

State of Maine

Department of Transportation

Project Number 1837610

WIN 018376.10

**Construction of a 154 Foot 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 **Ferry Vessel Construction** 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 January 31, 2018 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: Maine Federal Aid Project No. 18376.10, WIN. 018376.10

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 10AM to 12 Noon on January 10, 2018 at the Maine State Ferry Service in Rockland Maine.

For general information regarding Bidding and Contracting procedures, contact George Maccougall 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 4:30 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 4:30 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.

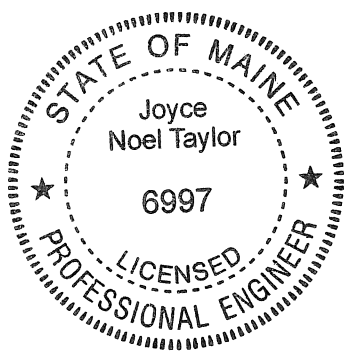
All work shall be governed by "State of Maine, Department of Transportation, Standard Specifications, November 2014 Edition", price \$10 [\$15 by mail], and Standard Details, November 2014 Edition, price \$10 [\$15 by mail]. They also may be purchased by telephone at (207) 624-3536 between the hours of 8:00 a.m. to 4:30 p.m. Standard Detail updates can be found at <http://www.maine.gov/mdot/contractors/publications/>.

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

Augusta, Maine
December 20, 2017



JOYCE NOEL TAYLOR P. E.
CHIEF ENGINEER



NOTICE

The Maine Department of Transportation is attempting to improve the way Bid Amendments/Addendums are handled, and allow for an electronic downloading of bid packages from our website, while continuing to maintain an optional plan holders list.

Prospective bidders, subcontractors or suppliers who wish to download a copy of the bid package and receive a courtesy notification of project specific bid amendments must fill out the on-line plan holder registration form and provide an email address to the MDOT Contracts mailbox at: MDOT.contracts@maine.gov. Each bid package will require a separate request.

Additionally, interested parties will be responsible for reviewing and retrieving the Bid Amendments from our web site, and acknowledging receipt and incorporating those Bid Amendments in their bids using the Acknowledgement of Bid Amendment Form.

The downloading of bid packages from the MDOT website is not the same as providing an electronic bid to the Department. Bidders shall submit a paper bid only as Electronic bids will not be allowed for this project.

For security and other reasons, all Bid Packages which are mailed, shall be provided in double (one envelope inside the other) envelopes. The *Inner Envelope* shall have the following information provided on it:

Bid Enclosed - Do Not Open

PIN:

Town:

Date of Bid Opening:

Name of Contractor with mailing address and telephone number:

In Addition to the usual address information, the *Outer Envelope* should have written or typed on it:

Double Envelope: Bid Enclosed

PIN:

Town:

Date of Bid Opening:

Name of Contractor:

This should not be much of a change for those of you who use Federal Express or similar services.

Hand-carried Bids may be in one envelope as before, and should be marked with the following information:

Bid Enclosed: Do Not Open

PIN:

Town:

Name of Contractor:

October 16, 2001

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: _____

BOND # _____

CONTRACT PAYMENT BOND
(Surety Company Form)

KNOW ALL MEN BY THESE PRESENTS: That _____
_____ **in the State of** _____, as principal,
and.....

a corporation duly organized under the laws of the State of and having a
usual place of business in
as Surety, are held and firmly bound unto the Treasurer of the State of Maine for the use
and benefit of claimants as herein below defined, in the sum of
_____ **and 00/100 Dollars (\$** _____ **)**
for the payment whereof Principal and Surety bind themselves, their heirs, executors and
administrators, successors and assigns, jointly and severally by these presents.

The condition of this obligation is such that if the Principal designated as Contractor in
the Contract to construct Project Number _____ in the Municipality of
_____ promptly satisfies all claims and demands incurred for all
labor and material, used or required by him in connection with the work contemplated by
said Contract, and fully reimburses the obligee for all outlay and expense which the
obligee may incur in making good any default of said Principal, then this obligation shall
be null and void; otherwise it shall remain in full force and effect.

A claimant is defined as one having a direct contract with the Principal or with a
Subcontractor of the Principal for labor, material or both, used or reasonably required for
use in the performance of the contract.

Signed and sealed this day of, 20

WITNESS:

SIGNATURES:

CONTRACTOR:

Signature.....

.....

Print Name Legibly

Print Name Legibly

SURETY:

Signature.....

.....

Print Name Legibly

Print Name Legibly

SURETY ADDRESS:

NAME OF LOCAL AGENCY:

.....

ADDRESS

.....

.....

TELEPHONE

.....

BOND # _____

CONTRACT PERFORMANCE BOND
(Surety Company Form)

KNOW ALL MEN BY THESE PRESENTS: That _____
_____ in the State of _____, as principal,
and.....
a corporation duly organized under the laws of the State of and having a
usual place of business
as Surety, are held and firmly bound unto the Treasurer of the State of Maine in the sum
of _____ and 00/100 Dollars (\$ _____),
to be paid said Treasurer of the State of Maine or his successors in office, for which
payment well and truly to be made, Principal and Surety bind themselves, their heirs,
executors and administrators, successors and assigns, jointly and severally by these
presents.

The condition of this obligation is such that if the Principal designated as Contractor in
the Contract to construct Project Number _____ in the Municipality of
_____ promptly and faithfully performs the 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 State
of Maine.

Signed and sealed this day of, 20.....

WITNESSES:

SIGNATURES:

CONTRACTOR:

Signature.....

.....

Print Name Legibly

Print Name Legibly

SURETY:

Signature

.....

Print Name Legibly

Print Name Legibly

SURETY ADDRESS:

NAME OF LOCAL AGENCY:

.....
.....
.....

ADDRESS
.....
.....

TELEPHONE.....

.....

NOTICE

Bidders:

Please use the attached “Request for Information” form when submitting questions concerning specific Contracts that have been advertised for Bid, include additional numbered pages as required. RFI’s may be faxed to 207-624-3431, submitted electronically through the Departments web page of advertised projects by selecting the RFI tab on the project details page or via e-mail to RFI-Contracts.MDOT@maine.gov.

These are the only allowable mechanisms for answering Project specific questions. Maine DOT will not be bound to any answers to Project specific questions received during the Bidding phase through other processes.

When submitting RFIs by Email please follow the same guidelines as stated on the “Request for Information” form and include the word “RFI” along with the Project name and Identification number in the subject line.

NOTICE

Disadvantaged Business Enterprise Proposed Utilization

The Apparent Low Bidder shall submit the Disadvantaged Business Enterprise Proposed Utilization form with their bid. This is a curable bid defect.

The Contractor's Disadvantaged Business Enterprise Proposed Utilization Plan form contains additional information that is required by USDOT.

The Contractor's Disadvantaged Business Enterprise Proposed Utilization Plan form should be used.

A copy of the new Contractor's Disadvantaged Business Enterprise Proposed Utilization Plan and instructions for completing it are attached.

Note: Questions about DBE firms, or to obtain a printed copy of the DBE Directory, contact The Office of Civil Rights at (207) 624-3066.

MDOT's DBE Directory of Certified firms can also be obtained at <http://www.maine.gov/mdot/civilrights/dbe.htm>

INSTRUCTIONS FOR PREPARING THE MaineDOT CONTRACTOR'S DBE/SUBCONTRACTOR UTILIZATION FORM

The Contractor Shall Extend equal opportunity to MaineDOT certified DBE firms (as listed in MaineDOT's DBE Directory of Certified Businesses) in the selection and utilization of Subcontractors and Suppliers.

SPECIFIC INSTRUCTIONS FOR COMPLETING THE FORM:

Insert Contractor name, the name of the person(s) preparing the form, and that person(s) telephone, fax number and e-mail address.

Calculate and provide percentage of your bid that will be allocated to DBE firms, Federal Project Identification Number, and location of the Project work.

In the columns, name each subcontractor, DBE and non-DBE firm to be used, provide the Unit/Item cost of the work/product to be provided by the subcontractor, give a brief description and the dollar value of the work.

Revised 1/12

FHWA DBE GOAL NOTICE FFY 2016-18
Maine Department of Transportation
Disadvantaged Business Enterprise Program

Notice is hereby given that in accordance with US DOT regulation 49 CFR Part 26, the Maine Department of Transportation has established a DBE Program for disadvantaged business participation in the federal-aid highway and bridge construction program; MaineDOT contracts covered by the program include consulting, construction, supplies, manufacturing, and service contracts.

For FFY 2016-18 (October 1, 2015 through September 30, 2018) MaineDOT has established an annual DBE participation goal of **2.0%** to be achieved through race/gender neutral means. This goal has been approved by the Federal Highway Administration and remains in effect through September 30, 2018. Maine DOT must meet this goal each federal fiscal year. If the goal is not met, MaineDOT must provide a justification for not meeting the goal and provide a plan to ensure the goal is met, which may include contract goals on certain projects that contractors will be required to meet.

MaineDOT asks all contractors, consultants and subcontractors to seek certified DBE firms for projects and to work to meet the determined 2.0% goal without the need to impose contract goals. DBE firms are listed on the MaineDOT website at:

<http://www.maine.gov/mdot/civilrights/dbe/>

Interested parties may view MaineDOT's DBE goal setting methodology also posted on this website. If you have questions regarding this goal or the DBE program you may contact Sherry Tompkins at the Maine Department of Transportation, Civil Rights Office by telephone at (207) 624-3066 or by e-mail at: sherry.tompkins@maine.gov

**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/>**

Maine Department of Transportation Civil Rights Office

Directory of Certified Disadvantaged Business Enterprises

Listing can be found at:

<http://www.maine.gov/mdot/civilrights/dbe.htm>

For additional information and guidance contact:

Civil Rights Office at (207) 624-3066

It is the responsibility of the Contractor to access the DBE Directory at this site in order to have the most current listing.

Vendor Registration

Prospective Bidders must register as a vendor with the Department of Administrative & Financial Services if the vendor is awarded a contract. Vendors will not be able to receive payment without first being registered. Vendors/Contractors will find information and register through the following link –

<http://www.maine.gov/purchases/venbid/index.shtml>

NOTICE

All bids for Federal Projects **shall** be accompanied by the DBE Proposed Utilization form. If you are submitting an electronic bid, the DBE Utilization Form may be faxed to 207-624-3431. Failure to submit the form with the bid will be considered a curable defect.

SPECIAL PROVISION
SECTION 104
GENERAL RIGHTS AND RESPONSIBILITIES
(Electronic Payroll Submission)
(Payment Tracking)

104.3.8.1 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. Additional information can be found at <http://www.maine.gov/mdot/contractors/> under the first “Notice”.

104.3.8.2 Payment Tracking The prime contractor and all subcontractors and lower-tier subcontractors will track and confirm the delivery and receipt of all payments through the Elation System

SPECIAL PROVISION 105
GENERAL SCOPE OF WORK
Equal Opportunity and Civil Rights
(Disadvantaged Business Enterprises Program)

105.10.1.1 Disadvantaged Business Enterprises Program The Maine Department of Transportation (MaineDOT) has established a Disadvantaged Business Enterprise (DBE) program in accordance with regulations of the United States Department of Transportation (USDOT), 49 CFR Part 26. The MaineDOT receives federal financial assistance from USDOT, and as a condition of receiving this assistance, the Department has signed an assurance that it will comply with 49 CFR Part 26. The MaineDOT is responsible for determining the eligibility of and certifying DBE firms in Maine.

A DBE is defined as a for-profit business that is owned and controlled by one or more socially and economically disadvantaged person(s). For the purpose of this definition:

1. “Socially and economically disadvantaged person” means an individual who is a citizen or lawful permanent resident of the United States and who is Black, Hispanic, Native American, Asian, Female; or a member of another group or an individual found to be disadvantaged by the Small Business Administration pursuant to Section 3 of the Small Business Act.
2. “Owned and controlled” means a business which is:
 - a. A sole proprietorship legitimately owned and controlled by an individual who is a disadvantaged person.
 - b. A partnership or limited liability company in which at least 51% of the beneficial ownership interests legitimately are held by a disadvantaged person(s).
 - c. A corporation or other entity in which at least 51% of the voting interest and 51% of the beneficial ownership interests legitimately are held by a disadvantaged person(s).

The disadvantaged group owner(s) or stockholder(s) must possess control over management, interest in capital, and interest in earnings commensurate with the percentage of ownership. If the disadvantaged group ownership interests are real, substantial and continuing and not created solely to meet the requirements of this program, a firm is considered a bona fide DBE.

105.10.1.2 Commercially Useful Function MaineDOT will count expenditures of a DBE contractor toward DBE goals only if the DBE is performing a commercially useful function on that contract. A DBE performs a commercially useful function when it is responsible for execution of the work of the contract and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. Credit will only be given when the DBE meets all conditions for a CUF. Credit for labor will be in accordance with the responsibilities outlined in the contract. To perform a commercially useful function, the DBE must also be responsible, with respect to materials and supplies used on the Contract, for negotiating price, determining quality and quantity, ordering the materials, and installing (where applicable) and paying for the material itself. To determine whether a DBE is performing a commercially useful function, MaineDOT will evaluate the amount of work subcontracted, industry practices, whether the amount the firm is to be paid under the Contract is commensurate with the work it is actually performing and DBE credit claimed for its performance of the work, and other relevant factors.

Rented equipment used by the DBE must not be rented from the Prime Contractor on a job that the DBE is subcontracted with that Prime Contractor for regular course of business.

A current listing of certified DBEs that may wish to participate in the highway construction program and the scope of work for which they are certified can be found at <http://www.maine.gov/mdot/disadvantaged-business-enterprises/pdf/directory.pdf>. Credit will be given for the value described by a DBE performing as:

- A. A prime contractor; 100% of actual value of work performed by own workforces.
- B. An approved subcontractor; 100% of work performed by own workforces.
- C. An owner-operator of construction equipment; 100% of expenditures committed.
- D. A manufacturer; 100% of expenditures committed. The manufacturer must be a firm that operates or maintains a factory or establishment that produces on the premises the materials or supplies obtained by the Contractor. Brokers and packagers shall not be regarded as manufacturers.
- E. A regular dealer; 60% of expenditures committed. A regular dealer is defined as a firm that owns, operates, or maintains a store, warehouse or other establishment in which the materials or supplies required for the performance of the contract are bought, kept in stock, and regularly sold to the public. For purposes of this provision a "Broker" is a DBE that has entered into a legally binding relationship to provide goods or services delivered or performed by a third party. Brokers and packagers shall not be regarded as regular dealers.
- F. A bona fide service provider; 100% of reasonable fees or commissions. Eligible services include professional, technical, consultant, or managerial, services and assistance in the procurement of essential personnel, facilities, equipment, materials or supplies required for the performance of the contract. Eligible services also include agencies providing bonding and insurance specifically required for the performance of the contract.
- G. A trucking, hauling or delivery operation. 100% of expenditures committed when trucks are owned, operated, licensed and insured by the DBE and used on the contract and, if applicable, includes the cost of the self supplied materials and supplies. 100% of expenditures committed when the DBE leases trucks from another DBE firm including an owner-operator. 100% of reasonable fees or commissions the DBE receives as a result of a lease arrangement for trucks from a non-DBE, including an owner-operator.
- H. Any combination of the above.

105.10.1.3 Race-neutral Goals The Maine DOT is required to set an annual goal (approved on a three year basis) for DBE participation in Federal-aid projects. In order to fulfill that goal, bidders are encouraged to utilize DBE businesses certified by the MaineDOT. MaineDOT seeks to meet the established DBE goal solely through race-neutral means. *Race-neutral* DBE participation occurs when a DBE is awarded a prime contract through customary competitive procurement procedures, is awarded a subcontract on a contract that does not carry a DBE contract goal, or wins a subcontract from a prime contractor that did not consider its DBE status in making the award. A DBE/subcontractor Utilization Proposed Form is required to be included in bid documents.

MaineDOT will analyze each project and create a Project Availability Target (PAT), based on a number of factors including project scope, available DBE firms, firms certified in particular project work, etc. Each bid will request that the contractor attempt to meet the PAT. This PAT is developed to assist contractors to better understand what the MaineDOT expectations are for a

specific project. The PAT is NOT a mandate but an assessment of what this particular project can bear for DBE participation. The Department anticipates that each contractor will make the best effort to reach or exceed this PAT for the project.

105.10.1.4 Race-conscious Project Goals If it is determined by the Department that the annual DBE goal will not be met through *race-neutral* means, the Department may implement *race-conscious contract goals* on some projects. Race-conscious contract goals are goals that are enforceable by the Department and require that the prime contractor use good faith effort to achieve the goal set by the Department for that particular project. If race conscious means are implemented on a project, the Prime must comply with the requirements of 49 CFR.

At the time of the bid opening, all Bidders shall submit with their bid a Disadvantaged Business Enterprise (DBE) Commitment Form provided by the Department. This form will list the DBE and non-DBE firms that are proposed to be used during the execution of the Work. The list shall show the name of the firm, the item/material/type of work involved and the dollar amount of work to be performed. The dollar total of each commitment shall be totaled and a percentage determined.

If the project goal is not met, acceptable documentation showing all good faith efforts made to obtain participation may be required in order to award the project. Failure to provide the required listing with the dollar participation total or acceptable documentation of good faith efforts to obtain DBE participation within 3 days after the bid opening date will be considered a lack of responsiveness on the part of the low bidder. Rejection of the low bid under these circumstances will require the low bidder to surrender the Proposal Guaranty to the Department. The submission and approval of the above forms does not constitute a formal subcontract.

If for any reason during the progress of the Work the Contractor finds that DBEs included on the list are unable to perform the proposed work, the Contractor, with written release by the committed DBE or approval of the Department, may substitute other DBE firms for those named on the list. If the Contractor is able to clearly document their inability to find qualified substitute firms to meet the project goal, the Contractor may request in writing approval to substitute the DBE with a non-DBE firm. If at any time during the life of the Contract it is determined that the Contractor is not fulfilling the goal or commitment(s) and is not making a good faith effort to fulfill the DBE requirement, the Department may withhold progress payments. If good faith effort is determined by the Department, failure to meet the DBE contract goal will not be a detriment to the bid award. Fulfillment of the goal percentage shall be determined by dividing the dollars committed to the DBEs by the actual contract dollars. These requirements are in addition to all other Equal Employment Opportunity requirements on Federal-aid contracts.

105.10.1.5 Certification of DBE attainment on Contracts The MaineDOT must certify that it has conducted post-award monitoring of all contracts to ensure that DBEs had done the work for which credit was claimed. The certification is for the purpose of ensuring accountability for monitoring which the regulation already requires. The MaineDOT will certify these contracts through review of CUF forms, Elations sub-contract payment tracking as well as occasional on-site reviews of projects and through the project's final closeout documentation provided by our Contracts Section.

105.10.1.6 Bidders' List Survey Pursuant to 49 CFR 26.11 the MaineDOT is required to “create and maintain” a bidders list and gather bidder information on our construction/consultant projects, Contractors will maintain information on all subcontract bids submitted by DBE and Non-DBE firms and provide that information to the Department. The Following information is required:

Firm Name

Firm Address

Firm status (DBE or non-DBE)

Age of firm (years)

And the annual gross receipts amount as indicated by defined brackets, i.e. \$500,000 to \$800,000, rather than requesting exact figures.

Not only is this information critical in determining the availability of DBE businesses relative to other businesses that do similar work, but the Federal Highway Administration requires that we obtain this information.

MaineDOT DBE Project Attainment Target
(PAT) for this Project is 2 %

The MaineDOT seeks to meet the specified annual Disadvantaged Business Enterprise (DBE) usage goal set out by 49 CFR 26.45 through the efforts of contractors seeking to employ qualified DBE subcontractors. We seek to meet this goal by race neutral means and do not, at this time, use contract specific requirements for each project. We do however, understand the capacity of Maine's DBE community and the unique characteristics a project may have that would differ from the broad annual goal.

Taking this into consideration, the MaineDOT will review each project and develop an anticipated attainment or Project Attainment Target (PAT) based on several factors that are project specific. Those factors include:

- Scope of Work
- DBE availability according to Specification Item
- Geographic location
- DBE capacity

This PAT is developed to assist contractors to better understand the DBE participation that the MaineDOT can reasonably expect for a specific project. The PAT is NOT a mandate but an assessment of the DBE opportunities that this project could meet or exceed. MaineDOT anticipates that each contractor will make the best effort to reach or exceed the PAT for this project.

Section 2

Invitation For Sealed Bids

INVITATION FOR SEALED BIDS

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

The Maine Department of Transportation (“Department”), with the approval of the Federal Highway Administration (“FHWA”) 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' 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”.

INFORMATION AND 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, Standard Specifications, November 2014 Edition. If you need further information regarding Bid preparation, call the MaineDOT Contracts Section at (207) 624-3410

2. **Form of Bidding – Bid Form:**

Bids shall be submitted in the form as set out in the bid form annexed hereto. Special care should be exercised in the preparation of the bid. Two (2) signed originals shall be submitted. 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 oral 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) Bid Guaranty

e) Contractor's Disadvantage Business Enterprise Proposed Utilization Plan

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 in the amount stated in the Notice to Contractors.

If Bid is to be sent, "FedEx First Overnight" delivery is suggested as the package is delivered directly to the DOT Headquarters Building located at 16 Child Street in Augusta. Other means, such as U.S. Postal Service's Express Mail has proven not to be reliable.

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, which, together with the 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 that they have 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 and 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. In the event 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 e-mail 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 January 31, 2018 at 11:00 AM** prevailing time and 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) Addendum No. to Invitation
- (List all addenda to the Invitation by number.)
10. **Time for Receipt and Opening:** Bids will be received until 11:00 o’clock AM (Prevailing time) on January 31, 2018.
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. **FHWA Required Provisions and Clauses:** The bidder shall review and abide by all Required Federal Contract Provisions (Section 6).
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.** In compliance with its obligation to the FHWA, the State of Maine has an established Disadvantaged Business Enterprise (DBE) goal of 2.0 % of total project cost to be achieved through race/gender neutral means for this project.
- Contractors are required to extend equal opportunity to certified DBEs in the selection and utilization of subcontractors and suppliers. All Bidders are required to submit, as part of their bid, quotes provided by DBEs. The DBE proposed

utilization plan requirements are explained in **Section 1**. 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 from 10:00 AM to 12:00 Noon on January 10, 2018 at the Maine State Ferry Service Rockland Terminal. A tour of the Frank E. Thompson Ferry or similar ferry will be provided from 10:00 am to 11:00 am. The question and answer session will occur from 11:00 am to 12:00 pm and will include representatives from the Maine Department of Transportation and Gilbert Associates, Inc., the Naval Architect. All clarifications and responses to questions asked by 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, then they will need to be asked again to receive a formal written response. No verbal responses will be allowed to modify the contract documents.

Section 3

Bid Form

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

1. In compliance with the Invitation for Bids of the Maine Department of Transportation, dated December 13, 2017, Information and 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 said 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 (D-358-T10) 154 foot LOA, Twin Screw Passenger/Vehicle Ferry", dated **December 13, 2017**, and (Plans) Drawing Series No. D358, 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 Five Hundred and Forty (540) 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, consist of the Contract documents as defined in the Plans, Standard Specifications, Revision of November 2014 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 26 of the Vessel Construction Agreement
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 26 of the Vessel Construction Agreement
6. The undersigned Bidder proposes that the aggregate amount payable under the performance and payment bonds required pursuant to this Article 26 shall not

exceed 100% of the Bid amount, pursuant to Article 26 of the Vessel Construction Agreement.

7. The undersigned also 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, Revision of November 2014, 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 Notice (Additional Instruction to Bidders) and submit a completed Contractor's Disadvantage Business Enterprise Proposed Utilization Plan 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) Acknowledgement 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)

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 _____, 2017 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 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 - November 2014 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, November 2014 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-358-T10) 154 foot LOA, Twin Screw Passenger/Vehicle Ferry", dated December 13, 2017, and (Plans) Drawing Series No. D358, 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 HIGHWAY ADMINISTRATION (FHWA)

This Agreement shall be subject to the provisions of the Federal Highway Administration, federal Contract Provisions Supplemental as provided in Section 6. 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.
- 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, November 2014 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 Five Hundred and Forty (540) 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 – Payment found in the Maine Department of Transportation, Standard Specifications, November 2014 Edition as amended. 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. 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 ACT

CONTR shall comply with the Buy America provisions set forth in Section 6, Required Federal Contract Provisions. Due to the nature of the work (ferryboat construction), FHWA has a nationwide waiver that governs this type of work and the following is added to the language found in Section 6.

February 9, 1994 Federal Register Notice

Notice of nationwide waiver of Buy America for ferryboat equipment and machinery

DEPARTMENT OF TRANSPORTATION

Federal Highway Administration

AGENCY: Federal Highway Administration [FHWA], DOT.

ACTION: Notice of nationwide waiver of Buy America for of Buy America for ferryboat equipment and machinery.

SUMMARY: The FHWA is hereby granting a nationwide waiver of the Buy America requirements for certain steel items used in the construction of ferryboats. This action permits the use of specifically identified steel equipment and machinery manufactured outside of the United States in Federal-aid highway construction projects for ferryboats.

EFFECTIVE DATE: February 9, 1994.

FOR FURTHER INFORMATION CONTACT: Mr. David R. Geiger, Office of Engineering (202) 366-0355 or Mr. Wilbert Baccus, Office of the Chief Counsel (202) 366-0780, Federal Highway Administration, 1200 New Jersey Avenue SE, Washington, DC 20590. Office hours are from 7:45 a.m. to 4:15 p.m., e.t., Monday through Friday, except legal Federal holidays.

SUPPLEMENTARY INFORMATION: In accordance with 23 CFR 635.410(c)(6), the FHWA hereby provides notice that it is granting a nationwide waiver of the requirements of 23 CFR 635.410, Buy America requirements, for certain ferryboat equipment and machinery items.

Section 635.410 provides, with exceptions, that no Federal-aid highway construction project using steel or iron materials is to be authorized to proceed unless all manufacturing processes including the application of coatings for such materials occur in the United States. Because the construction of ferryboats is increasingly difficult within the requirements of Buy America, a nationwide waiver of these requirements is being granted for certain ferryboat equipment and machinery items. The items included in the waiver are marine diesel engines, electrical switchboards and switchgear, electric motors, pumps, ventilation fans, boilers, electrical controls, and electronic equipment. Items not included in the waiver are products which are readily available in the United States such as steel and stainless steel plate and shapes, sheet steel and stainless steel, steel and stainless steel pipe and tubing, and galvanized steel products. Items not specifically included in the waiver remain subject to the Buy America requirements. The basis for the nationwide waiver is that certain equipment and machinery are not manufactured in the United States, using exclusively United States steel and iron, in sufficient and reasonably available quantities to avoid an enormous administrative burden on the State, contractor, and suppliers. Therefore, imposing Buy America requirements in this limited instance is not in the public interest.

On June 16, 1993 the FHWA published a notice (58 FR 33295) and requested comments on the proposed nationwide waiver and the availability of a domestic supply of the items included in the waiver. Two comments were received to FHWA Docket No. 93-22. Both commenters were supportive of the waiver. They both requested that the waiver be expanded to include more items. Their comments were basically the same; the two sought to include items such as bearings, fasteners, valves, and outfitting in the waiver. The FHWA does not agree that these items should be specifically included in the waiver. Bearings, fasteners, and valves are available in sufficient quantity and satisfactory quality from domestic manufacturers. Bearings, fasteners, and valves furnished as individual items are therefore not waived. However, bearings, fasteners, and valves included as a component of waived equipment and machinery are considered an integral part of the waived equipment and machinery and are included in the waiver. Outfitting is not included in the waiver. The FHWA believes that including outfitting in the waiver would allow the waiver to be applied to items which are domestically available in sufficient quantity and satisfactory quality.

The FHWA's Buy America requirements contained in 23 CFR 635.410 are based on section 165 of the Surface Transportation Assistance Act of 1982 (Pub. L. 97-424, Section 165, 96 Stat. 2097, 2136), as amended by Public Law 98-229, Section 10, 98 Stat. 55, 57, and Public Law 102-240, Sections 1041, 1048, 105 Stat. 1914, 1993, 1999. Authority: 23 U.S.C. 315; 49 CFR 1.48; 23 CFR 635.410

Issued on: January 28, 1994. Rodney E. Slater, Federal Highway Administrator. [FR Doc. 94-2906 Filed 2-8-94; 8:45 am] BILLING CODE 4910-22-P

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, FHWA 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 Highway Administration (“FHWA”), 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 2.0 % 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)

Section 5

SUPPLEMENTAL SPECIFICATIONS (UPDATES)

SUPPLEMENTAL SPECIFICATIONS
(Corrections, Additions, & Revisions to Standard Specifications - November 2014)

SECTION 101
CONTRACT INTERPRETATION

101.2 Definitions

Page 1-5 – Remove the definition of Bridge in its entirety and replace with:

“Bridge A structure that is erected over a depression or an obstruction, such as water, a highway or a railway, and has an opening measured along the centerline of the Roadway of more than 20 feet between: The faces of abutments; spring line of arches; extreme ends of openings of box culverts, pipes or pipe arches; or the extreme ends of openings for multiple box culverts, pipes or pipe arches.”

