

State of Maine

Department of Transportation

Project Number 2219400

WIN 022194.00

**Construction of a 154' LOA,
Twin Screw Passenger/Vehicle Ferry**

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Section 1

Notice to Shipbuilders

STATE OF MAINE DEPARTMENT OF TRANSPORTATION NOTICE TO CONTRACTORS

Sealed Bids addressed to the Maine Department of Transportation, Augusta, Maine 04333 and endorsed on the wrapper "Bids for **State Ferry Vessel Replacement** in the town of **Rockland**" will be received from contractors at the Reception Desk, Maine DOT Building, Capitol Street, Augusta, Maine, until 11:00 o'clock A.M. (prevailing time) on June 30, 2021 and at that time and place publicly opened and read. Bidders will be required to demonstrate their ability to perform the work per the INSTRUCTIONS TO BIDDERS, Bidder's Technical Capability.

Description: Project No. 2219400, WIN. 022194.00

Location: In Knox County, Maine State Ferry Service in Rockland Maine.

Outline of Work: Construction of 154 Foot LOA, Twin Screw Passenger / Vehicle Ferry

A Mandatory Pre-Bid Conference will be held from 10:30 AM to 12:30 PM on Tuesday June 8, 2021. Please email Nate.Benoit@maine.gov to register for this virtual meeting.

For general information regarding Bidding and Contracting procedures, contact George Macdougall at (207) 624-3410. Our webpage at <http://www.maine.gov/mdot/contractors/> contains a copy of the Plan Holders List, written portions of bid amendments, drawings, bid results and an electronic form for RFI submittal. For Project-specific information fax all questions to **Assistant Multimodal Program Manager Nate Benoit** at (207) 624-3431, use electronic RFI form or email questions to RFI-Contracts.MDOT@maine.gov, project name and identification number should be in the subject line. Questions received after 12:00 noon of Monday (or if that Monday is a state holiday, Friday) prior to bid date will not be answered. Bidders shall not contact any other Departmental staff for clarification of Contract provisions, and the Department will not be responsible for any interpretations so obtained. TTY users call Maine Relay 711.

Plans, specifications and bid forms may be seen at the Maine DOT Building in Augusta, Maine. They may be purchased from the Department between the hours of 8:00 a.m. to 3:30 p.m. by cash, credit card (Visa/Mastercard) or check payable to Treasurer, State of Maine sent to Maine Department of Transportation, Attn.: Mailroom, 16 State House Station, Augusta, Maine 04333-0016. They also may be purchased by telephone at (207) 624-3536 between the hours of 8:00 a.m. to 3:30 p.m. Full size plans ~~\$96.00~~ (\$102.00 by mail). Half size plans ~~\$48.00~~ (\$51.50 by mail), Bid Book \$10 (\$13 by mail), Single Sheets \$2, payment in advance, all non-refundable.

Each Bid must be made upon blank forms provided by the Department and must be accompanied by a bid bond at 5% of the bid amount or an official bank check, cashier's check, certified check, certificate of deposit, or United States postal money order in the amount of \$250,000.00 payable to Treasurer, State of Maine as a Bid guarantee. A Contract Performance Surety Bond and a Contract Payment Surety Bond, each in the amount of 100 percent of the Contract price, will be required of the successful Bidder.

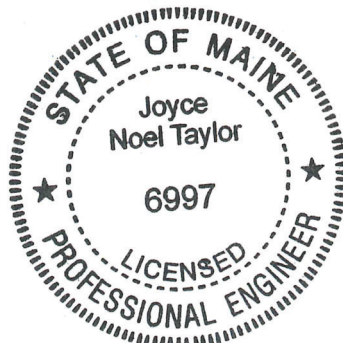
Please note: the Department will accept a facsimile of the bid bond; however, the original bid bond must then be received at the MDOT Contract Section within 72 hours of the bid opening.

This Contract is subject to all applicable Federal Laws. This contract is subject to compliance with the Disadvantaged Business Enterprise program requirements as set forth by the Maine Department of Transportation.

All work shall be governed by "State of Maine, Department of Transportation, Standard Specifications, March 2020 Edition", price \$10 [\$15 by mail], and Standard Details, March 2020 Edition, price \$10 [\$15 by mail]. They also may be purchased by telephone at (207) 624-3536 between the hours of 8:00 a.m. to 3:30 p.m. Standard Detail updates can be found at <http://www.maine.gov/mdot/contractors/publications/>.

The right is hereby reserved to the MaineDOT to reject any or all bids.

Augusta, Maine
May 26, 2021



A handwritten signature in blue ink that reads "Joyce Noel Taylor".

JOYCE NOEL TAYLOR, P. E.
CHIEF ENGINEER

Section 2

Invitation for Sealed Bids and Instructions to Bidders

INVITATION FOR SEALED BIDS

FOR THE CONSTRUCTION OF A 154-FOOT LOA, TWIN SCREW PASSENGER/VEHICLE FERRY FOR THE MSFS

The Maine Department of Transportation (Department), with the approval of the Federal Transit Administration (FTA), invites sealed bids from United States citizens for furnishing all labor and materials and performing, in a shipyard located in the United States, all work required for the construction of a 154-Foot LOA passenger/vehicle ferry in accordance with the Plans and Specifications.

For convenience, the Department shall be called the “Owner”, and the bidder for the construction of the vessel to whom an award is made shall be called the “Contractor”.

INSTRUCTIONS TO BIDDERS

1. Use pen and ink to complete all paper bids. For complete bidding requirements, refer to Section 102 of the Maine Department of Transportation’s Standard Specifications (March 2020 edition), “Bidding.” If you need more information regarding bid preparation, call the Department’s Contracts Section at (207) 624-3410

2. **Form of Bidding – Bid Form:**

Bids shall be submitted as set out in the attached Bid Form. Two (2) signed originals shall be submitted. Special care should be used in the preparation of the bid. Erasures or changes in bids must be explained or noted over the signature of the bidder. Each bid must be complete and must be executed in the name of the bidder by its proper officers or other persons authorized to execute and deliver the bid. When requested by the Owner, satisfactory evidence of the authority of the officer signing on behalf of the bidder shall be furnished promptly. The Owner shall not, after the opening of bids, receive, either directly or indirectly, from bidders, or any persons acting for them, any communication, plan or explanation, either verbal or in writing, tending to explain or modify their bid in any way whatever unless such communication, plan or explanation is called for by the Owner, which request the Owner shall have the right to make.

Each bid shall include the total price for completion and delivery of the vessel.

At a minimum, the following must be received prior to the time of Bid opening:

- a) a copy of the Notice to Contractors;
- b) the completed Acknowledgement of Bid Amendments form;
- c) two copies of the Bid Form signed and completed with the total price for the completion and delivery of the vessel;
- d) a Bid Guaranty;
- e) Contractor’s completed DBE Proposed Utilization form;
- f) FTA Certifications (Provisions/Clauses, Buy America, Lobbying)

Bid Guaranty acceptable forms are:

- a) a properly completed and signed Bid Bond on the Department's prescribed form (or on a form that does not contain any significant variations from the Department's form as determined by the Department) for the 5% of the Bid Amount; or
- b) an Official Bank Check, Cashier's Check, Certified Check, U.S. Postal Money Order or Negotiable Certificate of Deposit for 5% of the Bid Amount.

If Bid is to be sent, "FedEx First Overnight" delivery is suggested, as the package is delivered directly to the DOT Headquarters Building at 24 Child Street in Augusta. Other means, such as U.S. Postal Service's Express Mail, have proven to be unreliable.

- 3. **Place and Time of Performance:** Each bid must give the location of the plant or shipyard in which the bidder proposes to perform the contract work.
- 4. **Vessel Construction Agreement:**
The Vessel Construction Agreement will be a Contract Document that, together with other Contract Documents (including addenda issued before bids are opened and signed modifications entered into after award of the Vessel Construction Agreement), will govern all work related to the construction of the vessel.
- 5. **Bidder's Technical Capability:**
The bidder must demonstrate having the qualifications, experience and facilities to complete this vessel. The bidder must provide in sufficient detail information regarding the items listed below. This information shall be provided to the Owner by the apparent lowest responsive bidder, at the request of the Department, prior to an award being made. The bidder will have twenty (20) days in which to submit this information after the request has been made.
 - a. Bidder's ability to meet the Specifications, including but not limited to shipyard facilities, organization and key personnel.
 - b. Experience constructing similar passenger / vehicle ferries that have been reviewed and inspected by the United States Coast Guard or projects of higher complexity.
 - c. Contact names and telephone numbers of at least 3 previous customers that have had similar work performed at the shipyard.
 - d. Bidder's understanding of the project (include a copy of the Preliminary Master Schedule).
 - e. Statement of the technical expertise, safety plan, years of service and other qualification that the bidder's yard brings to shipyard services.
- 6. **Basis for Award:** Award will be made to the lowest qualified bidder.
If the Owner, after the time fixed for the receipt of bids hereunder and prior to the award of a contract, shall so request in writing of any bidder, such bidder shall, within five (5) days after receipt of such request, furnish to the Owner two (2) copies of the following financial statements. Failure on the part of a Bidder to furnish the following financial information may result in its bid being rejected.

(1) A copy of audited financial statements for the completed accounting year immediately preceding the date of the bid. The financial statements shall, at a minimum, include a balance sheet and a profit and loss statement, and shall provide an unqualified audit opinion by a licensed independent public accountant in accordance with generally accepted auditing standards promulgated by the American Institute of Certified Public Accountants. Additionally, the bidder shall grant to the Owner the right to examine the books, records, and accounts of the bidder, and the audit working papers of the independent public accountant, if and to the extent deemed necessary by the Owner; and

(2) A brief statement, including references from bidder's bank(s) or financial institution(s), of the nature of any changes in the financial condition of the bidder and the results of his operations since the close of the period covered by the audited financial statements referred to in (1) above.

7. **Withdrawal of Bids:** A bid may be withdrawn on written or email request from the bidder to the Maine Department of Transportation, Contracts Section, 16 State House Station, Augusta, Maine 04333-0016, Attn. George Macdougall (George.Macdougall@maine.gov) only prior to the time fixed for receipt of bids hereunder. Any mistake on the part of the bidder in preparing his bid confers no right for the withdrawal of such bid after the time fixed for the receipt of bids.
8. **Bids Received Prior to Time Fixed for Receipt of Bids:** Bids received prior to the time fixed for the receipt of bids will be securely kept and unopened, if properly identified. The Owner will open bids on the date and at the time provided in the Notice to Contractors; no bid received thereafter will be considered. No responsibility shall be attached to any representative of the Owner for the premature opening of a bid.
9. **Identification of Bids:** Each bid shall be enclosed in a sealed envelope and marked, **"COST PROPOSAL - FIXED PRICE BID FOR THE CONSTRUCTION OF A 154' LOA, TWIN SCREW PASSENGER/VEHICLE FERRY"**
pursuant to:
 - (1) Invitation for Bids
 - (2) Vessel Construction Agreement
 - (3) Plans and Specifications
 - (4) MaineDOT Standard Specifications (March 2020 edition)
 - (5) Addendum No. to Invitation
10. **Time for Receipt and Opening:** Bids will be received until 11:00 A.M. (prevailing time) on the date provided in the **Notice to Contractors**.

- 11. Acceptance and Rejection of Bids:** The Owner reserves the right to reject any and all bids, in whole or in part, to waive any informality and technicality in any bid and to accept any item or items in any bid.

As indicated in the Bid Form annexed hereto, each bidder is required to agree (1) that his bid will not be withdrawn before the expiration of sixty (60) days after the date fixed for the receipt of bids hereunder and (2) that in the event of the expiration of said sixty (60) day period without an award having been made to the bidder, their bid shall remain in full force and effect until an award is made to the bidder or until a written notice of the bidder's withdrawal of his bid shall have been received by the Owner.

Bids shall be in strict conformance with the Plans and Specifications and the provisions of this Invitation for Sealed Bids and any modification that may subsequently be made by addenda thereto. Any departure from the Plans and Specifications and the terms of this Invitation, as modified, will result in a bid being held non-responsive and thereby rejected.
- 12. FTA Required Provisions and Clauses:** The bidder shall review and abide by all Required Federal Contract Provisions, found in Section 6 and Section 8.
- 13. Computation of Time:** All periods of time herein specified shall be computed by including Saturdays, Sundays and holidays, except that, if such period terminates on a Saturday, Sunday or holiday, it shall be deemed extended to the business day of the Contractor next succeeding.
- 14. Disadvantaged Business Enterprise.** For FFY 2020-22 (October 1, 2019 through September 30, 2022), MaineDOT has established a DBE participation goal of **1.01%** to be achieved through race/gender neutral means. Bidders are required to extend equal opportunity to MaineDOT certified DBE firms in the selection and utilization of subcontractors and suppliers. Bidders must submit a completed Contractor's DBE Proposed Utilization Form with their bid. Signature indicates statement of intended utilization is accurate and reflects the bidder's good faith efforts.
- 15. Bidders' Conference:** A mandatory bidders' conference will be held on the date and time indicated in the **Notice to Contractors**. This will be a virtual meeting and each attendee shall RSVP by emailing: Nate.Benoit@maine.gov. Instructions on how to join the meeting will be provided by email. Note that a virtual tour of the Richard G. Spear, the newest ferry for the Maine State Ferry Service, will be provided as well as a question and answer session. Representatives from the Maine Department of Transportation and Gilbert Associates, Inc., the Naval Architect, will attend the meeting. All clarifications and responses to questions from the attendees during the bidders' conference will be provided via an addendum and will be issued after the conference. If questions were asked but not answered in writing through the addendum, such questions will need to be asked again to receive a formal written response. No verbal responses will be allowed to modify the contract documents.

RFI No: _____

Date _____ **Time** _____

WIN(S): _____ **Town(s):** _____ **Bid Date:** _____

Question(s): _____

Request by: _____
Company Name: _____ **Phone:**(____) _____

Email: _____ **Fax:** (____) _____

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**MaineDOT CONTRACTOR'S DBE/SUBCONTRACTOR
PROPOSED UTILIZATION FORM**

All Bidders must furnish this form with their bid on Bid Opening day

Contractor: _____ **Telephone:** _____ **Ext** _____

Contact Person: _____ **Fax:** _____

E-mail: _____

BID DATE: _____

FEDERAL PROJECT PIN # _____ **PROJECT LOCATION:** _____

TOTAL ANTICIPATED DBE ____ % PARTICIPATION FOR THIS CONTRACT

W B E	D B E	Non DBE	Firm Name	Item Number & Description of Work	Quantity	Cost Per Unit/Item	Anticipated \$ Value
Subcontractor Total>							
DBE Total >							

**NOTE: THIS INFORMATION IS USED TO TRACK AND REPORT ANTICIPATED DBE PARTICIPATION IN ALL
FEDERALLY FUNDED MAINE DOT CONTRACTS. THE ANTICIPATED DBE AMOUNT IS VOLUNTARY AND WILL
NOT BECOME A PART OF THE CONTRACTUAL TERMS.**

Equal Opportunity Use:

Form received: ____/____/____ Verified by: _____

FHWA ☐

FTA ☐

FAA ☐

**For a complete list of certified firms and company designation (WBE/DBE) go to
<http://www.maine.gov/mdot/civilrights/>**

Rev. 01/15

STATE OF MAINE DEPARTMENT OF TRANSPORTATION
Bid Guaranty-Bid Bond Form

KNOW ALL MEN BY THESE PRESENTS THAT _____

_____, of the City/Town of _____ and State of _____

as Principal, and _____ as Surety, a

Corporation duly organized under the laws of the State of _____ and having a usual place of

Business in _____ and hereby held and firmly bound unto the Treasurer of

the State of Maine in the sum of _____ for payment which Principal and Surety bind

themselves, their heirs, executors, administrators, successors and assigns, jointly and severally.

The condition of this obligation is that the Principal has submitted to the Maine Department of

Transportation, hereafter Department, a certain bid, attached hereto and incorporated as a

part herein, to enter into a written contract for the construction of _____

_____ and if the Department shall accept said bid

and the Principal shall execute and deliver a contract in the form attached hereto (properly

completed in accordance with said bid) and shall furnish bonds for this faithful performance of

said contract, and for the payment of all persons performing labor or furnishing material in

connection therewith, and shall in all other respects perform the agreement created by the

acceptance of said bid, then this obligation shall be null and void; otherwise it shall remain in full

force, and effect.

Signed and sealed this _____ day of _____ 20____

WITNESS:

WITNESS

PRINCIPAL:

By _____

By: _____

By: _____

SURETY:

By _____

By: _____

Name of Local Agency: _____

Section 3

Bid Form and Certifications

**FIXED PRICE BID FOR THE CONSTRUCTION OF A
154' LOA, TWIN-SCREW PASSENGER/VEHICLE FERRY**

1. In compliance with the MaineDOT Standard Specifications (March 2020 edition), Invitation for Bids of the Maine Department of Transportation, Instructions to Bidders, Contract Plans and Specifications for a 154' LOA, Twin Screw Passenger/Vehicle Ferry, designed by Gilbert Associates, Inc., the Vessel Construction Agreement, and the Addenda issued pursuant to the invitation: (herein called the "bidding documents"), which by reference are expressly made a part thereof and incorporated herein, the undersigned,

_____ hereby proposes to furnish all labor, service, and materials and perform all work required for the construction of a Passenger/Vehicle Ferry, as indicated below, in strict accordance with the terms and conditions of the bidding documents, and the provisions contained in the form of contract issued by the Owner, for the performance of all the work hereunder, and in any changes in such form of contract issued by the Owner, for the following amount, which amount shall be without adjustment for changes in labor, materials or tax costs: For the construction of a vessel in ACCORDANCE WITH Contract: (Specifications) "Maine State Ferry Service Technical Specifications (D358A-T10) 154' LOA, Twin Screw Passenger/Vehicle Ferry", and (Plans) Drawing Series No. D358A, Title Sheet and Referenced Drawings with delivery of the vessel to the MSFS Rockland pier at Rockland, Maine for the contract base price of:

_____ Dollars (\$ _____)

2. The undersigned Bidder agrees to complete and deliver the vessel within Six Hundred (600) Calendar Days, including Saturdays, Sundays and Holidays, after date of receipt by the Contractor from the Owner of a Notice-to-Proceed.
3. This contract, which may be amended, modified, or supplemented in writing only, consists of the Contract documents as defined in the Plans, Standard Specifications (March 2020 edition) as updated through advertisement, Supplemental Specifications, Special Provisions, Contract Agreement; and Contract Bonds. It is understood that this Contract will be governed by the documents listed above.
4. The undersigned Bidder proposes to furnish to the Owner within fifteen (15) calendar days after notice of intent to award a performance bond in the sum of 100% of the Bid amount pursuant to Article 24 of the Vessel Construction Agreement, "Surety."
5. The undersigned Bidder proposes to furnish to the Owner within fifteen (15) calendar days after notice of intent to award a payment bond in the sum of 100% of the Bid amount pursuant to Article 24 of the Vessel Construction Agreement, "Surety."
6. The undersigned Bidder proposes that the aggregate amount payable under the Required performance and payment bonds shall not exceed 100% of the Bid amount, pursuant to Article 24 of the Vessel Construction Agreement.

7. The undersigned agrees to perform the work at its plant or shipyard located at:
-
-
8. By signing below, the Contractor hereby certifies that to the best of the Contractor's knowledge and belief:
- A. All of the statements, representations, covenants, and/or certifications required or set forth in the Bid and Bid Documents, including those in the Federal Contract Provisions Supplement, and the Contract are still complete and accurate as of the date of this Agreement.
 - B. The contractor knows of no legal, contractual, or financial impediment to entering into this Contract.
 - C. The person signing below is legally authorized by the Contractor to sign this Contract on behalf of the Contractor and to legally bind the Contractor to the terms of the Contract.
9. The Undersigned Bidder agrees to do any extra work, not covered by the contract documents, which may be ordered by the Department's representative and to accept as full compensation the amount determined upon a "Force Account" basis as provided in the Standard Specification (March 2020 edition), and as addressed in the contract documents.
10. The Undersigned Bidder agrees that the bid guarantee at 5% of the bid amount as identified in the "Notice to Contractors" and accompanying this bid shall be forfeited, as liquidated damages, if in case this bid is accepted, and the undersigned shall fail to abide by the terms and conditions of the offer and fail to furnish satisfactory insurance and Contract bonds under the conditions stipulated in the Specifications within 15 days of notice of intent to award the contract.
11. The Bidder will be bound to the Disadvantage Business Enterprise (DBE) requirements contained in the attached Instructions to Bidders and submit a completed Contractor's DBE Proposed Utilization form with their bid.
12. The undersigned further agrees:
- (a) That it will not withdraw the foregoing bid prior to sixty (60) days after the date set for the receipt of the bids.
 - (b) That in the event said sixty (60) day period shall expire without an award having been made; the foregoing bid shall remain in full force and effect until an award is made to the undersigned or until written notice of the withdrawal of said bid shall have been received by the Owner.
13. The undersigned Bidder accepts and agrees to all the terms and conditions of the Invitation for Bids as fully as if they were separately repeated and agreed to in this bid.

14. The Bidder hereby certifies, to the best of its knowledge and belief that: the Bidder has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of competitive bidding in connection with its bid, and its subsequent contract with the Department.

15. In accordance with the terms of the subject invitation, this bid proposal is submitted in a sealed envelope and marked, **“COST PROPOSAL - FIXED PRICE BID FOR THE CONSTRUCTION OF A 154’ LOA TWIN SCREW PASSENGER/VEHCILE FERRY FOR MSFS.”** There are filled and submitted herewith;
 - (a) REQUISITE BID GUARANTY
 - (b) FTA REQUIRED PROCUREMENT PROVISIONS/CLAUSES
 - (c) FTA REQUIRED PROCUREMENT PROVISIONS – Buy America
 - (d) FTA REQUIRED PROCUREMENT PROVISIONS – Lobbying
 - (e) ACKNOWLEDGMENT OF BID AMENDMENTS

CONTRACTOR (Bidder)

Date

(Signature of Legally Authorized Representative of the Contractor)

(Name and Title Printed)

WITNESS:

(Name)

(Office)

(Name)

(Office)

(Date)

(Date)

FTA REQUIRED PROCUREMENT PROVISIONS/CLAUSES

(Submit Signed Sheet with Proposal)

The following FTA required procurement provisions and clauses will apply to this project. This form must be submitted with the Proposal as documentation that you have read and agreed to the attached FTA provisions and clauses.

1. Access to Records and Reports
2. Bonding Requirements
3. Bus Testing **(Not applicable to project)**
4. Buy America Requirements
5. Cargo Preference Requirements
6. Charter Service **(Not applicable to project)**
7. Clean Air Act and Federal Water Pollution Control Act
8. Civil Rights Laws and Regulations
9. Disadvantaged Business Enterprises (DBE)
10. Employee Protections
11. Energy Conservation
12. Fly America
13. Government-Wide Debarment and Suspension
14. Lobbying Restrictions
15. No Government Obligation to Third Parties
16. Patent Rights and Rights in Data
17. Pre-Award and Post-Delivery Audits of Rolling Stock Purchases
18. Program Fraud and False or Fraudulent Statements and Related Acts
19. Public Transportation Employee Protective Agreements **(Not applicable to project)**
20. Recycled Products
21. Safe Operation of Motor Vehicles
22. School Bus Operations **(Not applicable to project)**
23. Seismic Safety **(Not applicable to project)**
24. Substance Abuse Requirements **(Not applicable to project)**
25. Termination
26. Violations and Breach of Contract

Please sign and date below certifying that you have read and agreed to the attached FTA provisions. This form must be submitted with proposal.

Signature: _____ Date: _____
(Authorized Representative)

Printed Name: _____

Company: _____

FTA REQUIRED PROCUREMENT PROVISIONS – Buy America

(Submit Signed Sheet with Proposal)

A bidder or offeror must submit to the FTA recipient the appropriate Buy America certification (below) with all bids or offers on FTA-funded contracts, except those subject to a general waiver. Bids or offers that are not accompanied by a completed Buy America certification must be rejected as nonresponsive. This requirement does not apply to lower tier subcontractors.

Certification requirement for procurement of steel, iron, or manufactured products.

Please fill in and sign only one of the certificates below stating that you will or will not comply with these provisions concerning Buy America. **Do not sign both.**

Certificate of Compliance with 49 U.S.C. 5323(j) (1)

The bidder or offeror hereby certifies that it will meet the requirements of 49 U.S.C. 5323(j) (1) and the applicable regulations in 49 CFR Part 661.5.

Date _____

Signature _____

Company Name _____

Title _____

Certificate of Non-Compliance with 49 U.S.C. 5323(j) (1)

The bidder or offeror hereby certifies that it cannot comply with the requirements of 49 U.S.C. 5323(j) (1) and 49 C.F.R. 661.5, but it may qualify for an exception pursuant to 49 U.S.C. 5323(j) (2) (A), 5323(j) (2) (B), or 5323(j) (2) (D), and 49 C.F.R. 661.7.

Date _____

Signature _____

Company Name _____

Title _____

This form must be submitted with proposal.
FTA REQUIRED PROCUREMENT PROVISIONS - Lobbying
(Submit Signed Sheet with Proposal)

The undersigned [Contractor] certifies, 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 an 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 making lobbying contacts to an officer or employee of any 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 [as amended by "Government wide Guidance for New Restrictions on Lobbying," 61 Fed. Reg. 1413 (1/19/96). Note: Language in paragraph (2) herein has been modified in accordance with Section 10 of the Lobbying Disclosure Act of 1995 (P.L. 104-65, to be codified at 2 U.S.C. 1601, et seq.)]
3. The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

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 (as amended by the Lobbying Disclosure Act of 1995). 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.

[Note: Pursuant to 31 U.S.C. § 1352(c)(1)-(2)(A), any person who makes a prohibited expenditure or fails to file or amend a required certification or disclosure form shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such expenditure or failure.]

The Contractor, _____, certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Contractor understands and agrees that the provisions of 31 U.S.C. A 3801, et seq., apply to this certification and disclosure, if any.

_____ Signature of Contractor's Authorized Official

_____ Name and Title of Contractor's Authorized Official

_____ Date

SPECIAL PROVISION 102.7.3
ACKNOWLEDGMENT OF BID AMENDMENTS

With this form, the Bidder acknowledges its responsibility to check for all Amendments to the Bid Package. For each Project under Advertisement, Amendments are located at <http://www.maine.gov/mdot/contractors/> . It is the responsibility of the Bidder to determine if there are Amendments to the Project, to download them, to incorporate them into their Bid Package, and to reference the Amendment number and the date on the form below. The Maine DOT will not post Bid Amendments any later than noon the day before Bid opening without individually notifying all the planholders.

Amendment Number	Date

The Contractor, for itself, its successors and assigns, hereby acknowledges that it has received all of the above referenced Amendments to the Bid Package.

CONTRACTOR

Date

Signature of authorized representative

(Name and Title Printed)

Section 4

Vessel Construction Agreement

Vessel Construction Agreement

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VESSEL CONSTRUCTION AGREEMENT

THIS AGREEMENT is entered into this day of _____, 2021 by and between the State of Maine, acting through and by its Department of Transportation (MDOT), an agency of state government with its principal administrative offices located at 24 Child Street, Augusta, Maine, with a mailing address at 16 State House Station, Augusta, Maine 04333-0016, ("OWNER") and _____, ("CONTR"), which has a shipyard at _____, United States of America.

WHEREAS, OWNER has determined that a need exists to construct a new 154' passenger ferry vessel, ("Vessel"); WHEREAS, OWNER has obtained competitive bids from domestic shipyards for the construction of the Vessel, Contractor has submitted a bid, and OWNER desires to enter into an agreement with the Contractor for the construction of the Vessel; and WHEREAS, Contractor represents that it has the facilities, manpower and expertise to construct the Vessel in accordance with the terms of this agreement and the Plans and Specifications NOW THEREFORE, the parties hereby agree as follows:

AGREEMENT DEFINITIONS

1. Agreement shall include the provisions contained in this document entitled "Vessel Construction Agreement".
2. Commissioner means the Commissioner of the Maine Department of Transportation.
3. Contract means all documents affecting the respective rights and responsibilities of the OWNER and the CONTR. These documents include but are not limited to, the Vessel Construction Agreement, Plans, Standard Specifications March 2020 Edition, Supplemental Specifications, the Notice to Shipbuilders, the Bid Amendments, Contract Modifications, Permits, Contract Bonds, the CONTR's bid documents and bid prices, and all documents incorporated by reference.
4. Contract Documents means all documents, whether physically attached or incorporated by reference, which make up the Contract.
5. Defect means any defect, deficiency, deterioration, weakness, breakdown or failure in any material, machinery equipment or workmanship of the Vessel.
6. MDOT means the Maine Department of Transportation.
7. DESIGN AGENT means Gilbert Associates, Inc. of Braintree, MA.
8. Notice shall include all written notices, demands, instructions, claims, approvals and disapprovals required to obtain compliance with Agreement requirements. Any written notice by either party to this Agreement shall be sufficiently given if delivered to the other party to this Agreement in person or by certified mail to his last known address, or to his authorized agent, representative or officer in a like manner. The person to whom the notice is delivered shall sign the duplicate copy and return same to the other party immediately after receipt. Failure to sign any duplicate copy shall not invalidate the giving of any notice.
9. OWNER's Representative means the person or entity designated to represent OWNER during Vessel construction.
10. Project Manager means MDOT's duly authorized representative for overall coordination of the Project.

11. Subcontractor includes only those people or entities that have a contractual relationship with the Contractor to perform work related to this Contract.

ARTICLE 1 – GENERAL STATEMENT OF WORK

- A. Contractor shall furnish all plant facilities, labor, material and equipment, and shall perform all work necessary to construct, launch, outfit, test and deliver the Vessel, at CONTR's own risk and expense, in strict accordance and compliance with this Agreement except as otherwise provided. CONTR's performance shall include, but not be limited to, the development of additional plans, sketches and technical data ("Contractor-Provided Designs") which are necessary to construct the Vessel in a seaworthy manner but which are not specifically set forth in the Plans and Specifications. CONTR shall also be responsible for the receipt, storage and installation of outfitting and equipment required pursuant to this Agreement. Performance of all work set forth herein shall be for the consideration of the Contract Price. OWNER shall be responsible for designs, Plans, Specifications and other information provided by OWNER (OWNER-Provided Plans). CONTR shall bear no responsibility or liability for defects or deficiencies in OWNER-Provided Plans. The CONTR shall bear responsibility and liability for any defects or deficiencies in material, equipment, workmanship and Contractor-Provided Designs.
- B. The Vessel shall be identified as Contractor's hull number _____ and shall be constructed at Contractor's plant or shipyard (hereafter "Shipyard"), located at _____, in the State of _____. The Vessel when completed, after passing all requisite tests and trials, shall be delivered to OWNER at the Rockland Ferry Terminal in Rockland, Maine pursuant to Article 13 (Delivery of Vessel) and Article 14 (Contract Completion Time).
- C. The work to be performed shall be commenced immediately, prosecuted with due diligence and completed, and the delivery of the Vessel, in all respects complying with the terms and conditions of this Agreement and the Plans and Specifications, shall be made on or before the Contract Delivery Date, as may be extended in accordance with the terms hereof.
- D. This agreement, which may be amended, modified, or supplemented in writing only, consists of the Contract documents as defined in the Plans, Standard Specifications March 2020 Edition, Supplemental Specifications, Special Provisions, Vessel Construction Agreement, Bid Documents, and Contract Bonds.

ARTICLE 2 - PLANS AND SPECIFICATIONS

- A. The Plans and Specifications for the construction of the Vessel are those designated in the document entitled (Specifications) "Maine State Ferry Service Technical Specifications (D-358A-T10) 154 foot LOA, Twin Screw Passenger/Vehicle Ferry", and (Plans) Drawing Series No. D358A, Title Sheet and Referenced Drawings. A copy of the Specifications is attached hereto and incorporated as part of this Agreement (Section 7).
- B. If any discrepancy, difference or conflict is found to exist between the provisions of this Agreement and the Plans, then to the extent of such discrepancy, difference or conflict only,

the provisions of this Agreement shall prevail; but in all other respects the Plans shall be in full force and effect.

ARTICLE 3 - FEDERAL TRANSIT ADMINISTRATION (FTA)

This Agreement shall be subject to the provisions of the Federal Transit Administration, Federal Contract Provisions Supplemental as provided in Section 6 and Section 8. CONTR agrees to conform to and abide by all other terms and conditions set forth by the Federal Government. By signing below, the CONTR hereby certifies that to the best of the CONTR's knowledge and belief:

- A. All of the statements, representations, covenants, and/or certifications required or set forth in the Bid and Bid Documents, including those in the Federal Contract Provisions Supplement, and the Contract are still complete and accurate as of the date of this Agreement. The CONTR knows of no legal, contractual, or financial impediment to entering into this Contract.
- B. The person signing below is legally authorized by the CONTR to sign this Contract on behalf of the CONTR and to legally bind the CONTR to the terms of the Contract.

ARTICLE 4 – OWNER’S REPRESENTATIVE

OWNER's Representative shall be vested with authority on behalf of OWNER to give directions and to approve actions taken by CONTR in the performance of work under this Agreement. OWNER shall designate the OWNER's Representative in writing, and shall deliver said writing to CONTR prior to commencement of work.

ARTICLE 5 – CONTRACT PRICE

- A. The total consideration for performance of this Agreement is: _____ (\$ _____) (hereafter "Contract Price") plus or minus any adjustments thereto made pursuant to the terms and conditions of this Agreement.
- B. This is a fixed price contract and is not subject to any fluctuation due to the exchange rates, increases in costs of labor, materials or equipment, etc. or any other reasons except any alteration agreed to in writing by the OWNER and CONTR. Exception: the cost of steel will be adjusted per Special Provision, Section 108, Payment (Steel Cost Adjustment).
- C. The OWNER is a governmental agency and as such is exempt from State of Maine sales tax. Any other sales taxes due to any other state and any other taxes or fees due to any federal, state, or local government or governmental agency shall be the responsibility of the CONTR.

ARTICLE 6 – COMPUTATION OF TIME

All periods of time under this Agreement shall be computed by including Saturdays, Sundays and holidays, except in the event that any such period terminates on a Saturday, Sunday, legal holiday, or other day observed as a holiday under the CONTR's agreement with his production workers, such period shall be deemed extended to the next succeeding business day of the CONTR.

ARTICLE 7 - CONSTRUCTION SCHEDULE

- A. All work on the Vessel must be pursued by the CONTR with reasonable urgency and all facets of the construction and fitting-out operation shall occur at the earliest dates at which it is reasonable to do so to meet the Contract Delivery Date.
- B. The CONTR shall prepare a final Master Construction Schedule and bar chart and shall submit same to the OWNER within three (3) weeks of the date of the execution of this Contract. This Schedule shall cover all trades and shall highlight main equipment deliveries and key events in the progress of the work.

ARTICLE 8 – INSPECTION OF WORK AND APPROVAL OF PLANS

- A. All material, equipment and workmanship relative to the construction of the Vessel and CONTR's facilities shall be subject to inspection by OWNER, the OWNER's Representative or any governmental entity at any and all reasonable times during the performance of the work called for by this Agreement. All working drawings, shop drawings, blueprints, samples, working plans, progress photographs, progress reports, production schedules and other documentation required to be submitted in the Plans and Specifications shall be submitted to OWNER or the OWNER's Representative by CONTR. The review of those documents will be in accordance with the Maine Department of Transportation's Standard Specifications March 2020 Edition, Section 105.7 Working Drawings.
- B. OWNER or the OWNER's Representative shall inspect all material, equipment and workmanship as set forth in the Plans and Specifications to determine whether same conform to the requirements of this Agreement and the Plans and Specifications. OWNER or the OWNER's Representative shall promptly reject all material, equipment and workmanship found not to be in conformance with the requirements of this Agreement or as otherwise set forth in the Plans and
- C. Specifications. All material, equipment and workmanship rejected by OWNER or the OWNER's Representative shall be corrected, repaired or replaced by CONTR at CONTR's expense to the satisfaction of OWNER or the OWNER's Representative.

ARTICLE 9 – OVERSIGHT

The accredited representatives of the OWNER will oversee and may inspect, examine and test the work to be performed under this Contract. The CONTR shall provide access and customary telephone, fax, e-mail, administrative and other facilities during normal working hours, or at other times by arrangement, to the DESIGN AGENT, the OWNER's Representative, all other representatives of the OWNER, regulatory authorities, surveyors, and to any other person for all necessary and reasonable purposes, to all premises where work under these presents is being carried out or components stored, including those of subcontractors. At all times and places where work is being carried out in accordance with this Contract, the CONTR shall have a responsible person to superintend the carrying out thereof (who may be an employee of the CONTR, or a supplier or subcontractor responsible to the Contractor), and any directions given in writing to such person shall be deemed to have been given to the CONTR, except that where variation to this Contract is involved, the procedure laid down elsewhere in this Contract shall be observed.

ARTICLE 10 – CHANGES IN CONTRACT DOCUMENTS

- A. CONTR shall not depart or deviate from the requirements of the Plans and Specifications for the Vessel without prior written authorization of OWNER or the OWNER's Representative.
- B. All changes to the Contract that affect compensation, time, or quality must be made by written Contract Modification. The Contract Modification will describe the underlying issue that resulted in the Contract Modification and will specify adjustments to compensation, time, or other Work requirements, as applicable. If adjustments to compensation or time are not shown on the face of the Contract Modification, then there are no such adjustments. All Contract Modifications must be signed by the CONTR and the OWNER, or the OWNER's Representative. By signing a Contract Modification, the CONTR agrees to all the terms thereof and waives any and all claims for additional compensation, time, or other adjustments relating to the issue that is the subject of the Contract Modification.

ARTICLE 11 – EXTENSION OF TIME

- A. In the case of any delay in the delivery of the Vessel caused by any event beyond the control of the CONTR, a written "Notice of Delay" shall be given promptly by CONTR to OWNER or the OWNER's Representative. Said notice shall include the specific cause for the delay, any verification of said cause and the anticipated effect thereof. Said events shall include, without limitation, non-delivery or late delivery of material (but only if CONTR has ordered such material at proper times and has used every reasonable effort to obtain delivery thereof at the time required as determined by OWNER's Representative), Acts of God (other than ordinary¹ storms or inclement weather conditions), landslide, earthquake, collision, explosion, lightning, flood, epidemic, fire, strike, lockout or other industrial disturbance, riot, insurrection, war, sabotage, vandalism, blockade, embargo, or delay of subcontractor due to any of such causes (unless the supplies or services to be furnished by the subcontractor were obtainable from other sources in sufficient time to permit CONTR to meet the required delivery schedule). Within ten (10) calendar days after such cause of delay has ceased to exist, or such longer period as OWNER may permit, CONTR shall furnish to OWNER a written statement of actual delay to CONTR resulting from such cause.
- B. On the basis of written notices, statements and any other information furnished to OWNER by CONTR in regard to any delay enumerated above, in combination with information obtained by OWNER or the OWNER's Representative through independent sources, OWNER and CONTR shall enter into good faith negotiations in an attempt to agree upon the number of calendar days, if any, the Contract Delivery Date of the Vessel shall be extended.

1 Ordinary weather is defined as anything under gale force winds.

ARTICLE 12 – TESTS AND TRIALS

- A. The CONTR shall as soon as possible after the execution of this Contract submit to the OWNER a complete schedule of all tests and trials (the “Schedule of Tests and Trials”) to be carried out on the Vessel before the Vessel is declared to be ready for acceptance by the OWNER. The OWNER and the DESIGN AGENT shall have the right to reasonably alter, amend, extend or reduce the said Schedule of Tests and Trials to ensure compliance with this Contract and all applicable Governmental Rules, as of the effective date of this Agreement. Upon completion of all construction as set forth in this Agreement and the Plans and Specifications, the CONTR shall perform all tests and trials set forth in the Schedule of Tests and Trials, which shall include as a minimum all of the requirements set forth in the Specifications. All expenses of such tests and trials shall be borne by the CONTR except to the extent that OWNER or the DESIGN AGENT alter, amend or extend the Schedule of Tests and Trials beyond what is reasonably required for compliance with the Contract and applicable Governmental Rules or if the applicable Governmental Rules change subsequent to the effective date of this contract.
- B. If, during said tests and trials, the Vessel fails to meet any requirement of the Plans and Specifications or this Agreement, CONTR shall, after taking appropriate corrective action, subject the Vessel to further tests and trials sufficient to demonstrate compliance with this Agreement and the Plans and Specifications. The cost of all such additional tests and trials shall be borne by CONTR.

ARTICLE 13 – DELIVERY OF VESSEL

- A. When the Vessel has passed all tests and trials required by this Agreement and the Plans and Specifications is complete, or substantially complete as defined below, and after the OWNER’s Representative and the DESIGN AGENT have jointly issued a certificate (Certificate of Completion of Tests and Trials) of such satisfactory completion it shall be delivered by CONTR and accepted by OWNER at the Rockland Ferry Terminal in Rockland, Maine, free and clear of all liens except those in favor of a claimant arising out of the acts or omissions of OWNER, with not less than five (5) days prior written notice to OWNER of such delivery. “Substantially Complete” shall mean complete except for minor items not affecting safety, commercial utility or efficient operation of the Vessel. The parties may agree to stipulate damages in lieu of the CONTR completing such minor items and the Contract Price shall be adjusted accordingly by amendment to this Agreement.
- B. OWNER shall furnish to CONTR at the time of delivery a Delivery Certificate accepting the Vessel.
- C. Such acceptance does not relieve the CONTR of any of its remaining responsibilities under these presents, but acknowledges that the construction, fitting-out, trials and delivery phases of the Contract have been satisfactorily concluded in all material respects.
- D. Furthermore, the CONTR will, before delivery is taken, undertake to give adequate familiarization courses in Rockland, Maine to the OWNER's employees on the arrangements and working of the Vessel, her machinery and equipment.

ARTICLE 14 – CONTRACT COMPLETION TIME

The CONTR shall have Six Hundred (600) Calendar Days from the issuance of the Notice to Proceed, to complete the work on the vessel and deliver it to the MDOT. Such time frame shall be subject to adjustment pursuant to the terms and conditions of this Agreement. There are no incentive payments for early completion. However, the OWNER would accept earlier delivery.

ARTICLE 15 – GUARANTY

- A. CONTR guarantees to repair or replace to the reasonable satisfaction of OWNER any defect in materials, equipment or workmanship provided by CONTR or any defect resulting from Contractor–provided Designs, which is discovered within twelve (12) months after such Vessel is delivered to OWNER, provided that OWNER shall within thirty (30) calendar days after discovery of such defect, provide written notice of claim for said defect to Contractor. The Contract requirement of 12 months governs. OWNER’s failure to timely provide written notice of any defect to CONTR shall constitute a waiver of any and all claims arising out of such defect. With respect to CONTR’s guaranty as set forth in this Article, the term “defect” shall not include defects resulting from design of the Vessel provided by the OWNER in the Plans and Specifications or the following which may result from use of the Vessel during said guaranty period: (1) ordinary wear and tear; (2) misuse; (3) improper stowage or loading; and (4) negligence of OWNER, its agents or employees or the operator or crew of the Vessel.
- B. The liability of the CONTR to the OWNER hereunder on account of defects shall include the actual repair or replacement thereof. Any work required to be performed pursuant to the provisions of this Section shall be carried out, if practicable, at the shipyard of the CONTR or by the CONTR’s own personnel at the Vessel’s home port, or at a shipyard of the CONTR’s choosing. If this causes undue delays or is not practical in OWNER’s sole discretion, then the OWNER may have such work performed at any shipyard and in that event the CONTR shall be liable to the OWNER for the documented expenses thereof at the commercial rate prevailing in such port area, including the cost of dockage of the Vessel, if necessary, with regard to the repair or correction of any defective workmanship or defective material, guaranteed hereunder. CONTR shall guarantee such repair or replacement for an additional period of ninety (90) days from the completion of such repair or replacement, unless such repair and replacement shall occur more than ninety (90) days prior to the expiration of the twelve (12) month guarantee period, in which case such repair or replacement shall be guaranteed until the end of said twelve (12) month period
- C. Prior to the expiration of the guaranty period, a final guaranty survey of the Vessel shall be conducted by OWNER or the OWNER’s Representative. At such survey, OWNER or the OWNER’s Representative shall inspect the Vessel for any defects. Such survey shall be held at such port as OWNER shall designate. All material, equipment and workmanship guaranteed hereunder, which are found to be defective as a result of said inspection shall be corrected, repaired or replaced by CONTR at its expense to the reasonable satisfaction of OWNER or the OWNER’s Representative. All corrections, repairs or replacements to be made pursuant to said final guaranty survey shall be performed as set forth in Section B of this Article. OWNER shall give seven (7) calendar days prior written notice to CONTR of

the time and place of the final guaranty survey, and shall give CONTR an opportunity to have a representative present during the survey.

- D. Any guaranties from subcontractors to CONTR in excess of the guaranty provisions of this Article shall be assigned by CONTR to OWNER at the end of the guaranty period.
- E. The remedies contained in this Article 15 shall be OWNER's sole and exclusive remedies for defects after delivery, whether under tort, contract, warranty or otherwise and no other guaranties or warranties, whether expressed or implied by law or otherwise are or will be deemed to have been made by CONTR. All implied warranties, including warranties of merchantability or fitness for ordinary or intended use are specifically excluded. This guaranty is given in lieu of all other guaranties or warranties or actions in tort (including negligence or strict liability) or contract against CONTR. In no event shall CONTR's aggregate liability (whether in warranty, tort or contract) exceed the contract price. In no event shall CONTR be liable to OWNER for any incidental, punitive or consequential damages, including but not limited to, loss of use or loss of profits. Notwithstanding any provision contained herein, the CONTR shall remain liable for Liquidated Damages.

ARTICLE 16 – FINAL ACCEPTANCE

The Vessel shall be finally accepted (Final Acceptance) by OWNER after the final guaranty survey if the Vessel is found by OWNER or its Representative to have been constructed in conformity with this Agreement, the Plans and Specifications and any amendments thereto.

ARTICLE 17 – PAYMENT OF CONTRACT PRICE

Payment on this project will be made following the payment provisions outlined in Section 108 found in the Maine Department of Transportation, Standard Specifications March 2020 Edition as amended. The cost of steel material will be adjusted per Special Provision Section 108 Payment (Steel Cost Adjustment). The bidder will need to provide a schedule of values to the Department prior to an award being made. This schedule will be reviewed and approved by the Department at the time of the award and will form the basis from which to make progress payments on the project. The schedule of Values should have sufficient detail to cover all major components or areas of construction for the vessel as well as provide an amount for mobilization, bonds and insurance. All areas listed should be measurable and may require receipt of invoices at time of payment for materials and equipment. It is proposed to make payments on a monthly basis, unless the amount of work warrants a quicker schedule and it is agreed to by the Department. Payments will not be done more frequently than twice a month. The making of partial payments shall in no way prevent OWNER or the OWNER's Representative from asserting any right or remedy accruing to them under this Agreement because of the failure of CONTR to perform the work or deliver the completed Vessel in accordance with the terms of this Agreement. When the CONTR considers that an installment payment is about to fall due, he will give the OWNER fourteen (14) days notice thereof. The CONTR will then prepare an invoice, addressed to the OWNER and OWNER's Representative who will, on being satisfied that the relevant work has been completed, certify the same for payment and promptly advise the OWNER accordingly. The OWNER will settle process the invoice for payment. All payments made by the OWNER to the CONTR are so made strictly on the condition that all sums due by the CONTR to its suppliers and subcontractors are promptly and fully paid. OWNER reserves

the right to request executed waivers of liens and other claims of any or all such suppliers and subcontractors as a condition of making any of the required payments.

ARTICLE 18 – VALUE ENGINEERING

- A. CONTR may submit to OWNER written proposals for modifying the Plans and Specifications for the purpose of reducing the total cost of construction of the Vessel. The proposals shall be identified as Value Engineering Proposals, hereafter “V.E. Proposals”. Such V.E. Proposals shall contain the following information:
 - 1. A description of the proposed change, with specific reference to the pertinent existing requirements in the Plans and Specifications;
 - 2. A detailed estimate of the cost of performing the work under the existing requirements and under the proposed change;
 - 3. The date by which OWNER must approve or disapprove the proposed change.
- B. OWNER shall be the sole judge of both the technical acceptability of each V.E. Proposal and the estimated net savings to be derived therefrom. OWNER may reject each V.E. Proposal in writing within the time specified by CONTR in said Proposal. If OWNER does not approve any V.E. Proposal within the time so specified, said V.E. Proposal shall be deemed to be rejected. Any determination made by OWNER pursuant to this Article shall not be subject to the provisions of Article 22 (Dispute Resolution).
- C. In the event OWNER accepts any V.E. Proposal, such acceptance shall be evidenced by a written Change Order which states that said Order is made pursuant to this Article. Said Change Order shall provide for a reduction in the Contract Price to the extent of fifty percent (50%) of the net cost decrease and any change upon the Contract Delivery Date. Such an Order shall constitute an amendment to this Agreement.
- D. Until a Change Order incorporating any V.E. Proposal has been executed, CONTR shall continue to perform the work in accordance with the existing requirements of this Agreement and the Plans and Specifications.
- E. The delivery date shall not be extended by OWNER’s acceptance of CONTR’s V.E. Proposal unless such extension is specifically provided for in the Change Order. OWNER reserves the right to adopt any V.E. Proposal under this Agreement for general use on other contracts administered by OWNER.

ARTICLE 19 – LIQUIDATED DAMAGES

In the event CONTR fails to deliver the Vessel on or before the Contract Completion Time or any extension thereof, CONTR shall pay to OWNER as liquidated damages, and not as a penalty, the following amounts for each calendar day or part thereof elapsing from said Contract Completion Time (In Accordance with Article 14) to the date upon which the Vessel is actually delivered:

- A. Five Hundred Dollars (\$500.00) for each calendar day for the first 100 days,
- B. One Thousand Dollars (\$1,000.00) for each calendar day for the next 100 days,
- C. One Thousand Five Hundred Dollars (\$1,500.00) thereafter.

These liquidated damages which the parties each believe to be reasonable, are not set as a penalty for the CONTR’s breach, should one occur, nor are they intended to be a windfall to the

OWNER. The amount fixed herein between the parties is a reasonable forecast of the amount necessary to justly compensate the OWNER for the loss occasioned by the CONTR's breach of delivery. In the event that liquidated damages exceed 10% of the contract price, the parties agree that this provision may be revised.

ARTICLE 20 – DEFAULT OF CONTRACTOR

- A. The following circumstances shall constitute default of CONTR under this Agreement:
 - 1. The failure of CONTR to make delivery of the Vessel and its materials, fittings, equipment and supplies, and failure to perform the services required under this Agreement within the time specified herein or any extension thereof;
 - 2. The failure of CONTR to perform any of the other provisions of this Agreement or failure to make progress such that performance in accordance with its terms is endangered. Such failure may include, but is not limited to, failure to make timely payment for all labor, materials, services and other charges which are to be paid by CONTR;
 - 3. The dissolution of Contractor or the adjudication of CONTR as a bankrupt; the making of a general assignment by CONTR for the benefit of creditors; the appointment of a receiver of any kind whatsoever, temporary or permanent, for the property of CONTR; or the filing of a petition for reorganization with reference to CONTR, whether by CONTR, its creditors, stockholders or any other person whatsoever; or
- B. Where the failure of CONTR to comply with the provisions of this Agreement arises out of Acts of God or other events beyond the control of CONTR as contained in Article 20, Section A above, such failure shall not be considered default under this Article.
- C. In the event of default by CONTR as defined in Section A of this Article, OWNER may terminate this Agreement in whole or in part. Upon such termination, OWNER shall give written Notice of Default to CONTR. OWNER shall give CONTR fifteen (15) calendar days from the receipt of such Notice the opportunity to cure only such failure as set forth in Section A (2) of this Article in a manner satisfactory to OWNER.
- D. In the event that OWNER terminates this Agreement in whole or in part as provided in Section C of this Article, OWNER may procure the Vessel, supplies or services similar to those terminated. CONTR shall be liable to OWNER for any reasonable and documented costs for such similar Vessel, supplies or services which are in excess of the Contract Price or that portion of the Contract Price attributable to the part of the contract work performed by one other than CONTR. CONTR shall continue to perform the contract work to the extent said work is not terminated pursuant to this Article.
- E. If this Agreement is terminated by OWNER under this Article, OWNER may require CONTR to transfer title (insofar as not previously transferred) and deliver to OWNER, in the manner and to the extent directed by OWNER, the completed Vessel or the Vessel as partially completed and all supplies, materials, spare parts, tools, dies, jigs, fixtures, plans, drawings, information and contract rights as CONTR has constructed, produced or acquired for the portion of this Agreement subject to termination. OWNER shall require CONTR to protect and preserve property in possession of CONTR in which OWNER has an interest. OWNER shall pay to CONTR an amount commensurate with Contract Price, less the contract value of the terminated work, less all previous payments made under

Article 17 (Payment of Contract Price), and an amount to be agreed upon by CONTR and OWNER for the protection and preservation of property.

- F. In the event OWNER terminates this Agreement under this Article and elects to have the contract work completed by another, CONTR shall, at OWNER's direction, assign such subcontracts and orders for materials, equipment, services and supplies to be used in the performance of said contract work to OWNER.
- G. In the event OWNER terminates this Agreement under this Article and elects not to have the contract work completed, OWNER may, within one hundred twenty (120) calendar days from the date of termination, sell the partially completed Vessel, work-in-process, materials, machinery, fittings, equipment and supplies to which OWNER has title, together with all plans, specifications, calculations and other records required for the contract work. Such sale shall be made free from any equity of redemption and may occur without any appraisal or valuation at the option of OWNER. The purchaser at such sale shall be given reasonable time, not to exceed forty-five (45) days, within which to remove the Vessel and other property purchased from the plant of CONTR. OWNER may become a purchaser at such sale. The proceeds of the sale shall be applied in the following order of priority: first, to satisfy all costs and expenses, including reasonable attorneys' fees incurred by OWNER or its assigns in making such sale; second, to reimburse OWNER for payments already made by OWNER to CONTR; and third, to pay damages, demands or deficiencies arising by reason of the default of CONTR. The remaining proceeds, if any, shall be paid over to CONTR. In the event that the proceeds of such sale are not sufficient to pay the above priority items, the CONTR or its surety or sureties shall pay OWNER all such deficiencies.
- H. The rights conferred upon OWNER under the terms of this Article shall be in addition to any rights which OWNER would have at law or equity upon default of CONTR. The failure of OWNER to exercise any rights contained in this Article shall not constitute a waiver of OWNER's right to subsequently terminate this Agreement as set forth in Article 21 (Termination for Convenience of OWNER).

ARTICLE 21 – TERMINATION FOR CONVENIENCE OF OWNER

Notwithstanding Article 20 (Default of Contractor) of this Agreement:

- A. Performance of work under this Agreement may be terminated by OWNER in whole or in part whenever OWNER determines for any reason that termination is in the best interest of the State of Maine. Such determination shall not be subject to Article 22 (Dispute Resolution). Any such termination shall occur by OWNER's delivery to CONTR of a Notice of Termination specifying the extent to which performance of work under this Agreement is terminated and the date on which termination becomes effective. Upon receipt of a Notice of Termination and except as otherwise directed by OWNER, CONTR shall:
 - 1. Stop work to the extent specified in the Notice of Termination;
 - 2. Place no further orders or subcontracts for materials, equipment, services or facilities except as may be necessary for completion of such portion of the work which is not terminated;
 - 3. Terminate all orders and subcontracts to the extent that they relate to the performance of work terminated by the Notice of Termination;

4. Assign to OWNER all rights, title and interest of CONTR under any orders or subcontracts so terminated, in the manner, at the times and to the extent directed by OWNER;
5. Settle all outstanding liabilities and claims arising out of such termination of said orders and subcontracts to the extent that OWNER may require and with the approval or ratification of OWNER, which shall be final;
6. Transfer title (to the extent that title has not already been transferred to or vested in OWNER) and deliver to OWNER, in the manner, at the times and to the extent directed by OWNER the following:
 - a. the fabricated or unfabricated parts, work-in-process, completed work, supplies and other material produced as a part of or acquired in connection with the performance of the work terminated by the Notice of Termination; and
 - b. the completed or partially completed plans, drawings, information and other property which, if this Agreement had been completed, would have been required to be furnished to OWNER.
7. Use its best efforts to sell, in the manner, at the times, to the extent and at the price or prices directed or authorized by OWNER, any property of the types referred to in Section A(6) of this Article; provided, however, that CONTR:
 - a. shall not be required to extend credit to any purchaser; and
 - b. may purchase any such property under the conditions prescribed by and at the price or prices approved by OWNER.
8. Take such action as may be necessary, or as OWNER may direct, for the protection and preservation of the property related to this Agreement which is in the possession of CONTR and which OWNER has acquired or may acquire an interest.

Within sixty (60) calendar days of receipt of the Notice of Termination, CONTR shall submit to OWNER a list, certified as to quantity and quality, of any or all items not previously disposed of, exclusive of items the disposition of which has been directed or authorized by OWNER, and may request that OWNER remove or enter into a storage agreement for such items. Within forty-five (45) calendar days of receipt of such list, OWNER shall remove or enter into a storage agreement for said items. The list submitted shall be subject to verification by OWNER upon removal of the items. If the items are stored, such verification shall occur within thirty (30) calendar days from the date of the storage agreement. Any necessary adjustments to correct the list as submitted shall be made prior to final settlement.

- B. After receipt of a Notice of Termination, CONTR shall submit to OWNER in writing its final claim for any and all amounts that the CONTR asserts are due under the Contract, in the form and with the certification if any is prescribed by OWNER. Such claim shall be submitted promptly, but in no event later than one (1) year from the effective date of termination, unless extended in writing by OWNER within such one (1) year period or any authorized extension thereof. However, OWNER may determine that facts justify receipt of such final claim at any time after such one (1) year period or any extension thereof. Upon failure of CONTR to submit its final claim within the time allowed, OWNER may determine, on the basis of

information available to it, the amount that is due and shall thereupon pay to CONTR said amount.

- C. CONTR and OWNER may agree upon any or all amounts to be paid to CONTR by reason of the total or partial termination of work pursuant to this Article, which may include a reasonable allowance for profit on work done. Such agreement shall be memorialized in a written amendment to this Agreement. The parties may stipulate that this Agreement constitutes a full and final settlement of all amounts owed under this Agreement.
- D. In the event of the failure of CONTR and OWNER to agree as provided in Section C of this Article on the amount to be paid CONTR, OWNER shall determine the amount, if any, due CONTR based upon the following:
 - 1. For completed contract work accepted by OWNER (or sold or acquired as provided in Section A (7) of this Article) and not paid for, a sum equivalent to the aggregate price for such contract work computed in accordance with this Agreement;
 - 2. The total of:
 - a. The costs incurred in the performance of the contract work terminated, including initial costs and preparatory expenses allocable thereto, but exclusive of any costs attributable to contract work paid or to be paid for under Section D (1) of this Article; and
 - b. The cost of settling and paying claims arising out of the termination of work under subcontracts or orders, as provided in Section A (5) of this Article, which are properly chargeable to the terminated portion of this Agreement, but exclusive of amounts paid or payable on account of contract work or materials delivered or services furnished by subcontractors or vendors prior to the effective date of the Notice of Termination, which amount shall be included in the costs payable under Section 2 (a) of this Article; and
 - c. The reasonable costs of settlement, including accounting, legal, clerical and other expenses reasonably necessary for the preparation of settlement claims and supporting data with respect to the terminated portion of this Agreement and for the termination and settlement of subcontracts thereunder, together with reasonable storage, transportation and other costs incurred in connection with the protection or disposition of property allocable to this Agreement.
 - 3. The total sum to be paid CONTR under Sections D(1) and D(2) of this Article shall not exceed the total Contract Price as reduced by the amount of payments otherwise made and as further reduced by the Contract Price of work not terminated. Except for normal spoilage, and except to the extent that OWNER shall have otherwise expressly assumed the risk of loss, there shall be excluded from the amounts payable to CONTR as provided in Sections D(1) and D(2)(a) of this Article, the fair value, as determined by OWNER, in connection with materials, equipment, fittings and supplies which are destroyed, lost, stolen or damaged so as to become undeliverable to OWNER or to a buyer pursuant to Section A(7) of this Article.
- E. In arriving at the amount due CONTR under this Article, there shall be deducted:
 - 1. All advances or other payments on account made to CONTR,
 - 2. Any liquidated or finally determined claim which OWNER may have against CONTR in connection with this Agreement, and

3. The agreed price for or the proceeds from sale of any materials, equipment, supplies or other items acquired by CONTR or sold pursuant to the provisions of this Article and not otherwise recovered by or credited to OWNER.
- F. If the contract work is partially terminated, CONTR may file with OWNER a request in writing for an equitable adjustment of the Contract Price relating to the non-terminated portion of this Agreement prior to the settlement of the terminated work.
- G. OWNER may from time to time, under such terms and conditions as it may prescribe, make partial payments and payments on account against costs set forth in Sections 2(a) and 2(b) of this Article whenever, in the opinion of OWNER, CONTR is entitled to such payments. If the total of such payments is in excess of the amount finally agreed or determined to be due under this Article, such excess shall be payable by CONTR to OWNER upon demand. CONTR shall preserve and make available to OWNER all books, records, documents and other evidence bearing on the costs and expenses of CONTR under this Agreement and relating to the work terminated hereunder pursuant to Article 38 (Compliance with Laws)

ARTICLE 22 – DISPUTE RESOLUTION

Unless expressly stated otherwise in this Agreement, any action, omission, direction, decision, interpretation or determination of OWNER, its Representative, or CONTR may be the subject of a dispute. Any dispute arising under this Agreement must be raised in a timely manner. The parties shall negotiate in good faith to resolve any disputes arising in connection with this agreement. The CONTR must first informally negotiate with the Project Manager to resolve the dispute within 15 days of the date when the dispute becomes apparent to the CONTR. In the event that the parties are unable to amicably resolve the dispute through informal negotiations, the dispute shall be submitted to an arbitrator (hereafter “Arbitrator”) from the American Arbitration Association, and who has been approved by OWNER and CONTR. All rules of the American Arbitration Association shall apply. Arbitrator shall reduce his decision in writing and shall mail or otherwise furnish a copy thereof to OWNER, the OWNER’s Representative, and CONTR.

