

**MISSOURI HIGHWAYS AND TRANSPORTATION  
COMMISSION**

**BID, CONTRACT DOCUMENTS AND SPECIFICATIONS**

**for**

**MOBILE AIRCRAFT RESCUE FIRE FIGHTING TRAINER**

**July 15, 2011**

**Prepared for:**

**Missouri Highways and Transportation Commission**

**REQUESTS FOR BIDS/INVITATION FOR BIDS  
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION**

**Bid Request No. 3-110816 MARFFT**

Notice is hereby given that sealed bids will be received and then publicly opened and read in the Blue Conference Room at 830 MoDOT Drive, Jefferson City, Missouri at 2:00 PM, CDT for the purchase of the following equipment:

Item	Date of Bid	Time of Bid
<b>MOBILE AIRCRAFT RESCUE AND FIRE FIGHTING TRAINER Trailer WITH TRACTOR AND SUPPORT VEHICLE</b>	<b>August 23, 2011</b>	<b>10:00 AM CDT</b>

All bids must be received at the address indicated herein above prior to the time and date specified for bid opening. Bids received after the specified time and date of the bid opening will be returned unopened. The **Missouri Highways and Transportation Commission** shall not be held responsible or accountable for delays in the delivery of any bid by the U.S. Postal Service or other courier service.

All questions regarding the RFB shall be submitted to:

**RFB Coordinator**

**Warren Blanchard, Senior General Services Specialist  
Missouri Department of Transportation  
General Services, Fleet Unit  
P.O. Box 270  
830 MoDOT Drive  
Jefferson City, MO 65102**

**Phone: 573-526-2529  
Fax: 573-526-1218  
E-mail: warren.blanchard@modot.mo.gov**

Copies of the bid documents including instructions to bidders, technical specification, standard terms and conditions and proposal forms may be obtained from the above contact

**A pre-bid conference will be held** for purposes of clarifying requirements of this procurement and for resolving any possible ambiguities. This conference will be held **by teleconference call on July 27, 2011 at 10 AM CDT**. Bidders are highly encouraged to participate in the conference call at **1-866-630-9347**.

This project is subject to the requirements of 49 CFR Part 26 Disadvantaged Business Enterprise Participation. The Missouri Highways and Transportation Commission (MHTC) has established a contract goal of 0 percent participation for small business concerns owned and controlled by qualified disadvantaged business enterprises (DBE). The bidder shall make and document good faith efforts, as defined in Appendix A of 49 CFR Part 26, to meet the established goal.

Bids may be held by the Missouri Highways and Transportation Commission for a period not to exceed 90 days from the date of the bid opening for the purpose of evaluating bids prior to award of contract.

The right is reserved by the Missouri Highways and Transportation Commission to reject any and all bids.

This procurement action is governed by all applicable local, State and Federal regulations. Federal provisions include are not limited to the following:

Executive Order 11246 and DOL Regulation 41 CFR PART 60 - Affirmative Action to Ensure Equal Employment Opportunity

DOT Regulation 49 CFR PART 30 - Denial of Public Works Contracts to Suppliers of Goods and Services of Countries that Deny Procurement Market Access to U.S. Contractors (Foreign Trade Restriction).

DOT Regulation 49 CFR PART 32 – Government-wide Requirements for Drug-Free Workplace (Financial Assistance).

TITLE 49 United States Code, CHAPTER 501 – Buy America Preferences

# INSTRUCTIONS TO BIDDERS

## **Bid Documents**

The bid documents are hereby defined as the following;

- Invitation-for-Bids
- Instructions-to-Bidders
- General Terms and Conditions
- Supplementary Provisions
- Technical Specifications
- Bid Form with attachments
- Form of Contract Agreement
- All authorized addenda issued by the MHTC
- Any document incorporated in whole or in part by reference therein.

The term "Project Documents" as used herein shall be construed as being equivalent to the above defined bid documents.

All documents comprising the Project Documents are complementary to one another and together establish the complete terms, conditions and obligations of the successful bidder. Those individual elements of the Project Documents that are bound may not be removed or detached.

Prospective bidders may obtain a copy of the project bid documents from the designated office identified within the Invitation-for-Bids.

## **Bidder Representations**

By submittal of a bid, the BIDDER represents the following:

- The Bidder has read and thoroughly examined all project documents
- The Bidder has a complete understanding of the terms and conditions required for the satisfactory performance of the project.
- The Bidder has found no errors, conflicts, ambiguities or omissions in the project documents, except as previously submitted in writing to the RFB Coordinator that would affect cost, progress or performance of the work.
- The Bidder is familiar with all applicable Federal, State and local laws, rules and regulations pertaining to execution of the contract and the project work.
- The Bidder has complied with all requirements of these instructions and the associated project documents.

## **Modifications to Project Documents**

Modifications to the project documents may only be made by written addendum issued by the RFB Coordinator. Verbal explanations, interpretations or comments made by the RFB Coordinator shall not be construed as binding. Addenda will be transmitted to all known official plan holders. Each bidder shall certify at the time of bid submittal that they acknowledge receipt of all issued addenda.

## **Errors and Discrepancies in Project Documents**

Should Bidder find an error, discrepancy, ambiguity or omission in the project documents prior to submittal of a bid, the Bidder is obligated to contact the RFB Coordinator with written notice of the error, discrepancy, ambiguity or omission. The written notice shall identify the nature and location of the error, discrepancy, ambiguity or omission.

Corrections or modifications to the project documents will only be made by written addendum as prescribed herein. By submittal of a bid, Bidder represents that they have thoroughly reviewed the project documents and that they have not identified any error, discrepancy, ambiguity or omission that would affect cost, progress or performance of the project work.

### **Clarifications and Interpretations**

A bidder requiring a clarification or interpretation of the project documents shall make a written request to the RFB Coordinator. The RFB Coordinator must receive the written request a minimum of seven (7) calendar days prior to the date of the bid opening.

### **Issuance of Bid Forms**

The Missouri Highways and Transportation Commission reserves the right to refuse to issue a bid form to a prospective bidder should the bidder be in default for any of the following reasons:

- a. Failure to comply with any pre-qualification regulations of the MHTC, if such regulations are cited or otherwise included, in the bid as a requirement for bidding.
- b. Failure to pay, or satisfactory settle, all bills due for labor and materials on former contracts in force (with the MHTC) at the time the owner issues the bid to a prospective bidder.
- c. Contractor default under previous contracts with the MHTC.

### **Form of Bid**

Bidder shall make their bid on the forms provided herein the bound project documents. No bidder may submit more than one bid. Bidder must use ink to indicate their bid in a clear, legible written format. Bidder shall complete in a clear and legible manner, all blank spaces and certification statements in the bid forms using ink. Bidder shall not qualify any bid item. Bidder shall initial in ink any erasures and alterations made on the bid form by the bidder.

Bidder shall state the price of their bid in U.S. dollars and cents in both written and numeral format. In the event of a discrepancy, the MHTC will apply precedence to the written value of the bid.

### **Signature of Bid**

The bid shall be signed and dated by an authorized representative of the Bidder. All signatures shall be made with an ink pen. The Bidder's representative shall have the legal authority to obligate and bind the Bidder to the terms and conditions of the contract. The Bidder shall legibly state the name of the Bidder's representative, the legal name of the Bidder, the address of the Bidder including City, State and Zip Code, and the telephone number of the Bidder.

- For bids by corporations, an officer of the corporation shall sign the bid, the State of incorporation shall be identified and the corporate seal affixed.
- For bids submitted by an agent, evidence of the power of attorney shall be attached to the bid.
- For bids submitted by a partnership or joint venture, the bid shall identify the name of all firms and the authorized parties of all firms. A copy of the partnership/joint-venture agreement shall be provided to the MHTC as an attachment to the bid

### **Modification or Withdrawal of Bid**

A Bidder may modify or withdraw their bid at any point up to the specified time and date identified for receipt of bids. Any request for bid withdrawal or modification by the Bidder that is received after the specified time and date for receipt of bids will be returned unopened to the sender.

Any modification to a bid, subject to the time constraint noted herein, must be made on the bid forms contained in the project manual. The Bidder's authorized representative must sign the modification. The modification shall be placed in a sealed envelope and the statement "Modification to Bid " shall be legibly marked in the upper left hand corner. Withdrawal of a bid may be made, subject to the time constraint noted herein, only with written confirmation under signature of the Bidder.

### **Bidder Qualifications**

Bidder shall submit evidence of their ability, skill and experience to provide the equipment specified in the project documents. Evidence of experience shall include a listing of three previous customers in the past five years who were provided similar types of equipment.

### **Buy America**

As a matter of bid responsiveness, Bidder must indicate how they intend to comply with the Buy America preferences established by 49 USC 50101. The bidder may choose to certify it will comply with Buy America preferences by only installing steel and manufactured products that are 100% made in the United States. The bidder may also certify that they cannot fully comply with Buy America preferences and thus requests a waiver to Buy America preferences. A bidder that certifies they will meet Buy America preferences by requesting a waiver also agrees to prepare and submit a formal waiver request and the associated component cost calculation if selected by the owner as the apparent low bidder. The apparent low bidder must submit their formal waiver request and component cost calculation to the owner within the timeframe prescribed on the Buy America certification.

### **Compliance with the Work Authorization Law (as required by Section 285.530, Revised Statutes of Missouri)**

For all contracts where the total bid amount is in excess of \$100,000 (local match in excess of \$5,000), the Bidder, by submission of an offer and by signing the Worker eligibility Verification Affidavit, the Bidder certifies that it:

1. Does not knowingly employ any person who is an unauthorized alien in connection with the contracted services; and
2. Has enrolled and actively participates in a federal work authorization program;

A general contractor or subcontractor of any tier shall not be liable under sections 285.525 to 285.550 when such general contractor or subcontractor contracts with its direct subcontractor who violates subsection 1 of this section, if the contract binding the contractor and subcontractor affirmatively states that the direct subcontractor is not knowingly in violation of subsection 1 of this section and shall not henceforth be in such violation and the contractor or subcontractor receives a sworn affidavit under the penalty of perjury attesting to the fact that the direct subcontractor's employees are lawfully present in the United States.

### **Disadvantage Business Enterprise (DBE)**

The requirements of 49 CFR Part 26, Regulations of the U.S. Department of Transportation, apply to this contract. It is the policy of MHTC to practice nondiscrimination based on race, color, sex or national origin in the award or performance of this contract. All firms qualifying under this solicitation are encouraged to submit bids. Award of this contract will be conditioned upon satisfying the requirements of this section. These requirements apply to all bidders, including those who qualify as a Disadvantaged Business Enterprise (DBE).

A DBE contract goal of **0** percent has been established for this contract.

The apparent successful competitor will be required to submit the following information: (1) the names and addresses of DBE firms that will participate in the contract; (2) a description of the work that each DBE firm will perform; (3) the dollar amount of the participation of each DBE firm participating; (4) written documentation (signed contract ) of the bidders commitment to use a DBE subcontractor whose participation it submits to meet the contract goal; and (5) if the contract goal is not met, evidence of good faith efforts, as described *in 49 CFR Part 26*.