Page 1-12 – Remove the definition of Large Culvert in its entirety and replace with:

“Large Culvert Any structure not defined as a Culvert or Bridge that provides a drainage or non-drainage opening under the Roadway or Approaches to the Roadway, with an opening that is 5 feet but less than 10 feet.”

Remove the definition of Minor Span in its entirety and replace with:

“Minor Span Same definition as Bridge, except having an opening of between 10 feet and 20 feet, inclusive.”

SECTION 103
AWARD AND CONTRACTING

Amend this Section by adding the following:

“103.1a Tie Bids - In the case where two responsive bids from responsible bidders are equal monetarily, the Department shall determine the apparent low bidder by flipping a coin. The coin shall have sides clearly marked as heads and tails. The contractor whose first letter in their official company name that comes first in the alphabet shall be heads.

If there are three bids, each bidder will flip the coin and the bidder with the odd toss will be the winner. (i.e. if the results are two heads and a tails, the bidder who had tails is the winner). For a three way tie, bidders may flip their own coin or have the Contracts Engineer flip for them.

The coin flip will occur at the next bid opening by the Contracts and Specifications Engineer or a designee. The tied bidders may attend the coin flip in person or watch on the internet as they choose.”

In 103.3.2 Notice of Determination Revise this section by removing sections A – M and replacing with the following A - K:

(A) Default(s) or termination(s) on past or current Contracts.

**(B) Failure on past or current Contracts to pay or settle all bills for labor, Materials or services;
to comply with directives of the Department, to fulfill warranty obligations, or to provide Closeout Documentation.**

(C) "Below Standard" performance as determined from the Department's Contractor's Performance Rating process.

(D) Insufficient bonding capability or Inability of the Contractor to obtain or retain performance or Payment Bonds meeting MDOT requirements, or a pattern of unsupported Claims.

(E) Failure to accept an Award of a Contract made by the Department.

(F) Failure to provide information requested by the Department in a timely manner.

(G) Debarment, suspension or a denial of prequalification or 'award of contract' by any federal, State, or local governmental procurement agency or the Contractor's Agreement to refrain from Bidding as part of the settlement with any such agencies or any of the reasons contained in Section 102.02 of the "Rules Regarding Debarment of Contractors", Maine Department of Transportation Register 17-229, Chapter 102 (October 2, 1985).

(H) Failure to demonstrate ability to do work to the satisfaction and at the sole discretion of the Department.

(I) Number of personnel working directly for the Contractor with applicable knowledge and experience is significantly below industry standards.

(J) Safety Record, Environmental Record, Civil Rights or Equal Opportunity Record significantly below industry standards.

(K) Serious misconduct that the Department reasonably determines will substantially and adversely affect the cost, quality or timeliness of Work, or the safety of Workers or the public, any deceptive, evasive or fraudulent statements or omissions contained in the Application, made or omitted at any interview or hearing, or otherwise made to or omitted from the Department; or any other substantial deficiencies in experience or conduct that are clearly below industry standards and that clearly demonstrate in the sole discretion of the Department, that the Contractor is "Not Qualified".

SECTION 104 **GENERAL RIGHTS AND RESPONSIBILITIES**

This Section shall be amended by adding the following two sub-sections:

104.3.8.1 Electronic Payroll Submission On federally funded projects the prime contractor, all subcontractors, and lower-tier subcontractors will submit their certified payrolls electronically utilizing the Elations system. 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. Additional information can be found at <http://www.maine.gov/mdot/contractors/> under the “Bidder Info” go to “Electronic Payroll System.”

104.3.8.2 Payment Tracking On federally funded projects the prime contractor and all subcontractors and lower-tier subcontractors will track and confirm the delivery and receipt of all payments through the Elation System

104.4.10 Coordination of Road Closure / Bridge Closure / Bridge Width Restrictions

Revise the last sentence by adding a period after ‘Resident’; remove the “and” after Resident; and adding “**not covered by Pay Items**” between ‘costs’ and ‘will’. So that the last paragraph reads “**All Newspaper notices, radio announcements and any notifications will be subject to the approval of the Resident. All costs not covered by Pay Items will be considered incidental to the Contract.**”.

104.5.5 Prompt Payment of Subcontractors Add the following paragraph to this subsection:

C. Payment Tracking Federal Projects On federally funded projects, the prime contractor, subcontractors and lower-tier subcontractors will track and confirm the delivery and receipt of all payments through the Elation System. They will be responsible for entering all payments to all sub and lower tier contractors. MaineDOT will run a query monthly to ensure that contractors are complying and generate an e-mail to contractors who have not responded to confirm receipt of MaineDOT payment or contractor payment to lower tier subcontractors.

SECTION 105 **GENERAL SCOPE OF WORK**

105.2.5 Compliance with Health and Safety Laws Remove the second paragraph of this subsection in its entirety and replace with:

“For related provisions, see Sections 105.2.3 – Project Specific Emergency Planning,

105.3 – Traffic Control and Management and 105.4 – Maintenance of work.”

105.4.5 Special Detours Remove this subsection in its entirety and replace with:

“105.4.5 Maintenance of Existing Structures When a new Bridge or Minor Span is being installed on a new alignment and the existing structure is to remain in service, the Department will maintain the existing structure and the portions of the roadway required for maintaining traffic until such time that the new structure is opened to traffic and the existing structure is taken out of service. A similar situation exists when a new Bridge or Minor Span is being installed on the same alignment as the existing structure, requiring a temporary detour to be installed by the Contractor per Section 510, Special Detours, prior to removal of the existing structure. In this case, the Department will maintain the existing structure and the portions of the existing roadway required for maintaining traffic until such time that either the temporary detour is opened to traffic or the Contractor begins any work on the existing structure, including, but not limited to, repairs, modifications, moving, demolition or removal. In either case, once the new structure or temporary detour is opened to traffic, or the Contractor begins any work on the existing structure, the Contractor shall be solely responsible for all maintenance of the existing structure and the portions of the existing approaches that lie outside the new roadway or the temporary detour, respectively. This specification is not intended to supersede Standard Specification Section 104.3.11, Responsibility for Property of Others.”

105.6.2.4 Department Verification Add the following to the end of the first sentence: **“or other approved method, such as reference staking, to allow the Department to independently verify the accuracy of the work, as approved by the Department.”**

SECTION 106
QUALITY

106.3.4 Storage Revise this Section by adding the following sentence after the first sentence: **“Materials shall not be stored under or in close proximity to Highway Structures unless the Contractor receives written permission from the Resident.”**

106.4.1 General - In the first sentence, remove “When required by Special Provision,” and replace with **“When required elsewhere in the Contract, ”**

SECTION 108
PAYMENT

108.3 Retainage - Remove the paragraph beginning with “ The Contractor may withdraw...” in its entirety.

108.4.1 Price Adjustment for Hot Mix Asphalt:
Remove this section in its entirety and replace with the following

For all contracts with hot mix asphalt in excess of 500 tons total, a price adjustment for performance graded binder will be made for the following pay items:

Item 403.102	Hot Mix Asphalt – Special Areas
Item 403.206	Hot Mix Asphalt - 25 mm
Item 403.207	Hot Mix Asphalt - 19 mm
Item 403.2071	Hot Mix Asphalt - 19 mm (Polymer Modified)
Item 403.2072	Hot Mix Asphalt - 19 mm (Asphalt Rich Base)
Item 403.208	Hot Mix Asphalt - 12.5 mm
Item 403.2081	Hot Mix Asphalt - 12.5 mm (Polymer Modified)
Item 403.209	Hot Mix Asphalt - 9.5 mm (sidewalks, drives, & incidentals)
Item 403.210	Hot Mix Asphalt - 9.5 mm
Item 403.2101	Hot Mix Asphalt - 9.5 mm (Polymer Modified)
Item 403.2102	Hot Mix Asphalt - 9.5 mm (Asphalt Rich Base)
Item 403.2104	Hot Mix Asphalt - 9.5 mm (Thin Lift Surface Treatment)
Item 403.21041	Hot Mix Asphalt - 9.5 mm (Polymer Modified Thin Lift Surface Treatment)
Item 403.211	Hot Mix Asphalt – Shim
Item 403.2111	Hot Mix Asphalt – Shim (Polymer Modified)
Item 403.212	Hot Mix Asphalt - 4.75 mm (Shim)
Item 403.213	Hot Mix Asphalt - 12.5 mm (base and intermediate course)
Item 403.2131	Hot Mix Asphalt - 12.5 mm (base and intermediate course Polymer Modified)
Item 403.2132	Hot Mix Asphalt - 12.5 mm (Asphalt Rich Base and intermediate course)
Item 403.214	Hot Mix Asphalt - 4.75 mm (Surface)
Item 403.235	Hot Mix Asphalt (High Performance Rubberized HMA)
Item 403.301	Hot Mix Asphalt (Asphalt Rubber Gap-Graded)
Item 404.70	Colored Hot Mix Asphalt – 9.5mm (Surface)
Item 404.72	Colored Hot Mix Asphalt – 9.5mm (Islands, sidewalks, & incidentals)
Item 461.13	Light Capital Pavement
Item 461.210	9.5 mm HMA - Paver Placed Surface
Item 462.30	Ultra-Thin Bonded Wearing Course
Item 462.301	Polymer Modified Ultra-Thin Bonded Wearing Course

Price adjustments will be based on the variance in costs for the performance graded binder component of hot mix asphalt. They will be determined as follows:

The quantity of hot mix asphalt for each pay item will be multiplied by the performance graded binder percentages given in the table below times the difference in price between the base price and the period price of asphalt cement. Adjustments will be made upward or downward, as prices increase or decrease.

- Item 403.102–6.2%
- Item 403.206–4.8%

- Item 403.207-5.2%
- Item 403.2071-5.2%
- Item 403.2072-5.8%
- Item 403.208-5.6%
- Item 403.2081-5.6%
- Item 403.209-6.2%
- Item 403.210-6.2%
- Item 403.2101-6.2%
- Item 403.2102-6.8%
- Item 403.2104-6.2%
- Item 403.21041-6.2%
- Item 403.211-6.2%
- Item 403.2111-6.2%
- Item 403.212-6.8%
- Item 403.213-5.6%
- Item 403.2131-5.6%
- Item 403.2132-6.2%
- Item 403.214-6.8%
- Item 403.235-5.5%
- Item 403.301-6.2%
- Item 404.70-6.2%
- Item 404.72-6.2%
- Item 461.13-6.5%
- Item 461.210 - 6.4%
- Item 462.30-0.0021 tons/SY
- Item 462.301-0.0021 tons/SY

Hot Mix Asphalt: The quantity of hot mix asphalt will be determined from the quantity shown on the progress estimate for each pay period.

Base Price: The base price of performance graded binder to be used is the price per standard ton current with the bid opening date. This price is determined by using the average New England Selling Price (Excluding the Connecticut market area), as listed in the Asphalt Weekly Monitor.

Period Price: The period price of performance graded binder will be determined by the Department by using the average New England Selling Price (Excluding the Connecticut market area), listed in the Asphalt Weekly Monitor current with the paving date. The maximum Period Price for paving after the adjusted Contract Completion Date will be the Period Price on the adjusted Contract Completion Date.

SECTION 109 **CHANGES**

109.5.1 Definitions - Types of Delays

Delete Paragraph 'A' in its entirety and replace with:

"A. Excusable Delay Except as expressly provided otherwise by this Contract, an "Excusable Delay" is a Delay to the Critical Path that is directly and solely caused by (1) a weather related Event of such an unusually severe nature that a Federal Emergency Disaster is declared. The Contractor will only be entitled to an adjustment of time if the Project falls within the geographic boundaries prescribed under the disaster declaration. or (2) a flooding event at the effected location of the Project that results in a Q25 headwater elevation, or greater, but less than a Q50 headwater elevation. Theoretical headwater elevations will be determined by the Department; actual headwater elevations will be determined by the Contractor and verified by the Department or (3) An Uncontrollable Event."

APPENDIX A TO DIVISION 100

Remove Section D in its entirety as this is now covered in Section 105.10 EQUAL OPPORTUNITY AND CIVIL RIGHTS.

SECTION 203 **EXCAVATION AND EMBANKMENT**

203.02 Materials

At the bottom of page 2-12, add as the first item in the list:

Crushed Stone, ¾ inch 703.13

203.042 Rock Excavation and Blasting

On page 2-16, add the word "No" to the third sentence in Section 5 Submittals, Subsection V, 1 so that it reads:

"No blasting products will be allowed on the job site if the date codes are missing."

SECTION 304 **AGGREGATE BASE AND SUBBASE COURSE**

304.02 – Aggregate Add the following sentence before the sentence starting with "When designated on the plans...": **"Aggregate Base Course – Type C will be capped with 2" of millings or Untreated Aggregate Surface Course – Type B. Payment for this material will be made under 304.16"**

Revise the sentence beginning "When designated on the Plans, Type E..." by removing "When designated on the Plans," so it reads **"Type E subbase may be used 9 inches below and lower beneath the pavement."**

SECTION 307 **FULL DEPTH RECYCLED PAVEMENT**

Remove this Section in its entirety and replace with:

SECTION 307
FULL DEPTH RECYCLING
(UNTREATED OR TREATED WITH EMULSIFIED ASPHALT STABILIZER)

307.01 Description This work shall consist of pulverizing a portion of the existing roadway structure into a homogenous mass, adding an emulsified asphalt stabilizer (if required) to the depth of the pulverized material specified in the contract, placing and compacting this material to the lines, grades, and dimensions shown on the plans or established by the Resident.

MATERIALS

307.02 Pulverized Material Pulverized material shall consist of the existing asphalt pavement layers and one inch or more as specified of the underlying gravel, pulverized and blended into a homogenous mass. Pulverized material will be processed to 100% passing a 2 inch square mesh sieve.

307.021 New Aggregate and Additional Recycled Material New aggregate, if required by the contract, shall meet the requirements of Subsection 703.10 - Aggregate for Untreated Surface Course and Leveling Course, Type A. Aggregate Subbase Course Gravel Type D processed to 100 percent passing a 2 inch square mesh sieve and meeting the requirements of 703.06 – Aggregate for Base and Subbase may be used in areas requiring depths greater than 2 inches. New aggregate, will be measured and paid for under the appropriate item.

Recycled material, if required, shall consist of salvaged asphalt material from the project or from off-site stockpiles that has been processed before use to 100 percent passing a 2 inch square mesh sieve. Recycled material shall be conditionally accepted at the source by the Resident. It shall be free of winter sand, granular fill, construction debris, or other materials not generally considered asphalt pavement.

Recycled material generated and salvaged from the project shall be used within the roadway limits to the extent it is available as described in 307.09. No additional payment will be made for material salvaged from the project.

Recycled material supplied from off-site stockpiles shall be paid for as described in the contract, or by contract modification.

307.022 Emulsified Asphalt Stabilizer. If required, the emulsified asphalt stabilizer shall be grade MS-2, MS-4, SS-1, or CSS-1 meeting the requirements of Subsection 702.04 Emulsified Asphalt.

307.023 Water Water shall be clean and free from deleterious concentrations of acids, alkalis, salts or other organic or chemical substances.

307.024 Portland Cement If required, Portland Cement shall be Type I or II meeting the requirements of AASHTO M85.

307.025 Hydrated Lime If required, Hydrated Lime shall meet the requirements of AASHTO M216.

EQUIPMENT

307.03 Pulverizer The pulverizer shall be a self-propelled machine, specifically manufactured for full-depth recycling work and capable of reducing the required existing materials to a size that will pass a 2 inch square mesh sieve. The machine shall be equipped with standard automatic depth controls and must maintain a consistent cutting depth and width. The machine also shall be equipped with a gauge to show depth of material being processed.

307.04 Liquid Mixer Unit or Distributor. If treatment of the recycled layer with emulsified asphalt is required by the contract, a liquid mixing unit or distributor shall be used to introduce the emulsified asphalt stabilizer into the pulverized material. The mixing unit shall contain a liquid distribution and mixing system which has been specifically manufactured for full-depth recycling work, capable of mixing the pulverized material with an evenly metered distribution of emulsified asphalt into a homogeneous mixture, to the depth and width required.

The mixing unit shall be designed, equipped, maintained, and operated so that emulsified asphalt stabilizer at constant temperature may be applied uniformly on variable widths of pulverized material up to 6 feet at readily determined and controlled rates from 0.01 to 1.06 gal/yd² with uniform pressure and with an allowable variation from any specified rate not to exceed 0.01 gal/ yd². Mixing units shall include a tachometer, pressure gages, and accurate volume measuring devices or a calibrated tank and a thermometer for measuring temperatures of tank contents.

307.041 Cement or Lime Spreader If required by the contract, spreading of the Portland Cement or Hydrated Lime shall be done with a spreader truck designed to spread dry particulate (such as Portland Cement or Lime) or other approved means to insure a uniform distribution across the roadway and minimize fugitive dust. Pneumatic application, including through a slotted pipe, will not be permitted. Other systems that have been developed include fog systems, vacuum systems, etc. Slurry applications may also be accepted. The Department reserves the right to accept or reject the method of spreading cement. The Contractor shall provide a method for verifying that the correct amount of cement is being applied.

307.05 Placement Equipment Placement of the Full Depth recycled material to the required slope and grade shall be done with an approved highway grader or by another method approved by the Resident.

307.06 Rollers The full depth recycled material shall be rolled with a vibratory pad foot roller, a vibratory steel drum soil compactor and a pneumatic tire roller. The pad foot roller drum shall have a minimum of 112 tamping feet 3 inches in height, a minimum contact area per foot of 17 inch², and a minimum width of 84 inches. The vibratory steel drum roller shall have a minimum 84 inch width single drum. The pneumatic tire roller shall meet the requirements of Section 401.10 and the minimum allowable tire pressure shall be 85 psi.

MIX DESIGN

If treatment of the recycled layer with emulsified asphalt is required by the contract, the Department will supply a mix design for the emulsified asphalt stabilized material based on test results from pavement and soil analysis taken to the design depth. The Department will provide the following information prior to construction:

1. Percent of emulsified asphalt to be used.
2. Quantity of lime or cement to be added.
3. Optimum moisture content for proper compaction.
4. Additional aggregate (if required).

After a test strip has been completed or as the work progresses, it may be necessary for the Resident to make necessary adjustments to the mix design. Changes to compensation will be in accordance with the Mix Design Special Provision.

CONSTRUCTION REQUIREMENTS

307.06 Pulverizing The entire depth of existing pavement shall be pulverized together with 1 inch or more of the underlying gravel into a homogenous mass. All pulverizing shall be done with equipment that will provide a homogenous mass of pulverized material, processed in-place, which will pass a 2 inch square mesh sieve.

307.07 Weather Limitations Full depth recycled work shall be performed when;

- A. Recycling operations will be allowed between May 15th and September 15th inclusive in Zone 1 - Areas north of US Route 2 from Gilead to Bangor and north of Route 9 from Bangor to Calais.
- B. The atmospheric temperature, as determined by an approved thermometer placed in the shade at the recycling location, is 50°F and rising.
- C. When there is no standing water on the surface.
- D. During generally dry conditions, or when weather conditions are such that proper pulverizing, mixing, grading, finishing and curing can be obtained using proper procedures, and when compaction can be accomplished as determined by the Resident.

- E. When the surface is not frozen and when overnight temperatures are expected to be above 32°F.
- F. Wind conditions are such that the spreading of lime or cement on the roadway ahead of the recycling machine will not adversely affect the operation.

307.08 Surface Tolerance The complete surface of the Full Depth Recycled course shall be shaped and maintained to a tolerance, above or below the required cross sectional shape, of $\frac{3}{8}$ inch.

307.09 Full Depth Recycling Procedure New aggregate or recycled material meeting the requirements of Section 307.021 - New Aggregate and Additional Recycled Material, shall be added as necessary to restore cross-slope and/or grade before pulverizing. Locations will be shown on the plans or described in the construction notes. The Resident may add other locations while construction of the project is in progress. The Contractor will use recycled material to the extent it is available, in lieu of new aggregate. The material shall then be pulverized, processed, and blended into a homogeneous mass passing a 2 inch square mesh sieve. Material found not pulverized down to a 2 inch size will be required to be reprocessed by the recycler with successive passes until approved by the Resident.

Should the Contractor be required to add new aggregate or recycled material to restore cross-slope and/or grade after the initial pulverizing process, those areas will require re-processing to blend into a homogenous mass passing a 2 in square mesh sieve.

Sufficient water shall be added during the recycling process to maintain optimum moisture for compaction.

The resultant material from the initial pulverizing processes shall be graded and compacted to the cross-slope and profile shown on the plans or as directed by the Resident. The Contractor will also be responsible for re-establishing the existing profile grade. The completed surface of the full depth recycled course shall be shaped and maintained to a tolerance, above or below the required cross sectional shape, of $\frac{3}{8}$ inch. Areas not meeting this tolerance will be repaired as described in Section 307.091. The initial pulverizing process density requirements will be the same as Section 307.101 unless otherwise directed by the Resident.

Additives, if required, shall be introduced following completion of the initial pulverizing and blending process. Emulsified asphalt stabilizer shall be incorporated into the top of the processed material as specified in section 307.04 to the depth specified in the contract by use of the liquid mixer unit or a distributor, at the rate specified in the mix design. The emulsified asphalt shall then be uniformly blended into a homogeneous mass until an apparent uniform distribution has occurred. The rate of application may be adjusted as necessary by the Resident. Cement or lime shall be introduced as described in section 307.041. The resultant material shall be graded and compacted to the cross-slope and profile shown on the plans or as directed by the Resident. The Contractor will also be responsible for re-establishing the existing profile grade.

After final compaction, the roadway surface shall be treated with a light application of water, and rolled with pneumatic-tired rollers to create a close-knit texture. The finished layer shall be free from:

- A. Surface laminations.
- B. Segregation of fine and coarse aggregate.
- C. Corrugations, centerline differential, potholes, or any other defects that may adversely affect the performance of the layer, or any layers to be placed upon it.

The Contractor shall protect and maintain the recycled layer until a lift of pavement is applied. Any damage or defects in the layer shall be repaired immediately. An even and uniform surface shall be maintained. The recycled surface shall be swept prior to hot mix asphalt overlay placement.

307.091 Repairs Repairs and maintenance of the recycled layers, resulting from damage caused by traffic, weather or environmental conditions, or resulting from damage caused by the Contractor's operations or equipment, shall be completed at no additional cost to the Department.

For recycled layers stabilized with emulsified asphalt, low areas will be repaired using a hot mix asphalt shim. Areas up to 1 inch high can be repaired by milling or shimming with hot mix asphalt. Areas greater than 1 inch high will be repaired using a hot mix asphalt shim. All repair work will be done with the Resident's approval at the Contractor's expense.

TESTING REQUIREMENTS

307.10 Quality Control The Contractor shall operate in accordance with the approved Quality Control Plan (QCP) to assure a product meeting the contract requirements. The QCP shall meet the requirements of Section 106.4 - Quality Control and this Section. The Contractor shall not begin recycling operations until the Department approves the QCP in writing.

Prior to performing any recycling process, the Department and the Contractor shall hold a Pre-recycle conference to discuss the recycling schedule, type and amount of equipment to be used, sequence of operations, and traffic control. A copy of the QC random numbers to be used on the project shall be provided to the Resident. All field supervisors including the responsible onsite recycling process supervisor shall attend this meeting.

The QCP shall address any items that affect the quality of the Recycling Process including, but not limited to, the following:

- A. Sources for all materials, including New Aggregate and Additional Recycled Material.
- B. Make and type of rollers including weight, weight per inch of steel wheels, and average contact pressure for pneumatic tired rollers.
- C. Testing Plan.
- D. Recycling operations including recycling speed, methods to ensure that segregation is minimized, grading and compacting operations.

- E. Methods for protecting the finished product from damage and procedures for any necessary corrective action.
- F. Method of grade checks.
- G. Examples of Quality Control forms.
- H. Name, responsibilities, and qualifications of the Responsible onsite Recycling Supervisor experienced and knowledgeable with the process.
- I. A note that all testing will be done in accordance with AASHTO and MDOT/ACM procedures.

The Project Superintendent shall be named in the QCP, and the responsibilities for successful implementation of the QCP shall be outlined.

The Contractor shall sample, test, and evaluate the full depth reclamation process in accordance with the following minimum frequencies:

MINIMUM QUALITY CONTROL FREQUENCIES

Test or Action	Frequency	Test Method
Density	1 per 1000 feet / lane	AASHTO T 310
Air Temperature	4 per day at even intervals	
Surface Temperature	At the beginning and end of each days operation	
Yield of all materials (Daily yield, yield since last test, and total project yield.)	1 per 1000 ft/lane	

The Department may view any QC test and request a QC test at any time. The Contractor shall submit all QC test reports and summaries in writing, signed by the appropriate technician, to the Department’s onsite representative by 1:00 P.M. on the next working day, except when otherwise noted in the QCP due to local restrictions. The Contractor shall make all test results, including randomly sampled densities, available to the Department onsite.

The Contractor shall cease recycling operations whenever one of the following occurs:

- A. The Contractor fails to follow the approved QCP.
- B. The Contractor fails to achieve 98 percent density after corrective action has been taken.
- C. The finished product is visually defective, as determined by the Resident.
- D. The computed yield differs from the mix design by 10 percent or more.

Recycling operations shall not resume until the Department approves the corrective action to be taken.

307.101 Test Strip The contractor shall assemble all items of equipment for the recycling operation on the first day of the recycling work. The Contractor shall construct a test

strip for the project at a location approved by the Resident. The Responsible onsite Recycling Supervisor will work with Department personnel to determine the suitability of the mixed material, moisture control within the mixed material, and compaction and surface finish. The test strip section is required to:

- A. Demonstrate that the equipment and processes can produce recycled layers to meet the requirements specified in these special provisions.
- B. Determine the effect on the gradation of the recycled material by varying the forward speed of the recycling machine and the rotation rate of the milling drum.
- C. Determine the optimum moisture necessary to achieve proper compaction of the recycled layer.
- D. Determine the sequence and manner of rolling necessary to obtain the compaction requirements and establish a target density. The Contractor and the Department will both conduct testing with their respective gauges at this time.

The test strip shall be at least 300 feet in length of a full lane-width (or a half-road width). Full recycling production will not start until a passing test strip has been accomplished. If a test strip fails to meet the requirements of this specification, the Contractor will be required to repair or replace the test strip to the satisfaction of the Resident. Any repairs, replacement, or duplication of the test strip will be at the Contractor's expense.

After the test strip has been pulverized, and the roadway brought to proper shape, the Contractor shall add water until it is determined that optimum moisture has been obtained. The test strip shall then be rolled using the specified compaction equipment as directed until the density readings show an increase in dry density of less than 1 pcf for the final four roller passes of each roller. The Contractor and Department will each determine a target density using their respective gauges by performing several additional density tests and averaging them. The average of these tests will be used as the target density of the recycled material for QC and Acceptance purposes.

Following completion of the test strip, compaction of the material shall continue until a density of not less than 98 percent of the test strip target density has been achieved for the full width and depth of the layer. During the construction and compaction of the Full Depth Recycled base, should three consecutive Acceptance test results for density fail to meet a minimum of 95 percent of the target density, or exceed 102 percent of target density, a new test strip shall be constructed.

ACCEPTANCE TEST FREQUENCY

Property	Frequency	Test Method
In-place Density	1 per 2000 ft / lane	AASHTO T 310

308.102 Curing. No new pavement shall be placed on the full depth recycled pavement until curing has reduced the moisture content to 1 percent or less by total weight of the mixture, or a curing period of 4 days has elapsed, whichever comes first.

307.11 Method of Measurement Full Depth Recycled Pavement (Untreated or Treated with Emulsified Asphalt Stabilizer) will be measured by the square yard.

307.12 Basis of Payment The accepted quantity of Full Depth Recycled Asphalt Pavement (Untreated or Treated with Emulsified Asphalt Stabilizer) will be paid for at the contract unit price per square yard, complete in-place which price will be full compensation for furnishing all equipment, materials and labor for pulverizing, blending, placing, grading, compacting, and for all incidentals necessary to complete the work.