Regardless of the status or disposition of any dispute, the CONTR and the OWNER must perform their contractual responsibilities promptly and diligently. Unless expressly directed otherwise by the OWNER, the CONTR shall proceed without delay to perform the work or to conform to the decision or order of the OWNER.

ARTICLE 23 – INSURANCE

A. Insurance and Loss.

1. The CONTR shall at its own cost fully insure and keep insured in the joint names of the OWNER and the CONTR the Vessel and the machinery, materials and things used or intended for use in the construction and outfit thereof equivalent to the value of these or a sum of not less than the total of installments paid by the OWNER plus ten per cent (whichever is greater). Further, the CONTR shall at its own cost fully insure and keep insured in the joint names of the OWNER and the CONTR all modifications, spare parts, and additional equipment provided by the OWNER as may be agreed upon from time to time during the construction of the Vessel.

2. All Insurance Policies shall be placed with an insurance company or companies licensed or approved by the State of Maine, Department of Business Regulation, Bureau of Insurance, to do business in the State of Maine. CONTR shall provide OWNER with Certificates of Insurance accompanied by the copies of the related policies. Said insurance policies shall protect the Vessel against losses resulting from fire, launching and all other risks, accidents and damages (excluding War Risks) during and after the construction of the Vessel, whilst she remains in the harbor or the port of construction, when she is engaged on, or in connection with, any trials or delivery made under this Contract and until the time the Vessel is delivered to the OWNER. The CONTR shall from time to time renew the said insurance policies prior to their expiration and shall pay and continue to pay all premiums that become payable in respect of such insurance. Within seven days from the date when such renewed insurance becomes effective, or the premium paid, the CONTR shall deliver to the OWNER certificates that prove the policy or policies of insurance have been purchased. If, however, the CONTR defaults on such insurance, fails to keep up the said insurance or fails to obtain any such renewal of insurance as aforesaid, then the OWNER shall be at liberty to procure insurance and thereupon the CONTR shall repay to the OWNER the amount of the premiums paid, or the OWNER shall be at liberty, at its option, to deduct the amount thereof from any sums payable to the CONTR under this Contract. Nothing herein contained nor anything done or omitted to be done by the OWNER in pursuance thereof shall diminish or affect the CONTR's obligation to keep the Vessel, machinery, material and things insured to the full amount of their value in accordance herewith until the vessel is accepted, nor shall it diminish or affect the liability of the CONTR in respect thereof. All such policies shall name the OWNER as additional insured and shall be non-cancelable except on ten (10) days prior written notice to the OWNER.
3. If any event shall happen giving rise to a claim under any insurance policy to be effected under this Section, or if the Vessel shall become a total or constructive total loss before acceptance by the OWNER, the OWNER (without prejudice to its rights to have this Contract performed within such extended time and at such price as may be mutually agreed) shall receive the moneys which shall become payable under whichever of the policies the claim shall arise and retain the same, paying the CONTR the difference between the aggregate of such sums as they may have previously paid the CONTR under this Contract and such total amount as the DESIGN AGENT may certify would have been payable to the CONTR if this Contract had been terminated at the time of the event giving rise to the claim. The OWNER may, at its discretion, instruct the CONTR to arrange War Risk insurance, and the CONTR is then obliged to do so without delay, but all costs involved are at OWNER's expense.

B. Termination.

In the event the CONTR defaults on such insurance, fails to maintain the insurance or fails to obtain any renewal of insurance as aforesaid, the OWNER may terminate this contract for construction of any further portion of the Vessel and the OWNER shall not be obligated to pay any damages or additional money to the CONTR pursuant to this Contract.

ARTICLE 24 – SURETY

A. Performance and Payment Bonds

CONTR agrees to furnish OWNER, within 15 days of the execution of this Agreement, the following bonds upon which CONTR and its surety or sureties are jointly and severally bound to OWNER. The identities of the sureties must be satisfactory to OWNER. Sureties offered for bonds must appear on the list contained in the Beneficiary of Treasury Circular 570, “Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and Acceptable Reinsuring Companies. The form and sufficiency of the surety or sureties shall be satisfactory to OWNER and the final execution of the contract shall be contingent on an agreement as to the amounts for both the performance and payment bonds as set forth below:

1. A Performance Bond in the sum of 100% of the Bid amount conditioned upon the well and true performance and fulfillment of all undertakings, covenants, terms, conditions and provisions of this Agreement during its original term and any extensions, amendments or modifications thereof that may be granted by OWNER or the OWNER’s Representative, with or without notice to the surety and during the life of any guaranty required under this Agreement.
2. A Payment Bond in the sum of **100%** of the Bid amount conditioned upon CONTR making prompt payment to all persons supplying CONTR or its subcontractors of any tier with labor, materials, equipment and supplies in the performance of the work provided for in this Agreement during its original term and any extensions, amendments or modifications thereof that may be granted by OWNER or the OWNER’s Representative, with or without notice to the surety.
3. All Bids must be accompanied by a Bid Bond that complies with Maine DOT’s Standard Specifications March 2020 Edition. Bids must be accompanied by a Bid Bond at 5% of the bid amount or the amount specified in the Notice to Contractors. It can be in the form of an official bank check, cashier’s check, certified check, certificate of deposit, or United States postal money order payable to Treasurer, State of Maine as a Bid guarantee.

Please note: the Department will now additionally accept a facsimile of the Bid Bond (for either electronic or paper bids); however, the original Bid Bond must then be received at the MDOT Contract Section within 72 hours after the bid opening. Firms should submit their Bid Bonds electronically to the Contracts Section.

If any surety upon any bond furnished under this Article becomes unacceptable to OWNER or if any surety fails to furnish information as to its financial condition from time to time as required by OWNER, CONTR shall promptly furnish such additional security as may be required by OWNER to protect the interests of OWNER and of persons supplying CONTR or its subcontractors of any tier with labor, materials, equipment or supplies in the performance of the work covered by this Agreement.

B. Letter Of Credit

In the absence of a payment and performance bond, OWNER may consider as an alternative the issuance to OWNER a standby letter of credit (L/C) in a form acceptable to OWNER issued by a federally insured financial institution rated investment grade or

higher by a recognized commercial rating service. The L/C shall be irrevocable, require presentation of no document other than a written certificate of OWNER, a sight draft and the original L/C to the issuing financial institution, and shall expire only as provided below.

If the CONTR does not furnish an acceptable replacement L/C, or other acceptable substitute, at least 30 days before the L/C's scheduled expiration, the OWNER may immediately draw on the L/C.

The L/C shall remain in effect until the later of 60 days following final payment or the expiration of any warranty period. The L/C shall provide that, unless the issuer provides the beneficiary written notice of non-renewal at least 60 days in advance of the current expiration date, the L/C is automatically extended without amendment for one year from the expiration date, or any future expiration date, until the period of required coverage completed and the OWNER provides the financial institution with a written statement waiving the right to payment.

ARTICLE 25 – INDEMNIFICATION

CONTR shall indemnify, defend and hold harmless OWNER, its employees and agents, the OWNER's Representative and the Vessel against any and all claims, actions, causes of action, demands, losses, penalties and damages of any nature whatsoever, arising from any direct or indirect act, omission, neglect, or default of CONTR, its agents and employees, subcontractors or their agents and employees, including any and all actions for contribution and/or indemnity, any and all claims arising from injury to or death of employees, workmen, trespassers, licensees and all other persons, whether in, on or about the contract work, and any and all claims arising from damage to or loss of property of third parties due to, including reasonable attorneys' fees. It is agreed that the workmen and employees engaged in the construction of the Vessel shall at all times be employees of Contractor or its subcontractors and shall not be the employees of OWNER or the OWNER's Representative. This agreement of Contractor to indemnify, defend and hold harmless shall not apply to any injury to, or death of, any person, or to any damage to or loss of property of third parties occurring after delivery of the Vessel to the OWNER; except, that said indemnification shall be applicable to such injury, death or damages occurring during the period or periods the Vessel is in CONTR's Shipyard or under CONTR's contract work supervision for the performance of work or repairs required by Article 15 (Guaranty) and the Specification. Any death after delivery of the Vessel caused by an injury occurring before such delivery due to any direct or indirect act, omission, neglect or default of CONTR, its employees, its subcontractors or their employees shall not be excluded from the indemnity provisions provided for under this Article solely for the reason that such death occurred after delivery of the Vessel. This indemnification does not extend to a claim that results solely and directly from (a) the OWNER's negligence or unlawful act, or (b) action by the CONTR taken in reasonable reliance upon an instruction or direction given by an authorized person acting on behalf of the OWNER in accordance with the contract.

ARTICLE 26 – TITLE

Title to the Vessel under construction and title to materials, machinery, equipment, fittings and supplies delivered, bought or ordered for use in the construction of said Vessel shall vest in

OWNER to the extent of any payments made thereon, at the point when such materials, equipment, fittings and supplies are delivered to CONTR's plant or other place of storage located elsewhere and approved by OWNER. Accumulated payments by OWNER to CONTR under Article 17 (Payment of Contract Price) shall be deemed sufficient to cover the value of all material, machinery, equipment, fittings and supplies located at the CONTR's plant or in storage elsewhere, provided, however, that the risk of loss or damage to such materials, machinery, equipment, fittings and supplies and the Vessel itself shall remain with CONTR, and OWNER shall not be deemed to have waived the right to require CONTR to repair or replace defects at CONTR's expense and to deliver the Vessel with all contract work completed as required by this Agreement. CONTR shall have equity in such materials, machinery, equipment, fittings and supplies and completed contract work to the extent not paid for by OWNER. OWNER may, by written direction, require that title vest in OWNER upon delivery of such materials, machinery, equipment, fittings and supplies to the carrier for transportation to CONTR's plant or other place of storage. Title to all scrap material and to all material which is surplus to the requirements of this Agreement shall vest in CONTR. Notwithstanding the provisions of this Article, CONTR shall be subject to the risk of loss of the Vessel and all materials, machinery, equipment, fittings and supplies until the Vessel is delivered to OWNER in accordance with Articles 13 (Delivery of Vessel) and 14 (Contract Completion Time).

Contractor shall procure a release(s) from any party holding a UCC security interest or other liens covering the Vessel, all materials, supplies and parts which are used or intended to be used for the construction of the Vessel and any insurance proceeds (the "OWNER's Property").

Without impairing or releasing the title vested in OWNER, in order to fully ensure that title to the OWNER's Property for which OWNER has paid rests with OWNER, this Agreement shall also constitute the grant by Contractor of a UCC security interest to OWNER covering the OWNER's Property.

CONTR hereby irrevocably authorizes OWNER from time to time to file in any Uniform Commercial Code jurisdiction any initial financing statements and amendments or addendums thereto that: (a) indicate the OWNER's Property is the property of OWNER; and (b) contain any other information required by Part 5 of Article 9 of the applicable Uniform Commercial Code for the sufficiency or filing office acceptance, including (a) whether CONTR is an organization, the type of organization and any organization identification number issued to the CONTR. CONTR agrees to furnish any such information to OWNER promptly upon request.

CONTR covenants with OWNER that without providing at least 30 days prior written notice to OWNER, (a) CONTR will not change its name, its place of organization or incorporation or, its mailing address or organizational identification number if it has one, (b) if CONTR does not have an organizational identification number and later obtains one, CONTR shall forthwith notify OWNER of such organizational identification number, and (c) CONTR will not change its type of organization, jurisdiction of organization, or other legal structure without OWNER's prior written consent.

CONTR will promptly execute any financing statements or other instruments deemed necessary by OWNER to prevent any filed financing statement from becoming misleading or losing its perfected status. The information contained in this Section is provided in order that this

Agreement shall comply with the requirements of the Uniform Commercial Code, as enacted in the in which the Vessel is being constructed, for instruments to be filed as financing statements.

The remedies for any violation of the covenants, terms and conditions of the security agreement herein contained shall be (i) as prescribed herein, or (ii) as prescribed by general law, or (iii) as prescribed by the specific statutory consequences now or hereafter enacted and specified in said Uniform Commercial Code, all at OWNER's sole election. CONTR and OWNER agree that the filing of such financing statement(s) shall never be construed as in any wise derogating from or impairing the OWNER's title to the OWNER's Property.

ARTICLE 27 – RIGHTS TO THE DESIGN AND DRAWINGS

No part of the plans or drawings or other relevant information is to be made available by the CONTR to any other party, except as required to fulfill the contract obligations, without the prior written approval of OWNER and DESIGN AGENT. The CONTR shall not use, or allow the use of, all or any portion of the design of the vessel, or of all or any portion of the Specifications, Plans, or Drawings (including but not limited to the Bid Documents and the As-Built Drawings), without the prior written approval of both the OWNER and DESIGN AGENT, which approval can be withheld for any or no reason.

ARTICLE 28 – LIENS

- A. At the time CONTR requests any payment under this Agreement, CONTR must give written guaranty to OWNER that the Vessel, its materials, equipment, fittings and supplies and every part thereof is free and clear of any and all liens or rights in rem of any kind, except such liens in rem arising of OWNER's other contractors, suppliers and materialmen, or arising as a result of OWNER's default in payment to Contractor. CONTR shall furnish evidence satisfactory to OWNER that the Vessel, materials, equipment, fittings and supplies are free and clear of such liens or rights in rem.
- B. If such a lien or right in rem as CONTR is required to guaranty against hereunder is filed or asserted against or attached upon the Vessel, any materials, equipment, fittings or supplies, CONTR shall promptly notify OWNER of such lien or right in rem and shall no later than fifteen (15) calendar days thereafter secure the discharge or release of such lien or right in rem. If such release or discharge is not available under the law, CONTR shall immediately take such steps as in the opinion of OWNER shall prevent such lien or right in rem from delaying the contract work, and shall indemnify and hold harmless OWNER from all costs, charges and damages by reason of such lien or right in rem.
- C. OWNER, at its option, may satisfy the claim upon which such lien or right in rem as CONTR is required to guaranty against hereunder is based in order to secure its discharge or release. In such event, OWNER shall deduct such sum from any payments due or to become due CONTR. In the event that the cost of satisfying such lien or right in rem is in excess of the amount which is due or to become due CONTR, CONTR shall pay the amount of such excess to OWNER upon demand.
- D. OWNER may also, at its option, without securing the discharge or release of such lien or right in rem as provided in paragraph C above, withhold any payments due or to become due CONTR in an amount which is determined by OWNER to be required to secure the

release or discharge of such lien or right in rem, which amount shall include the estimated amount of all expenses reasonably expected to be incurred by OWNER in connection therewith; provided, however, that CONTR has not released or discharged such lien or right in rem.

ARTICLE 29 – TAXES

Contractor shall pay all United States, State, County, City, sales, use, excise or other taxes, assessments and duties lawfully assessed or levied prior to or concurrently with delivery of the Vessel against the Vessel and materials, equipment, fittings and supplies either to be used or actually used in the performance of this Agreement.

ARTICLE 30 – PATENT INFRINGEMENT

CONTR shall be responsible for any and all claims against OWNER or Vessel for infringement of patents or patent rights in the construction or use of the Vessel arising out of CONTR's workmanship, materials, equipment and Contractor-Provided Designs. Contractor shall defend, hold harmless and indemnify OWNER, the OWNER's Representative and the Vessel against all such patent claims and all costs, expenses, charges and damages which OWNER, the OWNER's Representative or the Vessel may be obligated to pay by reason of such patent claims, including all expenses of litigation and reasonable attorney's fees. OWNER shall notify CONTR promptly of any patent claim or any suit brought in connection therewith, and shall give CONTR an opportunity to defend against such suit. OWNER shall make no payment on account of any patent claim or suit in connection therewith, unless either with the consent of CONTR or pursuant to the decree of a proper court or tribunal. CONTR shall not be responsible for any patent claim or claim for indemnity arising in connection therewith, which arises out of or in connection with the design of the Vessel or any OWNER-Provided Plans.

The CONTR shall pay all royalties on patented articles, import duty, and other taxes.

ARTICLE 31 – LABOR PROVISIONS

This Agreement is controlled by the labor provisions set forth in Section 6, Required Federal Contract Provisions. In order to apply Davis-bacon wage rates, location specific prevailing wage determinations must be incorporated into the bid package. Since the department does not know the location where the work will take place, it is not practical to incorporate the prevailing wage determination in the contract. This is consistent with the US DOL Wage and Hour Division (WHD) Field Operations Handbook (FOH) *15d11 -Shipbuilding, Alteration, Repair, and Maintenance*. This contract will require that at least the minimum federal or state wage rate (whichever is greater) be paid as a minimum to all employees associated with the work of the contractor or any of its subcontractors.

In order for the Department to report the number of hours worked associated with this project, the Department will require Electronic Payroll Submission. The prime contractor and all

subcontractors and lower-tier subcontractors will submit their certified payrolls electronically on this contract utilizing the Elation System web based reporting. There is no charge to the contracting community for the use of this service. The submission of paper payrolls will not be allowed or accepted.

ARTICLE 32 – EQUAL OPPORTUNITY PROVISIONS

CONTR shall comply with the equal opportunity provisions set forth in Section 6, Required Federal Contract Provisions.

ARTICLE 33 – PLANT PROTECTION

CONTR shall provide safeguards for its plant and the work in process under this Agreement, including devices, equipment and personnel as would constitute reasonable protection against all hazards, including unauthorized entry, malicious mischief, theft, vandalism and fire.

ARTICLE 34 – BUY AMERICA

CONTR shall comply with the Buy America provisions set forth in Sections 6, Required Federal Contract Provisions, and Section 8, FTA Buy America Regulations

ARTICLE 35 – RECORDS

- A. CONTR shall maintain all reports, records and information required under this Agreement. The records, reports and information shall be maintained until the expiration of six (6) years following either the date of final payment or effective date of termination.
- B. Records shall include but not limited to records showing the cost of performance of this Agreement and of any termination of work thereunder. Such records shall include all books, records, documents, ledgers and all other writings related to the contract work set forth in this Agreement and all costs and expenses associated thereto, and may, to the extent approved by OWNER, consist of photographs, microfilm, microfiche or other authentic reproduction.
- C. CONTR shall make such records available for inspection by and without charge to OWNER or the OWNER's Representative at all reasonable times at the office of CONTR. Contractor's method of accounting shall be subject to the approval of OWNER or the OWNER's representative, but no material change shall be made therein if said method conforms to good accounting practice.

ARTICLE 36 – ACCESS TO REPORTS AND RECORDS

- A. Contractor agrees that the OWNER, shall, for the purpose of audit and examination, be permitted to inspect all work, materials, payrolls, reports, records, information and other data with regard to the project. The CONTR shall permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the OWNER, the OWNER's Representative, the Comptroller General of the United States, the Treasurer of the State of Maine, all state and federal agencies involved in this project, or any of their duly authorized representatives, to be pertinent to ascertain compliance with the requirements of

this Agreement. The CONTR shall provide all information, records and reports required in this Agreement without charge to the OWNER.

- B. CONTR agrees to maintain all required records until the expiration of six (6) years following either the date of final payment or effective date of termination, and all other pending matters are closed.

ARTICLE 37 – APPLICABILITY TO SUBCONTRACTORS

Contractor shall provide copies of this Agreement, the approved Plans and Specifications, and any other relevant documentation to each subcontractor performing any work, or providing any materials, equipment, fittings or supplies in the construction of the Vessel prior to the execution of any subcontract hereunder. CONTR may alternatively provide each subcontractor the opportunity to review any of the above documents prior to said execution. Contractor shall hold each subcontractor responsible for any relevant provisions contained in any of the documents set forth herein.

ARTICLE 38 – REPORT OF SUBCONTRACTING

Upon delivery of the Vessel to OWNER, CONTR shall submit to OWNER or the OWNER's Representative, in writing, an accounting of the total dollar amount of all subcontracts and purchase orders placed by it under this Agreement with organizations not affiliated with it. Said writing shall include an itemized list of each subcontractor who performed work on or provided services, materials, equipment, fittings and supplies for the Vessel prior to delivery to OWNER and the final cost to Contractor of the services, materials, equipment, fittings and supplies provided by each subcontractor.

ARTICLE 39 – COMPLIANCE WITH LAWS

- A. CONTR shall comply with all laws, rules, regulations and requirements of the United States affecting the construction and testing of the Vessel, as set forth in this Agreement, the Plans and Specifications, FTA Grants or otherwise. CONTR shall also comply with all laws, rules, regulations and requirements of any state in which the Vessel is constructed, tested or repaired, with all laws, rules, regulations and requirements of local authorities, with all applicable laws of the State of Maine and rules and regulations of the State of Maine, Department of Transportation. CONTR shall procure, at its own expense, any permits required under federal, state or local law as may be necessary in connection with any contract work set forth in this Agreement.
- B. Applicability to Subcontractors. Vendor shall ensure and shall cause the foregoing provisions to be inserted in any subcontract for any work covered by this Agreement so that such provisions shall be binding upon each subcontractor and each of its subcontractors' subcontractors, etc.

ARTICLE 40 – OFFICIALS NOT TO BENEFIT

No member of, nor delegate to, the legislatures of the United States or the State of Maine, nor any Maine Department of Transportation employee shall be permitted to any share in any part or benefit of this Agreement that may arise therefrom, but this provision shall not be construed to extend to this Agreement if made with a corporation for its general benefit. No member of, nor delegate to, the legislatures of the United State or the State of Maine, nor any Maine Department of Transportation employee shall be employed by CONTR, either with or without compensation, as an attorney, agent, officer or director.

ARTICLE 41 – OTHER GOVERNMENTAL REQUIREMENTS

- A. The Vessel, with its inventory, equipment and machinery, shall be built strictly in accordance with all applicable statutes, rules, and regulations (and directives issued pursuant thereto) of the United States Government and all agencies of the United States, including but not limited to the United States Department of Transportation (“DOT”), the Federal Transit Administration (“FTA”), the United States Coast Guard, and all successor agencies, and in accordance with the requirements of applicable Federal Acquisition Regulations, set forth or referenced in this agreement, including the Appendices (collectively the “Governmental Rules”).
- B. For the purpose of meeting the Disadvantaged Business Enterprise ("DBE") requirements of 49 CFR Part 23, OWNER has established a goal of 1.01 % utilization (of total contract amount) of Disadvantaged Business Enterprises (“DBE”). CONTR is required to demonstrate good faith effort to achieve the goal.
- C. Notwithstanding the requirements of Section 6, Required Federal Contract Provisions, OWNER has been granted an exemption/suspension of the provisions of the Davis-Bacon Act relating to minimum wages to be paid to the classifications of work required for construction of the Vessel. The CONTR must pay at the very least the Federal and State minimum wage rates, submit weekly certified payroll statements, and comply with all other Department of Labor laws.
- D. In the event of the CONTR’s noncompliance with the provisions of this Contract relating to Governmental Rules, the OWNER shall impose such Contract sanctions as it or the relevant governmental agency may determine to be appropriate, including, but not limited to:
 - i. Withholding of payments to the CONTR under the Contract until the CONTR complies; and/or
 - ii. Cancellation, termination, or suspension of the Contract, in whole or in part.
- E. The CONTR shall include the provisions of this Section in every subcontract, including procurements of materials and leases of equipment, unless excepted by the Governmental Rules. The CONTR shall take such action with respect to any subcontract or procurement as the OWNER or any governmental agency may direct as a means of enforcing such provisions including sanctions; provided, however, that, in the event a CONTR becomes involved in, or is threatened with, litigation with a subcontractor or supplier as a result of such direction, the Contractor may request the OWNER to enter into such litigation to protect the interests of the

OWNER, and, in addition, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

- F. The CONTR shall erect at the site of construction, and maintain during construction, signs satisfactory to the relevant governmental agencies identifying the Project and indicating that the Government is participating in the development of the Project.
- G. The CONTR and all sub-contractors, independent contractors, suppliers, and vendors shall, on OWNER's request, submit evidence to the OWNER that the governing air pollution criteria will be met. This evidence and related documents will be retained by the Contractor for on-site examination by relevant governmental agencies.
- H. CONTR recognizes and acknowledges that OWNER is financing the construction of the Vessel from an agency of the federal government and therefore the OWNER and the terms of this Contract are subject to all applicable regulations and requirements of that agency. CONTR agrees to be bound by all such regulations and requirements applicable to contractors and to fully cooperate with and assist OWNER in fulfilling its obligations under such regulations and requirements.

ARTICLE 42 – MUTUAL WAIVER OF CONSEQUENTIAL DAMAGES

In no event shall CONTR or OWNER be liable to the other party, whether arising in tort, contract or otherwise, for incidental, punitive or consequential damages, including without limitation loss of profit, loss of use or loss of hire. Further, in no event shall CONTR be entitled to recover more than the Contract Amount. No payments due the CONTR will be adjusted for inflation and no interest shall be due and payable on any payment due the CONTR, including payments that relate to issues, disputes or claims.

ARTICLE 43 – ENTIRE AGREEMENT

This Agreement contains the entire agreement between OWNER and Contractor relating to the subject matter contained herein and supersedes all prior discussions and agreements between OWNER and CONTR. Neither OWNER nor CONTR shall be bound by any definition, condition, warranty or representation other than as expressly stated in this Agreement and/or attached Sections 1-7.

CONTRACTOR (Bidder)

Date	(Signature of Legally Authorized Representative of the Contractor)

Witness	(Name and Title Printed)

MAINE DEPARTMENT OF TRANSPORTATION

Date	By: David Bernhardt, Commissioner

Witness	(Name and Title Printed)

SPECIAL PROVISION
SECTION 108
PAYMENT
(Steel Cost Adjustment)

This Special Provision was developed to minimize risk to the Contractor and steel fabricator(s) associated with current volatile fluctuations in the cost of steel materials.

Description Steel cost adjustments will be made to provide additional compensation to the Contractor, or a credit to the Department, for fluctuations in steel prices. All prices and costs are in U.S. Dollars (USD).

Types of Steel Products An adjustment will be made for fluctuations in the cost of plate and rolled-shape steel used in the fabrication of steel for the following items:

- Steel Hull, Superstructure, and Deckhouses

The adjustments shall apply to the above items when they are part of the original Contract or Extra Work added by Contract Modification.

Documentation Sufficient documentation shall be furnished to the Department to verify the following:

1. The dates on which steel was shipped from the mill to the fabricator, and quantity of steel, in pounds, shipped on those dates.
2. The quantity of steel, in pounds, incorporated into the State Ferry Vessel Replacement Project. The Department reserves the right to verify submitted quantities.

Method of Adjustment Steel cost adjustments shall be computed as follows:

$$SCA = Q \times D$$

Where: SCA = steel cost adjustment, in USD
 Q = quantity of steel incorporated into the work, in pounds
 D = price factor, in USD per pound

$$D = MP_B - MP_A$$

Where: **MP_B** = The Platts Steel Spot Market Prices for Plate, as published by the Engineering News- Record, for the month the steel is shipped from the mill. The price will be converted from USD per ton to USD per pound.

MP_A = The Platts Steel Spot Market Prices for Plate, as published by the Engineering News- Record for the month prior to the bid opening, for work paid for at the Contract price; or for the month the Contract Modification is signed by the Contractor for Extra Work that is paid for by agreed unit prices. The price will be converted from USD per ton to USD per pound.

The total weight of the steel that will be used to calculate the steel cost adjustment is shown in the following table:

Item	Weight of Steel
Plating	205 long tons (459,200 lbs.)
Shapes	58 long tons (129,920 lbs.)

No steel cost adjustment will be made for any products manufactured from steel having a mill shipping date prior to the Contract Bid date.

If the Contractor fails to provide the required documentation, the method of adjustment will be calculated as described above; however, the **MP_B** will be based on the date the steel arrives at the jobsite. In this case, an adjustment will only be made when there is a decrease in steel costs.

Basis of Payment Steel cost adjustments may be positive or negative but will only be made when there is a difference between the **MP_A** and **MP_B** in excess of five percent, as calculated by:

$$\text{Percent Difference} = \{(\text{MP}_B - \text{MP}_A) / \text{MP}_A\} \times 100$$

Steel cost adjustments will be calculated by the Department and will be paid or deducted when all other Contract requirements for the applicable items of work are satisfied. Adjustments will only be made for fluctuations in the cost of the steel as described herein. No adjustments will be made for changes in the cost of manufacturing, fabrication, shipping, storage, etc.

The steel cost adjustments shall not apply during any time after the Contract Completion Date when the Contractor is being assessed Liquidated Damages.

Cost adjustments, if any, shall be made by Contract Modification in accordance with this Special Provision.

Section 5

SUPPLEMENTAL SPECIFICATIONS (UPDATES)

SUPPLEMENTAL SPECIFICATIONS
(Corrections, Additions, & Revisions to Standard Specifications – March 2020)

SECTION 102
BIDDING

102.11 Bid Responsiveness Revise the paragraph that states
“The Bid is not signed by a duly authorized representative of the Bidder.” So that it reads:

“The Bid is not signed by a duly authorized representative of the Bidder.

- **Properly submitted electronic bids meet this requirement.**
- **Paper bids must include at least one signed copy of the Contract Agreement Offer & Award form.”**

SECTION 104
GENERAL RIGHTS AND RESPONSIBILITIES

104.2.1 Furnishing of Right-of-Way Revise the last sentence in the first paragraph by removing
“105.4.5 – Special Detours” and replacing it with **“105.4.5 – Maintenance of Existing Structures.”**

SECTION 106
QUALITY

106.6 Acceptance Revise this Subsection by replacing the paragraph beginning with “Acceptance of Hot Mix Asphalt Pavement will be based” with:

“Acceptance of Hot Mix Asphalt Pavement will be based on Method A or C Statistical Acceptance, or Method B or D Acceptance as specified. The method of acceptance for each item is defined in Special Provision, Section 403, Hot Mix Asphalt Pavement. When items of Hot Mix Asphalt Pavement are not so designated, Method A will be utilized whenever there are more than 1000 tons per Hot Mix Asphalt Pavement item, and Method B will be utilized when there are less than or equal to 1000 tons per Hot Mix Asphalt Pavement item.”

Revise Subsection “B” by removing it and replacing it with:

“B. Items not designated for Statistical Acceptance will utilize Method B or D Acceptance testing to validate the quality of the material incorporated into the Project. For material paid under Item 403.209 – Method D, or designated to be visually accepted, the Contractor shall provide the Department with a Certification Letter that indicates that the material supplied complies with the Specifications. Test results representative of the certified material shall be attached to the letter.

The Department will randomly sample and test the certified Material for properties noted in Table 1 of Section 502 - Structural Concrete or Table 14 of Section –401.21 Acceptance Method B & D. Material will be subject to rejection as noted in Structural Concrete Section 502.195 - Quality Assurance Method C Concrete or Hot Mix Asphalt, Section 401.2022 Pay Adjustment – Method B & D.”

106.7.1 Standard Deviation Method Revise 106.7.1, subsection H by removing the following from the first paragraph:

“Method B: $PF = [70 + (Quality\ Level * 0.33)] * 0.01$ ”

SECTION 110 INDEMNIFICATION, BONDING, AND INSURANCE

110.3.9 Administrative & General Provisions Amend this subsection by adding “**Automobile Liability**” under letter A) Additional Insured to the list of exceptions.

SECTION 206 STRUCTURAL EXCAVATION

206.01 Description – *Structural Earth Excavation, Below Grade* delete the entire sentence and replace with “**shall consist of the removal of excavation required for unknown or unanticipated subsurface condition. See 206.04 – Method of Measurement for pay limits.**”

206.04 Method of Measurement – Drainage and Minor Structures Paragraph 1, sentence 2, delete the remainder of the sentence beginning with “...provided the maximum allowable...”

And replace with: “**...in accordance with the following limits:**”

- **Vertical pay limits:**
 - **Below a plane parallel with and 12 inches below the bottom of the drainage or minor structure or**
 - **Below the excavation limits shown in the Bid Documents; whichever is greater.**
- **Horizontal pay limits – The maximum allowable horizontal dimensions shall not exceed those bounded by vertical surfaces 18 inches outside the base, or extreme limits of, the structure, and to the vertical neat lines of underdrain trenches, as shown in the Contract Documents.**

SECTION 401 HOT MIX ASPHALT PAVEMENT

401.19 Contractor Quality Control Amend this Section by adding the following to the end:

“Failure to comply with the approved QCP will result in work suspension and pay reductions as outlined in Section 106.4.6. The Quality Control Plan Value shall be the total bid value for all items covered by the QCP as identified in Special Provision 403.”

SECTION 502 STRUCTURAL CONCRETE

502.09 Forms and Falsework Amend this subsection by adding the subsection title **“502.10 Placing Concrete”** after section “D” Removal of Forms and False work” and after the paragraph beginning with “2. Forms and False work, including blocking...”. So that a new subsection starts and reads:

“502.10 Placing Concrete

A. **General Concrete shall not be placed until forms”**

502.1701 Quality Control, Method A and B Revise this Section so that the first paragraph and the first sentence of the second paragraph read:

“502.17 Quality Control The Contractor shall control the quality of the concrete through testing, inspection, and practices which shall be described in the QCP, sufficient to assure a product meeting the Contract requirements. The QCP shall meet the requirements of Section 106, Quality, and this specification. No work under this item shall proceed until the QCP is submitted to and approved by the Department. Failure to comply with the approved QCP will result in work suspension and pay reductions as outlined in Section 106.4.6. The Quality Control Plan Value shall be the total bid value for all cast-in-place items covered by the QCP, using the P value listed in Special Provision 502. If no P value is listed, a value of \$350, or bid value per cubic yard, whichever is less, shall be used.

502.1701 Quality Control, Method A and B The QCP shall address all elements that affect the quality of the structural concrete including, but not limited to, the following: “

502.18, Method of Measurement, Revise Subsection ‘F’ by removing the word ‘transverse’ so that it reads: **“Saw cut grooving of concrete wearing surfaces, complete and accepted, will be measured for payment as one lump sum.”**

502.19, Basis of Payment, Revise the third paragraph by removing the word ‘transverse’ so that it reads: **“Saw cut grooving of concrete wearing surfaces will be paid for at the Contract Lump Sum Price, which shall be payment for furnishing all materials, labor, and equipment, including depth gauges and all incidentals, to satisfactorily complete the work.”**

(Also see 535.24 and 535.25 for related changes)

SECTION 506
SHOP APPLIED PROTECTIVE COATING – STEEL

506.13 Surface Preparation Amend this section by adding this paragraph to the end:

“Steel shall meet the requirements of SSPC SP8 Pickling prior to being immersed in the zinc tanks. Verification of the surface preparation shall be included in the QC documentation.”

SECTION 523
BEARINGS

523.22 Fabrication Amend this subsection by adding the following: **“Elastomeric Bearings shall be fabricated in accordance with AASHTO M251.”**

SECTION 526
CONCRETE BARRIER

Amend this section by deleting it in its entirety and replacing it with:

“526.01 Description This work shall consist of the furnishing, constructing, erecting, setting, resetting, and removal of concrete barrier and associated elements in accordance with these specifications, the Standard Details, and the lines and grades shown on the Plans or established by the Resident.

The types of concrete barrier are designated as follows:

Portable Concrete Barrier Type I Double faced removable barrier in accordance with the Standard Details.

Permanent Concrete Barrier Type II Double faced barrier as shown on the Plans.

Permanent Concrete Barrier Type IIIa Single faced barrier 32 inches high in accordance with the Standard Details or as shown on the Plans.

Permanent Concrete Barrier Type IIIb Single faced barrier 42 inches high in accordance with the Standard Details or as shown on the Plans.

Permanent Concrete Transition Barrier Barrier of various heights joining steel bridge rail to steel guardrail in accordance with the Standard Details or as shown on the Plans.

Permanent Texas Classic Rail Barrier Traffic rail or sidewalk rail, in accordance with the Standard Details or as shown on the Plans.

526.02 Materials

a. **Concrete** Concrete for barriers, both permanent and portable, shall have a design strength of 5,000 psi.

For cast-in-place barrier: The concrete shall be Class LP, in accordance with Standard Specification Section 502, Structural Concrete.

For precast barrier: The concrete shall meet the requirements of Standard Specification 712.061, Structural Precast Concrete Units, except that the stripping strength for precast barriers is 4,000 psi.

b. **Reinforcing Steel** Reinforcing steel shall meet the requirements of Section 503, Reinforcing Steel.

c. **Structural Steel** Plates and barrier connections shall meet the requirements specified in Standard Specification 504 - Structural Steel and shall be hot dip galvanized after fabrication in accordance with Standard Specification 506, Shop Applied Protective Coating – Steel

d. **Bolts** Bolts shall meet the requirements specified in Section 713.02, High Strength Bolts.

e. **Connecting Pins for Portable Concrete Barrier** Portable concrete barriers must be connected using a 1- inch diameter pin. The connecting pin must be smooth, not deformed, i.e., reinforcing bar may not be used, and shall meet the strength requirements of ASTM A449 steel. Materials with greater strength may be used with the approval of the Department.

f. **Anchor Pins for Portable Concrete Barrier** Anchoring to concrete or asphalt will be required when specified on the Plans. When required, portable concrete barriers must be anchored using a 1 ½ - inch diameter anchor pin. The anchor pin must be smooth, not deformed, i.e., reinforcing bar may not be used, and shall meet the strength requirements of ASTM A36 steel. Materials with greater strength may be used with the approval of the Department.

g. **Device Crashworthiness** MaineDOT is transitioning to MASH2016 criteria for Portable Concrete Barrier on the following schedule:

New Portable Concrete Barrier shall be crash tested and/or evaluated to MASH2016 criteria.

Current Portable Concrete Barrier in useful serviceable condition that is successfully tested to NCHRP Report 350 or MASH2009 criteria may be utilized through December 31, 2029.

Other current Portable Concrete Barrier that is deemed acceptable by the Department may be utilized on projects off the National Highway System through December 31, 2024.

526.03 Construction Requirements

Cast-in-place barriers shall be fabricated in accordance with Standard Specification Section 502, Structural Concrete. Precast barriers shall be fabricated in accordance with Standard Specification 534, Precast Structural Concrete.

Concrete finish for permanent barrier shall be rubbed as defined in Standard Specification Section 502, Structural Concrete, 502.13 D2 or an approved equal.

Portable concrete barrier shall be generally free from fins and porous areas and shall present a neat and uniform appearance.

Permanent barrier shall have a protective coating applied in accordance with Standard Specification Section 515, Protective Coating for Concrete Surfaces.

Reflective delineators for concrete median barrier shall meet the requirements of Special Provision 645, Highway Signing.

Preformed Joint Filler shall meet the requirements specified in Subsection 705.01, Preformed Expansion Joint Filler.

Permissible dimensional tolerances for all concrete barriers shall be as follows:

- a. Cross-sectional dimensions shall not vary from design dimensions by more than $\frac{1}{4}$ inch. The vertical centerline shall not be out of plumb by more than $\frac{1}{4}$ inch.**
- b. Longitudinal dimensions shall not vary from the design dimensions by more than $\frac{1}{4}$ inch per 10 feet of barrier section and shall not exceed $\frac{3}{4}$ inches per section.**
- c. Location of anchoring holes shall not vary by more than $\frac{1}{2}$ inch from the dimensions shown in the concrete barrier details on the Plans.**
- d. Surface straightness shall not vary more than $\frac{1}{4}$ inch under a 10-foot straightedge.**
- e. The barrier shall have no significant cracking. Significant cracking is defined as fractures or cracks passing through the section, or any continuous crack extending for a length of 12 inches or more, regardless of position in the section.**

526.04 Method of Measurement Permanent Concrete Barrier Type II, IIIa, IIIb, Texas Classic Rail, and Precast Median Barrier will be measured for payment by lump sum, complete in place.

Portable concrete barrier, both anchored and unanchored will be measured for payment by lump sum. Lump sum measurement will include verification of the installation and removal of all portable concrete at the completion of the Contractor's operations.

The Contractor shall replace sections of portable concrete barrier, including anchored barrier damaged by the traveling public when directed by the Resident. Replacement sections will be measured for payment in accordance with Standard Specification 109.7, Equitable Adjustments to Compensation and Time.

Transition barrier will be measured by each, complete in place.

526.05 Basis of Payment The accepted quantities of Concrete Barrier Type II, IIIa, IIIb, Texas Classic Rail, and Precast Median Barrier will be paid for at the Contract lump sum price for the type specified, complete in place.

The accepted quantities of Portable Concrete Barrier Type I, both anchored and unanchored will be paid for at the Contract lump sum price. Such payment shall be full compensation for furnishing all materials, assembling, moving, resetting, transporting, temporarily storing, removing barrier, furnishing new parts as necessary, and all incidentals necessary to complete the work.

Portable barrier shall become the property of the Contractor upon completion of the use of the barrier on the project and shall be removed from the project site by the Contractor.

Transition barrier will be paid for at the Contract price each, complete in place.

The accepted quantity of all types of concrete barrier, whether portable or permanent, will be paid for at the lump sum or per each price, as applicable, which payment shall be full compensation for all materials, including reinforcing steel, protective coating, reflective delineators, steel plates and hardware, equipment, labor and incidentals required, as necessary, to complete the work.

Payment will be made under:

	<u>Pay Item</u>	<u>Pay Unit</u>
526.301	Portable Concrete Barrier, Type I	Lump Sum
526.304	Portable Concrete Barrier, Anchored Type I	Lump Sum
526.312	Permanent Concrete Barrier Type II	Lump Sum
526.321	Permanent Concrete Barrier Type IIIa	Lump Sum
526.323	Texas Classic Rail	Lump Sum
526.331	Permanent Concrete Barrier Type IIIb	Lump Sum
526.34	Permanent Concrete Transition Barrier	Each
526.502	Precast Concrete Median Barrier	Lump Sum"

SECTION 527
ENERGY ABSORBING UNIT

527.02 Materials Amend this section by deleting it in its entirety and replacing it with:

“MaineDOT is transitioning to MASH2016 criteria for Work Zone Traffic Control Devices on the following schedule:

Portable Crash Cushions will be crash tested and/or evaluated to MASH2016 criteria by January 1, 2030. Current Category 3 devices in useful serviceable condition that are successfully tested to NCHRP Report 350 or MASH2009 criteria may be utilized through December 31, 2029.

Work Zone Crash Cushions shall be selected from the Department’s Qualified Products List of Crash Cushions/Impact Attenuators or approved equal.”

SECTION 535 PRECAST, PRESTRESSED CONCRETE SUPERSTRUCTURE

535.24, Installation of Slabs, Beams, and Girders Revise the 5th paragraph by replacing “6.0 and 9.0” to “5.0 and 8.0” so it reads: **“Ready mixed grout shall achieve a design compressive strength of 6,000 psi at 28 days, have an entrained air content of between 5.0 and 8.0 percent, be non-shrink, flowable, and contain a non-shrink additive listed on the Department QPL for expansive cements.”**

535.25, Installation of Precast/Prestressed Deck Panels Revise the 2nd paragraph by replacing “6.0 and 9.0” to “5.0 and 8.0” so it reads: **“Ready mixed grout shall achieve a design compressive strength of 6,000 psi at 28 days, have an entrained air content of between 5.0 and 8.0 percent, be non-shrink, flowable, and contain a non-shrink additive listed on the Department QPL for expansive cements.”**

SECTION 606 GUARDRAIL

Amend this section by replacing it with the following:

606.01 Description This work shall consist of furnishing and installing guardrail components in accordance with these specifications and in reasonably close conformity with the lines and grades shown on the plans or as established. Guardrail is designated as:

31” W-Beam Guardrail - Mid-Way Splice

Galvanized steel w-beam, 8” wood or composite offset blocks, galvanized steel posts

Thrie Beam

Galvanized steel thrie beam, 8” wood or composite offset blocks, galvanized steel posts

Median guardrail shall consist of two beams of the above types, mounted on single posts.

Bridge mounted guardrail shall consist of furnishing all labor, materials, and equipment necessary to install guardrail as shown on the plans. This work shall also include drilling for and installation of offset blocks if specified, and incidental hardware necessary for satisfactory completion of the work.

Remove and Reset and Remove, Modify, and Reset guardrail shall consist of removing the existing designated guardrail and resetting in a new location as shown on the plans or directed by the Resident. Remove, Modify, and Reset guardrail and Modify guardrail include the following guardrail modifications: Removing plate washers at all posts, except at anchorage assemblies as noted on the Standard Details, adding offset blocks, and other modifications as listed in the Construction Notes or General Notes. Modifications shall conform to the guardrail Standard Details.

Bridge Connection shall consist of the installation and attachment of beam guardrail to the existing bridge. This work shall consist of constructing a concrete end post or modifying an existing end post as required, furnishing, and installing a terminal connector, necessary hardware, and incidentals required to complete the work as shown on the plans. Bridge Transition shall consist of a bridge connection and furnishing and installing guardrail components as shown in the Standard Details.

606.02 Materials Materials shall meet the requirements specified in the following Sections of Division 700 - Materials:

Timber Preservative	708.05
Metal Beam Rail	710.04
Guardrail Posts	710.07
Guardrail Hardware	710.08

Guardrail components shall meet the applicable standards of "A Guide to Standardized Highway Barrier Hardware" prepared and approved by the AASHTO-AGC-ARTBA Joint Cooperative Committee, Task Force 13 Report.

Posts for underdrain delineators shall be "U" channel steel, 8 ft long, 2 ½ lb/ft minimum and have 3/8-inch round holes, 1-inch center to center for a minimum distance of 2 ft from the top of the post.

Reflectorized Flexible Guardrail Markers shall be mounted on all guardrails. A marker shall be mounted onto guardrail posts at the flared guardrail terminal end point and tangent point, both at the leading and trailing ends of each run of guardrail. The marker's flexible posts shall be gray with either silver-white or yellow reflectors (to match the edge line striping) at the tangents, red at leading ends, and green at trailing ends. Whenever the guardrail terminal is not flared, markers will only be required at the terminal end point. These shall be red or green as appropriate. Markers shall be installed on the protected side of guardrail posts unless otherwise approved by the Resident. Reflectorized flexible guardrail markers shall be from the Department's Qualified Products List of Delineators. The marker shall be gray, flexible, durable, and of a non-discoloring material to which 3-inch by 9-inch reflectors shall be applied, and capable of recovering from repeated impacts and meeting MASH 16 requirements. Reflective material shall meet the requirements of Section 719.01 for ASTM D 4956 Type III reflective sheeting. The marker shall be secured to the guardrail post with two fasteners, as shown in the Standard Details.

Reflectorized beam guardrail ("butterfly"-type) delineators shall be mounted on all "w"-beam guardrail. The delineators shall be mounted within the guardrail beam at guardrail posts. Delineators shall be fabricated from high-impact, ultraviolet & weather resistant thermoplastic. Reflectorized beam guardrail delineators shall be placed at approximately 62.5 ft intervals or every tenth post on tangents and at approximately 31.25 ft intervals or every fifth post on curves. Exact locations of the delineators shall be as directed by the Resident. On divided highways, the left-hand delineators shall be yellow, and the right-hand delineators shall be silver/white. On two directional highways, the right-hand side shall be silver/white, and no reflectorized delineator used on the left. All reflectors shall have reflective sheeting applied to only one side of the delineator facing the direction of traffic as shown in the Standard Details. Reflectorized sheeting for guardrail delineators shall meet the requirements of Section 719.01.

Single wood post shall be of cedar, white oak, or tamarack, well-seasoned, straight, and sound and have been cut from live trees. The outer and inner bark shall be removed, and all knots trimmed flush with the surface of the post. Posts shall be uniform taper and free of kinks and bends.

Single steel post shall conform to the requirements of Section 710.07 b.

Single steel pipe post shall be galvanized, seamless steel pipe conforming to the requirements of ASTM A120, Schedule No. 40, Standard Weight.

Acceptable multiple mailbox assemblies shall be listed on the Department's Qualified Products List and shall be MASH 16 tested and approved.

Flared and Tangent w-beam guardrail terminals and guardrail offset blocks shall be from the Department's Qualified Products List. Flared terminals shall be installed with a 4 ft offset as shown in the Manufacturer's installation instructions.

Anchorage assemblies used to anchor trailing ends, radius guardrail, or other ends not exposed to traffic shall meet the applicable standards of "A Guide to Standardized Highway Barrier Hardware" prepared and approved by the AASHTO-AGC-ARTBA Joint Cooperative Committee, Task Force 13 Report, Drawing SEW02a.

Existing materials damaged or lost during adjusting, removing and resetting, or removing, modifying, and resetting, shall be replaced by the Contractor without additional compensation. Existing guardrail posts and guardrail beams found to be unfit for reuse shall be replaced when directed by the Resident.

606.03 Posts Posts for guardrail shall be set plumb in holes or they may be driven if suitable driving equipment is used to prevent battering and distorting the post. When posts are driven through pavement, the damaged area around the post shall be repaired with approved bituminous patching. Damage to lighting and signal conduit and conductors shall be repaired by the Contractor.

When set in holes, posts shall be on a stable foundation and the space around the posts, backfilled in layers with suitable material, thoroughly tamped.

The reflectorized flexible guardrail markers shall be set plumb with the reflective surface facing the oncoming traffic. Markers shall be installed on the protected side of guardrail posts. Markers, which become bent or otherwise damaged, shall be removed and replaced with new markers.

Single wood posts shall be set plumb in holes and backfilled in layers with suitable material, thoroughly tamped. The Resident will designate the elevation and shape of the top. The posts, that are not pressure treated, shall be painted two coats of good quality oil base exterior house paint.

Single steel posts shall be set plumb in holes as specified for single wood posts or they may be driven if suitable driving equipment is used to prevent battering and distorting the post.

Additional bolt holes required in existing posts shall be drilled or punched, but the size of the holes shall not exceed the dimensions given in the Standard Details. Metal around the holes shall be thoroughly cleaned and painted with two coats of approved aluminum rust resistant paint. Holes shall not be burned.

606.04 Rails Brackets and fittings shall be placed and fastened as shown on the plans. Rail beams shall be erected and aligned to provide a smooth, continuous barrier. Beams shall be lapped with the exposed end away from approaching traffic.

End assemblies shall be installed as shown on the plans and shall be securely attached to the rail section and end post.

All bolts shall be of sufficient length to extend beyond the nuts but not more than ½ inch. Nuts shall be drawn tight.

Additional bolt holes required in existing beams shall be drilled or punched, but the size of the holes shall not exceed the dimensions given in the Standard Details. Metal around the holes shall be thoroughly cleaned and painted with two coats of approved aluminum rust resistant paint. Holes shall not be burned.

606.045 Offset Blocks The same offset block material is to be provided for the entire project unless otherwise specified.

606.05 Shoulder Widening At designated locations the existing shoulder of the roadway shall be widened as shown on the plans. All grading, paving, seeding, and other necessary work shall be in accordance with the Specifications for the type work being done.

606.06 Mail Box Post Single wood post shall be installed at the designated location for the support of the mailbox. The multiple mailbox assemblies shall be installed at the designated location in accordance with the Standard Details and as recommended by the Manufacturer. Attachment of the mailbox to the post will be the responsibility of the home or business owner.

606.07 Abraded Surfaces All galvanized surfaces of new guardrail and posts, which have been abraded so that the base metal is exposed, and the threaded portions of all fittings and fasteners and cut ends of bolts shall be cleaned and painted with two coats of approved rust resistant paint.

606.08 Method of Measurement Guardrail will be measured by the linear foot from center to center of end posts along the gradient of the rail except where end connections are made to masonry or steel structures, in which case measurement will be as shown on the plans. When connected to radius rail, measurement will be to the end of the last tangent beam.

Guardrail terminal, reflectorized flexible guardrail marker, terminal end, anchorage assembly, bridge transition, bridge connection, multiple mailbox post, and single post will be measured by each unit of the kind specified and installed.

Widened shoulder will be measured as a unit of grading within the limits shown on the plans.

Excavation in solid rock for placement of posts will be paid under force account unless otherwise indicated in the Bid Documents.

606.09 Basis of Payment The accepted quantities of guardrail will be paid for at the contract unit price per linear foot for the type specified, complete in place. Reflectorized beam guardrail ("butterfly"-type) delineators will not be paid for directly but will be considered incidental to guardrail items. Reflectorized flexible guardrail marker, terminal end, anchorage assembly, bridge transition, bridge connection, multiple mailbox post, and single post will be paid for at the contract unit price each for the kind specified complete in place.

Guardrail terminals will be paid for at the contract price each, complete in place which price shall be full payment for furnishing and installing all components including the terminal section, posts, offset blocks, "w" beam, cable foundation posts, plates and for all incidentals necessary to complete the installation within the limits as shown on the Standard Details or the Manufacturer's installation instructions. Pay limits for a flared terminal will be 37.5 feet. Pay limits for a tangent terminal will be 50 feet. Each guardrail terminal will be clearly marked with the Manufacturer's name and model number to facilitate any future needed repair. Such payment shall also be full compensation for furnishing all material, excavating, backfilling holes, assembling, and all incidentals necessary to complete the work, except that for excavation for posts or anchorages in solid ledge rock, payment will be made under 109.7.5 – Force Account. Type III Retroreflective Adhesive Sheeting shall be applied to the approach buffer end sections and sized to substantially cover the end section. On all roadways, the ends shall be marked with alternating black and retroreflective yellow stripes. The stripes shall be 3 in wide and sloped down at an angle of 45 degrees toward the side on which traffic is to pass the end section. Guardrail terminals shall also include a set of installation drawings supplied to the Resident.

Anchorage to bridge end posts will be part of the bridge work. Connections thereto will be considered included in the unit bid price for guardrail.

Guardrail to be placed on a radius of curvature of 150 ft or less will be paid for under the designated radius pay item for the type guardrail being placed.

Widened shoulder will be paid for at the contract unit price each complete in place and will be full compensation for furnishing and placing, grading and compaction of aggregate subbase and any required fill material.

Adjust guardrail will be paid for at the contract unit price per linear foot and will be full compensation for adjusting to grade. Payment shall also include adjusting guardrail terminals where required.

Modify guardrail will be paid for at the contract unit price per linear foot and will be full compensation for furnishing and installing offset blocks, additional posts, and other specified modifications; removing, modifying, installing, and adjusting to grade existing posts and beams; removing plate washers and backup plates, and all incidentals necessary to complete the work. Payment shall also include removing and resetting guardrail terminals where required.

Remove and Reset guardrail will be paid for at the contract unit price per linear foot and will be full compensation for removing, transporting, storing, reassembling all parts, necessary cutting, furnishing new parts when necessary, reinstalling at the new location, and all other incidentals necessary to complete the work. Payment shall also include removing and resetting guardrail terminals when required.

Remove, Modify, and Reset guardrail will be paid for at the contract unit price per foot and will be full compensation for the requirements listed in Modify guardrail and Remove and Reset guardrail.

Bridge Connections will be paid for at the contract unit price each. Payment shall include, attaching the connection to the endpost including furnishing and placing concrete and reinforcing steel necessary to construct new endposts if required, furnishing and installing the terminal connector, and all miscellaneous hardware, labor, equipment, and incidentals necessary to complete the work.

Bridge Transitions will be paid for at the contract unit price each. Payment shall include furnishing and installing the thrie beam or "w"-beam terminal connector, doubled beam section, and transition section, where called for, posts, hardware, precast concrete transition curb, and any other necessary materials and labor, including the bridge connection as stated in the previous paragraph.

No payment will be made for guardrail removed, but not reset and all costs for such removal shall be considered incidental to the various contract pay items.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
606.1301 31" W-Beam Guardrail - Mid-Way Splice – Single Faced	Linear Foot
606.1302 31" W-Beam Guardrail - Mid-Way Splice – Double Faced	Linear Foot
606.1303 31" W-Beam Guardrail - Mid-Way Splice, 15' Radius and Less	Linear Foot
606.1304 31" W-Beam Guardrail - Mid-Way Splice, Over 15' Radius	Linear Foot
606.1305 31" W-Beam Guardrail - Mid-Way Splice Flared Terminal	Each
606.1306 31" W-Beam Guardrail - Mid-Way Splice Tangent Terminal	Each
606.1307 Bridge Transition (Asymmetrical) – Type IA	Each
606.1721 Bridge Transition - Type I	Each
606.1722 Bridge Transition - Type II	Each
606.1731 Bridge Connection - Type I	Each

606.1732	Bridge Connection - Type II	Each
606.178	Guardrail Beam	Linear Foot
606.25	Terminal Connector	Each
606.257	Terminal Connector - Thrie Beam	Each
606.259	Anchorage Assembly	Each
606.265	Terminal End-Single Rail - Galvanized Steel	Each
606.266	Terminal End-Single Rail - Corrosion Resistant Steel	Each
606.275	Terminal End-Double Rail - Galvanized Steel	Each
606.276	Terminal End-Double Rail - Corrosion Resistant Steel	Each
606.353	Reflectorized Flexible Guardrail Marker	Each
606.354	Remove and Reset Reflectorized Flexible Guardrail Marker	Each
606.356	Underdrain Delineator Post	Each
606.358	Guardrail, Modify	Linear Foot
606.362	Guardrail, Adjust	Linear Foot
606.365	Guardrail, Remove, Modify, and Reset	Linear Foot
606.366	Guardrail, Remove and Reset	Linear Foot
606.367	Replace Unusable Existing Guardrail Posts	Each
606.47	Single Wood Post	Each
606.48	Single Galvanized Steel Post	Each
606.50	Single Steel Pipe Post	Each
606.51	Multiple Mailbox Support	Each
606.568	Guardrail, Modify - Double Rail	Linear Foot
606.63	Thrie Beam Rail Beam	Linear Foot
606.64	Guardrail Thrie Beam - Double Rail	Linear Foot
606.65	Guardrail Thrie Beam - Single Rail	Linear Foot
606.66	Terminal End Thrie Beam	Each
606.70	Transition Section - Thrie Beam	Each
606.71	Guardrail Thrie Beam - 15 ft radius and less	Linear Foot
606.72	Guardrail Thrie Beam - over 15 ft radius	Linear Foot
606.73	Guardrail Thrie Beam - Single Rail Bridge Mounted	Linear Foot
606.74	Guardrail - Single Rail Bridge Mounted	Linear Foot
606.753	Widen Shoulder for Low Volume Guardrail End	Each
606.754	Widen Shoulder for Flared Guardrail Terminal	Each
606.78	Low Volume Guardrail End	Each
606.80	Buried-in-Slope Guardrail End	Each

SECTION 609 CURB

609.02 Materials Revise the paragraph beginning “The Contractor shall submit a concrete mix...” so that it reads:

“The Contractor shall submit a concrete mix design for the Portland Cement Concrete to the Resident, with a minimum designed compressive strength of 3000 psi concrete fill.”

609.03 Vertical Stone Curb, Terminal Section and Transition Sections and Portland Cement Concrete Curb, Terminal Sections and Transition Sections Revise this section by underlining the section number and title so that it reads in the spec book as:

“609.03 Vertical Stone Curb, Terminal Section and Transition Sections and Portland Cement Concrete Curb, Terminal Sections and Transition Sections”

Revise the last paragraph beginning with “The Contractor may elect...” so that it reads:

“The Contractor may elect to substitute concrete to backfill Stone Curbing or Stone Edging at their option. If the concrete backfill option is elected, the Concrete Fill shall meet the requirements of 609.02.”

