps. Side block softwood caps shall be a minimum of 2" thick and a maximum of 6" thick and they shall be proportional to the keel block softwood caps. Keels blocks shall be sized and set on the dry dock per Reference 1.2.1. Contractor-proposed deviation from the docking plan must be approved by the NCDOT Representative, but, in no case will keel block load pressure exceed 150 lbs/in^2 .

Keel blocks shall be no less than four (4) feet high. Side blocks shall be sized and set on the dry dock per Reference 1.2.1. Contractor-proposed deviation from the docking plan must be approved by the NCDOT Representative, but, in no case will side block load pressure exceed 100 lbs/in^2 .

The Contractor shall dry dock the ship, without strain or deformation, in accordance with Reference 1.2.1. The Contractor shall, by dry docking the vessel, expose the keel of the ship and all other underwater areas, including but not limited to the rudder, sea chests, underwater log, transducers, and overboard discharges for a complete inspection and any necessary repair or renovation work. The Contractor shall dry dock the ship using good trade, engineering, and shipyard practice. The Contractor shall use divers, experienced with dry docking operations, to verify ship position over the blocks immediately prior to landing the ship. The ship shall be landed on the dry dock blocks within the following parameters:

- No more than 4" off center, on the keel blocks.
- Within 6" of the indicated longitudinal position, per the docking plan.

Place cribbing such that the hull will be exposed to allow work as outlined herein. The ship shall

be blocked such that all underwater body painting and inspection detailed in the Contract Documents are accomplished. The Contractor shall shift ("bump") the ship in dry dock to expose, inspect, and paint the areas covered by the docking blocks. The Contractor may use a removable block configuration (sand boxes) in lieu of shifting the ship in dry dock.

Provide all staging, tarpaulins, weather covers, closures, and aerial apparatus necessary to accomplish the repairs and/or inspection work detailed in the Contract Documents.

If the vessel is dry docked contrary to any of these conditions, the Contractor shall immediately undock the vessel. The condition responsible for the undocking shall be corrected and the vessel shall be dry docked as soon thereafter as possible. The undocking and follow-on dry dockings, under these circumstances, shall be performed by the Contractor at no additional expense to the NCDOT.

If strain or deformation is noted during or after the dry-docking, the Contractor shall immediately undock the vessel. The condition responsible for the undocking shall be corrected and the vessel shall be dry docked as soon thereafter as possible. The undocking and follow-on dry dockings, under these circumstances, if determined to be a result of a Contractor act, omission, or other failure to abide by the direction in the Contract Documents, shall be performed by the Contractor at no additional expense to the NCDOT.

The Contractor shall undock the ship, without strain or deformation, upon completion of all underwater work, topside painting, or at the direction of the NCDOT Representative.

Immediately preceding the undocking the Contractor shall conduct an inspection, in the company of the NCDOT Representative, to verify the ship is ready to undock. During this inspection, the Contractor shall demonstrate:

- a) That all sea chest strainer plates are installed and fastened, with lock wired or tack welded stainless steel nuts or stainless steel Nylock style nuts, on all studs.
- b) That all cover plates, plugs, or other protective devices are removed from transducers and hull openings and that the transducer windows are intact and undamaged.
- c) That all anodes are in place and free of paint or other cover to permit immediate activation at undocking.
- d) That the propeller nut locks are intact.
- e) That all underwater body hull paint is intact and cured past the minimum dry to launch criteria established by the paint manufacturer.
- f) That the ship's stability is suitable for undocking and that no significant changes in ship's displacement, trim, and heel, from that observed at dry docking, are likely at undocking.
- g) That all gangways and shore services are disconnected.
- h) That all sea valves are closed.

- i) That all shaft seals are intact.
- j) That the rudder packing is intact.
- k) That the ship is in all respects ready to undock.

During the undocking the Contractor shall assign personnel to inspect hull fittings, seals, packings, transducer covers, and valves in all spaces, continuously, to discover and correct leaks. If a leak is discovered, the undocking shall be suspended, the leak shall be stopped and the condition causing the leak corrected, before the undocking is permitted to continue. The ship shall be undocked without strain or deformation.

The Contractor shall vent and bleed all sea water systems and prepare them for unrestricted operation of the vessel, in all normally anticipated sea states and weather conditions. When the ship is undocked it shall be moored safely, as directed in the Contract Documents, and prepared for dock and sea trials. The Contractor shall ensure that all sea water systems are fully functional for dock and sea trials and at the time of delivery of the vessel.

If the vessel is undocked contrary to any of these conditions, the Contractor shall immediately dry dock the vessel. The Contractor shall correct the condition responsible for the aborted undocking, and then undock the vessel as soon thereafter as possible. The dry-docking and follow-on undockings, under these circumstances, shall be performed by the Contractor at no additional expense to the NCDOT.

If any strain or deformation is noted during or after the undocking, the Contractor shall immediately dry dock the vessel. The Contractor shall correct the condition responsible for the aborted undocking, then undock the vessel as soon thereafter as possible. The dry-docking and follow-on undockings, under these circumstances, shall be performed at no additional expense to the NCDOT.

When under the Contractor's control, the Contractor shall not use or permit the use of the elevator for the carriage of personnel, tools, or materials. With the exception of any work on the elevator that is specified, the entire elevator installation, including door jams and thresholds, shall be secured from use and protected by the Contractor.

The Contractor shall ensure that the vessel's sinks, toilets, urinals, deck drains, and all other drainage systems are not used, except for the drainage of rainwater or exterior wash water runoff. Use of the drainage systems for the preparation and disposal of materials is specifically prohibited. The Contractor shall ensure that all drainage systems are fully functional at the time of delivery of the vessel.

When under the Contractor's control, the Contractor shall maintain circuit breaker tag-out procedures. All circuit breakers, regardless of system or function, which are operated by the Contractor or his sub-contractors, from their original position at time of delivery to the Contractor shall be red tagged.

The Contractor shall maintain a log to be located in the Engine Room that will note the original breaker position, location and purpose of the red-tagged breaker and date and time it is either

opened or closed each time it is operated. The circuit breaker tags and log shall be maintained for the entire duration of the contract. Upon returning the vessel to the NCDOT's control, all breakers shall be returned to their original position at the time the Contractor took possession of the vessel.

Additionally, the Contractor shall maintain a log, to be located in the Engine Room near the circuit breaker log discussed above, that will note any change to switches and equipment settings throughout the vessel. Any change to any switch or equipment setting for the duration of the contract shall be noted in the log. Upon returning the vessel to the NCDOT's control, all switches and equipment settings shall be returned to their original positions at the time the Contractor took possession of the vessel.

The Contractor shall shift ("bump") the ship in dry dock to expose, inspect, and paint the areas covered by the docking blocks. The Contractor may use a removable block configuration (sand boxes) in lieu of shifting the ship in dry dock. Surface preparation and paint schedule for the bumped areas shall be identical to the areas originally exposed.

1.5 Payment

The lump sum contract bid price for *Generic Ferry Item (Take Control And Dry Dock The M/V Sea Level)* shall be the total compensation for all labor, equipment, tools and materials to accomplish the work detailed in these Special Provisions and Supplemental Work Provisions, including testing and trials and all time necessary in dry dock to complete the work involved.

2 DOCK AND SEATRIALS

2.1 Description

This section describes the requirements for dock and sea trials, which shall be organized and carried out by the Contractor at the conclusion of the project.

2.2 References

None

2.3 Owner Furnished Equipment

None

2.4 Requirements

The Contractor shall organize and conduct formal dock trials and sea trials, per the Society Of Naval Architects and Marine Engineers SNAME T&R 3-39; "Guide for Shop and Installation Tests", and (SNAME) T&R 3-47; "Guide for Sea Trials", respectively and as applicable. Dock and Sea Trials' tests and agenda items shall also include all tests and trials required by equipment and engine manufacturers, for newly installed, re-built, or re-furbished equipment on board the vessel. Any and all items or equipment that has been disturbed in any way will require operational testing to the satisfaction of the NCDOT Representative, prior to final acceptance of the vessel.

The Contractor shall submit detailed test memoranda, bound into a test memoranda booklet, for each system to be tested and for the dock and integrated sea trials, no less than seven (7) working days prior to the scheduled start of dock trials. This milestone shall be inserted in the Contractor's progress schedule. The Contractor shall include as part of the test memoranda book, a sea trial and dock trial agenda detailing the sequence in which the tests will be conducted. The Contractor shall develop and conduct the test and trial protocols and schedules to thoroughly shakedown the vessel, in all modes and at various courses and speeds, including full power, to prove the capability and reliability of the vessel to operate, without restriction, on its certificated routes.

NCDOT shall provide a Coast Guard licensed Master, a Coast Guard licensed Engineer and other crew members as needed and in accordance with the vessel's COI operating requirements, to supervise and exercise operational and technical control of the vessel for all dockside and underway trial periods.

The Contractor shall be responsible for proving the operation and reliability of all systems disturbed by the work detailed in these Specifications, particularly, the main engines, main engine and reduction gear cooling systems, exhaust system, reduction gears, pneumatic engine and clutch controls, shaft brakes, propulsion shafting affected by the work scope, and all disturbed electrical and auxiliary systems. This same Contractor responsibility will extend to any equipment, machinery, or systems that are added to the original contracted work scope through approved change-orders.

The Contractor shall complete all maintenance and repair items and new installations, except for startup and testing, before dock trials and sea trials commence. Systems relying on integration with other systems shall be tested only after full integration is established. Partial trials, interrupted trials, and zone trials may be conducted for the Contractor's purposes and will be attended by the NCDOT Representative but will not be counted as acceptance trials.

Acceptance trials shall commence by 0800 each scheduled day and shall stop no later than 1600 each scheduled trial day. Trials need not be completed in one day.

2.5 Tests, Trials and Documentation

The Contractor shall provide the NCDOT Representative with a detailed and completed Dock and Sea Trial Agenda at least 7 working days prior to the commencement of dock trials. The NCDOT Representative shall approve of this agenda prior to the commencement of dock and sea trials.

2.6 Payment

The lump sum contract bid price for *Generic Ferry Item (Dock and Sea Trials)* for the [M/V Sea Level] shall be the total compensation for all labor, equipment, tools and materials to accomplish the work detailed in these Special Provisions and Supplemental Work Provisions, including testing and trials and all time necessary in dry dock and/or pier side to complete the work involved.

3 LAY DAYS

3.1 Description

This section describes the requirement for "Lay Days."

3.2 References

None

3.3 Owner Furnished Equipment

None

3.4 Requirements

"Lay Days" shall be defined as keeping the vessel in dry dock beyond the period initially anticipated to complete the basic dry dock-related work, in order to accomplish "Additional Work" that requires the vessel to remain on the dry dock. The Contractor will not be paid for "Lay Days" to accomplish "Additional Work" that can be done concurrently with any of the work outlined in these Specifications. The Contractor will only be paid "Lay Days" for additional work requiring the vessel to remain on the dry dock, that cannot be accomplished concurrently with the work outlined in this Specifications, and additional work falling under this condition must be explicitly demonstrated, explained to and accepted by, the NCDOT Representative prior to commencement of any "Additional Work".

In no event will payment be made for "Lay Days" for Saturdays, Sundays, or other days when no Contractor work is being accomplished, recognized NCDOT holidays, or for additional days required to complete work due to the Contractor's inexcusable delays, failure to prosecute the work diligently during the time available, or for days after the hull work and painting has been completed and dry docking is not necessary to complete remaining items or work, unless specifically authorized by the NCDOT Representative. For the purpose of providing a common proposal for all bidders, and for that purpose only, the NCDOT has estimated the number of days for "Lay Days" and has arbitrarily entered that number in the bid proposal to become a part of the total bid by the Contractor. The Contractor shall not use this estimate to infer a number of anticipated "Lay Days."

3.5 Tests, Trials and Documentation

None

3.6 Payment

Payment will be per the contract unit bid price per each day for <i>Generic Miscellaneous Item (Lay Days)</i> . No further compensation will be made.

4 BERTHING DAYS

4.1 Description

This section describes the requirement for "Berthing Days."

4.2 References

None

4.3 Owner Furnished Equipment

None

4.4 Requirements

"Berthing Days" shall be defined as days when the vessel must be tied up pier side, in the Contractor's facility, beyond the period initially anticipated to complete the basic work, in order to accomplish "Additional Work" that requires the vessel to remain at the Contractor's facility. Berthing days may be used, for example, to keep the vessel tied up while awaiting delivery of equipment or performing pier side maintenance. The Contractor will not be paid for "Berthing Days" to accomplish "Additional Work" that can be done concurrently with any of the work outlined in these Specifications. The Contractor will only be paid "Berthing Days" for additional work requiring the vessel to remain on site, that cannot be accomplished concurrently with the work outlined in this Specifications. Additional work falling under this condition must be explicitly demonstrated, explained to, and accepted by, the NCDOT Representative prior to commencement of any "Additional Work."