The addition of materials to restore profile grade and/or cross-slope in areas shown on the plans or described in the construction notes will be paid separately under designated pay items within the contract. No additional payment will be made for materials salvaged from the project.

Payments will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
307.331 Full Depth Recycled Pavement (Untreated)	Square Yard
307.332 Full Depth Recycled Pavement (with Emulsified Asphalt Stabilizer) 5 in. depth	Square Yard
307.333 Full Depth Recycled Pavement (with Emulsified Asphalt Stabilizer) 6 in. depth	Square Yard

SECTION 411 **UNTREATED AGGRAGATE SURFACE COURSE**

411.02 – Aggregate Add the following to the end of the first sentence: “- Type A”

SECTION 501 **FOUNDATION PILES**

501.05 – Method of Measurement

b. Piles Furnished – After the second sentence, add the sentence “**Measurement will not include any pile tips**”.

c. Piles in Place – Add the sentence to the end of the second paragraph, “**Measurement will include the pile tips**”.

d. Pile Tips – Add the words “**on the Pile**” to the end of the sentence.

SECTION 502
STRUCTURAL CONCRETE

502.05 Composition and Proportioning

Replace Table 1 with

TABLE 1

Concrete CLASS	Minimum Compressive Strength (PSI)	Permeability as indicated by Surface Resistivity (KOhm-cm)	Entrained Air (%)		Notes
			LSL	USL	
S	3,000	N/A	N/A	N/A	4,5
A	4,000	14	6.0	9.0	1,4,5
P	-----	-----	5.5	7.5	1,2,3,4
LP	5,000	17	6.0	9.0	1,4,5
Fill	3,000	N/A	6.0	9.0	4,5

In the list of information submitted by the contractor for a mix design:

Item J Replace “Target Coulomb Value.” with “Target KOhm-cm Value.”

Note #1 - Remove, “...**Standard Specification Section 711.05, Protective Coating for Concrete Surfaces, and per the manufacturer’s recommendations, at no additional cost to the Department.**” and replace with, “...**Standard Specification Section 515, Protective Coating for Concrete Surfaces, at no additional cost to the Department.**”

502.1703 Acceptance Methods A and B

In the paragraph that starts with “The Department will take Acceptance...” Remove the word chloride from chloride permeability in the last sentence.

Replace the paragraph starting with “Rapid Chloride Permeability specimens...” With the following:

“Surface Resistivity specimens will be tested by the Department in accordance with AASHTO TP-95 at an age \geq 56 days. Four 4 inch x 8 inch cylinders will be cast per subplot placed. The average of three concrete specimens per subplot will constitute a test result and this average will be used to determine the permeability for pay adjustment computations.”

502.1706 Acceptance Method C

Remove in its entirety and Replace with:

502.1706 Acceptance Method C The Department will determine the acceptability of the concrete through Acceptance testing. Acceptance tests will include compressive strength, air content and permeability. Method C concrete not meeting the requirements listed in Table 1 shall be removed and replaced at no cost to the Department. At the Department’s sole discretion, material not meeting requirements may be left in place and paid for at a reduced price as described in Section 502.195.

502.1707 Resolution of Disputed Acceptance Test Results

Section B

Remove “Rapid Chloride” from the section heading.

In paragraph 4 replace T-277 with TP-95

502.192 Pay Adjustment for Chloride Permeability

Remove “Chloride” from the heading and from the first sentence.

Replace the sentence that starts with “values greater than...” and replace with “values less than 10 KOhms-cm for Class A concrete or 11 KOhms-cm for Class LP concrete shall be subject to rejection and replacement, at no additional cost to the Department.”

502.194 Pay Adjustments for Compressive Strength, Chloride Permeability and Air Content, Methods A and B

Remove the word “Chloride” from the section heading and from the equation for CPF.

502.195 Pay Adjustment Method C

In Table 6: Method C Pay Reductions (page 5-53)
Under “Entrained Air” for “Class Fill”, in the first line,
change from “< 4.0 (Removal)” to “< **4.5 (Removal)**”

In Table 6: Method C PAY REDUCTIONS, revise the Chloride Permeability section by removing it in its entirety and replacing it with:

Surface Resistivity {Permeability in Kohm-cms and Pay Reduction per CY}			
15-16 (\$50)	13 (\$25)	N/A	N/A
13-14 (\$75)	12(\$50)	N/A	N/A

12 (\$100)	11 (\$75)	N/A	N/A
11 (\$125)	10 (\$100)	N/A	N/A
< 11 (Removal)	< 10 (Removal)	N/A	N/A

SECTION 503
REINFORCING STEEL

503.06 Placing and Fastening Revise this Subsection by removing, in its entirety, the paragraph which begins, “Stainless steel reinforcement shall not be tied to any other type of reinforcement.....”

SECTION 504
STRUCTURAL STEEL

504.26 Welding Remove the second paragraph beginning with “The range of heat....” in its entirety.

504.29 Welding ASTM A 709 HPS 70W Steel. Remove the third paragraph beginning with “Make Weld runoff tabs...” in its entirety.

SECTION 510
SPECIAL DETOURS

510.032 Geometric and Approach Design a. Horizontal alignment
The third paragraph of this section is revised to read as follows:

“The roadway width shall be increased on curved portions of the Special Detour to account for the off tracking characteristics of WB-62 vehicle in accordance with **the AASHTO publication A Policy On Geometric Design of Highways and Streets (the Green Book), chapter 3 table entitled Design Widths of Pavements for Turning Roadways.**”

SECTION 527
ENERGY ABSORBING UNIT

527.02 Materials This section is revised to read as follows.

527.02 Materials Work Zone Crash Cushions must comply with NCHRP Report 350. Work Zone Crash Cushions shall be selected from MaineDOT’s Qualified Products List of Crash Cushions / Impact Attenuators, or an approved equal.

SECTION 534
PRECAST STRUCTURAL CONCRETE

534.14 Process Control Test Cylinders

Revise this subsection to read:

“534.14 Acceptance and Quality Control Testing of Concrete Refer to Section 712.061.”

SECTION 535

PRECAST, PRESTRESSED CONCRETE SUPERSTRUCTURE

Section 535.08 – Quality Assurance

Revise the second paragraph to read:

“The QAI will perform acceptance sampling and testing and will witness or review documentation, workmanship and testing to assure the Work is being performed in accordance with the Contract Documents.”

Section 535.15 - Process Control Test Cylinders

Revise the first paragraph to read:

“535.15 Acceptance and Quality Control Testing of Concrete Acceptance of structural precast/prestressed units, for each day’s production, will be determined by the Department, based on compliance with this specification and satisfactory concrete testing results. At least once per week, the QAI will make 2 concrete cylinders (6 cylinders when the Contract includes permeability requirements) for use by the Department; cylinders shall be standard cured in accordance with AASHTO T23 (ASTM C31). The QAI will perform entrained air content and slump flow testing, determine water-cement ratio and determine temperature of the sampled concrete at the time of cylinder casting. All testing equipment required by the QAI to perform this testing shall be provided in accordance with Standard Specification Section 502.041, Testing Equipment. In addition, the Contractor shall provide a slump cone meeting the requirements of AASHTO T 119. Providing and maintaining testing and curing equipment shall be considered incidental to the work and no additional payment will be made.”

Insert the following as the second paragraph of Section 535.15:

“Quality Control concrete test cylinders shall be made for each day’s cast and each form bed used. Cylinders tested to determine strand release strength and design strength shall be field cured in accordance with AASHTO T23 (ASTM C31). 28 day cylinders shall be standard cured. Record unit identification, entrained air content, water-cement ratio, slump flow and temperature of the sampled concrete at the time of cylinder casting.”

SECTION 604

MANHOLES, INLETS CATCH BASINS

604.04 Adjusting Catch Basins and Manholes,

Add the following paragraph to the end of 604.04 b:

The Department will allow the use of metal ring inserts set into the manhole top frame or composite risers placed beneath the manhole frame to adjust manhole slope and grade for paving projects. The use of metal ring inserts shall be in accordance with 604.04 d. Ring Insert Requirements. The use of composite risers shall be in accordance with 604.04 e. Composite Riser Requirements.

Add the following paragraph after the first paragraph of 604.04 c:

The Department will allow the use of metal ring inserts set into the manhole top frame or composite risers placed beneath the manhole frame to adjust manhole slope and grade for paving projects. The use of metal ring inserts shall be in accordance with 604.04 d. Ring Insert Requirements. The use of composite risers shall be in accordance with 604.04 e. Composite Riser Requirements.

Add the following sections to 604.04:

d. Ring Insert Requirements Ring inserts to adjust manhole top frame slope and grade will be allowed in accordance with the following requirements:

1) Materials

- i. All ring inserts must be made of iron. *Multiple ring inserts will not be allowed.* The single ring insert may be any height up to a maximum of 2 inches tall.**
- ii. Ring inserts shall not be welded to the manhole frame to prevent brittle failure of the cast iron frame.**
- iii. Ring inserts shall be fastened to the manhole frame using liquid steel-filled epoxy such as Loctite Fixmaster Steel Liquid or equivalent. The epoxy shall be installed in accordance with the manufacturer's recommendations.**

2) Where Ring Inserts May/May Not Be Used

- i. MaineDOT will allow the use of a single manhole ring insert to raise manholes on state and state-aid highways.**
- ii. *Manhole ring inserts may not be used along state and state-aid highway sections where the speed limit is 40 miles per hour or more.* The standard brick and mortar or flat composite risers beneath the manhole frame must be used at these locations.**

3) Construction Requirements For The Use of Iron Manhole Ring Inserts

- i. Wherever iron ring inserts are used to raise manhole top elevations, the rings shall be fastened to the existing manhole frame using liquid steel-filled epoxy. The liquid steel-filled epoxy shall be placed evenly around the entire manhole frame before placing the ring insert. *Unbonded ring inserts will not be allowed.* If the manufacturer’s recommended construction practices result in loose or unacceptable manhole cover restraint, standard brick and mortar or flat composite risers beneath the manhole frame must be used at these locations.

e. Composite Riser Requirements Flat or beveled, doughnut-shaped, composite risers placed beneath the manhole frame to adjust slope and grade are allowed. The composite riser shall be fastened to both the top of the concrete cone and bottom of the manhole frame with the manufacturer’s recommended epoxy. Composite risers may be used at all locations on state and state-aid highways under any legal speed limit without restriction.

SECTION 606 **GUARDRAIL**

606.09 Basis of Payment Amend the first sentence of the eighth paragraph of this subsection by removing the word “meter” and replace it with “linear foot”.

SECTION 608 **SIDEWALKS**

608.021 Sidewalk Materials Revise this section by removing the second paragraph which begins with “Portland cement concrete shall...” in its entirety and replace with “**Portland cement concrete shall be Class A and meet the requirements of Section 502, Structural Concrete.**”

SECTION 609 **CURB**

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

Amend this section by adding the following paragraph to the end of it:

“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 following is added to Standard Specification 609 – Curb”

609.02 Materials Amend this section by adding the following to it:

Portland cement and Portland Pozzolan Cement	701.01	
Water	701.02	
Fine Aggregate for Concrete		703.01
Coarse Aggregate for Concrete	703.02	

The Contractor shall submit a concrete mix design for the Portland Cement Concrete to the Resident, with a minimum designed compressive strength of 4000 psi Class A concrete.

609.10 Basis of Payment Revise by changing the fifth paragraph which begins with “There will be no separate payment...” this section by removing the word “cement” and replacing it with “**concrete fill, mortar**”.

SECTION 619 **MULCH**

619.07 Basis of Payment Amend this section by adding the words “**; Bark Mulch and Erosion Control Mix will be paid for by the Cubic Yard;**” into the first sentence so that it reads:

“The accepted areas mulched will be paid for at the contract price per unit; **Bark Mulch and Erosion Control Mix will be paid for by the Cubic Yard;** which shall be full compensation for furnishing and spreading the hay or straw and mulch binder, cellulose fiber mulch, bark mulch or erosion control mix.

Revise the second sentence by removing “**for pay item 619.1201**” So that it reads:

“When Mulch is measured in Bales, each bale will be paid for at 60% of the contract price per Unit”.

Revise this section by removing all pay items and replace them with the following:

619.12 Mulch	Unit
619.13 Bark Mulch	Cubic Yard
619.14 Erosion Control Mix	Cubic Yard

SECTION 621 **LANDSCAPING**

621.0002 Materials - General

In the list of items change “Organic Humus” to “**Humus**”.

621.0019 Plant Pits and Beds

c Class A Planting

In the third paragraph beginning with “ The plant pit...” change “½ inch” to “**1 inch**”

SECTION 626

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

626.02 General Amend the Material list by adding the following to the list:

Gravel Borrow 703.20

Revise the Material List by removing:

Prewired Conduit 715.04

Metallic Junction and Fuse Box 715.05

626.021 Miscellaneous Material Amend this section by adding the following to the end of it:

“All concrete for concrete encasement of conduit shall be Fill Class concrete in accordance with the applicable requirements of Section 502 – Structural Concrete.”

Amend the third paragraph that begins with “If grouting is necessary...” by adding **“included on the Qualified Product List and”** after the word “material”.

626.03 General Amend this section by adding the following section to the end of it

“626.0301 Electrical Supply Lines and Service Connections The following requirements shall apply to Electric Supply Lines and Service Connections feeding traffic signalization equipment control boxes and lighting breaker boxes.

Whenever possible, the meter and breaker panel feeding traffic signal control boxes or lighting control boxes shall be constructed within 30 feet of the service drop pole.

All service connections to MaineDOT traffic signal control boxes or lighting breaker boxes constructed in trenches shall be in steel conduit or concrete encased PVC conduit.

Where trenchless technologies are employed to install the service connection conduit, Schedule 120 PVC conduit shall be used for the trenchless bore section of conduit. In addition, concrete encasement shall be used for any conduit placed in trench sections more than 10 feet before or after the limits of the trenchless bore conduit.

The construction practices described above shall be used for service connections up to a maximum of 600 feet. There may be rare exceptional cases where the service connection must exceed 600 feet. In these cases, the power companies may require primary power be run over 600 feet for the purpose of power consumption and dependable service. These cases will be evaluated on a case-by-case basis for alternate power feed methods and/or the need for steel or concrete encased conduit.”

626.031 Conduit Revise this section by removing the second paragraph which begins with “Trenches for conduits...” and replace it with the following:

“Trenches for conduits shall be excavated to a width that will permit proper installation of the conduit and to a minimum depth of 3 feet below finish grade as measured from the top of the conduit. If deeper depths are required, the conduit shall be installed at the depth shown on the plans or as directed. Conduit shall not interfere with poles, guardrail posts, sign foundations or other objects.”

Amend the third paragraph which begins with “All junction or pull boxes...” by adding **“concrete, in accordance with the applicable requirements of Section 502 – Structural Concrete,”** after Class LP.

Revise the fifth paragraph which begins with “After the trench has been...” by adding the following to the end of it:

“Where concrete encasement is required around the conduit, backfilling with approved material may begin adjacent to and above the encased conduit no sooner than 24 hours after concrete placement.”

Remove the following:

“All underground conduit shall be placed to at least the depth shown on the plans and shall not interfere with poles, guardrail posts, sign foundations or other objects.”

Revise the paragraph beginning with “All conduit ends shall...” by removing “Prewired Conduit shall be sealed during construction to prevent entry of moisture, dirt, or rocks.”

626.033 Polyvinylchloride Conduit Installation Amend the first paragraph of this section which begins with “Polyvinylchloride conduit and High Density...” by adding the following to the end of it:

“In addition, PVC conduit used for Electrical Supply Lines and Services feeding control cabinets for traffic signalization equipment or highway lighting breaker boxes shall be concrete encased. When trenchless technologies are used to install PVC conduit, concrete encasement shall not be required.

Concrete encasement shall consist of a minimum of 4 inches of concrete above, below and on both sides of the conduit that shall have a minimum compressive strength of 3000 psi and a maximum aggregate size of 1-inch (Fill Class concrete). The concrete encasement may be backfilled no sooner than 24 hours after placement. “

“NON-METALLIC UNDER PAVEMENT CONDUIT INSTALLATION

Where noted on the drawings, non-metallic under pavement conduit of schedule 80 or greater rating shall be provided to facilitate conduit crossing of the existing highway and ramps without disruption to the existing highway and ramp pavement surface. The non-metallic under pavement conduit shall be hydraulically jacked or directional bored below

the highway and ramp at a depth of not less than (36 inches). Under pavement conduit shall extend for a distance of (10 feet) beyond the highway or ramp edge at each side.”

Amend the sixth paragraph which begins with “Where PVC conduit runs are...” by changing “3 inch minimum bedding” to “**6 inch minimum bedding**”.

626.034 Concrete Foundations

Revise this section by removing the third paragraph which begins with “In the absence of Design Requirements...” in its entirety and replace with the following:

“In the absence of design requirements being provided on the plans, the Contractor shall prepare and submit the foundation design(s) to the Department for review. The Contractor may propose an alternate shallow spread footing or drilled shaft configuration/design than that set forth on the drawings. Design shall be in accordance with AASHTO LRFD Specifications for Structural Supports for Highway Sign, Luminaires and Traffic Signals, current edition; AASHTO LRFD Bridge Design Specifications, current edition; and FHWA-NHI-10-016 Drilled Shafts, Construction Procedures and Design Methods, current edition. Where conflicting requirements occur, the more stringent requirements shall govern. In addition to other design requirements, foundation design shall account for Torsion for which a minimum Factor of Safety equal to 1.2 shall be achieved. In evaluating axial capacity and torsional resistance in cohesionless soils, load transfer coefficient or side resistance coefficient (beta, β) will be used in accordance with Subsection 13.3.5.1 of FHWA-NHI-10-016, with beta determined in accordance with Equations 13-13 and 13-11 for silty sands to sandy silts (with varying amounts of gravel). The design criteria for the resistance of drilled shaft and spread footing foundations against overturning, sliding and bearing capacity failure shall meet the requirements of Section 4 of AASHTO LRFD Bridge Design Specifications, current edition. The structural design of foundations shall meet the requirements of AASHTO LRFD Bridge Design Specifications, current edition. The Contractor shall submit to the Department for review, three (3) copies of detailed plans and calculations of the proposed design. Design shall be prepared and sealed by a Professional Engineer licensed in the State of Maine. Construction of foundation(s) shall not commence until the Department has reviewed the foundation design.”

On Page 6-85, add the following paragraph before the paragraph beginning with “Drilled shafts shall not be...”.

“ No foundation design will be required for 18- and 24-inch diameter foundations for structures less than 30-feet tall and with no projecting arms. A foundation design prepared by a Professional Engineer licensed in accordance with the laws of the State of Maine will be required for all other foundations Precast foundations will be permitted for 18 and 24-inch diameter foundations for structures less than 30-feet tall and with no projecting arms. Where precast foundations are permitted flowable concrete fill shall be used as backfill in the annular space, and placed from the bottom up. Construction of precast foundations shall conform to the Standard Details and all requirements of Section 712.061 except that the concrete shall have a minimum permeability of 17 kOhm-cm and the use of calcium nitrite will not be required. “

On Page 6-86, Revise the paragraph beginning with “Concrete for drilled shafts...” so that a portion of it reads as follows:

“...The Contractor shall provide temporary dewatering of excavations for foundations such that concrete is placed in the dry. **Concrete for drilled shafts shall be placed in accordance with Section 502.10 as temporary casing is withdrawn to prevent debris from contaminating the foundation and to ensure concrete is cast against the surrounding soil. Concrete for drilled shafts and spread footings shall be Class LP in accordance with Section 502 - Structural Concrete. Precast foundations will not be permitted except as specified above in this Section.** Backfill for spread footing foundations shall be Gravel Borrow meeting the requirements of Section 703.20 - Gravel Borrow.....”

626.05 Basis of Payment Amend this section by removing the following paragraphs:
The one which starts with “Payment will be made for the total number of linear feet of prewired conduit...”
The one which starts with “Prewired conduit within the foundations...”

Amend this subsection by adding the following paragraph and Pay Items:

“Payment will be made for the total number of linear feet of under pavement conduit actually furnished, installed and accepted at the contract price per linear foot. This price shall include the cost of: furnishing and installing the conduit; excavating; furnishing special backfilling materials, pull wire, fittings, grounding and bonding; test cleaning interiors of conduits and all materials, labor, equipment and incidentals necessary to complete the work.”

Pay Item	PayUnit
626.221 Non-metallic Conduit, Concrete Encased	Linear Foot
626.251 Non-Metallic Under pavement Conduit (Schedule 80 or greater rating)	Linear Foot

Remove the following Pay Items:

626.23 Prewired Conduit Secondary Wiring	Linear Foot
626.24 Prewired Conduit Primary Wiring	Linear Foot

SECTION 627 **PAVEMENT MARKINGS**

Revise this section by removing it in its entirety and replacing with the following:

627.01 Description This work shall consist of furnishing and placing reflectorized pavement lines and markings, removing pavement lines and markings, and furnishing and applying reflectorized paint to curbing in reasonably close conformity with the plans and as designated.

627.02 Materials Materials shall conform to the requirements specified in the following Sections of Division 700 - Materials.

Pavement Marking Paint	708.03
Reflectorized Plastic Pavement Marking	712.05

Temporary Bi-directional Yellow Delineators shall be Temporary Object Markers (T.O.M.) as manufactured by the Davidson Plastic Company, 18726 East Valley Highway, Kent, WA 98031 or an approved equal.

627.04 General All pavement lines and markings shall be applied in accordance with the latest edition of Manual on Uniform Traffic Control Devices.

Longitudinal lines placed on tangent roadway segments shall be straight and true. Longitudinal lines placed on curves shall be continuous smoothly curved lines consistent with the roadway alignment. All pavement markings placed shall meet the tolerance limits shown on the plans.

Unless otherwise shown on the plans, non-interstate lines shall be 4 inches wide and broken lines shall consist of alternate 10 foot painted line segments and 30 foot gaps. On controlled access divided highways and on the interstate system lines shall be 6 inches wide and broken lines shall consist of alternate 15 foot painted line segments and 25 foot gaps. Width tolerance shall be +/- 1/4 inch.

Temporary pavement marking lines, defined in Special Provision Section 652, Maintenance of Traffic, Temporary Centerline, will be applied as many times as necessary to properly delineate traffic lanes for the safe passage of traffic. Bi-directional delineators may be used in place of temporary lines, except where specified otherwise in Special Provision 652 Maintenance of Traffic, Temporary Centerline. Delineators will be applied at 40 foot intervals.

In overnight lane closure areas that are not to be overlaid, temporary plastic lines or raised pavement markers shall be used through the length of the taper.

Newly painted lines, markings and curb shall be protected from traffic by the use of cones, stationary vehicles or other approved methods until the paint is dry.

627.05 Preparation of Surface Immediately before applying the pavement marking paint to the pavement or curb, the surface shall be dry and entirely free from dirt, grease, oil, or other foreign matter.

Surface preparation for application of plastic markings shall conform to the manufacturer's recommendations.

627.06 Application Prior to applying paint for final pavement lines, the Contractor shall perform a test for paint thickness by furnishing and placing a piece of

smooth, clean metal with an area of at least 144 in² in the path of the striping truck. The striping truck shall be passed over the piece of metal, painting the surface as it passes, without applying beads. The result of this test will be used to determine the pressure setting and speed of the truck when applying paint to obtain the specified thickness. Additional paint thickness testing may be required on the final paint markings. The wet thickness of paint without beads on final pavement lines shall be a minimum of 16 mils.

On other final pavement markings and on curb, where the paint is applied by hand painting or spraying, application shall be in two uniform covering coats, each at least 10 mils thick. Before the second coat of 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.

Glass beads shall be applied to the final and temporary pavement lines, marking and curb at a sufficient rate and in sufficient quantity to assure complete and uniform coverage of hand painted surfaces and achieve proper reflectivity.

Permanent and temporary white lines and markings shall have a minimum final reflectivity value of 250 millicandelas per square meter per lux (mcd/m²/lux) and permanent and temporary yellow lines and markings shall have a minimum final reflectivity value of 150 millicandelas per square meter per lux (mcd/m²/lux), as measured by the Department. Measurements taken to determine reflectivity shall be done within 4 weeks after final placement.

If the final reflectivity values are less than the described minimums, the Contractor shall repaint those areas not meeting required reflectivity at no cost to the Department. If the final reflectivity values are less than the described minimums after the second attempt, the Contractor will submit in writing a plan of action to meet the reflectivity minimums prior to continuing any work. Once the plan has been reviewed and approved by the Department, the Contractor shall re apply at no cost to the Department.

Temporary painted lines and markings shall be applied as specified for permanent painted lines, except that the thickness shall be a minimum of 16 mils.

Temporary pliant polymer marking material shall be used for temporary markings on the final pavement and on pavements not to be resurfaced when such pavement markings do not conform to the final pavement markings pattern.

The plastic final pavement lines and markings shall be applied in accordance with the manufacturer's recommendations by the inlay method of application.

627.07 Establishment Period Inlaid plastic pavement lines and marking material furnished and installed under this contract for final pavement markings shall still be subject to a six-month period of establishment.

The period of establishment shall commence as soon as the plastic pavement lines and markings are complete and in place and shall continue for six months. At the end of the establishment period, a minimum of 95% of the plastic pavement lines and markings shall still be in place to be acceptable.

If less than 95% of the plastic pavement lines and markings are in place after six months, the Contractor shall replace all unsatisfactory plastic pavement lines and markings on the project without additional payment. Plastic pavement lines and markings designated for replacement shall be installed according to these specifications, unless otherwise directed. Plastic pavement lines and markings replaced at the end of the six month establishment period will not be subject to a further establishment period.

627.08 Removing Lines and Markings When it is necessary to remove pavement lines and markings, it shall be done by high pressure water, grinding or other approved acceptable means. The method chosen must be capable of completely eradicating the existing line or marking without excessive damage to the pavement. Burning and the use of solvents to remove temporary markings from final pavement or from existing pavement not to be resurfaced will not be permitted.

627.09 Method of Measurement The quantity of pavement marking lines identified in the contract as a plan quantity pay item, the measurement of payment will be the number of feet shown in the Schedule of Items. This quantity will be considered final and no adjustments will be made except when changes resulting in increases or decreases are made by the Resident.

The accepted quantity of temporary or permanent pavement marking lines when identified in the contract as a linear foot item shall be measured and paid for at the contract unit price per linear foot for the total amount applied and accepted.

Double yellow centerline, broken or solid, will be considered one line for measurement purposes. The measurement of broken lines will include the gaps when painted and will not include the gaps when plastic. Double Yellow Centerline, broken or solid shall not be paid through intersections or side roads and will be paid for the actual length of painted line.

Broken white lines will include the gaps when painted and will not include the gaps when plastic inlaid pavement lines are applied. Yellow or white solid edge lines and will not be paid through intersections or side roads and will be measured by the actual length of painted line.

Temporary pavement marking lines shall not be paid through intersections or side roads and will be measured per linear foot of actual length of painted and accepted.

Reflectorized curb will be measured or computed by the square foot of curb surface actually painted and reflectorized.

The accepted quantity of removing existing pavement markings will be measured by the square foot.

Temporary Bi-directional Yellow Delineators will be measured by each unit, complete in place, maintained, and accepted.

627.10 Basis of Payment The accepted quantity of pavement marking lines identified in the contract as a plan quantity pay item will be paid for at the contract unit price for plan quantity. No adjustment will be made to the quantity for payment, except as described 627.09 Method of Measurement

The quantity of permanent or temporary pavement marking lines identified in the contract paid by the linear foot will be measured for payment as described under section 627.09 Method of Measurement.

All other permanent pavement markings will be paid for at the contract unit price per square foot in accordance with 627.09 Method of Measurement.

If allowed by Special Provision, the Contractor may utilize Temporary Bi-Directional Yellow and White (as required) Delineators. When utilized, payment will be made as temporary pavement marking lines, measured and paid at the contract unit price per linear foot. Such payment will include as many applications as required and removal.

Payment for final plastic pavement lines and markings will be made in two parts. The first payment of 75% will be made when plastic pavement lines and markings are placed. The payment of the remaining 25% will be made at the end of the establishment period for all plastic line and pavement markings accepted.

The accepted quantity of any pavement marking lines will be paid for at the contract unit price and will include as many applications as required and removal when required.