SECTION 610

STONE FILL, RIPRAP, STONE BLANKET, AND STONE DITCH PROTECTION

610.02 Materials Amend this subsection by adding the following to the end of the material list:
“Stone Ditch Protection 703.29”

SECTION 618 SEEDING

618.08 Mulching Revise this Section so that the third sentence reads: “Mulch for Seeding Method Number 1 shall only be cellulous fiber mulch Section 619.04 (b) or straw mulch Section 619.04 (a).”

SECTION 626

FOUNDATIONS, CONDUIT, AND JUNCTION BOXES FOR HIGHWAY SIGNING, LIGHTING, AND SIGNALS

626.034 Concrete Foundations Revise this Section by changing ‘626.037’ to ‘**626.036**’ in the Second Paragraph which begins with “Foundations shall consist of cast-in-place...”.

Revise the 10th paragraph beginning with “Before placing concrete, the required elbows...” by removing “...in accordance with **Standard Specification 633.**”

626.036 Precast Foundations Revise the last sentence of paragraph one so that it reads:
“Construction of precast foundations shall conform to the Standard Details and all requirements of 712.061.”

SECTION 627 PAVEMENT MARKINGS

627.06 Application Revise this subsection by replacing the paragraph beginning with “ On other final pavement markings...” with the following:

“On other final pavement markings and on curb, where the paint is applied by hand painting or spraying, application shall be one uniform covering coat at least 16 mils thick. Before the paint has dried, the glass beads shall be applied by a pressure system that will force the glass beads onto the undried paint as uniformly as possible.

Painted lines and markings shall be applied in accordance with the manufacturer’s published recommendations. These recommendations will be supplied to the Resident prior to installation.”

SECTION 643 TRAFFIC SIGNALS

643.021 Materials Amend this subsection by adding the following at the end:

“MaineDOT is transitioning to MASH2016 criteria for Work Zone Traffic Control Devices on the following schedule:

Temporary Traffic Control Signals will be crash tested and/or evaluated to MASH2016 criteria by January 1, 2030. Current Category 4 devices in useful serviceable condition that are successfully tested to NCHRP Report 350 or MASH2009 criteria may be utilized through December 31, 2029.”

643.09 Service Connection Revise this subsection by removing the paragraph that begins with “Traffic signal services shall have...”.

And by removing the paragraphs beginning with “ A service ground rod shall be installed...” and “A total of 4, 10’ service...” and replace them with **“A total of 4, 10’ service ground rods shall be installed and properly connected together on the outside of the cabinet foundation. One ground rod shall be located at each corner and shall be either flush or slightly below finished grade. The connection between the ground rod and the ground wire shall be an exothermic connection such as a Cadweld. The ground wire from the interconnected ground rods shall be routed through a conduit in the foundation and into the base of the cabinet”.**

SECTION 645 HIGHWAY SIGNING

Section 645.023 Sign Support Structures. Under letter “c.”, revise the fifth paragraph beginning with “In addition to the required details...” by removing the words **”and foundation”** from the 5th sentence.

Section 645.08 Method of Measurement. Revise the second paragraph beginning with “Bridge-type, cantilever and...” by removing the words **”including the foundation”** .

Section 645.09 Basis of Payment. Revise the third paragraph beginning with “The accepted bridge-type, cantilever and...” by removing the word **”foundation”** from the second sentence. Add the following sentence to the end of the paragraph **”Conduits, Junction Boxes, and Foundations will be paid for under Section 626.”**

SECTION 652 MAINTENANCE OF TRAFFIC

Amend this Section by adding the following new subsection:

“652.2.6 Device Crashworthiness MaineDOT is transitioning to MASH2016 criteria for Work Zone Traffic Control Devices on the following schedule:

Category 1 (Cones, Drums, Tubular Markers, Flexible Delineators, and similar devices that have little chance of causing windshield penetration, tire damage, or other significant effect on the control or trajectory of a vehicle) – All Category 1 devices will be manufacturer self-certified as MASH2016 by January 1, 2025. Current Category 1 devices in useful serviceable condition that are not self-certified as MASH2016 compliant may be utilized through December 31, 2024.

Category 2 (Barricades, Portable Sign Supports, Category 1 devices with attachments, and similar devices that are not expected to produce significant vehicular velocity change but may be otherwise hazardous) – All Category 2 devices will be crash tested and/or evaluated to MASH2016 criteria by January 1, 2025. Current Category 2 devices in useful serviceable condition that are successfully tested to NCHRP Report 350 or MASH2009 criteria may be utilized through December 31, 2024.

Category 3 (Portable Concrete Barrier, Portable Crash Cushions, Truck Mounted Attenuators, Category 2 devices weighing more than 100 pounds, and similar devices that are expected to produce significant vehicular velocity change or other harmful reactions) – All Category 3 devices will be crash tested and/or evaluated to MASH2016 criteria by January 1, 2030. Current Category 3 devices in useful serviceable condition that are successfully tested to NCHRP Report 350 or MASH2009 criteria may be utilized through December 31, 2029. (See Standard Specification 526 for additional Portable Concrete Barrier information).

Category 4 (Trailer Mounted Devices: Arrow Boards, Temporary Traffic Control Signals, Area Lighting, Portable Changeable Message Sign, and other similar devices.) – All Category 4 devices will be crash tested and/or evaluated to MASH2016 criteria by January 1, 2030. Current Category 4 devices in useful serviceable condition that are successfully tested to NCHRP Report 350 or MASH2009 criteria may be utilized through December 31, 2029.”

652.4 Flaggers Revise the first paragraph of this section so that it reads:

“The Contractor shall furnish flaggers as required by the TCP or as otherwise specified by the Resident. All flaggers must have successfully completed a flagger test approved by the Department and administered by a Department-approved Flagger-Certifier who is employing that flagger. All flaggers must carry an official certification card with them while flagging that has been issued by their employer.”

SECTION 681

PRECAST AGGREGATE-FILLED, CONCRETE BLOCK GRAVITY WALL

681.08 Basis of Payment Amend this section by adding the Item Number “**681.10**” in front of the item “Precast Aggregate-Filled Concrete Block Gravity Wall” at the end of the section.

SECTION 703

AGGREGATES

Add the following to Section 703 - Aggregates

703.01 Fine Aggregate for Concrete Fine aggregate for concrete shall consist of natural sand or, when approved by the Resident, other inert materials with similar characteristics or combinations thereof, having strong, durable particles. Fine aggregate from different sources of supply shall not be mixed or stored in the same pile nor used alternately in the same class of construction or mix without permission of the Resident.

All fine aggregate shall be free from injurious amounts of organic impurities. Should the fine aggregate, when subjected to the colorimetric test for organic impurities, AASHTO T 21, produce a color darker than the reference standard color solution (laboratory designation Plate III), the fine aggregate shall be rejected.

Fine aggregate shall have a sand equivalent value of not less than 75 when tested in accordance with AASHTO T 176.

Fine aggregate sources shall meet the Alkali Silica Reactivity (ASR) requirements of Section 703.0201.

The fineness modulus shall not be less than 2.26 or more than 3.14. If this value is exceeded, the fine aggregate will be rejected unless suitable adjustments are made in proportions of coarse and fine aggregate. The fineness modulus of fine aggregate shall be determined by adding the cumulative percentages of material by weight retained on the following sieves: Nos. 4, 8, 16, 30, 50, 100 and dividing by 100.

Fine aggregate, from an individual source when tested for absorption as specified in AASHTO T 84, shall show an absorption of not more than 2.3 percent.

Sieve Designation	Percentage by Weight Passing Square Mesh Sieves
$\frac{3}{8}$ inch	100
No. 4	95-100
No. 8	80-100
No. 16	50-85
No. 30	25-60
No. 50	10-30
No. 100	2-10
No. 200	0-5.0

703.02 Coarse Aggregate for Concrete Coarse aggregate for concrete shall consist of crushed stone or gravel having hard, strong, durable pieces, free from adherent coatings and of which the composite blend retained on the $\frac{3}{8}$ inch sieve shall contain no more than 15 percent, by weight of flat and elongated particles when performed in accordance with test method ASTM D 4791, Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate, using a dimensional ratio of 1:5.

The coarse aggregate from an individual source shall have an absorption no greater than 2.0 percent by weight determined in accordance with AASHTO T 85 modified for weight of sample.

The composite blend shall have a Micro-Deval value of 18.0 percent or less as determined by AASHTO T 327 or not exceed 40 percent loss as determined by AASHTO T 96.

Coarse aggregate sources shall meet the Alkali Silica Reactivity (ASR) requirements of Section 703.0201.

Coarse aggregate shall conform to the requirements of the following table for the size or sizes designated and shall be well graded between the limits specified.

Sieve Designation	Percentage by Weight Passing Square Mesh Sieves			
Grading	A	AA	S	LATEX
Aggregate Size	1 inch	$\frac{3}{4}$ inch	1½ inch	$\frac{1}{2}$ inch

2 inch			100	
1½ inch	100		95-100	
1 inch	95-100	100	-	
¾ inch	-	90-100	35-70	100
½ inch	25-60	-	-	90-100
⅜ inch	-	20-55	10-30	40-70
No. 4	0-10	0-10	0-5	0-15
No. 8	0-5	0-5	-	0-5
No. 16	-	-	-	-
No. 50	-	-	-	-
No. 200	0 - 1.5	0 - 1.5	0 - 1.5	0 - 1.5

703.0201 Alkali Silica Reactive Aggregates All coarse and fine aggregates proposed for use in concrete shall be tested for Alkali Silica Reactivity (ASR) potential under AASHTO T 303 (ASTM C 1260), Accelerated Detection of Potentially Deleterious Expansion of Mortar Bars Due to Alkali-Silica Reaction, prior to being accepted for use. Acceptance will be based on testing performed by an accredited independent lab submitted to the Department. Aggregate submittals will be required on a 5-year cycle, unless the source or character of the aggregate in question has changed within 5 years from the last test date.

As per AASHTO T 303 (ASTM C 1260): Use of a particular coarse or fine aggregate will be allowed with no restrictions when the mortar bars made with this aggregate expand less than or equal to 0.10 percent at 30 days from casting. Use of a particular coarse or fine aggregate will be classified as potentially reactive when the mortar bars made with this aggregate expand greater than 0.10 percent at 30 days from casting. Use of this aggregate will only be allowed with the use of cement-pozzolan blends and/or chemical admixtures that result in mortar bar expansion of less than 0.10 percent at 30 days from casting as tested under ASTM C 1567.

Acceptable pozzolans and chemical admixtures that may be used when an aggregate is classified as potentially reactive include, but are not limited to the following:

- Class F Coal Fly Ash meeting the requirements of AASHTO M 295
- Ground Granulated Blast Furnace Slag (Grade 100 or 120) meeting the requirements of AASHTO M 302
- Densified Silica Fume meeting the requirements of AASHTO M 307
- Lithium-based admixtures
- Metakaolin

Pozzolans or chemical admixtures required to offset the effects of potentially reactive aggregates will be incorporated into the concrete at no additional cost to the Department.

703.05 Aggregate for Sand Leveling Aggregate for sand leveling shall be sand of hard durable particles free from vegetable matter, lumps or balls of clay and other deleterious substances. The aggregate shall meet the grading requirements of the following table.

Sieve	Percentage by Weight
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Designation	Passing Square Mesh Sieves
$\frac{3}{8}$ inch	85-100
No. 200	0-5.0

703.06 Aggregate for Base and Subbase The following shall apply to Sections (a.) and (c.) below. The material shall have a Micro-Deval value of 25.0 or less as determined by AASHTO T 327. If the Micro-Deval value exceeds 25.0, the Washington State Degradation DOT Test Method T113, Method of Test for Determination of Degradation Value (January 2009 version) shall be performed, except that the test shall be performed on the portion of the sample that passes the $\frac{1}{2}$ inch sieve and is retained on the No. 10 sieve. If the material has a Washington Degradation value of less than 15, the material shall be rejected. The material used in Section (b.) below shall have a Micro-Deval value of 25.0 or less as determined by AASHTO T 327. If the Micro-Deval value exceeds 25.0 the material may be used if it does not exceed 25 percent loss on AASHTO T 96, Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.

Recycled Asphalt Pavement (RAP) shall not be used for or blended with aggregate base or subbase.

- a. Aggregate for base, Type A and B shall be crushed ledge or crushed gravel of hard durable particles free from vegetable matter, lumps or balls of clay and other deleterious substances. The gradation of the part that passes a 3 inch sieve shall meet the grading requirements of the following table:

Sieve Designation	Percentage by Weight Passing Square Mesh Sieves	
	Type A	Type B
$\frac{1}{2}$ inch	45-70	35-75
$\frac{1}{4}$ inch	30-55	25-60
No. 40	0-20	0-25
No. 200	0-6.0	0-6.0

At least 50 percent by weight of the material retained on the No. 4 sieve shall have at least one fractured face as tested by AASHTO T 335.

Type A aggregate for base shall only contain particles of rock that will pass the 2 inch square mesh sieve.

Type B aggregate for base shall only contain particles of rock that will pass the 4 inch square mesh sieve.

- b. Aggregate for base, Type C shall be crushed ledge or crushed gravel of hard durable particles free from vegetable matter, lumps or balls of clay and other deleterious substances. The material shall meet the grading requirements of the following table:

Sieve	Percentage by Weight
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Designation	Passing Square Mesh Sieves
	Type C
4 inches	100
3 inches	90-100
2 inches	75-100
1 inch	50-80
½ inch	30-60
No. 4	15-40
No. 200	0-6.0

At least 50 percent by weight of the material coarser than the No. 4 sieve shall have at least one fractured face as tested by AASHTO T 335.

c. Aggregate for subbase shall be sand or gravel of hard durable particles free from vegetable matter, lumps or balls of clay and other deleterious substances. The gradation of the part that passes a 3 inch sieve shall meet the grading requirements of the following table:

Sieve Designation	Percentage by Weight Passing Square Mesh Sieves	
	Type D	Type E
½ in	35-80	
¼ inch	25-65	25-100
No. 40	0-30	0-50
No. 200	0-7.0	0-7.0

Type D aggregate for subbase gravel may contain up to 50 percent by weight Recycled Concrete Aggregate (RCA). When RCA is used, the portion of the resulting blend of gravel and RCA retained on a ½" square mesh sieve shall contain a total of no more than 5 percent by weight of other recycled materials such as brick, concrete masonry block, or asphalt pavement as determined by visual inspection.

RCA shall be substantially free of wood, metal, plaster, and gypsum board as defined in Note 9 in Section 7.4 of AASHTO M 319. RCA shall also be free of all substances that fall under the category of solid waste or hazardous materials.

Aggregate for subbase shall not contain particles of rock which will not pass the 6 inch square mesh sieve.

703.08 Recycled Asphalt Pavement Recycled asphalt pavement shall consist of salvaged asphalt materials from milled pavements or production waste that has been processed before use to meet

the requirements of the job mix formula. It shall be free of winter sand, granular fill, construction debris, or other materials not generally considered asphalt pavement.

703.081 RAP for Asphalt Pavement Recycled Asphalt Pavement (RAP) may be introduced into hot-mix asphalt pavement at percentages approved by the Department according to the MaineDOT Policies and Procedures for HMA Sampling and Testing.

If approved by the Department, the Contractor shall provide documentation stating the source, test results for average residual asphalt content, and stockpile gradations showing RAP materials have been sized to meet the maximum aggregate size requirements of each mix designation. The Department will obtain samples for verification and approval prior to its use.

The maximum allowable percent of RAP shall be determined by the asphalt content, the percent passing the 0.075 mm sieve, the ratio between the percent passing the 0.075 mm sieve and the asphalt content, and Coarse Micro-Deval loss values as tested by the Department.

The maximum percentage of RAP allowable shall be the lowest percentage as determined according to Table 4 below:

Classification	Maximum RAP Percentage Allowed	Asphalt content standard deviation	Percent passing 0.075 mm sieve standard deviation	Percent passing 0.075 mm sieve / asphalt content ratio	Residual aggregate M-D loss value
Class III	10%	≤ 1.0	N/A	≤ 4.0	≤ 18
Class II	20%	≤ 0.5	≤ 1.0	≤ 2.8	
Class I	30%	≤ 0.3	≤ 0.5	≤ 1.8	

Table 4: Maximum Percent RAP According to Test Results

The Department will monitor RAP asphalt content and gradation during production by testing samples from the stockpile at approximately 15,000 T intervals (in terms of mix production). The allowable variance limits (from the numerical average values used for mix designs) for this testing are determined based upon the maximum allowable RAP percentage and are shown below in Table 5.

Table 5: RAP Verification Limits

Classification	Asphalt content (compared to aim)	Percent passing 0.075 mm sieve (compared to aim)
Class III	± 1.5	± 2.0
Class II	± 1.0	± 1.5
Class I	± 0.5	± 0.7

For specification purposes, RAP will be categorized as follows:

Class III – A maximum of 10.0 percent of Class III RAP may be used in any base, intermediate base, surface, or shim mixture. A maximum of 20.0 percent of Class III RAP may be used in hand-placed mixes for item 403.209.

Class II – A maximum of 20.0 percent Class II RAP in any base, binder, surface, or shim course.

Class I – A maximum of 20.0 percent Class I RAP may be used in any base, intermediate base, surface, or shim mixture without requiring a change to the specified asphalt binder. A maximum of 30.0 percent Class I RAP may be used in in any base or intermediate base mixture provided that a PG 58-28 or PG 58-34 asphalt binder is used. A maximum of 30.0 percent Class I RAP may be used in any surface or shim mixture provided that PG 58-34 asphalt binder is used. Mixtures exceeding 20.0 percent Class I RAP must be evaluated and approved by the Department.

The Contractor may use up to two different RAP sources in any one mix design. The total RAP percentage of the mix shall not exceed the maximum allowed for the highest classification RAP source used (i.e. if a Class I & Class III used, total RAP must not exceed 30.0%). The blended RAP material must meet all the requirements of the classification for which the RAP is entered (i.e. 10% Class III with 20% Class I, blend must meet Class I criteria). The Department may take belt cuts of the blended RAP to verify the material meets these requirements. If the Contractor elects to use more than one RAP source in a design, the Contractor shall provide an acceptable point of sampling blended RAP material from the feed belt.

In the event that RAP source or properties change, the Contractor shall notify the Department of the change and submit new documentation stating the new source or properties a minimum of 72 hours prior to the change to allow for obtaining new samples and approval.

SECTION 710

FENCE AND GUARDRAIL

710.06 Fence Posts and Braces Revise the first Paragraph so that it reads:

“Wood posts shall be of cedar, white oak, or tamarack or other AWP approved species, of the diameter or section and length shown on the plans.”

Remove the fourth paragraph which starts “ That portion of wood posts...”.

Revise the paragraph beginning with “Braces shall be of spruce, eastern hemlock ... so that it now reads:

“Braces shall be of spruce, eastern hemlock, Norway pine, pitch pine, or tamarack timbers or other AWP approved species, or spruce, cedar, tamarack or other AWP approved species round posts of sufficient length to make a diagonal brace between adjacent posts. All wood posts and braces shall be pressure-treated in accordance with AASHTO M 133 and AWP U1, UC4A Commodity Specification B: Posts. “

710.07 Guardrail Posts Revise this section so that the first sentence of section a. reads:

“a. Wood posts shall be of Norway pine, southern yellow pine, pitch pine, Douglas fir, red pine, white pine, or eastern hemlock or other AWP approved species.”

Revise the next paragraph so that it reads:

Wood posts and offset brackets shall be preservative treated in accordance with the requirements of AASHTO M 133 and AWP U1, UC4A Commodity Specification B: Posts.

SECTION 712 MISCELLANEOUS HIGHWAY MATERIAL

712.061 Structural Precast Units Amend this section by adding the following sentence to the end of the first paragraph of the Construction subsection:

“Facilities certified by NPCA or PCI shall provide to the Fabrication Engineer a copy of their annual audit to include deficiency reports and corrective actions.”

Revise this section by changing the letter “b” of ASTM C1611 of the Concrete Testing subsection so that it reads:

“b. Air content shall be 5.0% to 8.0%.”

SECTION 718

TRAFFIC SIGNALS MATERIAL

718.03 Signal Mounting Amend the paragraph beginning with “All trunions, brackets and...” by adding **“For polycarbonate signal heads with more than 3 sections or requiring mounting extensions greater than 12 inches in length, reinforcing plates shall be used to reinforce the housings at the point of attachment.”** to the end of the paragraph.

718.08 Controller Cabinet Revise this subsection by replacing the paragraph beginning with “The cabinet shall be supplied with LED light panels...” on or about page 7-66 with **“The cabinet shall be supplied with white LED light panels which shall automatically illuminate via a door open switch whenever one of the four main cabinet doors are opened for the ground mount cabinet or two main doors for the side of pole cabinet. The ground mounted cabinet shall contain four LED light panels per side totaling eight panels for the cabinet; one panel each at the top and bottom portion of the front side and back side on the Control side and Power/Auxiliary side of the cabinet. Each light panel shall produce a minimum of 250 lumens for a total minimum lumen output of 2000 lumens with all eight panels illuminated. The minimum output per side would be 1000 lumens. The LED panels shall be protected by a clear shatterproof shield. The side of pole mounted cabinet shall contain four light panels; one at the top of the rack assembly and one at the bottom rack assembly on each side of the cabinet. A second door open status switch per door shall activate a controller input to log a report event that one of the doors was opened. All door open status switches shall be connected to the same controller input. For the ground mount cabinet, there shall be two switches on each of the four main doors. For the side-of-pole mount cabinet, there shall be two switches on each of the two main doors.”**

Revise this subsection by replacing the paragraph beginning with “The cabinet shall be supplied with a generator panel ...” on or about page 7-68 with:

“The cabinet shall be supplied with a generator panel. The generator panel shall consist of a manual transfer switch and a twist-lock connector for generator hookup. The transfer switch knob and twist-lock connector shall be located inside a stainless steel enclosure with a separate lockable door accessed with a Corbin #2 key. The unit shall be mounted on the left, exterior of the control side wall of the ground mount cabinet a minimum of 36” above the surrounding grade and on the lower left side of the pole mounted cabinet. The generator transfer switch shall be a Reliance C30A1N Signa Series or approved equal. “

Revise this subsection by removing the following from the paragraph beginning with “The ground mounted cabinet shall be supplied and installed with an electric service meter socket trim and electrical service disconnect switch ...” on or about page 7-69: **“(removed: thus preventing that space from being used either by equipment supplied as part of the project, or future equipment that would be installed in the rack system. Joe indicated that he would add this language to the detail so it is covered.)”**.

Revise this subsection by replacing the following in the paragraph beginning with “The Contractor shall reconfigure the default user name...” on or around page 7-70; “MaineDOT IT” with **“MaineDOT Traffic Division”**.

In the paragraph beginning with “Tests shall be conducted by the contractor...” on or around page 7-73, amend this subsection by removing “**in the state of Maine and**” after “The facility shall be”.

Amend this Section by adding the following subsection:

718.13 Field Monitoring Unit (FMU) This item of work shall conform to this specification. This item shall consist of furnishing and installing a Field Monitoring Unit (FMU) and software, as well as all needed accessories required for a full and complete installation, including but not limited to power adapters, Ethernet cables, and interface cables, as described herein.

Where applicable, communications from MaineDOT’s cloud-based Central Management System (CMS) to the on-street traffic signal controllers shall be made through fiber optic interconnect cable connected back to existing internet connections and/or the Field Monitoring Unit (FMU). The Contractor shall furnish and install all materials necessary for a complete and operational fiber optic interconnection to all project intersections as shown on the plans. All connections to the CMS cloud-based system shall be via a secure VPN network.

The FMU shall be the only remote connection device used by isolated intersections to connect to the cloud-based system. All connections shall be encrypted VPN tunnels. The Contractor shall coordinate all configuration settings with MaineDOT IT and the Engineer.

The FMU central web based interface shall be a separate element from the CMS.

MATERIALS: The materials for this work shall conform to the following requirements:

1. The work under this item specifies the requirements for the FMU. The FMU shall operate independent of the brand/type of intersection controller deployed in the ATC traffic cabinet.
2. The FMU shall conform to the following requirements:
 - 2.1 The FMU shall function correctly between -34 degrees C and +74 degrees C.
 - 2.2 The FMU shall be provided with appropriately rated connectors that allows the FMU to be exchanged by unplugging connectors, without tools.
 - 2.3 The FMU shall monitor and log all ATC Controller and ATC cabinet faults and or alarms.
 - 2.4 The FMU shall be wired directly to the ATC cabinet.
 - 2.5 The FMU shall have an internal cellular modem running at 4G LTE.
 - 2.5.1 The Cellular modem shall be designed to be replaced / upgraded to 5G service when available.
 - 2.6 The FMU shall incorporate an integrated GPS and cell modem.
 - 2.7 The configuration of the FMU shall be accomplished by accessing the internal web server with a browser. It shall be possible to configure the FMU without any special software.

- 2.8 The FMU shall be powered via a standard 120V input power.
- 2.9 The FMU shall allow for the routing of the controller configuration packets to and from the controller (either by Ethernet or serial communications) for any type of controller utilized by the MaineDOT. In this way it shall be possible to configure the controller and utilize the controller specific software to interrogate the controller, and the FMU shall provide the communications pipe which allows this to be accomplished.
- 2.10 The FMU shall, within the size limitations above, include a battery and battery charging/monitoring circuit, to allow the FMU to function correctly even when all power to the intersection has failed. The battery shall continue to power the FMU for a minimum of 5 hours after all power has failed to the intersection.
- 2.11 The FMU shall incorporate an integrated GPS which will allow the FMU to geo-locate itself on the FMU management software map, without configuration.
- 2.12 The FMU shall operate without requiring a static IP address. The only configuration required at the FMU is to enter the URL of where the FMU management software is hosted.
- 2.13 In the event that the cell service is interrupted or is not available, the FMU shall store any events that occur in internal memory and forward these events automatically to the FMU management software when the cell service is restored. In this way, a complete record of events at the device can be maintained even if cell service is interrupted for a period. The system will store 5000 events.
- 2.14 The FMU shall utilize HTTP and HTTPS protocols, and XML data structures, for communication with the FMU management software. In this way the data will be open for future expansion and competition. The use of secret proprietary protocols is not permitted.
- 2.15 The FMU shall include Ethernet communications via an Ethernet Port with RJ45 connector.
- 2.16 The FMU shall include weather proof antennas.

3. Map Display FMU Management Software

- 3.1 The FMU shall include a scrollable, zoomable map display, with the intersections and other monitored devices shown as representative icons on the map. The map shall include the ability to see the intersections using Google Streetview.
- 3.2 The alarm status of the intersection shall be clearly indicated on the icon on the map, so that the user can see at a glance which intersections are in alarm.
- 3.3 The map display shall also include a list of intersections, with the number and priority of alarms indicated on the list. Intersections in high priority alarm shall be moved to the top

of the list, followed by medium priority, low priority and then finally by intersections not in alarm.

3.4 The icons shall change to be able to clearly indicate if an intersection is offline.

3.5 Clicking on the icon on the map shall expose a box with the current parameters of the intersection shown.

3.6 The default map display position and zoom shall be configurable by user, so that the user's view will default to show the intersections that the user is responsible for managing.

3.7 The map view shall have the ability to show Google traffic overlays on the map.

4. Intersection Detail Display FMU Management Software

4.1 It shall be possible to drill down, either from the map icon or from the list, to a device level detail for the intersection, which as a minimum shall display the following parameters:

4.1.1 The alarm status, with priority indicated, and a text description of the alarm (if an alarm is present for this device).

4.1.2 The time since the last communication with the device

4.1.3 The following parameters (real time now values, minimum for the day values, maximum for the day values, and average for the day values)

4.1.3.1 The AC mains voltage (value)

4.1.3.2 The battery back-up voltage (value)

4.1.3.3 The cabinet temperature (value)

4.1.3.4 The cabinet humidity (value)

4.1.3.5 The presence of AC power (OK or Fail)

4.1.3.6 The flashing status of the intersection (OK or Flashing)

4.1.3.7 Stop Time status (OK or Stop Time Active)

4.1.3.8 The cabinet door status (Open or Closed)

4.1.3.9 The intersection fan status (Fan On or Fan off)

4.1.4 It shall be possible to view graphs of each of the value parameters in graphical form, over the recent two-week period. This includes real time graphs of:

4.1.4.1 The AC mains voltage

4.1.4.2 The battery back-up voltage

4.1.4.3 The cabinet temperature

4.1.4.4 The cabinet humidity

5. **Diagnostics and Log Display FMU Management Software**

- 5.1 From the device level detail within the FMU management software, it shall be possible to drill down to get the raw data; the error logs; and the communications logs to allow a technician to fault-find problems.
- 5.2 It shall be possible to filter the logs by Device; by Device Type and/or by Group as well as between dates.
- 5.3 It shall be possible to print these selected logs to a local printer or a PDF file.
- 5.4 It shall be possible to export these logs to Excel on the local computer for further analysis.

6. **Alarms FMU Management Software**

- 6.1 The FMU management software shall have a comprehensive alarm generation capability
- 6.2 It shall be possible to configure alarms to be generated on any parameter becoming out of tolerance, including analog values, digital values and enumerated values.
- 6.3 Alarms shall be configurable to be of Low, High or Critical Priority.
- 6.4 The alarm priority shall be displayed throughout the FMU management software, on all displays, using color codes such as red-critical; yellow – high; and amber-low to indicate the priority of the alarm.
- 6.5 The current active alarms shall be accessible for view via an expandable window, to see which alarms are active and when the alarm occurred. The highest priority alarms shall rise to the top of the list.

7. **Alerts FMU Management Software**

- 7.1 The FMU management software shall have comprehensive alerting capability, to enable the response personnel to be notified when an abnormal situation has occurred.
- 7.2 It shall be possible to configure alerts to one or more personnel for each alarm. This will cause, as selected, an SMS and/or an email to be sent to the person when an alarm occurs.
- 7.3 The alert shall be configurable to optionally send via email and/or via SMS a message when an alarm clears.
- 7.4 The intention is that the FMU management software provides the alerts to the user in near real time. The SMS and email shall be issued within 30 seconds of the occurrence of event which results in an alert being issued.

8. Hosting and Connectivity and Service FMU / FMU Management Software

8.1 The contractor shall supply the FMU with the FMU manufacturers 10 year options for Connectivity and Service, as part of the purchase price. The Connectivity and Service agreement shall include at a minimum:

- 8.1.1 Cellular Connectivity
- 8.1.2 No cellular overage charges
- 8.1.3 Extended warranty on the hardware for the period of the Connectivity and Service Agreement
- 8.1.4 Over-the-air software updates
- 8.1.5 Over-the-air security updates
- 8.1.6 Future Connected Vehicles Service

SECTION 720 STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS

720.12 Wood Sign Posts Revise the first sentence so that it reads:

Wood sign posts shall be rectangular, straight and sound timber, cut from live growing native spruce, red pine, hemlock, cedar trees or other AWPAs approved species, free from loose knots or other structurally weakening defects of importance, such as shake or holes or heart rot.

Revise the third paragraph that starts with “When pressure treated...” so that it reads:

All sign posts shall be pressure-treated in accordance with AASHTO M 133 and AWPAs Standard U1, UC4A, Commodity Specification A: Sawn Products.

Section 6

REQUIRED FEDERAL CONTRACT PROVISIONS

Appendix A. Federally Required and Other Model Contract Clauses

A.1	ACCESS TO RECORDS AND REPORTS.....	
A.2	BONDING REQUIREMENTS.....	
A.3	BUS TESTING.....	N/A.....
A.4	BUY AMERICA REQUIREMENTS.....	
A.5	CARGO PREFERENCE REQUIREMENTS.....	
A.6	CHARTER SERVICE.....	N/A.....
A.7	CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT.....	
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A.9	DISADVANTAGED BUSINESS ENTERPRISE (DBE).....	
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A.12	FLY AMERICA.....	
A.13	GOVERNMENT-WIDE DEBARMENT AND SUSPENSION.....	
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A.17	PRE-AWARD AND POST-DELIVERY AUDITS OF ROLLING STOCK PURCHASES.....	
A.18	PROGRAM FRAUD AND FALSE OR FRAUDULENT STATEMENTS AND RELATED ACTS.....	
A.19	PUBLIC TRANSPORTATION EMPLOYEE PROTECTIVE ARRANGEMENTS.....	N/A.....
A.20	RECYCLED PRODUCTS.....	
A.21	SAFE OPERATION OF MOTOR VEHICLES.....	
A.22	SCHOOL BUS OPERATIONS.....	N/A.....
A.23	SEISMIC SAFETY.....	N/A.....
A.24	SUBSTANCE ABUSE REQUIREMENTS.....	N/A.....
A.25	TERMINATION.....	
A.26	VIOLATION AND BREACH OF CONTRACT.....	

A.1 ACCESS TO RECORDS AND REPORTS

49 U.S.C. § 5325(g)

2 C.F.R. § 200.333

49 C.F.R. part 633

Applicability to Contracts

The record keeping and access requirements apply to all contracts funded in whole or in part with FTA funds. Under 49 U.S.C. § 5325(g), FTA has the right to examine and inspect all records, documents, and papers, including contracts, related to any FTA project financed with Federal assistance authorized by 49 U.S.C. Chapter 53.

Flow Down

The record keeping and access requirements extend to all third party contractors and their contracts at every tier and sub-recipients and their subcontracts at every tier.

Model Clause/Language

There is no required language for record keeping and access requirements. Recipients can draw on the following language for inclusion in their federally funded procurements.

Access to Records and Reports

- a. Record Retention. The Contractor will retain, and will require its subcontractors of all tiers to retain, complete and readily accessible records related in whole or in part to the contract, including, but not limited to, data, documents, reports, statistics, sub-agreements, leases, subcontracts, arrangements, other third party agreements of any type, and supporting materials related to those records.
- b. Retention Period. The Contractor agrees to comply with the record retention requirements in accordance with 2 C.F.R. § 200.333. The Contractor shall maintain all books, records, accounts and reports required under this Contract for a period of at not less than three (3) years after the date of termination or expiration of this Contract, except in the event of litigation or settlement of claims arising from the performance of this Contract, in which case records shall be maintained until the disposition of all such litigation, appeals, claims or exceptions related thereto.
- c. Access to Records. The Contractor agrees to provide sufficient access to FTA and its contractors to inspect and audit records and information related to performance of this contract as reasonably may be required.
- d. Access to the Sites of Performance. The Contractor agrees to permit FTA and its contractors access to the sites of performance under this contract as reasonably may be required.

A.2 BONDING REQUIREMENTS

2 C.F.R. § 200.325

31 C.F.R. part 223

Applicability to Contracts

Bonds are required for all construction or facility improvement contracts and subcontracts exceeding the simplified acquisition threshold. FTA may accept the bonding policy and requirements of the recipient if FTA has determined that the Federal interest is adequately protected. If such a determination has not been made, the following minimum requirements apply:

- a. A bid guarantee from each bidder equivalent to five percent of the bid price. The “bid guarantee” must consist of a firm commitment such as a bid bond, certified check, or other negotiable instrument accompanying a bid as assurance that the bidder will, upon acceptance of the bid, execute such contractual documents as may be required within the time specified.
- b. A performance bond on the part of the contractor for 100 percent of the contract price. A “performance bond” is one executed in connection with a contract to secure fulfillment of all the contractor's obligations under such contract.
- c. A payment bond on the part of the contractor for 100 percent of the contract price. A “payment bond” is one executed in connection with a contract to assure payment as required by law of all persons supplying labor and material in the execution of the work provided for in the contract.

Flow Down

These requirements extend to all third party contractors and their contracts at every tier and sub-recipients and their subcontracts at every tier that exceed the simplified acquisition threshold.

Model Clauses/Language

There is no required language for bonding requirements. Recipients can draw on the following language for inclusion in their federally funded procurements.

Bond Requirements

Bid Guarantee

Bidders shall furnish a bid guaranty in the form of a bid bond, or certified treasurer's or cashier's check issued by a responsible bank or trust company, made payable to the RECIPIENT. The amount of such guaranty shall be equal to \$\$\$\$ or XX% of the total bid price.

In submitting this bid, it is understood and agreed by bidder that the RECIPIENT reserves the right to reject any and all bids, or part of any bid, and it is agreed that the Bid may not be withdrawn for a period of [90] days subsequent to the opening of bids, without the written consent of RECIPIENT.

It is also understood and agreed that if the undersigned bidder should withdraw any part or all of his bid within [90] days after the bid opening without the written consent of the RECIPIENT, or refuse or be unable to enter into this Contract as provided above, or refuse or be unable to furnish adequate and acceptable Performance and Payment Bonds, or refuse or be unable to furnish adequate and acceptable insurance, as provided above, it shall forfeit its bid guaranty to the extent RECIPIENT'S

damages occasioned by such withdrawal, or refusal, or inability to enter into an agreement, or provide adequate security thereof.

It is further understood and agreed that to the extent the defaulting bidder's bid guaranty shall prove inadequate to fully recompense RECIPIENT for the damages occasioned by default, then the undersigned bidder agrees to indemnify RECIPIENT and pay over to RECIPIENT the difference between the bid guarantee and RECIPIENT'S total damages so as to make RECIPIENT whole.

The undersigned understands that any material alteration of any of the above or any of the material contained herein, other than that requested will render the bid unresponsive.

Performance Guarantee

A Performance Guarantee in the amount of 100% of the Contract value is required by the Recipient to ensure faithful performance of the Contract. Either a Performance Bond or an Irrevocable Stand-By Letter of Credit shall be provided by the Contractor and shall remain in full force for the term of the Agreement. The successful Bidder shall certify that it will provide the requisite Performance Guarantee to the RECIPIENT within ten (10) business days from Contract execution. The RECIPIENT requires all Performance Bonds to be provided by a fully qualified surety company acceptable to the RECIPIENT and listed as a company currently authorized under 31 C.F.R. part 22 as possessing a Certificate of Authority as described hereunder. RECIPIENT may require additional performance bond protection when the contract price is increased. The increase in protection shall generally equal 100 percent of the increase in contract price. The RECIPIENT may secure additional protection by directing the Contractor to increase the amount of the existing bond or to obtain an additional bond.

If the Bidder chooses to provide a Letter of Credit as its Performance Guarantee, the Bidder shall furnish with its bid, certification that an Irrevocable Stand-By Letter of Credit will be furnished should the Bidder become the successful Contractor. The Bidder shall also provide a statement from the banking institution certifying that an Irrevocable Stand-By Letter of Credit for the action will be provided if the Contract is awarded to the Bidder. The Irrevocable Stand-By Letter of Credit will only be accepted by the RECIPIENT if:

1. A bank in good standing issues it. The RECIPIENT will not accept a Letter of Credit from an entity other than a bank.
2. It is in writing and signed by the issuing bank.
3. It conspicuously states that it is an irrevocable, non-transferable, "standby" Letter of Credit.
4. The RECIPIENT is identified as the Beneficiary.
5. It is in an amount equal to 100% of the Contract value. This amount must be in U.S. dollars.
6. The effective date of the Letter of Credit is the same as the effective date of the Contract
7. The expiration date of the Letter of Credit coincides with the term of this Agreement.
8. It indicates that it is being issued in order to support the obligation of the Contractor to perform under the Contract. It must specifically reference the Contract between the RECIPIENT and the Contractor the work stipulated herein.

The issuing bank's obligation to pay will arise upon the presentation of the original Letter of Credit and a certificate and draft (similar to the attached forms contained in Sections X and Y) to the issuing

bank's representative at a location and time to be determined by the parties. This documentation will indicate that the Contractor is in default under the Contract.

Payment Bonds

A Labor and Materials Payment Bond equal to the full value of the contract must be furnished by the contractor to Recipient as security for payment by the Contractor and subcontractors for labor, materials, and rental of equipment. The bond may be issued by a fully qualified surety company acceptable to (Recipient) and listed as a company currently authorized under 31 C.F.R. part 223 as possessing a Certificate of Authority as described thereunder.

Sample Bond Certifications

Performance Guarantee Certification

The undersigned hereby certifies that the Bidder shall provide a Performance Guarantee in accordance with the Specifications.

Designate below which form of Performance Guarantee shall be provided:

_____ Performance Bond
_____ Irrevocable Stand-By-Letter of Credit

BIDDER'S NAME: _____

AUTHORIZED SIGNATURE: _____

TITLE: _____

DATE: _____

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS:

that _____

_____ (Insert full name and address and legal title of Contractor) as Principal, hereinafter called Contractor, and _____

_____ (Insert full name and address or legal title of Surety) as Surety, hereinafter called Surety, are held and firmly bound unto RECIPIENT as Oblige, hereinafter called Authority, in the amount of ____ Dollars (\$____) for the payment whereof Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, Contractor has by written agreement dated , 20 , entered into a contract with the RECIPIENT for Contract No. _____, which contract is by reference made a part hereof, and is hereinafter referred to as the Contract.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if Contractor shall promptly and faithfully perform said Contract, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

The Surety hereby waives notice of any alteration or extension of time made by the RECIPIENT.

Whenever Contractor shall be, and is declared by the RECIPIENT to be in default under the Contract, the RECIPIENT having performed RECIPIENT'S obligations thereunder, the Surety may promptly remedy the default, or shall promptly

1. Complete the Contract in accordance with its terms and conditions, or
2. Obtain a bid or bids for completing the Contract in accordance with its terms and conditions, and upon determination by Surety of the lowest responsible bidder, or, if the RECIPIENT elects, upon determination by the RECIPIENT and the Surety jointly of the lowest responsible bidder, arrange for a contract between such bidder and the Authority, and make available as Work progresses (even though there should be a default or a succession of defaults under the contract or contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the balance of the contract price; but not exceeding, the amount set forth in the first paragraph hereof. The term "balance of the contract price," as used in this paragraph, shall mean the total amount payable by the RECIPIENT to Contractor under the Contract and any amendments thereto, less the amount properly paid by the RECIPIENT to Contractor.

Any suit under this bond must be instituted before the expiration of two (2) years from the date on which final payment under the Contract falls due.

No right of action shall accrue on this bond to or for the use of any person or corporation other than the RECIPIENT or the heirs, executors, administrators or successors of the RECIPIENT.

Signed and sealed this _____ day of _____ 20 .

WITNESS

PRINCIPAL

(SEAL)

(Title)

WITNESS

SURETY

(SEAL)

(Title)

Attach hereto proof of authority of officers or agents to sign bond.

Irrevocable Stand-By Letter Of Credit Certificate

The undersigned states that he/she is _____ of the

(Title)
_____ (The "Beneficiary") and hereby
(Name of Beneficiary)

Certifies on behalf of the Beneficiary to _____ (the "Bank), with
(Name of Issuing Bank)

Reference to Irrevocable Standby Letter of Credit No. _____ Issued by the
Bank (the "Letter of Credit"), that:

1. The undersigned is duly authorized to execute and deliver this certificate on behalf of the Beneficiary.
2. The Beneficiary is making a drawing under the Letter of Credit.
3. An Event of Default has occurred under Contract No. _____.
4. The amount of the draft presented with this certificate does not exceed the total maximum amount drawable today under the Letter of Credit as provided therein.

IN WITNESS WHEREOF, this certificate is executed this _____ day of _____, 20 .

(NAME OF BENEFICIARY)

By: _____

Its: _____

Bank Draft

FOR VALUE RECEIVED

Pay on presentment to _____ the sum of _____
(Name of Beneficiary) Dollars (\$)

Charge the Account of _____ Irrevocably Standby Letter of
(Name of Issuing Bank)

Credit No. _____ Dated: 20____.

To _____
(Name of Issuing Bank)

NAME OF BENEFICIARY

By _____

Its _____

A.3 BUS TESTING

49 U.S.C. § 5318(e)

49 C.F.R. part 665

Applicability to Contracts

The Bus Testing requirements pertain only to the purchase or lease of any new bus model, or any bus model with a major change in configuration or components to be acquired or leased with funds obligated by FTA. Recipients are responsible for determining whether a vehicle to be acquired requires full or partial testing or has already satisfied the bus testing requirements by achieving a passing test score in accordance with 49 C.F.R. part 665. Recipients must certify compliance with FTA's bus testing requirements in all grant applications for FTA funding for bus procurements.

Flow Down

There is no flow down requirement for Bus Testing.

Model Clause/Language

The operator of the bus testing facility is required to provide the resulting test report to the entity that submits the bus for testing. The manufacturer or dealer of a new bus model or a bus produced with a major change in component or configuration is required to provide a copy of the corresponding full bus testing report and any applicable partial testing report(s) to the recipient during the point in the procurement process specified by the recipient, but in all cases before final acceptance of the first bus by the recipient. The complete bus testing reporting requirements are provided in 49 C.F.R. § 665.11. Although no specific certification and bus testing language is required, recipients can draw on the following language for inclusion in their federally funded procurements.

Bus Testing

The Contractor [Manufacturer] agrees to comply with the Bus Testing requirements under 49 U.S.C. 5318(e) and FTA's implementing regulation at 49 C.F.R. part 665 to ensure that the requisite testing is performed for all new bus models or any bus model with a major change in configuration or components, and that the bus model has achieved a passing score. Upon completion of the testing, the contractor shall obtain a copy of the bus testing reports from the operator of the testing facility and make that report(s) publicly available prior to final acceptance of the first vehicle by the recipient.

A.4 BUY AMERICA REQUIREMENTS

49 U.S.C. 5323(j)
49 C.F.R. part 661

Applicability to Contracts

FTA's Buy America law and regulations apply to projects that involve the purchase of more than \$150,000 of iron, steel, manufactured goods, or rolling stock to be delivered to the recipient to be used in an FTA assisted project. FTA cautions that its Buy America regulations are complex. Recipients can obtain detailed information on FTA's Buy America regulation at: <https://www.transit.dot.gov/buyamerica> The Federal Transit Administration's Buy America website.

Flow Down

The Buy America requirements flow down from FTA recipients and sub-recipients to first tier contractors, who are responsible for ensuring that lower tier contractors and subcontractors are in compliance.

Model Clause/Language

The Buy America regulation at 49 C.F.R. § 661.13 requires notification of the Buy America requirements in a recipients' bid or request for proposal for FTA funded contracts. Recipients can draw on the following language for inclusion in their federally funded procurements. Note that recipients are responsible for including the correct Buy America certification based on what they are acquiring. Recipients should not include both the rolling stock and steel, iron, or manufactured products certificates in the documents unless acquiring both in the same procurement.

Buy America

The contractor agrees to comply with 49 U.S.C. 5323(j) and 49 C.F.R. part 661, which provide that Federal funds may not be obligated unless all steel, iron, and manufactured products used in FTA funded projects are produced in the United States, unless a waiver has been granted by FTA or the product is subject to a general waiver. General waivers are listed in 49 C.F.R. § 661.7. Separate requirements for rolling stock are set out at 49 U.S.C. 5323(j)(2)(C) and 49 C.F.R. § 661.11.

The [bidder or offeror] must submit to [Recipient] the appropriate Buy America certification below with its [bid or offer]. Bids or offers that are not accompanied by a completed Buy America certification will be rejected as nonresponsive.

In accordance with 49 C.F.R. § 661.6, for the procurement of steel, iron or manufactured products, use the certifications below.

Certificate of Compliance with Buy America Requirements

The bidder or offeror hereby certifies that it will comply with the requirements of 49 U.S.C. 5323(j)(1), and the applicable regulations in 49 C.F.R. part 661.

Date: _____

Signature: _____

Company: _____

Name: _____

Title: _____

Certificate of Non-Compliance with Buy America Requirements

The bidder or offeror hereby certifies that it cannot comply with the requirements of 49 U.S.C. 5323(j), but it may qualify for an exception to the requirement pursuant to 49 U.S.C. 5323(j)(2), as amended, and the applicable regulations in 49 C.F.R. § 661.7.

Date: _____

Signature: _____

Company: _____

Name: _____

Title: _____

In accordance with 49 C.F.R. § 661.12, for the procurement of rolling stock (including train control, communication, and traction power equipment) use the following certifications:

Certificate of Compliance with Buy America Rolling Stock Requirements

The bidder or offeror hereby certifies that it will comply with the requirements of 49 U.S.C. 5323(j), and the applicable regulations of 49 C.F.R. § 661.11.

Date: _____

Signature: _____

Company: _____

Name: _____

Title: _____

Certificate of Non-Compliance with Buy America Rolling Stock Requirements

The bidder or offeror hereby certifies that it cannot comply with the requirements of 49 U.S.C. 5323(j), but may qualify for an exception to the requirement consistent with 49 U.S.C. 5323(j)(2)(C), and the applicable regulations in 49 C.F.R. § 661.7.

Date: _____

Signature: _____

Company: _____

Name: _____

Title: _____

A.5 CARGO PREFERENCE REQUIREMENTS

46 U.S.C. § 55305

46 C.F.R. part 381

Applicability to Contracts

The Cargo Preference Act of 1954 requirements applies to all contracts involving equipment, materials, or commodities that may be transported by ocean vessels.

Flow Down

The Cargo Preference requirements apply to all contracts involved with the transport of equipment, material, or commodities by ocean vessel.

Model Clause/Language

The Maritime Administration (MARAD) regulations at 46 C.F.R. § 381.7 contain suggested contract clauses. Recipients can draw on the following language for inclusion in their federally funded procurements.

Cargo Preference - Use of United States-Flag Vessels

The contractor agrees:

- a. to use privately owned United States-Flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to the underlying contract to the extent such vessels are available at fair and reasonable rates for United States-Flag commercial vessels;
- b. to furnish within 20 working days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, "on-board" commercial ocean bill-of-lading in English for each shipment of cargo described in the preceding paragraph to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590 and to the FTA recipient (through the contractor in the case of a subcontractor's bill-of-lading.); and
- c. to include these requirements in all subcontracts issued pursuant to this contract when the subcontract may involve the transport of equipment, material, or commodities by ocean vessel.

A.6 CHARTER SERVICE

49 U.S.C. 5323(d) and (r)
49 C.F.R. part 604

Applicability to Contracts

The Charter Bus requirements apply to contracts for operating public transportation service.

Flow Down Requirements

The Charter Bus requirements flow down from FTA recipients and sub-recipients to first tier service contractors.

Model Clause/Language

The relevant statutes and regulations do not mandate any specific clause or language. Recipients can draw on the following language for inclusion in their federally funded procurements.

Charter Service

The contractor agrees to comply with 49 U.S.C. 5323(d), 5323(r), and 49 C.F.R. part 604, which provides that recipients and sub-recipients of FTA assistance are prohibited from providing charter service using federally funded equipment or facilities if there is at least one private charter operator willing and able to provide the service, except as permitted under:

1. Federal transit laws, specifically 49 U.S.C. § 5323(d);
2. FTA regulations, "Charter Service," 49 C.F.R. part 604;
3. Any other federal Charter Service regulations; or
4. Federal guidance, except as FTA determines otherwise in writing.

The contractor agrees that if it engages in a pattern of violations of FTA's Charter Service regulations, FTA may require corrective measures or impose remedies on it. These corrective measures and remedies may include:

1. Barring it or any subcontractor operating public transportation under its Award that has provided prohibited charter service from receiving federal assistance from FTA;
2. Withholding an amount of federal assistance as provided by Appendix D to part 604 of FTA's Charter Service regulations; or
3. Any other appropriate remedy that may apply.

The contractor should also include the substance of this clause in each subcontract that may involve operating public transit services.

A.7 CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

42 U.S.C. §§ 7401 – 7671q
33 U.S.C. §§ 1251-1387
2 C.F.R. part 200, Appendix II (G)

Applicability to Contracts

The Clean Air and Clean Water Act requirements apply to each contract and subcontract exceeding \$150,000. Each contract and subcontract must contain a provision that requires the recipient to agree to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401–7671q) and the Federal Water Pollution Control Act as amended (33 U.S.C. 1251–1387). Violations must be reported to the Federal awarding agency and the Regional Office of the Environmental Protection Agency (EPA).

Flow Down

The Clean Air Act and Federal Water Pollution Control Act requirements extend to all third party contractors and their contracts at every tier and sub-recipients and their subcontracts at every tier.

Model Clause/Language

Recipients can draw on the following language for inclusion in their federally funded procurements.

The Contractor agrees:

1. It will not use any violating facilities;
2. It will report the use of facilities placed on or likely to be placed on the U.S. EPA “List of Violating Facilities;”
3. It will report violations of use of prohibited facilities to FTA; and
4. It will comply with the inspection and other requirements of the Clean Air Act, as amended, (42 U.S.C. §§ 7401 – 7671q); and the Federal Water Pollution Control Act as amended, (33 U.S.C. §§ 1251-1387).

A.8 CIVIL RIGHTS LAWS AND REGULATIONS

Applicability to Contracts

The following Federal Civil Rights laws and regulations apply to all contracts.

1. **Federal Equal Employment Opportunity (EEO) Requirements.** These include, but are not limited to:
 - a. Nondiscrimination in Federal Public Transportation Programs. 49 U.S.C. § 5332, covering projects, programs, and activities financed under 49 U.S.C. Chapter 53, prohibits discrimination on the basis of race, color, religion, national origin, sex (including sexual orientation and gender identity), disability, or age, and prohibits discrimination in employment or business opportunity.
 - b. Prohibition against Employment Discrimination. Title VII of the Civil Rights Act of 1964, as amended, 42 U.S.C. § 2000e, and Executive Order No. 11246, “Equal Employment Opportunity,” September 24, 1965, as amended, prohibit discrimination in employment on the basis of race, color, religion, sex, or national origin.
2. Nondiscrimination on the Basis of Sex. Title IX of the Education Amendments of 1972, as amended, 20 U.S.C. § 1681 et seq. and implementing Federal regulations, “Nondiscrimination on the Basis of Sex in Education Programs or Activities Receiving Federal Financial Assistance,” 49 C.F.R. part 25 prohibit discrimination on the basis of sex.
3. Nondiscrimination on the Basis of Age. The “Age Discrimination Act of 1975,” as amended, 42 U.S.C. § 6101 et seq., and Department of Health and Human Services implementing regulations, “Nondiscrimination on the Basis of Age in Programs or Activities Receiving Federal Financial Assistance,” 45 C.F.R. part 90, prohibit discrimination by participants in federally assisted programs against individuals on the basis of age. The Age Discrimination in Employment Act (ADEA), 29 U.S.C. § 621 et seq., and Equal Employment Opportunity Commission (EEOC) Implementing regulations, “Age Discrimination in Employment Act,” 29 C.F.R. part 1625, also prohibit employment discrimination against individuals age 40 and over on the basis of age.
4. Federal Protections for Individuals with Disabilities. The Americans with Disabilities Act of 1990, as amended (ADA), 42 U.S.C. § 12101 et seq., prohibits discrimination against qualified individuals with disabilities in programs, activities, and services, and imposes specific requirements on public and private entities. Third party contractors must comply with their responsibilities under Titles I, II, III, IV, and V of the ADA in employment, public services, public accommodations, telecommunications, and other provisions, many of which are subject to regulations issued by other Federal agencies.

Flow Down

The Civil Rights requirements flow down to all third party contractors and their contracts at every tier.

Model Clause/Language

Every federally funded contract must include an Equal Opportunity clause. Recipients can draw on the following language for inclusion in their federally funded procurements.

Civil Rights and Equal Opportunity

The AGENCY is an Equal Opportunity Employer. As such, the AGENCY agrees to comply with all applicable Federal civil rights laws and implementing regulations. Apart from inconsistent requirements imposed by Federal laws or regulations, the AGENCY agrees to comply with the requirements of 49 U.S.C. § 5323(h) (3) by not using any Federal assistance awarded by FTA to support procurements using exclusionary or discriminatory specifications.

Under this Agreement, the Contractor shall at all times comply with the following requirements and shall include these requirements in each subcontract entered into as part thereof.

1. **Nondiscrimination.** In accordance with Federal transit law at 49 U.S.C. § 5332, the Contractor agrees that it will not discriminate against any employee or applicant for employment because of race, color, religion, national origin, sex, disability, or age. In addition, the Contractor agrees to comply with applicable Federal implementing regulations and other implementing requirements FTA may issue.
2. **Race, Color, Religion, National Origin, Sex.** In accordance with Title VII of the Civil Rights Act, as amended, 42 U.S.C. § 2000e et seq., and Federal transit laws at 49 U.S.C. § 5332, the Contractor agrees to comply with all applicable equal employment opportunity requirements of U.S. Department of Labor (U.S. DOL) regulations, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor," 41 C.F.R. chapter 60, and Executive Order No. 11246, "Equal Employment Opportunity in Federal Employment," September 24, 1965, 42 U.S.C. § 2000e note, as amended by any later Executive Order that amends or supersedes it, referenced in 42 U.S.C. § 2000e note. The Contractor agrees to take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, national origin, or sex (including sexual orientation and gender identity). Such action shall include, but not be limited to, the following: employment, promotion, demotion or transfer, recruitment or recruitment advertising, layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. In addition, the Contractor agrees to comply with any implementing requirements FTA may issue.
3. **Age.** In accordance with the Age Discrimination in Employment Act, 29 U.S.C. §§ 621- 634, U.S. Equal Employment Opportunity Commission (U.S. EEOC) regulations, "Age Discrimination in Employment Act," 29 C.F.R. part 1625, the Age Discrimination Act of 1975, as amended, 42 U.S.C. § 6101 et seq., U.S. Health and Human Services regulations, "Nondiscrimination on the Basis of Age in Programs or Activities Receiving Federal Financial Assistance," 45 C.F.R. part 90, and Federal transit law at 49 U.S.C. § 5332, the Contractor agrees to refrain from discrimination against present and prospective employees for reason of age. In addition, the Contractor agrees to comply with any implementing requirements FTA may issue.

4. **Disabilities.** In accordance with section 504 of the Rehabilitation Act of 1973, as amended, 29 U.S.C. § 794, the Americans with Disabilities Act of 1990, as amended, 42 U.S.C. § 12101 et seq., the Architectural Barriers Act of 1968, as amended, 42 U.S.C. § 4151 et seq., and Federal transit law at 49 U.S.C. § 5332, the Contractor agrees that it will not discriminate against individuals on the basis of disability. In addition, the Contractor agrees to comply with any implementing requirements FTA may issue.

A.9 DISADVANTAGED BUSINESS ENTERPRISE (DBE)

49 C.F.R. part 26

Background and Applicability

The Disadvantaged Business Enterprise (DBE) program applies to FTA recipients receiving planning, capital and/or operating assistance that will award prime contracts (excluding transit vehicle purchases) exceeding \$250,000 in FTA funds in a Federal fiscal year. All FTA recipients above this threshold must submit a DBE program and overall triennial goal for DBE participation. The overall goal reflects the anticipated amount of DBE participation on DOT-assisted contracts. As part of its DBE program, FTA recipients must require that each transit vehicle manufacturer (TVM), as a condition of being authorized to bid or propose on FTA assisted transit vehicle procurements, certify that it has complied with the requirements of 49 C.F.R. § 26.49. Only those transit vehicle manufacturers listed on FTA's certified list of Transit Vehicle Manufacturers, or that have submitted a goal methodology to FTA that has been approved or has not been disapproved at the time of solicitation, are eligible to bid.

FTA recipients must meet the maximum feasible portion of their overall goal using race-neutral methods. Where appropriate, however, recipients are responsible for establishing DBE contract goals on individual DOT-assisted contracts. FTA recipients may use contract goals only on those DOT-assisted contracts that have subcontracting responsibilities. See 49 C.F.R. § 26.51(e). Furthermore, while FTA recipients are not required to set a contract goal on every DOT-assisted contract, they are responsible for achieving their overall program goals by administering their DBE program in good faith.

FTA recipients and third party contractors can obtain information about the DBE program at the following website locations:

Federal Transit Administration website Disadvantaged Business Enterprise page click here:

<https://www.transit.dot.gov/dbe>

Department of Transportation website Disadvantaged Business Enterprise Program click here:

<https://www.transportation.gov/civil-rights/disadvantaged-business-enterprise>

Flow Down

The DBE contracting requirements flow down to all third party contractors and their contracts at every tier. It is the recipient's and prime contractor's responsibility to ensure the DBE requirements are applied across the board to all sub-recipients/contractors/subcontractors. Should a subcontractor fail to comply with the DBE regulations, FTA would look to the recipient to make sure it intervenes to monitor compliance. The onus for compliance is on the recipient.

Clause Language

For all DOT-assisted contracts, each FTA recipient must include assurances that third party contractors will comply with the DBE program requirements of 49 C.F.R. part 26, when applicable. The following contract clause is required in all DOT-assisted prime and subcontracts:

The contractor, sub-recipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry

out applicable requirements of 49 C.F.R. part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate, which may include, but is not limited to:

- 1) Withholding monthly progress payments;
- 2) Assessing sanctions;
- 3) Liquidated damages; and/or
- 4) Disqualifying the contractor from future bidding as non-responsible. 49 C.F.R. § 26.13(b).