In no event, will payment be made for "Berthing Days" for Saturdays, Sundays, or other days when no Contractor work is being accomplished, recognized NCDOT holidays, or for additional days required to complete work due to the Contractor's inexcusable delays, or failure to prosecute the work diligently during the time available, unless specifically authorized by the NCDOT Representative. For the purpose of providing a common proposal for all bidders, Contractor is to enter a per day Berthing Day fee in the bid sheet.

The Contractor shall provide at least [60] working days to complete work on the [M/V Sea Level]. Until all of these days are expended, no Berthing Days shall be paid by NCDOT.

"Berthing Days" shall only be paid if the vessel is actively being worked on during the days charged. Days spent waiting for subcontractors, parts, or shipyard personnel shall only be counted as "Berthing Days" if explicitly agreed to in writing, by the NCDOT Representative.

4.5 Tests, Trials and Documentation

None

4.6 Payment

Payment will be per the contract unit bid price per day for <i>Generic Miscellaneous Item (Berthing Days)</i> . No further compensation will be made.

5 Open, Clean, and Certify Gas Free: Bilges, Holds and Enclosed Areas

5.1 Description

This section describes the requirements to clean and gas free the vessel to accommodate ordered work and inspections.

5.2 References

None

5.3 Owner Furnished Equipment

None

5.4 Requirements

The Contractor shall open, clean, dewater if necessary, dry, and gas free the bilges, accessible voids, holds and enclosed areas in way of the hull, as indicated in this section, to facilitate complete inspection of the vessel's structure. The Contractor shall remove all docking plugs (if any) for skegs, rudders, and other inaccessible voids as applicable, and report conditions found. NOTE: Skegs and rudders may be "float coated," so all inaccessible voids shall be gas freed and certified only if hot work is anticipated or indicated by the Contract Documents. The Contractor shall utilize a National Fire Protection Association-certified marine chemist to certify the compartments "Safe for Personnel" to accommodate the USCG and NCDOT inspections. Where hot work is anticipated, or indicated by the Contract Documents and Special Provisions, the Contractor shall require the marine chemist to certify the compartments "Safe for Personnel and Safe for Hot work." The Contractor shall maintain gas free certification, for the full term of the performance period or until the NCDOT Representative authorizes closure. Gas free certifications shall be maintained by daily Competent Person inspections, per Title 29 of the Code of Federal Regulations (29 CFR 1915) and in accordance with all conditions and restrictions directed by the marine chemist at the time of initial certification. Copies of all gas free certificates and the daily Competent Person inspection log shall be posted conspicuously on the vessel and a copy shall be provided to the NCDOT Representative.

Open, ventilate if required and certify gas free and safe for entry, pump dry and clean all accessible voids, holds, pump rooms and machinery spaces under the Main Deck on the vessel. The Contractor shall completely clean the above-specified areas to remove all water, fuel, oil, and grease fouling, then wipe and ventilate the bilges dry. The Contractor shall remove and dispose of bilge slop in all bilges and shaft alleys throughout the vessel. The Contractor shall dispose of all removed materials and waste in accordance with all local, state, and federal regulations. The Contractor shall inspect the vessel before bidding to satisfy himself/herself as to the approximate bilge slop quantity and constituent mixture. After bilge slop removal, the Contractor shall hot-water-and-detergent clean the bilges and shaft alleys, remove debris, pump dry, and properly dispose of the contaminated cleaning solution and debris. At the completion of all work indicated in the Contract Documents, re-deliver the vessel with the bilges in this clean and dry condition.

The Contractor shall perform gas free testing for tanks, accessible voids, holds, and enclosed areas in way of the hull when directed by the NCDOT Representative at any time such testing is indicated for the protection of the vessel and the safety of personnel. If gas free certification is lost, the affected compartment(s) shall be re-certified by the NFPA-certified marine chemist. The NCDOT Representative will not accept re-certification by the competent person. If gas free certification is lost due to an act or omission of the Contractor, then additional cleaning, ventilating, and certification shall be accomplished at no cost to the NCDOT.

Compartments that are gas freed and certified per the Contract Documents shall remain in a gas free and certified condition until the Coast Guard and the NCDOT Representative approve closure of the compartment and until all Contractor work in the compartment is complete. Any gas free activity and certification required by the Contractor to conduct shipyard operations will be at the Contractor's expense and incidental to the various bid items involved.

Any gas free testing work directed by the NCDOT Representative in excess of two times per hold, tank or enclosed area, and that is not required by the Contractor to conduct his/her operations, will be considered and settled by the NCDOT Representative as Additional Work.

Before commencement of any cleaning or painting, and upon completion of work, the Contractor shall test all bilge high-level alarms. Any repairs required will be addressed as "Additional Work." Protect all bilge suction pockets and boxes from clogging. At the conclusion of all work, clean suction strainers and valves. Exercise all valves and verify that they are easily operable.

After opening, gas freeing and cleaning bilges, Contractor and NCDOT Representative shall jointly inspect all bilges for damaged coatings or structure. A report documenting this inspection shall be provided to the NCDOT Representative for review and approval of selected work scopes. The Contractor shall then spot prepare and paint areas in the bilge and voids as identified by the NCDOT Representative. Repair painting work shall be done to match existing paint in the selected areas.

The Contractor shall include in their bid for this item an allowance for spot prep and printing of bilge as directed by the NCDOT Representative Contractor shall take care to protect all equipment from overspray. Any equipment damaged by over spraying shall be restored to its original condition at no additional expense to NCDOT.

All paint work shall be accomplished as detailed in the Special Provision item "Painting – General."

5.5 Tests, Trials and Documentation

Contractor shall check, update daily, and post at all entry points to the various voids, copies of all certifications and Safe For Entry permits.

5.6 Payment

The lump sum contract bid price for *Generic Ferry Item (Open, Clean, and Certify Gas Free: Bilges, Holds, and Enclosed Areas)* shall include all costs for cleaning, painting, ventilation, marine chemist inspections and certifications, competent person inspections and certifications, and certification of all tanks, accessible and inaccessible voids, holds and enclosed areas in way of the hull and including disposal of all waste. No further compensation will be made.

6 MAIN DECK HATCH MAINTENANCE AND REPAIR

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.

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 Requirements

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 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 Tests, Trials and Documentation

Following refurbishment and re-installation of all hatches, Contractor shall prove all hatches watertight when subjected to low pressure or hose wash.

6.6 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)*. No further compensation will be made.

7 SEA VALVES

7.1 Description

This section describes the requirements to remove, open, clean and inspect 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

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". Valves equal to or less than 2" shall be replaced with USCG approved in kind valves. 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.
- b) 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.
- c) 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.
- d) Open and inspect sea water system check valves as listed.
- e) All valves condemned by the USCG Inspector or NCDOT Representative shall be replaced upon approval by the NCDOT Representative as "Additional Work."
- f) Upon completion of valve overhaul and prior to installation, hydrostatically test all overhauled and new valves to the satisfaction of USCG and NCDOT Representative.
- g) Reinstall all valves using new Contractor furnished gaskets (Garlock 3760 or equal) and 316 Stainless Steel fasteners.
- h) Complete inspections and submit report no later than five (5) working days after dry-docking.

Table of Valves

Main Deck:

- Steering room vent – stbd aft – 4" vent
 - Potable water fill – stbd aft – 2" ball valve
 - Fuel oil fill – stbd aft – 2" gate valve
 - Aft void exhaust air vent – stbd aft – 6" vent
 - Aft void exhaust air vent – stbd aft – 6" vent
 - Engine room exhaust air vent – stbd aft – 6" vent
 - MSD room discharge – stbd – 3" gate valve
 - Stbd storage room vent – stbd fwd – 4" vent
 - Rope locker room vent – stbd fwd – 4" vent
 - Shore fire connection – stbd fwd – 3" gate valve
 - Fuel oil fill – stbd fwd – 2" gate valve
 - Potable water fill – stbd fwd – 2" gate valve
 - Forepeak vent – stbd fwd – 4" vent
 - Potable water fill – port fwd – 2" gate valve
-

- Fuel oil fill – port fwd – 2” gate valve
- Shore fire connection – port fwd – 3” gate valve
- Fwd void vent - port fwd – 4” vent
- Port storage room vent – 4” vent
- Oily waste discharge – port aft – 2” gate valve
- Oily waste tank vent – port aft – 2” vent
- Engine room exhaust air vent – port aft – 6” vent
- Aft void supply air vent – port aft – 6” vent
- Aft void supply air vent – port aft – 6” vent
- Steering room vent – port aft – 4” vent
- Fuel oil fill – port aft – 2” gate valve
- Potable water fill – port aft – 2” ball valve
- Port potable water tank fill center – 2” gate valve
- Stbd potable water tank fill center – 2” gate valve
- Port potable water tank vent center – 2.5” vent
- Stbd potable water tank vent center – 2.5” vent
- Fwd fuel tank fill center – 2” gate valve
- Aft fuel tank fill center – 2” gate valve
- Lube oil tank fill center – 2” gate valve
- Lube oil tank fill cent – 2” gate valve
- Fwd fuel tank vent center – 2.5” vent
- Aft fuel tank cent center – 2.5” vent

Top Deck:

- Msd tank vent – 4” vent
- Zero discharge sump tank vent – 3” vent
- Gray water sump tank vent – 3” vent
- Black water sump tank vent 3” vent

Engine Room:

- 3” gate valve engine room bilge iso valve
- 3” gate valve bilge ovbd
- 3” check valve bilge ovbd
- 2” gate valve fire pump ovbd
- 2” check valve fire pump ovbd
- Bilge suction valves – 3” valves
- 1.5” gate valve shaft cooling sea chest
- 4” gate valve sprinkler sea chest
- 3” gate valve fire pump sea chest
- 3” gate valve bilge sea chest

MSD Room:

- 3” gate valve sanitary pump sea chest
 - 3” gate valve A/C sea chest
 - 3” gate valve A/C ovbd
 - 3” check valve A/C ovbd
-

Rope Locker:

- 2" gate valve fire pump ovbd
- 2" check valve fire pump ovbd
- 3" gate valve fire pump sea chest
- 1.5" ball valve sea chest vent

Pressure Relief Valve Pop Test 125 PSI:

- Eng room fire pump – 2" pressure relief valve
- Rope locker fire pump – 2" pressure relief valve

7.5 Tests, Trials and Documentation

As indicated in the "Requirements" section above.

Following reassembly of all valves, Contractor shall prove watertight at operating pressure.

7.6 Payment

Include all costs associated with repairs and modifications to the various items outlined in this Special Provision and Supplemental Work Provisions in the lump sum contract price for *Generic Ferry Item (Sea Valves)*. No further compensation will be made.

8 ZINC ANODE REPLACEMENTS**8.1 Description**

This section describes the requirements to remove and replace with new identified zinc anodes on the hull and rudders.

8.2 References

8.2.1 DWG 09-060 997-01 – [M/V Sea Level] Docking & Anode Plan

8.3 Owner Furnished Equipment

Keel Cooler Anodes (small, bar anodes that bolt directly into the coolers themselves).

8.4 Requirements

The Contractor shall renew all anodes on the vessel. Vessel is equipped with an estimated total of **one-hundred and nine (109) 23-24 lb weld on zincs, ZHS-23 or equal.

This is in addition to four (4), 5.3 lb, teardrop shape, weld on anodes inside each sea chest and bow thruster sea inlet and six (6), 6 lb teardrop shape anodes on each rudder. All welding on the hull is to be accomplished prior to cleaning, prepping, and painting in the bilge areas. Keel cooler bolt on zinc anodes (specific to protecting the keel coolers themselves) shall be replaced in accordance with this work item and in accordance with the requirements of item., "SEA WATER COOLING, INSPECTION, AND MAINTENANCE."

Compensation for renewal of all anodes requiring renewal shall be paid under this work item.

Repaint disturbed areas with anti-corrosive and anti-fouling paint in way of the zinc strap welds. Painting shall be as specified in the "Painting--Hull Below DLWL" section of these Special Provisions. All anodes shall be properly masked off when the surrounding areas are being painted. Masking tape shall be removed within 24 hours from when it was applied.

8.5 Tests, Trials and Documentation

None

8.6 Payment

The unit contract bid price per each for *Generic Miscellaneous Items Zinc Anode Replacements*: – (Vessel Hull / 23-24 lb.), (Sea Chests & Bow Thruster / 5.3 lb.), (Rudders / 6 lb.) and (Keel Cooler / bolt on per Keel Cooler specification), shall include labor and materials to remove and then install one (1) zinc anode. Separate unit pricing shall be provided for each zinc type. Quantities indicated on the bid proposal are estimated and arbitrarily assigned for the purpose of developing a common proposal for all bidders and for that purpose only. The NCDOT will count installed zincs and pay only for the number of installed zincs, based on the quoted unit price.

9 SEWAGE SYSTEM - CLEAN, INSPECT, AND PERFORM MAINTENANCE

9.1 Description

This section describes the requirement to empty and clean the ferry's MSD.