The accepted quantity of Temporary Bi-directional Yellow Delineators will be paid for at the contract unit price.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
627.18 12 inch Solid White Pavement Marking Line	Linear Foot
627.711 White or Yellow Pavement Marking Line - Plan Quantity	Linear Foot
627.733 4" White or Yellow Painted Pavement Marking Line	Linear Foot
627.744 6" White or Yellow Painted Pavement Marking Line	Linear Foot
627.75 White or Yellow Pavement & Curb Marking	Square Foot
627.77 Removing Existing Pavement Marking	Square Foot

627.78	Temporary 4" Painted Pavement Marking Line, White or Yellow	Linear Foot
627.781	Temporary 6" Painted Pavement Marking Line, White or Yellow	Linear Foot
627.407	Reflectorized Plastic, White or Yellow Pavement Marking	Square Foot
627.4071	Reflectorized Plastic, White or Yellow Pavement Marking Line - Plan Quantity	Linear Foot
627.811	Temporary Bi-directional Yellow Delineators	Each

SECTION 639 **ENGINEERING FACILITIES**

Revise this section by removing this section in its entirety and replace with the following:

639.01 Description This work shall consist of providing, erecting, lighting, equipping and maintaining buildings to be solely used by the Resident and other assigned Department representatives as a field office. Upon completion of the work, the buildings and equipment shall remain the property of the Contractor.

639.02 Materials Materials for buildings shall be of good quality customarily used in standard frame house or office trailer construction.

639.03 General The building of the type called for shall be provided before the start of work, and shall remain until work is completed and accepted, unless earlier removal is authorized. The location shall be approved by the Resident and should be adjacent or virtually adjacent to the Project.

A fire extinguisher shall be provided in each building or office trailer for electrical and chemical fires and effective on all solvents used in the building.

Walls, roof, floor, windows, and doors shall be tightly constructed to the required area.

Furnishings shall be supplied as called for. Doors shall be equipped with locks and all keys shall be in the possession of the Resident. Windows shall be equipped with latches so they may be locked on the inside. Window screens and screen doors shall be supplied when necessary. Adequate desk and desk space shall be provided. If a portable table is supplied, it should be adjustable to accommodate the various heights of employees. A 5-way adjustable office chair shall be provided in the quantities listed.

639.04 Field Offices Field Offices are designated Type A, Type B, or Type C. Buildings, including trailers, may be provided if they substantially equal or exceed the following requirements. Air conditioning, appropriate to the building size, shall be provided in all field offices.

The walls, roof, and floor of the building shall be completely insulated with a minimum insulation value of R-15. Office trailers shall be either new or in very good used condition. The interior walls shall be covered with suitable wall paneling. The entire office trailer shall be for the exclusive use of the Resident. The office trailer shall be winterized and completely enclosed at the bottom, if the trailer will be used in cold weather.

Other types of buildings and facilities may be furnished of equal or better quality. A public work area will be provided in the field office that shall be designed and constructed so that individuals with disabilities can approach, enter, and exit this area.

At least one accessible route to the field office shall be provided from accessible parking. The accessible route shall comply with the Americans with Disabilities Act Accessibility Guidelines (ADAAG) and this specification.

The minimum clear width of an accessible route shall be 36 inches except at doors. The least possible slope shall be used for an accessible route. An accessible route with a running slope greater than 1:20 shall be considered a ramp. Maximum ramp slope is 1:12. The maximum rise for any run of a ramp shall be 30 inches and the minimum clear width shall be 36 inches. Nowhere shall the cross slope of an accessible route exceed 1:50. Changes in level up to ¼ inch may be vertical and without edge treatment. Changes in level between ¼ inch and ½ inch shall be beveled with a slope no greater than 1:2. Ramp floor surfaces shall be stable, firm, and slip-resistant.

Ground floor surfaces along accessible routes and in accessible rooms and spaces including floors, walks, ramps, stairs, and curb ramps, shall be stable, firm, and slip-resistant.

The main door to the public work area shall have a minimum clear opening of 32 inches with the door opened 90 degrees, measured between the face of door and the opposite stop. Minimum maneuvering clearances at doors shall be provided. The floor or ground area within the required clearances shall be level and clear.

The handle and other operating devices on accessible doors shall have a shape that is easy to grasp with one hand and does not require tight grasping. Lever-operated mechanisms push type mechanisms, and U-shaped handles are acceptable designs. Hardware required for accessible door passage shall be mounted no higher than 48 inches above finished floor.

A minimum of 3 parking spaces will be supplied for Class B & C Field Offices and 6 for Class A. One wheelchair accessible parking space shall be located on the shortest accessible route of travel from adjacent parking to an accessible entrance.

Level landings shall be provided at bottom and top of each run. The landing shall be at least as wide as the ramp run leading to it with a minimum length of 60 inches.

If a ramp run has a rise greater than 6 inches or a horizontal projection greater than 72 inches, then it shall have handrails on both sides. Handrails shall have the following features:

- 1) Handrails shall be provided along both sides of ramp segments. The inside handrail on switchback ramps shall always be continuous.
- 2) If handrails are not continuous, they shall extend at least 12 inches beyond the top and bottom of the ramp segment and shall be parallel with the floor or ground surface.
- 3) The clear space between the handrail and the wall shall be 1½ inch.
- 4) Gripping surfaces shall be continuous.
- 5) Top of handrail gripping surfaces shall be mounted between 34 and 38 inches above ramp surfaces.
- 6) Ends of handrails shall be either rounded or returned smoothly to floor, wall, or post.
- 7) Handrails shall not rotate within their fittings.
- 8) The diameter or width of the gripping surfaces of a handrail shall be 1¼ to 1½ inch, or the shape shall provide an equivalent gripping surface.

Firm and sturdy steps shall also be provided with 7 inch maximum riser and 11 inch minimum depth, and at least one handrail extending from the top of the steps to a minimum 12 inches beyond the bottom of the steps.

The Contractor will make reasonable effort(s) to provide wheelchair accessible toilet facilities when "portable" facilities are provided.

The Contractor shall provide wheelchair accessible toilet facilities when flush type facilities, that is, those with running water, are provided; and the Contractor shall provide wheelchair accessible portable facilities, if used, when the contract duration exceeds two continuous construction seasons.

In addition to the facilities previously specified in this subsection, each field office shall meet the following minimum requirements:

<u>Description</u>	<u>Quantity</u>		
	<u>Type A</u>	<u>Type B</u>	<u>Type C</u>
Floor Area (Outside Dimension) - ft ²	312	220	125
Inside Wall Height – feet	7	7	7

Window Area - ft²	55	35	35	
Drafting Table Surface Area - ft²	15	15	15	
Drafting Stools - each	2	1	1	
Office Desks - each	2	1	1	
Ergonomic Swivel Chairs -ea (5-way adjustable)	3	2	2	
Folding Chairs - each		3	2	2
Lighting Units - each	4	2	2	
Electric Wall Outlets - each	6	4	3	
Power Strip Surge Protectors - each		3	2	1
Wall Closets - each	1	1	1	
Plan Rack for minimum of 6 sets of plans	1	1	0	
Toilet Facility	1	1	1	
Wastebaskets - each	2	2	1	

All windows shall be provided with shades or blinds.

The toilet facility shall be for the exclusive use of State personnel. If requested, the Contractor will supply a lock to ensure exclusive use.

The Resident will have the option to reject any furniture or supplies provided to the field office based on general condition.

One hundred ten volt, 60 cycle, continuous electric service shall be supplied for lighting and 15 amp duplex wall outlets. Lighting shall consist of florescent light units with rapid start bulbs or LED shop style lights located over the work areas for a minimum of 50 foot candles overall. At least one external light source will be provided.

Drafting surfaces shall be 40 inches above the floor and have shelves beneath. Shelves for plans and rolls shall also be furnished overhead. Drafting stools shall be approximately 28 inches high.

Desks shall be single or double pedestal standard office type, and shall be in addition to “built-in” type desks in the office trailer.

Field offices shall be furnished with one four-drawer letter size metal filing cabinet.

Wall closets shall be 21 inches wide, 15 inches deep, and at least 4 feet high.

Each office shall be furnished with a broom, dustpan, sweeping compound, trash bags, and with cleaning material for cleaning glass. If the field office is carpeted, then a vacuum cleaner will be provided. The contractor will be responsible for disposing of trash from the field office.

The Contractor shall provide a fully functional wireless desktop copier/scanner/printer, capable of copying field books, for the Resident’s use during the

project. All maintenance and supplies, except paper, shall be the responsibility of the Contractor.

The Contractor shall provide bottled water and a microwave for the duration of the project. All maintenance and supplies shall be the responsibility of the Contractor. Alternate source of water, such as a water cooler, may be provided as approved by resident.

The Contractor shall provide a 4 cubic-foot refrigerator in the field office for the duration of the project.

Each office shall be furnished with a 10-person general-purpose first aid kit. The first aid kit shall be periodically inspected and refilled as necessary.

639.08 Heat Heat appropriate to the building size shall be supplied by the Contractor to maintain an acceptable room temperature during occupancy.

639.091 Broadband Connection The contractor will supply one computer broadband connection, modem lease and router. The router shall have wireless access and be 802.11n or newer capable. The type of connection supplied will be contingent upon the availability of services (i.e. DSL or Cable Broadband). It shall be the contractor's option to provide dynamic or static IP addresses through the service. The selected service will have a minimum download connection of 5.0 Mbps and 1.0 Mbps upload. The contractor shall be responsible for the installation charges and all reinstallation charges following suspended periods. Monthly service and maintenance charges shall be billed by the Internet Service Provider (ISP) directly to the contractor.

639.10 Method of Measurement Field office will be measured by the unit or lump sum for each building provided, equipped and maintained satisfactorily.

639.11 Basis of Payment The accepted quantity of field office will be paid for at the contract unit price each or lump sum which payment shall be full compensation for furnishing until contract completion, erecting, equipping, maintaining, furnishing electricity, heating, installing and maintaining toilet facilities and if necessary removing the buildings or office trailers.

Payment for these items will be made in 3 parts; the first payment of ½ to be made after the Contractor has supplied the building or office trailer and it has been approved. The remaining payments shall be made at intervals as follows:

A second payment of ¼ shall be made when one-half of the anticipated work has been completed.

The final payment of the remaining ¼ shall be made upon completion of the work.

Payment will be made under:

<u>Pay Item</u>		<u>Pay Unit</u>
639.18	Field Office, Type A	Each
639.19	Field Office, Type B	Each
639.20	Field Office, Type C	Each

SECTION 652 MAINTENANCE OF TRAFFIC

652.3.3 Submittal of Traffic Control Plan On page 6-148, note f, in the last sentence revise the “105.2.2” to “105.2.3” so that the last sentence reads, “**For a related provision, see Section 105.2.3 – Project Specific Emergency Planning.**”.

652.3.4 General Revise the eighth paragraph by removing “Earth Berm” and replace it with “**Concrete Barrier**”.

Amend this section by adding the following paragraph before the paragraph beginning with “Special Detours and temporary structures...”:

“A temporary ramp shall be constructed with HMA at the ends of the roadway section paved or milled each day. The use of millings or RAP will not be allowed, but cold patch may be temporarily utilized until HMA plants are open for the season. The maximum ramp change in elevation shall not exceed 4” vertical. For Interstate Highways or roadways with speed limits equaling or exceeding 50 mph; temporary ramps shall be constructed at a length of eight feet per inch of transition depth. For roadways with speed limits less than 50 mph and greater than 25 mph, temporary ramps shall be constructed at a length of four feet per inch of transition depth. For roadways with speed limits 25 mph or less, temporary ramps shall be constructed at a length of two feet per inch of transition depth. Materials, placement, maintenance, and removal shall be incidental to contract items.”

652.4 Flaggers Revise this section by removing the first paragraph, and replace it with the following”

“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. All flaggers must carry an official certification card with them at all times while flagging.

For daytime conditions, flaggers shall wear a top (vest, shirt or jacket) that is orange, yellow, yellow-green, or fluorescent versions of these colors meeting ANSI 107-2004, Class 2 or Class 3, along with a hardhat with 360 ° retro-reflectivity.

For nighttime conditions, flaggers shall wear all Class 3 apparel, meeting ANSI 107-2004, including a Class 3 top (vest, shirt or jacket) and a Class E bottom (pants or coveralls),

shall be worn along with a hardhat with 360 ° retro-reflectivity and shall be visible at a minimum distance of 1000 ft. Flagger stations must be illuminated in nighttime conditions to assure visibility and will be specifically addressed in detail in the Contractor’s TCP”.

652.41 TRAFFIC OFFICERS

Revise this subsection so that the subsection number and title is
“652.4.1 TRAFFIC OFFICERS”

SECTION 656

TEMPORARY SOIL EROSION AND WATER POLLUTION CONTROL

656.5.2 If No Pay Item Add the following to the end of the first paragraph:

“Failure by the Contractor to follow Standard Specification or Special Provision - Section 656 will result in a violation letter and a reduction in payment as shown in the schedule list in 656.5.1. The Department’s Resident or any other representative of The Department reserves the right to suspend the work at any time and request a meeting to discuss violations and remedies. The Department shall not be held responsible for any delay in the work due to any suspension under this item.”

SECTION 660

ON-THE-JOB TRAINING

660.06 Method of Measurement

Remove the first sentence in its entirety and replace with **“ The OJT item will be measured by the number of OJT hours by a trainee who has successfully completed an approved training program.”**

660.07 Basis of payment to the Contractor

Remove the last word in the first sentence so that the first sentence reads **“ The OJT shall be paid for once successfully completed at the contract unit price per hour.”**

Payment will be made under

Change the Pay Item from **“660.22”** to **“660.21”** and change the Pay Unit from **“Each”** to **“Hour”**.

SECTION 672

PRECAST CONCRETE BLOCK GRAVITY WALL

672.035 Backfill Material– Revise this section by adding the following after the second paragraph:

Backfill materials shall meet the criteria in the following table.

<u>Base Polymer</u>	<u>Property</u>	<u>Criteria</u>	<u>Test Method</u>
Polyester (PET)	pH	3 < pH > 9	AASHTO T-289
Polyolefin (PP & HDPE)	pH	pH > 3	AASHTO T-289

672.04 Design Requirements – Revise this section by replacing items 2 and 3 in the second paragraph with the following:

- 2. FHWA-NHI-10-024 and FHWA-NHI-10-025, Design and Construction of Mechanically Stabilized Earth Walls and Reinforced Soil Slopes, Volumes I and II, current edition.**
- 3. FHWA-NHI-09-087 Corrosion/Degradation of Soil Reinforcements for Mechanically Stabilized Earth Walls and Reinforced Soil Slopes, current edition.**

SECTION 673
WETCAST SMALL LANDSCAPE BLOCK WALL

673.035 Backfill Material – Revise this section by adding the following after the second paragraph:

Backfill materials shall meet the criteria in the following table.

<u>Base Polymer</u>	<u>Property</u>	<u>Criteria</u>	<u>Test Method</u>
Polyester (PET)	pH	3 < pH > 9	AASHTO T-289
Polyolefin (PP & HDPE)	pH	pH > 3	AASHTO T-289

673.04 Design Requirements – Revise this section by replacing items 2 and 3 in the second paragraph with the following:

2. FHWA-NHI-10-024 and FHWA-NHI-10-025, Design and Construction of Mechanically Stabilized Earth Walls and Reinforced Soil Slopes, Volumes I and II, current edition.
3. FHWA-NHI-09-087 Corrosion/Degradation of Soil Reinforcements for Mechanically Stabilized Earth Walls and Reinforced Soil Slopes, current edition

SECTION 677 MECHANICALLY STABILIZED EARTH RETAINING WALL

677.03 Design Requirements – Revise this section by replacing items 6, 7 and 8 in the second paragraph with the following:

6. FHWA-NHI-10-024, Design and Construction of Mechanically Stabilized Earth Walls and Reinforced Soil Slopes, Volumes I, current edition.
7. FHWA-NHI-10-025, Design and Construction of Mechanically Stabilized Earth Walls and Reinforced Soil Slopes, Volumes II, current edition.
8. FHWA-NHI-09-087 Corrosion/Degradation of Soil Reinforcements for Mechanically Stabilized Earth Walls and Reinforced Soil Slopes, current edition

SECTION 674 PREFABRICATED CONCRETE MODULAR GRAVITY WALL

674.02 Materials

Amend this section by adding the following after “Concrete Units:” and before the paragraph beginning with “Tolerances”.

Concrete shall be Class P. The concrete shall contain a minimum of 5.5 gallons per cubic yard of calcium nitrite solution.

The minimum permeability of the concrete as indicated by Surface Resistivity shall be 17 KOhm-cm.

Defects Defects which may cause rejection of precast units include, but are not limited to, the following:

Any discontinuity (crack, rock pocket, etc.) of the concrete which could allow moisture to reach the reinforcing steel.

Rock pockets or honeycomb over 6 square inches in area or over 1 inch deep.

Edge or corner breakage exceeding 12 inches in length or 1 inch in depth.

Any other defect that clearly and substantially impacts the quality, durability, or maintainability of the structure, as determined by the Fabrication Engineer.

Repair honeycombing, ragged or irregular edges and other non-structural or cosmetic defects using a patching material from the MaineDOT Qualified Products List (QPL). The repair, including preparation of the repair area, mixing and application and curing of the patching material, shall be in accordance with the manufacturer's product data sheet. Corners that are not exposed in the final product may be ground smooth with no further repair necessary if the depth of the defect does not exceed 1/2 inch. Remove form ties and other hardware to a depth of not less than 1 inch from the face of the concrete and patch the holes using a patching material from the MaineDOT QPL.

Repair structural defects only with the approval of the Fabrication Engineer. Submit a nonconformance report (NCR) to the Fabrication Engineer with a proposed repair procedure. Do not perform structural repairs without an NCR that has been reviewed by the Fabrication Engineer. Structural defects include, but are not be limited to, exposed reinforcing steel or strand, cracks in bearing areas, through cracks and cracks 0.013 inch in width that extend more than 12 inches in length in any direction. Give the QAI adequate notice prior to beginning any structural repairs.

SECTION 677 MECHANICALLY STABILIZED EARTH RETAINING WALL

On page 6 - 203 change “636.041” to “677.041”

Amend 677.042 Precast Panel Tolerances and Surface Finish by the addition of the following:

Defects Defects which may cause rejection of precast units include, but are not limited to, the following:

Any discontinuity (crack, rock pocket, etc.) of the concrete which could allow moisture to reach the reinforcing steel.

Rock pockets or honeycomb over 6 square inches in area or over 1 inch deep.

Edge or corner breakage exceeding 12 inches in length or 1 inch in depth.

Any other defect that clearly and substantially impacts the quality, durability, or maintainability of the structure, as determined by the Fabrication Engineer.

Repair honeycombing, ragged or irregular edges and other non-structural or cosmetic defects using a patching material from the MaineDOT Qualified Products List (QPL). The repair, including preparation of the repair area, mixing and application and curing of the patching material, shall be in accordance with the manufacturer's product data sheet. Corners that are not exposed in the final product may be ground smooth with no

further repair necessary if the depth of the defect does not exceed 1/2 inch. Remove form ties and other hardware to a depth of not less than 1 inch from the face of the concrete and patch the holes using a patching material from the MaineDOT QPL.

Repair structural defects only with the approval of the Fabrication Engineer. Submit a nonconformance report (NCR) to the Fabrication Engineer with a proposed repair procedure. Do not perform structural repairs without an NCR that has been reviewed by the Fabrication Engineer. Structural defects include, but are not be limited to, exposed reinforcing steel or strand, cracks in bearing areas, through cracks and cracks 0.013 inch in width that extend more than 12 inches in length in any direction. Give the QAI adequate notice prior to beginning any structural repairs.

SECTION 702 BITUMINOUS MATERIAL

702.04 Emulsified Asphalt

Revise this Section by removing the first paragraph in its entirety and replace with the following:

Emulsified Asphalt shall conform to the requirements of AASHTO M 140. Cationic emulsified asphalt shall conform to the requirements of AASHTO M 208. Anionic emulsified asphalt Grade RS-1h shall conform to the requirements in the following table:

Type	Rapid-Setting	
Grade	RS-1h	
Tests on Emulsions	min	max
Viscosity, Saybolt Furol at 25°C SFS	20	100
Storage Stability test, 24-h, % ^A	-	1.0
Demulsibility, 35 ml, 0.02 N CaCl ₂ , %	60	-
Sieve Test, % ^A	-	0.10
Residue by distillation, %	55	-
Tests on Residue from Distillation Test	min	max
Penetration, 25°C 100g, 5 s	40	90
Ductility, 25°C 5 cm/min, cm	40	-
Solubility in trichloroethylene or n-propyl bromide, %	97.5	-

^A This requirement is waived if successful application of material has been achieved in the field.

SECTION 703 AGGREGATES

703.01 Fine Aggregate for Concrete Replace the second paragraph with the following:

“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 organic plate number 3, the fine aggregate shall be rejected.”

703.0201 Alkali Silica Reactive Aggregates. Remove this section in its entirety and replace with the following:

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.

703.06 Aggregate for Base and Subbase - Remove the first two paragraphs in their entirety and replace with these:

“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 ½ in 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. “

703.081 RAP for Asphalt Pavement

Remove this section in its entirety and replace with the following:

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:

Table 4: Maximum Percent RAP According to Test Results

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	

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 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 or 52-34 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.

Remove the gradation requirements table, and replace with the following:

Sieve Designation	Percentage by Weight Passing Square Mesh Sieves	
	Material for Underwater Backfill	Material for Embankment Construction
6 inch	100	
No. 40	0-70	0-70
No. 200	0-7.0	0-20.0

703.33 Stone Ballast - In the third paragraph, remove the words “less than” before 2.60 and add the words “or greater” after 2.60.

SECTION 712 **MISCELLANEOUS HIGHWAY MATERIAL**

Section 712.061- Structural Precast Concrete Units

Under the heading, Quality Control and Quality Assurance, revise the fourth paragraph to read:

“Acceptance is the prerogative of the Department. The Department will conduct Quality Assurance (QA) in accordance with Standard Specification Subsection 106.5. Testing deemed necessary by the Department that is in addition to the minimum testing requirements will be scheduled to minimize interference with the production schedule. The QAI will perform acceptance sampling and testing and will witness or review documentation, workmanship and testing to assure the Work is being performed in accordance with the Contract Documents.”

Under the heading, Concrete Testing, revise the first paragraph to read as the following two paragraphs:

“Concrete Testing Acceptance of structural precast units, for each day’s production, will be determined by the Department, based on compliance with this specification and satisfactory concrete testing results. At least once per week, the QAI will make 2 concrete cylinders (6 cylinders when the Contract includes permeability requirements) for use by the Department; cylinders shall be standard cured in accordance with AASHTO T23 (ASTM C31). The QAI will perform entrained air content and slump flow testing, determine water-cement ratio and determine temperature of the sampled concrete at the time of cylinder casting. All testing equipment required by the QAI to perform this testing shall be in accordance with Standard Specification Section 502.041, Testing Equipment. In addition, the Contractor shall provide a slump cone meeting the

requirements of AASHTO T 119. Providing and maintaining testing and curing equipment shall be considered incidental to the work and no additional payment will be made.

Quality Control test cylinders shall be made and tested in accordance with the following standards:

AASHTO T 22 (ASTM C39) Test Method for Compressive Strength of Cylindrical Concrete Specimens

AASHTO T23 (ASTM C31) Practice for Making and Curing Concrete Test Specimens in Field

AASHTO T141 (ASTM C172) Practice for Sampling Freshly Mixed Concrete

AASHTO T152 (ASTM C231) Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method

AASHTO T196 (ASTM C173) Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method

ASTM C1064 Test Method for Temperature of Freshly mixed Portland Cement Concrete

ASTM C1611 Standard Test Method for Slump Flow of Self-Consolidating Concrete”

Under the heading, Concrete Testing, delete the paragraph that begins:

“At least once per week, the Contractor shall make 2 concrete cylinders.....for use by the Department.....”

SECTION 713

STRUCTURAL STEEL AND RELATED MATERIAL

Section 713.01- Structural Steel Revise this Section by removing the sentence:

“ Impact test sampling and testing procedures shall be in accordance with AASHTO T.”

And replace it with: **“Impact test sampling and testing procedures shall be in accordance with AASHTO T 243 M/T 243 and AASHTO T 244.”**

SECTION 717

ROADSIDE IMPROVEMENT MATERIAL

717.02 Agricultural Ground Limestone

In the table after the third paragraph which starts with “Liquid lime...” change the Specification for Nitrogen (N) from “15.5 percent of which 1% is from ammoniac nitrogen and 14.5 /5 is from Nitrate Nitrogen” to read **“15.5 % of which 1% is from Ammoniacal Nitrogen and 14.5 % is from Nitrate Nitrogen”**

717.061 Erosion Control Blankets Revise this section by removing it in its entirety and replacing it with the following:

717.061 Erosion Control Blankets Shall consist of a machine produced rolled blanket of biodegradable fibers, evenly distributed over the entire area of blanket, of a consistent thickness, sewn into a biodegradable mesh on the top and bottom surface using a cotton blend thread. The blanket shall remain in place when subject to shear stress of 1.55 lb/ft². The blanket shall remain intact until grass is established. The blanket shall be a product currently listed on the department's Qualified Products List (QPL) of Erosion Control Products.

See Section 618.10 - Seeding, Maintenance and Acceptance.”

Section 6

REQUIRED FEDERAL CONTRACT PROVISIONS

APPENDIX A TO DIVISION 100

SECTION 1 - BIDDING PROVISIONS

A. Federally Required Certifications By signing and delivering a Bid, the Bidder certifies as provided in all certifications set forth in this Appendix A - Federal Contract Provisions Supplement including:

- Certification Regarding No Kickbacks to Procure Contract as provided on this page 1 below.
- Certification Regarding Non-collusion as provided on page 1 below.
- Certification Regarding Non-segregated Facilities as provided by FHWA Form 1273, section III set forth on page 21 below.
- "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion" as provided by FHWA Form 1273, section XI set forth on page 32 below.
- "Certification Regarding Use of Contract Funds for Lobbying" as provided by FHWA Form 1273, section XII set forth on page 35 below.

Unless otherwise provided below, the term "Bidder", for the purposes of these certifications, includes the Bidder, its principals, and the person(s) signing the Bid. Upon execution of the Contract, the Bidder (then called the Contractor) will again make all the certifications indicated in this paragraph above.

CERTIFICATION REGARDING NO KICKBACKS TO PROCURE CONTRACT Except expressly stated by the Bidder on sheets submitted with the Bid (if any), the Bidder hereby certifies, to the best of its knowledge and belief, that it has not:

(A) employed or retained for a commission, percentage, brokerage, contingent fee, or other consideration, any firm or person (other than a bona fide employee working solely for me) to solicit or secure this contract;

(B) agreed, as an express or implied condition for obtaining this contract, to employ or retain the services of any firm or person in connection with carrying out the contract, or;

(C) paid, or agreed to pay, to any firm, organization, or person (other than a bona fide employee working solely for me) any fee, contribution, donation, or consideration of any kind for, or in connection with, procuring or carrying out the contract;

By signing and submitting a Bid, the Bidder acknowledges that this certification is to be furnished to the Maine Department of Transportation and the Federal Highway Administration, U.S. Department of Transportation in connection with this contract in anticipation of federal aid highway funds and is subject to applicable state and federal laws, both criminal and civil.

CERTIFICATION REGARDING NONCOLLUSION Under penalty of perjury as provided by federal law (28 U.S.C. §1746), 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 the Contract.

For a related provisions, see Section 102.7.2 (C) of the Standard Specifications - "Effects of Signing and Delivery of Bids" - "Certifications", Section 3 of this Appendix A entitled "Other Federal Requirements" including section XI - "Certification Regarding Debarment, Suspension, Ineligibility, and Voluntary Exclusion" and section XII. - "Certification Regarding Use of Contract Funds for Lobbying."

B. Bid Rigging Hotline To report bid rigging activities call: **1-800-424-9071**

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

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

SECTION 2 - FEDERAL EEO AND CIVIL RIGHTS REQUIREMENTS

Unless expressly otherwise provided in the Bid Documents, the provisions contained in this Section 2 of this "Federal Contract Provisions Supplement" are hereby incorporated into the Bid Documents and Contract.

A. Nondiscrimination & Civil Rights - Title VI The Contractor and its subcontractors 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 CFR 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 Department deems appropriate. The Contractor and subcontractors shall comply with Title VI of the Civil Rights Act of 1964, as amended, and with all State of Maine and other Federal Civil Rights laws.

For related provisions, see Subsection B - "Nondiscrimination and Affirmative Action - Executive Order 11246" of this Section 2 and Section 3 - Other Federal Requirements of this "Federal Contract Provisions Supplement" including section II - "Nondiscrimination" of the "Required Contract Provisions, Federal Aid Construction Contracts", FHWA-1273.