Further, recipients must establish a contract clause to require prime contractors to pay subcontractors for satisfactory performance of their contracts no later than 30 days from receipt of each payment the recipient makes to the prime contractor. 49 C.F.R. § 26.29(a). Finally, for contracts with defined DBE contract goals, each FTA recipient must include in each prime contract a provision stating that the contractor shall utilize the specific DBEs listed unless the contractor obtains the recipient's written consent; and that, unless the recipient's consent is provided, the contractor shall not be entitled to any payment for work or material unless it is performed or supplied by the listed DBE. 49 C.F.R. § 26.53(f) (1).

As an additional resource, recipients can draw on the following language for inclusion in their federally funded procurements.

Overview

It is the policy of the AGENCY and the United States Department of Transportation ("DOT") that Disadvantaged Business Enterprises ("DBE's"), as defined herein and in the Federal regulations published at 49 C.F.R. part 26, shall have an equal opportunity to participate in DOT-assisted contracts. It is also the policy of the AGENCY to:

1. Ensure nondiscrimination in the award and administration of DOT-assisted contracts;
2. Create a level playing field on which DBE's can compete fairly for DOT-assisted contracts;
3. Ensure that the DBE program is narrowly tailored in accordance with applicable law;
4. Ensure that only firms that fully meet 49 C.F.R. part 26 eligibility standards are permitted to participate as DBE's;
5. Help remove barriers to the participation of DBEs in DOT assisted contracts;
6. To promote the use of DBEs in all types of federally assisted contracts and procurement activities; and
7. Assist in the development of firms that can compete successfully in the marketplace outside the DBE program.

This Contract is subject to 49 C.F.R. part 26. Therefore, the Contractor must satisfy the requirements for DBE participation as set forth herein. These requirements are in addition to all other equal opportunity employment requirements of this Contract. The AGENCY shall make all determinations with regard to whether or not a Bidder/Offeror is in compliance with the requirements stated herein. In assessing compliance, the AGENCY may consider during its review of the

Bidder/Offeror's submission package, the Bidder/Offeror's documented history of non-compliance with DBE requirements on previous contracts with the AGENCY.

Contract Assurance

The Contractor, sub-recipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this Contract. The Contractor shall carry out applicable requirements of 49 C.F.R. part 26 in the award and administration of DOT-assisted contracts. Failure by the Contractor to carry out these requirements is a material breach of this Contract, which may result in the termination of this Contract or such other remedy as the AGENCY deems appropriate.

DBE Participation

For the purpose of this Contract, the AGENCY will accept only DBE's who are:

1. Certified, at the time of bid opening or proposal evaluation, by the [certifying agency or the Unified Certification Program (UCP)]; or
2. An out-of-state firm who has been certified by either a local government, state government or Federal government entity authorized to certify DBE status or an agency whose DBE certification process has received FTA approval; or
3. Certified by another agency approved by the AGENCY.

DBE Participation Goal

The DBE participation goal for this Contract is set at 1.01%. This goal represents those elements of work under this Contract performed by qualified Disadvantaged Business Enterprises for amounts totaling not less than ____ % of the total Contract price. Failure to meet the stated goal at the time of proposal submission may render the Bidder/Offeror non-responsive.

Proposed Submission

Each Bidder/Offeror, as part of its submission, shall supply the following information:

1. A completed DBE Utilization Form (see below) that indicates the percentage and dollar value of the total bid/contract amount to be supplied by Disadvantaged Business Enterprises under this Contract.
2. A list of those qualified DBE's with whom the Bidder/Offeror intends to contract for the performance of portions of the work under the Contract, the agreed price to be paid to each DBE for work, the Contract items or parts to be performed by each DBE, a proposed timetable for the performance or delivery of the Contract item, and other information as required by the DBE Participation Schedule (see below). No work shall be included in the Schedule that the Bidder/Offeror has reason to believe the listed DBE will subcontract, at any tier, to other than another DBE. If awarded the Contract, the Bidder/Offeror may not deviate from the DBE Participation Schedule submitted in response to the bid. Any subsequent changes and/or substitutions of DBE firms will require review and written approval by the AGENCY.
3. An original DBE Letter of Intent (see below) from each DBE listed in the DBE Participation Schedule.
4. An original DBE Affidavit (see below) from each DBE stating that there has not been any change in its status since the date of its last certification.

Good Faith Efforts

If the Bidder/Offeror is unable to meet the goal set forth above (DBE Participation Goal), the AGENCY will consider the Bidder/Offeror's documented good faith efforts to meet the goal in determining responsiveness. The types of actions that the AGENCY will consider as part of the Bidder/Offeror's good faith efforts include, but are not limited to, the following:

1. Documented communication with the AGENCY's DBE Coordinator (questions of IFB or RFP requirements, subcontracting opportunities, appropriate certification, will be addressed in a timely fashion);
2. Pre-bid meeting attendance. At the pre-bid meeting, the AGENCY generally informs potential Bidder/Offeror's of DBE subcontracting opportunities;
3. The Bidder/Offeror's own solicitations to obtain DBE involvement in general circulation media, trade association publication, minority-focus media and other reasonable and available means within sufficient time to allow DBEs to respond to the solicitation;
4. Written notification to DBE's encouraging participation in the proposed Contract; and
5. Efforts made to identify specific portions of the work that might be performed by DBE's.

The Bidder/Offeror shall provide the following details, at a minimum, of the specific efforts it made to negotiate in good faith with DBE's for elements of the Contract:

1. The names, addresses, and telephone numbers of DBE's that were contacted;
2. A description of the information provided to targeted DBE's regarding the specifications and bid proposals for portions of the work;
3. Efforts made to assist DBE's contacted in obtaining bonding or insurance required by the Bidder or the Authority.

Further, the documentation of good faith efforts must include copies of each DBE and non-DBE subcontractor quote submitted when a non-DBE subcontractor was selected over a DBE for work on the contract. 49 C.F.R. § 26.53(b) (2) (VI). In determining whether a Bidder has made good faith efforts, the Authority may take into account the performance of other Bidders in meeting the Contract goals. For example, if the apparent successful Bidder failed to meet the goal, but meets or exceeds the average DBE participation obtained by other Bidders, the Authority may view this as evidence of the Bidder having made good faith efforts.

Administrative Reconsideration

Within five (5) business days of being informed by the AGENCY that it is not responsive or responsible because it has not documented sufficient good faith efforts, the Bidder/Offeror may request administrative reconsideration. The Bidder should make this request in writing to the AGENCY's [Contact Name]. The [Contact Name] will forward the Bidder/Offeror's request to a reconsideration official who will not have played any role in the original determination that the Bidder/Offeror did not document sufficient good faith efforts.

As part of this reconsideration, the Bidder/Offeror will have the opportunity to provide written documentation or argument concerning the issue of whether it met the goal or made adequate good faith efforts to do so. The Bidder/Offeror will have the opportunity to meet in person with the assigned reconsideration official to discuss the issue of whether it met the goal or made adequate good faith

efforts to do so. The AGENCY will send the Bidder/Offeror a written decision on its reconsideration, explaining the basis for finding that the Bidder/Offeror did or did not meet the goal or make adequate good faith efforts to do so. The result of the reconsideration process is not administratively appealable to the Department of Transportation.

Termination of DBE Subcontractor

The Contractor shall not terminate the DBE subcontractor(s) listed in the DBE Participation Schedule (see below) without the AGENCY's prior written consent. The AGENCY may provide such written consent only if the Contractor has good cause to terminate the DBE firm. Before transmitting a request to terminate, the Contractor shall give notice in writing to the DBE subcontractor of its intent to terminate and the reason for the request. The Contractor shall give the DBE five days to respond to the notice and advise of the reasons why it objects to the proposed termination. When a DBE subcontractor is terminated or fails to complete its work on the Contract for any reason, the Contractor shall make good faith efforts to find another DBE subcontractor to substitute for the original DBE and immediately notify the AGENCY in writing of its efforts to replace the original DBE. These good faith efforts shall be directed at finding another DBE to perform at least the same amount of work under the Contract as the DBE that was terminated, to the extent needed to meet the Contract goal established for this procurement. Failure to comply with these requirements will be in accordance with Section 8 below (Sanctions for Violations).

Continued Compliance

The AGENCY shall monitor the Contractor's DBE compliance during the life of the Contract. In the event this procurement exceeds ninety (90) days, it will be the responsibility of the Contractor to submit quarterly written reports to the AGENCY that summarize the total DBE value for this Contract. These reports shall provide the following details:

- DBE utilization established for the Contract;
- Total value of expenditures with DBE firms for the quarter;
- The value of expenditures with each DBE firm for the quarter by race and gender;
- Total value of expenditures with DBE firms from inception of the Contract; and
- The value of expenditures with each DBE firm from the inception of the Contract by race and gender.

Reports and other correspondence must be submitted to the DBE Coordinator with copies provided to the [Agency Name1] and [Agency Name2]. Reports shall continue to be submitted quarterly until final payment is issued or until DBE participation is completed.

The successful Bidder/Offeror shall permit:

- The AGENCY to have access to necessary records to examine information as the AGENCY deems appropriate for the purpose of investigating and determining compliance with this provision, including, but not limited to, records of expenditures, invoices, and contract between the successful Bidder/Offeror and other DBE parties entered into during the life of the Contract.
- The authorized representative(s) of the AGENCY, the U.S. Department of Transportation, the Comptroller General of the United States, to inspect and audit all data and record of

the Contractor relating to its performance under the Disadvantaged Business Enterprise Participation provision of this Contract.

- All data/record(s) pertaining to DBE shall be maintained as stated in Section [insert reference to record keeping requirements for the Project.]

Sanctions for Violations

If at any time the AGENCY has reason to believe that the Contractor is in violation of its obligations under this Agreement or has otherwise failed to comply with terms of this Section, the AGENCY may, in addition to pursuing any other available legal remedy, commence proceedings, which may include but are not limited to, the following:

- Suspension of any payment or part due the Contractor until such time as the issues concerning the Contractor's compliance are resolved; and
- Termination or cancellation of the Contract, in whole or in part, unless the successful Contractor is able to demonstrate within a reasonable time that it is in compliance with the DBE terms stated herein.

DBE UTILIZATION FORM

The undersigned Bidder/Offeror has satisfied the requirements of the solicitation in the following manner (please check the appropriate space):

_____ The Bidder/Offer is committed to a minimum of _____% DBE utilization on this contract.

_____ The Bidder/Offeror (if unable to meet the DBE goal of _____%) is committed to a minimum of _____% DBE utilization on this contract and submits documentation demonstrating good faith efforts.

DBE PARTICIPATION SCHEDULE

The Bidder/Offeror shall complete the following information for all DBE's participating in the contract that comprises the DBE Utilization percent stated in the DBE Utilization Form. The Bidder/Offeror shall also furnish the name and telephone number of the appropriate contact person should the Authority have any questions in relation to the information furnished herein.

DBE IDENTIFICATION AND INFORMATION FORM

Name and Address	Contact Name and Telephone Number	Participation Percent (Of Total Contract Value)	Description Of Work To Be Performed	Race and Gender of Firm

A.10 EMPLOYEE PROTECTIONS

49 U.S.C. § 5333(a)
40 U.S.C. §§ 3141 – 3148
29 C.F.R. part 5
18 U.S.C. § 874
29 C.F.R. part 3
40 U.S.C. §§3701-3708
29 C.F.R. part 1926

Applicability to Contracts

Certain employee protections apply to all FTA funded contracts with particular emphasis on construction related projects. The recipient will ensure that each third party contractor complies with all federal laws, regulations, and requirements, including:

1. **Prevailing Wage Requirements**
 - a. Federal transit laws, specifically 49 U.S.C. § 5333(a), (FTA’s “Davis-Bacon Related Act”);
 - b. The Davis-Bacon Act, 40 U.S.C. §§ 3141 – 3144, 3146, and 3147; and
 - c. U.S. DOL regulations, “Labor Standards Provisions Applicable to Contracts Covering Federally Financed and Assisted Construction (also Labor Standards Provisions Applicable to Non-construction Contracts Subject to the Contract Work Hours and Safety Standards Act),” 29 C.F.R. part 5.
2. **“Anti-Kickback” Prohibitions**
 - a. Section 1 of the Copeland “Anti-Kickback” Act, as amended, 18 U.S.C. § 874;
 - b. Section 2 of the Copeland “Anti-Kickback” Act, as amended, 40 U.S.C. § 3145; and
 - c. U.S. DOL regulations, “Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in part by Loans or Grants from the United States,” 29 C.F.R. part 3.
3. **Contract Work Hours and Safety Standards**
 - a. Contract Work Hours and Safety Standards Act, as amended, 40 U.S.C. §§ 3701-3708; and supplemented by Department of Labor (DOL) regulations, 29 C.F.R. part 5; and
 - b. U.S. DOL regulations, “Safety and Health Regulations for Construction,” 29 C.F.R. part 1926.

Flow Down

These requirements extend to all third party contractors and their contracts at every tier and sub-recipients and their subcontracts at every tier. The Davis-Bacon Act and the Copeland “Anti-Kickback” Act apply to all prime construction, alteration or repair contracts in excess of \$2,000. The Contract Work Hours and Safety Standards Act apply to all FTA funded contracts in excess of \$100,000 that involve the employment of mechanics or laborers.

Model Clause/Language

The recipient must place a copy of the current prevailing wage determination issued by the Department of Labor in each solicitation. The decision to award a contract or subcontract must be conditioned upon the acceptance of the wage determination. In addition, recipients can draw on the following language for inclusion in their federally funded procurements.

Prevailing Wage and Anti-Kickback

For all prime construction, alteration or repair contracts in excess of \$2,000 awarded by FTA, the Contractor shall comply with the Davis-Bacon Act and the Copeland "Anti-Kickback" Act. Under 49 U.S.C. § 5333(a), prevailing wage protections apply to laborers and mechanics employed on FTA assisted construction, alteration, or repair projects. The Contractor will comply with the Davis-Bacon Act, 40 U.S.C. §§ 3141-3144, and 3146-3148 as supplemented by DOL regulations at 29 C.F.R. part 5, "Labor Standards Provisions Applicable to Contracts Governing Federally Financed and Assisted Construction." In accordance with the statute, the Contractor shall pay wages to laborers and mechanics at a rate not less than the prevailing wages specified in a wage determination made by the Secretary of Labor. In addition, the Contractor agrees to pay wages not less than once a week. The Contractor shall also comply with the Copeland "Anti-Kickback" Act (40 U.S.C. § 3145), as supplemented by DOL regulations at 29 C.F.R. part 3, "Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in part by Loans or Grants from the United States." The Contractor is prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation to which he or she is otherwise entitled.

Contract Work Hours and Safety Standards

For all contracts in excess of \$100,000 that involve the employment of mechanics or laborers, the Contractor shall comply with the Contract Work Hours and Safety Standards Act (40 U.S.C. §§ 3701-3708), as supplemented by the DOL regulations at 29 C.F.R. part 5. Under 40 U.S.C. § 3702 of the Act, the Contractor shall compute the wages of every mechanic and laborer, including watchmen and guards, on the basis of a standard work week of 40 hours. Work in excess of the standard work week is permissible provided that the worker is compensated at a rate of not less than one and a half times the basic rate of pay for all hours worked in excess of 40 hours in the work week. The requirements of 40 U.S.C. § 3704 are applicable to construction work and provide that no laborer or mechanic be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous. These requirements do not apply to the purchase of supplies or materials or articles ordinarily available on the open market, or to contracts for transportation or transmission of intelligence.

In the event of any violation of the clause set forth herein, the Contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, the 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 or mechanic, including watchmen and guards, employed in violation of this clause in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by this clause.

The FTA shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys 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 this section.

The Contractor or subcontractor shall insert in any subcontracts the clauses set forth in this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime Contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in this agreement.

Contract Work Hours and Safety Standards for Awards Not Involving Construction

The Contractor shall comply with all federal laws, regulations, and requirements providing wage and hour protections for non-construction employees, in accordance with 40 U.S.C. § 3702, Contract Work Hours and Safety Standards Act, and other relevant parts of that Act, 40 U.S.C. § 3701 et seq., and U.S. DOL regulations, "Labor Standards Provisions Applicable to Contracts Covering Federally Financed and Assisted Construction (also Labor Standards Provisions Applicable to Non-construction Contracts Subject to the Contract Work Hours and Safety Standards Act)," 29 C.F.R. part 5.

The Contractor shall maintain payrolls and basic payroll records during the course of the work and shall preserve them for a period of three (3) years from the completion of the contract for all laborers and mechanics, including guards and watchmen, working on the contract. Such records shall contain the name and address of each such employee, social security number, correct classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid.

Such records maintained under this paragraph shall be made available by the Contractor for inspection, copying, or transcription by authorized representatives of the FTA and the Department of Labor, and the Contractor will permit such representatives to interview employees during working hours on the job. The contractor shall require the inclusion of the language of this clause within subcontracts of all tiers.

A.11 ENERGY CONSERVATION

42 U.S.C. 6321 et seq.

49 C.F.R. part 622, subpart C

Applicability to Contracts

The Energy Policy and Conservation requirements are applicable to all contracts. The Recipient agrees to, and assures that its sub-recipients, if any, will comply with the mandatory energy standards and policies of its state energy conservation plans under the Energy Policy and Conservation Act, as amended, 42 U.S.C. § 6201 et seq., and perform an energy assessment for any building constructed, reconstructed, or modified with federal assistance as required under FTA regulations, “Requirements for Energy Assessments,” 49 C.F.R. part 622, subpart C.

Flow Down

These requirements extend to all third party contractors and their contracts at every tier and sub-recipients and their subcontracts at every tier.

Model Clause/Language

No specific clause is recommended in the regulations because the Energy Conservation requirements are so dependent on the state energy conservation plan. Recipients can draw on the following language for inclusion in their federally funded procurements.

Energy Conservation

The contractor agrees to comply with mandatory standards and policies relating to energy efficiency, which are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act.

A.12 FLY AMERICA

49 U.S.C. § 40118

41 C.F.R. part 301-10

48 C.F.R. part 47.4

Applicability to Contracts

The Fly America requirements apply to the transportation of persons or property, by air, between a place in the U.S. and a place outside the U.S., or between places outside the U.S., when the FTA will participate in the costs of such air transportation. Transportation on a foreign air carrier is permissible when provided by a foreign air carrier under a code share agreement when the ticket identifies the U.S. air carrier's designator code and flight number. Transportation by a foreign air carrier is also permissible if there is a bilateral or multilateral air transportation agreement to which the U.S. Government and a foreign government are parties and which the U.S. DOT has determined meets the requirements of the Fly America Act.

Flow Down Requirements

The Fly America requirements flow down from FTA recipients and sub-recipients to first tier contractors who are responsible for ensuring that lower tier contractors and subcontractors are in compliance.

Model Clause/Language

The relevant statutes and regulations do not require any specific clause or language that recipients use in their third party contracts. A sample clause is provided for Federal contracts at 48 C.F.R. 52.247-63. Recipients can draw on the following language for inclusion in their federally funded procurements.

FTA proposes the following language, modified from the Federal clause.

Fly America Requirements

- a. *Definitions.* As used in this clause—

"International air transportation" means transportation by air between a place in the United States and a place outside the United States or between two places both of which are outside the United States.

"United States" means the 50 States, the District of Columbia, and outlying areas.

"U.S.-flag air carrier" means an air carrier holding a certificate under 49 U.S.C. Chapter 411.

- b. When Federal funds are used to fund travel, Section 5 of the International Air Transportation Fair Competitive Practices Act of 1974 (49 U.S.C. 40118) (Fly America Act) requires contractors, recipients, and others use U.S.-flag air carriers for U.S. Government-financed international air transportation of personnel (and their personal effects) or property, to the extent that service by those carriers is available. It requires the Comptroller General of the United States, in the absence of satisfactory proof of the

necessity for foreign-flag air transportation, to disallow expenditures from funds, appropriated or otherwise established for the account of the United States, for international air transportation secured aboard a foreign-flag air carrier if a U.S.-flag air carrier is available to provide such services.

- c. If available, the Contractor, in performing work under this contract, shall use U.S.-flag carriers for international air transportation of personnel (and their personal effects) or property.
- d. In the event that the Contractor selects a carrier other than a U.S.-flag air carrier for international air transportation, the Contractor shall include a statement on vouchers involving such transportation essentially as follows:

Statement of Unavailability of U.S.-Flag Air Carriers

International air transportation of persons (and their personal effects) or property by U.S.-flag air carrier was not available or it was necessary to use foreign-flag air carrier service for the following reasons. See FAR § 47.403. [State reasons]:

(End of statement)

- e. The Contractor shall include the substance of this clause, including this paragraph (e), in each subcontract or purchase under this contract that may involve international air transportation.

(End of Clause)

A.13 GOVERNMENT-WIDE DEBARMENT AND SUSPENSION

2 C.F.R. part 180

2 C.F.R part 1200

2 C.F.R. § 200.213

2 C.F.R. part 200 Appendix II (I) Executive Order 12549

Executive Order 12689

Background and Applicability

A contract award (of any tier) in an amount expected to equal or exceed \$25,000 or a contract award at any tier for a federally required audit (irrespective of the contract amount) must not be made to parties listed on the government-wide exclusions in the System for Award Management (SAM), in accordance with the OMB guidelines at 2 C.F.R. part 180. The Excluded Parties List System in SAM contains the names of parties debarred, suspended, or otherwise excluded by agencies, as well as parties declared ineligible under statutory or regulatory authority other than Executive Order 12549.

Recipients, contractors, and subcontractors (at any level) that enter into covered transactions are required to verify that the entity (as well as its principals and affiliates) with which they propose to contract or subcontract is not excluded or disqualified. This is done by: (a) checking the SAM exclusions; (b) collecting a certification from that person; or (c) adding a clause or condition to the contract or subcontract.

Flow Down

Recipients, contractors, and subcontractors who enter into covered transactions with a participant at the next lower level, must require that participant to: (a) comply with subpart C of 2 C.F.R. part 180, as supplemented by 2 C.F.R. part 1200; and (b) pass the requirement to comply with subpart C of 2 C.F.R. part 180 to each person with whom the participant enters into a covered transaction at the next lower tier.

Model Clause/Language

There is no required language for the Debarment and Suspension clause. Recipients can draw on the following language for inclusion in their federally funded procurements.

Debarment, Suspension, Ineligibility and Voluntary Exclusion

The Contractor shall comply and facilitate compliance with U.S. DOT regulations, “Non-procurement Suspension and Debarment,” 2 C.F.R. part 1200, which adopts and supplements the U.S. Office of Management and Budget (U.S. OMB) “Guidelines to Agencies on Government wide Debarment and Suspension (Non-procurement),” 2 C.F.R. part 180. These provisions apply to each contract at any tier of \$25,000 or more, and to each contract at any tier for a federally required audit (irrespective of the contract amount), and to each contract at any tier that must be approved by an FTA official irrespective of the contract amount. As such, the Contractor shall verify that its principals, affiliates, and subcontractors are eligible to participate in this federally funded contract and are not presently declared by any Federal department or agency to be:

- a) Debarred from participation in any federally assisted Award;

- b) Suspended from participation in any federally assisted Award;
- c) Proposed for debarment from participation in any federally assisted Award;
- d) Declared ineligible to participate in any federally assisted Award;
- e) Voluntarily excluded from participation in any federally assisted Award; or
- f) Disqualified from participation in any federally assisted Award.

By signing and submitting its bid or proposal, the bidder or proposer certifies as follows:

The certification in this clause is a material representation of fact relied upon by the AGENCY. If it is later determined by the AGENCY that the bidder or proposer knowingly rendered an erroneous certification, in addition to remedies available to the AGENCY, the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment. The bidder or proposer agrees to comply with the requirements of 2 C.F.R. part 180, subpart C, as supplemented by 2 C.F.R. part 1200, while this offer is valid and throughout the period of any contract that may arise from this offer. The bidder or proposer further agrees to include a provision requiring such compliance in its lower tier covered transactions.

A.14 LOBBYING RESTRICTIONS

31 U.S.C. § 1352

2 C.F.R. § 200.450

2 C.F.R. part 200 appendix II (J) 49 C.F.R. part 20

Applicability to Contracts

The lobbying requirements apply to all contracts and subcontracts of \$100,000 or more at any tier under a Federal grant. 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 agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this agreement, the payor must complete and submit the Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

Flow Down

The lobbying requirements mandate the maximum flow down pursuant to Byrd Anti-Lobbying Amendment, 31 U.S.C. § 1352(b)(5).

Model Clause/Language

49 C.F.R. part 20, Appendices A and B provide specific language for inclusion in FTA funded third party contracts as follows:

Lobbying Restrictions

The undersigned certifies, 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 an 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 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.
3. The undersigned shall require that the language of this certification be included in the award documents for all sub-awards at all tiers (including subcontracts, sub-grants, and contracts under grants, loans, and cooperative agreements) and that all sub-recipients shall certify and disclose accordingly.

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.

_____ Signature of Contractor's Authorized Official

_____ Name and Title of Contractor's Authorized Official

_____ Date

A.15 NO GOVERNMENT OBLIGATION TO THIRD PARTIES

Applicability to Contracts

The No Obligation clause applies to all third party contracts that are federally funded.

Flow Down

The No Obligation clause extends to all third party contractors and their contracts at every tier and sub-recipients and their subcontracts at every tier.

Model Clause/Language

There is no required language for the No Obligations clause. Recipients can draw on the following language for inclusion in their federally funded procurements.

No Federal Government Obligation to Third Parties.

The Recipient and Contractor acknowledge and agree that, notwithstanding any concurrence by the Federal Government in or approval of the solicitation or award of the underlying Contract, absent the express written consent by the Federal Government, the Federal Government is not a party to this Contract and shall not be subject to any obligations or liabilities to the Recipient, Contractor or any other party (whether or not a party to that contract) pertaining to any matter resulting from the underlying Contract. The Contractor agrees to include the above clause in each subcontract financed in whole or in part with Federal assistance provided by the FTA. It is further agreed that the clause shall not be modified, except to identify the subcontractor who will be subject to its provisions.

A.16 PATENT RIGHTS AND RIGHTS IN DATA

2 C.F.R. part 200, Appendix II (F) 37 C.F.R. part 401

Applicability to Contracts

If the recipient or sub-recipient wishes to enter into a contract (or subcontract) with a small business firm or nonprofit organization for the performance of experimental, developmental, or research work under the FTA award, the recipient or sub-recipient must comply with the requirements of 37 C.F.R. part 401, "Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements," and any implementing regulations issued by the awarding agency. Except in the case of an "other agreement" in which the Federal Government has agreed to take more limited rights, the Federal Government is entitled to a non-exclusive, royalty free license to use the resulting invention, or patent the invention for Federal Government purposes. The FTA has the right to:

1. Obtain, reproduce, publish, or otherwise use the data produced under a Federal award; and
2. Authorize others to receive, reproduce, publish, or otherwise use such data for Federal purposes.

Flow Down

The Patent Rights and Rights in Data requirements flow down to all third party contractors and their contracts at every tier that meet the definition of a research-type project under 37 U.S.C. § 401.2.

Model Clause/Language

Recipients can draw on language provided in 37 C.F.R. § 401.3 for appropriate Patent Rights and Data Rights Clauses for use in their federally funded research, development, demonstration, or special studies projects. Recipients should consult legal counsel for guidance in developing an appropriate Intellectual Property Agreement. At a minimum, recipients can include the following language in their standard boilerplates.

Intellectual Property Rights

This Project is funded through a Federal award with FTA for experimental, developmental, or research work purposes. As such, certain Patent Rights and Data Rights apply to all subject data first produced in the performance of this Contract. The Contractor shall grant the AGENCY intellectual property access and licenses deemed necessary for the work performed under this Agreement and in accordance with the requirements of 37 C.F.R. part 401, "Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements," and any implementing regulations issued by FTA or U.S. DOT. The terms of an intellectual property agreement and software license rights will be finalized prior to execution of this Agreement and shall, at a minimum, include the following restrictions: Except for its own internal use, the Contractor may not publish or reproduce subject data in whole or in part, or in any manner or form, nor may the Contractor authorize others to do so, without the written consent of FTA, until such time as FTA may have either released or approved the release of such data to the public. This restriction on publication, however, does not apply to any contract with an academic institution. For purposes of this agreement, the term "subject data" means recorded information whether or not copyrighted, and that

is delivered or specified to be delivered as required by the Contract. Examples of “subject data” include, but are not limited to computer software, standards, specifications, engineering drawings and associated lists, process sheets, manuals, technical reports, catalog item identifications, and related information, but do not include financial reports, cost analyses, or other similar information used for performance or administration of the Contract.

1. The Federal Government reserves a royalty-free, non-exclusive and irrevocable license to reproduce, publish, or otherwise use, and to authorize others to use for “Federal Government Purposes,” any subject data or copyright described below. For “Federal Government Purposes,” means use only for the direct purposes of the Federal Government. Without the copyright owner’s consent, the Federal Government may not extend its Federal license to any other party.
 - a. Any subject data developed under the Contract, whether or not a copyright has been obtained; and
 - b. Any rights of copyright purchased by the Contractor using Federal assistance in whole or in part by the FTA.
2. Unless FTA determines otherwise, the Contractor performing experimental, developmental, or research work required as part of this Contract agrees to permit FTA to make available to the public, either FTA’s license in the copyright to any subject data developed in the course of the Contract, or a copy of the subject data first produced under the Contract for which a copyright has not been obtained. If the experimental, developmental, or research work, which is the subject of this Contract, is not completed for any reason whatsoever, all data developed under the Contract shall become subject data as defined herein and shall be delivered as the Federal Government may direct.
3. Unless prohibited by state law, upon request by the Federal Government, the Contractor agrees to indemnify, save, and hold harmless the Federal Government, its officers, agents, and employees acting within the scope of their official duties against any liability, including costs and expenses, resulting from any willful or intentional violation by the Contractor of proprietary rights, copyrights, or right of privacy, arising out of the publication, translation, reproduction, delivery, use, or disposition of any data furnished under that contract. The Contractor shall be required to indemnify the Federal Government for any such liability arising out of the wrongful act of any employee, official, or agents of the Federal Government.
4. Nothing contained in this clause on rights in data shall imply a license to the Federal Government under any patent or be construed as affecting the scope of any license or other right otherwise granted to the Federal Government under any patent.
5. Data developed by the Contractor and financed entirely without using Federal assistance provided by the Federal Government that has been incorporated into work required by the underlying Contract is exempt from the requirements herein, provided that the Contractor identifies those data in writing at the time of delivery of the Contract work.
6. The Contractor agrees to include these requirements in each subcontract for experimental, developmental, or research work financed in whole or in part with Federal assistance.

A.17 PRE-AWARD AND POST-DELIVERY AUDITS OF ROLLING STOCK PURCHASES

49 U.S.C. 5323(m)

49 C.F.R. part 663

Applicability to Contracts

Recipients purchasing revenue service rolling stock with FTA funds must comply with the pre-award and post-delivery audit requirements set forth in 49 U.S.C. 5323(m) and supplemented by 49 C.F.R. part 663. For more information about pre-award and post-delivery audit requirements, please go to FTA's Buy America page on its website: <https://www.transit.dot.gov/buyamerica>.

Flow Down

There is no flow down requirement for Pre-Award and Post-Delivery Audits of Rolling Stock.

Model Clause/Language

Part 663 of Title 49, Code of Federal Regulations, does not contain specific language to be included in third party contracts but does contain requirements applicable to sub-recipients and third party contractors. Recipients are advised to use the model certificates and language contained in the audit handbook. Additionally, recipients can draw on the following language for inclusion in their federally funded procurements.

Pre-Award and Post-Delivery Audit Requirements

The Contractor agrees to comply with 49 U.S.C. § 5323(m) and FTA's implementing regulation at 49 C.F.R. part 663. The Contractor shall comply with the Buy America certification(s) submitted with its proposal/bid. The Contractor agrees to participate and cooperate in any pre-award and post-delivery audits performed pursuant to 49 C.F.R. part 663 and related FTA guidance.

A.18 PROGRAM FRAUD AND FALSE OR FRAUDULENT STATEMENTS AND RELATED ACTS

49 U.S.C. § 5323(l) (1)

31 U.S.C. §§ 3801-3812

18 U.S.C. § 1001

49 C.F.R. part 31

Applicability to Contracts

The Program Fraud clause applies to all third party contracts that are federally funded.

Flow Down

The Program Fraud clause extends to all third party contractors and their contracts at every tier and sub-recipients and their subcontracts at every tier. These requirements flow down to contractors and subcontractors who make, present, or submit covered claims and statements.

Model Clause/Language

There is no required language for the Program Fraud clause. Recipients can draw on the following language for inclusion in their federally funded procurements.

Program Fraud and False or Fraudulent Statements or Related Acts

The Contractor acknowledges that the provisions of the Program Fraud Civil Remedies Act of 1986, as amended, 31 U.S.C. § 3801 et seq. and U.S. DOT regulations, "Program Fraud Civil Remedies," 49 C.F.R. part 31, apply to its actions pertaining to this Project. Upon execution of the underlying contract, the Contractor certifies or affirms the truthfulness and accuracy of any statement it has made, it makes, it may make, or causes to be made, pertaining to the underlying contract or the FTA assisted project for which this contract work is being performed. In addition to other penalties that may be applicable, the Contractor further acknowledges that if it makes, or causes to be made, a false, fictitious, or fraudulent claim, statement, submission, or certification, the Federal Government reserves the right to impose the penalties of the Program Fraud Civil Remedies Act of 1986 on the Contractor to the extent the Federal Government deems appropriate.

The Contractor also acknowledges that if it makes, or causes to be made, a false, fictitious, or fraudulent claim, statement, submission, or certification to the Federal Government under a contract connected with a project that is financed in whole or in part with Federal assistance originally awarded by FTA under the authority of 49 U.S.C. chapter 53, the Government reserves the right to impose the penalties of 18 U.S.C. § 1001 and 49 U.S.C. § 5323(l) on the Contractor, to the extent the Federal Government deems appropriate.

The Contractor agrees to include the above two clauses in each subcontract financed in whole or in part with Federal assistance provided by FTA. It is further agreed that the clauses shall not be modified, except to identify the subcontractor who will be subject to the provisions.

A.19 PUBLIC TRANSPORTATION EMPLOYEE PROTECTIVE ARRANGEMENTS

49 U.S.C. § 5333(b) (“13(c)”)

29 C.F.R. part 215

Applicability to Contracts

The Public Transportation Employee Protective Arrangements apply to each contract for transit operations performed by employees of a Contractor recognized by FTA to be a transit operator.

Flow Down

The employee protective arrangements clause flows down to all third party contractors and their contracts at every tier.

Model Clause/Language

There is no required language for the Public Transportation Employee Protective Arrangements clause. Recipients can draw on the following language for inclusion in their federally funded procurements.

Public Transportation Employee Protective Arrangements

The Contractor agrees to comply with the following employee protective arrangements of 49 U.S.C. § 5333(b):

1. **U.S. DOL Certification.** Under this Contract or any Amendments thereto that involve public transportation operations that are supported with federal assistance, a certification issued by U.S. DOL is a condition of the Contract.
2. **Special Warranty.** When the Contract involves public transportation operations and is supported with federal assistance appropriated or made available for 49 U.S.C. § 5311, U.S. DOL will provide a Special Warranty for its Award, including its Award of federal assistance under the Tribal Transit Program. The U.S. DOL Special Warranty is a condition of the Contract.
3. **Special Arrangements.** The conditions of 49 U.S.C. § 5333(b) do not apply to Contractors providing public transportation operations pursuant to 49 U.S.C. § 5310. FTA reserves the right to make case-by-case determinations of the applicability of 49 U.S.C. § 5333(b) for all transfers of funding authorized under title 23, United States Code (flex funds), and make other exceptions as it deems appropriate, and, in those instances, any special arrangements required by FTA will be incorporated herein as required.

A.20 RECYCLED PRODUCTS

42 U.S.C. § 6962

40 C.F.R. part 247

2 C.F.R. part § 200.322

Applicability to Contracts

The Resource Conservation and Recovery Act, as amended, (42 U.S.C. § 6962 et seq.), requires States and local governmental authorities to provide a competitive preference to products and services that conserve natural resources, protect the environment, and are energy efficient. Recipients are required to procure only items designated in guidelines of the Environmental Protection Agency (EPA) at 40 C.F.R. part 247 that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition, where the purchase price of the item exceeds \$10,000 or the value of the quantity acquired during the preceding fiscal year exceeded \$10,000.

Flow Down

These requirements extend to all third party contractors and their contracts at every tier and sub-recipients and their subcontracts at every tier where the value of an EPA designated item exceeds \$10,000.

Model Clause/Language

There is no required language for preference for recycled products. Recipients can draw on the following language for inclusion in their federally funded procurements.

Recovered Materials

The Contractor agrees to provide a preference for those products and services that conserve natural resources, protect the environment, and are energy efficient by complying with and facilitating compliance with Section 6002 of the Resource Conservation and Recovery Act, as amended, 42 U.S.C. § 6962, and U.S. Environmental Protection Agency (U.S. EPA), "Comprehensive Procurement Guideline for Products Containing Recovered Materials," 40 C.F.R. part 247.

A.21 SAFE OPERATION OF MOTOR VEHICLES

23 U.S.C. part 402

Executive Order No. 13043 Executive Order No. 13513

U.S. DOT Order No. 3902.10

Applicability to Contracts

The Safe Operation of Motor Vehicles requirements apply to all federally funded third party contracts. In compliance with Federal Executive Order No. 13043, "Increasing Seat Belt Use in the United States," April 16, 1997, 23 U.S.C. Section 402 note, FTA encourages each third party contractor to adopt and promote on-the-job seat belt use policies and programs for its employees and other personnel that operate company owned, rented, or personally operated vehicles, and to include this provision in each third party subcontract involving the project. Additionally, recipients are required by FTA to include a Distracted Driving clause that addresses distracted driving, including text messaging in each of its third party agreements supported with Federal assistance.

Flow Down Requirements

The Safe Operation of Motor Vehicles requirements flow down to all third party contractors at every tier.

Model Clause/Language

There is no required language for the Safe Operation of Motor Vehicles clause. Recipients can draw on the following language for inclusion in their federally funded procurements.

Safe Operation of Motor Vehicles

Seat Belt Use

The Contractor is encouraged to adopt and promote on-the-job seat belt use policies and programs for its employees and other personnel that operate company-owned vehicles, company-rented vehicles, or personally operated vehicles. The terms "company-owned" and "company-leased" refer to vehicles owned or leased either by the Contractor or AGENCY.

Distracted Driving

The Contractor agrees to adopt and enforce workplace safety policies to decrease crashes caused by distracted drivers, including policies to ban text messaging while using an electronic device supplied by an employer, and driving a vehicle the driver owns or rents, a vehicle Contractor owns, leases, or rents, or a privately-owned vehicle when on official business in connection with the work performed under this agreement.

A.22 SCHOOL BUS OPERATIONS

49 U.S.C. 5323(f)

49 C.F.R. part 605

Applicability to Contracts

The School Bus requirements apply to contracts for operating public transportation service.

Flow Down Requirements

The School Bus requirements flow down from FTA recipients and sub-recipients to first tier service contractors.

Model Clause/Language

The relevant statutes and regulations do not mandate any specific clause or language. Recipients can draw on the following language for inclusion in their federally funded procurements.

School Bus Operations

The contractor agrees to comply with 49 U.S.C. 5323(f), and 49 C.F.R. part 604, and not engage in school bus operations using federally funded equipment or facilities in competition with private operators of school buses, except as permitted under:

1. Federal transit laws, specifically 49 U.S.C. § 5323(f);
2. FTA regulations, "School Bus Operations," 49 C.F.R. part 605;
3. Any other Federal School Bus regulations; or
4. Federal guidance, except as FTA determines otherwise in writing. If Contractor violates this School Bus Agreement, FTA may:
 - a. Bar the Contractor from receiving Federal assistance for public transportation; or
 - b. Require the contractor to take such remedial measures as FTA considers appropriate.

When operating exclusive school bus service under an allowable exemption, the contractor may not use federally funded equipment, vehicles, or facilities.

The Contractor should include the substance of this clause in each subcontract or purchase under this contract that may operate public transportation services.

A.23 SEISMIC SAFETY

42 U.S.C. 7701 et seq.

49 C.F.R. part 41

Executive Order (E.O.) 12699

Applicability to Contracts

The Seismic Safety requirements apply only to contracts for the construction of new buildings or additions to existing buildings.

Flow Down

The Seismic Safety requirements flow down from FTA recipients and sub-recipients to first tier contractors to assure compliance with the applicable building standards for Seismic Safety, including the work performed by all subcontractors.

Model Clauses/Language

The regulations do not provide suggested language for third party contract clauses. Recipients can draw on the following language for inclusion in their federally funded procurements.

Seismic Safety

The contractor agrees that any new building or addition to an existing building will be designed and constructed in accordance with the standards for Seismic Safety required in Department of Transportation (DOT) Seismic Safety Regulations 49 C.F.R. part 41 and will certify to compliance to the extent required by the regulation. The contractor also agrees to ensure that all work performed under this contract, including work performed by a subcontractor, is in compliance with the standards required by the Seismic Safety regulations and the certification of compliance issued on the project.

A.24 SUBSTANCE ABUSE REQUIREMENTS

49 U.S.C. § 5331
49 C.F.R. part 655
49 C.F.R. part 40

Applicability to Contracts

Third party contractors who perform safety-sensitive functions must comply with FTA's substance abuse management program under 49 C.F.R. part 655, "Prevention of Alcohol Misuse and Prohibited Drug Use in Transit Operations." Under 49 C.F.R. § 655.4, Safety-sensitive function means any of the following duties, when performed by employees of recipients, sub-recipients, operators, or contractors:

1. Operating a revenue service vehicle, including when not in revenue service;
2. Operating a nonrevenue service vehicle, when required to be operated by a holder of a Commercial Driver's License;
3. Controlling dispatch or movement of a revenue service vehicle;
4. Maintaining (including repairs, overhaul and rebuilding) a revenue service vehicle or equipment used in revenue service. This section does not apply to the following: an employer who receives funding under 49 U.S.C. § 5307 or § 5309, is in an area less than 200,000 in population, and contracts out such services; or an employer who receives funding under 49 U.S.C. § 5311 and contracts out such services;
5. Carrying a firearm for security purposes.
6. Additionally, third party contractors providing testing services involving the performance of safety sensitive activities must also comply with 49 C.F.R. part 40, "Procedures for Transportation Workplace Drug and Alcohol Testing Programs."

Flow Down Requirements

The Substance Abuse requirements flow down to all third party contractors at every tier who perform a safety-sensitive function for the recipient or sub-recipient.

Model Clause/Language

FTA's drug and alcohol rules, 49 C.F.R. part 655, are unique among the regulations issued by FTA. First, they require recipients to ensure that any entity performing a safety-sensitive function on the recipient's behalf (usually sub-recipients and/or contractors) implement a complex drug and alcohol testing program that complies with part 655. Second, the rules condition the receipt of certain kinds of FTA funding on the recipient's compliance with the rules; thus, the recipient is not in compliance with the rules unless every entity that performs a safety-sensitive function on the recipient's behalf is in compliance with the rules. Third, the rules do not specify how a recipient ensures that its sub-recipients and/or contractors comply with them.

How a recipient does so depends on several factors, including whether the contractor is covered independently by the drug and alcohol rules of another Department of Transportation operating administration, the nature of the relationship that the recipient has with the contractor, and the financial resources available to the recipient to oversee the contractor's drug and alcohol testing

program. In short, there are a variety of ways a recipient can ensure that its sub-recipients and contractors comply with the rules.

FTA has developed three model contract provisions for recipients to use "as is" or to modify to fit their particular situations.

Explanation of Model Contract Clauses

Option 1

The recipient ensures the contractor's compliance with the rules by requiring the contractor to participate in a drug and alcohol program administered by the recipient. The advantages of doing this are obvious: the recipient maintains total control over its compliance with 49 C.F.R. part 655. The disadvantage is that the recipient, which may not directly employ any safety-sensitive employees, has to implement a complex testing program. Therefore, this may be a practical option for only those recipients that have a testing program for their employees, and can add the contractor's safety-sensitive employees to that program.

Option 2

The recipient relies on the contractor to implement a drug and alcohol testing program that complies with 49 C.F.R. part 655, but retains the ability to monitor the contractor's testing program; thus, the recipient has less control over its compliance with the drug and alcohol testing rules than it does under Option 1. The advantage of this approach is that it places the responsibility for complying with the rules on the entity that is actually performing the safety-sensitive function. Moreover, it reserves to the recipient the power to ensure that the contractor complies with the program. The disadvantage of Option 2 is that, without adequate monitoring of the contractor's program, the recipient may find itself out of compliance with the rules.

Option 3

The recipient specifies some or all of the specific features of a contractor's drug and alcohol compliance program. Thus, it requires the recipient to decide what it wants to do and how it wants to do it. The advantage of this option is that the recipient has more control over the contractor's drug and alcohol testing program, yet it is not actually administering the testing program. The disadvantage is that the recipient has to specify and understand clearly what it wants to do and why.

SUBSTANCE ABUSE TESTING

Option 1

The Contractor agrees to participate in AGENCY's drug and alcohol program established in compliance with 49 C.F.R. part 655.

SUBSTANCE ABUSE TESTING

Option 2

The Contractor agrees to establish and implement a drug and alcohol testing program that complies with 49 C.F.R. parts 655, produce any documentation necessary to establish its compliance with part 655, and permit any authorized representative of the United States Department of Transportation or its operating administrations, the State Oversight Agency of [name of State], or AGENCY, to inspect the facilities and records associated with the implementation of the drug and alcohol testing program as required under 49 C.F.R. part 655 and review the testing process. The Contractor agrees further to certify annually its compliance with parts 655 before [insert date] and to submit the Management Information System (MIS) reports before [insert date before March 15] to [insert title and address of person responsible for receiving information]. To certify compliance, the Contractor shall use the "Substance Abuse Certifications" in the "Annual List of Certifications and Assurances for Federal Transit Administration Grants and Cooperative Agreements," which is published annually in the Federal Register.

SUBSTANCE ABUSE TESTING

Option 3

The Contractor agrees to establish and implement a drug and alcohol testing program that complies with 49 C.F.R. part 655, produce any documentation necessary to establish its compliance with part 655, and permit any authorized representative of the United States Department of Transportation or its operating administrations, the State Oversight Agency of [name of State], or AGENCY, to inspect the facilities and records associated with the implementation of the drug and alcohol testing program as required under 49 C.F.R. part 655 and review the testing process. The Contractor agrees further to certify annually its compliance with parts 655 before [insert date] and to submit the Management Information System (MIS) reports before [insert date before March 15] to [insert title and address of person responsible for receiving information]. To certify compliance the Contractor shall use the "Substance Abuse Certifications" in the "Annual List of Certifications and Assurances for Federal Transit Administration Grants and Cooperative Agreements," which is published annually in the Federal Register. The Contractor agrees further to [Select a, b, or c] (a) submit before [insert date or upon request] a copy of the Policy Statement developed to implement its drug and alcohol testing program; OR (b) adopt [insert title of the Policy Statement the recipient wishes the contractor to use] as its policy statement as required under 49 C.F.R. part 655; OR (c) submit for review and approval before [insert date or upon request] a copy of its Policy Statement developed to implement its drug and alcohol testing program. In addition, the Contractor agrees to: [to be determined by the recipient, but may address areas such as: the selection of the certified laboratory, substance abuse professional, or Medical Review Officer, or the use of a consortium].

A.25 TERMINATION

2 C.F.R. § 200.339

2 C.F.R. part 200, Appendix II (B)

Applicability to Contracts

All contracts in excess of \$10,000 must address termination for cause and for convenience, including the manner by which it will be effected and the basis for settlement.

Flow Down

For all contracts in excess of \$10,000, the Termination clause extends to all third party contractors and their contracts at every tier and sub-recipients and their subcontracts at every tier.

Model Clause/Language

There is no required language for the Terminations clause. Recipients can draw on the following language for inclusion in their federally funded procurements.

Termination for Convenience (General Provision)

The AGENCY may terminate this contract, in whole or in part, at any time by written notice to the Contractor when it is in the AGENCY's best interest. The Contractor shall be paid its costs, including contract close-out costs, and profit on work performed up to the time of termination. The Contractor shall promptly submit its termination claim to AGENCY to be paid the Contractor. If the Contractor has any property in its possession belonging to AGENCY, the Contractor will account for the same, and dispose of it in the manner AGENCY directs.

Termination for Default [Breach or Cause] (General Provision)

If the Contractor does not deliver supplies in accordance with the contract delivery schedule, or if the contract is for services, the Contractor fails to perform in the manner called for in the contract, or if the Contractor fails to comply with any other provisions of the contract, the AGENCY may terminate this contract for default. Termination shall be effected by serving a Notice of Termination on the Contractor setting forth the manner in which the Contractor is in default. The Contractor will be paid only the contract price for supplies delivered and accepted, or services performed in accordance with the manner of performance set forth in the contract.

If it is later determined by the AGENCY that the Contractor had an excusable reason for not performing, such as a strike, fire, or flood, events which are not the fault of or are beyond the control of the Contractor, the AGENCY, after setting up a new delivery of performance schedule, may allow the Contractor to continue work, or treat the termination as a Termination for Convenience.

Opportunity to Cure (General Provision)

The AGENCY, in its sole discretion may, in the case of a termination for breach or default, allow the Contractor [an appropriately short period of time] in which to cure the defect. In such case, the Notice of Termination will state the time period in which cure is permitted and other appropriate conditions

If Contractor fails to remedy to AGENCY's satisfaction the breach or default of any of the terms, covenants, or conditions of this Contract within [10 days] after receipt by Contractor of written notice from AGENCY setting forth the nature of said breach or default, AGENCY shall have the right to terminate the contract without any further obligation to Contractor. Any such termination for default shall not in any way operate to preclude AGENCY from also pursuing all available remedies against Contractor and its sureties for said breach or default.

Waiver of Remedies for any Breach

In the event that AGENCY elects to waive its remedies for any breach by Contractor of any covenant, term or condition of this contract, such waiver by AGENCY shall not limit AGENCY's remedies for any succeeding breach of that or of any other covenant, term, or condition of this contract.

Termination for Convenience (Professional or Transit Service Contracts)

The AGENCY, by written notice, may terminate this contract, in whole or in part, when it is in the AGENCY's interest. If this contract is terminated, the AGENCY shall be liable only for payment under the payment provisions of this contract for services rendered before the effective date of termination.

Termination for Default (Supplies and Service)

If the Contractor fails to deliver supplies or to perform the services within the time specified in this contract or any extension, or if the Contractor fails to comply with any other provisions of this contract, the AGENCY may terminate this contract for default. The AGENCY shall terminate by delivering to the Contractor a Notice of Termination specifying the nature of the default. The Contractor will only be paid the contract price for supplies delivered and accepted, or services performed in accordance with the manner or performance set forth in this contract.

If, after termination for failure to fulfill contract obligations, it is determined that the Contractor was not in default, the rights and obligations of the parties shall be the same as if the termination had been issued for the convenience of the AGENCY.

Termination for Default (Transportation Services)

If the Contractor fails to pick up the commodities or to perform the services, including delivery services, within the time specified in this contract or any extension, or if the Contractor fails to comply with any other provisions of this contract, the AGENCY may terminate this contract for default. The AGENCY shall terminate by delivering to the Contractor a Notice of Termination specifying the nature of default. The Contractor will only be paid the contract price for services performed in accordance with the manner of performance set forth in this contract.

If this contract is terminated while the Contractor has possession of AGENCY goods, the Contractor shall, upon direction of the AGENCY, protect and preserve the goods until surrendered to the AGENCY or its agent. The Contractor and AGENCY shall agree on payment for the preservation and protection of goods. Failure to agree on an amount will be resolved under the Dispute clause.

If, after termination for failure to fulfill contract obligations, it is determined that the Contractor was not in default, the rights and obligations of the parties shall be the same as if the termination had been issued for the convenience of the AGENCY.

Termination for Default (Construction)

If the Contractor refuses or fails to prosecute the work or any separable part, with the diligence that will ensure its completion within the time specified in this contract or any extension or fails to complete the work within this time, or if the Contractor fails to comply with any other provision of this contract, AGENCY may terminate this contract for default. The AGENCY shall terminate by delivering to the Contractor a Notice of Termination specifying the nature of the default. In this event, the AGENCY may take over the work and complete it by contract or otherwise, and may take possession of and use any materials, appliances, and plant on the work site necessary for completing the work. The Contractor and its sureties shall be liable for any damage to the AGENCY resulting from the Contractor's refusal or failure to complete the work within specified time, whether or not the Contractor's right to proceed with the work is terminated. This liability includes any increased costs incurred by the AGENCY in completing the work.

The Contractor's right to proceed shall not be terminated nor shall the Contractor be charged with damages under this clause if:

1. The delay in completing the work arises from unforeseeable causes beyond the control and without the fault or negligence of the Contractor. Examples of such causes include: acts of God, acts of AGENCY, acts of another contractor in the performance of a contract with AGENCY, epidemics, quarantine restrictions, strikes, freight embargoes; and
2. The Contractor, within [10] days from the beginning of any delay, notifies AGENCY in writing of the causes of delay. If, in the judgment of AGENCY, the delay is excusable, the time for completing the work shall be extended. The judgment of AGENCY shall be final and conclusive for the parties, but subject to appeal under the Disputes clause(s) of this contract.

If, after termination of the Contractor's right to proceed, it is determined that the Contractor was not in default, or that the delay was excusable, the rights and obligations of the parties will be the same as if the termination had been issued for the convenience of AGENCY.

Termination for Convenience or Default (Architect and Engineering)

The AGENCY may terminate this contract in whole or in part, for the AGENCY's convenience or because of the failure of the Contractor to fulfill the contract obligations. The AGENCY shall terminate by delivering to the Contractor a Notice of Termination specifying the nature, extent, and effective date of the termination. Upon receipt of the notice, the Contractor shall (1) immediately discontinue all services affected (unless the notice directs otherwise), and (2) deliver to the AGENCY's Contracting Officer all data, drawings, specifications, reports, estimates, summaries, and other information and materials accumulated in performing this contract, whether completed or in process. AGENCY has a royalty-free, nonexclusive, and irrevocable license to reproduce, publish or otherwise use, all such data, drawings, specifications, reports, estimates, summaries, and other information and materials.

If the termination is for the convenience of the AGENCY, the AGENCY's Contracting Officer shall make an equitable adjustment in the contract price but shall allow no anticipated profit on unperformed services.

If the termination is for failure of the Contractor to fulfill the contract obligations, the AGENCY may complete the work by contract or otherwise and the Contractor shall be liable for any additional cost incurred by the AGENCY.

If, after termination for failure to fulfill contract obligations, it is determined that the Contractor was not in default, the rights and obligations of the parties shall be the same as if the termination had been issued for the convenience of AGENCY.

Termination for Convenience or Default (Cost-Type Contracts)

The AGENCY may terminate this contract, or any portion of it, by serving a Notice of Termination on the Contractor. The notice shall state whether the termination is for convenience of AGENCY or for the default of the Contractor. If the termination is for default, the notice shall state the manner in which the Contractor has failed to perform the requirements of the contract. The Contractor shall account for any property in its possession paid for from funds received from the AGENCY, or property supplied to the Contractor by the AGENCY. If the termination is for default, the AGENCY may fix the fee, if the contract provides for a fee, to be paid the Contractor in proportion to the value, if any, of work performed up to the time of termination. The Contractor shall promptly submit its termination claim to the AGENCY and the parties shall negotiate the termination settlement to be paid the Contractor.

If the termination is for the convenience of AGENCY, the Contractor shall be paid its contract close-out costs, and a fee, if the contract provided for payment of a fee, in proportion to the work performed up to the time of termination.

If, after serving a Notice of Termination for Default, the AGENCY determines that the Contractor has an excusable reason for not performing, the AGENCY, after setting up a new work schedule, may allow the Contractor to continue work, or treat the termination as a Termination for Convenience.

A.26 VIOLATION AND BREACH OF CONTRACT

2 C.F.R. § 200.326

2 C.F.R. part 200, Appendix II (A)

Applicability to Contracts

All contracts in excess of the Simplified Acquisition Threshold (currently set at \$150,000) shall contain administrative, contractual, or legal remedies in instances where contractors violate or breach contract terms, and provide for such sanctions and penalties as appropriate.

Flow Down

The Violations and Breach of Contracts clause flow down to all third party contractors and their contracts at every tier.

Model Clauses/Language

FTA does not prescribe the form or content of such provisions. The provisions developed will depend on the circumstances and the type of contract. Recipients should consult legal counsel in developing appropriate clauses. The following clauses are examples of provisions from various FTA third party contracts. Recipients can draw on these examples for inclusion in their federally funded procurements.

Rights and Remedies of the AGENCY

The AGENCY shall have the following rights in the event that the AGENCY deems the Contractor guilty of a breach of any term under the Contract.

1. The right to take over and complete the work or any part thereof as agency for and at the expense of the Contractor, either directly or through other contractors;
2. The right to cancel this Contract as to any or all of the work yet to be performed;
3. The right to specific performance, an injunction or any other appropriate equitable remedy; and
4. The right to money damages.

For purposes of this Contract, breach shall include [AGENCY to define].

Rights and Remedies of Contractor

Inasmuch as the Contractor can be adequately compensated by money damages for any breach of this Contract, which may be committed by the AGENCY, the Contractor expressly agrees that no default, act or omission of the AGENCY shall constitute a material breach of this Contract, entitling Contractor to cancel or rescind the Contract (unless the AGENCY directs Contractor to do so) or to suspend or abandon performance.

Remedies

Substantial failure of the Contractor to complete the Project in accordance with the terms of this Agreement will be a default of this Agreement. In the event of a default, the AGENCY will have all remedies in law and equity, including the right to specific performance, without further assistance, and the rights to termination or suspension as provided herein. The Contractor recognizes that in the event

of a breach of this Agreement by the Contractor before the AGENCY takes action contemplated herein, the AGENCY will provide the Contractor with sixty (60) days written notice that the AGENCY considers that such a breach has occurred and will provide the Contractor a reasonable period of time to respond and to take necessary corrective action.

Disputes

- **Example 1:** Disputes arising in the performance of this Contract that are not resolved by agreement of the parties shall be decided in writing by the authorized representative of AGENCY's [title of employee]. This decision shall be final and conclusive unless within [10] days from the date of receipt of its copy, the Contractor mails or otherwise furnishes a written appeal to the [title of employee]. In connection with any such appeal, the Contractor shall be afforded an opportunity to be heard and to offer evidence in support of its position. The decision of the [title of employee] shall be binding upon the Contractor and the Contractor shall abide by the decision.
- **Example 2:** The AGENCY and the Contractor intend to resolve all disputes under this Agreement to the best of their abilities in an informal manner. To accomplish this end, the parties will use an Alternative Dispute Resolution process to resolve disputes in a manner designed to avoid litigation. In general, the parties contemplate that the Alternative Dispute Resolution process will include, at a minimum, an attempt to resolve disputes through communications between their staffs, and, if resolution is not reached at that level, a procedure for review and action on such disputes by appropriate management level officials within the AGENCY and the Contractor's organization.

In the event that a resolution of the dispute is not mutually agreed upon, the parties can agree to mediate the dispute or proceed with litigation. Notwithstanding any provision of this section, or any other provision of this Contract, it is expressly agreed and understood that any court proceeding arising out of a dispute under the Contract shall be heard by a Court de novo and the court shall not be limited in such proceeding to the issue of whether the Authority acted in an arbitrary, capricious or grossly erroneous manner.

Pending final settlement of any dispute, the parties shall proceed diligently with the performance of the Contract, and in accordance with the AGENCY's direction or decisions made thereof.

Performance during Dispute

Unless otherwise directed by AGENCY, Contractor shall continue performance under this Contract while matters in dispute are being resolved.

Claims for Damages

Should either party to the Contract suffer injury or damage to person or property because of any act or omission of the party or of any of its employees, agents or others for whose acts it is legally liable, a claim for damages therefor shall be made in writing to such other party within a reasonable time after the first observance of such injury or damage.

Remedies

Unless this Contract provides otherwise, all claims, counterclaims, disputes and other matters in question between the AGENCY and the Contractor arising out of or relating to this agreement or its breach will be decided by arbitration if the parties mutually agree, or in a court of competent jurisdiction within the State in which the AGENCY is located.