### **Submission of Bid**

Prospective bidders must submit their bid to arrive at the office location identified within the Notice-to-bidders at the specified time and date for receipt of bids. The RFB Coordinator will not give consideration to any bid received after the specified time. MHTC will return late bids in an unopened manner to the return address identified on the envelope.

Prospective bidders shall enclose their bid in a sealed opaque envelope. The upper left hand corner of the envelope shall be marked as follows:

**Sealed Bid**

Bid of {NAME OF BIDDER}

For furnishing **MARFFT Trailer, Tractor Vehicle, and Support Vehicle**

Bid No.: **3-110816 MARFFT**

To be opened at: **10:00 am CDT August 23, 2011**

For a modification to a previously submitted bid, insert "Modification to Bid" in place of "Sealed Bid".

**Bid Protest Procedure**

Any potential bidder wishing to file a protest concerning alleged improprieties in this solicitation must submit the protest in written format **72** hours prior to the specified time of the bid opening. The formal written protest must identify the name of vendor contesting the solicitation, the project name and number, and the specific grounds for the protest. All determinations made by the MHTC are final. Bidders desiring a complete copy of the MHTC protest procedures must make a written request to the MHTC.

**Bid Opening**

The MHTC or MHTC representative will publicly open and read aloud all bids submitted prior to the stated time and date for receipt of bids. Bidders, their authorized agents, and other interested parties are invited to attend. MHTC will automatically reject any bid without consideration that arrives after the stated time and date for receipt of bids. MHTC will return late bids in an unopened manner to the return address indicated on the envelope.

**Evaluation of Bids**

The MHTC reserves the rights to hold all bids for purpose of review and evaluation by the MHTC for a period not to exceed 90 calendar days from the stated date for receipt of bids. The MHTC will tabulate all bids and verify proper extension of unit costs. The Bidder shall honor their bid for the duration of this period of review and evaluation.

**Disqualification of Bids**

The MHTC reserves the right to reject any or all bids, as determined to be in the best interest of the MHTC. Causes for rejection of bids include but are not limited to:

- Submittal of an irregular bid;
- Submittal of more than one bid from the same partnership, firm or corporation;
- Failure by Bidder to submit the bid prior to the stated time and date for receipt of bids;
- Failure by Bidder to provide all information required of the bid documents;
- Failure by Bidder to comply with the requirements of bid instructions;
- Failure by the Bidder to demonstrate good faith efforts in obtaining participation by certified DBE firms;
- Failure by the Bidder to certify how it intends to meet Buy America requirements (Buy America Certification);
- Failure by the Bidder to comply with the requirements of the Work Authorization Law (Annual Worker Eligibility Verification Affidavit);
- Determination by the MHTC that Bidder is not qualified to accomplish the project work;
- Determination by the MHTC that the Bidder has placed conditions on or has qualified their bid;
- Discovery of any alteration, interlineations or erasure of any project requirement by the Bidder;
- Inclusion of the Bidder on the "Excluded Parties Listing System" as maintained and published by the General Services Administration;
- Evidence of collusion among bidders.

**Cancellation of Award**

At any time prior to execution of a contract agreement, the MHTC reserves the right to cancel the award for any reason without liability to the Bidder, at any time prior to execution of the contract.

**Notice of Award of Contract**

It is the intent of the MHTC, after a period of review and evaluation, to award a contract to the responsible bidder that submits the lowest and best responsive bid. At the discretion of the MHTC, a purchase order may be issued in lieu of a formal written contract agreement.

The successful bidder will be informed their bid has been accepted through the MHTC issuance of a Notice-of-Award. The Notice-of-Award shall not be construed as a binding agreement. The proper execution of a contract agreement or the issuance of a purchase order shall serve as the binding agreement.

**Federal Funding Assistance**

It is the intent of the MHTC to seek Federal participation assistance for this project under the Airport Improvement Program (AIP). Award of contract is conditioned upon the FAA concurring in the award and the MHTC securing federal funding assistance.

**Award of Alternates**

Unless specifically stated, the MHTC reserves the right to accept alternates in any order or combination, which in the judgment of the MHTC, best serves the MHTC's interest.

**Issuance of Purchase Order**

The MHTC's issuance and the bidder's acceptance of a purchase order serves as the binding agreement. The issuance and acceptance of the purchase order is conditioned upon the bidder's compliance with the complete terms and conditions set forth within the project documents.

**Contract Agreement**

Within fifteen (15) days of the receipt of the formal contract agreement or issued purchase order, the successful Bidder shall as appropriate execute the contract agreement or accept the purchase order. Failure to execute the contract agreement or accept the purchase order within the specified time frame may result in the bid being awarded to the next low bidder.

## GENERAL TERMS AND CONDITIONS

### DEFINITION OF TERMS

**Acceptable Performance:** The ability of a system or product to fully comply with the required Technical Specification and to properly function during its expected economic life in a reliable and other satisfactory manner under actual operating conditions.

**Advertisement:** A public announcement, as required by state law, inviting bids for work to be performed and materials to be furnished.

**Advisory Circular:** Documents published by the Federal Aviation Administration that convey policy, standards and guidance. Note: As a recipient of Federal funds, the MHTC may not treat the requirements of an applicable Advisory Circular as being advisory in nature. AIP grantees are obligated grant condition to apply the appropriate provisions stated within applicable Advisory Circulars. Refer to FAA website <http://www.faa.gov/arp/150acs.cfm>.

**AIP:** The Airport Improvement Program, a grant-in-aid program, administered by the Federal Aviation Administration.

**ARFF:** Aircraft Rescue and Fire Fighting

**ASTM:** The American Society for Testing and Materials.

**Award:** The acceptance, by the MHTC, of the successful bidder's submittal.

**Bid:** The written offer of the bidder (when submitted on the approved bid form) to perform the contemplated work and furnish the necessary materials in accordance with the provisions of the plans and specifications.

**Bidder:** Any individual, partnership, firm, or corporation, acting directly or through a duly authorized representative, who submits a bid for the work contemplated.

**Bid Documents:** A collective term for all project documents that a prospective bidders shall base its bid upon. Unless otherwise defined in the Instructions-to-bidders, the bid documents are comprised of the following:

- Invitation-for-Bids
- Instructions-to-Bidders
- General Terms and Conditions
- Supplementary Provisions
- Technical Specifications
- Bid Form with attachments
- Form of Contract Agreement
- All authorized addenda issued by the MHTC
- Any document incorporated in whole or in part by reference therein.

**Change Order:** A written order to the Contractor covering changes in the plans, specifications, or bid quantities and establishing the basis of payment and contract time adjustment, if any, for the work affected by such changes. The work, covered by a change order, shall be within the scope of the contract.

**Contract:** The written agreement covering the work to be performed. The awarded contract shall include, but is not limited to: The Advertisement; The Contract Form; The Bid; any required insurance certificates; The Specifications; The Plans, and any addenda issued to bidders.

**Contract Item (Pay Item):** A specific unit of work for which a price is provided in the contract.

**Contract Time:** The number of calendar days or working days, stated in the bid, allowed for completion of the contract, including authorized time extensions. If a calendar date of completion is stated in the bid, in lieu of a number of calendar or working days, the contract shall be completed by that date.

**Contractor:** The individual, partnership, firm, or corporation primarily liable for the acceptable performance of the work contracted and for the payment of all legal debts pertaining to the work who acts directly or through lawful agents or employees to complete the contract work.

**Calendar Day:** Every day shown on the calendar.

**Date Of Completion:** The date of formal acceptance from the MHTC.

**DBE:** Disadvantaged Business Enterprise. Refer to Federal Regulation 49 CFR Part 26

**Defect:** Patent or latent malfunction or failure in manufacture or design of any component or subsystem that causes a product to cease operating or causes it to operate in a degraded mode.

**Engineer:** The individual, partnership, firm, or corporation duly authorized by the MHTC to be responsible for the engineering supervision of the contract work and acting directly or through an authorized representative.

**Equipment:** All machinery, together with the necessary components and supplies for upkeep and maintenance, and also all tools and apparatus necessary for the proper construction and acceptable completion of the work.

**Extra Work:** An item of work not provided for in the awarded contract as previously modified by change order or supplemental agreement, but which is found by the Engineer to be necessary to complete the work within the intended scope of the contract as previously modified.

**FAA:** The Federal Aviation Administration of the U.S. Department of Transportation. When used to designate a person, FAA shall mean the Administrator or his/her duly authorized representative.

**Federal Specifications:** The Federal Specifications and Standards, supplements, amendments, and indices thereto are prepared and issued by the General Services Administration of the Federal Government.

**Inspector:** An authorized representative of the Engineer assigned to make all necessary inspections and/or tests of the work performed or being performed, or of the materials furnished or being furnished by the Contractor.

**Liquidated Damages:** An established daily amount paid by the Contractor to the MHTC for failure to complete the project within the established contract time. The established amount is based on estimated expenses and losses that reasonably may be suffered by the MHTC for failure by the Contractor to complete the project on time. The assessment of liquidated damages shall not be construed as a penalty.

**Materials:** Any substance specified for use in the construction of the contract work.

**Notice-Of-Award:** A written notice of the acceptance of the bid from the Owner to the successful bidder.

**Notice-To-Proceed:** A written notice to the Contractor instructing it to begin the actual contract work on a previously agreed to date. If applicable, the Notice to Proceed shall state the date on which the contract time begins.

**Missouri Highways and Transportation Commission, Owner, Sponsor:** The Missouri Highways and Transportation Commission or MHTC, or the term "owner" shall mean the party of the first part or the contracting agency signatory to the contract. For AIP contracts, the term "sponsor" shall have the same meaning as the term "owner."

**Project:** The agreed scope of work for accomplishing specific airport development with respect to a particular airport.

**Project Documents:** A collective term for documents identified within the definition for bid documents, which together as a whole form the complete and full contract obligation of the contractor.

**Purchase Order:** An order issue by the MHTC for the purchase of goods or services that when accepted by the vendor becomes a binding contract. The requirements established within the project

documents as defined herein are a binding obligation of the purchase order as if each element of the project documents is physically attached to the purchase order.

**Related Defect:** Damage inflicted on any component or subsystem as direct result of a separate defect.

**SAE:** Society of Automotive Engineers.

**Specifications:** A part of the contract containing the written directions and requirements for completing the contract work. Standards for specifying materials or testing which are cited in the contract specifications by reference shall have the same force and effect as if included in the contract physically.

### **INTENTION OF TERMS**

Whenever, in these specifications or on the plans, the words "directed," "required," "permitted," "ordered," "designated," "prescribed," or words of the like import are used, it shall be understood that the direction, requirement, permission, order, designation, or prescription of the Engineer is intended; and similarly, the words "approved," "acceptable," "satisfactory," or words of like import, shall mean approved by, or acceptable to, or satisfactory to the Engineer, subject in each case to the final determination of the owner.