B. Nondiscrimination and Affirmative Action - Executive Order 11246 Pursuant to Executive Order 11246, which was issued by President Johnson in 1965 and amended in 1967 and 1978, this Contract provides as follows.

The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its efforts to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:

Ensure and maintain a working environment free of harassment, intimidations, and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all forepersons, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.

Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its union have employment opportunities available, and to maintain a record of the organization's responses.

Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefore, along with whatever additional actions the Contractor may have taken.

Provide immediate written notification to the Department's Civil Rights Office when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Design-Builder's efforts to meet its obligations.

Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under B above.

Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligation; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.

Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination, or other employment decisions including specific review of these items with on-site supervisory personnel such as Superintendents, General Forepersons, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other Contractor's and Subcontractors with whom the Contractor does or anticipates doing business.

Direct its recruitment efforts, both orally and written to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notification to organizations such as the above describing the openings, screenings, procedures, and test to be used in the selection process.

Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth, both on the site and in other areas of a Contractor's workforce.

Validate all tests and other selection requirements.

Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.

Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.

Ensure that all facilities and company activities are non segregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.

Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction Contractor's and suppliers, including circulation of solicitations to minority and female Contractor associations and other business associations.

Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's EEO policies and affirmative action obligations.

C. Goals for Employment of Women and Minorities Per Executive Order 11246, craft tradesperson goals are 6.9% women and .5% minorities employed. However, goals may be adjusted upward at the mutual agreement of the Contractor and the Department. Calculation of these percentages shall not include On-the-Job Training Program trainees, and shall not include clerical or field clerk position employees.

For a more complete presentation of requirements for such Goals, see the federally required document "Goals for Employment of Females and Minorities" set forth in the next 6 pages below.

Start of GOALS FOR EMPLOYMENT OF FEMALES AND MINORITIES
Federally Required Contract Document

§60-4.2 Solicitations

(d) The following notice shall be included in, and shall be part of, all solicitations for offers and bids on all Federal and federally assisted construction contracts or subcontracts in excess of \$10,000 to be performed in geographical areas designated by the Director pursuant to §60-4.6 of this part (see 41 CFR 60-4.2(a)):

Notice of Requirement for Affirmative Action to Ensure Equal Opportunity (Executive Order 11246)

1. The Offeror's or bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Specifications" set forth herein.
2. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate work force in each trade on all construction work in the covered area, are as follows:

<u>Goals for female participation in each trade</u>	6.9%
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Goals for minority participation for each trade

Maine

001 Bangor, ME	0.8%
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Non-SMSA Counties (Aroostook, Hancock, Penobscot, Piscataquis, Waldo, Washington)

002 Portland-Lewiston, ME

SMSA Counties: 4243 Lewiston-Auburn, ME	0.5%
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(Androscoggin)

6403 Portland, ME	0.6%
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(Cumberland, Sagadahoc)

Non-SMSA Counties:
(Franklin, Kennebec, Knox, Lincoln, Oxford, Somerset, York)

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

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

3. The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within 10 working days of award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address and telephone number of the subcontractor, employer identification number of the subcontractor, estimated dollar amount of the subcontract; estimated started and completion dates of the subcontract; and the geographical area in which the subcontract is to be performed.

4. As used in this Notice, and in the Contract resulting from this solicitation, the "covered area" is (insert description of the geographical areas where the contract is to be performed giving the state, county and city, if any).

STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY CONSTRUCTION
CONTRACT SPECIFICATIONS (EXECUTIVE ORDER 11246)

1. As used in these specifications:
 - a. "Covered area" means the geographical area described in the solicitation from which this contract resulted;
 - b. "Director" means Director, Office of Federal Contract Compliance Programs, United States Department of Labor, or any person to whom the Director delegates authority;
 - c. "Employer identification number" means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department form 941;
 - d. "Minority" includes:

- (i) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);
 - (ii) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);
 - (iii) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and
 - (iv) American Indian or Alaskan Native (all persons having origins in any of the original peoples of the North America and maintaining identifiable tribal affiliations through membership and participation or community identification).
2. Whenever the Contractor, or any subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of \$10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.
3. If the contractor, is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or Subcontractor participating in an approved Plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other Contractors for Subcontractors toward a goal in an approved Plan does not excuse any covered Contractor's or Subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.
4. The Contractor shall implement the specific affirmative action standards provided in paragraphs 7 a. through p. of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in contractors performing construction work in geographical areas where they do not have a Federal or federally assisted construction contract shall apply the minority and female goals established for the geographical areas where the work is being performed. Goals are published periodically in the Federal Register in notice form and such notices may be obtained from any Office of Federal Contract Compliance Programs office or from Federal procurement contracting officers. The Contractor is expected to make substantially uniform progress in meeting its goals in each craft during the period specific.
5. Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the Contractor's obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant, thereto.

6. In order for the non working training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.
7. The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as expensive as the following:
 - a. Ensure and maintain a working environment free of harassment, intimidation, coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, when possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.
 - b. Establish and maintain a current list of minority and female recruitment sources provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organization's responses.
 - c. Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment sources or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefore, along with whatever additional actions the Contractor may have taken.
 - d. Provide immediate written notification to the Director when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.
 - e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources complied under 7b above.

- f. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.
- g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions including specific review of these items with on-site supervisory personnel such as Superintendents, General Foremen, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.
- h. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other Contractors and Subcontractors with whom the Contractor does or anticipates doing business.
- i. Direct its recruitment, efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month other training by any recruitment source, the Contractor shall send written notification to organizations such as the above, describing prior to the date for the acceptance of applications for apprenticeship or the openings, screening procedures, and tests to be used in the selection process.
- j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth both on site and in other areas of a Contractor's work force.
- k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.
- l. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.
- m. Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.

- n. Ensure that all facilities and company activities are non segregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.
 - o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitation to minority and female contractor associations and other business associations.
 - p. Conduct a review, at least annually, of all supervisor's adherence to and performance under the Contractor's EEO policies and affirmative action obligations.
8. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (7 a through p.). The efforts of a contractor association, joint contractor-union, contractor-community, or other similar group of which the contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 7 a through p. of these specifications provided that the contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program and reflected in the Contractor's minority and female work force participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions take on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.
9. A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the Contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example, specific minority group of women is underutilized.)
10. The Contractor shall not use the goals and timetables or affirmative action even though the Contractor has achieved its goals for women generally, the Contractor may be in violation of the Executive Order if standards to discriminate against any person because of race, color, religion, sex, or national origin.
11. The Contractor shall not enter into any Subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.
12. The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementation regulations by the Office of Federal Contract Compliance Programs. Any Contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.

13. The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.6.
14. The Contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g. mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and location at which the work was performed. Records be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.
15. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

End of GOALS FOR EMPLOYMENT OF FEMALES AND MINORITIES
Federally Required Contract Document

D. Section '**D Disadvantaged Business Enterprise (DBE) Requirements**' is removed in its entirety. The DBE material is in:

Section 105.10 EQUAL OPPORTUNITY AND CIVIL RIGHTS.

SECTION 3 - OTHER FEDERAL REQUIREMENTS

Unless expressly otherwise provided in the Bid Documents, the provisions contained in this Section 3 of this "Federal Contract Provisions Supplement" are hereby incorporated into the Bid Documents and Contract.

A. Buy America

If the cost of products purchased for permanent use in this project which are manufactured of steel, iron or the application of any coating to products of these materials exceeds 0.1 percent of the contract amount, or \$2,500.00, whichever is greater, the products shall have been manufactured and the coating applied in the United States. The coating materials are not subject to this clause, only the application of the coating. In computing that amount, only the cost of the product and coating application cost will be included.

Ore, for the manufacture of steel or iron, may be from outside the United States; however, all other manufacturing processes of steel or iron must be in the United States to qualify as having been manufactured in the United States.

United States includes the 50 United States and any place subject to the jurisdiction thereof.

Products of steel include, but are not limited to, such products as structural steel, piles, guardrail, steel culverts, reinforcing steel, structural plate and steel supports for signs, luminaries and signals.

Products of iron include, but are not limited to, such products as cast iron grates.

Application of coatings include, but are not limited to, such applications as epoxy, galvanized and paint.

To assure compliance with this section, the Contractor shall submit a certification letter on its letterhead to the Department stating the following:

“This is to certify that products made of steel, iron or the application of any coating to products of these materials whose costs are in excess of \$2,500.00 or 0.1 percent of the original contract amount, whichever is greater, were manufactured and the coating, if one was required, was applied in the United States.”

B. Materials

a. Convict Produced Materials References: 23 U.S.C. 114(b)(2), 23 CFR 635.417

Applicability: FHWA's prohibition against the use of convict material only applies to Federal-aid highways. Materials produced after July 1, 1991, by convict labor may only be incorporated in a Federal-aid highway construction project if: 1) such materials have been produced by convicts who are on parole, supervised release, or probation from a prison; or 2) such material has been produced in a qualified prison facility, e.g., prison industry, with the amount produced during any 12-month period, for use in Federal-aid projects, not exceeding the amount produced, for such use, during the 12-month period ending July 1, 1987.

Materials obtained from prison facilities (e.g., prison industries) are subject to the same requirements for Federal-aid participation that are imposed upon materials acquired from other sources. Materials manufactured or produced by convict labor will be given no preferential treatment.

The preferred method of obtaining materials for a project is through normal contracting procedures which require the contractor to furnish all materials to be incorporated in the work. The contractor selects the source, public or private, from which the materials are to be obtained (23 CFR 635.407). Prison industries are prohibited from bidding on projects directly (23 CFR 635.112e), but may act as material supplier to construction contractors.

Prison materials may also be approved as State-furnished material. However, since public agencies may not bid in competition with private firms, direct acquisition of materials from a

prison industry for use as State-furnished material is subject to a public interest finding with the Division Administrator's concurrence (23 CFR 635.407d). Selection of materials produced by convict labor as State-furnished materials for mandatory use should be cleared prior to the submittal of the Plans Specifications & Estimates (PS&E).

b. Patented/Proprietary Products References: 23 U.S.C. 112, 23 CFR 635.411

FHWA will not participate, directly or indirectly, in payment for any premium or royalty on any patented or proprietary material, specification, or process specifically set forth in the plans and specifications for a project, unless:

- the item is purchased or obtained through competitive bidding with equally suitable unpatented items,
- the STA certifies either that the proprietary or patented item is essential for synchronization with the existing highway facilities or that no equally suitable alternative exists, or
- the item is used for research or for a special type of construction on relatively short sections of road for experimental purposes. States should follow FHWA's procedures for "Construction Projects Incorporating Experimental Features" ([expermnt.htm](#)) for the submittal of work plans and evaluations.

The primary purpose of the policy is to have competition in selection of materials and allow for development of new materials and products. The policy further permits materials and products that are judged equal may be bid under generic specifications. If only patented or proprietary products are acceptable, they shall be bid as alternatives with all, or at least a reasonable number of, acceptable materials or products listed; and the Division Administrator may approve a single source if it can be found that its utilization is in the public interest.

Trade names are generally the key to identifying patented or proprietary materials. Trade name examples include 3M, Corten, etc. Generally, products identified by their brand or trade name are not to be specified without an "or equal" phrase, and, if trade names are used, all, or at least a reasonable number of acceptable "equal" materials or products should be listed. The licensing of several suppliers to produce a product does not change the fact that it is a single product and should not be specified to the exclusion of other equally suitable products.

c. State Preference References: 23 U.S.C. 112, 23 CFR 635.409

Materials produced within Maine shall not be favored to the exclusion of comparable materials produced outside of Maine. State preference clauses give particular advantage to the designated source and thus restrict competition. Therefore, State preference provisions shall not be used on any Federal-aid construction projects.

This policy also applies to State preference actions against materials of foreign origin, except as otherwise permitted by Federal law. Thus, States cannot give preference to in-State material sources over foreign material sources. Under the Buy America provisions, the States are

permitted to expand the Buy America restrictions provided that the STA is legally authorized under State law to impose more stringent requirements.

d. State Owned/Furnished/Designated Materials References: 23 U.S.C. 112, 23 CFR 635.407

Current FHWA policy requires that the contractor must furnish all materials to be incorporated in the work, and the contractor shall be permitted to select the sources from which the materials are to be obtained. Exceptions to this requirement may be made when there is a definite finding, by MaineDOT and concurred in by Federal Highway Administration's (FHWA) Division Administrator, that it is in the public interest to require the contractor to use materials furnished by the MaineDOT or from sources designated by MaineDOT. The exception policy can best be understood by separating State-furnished materials into the categories of manufactured materials and local natural materials.

Manufactured Materials When the use of State-furnished manufactured materials is approved based on a public interest finding, such use must be made mandatory. The optional use of State-furnished manufactured materials is in violation of our policy prohibiting public agencies from competing with private firms. Manufactured materials to be furnished by MaineDOT must be acquired through competitive bidding, unless there is a public interest finding for another method, and concurred in by FHWA's Division Administrator.

Local Natural Materials When MaineDOT owns or controls a local natural materials source such as a borrow pit or a stockpile of salvaged pavement material, etc., the materials may be designated for either optional or mandatory use; however, mandatory use will require a public interest finding (PIF) and FHWA's Division Administrator's concurrence.

In order to permit prospective bidders to properly prepare their bids, the location, cost, and any conditions to be met for obtaining materials that are made available to the contractor shall be stated in the bidding documents.

Mandatory Disposal Sites Normally, the disposal site for surplus excavated materials is to be of the contractor's choosing; although, an optional site(s) may be shown in the contract provisions. A mandatory site shall be specified when there is a finding by MaineDOT, with the concurrence of the Division Administrator, that such placement is the most economical or that the environment would be substantially enhanced without excessive cost. Discussion of the mandatory use of a disposal site in the environmental document may serve as the basis for the public interest finding.

Summarizing FHWA policy for the mandatory use of borrow or disposal sites:

- mandatory use of either requires a public interest finding and FHWA's Division Administrator's concurrence,
- mandatory use of either may be based on environmental consideration where the environment will be substantially enhanced without excessive additional cost, and
- where the use is based on environmental considerations, the discussion in the environmental document may be used as the basis for the public interest finding.

Factors to justify a public interest finding should include such items as cost effectiveness, system integrity, and local shortages of material.

C. Standard FHWA Contract Provisions - FHWA 1273

Unless expressly otherwise provided in the Bid Documents, the following “Required Contract Provisions, Federal Aid Construction Contracts”, FHWA-1273, are hereby incorporated into the Bid Documents and Contract.

Cargo Preference Act : Contractor and Subcontractor Clauses. “Use of United States-flag vessels: The contractor agrees—“(1) To utilize 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 this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels.”(2) To furnish within 20 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 paragraph (1) of this section to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590.”(3) To insert the substance of the provisions of this clause in all subcontracts issued pursuant to this contract.”(Reorganization Plans No. 21 of 1950 (64 Stat. 1273) and No. 7 of 1961 (75 Stat. 840) as amended by Pub. L. 91-469 (84 Stat. 1036) and Department of Commerce Organization Order 10-8 (38 FR 19707, July 23, 1973)) [42 FR 57126, Nov. 1, 1977]

The Cargo Preference Act requirements apply to materials or equipment that are acquired for a specific Federal-aid highway project. In general, the requirements are not applicable to goods or materials that come into inventories independent of an FHWA funded-contract. For example, the requirements would not apply to shipments of Portland cement, asphalt cement, or aggregates, as industry suppliers and contractors use these materials to replenish existing inventories. In general, most of the materials used for highway construction originate from existing inventories and are not acquired solely for a specific Federal-aid project. However, if materials or equipment are acquired solely for a Federal-aid project, then the Cargo Preference Act requirements apply.”

Start of FHWA 1273 REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS (As revised through May 1, 2012)

FHWA-1273 -- Revised May 1, 2012

**REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS**

- I. General
- II. Nondiscrimination
- III. Nonsegregated Facilities
- IV. Davis-Bacon and Related Act Provisions
- V. Contract Work Hours and Safety Standards Act Provisions
- VI. Subletting or Assigning the Contract
- VII. Safety: Accident Prevention
- VIII. False Statements Concerning Highway Projects
- IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
- X. Compliance with Governmentwide Suspension and Debarment Requirements
- XI. Certification Regarding Use of Contract Funds for Lobbying

ATTACHMENTS

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under Title 23 (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services). The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in bid proposal or request for proposal documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment,

termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

II. NONDISCRIMINATION

The provisions of this section related to 23 CFR Part 230 are applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR 60, 29 CFR 1625-1627, Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding \$10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR 230, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. Equal Employment Opportunity: Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract.

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

2. EEO Officer: The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

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

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

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

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

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

- a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.
- b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.
- c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

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

The following procedures shall be followed:

- a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.
- b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.
- c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.
- d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

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

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

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women.

Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

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

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

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

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even

though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants / Employees with Disabilities: The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established there under. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors and suppliers and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurance Required by 49 CFR 26.13(b):

a. The requirements of 49 CFR Part 26 and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.

b. The contractor 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 CFR 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 contracting agency deems appropriate.

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

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

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

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

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women;

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on [Form FHWA-1391](#). The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more.

The contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location, under the contractor's control, where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding \$2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 "Contract provisions and related matters" with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages

a. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b. (1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

- (i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and
- (ii) The classification is utilized in the area by the construction industry; and
- (iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

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

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

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

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

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

2. Withholding

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

3. Payrolls and basic records

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act),

daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

b. (1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g. , the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency..

(2) Each payroll submitted shall be accompanied by a “Statement of Compliance,” signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(i) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the “Statement of Compliance” required by paragraph 3.b.(2) of this section.

(4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or the State DOT, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and trainees

a. Apprentices (programs of the USDOL).

Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a

different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

b. Trainees (programs of the USDOL).

Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

d. Apprentices and Trainees (programs of the U.S. DOT).

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

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

6. Subcontracts. The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility.

a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

The following clauses apply to any Federal-aid construction contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1.) of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1.) of this section, 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 the clause set forth in paragraph (1.) of this section.

3. Withholding for unpaid wages and liquidated damages. The FHWA or the contacting agency 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 the clause set forth in paragraph (2.) of this section.

4. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1.) through (4.) of 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 paragraphs (1.) through (4.) of this section.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term “perform work with its own organization” refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions:

- (1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
- (2) the prime contractor remains responsible for the quality of the work of the leased employees;
- (3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and
- (4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

5. The 30% self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements.

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C.3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

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

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

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

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

Shall be fined under this title or imprisoned not more than 5 years or both."

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

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

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

1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.
2. That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

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

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost \$25,000 or more – as defined in 2 CFR Parts 180 and 1200.

1. Instructions for Certification – First Tier Participants:

- a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.
- b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.
- c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default.

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

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

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

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.

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

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

* * * * *

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency;

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

2. Instructions for Certification - Lower Tier Participants:

(Applicable to all subcontracts, purchase orders and other lower tier transactions requiring prior FHWA approval or estimated to cost \$25,000 or more - 2 CFR Parts 180 and 1200)

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

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

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

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

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

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.

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

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

* * * * *

**Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--
Lower Tier Participants:**

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed \$100,000 (49 CFR 20).

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

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

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

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

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

**ATTACHMENT A - EMPLOYMENT AND MATERIALS PREFERENCE FOR
APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM OR APPALACHIAN LOCAL
ACCESS ROAD CONTRACTS**

This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

End of FHWA 1273

The United States Department of Transportation (USDOT)

FHWA STANDARD TITLE VI/NONDISCRIMINATION ASSURANCES

DOT Order No. 1050.2A

The Maine Department of Transportation (herein referred to as the "Recipient"), **HEREBY AGREES THAT**, as a condition to receiving any Federal financial assistance from the U.S. Department of Transportation (DOT), through The Federal Highway Administration (FHWA), is subject to and will comply with the following:

Statutory/Regulatory Authorities

- Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d *et seq.*, 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin);
- 49 C.F.R. Part 21 (entitled *Nondiscrimination In Federally-Assisted Programs Of The Department Of Transportation—Effectuation Of Title VI Of The Civil Rights Act Of 1964*);
- 28 C.F.R. section 50.3 (U.S. Department of Justice Guidelines for Enforcement of Title VI of the Civil Rights Act of 1964);

FHWA may include additional Statutory/Regulatory Authorities here.

The preceding statutory and regulatory cites hereinafter are referred to as the "Acts" and "Regulations," respectively.

General Assurances

In accordance with the Acts, the Regulations, and other pertinent directives, circulars, policy, memoranda, and/or guidance, the Recipient hereby gives assurance that it will promptly take any measures necessary to ensure that:

No person in the United States shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity," for which the Recipient receives Federal financial assistance from DOT, including FHWA..

The Civil Rights Restoration Act of 1987 clarified the original intent of Congress, with respect to Title VI and other Nondiscrimination requirements (The Age Discrimination Act of 1975, and Section 504 of the Rehabilitation Act of 1973), by restoring the broad, institutional-wide scope and coverage of these nondiscrimination statutes and requirements to include all programs and activities of the Recipient, so long as any portion of the program is Federally assisted.

FHWA may include additional General Assurances in this section, or reference an addendum here.

Specific Assurances

More specifically, and without limiting the above general Assurance, the Recipient agrees with and gives the following Assurances with respect to its federally assisted programs:

1. The Recipient agrees that each "activity," "facility," or "program," as defined in §§ 21.23 (b) and 21.23 (e) of 49 C.F.R. § 21 will be (with regard to an "activity") facilitated, or will be (with regard to a "facility") operated, or will be (with regard to a "program") conducted in compliance with all requirements imposed by, or pursuant to the Acts and the Regulations.
2. The Recipient will insert the following notification in all solicitations for bids, Requests For Proposals for work, or material subject to the Acts and the Regulations made in connection with all Federal Highway Programs and, in adapted form, in all proposals for negotiated agreements regardless of funding source:

The (Agency), in accordance with the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252, 42 U.S.C. §§ 2000d to 2000d-4) and the Regulations, hereby notifies all bidders that it will affirmatively insure that any contract entered into pursuant to this advertisement, disadvantaged business enterprises will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, or national origin in consideration for an award.

3. The Recipient will insert the clauses of Appendix A and E of this Assurance in every contract or agreement subject to the Acts and the Regulations.
4. The Recipient will insert the clauses of Appendix B of this Assurance, as a covenant running with the land, in any deed from the United States effecting or recording a transfer of real property, structures, use, or improvements thereon or interest therein to a Recipient.
5. That where the Recipient receives Federal financial assistance to construct a facility, or part of a facility, the Assurance will extend to the entire facility and facilities operated in connection therewith.
6. That where the Recipient receives Federal financial assistance in the form, or for the acquisition of real property or an interest in real property, the Assurance will extend to rights to space on, over, or under such property.
7. That the Recipient will include the clauses set forth in Appendix C and Appendix D of this Assurance, as a covenant running with the land, in any future deeds, leases, licenses, permits, or similar instruments entered into by the Recipient with other parties:
 - a. for the subsequent transfer of real property acquired or improved under the applicable activity, project, or program; and
 - b. for the construction or use of, or access to, space on, over, or under real property acquired or improved under the applicable activity, project, or program.
8. That this Assurance obligates the Recipient for the period during which Federal financial assistance is extended to the program, except where the Federal financial assistance is to provide, or is in the form of, personal property, or real property, or interest therein, or structures or improvements thereon, in which case the Assurance obligates the Recipient, or any transferee for the longer of the following periods:

- a. the period during which the property is used for a purpose for which the Federal financial assistance is extended, or for another purpose involving the provision of similar services or benefits; or
 - b. the period during which the Recipient retains ownership or possession of the property.
9. The Recipient will provide for such methods of administration for the program as are found by the Secretary of Transportation or the official to whom he/she delegates specific authority to give reasonable guarantee that it, other recipients, sub-recipients, sub-grantees, contractors, subcontractors, consultants, transferees, successors in interest, and other participants of Federal financial assistance under such program will comply with all requirements imposed or pursuant to the Acts, the Regulations, and this Assurance.
10. The Recipient agrees that the United States has a right to seek judicial enforcement with regard to any matter arising under the Acts, the Regulations, and this Assurance.

FHWA may include additional Specific Assurances in this section.

By signing this ASSURANCE, Maine Department of Transportation also agrees to comply (and require any subrecipients, sub-grantees, contractors, successors, transferees, and/or assignees to comply) with all applicable provisions governing the FHWA access to records, accounts, documents, information, facilities, and staff. You also recognize that you must comply with any program or compliance reviews, and/or complaint investigations conducted by FHWA. You must keep records, reports, and submit the material for review upon request to FHWA, or their designees in a timely, complete, and accurate way. Additionally, you must comply with all other reporting, data collection, and evaluation requirements, as prescribed by law or detailed in program guidance.

Maine Department of Transportation gives this ASSURANCE in consideration of and for obtaining any Federal grants, loans, contracts, agreements, property, and/or discounts, or other Federal-aid and Federal financial assistance extended after the date hereof to the recipients by the U.S. Department of Transportation. This ASSURANCE is binding on Maine Department of Transportation, other recipients, sub-recipients, sub-grantees, contractors, subcontractors and their subcontractors', transferees, successors in interest, and any other participants in it programs. . The person(s) signing below is authorized to sign this ASSURANCE on behalf of the Recipient.

Name of Recipient: Maine Department of Transportation



David Bernhardt, Commissioner

DATED: 9/18/14

APPENDIX A

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the “contractor”) agrees as follows:

1. **Compliance with Regulations:** The contractor (hereinafter includes consultants) will comply with the Acts and the Regulations relative to Nondiscrimination in Federally-assisted programs of the U.S. Department of Transportation, **Federal Highway Administration**, as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.
2. **Nondiscrimination:** The contractor, with regard to the work performed by it during the contract, will not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor will not participate directly or indirectly in the discrimination prohibited by the Acts and the Regulations as set forth in Appendix E, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 CFR Part 21.
3. **Solicitations for Subcontracts, Including Procurements of Materials and Equipment:** In all solicitations, either by competitive bidding, or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier will be notified by the contractor of the contractor’s obligations under this contract and the Acts and the Regulations relative to Non-discrimination on the grounds of race, color, or national origin.
4. **Information and Reports:** The contractor will provide all information and reports required by the Acts, the Regulations and directives issued pursuant thereto and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Recipient or the **Federal Highway Administration**, to be pertinent to ascertain compliance with such Acts, Regulations, and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish the information, the contractor will so certify to the Recipient or the **Federal Highway Administration**, as appropriate, and will set forth what efforts it has made to obtain the information.
5. **Sanctions for Noncompliance:** In the event of a contractor’s noncompliance with the Non-discrimination provisions of this contract, the Recipient will impose such contract sanctions as it or the **Federal Highway Administration**, may determine to be appropriate, including, but not limited to:
 - a. withholding payments to the contractor under the contract until the contractor complies; and/or
 - b. cancelling, terminating, or suspending a contract, in whole or in part.

Incorporation of Provisions: The contractor will include the provisions of paragraphs one through six in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations and directives issued pursuant thereto. The contractor will take action with respect to any subcontract or procurement as the Recipient or the **Federal Highway Administration**, may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the contractor becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, the contractor may request the Recipient to enter into any litigation to protect the interests of the Recipient. In addition, the contractor may request the United States to enter into the litigation to protect the interests of the United States.

(APPENDIX C TO MAINEDOT TITLE VI ASSURANCE)

FEDERAL HIGHWAY ADMINISTRATION ASSISTED PROGRAMS

The following clauses shall be included in all deeds, licenses, leases, permits, or similar instruments entered into

by the Maine Department of Transportation pursuant to the provisions of Assurance 7(a).

The (grantee, licensee, lessee, permittee, etc., as appropriate) for herself/himself, his/her heirs, personal representatives, successors in interest, and assigns, as a part of the consideration hereof, does hereby covenant and agree [in the case of deeds and leases add "as a covenant running with the land"] that in the event facilities are constructed, maintained, or otherwise operated on the said property described in this (deed, license, lease, permit, etc.) for a purpose for which a Department of Transportation program or activity is extended or for another purpose involving the provision of similar services or benefits, the (grantee, licensee lessee, permittee, etc.) shall maintain and operate such facilities and services in compliance with all other requirements imposed pursuant to Title 49, Code of Federal Regulations, Department of Transportation, Subtitle A, Office of the Secretary, Part 21, Nondiscrimination of Federally-Assisted Programs of the Department of Transportation - Effectuation of Title VI of the Civil Rights Act of 1964, and as said Regulations may be amended.