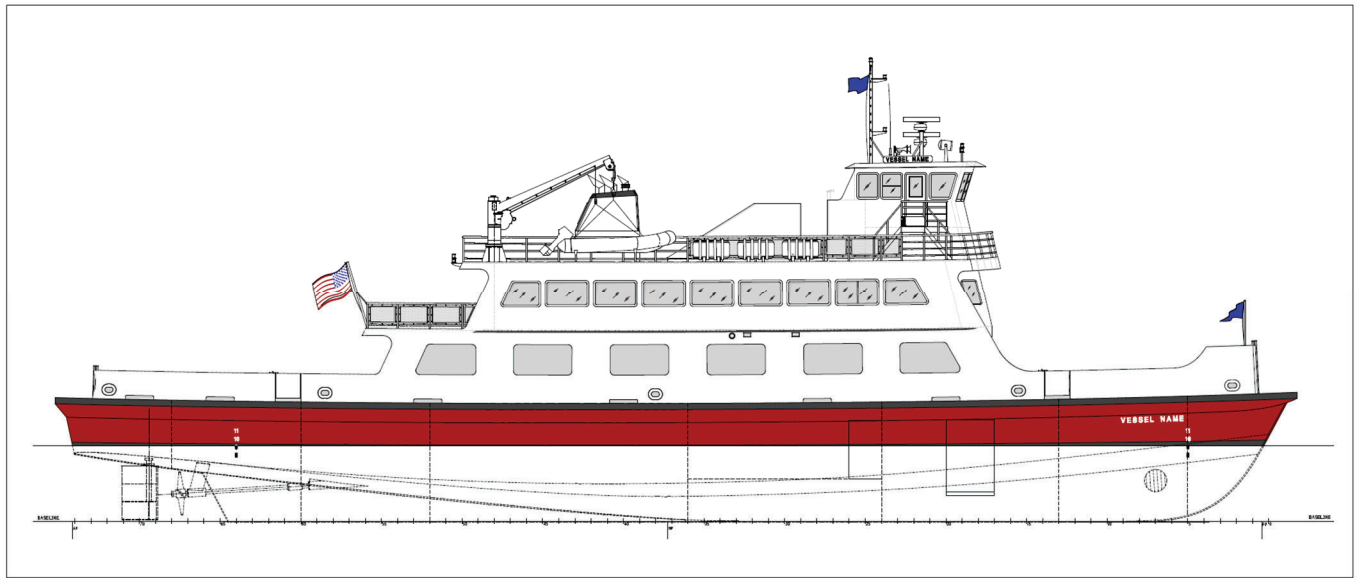
Rights and Remedies

The duties and obligations imposed by the Contract documents and the rights and remedies available thereunder shall be in addition to and not a limitation of any duties, obligations, rights and remedies otherwise imposed or available by law. No action or failure to act by the AGENCY or Contractor shall constitute a waiver of any right or duty afforded any of them under the Contract, nor shall any such action or failure to act constitute an approval of or acquiescence in any breach thereunder, except as may be specifically agreed in writing.

SECTION 7

MAINE STATE FERRY SERVICE TECHNICAL SPECIFICATIONS (D-358-T10)

MAINE DEPARTMENT OF TRANSPORTATION
TECHNICAL SPECIFICATIONS (D358A-T10)
154 FOOT LOA, TWIN SCREW PASSENGER/VEHICLE FERRY



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SECTION 000 GENERAL PROVISIONS

0.1 INTRODUCTION

0.1.1 GENERAL SCOPE

These Technical Specifications are Performance Based and provide the requirements of a Request for Proposal for the construction of a 154 foot LOA Passenger/Vehicle Ferry for the State of Maine Department of Transportation (MaineDOT); 16 State House Station; Augusta, ME 04333-0016. The Maine State Ferry Service (MSFS); P.O. Box 645; Rockland, ME 04841, operates the vessels as a division of MaineDOT.

The Maine State Ferry Service (hereinafter MSFS) operates year-round ferry service from mainland ports to the islands of Islesboro, Vinalhaven, North Haven, Swan's, Frenchboro, and Matinicus. Route distances range from three miles (Lincolnville to Islesboro) to 23 miles (Rockland to Matinicus). Fleet vessels have Stability Letters for and Certificates of Inspection for Partially Protected Waters - Lakes, Bays, and Sounds; Partially Protected Route.

This vessel will be constructed with funds provided by the Federal Transit Administration. The vessel construction and procurement of equipment for the vessel will be required to comply with FTA Buy America provisions described in 49 CFR Part 661 and 663, and the attached bid documents. FTA considers ferries to be "rolling stock" for applicability of funding requirements. CONTR shall be required to provide documentation during the construction of the vessel that the project complies with FTA regulations.

The vessel shall have a main propulsion plant consisting of two diesel engines that meet the applicable EPA Emission Standards for newly manufactured marine engines of their class at such time that the construction of the vessel commences (in conformance with EPA Emissions Standards "keel laying" requirements); and two hybrid reduction gears, 4.482:1 ratio reverse/reduction gears. Hybrid gears shall each be fitted with clutched electric PTO/PTI motors, 120 KW each. Generators, which also meet the applicable EPA Emission Standards, shall consist of two variable speed 230 KW maximum ship's service generator sets (SSDGs); and a radiator-cooled 95KW emergency diesel generator (EDG). The vessel shall have a transverse tunnel bowthruster, powered by 200 KW electric motor. The vessel shall conform to all regulations that apply to a 46 CFR Subchapter "K" Passenger Vessel. The vessel is designed to have a Gross Regulatory Tonnage of less than 100 GT.

MaineDOT has selected BAE Systems, Inc. as the power and propulsion solution provider for this project. BAE Systems shall provide quotes for the integrated power and propulsion system inclusive of Caterpillar propulsion engines, Caterpillar gensets, Reintjes gears, Spear energy storage system, propulsion controls, and BAE Systems' electric motors and power electronics. BAE Systems will provide integration support to the CONTR shipyard during the build process.

The Intended Service Life of this vessel shall be (25) Twenty-five years. The CONTR shall comply with the provisions of the FTA Buy America requirements where applicable. All products and equipment provided, whether referenced in these SPECIFICATIONS or not, shall be “supported” by the manufacturer for a minimum (10) ten year life span.

The CONTR shall make delivery of the vessel to the OWNER’s Rockland, ME facility. Upon delivery, all vessel systems shall be in operation and ready for service. The CONTR shall assist MaineDOT in attaining a valid USCG Certificate of Inspection for a 46 CFR Subchapter “K” passenger vessel for the service intended. The contractual requirements shall not be considered to be complete until this USCG Certificate is obtained.

The Specification term “Provide and Install” means that the piece of equipment or system shall be purchased and installed on the vessel in working condition. For example, floodlights or navigation lights that are to be “provided and installed” will be provided with foundations, wired, powered, switched, and tested complete. If cable is required to bring power to a light that is to be “provided and installed,” that cable shall be provided and installed as part and parcel of the light installation. If a kick-pipe is required, that kick-pipe shall be part of the installation.

0.2 ABBREVIATIONS

As used throughout these Specifications, the following partial list of terms and abbreviations shall have the meanings stated:

ABS	American Bureau of Shipping (classification society)
ADA	Americans with Disabilities Act
ADAAG	ADA Accessibility Guidelines
AIS	Automatic Identification System
AMR	Auxiliary Machinery Room
ANSI	American National Standards Institute
ASME	American Society of Mechanical Engineers
ASTM	American Society of Testing and Materials
BAE	BAE Systems, Inc.
CCTV	Closed Circuit Television
CFR	Code of Federal Regulations
CHT	Sewage Tank “Collection & Holding Tank”
COI	Certificate of Inspection
COLREGS	International Regulations for Preventing Collisions at Sea

CONTR	CONTRACTOR, YARD, or SHIPYARD
CONTRACT	Contract between MaineDOT and the CONTR
CuNi	Copper Nickel Alloy
CRES	Stainless Steel (SST)
DESIGN AGENT	Gilbert Associates Inc. (Naval Architect)
DGPS	Differential Global Positioning System
DFT	Dry Film Thickness
DNV	Det Norske Veritas (classification society)
DOJ	U.S. Dept. of Justice
DOT	U.S. Dept. of Transportation
DWG	Contract Drawing or Drawings
E-LIGHT	Light on Emergency Lighting Circuit
ECM	Engine Control Module
EDG	Emergency Diesel Generator
EDM	Electronic Display Module
EPA	Environmental Protection Agency
EPIRB	Emergency Position Indicating Radio Beacon
ER	Engine Room
ESS	Energy Storage System (Li-Ion Battery Banks)
FCC	Federal Communications Commission
FMEA	Failure Mode Effect Analysis
FO	Fuel Oil (in US gallons)
FRP	Fiber Reinforced Plastic
FTA	Federal Transit Administration
FW	Freshwater (in US gallons)
GPM	Gallons per Minute
GT	Gross Ton (Regulatory volume measurement unit)
HP	Horsepower

MAINE DEPARTMENT OF TRANSPORTATION FERRY SPECIFICATIONS

HVAC	Heating, Ventilation, and Air Conditioning
IAW	Image Analysis Workstation
IBA	Inflatable Buoyant Apparatus
IEEE	Institute of Electrical & Electronics Engineers
ITC	International Tonnage Convention
IWO	In Way Of
LCG	Longitudinal Center of Gravity
LT	Long Ton 2240 Lbs.
MDOT	Maine Department of Transportation, OWNER
ME	Main Engine
MSFS	Maine State Ferry Service, Division of MaineDOT
NEMA	National Electrical Manufacturer's Association
NFPA	National Fire Protection Association
NPS	National Pipe Schedule
NT	Net Ton (Regulatory volume measurement unit)
NVIC	Navigation and Vessel Inspection Circular
OCMI	Officer in Charge of Marine Inspection
OSHA	Occupational Safety and Health Administration
OWNER	Maine State Ferry Service
MARPOL	International Convention for Prevention of Pollution from Ships
MSO	Marine Safety Office, USCG
MSC	Marine Safety Center, USCG (Washington, DC)
MSFS	Maine State Ferry Service (part of MaineDOT)
NACE	National Association of Corrosion Engineers
NUC	Not Under Command
OF or OFE	Owner Furnished or Owner Furnished Equipment (MaineDOT furnished equipment)
OREP	Owner's Representative (On-site MaineDOT Representative)
OWNER	Maine Department of Transportation (MaineDOT)

MAINE DEPARTMENT OF TRANSPORTATION FERRY SPECIFICATIONS

P	Port (port side)
PFD	Personal Flotation Device
PLC	Programmable Logic Controllers
POC	Point of Contact
P&S	Port and Starboard (sides)
PTO/PTI	Power Take Off / Power Take In
QA	Quality Assurance
QAWT	Quick Acting Watertight (door)
QC	Quality Control
RFP	Request for Proposal
S	Starboard (side)
SEAL WELD	Structure which is double continuously welded
SHIPYARD	CONTR, CONTRACTOR, or YARD
SNAME	Society of Naval Architects & Marine Engineers
SSDG	Ship's Service Diesel Generator
SSPC	Society for Protective Coatings
SST	Stainless Steel (CRES)
SWBS	Ship Work Breakdown Structure (numbering system)
TWIC	Transportation Workers Identity Card
UL	Underwriters Laboratories
USCG	United States Coast Guard
USG	U.S. Gallons
USPHS	United States Public Health Service
USSG	United States Standard Gauge
UV	Ultra-violet
VCG	Vertical Center of Gravity
VESSEL	Ship Under Contract
WC	Water closet (toilet)

WTD	Watertight Door(s)
YARD	Contracting Shipyard (same as CONTR)

0.3 EXPANDED DEFINITIONS

0.3.1 OWNER FURNISHED

All equipment herein specified as MaineDOT furnished (OFE) is to be installed by the YARD in such condition that it is completely operational and serviceable under normal conditions of vessel operations. Such installations are to adhere to all applicable specifications of Regulatory Agencies and are to be to the satisfaction of the MaineDOT. This includes, but is not limited to, the following:

1. Time and materials for assembly
2. Time and materials for positioning and proper securing
3. Time and materials for connections of piping, wiring, etc.
4. Time and materials for operational testing

OFE equipment, when specified, shall be new equipment in current production. It shall be supplied to the CONTR with installation instructions, vendor references, and vendor POC. All equipment, which is not herein specified as MaineDOT furnished (OFE), shall be provided and installed by the CONTR.

0.3.2 GOOD SHIPBUILDING PRACTICE

The term "good shipbuilding practice" means construction practices which are in accordance with soundly engineered and detailed drawings approved by the MaineDOT and USCG. These drawings are to meet the requirements contained within this document of SPECIFICATIONS. Construction and testing shall conform to regulatory agency and industry accepted standards so as to ensure that each vessel will meet the general and particular design requirements.

0.3.3 QUALITY CONTROL

Inspections by MaineDOT are for the purpose of verifying the CONTR's Quality Control Program. These Inspections are not to be used as a substitute for in-process control of quality by the CONTR. The CONTR shall provide MaineDOT, as a part of the CONTR's Proposal, an outline with pertinent details of their current Quality Control Program and Procedures.

0.3.4 SOLE SOURCE/BID SUBSTITUTIONS

It is not necessary to quote machinery and equipment as "sole source" unless expressly stated in these SPECIFICATIONS as such or designated as "Proprietary" by MaineDOT.

The CONTR is permitted to submit bids containing substitutions (“or approved equals”) as long as such substitutions are clearly stated and detailed. Any substitution must be equal to the specified model, must be sufficiently documented to prove equality, and must meet the performance requirements of the vessel. If a substitution is proposed, the CONTR shall present for MaineDOT's review and approval written documentation of “equality”.

The CONTR is responsible for all additional costs associated with proposed substitutions including, but not limited to, required engineering expenses, and modifications to foundations, connection sizes, electrical interfaces, etc. which will render the substitution fully compatible with other installed equipment. In this regard, the SPECIFICATIONS herein are guidelines for minimum performance requirements. If those SPECIFICATIONS are not offered by a particular manufacturer, product, or model, the CONTR will be expected to include a separate list of all discrepancies. Substituted manufacturers, products, or models will not be considered unless they have been demonstrated to be equal to or exceeding the quality, durability and design and the minimum performance functions of the specified equipment.

Proposed substitutions shall not adversely affect any other component or system in the vessel; adversely affect the vessel's total performance; or relieve the CONTR from any obligation related to performance, warranty, etc. Any proposed substitution shall function as effectively as the equipment specified with no increase in required maintenance or need for premature replacement.

0.3.5 IN PROGRESS SUBSTITUTIONS

It is the intent of these SPECIFICATIONS that all equipment shall be provided as specified herein. Substitutions may be considered on a "case by case" basis upon timely written notice from the CONTR to MaineDOT; or, in the case of a MaineDOT generated substitution, upon timely written notice from MaineDOT to the CONTR. Such written notice shall include written documentation that the equipment and/or components proposed qualify as equal to those specified and that spare parts and service for them are readily available. MaineDOT or the CONTR is under no obligation to accept substitutions by either party of any materials or equipment unless this written process is adhered to and both have signed off in agreement. MaineDOT has the final decision concerning the acceptance of substitutions.

0.3.6 SUBSTITUTION CHECK LIST

The following list may be used as a guide for parameters to consider when bidding substitutions or proposing in progress substitutions:

- Regulatory Body approval
- Compliance with FTA Buy America requirements where applicable
- Dimensional characteristics
- Conformance to salient features
- Electrical characteristics
- Weight
- Capacities (GPM, pressure, volume, wattage, HP, etc.)

- Materials of Construction (high quality marine grade)
- Quality of fabrication, welding, and construction details
- Constructed to recognized standards (UL, IEEE, ANSI, ASTM, etc.)
- Functional characteristics
- Safety features
- Rate service duty life
- Manufacturer's ability to support
- Industry performance
- Maintenance life cycle

0.4 GENERAL SPECIFICATION REQUIREMENTS

0.4.1 GENERAL

These TECHNICAL SPECIFICATIONS provide details of an RFP for the Construction and Delivery of a 154 foot LOA, Subchapter "K" passenger/vehicle ferry. The vessel shall have (2) main propulsion diesel engines that meet applicable EPA Emission Standards for newly manufactured Marine Engines of their class (in conformance with EPA Emissions Standards "keel laying" requirements); (2) Hybrid reverse/reduction gears with 120 KW PTO/PTI motors; (2) variable speed engines with Integrated Starter-generator ends; and (1) 95KW emergency generator. All generator engines shall meet the EPA Emission Standards which apply to their HP and service. The vessel shall have a transverse tunnel bowthruster, powered by 200 KW electric motor. The vessel shall conform to the regulations that apply to a Subchapter "K" Passenger Vessel (46 CFR Subchapter "K" and 46 CFR Subchapter "S"). The vessel Gross Regulatory Tonnage shall not exceed 100 GT. The vessel is designed for and will be certified for "Lakes, Bays, and Sounds Cold Water Service and shall comply with the requirements of FTA BUY AMERICA where applicable. These SPECIFICATIONS and the accompanying CONTRACT DRAWINGS are intended to give the CONTR all necessary information for the completion of and submittal to MaineDOT of a Construction Proposal. The submitted Construction Proposal shall provide for the delivery to MaineDOT of a completely constructed, outfitted, seaworthy, and operational vessel that meet all applicable requirements of the applicable regulatory bodies.

0.4.2 GENERAL VESSEL DESCRIPTION

The vessel described by these SPECIFICATIONS will be a diesel propelled, twin screw, Passenger/Vehicle ferry designed and constructed to comply with the requirements of 46CFR Subchapter "K" Lakes, Bays, & Sounds for service on MaineDOT routes serving the State of Maine coastal islands.

Frame numbers are bow to stern, FR0 to FR74. Passenger boarding and vehicle loading will be on the Main Deck bow or stern loading over shore side ramps which are landed on the vessel's

deck. The vessel will have (3) Main Deck lanes for a capacity of approximately 23 cars or a mix of trucks and cars. The centerline vehicle lane is capable of accommodating trucks of legal over-the-road height limits. CONTR shall ensure that an overhead clearance of 15'-0" is maintained along the center vehicle lane, and that the inboard longitudinal bulkheads port and starboard of the center vehicle lane are clear of any obstructions or mounted equipment up to a height of 15'-0" above the Main Deck.

It is the responsibility of the CONTR to maintain open communication with MaineDOT as to the particular details of passenger and vehicle loading and off-loading requirements.

0.4.3 GENERAL CHARACTERISTICS

Length Overall	154 Feet (46.9 Meters)
Length between Perpendiculars (LBP)	147' - 6" (45 Meters)
Beam Molded	38 Feet (11.6 Meters)
Depth Molded	14' - 6" (4.4 Meters)
Displacement	642 LT at 9'-3" Waterline
Fuel Oil Capacity (100%)	6000 USG (one 6000 Gal. tank)
Potable Water Capacity (100%)	2390 USG (one 2390 Gal. tank)
Lube Oil Capacity (100%)	990 USG (two 495 Gal. tanks)
Dirty Oil Capacity (100%)	495 USG (one 495 Gal. tank)
Bilge Slops Capacity (100%)	495 USG (one 495 Gal. tank)
Sewage (CHT) Capacity (100%)	2970 USG (one 2970 Gal. tank)
Crew Space Lift Tank (100%)	65 USG (approximate)
Emergency Generator Fuel (100%)	120 USG (approximate)
Classification:	USCG Subchapter "K"
Passenger Capacity:	250
Crew Complement:	Per USCG C.O.I.
Service Speed	11.5 knots.

0.4.4 MANUFACTURERS' REPRESENTATIVES

Whether or not it is specifically stated in these SPECIFICATIONS, when it is required by the equipment manufacturer, by the specialized technical nature of the installation, for warranty purposes, or when work is outside the normal scope of the CONTR's work force, the CONTR is to provide the services of Manufacturers' Representatives, at the CONTR's cost for such assistance and expertise as is required for the proper installation, on-line testing, calibration, adjustments, etc. of CONTR Furnished and OFE equipment. At a minimum, Manufacturers' Representatives shall be employed for supervision of the installation and testing of main engines,

gears, generators, PTO/PTI motors, propulsion and auxiliary control systems, energy storage battery system, bowthruster, and electronic navigation equipment.

0.5 CORRESPONDENCE & COMMUNICATIONS

The CONTR shall provide MaineDOT with a copy of all communications relating to vessel construction which the CONTR has with Regulatory Bodies, in particular, the USCG Marine Safety Center (MSC) Washington, and the Local OCMI.

The CONTR shall invite MaineDOT to be present during all discussions relating to this vessel which they may have with the Representatives of Regulatory Bodies and, in particular, with the Local USCG OCMI or representatives of that office.

These documents and discussions may include, but are not limited to, the design, construction, installation of equipment and machinery, testing, sea trials, delivery, and operation of the vessel.

Requirements for planning, scheduling, material specifications, instruction manuals, etc. are detailed herein. The CONTR shall submit their proposed Correspondence and Communication Procedures to MaineDOT for approval within 30 days following Contract Award.

0.6 REGULATIONS, DOCUMENTATION, CERTIFICATION

0.6.1 COMPLIANCE

The vessel, as delivered, shall comply with the requirements of applicable Local, State and Federal Regulatory Agencies. These shall include, but may not be limited to:

- USCG: 46 CFR Subchapter “K” Passenger Vessel (Lakes, Bays & Sounds; Partially Protected Waters; Cold Water Service)
- Federal Transit Administration Buy America policies for Rolling Stock (49 CFR Part 661, 49 USC 5323)
- USPHS: Publication No.393, "Handbook on Sanitation of Vessel Construction"
- Federal Communications Commission (FCC)
- United States Access Board (USAB) ADA Accessibility Guidelines (ADAAG) and Revised Draft Passenger Vessel Accessibility Guidelines, July 2, 2013, USDOT 49 CFR Parts 39, Transportation for Individuals with Disabilities: Passenger Vessels
- For guidance: ABS Rules for Building and Classing Marine Vessels, and Rules for Steel Vessels Under 200 Feet in Length (vessel shall NOT be classed).
- I-EEE45 Recommended Practice for Electric Installations on Shipboard in Institute of Electrical & Electronics Engineers Standards #45 (IEEE)
- USCG NVIC 12-82 Recommendations on Control of Excessive Noise
- IES Recommended Practice for Marine Lighting

- Admeasurement Rules Regulatory (US Domestic). Vessel to receive both US Regulatory and ITC tonnage admeasurement.
- UL Applicable Standards for Marine Electrical Equipment & Lighting Fixtures
- NDAA Section 889 for onboard electronic security systems and telecommunication systems
- ASTM F1155 Standard Practice for Selection of Piping System Materials
- ASTM F1321 Standard Guide for Conducting a Stability Test
- Maine Department of Transportation Standard Specifications, Current Edition

If a conflict exists between State and Federal accessibility requirement/code the more stringent code must be followed. In addition, all design elements shall comply with the minimum Federal requirements/code even if a State requirement/code is less stringent.

0.6.2 DOCUMENTATION

All necessary certifications and/or documents covering the approval of, and indicating compliance with, applicable regulations shall be obtained by the CONTR and supplied to MaineDOT. MaineDOT shall provide the CONTR the vessel name, Port of Documentation, and Company name upon the CONTR's request so that the CONTR may complete and submit the Application for Initial Documentation (CG-1258) and the application for Official Number. It is MaineDOT's responsibility to provide the CONTR with a receipt for documents received and to retain these documents for presentation to Regulatory inspectors as and when required. When MaineDOT receives Bills of Sale and Builder's Certificates, MaineDOT shall be responsible for obtaining the final Certificates of Documentation.

0.6.3 CERTIFICATION

The vessel will be designed, constructed, and outfitted to meet the regulations of 46 CFR Subchapter "K" Passenger Vessels. Vessel shall be certified for "Lakes, Bays, and Sounds; Partially Protected Waters; Cold Water Service. MaineDOT is responsible to notify the CONTR of any special USCG requirements which may be imposed by the USCG Local OCMI in MaineDOT's operating venue. A notification of any such requirement shall be made prior to Contract Award.

The CONTR shall provide MaineDOT with the following Documentation (with exception of Officer's USCG licenses). These documents shall be posted in (2) aluminum, Plexi-glass (or equivalent) window cases with hinged door(s) and lock provided and installed for this purpose and approved by the OREP. Specific locations shall be to the approval of the OREP.

1. Stability Letter (pilothouse)
2. Certificate of Documentation (pilothouse)
3. Regulatory and ITC Tonnage Certificate (pilothouse)
4. FCC Radio License (pilothouse)
3. Compass Deviation Card (pilothouse)
4. MARPOL placard (pilothouse)

5. Certificate of Sanitary Construction (pilothouse)
6. Fire Safety Instructions (passenger space, pilothouse, EOS)
7. Certificate of Inspection (passenger space)
8. USCG Officer's Licenses (passenger space)
9. Emergency Evacuation Plan (passenger space)
10. Fire Safety Plan (passenger space)

The latest amendments to all laws, regulations, rules and conventions, which are in force at the time of Contract Award, are to be considered as part of the CONTRACT. Any amendment to such requirements or any new laws, regulations, rules or conventions that come into force after Contract Award, shall be treated as a change to the CONTRACT if not otherwise covered by these Specifications.

0.6.4 SUBSEQUENT REGULATORY CHANGES

IF: CONTRACT changes are required by modifications or additions to the Laws or Regulations of the State of Maine, the United States, the Regulatory Agencies listed in 0.6.1, or any Governmental body or board thereafter organized or created;

AND: Such changes require an increase or decrease in the cost of the vessel;

THEN: It is agreed by the CONTR and MaineDOT to re-negotiate the CONTRACT PRICE and/or DELIVERY DATE in light of such changes.

0.7 PROPOSAL & CONTRACT DRAWINGS, PHOTOS

0.7.1 GENERAL

The OWNER's Design Agent, Gilbert Associates, Inc., Braintree, MA, will submit the Contract Drawings to USCG/MSD for review, comments, and approval. Subsequent re-submittals to address comments will be accomplished by Gilbert Associates. Upon receiving the drawings returned from USCG/MSD as approved, Gilbert Associates will forward the approved drawings to MaineDOT, the CONTR, and to the Local OCMI as may be directed by USCG MSD. Gilbert Associates will keep MaineDOT apprised of USCG comments and shall provide MaineDOT and the CONTR with copies of all USCG communications of "Approval", "Examined", and "Returned for Revision". USCG approvals prevail over MaineDOT approvals.

0.7.2 INTERFERENCES & ACCESSES

The elimination of all equipment interferences; and the location of machinery, pumps, piping, wiring, ductwork and misc. equipment; so that proper access for operation and maintenance can be readily achieved, is the CONTR's responsibility. CONTR shall check manufacturer's drawings prior to ordering equipment to ensure that final equipment selection does not cause unforeseen interferences. CONTR shall notify MaineDOT and Design Agent of any such

differences. It is essential that the CONTR is aware of these obligations. The CONTR is responsible to see that all installations are arranged and constructed using "good shipbuilding practice" and that they adhere to the requirements of the SPECIFICATIONS, CONTRACT, and the CFR. The CONTR and MaineDOT are mutually responsible for the maintenance of ongoing communications, inspections, and approvals during construction.

0.7.3 ENGINEERING

The CONTR is responsible to provide competent and professional construction engineering to construct the vessel. Construction details that are not shown on the Contract Plans and that may be required for fabrication and/or construction guidance (commonly referred to as "working drawings" or "yard sketches") shall be developed by the CONTR and shall be approved by MaineDOT, Gilbert Associates, and, if required, by the USCG/MS.

The CONTR shall provide sufficient shop drawings for review to MaineDOT prior to the construction of the specific area in question.

Within 30 days of Contract award, the CONTR shall designate an individual as the CONTR's Representative for this CONTRACT and shall notify MaineDOT of the individual's contact information. This individual shall serve as the contact person (POC) between MaineDOT and the CONTR in matters of engineering and design until another individual is so designated.

Notwithstanding any requirements of these SPECIFICATIONS, it shall be the CONTR's sole responsibility to determine and develop working drawings, which may be necessary to complete the construction and delivery of the vessel. Working drawings shall be made available for timely inspection, comments, and approval by MaineDOT.

When a CONTR is authorized to install a different (or equal) piece of equipment other than specified under the terms and conditions of Section 0.3.4 or 0.3.5, the CONTR shall be responsible to revise any and all drawings associated with the installation of this equipment. All revised or original design and engineering drawings submitted to MaineDOT by the CONTR for review shall be in both PDF and AutoCAD format. The AutoCAD version (release) used shall be mutually agreed upon by MaineDOT and CONTR.

The CONTR shall provide an independent Noise & Vibration Surveyor to review the design and to attend Sea Trials (see Section 982.4.11); Noise Control Engineering, Billerica, MA, or approved equal.

0.7.6 INSTRUCTION SHEETS & MANUALS

The CONTR shall provide MaineDOT with (3) full sets of vendor instruction manuals, maintenance manuals, parts lists, and cut sheets for all equipment and machinery provided. A Manual Index shall be provided. Loose cut sheets and manuals of approximately (25) sheets or less shall be combined into 3-ring binders by category and indexed. Categories are groupings such as "Navigation Electronics", "Pumps", "Electrical Components", etc.

0.7.7 PHOTOGRAPHS

The CONTR shall provide MaineDOT with a photographic record of the vessel construction process. General photos of progress shall be taken bi-weekly. Photos of special events shall be taken at the time of the event. All photos shall be indexed and placed on a CD or flash drive and provided to the MaineDOT OREP for inclusion in the vessel construction records.

0.7.8 DOCKING PLAN

The CONTR shall generate a Docking Plan in AutoCad format and submit in PDF to the OREP and Design Agent for review and approval. The approved plan shall be, in turn, provided to the OREP and Design Agent as “As-Built” in AutoCAD, PDF, and paper copy.

The Docking Plan shall include, but is not limited to, blocking, rudders, shafts, propellers, grid coolers, transducer locations, bow thruster tunnel, anode locations, sea chests, and tank boundaries.

0.7.9 PURCHASE ORDERS

The CONTR shall provide copies of purchase orders for equipment and machinery to the OREP. This file will give the OWNER future reference for ordering replacements, parts, etc. during the life of the vessel.

0.8 WEIGHT AND CENTER OF GRAVITY

0.8.1 WEIGHT ESTIMATE

The CONTR shall be responsible for maintaining the weight, VCG, and LCG characteristics described in the Proposed Design Initial Weight Estimate (adjusted for authorized departures). Departures from the Contract vessel modifications which affect the weight, VCG, and LCG shall not be undertaken until the CONTR has submitted to MaineDOT an estimate of the effect that such departures will have on the Weight Estimate. MaineDOT is responsible to provide the CONTR written approval for such departures.

The CONTR shall be responsible to track the vessel’s weight by updating the Weight Estimate monthly throughout the construction process. Each updated Weight Estimate shall be provided to MaineDOT for review.

0.9 STABILITY AND SUBDIVISION

0.9.1 SUBDIVISION

The construction of the vessel shall be designed to meet the subdivision, intact stability, and damage stability requirements of 46 CFR Subchapter “K” and Subchapter “S”. The CONTR shall obtain and post the Stability Letter (Reference Section 0.6.3).

0.9.2 ACCESS AND LOGISTICAL REQUIRMENTS – STABILITY AND SUBDIVISION TESTS

The CONTR shall prepare and make the vessel available for the surveys called for in Section 0.14. The CONTR shall provide adequate ventilation and access to all spaces and shall provide a “Competent Person” with equipment to ascertain the gas free condition of spaces and adequacy of oxygen levels. The CONTR shall provide adequate temporary lighting and necessary incidental labor as required.

0.10 ADMEASUREMENT TONNAGE

0.10.1 GENERAL

The CONTR shall be responsible to have the vessel admeasured for Domestic Regulatory and ITC tonnages. The CONTR shall arrange for a major classification society tonnage surveyor to perform this work and shall assist the tonnage surveyor to Survey the vessel. All fees associated with the issuance of new tonnage documents will be the responsibility of the CONTR.

0.11 ACCESS & MAINTENANCE REQUIREMENTS

0.11.1 GENERAL

The arrangement of all machinery and equipment shall be designed, so far as possible, to permit ready access to all parts for operation, inspection, maintenance and repair without removal or disturbance of other structure or equipment. Ladders, doors, manholes, scuttles, bolted plates, etc. shall be provided as required for access.

In no case may grating/floor plate support, hangers, wireway supports or other miscellaneous structure be attached by welding to any equipment or machinery unless specifically approved by the respective manufacturer and by the MaineDOT OREP. Equipment such as switchboards, transformers, pumps, etc., shall not be welded to deck structure unless specifically approved as described above.

0.11.2 PIPES, VALVES, ETC.

Restriction of access openings by pipes, valves, wires, etc. is unacceptable. Pipes, ventilation ducts, controls, valves, etc., shall not be located in areas rendered inaccessible by the positioning of other fittings. All systems including piping, ductwork, hangers, etc., in way of areas designated as temporary access will be installed so that they may be readily removed without burning or cutting. Wireways shall not block temporary access areas. CONTR shall pay particular attention to the routing of pipes and wireways through tonnage deep floors, so that the lightening hole proximity requirements contained in USCG MTN 01-99 are not violated.

Where valves or other equipment that requires frequent attention are installed or relocated below floor plates, those floor plates or portions thereof shall be fitted with hinges so as to provide easy and safe access.

0.11.3 REMOVAL OF EQUIPMENT/MACHINERY

Main Engine and generator exhaust pipe runs, silencers, and lagging shall be installed with bolted flanges and reusable insulation blankets to facilitate efficient removal and replacement.

CONTR shall provide and install 24 padeye lift points in convenient locations throughout the Engine Room and above the access stairway for handling the removal of machinery and equipment. An additional 10 padeyes shall be provided and installed throughout the crew space below deck and above the access stairway for removal of batteries and other equipment.

0.11.4 DRAINAGE

In places where the lodgment of water or oil is unavoidable, adequate drainage shall be provided. Particular attention shall be paid to avoiding water lodgment along hull longitudinal frames, horizontal deck beams and stiffeners. Flanges shall be located to face downwards wherever possible and where not possible shall be fitted with adequate limber holes for drainage.

0.11.5 LIGHTENING HOLES, MANWAYS, LIMBER HOLES

Lightening holes and manways in swash bulkheads, tanks, voids, double bottoms, tonnage bulkheads, etc., shall be arranged to facilitate physical inspection and maintenance access. Hand grabs shall be provided above at least one set of lightening holes in each deep floor to provide safe transition from space to space, on each side of deep floor. So far as practicable and within the criteria of tonnage regulations, all areas of tanks and voids shall be accessible. Limber holes shall be located so that liquid can drain freely to bilge or tank suction locations. No limber holes shall be smaller than ¾" radius, unless that diameter is greater than 50% of the web depth. Limber holes shall be provided as shown in bar keel to provide drainage across centerline. It is the CONTR's responsibility to see that the basic requirements of reasonable access and liquid drainage are met.

0.12 ACCESS TO YARD/VESSEL/DOCUMENTS

0.12.1 ACCESS TO YARD/VESSEL

MaineDOT shall be afforded access to the CONTR's shipyard, the OREP's on-site office, and the vessel during YARD working hours, to include all shifts, thru and until the vessel's departure for the OWNER's venue.

MaineDOT reserves the right, at no additional cost to the CONTR, to witness ALL work at any point in the performance of the CONTRACT and/or to audit and verify that the performance of all work is in compliance with the documentation, policies, and procedures which are a part of this CONTRACT.

0.12.2 ACCESS TO DOCUMENTS

MaineDOT shall have ready access during normal working hours to all documentation concerning the vessel including, but not necessarily limited to: Drawings; Specifications; Technical Information; engineering calculations; Schedules; Test & Inspection Reports; Relevant Subcontract Documents; Regulatory Body Reports; Approvals; Recommendations; and the CONTR's Detailed Contract Estimate. The CONTR's Detailed Contract Estimate shall be viewed only in the presence of the CONTR's representative, shall not be copied, and shall not be removed from the CONTR's possession.

0.13 OFFICE

MaineDOT shall be provided with office space as described herein. This space shall have adequate electrical, telephone, and broadband internet outlets for office equipment including computers, and telephone equipment. Adequate lighting, heat, and air conditioning shall be provided. Telephone and internet connectivity charges shall be to the CONTR's account. The office spaces described in 0.14.1 and 0.14.2 should be located within easy walking distance of the vessel. An office trailer meeting these specifications may be sufficient.

0.13.1 MaineDOT OFFICE

An office with lockable door shall be provided and shall, at a minimum, include:

- (1) Office desk w/drawers
- (1) Office desk chair
- (1) Side chair
- (1) File cabinet (4 or 5 drawer legal size)
- (2) Telephones w/speaker phone capability and two local/long distance, outside lines
- (1) Table of sufficient size to lay out full size drawings
- (1) High Speed internet connection

Access to a nearby men's and women's (or unisex) restroom facility

0.13.2 CONFERENCE AREA

Upon prior notice and specific reservation request, the CONTR shall make available a Conference Area, which provides adequate space for meeting with vendors, yard personnel, and MaineDOT employees or designated subcontractors.

0.13.3 PARKING

Convenient parking space will be provided for MaineDOT employees, and Technical Reps. A minimum of two designated parking spots shall be marked as reserved for this construction project.

0.14 INSPECTIONS

0.14.1 GENERAL

All materials and workmanship shall be subject to inspection by MaineDOT, the USCG, and other regulatory bodies having jurisdiction. MaineDOT OREP or personnel will attend all inspections.

MaineDOT shall promptly approve all work and material conforming to the requirements of this Specification and shall promptly reject all work and materials which do not conform. Such rejected work or material shall be marked and isolated until satisfactorily corrected.

0.14.2 SCHEDULING & ATTENDANCE

The CONTR is responsible for scheduling and presenting all completed work for Acceptance Inspections and for giving written (email sufficient) advance notice (normally one week) to MaineDOT, USCG, and other required inspection agencies that such work is complete, has been passed by the CONTR's Quality Control (QC) department, and is ready for inspection. Inspections shall, when possible, be scheduled and accomplished during normal workdays on the CONTR's day shift and shall not constitute a delay to the CONTR's production schedule.

MaineDOT will make every effort to maintain communications with the parties involved and to report to the inspection site per agreed schedule. If MaineDOT is unable to keep the schedule, they shall notify the CONTR as soon as possible and reschedule for a mutually agreeable time. Failure of MaineDOT to attend an inspection does not constitute an acceptance of the work. Inspections by the Coast Guard or other agency do not eliminate these requirements for inspection and acceptance by MaineDOT.

0.14.3 PREPARATIONS

Work presented for inspection shall be complete in all respects, clean, free of debris, scrap, lines, welding wire ends, and all temporary gear. Reasonable accommodations shall have been made for access, lighting, and fresh air supply in advance of the inspection party.

0.14.4 COVERINGS

Prior to the application/installation of paint, deck covering, insulation, sheathing, joiner work, ceilings, etc., all structure and weld that is to be covered will be given final inspection and will be signed off by the MaineDOT OREP. Welds not passing visual inspection shall be repaired as required by these SPECIFICATIONS.

MaineDOT has the right and option to require removal of any or all coverings for inspection in areas that have not been previously inspected and passed. Work areas are NOT to be covered or concealed until inspected and approved by MaineDOT.

0.14.5 RE-INSPECTIONS

Any welding, burning, heat shrinking, etc. which is performed as rework, repair, or on change orders after an inspection has been completed, may require (at MaineDOT's option) the removal of any or all coverings for re-inspection of plate, welds, etc. An initial inspection in no way negates the requirement for re-inspection if an area is reworked in any manner.

0.14.6 COMPARTMENT COMPLETIONS

Tanks and voids, passenger spaces, work and machinery spaces shall be inspected and certified complete by the MaineDOT OREP and the CONTR's Representative. Machinery spaces shall include documented tests for all machinery and equipment. A compartment shall not be considered accepted until the checklist is complete, deficiencies are corrected, and the MaineDOT OREP and the CONTR have signed off on the space. At this time, so far as is possible, the compartment shall be secured and no further work shall be conducted within the space unless approved by the mutual consent of the MaineDOT OREP and the CONTR.

The intent of the foregoing paragraph is to guarantee that MaineDOT will receive, at delivery, a fully operational vessel which is immediately capable of entering regular on-line service.

0.14.7 TANKS

Prior to the final closing of any tank, the MaineDOT OREP shall have inspected and signed off that:

- a) Structure and welding is complete
- b) Air or hydro test has been passed and witnessed by the OCMI
- c) Filling and suction piping is complete and tested
- d) Vents, sounding tubes, striking plates, level indicators, and hi/low level alarms are properly installed and tested
- e) Coatings have been applied per the paint schedule
- f) The tank is clean and free of all debris

0.14.8 PIPING – FLUSH TESTING

All hydraulic fluid, lube oil, and fuel piping systems shall be thoroughly cleaned and flushed of all foreign matter with the appropriate system medium or an approved substitute. Hydraulic and lube oil piping shall be “pickled” with samples lab tested.

Waste oil piping and suction piping must be pressure tested for leaks at 5 to 10 PSI depending upon the system component pressure ratings.

Piping shall be tested, signed off, and approved by the CONTR and the MaineDOT OREP. The CONTR must determine the maximum permissible test pressure for each system component according to the applicable regulations. System flushing shall be conducted at the applicable system's maximum operating pressure and temperature, and at normal line velocity. Extreme care should be used to prevent over-pressurization of piping systems undergoing testing.

All systems shall be flushed for a period of one hour (or longer as required) to achieve and ensure system is thoroughly cleaned and flushed. Flushing shall be accomplished using a CONTR furnished pump to circulate appropriate medium and CONTR furnished filters to collect all contaminants.

Prior to flushing any system, proper care and attention must be given to systems that will require to be blocked off, removed or bypassed, due to in-line mechanisms, valves or machinery that may be capable of trapping debris or foreign matter.

Summary – Basic Test Procedure for Pressure Test Required Systems

- Fill system with appropriate medium
- Run system at maximum operating pressure and operating velocity for minimum of one hour
- Drain system and blow out with fresh air for 10 minutes
- Flush with clean oil
- Refill and secure system

0.14.9 FUEL LINE PRESSURE TESTING – MAIN AND GENERATOR ENGINES

- Engine fuel systems will be pressurized for a minimum of one hour and all piping, fittings, and hoses checked for leaks.

0.14.10 TESTING PROCEDURE

- Pressurize system to 150% of normal operating pressure (CONTR shall supply pump, fittings, and gauges).
- Keep system under specified pressure for a minimum of one hour.
- Check all piping, fittings, hoses, and piping in areas of pipe mounts for leaks.
- Acceptable leakage: None
- Secure system, bleed air, and return to operational status.

0.14.11 VENDOR SITE VISITS

At the request of MaineDOT, the CONTR shall make arrangements for MaineDOT and/or other MaineDOT designated personnel to visit vendor's or sub-contractor's sites to witness equipment tests, inspect facilities, etc. These visits shall be at MaineDOT's expense.

0.15 PROGRESS REVIEW MEETINGS

The CONTR, MaineDOT, and their OREP shall hold progress review meetings every one (1) to two (2) weeks. These meetings may be conference calls, or held at the CONTR's facility, or such other location as mutually approved by both parties. Meetings will commence no later than two (2) weeks after Contract Award. The primary purpose of Progress Review Meetings is to discuss, report, and resolve problems relative to progress and/or anticipated delays.

0.16 WARRANTIES

All warranties shall be as detailed in the Contract. The completed vessel shall be warranted for parts and labor for one year (12 months) beginning with the delivery date.

0.17 MATERIALS AND WORKMANSHIP

0.17.1 MATERIAL -- GENERAL

Material, unless otherwise specified herein, shall be of commercial quality; suitable for marine environment; and shall conform to ASTM, SAE, ABS or DNV, and USCG (CFR) requirements. This material shall be so designated on Bills of Material and on Construction Drawings. All materials shall be new and of first class quality. All materials shall be free from imperfections of manufacture and from defects, which adversely affect appearance or serviceability.

All steel used for construction of hull, superstructure, and deckhouses, including forgings, shall be of open hearth mild steel, of uniform quality, the chemical and physical properties of which shall conform to the requirements of the American Bureau of Shipping for Grade A steel or ASTM A-36 certified steel.

All steel used for construction of hull, superstructure, and deckhouses, including forgings, shall meet the FTA Buy America requirements described by 49 CFR Part 661.

0.17.2 WORKMANSHIP AND MATERIALS - GENERAL

All workmanship and materials shall be to the highest commercial standard, in compliance with MaineDOT, USCG, ABS, and AWS Standards.

0.17.3 STORAGE/PROTECTION

All material and equipment intended for the vessel in any form, whether CONTR or OFE, shall be adequately stored and protected from the elements and shall be given appropriate security by the CONTR. Due consideration shall be given to the nature of particular equipment or material with storage and security mutually agreed upon by MaineDOT and CONTR. Inside storage shall be provided for all equipment and material that will be located on the interior of the vessel and for equipment such as radar antennas, floodlights, spotlights, etc. that could be sensitive to damage.

The CONTR shall be responsible during construction and prior to vessel delivery for the protection of all items with finished surfaces, such as joiner panels, door frames, deck coverings, carpeting, joiner ceilings, countertops, furniture, etc.

Any soft material areas, such as (but not limited to) upholstery and carpeting, damaged by the CONTR or CONTR's Agents during course of this Contract, will be replaced at the CONTR's expense.

0.17.4 WELDING

Welding shall be of electric pulse arc Metal Inert Gas "MIG", Tungsten Inert Gas "TIG", or Shielded Metal Arc type process, as appropriate. Welding preparation and execution shall be in compliance with USCG or Class Society requirements and be performed by USCG "certified" welders.

All welding shall be overseen by a CWI or equivalent. WPS, PQR's and certification shall be submitted to the MaineDOT Fabrication Engineer for review. Non-destructive testing (NDT) shall be performed to ABS guidelines. CONTR shall submit the NDT plan to MaineDOT for approval. Additional testing may be required by MaineDOT based on the NDT results.

0.18 CONTRACTOR'S OBLIGATION

The CONTR is responsible to carefully review the Specifications and Contract Drawings. An item of work or equipment that is shown on the Drawings but omitted in the Specifications, or vice versa, shall be provided by the CONTR without a cost increase as though the item had been detailed or required in both documents. Precedence of Specifications or Contract Drawings shall be resolved as provided for in the CONTRACT.

The CONTR is to provide all plant infrastructure, labor, and transportation for shipyard employees, supplies as required, fuel for vehicles and machinery, water, power, lighting, air, steam, crane and forklift services, CONTR communications, line handling, wharfage, towing and shifting services. This obligation shall include equipment and power services to prevent cold weather freeze up, as well as adequate hot weather ventilation. This obligation shall also encompass all requirements of the vessel delivery as detailed in Section 983.

0.19 HULL AND STRUCTURE PROTECTION

0.19.1 WELDING

Rigid Control of welding and grounding shall be maintained for the protection of hull and hull appendages. Care shall be taken that the welding polarity and ground connections of welding machines used on this vessel, other vessels in the immediate vicinity, or on the dock to which the vessel is moored shall be such as not to damage any parts of the vessel. The CONTR shall

adequately protect, in all respects, the underwater part of the hulls prior to delivery. The CONTR shall ensure that all Control system and sensitive electronics have been electrically isolated as per the manufacturer's requirements prior to any welding taking place.

0.19.2 UNDERWATER HULL INSPECTION (AS APPLICABLE)

If at any time prior to the MaineDOT's acceptance of the vessel, there is reason to believe that the underwater portion of the vessel may have been damaged, that coatings may have failed, or that equipment or appendages require out of water maintenance due to the CONTR's or a Sub-contractor's negligence or due to an evolution conducted in good faith by the CONTR but resulting in damage, the CONTR shall contract for an independent certified diver's inspection of the underwater hull.

A copy of the diver's inspection report shall be provided to the MaineDOT OREP and USCG Inspector. In consideration of this report, the circumstances surrounding the damage, and the extent of damage which determine the damage to be a "warranted reason", the CONTR shall "haul out" (drydock) the vessel and adequately repair, clean and paint the damaged areas at the CONTR's expense. A protest by MaineDOT filed with the USCG Local OCMI and sustained by them, shall be deemed a "warranted reason" for requesting dry-docking.

If said Underwater Inspection is requested by MaineDOT, yet deemed unnecessary by CONTR, the cost of inspection will be borne by OWNER if the inspection report finds no discrepancies. If warranted discrepancies are found, the cost of inspection, as well as the cost of haul out (drydocking) and the cost of repairs, shall be borne by CONTR.

0.20 OPERATOR'S MANUAL

The CONTR shall provide MaineDOT with an Operator's Manual for the vessel based on USCG and MaineDOT guidelines and standards. The Manual shall include step by step start up and shut down procedures; operation procedures of all auxiliary equipment; system and equipment maintenance tasks; and a preventative maintenance schedule. (3) copies of the Operator's Manual shall be provided in 3-ring binders and (2) copies in electronic flash drive or CD format.

0.21 SPARES

The following list shall serve as a Reference to the SPECIFICATION requirements for spare equipment and components. The CONTR shall include all requirements for spares in their bid proposal.

1. Main Engines Section 233.1.3
2. Shaft Line and Propeller Components Section 242.1.1
3. Generator Sections 311.1.1, 311.2.1, 311.3.1
4. Electrical Section 324.1.4
5. Lamps (Lighting) Section 331.1.14
6. Steering System Section 561.0.1

7. Bow Thruster Section 568.2
8. Wheelchair Lift Section 585.0.2.4

SWBS SPECIFICATIONS

The following Technical Specifications are arranged by Ship Work Breakdown Structure (SWBS) numbers in Sections:

- 100 Vessel Structure
- 200 Mechanical
- 300 Electrical
- 400 Alarms, Internal Communications, Navigation
- 500 Insulation, HVAC, Piping, Fire Detection & Suppression
- 600 Markings, Access, Vessel Protection
- 900 Tests & Trials, Services

GENERAL NOTE

These Technical SPECIFICATIONS describe the criteria and parameters that the Maine Department of Transportation (MaineDOT) requires for the construction of a 154 foot, twin screw, passenger/vehicle ferry to service MaineDOT routes between the mainland and Maine coastal islands. MaineDOT will accept, review, and award a Contract for construction and delivery as detailed herein and in the accompanying Contract documents. MaineDOT's Contract Award will be predicated on a thorough examination of the Bidder's response to the IFB.

SWBS SECTION 100 VESSEL STRUCTURE

The following specifications and drawings referenced provide for the Construction of Hull, Superstructure and Deckhouse Structures required to be performed under this contract:

- 100.1 REFERENCE DRAWINGS
- 100.2 GENERAL SCOPE
- 110.1 HULL
- 123.1 TANKS
- 130.1 DECKS, FRAMING
- 150.1 SUPERSTRUCTURE
- 150.2 ENGINE FOUNDATIONS
- 167.1 WATERTIGHT HATCHES & SCUTTLES
- 168.1 WEATHERTIGHT DOORS
- 171.1 MASTS

100.1 REFERENCE DRAWINGS

D358A-A1	GENERAL ARRANGEMENTS
D358A-A2	INBOARD PROFILE
D358A-A3	OUTBOARD PROFILE
D358A-A12	BULWARK & MOORING ARRGTs & DETAILS
D358A-S1	STRUCTURAL PROFILE
D358A-S2	CONSTRUCTION SECTIONS BELOW MAIN DECK
D358A-S3	CONSTRUCTION SECTIONS ABOVE MAIN DECK
D358A-S4	TRANSVERSE AND LONGITUDINAL BULKHEADS BELOW MAIN DECK
D358A-S5	TRANSVERSE & LONGITUDINAL BHDS ABOVE MAIN DECK
D358A-S6	SHELL EXPANSION
D358A-S7	DECK SCANTLINGS
D358A-S12	RAILINGS, LADDERS AND STAIRWAY DETAILS & ARRANGEMENTS
D358A-S14	MIDSHIP SECTION PLAN

If any discrepancy, difference, or conflict is found to exist between the Plans and the Specifications, then to the extent of such discrepancy, difference, or conflict only, the matter shall be resolved as provided for in the CONTRACT. Any work called for by the Specifications and not shown on the Plans and any work shown on the Plans but not called for in the Specifications shall be performed by the Contractor as part of the contract work.

100.2 GENERAL SCOPE

The vessel is to be constructed in accordance with the Contract Drawings and Specifications submitted as an integral part of the Invitation for Bid. These documents have been developed by MaineDOT's Design Agent, Gilbert Associates, Inc. of Braintree, MA.

100.2.1 SUPERSTRUCTURE/ACCOMMODATIONS

The Superstructure shall comprise:

- 02-DECK: Pilothouse, EDG installation, crew head, open deck passenger seating, stair trunk, stack, IBAs, rescue boat, and rescue boat davit.
- 01-DECK: Passenger cabins P&S, passenger heads P&S
- MAIN DECK: Exhaust uptakes P&S, ER air supply P&S, deck lockers port and starboard, service trunks P/S, and hull access stairtrunks stbd.

The Main Deck, Port 01-Deck, and 02-Deck are serviced by a wheelchair lift located on the port side.

100.2.3 CLASSIFICATION

The vessel shall conform to all of the regulations that apply to a 46 CFR Subchapter "K" Passenger Vessel with a Gross Regulatory Tonnage not to exceed 100 GT. The vessel will not be classed; however, it shall be constructed in compliance with ABS Rules for the Construction of Marine Vessels and Rules for Steel Vessels Under 200 feet, as applicable and shall, in all respects, be constructed and outfitted according to good shipbuilding practices.

110.1 HULL

110.1.1 MATERIALS AND DESIGN

The Contract design is a welded steel, twin screw, hybrid diesel powered vessel. The vehicle deck extends from bow to stern. A steel bar rub rail guard surrounds the entire perimeter at the main deck edge.

123.1 TANKS

Tanks are supported by surrounding bulkhead / deck structure and not integral with the shell plating. Fuel Oil (Ref: Section 261.1), Potable Water, Lube Oil, Bilge Slops, Sewage, Dirty Oil, and Emergency Generator Fuel tanks provide capacities as listed in this Section and Section 0.4.3.

123.1.1 POTABLE WATER TANK

The design incorporates (1) 2400 gallon Potable Water tank located FR24-FR26. This tank shall be fitted with piping, valves, and fittings in accordance with Contract DWG D358A-P5. Tank shall have non-tight centerline swash bulkhead.

123.1.2 FUEL OIL TANK

The design incorporates one (1) 6000 gallon Fuel Oil tank at 100% capacity. It is located centerline FR52-FR56. This tank shall be fitted with piping, valves, and fittings in accordance with Contract DWG D358A-P4. Tank shall have non-tight centerline longitudinal swash bulkhead.

123.1.3 LUBE OIL TANKS

The design incorporates (2) 500 gallon Lube Oil Tanks located to port of the fuel oil tank FR52-FR54. These tanks shall be fitted with piping, valves, and fittings in accordance with the Contract DWG D358A-P11.

123.1.4 BILGE SLOPS TANK

The design incorporates (1) 500 gallon Bilge Slops Tank located to starboard of the fuel oil tank FR52-FR54. This tank shall be fitted with piping valves, and fittings in accordance with Contract DWG D358A-P11.

123.1.5 DIRTY OIL TANK

The design incorporates (1) 500 gallon Dirty Oil Tank located outboard of the starboard bilge slops tank FR52-FR54. This tank shall be fitted with piping, valves, and fittings in accordance with the Contract DWG D358A-P11.

123.1.6 SEWAGE TANK + LIFT TANK

The design incorporates (1) 3000 gallon stainless steel Sewage Tank located on centerline FR17-FR20. This tank shall be fitted with piping, valves, and fittings in accordance with the Contract DWG D358A-P6.

The design incorporates (1) 65 gallon (approx.) lift tank located below crew flat. Lift Tank shall be fitted with pump, piping, valves, and fittings in accordance with Contract DWG D358A-P6,

123.1.7 EMERGENCY GENERATOR FUEL OIL TANK

The design incorporates one (1) 120 gallon Emergency Generator Fuel Oil tank at 100% capacity. It is located in the void space below the Pilothouse. This tank shall be fitted with piping, valves, and fittings in accordance with Contract DWG D358A-P4.

130.1 HULL STRUCTURE

130.1.1 DESIGN and CONSTRUCTION

The CONTR shall use the Contract Drawings and Vendor Drawings, as appropriate, for guidance. Where required, the CONTR shall be responsible for developing construction working drawings.

All hull plating shall be of steel, the thicknesses and extents as shown on the Contract Drawings. Hull shall be framed with steel transverse bulkheads, transverse deep floors, and transverse floors with flanged plate bottom and side frames. Additionally, longitudinal intercostal or equivalent flat bar frames shall be fitted on bottom and side shell between transverses. The arrangement of intercostals and equivalent construction shall be as required by USCG MTN 01-99 "Tonnage Technical Policy", current edition. Main Deck shall be framed as shown on the Contract Drawings, with transverse web frames where shown, and with longitudinal angle frames intercostal to transverse deep floors and transverse bulkheads.

Arrangement of deep floors, lightening holes, and miscellaneous openings in deep floors shall be as shown on the Contract Plans and according to USCG MTN 01-99, current edition.

150.1 SUPERSTRUCTURE AND DECKHOUSE STRUCTURE

The CONTR shall use the Contract Drawings and Vendor Drawings, as appropriate, for guidance. Where required, the CONTR shall be responsible for developing construction working drawings.

The superstructure and deckhouse plating shall be steel, the thicknesses and extents as shown on the Contract Drawings. The superstructure and deckhouses shall generally be framed transversely, with steel flanged plates and angles, as shown on the Contract Drawings, supported by transverse and longitudinal bulkheads.

150.2 ENGINE AND AUXILIARY MACHINERY FOUNDATIONS

Engine foundations shall be as shown on the Contract DWG D358A-S9. Generator foundations shall be generally as shown on the Contract DWG D358A-S10, adjusted for final rail and resilient mount arrangement by manufacturer.

Engine foundations shall be formed of heavy plate, the thicknesses and extents as shown on the Contract Drawings. Heavy top plate rider bars shall be fitted as shown. Longitudinal engine foundations shall be fitted with transverse flanged plate brackets, as shown on the Contract Drawings.

Auxiliary equipment foundations shall generally consist of angles and plate, suitably secured to hull frames and with top bars of suitable size for attachment of the equipment. Where drip pans are needed, they may be formed of flanged plates with welded corners, and acting as part of the

foundation. All auxiliary foundations shall be braced to prevent vibration. Floor plates may be extended to form part of the foundations.

167.1 WATERTIGHT HATCHES & SCUTTLES

167.1.1 GENERAL

The CONTR shall provide and install flush mounted, steel, watertight hatches in the Main Deck accessing all hull spaces P&S. Access to voids not accessed by stairways shall be via hatches and vertical ladders installed with bolts.

167.1.2 HATCHES (SCUTTLES)

The CONTR shall provide and install flush-mounted watertight, hatches to provide access to Hold Deck void and machinery spaces as shown on the Contract DWGS. Hatches shall be by Freeman Marine, Model 2481, or approved equal (Ref. D358A-A7). See Section 623.1.1 for drip tray requirement below main deck hatches. Flush hatches shall be provided as shown for access to the void space below the Crew Break Room.

The CONTR shall provide (2) two portable fiberglass safety gratings to set into open hatches when personnel are working within a space with the hatch cover removed or hinged open.

168.1 WEATHER-TIGHT DOORS

The CONTR shall provide and install Main Deck and Upper Deck weather-tight doors. Doors shall be by Dean Steel, Pacific Coast Marine, Beclawat, Freeman Marine, or approved equal, and shall address accesses as shown on Dwg. D358A-A7-1&2. Also see Section 611.1.1.

171.1 MASTS

The CONTR shall provide and install appropriate masts and foundations to mount radar antennas, required navigational lights, miscellaneous antennas, flags, and day shapes in accordance with the Contract DWGS (Ref: D358A-A3 and A8).

- A mast shall be located on the Pilothouse top for navigation lights, flag hoists and day shapes. Mast shall be fitted with ladder rungs, as shown, and transverse yardarm for flag hoists and day shapes (Ref. D358A-A8)
- Two (2) masts shall support radar antennas on the Pilothouse top.
- A mast located on the Main Deck bulwark cap forward shall be fitted with hardware and halyards to accommodate a “Steering Pennant”.
- A mast located on the 01-deck, starboard FR56 shall be fitted with hardware and halyards to accommodate the ensign.