9.2 References

9.2.1 DWG 09-060 101-02 – General Arrangement

9.2.2 DWG 09-060 528-01 – Outboard Drains & Sewage System Schematic

9.2.3 DWG OW-1125-100 – Owens Kleen Tank Vendor Drawing

9.3 Owner Furnished Equipment

GREEN MARINE (CrapZapper)[®] Packaged Mix (for kick starting microbial digestion of sewage)

9.4 Requirements MSD Cleaning:

Vessel is equipped with the following OWENS KLEEN TANK[®]

MSD Unit:

[One Tank @ 1125 gallons per day]

WARNING: MSD will contain some amount of sludge, and should be considered **HAZARDOUS**; as the sludge may contain harmful bacteria and emit poisonous & flammable gasses. Contractor is required to handle, remove and dispose of all residual water, sludge, or any liquid in the MSD, in accordance with all local, state, and federal laws.

Inspect all restrooms, urinals and toilets to ensure that no waste is present. If waste is present, flush all waste into the MSD, prior to and rinse Close and secure all restrooms. Contractor is to assume that MSD's will be 95% full when the vessel arrives at the shipyard. Prior to working on the units, MSD electrical power and valves are to be secured in accordance with shipyard lock out procedures. Open and pump out all waste in every chamber of the MSD. Pressure wash (low to medium pressure as required) with a Clorox and water mixture, to disinfect and flush the MSD.

Following the wash and pump out, Contractor is to perform a visual inspection to determine condition of internal coatings, fittings, and piping. CHECKPOINT: NCDOT Representative is to witness both the MSD inspection, and visually inspect the condition of the MSD prior to closing the units up.

Once the NCDOT Representative has approved the units for closing, Contractor is to close the unit with fresh gaskets and fasteners, as required, and test for leaks using fresh potable water. Any leaks are to be identified, corrections made, and retested. CHECKPOINT: NCDOT Representative is to witness the MSD leak test.

Once there are no leaks, Contractor is to pump out and dispose of 50% of the potable water used for the test, and secure the unit against use, for the remainder of the ship yard availability. Within 24 hours of the vessel leaving the shipyard, Contractor is to unsecure the OWENS KLEEN TANK® Unit and unsecure all lavatories and heads, making them available for use. Contractor is to also add a GREEN MARINE (CrapZapper)® MSD packaged mix. The potable water and "mix" will initiate the biological action inside the unit.

9.5 Tests, Trials and Documentation

Conduct MSD closeout inspection and final tightness and leak tests. Inform NCDOT Representative and the USCG inspector to provide a witness for MSD closeout.

9.6 Payment

The lump sum contract bid price for *Generic Ferry Item (Sewage System - Clean, Inspect and Perform Maintenance)* shall include all costs for cleaning, disposal, replacement parts and inspections by qualified personnel. No further compensation will be made.

10 PAINTING—GENERAL

10.1 Description

These general requirements apply to all paint performance and activity ordered by the Contract Documents.

10.2 References

- 10.2.1 Visual Standard for Abrasive Blast Cleaned Steel [SSPC-VIS-1-89] forms a part of this Contract and will be used to judge the adequacy of the surface preparation.
- 10.2.2 Visual Standard for Power and Hand Tool cleaned Steel [SSPC-VIS-3] forms a part of this Contract and will be used to judge the adequacy of the surface preparation.
- 10.2.3 Steel Structures Painting Manual, Volume 2, Systems and Specifications [Fifth Edition] Chapter 2, titled Surface Preparation Specifications, shall be used to define the degree of surface preparation as required by the Specifications.
- 10.2.4 SSPC-SP 12/NACE5 Surface Preparation and Cleaning of Steel and Other Hard Materials by High-and Ultrahigh-Pressure Water jetting Prior to Recoating.

10.3 Owner Furnished Equipment

Owner will provide replacement signs and name boards as required.

10.4 Requirements

Surface preparation specified to be SSPC-SP10, "Near-White Blast Cleaning" shall be to SSPC Surface Preparation Specification No. 10 as defined in Chapter 2 of SSPC Volume 2.

Surface preparation specified to be SSPC-SP6, "Commercial Blast Cleaning," shall be to SSPC Surface Preparation Specification No. 6, as defined in Chapter 2 of SSPC Volume 2.

Surface preparation specified to be SSPC-SP7, "Brush-off Blast Cleaning," shall be to SSPC Surface Preparation Specification No. 7, as defined in Chapter 2 of SSPC Volume 2.

Surface preparation specified to be SSPC-SP3, "Power Tool Cleaning," shall be to SSPC Surface Preparation Specification No. 3, as defined in Chapter 2 of SSPC Volume 2.

Surface preparation specified to be SSPC-SP11, "Power Tool Cleaning to Bare Metal," shall be to SSPC Surface Preparation Specification No. 11, as defined in Chapter 2 of SSPC Volume 2.

The NCDOT Representative will designate the areas to be surface prepared, painted and the paint color/colors to be used unless otherwise designated in the Technical Specifications.

The Contractor shall grit blast the areas designated in each area to SSPC-SP6, unless otherwise designated in the Technical Specifications.

Existing paint coating bordering spot blasted areas shall be feathered to achieve a smooth transition appearance, ensuring that edges are feathered to make a smooth visual appearance to existing coating and that no rough or sharp edges can be seen between existing and newly applied paint.

Grit blasted surfaces or any prepared surfaces shall have a profile depth of 2 to 4 mils. Immediately after grit blasting, clean affected spaces and surfaces of blasting material and residue.

The blasted areas shall be coated the same day with paint to hold the blast. If the blasted areas cannot be coated before the surface remains exposed overnight, sand sweep to remove rust bloom prior to applying the paint.

Care must be exercised to see that dust and grit are not imbedded in soft paint in the areas adjacent to the blasting.

Prior to coating application, ensure that all surfaces are dry and free of foreign matter.

Surface Preparation and Paint Coating applications are to be in accordance with the

Paint

Manufacturer's Specifications, using either airless spray or conventional spray equipment. The back sides of angles, edges of structural shapes, and areas that are incapable of being properly covered by using conventional or airless spray equipment shall be hand-brushed to ensure that the minimum dry film thickness is obtained.

Thinning is not normally required or desirable, and shall not be done unless authorized by the

NCDOT Representative. Solvents used for thinning and cleaning shall be in strict accordance with the coating manufacturer's recommendations, and shall be handled, stored, and disposed of in strict accordance with current laws, rules, or regulations, whether local, State, or Federal, pertaining to toxic and/or hazardous waste.

Dry Film Thickness (DFT), where specified, is the minimum dry film thickness in mils.

Where both film thickness and number of coats is specified, both requirements must be fully met.

Instruments used to measure film thickness shall have been recently calibrated in accordance with SSPC-SP-PA2, and shall be routinely re-calibrated if requested by the NCDOT Representative.

Particular attention shall be paid to the temperature and humidity conditions at the time of application.

Keep surfaces clean and moisture-free during the coating process and during the curing period.

Prior to the application of any follow-on coat, thoroughly clean and build up any bare or lightly covered spots in the previous coat to the required thickness. Dirt, drips, runs, and sags are to be removed prior to follow-on coating application.

The finish coat is to completely obscure the undercoat, and be free of surface imperfections such as dirt, drips, runs, sags, dry spray and other imperfections. The finish coat is to have a smooth and glossy appearance when dry, except for areas requiring otherwise, i.e. Navigation Light screens.

Where any coating has been damaged by welding, burning, or other causes, repair the damaged area by blasting or power sanding, ensuring that edges are feathered to make a smooth visual appearance to existing coating and that no rough or sharp edges can be seen between existing and newly applied paint; and no sanding swirls or other marks will remain after the final coat is applied.

During inclement weather, provide surface protection (tarpaulins, plastic sheeting, etc.) for areas being painted. Provide heaters and dehumidification equipment as necessary to achieve proper surface temperature and dew point spread, per manufacturers' application instructions. All painting shall be done under conditions of temperature and relative humidity specified by the Paint Manufacturer.

Clean affected spaces and surfaces of paint over-spray immediately. Care shall be taken to prevent damage to such items.

Deck coating may be applied by roller or other means recommended by the manufacturer.

Upon completion of blasting and before inspection of a blasted area, all grit shall be removed from the inspection area by blowing down with air or other means. Upon completion of inspection and acceptance of blasted area by the NCDOT Representative, and before paint application, all blasting media shall be removed from all surfaces. Decks shall be broom clean.

NOTE: The NCDOT Representative will inspect all prepared surface areas upon completion of preparation, and before any paint is applied on prepared surfaces. Upon completion of each paint coat, the NCDOT Representative will inspect painted area for proper paint application before the next coat is applied. It is the responsibility of the Contractor to ensure that all required inspections are completed before continuing work.

NOTE: It is incumbent upon the Contractor to provide the NCDOT Representative with timely notification in order to preclude delays in required inspections. Failure to obtain the NCDOT Representative's approval, where required, may require re-preparation and coating, wholly at the expense of the Contractor.

NCDOT may enlist the services of the paint manufacturer's representative to assist the NCDOT Representative in overseeing the preparation of the surfaces and paint application. The NCDOT Representative may conduct or request of the Contractor, the following tests:

- a) Surface profile gage readings.
- b) Wet and dry film thickness gage readings.
- c) Holiday inspection, using a high or low voltage holiday detector.
- d) Surface temperature gauge readings.
- e) Dry film thickness gauge readings using a Tooke gauge.
- f) Surface contamination.

Ensure that prior to beginning superstructure blasting the edges of the stripe on the curtain plates and the stacks are measured for applying paint to proper location.

Carefully mask and protect machinery, motors, electrical panels and boxes, wiring, ventilation ducts, tank vents, void vents, name plates, identification labels, valve stems, fire hoses, bright work, glass trim, wiring, light fixtures and other such items and materials which could be damaged by water, abrasive blasting, dust associated with the process, or other surface preparation techniques, or which could have their function and appearance degraded by blasting or paint over-spray. If removal is required, Note and Map the location of all items removed.

Upon completion of painting, all items removed shall be re-installed in their original locations.

All plastic and brass signs in affected work areas shall be masked or removed, prior to painting or grit blasting, to prevent damage. If removal is required, Note and Map the location of signs. Upon completion of final paint coating, all signs removed will be supplied by NCDOT and shall be re-installed by the Contractor in their original locations, using new 316 Stainless Steel fasteners where applicable. Installation workmanship of all signs is to match the location, levelness, cleanliness, neatness, and overall quality of the original installation, and shall be to satisfaction of the NCDOT Representative. Sign installation workmanship not meeting these requirements shall be removed and re-installed at no cost to NCDOT.

Fire station boxes, fire ax boxes, fire extinguisher boxes, fire hoses, life ring holders, Vessel name placards, safety and restricted area signs, low-clearance and height signs, and other signs shall be removed in affected work areas before grit blasting. Upon completion of painting, all items removed shall be painted and re-installed in their original locations.

All painted stencils and markings affected by grit blasting or painting shall be re-painted upon completion of final paint coating in their proper color and location.

All windows shall be protected from blasting or painting by a protective covering, using plywood or other means determined to be satisfactory by the NCDOT Representative.

Affected

windows shall be hose tested upon completion of paintwork. Upon completion of cleaning and painting, all windows affected by the work shall be washed.

Ventilation fans shall be sealed and protected prior to surface preparation work in the immediate vicinity. They shall be unsealed upon completion and acceptance of all application of paint.

Decks in area of painting shall be protected in order to prevent paint over-spray. All over-spray shall be removed upon completion of painting.

Deck drains on all deck levels shall be clear of obstructions and proper operation shall be demonstrated to the NCDOT Representative before re-delivery.

Vessel decals, wood name signs, wood doors, wood benches and wood trim, shall be properly protected to prevent damage to coating, when affected by the Technical Specifications, shall be removed, sanded smooth, refinished and/or repainted in the proper colors as required.

Doors leading to passenger spaces shall be repainted to their proper color as required.

Care shall be taken when washing or blasting doors to prevent warping or any damage of doors or the surrounding area.

Life preserver locker release mechanisms shall be tested upon completion of painting to ensure proper operation when affected by the Technical Specifications.

Rescue-boat launching apparatus shall be protected during painting and/or blasting to prevent blasting, media from damaging equipment or grit contaminating great areas. Piping insulation shall be removed or protected before blasting. If removed or damaged, it shall be renewed using new insulation at the Contractor's expense.

Vent screens installed in vent bells shall be protected against blasting and painting.

All car deck and above car deck valve handles shall be painted in their proper colors.

Ventilation louvers (where applicable) shall be removed, blasted and painted on both sides, and re-installed. Care shall be taken to ensure that blasting media does not enter vents, and louvers are not damaged during grit blasting. Louvers shall be re-installed in their original location, using new 316 Stainless Steel fasteners where required.

All protective covering shall be removed upon completion of final paint coating.

All other work under these Specifications shall be coordinated with this paintwork to ensure a complete and proper coating system, and to prevent damage to "tight" existing coatings, and re- work.

Aluminum Surfaces

Grit blasting material shall be of non-ferrous material and approved by NCDOT:

- a) 30 Mesh Garnet
- b) Aluminum Oxide
- c) Ilmenite
- d) Other material as authorized by NCDOT

Immediately after surface preparation of new aluminum, remove all surface contaminants, obtain concurrence from the NCDOT Representative, and apply the applicable primer to prevent surface oxidation.

