STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

RALEIGH, N. C.

PROPOSAL FORM

_____

NAME OF BIDDER

_____

ADDRESS OF BIDDER

DATE AND TIME OF OPENING BIDS: **2:00 PM, September 15, 2009**

PROJECT NO. WBS 38683.3.3

TIP NO. F-4004C

Federal Aid No. FBD-0012(33)

Contract No. C202197

VESSEL CLASS: SOUND CLASS VESSEL NAME: N/A

DESCRIPTION: CONSTRUCTION OF ONE (1) 220' x 50' x 12'-6" PASSENGER/VEHICLE FERRY WITH STANDARD PROPULSION

TYPE OF WORK: NEW CONSTRUCTION

Bids Will Be Received As Shown:

NEW CONSTRUCTION: X

REPAIR:

5% BID BOND REQUIRED, SECURED BY EITHER A CORPORATE SURETY OR CERTIFIED CHECK.

PROPOSAL FOR THE CONSTRUCTION OF:

Project No WBS 38683.3.3

in **Hyde County**, North Carolina

Date: **AUGUST 18, 2009**

Department of Transportation

Raleigh, North Carolina

The Bidder has carefully examined the specifications and plans of the proposed work to be known as Project No. **WBS 38683.3.3**, 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 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 by **MAY 1, 2011** 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 Project No. **WBS 38683.3.3 for Hyde 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.

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.

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.

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COVER SHEET
PROPOSAL SHEETS

PROJECT SPECIAL PROVISIONS

EXECUTION OF SIGNATURE SHEETS

(6-17-82)

The Bidder's attention is directed to the various sheets in the proposal form which are to be signed by the Bidder. A list of these sheets is shown below. The signature sheets are located behind the item sheets in the proposal form. The bid bond is inserted in the proposal form.

1. Applicable Signature Sheets: 1, 2, 3, 4, 5, or 6 (Bid)

2. Bid Bond (Proposal Insert)

PROPRIETARY ITEMS ON PLANS

The Contractor's attention is directed to the fact that there are numerous references to proprietary items listed throughout the contract plans. These references shall not supersede the provisions in the contract proposal. Other products of equal quality may be used provided they meet or exceed the requirements of the special provisions and are approved for use by the Ferry Division. In those instances where there is no provision in the contract proposal to cover the work, the plan information shall apply unless otherwise directed by the Ferry Division.

SCHEDULE OF ESTIMATED COMPLETION PROGRESS:

(7-15-08) SP1 G58

The Contractor's attention is directed to the Standard Special Provision entitled *Availability Of Funds Termination Of Contracts* included elsewhere in this proposal. The Department of Transportation's schedule of estimated completion progress for this project as required by that Standard Special Provision is as follows:

Fiscal Year		Progress (% of Dollar Value)
2010	(7/01/09 - 6/30/10)	58 % of Total Amount Bid
2011	(7/01/10 - 6/30/11)	42 % of Total Amount Bid

The Contractor shall also furnish his own progress schedule in accordance with Article 108-2 of the *2006 Standard Specifications*. Any acceleration of the progress as shown by the Contractor's progress schedule over the progress as shown above shall be subject to the approval of the Engineer.

DOMESTIC STEEL AND IRON PRODUCTS:

(April 19, 1994)

The requirements of this provision do NOT apply to certain ferry boat equipment and machinery items. These items include marine diesel engines, electrical switchboards and switchgear, electric motors, pumps, ventilation fans, boilers, electrical controls and electronic equipment. The use of these specific equipment and machinery items, which have been manufactured outside the United States, is permitted for ferry boat construction.

Except as provided in the above paragraph, all steel and iron products which are permanently incorporated into this project shall be produced in the United States. Minimal amounts of foreign steel and iron products may be used provided the combined project cost of the bid items involved does not exceed one-tenth of one percent (0.1 percent) of the total amount bid for the entire project or $2,500.00, whichever is greater. This minimal amount of foreign produced steel and iron products permitted for use by this Special Provision is not applicable to fasteners. Domestically produced fasteners are required for this project.

All steel and iron products furnished as "domestic products" shall be melted, cast, formed, shaped, drawn, extruded, forged, fabricated, produced, or otherwise processed and manufactured in the United States. Raw materials used in manufacturing "domestic" steel and iron products may be imported; however, all manufacturing processes to produce the products, including coatings, must occur in the United States.

Before each steel or iron product is incorporated into this project or included for partial payment on a monthly estimate, the Contractor shall furnish the Resident Engineer a notarized certification certifying that the product conforms to the above requirements of this Special Provision. The Resident Engineer will forward a copy of each certification to the Materials and Tests Unit.

Each purchase order issued by the Contractor or a subcontractor for steel and iron products to be permanently incorporated into this project shall contain in bold print a statement advising the supplier that all manufacturing processes to produce the steel or iron shall have occurred in the United States. The Contractor and all affected subcontractors shall maintain a separate file for steel products permanently incorporated into this project so that verification of the Contractor's efforts to purchase "domestic" steel and iron products can readily be verified by an authorized representative of the Department or the Federal Highway Administration.

REVISION TO FHWA-1273 CONCERNING PERSONAL INFORMATION ON PAYROLL SUBMISSIONS:

(1-20-09) SP1G59

Revise the *Standard Special Provision FHWA-1273 Required Contract Provisions Federal-Aid Construction Contracts* as follows:

Section V, Paragraph 2b is replaced with the following:

The payroll records shall contain the name, and the last four digits of the social security number of each such employee, his or her correct classification; hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalent thereof the types described in Section 1(b)(2)(B) of the Davis Bacon Act); daily and weekly number of hours worked; deductions made; and actual wages paid.

DISADVANTAGED BUSINESS ENTERPRISE:
(10-16-07) SP1 G61

Policy

It is the policy of the North Carolina Department of Transportation that Disadvantaged Business Enterprises (DBEs) as defined in *49 CFR Part 26* shall have the equal opportunity to compete fairly for and to participate in the performance of contracts financed in whole or in part by Federal Funds.

Obligation

The Contractor, subcontractor, and sub-recipient shall not discriminate on the basis of race, religion, color, national origin, age, disability or sex in the performance of this contract. The Contractor shall comply with applicable requirements of *49 CFR Part 26* in the award and administration of federally assisted contracts. Failure by the Contractor to comply with these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy, as the Department deems necessary.

Definitions

Commitment - The approved DBE participation submitted by the prime contractor during the bidding process.

Committed DBE - Any DBE listed on the DBE commitment list approved by the Department at the time of bid submission or any DBE utilized as a replacement for a DBE firm listed on the commitment list.

Department - North Carolina Department of Transportation

Disadvantaged Business Enterprise (DBE) – A firm certified as a Disadvantage Business Enterprise through the North Carolina Unified Certification Program.

Goal - The DBE participation specified herein

Letter of Intent – Written documentation of the bidder/offeror's commitment to use a DBE subcontractor and confirmation from the DBE that it is participating in the contract.

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

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 or operates distribution equipment. Brokers and packagers

are not regarded as manufacturers or regular dealers within the meaning of this section.

Form RS-1-D - Form for subcontracts involving DBE subcontractors attesting to the agreed upon unit prices and extensions for the affected contract items.

North Carolina Unified Certification Program - A program that provides comprehensive information to applicants for certification, such that an applicant is required to apply only once for a DBE certification that will be honored by all recipients of USDOT funds in the state and not limited to the Department of Transportation only. The Certification Program is in accordance with *49 CFR Part 26*.

USDOT - United States Department of Transportation, including the Office of the Secretary, the Federal Highway Administration (FHWA), the Federal Transit Administration (FTA), and the Federal Aviation Administration (FAA).

Contract Goal

The following goal for participation by Disadvantaged Business Enterprises is established for this contract:

Disadvantaged Business Enterprises **0** %

(A) *If the goal is more than zero*, the Contractor shall exercise all necessary and reasonable steps to ensure that Disadvantaged Business Enterprises participate in at least the percent of the contract as set forth above as the goal.

(B) *If the goal is zero*, the Contractor shall continue to recruit the DBEs and report the use of DBEs during the construction of the project. A good faith effort will not be required with a zero goal.

Contract Requirement

The approved DBE participation submitted by the Contractor shall be the **Contract Requirement**.

Certified Transportation Firms Directory

Real-time information about firms doing business with the Department and firms that are certified through North Carolina's Unified Certification Program is available in the Directory of Transportation Firms. The Directory can be accessed by the link on the Department's homepage or by entering https://apps.dot.state.nc.us/vendor/directory/ in the address bar of your web browser. Only firms identified as DBE certified in the Directory can be utilized to meet the contract goals.

The listing of an individual firm in the Department's directory shall not be construed as an endorsement of the firm's capability to perform certain work.

Listing of DBE Subcontractors in Contract

Only those DBE firms with current certification are acceptable for listing in the bidder's submittal of DBE participation. The Contractor shall indicate the following required information:

(A) Electronic Bids

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

(1) The names and addresses of DBE firms committed to participate in the contract. If the bidder uses the updated listing of DBE firms shown in Expedite, the bidder may use the dropdown menu to access the name and address of the DBE firm.

(2) The contract line numbers of work to be performed by each DBE firm. When no figures or firms are entered, the bidder will be considered to have no DBE participation.

(B) Paper Bids

(1) *If the goal is more than zero,* bidders at the time the bid proposal is submitted, shall submit a listing of DBE participation on the appropriate form (or facsimile thereof) contained elsewhere in the contract documents in order for the bid to be considered responsive. Bidders shall indicate the total dollar value of the DBE participation for the contract. If bidders have no DBE participation, they shall indicate this on the form "Listing of DBE Subcontractors" by entering the word or number zero. This form shall be completed in its entirety. **Blank forms will not be deemed to represent zero participation**. Bids submitted that do not have DBE 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 returned to the bidder.

(2) *If the goal is zero,* bidders at the time the bid proposal is submitted, they shall enter the word "zero" or number "0" or if there is participation, add the value on the "Listing of DBE Subcontractors" (or facsimile thereof) contained elsewhere in the contract documents.

Written Documentation – Letter of Intent

The bidder shall submit written documentation of the bidder/offeror's commitment to use a DBE subcontractor whose participation it submits to meet a contract goal and written confirmation from each DBE, listed in the proposal, indicating their participation in the contract. This documentation shall be submitted on the Department's form titled "Letter of Intent to Perform as a Subcontractor". This letter of intent form is available at:

http://www.ncdot.org/doh/preconstruct/ps/contracts/letterofintent.pdf. It shall be received in the office of the State Contractor Utilization Engineer no later than 12:00 noon of the sixth calendar day following opening of bids.

If the bidder fails to submit the letter of intent from each committed DBE listed in the proposal indicating their participation in the contract, the DBE participation will not count toward meeting the goal.

Counting DBE Participation Toward Meeting DBE Goal of Zero or More

(A) If a firm is determined to be an eligible DBE firm, the total dollar value of the participation by the DBE will be counted toward the contract requirement. The total dollar value of participation by a certified DBE will be based upon the value of work actually performed by the DBE and the actual payments to DBE firms by the Contractor.

(B) When a DBE performs as a participant in a joint venture, the Contractor may count toward its DBE goal a portion of the total value of participation with the DBE in the joint venture, that portion of the total dollar value being a distinct clearly defined portion of work that the DBE performs with its forces.

(C) (1) The Contractor may count toward its DBE requirement only expenditures to DBEs that perform a commercially useful function in the work of a contract. A DBE 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 DBE 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 DBE 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 DBE credit claimed for its performance of the work, and other relevant factors.

(2) A DBE may enter into subcontracts. Work that a DBE subcontracts to another DBE firm may be counted toward the contract requirement. Work that a DBE subcontracts to a non-DBE firm does not count toward the contract requirement. If a DBE 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, the DBE shall be presumed not to be performing a commercially useful function. The DBE may present evidence to rebut this presumption to the Department for commercially useful functions. The Department's decision on the rebuttal of this presumption is subject to review by the Federal Highway Administration but is not administratively appealable to USDOT.

(3) The following factors will be used to determine if a DBE trucking firm is performing a commercially useful function.

(a) The DBE 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 DBE goals.

(b) The DBE shall itself own and operate at least one fully licensed, insured, and operational truck used on the contract.

(c) The DBE 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.

(d) The DBE may lease trucks from another DBE firm, including an owner-operator who is certified as a DBE. The DBE who leases trucks from another DBE receives credit for the total value of the transportation services the lessee DBE provides on the contract.

(e) The DBE may also lease trucks from a non-DBE firm, including from an owner-operator. The DBE who leases trucks from a non-DBE is entitled to credit for the total value of transportation services provided by non-DBE lessees not to exceed the value of transportation services provided by DBE-owned trucks on the contract. Additional participation by non-DBE lessees receives credit only for the fee or commission it receives as a result of the lease arrangement.

(f) For purposes of this paragraph, a lease shall indicate that the DBE has exclusive use of and control over the truck. This does not preclude the leased truck from working for others during the term of the lease with the consent of the DBE, so long as the lease gives the DBE absolute priority for use of the leased truck. Leased trucks shall display the name and identification number of the DBE.

(D) A contractor may count toward its DBE requirement 60 percent of its expenditures for materials and supplies required to complete the contract and obtained from DBE regular dealer and 100 percent of such expenditures to a DBE manufacturer.

(E) A contractor may count toward its DBE requirement the following expenditures to DBE firms that are not manufacturers or regular dealers:

(1) The fees or commissions charged by a DBE 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) The fees or commissions charged for assistance in the procurement of the materials and supplies, or for 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 not from a manufacturer or regular dealer and provided the fees are determined to be reasonable and not excessive as compared with fees customarily allowed for similar services.

Good Faith Effort for Projects with Goals More Than Zero

If the DBE participation submitted in the bid by the apparent lowest responsive bidder does not meet or exceed the DBE contract goal, the apparent lowest responsive bidder shall submit to the Department documentation of its good faith efforts made to reach the contract goal. One complete set and 9 copies of this information shall be received in the office of the State Contractor Utilization Engineer no later than 12:00 noon of the sixth calendar day following opening of bids. 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 DBE quotations shall be a part of the good faith effort submittal as necessary to demonstrate compliance with the factors listed below which the Department considers in judging good faith efforts. This documentation may include written subcontractor quotations, telephone log notations of verbal quotations, or other types of quotation documentation.

The following factors will be used to determine if the bidder has made adequate good faith effort:

(A) Whether the bidder attended any pre-bid meetings that were scheduled by the Department to inform DBEs of subcontracting opportunities.

(B) Whether the bidder provided solicitations through all reasonable and available means (e.g. advertising in newspapers owned and targeted to the Disadvantaged) at least 10 calendar days prior to bid opening). Whether the bidder provided written notice to all DBEs listed in the NCDOT Directory of Transportation Firms, within the Divisions and surrounding Divisions where the project is located, that specialize in the areas of work (as noted in the DBE Directory) that the bidder will be subletting.

(C) Whether the bidder followed up initial solicitations of interests by contacting DBEs to determine with certainty whether they were interested. If a reasonable amount of DBEs within the targeted Divisions do not provide an intent to quote or no DBEs specialize in the subcontracted areas, the bidder shall notify DBEs outside of the targeted Divisions that specialize in the subcontracted areas, and contact the Business Development Manager in the NCDOT Office of Civil Rights to give notification of the bidder's inability to get DBE quotes.

(D) Whether the bidder selected portions of the work to be performed by DBEs in order to increase the likelihood of meeting the contract goals. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate DBE participation, even when the bidder might otherwise perform these work items with its own forces.

(E) Whether the bidder provided interested DBEs with adequate and timely information about the plans, specifications and requirements of the contract.

(F) Whether the bidder negotiated in good faith with interested DBEs without rejecting them as unqualified without sound reasons based on a thorough investigation of their capabilities. Any rejection should be noted in writing with a description as to why an agreement could not be reached.

(G) Whether quotations were received from interested DBE firms but rejected as unacceptable without sound reasons why the quotations were considered unacceptable. The fact that the DBE firms quotation for the work is not the lowest quotation received will not in itself be considered as a sound reason for rejecting the quotation as unacceptable. The fact that the bidder has the ability and/or desire to perform the contract work with its own forces will not be considered as sound reason for rejecting a DBE quote. Nothing in this provision shall be construed to require the bidder to accept unreasonable quotes in order to satisfy contract goals.

(H) Whether the bidder specifically negotiated with subcontractors to assume part of the responsibility to meet the contract DBE goal when the work to be sublet includes potential for DBE participation.

(I) Whether the bidder made any efforts and/or offered assistance to interested DBEs in obtaining the necessary equipment, supplies, materials, insurance, and/or bonding to satisfy the work requirements in the bid proposal.

(J) Any other evidence that the bidder submits which show that the bidder has made reasonable good faith efforts to meet the contract goal.

If a bidder is the apparent lowest responsive bidder on more than one project within the same letting located in the same geographic area of the state, as a part of the good faith effort the Department will consider allowing the bidder to combine the DBE participation as long as the overall DBE goal value of the combined projects is achieved.

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 the Department that the contract goal can be met or that adequate good faith efforts have been made to meet the goal.

DBE Replacement

The Contractor shall not terminate a committed DBE subcontractor for convenience or perform the work with its own forces or those of an affiliate. If the Contractor fails to demonstrate reasonable efforts to replace a committed DBE firm that does not perform as intended with another committed DBE firm or completes the work with its own forces without the Engineer's approval, 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 committed DBE.

(A) Performance Related Replacement

When a DBE is terminated or fails to complete its work on the contract for any reason, the Contractor shall take all necessary, reasonable steps to replace the DBE subcontractor with another DBE subcontractor to perform at least the same amount of work as the DBE that was terminated. The Contractor is encouraged to first attempt to find another DBE firm to do the same work as the DBE that was being terminated.

To demonstrate necessary, reasonable good faith efforts, the Contractor shall document the steps they have taken to replace any DBE subcontractor who is unable to perform successfully with another DBE subcontractor. Such documentation shall include but not be limited to the following:

(1) Copies of written notification to DBEs that their interest is solicited in subcontracting the work defaulted by the previous DBE subcontractor or in subcontracting other items of work in the contract.

(2) Efforts to negotiate with DBEs for specific subbids including, at a minimum:

(a) The names, addresses, and telephone numbers of DBEs who were contacted.

(b) A description of the information provided to DBEs regarding the plans and specifications for portions of the work to be performed.

(3) For each DBE contacted but rejected as unqualified, the reasons for the Contractor's conclusion.

(4) Efforts made to assist the DBEs contacted, if needed, in obtaining bonding or insurance required by the Contractor.

(B) Decertification Replacement

(1) When a committed DBE is decertified by the Department after a Request for Subcontract has been received by the Department, the Department will not require the Prime Contractor to solicit replacement DBE 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 requirement.

(2) When a committed DBE is decertified prior to the Department receiving a Request for Subcontract for the named DBE firm, the Prime Contractor shall take all necessary and reasonable steps to replace the DBE subcontractor with another DBE subcontractor to perform at least the same amount of work to meet the contract goal or demonstrate that it has made a good faith effort to do so.

Changes in the Work

When the Engineer makes changes that result in the reduction or elimination of work to be performed by a committed DBE, 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 DBE based upon the Contractor's commitment, the DBE shall participate in additional work to the same extent as the DBE 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 DBEs 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 work had been expected to be performed by a committed DBE, the Contractor shall seek participation by DBEs 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 DBE, the Contractor shall seek additional participation by DBEs equal to the reduced DBE participation caused by the changes.

Reports

All requests for subcontracts involving DBE subcontractors shall be accompanied by a certification executed by both the Prime Contractor and the DBE subcontractor attesting to the agreed upon unit prices and extensions for the affected contract items. This information shall be submitted on the Department Form RS-1-D, located at:
http://www.ncdot.org/doh/forms/files/FORMRS-1-D.doc unless otherwise approved by the Engineer. The Department reserves the right to require copies of actual subcontract agreements involving DBE subcontractors.

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

All certifications will be considered a part of the project records, and consequently will be subject to penalties under Federal Law associated with falsifications of records related to projects.

Reporting Disadvantaged Business Enterprise Participation

(A) The Contractor shall provide the Engineer with an accounting of payments made to Disadvantaged Business Enterprise firms, including material suppliers, 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:

(1) Withholding of money due in the next partial pay estimate; or

(2) Removal of an approved contractor from the prequalified bidders' list or the removal of other entities from the approved subcontractors list.

(B) Electronic Bids Reporting:

The Contractor shall report the accounting of payments through the Department's DBE Payment Tracking System, which is located at: https://apps.dot.state.nc.us/Vendor/PaymentTracking/. The Contractor shall also provide the Engineer an affidavit attesting the accuracy of the information submitted in the Payment Tracking System. This too shall be submitted for any given month by the end of the following month.

(C) Paper Bids Reporting:

The Contractor shall report the accounting of payments on the Department's DBE Subcontractor Payment Information Form DBE-IS, which is available at: http://www.ncdot.org/doh/forms/files/DBE-IS.xls.

(D) Contractors reporting transportation services provided by non-DBE lessees shall evaluate the value of services provided during the month of the reporting period only.

Prior to payment of the final estimate, the Contractor shall furnish an accounting of total payment to each DBE. A responsible fiscal officer of the payee contractor, subcontractor, or second tier subcontractor who can attest to the date and amounts of the payments shall certify that the accounting is correct.

While each contractor (prime, subcontractor, 2nd tier subcontractor) is responsible for accurate accounting of payments to DBEs, 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 working on any DOT project until the required information is submitted.

Failure to Meet Contract Requirements

Failure to meet contract requirements in accordance with Article 102-16(J) of the *Standard Specifications* may be cause to disqualify the Contractor.

LIABILITY INSURANCE:

(11-18-08) SP1 G80

Page 1-68, Article 107-16 is amended to include the following as the first, second, third and fourth paragraphs:

The Contractor shall be liable for any losses resulting from a breach of the terms of this contract. The Contractor shall be liable for any losses due to the negligence or willful misconduct of its agents, assigns and employees including any sub-contractors which causes damage to others for which the Department is found liable under the Torts Claims Act, or in the General Courts of Justice, provided the Department provides prompt notice to the Contractor and that the Contractor has an opportunity to defend against such claims. The Contractor shall not be responsible for punitive damages.

The Contractor shall at its sole cost and expense obtain and furnish to the Department an original standard ACORD form certificate of insurance evidencing commercial general liability with a limit for bodily injury and property damage in the amount of $5,000,000.00 per occurrence and general aggregate, covering the Contractor from claims or damages for bodily injury, personal injury, or for property damages which may arise from operating under the contract by the employees and agents of the Contractor. The required limit of insurance may be obtained by a single general liability policy or the combination of a general liability and excess liability or umbrella policy. The State of North Carolina shall be named as an additional insured on this commercial general liability policy. The policy may contain the following language as relates to the State as an additional insured: "This insurance with respect to the additional insured applies only to the extent that the additional insured is held liable for your or your agent's acts or omissions arising out of and in the course of operations performed for the additional insured."

The Contractor shall maintain all legally required insurance coverage, including without limitation, worker's compensation and vehicle liability, in the amounts required by law. Providing and maintaining adequate insurance coverage is a material obligation of the contractor and is of the essence of this contract. All such insurance shall meet all laws of the State of North Carolina. Such insurance coverage shall be obtained from companies that are authorized to provide such coverage and that are authorized by the Commissioner of Insurance to do business in North Carolina. The Contractor shall at all times comply with the terms of such insurance policies.

Upon execution of the contract, provide evidence of the above insurance requirements to the Engineer.

CERTIFICATION FOR FEDERAL-AID CONTRACTS:

(3-21-90) SP1 G85

The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, *Disclosure Form to Report Lobbying*, in accordance with its instructions.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by *Section 1352, Title 31, U.S. Code*. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

The prospective participant also agrees by submitting his or her bid or proposal that he or she shall require that the language of this certification be included in all lower tier subcontracts, which exceed $100,000 and that all such subrecipients shall certify and disclose accordingly.

U.S. DEPARTMENT OF TRANSPORTATION HOTLINE:

(11-22-94) SP1 G100

To report bid rigging activities call: **1-800-424-9071**

The U.S. Department of Transportation (DOT) operates the above toll-free *hotline* Monday through Friday, 8:00 a.m. to 5:00 p.m. eastern time. Anyone with knowledge of possible bid rigging, bidder collusion, or other fraudulent activities should use the *hotline* to report such activities.

The *hotline* is part of the DOT's continuing effort to identify and investigate highway construction contract fraud and abuse is operated under the direction of the DOT Inspector General. All information will be treated confidentially and caller anonymity will be respected.

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 Article 108-13(E), of the *North Carolina Department of Transportation Standard Specifications for Roads and Structures*, dated July 1, 2006.

AWARD OF CONTRACT

(6-28-77) Z-6

"The North Carolina Department of Transportation, in accordance with the provisions of *Title VI of the Civil Rights Act of 1964* (78 Stat. 252) and the Regulations of the Department of Transportation (*49 C.F.R., Part 21*), issued pursuant to such act, hereby notifies all bidders that it will affirmatively insure that the contract entered into pursuant to this advertisement will be awarded to the lowest responsible bidder without discrimination on the ground of race, color, or national origin".

MINORITY AND FEMALE EMPLOYMENT REQUIREMENTS

Z-7

NOTICE OF REQUIREMENTS FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY (*EXECUTIVE NUMBER 11246*)

1. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, see as shown on the attached sheet entitled "Employment Goals for Minority and

Female participation".

These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally assisted) performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the Contractor also is subject to the goals for both its federally involved and nonfederally involved construction.

The Contractor's compliance with the Executive Order and the regulations in *41 CFR Part 60-4* shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in *41 CFR 60-4.3(a)*, and its effort to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade and the Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project or the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the executive Order and the regulations *in 41 CFR Part 60-4*. Compliance with the goals will be measured against the total work hours performed.

2. As used in this Notice and in the contract resulting from this solicitation, the "covered area" is the county or counties shown on the cover sheet of the proposal form and contract.

Employment Goals for Minority and Female Participation

Economic Areas

Area 023 29.7%
Bertie County
Camden County
Chowan County
Gates County
Hertford County
Pasquotank County
Perquimans County

Area 024 31.7%
Beaufort County
Carteret County
Craven County
Dare County
Edgecombe County
Green County
Halifax County
Hyde County

Area 026 33.5%
Bladen County
Hoke County
Richmond County
Robeson County
Sampson County
Scotland County

Area 027 24.7%
Chatham County
Franklin County
Granville County
Harnett County
Johnston County
Lee County
Person County
Vance County
Warren County

Area 029 15.7%
Alexander County
Anson County
Burke County
Cabarrus County
Caldwell County
Catawba County
Cleveland County
Iredell County
Lincoln County
Polk County
Rowan County
Rutherford County
Stanly County

Area 0480 8.5%
Buncombe County
Madison County

Jones County
Lenoir County
Martin County
Nash County
Northampton County
Pamlico County
Pitt County
Tyrrell County
Washington County
Wayne County
Wilson County

Area 025 23.5%
Columbus County
Duplin County
Onslow County
Pender County

Area 028 15.5%
Alleghany County
Ashe County
Caswell County
Davie County
Montgomery County
Moore County
Rockingham County
Surry County
Watauga County
Wilkes County

Area 030 6.3%
Avery County
Cherokee County
Clay County
Graham County
Haywood County
Henderson County
Jackson County
McDowell County
Macon County
Mitchell County
Swain County
Transylvania County
Yancey County

SMSA Areas

Area 5720 26.6%
Currituck County

Area 9200 20.7%
Brunswick County
New Hanover County

Area 2560 24.2%
Cumberland County

Area 6640 22.8%
Durham County
Orange County
Wake County

Area 1300 16.2%
Alamance County

Area 3120 16.4%
Davidson County
Forsyth County
Guilford County
Randolph County
Stokes County
Yadkin County

Area 1520 18.3%
Gaston County
Mecklenburg County
Union County

Goals for Female

Participation in Each Trade

(Statewide) 6.9%

REQUIRED CONTRACT PROVISIONS FEDERAL - AID CONSTRUCTION CONTRACTS

FHWA - 1273 Electronic Version - March 10, 1994 Z-8

I. GENERAL

1. These contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendent and to all work performed on the contract by piecework, station work, or by subcontract.
2. Except as otherwise provided for in each section, the contractor shall insert in each subcontract all of the stipulations contained in these Required Contract Provisions, and further require their inclusion in any lower tier subcontract or purchase order that may in turn be made. The Required Contract Provisions shall not be incorporated by reference in any case. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with these Required Contract Provisions.
3. A breach of any of the stipulations contained in these Required Contract Provisions shall be sufficient grounds for termination of the contract.
4. A breach of the following clauses of the Required Contract Provisions may also be grounds for debarment as provided in 29 CFR 5.12:
   Section I, paragraph 2;
   Section IV, paragraphs 1, 2, 3, 4, and 7;
   Section V, paragraphs 1 and 2a through 2g.
5. Disputes arising out of the labor standards provisions of Section IV (except paragraph 5) and Section V of these Required Contract Provisions shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the U.S. Department of Labor (DOL) as set forth in 29 CFR 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the DOL, or the contractor's employees or their representatives.
6. **Selection of Labor:** During the performance of this contract, the contractor shall not:
   a. discriminate against labor from any other State, possession, or territory of the United States (except for employment preference for Appalachian contracts, when applicable, as specified in Attachment A), or
   b. employ convict labor for any purpose within the limits of the project unless it is labor performed by convicts who are on parole, supervised release, or probation.

II. NONDISCRIMINATION

(Applicable to all Federal-aid construction contracts and to all related subcontracts of $10,000 or more.)

1. **Equal Employment Opportunity:** Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630 and 41 CFR 60) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The Equal Opportunity Construction Contract Specifications set forth under 41 CFR 60-4.3 and the provisions of the American Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:
   a. The contractor will work with the State highway agency (SHA) and the Federal Government in carrying out EEO obligations and in their review of his/her activities under the contract.
   b. The contractor will accept as his operating policy the following statement:
      "It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, preapprenticeship, and/or on-the-job training."
2. **EEO Officer:** The contractor will designate and make known to the SHA contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active contractor program of EEO and who must be assigned adequate authority and responsibility to do so.
3. **Dissemination of Policy:** All members of the contractor's staff who are to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual will be taken as a minimum:
   a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minority group employees.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. **Recruitment:** When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minority groups in the area from which the project work force would normally be derived.

   a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minority group applicants. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority group applicants may be referred to the contractor for employment consideration.

   b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, he is expected to observe the provisions of that agreement to the extent that the system permits the contractor's compliance with EEO contract provisions. (The DOL has held that where implementation of such agreements have the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Executive Order 11246, as amended.)

   c. The contractor will encourage his present employees to refer minority group applicants for employment. Information and procedures with regard to referring minority group applicants will be discussed with employees.

5. **Personnel Actions:** Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

   a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

   b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

   c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

   d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with his obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of his avenues of appeal.

6. **Training and Promotion:**

   a. The contractor will assist in locating, qualifying, and increasing the skills of minority group and women employees, and applicants for employment.

   b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision.

   c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

   d. The contractor will periodically review the training and promotion potential of minority group and women employees and will encourage eligible employees to apply for such training and promotion.

7. **Unions:** If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use his/her best efforts to obtain the cooperation of such unions to increase opportunities for minority groups and women within the unions, and to effect referrals by such unions of minority and female employees. Actions by the contractor either directly or through a contractor's association acting as agent will include the procedures set forth below:

   a. The contractor will use best efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minority group members and women for membership in the unions and increasing the skills of minority group employees and women so that they may qualify for higher paying employment.

   b. The contractor will use best efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

   c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the SHA and shall set forth what efforts have been made to obtain such information.

   d. In the event the union is unable to provide the contractor with a reasonable flow of minority and women referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minority group persons and women. (The DOL has held that it shall be no excuse that the union with which the contractor has a collective bargaining agreement providing for exclusive referral failed to refer minority employees.) In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the SHA.

8. **Selection of Subcontractors, Procurement of Materials and Leasing of Equipment:** The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment.

a. The contractor shall notify all potential subcontractors and suppliers of his/her EEO obligations under this contract.

b. Disadvantaged business enterprises (DBE), as defined in 49 CFR 23, shall have equal opportunity to compete for and perform subcontracts which the contractor enters into pursuant to this contract. The contractor will use his best efforts to solicit bids from and to utilize DBE subcontractors or subcontractors with meaningful minority group and female representation among their employees. Contractors shall obtain lists of DBE construction firms from SHA personnel.

c. The contractor will use his best efforts to ensure subcontractor compliance with their EEO obligations.

9. **Records and Reports:** The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following completion of the contract work and shall be available at reasonable times and places for inspection by authorized representatives of the SHA and the FHWA.

a. The records kept by the contractor shall document the following:

1. The number of minority and non-minority group members and women employed in each work classification on the project;

2. The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women;

3. The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minority and female employees; and

4. The progress and efforts being made in securing the services of DBE subcontractors or subcontractors with meaningful minority and female representation among their employees.

b. The contractors will submit an annual report to the SHA each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form FHWA-1391. If on-the job training is being required by special provision, the contractor will be required to collect and report training data.

III. NONSEGREGATED FACILITIES

(Applicable to all Federal-aid construction contracts and to all related subcontracts of $10,000 or more.)

a. By submission of this bid, the execution of this contract or subcontract, or the consummation of this material supply agreement or purchase order, as appropriate, the bidder, Federal-aid construction contractor, subcontractor, material supplier, or vendor, as appropriate, certifies that the firm does not maintain or provide for its employees any segregated facilities at any of its establishments, and that the firm does not permit its employees to perform their services at any location, under its control, where segregated facilities are maintained. The firm agrees that a breach of this certification is a violation of the EEO provisions of this contract. The firm further certifies that no employee will be denied access to adequate facilities on the basis of sex or disability.

b. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms and washrooms, restaurants and other eating areas, timeclocks, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive, or are, in fact, segregated on the basis of race, color, religion, national origin, age or disability, because of habit, local custom, or otherwise. The only exception will be for the disabled when the demands for accessibility override (e.g. disabled parking).

c. The contractor agrees that it has obtained or will obtain identical certification from proposed subcontractors or material suppliers prior to award of subcontracts or consummation of material supply agreements of $10,000 or more and that it will retain such certifications in its files.

IV. PAYMENT OF PREDETERMINED MINIMUM WAGE

(Applicable to all Federal-aid construction contracts exceeding $2,000 and to all related subcontracts, except for projects located on roadways classified as local roads or rural minor collectors, which are exempt.)

1. **General:**

a. All mechanics and laborers employed or working upon the site of the work will be paid unconditionally and not less often than once a week and without subsequent deduction or rebate on any account [except such payroll deductions as are permitted by regulations (29 CFR 3) issued by the Secretary of Labor under the Copeland Act (40 U.S.C. 276c)] the full amounts of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment. The payment shall be computed at wage rates not less than those contained in the wage determination of the Secretary of Labor (hereinafter "the wage determination") which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor or its subcontractors and such laborers and mechanics. The wage determination (including any additional classifications and wage rates conformed under paragraph 2 of this Section IV and the DOL poster (WH-1321) or Form FHWA-1495) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers. For the purpose of this Section, contributions made or costs reasonably anticipated for bona fide fringe benefits under Section 1(b)(2) of the Davis-Bacon Act (40 U.S.C. 276a) on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of Section IV, paragraph 3b, hereof. Also, for the purpose of this Section, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs, which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in paragraphs 4 and 5 of this Section IV.

b. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein, provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed.

c. All rulings and interpretations of the Davis-Bacon Act and related acts contained in 29 CFR 1, 3, and 5 are herein incorporated by reference in this contract.

2. **Classification:**

a. The SHA contracting officer shall require that any class of laborers or mechanics employed under the contract, which is not listed in the wage determination, shall be classified in conformance with the wage determination.

b. The contracting officer shall approve an additional classification, wage rate and fringe benefits only when the following criteria have

been met:

1. the work to be performed by the additional classification requested is not performed by a classification in the wage determination;
2. the additional classification is utilized in the area by the construction industry;
3. the proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination; and
4. with respect to helpers, when such a classification prevails in the area in which the work is performed.

c. If the contractor or subcontractors, as appropriate, the laborers and mechanics (if known) to be employed in the additional classification or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the DOL, Administrator of the Wage and Hour Division, Employment Standards Administration, Washington, D.C. 20210. The Wage and Hour Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

d. In the event the contractor or subcontractors, as appropriate, the laborers or mechanics to be employed in the additional classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. Said Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary

e. The wage rate (including fringe benefits where appropriate) determined pursuant to paragraph 2c or 2d of this Section IV shall be paid to all workers performing work in the additional classification from the first day on which work is performed in the classification.