Any reference to a specific requirement of a numbered paragraph of the contract specifications or a cited standard shall be interpreted to include all general requirements of the entire section, specification item, or cited standard that may be pertinent to such specific reference.

### **PATENTED MATERIAL, EQUIPMENT AND PROCESSES**

If the successful Bidder utilizes any design, device, equipment, material or process that is covered by a patent, trademark or copyright, the Bidder shall indemnify and hold harmless the MHTC and MHTC's representative from any and all claims for infringement by reason of the use of any patented design, device, equipment, material or process or the use of any trademark or copyright.

### **MATERIAL**

All components used in the manufacture and assembly of the specified equipment/vehicle shall be new and of high quality and grade. Re-manufactured parts shall not be utilized.

### **DECALS**

The contractor shall not affix advertising decals, stickers or other signs to the specified equipment. Vehicle mud flaps, when specified, shall be installed with the blank side facing outward.

### **BRAND NAMES**

Whenever in the specification proprietary names, manufacturers, trade names or catalog numbers are specified, such reference is made for the purpose of defining the minimum performance, quality and other salient characteristics of the desired item. Where "brand names" are specified, the term "or equal" shall be deemed to follow. Such reference is not intended to be restrictive in nature. The contractor may offer any material, item or process deemed equal with respect to the required minimum characteristics of the specified "brand name". The MHTC reserves the right to make the final determination of equivalency.

### **MANUALS/ DOCUMENTS**

As a minimum, copies of the following documents must be submitted with final delivery of the equipment/vehicle. Submittal of this information is in addition to any other submittal required specified within the technical specifications.

1. Applicable Title documents.
2. An owner's/operator's manual that includes all standard manufacturer/vendor literature.
3. Manufacturer's standard warranties and guaranties
4. Maintenance instructions

### **WARRANTY**

The Contractor guarantees that any defective component discovered within a twelve (12) month period following the date of the final acceptance shall be replaced at no expense to the MHTC. The warranty for this period shall cover all parts, labor, and shipping costs for the repair and replacement of any defective component. The MHTC agrees to give prompt notice of any discovered defect. The Contractor shall promptly, without undue delay, remedy such defects. The Contractor shall serve as the MHTC's agent for service under any standard manufacturer warranty.

### **MATERIAL SAFETY DATA SHEETS**

The Contractor shall submit applicable Material Safety Data Sheets (MSDS) for all chemical products supplied with the acquired equipment/vehicle.

### **PRE-DELIVERY INSPECTION**

The MHTC reserves the right to perform a pre-delivery inspection of the equipment/vehicle at the Contractor's facility. The purpose of the inspection is to verify compliance with critical requirements of the technical specifications. This inspection shall not serve as the final acceptance inspection.

### **DELIVERY**

Delivery of the vehicle/equipment shall be made within the **270** calendar days of the date of the approval of design drawings. Delivery shall be F.O.B. destination to the address noted herein below. C.O.D deliveries will not be accepted. All vehicles/equipment shall be off loaded at the designated location at vendor's expense.

**Missouri Highways and Transportation Commission  
Columbia Regional Airport  
11300 S. Airport Road  
Columbia, MO**

**Attn: Mr. Mark A. Lee, 573-882-4735**

### **ACCEPTANCE**

Delivery of equipment/vehicle does not constitute acceptance. Acceptance of the furnished equipment/vehicle will be based on combination of submitted manufacturer certifications and acceptance tests conducted at the time of delivery. The Contractor shall provide manufacturer certification for components and systems identified within the technical specification. The Contractor shall prepare and furnish the MHTC a signed written certification that the components constituting the whole of the equipment being provided comply with the applicable performance, design and construction requirements of the technical specifications.

### **ON-SITE ACCEPTANCE TESTING**

At no additional expense to the MHTC, the Contractor shall, upon delivery of the equipment/vehicle, have an authorized representative conduct an operational test of the furnished equipment in the presence of the MHTC. The Contractor shall demonstrate that all features and components are in proper working order and operate as intended by the Technical Specifications. This demonstration is in addition to any other stated acceptance tests within the technical specifications and as required by the MHTC.

### **COMPLETENESS**

All equipment/vehicle(s) shall be delivered complete and ready for use. All parts necessary for operation or which are normally furnished as standard equipment shall be furnished whether specified or not. Substitutions or cancellations are not permitted without written approval from the owner.

### **DEFECTS**

Contractor shall promptly repair any defects and related defects discovered within the standard 12- month warranty period. Unless otherwise approved by the owner, work shall commence to correct the defect and related defect within 15 calendar days from receipt of notification from the owner.

### **PAYMENT TERMS**

Payment for delivery of equipment can be made per each completed vehicle with the payment made after successful delivery. Completed vehicle is classified as:

- Bid Items 1 and 2 combined – MARFFT Tractor and Trailer,
- Bid Item 3 – Support Tractor Trailer Vehicle

### **ASSIGNMENT**

The rights of each party under this agreement shall not be assigned or transferred to any other person, entity, firm or corporation without prior written consent of both parties.

### **LIQUIDATED DAMAGES**

By submittal of a bid and subsequent acceptance of the contract, the CONTRACTOR understands and agrees that time is of essence for completion of the Work and that the MHTC will suffer additional expense and financial loss if said Work is not completed within the authorized Contract Time. Furthermore, the CONTRACTOR and the MHTC recognize and understand the difficulty, delay, and expense in establishing the exact amount of actual financial loss and additional expense. Accordingly, in place of requiring such proof, the CONTRACTOR expressly agrees to pay the MHTC as liquidated damages the non-penal sum of \$1,000 per day for each calendar day required in excess of the authorized Contract/Delivery Time.

Furthermore, the CONTRACTOR understands and agrees that;

- a. the MHTC has the right to deduct from any moneys due the CONTRACTOR, the amount of said liquidated damages;
- b. the MHTC has the right to recover the amount of said liquidated damages from the CONTRACTOR.

## **SUPPLEMENTARY PROVISIONS FEDERAL AND STATE PROVISIONS**

These Supplementary Conditions amend and/or supplement the General Terms and Conditions of the Contract and other provisions of the Contract Documents as indicated herein. All contract provisions that are not so amended or supplemented remain in full force and effect.

### **LOBBYING AND INFLUENCING FEDERAL EMPLOYEES:** (49 CFR Part 20)

- (1) No Federal appropriated funds shall be paid, by or on behalf of the Contractor, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the making of any Federal grant and the amendment or modification of any Federal grant.
  
- (2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any Federal grant, the Contractor shall complete and submit Standard Form-LLL, "Disclosure of Lobby Activities," in accordance with its instructions.

### **TRADE RESTRICTION CLAUSE:** (49 CFR Part 30)

The Contractor or subcontractor, by submission of an offer and/or execution of a contract, certifies that it:

- (a) is not owned or controlled by one or more citizens of a foreign country included in the list of countries that discriminate against U.S. firms published by the Office of the United States Trade Representative (USTR);
- (b) has not knowingly entered into any contract or subcontract for this project with a person that is a citizen or national of a foreign country on said list, or is owned or controlled directly or indirectly by one or more citizens or nationals of a foreign country on said list;
- (c) has not procured any product nor subcontracted for the supply of any product for use on the project that is produced in a foreign country on said list.

Unless the restrictions of this clause are waived by the Secretary of Transportation in accordance with 49 CFR 30.17, no contract shall be awarded to a contractor or subcontractor who is unable to certify to the above. If the Contractor knowingly procures or subcontracts for the supply of any product or service of a foreign country on said list for use on the project, the Federal Aviation Administration may direct through the Sponsor cancellation of the contract at no cost to the Government.

Further, the Contractor agrees that, if awarded a contract resulting from this solicitation, it will incorporate this provision for certification without modification in each contract and in all lower tier subcontracts. The Contractor may rely on the certification of a prospective subcontractor unless it has knowledge that the certification is erroneous.

The Contractor shall provide immediate written notice to the sponsor if the Contractor learns that its certification or that of a subcontractor was erroneous when submitted or has become erroneous by reason of changed circumstances. The subcontractor agrees to provide written notice to the Contractor if at any time it learns that its certification was erroneous by reason of changed circumstances.

This certification is a material representation of fact upon which reliance was placed when making the award. If it is later determined that the Contractor or subcontractor knowingly rendered an erroneous certification, the Federal Aviation Administration may direct through the Sponsor cancellation of the contract or subcontract for default at no cost to the Government.

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

This certification concerns a matter within the jurisdiction of an agency of the United States of America and the making of a false, fictitious, or fraudulent certification may render the maker subject to prosecution under Title 18, United States Code, Section 1001.

**BUY AMERICA PREFERENCES:** (Title 49 U.S.C. Chapter 501)

The successful bidder must comply with Title 49 U.S.C. Section 50101. Unless otherwise formally approved by the Federal Aviation Administration (FAA), all acquired steel and manufactured products installed under the AIP assisted project must be produced in the United States. Section of 50101(b) permits conditional waivers of this preference. Specifically, the FAA will consider a waiver if the bidder can demonstrate:

1. Applying Buy America preferences would be inconsistent with the public interest;
2. The steel and goods produced in the United States are not produced in a sufficient and reasonably available amount, or are not of a satisfactory quality;
3. The cost of components and subcomponents produced in the United States is more than 60 percent of the cost of all components and final assembly occurs within the United States; or
4. The inclusion of domestic material will increase the cost of the overall project by more than 25 percent.

As a condition of bid responsiveness, Bidder must indicate on the Buy America certification whether it intends to meet Buy America requirements by only installing 100% United States made steel and manufactured products or if they intend to request a permissible waiver to Buy America. A successful bidder that requests a waiver must submit a formal waiver request and associated component cost calculation within the timeframe indicated on Buy America certification. Bidder is hereby advised that the MHTC approval of the requested waiver is contingent upon approval by the FAA.

**ACCESS TO RECORDS AND REPORTS:** (49 CFR Part 18.36(i))

The Contractor shall maintain an acceptable cost accounting system. The Contractor agrees to provide the MHTC, the Federal Aviation Administration and the Comptroller General of the United States or any of their duly authorized representatives to access any books, documents, papers, and records of the Contractor which are directly pertinent to the specific contract for the purpose of making audit, examination, excerpts and transcriptions. The Contractor agrees to maintain all books, records and reports required under this contract for a period of not less than three (3) years after final payment is made and all pending matters are closed.

**BREACH OF CONTRACT TERMS:** (49 CFR Part 18.36)

Any violation or breach of terms of this contract on the part of the Contractor or their subcontractors may result in the suspension or termination of this contract or such other action that may be necessary to enforce the rights of the parties of this agreement. The duties and obligations imposed by the Contract Documents and the rights and remedies available hereunder shall be in addition to and not a limitation of any duties, obligations, rights and remedies otherwise imposed or available by law.