[Include in licenses, leases, permits, etc.]*

That in the event of breach of any of the above nondiscrimination covenants, Maine Department of Transportation shall have the right to terminate the [license, lease, permit, etc.] and to re-enter and repossess said land and the facilities thereon, and hold the same as if said [licenses, lease, permit, etc.] had never been made or issued.

[Include in deeds]*

That in the event of breach of any of the above nondiscrimination covenants, Maine Department of Transportation shall have the right to re-enter said lands and facilities thereon, and the above described lands and facilities shall thereupon revert to and vest in and become the absolute property of Maine Department of Transportation and its assigns.

The following shall be included in all deeds, licenses, leases, permits, or similar agreements entered into by Maine Department of Transportation pursuant to the provisions of Assurance 7(b).

The (grantee, licensee, lessee, permittee, etc., as appropriate) for herself/himself, his/her personal representatives, successors in interest, and assigns, as a part of the consideration hereof, does hereby covenant and agree (in case of deeds, and leases add "as a covenant running with the land") that (1) no person on the grounds of race, color, or national origin shall be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination in the use of said facilities, (2) that in the construction of any improvements on, over or under such land and the furnishing services thereon, no person on the grounds of race, color, or national origin shall be excluded from the participation in, be denied the benefits of, or be otherwise subjected to discrimination, and (3) that the (grantee, licensee, lessee, permittee, etc.) shall use the premises in compliance with all other requirements imposed by or pursuant to Title 49, Code of Federal Regulations, Department of Transportation, Subtitle A, Office of the Secretary, Part 21, Nondiscrimination in Federally-Assisted Programs of the Department of Transportation - Effectuation of Title VI of the Civil Rights Act of 1964, and as said Regulations may be amended.

[Include in licenses, leases, permits, etc.]*

That in the event of breach of any of the above nondiscrimination covenants, Maine Department of Transportation shall have the right to terminate the [license, lease, permit, etc.] and to re-enter and repossess said land and the facilities thereon, and hold the same as if said [license, lease, permit, etc.] had never been made or issued.

[Include in deeds]*

That in the event of breach of any of the above nondiscrimination covenants, Maine Department of Transportation shall have the right to re-enter said land and facilities thereon, and the above described lands and facilities shall thereupon revert to and vest in and become the absolute property of Maine Department of Transportation and its assigns.

* Reverter clause and related language to be used only when it is determined that such a clause is necessary in order to effectuate the purpose of Title VI of the Civil Rights Act of 1964.

APPENDIX D

CLAUSES FOR CONSTRUCTION/USE/ACCESS TO REAL PROPERTY ACQUIRED UNDER THE ACTIVITY, FACILITY OR PROGRAM

The following clauses will be included in deeds, licenses, permits, or similar instruments/agreements entered into by The Maine Department of Transportation pursuant to the provisions of Assurance 7(b):

- A. The (grantee, licensee, permittee, etc., as appropriate) for himself/herself, his/her heirs, personal representatives, successors in interest, and assigns, as a part of the consideration hereof, does hereby covenant and agree (in the case of deeds and leases add, “as a covenant running with the land”) that (1) no person on the ground of race, color, or national origin, will be excluded from participation in, denied the benefits of, or be otherwise subjected to discrimination in the use of said facilities, (2) that in the construction of any improvements on, over, or under such land, and the furnishing of services thereon, no person on the ground of race, color, or national origin, will be excluded from participation in, denied the benefits of, or otherwise be subjected to discriminations, (3) that the (grantee, licensees, lessee, permittee, etc.) will use the premises in compliance with all other requirements imposed by or pursuant to the Acts and Regulations, as amended, set forth in this Assurance.
- B. With respect to (licenses, leases, permits, etc.), in the event of breach of any of the above Non-discrimination covenants, (**The Maine Department of Transportation**) will have the right to terminate the (license, permit, etc., as appropriate) and to enter or re-enter and repossess said land and the facilities thereon, and hold the same as if said (license, permit, etc., as appropriate) had never been made or issued.*
- C. With respect to deeds, in the event of breach of any of the above Non-discrimination covenants, (**The Maine Department of Transportation**) will there upon revert to and vest in and become the absolute property of (**The Maine Department of Transportation**) and its assigns.*

(*Reverter clause and related language to be used only when it is determined that such a clause is necessary to make clear the purpose of Title VI.)

APPENDIX E

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the “contractor”) agrees to comply with the following non-discrimination statutes and authorities; including but not limited to:

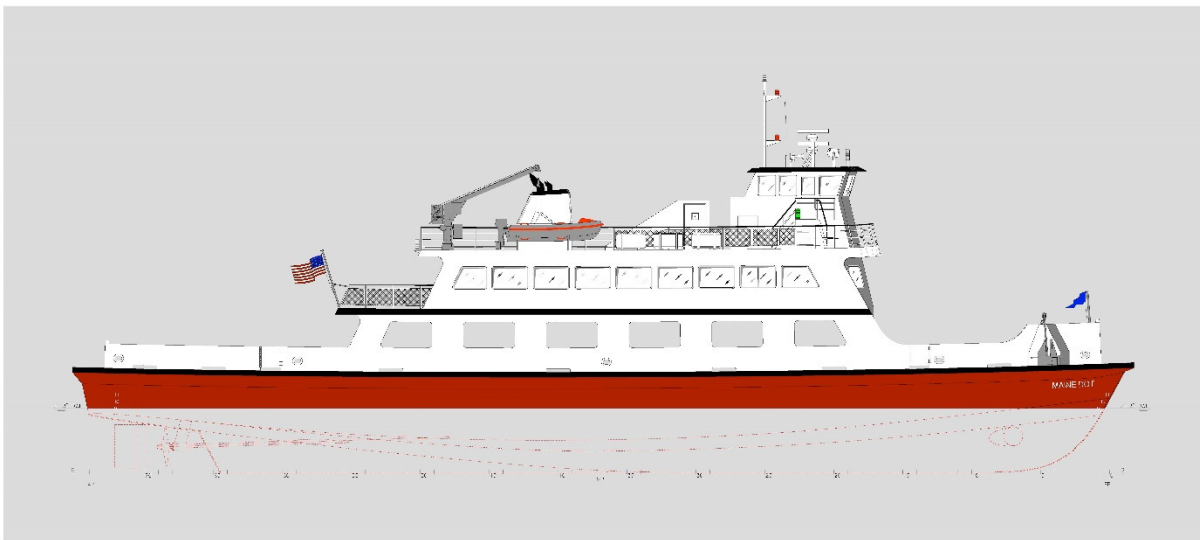
Pertinent Non-Discrimination Authorities:

- Title VI of the Civil Rights Act of 1964 (42 U.S.C. §2000d *et seq.*, 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin); and 49 CFR Part 21.
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. §4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- Federal-Aid Highway Act of 1973, (23 U.S.C. §324 *et seq.*), (prohibits discrimination on the basis of sex);
- Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. §794 *et seq.*), as amended, (prohibits discrimination on the basis of disability); and 49 CFR Part 27;
- The Age Discrimination Act of 1975, as amended, (42 U.S.C. §6101 *et seq.*), (prohibits discrimination on the basis of age);
- Airport and Airway Improvement Act of 1982, (49 U.S.C. §471, Section 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex);
- The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms “programs or activities” to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not);
- Titles II and III of the Americans with Disabilities Act, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§12131-12189) as implemented by Department of Transportation regulations at 49 C.F.R. Parts 37 and 38;
- The Federal Aviation Administration’s Non-discrimination statute (49 U.S.C. §47123) (prohibits discrimination on the basis of race, color, national origin and sex);
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures discrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;
- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);
- Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating of sex in education programs or activities (20 U.S.C. 1681 *et seq.*).

SECTION 7

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

MAINE STATE FERRY SERVICE
TECHNICAL SPECIFICATIONS (D-358-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 Maine State Ferry Service (MSFS); P.O. Box 645; Rockland, ME 04841. The MSFS operates as a division of the State of Maine Department of Transportation; 16 State House Station; Augusta, ME 04333-0016.

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.

The vessel shall have a main propulsion plant consisting of two Caterpillar C32 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); two Twin Disc MGX 5225DC 4.03:1 reverse/reduction gears. Generators, which also meet the applicable EPA Emission Standards, shall consist of two John Deere 99KW ship's service generator sets (SSDGs); a dedicated John Deere 200KW bow thruster genset; and a 65KW emergency diesel generator (EDG). The vessel shall conform to all of the 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.

To comply with FHWA funding requirements, the Intended Service Life of this vessel shall be (25) Twenty-five years. The CONTR is to comply with the provisions of the FHWA 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 MSFS 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 July 2013
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
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 MSFS and the CONTR
CuNi	Copper Nickel Alloy
CRES	Stainless Steel (SST)
DESIGN AGENT	Gilbert Associates (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

MAINE STATE FERRY SERVICE FERRY SPECIFICATIONS

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
FCC	Federal Communications Commission
FMEA	Failure Mode Effect Analysis
FO	Fuel Oil (in US gallons)
FRP	Fiber Reinforced Plastic
FHWA	Federal Highway Administration
FW	Freshwater (in US gallons)
GPM	Gallons per Minute
GT	Gross Ton (100 cubic foot measured unit)
HP	Horsepower
HVAC	Heating, Ventilation, and Air Conditioning
IAW	Image Analysis Workstation
IBA	Inflatable Buoyant Apparatus
IEEE	Institute of Electrical & Electronics Engineers
ITC	International Tonnage Commission
IWO	In Way Of
LCG	Longitudinal Center of Gravity
LT	Long Ton 2240 Lbs.
MDOT	Maine Department of Transportation
ME	Main Engine
MSFS	Maine State Ferry Service, OWNER

MAINE STATE FERRY SERVICE FERRY SPECIFICATIONS

NEMA	National Electrical Manufacturer's Association
NFPA	National Fire Protection Association
NPS	National Pipe Schedule
NT	Net Ton (100 cubic foot measured unit)
NVIC	Navigation and Vessel Inspection Circular
OCMI	Officer in Charge of Marine Inspection
OSHA	Occupational Safety and Health Administration
OWNER	Main 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
NUC	Not Under Command
OF or OFE	Owner Furnished or Owner Furnished Equipment (MSFS furnished equipment)
OREP	Owner's Representative (On-site MSFS Representative)
OWNER	Maine State Ferry Service (MSFS)
P	Port (port side)
PFD	Personal Flotation Device
PLC	Programmable Logic Controllers
POC	Point of Contact
P&S	Port and Starboard (sides)
QA	Quality Assurance
QAWT	Quick Acting Watertight (door)
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

MAINE STATE FERRY SERVICE FERRY SPECIFICATIONS

SSDG	Ship's Service Diesel Generator
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 or CONTR)

0.3 EXPANDED DEFINITIONS

0.3.1 MSFS FURNISHED

All equipment herein specified as MSFS 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 MSFS. 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 MSFS 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 MSFS 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 ASSURANCE

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

The CONTR is permitted to submit bids containing substitutions ("or 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 MSFS'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 MSFS; or, in the case of a MSFS generated substitution, upon timely written

notice from MSFS 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. MSFS 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. MSFS 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 FHWA 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) Caterpillar C32 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) Twin Disc MGX-5225DC reverse/reduction gears; (2) John Deere 99 KW 4045AFM85 w/Marathon electrical end SSDGs; (1) John Deere Model No. 6090AFM85 200KW Bow Thruster generator; and one John Deere 65KW EDG. All generator engines shall meet the EPA Emission Standards which apply to their HP and service. 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 FHWA 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 MSFS of a Construction Proposal. The submitted Construction Proposal shall provide for the delivery to MSFS 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 MSFS routes serving the State of Maine coastal islands.

Frame numbers are bow to stern, FR0 to FR75. 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.

It is the responsibility of the CONTR to maintain open communication with MSFS 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)
Draft Molded	14’- 6” (4.4 Meters)
Displacement	650 LT
Fuel Oil Capacity (90%)	5400 USG (two 3000 Gal. tanks)
Potable Water Capacity (100%)	2400 USG (one 2400 Gal. tank)
Lube Oil Capacity (90%)	900 USG (two 500 Gal. tanks)
Dirty Oil Capacity (90%)	450 USG (one 500 Gal. tank)
Bilge Slopes Capacity (90%)	450 USG (one 500 Gal. tank)

MAINE STATE FERRY SERVICE FERRY SPECIFICATIONS

Sewage (CHT) Capacity (90%)	2700 USG (one 3000 Gal. tank)
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 YARD Furnished and OFE equipment. At a minimum, Manufacturers' Representatives shall be employed for supervision of the installation and testing of main engines, gears, generators, and electronic navigation equipment.

0.5 CORRESPONDENCE & COMMUNICATIONS

The CONTR shall provide MSFS 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 MSFS 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 MSFS 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 Highway Administration Buy America policies (23 U.S.C. 313 and 23 CFR 635.410) and applicable waivers
- 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: American Bureau of Shipping Rules for Building and Classing Steel Vessels under 295 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 (domestic). Vessel to receive both Regulatory and ITC tonnage admeasurement
- UL Applicable Standards for Marine Electrical Equipment & Lighting Fixtures
- ASTM F1155 Standard Practice for Selection of Piping System Materials

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 MSFS. MSFS 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 MSFS'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 MSFS receives Bills of Sale and Builder’s Certificates, MSFS 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. She shall be certified for “Lakes, Bays, and Sounds; Partially Protected Waters; Cold Water Service. MSFS is responsible to notify the CONTR of any special USCG requirements which may be imposed by the USCG Local OCMI in MSFS’s operating venue. A notification of any such requirement shall be made prior to Contract Award.

The CONTR shall provide MSFS 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)

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 MSFS 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/MSF for review, comments, and approval. Subsequent re-submittals to address comments will be accomplished by Gilbert Associates. Upon receiving the drawings returned from USCG/MSF as approved, Gilbert Associates will forward the approved drawings to MSFS, the CONTR, and to the Local OCMI as may be directed by USCG MSC. Gilbert Associates will keep MSFS apprised of USCG comments and shall provide MSFS and the CONTR with copies of all USCG communications of "Approval", "Examined", and "Returned for Revision". USCG approvals prevail over MSFS 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. It is essential that the CONTR is aware of this obligation. 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 CFR. The CONTR and MSFS 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 MSFS, Gilbert Associates, and, if required, by the USCG/MSF.

The CONTR shall provide sufficient and well-developed details to MSFS prior to the construction of the specific area in question. This requirement is particularly applicable to foundation sketches for all significant pieces of machinery.

Within 30 days of Contract award, the CONTR shall designate an individual as the CONTR's Representative for this CONTRACT and shall notify MSFS of the individual's contact information. This individual shall serve as the contact person (POC) between MSFS 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 MSFS.

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 MSFS by the CONTR for review shall be in both PDF and AutoCAD format. The AutoCAD version (release) used shall be mutually agreed upon by MSFS 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 (PH: 978-670-5339), or equal.

0.7.6 INSTRUCTION SHEETS & MANUALS

The CONTR shall provide MSFS 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 MSFS 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 MSFS 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, wheels, 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 MSFS an estimate of the effect that such

departures will have on the Weight Estimate. MSFS 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 MSFS 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 MSFS 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, 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.

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.

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 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. 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. 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

MSFS 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.

MSFS 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

MSFS 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

MSFS 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 MSFS 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 MSFS employees or designated subcontractors.

0.13.3 PARKING

Convenient parking space will be provided for MSFS 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 MSFS, the USCG, and other regulatory bodies having jurisdiction. All inspection and observation of tests by MSFS will be performed in such a manner as not to unnecessarily delay the Contract work.

MSFS 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 24 hours) to MSFS, USCG, and other required inspection agencies that such work is complete, has been passed by the CONTR's Quality Assurance (QA) 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.

MSFS will make every effort to maintain communications with the parties involved and to report to the inspection site per agreed schedule. If MSFS is unable to keep the schedule, they shall notify the CONTR as soon as possible and reschedule for a mutually agreeable time. Failure of MSFS 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 MSFS.

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 MSFS OREP. Particular attention must be paid to all welds to ensure that they have been thoroughly wire-brushed and all weld smoke removed. Welds not passing visual inspection will be repaired to the satisfaction of the MSFS OREP.

It shall be clearly understood by the CONTR that MSFS 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. This requirement makes it essential that weekend and night shift foremen, for both CONTR and Sub-contractors, stay in close communication with the CONTR's QA Department and with the MSFS OREP. Work areas are NOT to be covered or concealed until inspected and approved by MSFS.

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 MSFS's option) the removal of any or all coverings for re-inspection of plate, welds, etc. This requirement will further emphasize the necessity of a formal QA Inspection process and the necessity for close communications between the CONTR and MSFS. An initial inspection in no way negates the requirement for re-inspection if an area is reworked in any manner.

If the above required rework, repair and inspection is due to the request of a change order by MSFS, any additional cost incurred for inspection will be paid by MSFS. If rework and inspection is the result of rejection of work by MSFS following an inspection, the CONTR will bear the cost of re-inspection.

0.14.6 COMPARTMENT COMPLETIONS

Tanks and voids, passenger spaces, work and machinery spaces shall be inspected and certified complete by the MSFS 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 MSFS 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 MSFS OREP and the CONTR.

The intent of the foregoing paragraph is to guarantee that MSFS 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 MSFS 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 MSFS OREP. The CONTR must determine the maximum permissible test pressure for each system component. 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 MSFS, the CONTR shall make arrangements for MSFS and/or other MSFS designated personnel to visit vendor's or sub-contractor's sites to witness equipment tests, inspect facilities, etc. These visits shall be at MSFS's expense.

0.15 PROGRESS REVIEW MEETINGS

The CONTR, MSFS, 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.

0.17.2 WORKMANSHIP - GENERAL

All workmanship shall be first-class in all respects. All material, machinery, equipment, pieces and/or parts specified herein and installed in the vessels shall be suitable for the marine service intended.

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 MSFS 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.

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. Generally, the Specifications take precedence over the Drawings.

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 MSFS'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 MSFS 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 MSFS 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 MSFS, 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 MSFS with an Operator's Manual for each vessel based on the USCG approved format described in NVIC 1-91 CH 1. 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. PARTS -- Main Engine (CAT) Section 233.1.3
2. PARTS -- Reverse/Reduction gear torsional coupling, gear oil cooler Section 241.1
3. Shaft line components Section 242.1.1
4. PARTS -- Generator (John Deere) Section 311.1.1
5. Lamps (Lighting) Section 331.1.14
6. Propellers (2) (Sound Propeller) Section 242.1.1
7. PARTS -- Steering System (Jastram) Section 561.0.1
8. PARTS -- Electrical

SWBS SPECIFICATIONS

The following Technical Specifications are arranged by Ship Work Breakdown Structure (SWBS) numbers in Sections:

- 100 Hull 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 State Ferry Service (MSFS) requires for the construction of a 154 foot, twin screw, passenger/vehicle ferry to service MSFS routes between the mainland and Maine coastal islands. MSFS will accept, review, and Award a Contract for construction and delivery as detailed herein and in the accompanying Contract documents. MSFS's Contract Award will be predicated on a thorough examination of the Bidder's response to the IFB.

SWBS SECTION 100 STRUCTURAL

The following specifications and drawings referenced provide for the Structural Modifications 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

D-358-A1	GENERAL ARRANGEMENTS
D-358-A2	INBOARD PROFILE
D-358-A3	OUTBOARD PROFILE
D-358-A12	BULWARK & MOORING ARRGTs & DETAILS
D-358-S1	STRUCTURAL PROFILE
D-358-S2	CONSTRUCTION SECTIONS BELOW MAIN DECK
D-358-S3	CONSTRUCTION SECTIONS ABOVE MAIN DECK
D-358-S4	TRANSVERSE BHD FRAMES BELOW MAIN DECK
D-358-S5	TRANSVERSE & LONGITUDINAL BHDS ABOVE MAIN DECK
D-358-S6	SHELL EXPANSION
D-358-S7	DECK SCANTLINGS
D358-S12	RAILINGS, LADDERS AND STAIRWAY DETAILS & ARRANGEMENTS
D-358-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 Plans shall prevail. 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 MSFS'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, 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, passenger luggage locker port, deck locker starboard

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 Steel Vessels Less Than 90 Meters LOA 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, diesel powered vessel. The vehicle deck extends from bow to stern. A steel guard rail surrounds the entire perimeter at the main deck edge.

123.1 TANKS

Tanks are "free-standing" supported by surrounding structure and not integral with the hull. Fuel Oil (Ref: Section 261.1), Potable Water, Lube Oil, Bilge Slops, Sewage, and Dirty Oil tanks provide capacities as listed in this Section and Section 0.4.3.

123.1.1 POTABLE WATER TANKS

The design incorporates (1) 2400 gallon Potable Water tank located FR24-FR26 P&S. This tank shall be fitted with piping, valves, and fittings in accordance with Contract DWG D358-P5.

123.1.2 FUEL OIL TANKS

The design incorporates two (2) 2700 gallon Fuel Oil tanks at 90% capacity, They are located port and starboard FR52-FR56. These tanks shall be fitted with piping valves, and fittings in accordance with Contract DWG D358-P4.

123.1.3 LUBE OIL TANKS

The design incorporates (2) 500 gallon Lube Oil Tanks located P&S FR52-FR54. These tanks shall be fitted with piping, valves, and fittings in accordance with the Contract DWG D358-P11.

123.1.4 BILGE SLOPS TANK

The design incorporates (1) 500 gallon Bilge Slops Tank located outboard of the port lube oil tank FR52-FR54. This tank shall be fitted with piping valves, and fittings in accordance with Contract DWG D358-P11.

123.1.5 DIRTY OIL TANK

The design incorporates (1) 500 gallon Dirty Oil Tank located outboard of the starboard lube oil tank FR52-FR54. This tank shall be fitted with piping, valves, and fittings in accordance with the Contract DWG D358-P11.

123.1.6 SEWAGE TANK

The design incorporates (1) 3000 gallon Sewage Tank located on centerline FR17-FR20. This tank shall be fitted with piping, valves, and fittings in accordance with the Contract DWG D358-P6.

130.1 DECKS, FRAMING

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.

150.1 SUPERSTRUCTURE

The superstructure shall be steel in accordance with the Contract Drawings.

150.1.1 PILOTHOUSE CONSOLE

The CONTR shall build full-scale mock-ups of each the forward and aft Pilothouse consoles from plywood or other suitable materials. Full scale cutouts of all console mounted equipment, gauges, indicators, access panels, etc. shall be provided and arranged on the mock-ups by

assigned MSFS operational personnel. Photographs shall be taken of the arrangement. These full scale mock-up arrangements shall be the base plan for the final console designs.

150.2 ENGINE FOUNDATIONS

Engine foundations shall be as shown on the Contract DWG D358-S9.

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 (PH: 1-888-373-3626) Model 2481 (Ref. D-358-A7).

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 of North American manufacture – Fabtek, Pacific Coast Marine, Beclawat, Freeman Marine, Dean Steel, Trident, or equal, and shall address the following accesses (Ref. D358-A7):

- Main Deck port “island” FR32: Wheelchair Lift
- Main Deck port “island” FR34: Escape Trunk
- Main Deck starboard “island” FR33: Access down to Crew Break Room
- Main Deck starboard “island” FR35: Access down to Engine Room
- Main Deck starboard “island” FR26: Deck Locker
- 01-Deck port FR25: Head of stairs into passenger cabin
- 01-Deck port FR41: Head of stairs into passenger cabin
- 01-Deck port FR48: Access to weatherdeck
- 01-Deck starboard FR25: Head of stairs into passenger cabin
- 01-Deck starboard FR43: Head of stairs into passenger cabin
- 01-Deck starboard FR48: Access to weatherdeck
- 02-Deck port FR24: Pilothouse to weatherdeck
- 02-Deck starboard FR24: Pilothouse to weatherdeck

- 02-Deck FR27.5: Emergency Diesel Generator Room
- 02-Deck port FR31: Wheelchair Lift
- 02-Deck starboard FR29: Head of stairs

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: D-358-A3 and A8).

- A mast shall be located on the Pilothouse top for navigation lights, flag hoists and day shapes. (Ref. D-358-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 Modifications 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

D-358-M1	SHAFT ARRGTs AND DETAILS
D-358-M2	RUDDER & STEERING ARRGT & DETAILS
D-358-M4	ANCHOR ARRGTs & CHAIN LOCKER
D-358-M5	RESCUE BOAT & DAVIT DETAILS
D-358-M7	ENGINE ROOM VENTILATION PLAN
D-358-M9	HVAC ARRGTs & DETAILS
D-358-M10	KEEL COOLER ARRANGEMENTS & DETAILS
D-358-P1	M.E., SSDG & EDG EXHAUST ARRGT & DETAILS
D-358-P4	FUEL OIL PIPING SCHEMATIC
D-358-P11	LUBE OIL & WASTE OIL PIPING SCHEMATIC
D-358-P13	HVAC BOILER WATER PIPE SCHEMATIC
D-358-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. MSFS 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 MSFS and the Engine Manufacturer's Tech Rep prior to the completion of shaft line component installations.

233.1.2 MAIN PROPULSION ENGINES

The (2) Main Propulsion Engines shall be CAT C32 Acert series; 750 bhp at 1600 rpm diesels; EPA Tier 3/IMO II compliant. The CONTR shall provide and install the Main Propulsion Engines and all associated equipment. The Main Engines, Controls, and Gear Boxes can be quoted by Milton CAT Inc. 100 Quarry Dr. Milford, MA 01757 (508) 634-5503.

Each Main Propulsion engine shall be supplied with:

- Factory certified Tech Rep for commissioning, startup, and sea trials
- SCAC keel cooling system
- Jacket water pumps
- Primary/Secondary fuel filters
- Air Intake system with filter element
- Electronic governor
- Compressed air starter for each and alternator for ME#2 only
- Lube oil filters
- Pre-lube pump
- Jacket water heater (240V, single phase, 1500 watt)
- Oil sump drain hose, valve, and quick disconnect Camlock
- LCD pilothouse display panel (additional displays in EOS and aft control station)
- Torsional Vibration Analysis
- Factory supplied fluids
- Parts & Service Manuals (3 sets)

- Factory test run witness for one or both main engines at MSFS's discretion (Witness expenses shall be to MSFS's account)

241.1 REVERSE/ REDUCTION GEARS

The CONTR shall provide and install Reverse/Reduction Gears and all associated equipment. They shall be TwinDisc Model MGX-5225DC 4.03:1 vertical offset.

Each gearbox shall be supplied with:

- Factory certified Tech Rep for commissioning, startup, and sea trials
- Main oil pump with filter and cooler
- Electric shift solenoid (quick shift technology)
- Pressure and Temperature senders as required by manufacturer
- Input torsional coupling
- Output companion flange
- Oil sump drain hose, valve, and quick disconnect
- Parts & Service Manuals (10 sets)
- Factory endorsed commissioning, startup, and sea trials

242.1 COUPLINGS, SHAFTING, SEALS

The CONTR shall provide all components of the power train port and starboard. The TwinDisc MGX-5225DC 4.03:1 reverse/reduction gears are connected to the Aqualoy 22 6" line shafts through a coupling provided by the gear manufacturer. The 6" line shafts pass through Duramax stuffing boxes Model 1786 and Duramax Model 600 cutless bearings at the forward end of the stern tube and a Duramax "Fault" cutless bearing at the aft end of the stern tube.

The line shafts are, in turn, coupled to the Aqualoy 22 6" tail shafts with Kahlenberg "muff" couplings (Kahlenberg DWG 2-5298). The tail shafts extend through the shaft struts and Duramax "Fault" cutless bearing to the propeller taper (Ref: D358-M1). The Aqualoy 22 shafts shall be sourced with American raw materials. Shafting may require up to a 10-month lead time to ensure American raw materials are used. Contact Robbie Floyd (757) 215-1508 at Western Branch Metals.

Propellers by Sound Propeller Services, Seattle, WA: 4 bladed, 64" Diameter, 52.8" Pitch, 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 MSFS OREP and DESIGN AGENT with the vendor's written verification response.

The CONTR shall provide and install all required couplings, shafting, seals, bearings, and foundations, in accordance with the Contract DWGS to make complete driveline installations. The companion flanges shall be Twin Disc P/N 1002276 (Reference DWG Twin Disc 1002312).

242.1.1 SPARE SHAFT LINE COMPONENTS

- (1) Tail Shaft, 6” diameter, Aqualoy 22, stainless steel
- (2) Propeller, Sound Propeller, 4 bladed, 64” Diameter, 52.8” Pitch, DAR 0.65, CF3 stainless, Style Sound B, one RH and one LH
- (1) Kahlenberg Muff coupling

252.1 PROPULSION CONTROL SYSTEM

The CONTR shall provide and install an electronic propulsion control system by Prime Mover Controls (PMC) or Twin Disc EC300. The electronic control system shall provide control of the main engine governors, the reverse/reduction gears, and steering systems. 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 a Tech Rep for commissioning, startup, and sea trials.