Under no circumstances leave freshly prepared aluminum overnight without primer. Should freshly prepared aluminum be left un-primed, the Contractor shall remove all traces of contamination and surface oxidation. All re-work shall be wholly at the expense of the Contractor.

Application of primer coats later the same day of preparation will only be allowed in an area where the Contractor has exercised humidity control sufficient to prevent the occurrence of any surface oxidation and after the inspection and approval of that area by the NCDOT Representative just prior to coating.

Unless otherwise specified, the coating system shall be the products of/or recommended by the PPG Industries.

Galvanized and Stainless Steel

For Galvanized and Stainless Steel paint application, new surfaces will be prepared using SSPC 1, Solvent cleaning to remove "grease" or as required by the Specifications.

After acceptance of surface preparation by the NCDOT Representative, apply a coat of PPG Amercoat 370 at a minimum of 5 mils (FDT) unless otherwise specified.

Upon the acceptance of the PPG Amercoat coat by the NCDOT Representative, apply a final coat of PPG, PSX-One of proper color at 2 mils, (DFT) minimum, to cover, unless otherwise specified.

The Contractor shall prepare surfaces and apply paint products in strict accordance with the manufacturer's instructions and as specified in the Contract Documents. Surfaces shall be prepared for painting in accordance with guidelines from the Steel Structure Painting Council (SSPC) or as called out specifically in the body of this section. Where "other equivalent standards" are permitted by the Specifications, Contractor recommended "other equivalent standards" for surface preparation shall be affirmatively endorsed by the Paint Manufacturer's Representative, in writing, before submittal to the NCDOT Representative for approval. Where the Specifications conflicts with the manufacturer's instructions, the manufacturer's instructions shall prevail. Promptly notify the NCDOT Representative when the Contract Documents conflict with the manufacturer's instructions.

Where existing paint is damaged by the work performed under other requirements of the Contract Documents, the damaged area shall be prepared for and repainted to the satisfaction of the NCDOT Representative.

Painting work, except touch up, shall be accomplished under the supervision of the Paint Manufacturer's Representative who will approve surface preparation, acceptable atmospheric conditions, and coating application. Runs, over spray, roughness and signs of improper applications shall be repaired or recoated at the Contractor's expense.

All hardware, windows, light fixtures, placards and signs, cables, and adjacent equipment and structure shall be properly masked off when the surrounding areas are being painted. Masking tape shall be removed within 24 hours from when it was applied. Items and surfaces to be protected may be removed, moved, or otherwise protected as interferences, at the preference of the Contractor, but shall be restored to their pre-removal form, appearance, and function at completion of the paint work. Upon completion of the work, any over spray shall be removed as directed by the NCDOT Representative.

The Contractor shall restore all superstructure markings, labels, stencils, and decals precisely as it existed when the Contractor took control of the ferry. Paint for stencils and labels shall be compatible with the underlying paint system and shall be approved by the Manufacturer's Representative for the underlying paint system.

The Contractor shall not paint in wet, windy or high humidity weather unless the work is well protected from such conditions, and then, only with the approval of the NCDOT Representative and the Paint Manufacturer's Representative.

The Contractor shall provide all necessary safety equipment as recommended by the manufacturer and regulatory authorities for the safe handling of each of the products used during this project. The Contractor is cautioned that the paint products may be hazardous during the painting process and the Contractor's employees must be protected accordingly.

10.5 Tests, Trials and Documentation

None

10.6 Payment

Include all costs involved in this Special Provision in the various contract bid prices for work involving painting.

11 HIGH-PRESSURE WATER WASH – HULL BELOW DLWL

11.1 Description

This section describes the requirements to clean, by high-pressure water wash, the ferry hull below the design load waterline (DLWL) to prepare the ferry for paint, as detailed in these Special Provisions.

11.2 References

None

11.3 Owner Furnished Equipment

None

11.4 Requirements

The Contractor shall clean the rudders, propellers, struts, and hull to approximately 12" above the DLWL to and including the bottom of the keel, by high-pressure water wash at a minimum pressure of 3000 psi. Remove all marine growth, soft fouling and hard fouling on the ferry hull. Start this wash within one hour of raising the vessel in the dry dock and continue until completed.

The Contractor shall perform a fresh water wash of the subject area using Prep #88 cleaner. Dilute 3 to 1 (1 part #88 / 3 parts water). Allow to stand on surface 10-15 minutes. Fully rinse off all traces with fresh water.

11.5 Tests, Trials and Documentation

None

11.6 Payment

The lump sum contract bid price for *Generic Ferry Item (High-Pressure Water Wash - Hull Below DLWL)* shall include all costs associated with high-pressure water wash as detailed in these Special Provisions. No further compensation will be made.

12 HIGH-PRESSURE WATER WASH - HULL ABOVE DLWL

12.1 Description

This section describes the requirements to clean, and high-pressure water wash, the ferry hull from the top of the guard plate to the DLWL to prepare the ferry for paint, as detailed in these Special Provisions.

12.2 References

None

12.3 Owner Furnished Equipment

None

12.4 Requirements

The Contractor shall perform a fresh water wash of the subject area using Prep #88 cleaner. Dilute 3 to 1 (1 part #88 / 3 parts water). Allow to stand on surface 10-15 minutes. Fully rinse off all traces with fresh water. The Contractor shall clean the hull freeboard above the DLWL to the top of the guard plate by a high-pressure water wash at the minimum pressure of 3000 psi

Pressure wash, as described above, may start at any time, but must precede the painting called out in these Special Provisions

12.5 Tests, Trials and Documentation

None

12.6 Payment

The lump sum contract bid price for <i>Generic Ferry Item (High-Pressure Water Wash - Hull above DLWL)</i> shall include all costs associated with the solvent and high-pressure water wash detailed in these Special Provisions. No further compensation will be made.

13 HIGH-PRESSURE WATER WASH – SUPERSTRUCTURE

13.1 Description

This section describes the requirements to clean, by high-pressure water wash, the ferry exterior superstructure as detailed in these Special Provisions.

13.2 References

None

13.3 Owner Furnished Equipment

None

13.4 Requirements

The Contractor shall clean the entire exterior superstructure between top of the stack and the car deck (not including the car deck itself), including but not limited to: pilot house sides, pilot house eyebrow, stack, handrails (w/existing paint), curtain plates, exterior machinery casings, house sides, bulwarks, curbs, exterior decks, ladders, stairs, stack, car deck overhead, stanchions, lockers, and rails.

The Contractor shall perform a fresh water wash of the subject area using Prep #88 cleaner. Dilute 3 to 1 (1 part #88 / 3 parts water). Allow to stand on surface 10-15 minutes. Fully rinse off all traces with fresh water. The Contractor shall clean the entire superstructure by a high-pressure water wash at the minimum pressure of 3000 psi.

Pressure wash, as described above, may start at any time, but must precede the painting called out in these Special Provisions.

The Contractor shall protect all equipment adjacent to and attached to the structures to be washed from damage by solvent and high-pressure water. Such equipment includes, but is not limited to, light fixtures, cables, piping, sprinkler heads, antennas, horns, loudspeakers, cameras, screens, windows, door hardware, elevator equipment, louvers, bells, wire penetrations, and life rings.

13.5 Tests, Trials and Documentation

None

13.6 Payment

The lump sum contract bid price for *Generic Ferry Item (High-Pressure Water Wash – Superstructure)* shall include all costs associated with the solvent and high-pressure water wash detailed in this Special Provision. No further compensation will be made.

14 SPOT CLEANING AND PAINTING - HULL BELOW DLWL

14.1 Description

After high-pressure water washing of the hull, as outlined in the "High-Pressure Water Wash – Hull Below DLWL" section, the Contractor shall, in areas designated by the NCDOT

Representative, spot repair the anti-corrosive (Primer) coating and shall apply anti-fouling (AF) coatings over the entire underwater body.

14.2 References

14.2.1 "General Painting Instructions" as part of these Special

14.3 Provisions Owner Furnished Equipment

None

14.4 Requirements

The Contractor shall spot blast those areas designated by the NCDOT Representative by abrasive blast to a SSPC-SP-6, Commercial Blast or other equivalent standard surface preparation.

After surface preparation, dry the area with clean dry compressed air.

Anti-corrosive 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 new Primer applied to the blasted surfaces. Coat all bare metal areas the same day they are exposed by blasting. Apply anti-corrosive paint by conventional industrial airless spray or compressed air spray equipment.

The Contractor shall determine the Manufacturer's minimum and maximum "dry to self-recoat" criteria and apply the second anti-corrosive coat inside this window.

The anti-corrosive coating system in these selected areas shall be:

- 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: ABC #3 red applied @ 4.0-6.0 Mils DFT

Two coats of Anti-Fouling (AF) paint, ABC #3 applied in 2 coats @ 4.0-6.0 Mils DFT each coat, the first coat red the second coat red-brown, shall be applied over the new AC coating. This is in addition to the underwater body paint work detailed in the Special Provision item "Painting – Hull Below DLWL."

14.5 Tests, Trials and Documentation

None

14.6 Payment

The contract unit bid price per square foot for *Generic Miscellaneous Item (Spot Cleaning and Painting - Hull Below DLWL)* shall include all costs for spot paint repairing the hull below DLWL, except for the high-pressure water wash and application of Anti-Fouling paint. Payment for this item will be based upon the Contractor's unit bid price and the actual square footage of work completed. High-pressure water wash shall be paid for under the lump sum contract bid price for (*High- Pressure Water Wash – Hull Below DLWL*) and applying Anti-Fouling paint shall be paid for under the lump sum contract bid price for (*Painting - Hull Below DLWL*).

15 SPOT CLEANING AND PAINTING - HULL ABOVE DLWL

15.1 Description

After degreasing and high-pressure water washing of the hull, as outlined in the "High-Pressure Water Wash – Hull Above DLWL" section of these Special Provisions, the Contractor shall, in areas designated by the NCDOT Representative, spot repair the Primer.

15.2 References

15.2.1 "General Painting Instructions" as part of these Special

15.3 Provisions Owner Furnished Equipment

None

15.4 Requirements

The Contractor shall spot blast, hydro blast, or tool clean those areas designated by the NCDOT Representative to a SSPC SP6, Sa2 ISO8501-1, or other equivalent standard surface preparation. 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. The Contractor shall have the option to use UHP- WJ2, Ultrahigh-Pressure Water Jetting only if the hull profile is taken and is within the required profile and approved by the NCDOT Representative.

After surface preparation, dry the area with clean dry compressed air. The Contractor shall assure that the areas to be painted are free of dust, dirt, salt, loose paint, moisture, and other contaminants before painting.

Coat all bare metal areas the same day they are exposed by blasting. Apply Primer paint by conventional industrial airless spray or compressed air spray equipment.

The Contractor shall determine the Manufacturer's minimum and maximum "dry to self-re-coat" criteria and apply the second AC coat inside this window.

The AC coating system in these selected areas shall be:

- 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 black applied @ 4.0-6.0 Mils DFT
- Finish Coat: PSX-One black applied @ 2.0-3.0 Mils DFT

The paint specified in this Special Provision item shall be applied to the selected areas in addition to the paint detailed in the Special Provision item "Painting – Hull Above DLWL".

15.5 Tests, Trials and Documentation

None

15.6 Payment

The contract unit bid price per square foot for *Generic Miscellaneous Item (Spot Cleaning and Painting – Hull Above DLWL)* shall include all costs for spot repairing the hull above DLWL, except solvent and high- pressure water wash. Payment for this item will be based upon the Contractor's unit bid price and the actual square footage of work completed. Solvent and high-pressure water wash shall be paid for under the lump sum contract bid price for (*High-Pressure Water Wash – Hull Above DLWL*).

16 PAINTING-SUPERSTRUCTURE

16.1 Description

This section describes the requirements for preparing and painting the following areas and installations:

- a) Superstructure and miscellaneous details
- b) Doors and door frames
- c) Rails and stanchions
- d) Pilot House Visor

Paint for this work shall be selected, provided and applied per these Special Provisions and the directives of the Paint Manufacturer's Representative.

16.2 References

16.2.1 General Painting Instructions" as part of these Special Provisions

16.3 Owner Furnished Equipment

None

16.4 Requirements

The Contractor shall mechanically or by hand, 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.

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 spot prepare those areas designated by the NCDOT Representative by abrasive blast, hydro blast, or hand tool, to a SSPC-SP6, Sa2 ISO 8501-1, or other equivalent standard surface preparation. 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 all areas of damaged paint have been spot prepped and painted; 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 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

17.6 Payment

The lump sum contract bid price for *Generic Ferry Item (Painting – Superstructure)* shall include all costs for painting the listed locations, except high-pressure water wash. Payment for this item will be based upon the Contractor's unit bid price and the actual square footage of work completed. High-pressure water wash shall be paid for under the lump sum contract bid price for *(High-Pressure Water Wash – Superstructure)*. The approximate number of spot repairs and general extent of areas to be painted shall be determined by the Contractor during vessel inspection prior to bidding. No further compensation will be made.

17 PAINTING - HULL BELOW DLWL

17.1 Description

This section describes the requirements for painting the ferry hull (underwater body), from the keel to 12" above the design load waterline.