**TERMINATION OF CONTRACT:** (49 CFR Part 18.36(i)(2))

The MHTC may, by written notice, terminate this contract in whole or in part at any time, either for the MHTC's convenience or because of failure of Contractor to fulfill the contract obligations. Upon receipt of such notice, services shall be immediately discontinued (unless the notice directs otherwise) and all materials as may have been accumulated in performing this contract, whether completed or in progress, delivered to the MHTC.

**RIGHTS TO INVENTIONS:** (49 CFR Part 18.36(i)(8))

All rights to inventions and materials generated under this contract are subject to regulations issued by the FAA and the Sponsor of the Federal grant under which this contract is executed.

**CIVIL RIGHTS ACT OF 1964, TITLE VI – CONTRACTOR CONTRACTUAL REQUIREMENTS:**  
(49 CFR Part 21)

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:

- 1.1 Compliance with Regulations. The Contractor shall comply with the Regulations relative to nondiscrimination in federally assisted programs of the Department of Transportation (hereinafter, "DOT") Title 49, Code of Federal Regulations, Part 21, as they may be amended from time to time (hereinafter referred to as the Regulations), which are herein incorporated by reference and made a part of this contract.
- 1.2 Nondiscrimination. The Contractor, with regard to the work performed by it during the contract, shall 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 shall not participate either directly or indirectly in the discrimination prohibited by section 21.5 of the Regulations, including employment practices when the contract covers a program set forth in Appendix B of the Regulations.
- 1.3 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 shall be notified by the Contractor of the Contractor's obligations under this contract and the Regulations relative to nondiscrimination on the grounds of race, color, or national origin.
- 1.4 Information and Reports. The Contractor shall provide all information and reports required by the Regulations or directives issued pursuant thereto and shall permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the MHTC or the Federal Aviation Administration (FAA) to be pertinent to ascertain compliance with such Regulations, orders, and instructions. Where any information required of a Contractor is in the exclusive possession of another who fails or refuses to furnish this information, the Contractor shall so certify to the sponsor or the FAA, as appropriate, and shall set forth what efforts it has made to obtain the information.
- 1.5 Sanctions for Noncompliance. In the event of the Contractor's noncompliance with the nondiscrimination provisions of this contract, the sponsor shall impose such contract sanctions as it or the FAA may determine to be appropriate, including, but not limited to:
  - a. Withholding of payments to the Contractor under the contract until the Contractor complies, and/or;
  - b. Cancellation, termination, or suspension of the contract, in whole or in part.

1.6 Incorporation of Provisions. The Contractor shall include the provisions of paragraphs 1.1 through 1.5 in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Regulations or directives issued pursuant thereto. The Contractor shall take such action with respect to any subcontract or procurement as the sponsor or the FAA may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, however, that in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or supplier as a result of such direction, the Contractor may request the MHTC to enter into such litigation to protect the interests of the sponsor and, in addition, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

**AIRPORT AND AIRWAY IMPROVEMENT ACT OF 1982:** (Section 520 - General Civil Rights Provisions)

The Contractor assures that it will comply with pertinent statutes, Executive orders and such rules as are promulgated to assure that no person shall, on the grounds of race, creed, color, national origin, sex, age, or handicap be excluded from participating in any activity conducted with or benefiting from Federal assistance. In the case of Contractors, this provision binds the Contractors from the bid solicitation period through the completion of the contract. This provision is in addition to that required of Title VI of the Civil Rights Act of 1964.

**VETERAN'S PREFERENCE:** (Title 49 U.S.C. 47112(c))

In the employment of labor (except in executive, administrative, and supervisory positions), preference shall be given to Veterans of the Vietnam era and disabled veterans as defined in Section 515(c)(1) and (2) of the Airport and Airway Improvement Act of 1982. However, this preference shall apply only where the individuals are available and qualified to perform the work to which the employment relates.

**DISADVANTAGED BUSINESS ENTERPRISES:** (49 CFR Part 26)

Where used in this provision, "Department of Transportation" or "DOT" refers to the United States Department of Transportation (USDOT). "MoDOT" refers to the Missouri Department of Transportation and the Missouri Highways and Transportation Commission.

**Policy.** It is the policy of the Department of Transportation that disadvantaged business enterprises as defined in 49 CFR Part 26 shall have the maximum opportunity to participate in the performance of contracts financed in whole or in part with Federal funds under this agreement. Consequently, the DBE requirements of 49 CFR Part 26 applies to this agreement.

**Contract Assurance.** MHTC will ensure that the following clause is placed in every USDOT assisted contract and subcontract:

"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 USDOT assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate."

(This assurance shall be included in each subcontract the prime contractor signs with a subcontractor.)

**Federal Financial Assistance Agreement Assurance.** MHTC agrees to incorporate the following assurances into the day to day operations and the administration of all USDOT assisted contracts; where "recipient" means MoDOT and any MoDOT grantee receiving USDOT assistance:

“MoDOT shall not discriminate on the basis of race, color, national origin, or sex in the award and performance of any USDOT assisted contract or in the administration of its DBE Program or the requirements of 49 CFR Part 26. The recipient shall take all necessary and reasonable steps under 49 CFR Part 26 to ensure nondiscrimination in the award and administration of USDOT assisted contracts. The recipient’s DBE Program, as required by 49 CFR Part 26 and as approved by USDOT, is incorporated by reference in this agreement. Implementation of this program is a legal obligation and failure to carry out its approved program, the Department may impose sanctions as provided for under Part 26 and may, in appropriate cases, refer the matter for enforcement under 18 U.S.C. 1001 and/or the Program Fraud Civil Remedies Act of 1986 (31 U.S.C. 3801 et seq.).”

MoDOT shall ensure that all recipients of USDOT assisted contracts, funds, or grants incorporates, agrees to and complies with the assurances statement.

Prompt Payment. MoDOT shall require all contractors to pay all subcontractors and suppliers for satisfactory performance of services in compliance with the prompt payment statute, Mo. Revised Statutes, Chapter 34, Section 34.057 (included below). MoDOT also requires the prompt, as defined in Section 34.057, return of all retainage held on all subcontractors after the subcontractor’s work is satisfactorily completed, as MoDOT personnel may ultimately determine (if necessary).

All contractors and subcontractors must retain records of all payments, made or received, for three (3) years from the date of final payment and must be available for inspection, upon request, by any authorized representative of MoDOT or USDOT. MoDOT will maintain records of actual payments to DBE firms for work committed to at the time of contract award.

MoDOT will perform audits of contract payments to firms. The audits will review payments to subcontractors to ensure that the actual amount paid to DBE subcontractors equals or exceeds the dollar amounts stated in the schedule of DBE participation and that payment was made in compliance with Missouri Revised Statutes, Chapter 34, Section 34.057.

## **Missouri Revised Statutes**

### **Chapter 34 State Purchasing and Printing Section 34.057**

**August 28, 2010**

---

#### **Public works contracts--prompt payment by public owner to contractor--prompt payment by contractor to subcontractor-- progress payments--retainage--late payment charges-- withholding of payments.**

34.057. 1. Unless contrary to any federal funding requirements or unless funds from a state grant are not timely received by the contracting public municipality but notwithstanding any other law to the contrary, all public works contracts made and awarded by the appropriate officer, board or agency of the state or of a political subdivision of the state or of any district therein, including any municipality, county and any board referred to as the public owner, for construction, reconstruction or alteration of any public works project, shall provide for prompt payment by the public owner to the contractor and prompt payment by the contractor to the subcontractor and material supplier in accordance with the following:

(1) A public owner shall make progress payments to the contractor on at least a monthly basis as the work progresses, or, on a lump sum basis according to the terms of the lump sum contract. Except in the case of lump sum contracts, payments shall be based upon estimates prepared at least monthly of work

performed and material delivered, as determined by the project architect or engineer. Retainage withheld on public works projects shall not exceed five percent of the value of the contract or subcontract unless the public owner and the architect or engineer determine that a higher rate of retainage is required to ensure performance of the contract. Retainage, however, shall not exceed ten percent of the value of the contract or subcontract. Except as provided in subsection 4 of this section, the public owner shall pay the contractor the amount due, less a retainage not to exceed ten percent, within thirty days following the latter of the following:

(a) The date of delivery of materials or construction services purchased;

(b) The date, as designated by the public owner, upon which the invoice is duly delivered to the person or place designated by the public owner; or

(c) In those instances in which the contractor approves the public owner's estimate, the date upon which such notice of approval is duly delivered to the person or place designated by the public owner;

(2) Payments shall be considered received within the context of this section when they are duly posted with the United States Postal Service or other agreed upon delivery service or when they are hand-delivered to an authorized person or place as agreed to by the contracting parties;

(3) If, in the discretion of the owner and the project architect or engineer and the contractor, it is determined that a subcontractor's performance has been completed and the subcontractor can be released prior to substantial completion of the public works contract without risk to the public owner, the contractor shall request such adjustment in retainage, if any, from the public owner as necessary to enable the contractor to pay the subcontractor in full. The public owner may reduce or eliminate retainage on any contract payment if, in the public owner's opinion, the work is proceeding satisfactorily. If retainage is released and there are any remaining minor items to be completed, an amount equal to two hundred percent of the value of each item as determined by the public owner's duly authorized representative shall be withheld until such item or items are completed;

(4) The public owner shall pay the retainage, less any offsets or deductions authorized in the contract or otherwise authorized by law, to the contractor after substantial completion of the contract work and acceptance by the public owner's authorized contract representative, or as may otherwise be provided by the contract specifications for state highway, road or bridge projects administered by the state highways and transportation commission. Such payment shall be made within thirty days after acceptance, and the invoice and all other appropriate documentation and certifications in complete and acceptable form are provided, as may be required by the contract documents. If at that time there are any remaining minor items to be completed, an amount equal to two hundred percent of the value of each item as determined by the public owner's representative shall be withheld until such items are completed;

(5) All estimates or invoices for supplies and services purchased, approved and processed, or final payments, shall be paid promptly and shall be subject to late payment charges provided in this section. Except as provided in subsection 4 of this section, if the contractor has not been paid within thirty days as set forth in subdivision (1) of subsection 1 of this section, the contracting agency shall pay the contractor, in addition to the payment due him, interest at the rate of one and one-half percent per month calculated from the expiration of the thirty-day period until fully paid;

(6) When a contractor receives any payment, the contractor shall pay each subcontractor and material supplier in proportion to the work completed by each subcontractor and material supplier his application less any retention not to exceed ten percent. If the contractor receives less than the full payment due under the public construction contract, the contractor shall be obligated to disburse on a pro rata basis those funds received, with the contractor, subcontractors and material suppliers each receiving a prorated portion based on the amount of payment. When, however, the public owner does not release the full

payment due under the contract because there are specific areas of work or materials he is rejecting or because he has otherwise determined such areas are not suitable for payment then those specific subcontractors or suppliers involved shall not be paid for that portion of the work rejected or deemed not suitable for payment and all other subcontractors and suppliers shall be paid in full;

(7) If the contractor, without reasonable cause, fails to make any payment to his subcontractors and material suppliers within fifteen days after receipt of payment under the public construction contract, the contractor shall pay to his subcontractors and material suppliers, in addition to the payment due them, interest in the amount of one and one-half percent per month, calculated from the expiration of the fifteen-day period until fully paid. This subdivision shall also apply to any payments made by subcontractors and material suppliers to their subcontractors and material suppliers and to all payments made to lower tier subcontractors and material suppliers throughout the contracting chain;

(8) The public owner shall make final payment of all moneys owed to the contractor, less any offsets or deductions authorized in the contract or otherwise authorized by law, within thirty days of the due date. Final payment shall be considered due upon the earliest of the following events:

(a) Completion of the project and filing with the owner of all required documentation and certifications, in complete and acceptable form, in accordance with the terms and conditions of the contract;

(b) The project is certified by the architect or engineer authorized to make such certification on behalf of the owner as having been completed, including the filing of all documentation and certifications required by the contract, in complete and acceptable form; or

(c) The project is certified by the contracting authority as having been completed, including the filing of all documentation and certifications required by the contract, in complete and acceptable form.