SWBS SECTION 200 MECHANICAL

The following specifications and drawings referenced provide for the Mechanical Installations required to be performed under this contract:

- 200.1 REFERENCE DRAWINGS
- 233.1 PROPULSION – DIESEL ENGINES
- 241.1 REVERSE/REDUCTION GEARS
- 242.1 COUPLINGS, SHAFTING, SEALS
- 252.1 PROPULSION CONTROLS SYSTEM
- 259.1 EXHAUST SYSTEMS
- 261.1 FUEL OIL SYSTEM
- 262.1 LUBE OIL SYSTEM
- 263.1 DIRTY OIL SYSTEM

200.1 REFERENCE DRAWINGS

D358A-M1	SHAFT ARRGTs AND DETAILS
D358A-M2	RUDDER & STEERING ARRGT & DETAILS
D358A-M4	ANCHOR ARRGTs & CHAIN LOCKER
D358A-M5	RESCUE BOAT & DAVIT DETAILS
D358A-M7	ENGINE ROOM VENTILATION PLAN
D358A-M9	HVAC ARRGTs & DETAILS
D358A-M10	KEEL COOLER ARRANGEMENTS & DETAILS
D358A-P1	M.E., SSDG & EDG EXHAUST ARRGT & DETAILS
D358A-P4	FUEL OIL PIPING SCHEMATIC
D358A-P11	LUBE OIL & WASTE OIL PIPING SCHEMATIC
D358A-P13	HVAC BOILER WATER PIPE SCHEMATIC
D358A-P14	KEEL COOLER PIPING SCHEMATIC

233.1 PROPULSION – DIESEL ENGINES

233.1.1 GENERAL

Main propulsion machinery shall be provided and installed in accordance with USCG requirements and ABS Classification Society standards.

The CONTR shall maintain communication throughout the construction process with vendors who are providing engines, gears, couplings, shafting, seals, bearings, etc., to make sure that all parties are in mutual agreement and that the provided components of the propulsion system are fully compatible. MaineDOT shall be copied on all electronic and written communication between the CONTR and vendors and between the CONTR and USCG concerning the installation of the Propulsion System.

The CONTR shall be responsible for aligning all drive line components installed to the Manufacturer's requirements. Alignments shall be performed in the presence of the main engine manufacturer's Tech Rep and shall be approved by this Tech Rep. Final alignments shall take place after floating the vessel and prior to engine start-up and Dock Trials. Alignment procedures shall be presented to MaineDOT and the Engine Manufacturer's Tech Rep prior to the completion of shaft line component installations.

233.1.2 MAIN PROPULSION DIESEL ENGINES

The (2) Main Propulsion Diesel Engines shall be Caterpillar C-18 ACERT series; 600 bhp at 1800 rpm; EPA Tier 3/IMO II compliant, A-rated for continuous service. The Main Engines shall be quoted and provided as part of the integrated power and propulsion system by BAE Systems, Inc. The CONTR shall install the Main Propulsion Engines and all associated equipment. The Main Engine package is being quoted to BAE Systems by Milton CAT Inc., Milford, MA for this project.

Each Main Propulsion engine shall be supplied with the following standard and optional equipment:

- SCAC Separate Circuit After-cooled
- Keel cooling for Jacket Water and Separate Aftercooler Circuits (See Section 520.1)
- Dry air filter element w/ service indicator
- Turbocharger, jacket water cooled
- Turbocharger inlet 6 in straight connection
- Programmable Low Idle
- Electronic Diagnostics, Fault Logging
- Engine speed, temperature, pressure monitoring
- Electronic fuel/air ratio control
- Engine Protection Mode
- 70 pin connector
- Throttle inputs
- ECM shutdowns for High jacketwater coolant temp, low oil pressure, overspeed

- SCAC pump, gear driven
- JW pump, gear driven
- SCAC and JW shunt tanks
- Water cooled exhaust manifold & turbocharger
- 6 in flanged exhaust outlet
- SAE No. 1 flywheel housing
- SAE No. 1 flywheel
- Front service simplex fuel system
- Gear driven fuel transfer pump
- Manual fuel priming pump
- Hybrid fuel line design
- Front service lube simplex system
- Deep sump oil pan
- Oil filler locations front & top
- Front service dipstick
- Oil pump, gear driven
- Resilient mount system, four-point
- PTO for alternator drive
- Front damper guard
- Front service engine
- Common electrical ground point
- Front service for lube, fuel filters
- 24 VDC electric starter motor right side
- 24 VDC alternator, 105 A, belt-driven
- Hydraulic pump drive
- Jacket water heater, 1.5 kw
- Engine Control Panel, remote MECP1
- Pilot House Panel Color Marine Display (one panel for both main engines)
- Engineer Station Panel Color Marine Display (one panel for both main engines)
- Fuel cooler
- USCG approved flexible fuel lines
- SOLAS spray shielding for fuel filter and fuel lines
- Lube oil drain lines
- Pressure cap and filler neck kit
- Closed crankcase ventilation
- Green Passport documentation
- IMO EIAPP certification
- Commercial paint finish, Cat yellow
- Torsional Vibration Analysis (TVA)
- Factory supplied fluids
- Parts & Service Manuals (3 sets)
- Factory test run witness for one or both main engines at MaineDOT's discretion (Witness expenses shall be to MaineDOT's account)

233.1.3 MAIN ENGINE SPARES

The (2) Main Propulsion Engines shall be provided with enough filters for two complete changes of all filters required for each engine.

241.1 REVERSE/ REDUCTION GEARS, PTO/PTI MOTORS

The Hybrid Reduction Gears, PTO/PTI motors, and associated equipment shall be quoted and provided as part of the integrated power and propulsion system by BAE Systems, Inc. The CONTR shall install Hybrid Reverse/Reduction Gears with clutched electric PTO/PTI motors and all associated equipment. Gears shall be Reintjes Model WAF-364, free-standing 4.481:1 vertical offset gears with hybrid input at aft end, modified by Reintjes to provide clearance for the PTO/PTI shafting (Reintjes Dwg 0-107-126384). Gears shall be provided through BAE Systems by Karl Senner, Inc. PTO/PTI motors shall be BAE Systems DDTM-100 dynamic drive traction motors, 120 KW each, liquid cooled.

Each gearbox shall be supplied with:

- Remote heat exchanger
- Gear-mounted Torsional Input Coupling model 1F50010IFAO
- Main oil pump with duplex filters and cooler
- 24 VDC Shift Control Valve
- Pressure and Temperature sensors.
- Rigid Mounting Brackets
- Propeller Shaft Output companion flange
- Oil sump drain hose, valve, and quick disconnect
- Ortech Clutch Assembly – aft PTO/PTI shaft
- Vulkan flexible coupling – aft PTO/PTI shaft
- Reintjes standard automation for attended engine room
- Parts & Service Manuals (3 sets)
- Factory endorsed commissioning, startup, and sea trials

(2) PTO/PTI motors shall be BAE Systems DDTM-100 dynamic drive traction motors, 120 KW each, liquid cooled. Motors shall be installed by CONTR according to BAE Systems Integrator Manual and according to BAE Systems recommendations.

CONTR to provide and install for traction motors, each side:

- Flexible couplings and clutch (see above)
- 3-point mounting system (CONTR to provide flanged mounting brackets)

- Barry Series 22000 isolator / resilient motor mounts (electrical & vibration isolation)
- Low voltage cables and connections for sensors: temperature, oil pressure
- Low voltage cables and connections to oil pump controller
- Low voltage cables and connections to high voltage interlock and speed sensor
- Grounding cable and connection to common ground system
- High Voltage cables and connections to 3-phase interface power
- Pipe and Piping connections to liquid-cooling circuit (shared with ISG) (D358A-P14)

242.1 COUPLINGS, SHAFTING, SEALS, PROPELLERS

The CONTR shall provide and install all required couplings, shafting, propellers, seals, bearings, and foundations, in accordance with the Contract DWGS to make complete driveline installation.

CONTR shall install Reintjes companion flange shaft couplings that are provided as part of the reduction gear package and in accordance with Reintjes 2-202-59574 design and installation instructions.

CONTR shall provide and install line shafts and tail shafts. Line shafts and tail shafts shall be 6" diameter stainless steel Aqualoy 22, or approved equal, and shall be of American raw materials, fitted with machined tapers and keyways as shown on the Contract DWGS.

CONTR shall provide and install stern and strut tube bearings and stuffing boxes as shown on the Contract DWGS. Provide and install Duramax stuffing boxes Model 1786 and Duramax Model 600 or approved equal cutless bearings at the forward end of the stern tube and a Duramax "Fault" or approved equal cutless bearing at the aft end of the stern tube. Provide and install strut bearings, Duramax "Fault" or approved equal cutless bearings to the propeller taper (Ref: D358A-M1).

CONTR shall provide and install Kahlenberg "muff" couplings or approved equal between line shafts and tail shafts (Kahlenberg DWG 2-5298).

CONTR shall provide and install propellers by Sound Propeller Services, Seattle, WA or approved equal: 4 bladed, 64" Diameter, Pitched per final recommendations, DAR 0.65, CF3 stainless, Style Sound B, one RH and one LH. The CONTR is to verify the propeller characteristics with the propeller vendor and shall provide the MaineDOT OREP and DESIGN AGENT with the vendor's written verification response. Propellers shall be arranged to be outboard turning, i.e., the starboard propeller will rotate clockwise when looking from aft of propeller, and port propeller will rotate counterclockwise when looking from aft of propeller.

242.1.1 SPARE SHAFT LINE COMPONENTS

- (1) Tail Shaft, 6" diameter, Aqualoy 22 or approved equal, US-sourced stainless steel
- (2) Propellers, Sound Propeller or approved equal, 4 bladed, 64" Diameter, pitched per final recommendation, DAR 0.65, CF3 stainless, Style Sound B, one RH and one LH
- (1) Kahlenberg or approved equal Muff coupling

252.1 PROPULSION CONTROL SYSTEM

The electronic propulsion control system shall be quoted and provided as part of the integrated power and propulsion system by BAE Systems, Inc. The CONTR shall install an electronic propulsion control system, with Twin Disc EC300 control heads in Pilot House. The electronic control system shall provide control of the main engine governors, the reverse/reduction gears, PTO/PTI motors, and Power Mode Selector. The system shall be provided with redundant power supplies and automatic power transfer. A back-up control system shall be incorporated. A failure alarm system shall be provided for the control and hydraulic system functions. The CONTR shall provide for a Tech Rep for commissioning, startup, and sea trials as appropriate.

Propulsion Control System shall comply with 46 CFR 121.620.

Main Engine control shall include ahead and reverse functions for each engine separately at the Pilothouse conning position. Control station transfer shall be IAW in accordance with 46 CFR. See Section 982.1.2.4 for PSTP and DVTP requirements.

259.1 EXHAUST SYSTEMS

The CONTR shall provide and install main propulsion engines, generators, emergency generator and heating boiler exhaust systems, in accordance with the Contract DWGS. The components of the system shall be as detailed on Dwg D358A-P1 and on the Exhaust System Bill of Materials DWG D358A-P1, or approved equal. Exhaust will discharge through the uptake located starboard "island" FR41, with emergency generator exhaust discharging through housetop port. The exhaust systems shall include manifolds, silencers, removable flex connectors, expansion joints, hangers, and associated hardware to comprise complete and operational exhaust systems. Risers and pipe shall be schedule 40 carbon steel. Hot piping shall be fitted with high-temperature, approved, fiberglass blanket insulation (Ref: D358A-P1).

261.1 FUEL OIL SYSTEM

261.1.1 SYSTEM

The CONTR will fabricate and install a fuel oil system which will include (1) 6000 gallon steel F.O. tank located centerline FR52 to FR56 and (1) 120 gallon emergency generator fuel tank located below pilothouse. Main tank piping will include 1-1/2" fill line; a fill station (FR43 inboard side of port "island") with cam locks; a fill station containment; 2" vent line; plugged valve drain fitting for sludge and water removal; and fuel oil suction lines. The Fuel oil transfer

pump will be a Viking model HL4195 or approved equal, rated 30 GPM with a 2 horsepower 1750 rpm motor (Ref: DWGs D358A-P4 and D358A-P12). Transfer pump shall be provided with 1 1/2" suction line, 1" discharge line to emergency generator fuel tank, and 1 1/2" overflow/return line from emergency generator fuel tank back to main fuel tank. Emergency generator fuel tank shall also be fitted with 1 1/2" vent line to housetop. Transfer pump shall be inter-connected with high level alarm system installed in emergency generator fuel tank.

The main fuel oil, and emergency generator suction lines shall be fitted with manual remote actuators. All piping, valves, fittings, and connections shall conform to USCG requirements.

CONTR shall provide and install fuel centrifuge system complete with foundation, and all piping and valves shown on DWG D358A-P4. Centrifuge shall be Alfa Laval MAB-103, 240VAC, 60 Hz, 3-phase model or approved equal. Centrifuge shall be fitted with remote shutdown from outside the engine room.

261.1.2 FILTERS

The main engines fuel oil supply shall be fitted with Racor, or approved equal, duplex primary filters and secondary particle filters. The ship service generators, furnace, and emergency generator fuel oil supply lines shall be fitted with Racor, or approved equal duplex filters.

261.1.3 FUEL SOUNDING

The main fuel oil tank shall be fitted with GEMS Suresite sight gauges or approved equal. Manual sounding tube with plug and striker plate shall also be fitted to tank. Emergency generator fuel tank shall be fitted with sight GEMS Suresite sight gauge.

261.1.4 SHUT DOWNS

Mechanical reach rods shall be installed on fuel shut off valves in compliance with USCG requirements.

261.1.5 VENTS

Fuel tank vent shall be run to the F.O. Loading station and be fitted with audible whistle alarms. Emergency generator fuel tank vent shall be run to return vent fuel line.

262.1 LUBE OIL SYSTEM

The CONTR shall fabricate and install a lube oil system with two 500 gallon clean lube oil tanks located outboard to Port of the fuel oil tank FR52-54. A Lube Oil Tank fill and vent station shall be provided and installed on the main deck inboard port side of the superstructure FR43 to FR47. The fill and vent station shall be equipped with an oil retention box containment. Fill pipe shall be fitted with a cam lock fitting and cap (Ref: DWG D358A-P11).

Each clean lube oil tank shall be fitted with a fill spigot and drip pan located to the approval of the MaineDOT OREP at a height and location convenient for filling 5 gallon pails.

263.1 WASTE OIL SYSTEM

The CONTR will fabricate and install a waste oil system with a 500 gallon waste oil tank located FR52-54 starboard, outboard of the starboard bilge slops tank. CONTR shall provide and install a dirty lube oil/ bilge slops pump. Pump shall be a Tuthill model CC9 series rated 9 GPM with a 1/2 HP 1750 RPM motor, or approved equal. A pump-off station and tank vent shall be provided and installed on the main deck inboard side of the superstructure FR43 to FR47. The suction pump-off station shall be equipped with an oil retention box containment. The suction pump-off shall be fitted with a cam lock fitting and cap (Ref: DWG D358A-P11).

Waste oil suction lines and valves shall be provided and installed for the (2) generator engine sumps and (2) main engine sumps, and flexible hose connection (Ref: DWG D358A-P11).

SWBS SECTION 300 ELECTRICAL

The following specifications and drawings referenced provide for the Electrical System Installation required to be performed under this contract:

- 300.1 REFERENCE DRAWINGS
- 300.2 GENERAL SCOPE
- 311.1 SHIPS SERVICE DIESEL GENERATORS (SSDG)
- 311.2 EMERGENCY DIESEL GENERATOR (EDG)
- 311.3 HYBRID SYSTEM COMPONENTS
- 313.1 BATTERIES & CHARGERS
- 321.1 POWER DISTRIBUTION
- 324.1 SWITCHBOARDS & POWER PANELS
- 331.1 LIGHTING FIXTURES & ILLUMINATION
- 332.0 ELECTRICAL SYSTEM TESTS

300.1 REFERENCE DRAWINGS

D358A-E1 ELECTRICAL ONE-LINE DIAGRAM

D358A-E2 ELECTRICAL LOAD ANALYSIS

300.2 GENERAL SCOPE

The CONTR shall provide and install complete AC and DC electrical systems in accordance with the Contract DWGS. The electrical systems shall conform to the requirements of USCG 46 CFR, ABS standards, and IEEE requirements. Bulkhead and deck penetrations shall be made with watertight strain relief fittings and multi-cable RISE brand transits or approved equal. Wireways, wire hangers, and tie wraps will be installed so as to prevent sags or chafes.

Electrical equipment and components shall be located in a manner that most readily facilitates operation and allows for ease of maintenance. Doors and panels must be capable of being fully opened. In accordance with Subchapter “J” 46 CFR 111, sufficient clear space in shall be provided in front and back of the main switchboard and power panels to allow for removal of components within. Primary access to the main and emergency switchboards shall be from the front.

For Electronic Propulsion Control Specifications see Section 252.1.

311.1 SHIP SERVICE DIESEL GENERATORS (SSDG)

The Ship Service Diesel Generators shall be quoted and provided as part of the integrated power and propulsion system by BAE Systems, Inc. The CONTR shall provide and install two (2)

Caterpillar/BAE C9.3 variable speed ship's service diesel generators in accordance with the Contract DWGS. The gensets shall comply with applicable EPA emission standards for newly manufactured marine engines of their class and shall be installed complete with all systems. They shall each be Caterpillar marine engine model C9.3 coupled with BAE Systems ISG 300 integrated starter-generator (three phase, 380 VAC, 60 Hz, 230 KW).

Each Generator Set will be supplied with:

- Keel Cooling for Engine and ISG circuits (See Section 520.1).
- Single turbocharger, jacket water cooled
- Turbocharger inlet, 5 in. straight connection
- Programmable low idle
- Electronic diagnostics and fault logging
- Engine monitoring – speed, temperature, pressure
- 70 pin connector
- Jacket water pump, belt driven
- Dry exhaust, 3.25" flanged turbocharger outlet
- Common rail fuel pump, gear driven
- Coolant block heater
- Lube oil filter
- Engine gauge and control panel
- Start/Stop at main switchboard & Pilothouse w/remote alarm panel located in pilothouse console.
- USCG Approved shutdowns and safety features including overspeed, low oil pressure, and high temperature shutdowns
- Steel base w/resilient sound mounts and drip tray
- Factory certified Tech Rep for commissioning, startup, and sea trials

Contractor shall install for the BAE Systems ISG-300 starter-generators:

- Low voltage connections and cables for temperature sensors and interlocks
- High voltage 3-phase connections for output power
- Pipe and Piping, connections to liquid-cooling circuit (shared with motors) (D358A-P14)

311.1.1 SPARE GENERATOR PARTS

- Belt, idler pulley
- Thermostat, thermostat gasket, thermostat seal
- Fuel pump w/sealing washer
- Water Pump, water pump gasket, water pump seal
- Air, Oil, and Fuel Filters
- Voltage Regulator

- Filter Head Assembly w/ pump
- Fuel/Water Separator

Spares shall be crated for storage and shipped directly to a MaineDOT storage facility as designated by MaineDOT.

The Ship's Service generator engines are being quoted to BAE Systems by Milton Cat, Milford, MA.

311.2 EMERGENCY DIESEL GENERATOR (EDG)

The Emergency Diesel Generator shall be quoted and provided as part of the integrated power and propulsion system by BAE Systems, Inc. The CONTR shall install the EDG to be located in the Emergency Diesel Generator Room on the 02-Deck aft of the pilothouse. The EDG shall be an air-cooled Caterpillar Model C4.4 rated at 95 kW, 60 Hz, three-phase, 240V. Installation shall be complete with Fuel Oil System, Alarm & Monitoring, Exhaust System, block heater, and all ancillary equipment as called out on the Contract DWGS. The CONTR shall plan to provide a factory certified Tech Rep for commissioning, startup, and sea trials.

311.2.1 SPARE EMERGENCY GENERATOR PARTS

- (1) 24V Starter Motor Kit
- Belt, idler pulley
- Thermostat, thermostat gasket, thermostat seal
- 24V alternator
- Water Pump, water pump gasket, water pump seal
- Air, Oil, and Fuel Filters
- Voltage Regulator
- Fuel Lift Pump Assembly
- Fuel/Water Separator

The emergency generator is being quoted to BAE Systems by Milton Cat, Milford, MA.

311.3 HYBRID SYSTEM COMPONENTS

CONTR shall install the following components that are to be included in the BAE Systems Scope of Supply. CONTR shall refer to the BAE Systems Integrator Manual and Installation Manuals for requirements for installation of each component, and the Contract Drawings showing cooling systems and electrical systems.

- Propulsion Control System (PCS 300) - 2 units supplied with reduction gears
- Auxiliary Propulsion Control System (APCS 300) - 2 units

- Dynamic Drive Traction Motor (DDTM-100) - 2 units
- System Control Unit (SCU) - 2 units
- Integrated Starter-Generator (ISG 300) - 2 units supplied with generator sets
- Aux Filters 200A – 2 units
- JBox – 2 units
- JBox Filtered – 2 units
- Power Distribution Units (PDU) – 4 units
- HV Accessory Kit 2 – 2 units
- HV Accessory Kit 3 – 2 units
- HV Accessory Kit 4 – 2 units
- Coolant Manifold Assembly for ISG's – 2 units
- Data Logger WiFi only – 1 unit
- Data Logger WiFi + Cellular – 1 unit
- 12" Helm Display single system - 2 units
- 7" Helm Display dual system engine room – 1 unit

313.1 BATTERIES & CHARGERS

313.1.1 ENERGY STORAGE SYSTEM (ESS)

The Energy Storage System shall be quoted and provided as part of the integrated power and propulsion system by BAE Systems, Inc. The CONTR shall install a complete Lithium-Ion Energy Storage System as shown on the Contract Drawings and as provided for in the BAE Systems Scope of Supply.

System shall be as provided by Spear Power Systems, Inc., a Trident model, liquid-cooled system divided into two units, each with capacity of 260 KWh. System will consist of 4 racks of batteries arranged and installed as shown in dedicated battery room located in the hold, between frames 32 and 36 on the starboard side. Spear Power Systems shall additionally supply the following components along with the Battery Racks:

- Battery Control Unit (BCU)
- String Controller Unit (SCU)
- Battery Controller Signal Interface Box (BCSI)
- Battery Management System
- Module Control Board

CONTR shall install the following interfaces to the ESS, as required by the Spear Power Systems Integration Specification and Installation Manuals:

- High Voltage connections between the SCU and BAE Systems' Junction Boxes
- CAN Communication Links between BCU and BAE Systems' Control Units
- Low Voltage 24 VDC control power to BCSI
- Emergency Stop input connection

- CONTR-Provided Exhaust Vent System and Inlet System (See D358A-M8 and D358A-P10)
- CONTR-Provided Liquid Cooling System (See D358A-P14)
- CONTR-Provided Fire Suppression system and manual sprinkler system (D358A-P8)

CONTR shall mount the battery racks to the deck in hold using the Spear-supplied mounting system. CONTR shall secure the top of the battery racks to overhead structure using steel angle trusses and vibration isolator mounts attached to the top of battery rack.

313.1.2 12/24V DC Power Systems

The CONTR shall provide and install 12/24V DC Service and emergency systems in compliance with 46 CFR Part 112 and the Contract DWGS (Ref: DWG D358A-E1, E2). The systems shall include Optima 31M batteries or approved equal (sized per load requirements), 150 amp-hour batteries connected in series supplying engine room electronics, running lights, designated alarms, and pilothouse electronics. These battery banks shall be charged by 24V battery chargers, Newmar, or approved equal, fed from a 120V and 240V AC circuits. All requirements of 46 CFR 112.55 shall be met.

313.1.3 ANTICIPATED 12/24V DC EMERGENCY LOADS

- Main Engine Control power
- Pilothouse DC panels
- Propulsion Control and monitoring systems
- Ship's service generator Control power
- PA and Alarm Systems

313.1.5 MAIN ENGINE STARTING 24V DC

The CONTR shall provide and install dedicated 24V main engine starting battery banks for both of the main engines. They shall be sized as per the engine manufacturer's recommendations and charged by Newmar, or approved equal, battery chargers fed from 120V AC circuits.

321.1 POWER DISTRIBUTION

321.1.1 SHORE POWER

The main switchboard shall be capable of distributing and transferring between shore power and generator / ESS inputs. All USCG requirements for safety, indicators, etc., shall be adhered to. A shore power receptacle compatible with MaineDOT's existing shore power connectors shall be provided and installed as per the Contract DWGS. The shore power connection shall be fitted with a watertight cap and shall be located so as to provide easy access for the shore power cable connection.

321.1.2 POWER REQUIREMENTS

The available Shore Power service is 200 Amp, 240V, 3-phase. The CONTR shall provide a properly sized, one-hundred (100') foot long shore power cable with connections at each end to match the vessel and shore end power connections. MaineDOT will provide a specification for the shore end connector to be compatible with the shore power plug to be used. The CONTR is responsible to provide and install this connector.

The Shore Power system shall supply the main switchboard. Shore Power system shall be coordinated with BAE Systems to provide simultaneous charging of batteries and service to normal shipboard loads. Distribution to lighting, electrical outlets, engine block heaters, battery chargers, etc. shall be in accordance with Electrical One-Line diagram (Ref: DWG D358A-E1). Further, the Shore Power system, in coordination with BAE Systems, shall provide for automatic starting of emergency generator and connection to normal shipboard loads upon failure of shore power.

324.1 SWITCHBOARDS & POWER PANELS

324.1.1 MAIN SWITCHBOARD

The CONTR shall provide and install a marine switchboard, by Electronic Power Design, Houston, TX, or approved equal, capable of distributing and transferring between shore power and hybrid system inputs. Switchboard shall be capable of automatic paralleling of the two hybrid system power input streams port and starboard to the main switchboard. An electrical interlock shall be installed between the shore power and main hybrid system breakers to prevent shore power from connecting to main switchboard if either main SSDG is operating. With SSDG's off, switchboard shall allow connection of shore power to ESS battery system for charging through the BAE Hybrid Power System.

The switchboard shall be located in the engine room as per DWGS D358A-A1-1 and D358A-A9. Metering and indicators for current, voltage, ground fault, and power available will be provided as per USCG requirements.

Note that space planned for main switchboard is currently 68" long, 28" deep, and 7'-0" high. Switchboard shall be designed primarily for front access. Additional space is available forward of the main switchboard (with partial deep floor in-between) for mounting auxiliary controls and electrical panels for the electrical system.

324.1.2 EMERGENCY SWITCHBOARD

The CONTR shall provide and install a marine emergency switchboard, by Electronic Power Design, Houston, TX, or approved equal, capable of distributing power to the emergency power panels and automatically energizing upon loss of main SSDG or shore power in compliance with the requirements of 46 CFR Subchapter "J" for Subchapter "K" passenger vessels.

Note that space planned for emergency switchboard is currently 54" long, 24" deep, and 6'-0" high. Switchboard shall be designed primarily for front access.

324.1.2 POWER PANELS

Distribution breaker panels shall be Square “D”, or approved equal, and must meet the requirements of IEEE STD 45, Section 23.1. The electrical distribution scheme designates panel locations. At a minimum, distribution panels shall include a main distribution panel, emergency distribution panel, engine room AC power panel, engine room AC lighting panels (2), crew space AC lighting panels (2), engine room DC control distribution panels (4), pilothouse AC lighting panels (2), pilothouse AC emergency power/lighting panels (2), and pilothouse DC electronics distribution panels (2).

Power and lighting panels which are accessible to passengers shall have latches with locks keyed alike. Labels are to be provided on each panel showing designation, voltage, and bus rating. A circuit directory card mounted in a plastic faced holder shall be completed and posted inside each panel door. Panels located in the Engine Room shall be NEMA 12 with doors fitted with gaskets. A panel located in interior spaces such as the passenger cabin may be NEMA 1.

324.1.3 CIRCUIT BREAKERS

Each breaker shall have sufficient interrupting capacity to safely interrupt the maximum fault current obtainable at its point of application.

Circuit breakers shall be by Square “D” (or approved equal) and shall be of the commercial molded case type, quick-make, quick-break, with inverse time tripping characteristics on overloads and instantaneous trip device for short circuits, except as noted. Two and three pole breakers shall have common trip handles. Breakers shall clearly show when they have been tripped by over-current. All circuit breakers shall be UL 489 listed.

The CONTR shall provide panels with one spare circuit breaker and space for one additional breaker for every ten active circuits or fraction thereof. Spares shall be representative of the breaker sizes used in that panel.

324.1.4 ELECTRICAL SPARES

The following electrical spares shall be provided:

Main Switchboard Breakers:

Qty (1) 3 pole, 125AF/40AT

Qty (1) 3 pole, 125AF/60AT

Main Switchboard Lighting Section Breakers:

Qty (1) 3 pole, 125AF/100AT

Qty (1) 2 pole, 125AF/15AT

Emergency Switchboard Breakers:

Qty (1) 3 pole, 125AF/45AT

Qty (1) 3 pole, 125AF/25AT

Emergency Lighting Section Breakers:

Qty (1) 3 pole, 125AF/100AT

Qty (1) 2 pole, 125AF/25AT

331.1 LIGHTING FIXTURES & ILLUMINATION

331.1.1 GENERAL

The vessel shall be adequately lighted throughout with approved lighting fixtures. Fixtures shall comply with the requirements of Publication UL595, UL1598 and UL1598A. The CONTR is responsible to see that all facets of lighting, particularly in public spaces, are complete, and fully adequate for the service intended.

All lighting fixtures shall be provided and installed by the CONTR. The CONTR is responsible to develop working DWGS for installations as required. These DWGS shall be in compliance with the requirements of CFR Subchapter “J”. Please reference Specification Section 0.7.3 for CONTR Working Drawing requirements.

Public spaces shall be supplied by at least two circuits so that the failure of one circuit will not leave a space without lighting. Flush mounted ceiling fixtures shall be provided and all wiring shall be concealed. Switches, where provided, shall be flush mounted. Switch plates shall be color coordinated with the space where installed.

Fixtures shall be designed for the particular location and service required and shall be installed in interior and exterior locations as specified below.

- Downlights shall be Imtra Wave LED, or approved equal. Lighting circuit to be powered by an Imtra 120VAC/24DC or approved equal converter unless otherwise noted.
- Freight Deck under the superstructure house center lane and P&S outboard lanes shall be Imtra Offshore Marine Deck Light, or approved equal.
- Hold Deck voids and miscellaneous work areas that have no drop ceiling shall be Imtra LED 24” IL100LED4KMSLSS, or approved equal.
- Primary Machinery Spaces (Engine Room and Bow Thruster Machinery Room) shall be Imtra LED 24” or 48” as designated below, IL100LED4KMSLSS, IL200LED8KMSLSS or approved equal.

331.1.2 INTERIOR LIGHTING

The CONTR shall provide and install adequate lighting for all passenger spaces crew spaces, stairways and passageways, work spaces, machinery spaces, voids, and storage spaces. Lighting levels shall comply with the Illumination Engineering Society (IES) Publication RP-12,

“Recommended Practice for Marine Lighting”. Interior superstructure lighting shall be switched from the distribution panel as shown on the Electrical One-line DWG. Engine Room lighting shall be switched locally from just inside the Main Deck Engine Room Access Door at FR31. Interior hull void lighting shall be switched locally.

Passenger cabins on 01 Deck, Port and Starboard shall be fitted with USB outlets (4 per unit) along the side bulkheads at 6’ intervals (approx.) where seating is installed.

The following types and quantities of lighting fixtures are provided as a guide only. Lighting shall be LED. Lighting power shall be in accordance with DWG D358A-E1. The provided lighting shall not be less than this guide:

PILOTHOUSE & 02-DECK SPACES

(2 each)	Pilothouse -- Wave Red/WW bi color light LED (on Emergency Circuit) Imtra, or approved equal. Lights Dimmable.
(4 each)	Pilothouse -- Imtra Wave WW (Ww-warm white) , or approved equal (switched from inside P&S pilothouse access doors). Lights Dimmable in Pilothouse.
(1 each)	Pilothouse -- F-26 Chart lamp or approved equal w/red filter (to the approval of the MaineDOT OREP)
(2 each)	02-Deck Crew Head -- LED Imtra Wave WW or approved equal
(1 each)	02-Deck Crew Head -- LED Imtra F-30, approved equal mirror lt
(2 each)	02-Deck EDG Room – Imtra LED 24” IL100LED4KMSLSS, or equal; one on emergency circuit)
(2 each)	02-Deck Pilothouse Void -- Imtra LED 24” IL100LED4KMSLSS (switched locally from access; one on emergency circuit)
(2 each)	02-Deck Head of stbd stairway -- Imtra LED 24” IL100LED4KMSLSS, or equal; one on emergency circuit)

01- DECK PASSENGER CABIN (Port):

(30 each)	LED down lights Imtra Wave WW, or equal; in accordance with IES recommended foot candle specifications; 6 on emergency circuit.
(3 each)	120V Exit Lights, Thomas & Betts, LED, WAC1NRCDA, or equal (on emergency circuit)

MAINE DEPARTMENT OF TRANSPORTATION FERRY SPECIFICATIONS

- | | |
|----------|--|
| (2 each) | 01-Deck port Passenger Head – Imtra Wave WW, or equal, 1 on emergency circuit. |
| (1 each) | 01-Deck port Passenger Head – Imtra F-30 24" LED no switch mirror light or equal |
| (1 each) | 01-Deck Emergency Escape Trunk – LED Imtra JBOX Light ILSGSM40180, or equal (on emergency circuit) |
| (2 each) | 01-Deck Head of stairways -- LED 24" IL100LED4KMSLSS, or equal; one on emergency circuit |
| (1 each) | 01-Deck port aft exterior – LED Imtra 24" waterproof LED 2 ft IL100LED4KMSLSS, or equal |

01- DECK PASSENGER CABIN (Starboard):

- | | |
|-----------|--|
| (30 each) | Recessed LED down lights Imtra Wave WW, or equal; in accordance with IES recommended foot candle specifications; 4 on emergency circuit. |
| (4 each) | 120V Exit Lights, Thomas & Betts, WAC1NRCDA, LED, or equal (on emergency circuit) |
| (2 each) | 01-Deck starboard Passenger Head – Imtra Wave WW, or equal, one on emergency circuit |
| (3 each) | 01-Deck Head of stairways -- LED 24" IL100LED4KMSLSS, or equal; one on emergency circuit |
| (1 each) | 01-Deck starboard Passenger Head -- 24V Imtra F-30 24" no Switch LED mirror light or equal |
| (1 each) | 01-Deck starboard aft exterior – LED Imtra 24" waterproof LED 2 ft IL100LED4KMSLSS, or equal |

MAIN DECK P&S ISLANDS

- | | |
|-----------|--|
| (2 total) | Stairway lighting – (at head of each stairway) FR28 & FR37 Imtra LED 24", or equal |
| (1 each) | Mn-Deck Emergency Escape Trunk – LED Imtra JBOX Light ILSGSM40180, or equal (on emergency circuit) |
| (1 each) | Deck Locker starboard -- LED Imtra JBOX Light ILSGSM40180, or equal (to approval of MaineDOT OREP) |

MAINE DEPARTMENT OF TRANSPORTATION FERRY SPECIFICATIONS

(1 each) Deck Locker port – Imtra JBOX Light ILSGSM40180, or equal (to approval of MaineDOT OREP)

FOREPEAK

(2 each) 24” LED Imtra LED 24” IL100LED4KMSLSS, or equal (switched locally inside access hatch) 1 on e-circuit

BOW THRUSTER ROOM

(6 each) 24” LED (FR9 P&S) Imtra LED 24” IL100LED4KMSLSS, or equal (switched locally inside both P&S accesses hatches) 2 on e-circuit

VOID FR13-FR24

(4 each) 24” LED (FR9 P&S) Imtra LED 24” IL100LED4KMSLSS, or equal (switched locally inside both P&S accesses hatches) 1 on e-circuit

CREW BREAK RM & PASSAGES

(20 each) Recessed LED down lights Imtra Wave WW, or equal; in accordance with IES recommended foot candle specifications; 8 on E-circuit.

(2 each) 24VDC Imtra F-40 with switch LED under counter (to approval of MaineDT OREP) or equal

WORKSHOP PORT

(4 each) 24” LED (FR9 P&S) Imtra LED 24” IL100LED4KMSLSS, or equal (switched locally); one on emergency circuit

BATTERY ROOM

(2 each) 24” LED (FR9 P&S) Imtra LED 24” IL100LED4KMSLSS, or equal (switched locally); one on emergency circuit

FM-200 Rooms P+S

(4 total) 24” LED (FR9 P&S) Imtra LED 24” IL100LED4KMSLSS, or equal (switched locally); two on emergency circuits

CREW HEAD

(2 each) Recessed LED down lights Imtra Wave WW, or equal; one on emergency circuit

(1 each head=2 total) 24VDC LED Imtra F-30 24" no switch mirror light or equal

ENGINE ROOM

- | | |
|-----------|---|
| (14 each) | 48" LED Imtra IL200LED8KMSLSS, or equal, (switched at head of ladder FR36 starboard – 4 on E-circuit) |
| (2 each) | EOS – 24" LED Imtra LED 24" IL100LED4KMSLSS, or equal, (switched locally, 1 on E-circuit) |

VOID FR52-FR60

- | | |
|----------|---|
| (4 each) | 24" LED Imtra LED 24" IL100LED4KMSLSS, or equal (switched locally inside both P&S access hatches) |
|----------|---|

VOID FR60-FR68

- | | |
|----------|--|
| (2 each) | 120V x 24" LED Imtra LED 24" IL100LED4KMSLSS, or equal (switched locally inside access hatch) one on e-circuit |
|----------|--|

STEERING GEAR FLAT

- | | |
|----------|--|
| (3 each) | 120V x 24" LED Imtra LED 24" IL100LED4KMSLSS, or equal, switched locally inside both P&S access hatches, one on E-circuit) |
|----------|--|

The CONTR shall provide LED spare lamps (6) of each type.

331.1.3 EXTERIOR LIGHTING

The CONTR shall provide and install navigation lights; floodlights to illuminate main deck, vehicle and passenger transit areas; weather deck lighting; and searchlights.

Exterior lights shall be switched from the pilothouse distribution panel, 01-deck lighting panels, or pilothouse navigation light panel as appropriate. IBA and Rescue Boat floods shall be on E-circuits.

PILOTHOUSE & 02-DECK

- | | |
|----------|--|
| (6 each) | Imtra Offshore Marine Deck Light, H.E. Williams LED Wall Pack Mini, or equal (switched from pilothouse panel), 2 on E-circuit (to approval of MaineDOT OREP) |
| (6 each) | Imtra Offshore Marine Deck Light, or equal (to approval of MaineDOT OREP) |
- (2) IBA prep mounted on house FR27.5 Port and FR34 “doghouse” Starboard (switched from Pilothouse E-panel)
 - (2) IBA launch mounted on 02-Deck rail P&S (switched locally)
 - (1) Rescue Boat prep mounted on stack (switched locally)

- (1) Rescue Boat launch mounted on 02-deck rail FR50 (switched locally)

MAIN DECK LIGHT LIGHTING

- (10 each) Imtra Offshore Marine Deck Light or H.E. Williams Wall Pack – Mini LED or equal (inboard sides of P&S superstructures FR20, FR36 & FR50; all located to the approval of the MaineDOT OREP. Locate above 15'-0" truck clearance height)
- (6 each side) Imtra Offshore Marine Deck Light or H.E. Williams Wall Pack – Mini LED or equal (outboard sides of P&S superstructures FR25 & FR45; all located to the approval of the MaineDOT OREP.
- (4 each) Imtra Offshore Marine Deck Light or H.E. Williams Wall Pack – Mini LED or equal (2 forward and 2 aft located on 01-deck FR17 and FR56 respectively)

NOTE: All Main Deck floodlighting shall be switched from a crew only accessible panel located on the Main Deck to the approval of the OREP. Lighting may be grouped in accordance with superstructure sides (ie. Lights on port outboard side on one switch).

331.1.7 EMERGENCY LIGHTING

Emergency Lighting shall be provided and installed in accordance with DWG D358A-E1. Emergency lighting shall furnish adequate levels of illumination to allow for emergency operations and movement throughout the vessel in situations of main switchboard power loss. Emergency Lighting fixtures shall be fed from lighting distribution panels connected to the emergency switchboard. Outside and inside emergency lights shall not be connected to the same branch lighting circuits. All E-lights shall be labeled with a red "E" symbol. Use similar Imtra fixtures to those specified under 331.1.2, or approved equals.

331.1.8 EXIT LIGHTS

Exit lighting shall be on emergency lighting circuits. Fixtures shall be Sure-Lites LED ceiling or wall mount as appropriate at each exit location (Thomas & Betts Lighting, or approved equal).

331.1.9 FLOODLIGHTS

Floodlights shall be 500W Eaton Champ Pro Model PFM15L, or approved equal (Ref: Section 583.1.5). Floodlights shall be mounted on suitable welded platforms (including a support gusset) attached to a bulkhead or the junction of the top 02-Deck rail at a rail stanchion as appropriate. Locations shall be approved by the OREP. Approximate locations:

- (2 each) FR16.5 P&S
- (1 each) FR39 centerline

- (2 each) FR50 P&S

Each floodlight shall be equipped with a cord and watertight plug. Electrical service shall be provided in close proximity to each rail mounted light by a surface-mounted switched receptacle.

Floodlight installations are to include all cabling to an emergency power panel; penetrations and kick-pipes as required, and hardware, switches, etc. to make the lights fully operational in conformance with the CFR and operational testing performance for OREP and USCG approval.

331.1.9.1 IBA RACK & LAUNCH FLOODLIGHTS

Floodlights for illumination of the IBA rack areas (FR32) P&S shall be provided and installed on the 02-Deckhouse FR26 P&S and switched from the Pilothouse. Floodlights for the IBA launch areas P&S shall be provided and installed on the 02-Deck rails and switched locally.

331.1.9.2 RESCUE BOAT CRADLE & LAUNCH FLOODLIGHTS

A floodlight for illumination of the Rescue Boat Cradle area shall be mounted on the starboard side of the stack and switched locally. A floodlight for illumination of the Rescue Boat launch area shall be provided and installed on the 02-Deck rail and switched locally.

331.1.10 SEARCHLIGHTS

(2) Carlisle & Finch Model XY3EDE-24ARF3 with anti-icing heater, CFX350 lamp, C4-1-1 master station, and 3PS115 power supply, or approved equal.

331.1.11 NAVIGATION LIGHTS & PANEL

See Section 422.1

331.1.12 ILLUMINATION LEVELS

In addition to satisfying the general illumination requirements for all compartments, particular attention shall be given to the installation of detail illumination for such items and areas as gauges, instruments, and switchboards.

Fixtures in work areas shall be arranged so that shadows are not cast on work surfaces and glare is not reflected off gauges or instruments. Illumination shall be so that gauges, sight glasses, etc. may be accurately read from usual and convenient operating positions. Fixtures shall be shaded to prevent glare as required.

331.1.13 JUNCTION BOXES

All junction boxes shall be accessible as per 46 CFR 56.4.2.

331.1.14 LIGHTING SPARES

The CONTR shall provide spares for lighting fixtures as follows:

- (6) LED down-light fixture “cans”

- (6) LED down-light trim pieces
- (12) LED down-light lamps (one case)
- (1) LED 48" unit light
- (2) LED 24" unit light

332.0 ELECTRICAL SYSTEM TESTS

- Insulation resistance (megger) test all power distribution cables, insulated motor and generator windings in accordance with the applicable requirements of the CFR.
- Visually inspect motor alignment with driven load (in instances where the load is not close-coupled).
- Manually operate all circuit breakers, disconnect switches, mode selectors, and pushbuttons to demonstrate correct operation.
- Bump test to verify that motors operate in the correct direction of rotation.
- Demonstrate correct system operation in all modes.

SWBS SECTION 400 ALARMS, INTERNAL COMMUNICATIONS, NAVIGATION

The following specifications and drawings referenced provide for the Alarms, Navigation Systems, and Internal Communications Systems Modifications required to be performed under this contract:

- 400.1 REFERENCE DRAWINGS
- 421.1 NAVIGATION SYSTEMS (NON-ELECTRICAL)
- 422.1 NAV LIGHTS & NAV LIGHT PANEL
- 423.1 NAV SYSTEMS (ELECTRONIC)
- 433.1 INTERNAL COMMUNICATIONS (PA, SP PHONE, GEN ALARM, LOUD Hailer)
- 436.1 SAFETY & SECURITY SYSTEMS
- 439.1 CCTV
- 441.1 EXTERNAL COMMUNICATION (RADIOS)
- 446.1 EXTERNAL COMMUNICATION (AIS)

400.1 REFERENCE DRAWINGS

D358A-A1-1 GEN ARRGTS HOLD & MAIN DECK

D358A-A1-2 GENERAL ARRGTS 01-DECK & PILOTHOUSE

D358A-A8 COLREGS PLAN & NAVIGATION LIGHT MAST DETAILS

D358A-P10 COMPRESSED AIR PIPING SCHEMATIC

421.1 NAVIGATION SYSTEMS (NON-ELECTRICAL)

421.1.1 FLAGS & SHAPES

The CONTR shall provide (2) black portable, nylon folding Not-Under-Command balls to comply with the Inland Rules of the Road (CalJune, or equal, 24" diameter). The CONTR shall provide (1) black portable, nylon folding Anchor ball (CalJune, or equal, 24" diameter). These day shapes shall be stowed in the pilothouse with line and hardware suitable for rapid deployment.

The CONTR shall provide (2) 3' x 5' US ensigns, (1) red "B" flag fueling pennant, and (2) steering pennants. Masts shall be rigged with flag halyards and hardware (blocks & clips) for the ensign, two signal pennant halyards, and two steering pennant halyards. See Section 171.

421.1.2 EMERGENCY SIGNALS

The CONTR shall provide (12) hand held, rocket propelled, red emergency flares in a watertight plastic box to be stowed in the pilothouse.

421.1.3 EPIRB

The CONTR shall provide and install a GPS capable EPIRB unit with bracket incorporating a hydrostatic release for vessel delivery (ACR, or equal).

421.1.4 ANCHOR SIGNAL BELL

The CONTR shall provide a removable 12" diameter bronze bell w/lanyard. The bell bracket shall be mounted on the exterior pilothouse bulkhead in a location approved by MaineDOT.

421.1.5 MAGNETIC COMPASS

The CONTR shall provide and install a Ritchie Model B-463 Globemaster magnetic compass, , or equal, black, 6" diameter, w/red 24V light, w/quadrantal spheres and anti-vibration binnacle on centerline at the forward console steering station. The compass shall be "swung" and a deviation card provided as per Section 982 "Sea Trials".

421.1.6 FIRST AID KIT & AED

The CONTR shall provide a USCG approved first aid kit to be installed in a Pilothouse location to the approval of the MaineDOT OREP. The CONTR shall install an OFE AED in the pilothouse location to be approved by the MaineDOT OREP.

421.1.7 AIR HORN & CONTROLLER

The CONTR shall provide and install (1 set) air horn and timer, Kahlenberg S-330-DVM-H with signal controller Model M522 or approved equal (Ref: Section 551.0 and DWG D358A-P10).

421.1.8 CLOCKS

The CONTR shall provide and install two (2) Weems & Plath Model Admiral 290500 or approved equal, quartz clocks. Locations shall be to the approval of the MaineDOT OREP.

421.1.9 BAROMETER

The CONTR shall provide and install a Weems & Plath Model Admiral 290700 or approved equal, aneroid barometer. Location shall be to the approval of the MaineDOT OREP.

421.1.10 ANEMOMETER

The CONTR shall provide and install a Maximum, Inc. Model Vigilant (black dial face w/white lettering) or approved equal, anemometer complete with mast mount sensor, AC adapter, and pilothouse display. Location of both sensor and display shall be to the approval of the MaineDOT OREP.

422.1 NAVIGATION LIGHTS & NAVIGATION LIGHT PANELS

Navigation lights shall be provided and arranged to comply with the requirements of the Inland Rules Of The Road (Ref: D358A-A8). The CONTR shall provide and install a 120VAC navigation light panel that is compatible with Perko LED navigation lights (J-Box, Glamox, Loco-Light, or approved equal) in the pilothouse. The panel is to be compliant with IEEE Standard 45 Section 34.2 and USCG 46 CFR 111.75-17. Navigation lights shall be USCG approved by Perko or approved equal as shown on DWG D358A-A8.

- (1 double) sidelight (red) 10-point, LED, Perko 1077R00BLK or equal
- (1 double) sidelight (green) 10-point, LED, Perko 1077G00BLK or equal
- (1 double) masthead light (white) 20-point, LED, Perko 1078000BLK or equal
- (1 double) stern light (white) 12-point, LED Perko 1079000BLK or equal
- (1 each) anchor light (white) 32-point, LED Perko 1380000BLK or equal
- (2 each) not under command (red) 32-point, LED Perko 1380R00BLK or equal

Reference: DWG D358A-A8

423.1 NAVIGATION SYSTEMS (ELECTRONIC)

The CONTR shall provide and install the following electronic navigation systems. The manufacturers and models listed shall be considered to be OR APPROVED EQUAL and may differ depending upon MaineDOT's preferences to match existing fleet equipment. The CONTR shall provide a factory certified Tech Rep for Electronic Navigation Equipment commissioning, startup, and sea trials.

- RADAR: (2) Furuno FR8125 w/4 foot antennas, inter-switched, 115VAC and 24 VDC
- GPS UNIT: (1) Furuno GP170D
- VHF RADIO: (2) ICOM M506 (See Section 441.1)
- HAILER/INTERCOM: Furuno LH5000 (Locations: PH control, Main Deck (2) intercoms one each loading station)
- AIS: (1) Furuno FA170 (See Section 446.1)
- DEPTH SOUNDER: Furuno FCV588
- NAV COMPUTER – local CPU with (2) 24" dimmable monitors
- SAT COMPASS: Furuno SC70
- AUTOPILOT: Simrad AP70 Mk II to interface with the Jastram Engineering, steering system
- NMEA Backbone system to link Electronic Navigation Systems

See Sections 439.1, 441.1, & 446.1 for additional pilothouse electronic equipment.

433.1 INTERNAL COMMUNICATIONS

433.1.1 PUBLIC ADDRESS & EMERGENCY NOTIFICATION SYSTEM

The CONTR shall provide and install a commercial quality Public Address System which incorporates an Emergency Notification System feature, Bogen, or equal. The System amplifier shall be located in the Pilothouse and shall be powered on an emergency circuit. System shall comply with 46 CFR 121.610, with announcements made from Pilothouse station. The system shall be capable of sounding a General Alarm signal, as required by 46 CFR 120.550(c).

The System shall be complete and shall incorporate the following equipment: Pilothouse mike; amplifier; equalizer module; exterior and interior speakers; volume Control module; and power conditioner module. The system shall provide a flashing light feature on speakers when notifications are being made, in addition to audible signal.

Interior speakers (ceiling mount style) shall be located to the approval of the MaineDOT OREP.

- Port passenger cabin (2)
- Starboard passenger cabin (2)
- Crew Break room (2)
- Engine room EOS (1)

Exterior speakers (trumpet style) shall be located to the approval of the MaineDOT OREP.

- 02-Deck – (2) one each P&S
- Main Deck Fwd – (1) centerline on visor at 01-Deck level
- Main Deck Aft – (1) centerline on deck edge plate at 01-Deck level
- Main Deck Port Vehicle Lane – (2)
- Main Deck Starboard Vehicle Lane – (2)

Intercom Communication from Wheelchair Lift shall be located to the approval of the MaineDOT OREP. System shall be powered in elevator by 4 hour UPS system, together with cab light.

- Wheelchair Lift Interior
- Pilothouse

433.1.2 LOUDHAILER

The CONTR shall provide and install a Loudhailer system, Furuno LH3000, or approved equal. The system shall include (2) loudhailer/intercom horns (1 each at Main Deck loading station) so that the Pilothouse can establish two-way communications with personnel manning the forward and aft docking/vehicle loading stations. Speakers shall be located to the approval of the OREP (Ref: Section 423.1).

433.1.3 SOUND POWERED PHONE SYSTEM

The CONTR shall provide and install a Sound Powered Phone System, Hose McCann, or approved equal. The system shall comprise Sound Powered Phone stations:

- Pilothouse (on vertical face of console)
- EDG Room (located approval of OREP)
- Forward Main Deck loading station (exterior watertight box)
- Aft Main Deck loading station (exterior watertight box)
- Crew Break Room (located approval of OREP)
- EOS (located approval of OREP)
- Bowthruster Room
- Steering gear flat (located approval of OREP)

The EOS station shall be located to the approval of the MaineDOT OREP. The EOS station shall have a bell sound signal and remote mounted strobe light signal mounted in a location to the approval of the MaineDOT OREP. System shall comply with 46CFR 121.602

433.1.4 CONTROL & ALARM CONSOLES

CONTR shall provide and install alarm and monitoring systems as required by 46 CFR 118.400(c-e), for fire detection system and fire alarm system, 46 CFR 119.530 for bilge level alarm system, and machinery alarm systems as required by these Specifications and as recommended by the machinery and hybrid system manufacturers.

Alarm and detection system shall be provided for ESS System Li-Ion gas detection in battery gas exhaust system. System shall be by Li-Ion Tamer or approved equal. System shall be interconnected with the fire detecting detection and alarm system provided for the vessel.

CONTR shall plan for fire detection in the following spaces as a minimum:

- Bowthruster Room
- Crew Break Rm Common Space (3)
- Workshop
- FM 200 Space Port
- FM 200 Space Stbd
- Battery Rm
- Crew Head Below Deck
- Engine Room (5)
- Main Deck Lockers (2)
- Passenger Heads 01 Deck
- EDG Room 02 Deck
- Mach Space Bel. Pilothouse
- Crew Head 02 Deck

The main consoles for gauges and alarm panel in the pilothouse and in the EOS will be by EMI Marine.

Alarm panels, at a minimum, shall provide alarm functions for:

For each main engine and gear:

- Low lube oil pressure alarm (audible and visible)
- Low lube oil level alarm “
- Low gear oil pressure alarm “
- High gear oil temp, alarm “
- High gear oil temp, alarm “
- Low coolant level alarm “
- High jacket water temp. alarm “
- High SCAC water temp. alarm “
- High exhaust temp alarm “

Note : Shutdowns shall be as per USCG requirements.

For each generator and generator engine:

- Generator running indicator light
- Low lube oil pressure alarm (audible and visible)
- Low lube oil level alarm (audible and visible)
- Low coolant level alarm (audible and visible)
- High jacket water temp. alarm (audible and visible)

Note : Shutdowns shall be as per USCG requirements.

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436.1 SAFETY & SECURITY SYSTEMS

The CONTR shall provide and install approved life rings and brackets as required by USCG regulations and at the direction of the OCMI.

- (3 each) Life rings: CalJune, or approved equal; 24” orange, w/brackets. One ring shall be located on each bridge wing. These two life rings shall be equipped with an approved strobe light. Two rings shall be located, one each, adjacent to the fore and aft Main Deck loading station areas and shall each be equipped with a lifeline. Life rings shall be stenciled with the vessel’s name and hailing port.
- (269) PFD, type I Adult, stenciled with vessel name
- (25 each) PFD, type I Child, stenciled with vessel name.

- (1 each) MaineDOT shall provide an Automated External Defibrillator (AED) with bulkhead mount housing case for CONTR installation in a location as determined by the MaineDOT OREP.
- (3 each) Work Safety Vests, stenciled with vessel name (one with a 50' tether and snap shackle)
- (6 each) Inflatable Buoyant Apparatus – Viking or approved equal open reversible life raft - 50 persons, stenciled with vessel name including installation hardware bowing lines, turning blocks, hydrostatic release units, and storage racks.

436.1.1 PFD STORAGE

PFD storage for a full complement of passengers, plus 15%, plus crew PFD's (294 total) shall be provided. Passenger PFD storage shall be in lockers and hinged top fiberglass deck boxes located in accordance with DWG D358A-A1.

Crew PFDs shall be located in Pilothouse, Crew Break Room, EOS appropriate to crew complement.

439.1 CCTV

The CONTR shall provide and install a CCTV system consisting of Pilothouse located control equipment and display monitor. CCTV cameras shall be located to the approval of the MaineDOT OREP. Entire CCTV system shall be compliant with NDAA Section 889. Cameras and recorder system shall be by Honeywell, Series 30, or approved equal. Approximate camera locations and general camera focus coverage locations are:

- 02-Deck FR18 focus fwd (exterior)
- 02-Deck FR50 focus aft (exterior)
- 02-Deck FR27.5 starboard focus port aft (exterior)
- 01-Deck FR35 port focus inboard and fwd (interior)
- 01-Deck FR35 starboard focus inboard and fwd (interior)
- 01-Deck FR35 starboard focus inboard and aft (interior)
- Main Deck FR35 centerline focus fwd (exterior)
- Main Deck FR35 centerline focus aft (exterior)
- Main Deck FR18 port wing focus aft (exterior)
- Main Deck FR18 starboard wing focus aft (exterior)
- Hold Deck Engine Room FR52 port focus fwd and to starboard (interior)
- Hold Deck Engine Room FR52 starboard focus fwd and to port (interior)

TOTAL (9) exterior (7) interior assuming 2 extra zones each interior and exterior determined on board to suit MaineDOT OREP.

441.1 EXTERNAL COMMUNICATIONS (RADIO)

The CONTR shall provide and install (2) ICOM Model 506 (or approved equal) VHF radios and (2) COMRAD AV 60 antennas. Power shall be supplied by an emergency circuit. Antennas shall be located on the Pilothouse top P&S as shown on DWG D358A-A1 and A3 and as approved by the MaineDOT OREP.

446.1 EXTERNAL COMMUNICATIONS (AIS)

The electronic navigation and communication package shall include a USCG approved and operational AIS system. All components of this system shall meet the approval of MaineDOT. The system shall be Furuno FA170 AIS, or equal, and shall be fully integrated in the Pilothouse console (Ref: Section 423.1).

The AIS system shall be interfaced with pilothouse navigation and communication equipment. Power to all electronic navigation and communication equipment shall be supplied by an emergency power circuit.

SWBS SECTION 500 INSULATION, HVAC, PIPING, FIRE SUPPRESSION

The following specifications and drawings referenced provide for the Piping Systems, HVAC, and Fire Suppression required to be performed under this contract:

- 500.1 REFERENCE DRAWINGS
- 500.2 PIPING SYSTEMS
- 508.1 INSULATION
- 511.1 HVAC
- 520.1 SEA CHESTS, KEEL COOLERS
- 521.1 FIRE MAIN & BILGE SYSTEMS
- 526.1 SCUPPERS & DECK DRAINS
- 528.1 SANITARY SYSTEM
- 529.2 BILGE SLOPS (OILY WATER) SYSTEM
- 533.1 POTABLE WATER SYSTEM
- 551.0 COMPRESSED AIR SYSTEM
- 555.1 FIRE EXTINGUISHING
- 561.1 STEERING SYSTEM
- 568.1 MANUEVERING & CONTROL
- 573.6 VEHICLE TIE DOWN SYSTEM
- 581.1 ANCHOR HANDLING & STOWAGE
- 582.1 MOORING SYSTEM
- 582.2 PIPING TESTS
- 583.1 RESCUE BOAT & DAVIT
- 585.0 WHEELCHAIR LIFT

500.1 REFERENCE DRAWINGS

D358A-A11	STRUCTURAL FIRE PROTECTION PLAN
D358A-M2	RUDDER & STEERING ARRGT & DETAILS
D358A-M4	ANCHOR ARRGTs & CHAIN LOCKER
D358A-P1	M.E. & GENERATOR EXHAUST ARRGTs & DETAILS
D358A-P5	POTABLE WATER PIPING SCHEMATIC
D358A-P6	DRAIN, WASTE, VENT & FLUSHING WATER PIPING SCHEMATIC
D358A-P7	FIRE MAIN SYSTEM PLAN
D358A-P8	SPRINKLER SCHEMATIC

D358A-P9	BILGE PIPE SCHEMATIC & SEA CHEST DETAILS
D358A-P10	COMPRESSED AIR PIPING SCHEMATIC
D358A-P12	TANK VENT & SOUNDING TUBE SCHEMATIC
D358A-P13	HVAC BOILER WATER PIPE SCHEMATIC
D358A-P14	KEEL COOLER PIPING SCHEMATIC

500.2 PIPING SYSTEMS

Piping shall be installed in accordance with USCG requirements. Pipe runs shall, as far as possible, be kept clear of work or access areas. Pipes will be secured to structure by bolted clips and hangers. Pipe runs requiring regular maintenance shall be separated by flanges to facilitate removal. Bulkhead penetrations shall conform to USCG regulations. All pipe hangers shall be painted as directed by the MaineDOT Orep.

Exposed pipe runs or pipe runs located in unheated spaces shall be protected against freeze-up by heat-tape and insulation. All fresh water lines shall have drain cocks installed to allow for system drainage to prevent freeze-up during winter layup or repair periods.