3. **Payment of Fringe Benefits:**

a. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor or subcontractors, as appropriate, shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly case equivalent thereof.

b. If the contractor or subcontractor, as appropriate, does not make payments to a trustee or other third person, he/she may consider as a part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, provided, that the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

4. **Apprentices and Trainees (Programs of U.S. DOL) and Helpers:**

a. Apprentices:

1. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the DOL, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by the Bureau, or if a person is employed in his/her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State apprenticeship agency (where appropriate) to be eligible for probationary employment as an apprentice.
2. The allowable ratio of apprentices to journeyman-level employees on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any employee listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate listed in the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor or subcontractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman-level hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.
3. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeyman-level hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator for the Wage and Hour Division determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.
4. In the event the Bureau of Apprenticeship and Training, or a State apprenticeship agency recognized by the Bureau, withdraws approval of an apprenticeship program, the contractor or subcontractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the comparable work performed by regular employees until an acceptable program is approved.

b. Trainees:

1. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the DOL, Employment and Training Administration.
2. The ratio of trainees to journeyman-level employees on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program

shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

3. Every trainee must be paid at not less than the rate specified in the approved program for his/her level of progress, expressed as a percentage of the journeyman-level hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman-level wage rate on the wage determination which provides for less than full fringe benefits for apprentices, in which case such trainees shall receive the same fringe benefits as apprentices.
4. In the event the Employment and Training Administration withdraws approval of a training program, the contractor or subcontractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Helpers:

Helpers will be permitted to work on a project if the helper classification is specified and defined on the applicable wage determination or is approved pursuant to the conformance procedure set forth in Section IV.2. Any worker listed on a payroll at a helper wage rate, who is not a helper under a approved definition, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed.

5. **Apprentices and Trainees (Programs of the U.S. DOT):**

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

6. **Withholding:**

The SHA shall upon its own action or upon written request of an authorized representative of the DOL withhold, or cause to be withheld, from the contractor or subcontractor under this contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements which is held by the same prime contractor, as much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the SHA contracting officer may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

7. **Overtime Requirements:**

No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers, mechanics, watchmen, or guards (including apprentices, trainees, and helpers described in paragraphs 4 and 5 above) shall require or permit any laborer, mechanic, watchman, or guard in any workweek in which he/she is employed on such work, to work in excess of 40 hours in such workweek unless such laborer, mechanic, watchman, or guard receives compensation at a rate not less than one-and-one-half times his/her basic rate of pay for all hours worked in excess of 40 hours in such workweek.

8. **Violation:**

Liability for Unpaid Wages; Liquidated Damages: In the event of any violation of the clause set forth in paragraph 7 above, the contractor and any subcontractor responsible thereof shall be liable to the affected employee for his/her unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory) for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer, mechanic, watchman, or guard employed in violation of the clause set forth in paragraph 7, in the sum of $10 for each calendar day on which such employee was required or permitted to work in excess of the standard work week of 40 hours without payment of the overtime wages required by the clause set forth in paragraph 7.

9. **Withholding for Unpaid Wages and Liquidated Damages:**

The SHA shall upon its own action or upon written request of any authorized representative of the DOL withhold, or cause to be withheld, from any monies payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph 8 above.

V. STATEMENTS AND PAYROLLS

(Applicable to all Federal-aid construction contracts exceeding $2,000 and to all related subcontracts, except for projects located on roadways classified as local roads or rural collectors, which are exempt.)

1. **Compliance with Copeland Regulations (29 CFR 3):**

The contractor shall comply with the Copeland Regulations of the Secretary of Labor which are herein incorporated by reference.

2. **Payrolls and Payroll Records:**

a. Payrolls and basic records relating thereto shall be maintained by the contractor and each subcontractor during the course of the work and preserved for a period of 3 years from the date of completion of the contract for all laborers, mechanics, apprentices, trainees, watchmen, helpers, and guards working at the site of the work.

b. The payroll records shall contain the name, social security number, and address of each such employee; his or her correct classification; hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalent thereof the types described in Section 1(b)(2)(B) of the Davis Bacon Act); daily and weekly number of hours worked; deductions made; and actual wages paid. In addition, for Appalachian contracts, the payroll records shall contain a notation indicating whether the employee does, or does not, normally reside in the labor area as defined in Attachment A, paragraph 1. Whenever the Secretary of Labor, pursuant to Section IV, paragraph 3b, has found that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in Section 1(b)(2)(B) of the Davis Bacon Act, the contractor and each subcontractor shall maintain records which show that the commitment to

provide such benefits is enforceable, that the plan or program is financially responsible, that the plan or program has been communicated in writing to the laborers or mechanics affected, and show the cost anticipated or the actual cost incurred in providing benefits. Contractors or subcontractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprentices and trainees, and ratios and wage rates prescribed in the applicable programs.

c. Each contractor and subcontractor shall furnish, each week in which any contract work is performed, to the SHA resident engineer a payroll of wages paid each of its employees (including apprentices, trainees, and helpers, described in Section IV, paragraphs 4 and 5, and watchmen and guards engaged on work during the preceding weekly payroll period). The payroll submitted shall set out accurately and completely all of the information required to be maintained under paragraph 2b of this Section V. This information may be submitted in any form desired. Optional Form WH-347 is available for this purpose and may be purchased from the Superintendent of Documents (Federal stock number 029-005-0014-1), U.S. Government Printing Office, Washington, D.C. 20402. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors.

d. Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his/her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:
   1. that the payroll for the payroll period contains the information required to be maintained under paragraph 2b of this Section V and that such information is correct and complete;
   2. that such laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in the Regulations, 29 CFR 3;
   3. that each laborer or mechanic has been paid not less that the applicable wage rate and fringe benefits or cash equivalent for the classification of worked performed, as specified in the applicable wage determination incorporated into the contract.

e. The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 2d of this Section V.

f. The falsification of any of the above certifications may subject the contractor to civil or criminal prosecution under 18 U.S.C. 1001 and 31 U.S.C. 231.

g. The contractor or subcontractor shall make the records required under paragraph 2b of this Section V available for inspection, copying, or transcription by authorized representatives of the SHA, the FHWA, or the DOL, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the SHA, the FHWA, the DOL, or all may, after written notice to the contractor, sponsor, applicant, or owner, take such actions as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

VI. RECORD OF MATERIALS, SUPPLIES AND LABOR THIS SECTION DELETED JUNE 4, 2007.

VII. SUBLETTING OR ASSIGNING THE CONTRACT

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the State. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635).
   a. "Its own organization" shall be construed to include only workers employed and paid directly by the prime contractor and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor, assignee, or agent of the prime contractor.
   b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid on the contract as a whole and in general are to be limited to minor components of the overall contract.
2. The contract amount upon which the requirements set forth in paragraph 1 of Section VII is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.
3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the SHA contracting officer determines is necessary to assure the performance of the contract.
4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the SHA contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the SHA has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

VIII. SAFETY: ACCIDENT PREVENTION

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the SHA contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.
2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 333).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 333).

IX. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, the following notice shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

NOTICE TO ALL PERSONNEL ENGAGED ON FEDERAL-AID HIGHWAY PROJECTS

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined not more that $10,000 or imprisoned not more than 5 years or both."

X. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

(Applicable to all Federal-aid construction contracts and to all related subcontracts of $100,000 or more.)

By submission of this bid or the execution of this contract, or subcontract, as appropriate, the bidder, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any facility that is or will be utilized in the performance of this contract, unless such contract is exempt under the Clean Air Act, as amended (42 U.S.C. 1857 et seq., as amended by Pub.L. 91-604), and under the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et seq., as amended by Pub.L. 92-500), Executive Order11738, and regulations in implementation thereof (40 CFR 15) is not listed, on the date of contract award, on the U.S. Environmental Protection Agency (EPA) List of Violating Facilities pursuant to 40 CFR 15.20.
2. That the firm agrees to comply and remain in compliance with all the requirements of Section 114 of the Clean Air Act and Section 308 of the Federal Water Pollution Control Act and all regulations and guidelines listed thereunder.
3. That the firm shall promptly notify the SHA of the receipt of any communication from the Director, Office of Federal Activities, EPA, indicating that a facility that is or will be utilized for the contract is under consideration to be listed on the EPA List of Violating Facilities.
4. That the firm agrees to include or cause to be included the requirements of paragraph 1 through 4 of this Section X in every nonexempt subcontract, and further agrees to take such action as the government may direct as a means of enforcing such requirements.

XI. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

1. **Instructions for Certification - Primary Covered Transactions:**

(Applicable to all Federal-aid contracts - 49 CFR 29)

a. By signing and submitting this proposal, the prospective primary participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective primary participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the department or agency determined to enter into this transaction. If it is later determined that the prospective primary participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause of default.

d. The prospective primary participant shall provide immediate written notice to the department or agency to whom this proposal is submitted if any time the prospective primary participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the department or agency

to which this proposal is submitted for assistance in obtaining a copy of those regulations.

f. The prospective primary participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

g. The prospective primary participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," provided by the department or agency entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the nonprocurement portion of the "Lists of Parties Excluded From Federal Procurement or Nonprocurement Programs" (Nonprocurement List) which is compiled by the General Services Administration.

i. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph f of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

* * * * *

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Primary Covered Transactions

1. The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:
   a. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
   b. Have not within a 3-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
   c. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph 1b of this certification; and
   d. Have not within a 3-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.
2. Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

* * * * *

2. Instructions for Certification - Lower Tier Covered Transactions:

(Applicable to all subcontracts, purchase orders and other lower tier transactions of $25,000 or more - 49 CFR 29)

a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "primary covered transaction," "participant," "person," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations.

e The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

g A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation

in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

* * * * *

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Covered Transactions:

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.
2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

* * * * *

XII. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

(Applicable to all Federal-aid construction contracts and to all related subcontracts which exceed $100,000 - 49 CFR 20)

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:
   a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
   b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.
3. The prospective participant also agrees by submitting his or her bid or proposal that he or she shall require that the language of this certification be included in all lower tier subcontracts, which exceed $100,000 and that all such recipients shall certify and disclose accordingly.

STANDARD SPECIAL PROVISION

GENERAL DECISION NC20080010 07/24/2009 NC10

Z-11

Date: July 24, 2009

General Decision Number NC20080010 07/24/2009

Superseded General Decision No. NC20070010

State: North Carolina

Construction Type: HIGHWAY

COUNTIES:

Alleghany	Granville	Pasquotank
Anson	Greene	Pender
Ashe	Halifax	Perquimans
Avery	Harnett	Person
Beaufort	Haywood	Pitt
Bertie	Henderson	Polk
Bladen	Hertford	Richmond
Brunswick	Hoke	Robeson
Caldwell	Hyde	Rockingham
Camden	Iredell	Rutherford
Carteret	Jackson	Sampson
Caswell	Johnston	Scotland
Chatham	Jones	Stanly
Cherokee	Lee	Surry
Chowan	Lenoir	Swain
Clay	Macon	Transylvania
Cleveland	Madison	Tyrrell
Columbus	Martin	Vance
Craven	McDowell	Warren
Currituck	Mitchell	Washington
Dare	Montgomery	Watauga
Duplin	Moore	Wayne
Edgecombe	Nash	Wilkes
Gates	Northampton	Wilson
Graham	Pamlico	Yancey

HIGHWAY CONSTRUCTION PROJECTS (does not include tunnels, building structures in rest area projects, railroad construction, and bascule, suspension, and spandrel arch bridges, bridges designed for commercial navigation, and bridges involving marine construction, and other major bridges).

Modification Number	Publication Date
0	2/08/2008
1	7/25/2008
2	7/24/2009

	Rates	Fringes
CARPENTER	7.71	
CONCRETE FINISHER	7.64	
IRONWORKER (Reinforcing)	9.27	
LABORER		
General	7.25	
Asphalt Raker	7.25	
Form Setter (Road)	7.25	
Mason (Brick, Block, Stone)	7.76	
Pipe Layer	7.25	
Power Tool Operator	7.25	
POWER EQUIPMENT OPERATORS		
Asphalt Distributor	7.25	
Asphalt Paver	7.25	
Bulldozer	7.25	
Bulldozer (utility)	7.25	
Concrete Finishing Machine	9.48	
Concrete Grinder	8.13	
Crane, Backhoe, Shovel, & Dragline (Over 1 yd.)	8.53	
Crane, Backhoe, Shovel, & Dragline (1 yd. & under)	7.25	
Drill Operator	7.65	
Grade Checker	7.25	
Grease person	7.25	
Hydroseeder	7.25	
Loader	7.25	
Mechanic	8.27	
Milling Machine	8.00	
Motor Grader (Fine Grade)	8.01	
Motor Grader (Rough Grade)	7.42	
Oiler	7.25	
Piledriver	11.00	
Roller (Finish)	7.25	
Roller (Rough)	7.25	
Scraper	7.25	
Screed Asphalt	7.25	
Stone Spreader	7.25	
Stripping Machine Operator	7.25	
Subgrade Machine	9.00	
Sweeper	7.25	
Tractor (utility)	7.25	
TRUCK DRIVERS		
Single Rear Axle Trucks	7.25	
Multi Rear Axle Trucks	7.25	
Heavy Duty trucks	7.25	
Welder	9.07	

Welders – Receive rate prescribed for craft performing operation to which welding is incidental.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(ii)).

In the listing above, the "SU" designation means that rates listed under that identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U. S. Department of Labor
200 Constitution Avenue, N.W.
Washington, D.C. 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, D.C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U. S. Department of Labor
200 Constitution Avenue, N.W.
Washington, D.C. 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

RALEIGH, NORTH CAROLINA

SPECIFICATIONS FOR CONSTRUCTION

OF

ONE (1) 220' x 50' x 12'-6" PASSENGER/VEHICLE FERRY

August 18, 2009

PREPARED BY:

MARINE ENGINEERING DEPARTMENT

NC DOT FERRY DIVISION

MANNS HARBOR, NORTH CAROLINA 27953

PROJECT NO. WBS 38683.3.3

TIP NO. F-4004 C

220' VEHICLE/PASSENGER FERRY
CONSTRUCTION SPECIFICATIONS

PROJECT No. WBS 38683.3.3 TIP F 4004C

BASIC HULL PARTICULARS:

Length (L.O.A.) . . . . . 220'-0"

Breadth (Molded). . . . . .. 50'-0"

Breadth (Max. at MN DK) . . . . . 50'-0"

Main Deck (Camber). . . . . 0'-6"

Depth (Amidships) . . . . . 12'-6"

Draft (Design). . . . . 6'-6"

Engine (Main Propulsion). 2

Propellers 2

Gross Tonnage . . . . . 800 LT. (approximate)

BRIEF DESCRIPTION

This vessel is a steel hull vehicle/passenger ferry. All spaces below main deck are voids with the exception of the engine room, sanitation compartment, fuel tanks and crew quarters. The passenger lounge, restrooms and wheelhouse are located above the vessels main deck. The vessel is fitted with an elevator to assist passengers and meets ADA requirements for passenger ferries.

COAST GUARD INSPECTION FOR PASSENGER VESSELS FOR HIRE MORE THAN 100 GROSS TONS (SUB-CHAPTER "H") IS REQUIRED.

SERVICE IS LAKES BAYS AND SOUNDS

SECTION I

CONSTRUCTION SPECIFICATIONS

PROJECT WBS 38683.3.3 TIP F-4004C

A.0 GENERAL REQUIREMENTS

A.1 DEFINITIONS

Wherever the words defined in this paragraph or pronouns used in their stead occur in these specifications, they shall have the meanings here given.

(a) The term "Owner" means the North Carolina Department of Transportation, and shall include its authorized Representatives and Inspectors.

(b) The terms "Contractor" or "builder" means the person, firm or corporation named as such in the contract and includes the plural number and the feminine gender when such are named in the contract as the contractor.

(c) The term "Subcontractor" means an individual, partnership, firm, joint venture, or Corporation to whom the Contractor, with written consent of the Engineer, sublets any part of the contract.

(d) The word "Vendor" shall be taken to mean suppliers and/or manufacturers of materials and equipment purchased by the Contractor for use in the work covered by these specifications.

(e) Coast Guard Inspector means Officer in Charge of Marine Inspection having cognizance over the certification of the vessel, where applicable, and includes Inspection Officers under his command.

(f) The words "approval of the Owners" or "approved" shall mean an approval in writing

signed by the owners, and shall also mean approval by the cognizant U. S. Coast Guard, section or office where applicable.

(g) The words "furnish", "provide" and "install" shall be taken to mean that the Contractor shall provide and install the specified material or equipment with necessary fittings, foundations, piping, electrical wiring and fixtures, etc., and make necessary hook-up and connections even though one of the words only is used, unless it is specifically stated otherwise.

(h) The term "work" of the Contractor or Builder or subcontractor includes labor or materials or both unless specifically stated otherwise herein.

(i) The words "renew" or "replace" shall be taken to mean that the existing material or item referred to shall be removed and disposed of as directed, and other material or items installed in place of the same as in subparagraph (h) above.

(j) The word "reinstall" shall mean that existing material shall be reused in either its original or a new location, and completely installed as in subparagraph (h) above.

(k) The term "Notice" as used herein shall include all written notices, demands, instructions, claims, approvals, and disapprovals, required to obtain compliance with Contract requirements. Any written notice by either party to the Contract shall be considered sufficiently given if delivered to the other party, agent, representative or officer in person. The person to whom the notice is delivered shall sign the duplicate copy and return the same to the other party immediately after receipt.

(l) The words "or equal" shall be taken to mean of equal quality, size capacity, general configuration and suitability for the use intended, as the item or items set out. Where reference is made to "trade names" or "catalogs", the reference is descriptive and restrictive unless stated otherwise by adding "or equal".

(m) The words "best Marine quality" or "first-class material" shall be taken to mean the top

grade product of an approved marine manufacturer.

(n) The words "first class workmanship" shall be taken to mean the level of quality that would be done by a capable marine mechanic experienced in construction and outfitting of passenger vessels, using proper tools in good condition and in accordance with normally accepted good shipbuilding practice.

(o) All "tons" used herein are 2,240 pounds each

(p) The term "Act of God" as used herein is defined as an unusual and extraordinary manifestation of the forces of nature that could not under normal conditions have been anticipated or expected. It includes a tornado, a hurricane, lightning, and fires caused by lightning, but it does not include strikes, or other work stoppages, rain not accompanied by a hurricane, fire not caused by lightning or hot or cold temperatures.

(q) The "Chief Engineer" means Chief Engineer of Operations Division of Highways, North Carolina Dept. of Transportation.

(r) "Division of Highways" means the division of the Department of Transportation which, under the direction of the Secretary of Transportation, carries out state highway planning, construction, and maintenance functions assigned to the Department of Transportation.

(s) The "Engineer" means the Chief Engineer of Operations, Division of Highways, North Carolina Department of Transportation, acting directly or through his duly authorized representatives.

(t) The "Inspector" means the authorized representatives of the engineer assigned to make a detailed inspection of any or all portions of the work and materials.

(u) "Department" or "Department of Transportation" means a principal department of the Executive Branch which performs the function of planning, construction, and maintenance of an integrated statewide transportation system.

A.2 BIDDING REQUIREMENTS AND CONDITIONS

A.2-1 INVITATION TO BID

After the advertisement has been made, an invitation to bid will be mailed to known qualified Contractors informing them that bids will be received for the construction of specific project. Such invitation will indicate the project number, length, locations, and general descriptions; a general summary of the items and approximate quantities of work to be performed; and the time and place for the public opening and reading of bids received. Information concerning the cost of and the availability of plans and proposal forms will also be indicated in the invitation to bid.

A.2-2 PREQUALIFYING TO BID

Prospective Bidders shall prequalify with the Department. The requirements for prequalification will be furnished each prospective Bidder by the Construction Unit, Raleigh, NC (919-733-2210). All required statements and documents shall be filed with the Construction Unit by the prospective Bidder at least two (2) weeks prior to the date of opening of bids. A bid will not be opened unless all prequalification requirements have been met by the bidder and have been found to be acceptable by the Construction Unit.

A.2-3 CONTENTS OF PROPOSAL FORMS

A proposal form will be furnished by the Department upon request. Each proposal form will be marked on the front cover by the Department with the name of the firm or individual to whom it is being furnished. It will set forth the date and time for the opening of bids. The form will include any requirements which vary from or are not contained in the plans. It will also include a bid sheet on which the Contractor shall place his lump sum bid for the project. All papers bound with the proposal form are necessary parts thereof and shall not be detached, taken apart, or altered.

The plans, specifications and other documents designated in the proposal form shall be

considered a part of the proposal form whether attached or not. The prospective Bidder will be required to pay the Department of Transportation the sum stated in the invitation to bid for each copy of the proposal form and each set of plans requested.

A.2-4 EXAMINATION OF PLANS AND SPECIFICATIONS

The Bidder shall carefully examine the proposal form, plans and specifications, before submitting a bid. It is mutually agreed that submission of a bid shall be considered prima-facie evidence that the Bidder has made such examinations and is reasonably satisfied as to the conditions to be encountered in performing the work, and as to the requirements of the proposal form and contract.

A.2-5 PREPARATION AND SUBMISSION OF BIDS

All bids shall be prepared and submitted in accordance with the following listed requirements:

1. **THE PROPOSAL FORM FURNISHED BY THE DEPARTMENT SHALL BE USED AND SHALL NOT BE TAKEN APART OR ALTERED.** The bid shall be submitted on the same proposal form which has been furnished to Bidder by the Department, as identified by the Bidder's name marked on the front cover by the Department.

2. All entries including signatures shall be written in ink.

3. The Bidder shall submit a unit or lump sum price for every item in the proposal form other than items which are authorized alternates to those items for which a bid price has been submitted.

4. The total amount bid shall be written in figures in the proper place in the proposal form.

5. Changes in any entry shall be made by marking through the entry in ink and making the correct entry adjacent thereto in ink. A representative of the bidder shall initial the change in ink.

6. The bid shall be properly executed. In order to constitute proper execution, the bid shall be executed in strict compliance with the following:

a. If a bid is by an individual, it shall show the name of the individual and shall be signed by the individual with the word "Individually" appearing under the signature. If the individual operates under a firm name, the bid shall be signed in the name of the individual doing business under the firm name.

b. If the bid is by a corporation, it shall be executed in the name of the corporation by the President or Vice President. It shall be attested by the Secretary or Assistant Secretary. The seal of the corporation shall be affixed. If the bid is executed on behalf of a corporation in any other manner than as above, a certified copy of the minutes of the Board of Directors of said corporation authorizing the manner and style of execution and the authority of the person executing shall be attached to the bid or shall be on file with the Department.

c. If the bid is made by a partnership, it shall be executed in the name of the partnership by one of the partners.

d. If the bid is a joint venture, it shall be executed by each of the joint venturers in the appropriate manner set out above. In addition, the execution by the joint venturers shall appear below their names.

7. The bid shall not contain any unauthorized additions, deletions, or conditional bids.

8. The Bidder shall not add any provision reserving the right to accept or reject an award, or to enter into a contract pursuant to an award.

9. The bid shall be accompanied by a bid bond on the form furnished by the Department or a bid deposit. The bid bond shall be completely and properly executed in accordance with the requirements of Section A.2-6. The bid deposit shall be a certified check or cashiers check in accordance with Section A.2-6.

10. The bid shall be placed in a sealed envelope and shall have been delivered and received by

the Department prior to the time specified in the invitation to bid.

A.2-6 BID BOND OR BID DEPOSIT

Each bid shall be accompanied by a corporate bid bond or a bid deposit of a certified or cashiers check in the amount of at least 5% of the total amount bid for the contract. No bid will be considered or accepted unless accompanied by one of the foregoing securities. The bid bond shall be executed by a Corporate Surety licensed to do business in North Carolina and the certified check or cashiers check shall be drawn on a bank or trust company insured by the Federal Deposit Insurance Corporation and made payable to the Department of Transportation in an amount of at least 5% of the total amount bid for the contract. The condition of the bid bond or bid deposit is: the Principal shall not withdraw its bid within 60 days after the opening of the same, and if the Board of Transportation shall award a contract to the Principal, the Principal shall within 14 calendar days after the notice of award is received by him give payment and performance bonds with good and sufficient surety as required for the faithful performance of the contract and for the protection of all persons supplying labor and materials in the prosecution of the work; in the event of the failure of the Principal to give such payment and performance bonds as required, then the amount of the bid bond shall be immediately paid to the Department as liquidated damages or, in the case of a bid deposit, the deposit shall be forfeited to the Department.

When a bid is secured by a bid bond, the bond shall be on the form furnished by the Department. The bid bond shall be executed by both the Bidders and a Corporate Surety licensed under the laws of North Carolina to write such bonds.

The execution by the Bidder shall be in the same manner as required by Section A.2-5 for the proper execution of the bid. The execution by the Corporate Surety shall be the same as is provided for by Section A.2-5, Item 6b, for the execution of the bid. The seal of the Corporate Surety shall be

affixed to the bid bond. The bid bond form furnished is for execution of the Corporate Surety by a General Agent or Attorney in Fact. A certified copy of the Power of Attorney shall be attached if the bid bond is executed by a General Agent or Attorney in Fact. The Power of Attorney shall contain a certification that the Power of Attorney is still in full force and effect as of the date of execution of the bid bond by the General Agent or Attorney in Fact. If the bid bond is executed by the Corporate Surety by the President or Vice President, and attested to by the Secretary or Assistant Secretary, then the bid bond form furnished shall be modified for such execution, instead of execution by the Attorney in Fact or the General Agent.

When a bid is secured by a bid deposit (certified check or cashiers check), the execution of a bid bond will not be required.

A.2-7 DELIVERY OF BIDS

All bids shall be placed in a sealed envelope having the name and address of the Bidder, and the statement **"Bid for the Construction of State Highway Project No. WBS 38683.3.3 in Hyde County"** on the outside of the envelope.

If delivered prior to the Bid Date, or on the day the bids are to be received, Bids may be delivered in person or by USPS, Federal Express, etc. to the State Contract Officer, Randy Garris, P.E. at:

North Carolina Department of Transportation
Contract Standards and Development Unit
Century Center Building B (Delivery)
1020 Birch Ridge Drive
Raleigh, NC 27610
Attention: State Contract Officer
(919) 250-4128

If delivered in person to the State Contract Officer, bids shall have been received prior to **2:00 pm** on the day of the bid opening. If delivered by mail, bids shall have been received prior to **2:00**

pm on the day of the bid opening. Bids received after the times specified above **WILL NOT** be accepted and will be returned to the Bidder unopened.

A.2-8 WITHDRAWAL OR REVISION OF BIDS

A Bidder may, without prejudice to himself, withdraw a bid after it has been delivered to the Department of Transportation, provided the request for such withdrawal is either in writing or by telegram to the Chief Engineer of Operations or the Engineer presiding over the public opening of bids before the date and time set for the opening of bids. The Bidder may then submit a revised bid provided it is received prior to the time set for opening of bids.

Only those persons authorized to sign bids under the pro- visions of Article A.2-5, Item 6 shall be recognized as being- qualified to withdraw a bid.

A.2-9 RECEIPT AND OPENING OF BIDS AND NON-COLLUSION AFFIDAVIT

(a) RECEIPT AND OPENING OF BIDS

Bids will be opened and read publicly at the time and place indicated in the invitation to bid. Bidders, their authorized agents, and other interested parties are invited to be present.

A bid will be received and opened from any Bidder who:

1. Is prequalified in accordance with the provisions of Article A.2-2, and

2. Has delivered the bid to the place indicated in the Specifications prior to the time indicated in the invitation to bid.

A bid received from a Bidder who has not complied with the above requirements will be returned to the Bidder unopened and under no circumstances will be considered for award.

(b) NON-COLLUSION AFFIDAVIT

In compliance with Section 112(c) of Title 23 USC and current regulations of the Department, each and every Bidder will be required to furnish the Department with an affidavit certifying that the Bidder has not entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with his bid on the project. Affidavit will be included in the proposal form as part of the Signature sheets. Execution of Signature sheets will also constitute execution of Non-Collusion Affidavit. Signature sheets shall be notarized.

A.2-10 REJECTION OF BIDS

Any bid submitted which fails to comply with any of the requirements of Articles A.2-5, A.2-6 and A.2-7 shall be considered irregular and may be rejected, except that any bid which fails to comply with Section A.2-5, Item 3 shall be considered irregular and will be rejected.

In addition to the above, any bids submitted by any Bidder who has failed to comply with the following requirement will be rejected.

Any bid submitted by a Bidder who at the time of the submission is bankrupt, insolvent, or has committed an act of bankruptcy or financially unable to meet its outstanding obligations, shall be considered irregular and will be rejected.

Any Bidder who has been disqualified from bidding shall have been requalified prior to the time set for receiving bids. The right to reject any and all bids shall be reserved to the Board.

A.2-11 DISQUALIFICATION OF BIDDERS

Any one of the following causes may be justification for disqualifying a Contractor from further bidding until he has applied for and has been requalified in accordance with Article A.2-2:

1. Unsatisfactory progress in accordance with Section A.7.
2. Being declared in default in accordance with Section A.32.

3. Uncompleted contracts which, in the judgement of the Chief Engineer of Operations, might hinder or prevent the prompt completion of additional work if awarded.

4. Failure to comply with prequalification requirements.

5. The submission of more than one bid for the same work from an individual, partnership, joint venture, or corporation under the same or different names.

6. Evidence of collusion among Bidders. Each participant in such collusion will be disqualified.

7. Failure to furnish a non-collusion affidavit upon request.

A.3 AWARD AND EXECUTION OF CONTRACT

A.3-1 CONSIDERATION OF BIDS

After the bids are opened and read, the amount bid for each item and the total bid will be checked and made known to the public.

The right is reserved to reject any or all bids, to waive technicalities, to request the low bidder to submit an up-to-date financial and operating statement, to advertise for new bids, or to proceed to do the work otherwise, if in the judgment of the Board, the best interests of the State will be promoted thereby.

A.3-2 AWARD OF CONTRACT

The award of the contract, if it be awarded, will be made by the Board of Transportation to the lowest responsible Bidder whose bid complies with all the requirements prescribed. The lowest responsible Bidder will be notified by letter mailed to the post office address shown on his bid that his bid has been accepted and that he has been awarded the contract. This letter shall constitute the notice of award. The notice of award, if the award be made, will be issued within sixty days after the opening of bids, except that with the consent of the successful Bidder the decision to award the

contract to such Bidder may be delayed for as long a time as may be agreed upon by the Department of Transportation and such Bidder. In the absence of such agreement, the lowest responsible Bidder may withdraw his bid at the expiration of the 60 days without penalty if notice has not been issued.

A.3-3 CANCELLATION OF AWARD

The Board of Transportation reserves the right to rescind the award of any contract at any time before the receipt of the properly executed contract and contract bonds from the successful Bidder.

A.3-4 RETURN OF BID BOND OR BID DEPOSIT

All bid bonds will be retained by the Department until the contract is executed by the successful Bidder, after which all such bid bonds will be destroyed unless the individual bid bond form contains a note requesting that it be returned to the Bidder or the Surety.

Checks which have been furnished as a bid deposit by all Bidders other than the three (3) lowest responsible Bidders will be retained not more than ten (10) days after the date of opening of bids. After the expiration of such period, Department of Transportation warrants in the equivalent amount of checks which were furnished as a bid deposit will be issued to all Bidders other than the three (3) lowest responsible Bidders.

Checks which have been furnished as a bid deposit by the three (3) lowest responsible Bidders will be retained until after the contract bonds have been furnished by the successful Bidder, at which time Department of Transportation warrants in the equivalent amount of checks which were furnished as a bid deposit will be issued to the three (3) lowest responsible Bidders.

A.3-5 CONTRACT BONDS

The successful Bidder, within 14 calendar days after the notice of award is received by him, shall provide the Department with a contract payment bond and contract performance bond each in an amount equal to 100 percent of the amount of the contract. All bonds shall be in conformance with *GS44A-33*. The Corporate Surety furnishing the bonds shall be authorized to do business in the State.

A.3-6 EXECUTION OF CONTRACT

As soon as possible following receipt of the properly executed contract bonds, the Department will complete the execution of the contract, retain the original contract and return one certified copy of the contract to the Contractor.

A.3-7 FAILURE TO EXECUTE CONTRACT

The successful Bidder's failure to file acceptable bonds within 14 calendar days after the notice of award is received by him shall be just cause for the forfeiture of the bid bond or bid deposit and rescinding the award of the contract. Award may then be made to the next lowest responsible Bidder or the work may be readvertised and accomplished under contract or otherwise, as the Board of Transportation may decide.

A.4 INTENT

(a) It is the intent of these specifications that the Contractor shall Build, Equip, Launch, Test and Deliver to the Owner one (1) vessel, as described, complete and ready for service in every respect as concerns the work covered herein. The Contractor shall provide the necessary plant, launch/railway and lay days to construct the vessel, all tools, materials, machinery, equipment, fittings and labor, including upkeep of the vessel until final acceptance by the Owner.

(b) The Contractor shall make removals and replacements as necessary to affect the work covered by these specifications as a part of the contract if required.

(c) The Contractor shall coat all new work and restore and recoat all areas disturbed due to the work required by these specifications as a part of the Contract.

(d) Any work, equipment, machinery, or other part or parts of the vessel injured or damaged while the vessel is in the custody of the Contractor during the progress of the work covered by these specifications shall be repaired by the Contractor to the satisfaction of the Inspector, at no cost to the Owner.

(e) Any work or detail omitted from these specifications or plans, but necessary to complete the specified construction covered herein in accordance with good shipbuilding practice shall be furnished by the Contractor as a part of the Contract at no additional cost to the Owner, and nothing herein or on the plans shall be construed as meaning otherwise.

(f) Whereas the true intent and meaning is manifest, the Contractor shall not be relieved from fulfilling the full requirements of the contract plans, contract guidance plans and specifications, or of the responsibility for producing satisfactory results, or of properly performing any work by any of the following:

Absence of the details where the essential features, functions and arrangements are defined. Mistakes in description of hull or machinery details which, if not corrected, would interfere with the proper performance of the items involved.

The Contractor is responsible for proper performance of the Contract in accordance with the full manifested intent of these specifications despite any error, omission, discrepancy or lack of clarity in the plans or specifications which should reasonably have been apparent to an experienced Contractor upon a careful and critical review.

(g) The intent above given is of the essence of these specifications.

A.5 INSPECTION

(a) All work and materials entering into the construction of the vessel, it's machinery, fittings and equipment shall be subject at all times to the inspection and approval of the Inspector and where applicable the U.S. Coast Guard.

(b) It is the duty of the Inspector to insist that the Contractor perform all work and supply all materials as called for in these specifications. The Contractor shall perform all work in a satisfactory manner. In the event that any work or materials fail to comply with these specifications the Inspector will notify the Contractor in writing of the deficiency or unsatisfactory work as soon as it comes to his attention.

(c) Any work not satisfactory, whether from defective material, departure from specifications, or poor workmanship, or any work performed in the absence of the Inspector and later found to be unsatisfactory, shall be removed and replaced promptly to the satisfaction of the Inspector, at the Contractor's expense.

(d) The Owners, the Inspector, the U. S. Coast Guard, and any person employed by the same shall be allowed access to the work at anytime during the regular working hours of the Contractor, or at such other times as will not entail additional expense to the Contractor, and the Contractor shall furnish all reasonable facilities and give ample time for such inspection.

A desk, desk chair, 4-drawer legal file cabinet with lock and keys, three (3) chairs, a 3' x 6' x 32" drawing board and compact copy machine shall be provided in a private office, and apart from facilities occupied by contractor's personnel. Office shall be for the Inspector's and Owner's sole use during the contract period. Office shall be provided with telephone service and internet connection with broadband service. Necessary long distance calls made to discuss questions arising concerning

the work shall be at the Contractor's expense. Telephone service shall be two private lines not subject to connection to contractor's telephone network listed in the Owners name. Contractor shall provide internet service access as a part of this contract. Additional telephone service on contractor's system may be installed.

(e) The Inspector shall determine the amount, quality, acceptability, and witness all parts of the work. He shall interpret the specifications, Contract Documents and supplemental agreements, if any, and he shall decide all other questions in connection with the work. The Inspector shall have no authority to approve or order changes in the work which alter the terms or conditions of the Contract. The Inspector shall confirm in writing within five (5) days any oral order, direction, requirement, or determination. The decision of the Inspector shall be final and binding on both Contractor and Owner.

(f) Nothing herein shall be taken to relieve the Contractor of complete responsibility for unsatisfactory workmanship, faulty materials or other deficiencies of any kind whatsoever that are the result of his work, his sub-contractors work, or material purchased or provided and installed by him.