Paint for this work shall be selected, provided, and applied per the directives of the Paint Manufacturer's Representative.

After high-pressure water washing of the hull, as outlined in the "High-Pressure Water Wash – Hull Below DLWL" section of these Special Provisions, and after completing the spot cleaning and painting as outlined in the "Spot Cleaning and Painting – Hull Below DLWL" section of these Special Provisions, the Contractor shall apply anti-fouling (AF) coatings over the entire hull below DLWL, including rudders, and all underwater appurtenances and fittings.

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 prepare and paint the entire underwater body hull, from the keel to 12" above the design load waterline, including both rudders, and all underwater appurtenances and fittings, excepting the propellers and zincs, with AF paint. AF paint shall be applied by conventional industrial airless spray or compressed air spray equipment. The Contractor shall prepare the surface for painting and ensure the hull is free of oil, grease, dust, soil, salts, moisture, and other contaminants, which may have been introduced following the high-pressure water wash. Solvent cleaner shall not be applied, as it is incompatible with the AF coating. The surface preparation and cleaning shall be inspected and approved by the Paint Manufacturer's Representative before the AF is applied. The AF coating system over the entire underwater body shall be:

- One full coat, ABC #3 red @ 4.0-6.0 Mils DFT
- One full coat, ABC #3 red-brown @ 4.0-6.0 Mils DFT

The Contractor shall determine the Manufacturer's minimum and maximum "dry to self-re-coat" criteria and apply the second AF coat inside this window. Additionally, the AF shall be applied while the AC specified in the "Spot Cleaning and Painting – Hull Below DLWL" section of these Special Provisions is still tacky. The Contractor shall take care to thoroughly build to full thickness the AF coatings inside both sea chests and as far into the sea chest vent pipes as can be reached with a brush.

The Contractor shall restore the draft marks and other hull marks precisely as they existed before hull bottom painting, or in accordance with 46 CFR 115.615, with brush applied Amercoat 370 shark white. The black hull above red AF shall be precisely cut in after completion of the AF coating with Amercoat 370 "black." Any AF overspray above the DLWL shall be repainted with Amercoat 370 "black" to match the surrounding hull.

The Contractor shall shift ("bump") the ship in dry dock to expose, inspect, and paint the areas covered by the docking blocks. The Contractor may use a removable block configuration (sand boxes) in lieu of shifting the ship in dry dock. Surface preparation and paint schedule for the bumped areas shall be identical to the areas originally exposed.

17.5 Tests, Trials and Documentation

None

17.6 Payment

The lump sum contract bid price for *Generic Ferry Item (Painting – Hull Below DLWL)* shall include all costs associated with the specific painting, except high-pressure water wash. No further compensation will be made. High-pressure water wash shall be paid for under the lump sum contract bid price for (High Pressure Water Wash – Hull Below DLWL). Repair of isolated areas of failed paint and recoating with anti-corrosive paint shall be paid for under the lump sum contract bid price for (Spot Cleaning and Painting – Hull Below DLWL).

18 EXTERIOR DECK PAINTING

18.1 Description

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

18.2 References

18.2.1 “General Painting Instructions” as part of these Special Provisions

18.3 Owner Furnished Equipment

None

18.4 Requirements

The Contractor shall mechanically or by hand prepare and paint the Main Deck and superstructure decks. This includes the curb- structures on the Main Deck.

Near-White Blast Cleaning - Surface preparation specified to be SSPC-SP10, "Near-White Blast Cleaning" shall be to 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.

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.

18.4.1 Car Deck Paint Requirements

All paint shall be applied in accordance with the paint manufacturer's directions.

Prior to application of top coat, Contractor shall apply non-skid to the deck by broadcast method. Paint schedule for Car Deck shall be as follows:

- 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 grey applied @ 4.0-6.0 Mils DFT
-

- Finish Coat: Amercoat 229T grey applied @ 2.0-4.0 Mils DFT

Line paint shall be applied to restore the vessel's car and safety lines to their original condition. Line paint schedule is as follows:

- One coat Amercoat 229T yellow applied @ 2.0-4.0 Mils DFT

Dry Film Thickness (DFT), where specified, is the minimum dry film thickness in mils.

The line paint and safety marking paint is to be applied in the areas and pattern detailed by Reference 18.2.1. Line paint should be applied in accordance with the paint manufacturer's instructions. Contractor is to apply non-skid materials by the "broadcast method," into final top coat of line paint and safety marking paint areas, in accordance with paint manufacturer's recommendations and guidance.

All Car Deck and above Car Deck valve handles shall be painted in their proper colors, as applicable.

18.4.2 Other Exposed Decks

All paint shall be applied in accordance with the paint manufacturer's directions.

Prior to application of top coat, Contractor shall apply non-skid to the deck by broadcast method.

Paint schedule for exposed decks above the Car Deck shall be as follows:

- 18.4.2.1 Primer Coat: Amercoat 370 red oxide applied @ 4.0-6.0 Mils DFT
- 18.4.2.2 Stripe Coat: Amercoat 370 grey applied @ 4.0-6.0 Mils DFT
- 18.4.2.3 Third Coat: Amercoat 370 grey applied @ 4.0-6.0 Mils DFT
- 18.4.2.4 Finish Coat: Amercoat 229T grey applied @ 2.0-4.0 Mils DFT

Dry Film Thickness (DFT), where specified, is the minimum dry film thickness in mils.

18.5 Tests, Trials and Documentation

None

18.6 Payment

The lump sum contract bid price for *Generic Ferry Item (Exterior Deck Painting)* shall be the total compensation for all labor, equipment, tools and materials to accomplish the work detailed, including testing and trials. No further compensation will be made.

19 TAIL SHAFT & PROPELLER REMOVALS, INSPECTIONS & SHAFTING ALIGNMENTS

19.1 Description

This section describes the requirements to remove and/or inspect (as appropriate), open, clean, prep for paint/protection, measure, test, and re-install the vessel's propellers, tail shaft couplings, tail shafts, line shafts, line shaft couplings, line shaft bearings, tail shaft bearings, shaft seals, bulkhead seals, and prepare all applicable shaft line components for additional USCG and NCDOT Representative inspection, as required.

19.2 References

19.2.1 DWG 09-060 561-01 Steering Arrangement

19.2.2 DWG 09-060 562-01 Rudder Arrangement

19.2.3 DWG 09-060 243-01 Shafting Arrangement

19.2.4 See Special Provisions Section 23 "Rudder Removals and Inspections"

19.3 Owner Furnished Equipment

Replacement tail shafts, propellers and propeller nuts shall be supplied by NCDOT as required, out of existing NCDOT inventory. The replacement shafts, propellers and propeller nuts will be provided by NCDOT in a "ready to install" condition and NCDOT is responsible for all shipping costs associated with NCDOT shafts, propellers, and propeller nuts. Alternate, replacement, and supplemental equipment, as needed, can be proposed and shall be reviewed with the NCDOT Representative for approval prior to purchase or acceptance.

19.4 Requirements

Rudder removal is required for this work item. The contract requirement to remove the rudders is detailed in "Rudder Removals and Inspections." No additional compensation will be forthcoming to the Contractor for rudder removal or replacement or for any rudder reinstallation costs or delays. The tail shafts shall be removed and re-installed and all tail shaft work (if any) shall be completed while the rudders are removed.

Prior to docking the vessel, Contractor is to check and document waterborne alignment of shafting connecting to the reduction gears, including bearing loads on tail shaft and line shaft bearings. Submit inspection data, results, and conclusions on a condition found report no later than five (5) days after alignment checks are complete. Submit inspection data, results, and conclusions on a condition found report no later than five (5) days after waterborne alignment checks are complete.

19.4.1 CHECKPOINT:

Contractor is to provide the NCDOT Representative with a written procedure for accomplishing the required shaft alignments, shaft alignment checks, and bearing load assessments, at least two (2) business days prior to initiating these alignments, checks, and/or bearing load assessments.

Not less than 24 hours after un-docking, and following re-connection of all line shafting, Contractor is to check, document, and report on the waterborne line shaft alignments to the tail shafts and reduction gears, including bearing loads on all line and tail shaft bearings.

19.4.2 CHECK POINT:

NCDOT Representative is to witness all shafting alignments. Contractor is to provide the NCDOT Representative with a written procedure for accomplishing the required shaft alignments and bearing load assessments, at least two (2) business days prior to initiating these alignments and bearing load assessments. Contractor is to provide a post docking alignment report to the NCDOT Representative within five (5) business days of completing the alignment checks.

While the vessel is on dock, the Contractor shall perform the following work, inspections and measurements, and report the findings in writing to the NCDOT Representative within three (3) working days of dry-docking the vessel. Failure to perform these inspections in a timely manner may delay the undocking of the vessel and/or result in Liquidated Damages. A delay in vessel undocking due to late reports shall not be considered legitimate grounds for the accrual of "Lay Days," for additional undocking and re-docking charges, or for accrual of "Berthing Days."

- a) Remove rope guard, clean and inspect the propeller hub and tail shaft interface.
- b) Clean shaft scoops (as applicable) and flush the outer stern tube bearings with medium pressure (500 psi) water.
- c) Remove propellers and prop nut.
- d) Disassemble, remove, and inspect tail shaft couplings and shaft seals.
- e) Disassemble and inspect the inner and outer sleeves of the tail shaft hydraulic couplings. Renew all seals upon re-installation.

19.4.3 CHECKPOINT:

Contractor shall provide NCDOT Representative with a tail shaft coupling inspection report prior to reassembly and reinstallation.

- f) Tail shafts (and propellers if required) shall be removed inspected and possibly replaced (depending upon condition of existing equipment) replaced with refurbished, Owner furnished shafts and propellers.
- g) Draw the tail shafts from the vessel. The couplings shall be dismounted (and later remounted) in accordance with the manufacturer's recommended procedures.
- h) If required to be refurbished after removal, tail shafts and propellers shall be high pressure washed (2500 psig) to remove organic growth and shipped to the NCDOT shipyard facility at Contractor expense. NCDOT shipyard address is as follows:

NCDOT Ferry
Division/Shipyard 8550
Shipyard Road
Manns Harbor, NC 27953

- i) Remove, clean, inspect, and re-install tail shaft seals per manufacturer's recommendations and instruction, applicable to a five year inspection cycle. Prior to re-assembly and re-installation, provide NCDOT Representative with condition found report.

19.4.4 CHECKPOINT:

NCDOT Representative approval of the seal conditions is required prior to re-assembly and re- installation into the vessel. Contractor is required to provide the services for an authorized factory representative to accomplish the seal inspections and renewals.

- j) Inspect condition and wear down measurements of tail shaft bearing. Measurements are to be taken at four quadrants, in three separate locations along the length of the bearings (both ends and the middle). Provide a written report on the condition of the vessels' tail shaft bearings to the NCDOT Representative
- k) If required by the NCDOT Representative. Contractor shall renew tail shaft bearings as described in the work item "Tail Shaft Bearing Replacement." Contractor shall not proceed with Tail Shaft Bearing Replacement work unless authorized to do so in writing by the NCDOT Representative.
- l) Inspect condition of line shafts and line shaft bulkhead seals in place, looking for corrosion, misalignment and other visible damage. Provide a written report on condition of the line shafts and bulkhead seals to the NCDOT Representative.
- m) If NCDOT Representative has provided Contractor with written acceptance of Optional Item to inspect and repair line shaft bearings, open and inspect line shaft bearings.
- n) Inspect line shaft bearing chock fast and/or shims (as applicable) and provide a condition found report.
- o) Measure stern tube clearances (four quadrants – at 3 places along the length of the stern tube I way of stern tube bearings) at both shaft tubes.

19.4.5 CHECKPOINT:

NCDOT Representative must receive, review, and approve condition of chock fast and stern tubes prior to re-installation of bearings.

- p) Prepare and submit a written report of all shaft line inspections within five (5) working days of docking the vessel. Prepare and bind the written reports for presentation to the NCDOT Representative & Coast Guard Inspector.
-

- q) As appropriate and applicable for renewal of the vessel's COI, arrange for Coast Guard Inspection of the propulsion shafting systems and propellers.
- r) Any required repairs not otherwise specified in this section shall be addressed as "Additional Work."
- s) Contractor shall re-install, re-position, and make-up all tail and line shafts, all shaft couplings, bearings, and seals in the reverse order they were removed or re-positioned.
- t) Check and verify in dock preliminary shaft alignments.
- u) No less than 24 hours after un-docking, Contractor is to check, document, and report on the waterborne line shaft alignments to the reduction gears, including bearing loads on all line and shaft bearings. These alignment checks are to take place at the time of just prior to and immediately thereafter re-connection of line shafts.

19.4.6 CHECKPOINT:

Contractor is to provide the NCDOT Representative with a written procedure for accomplishing the required post repair / installation shaft alignments and bearing load assessments, at least two business days prior to initiating these required work scopes.

19.5 Tests, Trials and Documentation

Contractor shall perform all tests and inspections as outlined in the sections of this work item and shall provide written reports of all inspections to the NCDOT Representative and USCG Inspector, as required.