All valves shall be clearly labeled and provided with permanent non-corroding metal tags.

All piping systems shall be marked with wraparound film pipe marking system complying with MSI (Marking Services Inc.) system, or approved equal. Markers MS-995 / MS-975 shall be applied to piping systems as directed by OREP. System shall indicate type of fluid and direction of flow in each pipe.

508.1 INSULATION

508.1.1 THERMAL

Exterior boundaries (sides and overheads) of hull (fr 24-36), WT Bhd fr 24 in hold, 01 deck accommodation and superstructure spaces, 02 Stair trunk, Pilothouse bulkheads and overhead, and enclosed work spaces bulkheads and overheads shall be thermally insulated with minimum 3-inch thick USCG approved fiberglass insulation or with mineral wool in accordance with the Structural Fire Protection Plans (D358A-A11) . Insulation fastening shall be USCG approved.

508.1.2 ENGINE ROOM COMPARTMENT INSULATION

The forward engine room bulkhead and overhead shall be insulated with USCG approved mineral wool insulation. The engine room bulkheads and overheads that are insulated are to be finished with heavy duty sealed fabric cloth covering, fastened and with seams and edges taped in accordance with the manufacturer's recommendations. All Engine Room insulation will conform to the Structural Fire Protection Plans (D358A-A11).

508.1.3 EXHAUST LAGGING & INSULATION

All insulation materials and installation details shall be in accordance with ASTM Volume 01.07 “Shipbuilding” Standard F683 except as detailed herein.

The main engines, generator engines, and furnace exhaust systems shall be provided with high temperature, exhaust wrap, removable, sewn pads/blankets by GT Exhaust or approved equal (Ref: DWG D358A-P1). Prepare surfaces by cleaning before applying insulation. Provide and install aluminum sheet metal covering in way of access areas where the insulation will be subject to damage or personnel contact to the satisfaction of MaineDOT.

511.1 HVAC

511.1.1 GENERAL

The CONTR shall provide and install HVAC equipment, ductwork, etc. in accordance with the Contract DWGS. HVAC calculations have been generated in the process of creating the HVAC Boiler Water Pipe Schematic DWG D358A-P13.

511.1.2 HEATING

The CONTR shall provide and install a FIVE zone hot water heating system consisting of a Weil McLain boiler Series 80 Model 480 or approved equal, (2) Gould circulation pumps or approved equal (1 backup), supply and return manifolds, system piping, fittings, heater units, and thermostats as detailed herein and on DWG D358A-P13.

Bulkhead mounted ECO, or approved equal radiant heaters or Modine, or approved hot water heaters shall be provided and installed as follows (Sized according to D358A-P13):

ZONE 1 (Radiant)

- Pilothouse (3)
- 02-Deck Crew Head (1)

ZONE 2 (Radiant)

- 01-Deck Port Passenger Cabin (5)
- 01-Deck Port Passenger Head (1)

ZONE 3 (Radiant)

- 01-Deck Starboard Passenger Cabin (5)
- 01-Deck Starboard Passenger Head (1)

ZONE 4 (Modine)

- Engine Room (2)
- Thruster Room (1)

ZONE 5 (Radiant)

- Crew Break Room & Passage (3)
- Crew Head (1)
- Battery Room (1)
- Workshop (1)

Hot water supply and return lines connect to the supply and return manifolds and thence to the Engine Room located Weil-McLain hot water heating boiler, or equal (Ref: D358A-P13).

Hot water lines to radiant heaters shall be run to heaters from within the cabin to avoid running water lines in unheated spaces such as vehicle lanes below the 01 deck cabins.

511.1.3 COOLING & VENTILATION

511.1.3.1 PILOTHOUSE

The CONTR shall provide and install (2) Coleman Mach 3 Plus 13,500 BTU, 320 CFM AC Units, or approved equal on foundations located on the Pilothouse top. The Pilothouse AC system shall consist of AC Units, thermostat, piping, fittings, ductwork, shrouds, etc. as required.

511.1.3.2 EOS

The CONTR shall provide and install (1) Americool WMC-2500 10,000 BTU, or approved equal AC Unit on a bulkhead mount foundation located on the EOS port side FR39-FR40. The EOS AC system shall consist of the AC Unit, thermostat, piping, fittings, ductwork, shrouds, etc. as required.

511.1.3.3 01-DECK P&S

The 01-decks P&S will not be air conditioned.

511.1.3.4 PASSENGER & CREW HEADS

The passenger and crew heads shall be equipped with ceiling mounted exhaust air fans. Supply air shall be by louvers in the head entrance doors (Ref: D358A-P9) Fans shall be Broan Nutone model 682 with charcoal filters, or approved equal.

511.1.3.5 CREW BREAK ROOM

The Crew Break Room will not be air conditioned. The crew break room shall have air supplied by (1) Hartzell Vaneaxial Blower, A25-M 85VA-STAI2, or approved equal. Supply air shall be via louver (port) with fire damper at FR 28 (Ref: D358A-M8). Crew break room shall have natural exhaust via louver with closure (starboard) at FR 29.

Battery Room shall have natural supply louver with fire damper and exhaust fan through ducting to outboard port side (Ref: D358A-M8). Fan shall be Dayton 450Z17 or approved equal. Battery room (800 cubic feet) air shall be changed a minimum of 6 times per hour.

511.1.3.2 MACHINERY SPACE VENTILATION

The Engine Room will be equipped with supply and exhaust ventilation trunks. The port side trunk shall be fitted with a supply fan as shown in DWG D358A-M7-1. The fan shall be a Hartzell, vane-axial fan, 53CM, size 29, 10 HP, 1755 RPM, 15,919 cfm @ 1.5" S.P., or approved equal, with diffuser below deck, as shown. Supply shall lead from a louver fitted with Delta T Slimline fire damper or approved equal, mounted on the inboard side of the port "island" superstructure FR40 to FR42.

Exhaust air shall be natural, from the engine room to the uptake trunk located on the starboard side between FR39 to FR43.5 with a louver fitted with Delta T Slimline fire damper, or approved equal, on the outboard side of the starboard "island" structure. Stack shall be fitted with natural exhaust louver on aft bulkhead with weather closure, as shown.

Louvers shall be stainless steel bolt in. Manual start/stop override shall be provided locally and controlled from Pilothouse as required.

520.1 SEA CHESTS, KEEL COOLERS

520.1.2 SEA CHESTS

Two sea chests shall be provided and installed in the Engine Room as shown generally on D358A-P9 for the Fire Main System suction and Bilge System priming. Sea chests will be located well forward in the engine room P/S off centerline. The sea chests shall be fitted with bolted strainer plates flush with the hull plate and shall have anode cathodic protection installed (See Section 633). Suction and discharge piping will be connected with flanged couplings. Sea valves shall be steel body gate valves and shall be located to expedite servicing and disassembly.

520.1.3 KEEL COOLERS

Cooling systems shall be provided and installed for the (2) Main Engines, (2) Gear Boxes, (2) Generators, (4) Motor/Electronics Systems, and ESS Cooling. These shall be flange-type Fernstrum grid coolers, or approved equal, as called out on the equipment list DWG D358A-M10. Guards shall be provided for each grid cooler that are adequate to protect against loose ice or flotsam strikes and are to be arranged to the approval of the MaineDOT OREP.

Grid coolers shall be provided with isolator washers and spool pieces to electrically isolate the coolers from the hull. Coolers shall be provided with their own anodes.

The cooling systems shall be filled with a 50% Glycol mix to the approval of the MaineDOT OREP.

521.1 FIRE MAIN & BILGE SYSTEMS

521.1.1 FIRE MAIN SYSTEM

The Fire Main System will be supplied by (1) fire pump, with bilge pump as backup. The Fire Pump (standby bilge) shall be a Goulds 7AI/BF model, self-priming, centrifugal, 2.5"x 3", 200 GPM at 170 ft head, 15 HP at 3450 rpm, or approved equal.

The Fire/Bilge manifold is located in the Engine Room near centerline FR41.5. Fire Main suction shall be taken from the P&S sea chests in accordance with DWG D358A-P9-1. The fire pump supply runs shall include duplex suction strainers, valves, and piping. The Fire/Bilge pumps shall be cross-connected and capable of providing fire main pressure to all vessel fire stations (Ref: D358A-P7).

The Fire/Bilge pumps shall be equipped with a pressure gauges and relief valves installed immediately after the pump discharges. The pumps shall be sized and installed to provide the flow and pressure required by USCG regulations. The fire pump shall have both local and Pilothouse on/off control. Fire Main System piping shall be as called out on D358A-P7 Material List.

Fire stations shall be provided and installed:

- Station #1: 02-Deck FR 30 port
- Station #2: 01-Deck FR 48 port
- Station #3: 01-Deck FR 31 starboard
- Station #4: Main Deck FR 27 port
- Station #5: Main Deck FR 23 starboard
- Station #6: Main Deck FR 38 port
- Station #7: Main Deck FR 46 starboard
- Station #8: Crew Break Room FR 28 starboard
- Station #9: Engine Room FR 36 port

Each shall be equipped with approved equipment: Valve; 50-foot x 1-1/2" hose length; hose rack; combination nozzle; and spanner as required by USCG regulations.

Exterior and Interior Fire Stations will be located in surface or recessed mount steel cabinets as shown, Larsen Mfg., or equal, Exterior stations shall have a steel door. Interior stations shall have a clear Plexiglass "windows" in the door. Exterior fire stations shall be fitted with a local drain valve.

521.1.2 BILGE SYSTEM

The Fire/Bilge pumps shall have both local and Pilothouse on/off control and shall be piped to the bilge manifold and bilge piping system. System materials shall be as shown on DWG D358A-P9. Bilge pump (backup fire) shall be MP Flomax model 15, self-priming, centrifugal, 3"x 3", 141 GPM at 73 ft head, 5 HP at 3450 rpm, or approved equal.

Individual bilge suctions shall be connected to the bilge manifold and shall be fitted with Flowmatic Model 357, or approved equal Foot Valves. Bilge pump (P-1) shall be piped for emergency overboard discharge. USCG approved bilge alarms shall be provided and installed in all compartments served by the bilge system with audible and visual digital readouts located on the pilothouse console.

526.1 SCUPPERS AND DECK DRAINS

526.1.1 GENERAL

The CONTR shall install scuppers, limber holes, and drains to prevent accumulation of water in the hull and to provide adequate drainage for the exterior decks. Particular attention shall be given to providing drainage of exterior decks in way of passenger foot traffic areas and at the top and bottom of exterior stairways (Ref: D358A-P3-1 & D358A-A12).

528.1 SANITARY SYSTEM (DRAIN, WASTE, VENT & FLUSHING)

The CONTR shall provide and install a Sanitary System to include drain, waste, vent, and flushing systems in accordance with Contract DWG D358A-P6. The Sanitary System shall include a 3000 gallon sewage tank (FR17-20 centerline); vent line; drain & fill lines. The system shall have (3) suction pump-off stations to deck connections located all at FR25 - one on the inboard side of the port "island" and one each P&S inside the main deck bulwarks. Each pump-off station shall be fitted with a USCG approved containment and pump-off connection with Cam-lock fitting and cap. The vent line shall terminate above the 02 deckhouse. The sewage tank shall be fitted with a Gems sight glass level gauge or approved equal.

CONTR shall provide and install a sanitary lift station located below the crew flat for draining all fixtures below the flat and with pump for emptying the lift station to sewage tank. Lift station shall have capacity of approximately 65 gallons. Pump shall be a float switch-controlled Zoeller 264 model, or approved equal.

Sea water shall be used for flushing. The flushing system will be pressurized by a Grundfos BMQE 15, or approved equal pressure set in accordance with the D358A-P6 material list. System piping clean outs shall be as shown on DWG D358A-P6.

529.2 BILGE SLOPS (OILY WATER) SYSTEM

The Bilge Slops Tank receives product from suctioned bilges via the bilge manifold and Bilge Pump. Discharge of the Bilge Slops tank is by the Dirty Lube Oil Pump (see 263.1) to the Main Deck pump-off connection (Ref: DWG D358A-P11).

533.1 POTABLE WATER SYSTEM

533.1.1 SYSTEM COMPONENTS

The CONTR shall provide and install (1) 2400 gallon Potable Water Tank (Hold Deck FR24-FR26) in accordance with the Contract DWG D358A-P5. The Potable Water system shall include vent, fill, and supply lines, Main Deck fill station, inboard side of starboard superstructure FR24.5. The Main Deck fill station shall be 1-1/2" with cam lock fitting. The Potable Water System shall include a Grundfos BMQE 15, or approved equal pump; an Aqua Pure SS4 EPE 316L, or approved equal water filter, pressure gage; valves; a Rheem, or approved equal electric heater hot water tank, and associated piping and fittings.

The Potable Water System services boiler feed; main engine and generator cooling make-up water; centrifuge, passenger and crew vanities; crew break room sink, and sink in Pilothouse. (Ref: D358A-P5).

551.0 COMPRESSED AIR SYSTEM

551.0.1 SYSTEM COMPONENTS

The CONTR shall provide and install a Compressed Air System which shall include one Quincy Model V-310, 2HP, or equal air compressor with integral 80 gallon x 150 PSI air receivers. Piping, valves, fittings, and air connections shall be as called out on DWG D358A-P10.

A main deck service air station to be located to the approval of the OREP and sea chest blow down air shall be installed and serviced by compressed air through a pressure reducer.

Compressed air shall be supplied through pressure reducers to the workshop in hold and to the battery room gas evacuating system (see DWG D358A-P10).

Compressed air shall also be supplied through the pressure reducer to the Air Horn mounted on the Pilothouse top (See Section 421 and DWG D358A-P10).

555.1 FIRE EXTINGUISHING

555.1.1 FM200 FIXED SYSTEMS

A USCG approved FM200 fire suppression system shall be installed for the engine room. The system shall include a manual release pull station, machinery shutdown switches, time delays, and alarms as required by USCG regulations. The CONTR shall engage the services of a manufacturer certified FM200 Service Shop for detailed system design and shall engage the services of a manufacturer certified FM200 Tech Rep for installation supervision of the fixed FM200 systems. The CONTR shall provide the required drawings and documentation to USCG/MSD in order to receive approval of the system and its installation. The FM200 cylinder storage room is located in the Hold Deck, port side, FR32-FR36 FM200 Cylinder/Wheelchair Lift Machinery Room.

The 02-Deck EDG Room will also be equipped with an FM200 system with the FM200 cylinder located in the under pilothouse void. Similar design and service representation shall apply to the EDG Room installation as to the Engine Room installation.

The Battery Room (800 cu.ft.), Stbd side in hold shall be equipped with an automatic FM200 system. System shall release upon heat detection, smoke detection, or gas detection from the Li-Ion gas detector system. Cylinder and controls shall be located in the space fwd of the battery room. Similar design and service representation shall apply to the Battery Room installation as to the Engine Room installation.

555.1.2 PORTABLE EQUIPMENT

Portable fire extinguishers shall be provided and located in secure brackets in quantities and type categories as per the requirements of 46 CFR. Any fire extinguisher bracket which is located on joiner panels shall be mounted with stand-offs to structure. Additional fire suppression equipment which may be required by USCG regulations shall be provided and properly secured or stowed (See Section 436.1 for Safety Equipment).

555.1.3 SPRINKLER SYSTEM

The CONTR shall provide and install a Sprinkler Fire Suppression System in accordance with DWG D358A-P8 and to the approval of USCG/MSD, the MaineDOT OREP, and attending USCG Inspectors. The systems shall include a Crane-Barnes Model 25 ICU-1 self-priming centrifugal pump; 3"x 3", 175 GPM @ 121' head, 10 HP, or approved equal.

System materials shall be as shown on DWG D358A-P8.

Sprinkler coverage shall be Main Deck P&S FR15 to FR52 (under the 01 deck house), the 01-Deck center FR15 to FR40 (under the 02 deck house), and Battery Room Stbd Hold. The System shall be a manual "dry" pipe system with open type sprinkler heads. All shall be to the approval of USCG/MSD, the attending USCG Inspector, and the MaineDOT OREP. The

Sprinkler System is designed to be a 4 ZONE System with an engine room located sprinkler pump and sprinkler manifold.

555.1.4 FIRE, SMOKE, GAS DETECTION

CONTR shall provide and install a complete USCG-approved fire and smoke detection system as required by Subchapter K, Part 118.400(c). Spaces requiring detectors include propulsion machinery spaces, spaces with internal combustion engines of more than 50 hp, spaces with oil fired furnaces, battery room, thruster room, emergency generator room, control spaces, and service spaces. Accommodation spaces require a manual alarm system connected to the pilot house panel. Additional requirements may be required by the local OCMI. The shipyard is responsible for the vessel's safety plan and coordination with the local USCG officials.

561.0 STEERING SYSTEM

The CONTR shall provide and install a steering system, by Jastram, B.C. Canada (Model S2-28-2-35) or approved equal. Steering shall be Pilothouse controlled from the Steering Station on centerline forward and from emergency station in lazarette. The Steering Stations shall incorporate a rudder angle indicator and rudder command indicator. The arrangement of rudder angle indicator and rudder command indicator shall be to the approval of the MaineDOT OREP. The forward steering station shall have both wheel follow-up (FFU) and jog lever non-follow-up (NFU) capability. The lazarette steering station shall have jog lever non-follow-up capability. The system shall be alarmed for pump failure and shall be capable of switching between the HPU #1 and HPU #2 pumps.

The steering system design shall comply with Subchapter “K” and USCG MTN 01-09. Electrical power input is 240V, 3- phase. The rudders shall be capable of hard over 35 degrees to 35 degrees in 15 seconds at max speed of 14 knots.

Piping for steering system shall be run from the two pumps, inboard of beam/5 from sideshell and separated as much as possible from each other. The electrical wiring for steering control shall be similarly run separately for the two power units to pilothouse.

A complete description of the Steering System shall be generated by the vendor and provided for submittal to USCG/MS. Documentation shall include a Design Verification Test Procedure (DVTP) and Periodic Safety Test Procedure (PSTP). The CONTR shall engage a Jastram Tech Rep for steering systems commissioning tests and trials.

Contact: Randy McKee; RG Group Marine Systems; 650 North St., York, PA 17403; PH 877-271-3246; www.rg-group.com. RG Group is Jastram’s Atlantic Coast and Great Lakes dealer/distributor.

The rudder stocks are 7 ½” diameter US-sourced stainless steel Aqualoy 22 by Western Branch Metals or approved equal. CONTR shall provide jockey bars system as shown on DWG D358A-M2 from US sourced steel.

561.0.1 STEERING SYSTEM SPARES

The CONTR shall provide the following spare parts for the steering system. Spare parts shall be labeled and crated for storage. Storage shall be at the direction of the MaineDOT OREP either direct shipped to an MaineDOT warehouse or placed on the vessel.

- JA-950006-1 SEAL KIT, S-400 CYLINDER
- JB-403005 SPHERICAL SWIVEL, S-400 CYLINDER
- JA-950094-4 TILLER PIN KEEPER KIT, S-400
- JM-211014-1 MOUNTING PAD PIN, S-400
- JB-504018 FLEX HOSE, S-400 CYLINDER
- JB-504019 FLEX HOSE, S-400 CYLINDER
- JA-950050-1 SEAL KIT, 3-WAY S.O.V.
- JA-950000-1 SEAL KIT, H36 HELM PUMP
- JA-950010-1 SEAL KIT, DARB 10
- TBA RETURN LINE FILTER, HPU
- TBA FILLER BREATHER, HPU
- TBA SERVICE FILTER GAUGE

568.0 BOW THRUSTER

The CONTR shall provide and install a Schottel Type STT 110 FP, 250HP tunnel bow thruster, or approved equal. This unit will be electric motor driven by 380 VAC 0-50 Hz, 200 KW electric motor furnished by Schottel or approved equal. The electric motor shall be powered and controlled from the BAE Systems power grid. Thruster shall be capable of being powered from either the port or starboard side of the power grid through a CONTR-provided manual transfer switch. The CONTR shall engage a Tech Rep for bow thruster commissioning tests and trials.

CONTR shall provide and install thruster control head in pilothouse as directed by BAE Systems for compatibility with the hybrid system.

The Schottel Thruster shall be provided complete for installation and operation including, but not limited to:

- Fixed pitched propeller
- Electric Motor
- Sacrificial anodes
- Propeller shaft and seals
- Lubrication system
- Lube oil expansion tank
- Tunnel w/stainless wear ring and outer guard flat bar grid system

568.1 MANEUVERING & CONTROL SYSTEM

Propulsion controls shall be by BAE Systems, provided as part of the integrate propulsion system. The vendor shall be responsible to provide USCG/MSD with a complete description of the Maneuvering and Control System (via the CONTR). This shall include a DVTP and PSTP document. The CONTR shall engage a Tech Rep for control system commissioning tests and trials.

568.2 BOW THRUSTER SPARES

The following spares will be supplied for the bow thruster by Schottel or approved equal:

Mechanical Spare Parts of STT 110 FP			
Pos	Description 1	Quant	Quant Unit
1	O-ring 110,00x 3,00	1	pc
2	O-ring 10,00x 2,00	1	pc
3	O-ring 115,00x 3,00	1	pc
4	Usit-Ring U60,7X73,0X3,0	1	pc
5	Usit-Ring U34,3X43,0X2,0	1	pc
6	O-ring 203,00x 3,00	1	pc
7	Rotary Shaft Seal110X 130X12	3	pc
8	O-ring 70,00x 3,00	1	pc
9	Rotary Shaft Seal70X 90 BABSL NIF	1	pc

573.6 VEHICLE TIE DOWNS

The CONTR shall provide and install a vehicle tie down system for the center truck lane.

573.6.1 TIE-DOWN SOCKETS

The CONTR shall provide and install thirty (30) main deck tie-down sockets in locations shown on D358A-S7-1 and as designated by the OREP. The system shall consist of deck sockets formed of 8" Sch. 80 pipe caps, with 1" round bar attachment points, all continuously welded all around to the approval of the OREP and attending USCG Inspector. Pipe caps shall be fitted as flush as possible to main deck plate top surface.

573.6.2 TIE-DOWN CHAIN, BINDERS

The CONTR shall provide (30) sets of 3/8" Grade 80 tie down chain assemblies 15' long with 3/8" hooks at each end and (30) lever type 3/8" chain binders. Storage for the assemblies shall be provided on expanded metal shelves in the starboard deck locker to the approval of the OREP.

581.1 GROUND TACKLE

The CONTR shall provide and install an anchoring system consisting of the following components in accordance with DWG D358A-M4:

- A bulwark anchor “pocket” main deck port FR6-FR11
- Double bitt port FR12 (DWG D358A-A12)
- Anchor 750# Baldr workboat type or approved equal
- Chain 32 ft. of 1” Grade 1 stud link, galvanized, stowed on bulwark hooks fr 9-13
- Line 235 ft., 1-1/2” inch Samson Ultra Blue 12 plaited rope or approved equal
- Anchor release lever mechanism (DWG D358A-M4)
- Hawse pipe, anchor rode retrieval drum port side hull void space
- (1 set) Shackles, swivel, thimbles, required and to the approval of the MaineDOT OREP.

582.1 MOORING SYSTEM

The CONTR shall provide and install, as appropriate, the following equipment:

582.1.1 LINES

(6) 50-foot (including eye splice) poly-Dacron dock lines, 1-1/4 inch diameter (18,750# avg. tensile strength), each with a 30-inch eye splice in one end.

582.1.2 KEVELS (CLEATS)

The CONTR shall provide and install mooring cleats and bulwark fairlead chocks to adequately moor the vessel for bow and stern loading and for side to pier docking. The CONTR shall provide and install (9) 24” kevels in locations as shown on DWG D358A-A12. There shall be kevels on each side, (4) port and (5) starboard. Each kevel shall have an associated fairlead chock (4” Schedule 80 hawse pipe) located to the approval of the MaineDOT OREP to provide adequate line leads from the chock to the kevel.

The CONTR shall provide and install line hooks on the bulwarks in (5) places – P&S bow and stern to hang mooring lines on, Port fr 9-13 for anchor chain. These shall be flat bars shaped to accommodate the mooring lines – two hooks spaced appropriately at each of (4) mooring stations. Hooks and locations shall be to the approval of the MaineDOT OREP.

582.1.3 BULWARK SERVICE GATES

The CONTR shall provide and install (4) hinged bulwark service gates in accordance with the locations and details of DWG D358A-A12.

582.2 PIPING SYSTEM TESTS**Table 900-1: Hydrostatic Test Pressures/Fluids**

System	Test Pressure	Test Fluid
Fresh water	128 psig	fresh water
Fuel oil service and transfer	150 psig	oil and service fluid
Fire main	129 psig	fresh water
Bilge system	38 psig	fresh water
Hot water heating system	(reserved)	fresh water
Compressed air, service air	150 psig	fresh water
Compressed air, whistle air	285 psig	fresh water
Hydraulics, bow & stern ramps	(reserved)	hydraulic oil
Hydraulics, steering gear	(reserved)	hydraulic oil

Manually operate all valves from stop to stop to demonstrate free operation without binding. Remote valve operators (reach rods, hydraulically actuated quick closing devices, etc.) shall be tested to demonstrate proper operation. Valve identification tags shall be checked for accuracy.

Manually operate all ventilation system balancing dampers and fire dampers to demonstrate free operation without binding. Check ventilation system filters for proper installation and cleanliness prior to system operation.

Demonstrate that all relief valves and pressure safety devices operate at their set pressure or provide current test certification. Provide all pressure gauges with lab calibration test and certification stickers along with certifying documents.

583.1 RESCUE BOAT & DAVIT

- 583.1.1: DAVIT: The CONTR shall provide and install a Coastal Marine Equipment, Inc. D50-14.75-11-24 (240V, 3-phase), or approved equal davit on the 02-Deck starboard side (Ref. D358A-A1-2 and D358A-M5). The CONTR shall note that the Coastal davit pedestal will not be provided with side gussets. The CONTR shall be responsible for fabricating and installing (8) gussets on the pedestal. Handing of davit as shown on plans.
- 583.1.2: RESCUE BOAT: The CONTR shall provide and install a new Zodiac Mil-Pro, or approved equal rescue boat with jockey seat, electric start, and (50) HP gasoline outboard motor.
- 583.1.3: The CONTR shall provide and install a new rescue boat battery charger. The charger shall be a Pro SE, Sportsman Edition, or approved equal and

shall be located in a position to be accessible to the rescue boat motor starting battery. Locate battery charger power to an appropriate source.

- 583.1.4: The CONTR shall provide and install aluminum cradle chocks, Scully Fabrication, or approved equal. Scully Fabrication of Morgan City, LA has the correct template for the aluminum cradle. Contact: Shane Scully PH 985-385-1323 shane@scullyfab.com 1015 Stephenville Rd., Morgan City, LA 70381. The Scully cradle shall be ordered for the boat with the motor stored in a vertical position.
- 583.1.5: Dedicated floodlights for prep and launch illumination shall be provided and installed in accordance with Section 331.1.9.2.
- 583.1.6: TESTS: The installation shall be fully operational in radius swing and clearances past the rails. The davit and boat shall be weight tested and operationally tested to the approval of the OREP and the attending USCG Inspector.

585.0 WHEELCHAIR LIFT

The CONTR shall provide and install a Gillespie or approved equal wheelchair lift at the location shown on the DWGS FR30 port side. This wheelchair lift will service the Main, 01 and 02 decks. The CONTR shall be responsible for all structural requirements for this install including labor and materials. The CONTR shall engage a Tech Rep who is certified by Gillespie to supervise the installation. The CONTR shall be responsible for the installation and operation of all alarms, safety devices, and ancillary wheelchair lift equipment to provide the vessel with a complete operating system.

A wireless intercom communications system from the wheelchair lift to the Pilothouse shall be provided and installed. System shall be wireless, powered by 4 hour UPS system in elevator can along with cab light.

The wheelchair lift system shall be performance tested to the satisfaction of the MaineDOT OREP and USCG and shall follow all of the Manufacturer's recommendations for installation. The system shall be installed to meet all ADAAG, USCG, and State of Maine requirements as applicable for a wheelchair lift.

Service use of the wheelchair lift prior to Contract completion will not be permitted. When tested and passed, the wheelchair lift shall be de-energized to prevent casual use until just preceding dock trials. The CONTR shall generate a test procedure for the approval of the OREP and conduct testing in the presence of OREP and USCG Inspector.

The CONTR shall install a Gillespie, or approved equal, directly coupled holeless hydraulic passenger wheelchair lift system designed per ANSI/ASME A17.1 Code for Elevators and

Escalators, complete with hydraulic power unit and cylinder, car frame and platform, cab and car doors, door operator, door protection, controller, car and hall fixtures, inspect station, guide rails, rail brackets, pit bumpers, shaftway switches, hardware and accessories as required. All shaftway switches and electrical devices to be NEMA 1 unless otherwise indicated.

585.0.2.1 SPECIFICS

The wheelchair lift shall be provided with a hoistway, entrances including frames, sills, hangers, tracks, closers, vision panels, and all required hardware. It shall be designed and installed to meet or exceed, so far as possible, the ADAAG handicapped accessibility code. This requirement shall be met for the wheelchair lift itself and for ADAAG entrance ramps and access features.

The entrance doors, Main Deck, 01-Deck, and 02-Deck shall be hinged with ADA hardware installed. ADA ramps shall be installed as required. The Main Deck and 02-Deck doors shall be weathertight. The 01-Deck door shall be joiner. Door operating forces shall be as required by the ADAAG, or USCG requirements if that should prevail.

The interior wheelchair lift cab entrance shall be fitted with a sliding according fence door fitted with ADA accessible hardware.

585.0.2.2 WHEELCHAIR LIFT CAR

The wheelchair lift car bulkhead linings shall be 304 brushed stainless steel. The ceiling shall be the Manufacturer's standard material and finish. The cab floor covering shall be the same as called out for the vestibule and floor covering on the 01 passenger deck. Any mild steel in the elevator cab shall be shop-painted before delivery to shipyard.

585.0.2.3 INSPECTIONS AND TESTS

The wheelchair lift and all components shall be inspected and tested under the supervision of the Manufacturer's Tech Rep and to the approval of the OREP and the attending USCG Inspector.

585.0.2.4 SPARES

The CONTR shall provide wheelchair lift spare parts in accordance with the manufacturer's recommended spare parts list.

585.0.2.5 WARRANTY

The vendor shall provide a (1) year warranty from the time of delivery of the vessel to the OWNER which shall include maintenance and repairs for the entire wheelchair lift and all wheelchair lift operating systems.

SWBS SECTION 600 MARKINGS, ACCESS, & OUTFITTING

The following specifications and drawings referenced provide for Furnishings, Coatings, and Joiner work items required to be performed by this Contract:

- 600.1 REFERENCE DRAWINGS
- 602.1 SIGNAGE & MARKINGS
- 611.1 HULL FITTINGS
- 612.1 RAILS & STANCHIONS
- 622.1 FLOOR PLATES, GUARDS
- 623.1 LADDERS, STAIRS, ADA RAMPS
- 625.1 WINDOWS
- 631.1 COATINGS
- 631.2 SAMPLE COATING SCHEDULE
- 633.1 CATHODIC PROTECTION
- 634.1 INTERIOR DECK COVERINGS
- 634.2 EXTERIOR DECK COVERINGS
- 644.0 SANITARY SPACES & FIXTURES
- 645.1 PASSENGER, CREW & PILOTHOUSE SPACES
- 654.1 UTILITY SPACES

600.1 REFERENCE DRAWINGS

D358A-A1 GENERAL ARRANGEMENTS
D358A-A3 OUTBOARD PROFILE
D358A-A7 DOOR & WINDOW SCHEDULE
D358A-A10 PILOTHOUSE ARRANGEMENT
D358A-S13 BULWARK & MOORING ARRGTs & DETAILS

602.1 SIGNAGE & MARKINGS

602.1.1 GENERAL

The CONTR shall provide and install all USCG required internal and external signage and markings. Access/Braille signage shall comply with 521 CMR 41.00. Additional signage will be provided as required by these Specifications.

602.1.2 REGULATORY MARKINGS

The following letters and numbers will be welded on and painted in contrasting color, sized in accordance with USCG regulations 46 CFR and positioned to the approval of MaineDOT:

- Vessel Name: TBD – Bow P&S Hull; transom
- Hailing Port: Beneath vessel name on transom
- Name Boards: Mounted P&S on Pilothouse above pilothouse doors. Mahogany boards, carved 6” letters painted yellow, boards finished with clear marine epoxy.
- Draft marks: FR5 and FR68 P&S (4 sets) – Numbers 11, 10, 9, 8 in four locations. Exact frame locations to the approval of the MaineDOT OREP.
- Official Number: The Official Documentation Number shall be welded to a transverse hull structure in accordance with 46 CFR and located to the approval of the MaineDOT OREP. A location such as at the bottom of the engine room access FR42 would be appropriate if approved by the OREP.

602.1.3 COMPANY NAME & LOGOS

At the option of MaineDOT, the MaineDOT logo shall be applied in decal material or paint on each side of the stack. If the option is exercised, MaineDOT shall provide the logo to the CONTR in electronic graphic form.

602.1.4 SAFETY & WARNING SIGNS

Signage for keeping off stairways during docking, no smoking, exits, general warnings, PFD stowage and access, lane height clearances, etc. shall be designated by the MaineDOT OREP and shall be in compliance with USCG CFR requirements.

602.1.4 BUILDER’S PLAQUE

A bronze, engraved Builder’s Plaque will be provided and installed in either the port or starboard 01-Deck passenger cabin in a location as approved by the MaineDOT OREP. At a minimum, the Builder’s Plaque shall identify the vessel Name, Builder, Designer, Owner, and delivery year.

611.1 HULL FITTINGS

611.1.1 DOORS, EXTERIOR WEATHER-TIGHT

Exterior marine weather-tight doors will be North American manufacture Dean Steel, Freeman Marine, Pacific Coast Marine, Dean Steel, Beclawat, or approved equal. Doors shall meet the 46 CFR fire code requirements of the space to which they serve. Doors shall be “bolt-in” frame type. All doors shall be steel, stainless steel, or aluminum as appropriate for the installation and as shown on the Contract DWGS. Doors and frames shall be painted by CONTR to match adjoining bulkheads and/or joinerwork. Door sill heights shall be no greater than as required by the ADA Guidelines, or as required by USCG downflooding and stability requirements. Exterior doors not insulated with mineral wool shall be filled with fiberglass thermal insulation.

Doors shall be handed as per DWG D358A-A7. Hardware, lights, and special features shall be as described on D358A-A7. A general reference list of WEATHER-TIGHT doors follows:

- Pilothouse weather-tight: (1) each P&S (fitted with holdbacks in 2 positions)
- 02-Deck weather tight: EDG Room FR27.5; Stairway starboard FR29.5; Wheelchair lift FR31
- 01-Deck Port weather tight: Stairways FR24 & FR41; weather deck FR48.5
- 01-Deck Starboard weather tight: Stairways FR24, FR39, FR43; weather deck FR48.5
- Main Deck Port superstructure: Wheelchair lift FR31; Escape Trunk FR34, Deck Locker FR 25.5
- Main Deck Starboard superstructure: Deck Locker FR25.5; Crew Break Room access FR27; Engine Room access FR35.5

All doors accessible to passengers shall be fitted with finger guard protectors at the hinges.

611.1.2 DOORS, INTERIOR JOINER

Interior joiner doors shall be North American manufacture Dean Steel, Freeman Marine, Pacific Coast Marine, Beclawat, or approved equal. Doors shall meet the 46 CFR fire code requirements of the space to which they serve, including internal insulation. Doors shall be “bolt-in” frame type. All doors shall be steel, stainless steel, or aluminum as appropriate for the installation and as shown on the Contract DWGS. Doors and frames shall be painted by CONTR to match adjoining bulkheads and/or joinerwork. The clear opening tops of doors shall, in general, be not less than 6’-8” above the finished deck (Ref: D358A-A7). Door sill heights in passenger areas shall be no greater than as required by the ADA Guidelines or USCG regulations. Self-closing door opening force shall not exceed ADA Guidelines or as required by USCG Regulations.

Doors shall be handed as per DWG D358A-A7. Hardware, lights, and special features shall be as described on D358A-A7. A general reference list of JOINER doors follows:

- 02-Deck: Crew head FR25
- 01-Deck Port: Wheelchair lift FR31; Escape Trunk FR34; Passenger head FR38
- 01-Deck Starboard: Passenger Head FR30;
- Hold Deck: Crew Head Stbd; FM 200 rms p/s, Workshop, Battery Room
- Engine Room – Acoustic EOS doors P/S

All doors accessible to passengers shall be fitted with finger guard protectors at the hinges.

611.1.3 ENGINE ROOM WATERTIGHT DOOR

CONTR shall provide and install Class I hinged, watertight door on forward engine room bulkhead (Ref: D358A-A7). Door shall be steel, with clear opening dimensions of 66”x30”. Door shall be equipped with quick-acting wheel operation both sides. Door shall have local and

pilothouse audible and visual alarms for open status. Door shall be by Cen-Tex or approved equal. Door shall meet all U.S. Coast Guard requirements for subdivision bulkhead watertight door.

612.1 RAILS & STANCHIONS

612.1.1 EXTERIOR RAILINGS

The CONTR shall provide and install welded steel pipe handrails and stanchions to meet 46 CFR requirements (Ref: D358A-S12). Handrails shall be provided and installed around all perimeters of the 02 & 01 weather deck areas including 02-Deck inboard/forward/aft of the IBA storage racks and rescue boat storage/launch area. These pipe handrails shall be fitted with welded tabs and bolt-on stainless screen sections (See Section 612.1.2 below).

Perimeter exterior rails in way of passenger and crew accessible areas shall be of the following approximate dimensions.

1. Top course, and stanchions: 2" Schedule 40 pipe
2. Lower course: 1-1/2" Schedule 40 pipe
3. Second and third courses (crew): 1-1/2" Schedule 40 pipe
4. Deck to top of top course = 40"
5. Spacing of intermediate courses as shown on plans
6. Deck to bottom of bottom course = no greater than 6" (passenger areas)
7. Deck to bottom of bottom course = no greater than 9" (crew areas)
8. All passenger accessible openings are to be fitted with stainless steel screen panels

NOTE: Rails forward of the bridge wings and around the front of the pilothouse where passengers do NOT have accessibility shall not be fitted with screening.

Rail installations shall be in accordance with D358A-S12 and shall in general be:

- 02-Deck: Passenger Access -- two courses & screens
- 02-Deck: Crew Only Access -- four courses; no screening panels
- 01-Deck: Passenger Access -- two courses & screens

Pilothouse top shall be fitted with six attachment padeyes for crew to clip safety lines into when working on housetop. Aft end of pilothouse shall be fitted with tag line system for crew to clip safety lines into when working on lower housetop.

612.1.2 SAFETY FENCING

The CONTR shall provide and install stainless steel safety screen panels on perimeter rails on the 02 and 01 decks. Screens shall be McNichols or approved equal, woven 316 stainless steel lock crimp 2" square, 0.25" wire diameter (2-3/4 ga.) and must be approved by the OREP.

612.1.2 INTERIOR RAILS

“Sea Rails” shall be provided and installed in accordance with the requirements of the CFR, ADAAG, and to the approval of the USCG in the 01-Deck passenger spaces P&S. The CONTR shall allow for 100 linear feet of sea rail installation to be allocated at the direction of the OREP and to the approval of the attending USCG Inspector. Interior sea rails shall be mild steel.

Hand rails that are affected by new joiner panels, joiner sheathing, or insulation shall be adjusted to be clear of such installations providing sufficient hand clearance. This may require lengthening or otherwise modifying existing hand rail brackets and supports. The CONTR is responsible for this work. All interior hand rails shall be securely fastened back to structure to the approval of the OREP. Fastening to soft core joiner panels alone is not sufficient.

622.1 FLOOR PLATES, GUARDS

622.1.1 FLOOR PLATES

The CONTR shall provide and install patterned steel floor plate in the engine room. Steering gear flats, tank voids, at the bottom of all vertical ladders, and void spaces where there is equipment which must be periodically inspected or serviced shall be provided with catwalks and side handrails to provide safe passage. Catwalks shall be installed, as shown on Dwg. D358A-A1-1, with framed steel diamond plate base, angle supports and handrails on both sides.

622.1.2 GUARDS

Guards shall be installed in way of exposed shafting, other rotating machinery, and exposed hot pipes as appropriate to protect personnel.

623.1 LADDERS, STAIRS & ADA RAMPS

623.1.1 VERTICAL LADDERS

The CONTR shall provide and install vertical ladders in way of access and escape hatches, and for access to the top of the pilothouse. Handholds will be installed as required to aid personnel access. Steel diamond plate platforms shall be installed at the bottom of all vertical ladders in the Hold. Platforms 24”x 24” minimum, and arranged to provide a secure standing surface as well as for collection of road salt liquid dripping down and collecting in corners of bottom plate, stiffeners, etc. (See 622.1.1). Vertical ladders shall be no narrower than 16”, have no obstructions behind centerlines of rungs closer than 7”, and rungs shall be spaced no more than 12” apart. Ladders shall meet USCG regulations for Subchapter K passenger vessels (46 CFR 116.438).

623.1.2 INCLINED STAIRS

The CONTR shall provide and install inclined stairs leading from the Main Deck to the Engine Room, Crew Break Room, 01-Deck, 02-Deck, and Pilothouse. Particular attention shall be paid to the maintenance of adequate headroom on stairways. Stairways shall be fitted with railings and stanchions to comply with USCG regulations and ADA Guidelines as applicable. Each stair riser in a stairway run shall measure vertically **exactly** equal to all other risers in that stair run. The MaineDOT OREP and CONTR shall ship check and confirm this requirement. All inclined stairs, interior and exterior (with exception of exterior pilothouse stairs) shall be fitted with Wooster Products Stairmaster Type 500 non-skid safety treads or approved equal (See 634.1.5). Interior and Exterior passenger access stair rails shall comply with ADA Guidelines including rail extensions top and bottom (See ADAAG V503.10.2 and V503.10.3).

625.1 WINDOWS

625.1.1 PILOTHOUSE WINDOWS

The Pilothouse windows shall be clear, tempered Pacific Coast Marine, Beclawat, or approved equal, with aluminum clamp-ring frames. CONTR to provide and install pilothouse windows (16 total), ten of which shall be electrically heated (30Watts/ft. sq.). Forward facing windows shall be installed on a slant (top forward) to limit reflection. All aluminum frame windows shall be installed with fire clips to satisfy 46 CFR requirements.

The CONTR shall provide and install heavy-duty Hepworth, Cornell-Carr, or approved equal, marine window wipers on (8) Pilothouse windows. Individual console-mounted switches at each console shall control On/Off/Intermittent wiper functions (Ref: DWGS D358A-A7 and D358A-A10).

All pilothouse windows shall be fitted with Sola-Cure Anti-Glare film shades.

625.1.2 01- DECK WINDOWS

The CONTR shall provide and install fixed and sliding windows in the P&S 01-Deck passenger spaces (Ref: D358A-A7). They shall be Beclawat, Pacific Coast Marine, FabTek, (or approved equal), aluminum, clamp-ring frame, with tinted tempered thermopane glass. All aluminum frame windows shall be installed with fire clips to satisfy 46 CFR requirements. Sliding windows shall be fitted with locking devices to prevent windows from opening more than 5 inches.

631.1 COATINGS

631.1.1 REFERENCES

1. PPG Paint and American Safety Technologies Technical Data Sheets
2. ASTM D 4541-89 - Standard Test Method for Pull-Off Strength of Coatings Using a Portable Adhesion Tester.
3. MaineDOT Standard Specification 506 – Shop Applied Protective Coating - Steel
4. ASTM D 4138-88 - Standard Test Method for Measurement of Dry Film Thickness of Protective Coating Systems by Destructive Means.
ASTM D 4414 - 90 - Standard Practice for Measurement of Wet Film Thickness by Notch.

631.1.2 GENERAL SCOPE

The CONTR shall apply a high-quality commercial marine paint system, PPG Inc., or approved equal. Prior to the commencement of coating applications, the CONTR shall provide MaineDOT with a detailed coating schedule for surface preparation and application of the coating system. The schedule shall be reviewed and approved by the MaineDOT OREP and shall be in compliance with the paint manufacturer's application and warranty requirements.

CONTR shall hold a current shop NACE NIICAP, or SSPC- QP3 certification or another coatings certification as approved by the State of Maine Fabrication Engineer. CONTR shall submit QC plan to MaineDOT for review.

631.1.3 INSPECTIONS

Acceptance of coatings shall be by the MaineDOT OREP as areas are presented for inspection. Construction primer need not be removed provided it is compatible with the paint system specified. The CONTR shall arrange for the Paint Manufacturer's Tech Rep to be present to the degree required by the CONTR and Paint Manufacturer to ascertain that the warranties on all major coating applications are enforceable.

The coating systems are to be agreed upon between the Paint Manufacturer's Rep, MaineDOT's OREP, and the CONTR prior to commencing any coating work. This agreement shall detail the Manufacturer's paint specifications and coating application Instructions. These Specifications and Instructions are to be followed for the duration of the contract. Any coating system listed in this specification is strictly a guideline. The exact specification will be agreed upon prior to commencing work.

All finish colors shall be as directed by the MaineDOT OREP.

Tank Divisions, superstructure, deckhouses, bulkheads, deck and hull inserts, and any other welds which are required to pass USCG inspection shall not be painted until the USCG Inspector assigned has witnessed and passed the required air test, water blast test, vacuum box test, dye-penetrant test or other test method applicable to the particular class of weld as required by the CFR. Coating of welds shall not commence before the attending USCG Inspector has passed the

welds in question. If such areas are painted in advance of required tests, the CONTR shall remove all paint applied to either or both sides of the weld to the satisfaction of the attending USCG Inspector in preparation for proper testing.

631.1.4 PROTECTION/PREPARATION

Where blasting and/or grinding is performed, the CONTR shall mask or seal off sea valves, machinery, equipment and all openings as necessary to prevent damage. Windows, doors, antennas, wires, A/C units, battery boxes, cables, deck lights, navigation lights, etc. shall be properly protected and sealed. Any equipment damaged by blasting and coating (including overspray) shall be repaired at the CONTR's expense.

Coatings are only to be thinned with solvent for spray painting or other purposes as specifically approved by the Paint Manufacturer's Tech Rep.

Where necessary, scuppers, and overboard drains shall be sealed, plugged, or led clear overboard so that the hull will remain dry during the paint application. The CONTR shall keep a coating Weather Log and a DFT Mil Reading Log. These logs shall be available for inspection by MaineDOT's OREP during job progress. A copy shall be presented to the OREP and to the Paint Manufacturer's Tech Rep prior to delivery of the vessel to the OWNER.

All fixtures, deck coverings, joiner work, machinery, equipment, label plates, gages, instruments, etc. shall be protected during coating operations. Upon completion of work, all paint, smudges, sealant, bonding agents, etc. shall be removed from finish surfaces.

631.1.5 MACHINERY SPACES

All machinery and void spaces shall receive a complete and thorough preparation and a full coating system. When work has been completed in a hull machinery or void space all areas and surfaces shall be thoroughly cleaned prior to commencement of coating application. The MaineDOT OREP and coating manufacturer's Rep shall inspect and sign off on each space.

Piping or lagging which is exposed to view shall be color banded and stenciled for identification. Standard safety colors (approved by the OREP) shall be used to distinguish machinery, pipes and fittings, which may present a hazard.

631.1.6 VEHICLE DECK (MAIN DECK)

The main vehicle deck shall be blasted, prepped, and shall receive a complete coating system (Ref: Section 631.2.A4).

631.1.7.1 GENERAL SCOPE

All surface preparation shall be to the specifications and approval of the paint manufacturer's assigned Tech Rep and to the inspection and approval of the OREP.

631.1.8 HULL, DECK HOUSE MARKINGS

Paint for markings on the hull and deck house shall be compatible with the painted surfaces upon which they are applied.

631.1.9 PRE-CONSTRUCTION PRIMER

If the pre-construction primer applied to construction steel is not compatible with the paint system used, the pre-construction primer must be removed.

631.2 SAMPLE COATING SCHEDULE

The Sample Schedule below is based on PPG Paint preparation and coating recommendations. It is included in these Specifications as a guide for the CONTR to use in assessing coating Manufacturer's proposals. MaineDOT must approve final paint specification and any "or equal" coating provider proposals.

SAMPLE COATING SCHEDULE

ALL HULL COATINGS SHALL BE APPLIED, MAINTAINED, AND REMOVED CONSISTENT WITH FIFRA. ALL EXPOSED EXISTING OR NEW COATINGS SHALL CONTAIN ONLY APPROVED BIOCIDES AND/OR TOXICS

A.1 EXTERIOR HULL KEEL TO WATERLINE (curved height waterline per Outboard Profile Plan)

A.1.1: AREAS OF COMMERCIAL BLAST & NEW STEEL ONLY

- Sandblast welds to a SSPC-SP10 Near White Blast and sweep blast new steel plates
- Amerlock 2 (color contrast with next coat) 5 mils DFT
- Amerlock 2 (color contrast with previous coat) 5 mils DFT
- ABC 3 (color contrast with top coat) 5 mils DFT
- ABC 3 (black) 5 mils DFT
- ABC 3 (black) – WL down 4 ft. band 5 mils DFT

NOTE 1: DFT readings are to be taken on 1st coat. The first coat of anti-fouling shall be applied over a tack coat of Amerlock 2. DFT shall be taken and recorded after first coat of anti-fouling has dried.

NOTE 2: Keel to waterline – The finish coat shall be **black**. The first coat shall be a color that contrasts with the final coat. Follow application guidelines to insure proper inter-coat adhesion.

NOTE 3: First coat anti-fouling shall be applied over a tack coat of Amerlock 2 while still "thumb print" tacky.

A.2 FREEBOARD – WATERLINE TO & INCLUDING RUB RAIL GUARD ONLY

A.2.1: The waterline to the rub rail guard and including the guard to the side shell weld on the main deck is to be coated in accordance with the requirements:

Spot blast to approval of OREP damaged/corroded areas to SSPC-6 commercial blast and “scuff sand” all sound and intact gloss finish areas prior to coating application to provide a profile and fresh water rinse.

- Dimetcote 302H (Spot coat to blasted areas) 3 mils DFT
- Amerlock 2 (Full coat) 5 mils DFT
- PSX 700 (Full coat all areas) 5 mils DFT

(Color to be Red below Guard, Guard to be Black)

A.3 TOP SIDES

A.3.1: AREAS OF COMMERCIAL BLAST & NEW STEEL ONLY

- Dimetcoat 302H 3-4 mils DFT
- PSX 700 5-6 mils DFT

(Color to be White including mesh panels, lower handrail courses, and rail stanchions; Black for pinstripe at 01 Deck, Bulwark caps, top course of handrails all around vessel, and main deck mooring fittings)

A.3.4: STACK

- Schedule as in A.3.1 above for Dimetcoat 302H with the following exceptions
- Finish coat PSX 700 color White 5-6 mils DFT
- Finish coat stripe on cap and base PSX 700 color Black 4 mils DFT

A.4 FREIGHT DECK

A.4.1: AREAS OF COMMERCIAL BLAST AND NEW STEEL ONLY

- Dimetcoat 302H 3-4 mils DFT
- Amerlock 2 white (with aluminum oxide #24 cast by hand to the desired quantity) 5 mils DFT
- Amerlock 2 grey 5 mils DFT
- PSX 700 Color Grey 4 mils DFT
- Note: Apply 5’ x 5’ wet sample for approval by OREP.
- PSX 700 vehicle lane and ADA markings (white) 2-4 mils DFT

A.5 OTHER EXTERIOR DECKS INCLUDING PILOT HOUSE TOP

A.5.1: AREAS OF COMMERCIAL BLAST AND NEW STEEL

- Dimetcoat 302H 3-4 mils DFT
- Amerlock 2 white (with aluminum oxide #24 cast by hand to the desired Quantity per OREP) 5 mils DFT
- Note: Apply 5' x 5' wet sample for approval by OREP.
- PSX 700 Color per OREP 3-4 mils DFT

A.6 INTERIOR VOIDS & MACHINERY SPACES BELOW FLOOR PLATES

A.6.1: AREAS OF COMMERCIAL BLAST AND NEW STEEL ONLY

- Needle gun welds and disturbed steel to a SSPC-SP11 Power Tool Cleaning to Bare Metal
- Amerlock 2 Grey Stripe coat
- Amerlock 2 White 5 mils DFT
- Amerlock 2 Grey (color contrast with first coat) 5 mils DFT

A.7 INTERIOR MACHINERY SPACES ABOVE FLOOR PLATES

A.7.1: AREAS OF COMMERCIAL BLAST AND NEW STEEL ONLY

- Needle gun welds and disturbed steel to a SSPC-SP11 Power Tool Cleaning to Bare Metal
- Amerlock 2 Grey Stripe coat
- Amerlock 2 White or gray 5 mils DFT
- PSX 700 White 5 mils DFT

A.8 ACCOMMODATION & PUBLIC SPACES INCL. FREIGHT DK BULKHEADS – VISIBLE

A.8.1: AREAS OF NEW STEEL

- Amerlock 2 Grey Stripe coat
- Amerlock 2 Grey 5 mils DFT
- PSX 700 White 5 mils DFT

A.9 BEHIND INSULATION – ALL SPACES

A.9.1: AREAS OF NEW STEEL ONLY

- Amerlock 2 Grey Stripe coat
- Amerlock 2 White 5 mils DFT

A.10 MACHINERY SPACE FLOOR PLATES

A.10.1: COMMERCIAL BLAST AND NEW STEEL ONLY

- CONTR to research procurement of pre-blasted patterned steel floor plates
- PSX 700 color per OREP 5 mils DFT

A.11 POTABLE WATER TANKS

A.11.1: COMMERCIAL BLAST AND NEW STEEL ONLY

- Needle gun welds and disturbed steel to a SSPC-SP11 Power Tool Cleaning to Bare Metal
- Amercoat 133 White Stripe coat
- Amercoat 133 White 10 mils DFT

NOTE: 30 DAYS DRY TIME REQUIRED (vent & leave access open)

A.12 BILGE SLOPS TANK

A.12.1: COMMERCIAL BLAST AND NEW STEEL ONLY

- Amerlock 2 White 5 mils DFT
- Amerlock 2 Gray 5 mils DFT

A.13 SEWAGE TANK Stainless Steel (CHT)

A.13.1: COMMERCIAL BLAST AND NEW STEEL ONLY

- Light abrasive blast
- PPG Amercoat 240 Buff Stripe Coat
- PPG Amercoat 240 Buff 10 mils DFT
- PPG Amercoat 240 Grey Stripe Coat
- PPG Amercoat 240 Grey 10 mils DFT

A.14 REPAIR OF DISTURBED COATINGS

A.14.1: Minimum repair of disturbed existing coatings shall be (2) coats primer at 4 mils DFT each coat and (1) coat matching finish gray on Main Deck top surface; and (2) coats primer at 4 mils DFT on interior disturbed surfaces.

A.15 SHOP COAT

A.15.1: NEW STEEL PROVIDED WITH SHOP COAT

Proceed with specifications above. Normal steel procurement will include shop coat.

A.15.2: NEW STEEL NOT PROVIDED WITH SHOP COAT

All new steel that has not previously been shop coated shall receive a white metal blast to one side prior to installation. This side shall be shop coated with one coat of Interzinc 75V at 3-5 mils DFT. The blasted and primed steel shall be installed to the inboard side.

633.1 CATHODIC PROTECTION

Aluminum alloy anodes will be stud bolted to the hull and underwater appendages, in particular, at critical areas that could generate electrolysis including the transoms. Each sea chest shall be fitted with two anodes. Anodes shall be secured to stainless threaded studs with stainless Nyloc nuts having a minimum of 3-threads clear. Accurate stud spacing is essential for future replacement of anodes by divers.

There shall be anodes provided of sufficient capacity to provide 24-month minimum protection for the hull, sea chests, and hull appendages. Anode count and location shall be to the approval of the OREP.

634.1 INTERIOR DECK COVERINGS

In general, the CONTR shall follow the Coatings guidance schedule.

634.1.1 CREW SPACE IN HOLD

- Paint in accordance with schedule

634.1.2 MAIN DECK

- Miscellaneous lockers and Crew Shelter: Paint in accordance with schedule

634.1.2 01-DECK

- Passenger Cabins: Poured Epoxy floor covering with broadcast flake pattern. Covering will be installed with turned-up cove base 4 inches on the bulkheads. Color and pattern to be approved by the MaineDOT OREP.
- Deck Locker and Storage Locker: Paint in accordance with schedule

634.1.4 PILOTHOUSE

- Pilothouse: Poured epoxy floor covering, color to be approved by the MaineDOT OREP. Heavy duty rubber matting shall be provided in way of console operational standing area.

634.1.4 SAFETY MATTING

Switchboard; Heavy duty rubber safety matting both for Main & Emergency switchboards.

634.1.5 NON-SLIP STAIR TREADS

The CONTR shall provide and install non-slip stair treads on all interior and exterior (with exception of exterior pilothouse stairs) inclined stair steps including the top landing of each run. Treads shall be Wooster Products, Stairmaster 500 model non-skid, abrasive-filled.

634.2 EXTERIOR DECK COVERINGS

634.2.1 MAIN DECK

Coating system in accordance with Schedule.

635.2 STRUCTURAL FIRE PROTECTION

CONTR shall provide and install structural fire protection insulation on bulkheads and overheads generally as shown on the Contract Drawings. The CONTR shall use NVIC 9-97 Ch. 1 (Guide to Structural Fire Protection Aboard Merchant Ships) as guidance. All materials used in the structural fire protection system shall be approved under series 164.007 and provided with current approval certificates.

Insulation shall be installed in batts or blankets. Insulation shall be faced, sheathed and lined in all enclosed passenger and crew spaces. Insulation shall be finished with heavy duty sealed fabric cloth covering, fastened and with seams and edges taped in accordance with the manufacturers' recommendations in all service and vehicle spaces. Mineral wool shall be attached to structure using welded pins as required. Any glue used in system shall be incidental to the attachment system and be approved as fireproof.

The assembled insulation blankets or batts shall maintain the required fire rating for the given installed locations as shown in D358A-A11. Seal edges and joints of insulation with tape as recommended by the insulation manufacturer to present a smooth, continuously sealed surface.

644.0 SANITARY SPACES & FIXTURES

644.0.1 GENERAL SCOPE

The CONTR shall provide and install plumbing fixtures and accessories in passenger heads, crew heads, and crew break room as per these Specifications and the Contract DWGS. Plumbing fixtures, fittings, and accessories shall be specifically manufactured for marine service with stainless steel or chrome plated cast brass trim. Furnish and install fixtures complete with valves, faucets, stops, drain fittings, vents, and hangers. Traps shall be chrome plated cast brass with cleanout plugs.

All plumbing systems are performance based and are to be tested as such for the approval of the OREP. This includes clean out of all flushometers after installation and flushing of the sanitary supply water system.

644.0.2 ADA COMPLIANCE

All fixtures in the 01-Deck port side passenger head, designated as ADA, shall be provided and installed in strict compliance with ADAAG July 2013 regulations and requirements. The CONTR shall take particular care in horizontal and vertical locations for ADA compliance when installing grab rails, toilet, lavatory, mirror, paper holders, etc. All sanitary fixture locations must be approved by the OREP. All other heads not ADA compliant shall be fit with grab rails.

644.0.4 SANITARY FIXTURES

The CONTR shall provide and install all sanitary fixtures as per Contract DWG material lists and these Specifications unless changes are specifically approved by the OREP on a case by case basis.

- TOILETS (all heads): (4) Floor mounted, Kohler Model Highcliff K-96057, elongated bowl, white, ADA compliant, w/SEAT, Kohler Model Lustra K-4666, white, open front, no cover, or equal.
- FLUSHOMETER (all heads): (4) Sloan, salt water service, or equal.
- LAVATORY BOWL (Stbd 01 Deck) Nameek's Arda Corner Sink, CeraStyle 001900-U, Corner mount, wall hung, w/overflow + strainer, or equal.
- LAVATORY BOWL (Port 01 Deck): American Standard Wheelchair Users Wall Mounted Sink, Model 9141.011.020, with overflow + strainer, or equal.
- LAVATORY BOWLS (remaining 2) American Standard Lucerne, wall-mounted, Model 0356.028.020, with overflow + strainer, or equal.
- FAUCET (01-Deck heads): (2) Sloan, electronic Model EAF-350-ISM, or equal.
- FAUCET (crew heads): (2) Kohler Model K-15198 Coralais, centerset, or equal.
- HAND DRYER (01-Deck heads): (2) Excel ThinAir TA-SB surface mount, or equal.
- PAPER TOWEL DISPENSER (all heads & break room): (5) MaineDOT standard issue

- TOILET PAPER DISPENSER (4) MaineDOT standard issue
- VANITY MIRROR (all heads): (4) Bobrick Model B-165-2430, or equal.
- SOAP DISPENSER (all heads): (4) Bobrick Contura Model 818615, surface mounted, or equal.
- WASTE RECEPTACLE (all heads): Bobrick surface mounted Model B-279 or equal.
- GRAB BARS (all heads): (1 x 36" Bobrick B5806-36) and (1 x 42" Bobrick B5806-42), or equal.