(g) The Inspector shall have general surveillance of the work. All orders and communications from the Contractor shall be transmitted through him. He shall have authority to stop the work whenever such stoppage may be necessary to ensure the proper execution of contract, said stoppage is to be a Contractor caused delay in computing liquidated damages, if any, for late delivery.

(h) As the Inspector is, in the first instance, the interpreter of the conditions of the contract and the judge of its performance, he shall use his powers under the contract to enforce its faithful performance.

(i) The Contractor shall notify the Inspector prior to any and all Contractor scheduled meetings or inspections relevant to this contract which involve any representative of the U.S. Coast

Guard. The Inspector shall be given the opportunity, at his option, to be present on such occasions. At no time shall the Contractor allow access to any portion of this contract by personnel other than those employed by the Contractor without first receiving the Inspectors approval.

A.6 LAWS, PERMITS, AND REGULATIONS

(a) The Contractor shall obtain and pay for all licenses and permits and shall pay for all fees and charges for connection to outside service and use of property other than the site of the work for storage of materials and other purposes.

(b) The Contractor shall comply with all laws, ordinances, and regulations applicable to the work unless in conflict with contract requirements. If the Contractor ascertains at any time that any requirements of this Contract are at variance with applicable laws, ordinances, or regulations he shall promptly notify the Inspector and Owner and any necessary adjustment of the Contract shall be made as specified under Changes in the work.

(c) Any questions arising under this contract shall be determined under the laws of the State of North Carolina.

(d) The Contractor shall furnish the Inspector copies of affidavits upon request giving the original dates, renewal dates and expiration dates of all labor contracts, if any, related to any phase of the work to be performed in the shipyard under this contract.

A.7 PROSECUTION OF WORK (LIQUIDATED DAMAGES)

(a) Date of completion is the essence of any contract resulting from these specifications and plans. The Contractor will be required to complete all work no later than the date stated in the contract.

(b) Should progress of the work lag or fall behind schedule, the Contractor shall direct sufficient additional labor to work, including overtime if required, to maintain the contract delivery

date, at no additional cost to the Owner.

(c) The Contractor will be required to pay liquidated damages for each and every day that delivery is delayed beyond the contract date for its completion. The timely completion of the performance of this contract has a substantial financial value to the Owners, which value is difficult or impossible to forecast or evaluate exactly. It is, therefore, stipulated and agreed that the value to the Owners for each calendar day of delay in delivery of the vessel by the Contractor to the Owners beyond the contract completion date of the work to be performed by the Contractor under this contract shall be a fixed sum and shall be set in advance. Upon the foregoing consideration and for the purpose of this contract, the sum of **One Thousand Dollars ($1,000.00) per day** is hereby mutually agreed upon as the sum which the Contractor shall give to the Owners as liquidated damages for each calendar day delayed beyond the contract completion date that the work remains unfinished and said vessel remains undelivered.

(d) For the purpose of these specifications in determining the days for which liquidated damages will be charged the Contractor shall be entitled to an extension of the contract time or to an apportionment and remittance of liquidated damages when a contract is not completed within the contract time to the extent that delays to the current controlling operations, or operations, were caused by acts of God as defined herein, or acts of the Boards or its agents. The Contractor, however, shall be entitled to an extension of contract time, or an apportionment and remittance of liquidated damages, only to the extent and in the proportion that such delays were caused by acts of God or acts of the Board, and it is understood that the Board does not hereby waive or release any claim against the Contractor for liquidated damages when the contract is not completed within the contract time for any reason whatsoever other than the said acts of God or acts of the Board. A request by the Contractor for an extension of time shall be made to the Inspector within five (5) days

after such delay has occurred and he shall make a determination as to the cause of the delay and the amount of time that the contract should be extended by reason of such delay.

(e) It is understood and agreed that if a claim is filed for an extension of contract time, or an apportionment and remittance of liquidated damages, the burden of proof shall be upon the Contractor to establish the acts of God or the acts of the Board causing the alleged delay; and if the Contractor fails to sustain the burden of proof, he shall not be entitled to an extension of contract time, or to an apportionment and remittance of liquidated damages. The burden of proof herein referred to shall be the same that in other cases of like nature exists. Proof by the Contractor of delays due to an act of God or act of the Board to enforce or collect liquidated damages due to any other reason whatsoever.

(f) The Contractor is hereby notified that no consideration will be given to requests for remissions of liquidated damages for any reason whatsoever, except as covered by Paragraph A.7 herein. The Contract date for completion will be changed on a negotiated basis for any work authorized or deleted by supplemental agreements to the original contract.

A.7-1 WORK PROGRESS

(a) It is the intent of these specifications that the Contractor shall commence work on the date of availability as noted elsewhere herein. The Contractor shall not begin work prior to the date of availability without written approval of the Inspector. If such approval is given and the Contractor does begin work prior to the date of availability, the Department will assume no responsibility for any delays caused prior to the date of availability by any reason whatsoever, and such delays, if any, will not constitute a valid reason for extending the completion date.

(b) The Contractor shall not perform any work on the project until the Department has received the properly executed contract and contract bonds.

(c) It is further the intent of these specifications that the Contractor shall pursue the work diligently with workmen in sufficient numbers, abilities, and supervision and with equipment, material, and method of construction as may be required to complete the work described in the contract, or as may be amended by the completion date.

A.7-2 PROGRESS SCHEDULE

(a) The Contractor shall prepare and submit for approval by the Inspector a schedule of his proposed working progress on the project.

(b) The proposed progress schedule shall be submitted no later than the date of the project preconstruction conference (Section A.7-3) and before any work is begun on the project.

(c) When conditions beyond the Contractor's control have adversely affected his progress, the Contractor may submit a revised progress schedule to the Inspector for approval. Such revised progress schedules will not be approved unless accompanied by a detailed written statement giving the Contractor's reasons for the proposed revision.

(d) When, at any time during construction or repair of the project, the Contractor's progress deviates substantially from the latest approved progress schedule, the Inspector may request the Contractor to submit a revised progress schedule. Revised progress schedules requested by the Inspector shall be submitted within seven (7) days after the date of such request.

A.7-3 PRECONSTRUCTION CONFERENCE

(a) Immediately after receipt of notice of award, the Owner, Design Firm (EBDG) and the Contractor will establish a mutually agreeable date on which the preconstruction conference will be held. The Contractor's project superintendent and other individuals representing the Contractor who are knowledgeable of the Contractor's proposed progress schedule or who will be in charge of major items of the work shall attend the preconstruction conference. Contractor shall provide necessary

personnel to take, transcribe, correct, reproduce and distribute minutes of the pre-construction meeting.

A.7-4 CONSTRUCTION CONFERENCES

(a) After work on the project has begun, initially construction conferences shall be held monthly and adjusted to suit construction. The construction conferences are to be scheduled at times which are mutually agreeable to both the Contractor's project superintendent and the Inspector. It shall be the superintendent's responsibility to attend the conference. Contractor may elect to have other members (See Section A.7-3) of his staff attend construction conferences. Contractor shall provide necessary personnel to take, transcribe, reproduce and distribute minutes of each meeting.

A.8 MATERIALS

(a) All materials intended for use, and all equipment used shall be new and as specified or as shown on plans except where Owner furnished (Paragraph A.17). Should the Contractor desire to substitute any material or equipment for that specified he must first obtain an order from the Owner in writing. (See also paragraphs A.5 and A.11 herein.)

(b) It is the responsibility of the Contractor to furnish sufficient data and information on materials he wishes to substitute to allow the Owner to make a decision.

(c) All equipment, where required, shall be of U. S. Coast Guard approved type and manufacture, and details or plans shall be submitted for U. S. Coast Guard approval by the Contractor where required and not previously approved. (See Section A.10 & A.11 "Plans and Specifications").

(d) Steel plate, shapes and other metal work shall be of the best quality domestic steel products for its particular purpose. (See special provision "Domestic Steel and Iron Products" dated April 19, 1994.)

(e) Paints, electrical, piping, and all other materials shall conform to the standards of first class material for passenger vessels, as specified herein.

(f) All galvanizing shall be "hot dip" process.

(g) All plywood shall be waterproof marine type in all cases, with all edges sealed before installation, but after cutting to shape.

(h) Two (2) copies of each purchase order for all materials, articles, and equipment purchased by the Contractor shall be furnished to the Inspector at the time of issue to the vendor. Purchase orders shall show unit and total price of materials, articles and equipment purchased and vendor's complete address.

(i) Materials requiring specified approval, which are ordered by the Contractor before approval, shall be entirely at the risk of the Contractor.

(j) Where material herein specified is not available on the present market, alternate materials of equal quality at no additional cost may be processed for approval of the Inspector by the Contractor.

(k) Any material or equipment provided by the Contractor which proves defective and unfit for service either before or after installation and whether previously approved or not shall be replaced by the Contractor with satisfactory items without additional cost to the Owner.

A.9 WORKMANSHIP

(a) Workmanship throughout shall be first class and high grade in all respects for passenger vessels. Particular care shall be taken to insure fair lines, adequate and proper fastening, suitable butts

and scarfs, smooth surfaces, neat and substantial work, and the maximum degree of watertightness. All welding shall be done by competent USCG/ABS certified welders. All plating shall be free of uneven and wavy lines or wrinkles after welding. (See paragraph A.27 herein also).

(b) The work shall be executed by competent workmen, in each trade, experienced in marine construction, and under adequate supervision to assure first class workmanship throughout.

(c) Ragged edges or sharp projections which are hazardous to operating personnel, contribute to additional maintenance, or detract from the finished appearance shall be eliminated.

(d) Dimensional tolerances, fit alignment, fairness and finish shall be in accordance with approved working plans. Where tolerances are not given on working drawings or specified elsewhere, a standard of plus or minus 1/64 of an inch will be assumed for unmachined fits. Machined fits shall be in accordance with S.A.E. Standards for tolerance and finish.

(e) Fittings at openings through decks and bulkheads for pipes, cables, etc., shall be properly designed to maintain watertight integrity, reduce transmission of heat and eliminate transfer of machinery vibration and noise to the hull structure. Doubler plates or other suitable strengthening shall be fitted at all bulkhead and hull penetrations.

(f) Piping and cables shall be run as far inboard and shall pierce the bulkheads as close under the decks and as near the top of the bulkheads as practicable.

A.9-1 <u>ON SITE PROJECT SUPERVISION</u>

(a) At all times that work is actually being performed, the Contractor shall have present on the project one competent individual who has been authorized to act in a supervisory capacity over all work on the project including work subcontracted. This individual who has been so authorized shall be experienced in the type of work being performed and is to be fully capable of managing, directing and coordinating the work; of reading and thoroughly understanding the contract; and of receiving

and carrying out directions from the Inspector. He shall be an employee of the Contractor.

(b) The project Supervisor shall be authorized to accept and sign for notices and instructions, if and when found necessary, from the Inspector.

(c) The Project Supervisor shall be identified at the time of the Pre-construction Conference, Section A.7-3, and shall meet with the Inspector's approval. Should it become necessary to assign another individual in this position, the Contractor shall provide the Inspector written notification within five (5) working days of the proposed change. The individual assigned shall be approved by the Inspector and shall be capable of assuming the duties as outlined in Section A.9-1 (a) and (b) herein.

A.10 PLANS AND SPECIFICATIONS

(a) All work shall conform to these specifications, the plans, the Notice to Bidders and the Bid Proposals, which are made a part hereof by reference.

(b) The plans and these specifications are to be considered as mutually explanatory or supplementary, and any feature shown on one and not on the other shall have the same force and effect as though shown on both. Should any discrepancy appear or any misunderstanding arise as to the importance of anything contained in them it shall be called to the attention of the Marine Engineer or Inspector immediately, and no further work performed on the item in question until a decision is reached. Work performed based on such an error, omission, discrepancy or lack of clarity shall be at the Contractor's risk and expense. These plans and specifications shall be used by the Contractor as guides in the prosecution of the work required.

(c) The following plans will be furnished by the Owners to the Contractor: (List of plans is attached ahead of Part II of the specifications). These drawings were produced by computer aided drafting methods. CAD drawings were developed using AUTODESK, AutoCAD Release 2000.

(d) Contract Plans **HAVE NOT BEEN** submitted to the U.S. Coast Guard for approval. However, they have been stamped by a P.E. from EBDG and are thought to conform to all requirements.

(e) It is expressly understood that the Contractor shall verify all quantities and figures will be held responsible for the proper coordination of all dimensions and the work, and that the furnishing of the drawings herewith will not relieve the Contractor from responsibility for errors or omissions in dimensions and quantities. No addition to the cost will be entertained for errors, omissions or for discrepancies found between actual details and the plans and specifications after the proposal has been received.

(f) The Owner reserves the right to alter the drawings to correct or avoid impossible conditions created by prosecution of the work. The alterations necessary in the work, if any, are to be made by the Contractor without additional cost to the Owner.

A.11 DETAIL WORKING DRAWINGS

(a) Detail working drawings shall be prepared in accordance with contractor prepared working drawings list provided ahead of Section II of these specifications. Two (2) copies of each contractor prepared and/or revised drawing shall be submitted to the owner for review and comments. Owner comments, if any, shall be incorporated in drawings and two (2) copies re-submitted to the Owner for final approval prior to submitting to U.S. Coast Guard Marine Safety Center, Washington, D.C. Owner's drawing review action can be expected in one of the following manners:

(1) "APPROVED" - Drawing is acceptable and ready for U.S. Coast Guard review and/or for construction.

(2) "APPROVED SUBJECT TO COMMENTS" - Owner's comments shall be included on drawing at next normal issue, U.S. Coast Guard submittal or issue for construction.

(3) "RETURNED FOR REVISION" - Drawing is not in accordance with contract specification and/or applicable regulatory body (U.S. Coast Guard EEE45, etc.) rules and regulations. Drawing shall be revised resubmitted to owner for approval prior to issue and/or Coast Guard submittal.

(4) "REJECTED" - Drawing is not in compliance with Contract Specific and shall be redeveloped and resubmitted to owner for review.

(5) "EXAMINED" - Plans, calculations, sketches, etc., are found to be in accordance with contract specifications and do not require specific Owner approval. General data of this nature is supporting documentation.

(b) Contractor shall provide all engineering services necessary for the development and construction of the vessel, including technical calculations, and prepare and submit to the Engineer two (2) copies each for his approval all calculations, shop and working drawings as required. Working and shop drawings will be reviewed, and approved, or returned for correction, as promptly as the conditions will permit. No deviations from approved working drawings shall be made without the written approval of the Inspector.

(c) Plans/Drawings shall be prepared by the Contractor's Engineering Design personnel or by subcontract with an approved Engineering Design Agent. All plans shall be prepared using AUTODESK, AutoCAD Release 2000. All plans shall be revised providing details, assemblies arrangements and material list to indicate "as built" condition. AutoCAD original drawings shall reflect all changes to "as built" conditions. AutoCAD drawings shall be REPLOTTED on plain bond paper in accordance with Section A.11 (d) herein.

(d) Original drawings shall be of uniform size 24"x 36" (arch size D) prepared on 20 lb. plain bond paper and to comply with sample format for title block etc. as provided to the contractor. All original drawings shall be capable of reproduction in clear and legible copies. Drawing number sequence shall be maintained in accordance with Owner furnished drawings. Original drawings prepared by the Owner and identified in the list ahead of Part II shall be provided to the contractor. Drawings shall be revised for resubmittal to the U.S. Coast Guard, if required and to reflect final "as built conditions". All drawings shall be stamped to indicate final U.S.C.G. approval date and letter file number. Two (2) copies of all Contractor and Coast Guard correspondence relating to plan approval shall be submitted to the Inspector.

(e) In developing the working plans and detailed design, the Contractor shall adhere to all salient features and characteristics embodied in the specifications and plans, and the intent thereof. Modifications to the drawings which become necessary during development, or which may be sired by the Contractor to suit his standard practice, shall be brought to the attention of the Inspector at the time of submittal of working drawings for approval. Failure to notify the Inspector of such modifications will not constitute approval even though the working drawing was approved.

(f) Within 15 days of Contract award, the Contractor shall prepare and submit a drawing schedule for all drawings to be prepared for this contract. The schedule shall be updated monthly and submitted to the Inspector. Upon completion of drawing preparation and revision, the updates only need to be made when new drawings are added or drawings revised. The format of the schedule may use the Contractor's standards and incorporate Drawing number, Title, and distribution list with applicable dates.

(g) The Inspector will cooperate with the Contractor in developing a plan approval procedure in order to expedite plan approval with minimum delay. Approval will be given subject to correction

by the Contractor of any errors, omissions, and/or interferences contained thereon and compliance with the plans and specifications as previously noted. All revisions made to approved working plans shall be concisely described in a suitable revision column and copies forwarded to the Inspector for comments. Such revisions shall not negate the intent of the original approval without written consent of the Owner.

(h) Upon completion of the contract and at time of vessel delivery, all original drawings and CD's shall become the property of the North Carolina Department of Transportation and it is under stood that the Department of Transportation shall reproduce and issue above noted drawings in any manner for future use. Three (3) sets of the final approved copies and one (1) set of as -built originals shall be delivered with the vessel. Each set of drawings shall be individually packaged or boxed and shall be labeled as to contents. A list of drawings shall be included in each set.

(i) Shop sketches and templates shall be prepared by the Contractor as required for his shop use. Two (2) copies of shop sketches shall be provided to the Owner.

(j) The Contractor shall keep, on the work site, a copy of the drawings (latest revision) and specifications including all authorized supplemental agreements and shall at all times give the Owner and their authorized representatives access thereto. All drawings and specifications, except the signed contract, shall be returned to the Owner at the completion of work.

A.12 ALTERATIONS (CHANGES)

(a) The Owner reserves the right to make any deletions or additions to the work to be performed without invalidating the contract, or giving notices to the sureties. Any change in cost due to alterations or deletions shall be negotiated prior to accomplishment, or performed on a time and material basis as hereinafter provided in this section, at the Owner's option, and approval of any such changes shall be authorized by the Owner and accepted by the Contractor in writing on the

Standard form provided prior to start of the work. Optional items, if any, may be approved by issue of a supplemental agreement by the Owner at the cost quoted therefor.

(b) In making any alteration on a time and material basis, the charge or credit for the change shall be determined by the labor rates submitted with the bid proposal and purchase orders for materials to be used. Material shall be at invoiced cost to the Contractor plus 15%. Deletion of equipment and/or material is to be negotiated on a cost of material and labor estimated basis.

(c) The Contractor shall, within five (5) working days, when required by the Owner, furnish to the Owner an itemized breakdown of the man-hours, quantities, and prices used in computing the value of any change that might be ordered.

(d) The completion date will be changed to cover additions to, or deletions from the contract, on a negotiated basis. (Paragraph A.7 (d) is to be used for guidance).

(e) The Contractor may not substitute other material for that specified, except as covered by Paragraph A.8 herein.

A.13 CONTRACTOR'S AND SUBCONTRACTOR'S INSURANCE

(a) The Contractor shall not commence work under this contract until he has obtained all the insurance required here under and such insurance has been approved by the Owner; nor shall the Contractor allow any subcontractor to commence work on his subcontract until all similar insurance has been so obtained and approved. Approval of the insurance by the Owner shall not relieve or decrease the liability of the Contractor hereunder.

(b) COMPENSATION AND EMPLOYER'S LIABILITY INSURANCE

The Contractor shall take out and maintain during the life of this contract the statutory Workmen's Compensation and Employer's Liability Insurance for all his employees to be engaged in work under this contract and in case of any such work is sublet, the Contractor shall require the

subcontractor similarly to provide Workmen's Compensation and Employer's Liability Insurance for all of the latter's employees to be engaged in such work and shall save the Owner harmless.

(c) BODILY INJURY LIABILITY AND PROPERTY DAMAGE LIABILITY INSURANCE

The Contractor shall take out and maintain during the life of this contract such Bodily Injury Liability and Property Damage Liability Insurance as shall protect him from claims for damages for personal injury, including death, as well as from claims for property damage, which may arise from operations under this contract whether such operations be by himself or by anyone directly or indirectly employed by either of them, and shall save the Owner harmless.

(d) INSURANCE ON VESSEL

The Contractor shall, at his expense, from the time construction starts at his facility to the time of final acceptance at Hatteras, N.C. after completion of all work and testing, furnish all risk insurance as provided in American Institute Builder's Risk Form dated February 8, 1979, amended by striking out line 217 covering the value of the vessel in the full amount and shall save the Owner harmless from any damage whatsoever while the vessel is in custody of the Contractor. The insurance shall be in a responsible company or companies authorized to transact such business in the State in which the construction is being accomplished, and in the State of North Carolina. A statement agreeing to accept service of legal action in North Carolina must accompany the policy. The policy shall be made payable to the Owner. Where the Contractor carries a blank plant policy a rider must be obtained designating the Owner as first beneficiary under the policy in the amount stated.

For the purpose of this Contract the value of the vessel shall be placed at the Total Bid Amount.

A.14 ACCIDENT PREVENTION

Precaution shall be exercised at all times for the protection of persons, including employees, and property. The safety provisions of applicable laws shall be observed. Machinery equipment and all hazards shall be guarded or eliminated in accordance with the best marine construction safety practices.

A.15 SUBCONTRACTS

The Contractor shall not sublet, sell, transfer, assign, or otherwise dispose of the contract or any portion thereof; or of his right, title, or interest therein; without written consent of the Engineer. In case such consent is given, the sublet work shall be performed by the Subcontractor unless otherwise approved in writing by the Inspector. A firm which has been disqualified because of its failure to maintain satisfactory progress will not be approved as a subcontractor until the firm demonstrates the ability to perform the work in a satisfactory manner. Contractor shall submit a certified copy of the actual subcontract agreement executed between the Contractor and Subcontractor prior to written consent being issued by the Inspector. In case such consent is given, the Contractor will be permitted to sublet a portion thereof, but shall perform with his own organization, work amounting to not less the 75 percent of the total original contract amount.

Extra work performed in accordance with Section A.12 will not be considered in the computation of work required to be performed by the Contractor.

An assignment by operations of law or assignment for the benefit of creditors, or the bankruptcy of the Contractor, shall not vest any right in this contract in the Trustee in bankruptcy, the Contractor's creditors, or the agent of the creditors.

A Subcontractor shall not sublet, sell, transfer, assign, or otherwise dispose of his contract with a Contractor or any portion thereof; or of his right, title, or interest therein; without written

consent of the Inspector. When directed by the Inspector, the Contractor shall submit a certified copy of the actual subcontract agreement executed between the Subcontractor and the Second Tier Subcontractor. In the event of an assignment by operations of law or the bankruptcy of the Subcontractor, the Contractor shall have the right, power, and authority, in its discretion, without violating the contract or releasing the surety, to terminate the subcontract. An assignment by operations of law or assignment for the benefit of creditors or the bankruptcy of the Subcontractor shall not vest any right in this contract in the Trustee in bankruptcy, nor the Subcontractor's creditors or agents of the creditors.

Neither the Contractor, nor any Subcontractor, shall enter into any written or oral equipment lease or rental agreement, materials purchase agreement, and/or labor agreement which circumvents the provisions of this article.

If the Contractor or a Subcontractor enters into a lease or rental agreement for equipment based upon payment for a unit of work, such agreement will be considered subletting of the contract unless the lease or rental agreement is with a commercial equipment company, manufacturer, and/or commercial leasing agency and such firm has been approved by the Inspector. An equipment lease or rental agreement which is based upon unit price per unit of time will not be considered subletting of the contract.

The approval of any subcontract will not release the Contractor of his liability under the contract and bonds, nor will the Subcontractor or the second tier Subcontractor have any claim against the Department of Transportation by reason of the approval of the subcontract.

The Contractor shall as soon as practicable after the signing of the Contract, notify the Owner in writing of the names of the Subcontractors proposed for parts of the work and shall not employ any that the Inspector may within a reasonable time object to as incompetent or unfit.

The Contractor agrees that he is as fully responsible to the Owner for the acts and omissions of his Subcontractors and of persons either directly or indirectly employed by them, as he is for the acts and omissions of persons directly employed by him.

Failure of the Contractor to comply with any of the provisions of this article may be justification for disqualifying the Contractor from further bidding in accordance with the provisions of Section A.2-11.

A.16 PROTECTION AND CUSTODY OF VESSEL

(a) The Contractor shall take suitable means of protecting the vessel, the engines, and all other machinery, outfit, equipment, piping, wiring, etc. from the start of construction and until the vessel is accepted by the Owner, and he will be held responsible for any damage that may be sustained during this period. (See paragraph A.13 herein also).

(b) The vessel is agreed to be in the custody of the Contractor from the start of work at his plant until the completion of the vessels, including the tests and trials if required by Section VI herein, and until delivery to the Owner.

(c) The Contractor shall keep all litter and debris removed from the vessels, and shall conform to normal standard safety practices in the prosecution of the work and condition of the shipyard area.

A.17 MATERIAL FURNISHED BY OWNER AND TO BE RETAINED BY OWNER

(a) The Contractor shall receive, handle, and install all Owner furnished material and equipment, if any, and shall provide the required foundation, piping, wiring, etc., to make a complete and satisfactory installation at no additional cost to the Owner as a part of this contract.

(b) The anticipated in-yard delivery date for all owner furnished equipment will be on or before **December 31, 2009**.

A.18 HAULING AND LAY-TIME

(a) The Contractor shall provide a suitable marine railway for hauling the vessel and sufficient lay days to complete all work as required, or that may become necessary.

(b) The vessel shall enter the drydock or railway without list and without excessive trim. If any strain or possible damage to the vessel be suspected or observed, the docking operation shall be suspended and necessary corrective measures taken. Blocking and shores shall be arranged in accordance with standard practice, leaving room in way of rudders, propellers, and other obstructions. The vessel shall remain on the drydock or railway until the underwater work has been satisfactorily completed, then it shall be carefully undocked.

A.19 RAILWAY CERTIFICATION

Upon award of the contract, the Contractor shall submit to the Ferry Division Engineer, a certificate of condition and capacity of Railway or Drydock intended for use during docking if required. Certificate shall indicate capacity, maximum width, and condition of facility which has been inspected within 30 days of bidding by a Certified Marine Inspector or Registered Professional Engineer.

A.20 GUARANTEE

(a) The Contractor shall guarantee all materials furnished and all workmanship performed by him under these specifications for a period of twelve months following final acceptance by the Owner. This guarantee shall be limited to replacement (including labor) of any parts giving out under normal service because of defect in material or workmanship, and not because of carelessness or neglect on the part of the Owner, his officers or agents; provided further, that any work necessary under this warranty shall be performed without delay by the Contractor at a shipyard or such other place as may be approved by the Owner, and said Contractor shall not be liable for any expense or damages other

than as herein called for above. The regular manufacturer's warranty shall be furnished with all equipment, machinery, fitting, etc., provided by the Contractor.

(b) Manufacturer's warranties shall be filed by the Contractor for all equipment provided and installed and said warranties shall be transferred and/or filed in the Owner's name for all equipment, machinery, fittings, etc.; regular warranty periods will apply for all component items not hereinafter listed.

(c) The Contractor shall make good all damage to the vessel or its equipment or contents thereof, which is the result of the use of materials, equipment or workmanship which are inferior, defective, or not in accordance with the terms of the contract and shall restore all disturbed work resulting from the same.

(d) If the Contractor, after notice, fails to proceed promptly to comply with the terms of the guarantee, the Owner may have the defects corrected and the Contractor and his surety shall be liable for all expenses incurred.

(e) All special guarantees applicable to definite parts of the work that may be stipulated in the specifications or other papers forming a part of the contract shall be subject to the terms of this paragraph during the life of such special guarantees.

A.22 CERTIFICATES, DOCUMENTS, ETC.

(a) Upon completion of vessel and prior to acceptance the Contractor shall turn over to the Owner "Consent of Surety," "Affidavit of Payment of Labor and Materials" which shall include a list of material and equipment that is unpaid, waivers from suppliers and a statement that the vessel is free and clear of all liens and any other documents called for in other paragraphs herein.

(b) Upon completion of the vessel and after it is delivered, the Owner shall turn over to the Contractor a certified statement that all work required by these specifications, including any extra

work is complete and satisfactory on the date of delivery. This statement in no way affects or reflects on the guarantee covered herein.

A.23 DELIVERY

(a) The vessel shall be delivered by the Contractor to the Owner at the North Carolina State Shipyard, located at 8550 Shipyard Road, Manns Harbor, North Carolina 27953.

(b) The Owner shall upon delivery turn over to the Contractor all documents required by these specifications, (paragraph A.22(b)).

(c) The Contractor shall upon delivery turn over to the Owner all documents required by these specifications (paragraph A.22(a)).

A.24 ACCEPTANCE

When the trials and all tests have been made, and all work completed to the satisfaction of the Owner, the vessel will be formally accepted by the Owner after delivery upon presentation of all necessary documents as described herein.

A.25 FAILURE TO RECOGNIZE

Failure of the Contractor to recognize the need for performance of work or furnishing of materials required to complete the vessel in accordance with the true intent of these specifications shall not be grounds for additional payments or charges under this contract or these specifications.

A.26 PATENT RIGHTS

The Contractor shall pay all royalties and assume defense and indemnity and save harmless the Owner and his officers, from any patent infringements.

There is no knowledge of any infringement.

A.27 WELDING

(a) Qualifications of Welders

All welding performed under this specification shall be done by welders holding a valid qualification certificate issued by the U. S. Coast Guard, or the American Bureau of Shipping, for the class of work to be accomplished. A list of welders and their certification shall be provided to the Owner. List shall be updated as required.

Qualified welding supervisors shall be employed to assure conformity with standards of workmanship required.

(b) Standards

In general, the design of joints and the amount and type of welding shall conform to Section 30 of A.B.S. Rules for Building and Classing Steel Ships. A more detailed description of the workmanship required can be found under Chapter 52 (Ships) Third Edition of the Welding Handbook, published by the American Welding Society. Electrodes used for welding shall be of type approved by the U. S. Coast Guard for the various types of materials to be welded. Plates shall be smooth and free from wrinkles, uneven joints, wavy surfaces, et cetera.

No welding is to be done on hull plating below or near the waterline while the vessel is afloat. Welds shall be uniform and properly sized. Unsatisfactory welding shall be removed, ground smooth and rewelded in a satisfactory manner.

The striking of an arc on any principal hull plate surface is prohibited unless the plate surface on which the arc is struck is to be incorporated in a welded joint. Marks left by an accidental striking of an arc shall be ground out to a smooth contour, taking care that the plate thickness is not reduced more than ten (10) percent. Arc marks which exceed ten (10) percent of the plate thickness shall be reported at once to the Inspector, and corrective action taken as he directs. U.S. Coast Guard and/or

ABS approved welding procedures shall be provided prior to starting construction.

A.28 CARE DURING CONSTRUCTION

All parts of the vessel, including, but not limited to, structure, deck coverings, fittings, equipage, outfit, furniture, insulation, paint work, machinery, auxiliaries, appliances and apparatus, shall be maintained in satisfactory condition during the entire period of construction and fitting out. All dirt, chips, and scrap material shall be cleaned out at frequent intervals during construction, and no water shall be allowed to remain in the vessel. The vessel must be thoroughly cleaned throughout at the time of delivery to the Owner. Special measures shall be taken to minimize damage incident to storage, installation and construction and to prevent corrosion or other deterioration, especially to all unpainted, polished, and moving parts. All defects, damage, and deterioration of the vessel, its parts, fittings, and outfit that occur before acceptance of the vessel shall be corrected and repaired by the Contractor at his expense. Equipment, prefabricated parts, furniture, and items such as life floats, lines, and canvas, which are stored in warehouses or on piers during the construction period of the vessel, shall be thoroughly examined for and rid of rats and vermin before being placed on board.

A.29 PAYMENTS AND ACCEPTANCE

(a) Payments shall be made as set out in the Contract.

(b) All material and work covered by partial payments made shall thereupon become the sole property of the Owner, but this provision shall not be construed as relieving the Contractor from the sole responsibility for all materials and work upon which payments have been made or the restoration of any damaged work or any responsibility of the Contractor as herein set forth or as a waiver of the right of the Owner to require the fulfillment of all of the terms of the Contract.

(c) Neither the final payment nor any part of the retained percentage shall become due until the Contractor shall deliver to the Owner through the Inspector, Consent of Surety for final payment

and an Affidavit of Payments of Claims that all subcontractors and suppliers of either labor or materials have been paid all sums due them for work performed or materials furnished in connection with this Contract or that satisfactory arrangements have been made by the Contractor with such subcontractors and suppliers with respect to the payment of such sums as may be due them by the Contractor (See paragraph A.35 also).

(d) An amount equal to five (5) percent of the total amount due on the progress estimates will be deducted and retained by the Department until final acceptance of the contract.

(e) ACCEPTANCE OF FINAL PAYMENT CONSTITUTES RELEASE

No certificate for payment issued by the Inspector and no payment, final or otherwise, nor partial or entire use or occupancy of the work by the Owner, shall be an acceptance of any work or materials not in accordance with the contract, nor shall the same relieve the Contractor of responsibility for faulty materials on workmanship or operate to release the Contractor or his surety from any obligations under the contract or the Performance Bond. North Carolina *General Statute 136-29 (2)* applies.

A.30 CONTRACTOR'S TITLE TO MATERIALS

No materials or supplies for the work shall be purchased by the Contractor or by any subcontractor subject to any chattel mortgage or under a conditional sale or other agreement by which an interest is retained by the seller. The Contractor warrants that he has good title to all materials and supplies for which he accepts partial payment.

A.31 CONTRACTOR'S RIGHT TO STOP WORK OR TERMINATE CONTRACT

If the work should be stopped under an order of any court or other public authority for a period of three (3) months, through no act or fault of the Contractor or of anyone employed by him, or if the Inspector should fail to issue any certificate for payment within a reasonable time after it is

due, or if the Owner should fail to pay to the Contractor within a reasonable time any sum certified by the Inspector, then the Contractor may, upon fourteen (14) calendar days of written notice to the Owner via the Inspector, stop work or terminate this contract and recover from the Owner payment for all work executed.

A.32 OWNER'S RIGHT TO TERMINATE CONTRACT

(a) If the work to be done shall be abandoned or if the Contractor should be adjudged a bankrupt, or if he should make a general assignment for the benefit of his creditors, or if a receiver should be appointed on account of his insolvency, or if this contract or any part thereof shall be sublet without previous approval of the Owners; or if this contract or any claim thereunder shall be assigned by the Contractor; if any materials or any tools, machinery or other equipment shall be attached or encumbered, which attachment or encumbrance remains undisolved for a period exceeding ten days; or if at any time the Inspector shall be of the opinion, and shall so certify in writing to the Contractor, that the said work is being unnecessarily delayed by the Contractor, or is not executing said contract in good faith, or is not making such progress in the execution of the work as to indicate its completion within the required time, or if he should persistently or repeatedly refuse or should fail to supply enough properly skilled workmen or proper materials, or persistently disregard laws, ordinances, or the instructions of the Inspector, the Owners shall have the power and right to notify the Contractor to discontinue all work or any part thereof under this contract and thereupon the Contractor shall discontinue such work or such part thereof as the Owner shall designate and the Owners shall thereupon have the power, by contract or otherwise as they may determine, to enter the premises of the Contractor where said vessel is being constructed and complete the work herein described, or such part thereof as they deem necessary; and to use such tools and other equipment and such materials of every description as may be found upon or designated to be used upon said

work, and to procure additional tools and other equipment and additional materials for the completion of the same; and to debit to the Contractor the expense of labor and of additional materials and of additional tools and other equipment so procured, which additional tools and other equipment shall be and remain the property of the Contractor upon the completion of the work; and to credit him with the value of the work so done, as estimated by the Inspector.

(b) The excess of any cost to the Owners caused by or arising from its having taken over the completion of said vessel including compensation for additional inspection, managerial and administrative services shall be paid to said North Carolina Department of Transportation by the Contractor or by the surety on its performance bond, and in such accounting, the Owners shall not be held to obtain the lowest cost for the work of completing the contract, or any part thereof, but all sums actually paid therefore shall be charged to the Contractor.

(c) It is further agreed that in case the Contractor shall not fully complete the contract work at the time stipulated, the Owners, in lieu of the foregoing provision, may at its option pay the Contractor for the parts already done, according to the provisions of the contract, and these specifications, and may treat and consider the parts remaining undone as if the contract was cancelled or abandoned by said Contractor or as if they had never been included in or contemplated by this contract.

(d) No action, proceeding or notice contemplated by the contract on the part of the Owners or Inspector and nothing herein contained shall operate as a waiver or release of any rights of the North Carolina Department of Transportation under this agreement against either the Contractor or its Surety.

(e) For purposes of the above "Abandonment of Work" shall mean any consecutive period of ten (10) calendar days without performance of work on the vessel by the Contractor.