Main Engine control shall include ahead and reverse functions for each engine separately at each of the Pilothouse conning positions. 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 engine, generator, and heating boiler exhaust systems, in accordance with the Contract DWGS. The components of the system shall be as detailed on the Exhaust System Bill of Materials DWG D-358-P1. Exhaust will discharge through the uptake located starboard “island” FR41. 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: D-358-P1).

261.1 FUEL OIL SYSTEM

261.1.1 SYSTEM

The CONTR will fabricate and install a fuel oil system which will include (2) 3000 gallon steel F.O. tanks located port and starboard of centerline FR52 to FR56 on foundations (Ref: DWG D358-P4) 1-1/2” fill lines; a fill station (FR43 inboard side of port “island”) with cam locks; a fill station containment; 2” vent lines; plugged valve drain fitting for sludge and water removal; fuel oil suction lines.

The main fuel oil suction lines shall be fitted with manual remote actuators. All piping, valves, fittings, and connections shall conform to USCG requirements.

261.1.2 FILTERS

The main engine fuel oil supply shall be fitted with Racor, or equal, duplex primary filters and secondary particle filters. The generator fuel oil supply shall be fitted with a Racor simplex filter.

261.1.3 FUEL SOUNDING

The fuel oil tanks shall be fitted with GEMS Suresite sight gauges. Manual sounding tubes with plugs and striker plates shall be fitted to each tank.

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 vents shall be run to the F.O. Loading station and be fitted with audible whistle alarms.

262.1 LUBE OIL SYSTEM

There are two 500 gallon lube oil tanks located outboard P&S of each the fuel oil tanks 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 D358-P11).

Each lube oil tank shall be fitted with a fill spigot and drip pan located to the approval of the MSFS OREP at a height and location convenient for filling 5 gallon pails.

263.1 WASTE OIL SYSTEM

There is a 500 gallon waste oil tank Hold Deck FR52-54 starboard outboard of the starboard lube oil tank. A suction 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. Waste oil suction lines and valves shall be installed for the (3) generator engine sumps and (2) main engine sumps (Ref: DWG D358-P11).

SWBS SECTION 300 ELECTRICAL

The following specifications and drawings referenced provide for the Electrical Modifications 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 BOW THRUSTER DIESEL GENERATOR
- 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

D-358-E1 ELECTRICAL ONE-LINE DIAGRAM

D-358-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.

For Electronic Propulsion Control Specifications see Section 252.1.

311.1 SHIP SERVICE DIESEL GENERATORS (SSDG)

The CONTR shall provide and install two (2) John Deere ship's service diesel generators in accordance with the Contract DWGS. Each genset shall be capable of supplying 100% of the vessel's electrical load plus a reserve capacity of 15%. 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 be John Deere PowerTech 4.5L marine engine model 4045AFM85 coupled with Marathon generator (three phase, 240V, 99KW; Model 362CSL-1606).

Each Generator Set will be supplied with:

- Factory certified Tech Rep for commissioning, startup, and sea trials
- Cooling by heat exchanger system incorporating Fernstrum Grid Coolers (See Section 520.1)
- Dry exhaust
- Coolant block heater
- 24V starter and alternator w/isolated ground for Generator #1 and Compressed air starter for Generator #2
- Lube oil filter
- Engine gauge and control panel (Basler DGC-2020 digital generator control)
- Start/Stop at main switchboard & Pilothouse w/remote alarm panel (RDP110) located in forward pilothouse console.
- USCG Approved shutdowns and safety features including overspeed, low oil pressure, and high temperature shutdowns
- Steel base w/drip tray

311.1.1 SPARE GENERATOR PARTS

- (1) Compressed Air Starter
- (1) 24V Starter ISKRA 6.5KW/8.7 HP, starter solenoid 24V
- Belt, idler pulley
- Thermostat, thermostat gasket, thermostat seal
- Water pump
- Fuel pump w/sealing washer
- 24V alternator

Spares shall be crated for storage and shipped directly to a MSFS storage facility as designated by MSFS.

The Ship's Service generators can be quoted by R.A. Mitchell Co., Inc.; New Bedford, MA
PH: 508-999-5685 info@ramitchell.com Contact: Bob Mitchell or Karen "Mitchell" Joseph.

311.2 EMERGENCY DIESEL GENERATOR (EDG)

The CONTR shall provide and install an 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 John Deere 65KW genset Model 4045 AFM85 installation complete with Fuel Oil System, Alarm & Monitoring,

Exhaust System, and all ancillary equipment as called out on the Contract DWGS. The CONTR shall provide a factory certified Tech Rep for commissioning, startup, and sea trials.

The EDG generator can be quoted by R.A. Mitchell Co., Inc.; New Bedford, MA
PH: 508-999-5685 info@ramitchell.com Contact: Bob Mitchell or Karen “Mitchell” Joseph.

311.3 BOW THRUSTER DIESEL GENERATOR

The CONTR shall provide and install a dedicated bow thruster genset to be located in the Engine Room port side FR40. The Bow Thruster Generator shall be a John Deere 200KW marine generator Model 6090 AFM85, keel cooled, and steel skid mounted. The CONTR shall provide a factory certified Tech Rep for commissioning, startup, and sea trials.

The EDG generator can be quoted by R.A. Mitchell Co., Inc.; New Bedford, MA
PH: 508-999-5685 info@ramitchell.com Contact: Bob Mitchell or Karen “Mitchell” Joseph.

313.1 BATTERIES & CHARGERS

313.1.1 EMERGENCY SERVICE 12/24V DC

The CONTR shall provide and install 12/24V DC Emergency Service system in compliance with 46 CFR Part 112 and the Contract DWGS. The system shall include AGM-type, 8D (or sized per load requirements), 220 amp-hour batteries connected in series supplying running lights, designated alarms, and pilothouse electronics. These battery banks shall be charged by 24V battery chargers, Newmar, or equal, fed from a 120V AC circuit. All requirements of 46 CFR 112.55 shall be met.

313.1.2 ANTICIPATED 12/24V DC EMERGENCY LOADS

- Main engine Control power
- Pilothouse DC panel
- Propulsion Control and monitoring systems
- Ship’s service generator Control power
- PA and Alarm System
- Emergency Lighting (Main Deck Crew Shelter, 01-Deck Passenger Cabin, and Pilothouse)

313.1.5 GENERATOR STARTING 24V DC

The CONTR shall provide and install a dedicated 24V generator starting battery bank for one of the generators. It shall be sized as per the engine manufacturer’s recommendations and charged by Newmar, or equal, battery chargers fed from a 120V AC circuit.

321.1 POWER DISTRIBUTION

321.1.1 SHORE POWER

The main switchboard shall be capable of distributing and transferring between shore power and generator inputs. All USCG requirements for safety, indicators, etc., shall be adhered to. A shore power receptacle compatible with MSFS'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 100 Amp, 240V, 3-phase. The CONTR shall provide a properly sized, seventy-five (75') foot long shore power cable with connections at each end to match the vessel and shore end power connections. MSFS 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. Distribution to lighting, electrical outlets, engine block heaters, battery chargers, etc. shall be in accordance with Electrical One-Line diagram.

324.1 SWITCHBOARDS & POWER PANELS

324.1.1 MAIN SWITCHBOARD

The CONTR shall provide and install a non-paralleling, marine switchboard, IEM Power Systems, Jacksonville, FL or equal, capable of distributing and transferring between shore power and generator inputs. An electrical interlock shall be installed between the shore power and generator breakers to prevent paralleling of the input sources.

The switchboard shall be located in the engine room as per DWGS D358-A1-1 and D358-A9. Metering and indicators for current, voltage, ground fault, and power available will be provided as per USCG requirements.

324.1.2 EMERGENCY SWITCHBOARD

The CONTR shall provide and install a marine switchboard, IEM Power Systems, Jacksonville, FL (Contact Ralph Cahill ralph.cahill@iemfg.com), or equal, capable of distributing power to the emergency power panels and automatically energizing upon loss of power in compliance with the requirements of 46 CFR Subchapter "J" for Subchapter "K" passenger vessels.

324.1.2 POWER PANELS

Distribution breaker panels shall be Square "D", or 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 a/c power panel, engine room a/c lighting panels (2), engine room d/c control distribution panels (2), pilothouse lighting panels (2), pilothouse a/c emergency power/lighting panels (2), pilothouse d/c electronics distribution panels (2), bow thruster panel (Ref: D358-E1).

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 Square “D” (or 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.

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.

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. A rough layout has been provided by Alex Larsen at Imtra 508-207-1616 alex@imtra.com.

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 equal. Lighting circuit to be powered by an Imtra 120VAC/24DC 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 equal.
- Hold Deck voids and miscellaneous work areas that have no drop ceiling shall be Imtra LED 24” IL100LED4KMSLSS, or equal.
- Primary Machinery Spaces (Engine Room, Auxiliary Machinery Room, and Bow Thruster Machinery Room) shall be Imtra LED 24” or 48” as designated below, IL100LED4KMSLSS, IL200LED8KMSLSS or equal.

331.1.2 INTERIOR LIGHTING

The CONTR shall provide and install adequate lighting for all passenger 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.

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 D-358-E1. The provided lighting shall not be less than this guide:

PILOTHOUSE & 02-DECK SPACES

- | | |
|----------|---|
| (2 each) | Pilothouse -- 24VDC Wave Red/WW bi color light LED (on Emergency Circuit) Imtra, or equal |
| (4 each) | Pilothouse -- 24V LED Imtra Wave WW (Ww-warm white) , or equal (switched from inside P&S pilothouse access doors) |
| (1 each) | Pilothouse -- 24V F-26 Chart lamp w/red filter (to the approval of the MSFS OREP) |
| (2 each) | 02-Deck Crew Head -- 120V LED Imtra Wave WW or equal |
| (1 each) | 02-Deck Crew Head -- 120V LED Imtra F-30 mirror light |
| (2 each) | 02-Deck EDG Room – Imtra LED 24” IL100LED4KMSLSS, or equal |
| (2 each) | 02-Deck Pilothouse Void -- Imtra LED 24” IL100LED4KMSLSS (switched locally from access; one on emergency circuit) |

MAINE STATE FERRY SERVICE FERRY SPECIFICATIONS

01- DECK PASSENGER CABIN (Port):

- (16 each) 24V recessed LED down lights Imtra Wave WW, or equal; in accordance with IES recommended foot candle specifications; 4 on emergency circuit.
- (3 each) 120V Exit Lights, Thomas & Betts, LED, WAC1NRCDA, or equal (on emergency circuit)
- (5 each) 01-Deck port Passenger Head – Imtra Wave WW, or equal.
- (1 each) 01-Deck port Passenger Head – 24V Imtra F-30 24" LED no switch mirror light
- (1 each) 01-Deck Emergency Escape Trunk – 120V LED Imtra JBOX Light ILSGSM40180, or equal (on emergency circuit)
- (2 each) 01-Deck Head of stairways -- Imtra LED 24" IL100LED4KMSLSS, or equal

01- DECK PASSENGER CABIN (Starboard):

- (18 each) 120V 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
- (1 each) 01-Deck starboard Passenger Head -- 24V Imtra F-30 24" no Switch LED mirror light
- (1 each) 01-Deck Emergency Escape Trunk – 120V LED Imtra JBOX Light ILSGSM40180, or equal (on emergency circuit)
- (1 each) 01-Deck starboard aft exterior – 120V LED Imtra 24" waterproof LED 2 ft IL100LED4KMSLSS, or equal

MAIN DECK P&S ISLANDS

- (2 total) Stairway lighting – (at head of each stairway) FR32 & FR36 Imtra LED 24", or equal
- (1 each) Deck Locker starboard -- 120V LED Imtra JBOX Light ILSGSM40180, or equal (to approval of MSFS OREP)

MAINE STATE FERRY SERVICE FERRY SPECIFICATIONS

(1 each) Passenger Luggage Locker port – 120V LED Imtra JBOX Light
ILSGSM40180, or equal (to approval of MSFS OREP)

FOREPEAK

(1 each) 120V x 24” LED Imtra LED 24” IL100LED4KMSLSS, or equal
(switched locally inside access hatch)

BOW THRUSTER ROOM

(2 each) 120V x 24” LED (FR9 P&S) Imtra LED 24”
IL100LED4KMSLSS, or equal (switched locally inside both P&S
accesses hatches)

VOID FR13-FR24

(3 each) 120V x 24” LED (FR9 P&S) Imtra LED 24”
IL100LED4KMSLSS, or equal (switched locally inside both P&S
accesses hatches)

CREW BREAK RM & PASSAGES

(24 each) 24VDC recessed LED down lights Imtra Wave WW, or equal; in
accordance with IES recommended foot candle specifications; 5 on
E-circuit.

(2 each) 24VDC Imtra F-40 with switch LED under counter (to approval of
MSFS OREP)

CREW HEADS

(2 each head=4 total) 24VDC Imtra Wave WW, or equal (2 on E-circuit)

(1 each head=2 total) 24VDC LED Imtra F-30 24" no switch mirror light

ENGINE ROOM

(8 each) 120V x 48” LED Imtra IL200LED8KMSLSS, or equal, (switched
at head of ladder FR36 starboard – 4 on E-circuit)

(1 each) EOS – 120V x 24” LED Imtra LED 24” IL100LED4KMSLSS, or
equal, (switched locally, on E-circuit)

VOID FR52-FR60

(4 each) 120V x 24” LED Imtra LED 24” IL100LED4KMSLSS, or equal
(switched locally inside both P&S access hatches)

MAINE STATE FERRY SERVICE FERRY SPECIFICATIONS

VOID FR60-FR68

(2 each) 120V x 24" LED Imtra LED 24" IL100LED4KMSLSS, or equal (switched locally inside access hatch)

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 MSFS OREP)

(6 each) Imtra Offshore Marine Deck Light, or equal (to approval of MSFS 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

(6 each) Imtra Offshore Marine Deck Light or H.E. Williams Wall Pack – Mini LED (inboard sides of P&S superstructures FR20, FR36 & FR50; all located to the approval of the MSFS OREP.

(6 each) Imtra Offshore Marine Deck Light or H.E. Williams Wall Pack – Mini LED (outboard sides of P&S superstructures FR25 & FR45; all located to the approval of the MSFS OREP.

(2 each) Imtra Offshore Marine Deck Light or H.E. Williams Wall Pack – Mini LED (one forward and one 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 D358-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.

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 equal).

331.1.9 FLOODLIGHTS

Floodlights shall be 500W Eaton Champ Pro Model PFM15L, or 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 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

D358-A1-1 GEN ARRGTs HOLD & MAIN DECK

D358-A1-2 GENERAL ARRGTs 01-DECK & PILOTHOUSE

D358-A8 COLREGS PLAN & NAVIGATION LIGHT MAST DETAILS

D358-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 MSFS.

421.1.5 MAGNETIC COMPASS

The CONTR shall provide and install a Ritchie Model B-463 Globemaster magnetic compass, 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 MSFS OREP. The CONTR shall install an OFE AED in the pilothouse location to be approved by the MSFS 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 (Ref: Section 551.0 and DWG D-358-P-10).

421.1.8 CLOCKS

The CONTR shall provide and install two (2) Weems & Plath Model Admiral 290500 quartz clocks. Locations shall be to the approval of the MSFS OREP.

421.1.9 BAROMETER

The CONTR shall provide and install a Weems & Plath Model Admiral 290700 aneroid barometer. Location shall be to the approval of the MSFS OREP.

421.1.10 ANEMOMETER

The CONTR shall provide and install a Maximum, Inc. Model Vigilant (black dial face w/white lettering) anemometer complete with mast mount sensor, AC adapter, and pilothouse display. Location of both sensor and display shall be to the approval of the MSFS 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: D358-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 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 as shown on DWG D-358-A8.

- (1 double) sidelight (red) 10-point, LED, Perko 1077R00BLK
- (1 double) sidelight (green) 10-point, LED, Perko 1077G00BLK
- (1 double) masthead light (white) 20-point, LED, Perko 1078000BLK
- (1 double) stern light (white) 12-point, LED Perko 1079000BLK
- (1 each) anchor light (white) 32-point, LED Perko 1380000BLK
- (2 each) not under command (red) 32-point, LED Perko 1380R00BLK

Reference: DWG D358-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 EQUAL and may differ depending upon MSFS'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 FAR2117 w/4 foot antennas, inter-switched, 115VAC
- GPS UNIT: (1) Furuno GP170D
- VHF RADIO: (2) ICOM 506 (See Section 441.1)
- HAILER/INTERCOM: (2) Furuno LH3000 (Locations: PH control, Main Deck (2) intercoms one each loading station)
- AIS: (1) Furuno FA170 (See Section 446.1)
- DEPTH SOUNDER: Furuno FE800
- CHART PLOTTER (ECDIS): Transas (See Section 423.1.2)
- GYRO COMPASS: Raytheon-Anschutz STD22, or equal (See Section 423.1.1)
- AUTOPILOT: Raytheon Pilotstar D, or equal, to interface with the Jastram Engineering, LTD S2-19-1-35 steering system

See Sections 439.1, 441.1, & 446.1 for additional pilothouse electronic equipment.

423.1.1 GYRO COMPASS

The CONTR shall provide and install one gyro compass system, Raytheon-Anschutz STD22, or equal. The system shall include a pedestal mounted gyro in the Pilothouse; a distribution unit mounted in a rack in the Pilothouse console; a flush-mounted operator unit mounted in the Pilothouse console; and (1) open scale repeater compass (Raytheon-Anschutz type 133-556), or equal. A repeater compass is to be mounted in the console.

423.1.2 CHART PLOTTER

The CONTR shall provide and install a Chart Plotter system consisting of a Transas ECDIS display screen in the Pilothouse console to be a flush mounted, Hatteland 23.1 inch digital unit type JH 23T14 MMD, or equal, interfaced with a keyboard, trackball, and computer with Transas software installed. The ECDIS computer shall be approved by the Electronics Tech Rep. The console shall be fitted with a pull-out shelf for the computer keyboard. The installation shall be to the approval of the MSFS OREP.

433.1 INTERNAL COMMUNICATIONS

433.1.1 PUBLIC ADDRESS & GENERAL ALARM

The CONTR shall provide and install a commercial quality Public Address System which incorporates a General Alarm feature, Bogen, or equal. The System amplifier shall be located in the Pilothouse and shall be powered on an emergency circuit.

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 be ADA compliant.

Interior speakers (ceiling mount style) shall be located to the approval of the MSFS OREP.

- Port passenger cabin (2)
- Starboard passenger cabin (1)
- Crew Break room (1)
- Engine room EOS (1)

Exterior speakers (trumpet style) shall be located to the approval of the MSFS 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 Wing – mid-ships (1)
- Main Deck Starboard Wing – mid-ships (1)

Handsfree Communication from Wheelchair Lift shall be located to the approval of the MSFS OREP.

- Wheelchair Lift Interior
- Pilothouse
- Crew Break Room

433.1.2 LOUDHAILER

The CONTR shall provide and install a Loudhailer system, Furuno LH3000, or 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 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)
- Steering gear flat (located approval of OREP)

The EOS station shall be located to the approval of the MSFS 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 MSFS OREP.

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 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.

MAINE STATE FERRY SERVICE FERRY SPECIFICATIONS

- (1 each) MSFS shall provide an Automated External Defibrillator (AED) with bulkhead mount housing case for CONTR installation in a location as determined by the MSFS OREP.
- (2 each) Work Safety Vests, stenciled with vessel name (one with a 50' tether and snap shackle)
- (6 each) Inflatable Buoyant Apparatus – Viking open reversible life raft - 50 persons, stenciled with vessel name including installation hardware bowing lines, turning blocks and hydrostatic release units.

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 the boxes under passenger seating P&S 01-Deck and in deck lockers located in accordance with DWG D358-A1.

Crew PFDs shall be located: Pilothouse (2); Crew Break Room (2); EOS (2).

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 MSFS OREP. 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 (7) exterior (5) interior

441.1 EXTERNAL COMMUNICATIONS (RADIO)

The CONTR shall provide and install (2) ICOM Model 506 (or 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 D358-A1 and A3 and as approved by the MSFS 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 MSFS. 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

D-358-A11	STRUCTURAL FIRE PROTECTION PLAN
D-358-M2	RUDDER & STEERING ARRGT & DETAILS
D-358-M4	ANCHOR ARRGTs & CHAIN LOCKER
D-358-P1	M.E. & GENERATOR EXHAUST ARRGTs & DETAILS
D-358-P5	POTABLE WATER PIPING SCHEMATIC
D-358-P6	DRAIN, WASTE, VENT & FLUSHING WATER PIPING SCHEMATIC
D-358-P7	FIRE MAIN SYSTEM PLAN
D-358-P8	SPRINKLER SCHEMATIC
D-358-P9	BILGE PIPE SCHEMATIC & SEA CHEST DETAILS

- D-358-P10 COMPRESSED AIR PIPING SCHEMATIC
- D-358-P12 TANK VENT & SOUNDING TUBE SCHEMATIC
- D-358-P13 HVAC BOILER WATER PIPE SCHEMATIC
- D-358-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. Chlorinated Polyvinyl Chloride “CPVC” shall be used to the extent possible on non-critical systems.

Exposed pipe runs or pipe runs located in unheated spaces shall be protected against freeze-up by heat-tape and insulation. This requirement does not apply to under Main Deck heat pipe runs. All fresh water lines shall have drain cocks installed to allow for system drainage to prevent freeze-up during winter layup or repair periods.

508.1 INSULATION

508.1.1 THERMAL

Exterior boundaries of superstructure accommodation and superstructure work spaces shall be thermally insulated with minimum 3-inch thick USCG approved fiberglass insulation or in accordance with the Structural Fire Protection Plans (D-358-A11). Insulation fastening shall be USCG approved.

508.1.2 ENGINE ROOM COMPARTMENT INSULATION

The engine room bulkheads shall be insulated with USCG approved ceramic fiber insulation. The engine room insulation shall be covered with thin aluminum sheathing. All Engine Room insulation will conform to the Structural Fire Protection Plans (D-358-A11). Engine room vent ducts will be sheathed with an acoustical duct board on sides adjacent to interior spaces.

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.

Insulate the main engine and generator exhaust systems with high temperature, exhaust wrap, removable, sewn pads/blankets by GT Exhaust (Ref: DWG D-358-P1). Prepare surfaces by cleaning and coat with two applications of heat-resistant aluminum paint 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 MSFS.

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 D-358-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 380, (1) Gould circulation pump, supply and return manifolds, system piping, fittings, heater units, and thermostats as detailed herein and on DWG D-358-P13.

Bulkhead mounted ECO radiant heaters or Modine hot water heaters shall be provided and installed as follows (Sized according to D-358-P13):

ZONE 1 (Radiant)

- Pilothouse (3)
- 02-Deck Crew Head (1)

ZONE 2 (Radiant)

- 01-Deck Port Passenger Cabin (4)
- 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)

ZONE 5 (Radiant)

- Crew Break Room & Passage (4)
- Crew Heads (2)

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: D-358-P13).

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 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) Frigidaire FFTH0822R1 8,000 BTU, 269 CFM 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: D358-P9)

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. Supply air shall be via louver (port) at FR 28 (Ref: D358-M7-3). Crew break room shall have natural exhaust via louver (starboard) at FR 29.

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 D-358-M7-1. The fan shall be a Hartzell, vane-axial fan, 53 cm, 297 VA, 3.10 HP, 1800 cfm, or equal, with manual fire damper. Supply ductwork shall lead from a louver mounted on the inboard side of the port "island" superstructure FR40 to FR42.

Exhaust air shall be ducted from the engine room to the uptake trunk located on the starboard side between FR39 to FR43.5 and ducted out through a louver on the inboard side of the starboard "island" structure.

Louvers shall be stainless steel bolt in. A manual start/stop override shall be provided locally.

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 D358-P9 for the Fire Main System suction and Bilge System priming. Sea chests will be located well forward in the engine room close to the 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 flanges and Victaulic, or equal, 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, and (3) Generators. These shall be flange-type Fernstrum grid coolers as called out on the equipment list DWG D-358-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 MSFS OREP.

The cooling systems shall be filled with a 50% Glycol mix to the approval of the MSFS OREP.

521.1 FIRE MAIN & BILGE SYSTEMS

521.1.1 FIRE MAIN SYSTEM

The Fire Main System will be supplied by (2) Gorman Rupp Fire/Bilge pumps. The Fire Pump (standby bilge) shall be a Gorman Rupp Model 83B-B-2 self-priming, centrifugal, 3"x 3", 200 GPM, 15HP. The Bilge Pump shall be a Gorman Rupp Model 83D-B-1 self-priming, centrifugal, 3"x 3", 138 GPM, 5HP.

The Fire/Bilge manifold is located in the Engine Room on centerline FR41.5. Fire Main suction shall be taken from the P&S sea chests in accordance with DWG D-358-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: D-358-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 D-358-P7-1 Material List.

Fire stations shall be provided and installed:

Station #1: 02-Deck FR28 port

Station #2: 01-Deck FR48 port

MAINE STATE FERRY SERVICE FERRY SPECIFICATIONS

- Station #3: 01-Deck FR34 starboard
- Station #4: Main Deck FR28 port
- Station #5: Main Deck FR28 starboard
- Station #6: Main Deck FR40 port
- Station #7 Main Deck FR38 starboard
- Station #8 Crew Break Room FR32 starboard
- Station #9 Engine Room FR37 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 mount steel cabinets, 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. Bilge System piping shall be galvanized steel. Fire pump shall be Gorman Rupp 83B-B-2 self-priming, centrifugal, 3"x 3", 200 GPM, 15 HP. Bilge pump shall be Gorman Rupp 83D-B-1 self-priming, centrifugal, 3"x 3", 138 GPM, 5 HP.

Individual bilge suction shall be connected to the bilge manifold and shall be fitted with Flowmatic Model 357 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: D358-P3-1 & D358-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 D358-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 also terminate within the Main Deck containment. The sewage tank shall be fitted with a Gems sight glass level gauge.

Sea water shall be used for flushing. The flushing system will be pressurized by a Grundfos BMQE 15 pressure set in accordance with the D358-P6 material list. System piping clean outs shall be as shown on DWG D358-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 Slops (Pump Gorman Rupp Model 81,1/2D-B-1, 20 GPM, 0.5 HP) to the Main Deck pump-off connection (Ref: DWG D358-P9).

533.1 POTABLE WATER SYSTEM

533.1.1 SYSTEM COMPONENTS

The CONTR shall provide and install (1) 2400 gallon Potable Water Tanks (Hold Deck FR24-FR26) in accordance with the Contract DWG D-358-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 an Grundfos BMQE 15; pressure gage; valves; a Rheem 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; passenger and crew vanities; and crew break room sink. (Ref: D-358-P5).

551.0 COMPRESSED AIR SYSTEM

551.0.1 SYSTEM COMPONENTS

The CONTR shall provide and install a Compressed Air System which shall include two Quincy Model QR-25-325, 5HP air compressors and two 225 gallon x 150 PSI air receivers. Piping, valves, fittings, and air connections shall be as called out on DWG D-358-P10.

Compressed starting air shall service the two CAT C32 main engines, one of the John Deere 99KW SSDG, and the John Deere 200KW Bow Thruster generator.

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 also be supplied through the pressure reducer to the Air Horn mounted on the Pilothouse top (See Section 421 and DWG D-358-P10).

555.1 FIRE EXTINGUISHING

555.1.1 FM200 FIXED SYSEM

The 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/MSC 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.

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 and as shown on the Contract DWGS (Ref: D-358-A6). 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 D358-P8 and to the approval of USCG/MSC, the MSFS OREP, and attending USCG Inspectors. The systems shall include a Gorman Rupp Model 83D-B-1 self-priming centrifugal pump; 3"x 3", 180 GPM, @ 60' head, 5 HP, 2850 RPM.

Sprinkler coverage shall be Main Deck P&S FR15 to FR52 (under the 01 deck house), and the 01-Deck center FR15 to FR40 (under the 02 deck house). The System shall be a manual "dry" pipe system with open type sprinkler heads. All shall be to the approval of USCG/MSC, the attending USCG Inspector, and the MSFS OREP. The Sprinkler System is designed to be a 3 ZONE System with an engine room located sprinkler pump and sprinkler manifold.