19.6 Payment

The lump sum contract bid prices for *Generic Ferry Item (Tail Shaft & Propeller Removals, Inspections and Shaft Alignments)* shall include all costs associated with completing the requirements of this Section, as defined above. The Contractor shall submit a lump sum contract bid price for work described above for two (2) tail shafts, all associated line shafts, bearings, seals, and two (2) propellers. No further compensation will be made.

Warning:

Contractor failure to restore and check the stern tube cooling/flushing salt water system may result in significant damage to the seal, bearings, shaft liners, and propulsion shaft. The Contractor shall repair or renew all equipment damaged by failure to restore and test the shaft cooling/flushing systems at no additional cost to NCDOT. Attention is made to the Contractor to note the valve tag out procedures.

20 TAIL SHAFT BEARING REPLACEMENT

20.1 Description

This section describes the requirements to renew a tail shaft bearing. Any number of tail shaft bearings may be renewed by this work item. If more than one tail shaft bearing is renewed, the provisions of this work item shall apply to each of them.

Work on this section shall not begin until given specific authorization by the NCDOT Representative. NCDOT Representative shall not authorize work under this item to proceed until they are given a tail shaft bearing inspection report. This item may be canceled pending result of the tail shaft bearing inspection report, in which case no payment will be made to the Contractor for this bid item.

20.2 References

20.2.1 DWG 09-060 243-01 Shaft Arrangement

20.3 Owner Furnished Equipment

NCDOT furnished Tail Shaft bearings [Johnson Duramax (861782100 “Gravel”)] are available and will be owner furnished

20.4 Requirements

Contractor shall remove damaged or worn tail shaft bearing. Contractor shall be responsible for the disposal of removed equipment.

Bearing shall be replaced with a bearing of the same make and model as the bearing removed. Bearing flanges shall be supplied blank, and shall be templated and drilled to match the bolt pattern of the removed bearing.

Contractor shall inspect and measure ID of existing Chockfast around removed bearing. The Contractor shall provide a written report of Chockfast condition and IDs to the NCDOT Representative. For purposes of bidding this item, Contractor shall assume Chockfast is in good condition and not in need of replacement. If Chockfast does need to be replaced, replacement shall be handled as "Additional Work."

Machine new bearing casing to fit Chockfast ID or stern tube bearing boss, as applicable. Tolerances shall be within bearing manufacturer and Chockfast recommended allowances. New bearing housing shall be greased with releasing agent and inserted into the existing Chockfast.

Template and drill new bolt holes on bearing flange to match existing bolt pattern on the stern tube. Contractor shall renew tail shaft bearing bolts with bolts of equivalent size, material and grade. Re-attach with new materials all locking straps, wire straps, or other keepers as may be affixed to prevent movement of the bearing flange fasteners.

20.5 Tests, Trials and Documentation

Contractor shall provide NCDOT Representative with an AutoCAD drawing showing as installed, machined OD and ID measurements for each installed tail shaft bearing. Measurements are to be shown at four quadrants, in three separate locations along the length

of the bearings (both ends and the middle).

20.6 Payment

Include all costs associated with repairs and modifications to the various items outlined in this Special Provision in the unit contract price for *Generic Ferry Item (Tail Shaft Bearing Replacement)*. Unit price per each shall include all labor and expenses to renew one single tail shaft bearing. This unit price shall apply to the renewal of each tail shaft bearing up to (4) tail shaft bearings on the vessel. No further compensation will be made. No further compensation

21 LINE SHAFT BEARING REPLACEMENT

This section describes the requirements to renew the line shaft bearings. Work on this section shall not begin until the contractor is given specific authorization to proceed by the NCDOT Representative. NCDOT Representative shall not authorize work under this item to proceed until they are given the line shaft bearing inspection report. This item may be canceled pending result of the line shaft bearing inspection report, in which case no payment will be made to the Contractor for this bid item.

21.2 References

21.2.1 DWG 09-060 243-01 Shaft Arrangement

21.3 Owner Furnished Equipment

None

21.4 Requirements

Prior to any disassembly of line shaft bearings, Contractor is to precisely index the position of the bearings on the line shafts, for future reference if needed.

Vessel is equipped with "2," Cooper pillow block [two, Split Cylindrical Roller Bearings, Craft Bearing Company, Model: S1 BCH 500] line shaft bearings. All maintenance under this work item shall be accomplished in accordance with manufacturer guidelines and by manufacturer certified technicians.

Unbolt and remove line shaft bearing from vessel. Bearings shall be transported to a machine shop for inspections and maintenance work. Following loosening and removal of bearing caps, Contractor is to carefully lift and support line shafting at the bearings.

Remove bearings from the bearing housings, wipe with clean rag removing all grease, and inspect both rollers and races.

21.4.1 **CHECK POINT:**

Owner's Representative is to witness line shaft bearing inspections. Contractor is to provide an inspection / condition found report on the condition of all moving and wearing parts of the vessel's line shaft bearings. Contractor is required to obtain the services of the bearing manufacturer's authorized technical representative to inspect the bearings, or otherwise accomplish the inspection in accordance with the manufacturer's guidelines and recommendations. NCDOT Representative is to witness the condition and inspections of the line shaft bearings prior to re-assembly and / or ordering or replacement of any components. Final determination on replacement of line shaft and tail shaft bearings or any other shafting system components is dependent upon the results of accurate and timely inspections and measurements.

Once approved for re-use by NCDOT Representative, Contractor will re-pack the bearings using manufacturer approved grease and in accordance with manufacturer's recommendations.

Contractor is to re-install the bearings. (NOTE: Bearing caps will be positioned and secured in place, but are to remain un-torqued to final torque specifications until initial run in of shafts during sea trials. Bearing caps are then to be torqued to manufacturer's specifications, and this is to be witnessed by NCDOT Representative during dock and sea trials.)

New bearings and other bearing assembly parts replacements that are not specifically associated with the bearing manufacturer's documented maintenance procedure, or called out in this work item, shall be considered in accordance with the changes procedures detailed in the "Additional Work" section of the Specifications.

21.5 **Tests, Trials and Documentation**

All work is to be completed in advance of dock trials, except as noted above.

21.6 **Payment**

Include all costs associated with repairs and modifications to the various items outlined in this Special Provision in the unit contract price for *Generic Ferry Item (Line Shaft Bearing Replacement)*. Unit price per each shall include all labor and expenses to renew one single line shaft bearing. This unit price shall apply to the renewal of each line shaft bearing up to (2) shaft bearings on the vessel. No further compensation will be made.

22 **RUDDER REMOVALS AND INSPECTIONS**

22.1 **Description**

This section describes the requirements to unship, inspect, and re-install both rudders, rudder stocks (2 total), rudder stock bearings, and steering gear systems (not including the hydraulic, feedback, or rudder control systems).

22.2 References

22.2.1 DWG 09-060 562-01 – Rudder Arrangement

22.3 Owner Furnished Equipment

NCDOT furnished rudder stocks, rudder stock nuts, quadrants, and quadrant fasteners are available and will be owner furnished, if required.

22.4 Requirements

While in dry dock, the Contractor shall first exactly determine and mark positioning of the tiller arms when the rudder is at zero angle position. A durable mark parallel to rudder centerline shall be stamped on the tiller arm or upper end of the rudder stock and adjoining structure.

Alternatively, a fixed rigid removable alignment indicator with a mark at zero rudder angle shall be installed from adjoining structure. The zero-alignment indicator and the reference mark on the tiller or upper end of the rudder stock shall allow accurate lineup and viewing for determination as to when the rudder is in its zero-angle position. The alignment indicator shall be bolted in place and removable to facilitate rudder or tiller removal. Removal and reinstallation of the alignment indicator shall not cause loss of the zero-angle reference. The alignment indicator shall be rigid enough not to be bent or loss of zero angle reference from knocks from normal maintenance of the rudder and steering gear. Where new steel is installed or existing paint was damaged by the work performed under this requirement, the areas shall be prepared for and painted to the satisfaction of the NCDOT Representative.

The Contractor shall perform the following work, inspections and measurements, and report the findings in writing to the NCDOT Representative within two (2) work days of dry-docking the vessel. Failure to perform these inspections in a timely manner may delay the undocking of the vessel. A delay in vessel undocking due to late reports shall not be considered legitimate grounds the accrual of "Lay Days," or for additional undocking and re-docking charges.

- a) Remove rudder drain plugs, drain, catch, and properly dispose of any water or excess preservative remaining in the rudder.

[NOTE: Contractor is advised that NCDOT skegs and rudders are typically "float coated" to preserve the internal steel, so all appropriate cautions and inspections are to be taken prior to initiation of any hot work to these areas.]

22.4.1 **CHECKPOINT:**

Static pressure test rudders for leaks in the presence of NCDOT Representative. Test pressure shall be 1.5 PSI. Accepted test is no leaks for one hour. Contractor shall provide written report of test results to NCDOT Representative.

- b) Unbolt rudders from the rudder stock palms.
 - c) Lower and block up both rudders on the dry dock floor with the palms accessible for inspection. Clean each rudder, exterior rudder stock, flange.
-

- d) Unbolt and disconnect all steering gear, angle indicator transmitters, and linkages from the tillers and retain for reuse. Remove the rudder stock o-ring seals.
- e) Set aside the parts and protect them for re-installation. Mark the matched rudders, tillers and rudder stocks, indexed to their corresponding ends of the ferry.
- f) Suspend, or otherwise support both rudders then, remove the lock plates, thrust washers, bearing keepers, and separate the tillers from the rudder stocks.
- g) Lower the rudder stocks from the ship and transport to an inside machine shop for inspection and measurement.
- h) Using feeler gauges, inspect bearings in rudder trunk. Measurements are to be taken at four quadrants, in three separate locations along the length of the bearings (both ends and the middle). Provide a written report on the condition of the vessels' rudder stock bearings to the NCDOT Representative.
- i) Inspect and measure the wear down on rudder stock bearing surface wear down at both ends of the vessel. All wear down readings are to be taken at three locations along the length of each journal or bearing, and at four circumferential quadrants of each journal or bearing.
- j) Thoroughly clean both rudder stocks, mount in a lathe and check by dial indicator or laser methods, for straightness (TIR).
- k) Protect the carrier bearings with temporary cover.

NOTE: If the ship's structure is to be used to handle the rudder stocks, the Contractor shall demonstrate to the NCDOT Representative that the structure will support the load. The Contractor may temporarily stiffen the structure to handle the rudders stocks, at the Contractor's discretion and risk, but shall restore the structure and coatings to the as found condition, or better, upon completion of this work item

22.4.2 Check Point:

NCDOT Representative shall review rudder inspection report. NCDOT Representative shall either approve the existing rudder and rudder stock for reinstallation on the vessel, or order that a new rudder or rudder stock be installed. If a new rudder stock is required, it shall be supplied by NCDOT. Contractor shall not reinstall existing rudder without express, written direction to do so by the NCDOT Representative.

- l) Prior to reinstallation of rudder stocks, rudders shall be blue quality fit with Prussian Blue ink into tiller hubs. Rudder stocks and tiller hub shall be polished as required to ensure a good, 80% contact blue fit.

22.4.3 Check Point

NCDOT Representative is to witness and approve 80% contact prior to Contractor installing equipment back into the hull. Contractor is to allow adequate time for additional fitting if necessary.

- m) Reassemble the rudder stocks and tillers to the steering gear in the reverse order of disassembly. Renew the lock plate bolts with SAE Grade 8.
- n) Lubricate rudder carrier bearings and the carrier, by hand packing, before stock installation. Remove the existing grease fittings and replace them all with new stainless steel fittings. Renew the upper rudder stock O-rings seals with the same type and size as removed. Secure all loose gland studs and double-nut the studs or use Nylock nuts after installation and adjusting of new o-rings seals. Check and lubricate the bearings again, through installed fittings and cavities prior to trials. Cycle the rudders from side to side and lubricate until grease extrudes from the bearing vents.
- o) Hang the rudders and make them up to the rudder stocks in the reverse order of disassembly. Renew all rudder palm bolts with SAE Grade 8 fitted fasteners.
- p) Repack the rudder stock seal with new packing.
- q) Re-install any rope guards removed with new Contractor furnished rope guards.

22.5 Tests, Trials and Documentation

Thoroughly clean all surfaces in the tillers, pins, rudder trunks, rudder stock bearings, rudder palms, and rudder stocks, particularly in way of the bearings. Visually inspect as appropriate all non-moving/non-wearing parts and assemblies. Inspect and measure all moving and wearing parts, and report findings in writing.

Upon re-install, measure and report lower rudder stock clearances. Provide a written report of all the measurements to the NCDOT Representative

Provide NCDOT Representative with target bolt torque for rudder palm bolts, prior to tightening. Measure and report the torque applied to the rudder palm bolts to the NCDOT Representative.

Contractor shall perform all tests and inspections as outlined in the "Requirements" section of this work item and shall provide all necessary reports to the NCDOT Representative and USCG Inspector.