A.33 CLIMATIC CONDITIONS

When so ordered by the Inspector, the Contractor shall suspend any work that may be subject to damage by climatic conditions existing or predicted for the area within 24 hours.

A.34 TAXES

The Contractor shall without additional expense to the Owner pay all applicable federal, state and local and other taxes which are assessed against this work.

A.35 ASSIGNMENTS

The Contractor shall not assign any part of the contract nor shall the Contractor assign any claim due under the contract or monies due or to become due under the contract.

A.36 SPECIAL NOTES

(a) All bidders are cautioned to clarify any questions prior to submission of proposal.

(b) The submission of a bid will be considered an acceptance of all requirements of these specifications and all governing laws and ordinances without exception.

(c) There may be requirements for manufacturers or their representative personnel to perform work on some items of the ship's equipment not covered by these specifications, while at the Contractor's plant. These persons shall be allowed access to the vessel during normal working hours to perform their work. The Contractor shall provide a reasonable amount of electric power for hand tools and light if required.

(d) Any questions concerning these specifications should be addressed to:

North Carolina Department of Transportation
Contract Standards and Development Unit
Century Center Building B
1020 Birch Ridge Drive
Telephone: (919) 250-4128 extension 267
Fax: (919) 250-4119
Attn: Randy A. Garris, State Contract Officer
Email: rgarris@ncdot.gov

(e) The Owners reserve the right to waive informalities or to reject any or all bids.

(f) All bidders shall be prequalified by the Department of Transportation at least two (2) weeks prior to bid opening.

(g) Proposals received after the date and time set for the opening regardless of the cause will be returned unopened.

(h) **COAST GUARD INSPECTION OF THIS VESSEL IS REQUIRED**

A.37 GUARDING

All moving parts of machinery, shafts, etc., shall be shielded to prevent injury to personnel. Shielding fitted on items requiring frequent attention shall have doors, covers or be readily portable.

A.38 QUALITY CONTROL

(a) A competent employee of the Contractor, satisfactory to the Owner, shall from the start of work until the completion of the vessel, maintain quality control over the job. He shall make such inspections and investigations as are necessary to insure that the quality of workmanship, materials and testing is in accordance with that specified.

(b) The quality control employee shall prepare and maintain records of his actions, provide copies to the Inspector and cooperate with the Inspector.

(c) The Inspector shall have access to the quality control employee and his records at all reasonable times during working hours.

A.39 CONTRACT TIME

Contract time shall be the number of calendar days inclusive between the date of availability and the completion date, said dates as being set forth below, including authorized extensions to the completion date.

Date of Availability for this contract is: OCTOBER 26, 2009.

Final contract completion date for this contract is: MAY 1, 2011.

The completion date shall include at least five (5) working days of Contractor's representative(s) at Manns Harbor, N.C. to provide operational instructions to Ferry Division personnel prior to final acceptance.

5305 Shilshole Avenue NW Suite 100, Seattle, WA 98107 • **Seattle 206.782.3082** • f 206.782.3449
20th Floor 1100 Poydras Street, New Orleans, LA 70163 • **New Orleans 504.529.1754** • f 504.529.1974
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NEW SOUND CLASS FERRY

Technical Specification

Prepared for: North Carolina DOT, Ferry Division • Raleigh, NC

Ref: 07069-001-832-1 Rev. C **June 23, 2009**

Elliott Bay Design Group
Architectural & Engineering Services for the Marine Industry

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GROUP 0 GENERAL PROVISIONS

References

0.1 American Bureau of Shipping Rules for Building and Classing Steel Vessels Under 90 Meters (295 Feet) in Length (as modified by Part 5, Addendum 1), current edition.

010 Vessel Performance/Capabilities

The vessel is to be a single-ended, automobile and passenger ferry, outfitted for service between the Cedar Island, NC and Ocracoke Island, NC terminals.

The hull of the vessel is to be of all welded steel construction using a longitudinal system of framing.

Propulsion will be provided by two diesel engines. Drive will be through reversing reduction gears with shafting and propellers. Electric power requirements will be met by two diesel driven generators.

The vessel shall be designed for transporting 50 standard vehicles and 300 passengers.

Design trial speed shall be 13 knots with a full load service speed of 12 knots at 2/3 power.

042 Regulatory Body/Classification Requirements

The vessel shall be designed and constructed to the requirements of Reference 0.1, except where specifically exempted in writing by the Owner. The vessel shall not be classed by ABS.

The vessel shall be inspected by the United States Coast Guard as a Subchapter H passenger vessel. The Certificate of Inspection shall allow the ferry to operate with up to 300 passengers with one licensed master and 5 crew (1 licensed chief engineer, 1 ordinary, 2 able seamen, and 1 oiler).

Certificates, including Certificate of Inspection, Stability Letter, admeasurement, and USDH certificates shall be provided to the Owner (see Section 800). The vessel shall meet American Disability Act (ADA) requirements for access of disabled persons as it pertains to passengers and crew access to the extent of the USCG requirements.

060 Principal Characteristics

Dimensions:	
Length overall (molded)	220'-6"
Length on design load waterline	208'-0"
Breadth (molded) over guard	50'-0"
Depth (molded) amidships at side	12'-6"
Draft (molded) at DLWL	6'-6"
Capacities (approximate):	
Fuel oil (95%)	5,000 Gallons
Fresh water	5,000 Gallons
Lube oil	200 Gallons
Gear oil	150 Gallons
Power (approximate):	
Propulsion power	***2 × 1100 BHP***
Bow thruster	***500 BHP***
Ship's service generators	***2 × 150 kW***
Regulatory gross tonnage (approximate):	833

070 General Requirements for Design and Construction

The vessel shall comply with all the rules and regulations of the regulatory bodies as stated above. The vessel has been designed to meet the rules and regulations that are in effect at the time of the contract signing. In the event any changes occur in these applicable rules and regulations, all design and construction changes necessary to conform to the applicable rules and regulations shall be made by the Contractor.

078 Materials

All materials, machinery, equipment, and components shall be of good commercial marine quality, in full compliance with these Specifications, the requirements of the cognizant authoritative agencies, and suitable for the service intended.

An "or equal" product is one which exhibits the same salient features of size, weight, characteristics, performance, reliability, and maintainability as the product identified in these Specifications. The total performance of the "or equal" product will be such that its use will not adversely affect the intended performance of other systems or the vessel and with no increase in required maintenance or replacement periodicity. Demonstration of an "or equal" status is the responsibility of the Contractor and must be approved by Owner.

Fastenings throughout shall be 316 or 18-8 stainless steel unless otherwise specified, and in accordance with sizes required or shown on plans and listed elsewhere in these Specifications.

All hardware shall be made of best quality marine grade brass, bronze or 316 stainless steel unless otherwise specified. Bolts shall be fitted with lock washers, flat washers, and nuts. Nuts shall be drawn up tight. Screws shall be of highest quality stainless steel, with clean cut threads. All threads shall be coated with sealant (non-seizing) prior to installation.

085 Contract/Guidance Drawings

The vessel shall be constructed as depicted in below listed Contract Drawings and as described in these Specifications. Information contained in the Contract Drawings is subject to alteration, development, and refinement by the Contractor pursuant to implementing the details of these Specifications, appropriate authoritative agency regulations, and design development.

07069-001-050-1	Propulsion Powering Estimate
07069-001-061-1	Scantling Calculations
07069-001-063-1	Electrical Loads Analysis (Refer to NCDOT website)
07069-001-100-1	Lines Plan
07069-001-101-1	Profiles and Deck Arrangements
07069-001-110-1	Shell Plating and Frames
07069-001-120-1	Scantling Sections
07069-001-120-2	Inboard Structural Profile
07069-001-120-5	Long'l Bulkheads
07069-001-130-1	Main and Lower Deck Plating and Frames
07069-001-150-1	Superstructure and Pilothouse Structure
07069-001-200-1	Engine Room and Tank Room Arrangement
07069-001-243-1	Propulsion Shafting Arrangement and Detail
07069-001-256-1	Engine Cooling Piping Schematic
07069-001-259-1	Engine Exhaust Schematic
07069-001-261-1	Fuel Oil Piping Schematic
07069-001-264-1	Lube & Dirty Oil Schematic
07069-001-320-1	Electrical One-Line Diagram
07069-001-330-1	Lighting Plan
07069-001-506-1	Fills, Vents and Sounds Piping Schematic
07069-001-506-2	Fills, Vents and Sounds Piping Arr & Details
07069-001-514-1	HVAC Calculations (Refer to NCDOT website)
07069-001-521-1	Fire Main Piping Schematic
07069-001-521-2	Fire Main Piping Arrangement and Details
07069-001-522-1	Sprinkler Piping Schematic
07069-001-522-2	Sprinkler Piping Arrangement and Details
07069-001-526-1	Weather Deck Drains
07069-001-528-1	Sanitary Drains / Sewage Treatment System Schematic
07069-001-529-1	Bilge & Oily Water System Piping Schematic
07069-001-529-2	Bilge System Arrangement & Details
07069-001-533-1	Potable Water Piping Schematic
07069-001-533-2	Potable Water Piping Arrangement & Details
07069-001-551-1	Compressed Air Piping Schematic
07069-001-551-2	Compressed Air Piping Arrangements & Details
07069-001-562-1	Rudder Arrangement and Detail
07069-001-600-1	Bulwark Arrangement
07069-001-635-1	Structural Fire Protection
07069-001-801-1	Life Saving Equipment Arrangement
07069-001-832-1	Technical Specifications
07069-001-835-1	Regulatory Tonnage Estimate
07069-001-843-1	Stability Assessment
07069-001-891-1	Evacuation Plan

Plans provided to the Contractor at time of bidding are to be used for guidance and construction. The Contractor shall verify quantities, provide additional working drawings, and sketches, if required, and obtain approval of same from the Owner and the U.S. Coast Guard Marine Safety Center.

Bidders are advised that Plans and Specifications may not be complete and/or entirely consistent. Allowances should be made in the bids to allow for clarifications and corrections that occur after the bidding process.

GROUP 1 STRUCTURAL

References

1.1. 07069-001-110-1, Shell Plating and Frames

1.2. 07069-001-120-1, Scantling Sections

1.3. 07069-001-120-2, Inboard Structural Profile

1.4. 07069-001-120-5, Long'l Bulkheads

1.5. 07069-001-130-1, Main and Lower Deck Plating and Framing

1.6. 07069-001-150-1, Superstructure and Pilothouse Structure

1.7. 07069-001-101-1, Profiles and Deck Arrangements

1.8 07069-001-100-1, Lines Plan

100 Structure – General Requirements

All steel shall be new, ASTM-A36 certified, and of U.S. manufacture and origin. The Contractor shall provide mill certification or ABS certification. See special provision for purchase of domestic steel products.

The Contractor is advised that References 1.1 – 1.7 may not be entirely consistent, and that propulsion and other major equipment foundations have not been designed. The Contractor shall be responsible to reconcile inconsistencies and complete the detail design to the satisfaction of USCG and the Owner.

101 Material and Scantlings

The vessel shall be constructed on a longitudinal system of framing.

Longitudinal strength shall be maintained by ensuring continuity of main fore and aft members including the Main Deck, bottom and deck girders, and the shell plating. Where the strength of a main structural member is impaired by cuts or interruptions in continuity, efficient means of compensation shall be fitted.

Limber and vent holes, 1-1/2" radius minimum, shall be cut as necessary to ensure proper venting and drainage of tanks, compartments, pockets, and voids. Tanks shall have limber holes and vent holes of adequate size for full capacity flow to suction and vent lines.

All structural steel material, including forged components, are to be made of open hearth mild steel of uniform quality, the chemical and physical properties of which are to conform to the requirements of the ASTM-A36.

All scantlings shall meet or exceed the American Bureau of Shipping requirements and USCG technical notes. Where scantlings on the plans exceed ABS requirements, the increased scantlings shall be used.

Scantlings not specified by the plans, ABS or USCG are to be in compliance with the yard's practice.

Temporary access openings may be provided through shell, bulkheads, decks, etc. for convenience of workers and are to be reclosed in place by welding. All such openings shall have large radius corners for this purpose. Openings shall be positioned to utilize existing design butt welds and seams wherever possible.

Local reinforcements, for special loads and vulnerable areas subject to high wear, also compensation for penetration, doors, stairway openings, etc. shall be provided generally in accordance with ABS rules.

In general, doublers shall not to be used. Reinforcements shall be insert plates of increased thickness.

Except at the Main Deck, wherever there is a difference in adjacent plate thickness, the stiffener side shall be kept flush. At the Main Deck, the weather surface shall be kept flush.

Particular care shall be taken on all visible surfaces (i.e.: outside shell, deckhouse, etc.) to maintain a good appearance by means of suitable chamfers. Outside corners of steel material which passengers may contact shall be 1" minimum radius.

No rough edges shall remain where steelwork is cut. Penetrations shall be pre-cut by machine or neatly burned.

All steel material shall be shot blasted to coating manufacturer's recommendations at least to SSPC Sp 10 standard, and immediately thereafter coated with a suitable primer. The primer shall be of weldable type and fully compatible with ultimate coating system.

Design of steel structures shall allow clear heights as specified after allowing for passage of ducts, pipes, etc.

Unfairness of plating between frames, stiffeners, or deck beams shall not exceed 1/4".

102 Welding

Electric arc welding shall be used for assembly of all construction elements in hull, superstructures, stern, stem, meeting or exceeding ABS and USCG requirements. Automatic welding is to be used to the greatest possible extent.

Weld joints shall be prepared and welded in compliance with ABS requirements. Mill scale, rust, moisture, dirt, slag, and other alien substances shall be removed before welding is executed. After the welding, remnants of slag are to be removed.

Special care is to be taken in regard to welding sequence in narrow places or places having difficult access (i.e.: rudder, fore peak, etc.).

All welding shall be done after carefully scheduled sequences. The welding sequence shall ensure a minimum of strains of finished hull. Particular care is to be taken in the welding sequence to relieve stresses which might cause inherent weakness in the structure or excessive buckling of plates.

Vehicle deck longitudinal beams shall be welded with a minimum of 6" in 12" intermittent 5/16" fillet weld with a balanced 6" and wrapped fillet weld at the ends. Vehicle deck transverse girders shall be 5/16" fillet continuously welded on both sides. All other welds shall meet or exceed ABS requirements. All welding exposed to the weather shall be double continuous. A welding schedule shall be submitted for regulatory body and Owner's approval.

Good grounding connections shall be ensured for all welding, and care is to be taken with all welding to avoid undue stresses.

Electrodes shall be of the quality approved regulatory body type.

Internal scallops may only be used for air escape, drainage and in way of cross welds. Crossings shall be made with notch, or the first weld to be ground flush before the crossing element is installed.

Single side welding may be performed only on down-hand runs, generally to ABS requirements.

The welding shall be controlled by means of X-ray, ultrasound, and magna-flux methods. Random radiographs shall be made to regulatory body requirements. Magna-flux method shall be used for examination for cracks when appropriate. In the event that defects are found, rechecking shall be carried out after repair. See also Section 841 for testing requirements.

Backgouging, where necessary, shall be carried out by air gouging or pneumatic chipping.

Temporary welding shall be carefully removed by chipping and/or grinding and steelwork in way made good to the satisfaction of Owner's and regulatory body surveyors.

Direct attachment of fittings to oil-tight structures shall be by welding only. Such welds shall be tested for tightness.

103 Lofting

Hull lines shall be carefully faired and offsets determined. Offsets shall be taken at each frame and three (3) copies of the offsets provided to the Owner prior to steel lay-off.

Templates shall be made where required for steel lay-off.

110 Shell and Supporting Structure

Frames and girders shall be bracketed on both sides of oil-tight and watertight bulkheads, or slotted through watertight bulkheads and collared. Special attention shall be paid to the alignment of girders under the engines and reduction gears, and at the struts and rudders.

111 Shell Plating

Shell plating shall be constructed in accordance with Reference 1.1. Attention shall be paid to finish of exposed steel on outside shell and superstructure; welding shall be ground smooth where unsightly. It is not the intention to grind smooth all hand-made welding on the side shell plating.

Each overboard discharge through the shell plating shall be rigidly stiffened vertically and horizontally to the nearest structural members.

114 Tire Rail

Install a 3", ***schedule 80 steel tire rail*** as shown on References 1.6 and 1.7. ***Provide pipe caps*** to ends to prevent injury or damage. Tire rails shall be continuously welded.

115 Stanchions

Provide stanchions support longitudinal and transverse deck girders in accordance with References 1.1, 1.2, and 1.5. Minimize the number of stanchions in public areas.

As far as possible, supports for the various decks are to be arranged vertically above each other to form as stiff a construction as possible. The whole is to be designed to eliminate vibration to the greatest extent possible.

Heavy stanchions and girders shall be fitted in machinery spaces as needed to minimize vibration. Care is to be taken in the design of accommodation areas to ensure continuity of pillars, girders, bulkheads and webs so as to minimize vibration. Location of stanchions throughout, but especially in passenger areas, shall be arranged as far as possible to suit the arrangement, function, and decoration of the spaces concerned.

116 Skeg

The skeg shall be tapered, hollow construction with widths (half breadths) as shown on Reference 1.8. The skeg shall be fitted with suitable transverse framing and made watertight.

Stainless steel half couplings shall be installed in bottom plating at each skeg void and shall be fitted with 2" brass flush plugs. Install liquid rust inhibitor in each skeg void after testing and welding in adjacent areas has been completed.

117 Framing

Framing shall be in accordance with ABS except where the plans specify heavier framing.

120 Hull Structural Bulkheads

Structural bulkheads shall be arranged as shown on the plans and generally in accordance with Reference 1.2 and ABS rules. Hull bulkhead plating shall be no less than 5/16" thick. Bulkhead stiffeners shall be arranged to line up with girders or other stiffeners.

All openings shall have rounded corners to the Owner's approval.

121 Center Vertical Keel

The center vertical keel shall vary in construction as shown on Reference 1.3. The CVK shall be continuous through bulkheads where the keel thickness on each side is identical.

130 Decks

The Main Deck and Lower Deck shall be fabricated as shown on Reference 1.5.

Insert plates with radiused corners shall be installed under bitts, cleats, pad eyes, and similar fittings. Main Deck insert plates shall be installed flush on the top side with surrounding plates.

Deck beams shall be either slotted through bulkheads and girders or bracketed each side. In way of tight bulkheads, slotted beams shall be collared.

Camber in the Main and Passenger Decks and tumblehome in the curtain plating shall be straight line.

Decks shall be reinforced in way of corners of large openings, breaks, etc., where required by regulatory bodies. Such reinforcement shall be by insert plates of increased thickness-doublers are not to be used – and by installation of heavy girders.

Steel or aluminum diamond plate shall be provided in machinery space walkways. Aluminum plates shall be installed except where steel is required by USCG regulations.

136 Upper Decks

The Passenger Deck and decks above shall be fabricated as shown on Reference 1.6.

The Passenger Deck and decks above shall have straight line camber, 6" in 50'.

Note that this camber is not shown on the plans.

150 Superstructure Bulkheads

Superstructure bulkheads and frames shall be fabricated in accordance with Reference 1.6 except that the Contractor shall verify and provide scantling sizes, connections and details in accordance with USCG Marine Safety Center Technical Note MTN 05-94 for racking requirements.

Superstructure exterior bulkheads shall be of flat and curved plate construction with welded stiffeners on the inside. Care shall be taken to ensure fairness and elimination of distortion of deckhouse bulkheads and house fronts. All deckhouse corners are to be well radiused.

Edges of the cutouts in the curtain plates shall be ground smooth to ensure good coating adhesion. Alternately; Contractor may install 3/8" round bars around the cutout perimeters, continuously welded both sides.

151 Bulwarks

The bulwark cap tube shall be internally coated with a preservative and seal welded to be watertight. Welding on the bulwark cap shall be ground smooth.

A bulwark gate shall be provided at the Main Deck, starboard side, in way of the rescue boat ladder access. Hinges and latches shall be heavy duty stainless steel. The gate shall swing outboard; latches shall be provided to secure the gate in both the open and closed positions.

Provide a double-hinged bow gate generally as shown on Reference 1.7 with details as on current NC DOT vessels. The bow gate shall lock securely in both the open and closed positions. Hinge pins and locking pins shall be 316 stainless steel. Hinges shall be fitted with stainless steel grease fittings. The bow gate shall be balanced so as to be easily operable by one crew member.

161 Deck Fittings

Cast steel cleats and chocks shall be provided on the Main Deck as shown on References 1.5, 1.6, and 1.7. Corners and weld bead shall be ground smooth to prevent chafing of mooring lines.

Bulwark chocks shall be 8"x12" closed type. Kevels shall be 36" closed chock.

Chafing protection, round bar, or pipe shall be provided on bulwark stiffeners where lines may lead from kevels or chocks.

Insert plates and local under-deck stiffening shall be provided to accommodate the kevel installation. Doubler plates are not acceptable.

163 Sea Chests

Each sea chest shall be 1/2" minimum thickness with a gate valve, ASTM A395 ductile iron body with bronze trim and rising stem, to isolate the header. Sea chests shall be vented to the overhead of the space in which they are located.

Sea chest strainer plates shall have a minimum cross section area of 2.5 times the total cross section of the piping attached to it. Strainers shall be 3/8" plate steel, hinged with 316 stainless steel pins and fasteners.

The bow thruster sea chest shall be 1/2" plate and shall be vented to the overhead of the Bow Thruster Room. The thruster sea chest strainer plate shall be hinged with 316 stainless steel pins and fasteners.

167 Watertight Doors, Hatches, and Manholes

Steel hatches and doors shall be shot blasted and coated with one coat of inorganic zinc to all surfaces prior to assembly.

Bolted manholes (15" x 23" minimum size) shall be provided for each built-in tank and void. Where the lower edge of the manhole is more than three feet above the tank bottom or working platform, bent round bar rungs shall be provided for safe access. In addition, a bent round bar grab rung shall be provided above the manhole.

A bolted machinery removal hatch shall be provided in the Main Deck as shown on Reference 1.5. ***Provide flush stainless steel fasteners to provide watertight integrity to meet ABS requirements.***

Six dog 26" × 75" quick acting watertight doors shall be installed at each transverse watertight bulkhead below the Main Deck, except the collision bulkhead as shown on References 1.2 and 1.7. Doors shall be quick-acting, hand wheel-operated. There shall be provisions for locking watertight doors using padlocks. All doors shall be labeled on both sides using engraved stainless plates in accordance with 46CFR 78.47-37 (a) and (b).

Flush deck watertight quick-acting hatches, 20" diameter, shall be installed in the Main Deck as shown on References 1.5 and 1.7 for access to compartments and voids. Hatches shall be model 2407-0003 with stainless steel mechanism, inside handle and stainless steel deck ring. Provide and install one (1) spring balanced, quick acting, 36" x 36" flush watertight hatch at frame 71 as shown on References 1.5 and 1.7. The hatch shall have a stainless steel label on the underside with arrows showing direction to rotate hand wheel to open.

168 Tanks

The interiors of all tanks and voids shall be thoroughly cleaned and coated to the satisfaction of the Owner.

After coating, the potable fresh water tanks shall be filled and flushed at least three times, the first time having sufficient chlorine dosage to ensure decontamination. Tanks shall be certified safe by competent authority.

The emergency generator fuel tank shall be in accordance with 46CFR 58.50-10. Vents shall be installed in accordance with 46CFR 56.50-75 and 56.50-85.

Fuel and lubrication oil tanks shall be thoroughly cleaned of all debris, weld splatter, flux, and other foreign matter and approved by the Owner prior to initial filling, and shall be kept closed thereafter until ready for use.

169 Special Purpose Closures

Where required by regulatory bodies, holes permitting fire hoses to be passed through interior fire doors shall be fitted at the hinge side.

Interior fire doors shall have electromagnetic hold backs which are automatically deactivated upon activation of the fire alarm, thereby allowing the fire doors to close. Local magnetic release switches shall be provided with central control of the release switches in the Pilothouse.

171 Masts

Navigation light masts shall be provided and located as shown on Reference 1.7. The navigation light masts shall be of aluminum construction, hinged, and counterbalanced for convenient and safe one-man operation. Hinging arrangement is intended to permit changing of navigation light bulbs without requirement for ladders.

Electrical cables on the navigation light masts shall be provided with watertight receptacles at each light fixture and adjacent to the mast base.

Flagstaffs shall be fitted with sheaves and brass cleats for halyards. Provide brass pulleys for each arm and gaff, three (3) complete with flag halyard of 1/4" nylon line with brass snap hooks secured to each end of halyard. Halyards shall be endless loop type, suitable for service intended.

180 Foundations and Struts

Contractor shall fabricate and install all necessary foundations and supporting structure. Foundations shall ensure rigidity, freedom from vibration in normal operation, and secure containment of the equipment in rough seas and crash stops (accelerations of at least l.0 g in any direction). Flat bars shall be welded around the edges of top plates where they are necessary to retain possible leakage of oil or water, and drain plugs shall be provided to permit release of all drainage. Foundations shall extend a sufficient distance to distribute the load and to avoid excessive weight concentrations. Doublers or insert plates, girders, headers, and stanchions shall be fitted and under deck framing shall be otherwise reinforced to provide adequate support of the equipment. Top members of foundation girders shall be machined as necessary and drilled to suit the equipment base structure. Chocks and/or liners shall be fitted, machined as necessary to produce and maintain correct alignment and to permit adjustment of alignment.

The foundation (under deck structure) for the rescue boat davit (Reference 1.6 and Section 583.2) shall be designed with a safety factor of 4.5:1 based on the rescue boat test load of approximately 2,250 pounds.

182 Propulsion Plant Foundations

Foundations for the propulsion machinery shall be fitted as an integral part of the vessel's primary structure. Abrupt discontinuities shall be avoided by gradual tapers at the extremities of foundation structure.

The propulsion machinery foundations shall be of a height to suit the engine and reduction gear alignment chocks. The reduction gear foundations shall be a continuation of the main engine foundations. Brackets shall be installed at every frame, except where such brackets interfere with the engine bolting arrangements. Welding of engine and reduction gear foundations shall be continuous.

183 Generator Engine Foundations

The Owner-furnished generator sets will be furnished skid mounted. The engine rails shall be secured to the foundations using vibration isolation devices approved by the generator set manufacturer. Hull structure shall be locally reinforced to support the generator sets.

184 Navigation/Communications/Electronics Foundations

Welded steel foundations shall be provided as required for all navigation, communications, and electronics equipment and consoles.

185 Auxiliary Equipment Foundations

Appropriate foundations and support structure (brackets, etc.) shall be provided for all equipment, such as electrical panels and instrumentation, regardless of weight. Containment coamings shall be incorporated into the foundation around all equipment where oil leakage may occur. Design of foundations shall permit equipment access as required, and access for maintenance of foundations and adjacent hull structure. Foundations shall incorporate suitable supports so as to prevent excessive or unusual vibration under the normal range of vessel operating conditions.

Auxiliary foundations shall consist generally of angles and plate, adequately secured to frames and with top bars of suitable size for connection of the machine. Where drip pans are needed, such may be formed of flanged plates with welded corners, and acting as part of the foundations. All foundations shall be braced to reduce vibration. Floor plates shall not be extended to form part of the foundations.

Drip pans with drains and chocks shall be fitted where warranted by the nature of the equipment supported.

Care shall be taken to avoid sharp corners or projecting members that might be hazardous to personnel. Due consideration is to be given in the design of foundations to provide for ready access to the equipment and adjacent structure and fittings.

Foundations for davits, kevels, chocks and the like shall be designed to withstand the breaking strength of the cable or mooring lines attached.

GROUP 2 PROPULSION

References

2.1 07069-001-256-1, Engine Cooling Piping Schematic

2.2 07069-001-259-1, Engine Exhaust Schematic

2.3 07069-001-261-1, Fuel Oil Piping Schematic

2.4 07069-001-264-1, Lube & Dirty Oil Schematic

2.5 07069-001-243-1, Propulsion Shafting Arrangement and Detail

2.6 07069-001-562-1, Rudder Arrangement and Detail

Addendums

A2-1 Main engine purchase order

A2-2 Reduction gear purchase order

A2-3 Generator set purchase order

200 Propulsion Plant, General

The propulsion system is for a single-ended design, with two fixed-pitch stainless steel propellers at the stern, and a transverse thruster at the bow. The propulsion machinery installation will consist of two non-reversing, 4-stroke, turbo-charged diesel engines, each connected through reversing reduction gears to a propeller.

233 Main Engines

The main propulsion engines shall be ***Owner-furnished MTU 8V4000, 1140 HP @ 1800 RPM , Caterpillar 3508 , 1050 HP @ 1800 RPM***, arranged for keel cooling; see Reference A2-1.

Engines shall burn No. 2 diesel fuel having a flash point greater than 110°F.

Control of each propulsion drive train shall be achieved through the use of an engine throttle lever and independent clutch control pushbuttons. ***Propulsion system controls shall be mounted in Pilothouse Aft Control Station and EOS console (three locations).*** Additionally, local throttle and clutch controls shall be provided at each main engine.

Contractor shall install owner furnished main engines. Contractor shall provide all required fasteners, wiring, exhaust system flex connections, all piping, insulation, bedding materials, guards, gaskets, fittings, etc. for a complete and operational installation.

Contractor shall install six owner furnished lighted digital tachometers, two each at the EOS Console, Pilothouse Console and Aft Control Station console. These may be part of the engine gauge panel if so provided.

Contractor shall fill engines with a mixture of freshwater and approved water treatment product. Amount of water treatment added shall be to manufacturer's recommendation for type and size of engines. Provide one water treatment test kit.

Owner shall provide the services of an authorized technician to accomplish initial start up of main engines. Test Reports of initial start up shall be provided to the Owner.

Owner shall provide the services of an authorized technician to accomplish a PAR test on all engines. See also Section 842.2 for test requirements.

236 Propellers

Provide two fixed-pitch propellers fabricated, machined, and balanced in compliance with ISO 484/2 class 1 standards. Design propellers to accommodate rope guards and lifting/pulling bolts. Propellers shall be thoroughly stress relieved prior to machining and finishing. Propellers shall be dynamically balanced and the trailing edges of blades shall be properly ground to prevent "singing". Propellers shall be secured to the tail shafts with propeller nuts, which upon final fitting and tightening shall be welded to the propeller. The propeller shaft hub (gear mating coupling) shall be owner furnished.

Propellers shall be Rolls Royce or Owner-approved equal, as follows (subject to confirmation by Rolls Royce):

Material	CF-3 Stainless Steel
Number of blades	5
Diameter	56.00"
Variable Pitch	To be determined @ (1100 hp)
Hydrodynamic P/D (0.60R)	0.902
Projected skew at tip	18.0°
DAR	0.800
PAR	0.682
Actual T_{max} at 0.25R	2.40"
T_{max} at 1.0R	0.403"
T/C at 0.25R	0.159
Total rake at tip	3.920"

237 Bow Thruster

The Contractor shall furnish and install one jet-pump, 360° azimuthing bow thruster, Omnithruster model HT600 and appropriate reduction gear to suit the engine. ***The thruster engine shall be Owner furnished MTU/Detroit 60 Series, Caterpillar C18 or equal, rated minimum 500 HP at 1800 RPM.*** Engine shall be installed on resilient mounts to be approved by the Owner and the engine manufacturer. The bow thruster gear shall be owner furnished Twin Disc Mg-5114 SC.

The Contractor shall provide all components for a complete and functional installations including, but not limited to reduction gear, Cardan shaft, couplings, guards, controls, etc.

The thruster shall be mounted on the forward side of the thruster sea chest. Appropriate lifting eyes shall be provided for removal of the thruster and the thruster engine.

The Cardan shaft shall be designed to allow removal of the thruster without disturbing the drive engine. Drive shaft shall be rated for the maximum input horsepower and speed. A protective shaft cover for personnel safety and whip preventer designed to keep the shaft from whipping in case failure of universal joint shall be provided.

240 Transmission Systems

Two complete propulsion shaft systems shall be provided as described herein. The propulsion shafting system shall be in compliance with applicable USCG requirements including all regulatory documentation, failure modes analyses, and testing and verification procedures.

243 Propulsion Shafting

Propulsion shafting arrangement shall be generally as described on Reference 2.5.

After vessel is afloat, but in no case less than 24 hours, align shaft system with the reduction gears so that tolerance is no greater than 0.003" from true.

243.1 Reduction Gears

The main engine reversing reduction gears shall be ***Owner furnished Twin Disc 540, approximately 3.26:1 ratio***, arranged for keel cooling; see Reference A2-2.

Output shafts shall be attached to line shafts with keyed couplings. Provide and install portable protective guards around coupling and shafts.

Contractor shall provide and install all necessary ancillary materials and equipment, including but not limited to all foundations, fasteners, guards, oils, fittings, hardware, etc. as required by the manufacturer for a complete and operational system.

243.2 Bulkhead Shaft Seals

Contractor shall provide and install bulkhead penetration shaft seals, ***Split-type for easy repair***, arranged for sea water cooling.

The Contractor shall provide two cooling pumps, arranged in parallel so that either pump can provide a minimum of 30 gallons per minute to each stern seal. Valves shall be provided to permit isolation of each pump and each shaft seal. A simplex strainer, bronze body with stainless steel basket, shall be provided on the suction side of each pump. A low-flow alarm shall be provided for each supply line.

The Contractor shall provide a stainless steel drip collection sump below each shaft seal. Provide a 1/4 HP centrifugal discharge pump at each sump. Pumps shall be float switch activated and shall discharge overboard just below the guard strake. Install a high level alarm in each sump.

Contractor shall provide and install all necessary ancillary materials and equipment, including but not limited to all foundations, fasteners, fittings, packing, lubricants, hoses, etc. for a complete and operational system.

243.3 Shaft Guards

Contractor shall provide and install shaft protective guards constructed of 2" × 2" × 1/4" angle frames and 1/4" aluminum diamond plate. ***Guards shall be attached to framing with 3/8" diameter stainless steel machine screws.*** Angle frames shall be drilled and tapped.

Rubber isolation material 1/8" thick shall be installed between angle and aluminum plating.

Hinged covers shall be installed in way of bearings and other equipment requiring periodic maintenance. Hinges shall be stainless steel.

252 Propulsion Control System

252.1 Main Engine Controls

Provide and install ***electronic three (3)*** station engine control system for each main engine ***from EMI, Mathers, Sperry or equal manufacturer.***

252.2 Bow Thruster Controls

Contractor shall provide and install electronic three (3) station control system for the bow thruster from EMI, Mathers or equal manufacturer. Controls shall be located at the Pilothouse forward console, at the aft control station and EOS console. Installation shall consist of all wiring, foundations, hardware, etc. for a complete operational system to control thruster direction and power.

256 Engine Cooling

256.1 Main Engine and Ship's Service Generator Cooling

The cooling system for the main engines, reduction gears, thruster engine and ship's service generator engines shall be per Reference 2.1.

Jacket water piping shall include USCG-approved flexible connections to accommodate engine motions and thermal expansions, valves to minimize coolant loss when servicing the heat exchangers and instrumentation as required for monitoring and diagnosis, including jacket water temperature. Any high points in the jacket water system shall have valved vents. Provide an engine manufacturer-approved corrosion inhibiting antifreeze for all engines in sufficient concentration to protect against freezing.

All temperature sensors and level switches shall include hardware and signal conditioning devices for interfacing with the machinery monitoring and control system (see Section 436.2).

See Section 437 for tank level indication requirements.

256.2 Emergency Generator Cooling

The emergency generator shall be radiator cooled with attached jacket water pump, thermostat valve, belt driven radiator fan, and radiator. Provide a corrosion inhibiting antifreeze in sufficient concentration to protect against freezing.

The radiator fan shall ventilate the emergency generator room and the radiator air discharge shall be fit with a flexible connection to the outside.

259 Engine Exhaust Piping

Contractor shall provide and install complete exhaust system for all diesel engines as shown on Reference 2.2.

Hull penetrations shall be seamless Sch. 80, 316 stainless steel pipe. USCG-approved bulkhead penetrations shall be used where exhaust piping penetrates engine room bulkheads.

Install a ***stainless steel*** expanded metal safety guard around the portion of the emergency generator exhaust piping, which is located above the deckhouse top.

Insulation shall not be installed until systems have been tested to the USCG and Owner's satisfaction. Each system shall be insulated from the engine outlet flange to the weather connection.

Install crankcase vents with flame screens, if recommended by the engine manufacturer, to weather. Emergency generator crankcase vent (if required) shall terminate with a 180° gooseneck above the Deckhouse top.

Cowl silencers shall be installed on this vessel.

261 Fuel Oil System

Provide and install a complete fuel oil piping system to all diesel engines to consist of necessary supply lines, return lines, manifolds, ball valves, and all associated fasteners, fittings, etc. in accordance with Reference 2.3, 46CFR 56.50-75, and other applicable CFR sections.