2. Nothing in this section shall prevent the contractor or subcontractor, at the time of application or certification to the public owner or contractor, from withholding such applications or certifications to the owner or contractor for payment to the subcontractor or material supplier. Amounts intended to be withheld shall not be included in such applications or certifications to the public owner or contractor. Reasons for withholding such applications or certifications shall include, but not be limited to, the following: unsatisfactory job progress; defective construction work or material not remedied; disputed work; failure to comply with other material provisions of the contract; third party claims filed or reasonable evidence that a claim will be filed; failure of the subcontractor to make timely payments for labor, equipment and materials; damage to a contractor or another subcontractor or material supplier; reasonable evidence that the contract cannot be completed for the unpaid balance of the subcontract sum or a reasonable amount for retention, not to exceed the initial percentage retained by the owner.

3. Should the contractor determine, after application or certification has been made and after payment has been received from the public owner, or after payment has been received by a contractor based upon the public owner's estimate of materials in place and work performed as provided by contract, that all or a portion of the moneys needs to be withheld from a specific subcontractor or material supplier for any of the reasons enumerated in this section, and such moneys are withheld from such subcontractor or material supplier, then such undistributed amounts shall be specifically identified in writing and deducted from the next application or certification made to the public owner or from the next estimate by the public owner of payment due the contractor, until a resolution of the matter has been achieved. Disputes shall be resolved in accordance with the terms of the contract documents. Upon such resolution the amounts withheld by the contractor from the subcontractor or material supplier shall be included in the next application or certification made to the public owner or the next estimate by the public owner and shall be paid promptly in accordance with the provisions of this section. This subsection shall also apply to applications or certifications made by subcontractors or material suppliers to the contractor and throughout the various tiers of the contracting chain.

4. The contracts which provide for payments to the contractor based upon the public owner's estimate of materials in place and work performed rather than applications or certifications submitted by the contractor, the public owner shall pay the contractor within thirty days following the date upon which the estimate is required by contract to be completed by the public owner, the amount due less a retainage not to exceed five percent. All such estimates by the public owner shall be paid promptly and shall be subject to late payment charges as provided in this subsection. After the thirtieth day following the date upon which the estimate is required by contract to be completed by the public owner, the contracting agency shall pay the contractor, in addition to the payment due him, interest at a rate of one and one-half percent per month calculated from the expiration of the thirty-day period until fully paid.

5. Nothing in this section shall prevent the owner from withholding payment or final payment from the contractor, or a subcontractor or material supplier. Reasons for withholding payment or final payment shall include, but not be limited to, the following: liquidated damages; unsatisfactory job progress; defective construction work or material not remedied; disputed work; failure to comply with any material provision of the contract; third party claims filed or reasonable evidence that a claim will be filed; failure to make timely payments for labor, equipment or materials; damage to a contractor, subcontractor or material supplier; reasonable evidence that a subcontractor or material supplier cannot be fully compensated under its contract with the contractor for the unpaid balance of the contract sum; or citation by the enforcing authority for acts of the contractor or subcontractor which do not comply with any material provision of the contract and which result in a violation of any federal, state or local law, regulation or ordinance applicable to that project causing additional costs or damages to the owner.

6. Notwithstanding any other provisions in this section to the contrary, no late payment interest shall be due and owing for payments which are withheld in good faith for reasonable cause pursuant to subsections 2 and 5 of this section. If it is determined by a court of competent jurisdiction that a payment which was withheld pursuant to subsections 2 and 5 of this section was not withheld in good faith for reasonable cause, the court may impose interest at the rate of one and one-half percent per month calculated from the date of the invoice and may, in its discretion, award reasonable attorney fees to the prevailing party. In any civil action or part of a civil action brought pursuant to this section, if a court determines after a hearing for such purpose that the cause was initiated, or a defense was asserted, or a motion was filed, or any proceeding therein was done frivolously and in bad faith, the court shall require the party who initiated such cause, asserted such defense, filed such motion, or caused such proceeding to be had to pay the other party named in such action the amount of the costs attributable thereto and reasonable expenses incurred by such party, including reasonable attorney fees.

**MoDOT DBE Program Regulations.** The contractor and each subcontractor are bound by the MoDOT DBE Program Regulations at Title 7 CSR 10, Chapter 8.

**CLEAN AIR AND WATER POLLUTION CONTROL:** (49 CFR Part 18.36(i)(12))

Contractors and subcontractors agree:

- a. That any facility to be used in the performance of the contract or subcontract or to benefit from the contract is not listed on the Environmental Protection Agency (EPA) List of Violating Facilities;
- b. To comply with all the requirements of Section 114 of the Clean Air Act, as amended, 42 U.S.C. 1857 et seq. and Section 308 of the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq. relating to inspection, monitoring, entry, reports, and information, as well as all other requirements specified in Section 114 and Section 308 of the Acts, respectively, and all other regulations and guidelines issued there under;
- c. That, as a condition for the award of this contract, the Contractor or subcontractor will notify the awarding official of the receipt of any communication from the EPA indicating that a facility to be used for the performance of or benefit from the contract is under consideration to be listed on the EPA List of Violating Facilities;

d. To include or cause to be included in any construction contract or subcontract which exceeds \$ 100,000 the aforementioned criteria and requirements.

**ENERGY CONSERVATION REQUIREMENTS:** (49 CFR Part 18.36(i)(3))

The Contractor agrees to comply with mandatory standards and policies relating to energy efficiency that are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act (Public Law 94-163).

## DBE ADMINISTRATION

1. **Eligibility of DBE's:** Only those firms currently certified as DBE's by the Missouri Department of Transportation (MoDOT), City of St. Louis, Metro, City of Kansas City, and Kansas City Area Transportation Authority are eligible to participate as DBE's on this contract. A list of these firms are available on MoDOT's Office of External Civil Rights webpage at the following address:

[http://www.modot.mo.gov/business/contractor\\_resources/External\\_Civil\\_Rights/DBE\\_program.htm](http://www.modot.mo.gov/business/contractor_resources/External_Civil_Rights/DBE_program.htm).

2. **Counting DBE Participation Towards DBE Goals:** DBE participation toward attainment of the goal will be computed on the basis of the subcontract prices agreed to between the contractor and subcontractors for the contract items or portions of items being sublet, as documented in the Bid Form. Credit will only be given for use of DBE's that are certified or accepted according to this specification. DBE participation shall be counted toward meeting the DBE goal in accordance with the following:

- a. **Commercially Useful Function:** The Sponsor shall count toward the DBE goal only those expenditures to DBE's that perform a commercially useful function in the work of the contract. A DBE performs a commercially useful function when it is responsible for execution of a distinct element of work by actually performing, managing, and supervising that work. To determine if a DBE is performing a commercially useful function, the amount of work subcontracted, industry practices, and other relevant factors will be evaluated. If consistent with industry practices, a DBE shall enter into a subcontract or other contractual written agreement. A DBE Contractor may subcontract a portion of the work up to the amount allowed under standard subcontracting contract provisions of normal industry practices. A DBE is presumed not to be performing a commercially useful function if the DBE is performing outside these guidelines.

- b. **Materials and Supplies:** The Sponsor shall count toward the DBE goal the expenditures for materials and supplies obtained from DBE suppliers and manufacturers as described below. The DBE's must assume the actual and contractual responsibility for the provision of the materials and supplies:

- (1) The entire expenditure to a DBE manufacturer will be counted toward the DBE goal. A manufacturer must operate or maintain a factory or establishment that produces on the premises the materials or supplies that are obtained by the contractor.

- (2) Sixty percent of expenditures to a DBE regular dealer will be counted toward the DBE goal. A regular dealer must perform a commercially useful function in the supply process including buying the materials or supplies, maintaining an inventory and regularly selling materials to the public. Bulk items such as steel, cement, gravel, stone and petroleum products need not be kept in stock, but the dealer must own or operate distribution equipment.

- (3) No credit will be given toward the DBE goal, if the prime contractor makes a direct payment to a non-DBE material supplier. However, it will be permissible for a material supplier to invoice the prime contractor and the DBE jointly and be paid by the prime contractor making remittance to the DBE firm and material supplier jointly.

- (4) No credit, toward the DBE goal, will be given for the cost of materials or equipment used in a DBE firm's work when those costs are paid by a deduction from the prime contractor's payment(s) to the DBE firm.

- c. **Work Classifications:** DBE credit will count toward the contractual goal only for work actually performed by the DBE firm and within the Standard Industry Classification (SIC) code approved for that firm. The credit will be counted in the following manner:

(1) Manufacturer: Credit is given for 100 percent of the value paid for materials furnished which becomes a permanent part of the project. A manufacturer is a firm that owns and operates the facilities to produce a product required by the project and purchased by the contractor.

(2) Supplier: Credit is given for 60 percent of the value paid for materials furnished which becomes a permanent part of the project. A supplier sells goods to the general public and maintains an inventory at an owned or leased warehouse or store. Bulk items such as steel, petroleum projects, or rock do not have to be maintained in an on-site inventory. Credit will not be given for the cost of the materials and separate credit for the hauling of those same materials. Transportation of the materials is deemed part of the total cost.

(3) Broker: Credit is given for 100 percent of the **fees** or **commission** received by the DBE firm for materials purchased, services provided, or equipment secured and resold to the contractor. Fees or commissions are defined as the difference between what the DBE firm paid for the materials purchased, services provided, or equipment secured and the price paid by the contractor to the DBE firm for those items. A broker does not manufacture or supply on a regular basis.

(4) Trucker: Credit is given for 100 percent of the amount paid to the DBE trucker if that trucking is performed by the DBE, with employees of the DBE, using equipment owned or long-term leased by the DBE. However, if the DBE firm uses leased trucks, at least one truck owned by the firm **must** be used on the project.