22.6 Payment

The lump sum contract bid price for *Generic Ferry Item (Rudder Removals and Inspections)* shall be the total compensation for all labor, equipment, tools and materials to accomplish the work detailed in these Special Provisions for both rudders, including testing and trials and all time necessary in dry dock to complete the work involved. No further compensation will be made.

23 SEA WATER COOLING SYSTEM INSPECTION AND MAINTENANCE

23.1 Description

This section describes the requirements to open, clean, inspect, repair, modify, seal, renew, test and reassemble as indicated, the vessel's sea water cooling system, including but not limited to:

- Sea Chests
- Sea Strainers
- Removable pipe spool pieces
- Keel Coolers

Contractor shall take into consideration work associated with "Sea Valves" 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]."

23.2 References

- 23.2.1 DWG 09-060 256-01 – Engine Cooling Piping Schematic
- 23.2.2 DWG 09-060 256-02 – Engine Cooling System Arrangement & Details
- 24.2.3 DWG 09-060-163-01 – Sea Chest
- 24.2.4 DWG 09-060 568-01 – Bow Thruster Installation

23.3 Owner Furnished Equipment

Fernstrum Keel Coolers, Keel cooler bolt on anodes, and grounding straps (as needed)

23.4 Requirements

The Contractor shall complete the following work in the sea chests:

- a) Remove all external sea chest inlet strainer plates (3 total)
 - b) Disassemble sea chest piping at valves or takedown joints as needed, unbolt and remove internal sea chest cover plate
 - c) Remove one or more grating bars to Bow Thruster Sea Chest as necessary to allow (3000 psi) hydro blast and painting of sea chest grating bars associated with Bow Thruster inlets.
 - d) Remove all soft and hard fouling marine growth and high pressure water wash (3000 psi minimum) the inlets, sea chests and interior salt water spool pieces.
 - e) Prep and paint the inlet strainer plate and interior of each sea chest per the requirements detailed in the painting section of these Special Provisions.
 - f) Reinstall the strainer plates and grating bars using new fasteners of the same size, type, and materials as was removed.
 - g) Contractor is to use existing take-down joints and flanged connections to equipment to disconnect, inspect, and clean connected sea water piping in order to remove marine growth.
-

23.4.1 CHECK POINT:

NCDOT Representative shall inspect cleaned seawater piping prior to re-installation.

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 pressures.

23.4.2 CHECK POINT:

Prior to hydro test, Contractor is to provide NCDOT Representative with documented recommended hydro test pressure obtained from manufacturer.

23.4.3 NCDOT Representative is also to witness the hydro test of all keelcoolers.

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 e) 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.

23.4.4 CHECKPOINT

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.

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

23.4.5 CHECKPOINT:

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

- e) Refill each FW cooling system with a 50/50 mixture of fresh potable water and NALCOOL 2000.

23.4.6 CHECKPOINT:

After fit up of keel coolers but prior to vessel launch, Contractor shall pressure test all keel coolers and SW 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.

23.5 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.

23.5.1 CHECK POINT:

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

23.6 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 (Sea 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 Waterline*). Include all costs associated with painting the sea chests in the lump sum bid item (*Painting – Hull Below Waterline*).

24 REBUILD HYDRAULIC RAMS**24.1 Description**

This section describes the requirements for rebuilding the hydraulic steering rams.

Work on this section shall not begin until given specific authorization by the NCDOT Representative. NCDOT Representative shall not authorize work under this item to proceed until they are given the hydraulic ram inspection report. This item may be canceled pending result of the hydraulic ram inspection report; in which case no payment will be made to the Contractor for this bid item.

24.2 References

24.2.1 DWG 09-060 561-01 – Steering Arrangement

24.3 Owner Furnished Equipment

None

24.4 Requirements

All material and workmanship shall be in accordance with USCG regulations 46 CFR Subchapter H for Small Passenger Vessels and ABS Rules for Steel Vessels Under 90 Meters (295 Feet) in Length.

This item shall be accomplished in coordination with "Rehabilitate Hydraulic Steering Gear." All cleanliness and workmanship requirements of that work item also apply to this work item.

Remove from vessel and perform complete overhaul of hydraulic steering rams. Contractor shall follow manufacturer guidance to completely disassemble hydraulic steering rams, inspect all wearing parts, and renew all seal and gaskets. Contractor is to inspect all ram hoses, end connections, connection bolts (if loose or condition is suspect), pins, and bushings. Contractor shall provide written report of these inspections to NCDOT Representative.

Contractor shall assume rigid metal components are in good order. If rigid metal components are damaged, their repair shall be handled as "Additional Work."

24.4.1 CHECK POINT:

If hydraulic rams are beyond repair or their continued use after a rebuild is even questionable and the "Additional Work" clause needs to be invoked, Contractor shall arrange for NCDOT Representative to inspect the rams, and provide a minimum of two (2) business days' notice in advance of ram inspection.

Contractor shall reinstall hydraulic rams into vessel, in coordination with other hydraulic steering gear work.

24.5 Tests, Trials and Documentation

Contractor shall test all equipment for proper operation during dock trials. Contractor shall ensure all associated steering equipment and controls are properly installed and working properly.

The steering systems shall be operationally tested as described under the item "Rehabilitate Hydraulic Steering Gear."

24.6 Payment

The lump sum contract bid price for *Generic Ferry Item "(Rebuild Hydraulic Rams)* shall include all costs for removal, disposal, installation, testing, materials, tools, labor, vendors, and equipment necessary or incidental to completing the work as specified. No further compensation will be made.

25 BOW THRUSTER SYSTEM INSPECTION & MAINTENANCE

25.1 Description

This section describes the requirements to perform inspection on the bow thruster and the bow thruster diesel engine.

25.2 References

- 25.1.1 DWG 09-060 568-01 – Bow Thruster Installation
- 25.1.2 DWG 09-060 256-01– Engine Cooling Piping Schematic
- 25.1.3 DWG 09-060 256-02 – Engine Cooling System Arrangement & Details

25.3 Owner Furnished Equipment

None

25.4 Requirements

The Contractor shall flush the bow thruster engine aftercooler and gear expansion tank and the bow thruster engine jacket water expansion tank to assure cleanliness of systems. See Special Provisions, Section 24.4.5 for refill mixture.

25.5 Tests, Trials and Documentation

Contractor shall pressure test expansion tanks and 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.

25.6 Payment

The lump sum contract bid price for *Generic Ferry Item (Bow Thruster System Inspection and Maintenance)* shall be the total compensation for all labor, equipment, tools and materials to accomplish the work detailed in these Special Provisions, including testing and trials. No further compensation will be made.

26 DRAWINGS

Contractor is advised drawings are for general guidance only. Drawings may contain some inaccuracies. In instances where drawings conflict with the language in these Specifications, Contractor shall follow the Specifications. Inaccuracies in reference drawings shall not be considered cause for "Additional Work" or form the basis of a Change Order.

The following drawings and documents are included herein per attachment:

- | | |
|----------------------------------------|---------------|
| • Outboard Profile | 09-060 101-01 |
| • General Arrangement | 09-060 101-02 |
| • Sea Chest | 09-060 163-01 |
| • Schedule OF Openings Below Main Deck | 09-060 167-01 |
| • Shaft Arrangement | 06-060 243-01 |
| • Cooling Piping Schematic | 09-060 256-01 |
| • Cooling System Arrangement & Details | 09-060 256-02 |

• Fuel Oil System Schematic	09-060 261-01
• Fuel Oil System Arrangement & Details	09-060 261-02
• Lube Oil & Dirty Oil System Schematic	09-060 264-01
• Lighting Deck Plan	09-060 330-01
• Fills, Vents and Sounds Schematic	09-060 506-01
• Fills, Vents and Sounds Arrangement & Details	09-060 506-02
• Fire Main System Schematic	09-060 521-01
• Fire Main System Arrangement & Details	09-060 521-02
• Outboard Drains & Sewage System Schematic	09-060 528-01
• Outboard Drains & Sewage Sys Arrangement & Details	09-060 528-02
• Bilge & Oily Water Schematic	09-060 529-01
• Bilge & Oily Water Arrangement & Details	09-060 529-02
• Potable Water Schematic	09-060 533-01
• Potable Water Arrangement & Details	09-060 533-02
• Steering Arrangement	09-060 561-01
• Rudder Arrangement	06-060 562-01
• Bow Thruster Arrangement	09-060 568-01
• Docking and Anode Plan	09-060 997-01
• Owens Kleen Tank – Vendor Drawing	OW-1125-100

SUPPLEMENTAL WORK PROVISIONS DURING M/V SEA LEVEL CDD PERIOD

1 Repair Car Deck Sprinkler System

1.1 Description

This section describes the requirement to repair leaking Car Deck Sprinkler System with original design Viega piping and fittings.

1.2 References

1.2.1 DWG 09-060 521-01 – Fire Main System Schematic

1.2.2 DWG 09-060 521-02 – Fire Main System Arrangement

1.3 Owner Furnished Equipment

None

1.4 Requirements

The Contractor shall pressure test Car Deck Sprinkler System to identify which joints are leaking and to repair using original designed Viega piping and fittings.

1.5 Test, Trials and Documentation

Following repair of Car Deck Sprinkler System, Contractor shall prove integrity of system by pressure testing piping in the company of the NCDOT Representative.

Payment

The lump sum contract bid price for *Generic Ferry Item (Repair Car Deck Sprinkler System)* shall be the total compensation for all labor, equipment, tools and materials to accomplish the work detailed in these Supplemental Work Provisions and Special Provisions, including testing and trials. No further compensation will be made.

2 Replace Car Deck Light Fixtures

2.1 Description

This section describes the requirement to replace deteriorating Car Deck light fixtures.

2.2 References

2.2.1 DWG 09-060 320-03 – Electrical Miscellaneous

2.3 Owner Furnished Equipment

NCDOT to provide (13) LED Light Fixtures. Dynagen: model: NCFLED-4-48D1L850

2.4 Requirements

The Contractor shall remove deteriorating light fixtures and brackets and install (12) new LED light fixtures and brackets in original overhead design locations and (1) in the vestibule.

2.5 Test, Trials and Documentation

Following refurbishment of Car Deck Lighting System, Contractor shall prove operational of lights in the company of the NCDOT Representative.

Payment

The lump sum contract bid price for *Generic Ferry Item (Replace Car Deck Light Fixtures)* shall be the total compensation for all labor, equipment, tools and materials to accomplish the work detailed in these Supplemental Work Provisions and Special Provisions, including testing and trials. No further compensation will be made.

3 Restore Deck Plates**3.1 Description**

This section describes the requirement to remove, blast, and recoat forward and aft voids, bow thruster and engine room deck plates.

3.2 References**3.2.1 See Section 11 Painting-General above in (Special Provisions for Vessel Maintenance and Repair)****3.3 Owner Furnished Equipment**

None

3.4 Requirements

The NCDOT Representative will designate which (39) deck plates to be surface prepared, painted and the paint color to be used, refer to Section 11 "Painting-General Special Provisions". Contractor to label, remove, blast, and recoat rusting deck plates.

3.5 Test, Trials and Documentation

Contractor to reinstall deck plates with design hardware in original designed location.

3.6 Payment

The contract unit bid price per each for *Generic Ferry Item (Restore Deck Plates)* shall be the total compensation for all labor, equipment, tools and materials to accomplish the work detailed in these Supplemental Work Provisions and Special Provisions, including testing and trials. No further compensation will be made.

STANDARD SPECIAL PROVISIONS

AVAILABILITY OF FUNDS – TERMINATION OF CONTRACTS

(5-20-08)

Z-2

General Statute 143C-6-11. (h) Highway Appropriation is hereby incorporated verbatim in this contract as follows:

(h) Amounts Encumbered. – Transportation project appropriations may be encumbered in the amount of allotments made to the Department of Transportation by the Director for the estimated payments for transportation project contract work to be performed in the appropriation fiscal year. The allotments shall be multiyear allotments and shall be based on estimated revenues and shall be subject to the maximum contract authority contained in *General Statute 143C-6-11(c)*. Payment for transportation project work performed pursuant to contract in any fiscal year other than the current fiscal year is subject to appropriations by the General Assembly. Transportation project contracts shall contain a schedule of estimated completion progress, and any acceleration of this progress shall be subject to the approval of the Department of Transportation provided funds are available. The State reserves the right to terminate or suspend any transportation project contract, and any transportation project contract shall be so terminated or suspended if funds will not be available for payment of the work to be performed during that fiscal year pursuant to the contract. In the event of termination of any contract, the contractor shall be given a written notice of termination at least 60 days before completion of scheduled work for which funds are available. In the event of termination, the contractor shall be paid for the work already performed in accordance with the contract specifications.

Payment will be made on any contract terminated pursuant to the special provision in accordance with Subarticle 108-13(E) of the *2018 Standard Specifications*.

BIDS OVER LIMIT:

(08-01-16)

SPD 01-400

In accordance with GS 136-28.1(b), if the total bid amount of the contract exceeds \$5.0 million, the bid will not be considered for award.