Fuel tank shut-off valves shall be so arranged with stainless steel deck fittings as manufactured by ***Stow Manufacturing Company, p/n 18389-612***, remote reach rods, valve connections, etc. to provide a station outside the Tank Room for closing the fuel supply. ***Deck sockets shall be located near main deck islands away from car lanes.***

See Specification Section 437 for tank level indication requirements.

Fuel oil tanks shall **not** be connected to the dirty oil system.

264 Lubricating Oil Systems

Provide a gear and engine lubricating oil system per Reference 2.4 for transfer of oil from the lubricating oil tanks to the main engines and generators.

Provide a dirty oil transfer system per Reference 2.4 for evacuating the main engine and generator oil to the dirty oil tank and for pump out of the dirty oil tank to the discharge station.

Provide pressure switches and/or transducers for alarms and automatic shutdown as described in Section 436 and as required by USCG.

Provide lubricating oil for initial start-up, tests and trials. All engines shall have lubricating oil levels at recommended maximums at time of delivery to Owner. Lube oil tanks shall be filled with Owner-approved oils at the time of delivery to the Owner.

Engine motions and thermal expansions shall be accommodated by USCG-approved flexible connections.

GROUP 3 ELECTRICAL

References

3.1 07069-001-101-1, Profiles and Deck Arrangements

3.2 07069-001-200-1, Engine Room & Tank Room Arrangement

3.3 07069-001-320-1, Electrical One-Line Diagram

3.4 07069-001-063-1, Electrical Load Analysis

3.5 07069-001-330-1, Lighting Plan

Addendums

300 Electrical System – General

The Contractor shall provide a complete electrical system, including wiring and equipment, as described in these Specifications.

All equipment, materials and workmanship shall fully comply with the following electrical standards:

- 46CFR Subchapter J, Electrical Engineering
- ABS Rules for Vessels Under 90 Meters

The electrical system shall be supplied with equipment quantities and ratings per Reference 3.3 and this Specification.

301 Electrical Equipment Arrangement

In general, equipment shall be located per References 3.1 and 3.2.

Each connection box in a damp or wet location shall be watertight, with terminal or stuffing tubes for cable entrance and external mounting feet. Each watertight connection box shall be mounted by the external mounting feet.

All electrical components installed in locations exposed to the weather shall be 316 stainless steel or bronze, as approved by the Owner.

302 Electrical Motors & Associated Equipment

302.1 General

Motors and controllers shall be supplied to suit the requirements of each application. Particular care shall be exercised in the selection of AC motors to ensure that each motor is not too large for the service intended, thereby avoiding the low power factor inherent in under loaded induction motors.

302.2 Motors

Unless otherwise specified, motors rated 2 HP or larger shall be AC squirrel cage, induction type, designed for 208 VAC, 3-phase, 60 Hz, continuous duty, with class B or F insulation. Motors of less than 2 HP rating shall be designed for operation on 115/208 VAC single phase or 208 VAC three phase. ***All motors in machinery spaces shall be rated for 50 degree Centigrade***.

Electric motors installed in the engine room, open decks, or otherwise exposed to weather shall be marine waterproof type; all other motors shall be TEFC and in accordance with all requirements of IEEE STD 45 (latest issue). Fan motors installed in ventilating trunks shall be TEAO type construction, with multi-speed windings if specified.

Except as otherwise specified, all integral horsepower motors shall have horsepower, speed, and torque characteristics that will best suit the intended application. All ratings shall be continuous duty unless the application definitely permits an intermittent duty rating.

Bearings shall be of the readily renewable anti-friction (ball or roller) type. Bearing housings shall be equipped with pressure and relief fittings for grease lubrication, and all such fittings shall be of a uniform type. Pressure fittings shall be located to facilitate lubrication. If necessary, they shall be extended to an accessible location with suitable piping to the Owner's satisfaction. In lieu of provided fittings, anti-friction bearings may be of pre-lubricated "sealed-for-life" type, provided that the lubricant is of a type guaranteed not to deteriorate during the guaranteed full life of the bearings, and that the seals and housings are of such design as will prevent entry of contaminants and/or loss of lubricant.

302.3 Motor Controllers

Each motor controller and protective device shall be suitable for a marine application and constructed in accordance with IEEE STD 45, and shall meet Article 430 of the National Electrical Code and UL 508, including the Marine Supplement.

The complete starter shall be housed in a marine type, corrosion resistant, self-ventilating, drip proof enclosure type SDW-21 as manufactured by Square D, suitable for bulkhead mounting where practicable. Control circuit voltage shall not exceed 120 volts (single phase).

All starters and control components shall be capable of satisfactory operation when inclined as much as 30 degrees in any direction.

Motor overload protection shall be provided by thermal overloads (melting alloy unless otherwise specified) in the motor controller. Motor overloads shall be sized in accordance with motor nameplate data and controller manufacturer's guidelines.

Integral horsepower motor controllers for motors requiring remote operators and/or pressure switches shall be of the combination type with local pushbutton operators and an external reset button mounted in the controller door. Controllers shall have LVP and a green run indication light mounted in the door unless otherwise specified.

Integral horsepower motor controllers for motors less than or equal to 10 HP which do not require remote and/or pilot operators shall be manual, across the line type, with pushbutton operators mounted in the controller face. Unless otherwise specified, all manual starters shall have low voltage protection (LVP), a run indication light, mechanism lock-off and shall be NEMA size 1 (M-1).

Reduced voltage starters shall be provided for motors of 20 horsepower or larger.

Manual starting switches may be used for all fractional horsepower motors, single phase or three phase. These switches shall have a "quick-make-break" mechanism and shall provide thermal overload protection to the motors, except where such protection is built into the motors. These switches shall be installed in waterproof corrosion resistant housings.

Each motor controller hinged door shall have door positioners and stops. Equipment mounted on a hinged door shall be constructed or shielded so that no electrically live part of the door mounted equipment is exposed to accidental contact by a person when the controller is open and the circuit energized.

Controllers for multi-speed motors shall include properly labeled speed indicating lights.

A complete wiring diagram, specific to the application, of each controller shall be attached to the inside surface of the control cabinet door and protected by a heat resistant transparent protective covering.

Each controller shall be provided with the necessary circuits and auxiliary contacts for energizing indicating lights, alarms, and illuminated push buttons as required. All field wiring shall terminate at terminal blocks.

Automatic controls shall have provisions for manual over-ride control through the use of 3-position switches, which can be set to "HAND", "OFF", or "AUTO" (HOA). The 3-position switch shall have spring return to "OFF" from "HAND". A blue automatic mode light and a green run indicating light shall be provided on any HOA motor controller.

All compressor, potable water pump, priming pump, etc., drive motors shall be interlocked as required for safety in the affected auxiliary system.

302.4 Pushbutton Stations

Starters shall be installed as conveniently near their respective motors as possible. If a starter must be installed at a point from which the motor served is not visible, separately mounted start-stop push-buttons shall be installed near the motor, in addition to those at the starter. These push-buttons shall be in waterproof bronze enclosures.

An emergency stop station with run indication shall be located on the open Main Deck outside of the Engine Room access. The station shall have a means to stop all main ventilation fans, fuel oil service and transfer pumps.

304 Cabling – General

Cables shall be selected and sized per ABS and USCG rules and shall meet the recommendations of IEEE STD 45. 208/120 VAC cables shall be rated for 600 VAC. The minimum size of conductors for power and lighting cables shall be #14 AWG.

All electrical power, lighting and low voltage control cables in interior areas and protected exterior areas shall be low smoke cable. Plenum-rated cabling may be used for specialty data and communications cabling.

All electrical communications and data cable in interior areas and protected exterior areas shall comply with UL 1581.

Voltage drop for motor and lighting circuits shall not exceed 5% from the switchboard to the last load in a branch. Cable sizes shown in the Reference 3.3 are estimates; the Contractor shall upgrade cables as necessary to meet voltage drop criteria based on the actual cable lengths. The Contractor shall also take and provide the actual voltages (under full load) at the load end for the longest run of each cable size to verify that voltage drops are not exceeded. Particular care shall be exercised for lighting circuits with multiple branches.

All electrical cable to deck mounted equipment and controls exposed on deck shall be adequately guarded for the full run from deck to terminal box with pipe or other substantial protection. Kick-pipes shall be arranged to permit movement of the deck relative to the terminal box.

Cable in crew's spaces shall be concealed. Where bulkhead construction makes concealment impractical, the wiring shall be neatly formed and installed on the surface, giving particular attention to appearance.

Cables are to be installed in the interior of the hull or superstructure insofar as possible. Where fixtures and equipment are fitted on exterior surfaces of the vessel, cable shall be run in 316 stainless steel pipe screwed directly into the light fixture, junction box, receptacle, shore power box, fan housing, sound powered telephone, etc. Stainless steel unions, type 316, shall be provided as close as practical to each fixture to facilitate easy removal.

Where cables are run to fixtures which are designed to be adjustable (such as spot lights; flood lights, and public address system speakers), stainless steel pipe shall terminate as close as possible to the fixture and a watertight simplex receptacle equal to Pauluhn #2632 shall be provided. Short lengths of heavy duty "SO" Cord shall be provided with watertight plugs equal to Pauluhn #420-P from each fixture to the receptacle. All fasteners used to attach fixtures or equipment to the vessel shall be stainless steel.

305 Equipment Label Plates

Labeling requirements for specific equipment/components are included in the following Specification sections.

Any equipment with multiple power sources shall be labeled with a warning placard (white letters on a red background); "WARNING – MULTIPLE POWER SOURCES" and include the circuit designations of all power sources.

Cable tags:

- All electrical cables shall be tagged with embossed aluminum tags on each side of a penetration, into and out of junction/connection boxes and/or equipment. The unique circuit designation, keyed to the various electrical plans, shall be embossed on the tag.
- All control wiring within control panels and consoles shall be identified with floaters.
- 311 Ship's Service Generators

The two ship service generators will be Owner-furnished; a copy of the purchase order is appended to the Specification. ***Owner furnished 150 kW USCG-approved marine type shall be installed in the machinery space.***

Generators shall not be arranged for parallel operation. Controls and control power for each generator shall be independent such that the loss of any control device, signal or power source will not affect more than one generator set.

The generators shall be located as shown on Reference 3.2.

Provide flexible hose of suitable length and all necessary fittings and valves to facilitate easy engine oil change. Installation shall be approved by engine manufacturer and the Owner.

All external moving or hot parts of engines and generators shall be provided with suitable guards to prevent personal injury. Turbocharger housing shall be insulated with removable thermal blanket.

Provide and install manufacturer-approved spring vibration isolators between foundations and generator mounting rails.

Contractor shall provide and install all necessary ancillary materials and equipment, including but not limited to all foundations, fasteners, wiring, piping, hoses, fittings, hardware, etc. for a complete and operational system.

312 Emergency Generator

The emergency generator shall be Owner-furnished 99 kW. Generator engine shall be USCG-approved marine type, arranged for 24 VDC electric auto-start and radiator cooling.

An emergency generator fuel oil tank shall be provided in the emergency generator compartment. The fuel oil tank shall be provided with a high level switch which shall shut down the fuel oil transfer pump. The fuel tank shall be sized to supply the emergency generator for a minimum of 12 hours at full load.

Contractor shall provide and install all necessary ancillary materials and equipment, including but not limited to all foundations, fasteners, wiring, piping, hoses, fittings, hardware, etc. for complete and operational system.

313 Batteries and Battery Chargers

Battery and charger installations shall comply with 46CFR115 (moderate battery installations) and ABS Sections 4-6-3/3.7, 4-6-4/5, and 4-6-4/7.19.

All batteries are to be Absorbed Glass Matt (AGM) construction, sealed valve regulated, 12-volt, group 27 deep-cycle wired in series/parallel as required.

Battery connections shall be pressure type lugs. Battery cables shall be end sealed to prevent electrolyte entrance by creepage or spray. Each battery bank shall be contained in a battery box located adjacent to the served unit and securely mounted in a foundation to the Owner's satisfaction.

Battery chargers shall not be installed directly over the batteries.

Batteries and battery chargers shall be provided as follows:

313.1 Temporary Emergency Power (TEP) System

- ***One 24 VDC deep-cycle battery bank. The battery bank will consist of two (2) 12 volt batteries, one (1) NewMar model 24-4800IC inverter/chargers (4800 W, 24 VDC).*** Installation shall include a DC Energy Monitor (DCE) and remote control panel (ICR-2) mounted at each control station (Pilothouse, aft Wheelhouse and EOS).

313.2 Ship's Service Generator Engine Starting

- Two 24 VDC battery banks each of sufficient capacity for starting generator engines per manufacturer's recommendations and ABS Rules. Battery banks shall be provided with approved rotary type switch of proper capacity and shall be cross connected in such a manner as to be capable of starting either generator engine from either battery bank. Battery switch unit shall be arranged with a center off position and as shown on plans.
- One NewMar model PT-24-40 (24 VDC, 40 A, 3-bank, 3-step) battery charger with Phase Three Monitor/Control Unit.

313.3 Emergency Generator Engine Starting

- One 24 VDC battery bank of sufficient capacity for starting generator engine per manufacturer's recommendations and ABS Rules.
- One NewMar model PT-24-40 (24 VDC, 40 A, 3-bank, 3-step) battery charger with Phase Three Monitor/Control Unit.

Contractor shall provide and install all necessary ancillary materials and equipment, including but not limited to all foundations, battery boxes, cables of sufficient size to supply required amperage to all starters, solder type battery lugs, circuit breakers of proper size and type, wiring, hangers, etc. for a complete and operational system.

321 Ship Service System

Power distribution shall be provided per References 3.3 and 3.4.

324 Switchgear/Switchboards

The ship's service switchboard shall provide for the control and protection of the ship's service generators, ground detection, connection to the emergency switchboard and shore power, and distribution of 3-phase, 4-wire, 208/120 VAC electrical power to ship's service loads.

The emergency switchboard shall provide for the control and protection of the emergency generator, ground detection, connection to the ship's service switchboard, automatic starting and transfer to the emergency generator, and distribution of 3-phase/4-wire, 208/120 VAC electrical power to emergency loads.

Circuit breakers shall be “Square D” marine or equal. Circuit breakers shall be the same manufacturer as the panelboards.

326 Panels/Panelboards

Panelboards shall be dead front, circuit breaker type. Lighting and power panelboards shall be provided with at least one spare switching unit, complete and installed but not used, for every ten active units or fraction thereof installed.

Each panelboard door shall be provided with a combination catch and lock. Locks shall be keyed alike. Catch and lock shall be flush on the panels located in public areas.

Circuit breakers used in panelboards shall be "Square D" commercial marine (or Owner-approved equal). All panelboards shall be of the same manufacturer.

208Y/120 VAC Power Panels:

- Panels shall be 3-phase, 4-wire, with bolt-on style circuit breakers.
- Panels shall be Main Lug Only (MLO), fully rated, with all copper current carrying parts and 20" wide cabinets.
- Circuit breakers for 120 VAC shall be double pole with switched neutral. Circuit breakers for 208 VAC circuits shall be two pole (single phase) or three poles (three phase).

327 DC Systems/Loads

12 VDC and 24 VDC systems shall be provided per Reference 3.3 and Section 313. Systems shall include batteries, cabling, disconnects, panels, breakers, inverters, chargers, transfer switches, power supplies, and monitoring devices.

Where loads are supplied from a 120 VAC panel and require 12 or 24 VDC, a NewMar Heavy Duty Series power supply will be utilized and located as close as possible to the load except for emergency power to Pilothouse, which shall be located in the machinery space.

328 Wireways

328.1 General

All wireways and cable installations shall be in accordance with IEEE STD 45 recommendations.

Cable wireways shall be segregated into two individual systems: power/lighting and low voltage (including data and communications). Electrical systems shall maintain a minimum of 6" separation in wireways and MCT's and shall cross at right angles to each other. Wireway hangers shall be color coded: red for power/lighting, and blue for low voltage, data, and communications.

All cable hanger material shall be steel with a corrosion resistant finish. Painting is acceptable as a corrosion resistant finish for interior hanger material. Bolts, nuts, and washers for use with painted hanger material shall be stainless steel.

Exterior hanger material and studs shall be stainless steel with stainless steel, brass or bronze nuts, bolts, and washers.

Each weld area at hangers and/or studs shall be wire brushed and coated immediately after welding and before the installation or any cables.

All electrical cable shall be banded to the wireway downcomers with stainless steel banding.

328.2 Wireway Penetrations

Openings in decks or platforms for the purpose of cable penetrations which do not require stuffing tubes or kickpipe protection shall have a collar continuously welded around the edge of the opening. This requirement particularly applies to cable openings in switchboard platforms and other deck structures where watertight integrity is not otherwise required.

Cable penetrations through bulkheads and decks, both watertight and non-watertight, shall comply with regulatory body requirements. Multi-cable, transit type penetrations may be substituted for stuffing tubes for all penetrations. Kickpipes shall be 9" high to the top of the stuffing tube. Built-in

watertight boxes may be used in lieu of kickpipes. Transits using poured sealers or putty type packing shall not be used.

Multi-cable, transit type penetrations shall maintain segregation of power/lighting circuits and low voltage/data/communication circuits. The two different types of circuits shall not share the same multi-cable penetration.

Penetrations of fire rated structure shall utilize fire stops which maintain the fire protection level (Grade A, Grade B, etc.) associated with the fire zone penetrated.

329 Receptacles, Junction Boxes, & Misc. Distribution Devices

329.1 House/General Receptacles

Duplex receptacles, 20 A, 2 pole, 3 wire (U-ground) shall be furnished and installed throughout the vessel for maintenance and house services.

329.2 Shore Power Receptacles

Two shore power receptacles shall be provided and located per Reference 3.1. The shore power circuit breakers and generator circuit breakers shall be interlocked such that the shore power breaker cannot be closed at the same time as any of the generator circuit breakers.

The shore connection box/locker shall have a white ***Power Available*** indicator lamp which shall be energized via an auxiliary switch on the shore power circuit breaker deriving power from the load side of the breaker. An engraved phenolic placard with complete operating instructions shall be provided describing the operation of connection to shore power.

Shore power shall be monitored for loss of phase/improper phase rotation via a relay that shall trip the shore power circuit breaker via a 24 VDC shunt trip. Tripping of the relay shall be indicated by a red indicator in the vicinity of the shore power circuit breaker on the ships service switchboard.

329.3 Junction/Connection Boxes

Each junction/connection box in a damp or wet location shall be watertight, terminal, or stuffing tubes for cable entrance and have external mounting feet. Each watertight connection box shall be mounted on external mounting feet.

Watertight brass junction boxes shall have gaskets, etc. as needed.

All junction boxes shall be identified with phenolic tags, black with white lettering, which correspond with the unique circuit designation keyed to the various electrical plans.

330 Lighting Systems

Interior and exterior lighting fixtures shall be Pahluhn or Owner-approved equal as shown on Reference 3.5. The Contractor shall prepare and submit a list of all lighting fixtures and control devices for approval by the Owner prior to purchasing any items. Interior lighting may be Pauluhn #FAS217 aluminum housing with polyester powder coated finish. Exterior lighting shall be FSS217 stainless steel housing.

Contractor shall provide and install all necessary ancillary materials and equipment, including but not limited to foundations, junction boxes, switches, cabling, hangers, etc. for a complete and operational system.

GROUP 4 NAVIGATION, COMMUNICATIONS and ELECTRONICS

References

4.1 07069-001-551-1, Compressed Air Piping Schematic

4.2 NC DOT List of Required Electronic Equipment

400 Navigation and Communications

Electronic systems shall be in accordance with the applicable regulations of the FCC (47 CFR Part 80), 46 CFR Subchapter H, and ABS Rules. Installation and testing of equipment shall be supervised by the equipment manufacturer's representative. All antennae shall be installed to avoid interference with each other and provide maximum clear reception.

The Contractor shall be responsible for accomplishing FCC inspection and obtaining certification. The systems shall be considered complete only when the FCC inspection and certification has been accomplished. The Contractor may need to apply for a temporary FCC license to get the vessel to North Carolina. The Ferry Division will assist the Contractor, as needed, to secure this license.

The Contractor shall fabricate full-size mockups of the pilothouse consoles and aft control station console (the EOS console is addressed in Section 663). Mockups shall include all controls, switches, gages, screens, electronic components, etc. so that the Owner can review and make adjustments required to NC DOT satisfaction. ***Once the Owner has approved the console arrangements, consoles shall be manufactured by high quality metal console manufacturer approved by Owner.***

Pilothouse Console

The following items are to be installed in the Pilothouse main control console:

1. ***Steering system controls, one (1) Full follow-up control lever and one (1) non-follow-up***
2. ***Engine Throttles***
3. ***Bow Thruster Throttle***
4. ***Main Engine Gauge Panel (2)***
5. ***Bow Thruster Gauge Panel***
6. ***Navigation Light Panel***
7. ***Alarm Panel***
8. ***Magnetic 6" Compass***
9. ***General Alarm Contact***
10. ***Sound Powered Phone***

11. Searchlight Controls (2)

12. Window Defroster Controls

13. Window Wiper Controls (5)

14. Depth Sounder Display

15. Starting Air Pressure Display (electric)

16. Radars (2 overhead)

17. Shaft Tachometers (2 overhead)

18. Air Horn Pull (overhead)

19. VHF Radios (2 overhead)

20. Vessel Loudhailer/Interior Communication Controls (overhead)

21. Fire Alarm Panel

22. GPS Display

23. Electronic Compass

24. Floodlights and Rescue Boat Light Switches

25. Remote Fire Pump Start

26. Remote Sprinkler Start

27. Remote Ventilation Shutdown

28. Electronic Chart Display

Pilothouse Aft Console

The following items are to be installed in the Pilothouse aft control console:

1. Steering system control, one (1) non-follow-up lever

2. Engine Throttles (2)

3. Bow Thruster Throttle

4. Main Engine Tachometers (2)

5. Shaft Tachometers (2)

6. Bow Thruster Engine Tachometer

7. Alarm Panel

8. General Alarm Contact

9. Sound Powered Phone

10. Searchlight Control

11. Window Defogger Control

12. Window Wiper Control

13. Vessel Loudhailer/Interior Communication Control

EOS Console

The following items are to be installed in the EOS console:

1. ***Steering System Control, one (1) non-follow-up***
2. ***Engine Throttles (2)***
3. ***Main Engine Gauge Panel***
4. ***Bow Thruster Gauge Panel***
5. ***Alarm Panel (main)***
6. ***General Alarm Bell***
7. ***Sound Powered Phone***
8. ***Starting Air Pressure Display (electric)***
9. ***Vessel Loudhailer/Interior Communication Talk-Back Speaker***
10. ***Fire Alarm Panel***

421 Non-Electrical Navigation Equipment

Magnetic Compass

Primary helm station shall be fitted with one 6" binnacle-mounted magnetic compass suitable for steel-hulled vessels, (C Plath, Sperry, or approved equal). Built-in compensators and illumination shall be contractor furnished and installed.

Ship's Bell

Pilothouse shall be fitted with a 12" brass bell per USCG regulations. Bell shall have the ship's name and year built engraved, and include mounting bracket affixed to a varnished mahogany or teak plaque. The bell location shall be approved by the Owner.

Inclinometer

Pilothouse shall be fitted with an inclinometer with dual glass tube scales: 5-0-5 and 15-0-15. Location shall be approved by the Owner.

Whistle/Air Horn

Pilothouse shall be fitted with one Kalenberg D-2 polished brass air-horn with white signal light as shown on Reference 4.1. System shall include bronze whistle pulls, operating valves, air strainer, and moisture separator.

Bronze whistle pulls and solenoid/manual valves shall be installed as directed by the Owner to allow easy access by the operator from each control console. Air strainer shall be mounted inside Pilothouse console and drain piped to weather. ***A 30 gallon air receiver fitted with relief valve, air pressure regulator and remote air gage in pilothouse console, shall be located in the Pilothouse void area to supply adequate volume of air to the air horn.***

Contractor shall provide and install all necessary ancillary materials and equipment, including but not limited to all foundations, metal grounds for whistle pulls, air supply piping from Engine Room to Pilothouse, cables, pulleys, wiring, fasteners, tubing, fittings, etc. for a complete and operational system.

422 Navigation/Search/Flood Lights

422.1 Navigation Lights

Provide and install navigation lights to comply with IMO COLREG requirements. ***Masthead, stern, and sidelight fixtures shall be dual-lens of cast brass construction.*** Navigation light fixtures shall be cast bronze and complete with lamps; all fixtures shall utilize the same lamp.

Provide and install navigation lighting panel with label plates so that all the lights can be controlled from the Pilothouse. Each circuit shall be supervised with light and buzzer alarm and silence button.

Contractor shall provide two (2) spare navigation light lamps and manufacturer's recommended spare parts for the navigation light panel.

422.2 Search/Flood Lights

Provide and install three 1000 watt, 12", halogen searchlights with non-vented drum, two on the Pilothouse top and one on the Aft Control Station top as directed by the Owner, with electrical remote operation from each Pilothouse station. Searchlights shall be Carlisle & Finch model 125BC-2 (remote electric control) or equal, with indoor joystick controller #C8160, outdoor joystick controller #C1E5, and medium pre-focus lamp holder with vibration dampening base to use lamp #BTP.

Provide and install ***three (3)*** 500 watt, cast bronze, medium flood, quartz halogen, flood lights (Pauluhn model 746BQMR-GRD-HDL), ***one at each life raft launch station and one for rescue boat launching. Flood lights will be switched on the Pilothouse console, powered from emergency lighting panelboard,*** and include a wire lens guard, handle, and clamp.

Provide and install four 500 watt, cast bronze, medium flood, quartz halogen flood lights (Pauluhn model 746BQMR), two at each end of the vessel mounted on the Passenger Deck overhang and overlooking the vehicle loading zone. All flood lights shall be switched at the main Pilothouse console. Provide and install four 300 watt, stainless steel, quartz halogen, floodlights (Pauluhn model QS1603, two at each side of the vessel mounted on the Passenger Deck for security lighting when in port. Each pair of lights shall be separately switched in the Pilothouse.

423 Electronic Navigation Equipment

Required electronic equipment is provided in Reference 4.2. The Contractor shall furnish and install all specified equipment in accordance with manufacturer's instructions and in locations as directed by the Owner.

429 Environmental Monitoring Systems

Thermometer

Pilothouse shall be fitted with a polished brass ***6" diameter face***, marine grade thermometer with radiation shield on external sensor.

Barometer

Pilothouse shall be fitted with a polished brass, marine grade barometer to match thermometer.

Clock

Pilothouse shall be fitted with a polished brass, marine grade electric powered clock to match barometer.

Wind Instruments

Pilothouse shall be fitted with ***one*** wind speed/direction sensor ***mounted on the Pilothouse mast, and one display unit mounted at the Pilothouse console area.***

433 Interior Communications

An integrated Interior Communications System (ICS) shall be furnished and installed by the Builder with owner approval of vendor and installation location.

The system shall integrate the telephone, public address (to include automated announcements, public and non-public zones), paging, talkback, loudhailer, elevator intercom, and alarm annunciation. Telephone stations shall be required in the wheelhouse and aft control station.

The system shall include an uninterruptible power supply (UPS); duplicate tone generators and redundant controls; speaker placement, wiring and zoning; as required to comply with USCG requirements for public address, talkback, fire, and general alarm systems.

436 Alarm Systems

436.1 Fire Detection System

Provide and install a fire detection system as required to comply with USCG requirements. The main alarm panel shall be mounted in the Pilothouse as directed by the Owner. A remote alarm panel shall be mounted in the EOS.

The fire detection/monitoring system will provide the following functions (automatic and Pilothouse manual control):

- Heat detection
- Smoke detection
- Sprinkler system monitoring
- Main ventilation system shutdown
- Detection of CO_2 system activation
- Watertight door closure status
- Alarm activation (interface with Interior Communications System)

Main Ventilation Shutdown:

- Provide, install and terminate all cable required for the automatic shutdown of the main HVAC system fans.
- Provide, install and terminate all cable required for the automatic closure of motorized fire dampers if required.

436.2 Machinery Monitoring & Alarm System (MMAS)

Provide and install an integrated machinery monitoring and alarm system. The system shall include level sensors, signal conditioning between all sensors and the system, control and display units, and interface with the ICS for ship-wide alarms (if required). ***Local and remote indication and alarm functions shall be provided for all tank and bilge levels, engines, generators, WT doors, and other auxiliary and electrical equipment as required by USCG.***

Installation shall consist of the following minimum components:

Engineer's Control Console

One main alarm and monitoring panel complete with "POWER ON" light, LED display, test/silence push buttons and internal horn. System shall be configured to monitor the following active alarm points:

- ***Starboard main engine low oil pressure***
- ***Starboard main engine high cooling temperature***
- ***Starboard main engine low cooling water level***
- ***Starboard main engine high oil temperature***
- ***Starboard main engine overspeed***
- ***Stbd. main red. gear low oil pressure***
- ***Stbd. main red. gear high water temperature***
- ***Stbd. main red. gear low cooling water level***
- ***Port main engine low oil pressure***
- ***Port main engine high cooling temperature***
- ***Port main engine low cooling water level***
- ***Port main engine high oil temperature***
- ***Port main engine overspeed***
- ***Starboard generator engine low oil pressure***
- ***Starboard generator engine high cooling temperature***
- ***Starboard generator engine low cooling level***
- ***Starboard generator engine high oil temperature***
- ***Port main red. gear low oil pressure***
- ***Port main red. gear high water temperature***
- ***Port main red. gear low cooling water level***
- ***Starboard generator engine overspeed***
- ***Port generator engine low oil pressure***
- ***Port generator engine high cooling temperature***
- ***Port generator engine low cooling level***
- ***Port generator engine high oil temperature***
- ***Port generator engine overspeed***
- ***Emergency generator engine low oil pressure***
- ***Emergency generator engine high cooling temperature***

- ***Emergency generator engine high oil temperature***
- ***Emergency generator overspeed***
- ***Main Engine throttle 24 VDC power***
- ***Starting air pressure low***
- ***MSD high level***
- ***Bilge high level***
- ***General alarm system power failure***
- ***Steering gear power failure***
- ***Steering gear low oil pressure***
- ***Steering gear low oil level***
- ***Control 24 VDC power failure***
- ***Watertight door open***
- ***Elevator power failure***
- ***Alarm system power failure***
- ***Shaft Flushing water pressure low***
- ***Spare***
- ***Spare***
- ***Spare***
- ***Spare***

Pilothouse Console and Aft Control Station Console

Provide two (2) remote alarm and monitoring panels, complete with "POWER ON" light, test/silence push buttons, LED display, internal horn and dimmer control.

Pilothouse and aft control stations shall be configured to monitor the following active alarm points:

- ***Emergency generator engine low oil pressure***
- ***Emergency generator engine high water temperature***
- ***Emergency generator engine overspeed***
- ***Watertight door open***
- ***Bilge alarms***
- ***Steering gear power failure***
- ***Steering gear low oil pressure***
- ***Steering gear low oil level***

- ***Elevator power failure***
- ***Control 24 VDC power failure***
- ***Starting air pressure low***
- ***Alarm system power failure***
- ***Spare***
- ***Spare***
- ***Spare***
- ***Spare***

Install one 24 VDC operated electric horn and one 24 VDC rotating beacon with blue transparent hood. Beacon and horn shall be installed to operate simultaneously with local alarm horn in engineer's console and be secured by silence button in alarm panel.

Main Deck

Install on main deck superstructure at frame 62 one 24 VDC operated electric horn, for alarm notification.

General Requirements

Each panel shall be sized for spare places for future growth in alarm points (both analog and digital).

Contractor shall provide and install all necessary ancillary materials and equipment, including but not limited to all foundations, enclosures, wiring, fasteners, relays (for systems interface), all switches (ungrounded, normally closed in the normal operating condition) for A/C cooling water and watertight door positions (alarm in open position), hangers, watertight bulkhead and deck penetrations, etc. for a complete and operational system.

Provide and store on board vessel as directed by Owner, one set of manufacturer recommended spares for each panel installed and three sets of manuals for each panel.

Contractor shall provide the services of a manufacturer factory representative to verify the installation of all alarm system components and perform initial start up test and procedures.

System shall interface with the interior communications system (Section 433) as required for alarm annunciation.

437 Tank Level Indication

Unless otherwise indicated, all level transmitters shall interface with the Machinery Monitoring and Alarm System (MMAS) for remote tank level indication (TLI), alarms, and pump control when required.

The cooling water expansion tanks shall each have a level indicator and a level transmitter interface with the MMAS. The emergency generator fuel tank shall have a level indicator and a level transmitter interface with the MMAS. The black water and gray water tanks shall have an ultrasonic non-contact type tank level transmitter with input to the MMAS. Remote TLI shall be provided at the EOS and next to the black water pump controllers. The level transmitter (or MMAS) shall provide input to the black and gray water pump controllers for pump actuation.

441 Radio Systems

441.1 VHF Radio System

Required radio equipment is provided in Reference 4.2. The Contractor shall furnish and install all specified equipment in accordance with manufacturer's instructions and in locations as directed by the Owner.

441.2 AIS System

Not Applicable

NC DOT LIST OF REQUIRED ELECTRONIC EQUIPMENT

EQUIPMENT	MAKE	MODEL	DETAILS	NOTES
RADIOS	Furuno	FM3000	12vDC/25w DSC	
RADARS	Furuno	FAR2117 FAR2137S/12	12KW with 8' open array 30KW with 12' open array	To be connected to gps/chart overlay To be connected to gps/chart overlay
RADAR DISPLAYS	Furuno	MU231CR	21"-23" marine LCD or equivalent	SXGA video
SOUNDER	Furuno	LS6100		Bronze reducer with temp/thru hull
GPS	Furuno	GP1850WD	with chartcard	
ELECTRONIC COMPASS	Furuno	SC50	electronic compass	Available outputs for autopilot, radar (chart overlay)

NOTE: All electronics will be interfaced with the radar to provide information on the flat panel radar screen or each individual device as required by the Department. A Department furnished laptop computer will also be installed on the console for electronic chart maps.

GROUP 5 MECHANICAL SYSTEMS

References

5.1 07069-100-101-1, Profiles and Deck Arrangements
5.2 07069-100-200-1, Engine Room and Tank Room Arrangement
5.3 07069-100-264-1, Lube & Dirty Oil Schematic
5.4 07069-100-506-1, Fills, Vents and Sounds Piping Schematic
5.5 07069-100-521-1, Fire Main Piping Schematic
5.6 07069-100-522-1, Sprinkler Piping Schematic
5.7 07069-100-522-2, Sprinkler Piping Arrangement & Details
5.8 07069-100-526-1, Weather Deck Drains
5.9 07069-100-528-1, Sanitary Drains/Sewage Treatment System Schematic
5.10 07069-100-529-1, Bilge & Oily Water System Piping Schematic
5.11 07069-100-533-1, Potable Water Piping Schematic
5.12 07069-100-551-1, Compressed Air Piping Schematic
5.13 07069-100-150-1, Superstructure and Pilothouse Structure
5.14 07069-100-256-1, Engine Cooling Piping Schematic
5.15 07069-100-514-1, HVAC Calculations
5.16 07069-001-130-1, Main and Lower Deck Plating and Framing
5.17 07069-001-600-1, Bulwark Arrangements

5.18 07069-001-562-1, Rudder Arrangement and Detail

500 Auxiliary Systems - General

Mechanical and Piping Standards:

- ASTM F-1155-88 Standard Practice for Selection and Application for Piping System Materials. Commercial Ship Design and Construction. Malleable iron fittings ASTM 195 are acceptable as indicated on the plans.
- ASTM Standard Section 1 Iron and Steel Products, Volume 01.07 Shipbuilding.
- CFR 46Subchapter F, Marine Engineering.
- ASHRAE Ventilation Standards.

Except as otherwise described in these Specifications or drawings referenced by these Specifications, piping materials shall be in accordance with ASTM Standard F1155, Standard Practice for Selection and Application of Piping System Materials.

Interiors of all piping systems shall be cleaned by high velocity flushing or other Owner-approved method to a degree suitable to their service. Particular care shall be exercised for fuel, lubricating oil, compressed air, hydraulic, and potable water piping, which shall be cleaned to a degree that when the flushing medium is passed through a temporary filter, no contamination is detected by unaided human senses

Templates, gauges and jigs required for the proper machining and assembly of components and furnished by the Contractor shall become the property of the Owner at the conclusion of the work. Templates shall be made of 3/8" steel plate fitted with not less than two removable hardened steel drilling guide bushings for drilling flange holes and other drilling in the components. All such items shall be accurately and substantially made in a manner to retain their accuracy under repeated use and with proper care and handling. At the completion of the work, all patterns, templates, jigs, and gages shall be cleaned and all metal parts given a suitable coating of anti-corrosive grease. The equipment shall then be delivered in first class condition to the Owner. A tag containing the name of the equipment and the purpose of the template, etc., shall be attached securely to the item.