Full credit will not be given for leased trucks unless they are leased on a long-term basis from another DBE firm, DBE owner operators, or a recognized commercial leasing operation. Firms licensed by the Missouri Public Service Commission as leasing agents qualify as a recognized leasing operation. Lease of trucks from the prime contractor will not be credited toward the DBE goal, other than possibly the portion constituting broker fees and commissions. This type of relationship will be subject to strict scrutiny.

All trucks used must be labeled clearly and visibly with a sign indicating the firm owning or leasing the vehicle. MoDOT will require submittal of a truck roster report, including ownership and vehicle identification information, on a regular basis. MoDOT project office or other designated personnel will review the rosters for verification and will monitor the trucks operating on the project. MoDOT will conduct random verification and report any irregularities to the External Civil Rights Unit for review.

In order for the use of a DBE trucker to be credited for the delivered price of materials supplies, the trucker must be certified as a supplier or manufacturer of the material, responsible for the quality standards of the material, negotiating the material price, payment, and select the source.

- (a) Owner-Operator Trucking: The Sponsor shall count toward the DBE goal, the entire delivery fee paid to DBE owner-operators performing trucking for the contractor, if they appear on the contractor's payroll and separate records are furnished to the Sponsor documenting the expenditures. The records shall include for each owner-operator; their social security number; driver's license number; vehicle registration number; current vehicle license number; truck number; and a complete record of the contract fees paid to them.

If the DBE firm uses owner-operators to supplement their owned trucks, the DBE must be responsible for management and supervision of the entire trucking operation. The trucking arrangement or contract **cannot** be a contrived arrangement to meet the DBE goal. The DBE will be considered a broker, and only fees or

commissions received will count toward the goal, if the DBE is not in full control, or does not have employees or trucks on the project.

d. **Joint Venture:** When a joint venture contract is involved, the Sponsor shall count towards the DBE goal that portion of the contract total dollar value equal to the percentage of ownership and control of each DBE firm within the joint venture. Such crediting is subject to the sponsor's acceptance of the joint venture agreement. The Bidder must furnish the joint venture agreement with the DBE Participation Form. The joint venture agreement must include a detailed breakdown of the following:

- (1) Contract responsibility of the DBE for specific contract items of work,
- (2) Capital participation by the DBE,
- (3) Specific equipment to be provided by the DBE,
- (4) Specific responsibilities of the DBE regarding control of the joint venture,
- (5) Specific workers and skills to be provided by the DBE, and
- (6) Percentage distribution to the DBE of the projected profit or loss incurred by the joint venture.

The joint venture must be certified in writing by MoDOT.

3. **Award Documentation and Procedure:** All Bidders shall certify in the Bid Form their intent to meet or exceed the established goal or to demonstrate good faith efforts to meet the goal. Failure to make such certification or failure to demonstrate good faith efforts will render a bid non-responsive and will not be considered.

a. **DBE Participation Information:** All Bidders must complete the required DBE participation information in the Bid Form, when a DBE goal has been established for the project. The information shall demonstrate the contractor's intended participation by certified DBE's. The information furnished shall consist of:

- (1) The names and addresses of DBE firms that will participate in the contract;
- (2) A description of the work that each DBE will perform;
- (3) The dollar amount of the participation of each DBE firm participating;
- (4) Written documentation (signed contract bid) of the bidder/offeror's commitment to use a DBE subcontractor whose participation it submits to meet a contract goal;
- (5) If the contract goal is not met, evidence of good faith efforts (see paragraph c below).

(Note: After award of the contract, the MoDOT External Civil Rights Office will contact by mail each DBE firm participating in the contract, requesting written confirmation from the DBE that it is participating in the contract as provided in the Bid Form.)

b. **Sponsor Evaluation:** In selecting the lowest responsible bidder, the Sponsor and MoDOT will evaluate the DBE information provided with the bid. The Sponsor and MoDOT may request additional DBE information. Prior to awarding the contract, the Sponsor will verify verbally and/or in writing that the information submitted by the apparent successful bidder is accurate and complete.

c. **Good Faith Efforts:** If the bidder is unable to meet the DBE goal, the bidder must submit in and as part of its bid, written documentation and evidence of good faith efforts taken to meet the goal. Good faith efforts conducted after the bid opening will not be considered adequate to fulfill these bid requirements. Good faith efforts may include but are not limited to:

- (1) Efforts to select portions of the work for performance by DBE's, in order to increase the likelihood of achieving the DBE goal. This can include, but is not limited to, breaking down contracts into economically feasible units to facilitate DBE participation. Selection of portions of work shall be at least equal to the DBE goal.

(2) Written notification to individual DBE's likely to participate in the contract sent at least 7 calendar days prior to the bid opening. The notification shall list specific items or types of work and shall be sent to a reasonable number of DBE's qualified to participate in the contract.

(3) Efforts to negotiate with DBE's for specific items of work including:

- (a) Names, addresses, and telephone numbers of DBE's who were contacted, the dates of initial contact and information on further contacts made to determine with certainty if the DBE's were interested. Personal or phone contacts are expected;
  - (b) Description of the information provided to the DBE's regarding the plans, specifications and estimated quantities for portions of the work to be performed;
  - (c) Individual statements as to why agreements with DBE's were not reached; and
  - (d) Information on each DBE contacted but rejected and the reasons for the rejection.
- (4) Efforts to assist the DBE's that need assistance in obtaining bonding, insurance, or lines of credit required by the contractor.
- (5) Documentation that qualified DBE's are not available or not interested.
- (6) Advertisements in general circulation media, trade association publications and disadvantaged-focus media concerning subcontracting opportunities.
- (7) Efforts to use the services of available disadvantaged community organizations; disadvantaged contractor's groups; local, state and federal disadvantaged business assistance offices; and other organizations that provide assistance in recruitment and placement of DBE's.

The demonstration of good faith efforts by the contractor must prove the contractor actively and aggressively sought out DBE's to participate in the project. The following actions would not be considered acceptable reasons for failure to meet the DBE goal and would not constitute a good faith effort:

- (1) The DBE was unable to provide adequate performance and/or payment bonds.
- (2) A reasonable DBE bid was rejected based on price.
- (3) The DBE would not agree to perform the subcontract work at the prime contractors unit bid price.
- (4) Union versus non-union status of the DBE firm.
- (5) The prime contractor would normally perform all or most of the work included in this contract.
- (5) The prime contractor solicited DBE participation by mail only.

Should MoDOT and the city determine that the bidder's submitted documentation on good faith efforts are inadequate, the bidder must make a written request for administrative reconsideration within 2 working days of the notification on lack of good faith efforts. That notice may be faxed or emailed to:

**Lester Woods, Jr.**  
**External Civil Rights Administrator**  
**P. O. Box 270**  
**Jefferson City, Missouri 65102**  
**Telephone: (573) 751-2859**  
**Fax: (573) 526-0558**  
**E-Mail: [Lester.WoodsJr@modot.mo.gov](mailto:Lester.WoodsJr@modot.mo.gov)**

The Administrative Reconsideration Committee will include 3 individuals MoDOT deems appropriate and the members will be familiar with the DBE program, bidding, construction, and/or contracting matters. The External Civil Rights Unit will process the request, including providing documentation of the determination, and notify the Administrative Reconsideration

Committee of the request for review, however, the administrator, nor any member of MoDOT that had a part in the initial determination will be a part of the reconsideration determination.

As part of this reconsideration, the bidder will have the opportunity to provide written documentation or argument concerning the issue of whether it met the goal or made adequate good faith efforts to do so to the committee. The bidder may choose to meet in person with the Administrative Reconsideration Committee to discuss the finding. MoDOT and the city will notify the bidder, in writing of the decision on reconsideration, explaining the basis for finding that the bidder did or did not make adequate good faith efforts to meet the goal. The result of the reconsideration process is not administratively appealable to the USDOT.

4. **Post Award Compliance:** If the contract is awarded on less than full DBE goal participation, the contractor is not relieved of the responsibility to make a determined effort to meet the full goal amount during the life of the contract. In such a case, the contractor shall continue good faith efforts throughout the life of the contract to increase the DBE participation to meet the contract goal.

If a DBE is unwilling or unable to perform the work specified, the contractor shall request from the Sponsor and FAA, relief from the obligation to use that DBE. Efforts will be made by the contractor to acquire from the DBE a letter which states the reason the DBE is unwilling or unable to complete its obligations under the project. If this results in a DBE contract shortfall, the contractor shall immediately take steps to obtain another certified DBE to perform an equal dollar value of allowable credit. If a new DBE cannot be found, the contractor shall submit evidence of good faith efforts within 15 calendar days of the request for relief. The contractor shall submit the new DBE's name, address, work items and the dollar amount of each item. The sponsor and the FAA shall approve the new DBE before the DBE starts work.

If the contractor fails to conform to the approved DBE participation or if it becomes evident that the remaining work will not meet the approved participation, then the contractor shall submit evidence showing either how the contractor intends to meet the DBE participation, or what circumstances have changed affecting the DBE participation. If the sponsor is not satisfied with the evidence, then liquidated damages may be assessed for the difference between the approved and actual DBE participation.

5. **Records and Reports:** The contractor and all of its subcontractors shall keep records as necessary to determine compliance with the DBE obligations. The records shall include but are not limited to:
  - a. **Record of DBE Participation:** The names of disadvantaged and non-disadvantaged subcontractors, regular dealers, manufacturers, consultant and service agencies; the type of work or materials or services performed on or incorporated in the project; and the actual value of such work.
  - b. **Efforts to Utilize DBE Firms:** Documentation of all efforts made to seek out disadvantaged contractor organizations and individual disadvantaged contractors for work on this project. All correspondence, personal contacts, telephone calls, etc., to obtain the services of DBE's should be documented.

**Final DBE Certification:** Upon completion of the individual DBE firm's work, the prime contractor shall submit a certification letter attesting to the actual work performed by the DBE firm and the amount paid the DBE firm. This certification letter shall be signed by both the prime contractor and the DBE firm. A sample certification letter is available on the MoDOT Aviation website.

## EQUIPMENT/VEHICLE SPECIFICATIONS

### **Section A**

**Bid Item 1-** Technical Specifications for the Mobile Aircraft Rescue Fire Fighting Trainer (MARFFT) Trailer

### **Section B**

**Bid Item 2-** Technical Specifications for MARFFT Tractor Vehicle

**Bid Item 3-** Technical Specifications for Support Vehicle

**Technical Specifications**  
**Mobile Aircraft Rescue Fire Fighting Trainer**  
**(MARFFT)**  
**Trailer**  
**For**  
**FAA Central Region**  
**(Iowa, Kansas, Missouri and Nebraska)**  
**(MARFFT) - Performance Specification**  
**As outlined in FAA AC 150/5220-17B, 9/30/2010**

**A. OVERVIEW**

**A.1.** The following listed clarifications shall not limit the manufacturer from providing other innovative interior or exterior fire fighting techniques that would enhance the training evolutions in and around the MARFFT. Manufacturer shall present to the sponsor design concepts and off the shelf designs that will ensure the performance of the MARFFT. Models that have already been produced can be referenced as models for the FAA Central Region MARFFT purchase.