644.0.5 CREW HEADS

The design calls for (2) unisex crew heads – (1) on the 03-deck aft of the pilothouse and (1) in the Hold Deck.

644.0.6 PASSENGER HEADS

The design calls for (2) unisex passenger heads, one each on the port and starboard 01-Deck.

644.0.6.1 ADA PORT SIDE 01-DECK HEAD

The PORT side passenger head shall be ADA accessible and comply with ADAAG guidelines in all respects. Toilet transfer grab bars (Bobrick or equal) shall be installed in compliance with the ADAAG July 2013 requirements. The installation of the toilet shall adhere to ADAAG height and positioning dimensions. Hand dryers, vanity arrangement, lighting switches, mirror, etc. shall comply with ADAAG Guidelines.

645.1 PASSENGER, CREW, & PILOTHOUSE SPACES

645.1.1 GENERAL

The 01-Deck P/S Passenger Cabins; Crew and Passenger Heads; Pilothouse; Interior Passageways; Stbd 02 Stair Trunk; Crew Break Room (including common passageways, locker and snack prep area) shall be finished to a commercial standard with drop ceilings, finished lined side and ends joiner bulkheads from the deck to overhead drop ceiling, poured Epoxy deck covering, recessed lighting, and marine grade furnishings. Heads shall be fitted with stainless bulkhead linings. A USCG-approved type bulkhead and lining system shall be used. Final finishes shall be reviewed and approved by MaineDOT OREP. Sound insulation and isolation treatment shall be provided as necessary to assure that acceptable decibel levels are maintained in all crew and passenger spaces. Joiner system is to be by Rigidized Metals Corp., Ayres, or approved equal. All joiner system components shall be incombustible.

645.1.2 PILOTHOUSE

The Pilothouse shall be fitted with a forward navigation console similar to the consoles on existing MaineDOT fleet vessels. There shall be a fixed helm chair on center and a fixed lookout chair to port; chart table w/storage under; raised settee (at same height as fixed chairs);

publication rack; a frame for required USCG documents; and all navigation, control, and alarm equipment. The helm and lookout chairs shall be Llebroc Industries, or equal, (Color to be approved by the MaineDOT OREP). Aft end of Pilothouse shall be fitted with console containing a sink, small refrigerator, coffee maker, and microwave, all as shown on the Contract DWGs.

The consoles shall be steel or aluminum framed, fabricated and sheathed with low reflective decorative laminate (Color to be approved by MaineDOT). The Pilothouse console shall be designed to accommodate an operator seated in the helm chair with control functions and navigational instrumentation within easy reach. All displays shall be readable in sunlight. All primary and safety Controls and equipment shall be provided with night backlighting and shall have brightness Controls dim to dark.

The CONTR shall fabricate a full scale mock-ups of the proposed consoles out of lightweight plywood or other suitable material and assemble this mock-up in an interior space made suitable for the purpose. Portable full-scale cutouts of all console mounted equipment including controls, instrumentation, alarm panels, screens, access panels, etc. shall be provided. The CONTR shall work with MaineDOT marine management and designated MaineDOT employees and/or Sub-contractors to verify the exact placement of all equipment, to eliminate possible interferences, to maximize maintenance accessibility, and to promote ergonomic and logical operational function.

When all equipment has been placed, photographs shall be taken of the arrangement and accurate dimensions shall be verified. The pilothouse consoles shall be constructed and equipment installed according to the approved mock-up plans.

645.1.2.1 PILOTHOUSE EQUIPMENT & FURNISHINGS

- CHAIRS – HELM & LOOKOUT: Fixed; LleBroc LX Series w/pedestal package 4BRLX01 or equal
- CHART TABLE: Custom fabrication w/chart drawer and cabinet with doors under
- SETEE: 3’-0” overall length, upholstered, w/stowage bin below, height to matched chairs
- MAIN MONITORING & ALARM CONSOLES: designed by BAE Systems, and EMI Marine

645.1.3 01- DECK PASSENGER CABIN

645.1.3.1: The 01- Deck passenger cabins P&S shall be fitted with interior seating for (41) passengers on the port side and (47) passengers on the starboard side. Seating shall be by Freedman Seating, Chicago, IL, Model Gemini, or approved equal. Four of the interior seats in port cabin shall have fold-up seats. Interior seats are to have upholstered removable backs and seats. Installation shall be with studs welded to

the deck and finish cap nuts. Seating upholstery and frame finish colors shall be approved by MaineDOT. Tables are to be manufactured from Plascore or equal aluminum honeycomb core with a decorative panel. Fastened to a stanchion and a bulkhead ledger.

- 645.1.3.2: Passenger heads P&S 01-Deck shall be fitted with toilet, lavatory, mirror with lighting, soap dispenser, hand dryer, grab rails, and stainless trash container. The port side 01-deck passenger head shall be ADA outfitted in all respects including grab rails, ADA compliant toilet, lavatory, hand dryer, and slanted mirror (See Section 644.0.1).
- 645.1.3.3: The CONTR shall provide and install (2) sets of wheel chair tie downs in the port 01-Deck passenger space to be located to the approval of the OREP. Tie downs shall be Q'Straint M Series, or equal.
- 645.1.3.4: All bulkhead and deck surface finishes shall be of non-combustible material with color/pattern approved by MaineDOT OREP.

645.1.4 SUPERSTRUCTURE EXTERIOR ACCOMMODATIONS

The exterior 01 deck starboard shall be fitted with exterior seating for (5) passengers. The exterior 02 deck shall be fitted with exterior seating for (29) passengers on the port side and (15) passengers on the starboard side. Seating shall be by Freedman Seating, Chicago, IL, Model Gemini or approved equal with rigid plastic backs and seats. Installation shall be with studs welded to the deck and finish cap nuts. Seating body and frame finish colors shall be approved by MaineDOT.

654.1 UTILITY, CREW, & WORK SPACES

654.1.1: ENGINEERS OPERATING STATION (EOS)

The EOS shall be provided and installed as shown on the Contract Dwgs at the forward end of engine room. EOS shall be by QuietStar Industries, or approved equal, and shall match the enclosure installed on the previous MaineDOT ferry vessel. The EOS shall be provided with an aluminum console to the approval of the OREP. A full scale mock-up similar to the required pilot house console will be provided (see above). Protect corners and edges against damage with polished metal trim pieces. Fit the front and one side with doors fitted with ventilation louvers to permit convenient access to all internal components. A commercial quality armchair, and a two drawer, legal sized, file cabinet w/sub-base and secured to the bulkhead. Provide sufficient fluorescent lighting and electrical outlets under the console for maintenance and electrical equipment. Lights shall be switched inside and convenient to access doors.

654.1.2: MISCELLANEOUS ENGINE ROOM EQUIPMENT

Rag bucket – metal with hinged top, red, to approval of the MaineDOT OREP

Trash bucket – metal to approval of the MaineDOT OREP

654.1.3: DECK LOCKERS

Steel shelving to the approval of the MaineDOT OREP

654.1.3: CREW BREAK ROOM

- MICROWAVE: 0.7 cu. Ft., Black & Decker, Hamilton Beach, or equal
- COFFEE BREWER: Keurig K50, or equal
- REFRIGERATOR: 18 cu.ft. Frigidaire, or equal

SECTION 800 INCLINING

The following specifications provide for items not covered elsewhere in these Specifications that are, however, required to be performed under this contract. A number of SWBS 800 Sections have been moved to Section 0.0 at the OWNER's option.

- 843.1 INCLINING EXPERIMENT

843.1 INCLINING EXPERIMENT

843.1.1 GENERAL SCOPE

MaineDOT, Gilbert Associates, and the CONTR shall schedule an Inclining Experiment for a mutually agreeable date. Prior to the test, Gilbert Associates will submit the Inclining Experiment procedure to USCG/MSD for approval. Thirty days must be allowed for the USCG/MSD submittal and approval; therefore the CONTR is obligated to stay in communication with Gilbert Associates, MaineDOT's Design Agent, as to schedules and particulars of the Inclining Experiment evolution.

843.1.2 PREPARATION & EQUIPMENT

The CONTR shall prepare the vessel in all respects for the Inclining Experiment. The CONTR shall provide all crane services, rigging, labor, certified weights, and materials to perform the Inclining Experiment in accordance with the Inclining Procedure which has been prepared and submitted to USCG/MSD by Gilbert Associates. The Inclining Procedure shall be written in accordance with the specifications of USCG (MSD), NVIC 15-81 and ASTM Volume 01.07 "Shipbuilding" Standard F1321-14. The CONTR shall supply all necessary Inclining Experiment apparatus including, but not limited to, required certified weights, (3) pendulums and oil filled troughs (or other approved apparatus), a small powered boat or powered float (with operator) , and weight moving apparatus.

So far as possible, all tanks and voids shall be dry and opened for USCG inspection. Where this is not possible, tanks shall be accurately sounded and liquid levels recorded. A positive visual means of proving the main fuel oil tank level in the presence of the USCG Inspector shall be prepared. This may mean removal of a bolted plate scuttle and use of a sounding tape.

NOTE: The Local USCG Inspector will require copies of the certified weights. These weights must have been certified within the time frame as required by the Inspector. It is the CONTR's responsibility to make sure that the weights and their certifications will be available to and acceptable to the observing USCG Inspector prior to the scheduled day of the Inclining Experiment.

843.1.3 PROCEDURES

Gilbert Associates shall supervise the Inclining Experiment, record results, and submit same to USCG/MS. A copy of the raw data derived from the Inclining Experiment must be submitted to the attending USCG Inspector at the completion of the Test. On the day before the scheduled test, the CONTR and Gilbert Associates shall jointly inspect the condition of the vessel to certify that all preparations are complete in accordance with the Inclining Procedure as approved by USCG/MS.

No work or personnel movements on or off the vessel can be scheduled during the Inclining Experiment process. Weather conditions must be acceptable to the USCG Inspector. Berthing with slack lines and removed gangway will be a requirement.

SWBS SECTION 900 TESTS & TRIALS, SERVICES

The following specifications provide for Tests & Trials and services required to be performed under this contract:

- 982.0 GENERAL SCOPE
- 982.1 SHOP TESTS
- 982.2 DOCK & SEA TRIALS
- 983.3 DELIVERY
- 997.1 LAUNCHING & DRYDOCKING

982.0 TESTS & TRIALS GENERAL SCOPE

The CONTR shall develop a Test Schedule to demonstrate the installation, capability, and performance of all ship systems to the satisfaction of the attending USCG Inspector and the MaineDOT OREP. The testing requirements of 46 CFR Subchapter K and those as described in these Specifications shall be adhered to.

The Test Schedule shall include CONTR provided Test Report Sheets. These shall be filled out for each test and signed off by the MaineDOT OREP; the CONTR's representative; and, if applicable the attending USCG Inspector and/or the Manufacturer's Rep. Shop tests, ship installation tests, and trial tests shall be scheduled and completed to the satisfaction of the MaineDOT OREP and attending USCG Inspector.

Tests which are not completed successfully or do not pass the Specification criteria on the first attempt shall be repeated until such deficiencies are cleared. The test title and brief description; any deficiencies and/or corrections; and the date of satisfactory completion of each test shall be recorded.

The CONTR shall engage Tech Reps and/or utilize such additional equipment as necessary to accomplish successful tests at no cost to MaineDOT. The CONTR shall ensure that Tech Reps attend commissioning, tests, and trials for major machinery or system components. These shall include, but may not be limited to, switchboards, alarm and monitoring, steering gear, gensets, main propulsion engines, navigational electronics, and the fire suppression system.

Testing should occur in the following sequence:

1. Shop Tests
2. Installation Tests
3. Operational Tests
4. Dock Trials
5. Sea Trials

The Contractor shall provide all consumables required to accomplish testing and trials, including cooling system additives, lube oil, fuel oil, hydraulic oil, and other materials required to demonstrate the functioning and performance of ship systems and the vessel itself.

982.1 SHOP TESTS

Primary machinery and equipment shall have passed factory "shop" tests before delivery to the CONTR's facility. The manufacturer or vendor shall provide the CONTR with certificates demonstrating compliance with this requirement. Testing shall be in accordance with the recommendations of SNAME T&R 3-39 Guide for Shop and Installation Tests. Equipment to be Shop Tested shall include (but not be limited to) the following:

- Propulsion engine testing to demonstrate operation over the entire range of engine speeds and loads. Measurement of all relevant parameters to demonstrate engine performance. Testing of all safety and interlock devices. Post-run inspections of critical components.
- Reduction gear inspection and testing, including gear tooth contact and casing alignment inspection, operational testing of lube oil/hydraulic oil system operation, operation of the gear at rated speed for one hour, and post run inspections of critical components.
- Auxiliary engine and generator testing to demonstrate operation over the entire range of loads. Generator load shall be built up in 25% increments of 30 minutes each to 100%, which shall be maintained for four (4) hours, followed by 110% rated load for two (2) hours. Loading shall be based on current (Amperes) and a power factor of 0.8.
- Bow thruster, and bow thruster electric motor, tested at a range of speeds from 0 to 100% of full load.
- The main switchboard shall be tested as required in accordance with the DVPT and Fault Current Analysis schedules.
- Testing and calibration of safety relief valves (furnace).
- Testing and calibration of all mechanical system field instruments; analog pressure/temperature gauges, continuous pressure/temperature signal transmitters, pressure/temperature switches.

Pipes, valves and fittings shall have material and pressure test certificates if required by the regulatory agencies.

982.2 DOCK & SEA TRIALS

982.2.1 GENERAL SCOPE

Dock and Sea Trials shall be performed to the satisfaction of the MaineDOT OREP and, as required, by the attending USCG Inspector. Trials shall be scheduled mutually by the CONTR, the MaineDOT OREP, and representatives of the Local OCMI.

The CONTR shall provide Check-Off forms for both Dock and Sea Trials. These forms shall be approved in advance of trials by the MaineDOT OREP. Dock trials shall commence only upon the approval of the MaineDOT OREP and the mutual agreement of the CONTR.

Sea Trials will be performed using the SNAME Technical & Research Bulletin #3-47 and these Specifications for guidance. All Dock and Sea Trial Data shall be recorded and provided to the MaineDOT OREP.

982.3 DOCK TRIALS

Dock trials shall be scheduled for a date and time mutually agreeable to the OWNER, CONTR, and the attending USCG Inspector. The OWNER may wish to have additional personnel on hand for these trials and, depending upon the CONTR's venue, it may be necessary to plan travel in advance. It is the CONTR's responsibility to provide the USCG Inspector assigned to the project with sufficient advance of dock trial schedules. The CONTR shall be responsible for all costs associated with Dock Trials

The purpose of Dock Trials is to test all equipment and systems under operational conditions prior to moving away from the security of the construction or fit-out berth. Some testing and approvals may be accomplished in advance of the Dock Trial schedule.

982.3.1 PRELIMINARY DOCK TRIAL SCHEDULE

The final dock trial schedule of test items shall be agreed upon in advance by the MaineDOT OREP and CONTR. The Dock Trial principle is to perform system and equipment operations so that Sea Trials will be completed without problems.

The vessel shall be fueled under the supervision of the CONTR's Project Manager and the MaineDOT OREP (or other designated MaineDOT representative) at a time mutually acceptable to the all parties. The CONTR shall provide fuel truck access to the vessel's fueling station and shall allow for labor and miscellaneous materials to assist with the fueling. Past experience has found that connection fittings, bucket, oil absorbent "diapers", etc. may be required. Fuel for tests, trials, and delivery is to the CONTR's account.

The following schedule is "preliminary" and only to serve as a guide. Any items that can be approved in advance can be eliminated; however, MaineDOT's management personnel may be on hand and may call for performance demonstrations of particular Contract task items.

- 1) Main Engines, Reverse/Reduction Gears, and PTO/PTI motors: Start up, forward & reverse control, shut downs
- 2) Generators: Start up, power load, shifts, shut downs, sensors. The CONTR shall allow for a Load Bank test.
- 3) Bow Thruster: Electric motor, thruster operation and control
- 4) Main Switchboard: Operational performance, shift shore to ship's power and back
- 5) Rescue Boat, rescue boat motor, and Davit weight and operational
- 6) Electrical Systems: Compliance with 46 CFR Subchapter K and IEEE 45; Operational
- 7) Lighting and Receptacle Tests: Operational
- 8) Pilothouse: Navigation and communication equipment (all)
- 9) Pilothouse: Alarm systems (all)
- 10) Pilothouse: Security systems (all)
- 11) Steering gear: Operational performance (2 sets)
- 12) Fire Main System: Operational performance
- 13) Sprinkler System: Operational performance
- 14) Bilge System: Operational performance
- 15) Potable Water System: Operational Performance
- 16) Fuel Oil System: Operational Performance

- 17) Compressed Air System: Operational Performance
- 18) Vents, Fills, & Sounds: Operational
- 19) Engine cooling Systems: Operational
- 20) HVAC system: Operational performance (heating and cooling)
- 21) Engine room ventilation system: Operational performance
- 22) CCTV Security System: Operational

982.3.2 PIPING & MECHANICAL SYSTEMS

As a part of Dock Trials, the CONTR shall test the functions of the Piping & Mechanical Systems. The CONTR shall test all pumps, fans, the compressor, the boiler, heat exchangers, and equipment to demonstrate proper operational service. Equipment shall be run at steady state for a period of one (1) hour or one (1) full duty cycle, whichever is less. Prior to a pump test, the CONTR shall verify that the pump is primed with its service fluid.

The following steady state test conditions shall be measured and recorded:

- For centrifugal pumps: pump suction and discharge and flow rate, record motor current
- For positive displacement pumps: pump differential pressure and flow rate, record motor current
- For fans: fan static pressure and flow rate
- Fire Main test full pressure and record at the two highest fire stations in the system

All modes of control for a piece of equipment shall be tested (i.e., hand/off/auto, local/remote). Auto start/stop control shall be demonstrated to initiate action at the correct set points. Pressure and temperature settings of control instrumentation shall be adjusted as needed.

Pressure/temperature regulating valves or control features shall be tested to demonstrate that the correct set point is maintained. Set points shall be adjusted as needed to ensure proper system function. Mechanized control actuators for valves and dampers shall be tested for proper operation.

982.3.3 ELECTRICAL SYSTEMS

As a part of Dock Trials, the CONTR shall test the functions of the Electrical Systems. The CONTR shall demonstrate the operation of the electrical distribution system on both shore power and ship's power. All equipment shall be tested under normal operational load. Test all switches and control devices for proper function. Circuit breakers shall be tested by manually opening under load. Shore power available at the OWNER'S terminals is 240V, 3-phase, 200 Amp.

The CONTR shall test all motor controllers for proper function. Motors shall be operated at a steady state for a period of one (1) hour or one (1) full duty cycle, whichever is less. The CONTR shall measure and record voltage and amperage at various phases of motor speed.

Automatic thermal control devices, alarm devices, and indicator devices shall be checked and calibrated as required.

Electronic equipment shall be tested under the supervision of the manufacturer's Tech Rep. The RF electronic system shall not be considered complete until the FCC inspection and certification has been accomplished. The CONTR is responsible for attaining the FCC vessel station certification. The certificate shall be posted in the Pilothouse.

982.3.4 ALARM & MONITORING SYSTEMS

As a part of Dock Trials, the CONTR shall test the functions of the Alarm & Monitoring Systems. In accordance with the PSTP and DVTP, each alarm shall be tested to demonstrate actuation at the correct set points. Each alarm channel shall be tested independently to demonstrate that the required audible/visual alarm indication is given. For instance, pressure switches shall be subjected to a false pressure signal to test the internal pressure-sensing and switching capability. False electrical signals or the alteration of alarm system set-points to mimic alarm conditions are prohibited, except in cases where it is necessary to protect equipment from damage or is impractical to do otherwise.

The CONTR shall develop and perform the Periodic Safety Test Procedures (PSTP) and Design Verification Test Procedures (DVTP) as required in the CFRs. Testing shall be performed with the guidance of the on-site Tech Rep for the propulsion engines, reduction gears, steering systems, and alarm/monitoring system. Tests shall be accomplished in the presence of the MaineDOT OREP and the attending USCG Inspector.

Demonstrate that alarm circuits do not alarm under normal transient conditions when equipment is being started or shutdown, or during operator command changes such as rapid rpm reduction of the main propulsion system. Adjust delay timers and dead band settings as necessary to avoid nuisance alarms.

982.3.5 PROPULSION CONTROLS

As a part of Dock Trials, the CONTR shall test the functions of the Main Engine Propulsion Controls from the Pilothouse conning stations. Tests shall include:

- Engine starting and shutdowns
- Local engine speed controls
- Pilothouse engine speed controls
- Transfer of control functions
- Pilothouse emergency propulsion engine shutdown
- Proper operation of remote indicators for shaft rpm

982.3.6 STEERING GEAR

As a part of Dock Trials, the CONTR shall test the functions of the Steering gear systems from the Pilothouse conning station. Tests shall include:

- Local/remote starting and stopping of steering gear HPU hydraulic pumps
- Rudder response to helm commands over the full range of motion (stop to stop) from the local control station and from each Pilothouse conning station
- Time rudder swing rates from hard over to hard over in both directions with each hydraulic pump
- Operation of the steering system in follow-up and non-follow-up modes
- Verify that the hydraulic system pressures and temperatures are within normal operating limits and those hydraulic system components such as pressure regulating valves, relief valves, etc. function properly.
- Operation and calibration of the Pilothouse rudder angle indicator

982.3.7 BOW THRUSTER

As a part of Dock Trials, the CONTR shall test the functions of the bow thruster systems from the Pilothouse conning station. Tests shall include:

- Local/remote starting and stopping of bow thruster motor.
- Bow thruster response to speed and directional controls

982.4 SEA TRIALS

982.4.1 GENERAL

A Sea Trial will be performed to generate a baseline measure of speed; maneuvering, steering; and handling characteristics. Sea trial results shall be recorded and all data shall be provided to MaineDOT. All main propulsion and auxiliary machinery equipment and systems shall be tested to full operational capability to the satisfaction of the USCG inspector, MaineDOT, and the major equipment Tech Reps, as appropriate. The CONTR shall be responsible for all costs associated with Sea Trials including, but not necessarily limited to: Crewing; Tech Rep attendance; consumables such as fuel, lubrications, etc.; bottled water, beverages, and light lunch for riding personnel; pilotage, if required; and line handlers.

Drafts, tank soundings, and the names of all personnel aboard shall be recorded for sea trials. The following trials shall be performed to the satisfaction of MaineDOT's OREP and the attending USCG Inspector.

All CONTR, Vendor, and MaineDOT personnel engaged on Sea Trials shall supply the CONTR, in advance of the date of Sea Trials, with identification (Identification may be TWIC) at the CONTR's direction and discretion.

982.4.2 ENDURANCE TRIAL

A four (4 total) hour endurance trial shall be performed to demonstrate the vessel's sustained operation at full speed (2 hours in each direction).

982.4.3 MANUEVERING TRIALS

A series of maneuvering tests shall be used to evaluate vessel maneuverability and to measure basic course-keeping and turning qualities. The following tests shall be carried out:

- Quick reversal from ahead to astern
- Quick reversal from astern to ahead
- Crash Stop from full speed ahead (time to stop and distance travelled recorded)
- Ahead steering test
- Turning circles to both port and starboard at full speed
- Zig-zag maneuvering test to determine directional stability
- Bow thruster operational tests port and starboard

982.4.4 PERFORMANCE TRIALS

- Speed and Maneuvering Trials will be conducted in the vicinity of the CONTR's construction venue.
- At least one hour of the Sea Trials shall be performed during hours of darkness.
- Vessel speed will be measured in accordance with a Trial Plan proposed by the CONTR and mutually agreed to by the CONTR and MaineDOT. Reference shall be Guide for Sea Trials, SNAME Technical & Research Bulletin 3-47, 1989.
- Vessel speed will be measured by DGPS at approximately six (6) RPM points. If current, sea, or wind are factors during the trials, reciprocal runs shall be made and speed averaged.
- Results of the Speed Trials will be recorded and provided to MaineDOT.
- Sea Trial maneuvering tests shall include maneuvering tests, steering capabilities, and crash stops.
- If a re-trial is necessary as a result of a failure of OFE equipment, the cost of the re-trial shall be paid by MaineDOT. If re-trial is necessary as the result of a failure of CONTR provided equipment, the cost of the re-trial shall be paid by the CONTR.
- Prior to delivery, the ship's magnetic compasses shall be adjusted by a qualified compass adjuster and Deviation Cards shall be provided.
- The following parameters shall be measured and recorded:
 - Shaft rpm (both ends, both directions)
 - Fuel rack position (or equivalent)
Fuel consumption (each engine)
 - Speed through water
 - Shaft bearing temperatures
 - After cooler circuit press/temp
 - Charge air system temp/pressure
 - Lube oil system temp/press
 - Fuel Oil System temp/press

- Jacket water temp/press
- Reduction gear lube oil temp/press
- Exhaust temp/back press

982.4.5 PRELIMINARY SEA TRIAL SCHEDULE

The following schedule is “preliminary” and shall serve as a guide. The vessel Captain and Chief Engineer, the MaineDOT OREP, and/or the attending USCG Inspector may wish to modify this list according to the results of the Dock Trials and the circumstances prevalent at the time of Sea Trials.

- 1) Magnetic Compass adjustment
- 2) Endurance trials
- 3) Maneuvering trials
- 4) Communication Equipment and Systems
- 5) Navigation Equipment, Electronic
- 6) Navigation Equipment, non-Electronic
- 7) Propulsion control system
- 8) Steering Systems
- 9) Anchor System
- 10) Rescue Boat and Rescue Boat Davit
- 11) Emergency drills for delivery crew
- 12) Systems & equipment as required by the attending USCG Inspector

982.4.6 MAGNETIC COMPASSES

The magnetic compasses shall be “swung” by a compass adjuster. Compass adjustment shall be to the CONTR’s account. The compass adjuster shall provide new deviation cards.

982.4.7 RADAR HEADING FLASHERS

The Electronic Navigation Tech Rep may be able to calibrate radar heading flashers during Dock Trials or at another time prior to Sea Trials. If this is not the case, radar heading flasher calibrations shall be accomplished as a part of Sea Trials.

982.4.8 SAT COMPASS & AUTO PILOT

Demonstrate proper functioning of the sat compass and auto pilot system.

982.4.9 MAIN ENGINE PROPULSION CONTROL SYSTEM

Demonstrate proper functioning of the Propulsion Control System by running through the ranges of power settings for ahead and astern, and demonstrating emergency procedures.

982.4.10 STEERING GEAR

Start each test (#1 and #2 steering pumps) with the vessel underway at full RPM, rudders amidships. Test steering at each end of the vessel through the full range of rudder angles. Test for conformance with rudder speed requirements.

982.4.11 NOISE AND VIBRATION SURVEY

The CONTR shall provide an independent Noise and Vibration Analysis Surveyor, Noise Control Engineering, Billerica, MA, or equal, to attend sea trials and to record noise and vibration levels in machinery spaces, crew work and living spaces, and passenger spaces. The written report of this survey shall be provided to the CONTR and to the OREP.

Maximum noise levels allowed shall be as determined by the recommendations detailed in NVIC 12-82.

982.4.11 POST TRIAL INSPECTIONS

Following underway sea trials oil samples shall be taken from main engines, gear boxes, and generator engines. Samples shall be sent to an approved lab for analysis. Written reports shall be provided to the OREP to establish a base line.

982.4.12 ADDITIONAL TESTS & TRIALS

The attending USCG Inspector may require additional tests and trials than the preliminary trials listed above. The CONTR is responsible for completing required tests and trials and shall allow time in the Dock & Seat Trial schedules for such eventuality.

983.0 DELIVERY

983.0.1 GENERAL SCOPE

The CONTR shall deliver the vessel to the OWNER in accordance with the Contract in a clean, operational condition and in all respects ready for sea. The vessel shall be delivered ready to receive liquids, stores, supplies, vehicles, and passengers on revenue producing runs without further maintenance or housekeeping being required.

Particular emphasis shall be placed on the condition of all tanks. Special care shall be exercised to see that internal surfaces of tanks, pipelines, and machinery are clean and free from any foreign substance.

All USCG required safety gear shall be installed on board, inspected, and ready for use. The valid USCG Certificate of Inspection and Stability Letter shall be posted.

983.0.2 DEFICIENCIES

The existence of any major uncorrected deficiency which has been caused by the CONTR in the course of completing the Contract and which may affect the safe navigation or the immediate on-

line use of the vessel will be sufficient cause to postpone or cancel delivery pending the correction of the item(s) concerned.

All major system tests shall be completed prior to Sea Trials, and ALL tests shall be completed prior to delivery. The existence of a large number of uncorrected minor deficiencies remaining will likewise be cause for postponement or cancellation of delivery until their number has been reduced to a level acceptable to MaineDOT.

983.0.3 FINAL SURVEY

To insure that the vessel is in a proper condition for delivery, a Final Joint Survey will be made by the MaineDOT OREP and the CONTR at least three (3) days prior to the scheduled delivery date. This Survey shall include a review of any outstanding deficiencies. An agreement based on this Survey shall be reached between the MaineDOT OREP and CONTR as to the extent of further cleaning and correction of minor deficiencies, which will be, required prior to delivery. This agreement shall also determine which work, if any, will be allowed to be deferred until after the time of delivery. In this regard, it must be recognized that the CONTR is required to deliver the vessel free of all known deficiencies and that deferral of corrective work is solely a temporary waiver of this responsibility.

The CONTR, therefore, must agree to perform corrective work at the earliest time, which will not interfere with the scheduled use of the vessel. The OWNER retains the option to come to a mutual agreement with the CONTR to accomplish this work at a future date under a plan of mutually agreeable compensation.

997.1 LAUNCHING & DRYDOCKING

The CONTR shall be responsible for the satisfactory launching of the vessel at a time to be mutually agreed upon by all parties concerned. The CONTR shall be responsible for dry docking the vessel, if drydocking is required subsequent to launching and prior to delivery to MaineDOT. If the vessel is launched into a salt water environment more than 90 days prior to delivery, the CONTR may be required, at the Owner's option, to dry dock the vessel for bottom inspection, cleaning, and coating repairs sufficient to maintain the coating warranty.

If underwater damage resulting from the launch, or other events, is observed or suspected the CONTR shall be responsible to dry dock the vessel in order to affect repairs. Suspected damage shall be first confirmed by a diver and video record. A decision to dry dock the vessel shall be made in accordance with the information gleaned from the launch events and by the diver's video. If the OWNER requires a dry docking, and no damage is found, the dry docking shall be on the OWNER's account. In any case, if the USCG OCMI requires a dry docking due to suspected launch damage or other events occurring prior to delivery, the CONTR shall comply with the OCMI's directive at the CONTR's expense.

END OF TECHNICAL SPECIFICATIONS

SECTION 8

FTA BUY AMERICA REGULATIONS

Current as of March 23, 2021 – FTA Buy America Regulations

§661.1 Applicability.

Unless otherwise noted, this part applies to all federally assisted procurements using funds authorized by 49 U.S.C. 5323(j); 23 U.S.C. 103(e)(4); and section 14 of the National Capital

§661.3 Definitions.

As used in this part:

Act means the Federal Public Transportation Law (49 U.S.C. Chapter 53).

Administrator means the Administrator of FTA, or designee.

Component means any article, material, or supply, whether manufactured or unmanufactured, that is directly incorporated into the end product at the final assembly location.

Contractor means a party to a third party contract other than the grantee.

End product means any vehicle, structure, product, article, material, supply, or system, which directly incorporates constituent components at the final assembly location, that is acquired for public use under a federally-funded third-party contract, and which is ready to provide its intended end function or use without any further manufacturing or assembly change(s). A list of representative end products is included at Appendix A to this section.

FTA means the Federal Transit Administration.

Grantee means any entity that is a recipient of FTA funds.

Manufactured product means an item produced as a result of the manufacturing process.

Manufacturing process means the application of processes to alter the form or function of materials or of elements of the product in a manner adding value and transforming those materials or elements so that they represent a new end product functionally different from that which would result from mere assembly of the elements or materials.

Negotiated procurement means a contract awarded using other than sealed bidding procedures.

Rolling stock means transit vehicles such as buses, vans, cars, railcars, locomotives, trolley cars and buses, and ferry boats, as well as vehicles used for support services.

System means a machine, product, or device, or a combination of such equipment, consisting of individual components, whether separate or interconnected by piping, transmission devices, electrical cables or circuitry, or by other devices, which are intended to contribute together to a clearly defined function. Factors to consider in determining whether a system constitutes an end

product include: Whether performance warranties apply to an integrated system (regardless of whether components are separately warranted); whether products perform on an integrated basis with other products in a system, or are operated independently of associated products in the system; or whether transit agencies routinely procure a product separately (other than as replacement or spare parts).

United States means the several States, the Commonwealth of Puerto Rico, the District of Columbia, Guam, American Samoa, the U.S. Virgin Islands, and the Commonwealth of the Northern Mariana Islands.

APPENDIX A TO §661.3—END PRODUCTS

The following is a list of representative end products that are subject to the requirements of Buy America. This list is representative, not exhaustive.

(1) *Rolling stock end products*: All individual items identified as rolling stock in §661.3 (e.g., buses, vans, cars, railcars, locomotives, trolley cars and buses, ferry boats, as well as vehicles used for support services); train control, communication, and traction power equipment that meets the definition of end product at §661.3 (e.g., a communication or traction power system, including manufactured bimetallic power rail).

(2) *Steel and iron end products*: Items made primarily of steel or iron such as structures, bridges, and track work, including running rail, contact rail, and turnouts.

(3) *Manufactured end products*: Infrastructure projects not made primarily of steel or iron, including structures (terminals, depots, garages, and bus shelters), ties and ballast; contact rail not made primarily of steel or iron; fare collection systems; computers; information systems; security systems; data processing systems; and mobile lifts, hoists, and elevators.

§661.5 General requirements.

(a) Except as provided in §661.7 and §661.11 of this part, no funds may be obligated by FTA for a grantee project unless all iron, steel, and manufactured products used in the project are produced in the United States.

(b) All steel and iron manufacturing processes must take place in the United States, except metallurgical processes involving refinement of steel additives.

(c) The steel and iron requirements apply to all construction materials made primarily of steel or iron and used in infrastructure projects such as transit or maintenance facilities, rail lines, and bridges. These items include, but are not limited to, structural steel or iron, steel or iron beams and columns, running rail and contact rail. These requirements do not apply to steel or iron used as components or subcomponents of other manufactured products or rolling stock, or to bimetallic power rail incorporating steel or iron components.

(d) For a manufactured product to be considered produced in the United States:

(1) All of the manufacturing processes for the product must take place in the United States; and

(2) All of the components of the product must be of U.S. origin. A component is considered of U.S. origin if it is manufactured in the United States, regardless of the origin of its subcomponents.

§661.6 Certification requirements for procurement of steel or manufactured products.

If steel, iron, or manufactured products (as defined in §§661.3 and 661.5 of this part) are being procured, the appropriate certificate as set forth below shall be completed and submitted by each bidder or offeror in accordance with the requirement contained in §661.13(b) of this part.

Certificate of Compliance with Buy America Requirements

The bidder or offeror hereby certifies that it will comply with the requirements of 49 U.S.C. 5323(j)(1), and the applicable regulations in 49 CFR part 661.

Date
Signature
Company
Name
Title

Certificate of Non-Compliance with Buy America Requirements

The bidder or offeror hereby certifies that it cannot comply with the requirements of 49 U.S.C. 5323(j), but it may qualify for an exception to the requirement pursuant to 49 U.S.C. 5323(j)(2), as amended, and the applicable regulations in 49 CFR 661.7.

Date
Signature
Company
Name
Title

§661.7 Waivers.

(a) Section 5323(j)(2) of Title 49 United States Code provides that the general requirements of 49 U.S.C. 5323(j)(1) shall not apply in four specific instances. This section sets out the conditions for the three statutory waivers based on public interest, non-availability, and price-differential. Section 661.11 of this part sets out the conditions for the fourth statutory waiver governing the procurement of rolling stock and associated equipment.

(b) Under the provision of 49 U.S.C. 5323(j)(2)(A), the Administrator may waive the general requirements of 49 U.S.C. 5323(j)(1) if the Administrator finds that their application would be inconsistent with the public interest. In determining whether the conditions exist to grant this public interest waiver, the Administrator will consider all appropriate factors on a case-by-case basis, unless a general exception is specifically set out in this part. When granting a public interest waiver, the Administrator shall issue a detailed written statement justifying why the waiver is in the public interest. The Administrator shall publish this justification in the FEDERAL REGISTER, providing the public with a reasonable time for notice and comment of not more than seven calendar days.

(c) Under the provision of 49 U.S.C. 5323(j)(2), the Administrator may waive the general requirements of 49 U.S.C. 5323(j) if the Administrator finds that the materials for which a waiver is requested are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality.

(1) It will be presumed that the conditions exist to grant this non-availability waiver if no responsive and responsible bid is received offering an item produced in the United States.

(2) In the case of a sole source procurement, the Administrator will grant this non-availability waiver only if the grantee provides sufficient information which indicates that the item to be procured is only available from a single source or that the item to be procured is not produced in sufficient and reasonably available quantities of a satisfactory quality in the United States.

(3) After contract award, the Administrator may grant a non-availability waiver under this paragraph, in any case in which a bidder or offeror originally certified compliance with the Buy America requirements in good faith, but can no longer comply with its certification. The Administrator will grant a non-availability waiver only if the grantee provides sufficient evidence that the original certification was made in good faith and that the item to be procured cannot now be obtained domestically due to commercial impossibility or impracticability. In determining whether the conditions exist to grant a post-award non-availability waiver, the Administrator will consider all appropriate factors on a case-by-case basis.

(d) Under the provision of section 165(b)(4) of the Act, the Administrator may waive the general requirements of section 165(a) if the Administrator finds that the inclusion of a domestic item or domestic material will increase the cost of the contract between the grantee and its supplier of that item or material by more than 25 percent. The Administrator will grant this price-differential waiver if the amount of the lowest responsive and responsible bid offering the item or material that is not produced in the United States multiplied by 1.25 is less than the amount of the lowest responsive and responsible bid offering the item or material produced in the United States.

(e) The four statutory waivers of 49 U.S.C. 5323(j)(2) as set out in this part shall be treated as being separate and distinct from each other.

(f) The waivers described in paragraphs (b) and (c) of this section may be granted for a component or subcomponent in the case of the procurement of the items governed by 49 U.S.C. 5323(j)(2)(C) (requirements for rolling stock). If a waiver is granted for a component or a subcomponent, that component or subcomponent will be considered to be of domestic origin for the purposes of §661.11 of this part.

(g) The waivers described in paragraphs (b) and (c) of this section may be granted for a specific item or material that is used in the production of a manufactured product that is governed by the requirements of §661.5(d) of this part. If such a waiver is granted to such a specific item or material, that item or material will be treated as being of domestic origin.

(h) The provisions of this section shall not apply to products produced in a foreign country if the Secretary, in consultation with the United States Trade Representative, determines that:

(1) That foreign country is party to an agreement with the United States pursuant to which the head of an agency of the United States has waived the requirements of this section; and

(2) That foreign country has violated the terms of the agreement by discriminating against products covered by this section that are produced in the United States and are covered by the agreement.

APPENDIX A TO §661.7—GENERAL WAIVERS

(a) All waivers published in 48 CFR 25.104 which establish excepted articles, materials, and supplies for the Buy American Act of 1933 (41 U.S.C. 10a-d), as the waivers may be amended from time to time, apply to this part under the provisions of §661.7 (b) and (c).

(b) Under the provisions of §661.7 (b) and (c) of this part, a general public interest waiver from the Buy America requirements applies to microprocessors, computers, microcomputers, or software, or other such devices, which are used solely for the purpose of processing or storing data. This general waiver does not extend to a product or device which merely contains a microprocessor or microcomputer and is not used solely for the purpose of processing or storing data.

(c) Under the provisions of §661.7(b) of this part, a general public interest waiver from the Buy America requirements for "small purchases" (as defined in the "common grant rule," at 49 CFR 18.36(d)) made by FTA grantees with capital, planning, or operating assistance.

§661.9 Application for waivers.

(a) This section sets out the application procedures for obtaining all waivers, except those general exceptions set forth in this part for which individual applications are unnecessary and those covered by 49 U.S.C. 5323(j)(2)(C). The procedures for obtaining an exception covered by 49 U.S.C. 5323(j)(2)(C) are set forth in §661.11 of this part.

(b) A bidder or offeror who seeks to establish grounds for an exception must seek the exception, in a timely manner, through the grantee.

(c) Except as provided in paragraph (d) of this section, only a grantee may request a waiver. The request must be in writing, include facts and justification to support the waiver, and be submitted to the Administrator through the appropriate Regional Office.

(d) FTA will consider a request for a waiver from a potential bidder, offeror, or supplier only if the waiver is being sought under §661.7 (f) or (g) of this part.

(e) The Administrator will issue a written determination setting forth the reasons for granting or denying the exception request. Each request for an exception, and FTA's action on the request, are available for public inspection under the provisions of 49 CFR part 601, subpart C.

§661.11 Rolling stock procurements.

(a) The provisions of §661.5 do not apply to the procurement of buses and other rolling stock (including train control, communication, and traction power equipment), if the cost of components and subcomponents produced in the United States is more than 70 percent of the cost of all components and final assembly takes place in the United States.

(b) The domestic content requirements in paragraph (a) of this section also apply to the domestic content requirements for components set forth in paragraphs (i), (j), and (l) of this section.

(c) A component is any article, material, or supply, whether manufactured or unmanufactured, that is directly incorporated into an end product at the final assembly location.

(d) A component may be manufactured at the final assembly location if the manufacturing process to produce the component is an activity separate and distinct from the final assembly of the end product.

(e) A component is considered to be manufactured if there are sufficient activities taking place to advance the value or improve the condition of the subcomponents of that component; that is, if the subcomponents have been substantially transformed or merged into a new and functionally different article.

(f) Except as provided in paragraph (k) of this section, a subcomponent is any article, material, or supply, whether manufactured or unmanufactured, that is one step removed from a component (as defined in paragraph (c) of this section) in the manufacturing process and that is incorporated directly into a component.

(g) For a component to be of domestic origin, more than 60 percent of the subcomponents of that component, by cost, must be of domestic origin, and the manufacture of the component must take place in the United States. If, under the terms of this part, a component is determined to be of domestic origin, its entire cost may be used in calculating the cost of domestic content of an end product.

(h) A subcomponent is of domestic origin if it is manufactured in the United States.

(i) If a subcomponent manufactured in the United States is exported for inclusion in a component that is manufactured outside the United States and it receives tariff exemptions under the procedures set forth in 19 CFR 10.11 through 10.24, the subcomponent retains its domestic identity and can be included in the calculation of the domestic content of an end product even if such a subcomponent represents less than 60 percent of the cost of a particular component.

(j) If a subcomponent manufactured in the United States is exported for inclusion in a component manufactured outside the United States and it does not receive tariff exemption under the procedures set forth in 19 CFR 10.11 through 10.24, the subcomponent loses its domestic identity and cannot be included in the calculation of the domestic content of an end product.

(k) Raw materials produced in the United States and then exported for incorporation into a component are not considered to be a subcomponent for the purpose of calculating domestic content. The value of such raw materials is to be included in the cost of the foreign component.

(l) If a component is manufactured in the United States, but contains less than 60 percent domestic subcomponents, by cost, the cost of the domestic subcomponents and the cost of manufacturing the component may be included in the calculation of the domestic content of the end product.

(m) For purposes of this section, except as provided in paragraph (o) of this section:

(1) The cost of a component or a subcomponent is the price that a bidder or offeror must pay to a subcontractor or supplier for that component or subcomponent. Transportation costs to the final assembly location must be included in calculating the cost of foreign components and subcomponents.

(2) If a component or subcomponent is manufactured by the bidder or offeror, the cost of the component is the cost of labor and materials incorporated into the component or subcomponent, an allowance for profit, and the administrative and overhead costs attributable to that component or subcomponent under normal accounting principles.

(n) The cost of a component of foreign origin is set using the foreign exchange rate at the time the bidder or offeror executes the appropriate Buy America certificate.

(o) The cost of a subcomponent that retains its domestic identity consistent with paragraph (j) of this section shall be the cost of the subcomponent when last purchased, f.o.b. United States port of exportation or point of border crossing as set out in the invoice and entry papers or, if no purchase

was made, the value of the subcomponent at the time of its shipment for exportation, f.o.b. United States port of exportation or point of border crossing as set out in the invoice and entry papers.

(p) In accordance with 49 U.S.C. 5323(j), labor costs involved in final assembly shall not be included in calculating component costs.

(q) The actual cost, not the bid price, of a component is to be considered in calculating domestic content.

(r) Final assembly is the creation of the end product from individual elements brought together for that purpose through application of manufacturing processes. If a system is being procured as the end product by the grantee, the installation of the system qualifies as final assembly.

(s) [Reserved]

(t) Train control equipment includes, but is not limited to, the following equipment:

- (1) Mimic board in central control
- (2) Dispatcher's console
- (3) Local control panels
- (4) Station (way side) block control relay cabinets
- (5) Terminal dispatcher machines
- (6) Cable/cable trays
- (7) Switch machines
- (8) Way side signals
- (9) Impedance bonds
- (10) Relay rack bungalows
- (11) Central computer control
- (12) Brake equipment
- (13) Brake systems
- (14) Cab Signaling;
- (15) ATO Equipment;
- (16) ATP Equipment;
- (17) Wayside Transponders;

- (18) Trip Stop Equipment;
- (19) Wayside Magnets;
- (20) Speed Measuring Devices;
- (21) Car Axle Counters;
- (22) Communication Based Train Control (CBTC).
- (u) Communication equipment includes, but is not limited to, the following equipment:
 - (1) Radios
 - (2) Space station transmitter and receivers
 - (3) Vehicular and hand-held radios
 - (4) PABX telephone switching equipment
 - (5) PABX telephone instruments
 - (6) Public address amplifiers
 - (7) Public address speakers
 - (8) Cable transmission system cable
 - (9) Cable transmission system multiplex equipment
 - (10) Communication console at central control
 - (11) Uninterruptible power supply inverters/rectifiers
 - (12) Uninterruptible power supply batteries
 - (13) Data transmission system central processors
 - (14) Data transmission system remote terminals
 - (15) Line printers for data transmission system
 - (16) Communication system monitor test panel
 - (17) Security console at central control
 - (18) Antennas;
 - (19) Wireless Telemetry Equipment;

- (20) Passenger Information Displays;
- (21) Communications Control Units;
- (22) Communication Control Heads;
- (23) Wireless Intercar Transceivers;
- (24) Multiplexers;
- (25) SCADA Systems;
- (26) LED Arrays;
- (27) Screen Displays such as LEDs and LCDs for communication systems;
- (28) Fiber-optic transmission equipment;
- (29) Fiber-optic transmission equipment;
- (30) Frame or cell based multiplexing equipment; 13) Communication system network elements.

(v) Traction power equipment includes, but is not limited to the following:

- (1) Primary AC switch gear
- (2) Primary AC transformer rectifiers
- (3) DC switch gear
- (4) Traction power console and CRT display system at central control
- (5) Bus ducts with buses (AC and DC)
- (6) Batteries
- (7) Traction power rectifier assemblies
- (8) Distribution panels (AC and DC)
- (9) Facility step-down transformers
- (10) Motor control centers (facility use only)
- (11) Battery chargers
- (12) Supervisory control panel

- (13) Annunciator panels
- (14) Low voltage facility distribution switch board
- (15) DC connect switches
- (16) Negative bus boxes
- (17) Power rail insulators
- (18) Power cables (AC and DC)
- (19) Cable trays
- (20) Instrumentation for traction power equipment
- (21) Connectors, tensioners, and insulators for overhead power wire systems
- (22) Negative drainage boards
- (23) Inverters
- (24) Traction motors
- (25) Propulsion gear boxes
- (26) Third rail pick-up equipment
- (27) Pantographs
- (28) Propulsion Control Systems;
- (29) Surge Arrestors;
- (30) Protective Relaying.
- (31) Bimetallic power rail.

(w) The power or third rail is not considered traction power equipment and is thus subject to the requirements of 49 U.S.C. 5323(j) and the requirements of §661.5.

(x) A bidder on a contract for an item covered by 49 U.S.C. 5323(j) who will comply with section 165(b)(3) and regulations in this section is not required to follow the application for waiver procedures set out in §661.9. In lieu of these procedures, the bidder must submit the appropriate certificate required by §661.12.

APPENDIX A TO §661.11—GENERAL WAIVERS

(a) The provisions of §661.11 of this part do not apply when foreign sourced spare parts for buses and other rolling stock (including train control, communication, and traction power equipment) whose total cost is 10 percent or less of the overall project contract cost are being procured as part of the same contract for the major capital item.

(b) [Reserved]

APPENDIX B TO §661.11—TYPICAL COMPONENTS OF BUSES

The following is a list of items that typically would be considered components of a bus. This list is not all-inclusive.

Car body shells, engines, transmissions, front axle assemblies, rear axle assemblies, drive shaft assemblies, front suspension assemblies, rear suspension assemblies, air compressor and pneumatic systems, generator/alternator and electrical systems, steering system assemblies, front and rear air brake assemblies, air conditioning compressor assemblies, air conditioning evaporator/condenser assemblies, heating systems, passenger seats, driver's seat assemblies, window assemblies, entrance and exit door assemblies, door control systems, destination sign assemblies, interior lighting assemblies, front and rear end cap assemblies, front and rear bumper assemblies, specialty steel (structural steel tubing, etc.) aluminum extrusions, aluminum, steel or fiberglass exterior panels, and interior trim, flooring, and floor coverings.

APPENDIX C TO §661.11—TYPICAL COMPONENTS OF RAIL ROLLING STOCK

The following is a list of items that typically would be considered components of rail rolling stock. This list is not all inclusive.

Car shells, engines, main transformer, pantographs, traction motors, propulsion gear boxes, interior linings, acceleration and braking resistors, propulsion controls, low voltage auxiliary power supplies, air conditioning equipment, air brake compressors, brake controls, foundation brake equipment, articulation assemblies, train control systems, window assemblies, communication equipment, lighting, seating, doors, door actuators and controls, wheelchair lifts and ramps to make the vehicle accessible to persons with disabilities, couplers and draft gear, trucks, journal bearings, axles, diagnostic equipment, and third rail pick-up equipment.

APPENDIX D TO §661.11—MINIMUM REQUIREMENTS FOR FINAL ASSEMBLY

(a) Rail Cars: In the case of the manufacture of a new rail car, final assembly would typically include, as a minimum, the following operations: installation and interconnection of propulsion control equipment, propulsion cooling equipment, brake equipment, energy sources for auxiliaries and controls, heating and air conditioning, communications equipment, motors, wheels and axles, suspensions and frames; the inspection and verification of all installation and interconnection work; and the in-plant testing of the stationary product to verify all functions.

(b) Buses: In the case of a new bus, final assembly would typically include, at a minimum, the installation and interconnection of the engine, transmission, axles, including the cooling and braking systems; the installation and interconnection of the heating and air conditioning equipment; the installation of pneumatic and electrical systems, door systems, passenger seats, passenger grab rails, destination signs, wheelchair lifts; and road testing, final inspection, repairs and preparation of the vehicles for delivery.

(c) If a manufacturer's final assembly processes do not include all the activities that are typically considered the minimum requirements, it can request a Federal Transit Administration (FTA) determination of compliance. FTA will review these requests on a case-by-case basis to determine compliance with Buy America.

§661.12 Certification requirement for procurement of buses, other rolling stock and associated equipment.

If buses or other rolling stock (including train control, communication, and traction power equipment) are being procured, the appropriate certificate as set forth below shall be completed and submitted by each bidder in accordance with the requirement contained in §661.13(b) of this part.

Certificate of Compliance with Buy America Rolling Stock Requirements

The bidder or offeror hereby certifies that it will comply with the requirements of 49 U.S.C. 5323(j), and the applicable regulations of 49 CFR 661.11.

Date
Signature
Company
Name
Title

Certificate of Non-Compliance with Buy America Rolling Stock Requirements

The bidder or offeror hereby certifies that it cannot comply with the requirements of 49 U.S.C. 5323(j), but may qualify for an exception to the requirement consistent with 49 U.S.C. 5323(j)(2)(C), and the applicable regulations in 49 CFR 661.7.

Date
Signature
Company
Name
Title

§661.13 Grantee responsibility.

(a) The grantee shall adhere to the Buy America clause set forth in its grant contract with FTA.

(b) The grantee shall include in its bid or request for proposal (RFP) specification for procurement within the scope of this part an appropriate notice of the Buy America provision. Such specifications shall require, as a condition of responsiveness, that the bidder or offeror submit with the bid or offer a completed Buy America certificate in accordance with §§661.6 or 661.12 of this part, as appropriate.

(1) A bidder or offeror who has submitted an incomplete Buy America certificate or an incorrect certificate of noncompliance through inadvertent or clerical error (but not including failure to sign the certificate, submission of certificates of both compliance and non-compliance, or failure to submit any certification), may submit to the FTA Chief Counsel within ten (10) days of bid opening of submission or a final offer, a written explanation of the circumstances surrounding the submission of the incomplete or incorrect certification in accordance with 28 U.S.C. 1746, sworn under penalty of perjury, stating that the submission resulted from inadvertent or clerical error. The bidder or offeror will also submit evidence of intent, such as information about the origin of the product, invoices, or other working documents. The bidder or offeror will simultaneously send a copy of this information to the FTA grantee.

(i) The FTA Chief Counsel may request additional information from the bidder or offeror, if necessary. The grantee may not make a contract award until the FTA Chief Counsel issues his/her determination, except as provided in §661.15(m).

(ii) [Reserved]

(2) For negotiated procurements, compliance with the Buy America requirements shall be determined on the basis of the certification submitted with the final offer or final revised proposal.

However, where a grantee awards on the basis of initial proposals without discussion, the certification submitted with the initial proposal shall control.

(3) Certification based on ignorance of the proper application of the Buy America requirements is not an inadvertent or clerical error.

(c) Whether or not a bidder or offeror certifies that it will comply with the applicable requirement, such bidder or offeror is bound by its original certification (in the case of a sealed bidding procurement) or its certification submitted with its final offer (in the case of a negotiated procurement) and is not permitted to change its certification after bid opening or submission of a final offer. Where a bidder or offeror certifies that it will comply with the applicable Buy America requirements, the bidder, offeror, or grantee is not eligible for a waiver of those requirements.

§661.15 Investigation procedures.

(a) It is presumed that a bidder or offeror who has submitted the required Buy America certificate is complying with the Buy America provision. A false certification is a criminal act in violation of 18 U.S.C. 1001.

(b) Any party may petition FTA to investigate the compliance of a successful bidder or offeror with the bidder's or offeror's certification. That party ("the petitioner") must include in the petition a statement of the grounds of the petition and any supporting documentation. If FTA determines that the information presented in the petition indicates that the presumption in paragraph (a) of this section has been overcome, FTA will initiate an investigation.

(c) In appropriate circumstances, FTA may determine on its own to initiate an investigation without receiving a petition from a third party.

(d) When FTA determines under paragraph (b) or (c) of this section to conduct an investigation, it requests that the grantee require the successful bidder or offeror to document its compliance with its Buy America certificate. The successful bidder or offeror has the burden of proof to establish that it is in compliance. Documentation of compliance is based on the specific circumstances of each investigation, and FTA will specify the documentation required in each case.

(e) The grantee shall reply to the request under paragraph (d) of this section within 15 working days of the request. The investigated party may correspond directly with FTA during the course of investigation, if it informs the grantee that it intends to do so, and if the grantee agrees to such action in writing. The grantee must inform FTA, in writing, that the investigated party will respond directly to FTA. An investigated party may provide confidential or proprietary information (see paragraph (l) of this section) directly to FTA while providing other information required to be submitted as part of the investigation through the grantee.

(f) Any additional information requested or required by FTA must be submitted within 5 working days after the receipt of such request unless specifically exempted by FTA.

(g) The grantee's reply (or that of the bidder or offeror) will be transmitted to the petitioner. The petitioner may submit comments on the reply to FTA within 10 working days after receipt of the reply. The grantee and the low bidder or offeror will be furnished with a copy of the petitioner's comments, and their comments must be received by FTA within 5 working days after receipt of the petitioner's comments.

(h) The failure of a party to comply with the time limits stated in this section may result in resolution of the investigation without consideration of untimely filed comments.

(i) During the course of an investigation, with appropriate notification to affected parties, FTA may conduct site visits of manufacturing facilities and final assembly locations as it considers appropriate.

(j) FTA will, upon request, make available to any interested party information bearing on the substance of the investigation which has been submitted by the petitioner, interested parties or grantees, except to the extent that withholding of information is permitted or required by law or regulation.

(k) If a party submitting information considers that the information submitted contains proprietary material which should be withheld, a statement advising FTA of this fact may be included, and the alleged proprietary information must be identified wherever it appears. Any comments on the information provided shall be submitted within a maximum of ten days.

(l) For purposes of paragraph (j) of this section, confidential or proprietary material is any material or data whose disclosure could reasonably be expected to cause substantial competitive harm to the party claiming that the material is confidential or proprietary.

(m) When a petition for investigation has been filed before award, the grantee will not make an award before the resolution of the investigation, unless the grantee determines that:

(1) The items to be procured are urgently required;

(2) Delivery of performance will be unduly delayed by failure to make the award promptly; or

(3) Failure to make prompt award will otherwise cause undue harm to the grantee or the Federal Government.

(n) In the event that the grantee determines that the award is to be made during the pendency of an investigation, the grantee will notify FTA before making such award. FTA reserves the right not to participate in the funding of any contract awarded during the pendency of an investigation.

(o) Initial decisions by FTA will be in written form. Reconsideration of an initial decision of FTA may be requested by any party involved in an investigation. FTA will only reconsider a decision only if the party requesting reconsideration submits new matters of fact or points of law that were not known or available to the party during the investigation. A request for reconsideration of a decision of FTA shall be filed not later than ten (10) working days after the initial written decision. A request for reconsideration will be subject to the procedures in this section consistent with the need for prompt resolution of the matter.

§661.17 Failure to comply with certification.

If a successful bidder or offeror fails to demonstrate that it is in compliance with its certification, it will be required to take the necessary steps in order to achieve compliance. If a bidder or offeror takes these necessary steps, it will not be allowed to change its original bid price or the price of its final offer. If a bidder or offeror does not take the necessary steps, it will not be awarded the contract if the contract has not yet been awarded, and it is in breach of contract if a contract has been awarded.

§661.18 Intentional violations.

A person shall be ineligible to receive any contract or subcontract made with funds authorized under the Federal Public Transportation Act of 2005 pursuant to part 29 of this title if it has been determined by a court or Federal agency that the person intentionally—

(a) Affixed a label bearing a “Made in America” inscription, or an inscription with the same meaning, to a product not made in the United States, but sold in or shipped to the United States and used in projects to which this section applies, or

(b) Otherwise represented that any such product was produced in the United States.

§661.19 Sanctions.

A willful refusal to comply with a certification by a successful bidder or offeror may lead to the initiation of debarment or suspension proceedings under part 29 of this title.

§661.20 Rights of parties.

(a) A party adversely affected by an FTA action under this subsection shall have the right to seek review under the Administrative Procedure Act (APA), 5 U.S.C. 702 *et seq.*

(b) Except as provided in paragraph (a) of this section, the sole right of any third party under the Buy America provision is to petition FTA under the provisions of §661.15 of this part. No third party has any additional right, at law or equity, for any remedy including, but not limited to, injunctions, damages, or cancellation of the Federal grant or contracts of the grantee.

§661.21 State Buy America provisions.

(a) Except as provided in paragraph (b) of this section, any State may impose more stringent Buy America or buy national requirements than contained in section 165 of the Act and the regulations in this part.

(b) FTA will not participate in contracts governed by the following:

(1) State Buy America or Buy National preference provisions which are not as strict as the Federal requirements.

(2) State and local Buy National or Buy America preference provisions which are not explicitly set out under State law. For example, administrative interpretations of non-specific State legislation will not control.

(3) State and local Buy Local preference provisions.