500.1 Piping

All piping shall be as set forth below and elsewhere in these specifications and shall be arranged to obtain optimum operating conditions and shall be compatible with the machinery or equipment served.

Piping shall be led as directly as practicable. Piping shall include valves, unions, and fittings necessary to isolate any piece of equipment for repairs without disrupting the entire system. Unions and flanges shall be used to facilitate installation and subsequent replacement with minimum labor and materials. ***Flexible connections to machinery components, where vibration may be encountered, shall be threaded or flanged on 2" diameter and above. Piping shall be kept clear of switchgear insofar as practicable.***

Piping shall be secured by supports and hangers so as to avoid excessive strains; avoid the weight of the piping being transmitted to valves and fittings; minimize the effects of vibrations, shock, pitching, and rolling of the vessel consistent with the kind of service in which the vessel will be normally exposed; and permit proper thermal expansion and contraction by changes in direction of pipe runs or by use of expansion bends, joints, loops, or offsets. Hangers for copper pipe to be lined with molded rubber or nylon.

To minimize galvanic corrosion, valves and fittings in salt water lines shall be of the same composition as adjacent piping, unless otherwise specified. Where joining of dissimilar metal piping cannot be practicably avoided, 12" long steel waster pieces shall be installed adjacent to nonferrous valves or fittings.

Galvanizing destroyed by welding or other activity shall be replaced. Where welding destroys the galvanizing not more than 6" from the end of the pipe, the method of replacing galvanizing shall be similar and equal to "Galvweld" on piping 3" and above, or "Galvicon" on piping 2-1/2" and below. All steel piping, regardless of size, shall be hot dipped galvanized when welding or other activity is such that galvanizing has been destroyed more than 6" from the end of ends of a pipe section.

Joints for steel piping shall be screwed for size 1-1/2" and below and welded for sizes 2" and above, except hydraulic, vents, and sounding pipes. Vent and sounding pipes shall be welded for all sizes. Hydraulic piping at each directional control valve and hydraulic cylinder shall be flanged using 3000# (4) bolt flange "anchor" or equal; All burrs shall be removed from the ends of all piping after any. Pipe ends shall be dressed with a reamer before installation.

Where not otherwise specified, valves shall be of the flanged or union nut bonnet type. Materials shall be corrosion resisting for the service conditions to which they may be subjected. Valves shall be of the rising stem type. Where three or more valves are located together for the same service, they shall be combined into a manifold. Shutoff valves shall be provided in fuel supply lines, one as close to each tank as practicable, and one as close to each fuel pump as practicable. A brass plate secured by the handwheel nut shall be attached to the handwheel of each valve and inscribed to indicate its function. Valves shall be readily accessible. Where installation conditions do not permit ready access to valves, reach rods shall be provided for operating the same.

All valves to be installed to close against the pressure.

Where pipes are carried through watertight bulkheads, decks, or tank tops, the watertight integrity of the structure shall be maintained. Heat sensitive materials shall not be used in piping systems which penetrate watertight sub-divisions where deterioration of such materials would, in the event of fire, impair the watertight integrity of such sub-divisions. Hydraulic steel tubing and all copper tubing shall penetrate watertight bulkheads and decks using suitable compression type sleeves (Anvil or equal). Where overboard discharge lines are attached to the inside of the hull, the hull shall be reinforced by a doubler or heavy insert plate, to maintain the original strength and integrity. Piping systems shall be designed in accordance with 46CFR 56.50.

All piping, pipe fittings and applicable equipment shall be thoroughly cleaned after fabrication and prior to shipboard installation. After complete shipboard installation each system shall be thoroughly cleaned and flushed of all foreign matter with the applicable system's medium or an approved substitute. System flushing shall be conducted at the applicable system's maximum operating pressure and where practicable, above the normal line velocity. However, prior to flushing operations, items having in line mechanisms capable of trapping or being affected by the carry over of foreign matter shall be either removed or blanked off and bypassed. Flushing of the piping systems shall be witnessed and approved by the Owner.

Reducing valves and all other pressure and flow control devices shall be provided with a strainer at the inlet, a relief valve and a pressure gauge in the discharge side, and a valved bypass. Fittings shall be free from fins and burrs. Joints shall be made with approved pipe joint compound applied to male threads only and all exposed threads on pipes mopped to prevent rust. Threads to be full cut.

Flanged joints shall be fitted and made up with suitable gaskets and steel bolts.

500.2 Overboard Discharges

Hull discharge connections shall be installed in accordance with 46CFR 56.50-95.

500.3 Guarding of Machinery

Provide and install guards to prevent injury to operating personnel. Installation of guards shall be fitted on but not limited to such items as belts, motor pump connections, pulleys, etc. Propulsion shafting guards are described in Section 243.5.

500.4 Drip Pans

Provide and install drip pans under all engines, constructed of 20 gauge galvanized sheet metal, with minimum 2" flanged sides properly sealed to prevent leakage of engine oil into the bilges or on deck. Drip pans shall be provided with necessary supports to restrain movement and shall be easily removable for cleaning and maintenance.

Provide and install stainless steel plate drip pans under all pump installations with drains running directly to bilge.

502 Auxiliary Equipment

Provide and store on board as directed by Owner the following:

Two self-retracting air hoses complete with male and female quick disconnect fittings or equal. Quick disconnect fittings shall be compatible with fittings required in Section 3.10 (b).

One lever-handle blowgun with male quick disconnect fitting.

Three (3) 30 gallon capacity hot dipped galvanized steel garbage cans.

506 Fills, Vents, Sounding Tubes, and Overflows

Fills, vents, sounding tubes, and overflows shall be provided per Reference 5.3, the system specific diagrams, and these Specifications.

Vents shall be provided for tanks and inaccessible spaces below the Main Deck.

Vents to the weather shall penetrate the Main Deck as shown on References 5.4 and 5.12. Vent terminals shall be located just inboard of the bulwarks with the goosenecks located 30" above the deck. ***All vents, sounds and fill pipes shall be 316 stainless steel above the main deck and 6" below.***

507 Label Plates and Markings

Valves:

- Provide label plates for all valves whose function is not obvious. Where practicable, fasten label plates to the handwheel or operating lever of the valve. In locations where such labels would not be visible during normal operation, or the valve is a type where such attachment is not practical, attach the label plate to another part of the valve or nearby the valve. Valve label plates shall be engraved and filled with black paint, except fire main and $C0_2$ fire extinguishing system valves which shall be filled with red paint.
- ***Valve label plates shall be brass with 1/8" lettering attached to valves or pipe with stainless steel wire.***

Piping:

- Exposed piping shall be stenciled or clearly marked with pressure sensitive markers to indicate the medium contained in the system and the normal direction of flow. Each pipe shall be marked at least once between take down joints, on each side of bulkhead penetrations, and in no case less than once in each compartment through which the pipe passes or is contained.
- ***The stenciling or pressure sensitive marker letters, numerals, and direction arrows shall be proportional to the diameter of the pipe but need not be larger than 1" letters. The color of the lettering and arrows shall be same as indicated on pipe color chart section 602.3.***
- Each stencil or marker shall be applied so as to be readily visible from adjacent decks, floorplates, or walkways.
- ***Fill, vent and sounding pipes shall be provided with engraved 316 stainless steel plates identifying the function. Letters shall be filled with enamel.***

508 Pipe Insulation

General:

- Insulate piping as required for safety, energy conservation, to protect from freezing where exposed to weather, to prevent condensation where damage or discomfort may occur due to condensation on pipe exterior, and where required to meet structural fire protection requirements.
- All materials and installations shall be USCG-approved.
- Materials, insulation thickness, and installation methods shall be in accordance with ASTM Standard F683, Standard Practice for Selection and Application.
- ***No paint shall be applied to insulation blankets on exhaust system.***
- ***Provide conveniently removable sections of insulation on all exhaust lines and engine exhaust flex connections.***

The Contractor shall develop a piping insulation schedule and submit it to the Owner for approval.

Provide insulation including, but not limited to, the following:

- ***Insulate the exhaust piping, including silencers, to the extent described in Section 508.***
- ***Insulate hot potable water piping with foam type insulation to prevent sweating and heat loss.***
- ***Insulate main and generator engine jacket water piping above the floor plates and where necessary with blanket type insulation to prevent injury to personnel and equipment.***
- ***Insulate chilled water piping as required to prevent condensation on pipe exterior using water resistant type insulation.***
- Insulate various systems where necessary to prevent freezing. Systems such as dry fire main and sewage discharge piping shall not require insulation if installed with proper drainage to prevent freezing.
- Insulate various systems containing cold fluids where necessary to prevent condensation where damage or discomfort may result from moisture on the pipe exterior.
- Insulate piping penetrating decks and bulkheads where necessary for structural fire protection as required by NVIC 6-80.

All hot and cold water piping, air conditioning piping and tubing, including valves, shall be insulated as necessary to prevent heat transfer, sweating and/or freezing. ***Where insulation is subject to damage it shall be covered with removable aluminum sheet metal guards.***

512 Ventilation System

Provide mechanical supply to all public spaces, offices, and crew spaces; provide mechanical exhaust from all toilet spaces per Reference 5.15.

Louvered inlets and outlets shall be in accordance with 46CFR 72.15-15 (a), and shall be provided for all mechanically ventilated spaces. ***Louvers shall be removable and of all 316 stainless steel construction, including 1/8" square mesh bird screens.*** Louver shall be sized for a maximum air velocity of 1500 feet per minute and assuming a 50% blockage due to louvers and screens.

513 Machinery Space Heating, Ventilation, and Air Conditioning

Definitions: For the purposes of ventilation and heating, the following are defined as machinery spaces:

- Bow Thruster Room
- Tank Room
- Engine Room
- Engineer's Operating Station (EOS)
- HVAC Fan Room #1
- Emergency Generator Room

Provide electric unit heaters, Indeeco or equal, with adjustable thermostats, in sizes, quantities, and locations, so that machinery spaces are no less than 40° F in the following conditions:

- Generators not running

- Machinery space ventilation fans not running
- Outside air temperature 30° F
- Outside water temperature 46° F

Provide a fan coil cooler unit for the EOS, using chilled water from the system described in Section 514. The EOS cooler shall be capable of maintaining a temperature of 80° F dry bulb, 70° F wet bulb, with an engine room temperature of ***120° F***.

513.1 Ventilation - Engine Room

Engine room ducts shall be constructed of 22 gauge galvanized sheet metal, with necessary transitions, laterals, adjustable terminals, screens, etc. generally as shown on Reference 5.2. Curved vanes shall be installed to provide even flow of air through bends. Joints shall be made airtight.

Fan requirements and sizing shall be in accordance with Reference 5.15.

One main exhaust plenum shall be installed in the engine room for removal of hot air and exchange of air required in compartment. The exhaust plenum shall be provided with one exhaust fan. Fan housing shall be epoxy coated.

Two vent supply ducts shall each be fitted with a marine duty fan. Fans shall be furnished with an inlet bellmouth and housings shall be epoxy coated.

Manual operators shall be provided on all louvers. Louvers installed on the outside of bulwarks shall have manual operators provided on the inside of bulwark.

513.2 Emergency Generator Room Ventilation

The aft bulkhead shall be fitted with two louvers, approximately 27" x 30", as per Section 512. Louvers shall be fitted with 120 VAC motor operated gear boxes which shall be configured to open louvers on generator engine start and close on generator stop.

514 Heating, Ventilation, and Air Conditioning

General:

- Provide HVAC for all public spaces, offices, crew break room, the lounge, ship's office, crew lounge, crew staterooms, crew galley, passage ways, interior stairways (except machinery space access), aft control station and Pilothouse in accordance with Reference 5.15.
- Provide and install vent fans in each toilet space, sized in accordance with Reference 5.15.
- Provide fans, ductwork, air filters, chilled water air coolers, electric heaters, chilled water pumps and piping, chilled water refrigeration system, condenser cooling pumps and piping, condensate collection sump tank, pump, and piping, duct and pipe insulation, controls, electrical power supplies, engineering, testing and startup, and operation and maintenance manuals.
- Air-conditioning components shall be Carrier Marine, all other HVAC component shall be types that are currently in production and supported by a parts distribution network supplying replacement parts to North Carolina in no more than 24 hours.

Space heating and cooling shall be provided with all necessary automatic and manual controls, electrical installation, fans, etc. to provide heating and cooling as shown in Reference 5.15.

The Contractor shall provide and install ventilation system fire dampers as required by USCG regulations for structural fire protection. Fire dampers shall be Halton FDB or equal and satisfy the following minimum requirements:

- Hot-dipped galvanized body and blade, 11 gage minimum body
- Non-corroding pivot points
- Capable of closing against air flow from either side of the bulkhead or deck
- Activated by CO_2 fire suppression system, 165°F fusible link, and manually
- External manual activation and reset
- Closure status visible outside the duct
- Access for service or cleaning
- Flow direction arrow outside the fire damper body

Engineering:

- Contractor shall provide all final design calculations, drawings, test result documents, operation and maintenance manuals (except as described below) and shall be prepared under the direction of a Professional Engineer who will stamp and sign all HVAC engineering documents. Exception to this requirement shall be component drawings of equipment supplied by an established manufacturer.
- Contractor shall provide engineering necessary to assure compliance with applicable regulations; compliance with the requirements of the contract; efficient, timely production of HVAC systems; coordination with other systems to provide interfaces and eliminate interferences; to direct testing and startup to assure proper operation of HVAC systems; and to provide operation and maintenance manuals including all necessary parts lists for the long term successful performance of HVAC systems.
- Contractor shall coordinate selection of equipment and colors with the Owner for items such as diffusers and registers which will not be hidden.
- HVAC engineering documents shall include the following (minimum):
    - summer heating load calculations
    - winter cooling load calculations
    - ventilation duct diagram
    - ventilation duct pressure drop calculation
    - ventilation duct arrangement
    - chilled water system diagram
    - chilled water piping arrangement and details
    - heating electrical equipment arrangement and details
    - refrigerant piping schematic
    - condenser cooling water diagram
    - condenser cooling water arrangement and details
    - condensate discharge system diagram

- condensate discharge system arrangement and details
- control system schematic
- power system schematic
- test results book
- operation and maintenance manual

Design Conditions:

Summer

- Outside air: 90° F at 80% RH
- Inside air: 72° F at 50% RH
- Sea water: 85° F
- 300 people on board

Winter

- Inside air: 68° F at 50% RH
- Outside air: 30° F at 60% RH
- Sea water: 46° F
- 300 people on board

Smoke

- No smoking in any enclosed spaces

Ventilation:

- Provide mechanical supply to all public spaces, offices, and counting rooms; provide mechanical exhaust from toilet spaces in accordance with Reference 5.15.
- Ventilation shall be in accordance with ASHRAE Standard 62-1989, Ventilation for Acceptable Indoor Air Quality.
- All outside air shall be filtered with replaceable or washable filters.
- Duct elbows shall have, in general, center radius of one and one half times the breadth of the duct in the plane of the turn. Where necessary to use a lesser radius, turning vanes shall be installed to provide quiet and efficient operation.
- Unless sound attenuation devices are used, air flow velocities shall not exceed 1500 feet per minute.
- Ducts shall be galvanized steel sheet metal. Duct thickness shall not be less than the following:

Duct size	Thickness
6" or less	22 Ga (0.0336")
6" to 12"	20 Ga (0.0396")
12" to 24"	18 Ga (0.0516")
larger than 24"	16 Ga (0.635")

- Use thicker duct material where required for structural fire protection, strength, or resistance to panting.

- Stiffen ducts where necessary to prevent panting.
- Heating/cooling supply ducts through unconditioned spaces shall be insulated with at least 2" thick insulation. In conditioned spaces, all heating/cooling return and supply ducts shall be insulated with at least 1" thick insulation.

Air Conditioning:

- Air conditioning shall be accomplished with chilled water cooling of duct coils in each of the ventilation supply systems (air handlers, fan coil units, etc.) in accordance with Reference 5.15.

Chilled Water System:

- Provide and install two ***MP Pump Flowmax***, or equal, marine grade centrifugal pumps with close coupled motors for raw water cooling circuit for A/C system as shown in Reference 5.15. Provide and install in-line with suction side of pumps, one Hayward model 50, bronze duplex strainer w/stainless steel trim and 1/16" perforated stainless steel baskets. Installation shall be complete in all respects including foundations, piping, valves, wiring, motor controllers, hardware, etc. as shown on plans.
- Chilled water piping may be either Sch. 40 black steel pipe with malleable iron fittings or copper water pipe with wrought copper solder fittings.
- Penetrations through fire zone boundaries shall be in accordance with USCG regulations.
- Insulate chilled water piping for energy conservation, to prevent objectionable condensation on pipe exteriors, and for structural fire protection, as described in Section 508.
- Treat the chilled water with a corrosion inhibiting antifreeze to a concentration which will prevent freezing to 0° F.

Water Chillers and Refrigerant Piping:

- The total cooling loading for the vessel has been estimated to be 60 tons. The system shall be designed with two chiller units (main and standby).
- Provide a quantity of two dual circuit, Carrier reciprocating marine chiller units, water cooled. Each chiller unit shall be approximately 60 tons. The chiller condenser shall be a self cleaning tube brush type.
- Refrigerant shall be R-404A. Bidders may propose use of alternate refrigerants; however, no refrigerant with less health or environmental safety, or significantly lower thermodynamic efficiency, will be accepted.
- Chiller units shall be identical, except variations in arrangement to enhance safety or access may be permitted.
- The refrigerant system of each chiller unit shall be entirely independent of the others.
- Each chiller unit shall include compressor(s), purging connection, refrigerant fill connection, expansion valve, controls, water cooled condenser, and instrumentation as required for monitoring and diagnostics.

Condenser Cooling System:

- Provide a sea water circulating system to cool the refrigerant condensers circuit.

- Provide two identical marine grade condenser cooling pumps ***MP Pump Flowmax*** (main and standby).
- Condenser cooling piping shall be Sch. 40, 316 stainless steel, with butt welded fittings, except piping outboard of sea chest and overboard valves, and piping routed through tanks shall be Sch. 80.
- Sea chest connections and overboards shall be in accordance with 46CFR 56.50-95.

Condensate Discharge System:

- Condensate extracted from cooling coils shall be discharged overboard.
- Provide stainless steel or aluminum drip trays under all cooling coils. Route drain pipes, each with a trap, from each condensate drip tray. Drip trays shall be sufficient to drain and not overflow when the vessel has a 5° list to port or starboard.
- Drains from cooling coil, located above the Main Deck, may be routed overboard via gravity. This may be accomplished, where appropriate, by discharging the condensate drain pipe into weather deck drains.
- Provide a condensate sump tank with a float switch activated pump for air handlers and fan coil units. Alternately, condensate from units below the Main Deck can drain to the gray water tank.
- Condensate discharge piping shall be Sch. 40 black steel pipe and malleable iron fittings.
- Overboard discharges shall be in accordance with 46CFR 56.50-95.

Heating:

- Provide electric duct heaters as necessary to accomplish the performance specified. Heating shall be in accordance with Reference 5.15.

Electrical Power Supplies:

- Provide electrical power to equipment per IEEE Standard 45 requirements.

Controls:

- Provide an electronic/electrical control system including adjustable thermostatic control of coolers and heaters, on/off/automatic control of water chillers, and manual start/stop of fans and circulating pumps.
- Each main Air Handling Unit (AHU) shall be controlled by an individual electronic panel with return and supply sensors, return dehumidistat, outside air sensor for preheating outside air and starting components for fan motors.
- Each Fan Coil Unit (FCU) controller shall have a speed switch for the fans and temperature setting with lockable cabinet.
- Each central exhaust fan controller shall provide interlock exhaust with each AHU.

Noise and Vibrations:

- Mount fans and reciprocating equipment on vibration isolators, Korfund, or equal, and provide flexible connections to duct, piping, and other equipment.
- Observe duct air velocity limits described in Section 514.

- Size louvers, cooling coils, heating coils, registers, grilles, etc. in accordance with accepted practice, so that noise due to excessive velocities does not occur.

Testing:

- Test and balance all HVAC systems to assure compliance with applicable regulations, the Contract, and the Specifications. The Contractor shall use an independent agency certified by Nation Environmental Balancing Bureau or American Air Balance Council to test and balance the system. The Contractor will supply a testing and balance report of all measured flows, velocities, pressures, etc. versus design data for the HVAC system. The Contractor will conduct random tests throughout the vessel with the Owner after the test report is issued.

Regulations and Standards:

- All HVAC components and installations shall be in accordance with USCG requirements and applicable standards of the American Society of Heating, Refrigerating, and Air Conditioning Engineers and the Sheet Metal and Air Conditioning Contractors' National Association.

521 Fire Main System

Shipyard shall provide a fire main system as described by these Specifications, Reference 5.5, and as required by USCG, particularly 46CFR Support 76.10.

The fire pump shall be capable of remote starting from the Pilothouse. Fire pump run light indication and pressure indication shall be provided in the Pilothouse.

Contractor shall provide and install fire pump motor controller which shall be reduced voltage, auto-transformer type, closed transition with two step timed acceleration. An adjustable 0-30 second plug-in timer shall be furnished to allow for time delayed starting.

Fire main system shall consist of fire stations with fire hose fitted with combination nozzles and brass couplings. Threads for hoses and nozzles shall be 9 threads per inch. Provide and install 1 ½" valves at each fire hose station. Adapters between hose and valve are not permitted.

Fire hose shall be stowed on a rack adjacent to each fire plug, so that it may remain connected at all times. Suitable clips shall be provided to secure the nozzle and spanner wrench at each station.

Install in fire pump suction line a bronze strainer with stainless steel trim including yoke screws and stainless steel strainer basket.

522 Sprinkler System

Shipyard shall provide a vehicle deck sprinkler system per References 5.6 and 5.7.

526 Scuppers and Weather Deck Drains

Provide weather deck drains as described by these Specifications, Reference 5.8, and as required to drain objectionable accumulations of water on weather decks to overboard discharge.

Overboard discharges shall be in accordance with 46CFR 56.50-95.

528 Plumbing Drains and Sewage System

Shipyard shall provide sanitary drains and a sewage treatment system per Reference **Error! Reference source not found.** and these specifications.

Sanitary flushing water to all water closets shall be supplied by a pressure set drawing from the fresh water tank. Piping, valves and fittings shall be 316 stainless steel.

Contractor shall provide and install sanitary pressure set pump. ***Pump delivery capacity shall be approximately 300 GPH. Provide and install bladder type, 30 gallon captive air stowage tank, or equal, fitted with pressure-operated switch set to start pump motor at 30 psig and stop at 50 psig.***

Contractor shall provide and install all necessary ancillary materials and equipment including but not limited to all valves, unions, fittings, wax seals, nuts, bolts, lockwashers, hangers, foundations, etc. All hardware shall be stainless steel.

529 Bilge System

The bilge system shall be capable of pumping out all compartments below the Main Deck as shown on Reference 5.10. Bilge piping shall be as straight as feasible with a minimum number of bends and elevation changes.

Bilge suctions shall be located as close as possible to the lowest point of the space served. Overboard discharges shall be located in the side shell just under the guard strake.

532 Keel Coolers, Engine Cooling

Provide and install ***"Fernstrum" keel coolers*** for the main engines, reduction gears, ship service generator engines, and thruster engine as shown on Reference 5.14. Installation shall be complete, including but not limited to, all valves, hull fittings and guards, piping, hardware, etc.

Coolers shall be surface-mounted on the bottom shell plating. Provide guards for each cooler; guard design shall be approved by the Owner and Fernstrum prior to fabrication.

Contractor shall provide and install an engine cooling water make up system for all main and ship service generator engines. System shall be supplied from ships fresh water system. Use appropriate size copper tubing and ball valves at each engine expansion tank.

533 Potable Water System

The potable water system shall be provided as shown on Reference 5.11 in accordance with the requirements of the USCG, U.S. Public Health Service, and World Health Organization.

Potable water shall be stored in two 2500 gallon steel tanks independent of the bottom, deck, and side hull plating but common to transverse bulkhead #44.

Piping in spaces with lining shall be concealed behind ceiling panels or bulkhead liners. Piping shall be run as directly as possible using a minimum of fittings. Install cut-off valves below each lavatory and drinking fountain in supply piping to allow repairs without securing the system.

A fresh water line shall be installed from the potable water system to each engine expansion tank with a 2" minimum air gap. Copper tubing shall be ½" with a ball valve at each expansion tank.

Provide and install hose reels and high quality reinforced rubber hose in 50 foot lengths, 3/4" diameter commercial grade, with permanently attached brass couplings and brass nozzles at all seven hose bibs.

The water filters for the Passenger Lounge and Crew Galley coffee stations shall ***be ½" npt.***

551 Ship's Service Air System

Contractor shall provide and install a ship's service air system per Reference 5.12. Air receivers shall be USCG-approved and stamped.

One compressor shall be supplied from the emergency generator. Installation shall be complete with all necessary foundation, brackets, flexible connectors, control cable (wiring), pressure switches, relief valves, etc. Compressor motor controllers shall be arranged for "off", "auto" and "manual" operation.

555 Fixed Fire Extinguishing Systems (see Section 683 for portable extinguishers)

The vessel shall have two independent CO2 fixed fire extinguishing systems. One system shall be installed to protect the Engine Room and the other shall protect the Emergency Generator Room. The systems shall include all CO2 cylinders, nozzles, sensors, alarms, wiring, engine shutdowns and discharge actuators. The system shall be designed, fabricated, and installed to meet USCG regulations 46CFR Subchapter H (Passenger Vessels), Part 76.15 and NVIC 6-72.

The CO_2 cylinders for the Engine Room fire extinguishing system will be stored in the CO_2 Room on the Main Deck. The CO_2 cylinder for the Emergency Generator Room fire extinguishing system shall be stored in the adjacent HVAC space.

The system shall be designed and installed such that the number, type, and location of the discharge nozzles shall be positioned for a uniform distribution of CO_2 throughout the protected spaces. Nozzle placement shall preclude the possibility of blockage of the discharge pattern by obstructions.

The system shall be designed such that the minimum quantity (85%) of CO_2 required to flood each space protected can be discharged completely within two minutes.

The Engine Room system shall be designed for remote manual actuation of release of CO_2 gas from two (2) locations outside the compartment. One control shall be at the Main Deck access to the Engine Room; the other shall be in the Tank Room adjacent to the EOS access door. Actuation devices shall have "break glass" boxes.

The Emergency Generator Room system shall have automatic actuation. The system shall provide a pneumatic detection and control system for the space that complies with 46CFR 76.15-10.

Both systems shall include switches for ventilation fan shutdown. This shall include automatic closure of ventilation louvers in the Emergency Generator Room. A method for weighing the CO_2 cylinders in place shall be provided.

Each system shall have engraved phenolic or brass instruction placards at all actuation devices, valves and alarms. Each system shall have means for automatically giving audible warning of the release of fire extinguishing gas into the protected spaces. Alarms shall operate for 30 seconds before the gas is released. The audible CO_2 power sirens shall be located in the space being flooded. Visual alarm indicators shall be part of the fire/smoke alarm system and located at the Pilothouse fire alarm panel and the engineer's remote monitor.

Provide instruction books/technical manuals for the ship's crew in operating, maintaining, and repairing the equipment supplied. The books/manuals shall include, but are not limited to, operating instructions, parts breakdown with descriptions and parts numbers, assembly drawings, piping and wiring diagrams, troubleshooting procedure, and test procedures.

All repairable components shall be fitted with suitable nameplates. Nameplates shall depict manufacturer and model. Each interface with a shipboard system shall be suitably labeled to facilitate component installation.

All components, except generic materials such as piping and cable, shall be from the same manufacturer.

559 Environmental Pollution Control

Sewage system shall be installed in accordance with Reference 5.9 as well as CFR 33, Part 159 Subpart A, Regulation 159.3(S). Installation shall be complete in all respects including all foundations, piping, wiring, valves, etc. for a complete operational installation.

Oily water system shall be in accordance with Reference 5.10 as well as CFR 33, Part 155, Subpart B, Regulations 155.330(A), 155.350(a)(2), and 155.360 (2)(c).

561 Steering System

The steering system shall be in compliance with all applicable USCG requirements including all regulatory documentation, failure modes analysis, and testing and verification procedures. FMEA and DVTP shall be provided for these systems and submitted to USCG MSC as part of the steering and engine throttle systems. Tillers shall be connected with a rectangular tube section tiller bar (designed to handle rudder torque) so that the two rudders act together. Provide calculations on detail drawing submitted to USCG for approval.
The steering system shall have both full follow up and non follow up controls at the two (2) upper control stations and a non-follow up control in the EOS console adjacent to the engine throttle controls. Refer to console layout for locations.
Starting and stopping of the steering system shall be made by the operator from the main console in the wheelhouse. Three rudder angle indicators shall be installed, one in the Pilothouse console and one on the aft control station console and one in the EOS console. Angle indicators shall be back lighted with red bulb and brightness control rheostat mounted in steering control panel. Face of indicator shall be minimum 4 inch diameter.

561.1 Steering System Performance Requirement

With any one hydraulic power unit serving two hydraulic cylinders, the steering system must be capable of moving the rudder from 35° port helm to 35° starboard helm, hard-over to hard-over in less than 15 seconds. Mechanical stops shall be placed at 35° port and starboard of centerline plus ¼". The steering gear shall meet the performance requirements set forth in 46 CFR 58.25-10. The steering system shall be capable of moving, stopping, and holding the rudders at any angle within their operating range with the vessel speed at 14 knots ahead or 6 knots astern.
The steering system shall be provided with the following major components and any others as required to meet USCG requirements:

Qty	Item	Comments
2	Dual acting steering cylinders	ABS & USCG rules apply,
2	Split-type, straight bore steering tiller	Located in steering compartment
2	Valve body unit	Located in ER aft
2	Dual hydraulic power unit	Located in ER aft
2	Rudder feedback unit	Located in steering compartment
3	Non follow-up lever	Located in EOS, WH & Aft Sta.

2	Full-follow up lever	Located in Wheelhouse & Aft Sta.
2	steering control amplifier	
3	rudder angle indicators	Located in EOS, main console & aft steering station console
2	Control panel	Located in ER & EOS
3	steering gear alarm panels	Located in EOS, main console & aft steering station console
2	Steering power unit control starters	Located in ER near power unit
2	Steering system placard	Located near control valves

561.2 Electrical Installation

Power for the control elements of the steering gear systems shall be derived from the vessels 24 VDC power supply. Power for the hydraulic unit shall be 208 volt 3 phase. Electrical cables for power and control functions of the steering system shall not be run adjacent to each other but separated as far as possible in the electrical cable tray run.

561.3 Steering Gear

A clamp type tiller shall be provided for each rudder. Mechanical stops shall limit rudder angle to 35° to each side of centerline. Tiller assemblies shall be steel construction complete with mechanical tubing hub, 1 inch (minimum) steel plate arm. Stainless steel (316) tiller pins shall connect jockey bar to tillers with brass bushings and grease fittings. Cylinders shall be designed to operate to a minimum of 37° to each side of centerline and shall have tie-rod type construction with SAE straight thread o-ring ports. Cylinder pins shall be same design ands size as jockey bar pins, designed for expected loads. Cylinder rods shall be hard chrome plated. Steering cylinders shall meet ABS and USCG regulations. Cylinder test certificates shall be required. A copy of all material certificates as required by USCG shall be provided in the operation manual and the material certificate binders as required elsewhere in the specifications.

561.4 Valves and Piping

Shutoff valves shall be located at the aft engine room bulkhead near the hydraulic power unit. All hydraulic piping shall be steel with socket weld fittings except where long radius bends can be installed to eliminate weld fittings. Hoses shall be installed in the steering compartment and engine room to isolated steering cylinders and hydraulic power unit. Elbow end fittings shall be used to prevent kinking of hoses.

561.5 Instructional placard

An instructional placard shall be located near the shutoff valves to provide a system layout and written instructions per USCG requirements. This placard shall be at least 11"x 17" size mounted with stainless steel screws so that it can be removed to allow painting of the machinery space. Vendor shall provide a duplicate copy of this placard at vessel delivery to NC DOT engineering department. Placard shall be on stainless steel sheet metal with permanent etching to prevent tampering.

562 Rudders

The Contractor shall design fabricate and install spade rudders and a steering system in accordance with Reference 5.18. Rudder shall be double-skin, airfoil cross-section. Drain plugs shall be installed to permit Contractor to protect the interior with liquid anti-corrosive after rudder fabrication is complete.

Tillers and the steering system shall be designed by the Contractor. Tillers shall be connected with a tie rod.

581 Anchor Handling and Stowage

One 1000 lb Danforth-style anchor shall be provided and stowed on the port side bulwark generally as shown on Reference 5.13. Suitable clips and securing fittings for quick and simple deployment shall be provided. Eighteen fathoms of ***3/4" diameter galvanized proof-coil chain***, with shackles and swivel, shall be attached to the anchor and stowed in a self draining metal box port side on the inboard of the bulwark adjacent to anchor. A davit shall be supplied to assist in deploying the anchor.

The bitter end of the chain shall be secured to a pad installed on the Main Deck near the chain box and the other end to swivel and shackle of anchor. The deck padeye shall be designed to 1.5 times the breaking strength of the chain.

582 Mooring

Provide four mooring lines, ***1 1/2" diameter double braid nylon rope, 50 feet long***, each with a four foot spliced eye in one end and with the other end seized. Mooring lines shall not be used during construction.

583 Rescue Boat and Davit

The rescue boat and davit installation shall be installed to the satisfaction of the U.S. Coast Guard OCMI representative. See Global Davit drawing 1-2035 / 06-133 for boat/davit installation. Point of contact for the boat/davit is Scott Waltrip, Marine Equipment Inc, P.O. Box 73049, Houston, TX 77273, Tel: (281) 447-8597, E-mail: marineequipment@att.net.

583.1 Rescue Boat

A 6-person capacity rescue boat shall be provided and installed as shown on Reference 5.1. The unit shall be a Fassmer model RR 4.2.

Boat shall be stowed on a cradle with quick release securing and arranged to allow the outboard motor to remain in normal upright position.

Provide and install ***one (1) 25 HP, 2 stroke YAMAHA*** outboard motor with prop guard.

Provide all gear required by rescue boat crew and a suitable fiberglass stowage locker located near the davit. The locker shall be self-draining and shall be securely bolted to a foundation at least 3" above the deck.

Provide and install a boat cover complete with securing devices/straps, color white.

583.2 Rescue Boat Davit

A rescue boat davit shall be provided and installed as shown on Reference 5.1 and the vendor drawing. The unit shall be a Global Davit GmbH model Rhs.11/3.5, rated for 11 kN and 3.5m reach. Davit shall be supplied by 208 VAC, 3-phase power from the emergency switchboard.

585 Elevator

Shipyard shall furnish and install one elevator in the vessel as shown on Reference 5.1. The unit shall be an ***electric or electro-hydraulic powered marine duty elevator (Owner approved), rated for 6-persons to also meet new ADA requirements (no assistance required access).*** Interior and fixtures shall be brushed stainless steel. Telephone and backup battery power supply shall be included with the elevator. Unit shall be powered at 208VAC, 3-phase from the emergency switchboard. ***Elevator will be accessible to all passengers including ADA. Owner requires that manufacture be able to provide long term maintenance agreement for elevator including labor and material as part of owner approval of vendor.***

GROUP 6 OUTFITTING

References

6.1 07069-001-101-1, Profiles and Deck Arrangements
6.2 07069-001-200-1, Engine Room and Tank Room Arrangement
6.3 07069-001-635-1, Structural Fire Protection
6.4 07069-001-801-1, Life Saving Equipment Arrangement
6.5 07069-001-533-1, Potable Water Piping Schematic
6.6 07069-001-600-1, Bulwark Arrangement

600 General

Outfitting shall be provided and installed by the Contractor as described herein. All materials supplied under this item shall be constructed, applied or stowed in accordance with the authorized regulatory bodies listed under Section 050 of these Specifications.

602 Label Plates and Hull Markings

602.1 Hull Markings

The name of the vessel shall be approximately 12" high, cut from 1/4" plate, and welded to the forward bulwarks as shown on Reference 6.1. The vessel's name and hailing port, welded to the aft bulwarks port and starboard, shall be ***approximately 12" and 6" high*** respectively and cut from 1/4" plate. All welding shall be continuous.

Bow thruster location indicators shall be cut from 1/4" plate and installed port and starboard as shown on Reference 6.1.