DIVISION LET CONTRACT PREQUALIFICATION:

(07-01-14)(12-1-16)

SPD 01-410

Any firm that wishes to bid as a prime contractor shall be prequalified as a Bidder or PO Prime Contractor prior to submitting a bid. Information regarding prequalification can be found at: <https://connect.ncdot.gov/business/Prequal/Pages/default.aspx>.

Prior to performing the work, the prime contractor and/or subcontractor(s) shall be prequalified in the work code(s) which are identified as work items in the prime contractor's construction progress schedule that they will complete themselves. Any contractor identified as working outside their expertise may be considered in default of contract.

SAFETY VESTS:

All Contractors' personnel, all subcontractors and their personnel, and any material suppliers and their personnel must wear an OSHA approved reflective vest or outer garment at all times while on the project.

CONTRACTOR CLAIM SUBMITTAL FORM:

(2-12-14)

104-3

SPD 01-440

If the Contractor elects to file a written claim or requests an extension of contract time, it shall be submitted on the *Contractor Claim Submittal Form (CCSF)* available through the Construction Unit or at <https://connect.ncdot.gov/projects/construction/Pages/Construction-Resources.aspx> as Form CCSF under Construction Forms.

Any claims for additional compensation and/or extensions of the completion date shall be submitted to the Division Engineer in writing, with detailed justification, prior to submitting the final invoice payment. Once an invoice is received and accepted that is marked as “Final”, the Contractor shall be barred from recovery.

ERRATA:

(2-12-18)

Z-4

Revise the *2018 Standard Specifications* as follows:

Division 7

Page 7-27, line 4, Article 725-1 MEASUREMENT AND PAYMENT, replace article number “725-1” with “724-4”.

Page 7-28, line 10, Article 725-1 MEASUREMENT AND PAYMENT, replace article number “725-1” with “725-3”.

Division 10

Page 10-162, line 1, Article 1080-50 PAINT FOR VERTICAL MARKERS, replace article number “1080-50” with “1080-10”.

Page 10-162, line 5, Article 1080-61 EPOXY RESIN FOR REINFORCING STEEL, replace article number “1080-61” with “1080-11”.

Page 10-163, line 25, Article 1080-83 FIELD PERFORMANCE AND SERVICES, replace article number “1080-83” with “1080-13”.

MINIMUM WAGES:

(7-21-09)

Z-5

FEDERAL: The Fair Labor Standards Act provides that with certain exceptions every employer shall pay wages at the rate of not less than SEVEN DOLLARS AND TWENTY FIVE CENTS (\$7.25) per hour.

STATE: The North Carolina Minimum Wage Act provides that every employer shall pay to each of his employees, wages at a rate of not less than SEVEN DOLLARS AND TWENTY FIVE CENTS (\$7.25) per hour.

The minimum wage paid to all skilled labor employed on this contract shall be SEVEN DOLLARS AND TWENTY FIVE CENTS (\$7.25) per hour.

The minimum wage paid to all intermediate labor employed on this contract shall be SEVEN DOLLARS AND TWENTY FIVE CENTS (\$7.25) per hour.

The minimum wage paid to all unskilled labor on this contract shall be SEVEN DOLLARS AND TWENTY FIVE CENTS (\$7.25) per hour.

This determination of the intent of the application of this act to the contract on this project is the responsibility of the Contractor.

The Contractor shall have no claim against the Department of Transportation for any changes in the minimum wage laws, Federal or State. It is the responsibility of the Contractor to keep fully informed of all Federal and State Laws affecting his contract.

ON-THE-JOB TRAINING:

(10-16-07) (Rev. 4-21-15)

Z-10

Description

The North Carolina Department of Transportation will administer a custom version of the Federal On-the-Job Training (OJT) Program, commonly referred to as the Alternate OJT Program. All contractors (existing and newcomers) will be automatically placed in the Alternate Program. Standard OJT requirements typically associated with individual projects will no longer be applied at the project level. Instead, these requirements will be applicable on an annual basis for each contractor administered by the OJT Program Manager.

On the Job Training shall meet the requirements of 23 CFR 230.107 (b), 23 USC – Section 140, this provision and the On-the-Job Training Program Manual.

The Alternate OJT Program will allow a contractor to train employees on Federal, State and privately funded projects located in North Carolina. However, priority shall be given to training employees on NCDOT Federal-Aid funded projects.

Minorities and Women

Developing, training and upgrading of minorities and women toward journeyman level status is a primary objective of this special training provision. Accordingly, the Contractor shall make every effort to enroll minority and women as trainees to the extent that such persons are available within a reasonable area of recruitment. This training commitment is not intended, and shall not be used, to discriminate against any applicant for training, whether a member of a minority group or not.

Assigning Training Goals

The Department, through the OJT Program Manager, will assign training goals for a calendar year based on the contractors' past three years' activity and the contractors' anticipated upcoming year's activity with the Department. At the beginning of each year, all contractors eligible will be contacted by the Department to determine the number of trainees that will be assigned for the upcoming calendar year. At that time the Contractor shall enter into an agreement with the Department to provide a self-imposed on-the-job training program for the calendar year. This agreement will include a specific number of annual training goals agreed to by both parties. The number of training assignments may range from 1 to 15 per contractor per calendar year. The Contractor shall sign an agreement to fulfill their annual goal for the year.\

Training Classifications

The Contractor shall provide on-the-job training aimed at developing full journeyman level workers in the construction craft/operator positions. Preference shall be given to providing training in the following skilled work classifications:

Equipment Operators	Office Engineers
Truck Drivers	Estimators
Carpenters	Iron / Reinforcing Steel Workers
Concrete Finishers	Mechanics
Pipe Layers	Welders

The Department has established common training classifications and their respective training requirements that may be used by the contractors. However, the classifications established are not all-inclusive. Where the training is oriented toward construction applications, training will be allowed in lower-level management positions such as office engineers and estimators. Contractors shall submit new classifications for specific job functions that their employees are performing. The Department will review and recommend for acceptance to FHWA the new classifications proposed by contractors, if applicable. New classifications shall meet the following requirements:

Proposed training classifications are reasonable and realistic based on the job skill classification needs, and

The number of training hours specified in the training classification is consistent with common practices and provides enough time for the trainee to obtain journeyman level status.

The Contractor may allow trainees to be trained by a subcontractor provided that the Contractor retains primary responsibility for meeting the training and this provision is made applicable to the subcontract. However, only the Contractor will receive credit towards the annual goal for the trainee.

Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training. The number of trainees shall be distributed among the work classifications on the basis of the contractor's needs and the availability of journeymen in the various classifications within a reasonable area of recruitment.

No employee shall be employed as a trainee in any classification in which they have successfully completed a training course leading to journeyman level status or in which they have been employed as a journeyman.

Records and Reports

The Contractor shall maintain enrollment, monthly and completion reports documenting company compliance under these contract documents. These documents and any other information as requested shall be submitted to the OJT Program Manager.

Upon completion and graduation of the program, the Contractor shall provide each trainee with a certification Certificate showing the type and length of training satisfactorily completed.

Trainee Interviews

All trainees enrolled in the program will receive an initial and Trainee/Post graduate interview conducted by the OJT program staff.

Trainee Wages

Contractors shall compensate trainees on a graduating pay scale based upon a percentage of the prevailing minimum journeyman wages (Davis-Bacon Act). Minimum pay shall be as follows:

60 percent	of the journeyman wage for the first half of the training period
75 percent	of the journeyman wage for the third quarter of the training period
90 percent	of the journeyman wage for the last quarter of the training period

In no instance shall a trainee be paid less than the local minimum wage. The Contractor shall adhere to the minimum hourly wage rate that will satisfy both the NC Department of Labor (NCDOL) and the Department.

Achieving or Failing to Meet Training Goals

The Contractor will be credited for each trainee employed by him on the contract work who is currently enrolled or becomes enrolled in an approved program and who receives training for at least 50 percent of the specific program requirement. Trainees will be allowed to be transferred between projects if required by the Contractor's scheduled workload to meet training goals.

If a contractor fails to attain their training assignments for the calendar year, they may be taken off the NCDOT's Bidders List.

Measurement and Payment

No compensation will be made for providing required training in accordance with these contract documents.

County : Dare

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
ROADWAY ITEMS						
0001	0000820000-N	SP	GENERIC MISCELLANEOUS ITEM (BERTHING DAYS)	60 DAY		
0002	0000820000-N	SP	GENERIC MISCELLANEOUS ITEM (LAY DAYS)	1 DAY		
0003	0000915000-N	SP	GENERIC MISCELLANEOUS ITEM (LINE SHAFT BEARING REPLACEMEN T)	1 EA		
0004	0000915000-N	SP	GENERIC MISCELLANEOUS ITEM (RESTORE DECK PLATES)	39 EA		
0005	0000915000-N	SP	GENERIC MISCELLANEOUS ITEM (TAIL SHAFT BEARING REPLACEMEN T)	2 EA		
0006	0000915000-N	SP	GENERIC MISCELLANEOUS ITEM (ZINC ANODE REPLACEMENTS, KEEL COOLERS / BOLT ON PER KEEL COOLER SPECIF ICATIONS)	20 EA		
0007	0000915000-N	SP	GENERIC MISCELLANEOUS ITEM (ZINC ANODE REPLACEMENTS, RUDD ERS/ 6 LB)	12 EA		
0008	0000915000-N	SP	GENERIC MISCELLANEOUS ITEM (ZINC ANODE REPLACEMENTS, SEA CHEST & BOW THRUSTER - 5.3 LB.)	4 EA		
0009	0000915000-N	SP	GENERIC MISCELLANEOUS ITEM (ZINC ANODE REPLACEMENTS, VESS EL HULL / 23-24 LB.)	109 EA		
0010	0000950000-E	SP	GENERIC MISCELLANEOUS ITEM (SPOT CLEANING & PAINTING, HUL L ABOVE DLWL)	2,000 SF		
0011	0000950000-E	SP	GENERIC MISCELLANEOUS ITEM (SPOT CLEANING & PAINTING, HUL L BELOW DLWL)	700 SF		
0012	0005000000-N	SP	GENERIC FERRY ITEM (BOW THRUSTER SYSTEM INSPECTIO N & MAINTENANCE)	Lump Sum	L.S.	
0013	0005000000-N	SP	GENERIC FERRY ITEM (DOCK AND SEA TRIALS)	Lump Sum	L.S.	

County : Dare

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0014	0005000000-N	SP	GENERIC FERRY ITEM (EXTERIOR DECK PAINTING)	Lump Sum	L.S.	
0015	0005000000-N	SP	GENERIC FERRY ITEM (HIGH-PRESSURE WATER WASH, HULL ABOVE DLWL)	Lump Sum	L.S.	
0016	0005000000-N	SP	GENERIC FERRY ITEM (HIGH-PRESSURE WATER WASH, HULL BELOW DLWL)	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 (MAIN DECK HATCH MAINTENANCE & REPAIR)	Lump Sum	L.S.	
0019	0005000000-N	SP	GENERIC FERRY ITEM (OPEN, CLEAN & CERTIFY GAS FREE: BILGES, HOLDS & ENCLOSED AREAS)	Lump Sum	L.S.	
0020	0005000000-N	SP	GENERIC FERRY ITEM (PAINTING HULL BELOW DLWL)	Lump Sum	L.S.	
0021	0005000000-N	SP	GENERIC FERRY ITEM (PAINTING SUPERSTRUCTURE)	Lump Sum	L.S.	
0022	0005000000-N	SP	GENERIC FERRY ITEM (REBUILD HYDRAULIC RAMS)	Lump Sum	L.S.	
0023	0005000000-N	SP	GENERIC FERRY ITEM (REPAIR CAR DECK SPRINKLER SYSTEM)	Lump Sum	L.S.	
0024	0005000000-N	SP	GENERIC FERRY ITEM (REPLACE CAR DECK LIGHT FIXTURES)	Lump Sum	L.S.	
0025	0005000000-N	SP	GENERIC FERRY ITEM (RUDDER REMOVALS & INSPECTIONS)	Lump Sum	L.S.	
0026	0005000000-N	SP	GENERIC FERRY ITEM (SEA VALVES)	Lump Sum	L.S.	

County : Dare

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0027	0005000000-N	SP	GENERIC FERRY ITEM (SEA WATER COOLING SYSTEM INSP ECTION & MAINTENANCE)	Lump Sum	L.S.	
0028	0005000000-N	SP	GENERIC FERRY ITEM (SEWAGE SYSTEM - CLEAN, INSPEC T & PERFOR M MAINTENANCE)	Lump Sum	L.S.	
0029	0005000000-N	SP	GENERIC FERRY ITEM (TAIL SHAFT & PROPELLER REMOVA LS, INSPEC TIONS & SHAFING ALIGNMENTS)	Lump Sum	L.S.	
0030	0005000000-N	SP	GENERIC FERRY ITEM (TAKE CONTROL & DRY DOCK M/V S EA LEVEL)	Lump Sum	L.S.	
0937/May10/Q2967.0/D104945000/E30			Total Amount Of Bid For Entire Project :			

Execution of Contract

Contract No: DA00418

Counties: Dare

ACCEPTED BY THE DEPARTMENT

Contract Officer

Date

Signature Sheet (Bid) - ACCEPTANCE SHEET