**A.2.** This document is intended for the manufacturer to provide a MARFFT that will satisfy training needs. The intention of the document is to specify certain requirements for the FAA Central Region. It isn't the intent of this document to design a totally new concept. Off the shelf technology is available and FAA Central Region's desire is to utilize this technology.

**A.3.** Introduction. The Mobile Aircraft Rescue Fire Fighting Trainer (MARFFT) is to meet the requirements of this document and **FAA AC 150/5220-17B, Aircraft Rescue and Fire Fighting (ARFF) Training Facilities**. The MARFFT will be used to provide rescue and live fire training primarily for the FAA Central Region (Iowa, Kansas, Missouri and Nebraska). The MARFFT will be used to provide rescue and live fire training secondarily anywhere in the continental United States.

**A.4.** The Missouri Highways and Transportation Commission (MHTC) is responsible for bid and acquisition.

**A.5. Background:** The FAA AC 150/5220-17B mandates initial and annual requalification live fire training for all certified airports to acquire and maintain proficiency in response to aircraft crash rescue and firefighting evolutions. Environmental considerations have constrained customary live fire proficiency training methods. Environmentally acceptable alternatives to traditional live fire training are required to ensure adherence to training requirements.

**A.6. Objective** -The objective of this procurement is to obtain a Commercial, Off -The Shelf (COTS), non-developmental Mobile Aircraft Rescue Fire Fighting Trainer (MARFFT). The MARFFT will be modifiable to the requirements specified herein to satisfy training requirements for FAA Central Region, Municipal Airport and Military fire fighting personnel under safe and controlled conditions in various geographical areas. The device shall be safe, self-sufficient, environmentally friendly and easily set up, maintained and operated, to provide continuous all weather training to ensure readiness in response to aircraft crash, rescue and firefighting. The unit shall utilize environmentally friendly fuel (propane), applied in a very unique manner capable of recreating a wide range of live fire conditions which can be selected to meet site specific training needs. The intent is to ensure that the knowledge of propane technology is relevant to experience, as the trainer required by the solicitation shall have the ability for a minimum of five firefighters to enter it and thus must be designed with the utmost regard for their safety and survivability. The MARFFT mobility shall allow Fire Service Instructors in the

## Section A- Specs for MARFFT Trailer

FAA Central Region the ability to train students at their location while using their fire apparatus in live fire training evolutions. The MARFFT will include, but not be limited to the following features:

**A.6.A.** Multi-skill level training capability

**A.6.B.** Total mobility

**A.6.C.** Provide "Hot Fire" training evolutions to meet FAA training requirements. "Hot Fire" is defined as Incident and Fire Scenarios as stated in FAA AC 150/5220-17B. This doesn't limit the manufacturer from providing other innovative interior or exterior fire fighting evolutions that would enhance the training capabilities in and around the MARFFT.

**A.6.D.** Cabin area flash over.

**A.6.E.** Authentic rescue situations.

**A.6.F.** Interior (flight deck, galley, overhead compartment, right cabin, left cabin AND cargo), fuselage, right wing engine, left wing engine, tail engine fuel spill, APU and wheel fire scenarios.

**A.6.G.** Environmentally friendly fuel with full HVAC and smoke system.

**A.6.H.** Complete remote control.

**A.6.I.** Meets all NFPA identified safety systems.

**A.6.J.** Economical operation – Must be able to setup MARFFT within 3 hours (maximum) and 900 sq. ft. spill pan fire system within 2 hours (maximum). Setup needs to be self-sufficient with two people (i.e. no forklift needed).

**A.6.K.** Life Span- The life span of the MARFFT will be 10 years with recommended service maintenance schedule.

**A.6.L.** Purchaser requests flames along the side of the mock-up separate from the flames from the spill, wheel/brake and engine fires. Flames along 70% of the left and right side of the MARFFT fuselage will enhance the training program. This will provide an opportunity to discharge agent on the fuselage for cutting a rescue path and cooling the fuselage.

**A.6.M.** Tail section of MARFFT will be squared similar to a box trailer with swing down ramp the full width of the trailer. The ramp will be designed to swing down totally from the back of the trailer and stay extended and shall not exceed a 25 degree incline.

**A.6.N.** Spill pans can be manufactured with aluminum with a size approximately 6' x 7'.

**A.6.O.** Wings will be a solid wing approximately 23 feet long (+/- 1 feet) approximately 4.5 wide at fuselage and 3.5 feet wide at the wing tip with permanently mounted engines that when wing is rotated and swung back, the engines can swing into the fuselage where the door, hatch and/or cut out panels have been removed or opened. When the wing swings out, the door, hatch and/or cut in panels are then reinstalled and/or swung shut for the training evolution. Fuselage will have a wing on each side mounted 60 inches above the ground +/- 6 inches.

**A.6.P.** If the tail engine is retractable, the tail engine will rotate up and down to be stowed inside the trailer when traveling and stored or the engine may be permanently mounted. The engine diameter will be approximately 20 inches in diameter and 4 feet long. If the tail engine is raised it will have a tail fin to simulate an actual aircraft. Bidder is to provide design concepts for purchaser consideration.

**A.6.Q.** Hard wire and pipe connections to trainer with cables placed in a trough at nose of unit. Discuss with requestor for concept ideas for the construction.

## Section A- Specs for MARFFT Trailer

**A.6.R.** Two cameras are to be installed inside the MARFFT to view the students: one camera at the front of interior and one camera at the rear of the interior.

**A.6.S.** Electrical and gas plumbing connections on MARFFT tractor and control station will be mounted so the connections point at a 45 degree angle to the ground instead of being horizontal to the ground.

**A.6.T.** Doors and hatches will be installed similar to commercial aircraft flight deck doors. This will challenge the responders to open the door to gain access to the flight deck fire. Doors will be located at L1 behind the flight deck and R2 will be located at rear of fuselage. Hatches will be over both wings.

**A.6.U.** Three zones ( 300 sq ft each) of fuel spill fire training props will be included. Spill pans will be 6' by 7' with a 1 ½' x 7' space between pans. The weight of the water in the pans will be sufficient weight to hold pans in place with braces between pans. No additional grates on top of pans will be required. Fuel spill pans will have a 1 1/2 inch drain plug in the side each spill pan. Pans will be approximately 3 ½ inches high +/- ½ inch. Pans can be loaded sideways onto a trailer. The metal braces between pans will be 18" by 18". Two braces will be used to hold spill pans together. The requestor will provide further details for the bidders.

**A.6.V.** The MARFFT will have a wheel assembly on each side of the fuselage, left and right. These will be attached to the wing similar to a stanchion to support the wing.

**A.6.W.** Install 1 ½ " diameter threaded plugs which can be removed from all units that hold water for ease of draining, vertical or horizontal as needed for the fireplaces, along the fuselage and spill pans.

**A.6.X.** A monitor screen will be mounted on the control pan directly in front of the control operator so interior camera views and exterior operations can be observed simultaneously.

**A.6.Y.** Water traps for the fire drains will be designed to hold water when in use but capable of being drained during freezing weather.

**A.7. Restrictions Imposed on Bidders:** This requirement is SAFETY critical. Bidders desiring to submit a bid in response to this solicitation are advised they must have commercially produced and successfully delivered 3 mobile fire trainers within the last five (5) years. It is also required that propane technology, to simulate fire in a confined interior space (fire training building, fixed site trainer, mobile trainer, etc.), be used. A confined space is defined as a room or enclosure surrounded by walls or bulkheads and accessible through a doorway or hatch, where, once inside, five firefighters would be confined while fighting a simulated fire that uses permanent (hard-piped) propane technology for fire simulation, including igniters, gas evacuation fans and emergency shutdown systems to protect the firefighters in the event of an emergency. In addition, this is a non- developmental requirement for manufacturers of similar systems whereby they can incorporate the modifications required by the solicitation using the propane technology of an existing trainer to produce the resultant MARFFT that simulates the look of an aircraft. Manufacturers of propane trainers meeting the criteria specified in the foregoing that have not commercially produced a trainer for sale but have built similar trainers for lease or rental shall receive the same consideration as companies that have sold a trainer.

### **B. Aircraft Mock-up, Fuel Spill Ground Fire and Control Station**

NOTE: The MARFFT shall be constructed in accordance to AC 150/5220-17B.

**B.1.** Wheel protection. The MARFFT should provide protection for the trailer tires during fuselage fires. The design shall allow one person to install. The panels may be swing up, swing down, carry to install or other configuration for ease of use.

**B.2.** Nitrogen purging for tanks.

**B.3.** The Aircraft Mock-up shall be constructed to require no structural repairs within a one-year period after acceptance by MHTC. The Aircraft Mock-up shall simulate a fixed wing aircraft (passenger and cargo). Types of fires shall include: cockpit; 70% of left and right side of fuselage, flight deck, galley, flashover, overhead compartment, front and rear of fuselage cargo and passenger compartments, APU, left side wheel assembly, right side wheel assembly, battery, and 2 wing engines (1 engine on each wing) and 1 tail engine. A/C150/5220-

## Section A- Specs for MARFFT Trailer

17B lists the required fireplaces. The Aircraft Mock-up fuselage will be divided into cockpit, passenger, and cargo areas and shall provide for fire on all sides of fuselage structure so that a minimum of 5 firefighter trainees, in full protective clothing and SCBA can approach from any direction, facing fire, without unreasonable cable or equipment obstruction. Note: It is understood that there will be a non-fire point on the Aircraft Mock-up where the control cables / piping is attached for operating the MARFFT. The Aircraft Mock-up and accessories shall be capable of withstanding the full force of a 1250 gpm truck mounted turret nozzle at full flow in straight stream, configuration at a distance of 50 feet. In addition, fires shall not be located beneath Aircraft Mock-up firefighter walkway/access surfaces.

**B.4.** The Aircraft Mock-up shall be configured with one low wing on each side of the fuselage, both with engines. Wing height will be as stated in FAA AC 155/5220-17B. The wings will be attached to the fuselage, to simulate various aircraft, for the training evolutions. The overall wingspan shall be approximately forty-eight feet when installed. Provide one four-blade propeller, approximately 6' diameter, light weight material that can be attached and rotated on either wing engine. A way to lock the propeller to prevent rotating will be included in the design.

**B.5. Hinged passenger entrances** (both sides of fuselage) with operable latches that simulate typical aircraft latches to hold the door closed. Entrance points shall also have operable latches that retain the doors in the "open" position. Entrance steps, cargo ramps, and over the wing access shall have a non-slip surface constructed of a punched metal material. The entrance steps shall mount to the Aircraft Mock-up while in use, and be removable for transport. The steps at the entrance doors shall be designed to preclude a stumbling hazard. Equal rise and run for all steps and wide enough for two (2) people in full fire-fighting protective clothing and SCBA to stand side by side, (one instructor and one student) hinged cargo door/ramp aft shall not exceed a 25 degree incline when opened. The doors shall be designed so the fire fighting hand lines may pass through the corners with ease.