Name boards of ***2" thick varnished hardwood*** (mahogany or teak) shall be provided on the pilothouse handrails, port, and starboard. Eight inch letters shall be routed out and painted ***white***.

The vessel's official number shall be center punched and painted black on the ***aft*** engine room bulkhead. Letters and numbers shall be 3" high.

The Builder's nameplate shall be approximately 24" long and shall be engraved on polished bronze plate and with enamel filled letters. The nameplate shall be mounted on 3/4" thick varnished hardwood (mahogany or teak) pad, and shall be located in the Passenger Lounge as directed by Owner. Builder's nameplate shall include the following:

VESSEL NAME
Keel Laid: (e.g. November 2, 2009)
North Carolina DOT - Ferry Division
Beverly Eaves Perdue, Governor
Eugene J. Conti Jr., Transportation Secretary
Designed by: Elliott Bay Design Group, LLC
Builder's name, Hull No. 0000
(Official No. 000000000)

602.2 Labeling

Life rings, life preservers, IBA's, rescue boat, oars, fire axes, fire hoses, fire extinguishers, and other lettering shall be accomplished as normally required for a vessel of this class and as required by 46 CFR Subchapters "H" and "W" if not specifically covered elsewhere herein.

All valves and operating gear shall be labeled to indicate the service used. Labels shall be brass material, machine engraved, with 1/8" letters to suit condition and easy legibility. Labels shall be secured to handwheels using stainless steel wire tie.

All wiring cables shall be labeled with embossed metal tags secured to cable at sufficient intervals to allow ready identification of cable and circuit if it should become necessary to trace circuits after shipboard installation is complete).

Label plates marking the centerline and six foot mark above baseline shall be fitted on the after side of the engine room forward bulkhead.

Paint lines to indicate vehicle runways and safety zones on decks, colors, and markings as specified by the Owner and Reference 6.1.

Provide "No Smoking" signs as required by 46CFR78.40-10 and per Reference 6.6.

Provide "General Alarm" identifications as directed by 46CFR 78.47-5 and 78.47-7.

Watertight doors as required by 46CFR 78.47-37 (a) and (b) all other doors shall be marked as required by 46CFR 78.47-35.

Provide fire station labels as required by 46CFR78.47- 20 (minimum 2" letters).

Provide "E" on all emergency and exit lights as required by 46CFR 78.47-33.

Provide signs to indicate location of life jacket stowage.

Centerpunch and paint the frame number on forward and aft side of each watertight bulkhead, 3" high, in black.

Provide label entrances to Passenger Lounge, Toilets, Emergency Generator Room, etc.

Provide and install 3/16" stainless steel, deeply engraved labels adjacent to each sounding plug, remote valve operator, fuel fill and vents, fresh water fill and vent, lube oil fill, bilge discharge line, quick acting hatches, watertight doors and joiner doors. Labels shall identify service and/or space served and be continuously welded in place.

All signs, notices, and labels required to be placed on vessel shall be fabricated of vinyl using Avery Graphics, Series A3, 3 to 4 mil material, or equal, unless otherwise specified herein. All signs, notices, and labels, required to be painted shall be produced by a qualified sign painter or shipyard sign shop approved by the Owner.

Contractor shall provide and install, as directed by Owner, all notices required by USCG such as station bills, stability letter, radio station license, etc. Notices shall be installed in glass faced frames of brushed aluminum, which shall complement the vessel's interior finish.

Contractor shall mount ***four (4)*** Owner-furnished decals, ***about 36" x 36", on 1/8" thick aluminum plate.*** Each decal shall be installed on vessel with six 1/4" stainless steel studs and nuts equally spaced, ***length as required to stand decals 1" off from superstructure. Owner will supply pattern for locating the studs.***

Mounting location on vessel shall be as directed by the Owner and shall be installed to facilitate easy removal for future maintenance.

Provide and install an oil waste discharge placard suitably photo-etched or epoxy painted on anodized aluminum, 5" × 8". Placard shall be fixed adjacent to bilge pump control station in a conspicuous place and be in accordance with 33CFR 155.450.

Provide and install six garbage dumping placards, located as directed by Owner. Placards shall comply with the dimension, lettering and information requirements of 33 CFR 151.59.

602.3 Labeling And Identification of Hand Wheels and Piping

All valve hand wheels and actuator handles shall be coated with glossy enamel using the following color codes.

SYSTEM	COLOR FED.STD.NUMBER	
Fire main	Red	11105
Fresh water	Blue (light)	15200
Fuel oil	Yellow	13538
Compressed air	Orange	12246
Bilge	Black (dk.gray)	16081
Hydraulic	Purple	17141
Sea water	Green	14062
Sewage	Gray (light)	16376

All piping in the engine room shall be color coded, using the same scheme as above, by painting an arrow pointing in the direction of flow at sufficient intervals to allow ready identification. All fuel oil, hydraulic oil, and fire main piping shall be marked in the same manner throughout the vessel. Provide and mount in frame in EOS, one 8 ½" × 11" color code key plan.

603 Draft Marks

Draft marks shall be cut from 1/4" plate and installed fore and aft, port and starboard as shown on Reference 6.1. Numerals shall be expanded so that the vertical projected height of each numeral is ***6" and shall be painted white.***

604 Locks, Keys, and Tags

Spaces to be fitted with lockable doors are the Pilothouse, aft control house, ship's office, and the crew storeroom. Lockable doors shall be capable of being unlocked from inside the space without a key.

Door hardware shall be provided for all doors including the following:

- ***Lock sets provided for crew spaces are to be stainless steel handle type door latch marine hardware. Lock sets shall be keyed alike.***
- ***Latch sets provided for public spaces and crew spaces are to be stainless steel handle type door latch set (not round knobs) marine hardware.***
- Door closures as required by USCG.
- ***Emergency panic bars on all passenger exit doors.***
- High security locks for the Pilothouse and aft control station doors.
- Magnetic hold backs as required by USCG.

Hardware shall be heavy duty marine-type brass, bronze or stainless steel.

605 Rodent and Vermin Proofing

The crew galley and dayroom shall be constructed in accordance with U.S. Public Health Service "Standards for Rat-proof Construction."

611 Docking Plugs

Stainless steel docking plugs with bronze 1-1/2" socket head plugs shall be provided for voids to permit proper drainage during drydocking of the vessel. The docking plugs shall be fabricated and installed in accordance with ASTM F991M. Docking plugs shall be labeled with weld bead on the hull identifying the void it drains.

612 Rails and Stanchions

Rails and guards shall be provided and installed to meet USCG requirements, and as shown on Reference 6.1. All rails shall be 1 1/4" Schedule 40 stainless steel pipe, smooth and free of abrasions, sharp corners, and defects which could injure persons sliding a hand on or along the same.

Hand rails shall be three-course, provided around the perimeter of the Passenger Deck. The rails shall be fabricated of 316, stainless steel, ***42" high, and shall be fitted with #9 flattened stainless steel expanded metal between the courses. See reference 6.1.***

Hand rails around the house top shall be three-course, 39-1/2" high.

A handrail gate shall be provided in way of the rescue boat and davit. Hinges and latches shall be heavy duty stainless steel. The gate shall swing outboard; latches shall be provided to secure the gate in both the open and closed positions.

Storm rails of l-1/4" Schedule 40 stainless steel pipe shall be fitted around the perimeter of the casing at the Main Deck, the Pilothouse and Deckhouse, and outboard of the curtain plate adjacent to the rescue boat access opening. Storm rails shall be set 4" out from bulkhead.

612.1 Safety Barriers

Contractor shall provide and install a 42" high, 6" × 6" mesh nylon web barrier at each end of the Main Deck between bulwark stanchions. Barrier shall be fabricated from MIL-W-23223 nylon 1-3/4" wide, minimum 0.075" thick material. Barrier shall be fabricated with a minimum three loops at each end to facilitate attachment to bulwark stanchions. Attachment to bulwark stanchions shall be accomplished by using minimum 3/8" chain shackles at one side and a series of three short lengths of 3/8" chain attached to barrier on the opposite side. A minimum three 3/8" chain hooks shall be welded to bulwark stanchions at each end of Main Deck, spaced to accommodate loop spacing in barrier to allow attachment of 3/8" chain to bulwark stanchions. Provide and install two equally spaced portable 2" Sch. 40 stainless steel pipe stanchions at each end of the Main Deck in line with bulwark stanchions to support net barriers. Stanchions shall be fitted with 1/2" stainless steel round bar hooks to hold net barriers in place. Provide and install reinforced stainless steel pipe sockets recessed in the Main Deck to support portable stanchions. Provide stainless steel pipe sockets, total of 4, on the Main Deck adjacent to bulwark stanchions to be used to store portable stanchions when net barriers are open.

614 Fixed Ballast

Contractor shall calculate the required fixed ballast necessary to produce a light ship heel and trim condition of zero degrees with all consumables and stores and all rigging, trim, and equipment on board.

Fixed ballast, if required, shall be pig lead of approximately 59 lbs per pig.

Fixed lead ballast shall be supported on adequate foundations to carry the loads and shall be restrained against movement under conditions of 5° pitch (fore and aft) and 25° roll (port and starboard). The vessel structure shall be protected from contact with the fixed ballast by a layer of 3/4" plywood in all areas which may come in contact with fixed ballast. Plywood shall be treated and coated to the Owner's satisfaction to prevent encroachment of moisture fire proofing.

Fixed lead ballast shall be coated in accordance with engine room finish coatings.

621 Joiner Bulkheads, Linings, and Ceilings

Bulkheads, whether flat side or stiffener side, and overheads in the following spaces shall be sheathed with vinyl-covered aluminum:

- Pilothouse
- Ship's office
- House top passageway
- Passenger lounge and restrooms
- Interior stairways above the Mid Deck
- Crew staterooms, quarters, day room and passageway

Colors and finishes shall be approved by the Owner. ***There will no painted smooth steel bulkheads allowed in the passenger lounge area. All surfaces shall be sheathed with the vinyl covered aluminum sheathing.***

The lower 48" of toilet space bulkheads and boxing around windows shall be 18 gauge polished stainless steel.

Removable panels shall be installed in areas concealing piping or electrical systems wiring.

All exposed metal doors, frames, etc. shall be spray painted to the satisfaction of the Owner using matching colors to the surrounding paneling.

622 Floor Plates and Gratings

Contractor shall develop necessary drawings for the installation of aluminum deck plates in the Engine Room, Tank Room, forward and aft voids, Bow Thruster Room, and Steering Gear Room.

Deck plates shall be installed to provide complete coverage of Engine Room and Tank Room except directly below machinery and manifolds. Deck plates shall be installed to provide walkways and convenient access to and around machinery in the voids, bow thruster room and steering gear room.

Grating shall be 1/4" aluminum diamond plate supported by 3" × 2" × 1/4" angles (beams and stanchions). Steel floor plates shall be installed only where required by USCG regulations. Grating shall be portable type bolted down with 3/8" diameter socket flat head countersunk stainless steel machine screws. Angle frames shall be drilled and tapped. Install 1/8" thick rubber between angles and aluminum decking. Flush hinged plates shall be provided for quick access to valves and bilge suction foot valves located below grating line. Hinges shall be stainless steel.

Two course galvanized pipe handrails shall be provided around the perimeter of floor plates where a drop off of more than 12" exists.

623 Ladders and Stairways

All ladders and stairways shall be constructed in accordance with 46CFR 72.05-20.

Install vertical ladders for access to all voids on bulkheads at each manhole.

- Vertical ladders shall be provided for access to the bottom of voids, tanks, house tops, and elsewhere, as required. Vertical ladders shall be portable, secured with 5/8" stainless steel fasteners, and constructed with 3" × 3/8" flat bar stringers and 5/8" square bar rungs spaced 12" apart. The minimum ladder width shall be 16" between stringers. Where independent ladder rungs are required, they shall be fabricated with a 3" drop center to prevent a foot from slipping off an open side. Rungs shall be aligned vertically.
- Ladders and independent rungs shall provide a foothold of 7" minimum depth. Ladders shall not be recessed under the deck more than is reasonably necessary to keep the ladder clear of the access opening.
- ***Vertical ladders shall portable where installed at all escapes and elsewhere as required for access to compartments.***

Inclined ladders shall be portable and secured with stainless steel fasteners. Inclined steel ladders shall have MC 10" × 8.4 # channel side stringers, with MC 10" × 6.5 # channel treads with 8" × 24" and 8" × 36" × 9/32" aluminum safety treads, Super-Grip, Type 182 as manufactured by Wooster Products, Inc., Wooster, OH. Safety treads shall be attached by stainless steel, flat head countersunk machine screws. Aluminum shall be insulated from steel by 1/8" thick, rubber gasket material. Special care shall be taken that tread heights vary no more than 1/4" – **any variation greater than this will be cause for rejection.**

624 Doors

Tops of doors shall be at least 6'-8" above the finished deck. Doors shall be operable from both sides and shall be furnished complete with latches, locks, key hooks, holdbacks, bumpers, and closers as required for each particular door. Reinforcing plates shall be provided in way of door closers. Door locks are described in Section 604.

Exterior surfaces of all doors shall be coated with same coating system as on adjoining structure.

Weather doors shall have watersheds over them where not otherwise protected.

Weather doors shall be filled with fibrous glass thermal insulation. Fire-rated doors shall be filled with USCG-approved structural insulation necessary to comply with the structural fire protection requirements. Doors to weather from the Passenger Lounge shall be fitted with panic bars.

Engine Room, Tank Room, and Crew Day Room access doors from the Main Deck shall be quick acting, watertight door.

Joiner doors shall be flush, hollow core. All joiner doors and door frames shall be of welded steel construction.

All doors shall be fitted with hooks with bumpers to secure them in the open position, except watertight doors. The passenger toilet and passenger cabin doors shall be fitted with heavy duty all stainless-steel door closures, marine type.

Joiner and weather tight doors shall be installed with 1/4" diameter, hex head, stainless steel, machine screws with nuts and lock washers spaced on 3" centers.

Joiner doors opening to the weather shall be stainless steel with window, fitted with weather and fume tight frames, Four sided sill designed for bolted installation with maximum 2" bottom sill. Apply sealant between frame and structure before bolting in place.

Toilet space doors, frames, and sills shall be stainless steel construction. Doors shall be fitted with stainless steel hinges and lever type lock sets. Doors shall be fitted with maximum 2" sill.

The EOS joiner door shall be stainless steel construction with weather and fume tight frame. Door shall have thermal and acoustic insulation, and shall be fitted with stainless steel hinges and stainless steel lever type mortise lock set (without lock). Door shall be fitted with flush sill. ***A 18" x 30" window shall be fitting in the EOS door.***

Two weather tight exterior mounted, sliding doors shall be installed at the Emergency Generator Room as shown on Reference 6.1. Door, frame, and sill shall be stainless steel construction. Doors shall be fitted with stainless steel guide, bronze sheaves and track and lever handle mortise lock set. Door shall be fitted with flush sill. Modify bottom door track by installing 1" × 3/16" flat bar on inboard side to prevent water from entering space.

625 Windows and Window Wipers

Five (5) windows at the Pilothouse front and one window at the aft control station shall be fitted with pantograph wipers, Wynn model 1801.

Pilothouse and aft control station windows shall be of size and at locations as shown on plans and shall be stainless steel construction with clamp-in type installation properly sealed to prevent leakage.

Lounge windows shall be of size and at locations as shown on plans and shall be 1/4" thick (minimum) dark tint laminated safety plate glass, in accordance with ANSI Z26.1 and shall be stainless steel construction with clamp-in type installation, properly sealed to prevent leakage.

626 Window Defogger

A window defogger shall be furnished and installed with outlets at all forward pilothouse windows. The outlets should be installed at the base of the windows to furnish hot air across the window surface. Control for the defogger shall be located on the console including fan speed and heat control. The ducting shall be covered using the same material as used for wall covering with screws to provide easy removal and maintenance.

631 Coating Systems

Final color selections shall be determined by the Owner at a later date. The Contractor shall provide and install custom color trim similar to other vessels in the NC DOT fleet.

631.1 Surface Preparation

Surface preparations and coating as specified herein shall be accomplished in strict accordance with and as recommended by the Steel Structure Paint Council, Jotun Marine Coatings Company, and the Owner. The Owner reserves the right to select the standards used.

Where structure, machinery, or equipment will cover other structure in a manner that prevents access for maintenance, both structures shall be cleaned prior to installation of the covering structure and

both coated with one (1) coat of inorganic zinc followed by the applicable paint schedule as applied to the surrounding area as specified elsewhere herein.

All grease, dirt, and other contaminating properties shall be removed from surfaces before painting: All loose, blistered, cracked paint, all rust and mil scale shall be removed from surfaces to be painted by appropriate methods as specified elsewhere herein, and spot primed with appropriate primers prior to subsequent coatings.

Zinc primers shall be fully cured and all oxidation removed prior to subsequent coatings.

All coats of paint applied must be compatible with primers and other paints.

Sufficient time for proper drying or tacking shall be allowed between coats.

All painting shall be accomplished to protect all surfaces liable to water, immersion, seepage, or condensation.

The vessel shall be shifted on blocks so that complete painting of the bottom area may be accomplished. Areas in way of block spots shall be shotblasted and coating system brought up as specified herein.

631.2 Type Coating

All paints used, unless otherwise specified, shall be of the best quality for marine application and applied in strict accordance with Jotun recommendations as directed by ***Jotun and the Owner***.

Provide the Owner's representative with one (1) copy of painting report prior to each application of paint.

The Owner reserves the right to approve the manufacturer of the coating system used and all paint for work not described or called for in this section but which is required and shall be accomplished using a paint schedule designed for the purpose intended and within the applicable standards.

631.3 Weather Conditions – Minimum Standards

No paint shall be applied when weather conditions are below the minimum recommended standards as prescribed by Jotun product data sheets. Contractor shall provide a factory authorized applications technician to accept or reject surface preparation and environmental conditions prior to paint applications. In the event of uncertain or unfavorable weather conditions, the Contractor shall advise and discuss conditions and paint applications with the Owner prior to applying paint.

Conditions of the hull such as condensation will prohibit paint application. The Owner shall stop or delay all painting operation until more favorable weather conditions exist.

631.4 Paint Application

Paint may be sprayed, brushed, or rolled on as the Contractor select except as described below. Paint may not be thinned, except as approved by the Owner. Any coat applied without measurement or inspection of previous coats by Owner will not be recognized as applied.

The Contractor shall repair, as specified elsewhere herein, any areas damaged due to the use of destructive testing techniques, if used.

Protect all hull anodes, transducers, propellers, and bearing surfaces from paint coatings.

The final coat of finish paint above the water line shall not be applied until all other work has been completed and the vessel is otherwise ready for delivery. The final coat shall be applied by spraying only.

Should the vessel remain undelivered, excluding delivery time, three (3) months after launching, it shall be dry-docked, surface prepared and one (1) additional coat of anti-fouling paint applied.

The 6'-6" waterline shall be defined by intermittent weld bead of 1" in length on 4'-0" centers.

631.5 Shotblasting

All steel surfaces on the exterior of the hull, the entire interior of the hull, including all void spaces, the Engine Room, steering gear compartment, entire superstructure, Main Deck, overhang, bulwarks, etc. shall be shotblasted to near white metal, SSPC-SP-l0.

Immediately after shotblasting all shotblast material shall be completely removed from surfaces by sweeping and blowing with dry compressed air or other suitable means and one coat of inorganic zinc applied to prevent rusting. All shotblast material shall be completely removed from surfaces prior to any coating being applied.

Following general directions shall be accomplished for the preparation of surfaces to receive the self curing inorganic zinc coatings:

- Round off all rough welds and sharp steel edges, remove weld spatter.
- Dry-abrasive blast all pits and depressions, remove all mill scale, rust, rust scale, grease, paint or foreign matter. Surface profile from abrasive blasting should be similar to that obtained with fresh steel grit (G-40 size), steel shot (S-230 size), graded flint or silica sand (30-60 mesh), under nozzle pressure of 100 psi. If abrasives are reused they shall be cleaned of contamination. Do not reuse sand or flint abrasives.
- Apply inorganic zinc coating as soon as possible to prevent blasted surfaces from rusting.
- Keep surfaces moisture-free until coated. Keep oil, grease or other organic matter off surface before coating.
- Spot blast to remove any contamination. Do not solvent-wipe.
- During blasting operations, seal off all deck machinery, ventilation fans, and any other equipment which could be subject to damage from sandblasting operations. The Engine Room and all openings thereto are to be sealed off prior to blasting if any machinery is installed, and kept sealed for the duration of blasting operations.

631.6 Disturbed Surface Repairs

Any painted surface that is disturbed during construction or outfitting shall be restored to suit the adjacent area as follows:

- Remove any damaged coating system by sanding to a sound anchor profile.
- Sand surrounding paint to present an even contour with edges feathered and at least two of the three underlying coats separately visible and distinct from each other. Each layer or coat shall be a minimum of 2" wide.
- Where the disturbed area has penetrated through to the substrate any scarred or damaged metal shall be repaired and a proper anchor profile renewed.
- Restore damaged epoxy coatings systems to a finished surface profile equal to adjacent and surrounding areas. Each coat to be as specified elsewhere herein.
- Apply top coats as required elsewhere herein.

Finished paint shall blend with adjacent areas and present a smooth even profile free of runs, contamination, or other unsightly coating defects.

631.7 Clean-Up

After all construction and outfitting has been completed and just prior to vessels departure/delivery, Contractor shall remove all paint from all windows, slides, and free up moving sashes.

Contractor shall remove paint from all glass and bright work. All bright work shall be polished after all other work has been completed and vessel is otherwise ready for delivery.

Remove all paint and paint over-spray from machinery components, machinery label plates, signs, threads of wing nuts, and bolts used for securing vent and storm covers etc., hinge pins, shafting, door knobs, latching mechanisms, actuator rods, valve stems, etc.

Vessel shall be thoroughly cleaned throughout including but not limited to the removal of all dust, grit, grease, solvents, and lint from all spaces, machinery, components, structure, void vents, drains, bilges, paneling, furnishings, and deck coverings.

Wash down with fresh water and dry all decks, superstructure and bilges prior to final delivery of vessel.

Ferry will have special trim stripes painted on superstructure, and bulwarks. Contractor shall assume that at least two different colors of paint will be applied. Special trim is based on colors of a North Carolina University to be selected at a later date. Accent stripes to be similar to the vessel PAMLICO.

631.8 Paint Schedule

Coat No.	Product	Mils DFT
1	Jotun Muki Z WB 50 Pre-construction primer	1
2	Jotacote Universal Prime coat	7 +/- 1

Steel surfaces shall be finished as described below. Special care shall be taken to apply full thickness of coatings behind flanges. Failure to apply full coating thickness at any locations shall be remedied prior to application of successive coats.

Exterior hull to waterline

No.	Product	Mils DFT
1	Safeguard Universal gray	5 +/- 1
2	Hydroclean antifouling, Light red	4 +/- 1
3	Hydroclean antifouling, Dark red	4 +/- 1

Exterior hull above waterline and bulwarks

No.	Product	Mils DFT
1	Jotamastic lt gray	7 +/- 1
2	J-Kryl black	5 +/- 1

Exterior decks

No.	Product	Mils DFT
1	Jotamastic lt gray	7 +/- 1
2	J-Kryl gray	5 +/- 1

Add heavy nonskid to final coat on all exterior decks.

The ADA path and 6" wide lane stripes on the Main Deck shall be painted yellow. Paint large numerals "1", "2", and "3" at each end of the port side traffic lanes as directed by the Owner.

Superstructure and house exterior

No.	Product	Mils DFT
1	Jotamastic lt gray	7 +/- 1
2	J-Kryl white	5 +/- 1

Interior exposed bulkheads and overheads

No.	Product	Mils DFT
1	Jotamastic lt gray	7 +/- 1
2	J-Kryl white	5 +/- 1

Interior decks (except where vinyl tile is installed)

No.	Product	Mils DFT
1	Jotamastic lt gray	7 +/- 1
2	J-Kryl gray	5 +/- 1

Bilges

No.	Product	Mils DFT
1	Jotamastic lt gray	7 +/- 1
2	J-Kryl white	5 +/- 1

Potable water tanks

No.	Product	Mils DFT
1	Epoxy Tank Lining 550, Buff	7 +/- 1
2	Epoxy Tank Lining 550, White	7 +/- 1

Fuel, dirty oil, and lube oil tanks

No.	Product	Mils DFT
1	Oil	N/A

Black and gray water sumps are polyethylene and shall not be coated.

Aluminum deck plates and stainless steel railings shall not be coated.

633 Cathodic Protection

Sacrificial high purity zinc anodes shall be provided and installed in accordance with the recommendations of the Society of Naval Architects and Marine Engineers (SNAME) PNR R-21, Fundamentals of Cathodic Protection for Marine Service. Anodes shall be installed with the long axis fore and aft, attached by welding to the hull, equally divided port, and starboard.

634 Deck Coverings

Deck covering shall not be installed under built-in furniture or under equipment with enclosed foundations.

Before any deck covering is installed, the decks shall be free of rust, grease, oil, scale, loose paint, and other extraneous matter. Attachments to, and penetration of, the structure to be covered shall be complete and the structure tested, as required, before applying coverings.

Before vinyl tile is installed, the deck shall be faired with underlayment in way of laps, depressions in plating, and weld seams. Underlayment shall be applied only to the minimum extent required to fair.

All deck coverings shall be applied in accordance with manufacturer's recommendations.

Deck covering in Pilothouse, Ship's Office, Passenger lounge, Passenger restrooms, Crew Staterooms, Crew Day Room, Crew Store Room, and Crew Galley shall be 12" × 12" vinyl tile. Tile color shall be "Sand Drift White, # 51858". The Contractor shall install a 4" high vinyl cove base wherever tile ends at a vertical boundary.

The entire EOS deck shall be covered with gray diamond pattern insulating switchboard matting meeting the requirements of ASTM D-178 and MilSpec M-15562F.

635 Hull Insulation

The Contractor shall furnish and install thermal insulation in accordance with Reference 6.3 and 46 CFR Subchapter H. Installation of all types of insulation shall be per manufacturer's recommendations.

Exterior weather boundaries and boundaries separating air conditioned spaces from non-air conditioned spaces to be insulated with a minimum 3" of thermal USCG-approved insulating material.

Acoustic faced insulation shall be 2 pound /cubic foot, 2" thick, or equal and installed at the Engine Room overhead, Engine Room companionway, and on the exterior of all EOS boundaries (except insulation shall be on the underside of the Main Deck). Insulation shall be sheathed with factory-finished aluminum color perforated, 18 gage sheet metal, to all bulkheads and overhead complete with trim.

Where structural fire protection insulation is not required, thermal insulation shall be provided on all weather boundaries in ventilated passenger and crew spaces, with the exception of the Engine Room. In addition, the space under the Pilothouse shall receive thermal insulation on its weather bulkheads and underside of the deck in way of the Passenger Cabin.

Seams of cloth back insulation shall be covered with glass tape so as to present a smooth surface. Coat exposed cloth backed insulation with vapor-barrier sealer after installation and prior to bulkhead liner installation and/or paint application.

636 Hull Dampening and Vibration Control

The following measures will be taken by the Contractor to control vibration:

- Generator sets shall be mounted on marine isolators. Manufacturer and types shall be per engine manufacturer's recommendation.
- Fans and compressors shall be mounted on marine type isolation mounts, and connected to ducting through flexible joints.
- Piping connections to equipment mounted on vibration isolators shall be through flexible connections.

640 Furniture and Furnishings

Furniture and furnishings shall be provided as shown on Reference 6.1 and shall be good marine quality, installed so as to present a complete and pleasing package satisfactory to the Owner.

644 Sanitary Spaces and Furnishings

Bulkhead mounted stainless steel countertops and lavatories shall be provided in the toilet spaces. Piping and drains under the lavatories shall be fitted with removable preformed insulating pads in accordance with ADA requirements, or shall be fitted with removable stainless steel plate guards.

There shall be no sharp edges or corners on the countertops or its supporting structure that may cause injury to passengers. Install a self-closing solid brass chrome plated faucet, stainless steel soap

dish and 12" × 18" commercial grade mirror with stainless steel frame at each lavatory. Provide one ADA-compliant lavatory and mirror in each passenger restroom.

Toilet partitions shall be stainless steel (vandal-resistant finish) and shall be firmly affixed to the deck, overhead, and bulkhead with tamper-resistant stainless steel fasteners.

Each passenger toilet shall be fitted with grab rails 30" to 36" long. Rails shall be stainless steel tubing securely attached with vandal-resistant stainless steel fasteners.

Toilets shall be ADA-compliant vitreous china, deck mounted, white with Sloan 110-3 flush valve (brass, chrome plated). Toilet seats shall be commercial high impact Polystyrene open front with stainless steel hinge as manufactured by American Standard catalog number 2221.018.

Provide and install one commercial grade toilet paper (roll) holder in each toilet stall.

645 Passenger Lounge

Provide and install model 10500 (2 seat) and 10500 (3 seat) units generally as shown on Reference 6.1. Seats shall be provided with powder coated aluminum pedestals and unpadded powder-coated aluminum grab rails. Seats shall be secured to deck with stainless steel studs welded to deck and secured with stainless steel acorn nuts and lock washers. Upholstery shall be transit grade, flame retardant vinyl and foam. Seat coverings shall be Naugahyde, Phoenix # PH 59 Almond. Provide three spare back and bottom covers. All seats shall be embossed with Ferry Division Logo including spare back covers.

Provide and install settees generally as shown on Reference 6.1. Settees shall be provided with powder coated aluminum pedestals and shall be secured to deck with stainless steel studs welded to deck and secured with stainless steel acorn nuts and lock washers. Upholstery shall be transit grade, flame retardant vinyl and foam. Seat coverings shall be Naugahyde, Phoenix # PH 59 Almond. Provide three spare back and bottom covers for each size settee.

Contractor shall provide and install fourteen rectangular, 29" high tables as shown on reference 6.1. Table sizes shall be as shown on Reference 6.1. Table tops shall be Custom Laminate, Pattern: Custom Graphics "Potters River Square" as directed by Owner.

Provide and stow two 20 gallon trash receptacles with self-closing stainless steel door and galvanized steel inner liner. Receptacles shall be 36" high x 15" diameter, 20 gallon, color tan.

Provide and install one officer's license frame, suitable to display six licenses. Locate as directed by Owner.

Provide and install one (1) bulletin board, 28" × 42" with satin chrome finish and plexi-glass front. Locate as directed by Owner.

Provide and install a coffee service cabinet module with adjacent duplex electrical outlet. Cabinet module shall be sized about 16" × 36" with doors and storage shelf below. Cabinet colors shall be selected by the Owner. Provide a Bunn or equal coffee maker with 8-cup capacity stainless steel decanter. The coffee maker shall be securely affixed to the counter top as directed by the Owner. A water filter furnished with the potable water system shall be installed inside the cabinet.

Contractor shall provide and install two free-standing water coolers with a capacity of 14.0 gph at 50° F. One unit shall be ADA-compliant. Install coolers in accordance with manufacturer's recommendations.

Provide and install four 20" flat screen television units in the passenger lounge at locations selected by the Owner. Duplex electrical outlets for these units shall be provided in the overhead immediately adjacent to the mounting location with 110 power and cable plug. Provide rigid powder coated, tamper-resistant foundations for these units.

Provide a DVD player in the ship's office wired to all four (4) television monitors.

645.1 Passenger Deck Exterior Seats

Provide and install bench seating on open passenger deck as shown on Reference 6.1. Seats shall be constructed of aluminum with approval by Owner. Seats shall be mounted to the deck with stainless steel studs welded to the deck, size to suit. Seat bottoms shall be arranged to avoid water entrapment.

651 Vending Machines

Vending machines shall be furnished by the Owner and installed by the Contractor generally as shown on Reference 6.1. Unobtrusive but secure strapping shall be provided to prevent vending machines from movement.

654 Cleaning Gear Locker

The cleaning gear locker shall be equipped with the following as approved by the Owner:

- Deep slop sink, FRP construction and mounted to the bulkhead.
- Two stainless steel shelves with sea rails over the slop sink.
- Four stainless steel hooks on the bulkhead for hanging brooms, mops, etc.

655 Crew Galley

The crew galley shall be arranged generally as shown on Reference 6.1. Counters shall have drawers under along with upper and lower cabinets (with shelves as directed by the Owner) as well as full backsplashes. All these shall be stainless steel as manufactured by Quality Metal Works (504-734-7216). Cabinet doors and drawers shall be equipped with latches to prevent opening in a seaway.

Additional equipment (to be Owner-approved) shall include:

- Stainless steel deep double sink with high quality faucet and sprayer
- Heavy duty overhead household style microwave oven, 2.0 cu ft capacity minimum.
- Four burner electric range/oven, with white finish house hold style.
- Refrigerator/freezer, 20 cu ft with ice maker, white finish house hold style.
- Four slice toaster, white finish
- Automatic coffee maker, “Bunn” 12-cup capacity with stainless steel decanter.

656 Crew Day Room

The Crew Day Room shall be arranged generally as shown on Reference 6.1. All furniture shall be such as is available in a high quality consumer furniture store.

Furniture (colors and styles to be Owner approved) shall include:

- ***One rectangular dining table***
- ***Six side chairs***

Tables shall be secured to the deck with stainless steel fasteners in locations approved by the Owner.

657 Crew Staterooms

Each crew stateroom shall be arranged generally as shown on Reference 6.1. Berths shall be enameled steel, double case bunks with curtains and drawers. Lockers shall be enameled steel.

A lavatory shall be provided in each stateroom. Install a chrome plated faucet, stainless steel soap dish and 12" × 18" mirror with stainless steel frame at each lavatory.

658 Crew Toilet Spaces

Toilets shall be vitreous china, deck mounted, white with Sloan 110-3 flush valve (brass, chrome plated). Toilet seats shall be commercial high impact Polystyrene open front with stainless steel.

Provide and install one commercial grade toilet paper (roll) holder in each toilet stall.

Shower stalls shall be high quality stainless steel Owner-approved with built in shelves for soap and shampoo, and a built in grab rail. Stalls shall be complete with all fixtures, curtain rods, curtains, etc. Shower shall have wood grating for drainage and provide for non-slip surface.

661 Ship's Office

The ship's office shall be furnished with the following commercial grade furniture:

- Desk with regular two drawers and two hanging file drawers
- Straight leg arm chair
- Two 4-drawer legal size file cabinets
- DVD shelves with storage
- Book shelf with four shelves

Except for the chair, all furniture shall be secured to the deck or a bulkhead.

The book shelf and file cabinets shall be affixed to a transverse bulkhead. Furniture selection and arrangement shall be as approved by the Owner.

662 Pilothouse Outfit

662.1 Consoles

The Pilothouse and Aft Control Station shall be fitted with consoles generally as shown on Reference 6.1 and as described in Section 400.

Consoles shall be totally enclosed manufactured of steel with suitable stiffeners to support equipment installation. Hinged doors or removable panels shall be installed to provide access. Door sills shall be portable or removable. Stowage, equipment mounting surfaces, shelves, louvers, etc. shall be provided.

Equipment and instruments listed elsewhere herein shall be installed in consoles to provide complete operational control centers.

662.2 Furniture

The Pilothouse shall be furnished with the following commercial grade furniture and items:

- Two pilot chairs with aluminum base and vinyl seat and back, adjustable. Color shall be Owner selected.
- Chart table of enameled steel construction with a single 5" deep chart drawer and cabinets below. Chart table shall be furnished with a Plexiglas surface and red light for night use. Provide two duplex electrical outlets at the chart table.
- Book shelf with three shelves designed to fit below windows
- Settee with vinyl covered seat and back. Storage shall be provided below removable seat.
- Two USCG approved adult life preservers in storage rack overhead as directed by Owner.

662.3 Window Shades

Contractor shall provide and install window shades on windows located on both sides and aft end of pilothouse.

Shades shall be mylar-polyester film. Shade pattern shall be smoke/smoke 4.5 mill material consisting of two layers of smoke Mylar on (one of silver) in the middle.

Provide and install all mounting hardware including metal clips at bottom of windows to restrain movement while shade is covering window. Shades shall have manual roll-up bar at top.

662.4 Window Defrosters

See section 626

662.5 Window Washers

Not applicable

663 Engineers Operating Station (EOS)

Provide and install five double pane, 1/4" safety plate glass windows generally as indicated on Reference 6.1. Glass shall be installed with 2" air space between panes. Glass shall be set in self locking rubber channel and shall provide maximum visibility of Engine Room space.