561.0 STEERING SYSTEM

The CONTR shall provide and install a steering system, by Jastram, B.C. Canada (Model S2-28-2-35). Steering shall be Pilothouse controlled from the Steering Stations on centerline. 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 MSFS OREP. Tillers and jockey bar ends shall be manufactured from USA-sourced steel raw materials. Jastram shall provide certificates stating source of steel materials in system.

MAINE STATE FERRY SERVICE FERRY SPECIFICATIONS

The forward steering station shall have both lever or wheel follow-up (FFU) and jog lever non-follow-up (NFU) capability. The option of lever follow-up or wheel follow-up shall be by direction of the MSFS OREP. The aft 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". 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.

A complete description of the Steering System shall be generated by the vendor and provided for submittal to USCG/MSF. 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 stock is 7 1/2" diameter Aqualoy 22 sourced with American raw materials. Shafting may require up to a 10-month lead time to ensure American raw materials are used. Contact Robbie Floyd (757) 215-1508 at Western Branch Metals. CONTR shall provide jockey bar for system, manufactured from USA-sourced steel raw material.

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 MSFS OREP either direct shipped to an MSFS 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. This unit will be electric motor driven. The electric motor shall be powered by a dedicated John Deere generator located in the Engine Room port side. The CONTR shall engage a Schottel Tech Rep for bow thruster commissioning tests and trials.

The Schottel Thruster shall be provided complete for installation and operation including, but not limited to:

- Fixed pitched propeller
- Sacrificial anodes
- Propeller shaft and seals
- Lubrication system
- Lube oil expansion tank
- Tunnel w/stainless wear ring

568.1 MANEUVERING & CONTROL SYSTEM

Propulsion controls shall be by Prime Mover Controls, Inc. (PMC) of Burnaby, BC Canada www.pmc-controls.com. (Contact: Mike Combs mike@pmc-controls.com PH: 604-433-4644). 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 PMC Tech Rep for control system commissioning tests and trials.

573.6 VEHICLE TIE DOWNS

The CONTR shall provide and install a Peck & Hale vehicle tie down system for the center truck lane. The system shall consist of Peck & Hale deck sockets, deck socket covers for each installed deck socket, and D-ring fittings all as called out below. Locations shall be 4'-8" off C/L P&S to the approval of the MSFS OREP.

573.6.1 SOCKETS & COVERS

The CONTR shall provide and install thirty-two (32) Peck & Hale socket tie-downs in deck locations shown on D-358-S7-1 and as designated by the OREP. The CONTR shall provide thirty-two (32) covers, one for each socket. The new tie-downs shall be installed by double continuous weld to the approval of the OREP and attending USCG Inspector.

573.6.2 D-RINGS, CHAIN, BINDERS

The CONTR shall provide forty-six (46) Peck & Hale D-rings and a storage bin for D-rings and socket covers to be located in the Freight Deck Storage Locker on the starboard side as per direction of the OREP. The bin shall be aluminum 24"W x 36"L with a fiberglass grate bottom sufficient to hold the weight of (46) D-rings. The bottom of the bin shall be approximately 24" off the deck.

The CONTR shall provide (20) sets of 3/8” Grade 80 tie down chain assemblies 15’ long with 3/8” hooks at each end and (20) lever type 3/8” chain binders.

573.6.3 MATERIAL CALL OUTS

- (32) Sockets: Peck & Hale, Model F700-1-OC, breech base, flush style
- (32) Socket covers: Peck & Hale, Model F700-10-1
- (46) D-rings: Peck & Hale, Model F678-50-1
- (2) Wrenches: Peck & Hale, Model 569-8

581.1 GROUND TACKLE

The CONTR shall provide and install an anchoring system consisting of the following components in accordance with DWG D358-M4:

- A bulwark anchor “pocket” main deck starboard FR6-FR11
- Double bitt starboard FR12 (DWG D358-A12)
- Anchor 750# Baldt workboat type
- Chain 32 ft. of 3/4” stud link galvanized
- Line 235 ft., 1-1/2” inch Cortland Co-Polymer 12 plait
- Anchor release lever mechanism (DWG D358-M4)
- Hawse pipe, anchor rode retrieval drum
- (1 set) Shackles, swivel, thimbles, required and to the approval of the MSFS 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 (10) x 24” kevels in locations as shown on DWG D358-A12. There shall be (5) kevels on each side, port and starboard. Each kevel shall have an associated fairlead chock (4” Schedule 80 hawse pipe) located to the approval of the MSFS OREP to provide adequate line leads from the chock to the kevel.

The CONTR shall provide and install line hooks on the bulwarks in (4) places – P&S bow and stern) to hang mooring lines on. 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 MSFS OREP.

582.1.3 BULWARK SERVICE GATES

The CONTR shall provide and install (4) bulwark service gates in accordance with the locations and details of DWG D358-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) davit on the 02-Deck starboard side (Ref. D-358-A1-2 and D-358-A3). 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.

- 583.1.2: RESCUE BOAT: The CONTR shall provide and install a new Zodiac Mil-Pro rescue boat with jockey seat, electric start, and (50) HP 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 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 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 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 communications system from the wheelchair lift to the Pilothouse and crew break room shall be provided and installed. This system may be a part of the sound powered phone system or an electronic system powered from an emergency circuit.

The wheelchair lift system shall be performance tested to the satisfaction of the MSFS 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 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.

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.

The emergency wheelchair lift car phone shall connect with the pilothouse and crew break room either to an independent visual and audible alarm and phone or integrated with the vessel's internal SPP communications system.

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

D-358-A1	GENERAL ARRANGEMENTS
D-358-A3	OUTBOARD PROFILE
D-358-A7	DOOR & WINDOW SCHEDULE
D-358-A10	PILOTHOUSE ARRANGEMENT
D-358-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 MSFS:

- Vessel Name: TBD – Bow P&S bulwarks; 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 FR64 P&S (4 sets) – Numbers 10, 9, 8, 7 in four locations. Exact frame locations to the approval of the MSFS 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 MSFS 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 MSFS, the MSFS logo shall be applied in decal material or paint on each side of the stack. If the option is exercised, MSFS 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, PDF stowage and access, etc. shall be designated by the MSFS 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 MSFS 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 Freeman Marine, Pacific Coast Marine, Dean Steel, Trident Marine, FabTek, Bcclawat, or equal. FHWA Buy America shall be adhered to, if applicable. 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 shall be handed as per DWG D-358-A7. Hardware, lights, and special features shall be as described on D-358-A7. A general reference list of WEATHER-TIGHT doors follows:

- Pilothouse weather-tight: (1) each P&S
- 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
- Main Deck Starboard superstructure: Deck Locker FR25.5; Crew Break Room access FR32.5; Engine Room access FR35.5

611.1.2 DOORS, INTERIOR JOINER

Interior joiner doors shall be North American manufacture Freeman Marine, Pacific Coast Marine, Dean Steel, Trident Marine, FabTek, Beclawat, or equal. FHWA Buy America shall be adhered to, if applicable. 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. The clear opening tops of doors shall, in general, be not less than 6’-8” above the finished deck (Ref: D-358-A7).

Doors shall be handed as per DWG D-358-A7. Hardware, lights, and special features shall be as described on D-358-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 port FR34; Crew Head starboard FR34

611.1.3 DOORS (SPECIALTY) FIRE RATED - EOS

Specialty Fire rated doors shall be North American manufacture Freeman Marine, Pacific Coast Marine, Dean Steel, Trident Marine, FabTek, Beclawat, or equal. FHWA Buy America shall be adhered to, if applicable. Doors shall meet the 46 CFR fire code requirements of the space to which they serve. Doors shall be “bolt-in” frame type. EOS doors shall be steel A-60 rated. The clear opening tops of doors shall, in general, be not less than 6’-8” above the finished deck (Ref: D-358-A7).

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: D-358-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 accessible areas shall be of the following approximate dimensions.

1. Top course, bottom course, and stanchions: 2" Schedule 40 pipe
2. Second and third courses: 1-1/2" Schedule 40 pipe
3. Deck to top of top course = 40"
4. Spacing of intermediate courses as shown on plans
5. Deck to bottom of bottom course = no greater than 9"
6. 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 D-358-S12 and shall in general be:

- 02-Deck: FR24-50 P&S passenger access -- three courses & stainless screening panels
- 02-Deck: FR17-23 crew only access three courses; no screening panels
- 01-Deck: FR48-56 P&S passenger access -- three courses & stainless screening panels

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 equal, woven stainless steel lock crimp 2" square, 0.25" gauge 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 walkways and side rails to provide safe passage.

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. Handholds will be installed as required to aid personnel access. Steel diamond plate platforms shall be installed at the bottom of all vertical ladders. Platforms 24”x 24” minimum, and arranged to provide a secure standing surface as well as for protection from road salt liquid dripping down and collecting in corners of bottom plate, stiffeners, etc. (See 622.1.1).

623.1.2 INCLINED STAIRS

The CONTR shall provide and install inclined stairs leading from the Main Deck to the Engine 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 MSFS OREP and CONTR shall ship check and confirm this requirement. All inclined stairs, interior and exterior shall be fitted with Wooster Product Type 161 non-skid safety treads (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 North American manufactured, fixed, clear, tempered Pacific Coast Marine, FabTek, Beclawat, or equal, with aluminum clamp-ring frames. Pilothouse windows (16 total), six of which shall be electrically heated (30Watts/ft. sq.). Forward facing windows shall be installed on a slant (top forward) to limit reflection. Note: If Buy America is a requirement, FabTek is a Washington State manufacturer.

The CONTR shall provide and install heavy-duty Hepworth, Cornell-Carr, or equal, marine window wipers on (4) Pilothouse windows. Individual console-mounted switches at each console shall control On/Off/Intermittent wiper functions (Ref: DWGS D-358-A7 and D-358-A10).

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: D-358-A7). They shall be North American Manufacture, Pacific Coast Marine, FabTek, (or equal), aluminum, clamp-ring frame, with tinted tempered thermopane glass. Aluminum frame windows shall be installed with fire clips to satisfy 46 CFR requirements.

631.1 COATINGS

631.1.1 REFERENCES

1. International 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. 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, International, or equal. Prior to the commencement of coating applications, the CONTR shall provide MSFS with a detailed coating schedule for surface preparation and application of the coating system. The schedule shall be reviewed and approved by the MSFS OREP and shall be in compliance with the paint manufacturer's application and warranty requirements.

631.1.3 INSPECTIONS

Acceptance of coatings shall be by the MSFS 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, MSFS'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.

The need for supervision and inspection of surface preparation prior to the application coatings will be evaluated on a case by case basis with the MSFS OREP and the Manufacturer's Rep. All finish colors shall be as directed by the MSFS 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. Care shall be taken to schedule construction so that blasting and grinding does not occur over or adjacent to work in progress on machinery or mechanical equipment. 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 MSFS'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 MSFS 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). Vehicle lane markings shall be marked by weld bead on the deck prior to Main Deck coating application.

631.1.7 SURFACE PREPARATION

631.1.7.1 GENERAL SCOPE

Prior to the application of coating materials on any surfaces, including those already coated with a shop coat, the surface shall be made clean and free from foreign matter such as: crayon marks, dirt, dust, grease, heat and mill scale, oil, residual abrasive from blasting, rust salt deposits, weld spatter, standing water, etc. Cleaning and coating applications shall be scheduled so that contaminants from the cleaning process will not fall on any freshly cleaned or newly coated surfaces.

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.

Ultra-high pressure water blast at plus 30,000 PSI is an acceptable option to traditional blasting. If this option is exercised, NACE International Joint Surface Preparation Standard #5/SSPC-SP 12 shall be adhered to.

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 by commercial blast to SSPC-SP6 or WJ-2L and then application of the complete coating system as detailed herein may commence.

631.2 SAMPLE COATING SCHEDULE

The Sample Schedule below is based on International 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. MSFS must approve "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

A.1.1: AREAS OF COMMERCIAL BLAST & NEW STEEL ONLY

- Sandblast new steel and welds to a SSPC-SP10 Near White Blast
- Intershield 300V Epoxy (color contrast with next coat) 6 mils DFT
- Intergard 267 (color contrast with previous coat) 5 mils DFT
- Interspeed 640 AF(color contrast with top coat) 5 mils DFT
- Interspeed 640 AF (black) 5 mils DFT
- Interspeed 640 AF (black) – WL down 4 ft. band 5 mils DFT

NOTE 1: DFT readings are to be taken on 1st coat and reported to the OREP. The second coat will be measured with readings as mils WFT and quantities of product used, if so requested by the OREP.

A.1.2: AREAS OF HIGH PRESSURE WASH ONLY

- Interspeed 640 AF 3-4 mils DFT
- Interspeed 640 AF 3-4 mils DFT

NOTE 2: Keel to waterline – The finish coat shall be **black**. The first coat shall be a color that contrasts with the finish coat. Follow application guidelines to insure proper inter-coat adhesion.

NOTE 3: First coat anti-fouling shall be applied over a tie coat of INTERGARD 267 EPOXY while 267 is 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.

- Intershield 300V (Spot coat to blasted areas) 6 mils DFT
- Intershield 300V (Spot coat to blasted areas) 6 mils DFT
- Interthane 990HS (Full coat all areas) 3 mils DFT
(COLOR TO MATCH)

A.3 TOP SIDES

A.3.1: AREAS OF COMMERCIAL BLAST & NEW STEEL ONLY

- Intershield 300V 6 mils DFT
- Intershield 300V (contrast color w/first coat & top coat) 6 mils DFT
- Interthane 990HS white 3 mils DFT

A.3.3: AREAS OF HIGH PRESSURE WASH ONLY

Power or hand sand all sound and intact gloss finish areas prior to coating application to provide a profile and fresh water rinse.

- Interthane 990HS (color to match existing finish) 3 mils DFT

A.3.4: STACKS

- Schedule as in A.3.1 above with the following exceptions
- Finish coat Interthane 990HS color buff 3 mils DFT
- Finish coat stripe on cap and base 990HS color black 3 mils DFT

A.4 FREIGHT DECK

A.4.1: AREAS OF COMMERCIAL BLAST AND NEW STEEL ONLY

- Intershield 300V 6 mils DFT
- Bar Rust 235 (with aluminum oxide #24) 4-8 mils DFT

Note: Add approx. two pounds per gallon of aluminum oxide #24 non-slip additive to first coat of Bar Rust 235 and continuously mechanically agitate to ensure non-slip grit uniformity. Apply 5'x 5' wet sample for approval by OREP.

- Bar Rust 235 (OREP approve color) 3-4 mils DFT
- Interthane 990HS vehicle lane and ADA markings (white) 2-4 mils DFT
- Wasser MCLuster 100 lane and ADA markings (yellow) 2-4 mils DFT

A.4.2: AREAS OF HIGH PRESSURE WASH ONLY

All surfaces to be coated: Wash w/freshwater/tri-sodium-phosphate (TSP) to clean & de-gloss. Immediately freshwater rinse to remove all cleansing agent residue.

- Bar rust 235 (with aluminum oxide #24) 3-4 mils DFT

Note: Add approx. one pound per gallon of aluminum oxide approved non-slip additive to first coat of Bar Rust 235 and continuously mechanically agitate to ensure non-slip grit uniformity. Apply 5'x 5' wet sample for approval by OREP.

- Bar rust 235 (OREP approve color) 3-4 mils DFT
- Interthane 990HS lane and ADA markings (white) 2-4 mils DFT
- Wasser MCLuster 100 lane and ADA markings (yellow) 2-4 mils DFT

A.5 OTHER EXTERIOR DECKS INCLUDING PILOT HOUSE TOP

A.5.1: AREAS OF COMMERCIAL BLAST AND NEW STEEL

MAINE STATE FERRY SERVICE FERRY SPECIFICATIONS

- Intershield 300V 6 mils DFT
- Bar Rust 235 with aluminum oxide grit to be approved by OREP after presentation of test patches by paint contractor) 4-8 mils DFT

Note: Add approx. one pound per gallon of aluminum oxide approved non-slip additive to first coat of Bar Rust 235 and continuously mechanically agitate to ensure non-slip grit uniformity. Apply 5' x 5' wet sample for approval by OREP.

- Bar Rust 235 (OREP approve color) 3-4 mils DFT

A.5.2: AREAS OF HIGH PRESSURE WASH ONLY

All surfaces to be coated: Wash w/freshwater/tri-sodium-phosphate (TSP) to clean & de-gloss. Immediately freshwater rinse to remove all cleansing agent residue.

- Bar Rust 235 with aluminum oxide grit to be approved by OREP after presentation of test patches by paint contractor) 4-8 mils DFT

Note: Add approx. one pound per gallon of aluminum oxide approved non-slip additive to first coat of Bar Rust 235 and continuously mechanically agitate to ensure non-slip grit uniformity. Apply 5' x 5' wet sample for approval by OREP.

- Bar Rust 235 (OREP approve color) 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-SP3 Tool Cleaned Surface
- Intershield 300V (color contrast with top coat) 6 mils DFT
- Stripe coat
- Intershield 300V stripe coat (color contrast with first coat)
- Interbond (finish coat color buff) 6 mils DFT

A.6.2: AREAS OF HIGH PRESSURE WASH ONLY

Mechanically abrade all surfaces to be coated via media sweep blasting or mechanical hand scuff and wipe clean and dry prior to coating applications.

- Intertuf 262 (color buff) 6 mils DFT
- Alternative Moisture Cured 100 Wasser Prepbond 6 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 an SSPC-SP3 Tool Cleaned Surface
- Intershield 300V 6 mils DFT
- Intershield 300V stripe coat (color contrast with first coat)
- Intershield 300V 6 mils DFT
- Interthane 990HS (white) 3 mils DFT

A.7.2: AREAS OF HIGH PRESSURE WASH ONLY

Power or hand sand all sound and intact gloss finish areas prior to coating application to provide a profile and fresh water rinse.

- Interthane 990HS (white) 3 mils DFT

A.8 ACCOMMODATION & PUBLIC SPACES INCL. FREIGHT DK BULKHEADS – VISIBLE

A.8.1: AREAS OF NEW STEEL

- Intershield 300V 6 mils DFT
- Stripe coat
- Intershield 300V 6 mils DFT
- Interthane 990 (color by Owner approval) 3 mils DFT

A.8.2: AREAS TO BE RE-FURBISHED FOR AESTHETICS

Power or hand sand all sound and intact gloss finish areas prior to coating application to provide a profile and fresh water rinse.

- Interthane 990 (color by Owner approval) 3 mils DFT

A.9 BEHIND INSULATION – ALL SPACES

A.9.1: AREAS OF NEW STEEL ONLY

- Intershield 300V 6 mils DFT
- Stripe coat
- Intershield 300V 6 mils DFT

A.10 MACHINERY SPACE FLOOR PLATES

A.10.1: COMMERCIAL BLAST AND NEW STEEL ONLY

- Intershield 300V 6 mils DFT
- Intershield 300V 6 mils DFT

MAINE STATE FERRY SERVICE FERRY SPECIFICATIONS

- Interthane 990V 3 mils DFT

A.11 POTABLE WATER TANKS

A.11.1: COMMERCIAL BLAST AND NEW STEEL ONLY

- Intershield 300V 6 mils DFT
- Stripe coat
- Intershield 300V 6 mils DFT

NOTE: 30 DAYS DRY TIME REQUIRED (vent & leave access open)

A.11.2: ALL REMAINING AREAS

Sweep blast and clean prior to coating application

- Intershield 300V 6 mils DFT

NOTE: 30 DAYS DRY TIME REQUIRED (vent & leave access open)

A.12 BALLAST TANKS

A.12.1: COMMERCIAL BLAST AND NEW STEEL ONLY

- Intershield 300V 6 mils DFT
- Stripe coat
- Intershield 300V 6 mils DFT

A.12.2: ALL REMAINING AREAS

Sweep blast and clean prior to coating application

- Intershield 300V 6 mils DFT

A.13 SEWAGE TANKS (CHT)

A.13.1: COMMERCIAL BLAST AND NEW STEEL ONLY

- Interline 624 5 mils DFT
- Stripe coat
- Interline 624 5 mils DFT

A.13.2: ALL REMAINING AREAS

Sweep blast and clean prior to coating application

- Interline 624

5 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 MAIN DECK

- Miscellaneous lockers and Crew Shelter: Paint in accordance with schedule

634.1.2 01-DECK

- Passenger Cabin: 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 MSFS OREP.

- Deck Locker and Storage Locker: Paint in accordance with schedule

634.1.3 PILOTHOUSE

- Pilothouse: Poured epoxy floor covering, color to be approved by the MSFS OREP. Heavy duty rubber matting shall be provided in way of each 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 inclined stair steps including the top landing of each run. Treads shall be Wooster Products, Sure-Foot Industries Corp Sure-Foot Industries Corp. Boldstep Safety Treads Part #4009102 black tread with yellow nosing.

634.2 EXTERIOR DECK COVERINGS

634.2.1 MAIN DECK

Coating system in accordance with Schedule.

635.2 STRUCTURAL FIRE PROTECTION

Complete the detail design, provide, and install structural fire insulation to the thickness necessary for the bulkhead or deck classification required by the USCG. Insulation shall be approved by the USCG under series 164.007 "Structural Insulation" and shall be installed in batts or blankets. Insulation shall be faced, sheathed and lined. Attach facings using a USCG-approved adhesive. The assembled insulation blankets or batts shall maintain the required fire rating for the given installed locations as shown in D-359-A-11. 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 02-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.

644.0.3 HEAD DECK DRAINS

Each head, crew and passenger, shall be fitted with a deck drain. Drain piping is to have no less than 1/8" slope per foot in longitudinal runs and 1/4" per foot in transverse runs. Deck drains shall be fitted with traps and cleanouts to the approval of the OREP. Head flooring shall be sloped to the drain locations. Head deck drains shall be piped as per the Contract DWGS to the Sanitary Drain System and CHT.

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): (5) Floor mounted, Kohler Model Highline K-4405-0, elongated bowl, white, ADA compliant, w/SEAT, Kohler Model Lustra K-4666, white, open front, no cover
- FLUSHOMETER (all heads): (5) Sloan, salt water service
- LAVATORY BOWLS (all heads): (5) Kohler Model Caxton K-2210, under-mount, white, w/overflow and clamps strainer drain Model K1729-A-CP
- FAUCET (01-Deck heads): (2) Sloan, electronic Model EAF-350-ISM
- FAUCET (crew heads): (3) Kohler Model K-15198 Coralais, centerset
- HAND DRYER (01-Deck heads): (2) World Smart Dri, surface mount
- PAPER TOWEL DISPENSER (all heads & break room): (6) MSFS standard issue
- TOILET PAPER DISPENSER (5) MSFS standard issue
- VANITY MIRROR (all heads): (5) Bobrick Model B-165-2430
- SOAP DISPENSER (all heads): (5) Bobrick Contura Model 818615, surface mounted
- WASTE RECEPTACLE (all heads): (2) Bobrick surface mounted Contura Model B-277
- GRAB BARS (all heads): (1 x 36" Bobrick B5806-36) and (1 x 42" Bobrick B5806-42)

644.0.5 CREW HEADS

The design calls for (3) unisex crew heads – (1) on the 03-deck aft of the pilothouse and (2) 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 Passenger Cabins; Crew and Passenger Heads; Pilothouse; Interior Passageways; Crew Break Room (including locker and snack prep area) shall be finished to a commercial standard with drop ceilings, lined side 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 MSFS 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. 800-836-2480 or American approved equal.

645.1.2 PILOTHOUSE

For operational and vessel control efficiencies, the Pilothouse shall be fitted with a forward and aft navigation console similar to the consoles on existing MSFS fleet vessels. There shall be a fixed helm chair and a portable lookout chair; chart table w/storage under; settee; publication rack; a frame for required USCG documents; and all navigation, control, and alarm equipment. The helm chair and portable lookout chairs shall be Liebrock Industries, or equal, (Color to be approved by the MSFS OREP).

The consoles shall be steel frame fabricated and sheathed with low reflective decorative laminate (Color to be approved by MSFS). The Pilothouse and forward console shall be designed to accommodate an operator seated in the helm chair with control functions and navigational instrumentation within easy reach. The aft console shall be designed to accommodate a standing operator 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 MSFS marine management and designated MSFS 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

- CHAIR - HELM: Fixed; LleBroc LX Series w/pedestal package 4BRLX01 or equal
- CHAIR – LOOKOUT: Portable; LleBroc Sailfish w/no flip bolster SKU: 4BHC06HC5; Track Lock III swivel SKU: 3100Z1-L1; 5 leg free-standing adjustable 24”-30” pedestal SKU: SPR-1081422; Footrest SKU: SPR1580017
- CHART TABLE: Custom fabrication w/chart drawer and cabinet with doors under
- SETEE: 3’-0” overall length, upholstered, w/stowage bin below

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 (30) passengers on the port side and (38) passengers on the starboard side. Seating shall be by Freedman Seating, Chicago, IL, Model Gemini. Installation shall be with studs welded to the deck and finish cap nuts. Seating upholstery and frame finish colors shall be approved by MSFS.

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 with foot operated lid. 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 MSFS OREP.

654.1 UTILITY, CREW, & WORK SPACES

645.1.1: ENGINEERS OPERATING STATION (EOS)

The EOS is constructed from either a prefabricated modular unit or prefabricated sound proofing panels to reduce the noise level inside to 70

dB during normal operation (iac acoustics or equal). 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 150.1.1 PILOTHOUSE CONSOLE). 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.

645.1.2: MISCELLANEOUS ENGINE ROOM EQUIPMENT

Rag bucket – metal with hinged top, red, to approval of the MSFS OREP

Trash bucket – metal to approval of the MSFS OREP

645.1.3: DECK LOCKER & PASSENGER LUGGAGE LOCKER

Steel shelving to the approval of the MSFS OREP

645.1.3: CREW BREAK ROOM

- MICROWAVE: 0.7 cu. Ft., Black & Decker, Hamilton Beach, or equal
- COFFEE BREWER: Keurig K50, or equal
- REFRIGERATOR: 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

MSFS, 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/MSC for approval. Thirty days must be allowed for the USCG/MSC submittal and approval; therefore the CONTR is obligated to stay in communication with Gilbert Associates, MSFS'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/MSC by Gilbert Associates. The Inclining Procedure shall be written in accordance with the specifications of USCG (MSC), NVIC 15-81 and ASTM Volume 01.07 "Shipbuilding" Standard F1321-90. 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/MSC. 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/MSC.

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 MSFS OREP. The testing requirements of 46 CFR Subchapter H 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 MSFS 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 MSFS 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 MSFS. 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, bow thruster electric motor, and bow thruster dedicated 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.
- 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 (boiler).
- 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 MSFS OREP and, as required, by the attending USCG Inspector. Trials shall be scheduled mutually by the CONTR, the MSFS 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 MSFS OREP. Dock trials shall commence only upon the approval of the MSFS 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 MSFS OREP.

982.3 DOCK TRIALS

Dock trials shall be scheduled for a date and time mutually agreeable to the OWNER (MSFS), 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 MSFS 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 MSFS OREP (or other designated MSFS 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, MSFS's management personnel may be on hand and may call for performance demonstrations of particular Contract task items.

- 1) Main Engines and Reverse/Reduction Gears: 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: Dedicated generator, 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 H 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) Bilge System: Operational performance
- 14) Potable Water System: Operational Performance
- 15) Fuel Oil System: Operational Performance
- 16) Compressed Air System: Operational Performance
- 17) Vents, Fills, & Sounds: Operational
- 18) Engine cooling Systems: Operational
- 19) HVAC system: Operational performance (heating and cooling)
- 20) Engine room ventilation system: Operational performance
- 21) 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, 100 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 MSFS 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:

MAINE STATE FERRY SERVICE FERRY SPECIFICATIONS

- 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 dedicated bow thruster genset.
- 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 MSFS. All main propulsion and auxiliary machinery equipment and systems shall be tested to full operational capability to the satisfaction of the USCG inspector, MSFS, 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 MSFS's OREP and the attending USCG Inspector.

All CONTR, Vendor, and MSFS 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:

MAINE STATE FERRY SERVICE FERRY SPECIFICATIONS

- 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 MSFS. 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 MSFS.
- 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 MSFS. 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

MAINE STATE FERRY SERVICE FERRY SPECIFICATIONS

- 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 MSFS 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 GYRO COMPASS & AUTO PILOT

Demonstrate proper functioning of the gyro compass and auto pilot system.

982.4.9 MAIN ENGINE PROPULSION CONTROL SYSTEM

Demonstrate proper functioning of the Propulsion Control System by transferring control to both the forward and aft pilothouse control station and running through the ranges of power setting for ahead and astern.

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 (PH: 978-670-5339), 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 MSFS.

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 MSFS 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 MSFS 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 MSFS. 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.