Provide and install the following generally as shown on Reference 6.1:

- One legal size, four drawer, non-locking file cabinet
- One metal frame guest type chair without arms (office furniture) brown vinyl seat and back.
- Two (2) USCG adult size life preservers and storage rack as located by the Owner

- ***One marine clock, non-striking, 6" dial electric movement in polished brass case with wood base for bulkhead mounting as directed by the Owner***
- ***One white four (4) cu ft refrigerator to located by Owner***
- ***See section 436.2 for console equipment listing***

665 Machinery Spaces Outfit

Provide and install one workbench with four (4) drawers on each side and heavy metal top with 6" vise as shown on Reference 6.2.

Provide and install one flammable liquid storage cabinet, McMaster-Carr catalog #9974T53 or equal. Provide adequate foundations and install unit as directed by the Owner.

Provide and stow in the Engine Room, one 30 gallon, galvanized steel, oily waste can.

Provide and install padeyes over main engines, reduction gears, generator engines, thruster and thruster engine, to suit lifting arrangements and capacity of equipment installed. Padeyes shall be securely attached to ship's structure including any additional stiffeners required. ***Contractor to provide calculations showing design of padeye is sufficient for service intended. Padeyes are to be load tested to 150% of maximum intended load of equipment to be lifted and witnessed by Owner or Owners representative.***

671 Lockers

Contractor shall provide and install six (6) metal storage cabinets generally as shown on Reference 6.2. Lockers shall have adjustable metal shelves and lockable handle, all keyed alike. Lockers shall be securely attached to the deck and adjacent bulkhead.

672 Store Rooms

The crew store room shall be fitted with three-tier shelving all around except in way of the door. Shelving shall be of all stainless steel wire construction with sea rails on each tier. Shelving shall be well secured to the deck and to bulkheads.

680 Life Safety/Emergency Equipment

Life rafts, life preservers and other equipment shall be marked with vinyl letters in accordance with the U.S. Coast Guard regulations in effect at time of contract. Life preserver stowage shall be marked as required showing number of adult and child life preservers at each location. Contractor shall provide 300 life jackets in addition to the crew life jackets stored elsewhere.

The quantity, location and installation of life saving appliances are subject to final approval of the local OCMI at Cedar Island, North Carolina.

681 Life Rafts/Buoyant Apparatus

Provide and install six USCG-approved, 50-person, Inflatable Buoyant Apparatus (IBA). IBA's shall be located on Pilothouse Deck as shown on References 6.1 and 6.4.

Provide and install six IBA galvanized launching devices.

682 Personal Life Saving Equipment

Provide, install, and stow as required the following equipment:

- Three hundred and ten (310) Jim Buoy model 601-T adult life preservers
- Thirty five (35) Jim Buoy model 603-T children's life preservers
- Eight (8) Jim Buoy model JB-SO-30 life rings w/ M/N 1123-30 life ring brackets
- Two (2) Jim Buoy model 1820 man overboard lights
- Two (2) Jim Buoy model 1821 man overboard light brackets

Contractor shall stow life preservers in fiberglass stowage lockers as shown on Reference 6.1. Provide a wood grating in each locker; finish shall be natural with varnish sealant. Adult and children's life preservers shall be separated by a divider. Provide and install stainless steel, brass, or aluminum ventilation grills in each locker. Hinges for the lockers shall be 316 stainless steel. Lockers shall be securely mounted to 3"x 2"x1/4" 316 stainless steel foundation angles.

Contractor shall stow life rings and man overboard lights as shown on Reference 6.4. Final stowage locations shall be approved by the Owner.

Contractor shall provide and install on each Main Deck life ring, 100 feet of 5/16", braided, orange, polyethylene rope. Contractor shall provide and install four (4) of the eight (8) life rings stowed on the Main Deck, 6 feet of 5/16", braided, orange, polyethylene rope with one end spliced to the life ring and other end spliced to a man overboard light. The remaining four (4) life rings shall be located on the passenger deck, two (2) forward and two (2) aft.

Contractor shall provide and install all necessary ancillary materials and equipment, including but not limited to all stainless steel fasteners, lashing twine, rope, etc. for a complete and operational system.

683 Emergency Equipment

Emergency equipment shall be provided and installed generally as shown on Reference 6.4 and as described herein. A fire / safety plan shall be frame mounted in the hallway aft of the pilothouse. Size of plan shall be approximately 24"x36 hardwood frame with 1/8" Plexiglas. Safety items shall be noted using international symbols and bill of materials showing quantities. Exits shall be marked along with passenger debarkation areas.

683.1 Rescue Equipment

Contractor shall provide and stow on board vessel as directed by the Owner the following rescue equipment as supplied by Lifesaving System Corp. 220 Elsberry Road, Apollo Beach, FL 33572:

- One Medevac II litter, M/N 404-F w/flotation kit #101 installed and with litter hoisting sling M/N 193 (factory installed)
- One rescue strop, M/N 214

Contractor shall provide and install one gear storage locker. The locker shall be installed on the Navigation Bridge Deck as directed by the Owner.

Contractor shall fabricate one aluminum rescue ladder fabricated of 2" × 3" × 1/8" wall rectangular aluminum tube rails spaced 18" apart and 1 1/2" × 1" C-shaped rungs spaced 12" apart. Ladder shall be approximately 9 foot long and shall hinged at the main deck. The ladder

shall be secured by latching pin in the vertical position when not in use. Access door at the ladder shall be 30" wide with latching devise to keep closed.

683.2 Defibrillator

Contractor shall provide and stow one (1) Lifepak 500, P/N 3011790-B automatic external defibrillator as manufactured by Medtronic Physio-Control, P.O. Box 97006, Redmond, WA, (425-867-4000). Unit shall be bulkhead mounted in Pilothouse with final location as directed by the Owner.

683.3 Fire Axes

Contractor shall provide and install four fire axes with stainless steel mounting brackets in locations as directed by the Owner and in accordance with 46CFR 76.60.

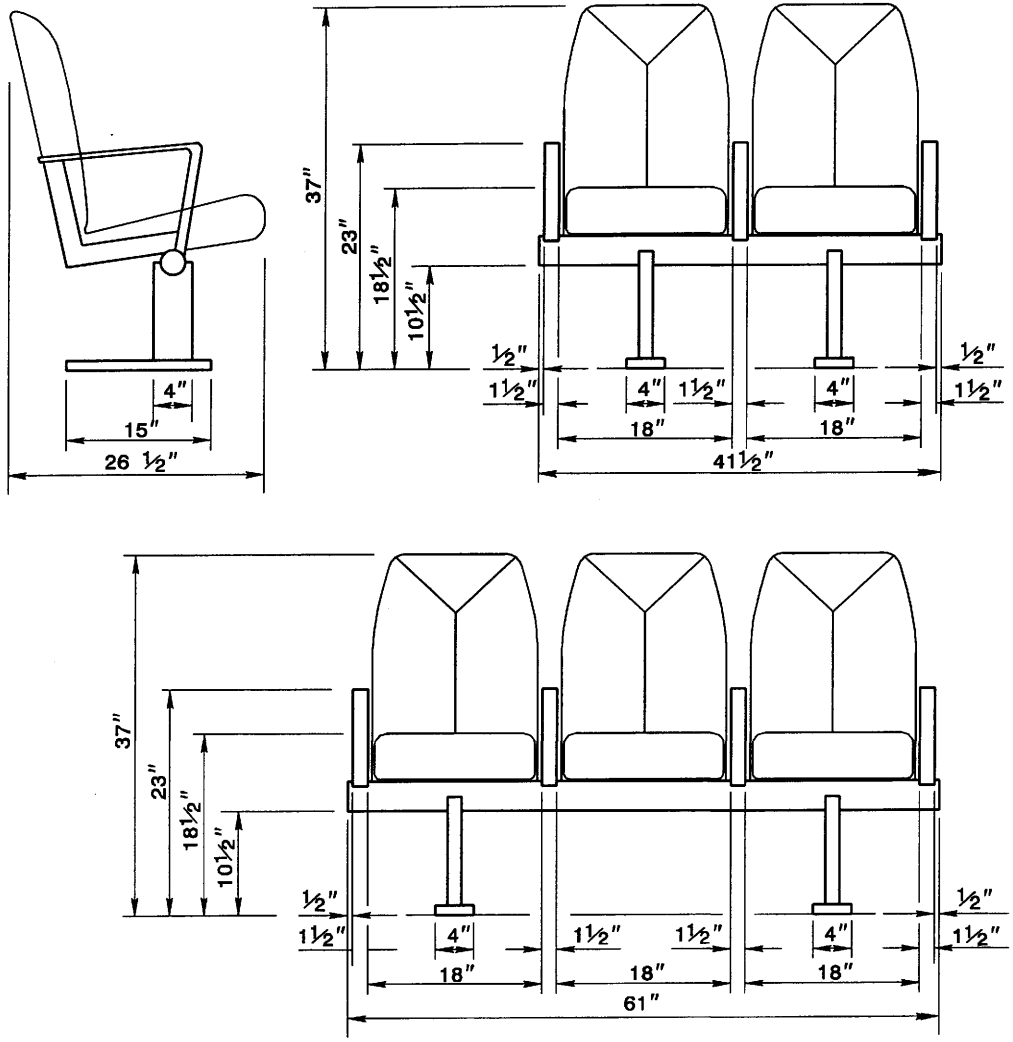
683.4 Fire Extinguishers Hand Portable

As a minimum, the Contractor shall provide and install hand portable fire extinguishers, USCG-approved type in following locations:

▪ Engine Room	4	15 # $C0_2$
▪ Tank Room	2	15 # $C0_2$
▪ Steering Gear Room	1	15 # $C0_2$
▪ Bow Thruster Room	1	15 # $C0_2$
▪ Emergency Generator Room	1	15 # $C0_2$
▪ Main Deck Bulwarks	4	15 # $C0_2$
▪ Main Deck Superstructure	2	15# $C0_2$
▪ Engine Room Access Trunk	1	15 # $C0_2$
▪ Passenger Lounge Interior	2	2 Gallon foam
▪ Pilothouse	1	10 # ABC Type II
▪ Crew quarters	2	2 Gallon foam
▪ Spares	6	15 # $C0_2$
▪ Spare	1	10 # ABC

$C0_2$ extinguishers shall be contained in truck style mounting bracket. ABC extinguishers shall be mounted with tension type bracket to prevent movement. Spares shall be mounted in like manner and stowed in the tank room mid-ship with final location as directed by the Owner.

Contractor shall provide and install one (1) B-III, 35#$C0_2$ hose and reel extinguisher in the engine room as directed by the Owner.



*NOTE: SEAT WIDTHS CAN BE CHANGED TO ANY WIDTH

PASSENGER SEATS

GROUP 8 TESTING, INSPECTION, & DELIVERY

800 Tests and Inspections

841 Tests

Tests of structure, piping, machinery, and electrical systems shall be accomplished in accordance with applicable classification societies and regulatory agency test requirements.

This vessel shall be inspected in accordance with title 46 Code of Federal Regulations, Subchapter "H", and applicable classification society rules incorporated by reference therein. All tests shall be witnessed and approved by the Owner.

Three copies of all test records signed and dated by the Contractor, Owner, and USCG (as required) shall be delivered to the Owner prior to the vessel leaving the Contractor's location. These records shall be bound in 3" D-style ring binders and properly labeled. Binders shall be black in color with clear cover to hold a label of 8-1/2" × 11" with the vessel's name, Contractor's name, and hull number. Three copies of the documents shall also be provided on CD.

Tests and trials shall be conducted by the Contractor at the Contractor's expense. Any deficiency recorded during the trials shall be corrected and given another trial similar to the original.

841.1 Welding

Welding shall be subject to inspection at any point in the process from fit-up to finish. Non-destructive inspection of all welds shall be performed at any point in the welding process at the discretion of the Owner.

Final welds shall be subjected to radiographic inspection in accordance with ABS Rules for Non-Destructive Inspection of Hull Welds, latest edition. Additional radiographs shall be taken for each failed radiograph, if any, in random locations designated by the Owner on a one-for-one basis.

All welds shall be subjected to visual inspection by the Owner to assure that they are free from surface discontinuities which might prove detrimental to the weld, such as undercut, porosity, cracks, melt through, burn through, etc.

841.2 Structural Tests

Voids and compartments below the Main Deck shall be proven watertight by testing at 1.5 PSI. While compartments and voids are under pressure, all boundaries shall be soaped to identify any leaks. Leaks shall be repaired by completely removing non-tight welds by grinding or other suitable

means and re-welded to the satisfaction of the Owner. No repair welding shall be accomplished while the compartment is being tested.

Watertight boundaries above Main Deck shall be proven by hose testing using a stream of water of at least 50 PSI directed at the boundary being tested to prove the boundary tight.

Any additional test to prove the integrity of the vessels structure which may be required by the USCG shall be performed as a part of this contract.

841.3 Piping System Tests

All tests of piping systems required by the USCG shall be performed as a part of contract.

All piping systems shall be tested using the medium normally carried in the system to a pressure of 1 1/2 times the system MAWP (Mean Actual Working Pressure), but in no case less than 50 PSI.

Hydraulic system piping shall be pickled and flushed.

Fuel system piping shall be flushed using diesel oil.

Initial installation test of $C0_2$ system piping shall be free from any leaks and shall maintain required test pressures for five minutes with no drop in pressure.

Test pressures shall be held for a minimum of thirty minutes to allow inspection of the entire piping system. After inspection of the system under pressure, the test pressure shall be monitored by a calibrated gauge, with a mid point range within 10% of the test pressure, for a minimum of one hour without any drop in pressure. The test gauge shall be at the opposite end of the piping system from the source of the test medium.

841.4 Electrical System Tests

Electrical systems shall be tested as prescribed in IEEE Standard #45 Section 46, ABS Rules for Building and Classing Steel Vessels Sections 35.161.2 and 35.161.3; and 46CFR 110.30.

The generators and switchboard shall be tested for the full anticipated load during an emergency condition. This shall include pumps, steering, lighting, rescue davit, and any other expected loads as required by the USCG. The list of items to be loaded on the switchboard shall be pre-approved by the Owner and the USCG before test can begin.

The emergency generators and switchboard shall be tested for the full anticipated load during an emergency condition. This shall include pumps, steering, lighting, rescue davit, and any other expected loads as required by the USCG. The list of items to be loaded on the switchboard shall be pre-approved by the Owner and the USCG before test proceeds.

841.5 Machinery Tests

Each piece of machinery shall be operated for a period sufficient to indicate satisfactory performance and operational acceptability, but not less than two hours. Each piece of machinery shall have its own test page or pages as required to record data with place for date, time, and witnesses to test. Anticipated test results shall be pre-approved by the Owner.

841.6 Electronic Equipment Tests

All other machinery and equipment shall be tested to prove its satisfactory operation and performance to the satisfaction of the Owner and the USCG.

841.7 Alarm System Tests

A pretest of all alarm points shall be conducted to verify alarm point settings and dependability of system. The test shall be conducted by the manufacturer so any adjustments can be made by the manufacturer and noted in the warranty paperwork.

Any adjustments shall be documented and become part of the vessel trial records.

842 Dock and Sea Trials

Dock trials shall include, but not be limited to, Sections 801.5 through 801.8.

A pre-approved agenda shall be used to conduct all dock trials. This document shall be signed by Contractor and by the Owner at the conclusion of each test.

Sea trials shall be conducted to check operation of steering gear and all equipment. The Owner and the USCG shall be present to witness the trials. A minimum of two weeks notice shall be given by the Contractor to all parties involved as to the date(s) and time of the sea trials.

842.1 Main Engines, Generators, and Bow Thruster Engine

Each propulsion engine and generator shall receive a sea trial audit in accordance with manufacturer requirements. Main and auxiliary engines shall be tested using manufacture provided testing equipment as required to provide an accurate PAR test, providing a baseline for future testing of equipment by the Owner.

842.2 Bow Thruster Test

The bow thruster shall be tested with the vessel at the dock. The bow thruster shall be tested in both directions with engine at low, medium, and high RPM ranges.

The thruster will be checked at sea to record the time to rotate the vessel through 90°, 180°, 270°, and 360° of rotation with the engine at low, medium, and high RPM ranges.

842.3 Endurance Test

This trial shall consist of a run of at least four hours, two hours each in opposite directions, during which the following tests shall be conducted:

1. Full speed run for thirty minutes to record vessel speed. This test is to be conducted in both directions.
2. Speed runs at maximum speed, 12 knots, 10 knots, 6 knots, and at idle speed in both directions for a minimum of fifteen minutes each. During this time vibrations shall be recorded.
3. Full ahead for ten minutes to stop and stop to full speed. This test is to be conducted in both directions.
4. Full ahead for 10 minutes to full astern. This test is to be conducted in both directions.
5. The vessel shall be steered hard over ahead and astern. During this time vibrations shall be recorded.
6. The vessel shall be steered hard over to record the turning radius with radar and GPS at four points of the compass.
7. All machinery equipment shall be tested during sea trials with the performance recorded in the test records to be turned over to the Owner.

842.4 Vibration Analysis

The Contractor shall provide the services of a reputable company experienced in conducting analysis of vibration induced by fluid-structure interaction, structure-machinery interaction, and/or by the propeller. The completed vessel shall be examined to determine extent of vibration at operating conditions and speeds. A detailed report shall be provided to the Owner.

843 Stability Test

After dock trials are completed a stability test, as prescribed by the USCG, shall be conducted by the Contractor. Contractor shall supply weights, crane, or other means of shifting weights, labor as required, and cribbing for weights.

856 Instruction Manuals, Drawings, Delivery, and Certificates

856.1 Manuals

Three sets each of the manufacturer's operating and maintenance manuals shall be furnished for all machinery and equipment furnished by the Contractor. Manuals shall contain operating, maintenance instructions, and a list of parts. These manuals, along with the test records, shall be delivered to the Owner prior to the vessel leaving the Contractor's facility. The Owner shall approve all departure documents which shall include all deliverable items at the time of departure.

856.2 Drawings

The Contractor shall provide **as-built** drawings on CD in **AutoCAD format** to the Owner prior to sea trials. The drawings shall include contract plans, as-built plans, a copy of all USCG stamped

approved plans in **pdf format** and all other plans noted herein required to construct the vessel including vendor detail drawings, schematics, and bill of materials.

856.3 Launching Ceremonies

In accordance with the Contractor's standard launching policies and procedures to properly launch a vessel of this size and type, the Contractor shall provide all necessary facilities, personnel, bunting, etc. The Owner reserves the privilege to invite up to ***20 guests***.

856.4 List of Certificates to Be Provided

1. Builder's Certificate
2. Documentation Certificate
3. Admeasurement Certificates (Regulatory and International)
4. Stability Letter with stability data and other stability documents as required (USCG stamped)
5. Radio License
6. Compass Deviation Card
7. Life Raft (IBA) Certificate for (6) 50 person rafts
8. Certificate for CO_2 system installation
9. Local testing lab certificate for potable water tanks
10. Certificate of Financial Responsibility (furnished by Owner)
11. Certificate of Inspection

856.5 Progress Payment Schedule

The payment of event #2 is contingent on USCG approval of drawings prepared by Contractor.

New Ferry Payment Schedule (milestone events)

EVENT	PERCENTAGE
1. Signing of contract	10%
2. Completion of engineering and drawings (USCG approved)	5%
3. Keel laying (40 tons of steel fabricated and erected)	5%
4. Completion of 50% of hull and house steel	5%
5. Fabrication, erection, and welding of 100% of hull steel	10%
6. Fabrication, erection, and welding of all superstructure	10%
7. Installation of propulsion machinery and elevator	10%
8. Complete installation of all machinery, electrical, and electronics	10%
9. Completion of all joiner below and above main deck	5%
10. Completion of all outfitting and painting	5%
11. Satisfactory completion of sea trials	10%
12. Delivery of vessel to Manns Harbor, NC	10%
13 Five percent to be held for 30 days after delivery to Manns Harbor, NC	5%
Total	100%

857 Final Acceptance of Vessel

The vessel shall be delivered complete to the North Carolina Department of Transportation, Ferry Division, NC State shipyard in Manns Harbor, NC. The Owner shall accept the vessel pending a final inspection on dry dock of the vessel at its shipyard in Manns Harbor, NC. The contractor shall provide for repairs of any and all damage to vessel structure, propellers, rudders, anodes and/or paint due to damage occurred during trip to Owner's facility or during launching at contractors facility.

PROJECT: WBS 38683.3.3 TIP F-4004C

NEW CONSTRUCTION PASSENGER/VEHICLE FERRY

INSTRUCTIONS: Contractor shall complete each item below by inserting the appropriate value for each. Lump sum per vessel shall be equal to the total of individual item cost. Please use pen for completion.

ITEM	DESCRIPTION	COST (Labor & Material)
1	Engineering & As-built	_____
2	Stability	_____
3	Hull Steel	_____
4	Superstructure	_____
5	Bulwarks & Tire Guards	_____
6	Machinery	_____
7	Piping	_____
8	Electrical	_____
9	Joiner (Passenger Lounge & Crew Quarters)	_____
10	Elevator	_____
11	Stairways, Ladders & Handrails	_____
12	Outfitting	_____
13	Doors, Windows & Manholes	_____
14	Shafting	_____
15	Rudders & Steering	_____
16	Electronics	_____
17	Fire, Safety & Rescue Boat	_____
18	Painting	_____
19	Names & Tags	_____
20	Testing & Trials	_____
21	Delivery	_____
22	Bonding	_____
23	Profit	_____

PROJECT: WBS 38683.3.3 TIP F-4004 C

NEW CONSTRUCTION PASSENGER/VEHICLE FERRY

***** LUMP SUM BID *****

C202197

Amount to complete plans, construction, testing and delivery of **one (1) passenger/vehicle ferry** in accordance with the plans and specifications.

Lump Sum **$**_____

*** NOTE ***

All bidders shall specify, in the space provide below, the physical location of the construction facility, which will be used for the construction of this project.

This information shall be used by the Board of Transportation when award is made to the Lowest Responsible Bidder. Any substitution of construction site after award of contract shall be approved by the Department. The Contractor shall submit any request for substitution through the Marine Engineer of the Ferry Division, and the request must provide a valid basis or reason for proposed substitution.

FACILITY LOCATION

_____

_____

_____

PROJECT: WBS 38683.3.3 TIP F-4004 C

NEW CONSTRUCTION PASSENGER/VEHICLE FERRY

LABOR AND MATERIALS	PER HOUR COST
a. Price of Chipper	$_____
b. Price of Shipfitter	$_____
c. Price of Machinist	$_____
d. Price of Carpenter	$_____
e. Price of Electrician	$_____
f. Price of Rigger	$_____
g. Price of Pattern Maker	$_____
h. Price of Pipe Fitter	$_____
i. Price of Welder	$_____
j. Price of Sheet Metal Worker	$_____
k. Price of Painter	$_____
l. Price of Welder Helper	$_____
m. Price of Pipe Fitter Helper	$_____
n. Price of Electrician Helper	$_____
o. Price of General Labor (helper)	$_____
p. Price of Crane Operator	$_____
q. Price of Crane Service (overhead shop crane)	$_____
r. Price of Crane Service (crawler crane)	$_____
s. Price of Metal Prep (sand blasting or shot blast)	$_____
t. Price of Welding (per linear foot /pass)	$_____
u. Price of Galvanizing (hot dip process)	$_____

The price charged as itemized opposite each of the above listed artificers will, except as noted, include the cost of materials and tools such as gas, electricity, heat, compressed air, torches, air hammers, forges, welding equipment, welding iron, and all other materials normally employed by artificers in performing operations under their trades, but will exclude the cost of any other materials actually used by the artificers in these processes. When welding is performed, the required number of passes over one (1) foot of seam shall constitute one (1) linear welded foot. Materials used in work, if purchased from the Contractor, shall be priced at his invoiced cost, plus 15 %.

LISTING OF DBE SUBCONTRACTORS

Sheet _____ of _____

FIRM NAME AND ADDRESS	ITEM NO.	ITEM DESCRIPTION	(*) AGREED UPON UNIT PRICE	DOLLAR VOLUME OF SUBLET ITEM

CONTRACT NO._____ **COUNTY**_____ **FIRM**_____

THIS FORM MUST BE COMPLETED IN ORDER FOR THE BID TO BE CONSIDERED RESPONSIVE AND BE PUBLICLY READ.
BIDDERS WITH NO DBE PARTICIPATION MUST SO INDICATE THIS ON THE FORM BY ENTERING THE WORD OR NUMBER ZERO.

LISTING OF DBE SUBCONTRACTORS

Sheet _____ of _____

FIRM NAME AND ADDRESS	ITEM NO.	ITEM DESCRIPTION	(*) AGREED UPON UNIT PRICE	DOLLAR VOLUME OF SUBLET ITEM

CONTRACT NO._____ **COUNTY**_____ **FIRM**_____

LISTING OF DBE SUBCONTRACTORS

Sheet _____ of _____

FIRM NAME AND ADDRESS	ITEM NO.	ITEM DESCRIPTION	(*) AGREED UPON UNIT PRICE	DOLLAR VOLUME OF SUBLET ITEM

CONTRACT NO._____ **COUNTY**_____ **FIRM**_____

LISTING OF DBE SUBCONTRACTORS

Sheet _____ of _____

FIRM NAME AND ADDRESS	ITEM NO.	ITEM DESCRIPTION	(*) AGREED UPON UNIT PRICE	DOLLAR VOLUME OF SUBLET ITEM

CONTRACT NO._____ **COUNTY**_____ **FIRM**_____

(*) The Dollar Volume shown in this Column shall be the Actual Price Agreed Upon by the Prime Contractor and the DBE Subcontractor, and these prices will be used to determine the percentage of the DBE participation in this Contract.

**Dollar Volume of DBE Subcontractor .. $ _____

Percentage of Total Contract bid Price _____%

**MUST HAVE ENTRY EVEN IF FIGURE TO BE ENTERED IS ZERO.

EXECUTION OF BID, NONCOLLUSION AFFIDAVIT, AND DEBARMENT CERTIFICATION

The person executing the bid, on behalf of the Bidder, being duly sworn, solemnly swears (or affirms) that neither he, nor any official, agent or employee of the bidder has entered into any agreement, participated in any collusion, or otherwise taken any action which is in restraint of free competitive bidding in connection with this bid, and that the Bidder intends to do the work with its own bonafide employees or subcontractors and is not bidding for the benefit of another contractor.

In addition, execution of this bid in the proper manner also constitutes the Bidder's certification of "Status" under penalty of perjury under the laws of the United States in accordance with the Debarment Certification included elsewhere in the proposal form, provided that the Debarment Certification also includes any required statements concerning exceptions that are applicable.

SIGNATURE OF CONTRACTOR
(If a corporation uses this sheet)

_____
(Print full name of corporation)

_____
(Address as Prequalified)

Attest_____ By_____
(Secretary) (Assistant Secretary) (President) (Vice President)
Delete inappropriate title (Asst. Vice President)
Delete inappropriate title

_____ _____
Print Signer's Name Print Signer's Name

CORPORATE SEAL

NOTE - AFFIDAVIT MUST BE NOTARIZED

Subscribed and sworn to before me this the

_____ day of _____, 20_____.

_____
(Signature of Notary Public) NOTARY SEAL:

of _____County.

State of _____.

My Commission Expires: _____

EXECUTION OF BID, NONCOLLUSION AFFIDAVIT, AND DEBARMENT CERTIFICATION

The person executing the bid, on behalf of the Bidder, being duly sworn, solemnly swears (or affirms) that neither he, nor any official, agent or employee of the bidder has entered into any agreement, participated in any collusion, or otherwise taken any action which is in restraint of free competitive bidding in connection with this bid, and that the Bidder intends to do the work with its own bonafide employees or subcontractors and is not bidding for the benefit of another contractor.

In addition, execution of this bid in the proper manner also constitutes the Bidder's certification of "Status" under penalty of perjury under the laws of the United States in accordance with the Debarment Certification included elsewhere in the proposal form, provided that the Debarment Certification also includes any required statements concerning exceptions that are applicable.

SIGNATURE OF CONTRACTOR
(If a joint venture, use this sheet)

Instructions to Bidders: On Line (1), print the name of each contractor. On Line (2), print the name of one of the joint venturers and execute below in the appropriate manner and furnish in the following lines all information required by Article 102-8 of the Specifications. On Line (3), print the name of the other joint venturer and execute below in the appropriate manner and furnish all information required by said article of the Specifications. For correct form of execution and information required for execution of this sheet by an individual, see Signature Sheets 3 and 4; for a corporation, see Signature Sheet 1; and for a partnership, see Signature Sheet 5.

(1)_____ and _____
A Joint Venture

(2)_____(Seal)
(Name of Contractor)

_____
(Address as Prequalified)

_____ By_____
Witness or Attest

_____ _____
Print Signer's Name Print Signer's Name
If a corporation, affix corporate seal:

and

(3)_____(Seal)
(Name of Contractor)

_____
(Address as Prequalified)

_____ By_____
Witness or Attest

_____ _____
Print Signer's Name Print Signer's Name
If a corporation, affix corporate seal:

NOTE - AFFIDAVIT MUST BE NOTARIZED For Line (2)

Subscribed and sworn to before me

this the _____day of _____, 20____.

_____
(Signature of Notary Public & Seal)

of _____County.

State of _____.

My Commission Expires:_____

NOTE - AFFIDAVIT MUST BE NOTARIZED For Line (3)

Subscribed and sworn to before me

this the ____ day of _____, 20___.

_____
(Signature of Notary Public & Seal)

of _____County.

State of _____.

My Commission Expires_____

EXECUTION OF BID, NONCOLLUSION AFFIDAVIT, AND DEBARMENT CERTIFICATION

The person executing the bid, on behalf of the Bidder, being duly sworn, solemnly swears (or affirms) that neither he, nor any official, agent or employee of the bidder has entered into any agreement, participated in any collusion, or otherwise taken any action which is in restraint of free competitive bidding in connection with this bid, and that the Bidder intends to do the work with its own bonafide employees or subcontractors and is not bidding for the benefit of another contractor.

In addition, execution of this bid in the proper manner also constitutes the Bidder's certification of "Status" under penalty of perjury under the laws of the United States in accordance with the Debarment Certification included elsewhere in the proposal form, provided that the Debarment Certification also includes any required statements concerning exceptions that are applicable.

SIGNATURE OF CONTRACTOR
(If an individual doing business under a
firm name, use this sheet)

Name of Contractor_____trading
(Print individual name)

_____
Witness

_____ and doing business as _____
Print signer's name (Print firm name)

_____
(Address as Prequalified)

Signature of Contractor_____
(Individually)

_____
Print signer's name

NOTE - AFFIDAVIT MUST BE NOTARIZED

Subscribed and sworn to before me this the NOTARY SEAL

_____ day of _____, 20_____.

_____
(Signature of Notary Public)

of _____County.

State of _____.

My Commission Expires:_____

EXECUTION OF BID, NONCOLLUSION AFFIDAVIT, AND DEBARMENT CERTIFICATION

The person executing the bid, on behalf of the Bidder, being duly sworn, solemnly swears (or affirms) that neither he, nor any official, agent or employee of the bidder has entered into any agreement, participated in any collusion, or otherwise taken any action which is in restraint of free competitive bidding in connection with this bid, and that the Bidder intends to do the work with its own bonafide employees or subcontractors and is not bidding for the benefit of another contractor.

In addition, execution of this bid in the proper manner also constitutes the Bidder's certification of "Status" under penalty of perjury under the laws of the United States in accordance with the Debarment Certification included elsewhere in the proposal form, provided that the Debarment Certification also includes any required statements concerning exceptions that are applicable.

SIGNATURE OF CONTRACTOR
(If an individual doing business in
his own name, use this sheet)

Name of Contractor_____
(Print)

_____
(Address as Prequalified)

_____ Signature of Contractor_____
Witness (Individually)

_____ _____
Print Signer's Name Print Signer's Name

NOTE - AFFIDAVIT MUST BE NOTARIZED

Subscribed and sworn to before me this the NOTARY SEAL

_____ day of _____, 20____.

_____
(Signature of Notary Public)

of _____County.

State of _____.

My Commission Expires:_____

EXECUTION OF BID, NONCOLLUSION AFFIDAVIT, AND DEBARMENT CERTIFICATION

The person executing the bid, on behalf of the Bidder, being duly sworn, solemnly swears (or affirms) that neither he, nor any official, agent or employee of the bidder has entered into any agreement, participated in any collusion, or otherwise taken any action which is in restraint of free competitive bidding in connection with this bid, and that the bidder intends to do the work with its own bonafide employees or subcontractors and is not bidding for the benefit of another contractor.

In addition, execution of this bid in the proper manner also constitutes the bidder's certification of "Status" under penalty of perjury under the laws of the United States in accordance with the Debarment Certification included elsewhere in the proposal form, provided that the Debarment Certification also includes any required statements concerning exceptions that are applicable.

SIGNATURE OF CONTRACTOR
(If a partnership, use this sheet)

_____
(Print Name of Partnership)

_____
(Address as Prequalified)

_____ By_____
Witness Partner

_____ _____
Print Signer's Name Print Signer's Name

NOTE - AFFIDAVIT MUST BE NOTARIZED

Subscribed and sworn to before me this the NOTARY SEAL

_____ day of _____, 20____.

_____
(Signature of Notary Public)

of _____County.

State of _____.

My Commission Expires:_____

EXECUTION OF BID, NONCOLLUSION AFFIDAVIT, AND DEBARMENT CERTIFICATION

The person executing the bid, on behalf of the Bidder, being duly sworn, solemnly swears (or affirms) that neither he, nor any official, agent or employee of the bidder has entered into any agreement, participated in any collusion, or otherwise taken any action which is in restraint of free competitive bidding in connection with this bid, and that the Bidder intends to do the work with its own bonafide employees or subcontractors and is not bidding for the benefit of another contractor.

In addition, execution of this bid in the proper manner also constitutes the Bidder's certification of "Status" under penalty of perjury under the laws of the United States in accordance with the Debarment Certification included elsewhere in the proposal form, provided that the Debarment Certification also includes any required statements concerning exceptions that are applicable.

SIGNATURE OF CONTRACTOR
(Limited Liability Company, use this sheet)

Name of Contractor_____
(Print firm name)

_____
(Address as Prequalified)

Signature of Manager_____
(Individually)

_____
Print Signer's Name

NOTE - AFFIDAVIT MUST BE NOTARIZED

Subscribed and sworn to before me this the

_____ day of _____, 20____.

NOTARY SEAL

_____
(Signature of Notary Public)

of _____County.

State of _____.

My Commission Expires:_____

Contract No: C202197

County: Hyde

ACCEPTED BY THE
DEPARTMENT OF TRANSPORTATION

_____
Contract Officer

_____
Date

Execution of Contract and Bonds
Approved as to Form:

_____
Attorney General

DEBARMENT CERTIFICATION OF BIDDERS

Instructions & conditions for certification

1. By signing and submitting this proposal, the bidder is providing the certification set out below.

2. The inability of a bidder to provide the certification required below will not necessarily result in denial of participation in this contract. If the certification is not provided, the bidder must submit an explanation (exception) of why it cannot provide the certification set out below. The certification or explanation (exception) will be considered in connection with the Department's determination whether to award the contract. However, failure of the prospective bidder to furnish a certification or an explanation (exception) may be grounds for rejection of the bid.

3. The certification in this provision is a material representation of fact upon which reliance is placed when the Department determines whether or not to award the contract. If it is later determined that the bidder knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the Department may terminate this contract for cause of default.

4. The prospective bidder shall provide immediate written notice to the Department if at any time the bidder learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

5. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this provision, have the meanings set out in the Definitions and Coverage sections of the rules implementing *Executive Order 12540*. A copy of the Federal Rules requiring this certification and detailing the definitions and coverages may be obtained from the Contract Officer of the Department.

6. The bidder agrees by submitting this bid that, should the contract be awarded, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this contract, unless authorized by the Department.

7. The prospective bidder further agrees by submitting this proposal that it will include the Federal-Aid Provision titled "Required Contract Provisions Federal-Aid Construction Contract" (Form FHWA PR 1273) provided by the Department, without subsequent modification, in all lower tier covered transactions.

8. The prospective bidder may rely upon a certification of a prospective participant in a lower tier covered transaction that it is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals.

9. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this provision. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

10. Except for transactions authorized under paragraph 6 of these instructions, if the successful bidder knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the Department may terminate this transaction for cause of default.

DEBARMENT CERTIFICATION

The bidder certifies to the best of its knowledge and belief, that it and its principals:

a. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

b. Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records; making false statements; or receiving stolen property;

c. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph b. of this certification; and

d. Have not within a three-year period preceding this proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

Where the prospective bidder is unable to certify to any of the statements in this certification, it shall attach an explanation to this proposal.

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IF AN EXPLANATION, AS PROVIDED IN THE ABOVE DEBARMENT CERTIFICATION, HAS BEEN ATTACHED TO THE PROPOSAL, PLEASE CHECK THE BOX SHOWN BELOW:

☐ An explanation has been attached to the proposal.