**B.6. Passenger Seats.** Removable passenger seats shall be provided on both sides of a 20" center isle (Manufacturer will provide size, quantity and arrangement of seats per row on each side of the aisle). Ten (10) rows of seats minimum. Seats shall be capable of being rearranged in a row with their back against the fuselage on both sides of the aircraft's interior.

**B.7. Access Panels.** Twenty-four (24) large and 24 small replacement panels shall be provided with the unit.

**B.8. Tail.** If the tail engine swings up, the tail section with a tail mounted engine shall extend approx. 4 feet above the fuselage giving the ground to top height of approximately 13 to 20 feet.

**B.9.** The MARFFT and all support equipment shall require no more than 2 staff for safe transport. The MARFFT shall require no more than 2 personnel to setup, operate and pack up. The fuselage unit shall require no more than 2 personnel four man-hours for set-up/assembly time to make fully operational. Components shall be designed to withstand repeated heating and cooling while maintaining their integrity. If Special tools or equipment are required for maintenance, setup or operation of the MARFFT, the bidder shall supply them. Adequate tie down provisions with ratchet style tie down straps shall be provided for all unsecured items during transport. The MARFFT shall be designed to allow for easy access to all serviceable items on the unit to facilitate maintenance and repair. In the event of igniter fuel supply, or controller failure, the average meantime to repair shall not exceed 1.5 hours. Exterior features must minimize wind resistance during towing.

**B.10. Fuel-Spill Ground Fire.** The Aircraft Mock-up shall provide a fully portable, fully involved, zone controlled simulated fuel spill fire up to 900 sq. feet. The 900 ft. spill area will be constructed in three sections 300 square feet each. The approximate size of each section will be 7 feet by 43 feet. Low-profile fire pans shall include the following: (a) square area, (b) a firewall (which totally surrounds the perimeter of the aircraft) and (c) sectional spill fires to create multiple fires around sections of a downed aircraft. The Fuel Spill Burn Area shall require no more than an additional four (4) man-hours for 2 staff for set-up/assembly time to make fully operational.

**B.11-**The MARFFT shall consist of a Control Unit (CU) mounted on a tow vehicle and an Aircraft Mock-up. It is estimated that the MARFFT will be used for 40 sessions with an estimated 400 to 500 course burns in one year. The MARFFT will travel approximately 12,000 miles to present these sessions. This estimate of quantity of burns is for informational purposes only. This estimate may vary and the manufacturer shall, in good faith, provide a warranty that represents past experience with the manufacturer's existing mobile trainer. The

## Section A- Specs for MARFFT Trailer

MARFFT maintenance schedule, for onsite or to the plant maintenance, shall be arranged by mutual agreement between both parties.

**B.12. Safety Features-**The MARFFT shall incorporate numerous automatic shutdown and manual emergency override systems to ensure the highest possible level of Student and Instructor safety. The designed safety features shall have a field proven record in all types of climatic conditions and constructed according to A/C 150/5220-17B. The MARFFT shall include, but not be limited to the following features:

**B.12.A.** Main Control panel operator dead man foot cut off switch.

**B.12.B.** Safety Officer dead man cut off switch.

Additional types of fires shall include, but not be limited to, external/internal fuselage (cargo & passenger compartments), cockpit (cargo and fighter aircraft), left wing engine, right wing engine, tail engine, flight deck, galley, left cabin, right cabin, interior flashover, cargo, Auxiliary power Unit (APU), left and right wheel/brake and battery compartment..

**B.13.** The Master Control board shall be equipped with, but not limited to the features listed in B.13.A to B.13.E.

**B.13.A.** Watertight construction.

**B.13.B.** Selectable flame height control for the Fuel-Spill Burn Area:

- Low (minimum of 3 feet)
- Medium (a consistent approximate height of 8 feet)
- High (a maximum height of 15 to 20 feet)

**B.13.C.** Profile/zone graphics clearly depicting what switches controls the live fire burner(s). The term's left, right, front and rear of fuselage should identify the profiles. .

**B.13.D.** Control and status indication lights for the smoke generation system, fuel supply system and exhaust fans.

**B.13.E.** The Control Unit shall be self-contained and self-sufficient (not requiring external power). The MARFFT vehicle will have a minimum 24 k Volt generator.

**B.13.F** MARFFT and spill pan controls will be on same control panel.

**B.13.G. Manual** switches on control panel. Not a computer screen. No changing screens to modify the scenario.

**B.14.** Full Duplex communications equipment shall be provided for use between the Firefighting Team Leader and team members, the MARFFT Operator, Assistant MARFFT Operator, and the Safety Observer. Communications equipment shall be for use in a hostile firefighting environment. At a minimum, the equipment will provide for hands free operation with a continuous noise-canceling, live microphone. The system will provide full duplex communications to four (4) personnel at all times, noise reducing headsets, wireless communications for four headsets, a battery back-up for the system with re-charger, and a standard line-out jack to provide the capability to the record of all communications on the system. Bidders must provide supporting documentation establishing the quality or superiority of the communication system. Video recording and monitoring equipment shall be provided to record and observe both interior and exterior firefighting operations simultaneously at the control station. Exterior equipment shall be weather protected. Interior equipment shall be water resistant and suitable for use in an extreme heat environment. The video recording system shall be capable of receiving and recording the audio output from the communication system. The video recording equipment shall be capable of recording two copies simultaneously. All wiring shall be shielded from electronic interference.

**B.15. Hinged battery compartment.** A battery compartment shall be located below the flight deck and accessible from the exterior of the MARFFT. No smoke or flame is required for this option. The compartment will be constructed to hold a simulated battery constructed out of non-combustible material. A standard aircraft

## Section A- Specs for MARFFT Trailer

battery quick disconnect and cable will be used so students can actually turn the knob and separate the quick disconnect from the simulated battery. The size of the simulated battery will be similar to that of a 737 aircraft.

**B.16. Simulated Auxiliary Power Unit Fire.** The Aircraft Mock-up shall accommodate a Simulated Auxiliary Power Unit (APU) fire similar to commercial aircraft. The Simulated Auxiliary Power Unit shall be located in the aft section near the MARFFT floor line. The Simulated Auxiliary Power Unit fire shall have fire capability and fire access points for inserting fire fighting agent

**B.17. Smoke generation capabilities** that can create a zero visibility environment within the aircraft interior within 30 seconds, with or without the presence of live fire. Smoke generation with capability between 20,000 and 30,000 cfm output. The unit shall be of sufficient size to maintain obstructed view in the fuselage of the MARFFT when the burners/fire places are operating during burn scenarios and 5-gal (minimum) smoke fluid reservoir capability. Note: Smoke generation to be configured for use with the nitrogen provided for purging propane lines. The LFTU shall be able to produce non-toxic /non-flammable smoke with or without fire so as to conduct Self Contained Breathing Apparatus (SCBA) and search and rescue training. The unit shall be designed to provide for ventilation and dispersing of flammable gasses upon demand.

**B.18.** The Cockpit area shall consist of two seats. The left and right seats will be positioned to allow 6' rescue mannequins, weighing up to 145 lbs. each, to "sit" on the seat.

**B.18.A** Cockpit will be configured with simulated operable non-combustible fire handles, throttle, APU switch and fuel selector switch on the main control panel. A minimum of 3 non-combustible movable simulated switches and 3 simulated non-combustible T-handles on the overhead panel similar to a Boeing 727 console.

**B.18.B** A flight deck escape hatch, similar to a Bombardier Canadian Regional Jet 200 cockpit overhead escape hatch or equivalent, will be installed with similar removal and release handles installed. The hatch will be constructed to allow for one person to remove and replace.

**B.19. Maintenance Support Kit.** The Bidder shall provide a Maintenance Support Kit consisting of the manufacturer's recommended spare parts to support preventative maintenance to sustain operations for one year. The kit shall also contain a preventative maintenance schedule for 10 years.

**B.20. Training.** The vendor shall provide on-site certification training for up to 12 people. In addition to training provided by the manufacturer, a minimum of 3 (three) set up, burns and tear down operations will be completed in the training. The vendor will provide student manuals. An example of the training materials will be sent to MHTC two (2) months in advance of the trainer to allow time to evaluate the training program for completeness. MHTC requests a typical schedule showing the time breakdown for each aspect of the training during the 5 day course. The training site shall be at the Columbia Regional Airport, Columbia, MO.

**B.21.** The MARFFT shall meet all United States Department of Transportation (USDOT) requirements for commercial vehicles without waivers for size restrictions on primary and secondary interstates and highways in the continental United States. Consideration will include all states on a route between the manufacturer and the FAA Central Region. The MARFFT shall be self contained, self-sufficient and provided with a tow vehicle so it may be transported to, and operate at various geographical sites.

**B.22.** The MARFFT shall be capable of operating in areas that will include improved surfaces (paved) and unimproved surfaces (unpaved solid ground) in all FAA Central Region seasonal weather conditions including night operations.

**B.23.** A 500 gallon tank, or (2) 250-gallon tanks, shall be provided. Tank shall be DOT, NFPA and CFR 49 rated; capable of inside or outside storage and authorized for over the road transport. The system shall be designed to be filled by a commercial Bobtail Delivery Truck or equivalent with propane which will be stored in the MARFFT vehicle storage tanks.

**B.24. Option for factory refurbishment and overhaul of the MARFFT.** Bidders shall specify what overhaul will entail. In addition, the Bidders shall provide in their bid the time frame, based on usage that the unit is to be refurbished/overhauled at the bidders facility (unit to be delivered and picked up by a representative from The University of Missouri Fire & Rescue Training Institute).

## Section A- Specs for MARFFT Trailer

**B.25. Warranty-** The manufacturer shall include a one-year warranty from the date of final acceptance, for parts and labor due to material defects or design failure for the mock-up and all props. The tow vehicle shall include a normal manufacturer warranty of at least four years.

**B.26. Computer-**If computer technology is used; all software upgrades shall be provided, at no additional cost to the University of Missouri for 5 years.

**B.27.** The MARFFT fuselage interior will be constructed to allow for passenger seating the full length of the interior. The cargo box can be collapsed and not used. The interior will have capability to utilize up to a maximum of ten rows of seats. This will allow for variations to the training. Example: ½ of interior will have passenger seats the other ½ will be cargo box fire, or have a full interior with ten rows of passenger seats on left and right with the capability to remove seats on either side.

**B.28.** The seats will be designed to install a retaining pin in at least one of each seat foot retaining slots. This retaining pin hole will be positioned and designed so any seat on the left hand side or the right side of the aisle can be placed in a slot and all the pin holes will be the same. This will allow any seat on the left or right side to be installed without having to have the exact seat in the exact slot. The seats must be standardized to allow for placement of any seat in any slot.

**B.29.** Each wing will be one solid piece approximately 23 feet long with the engine permanently mounted. Wings will be designed to rotate and swing back and be flat against the fuselage with the engines entering the fuselage where a door/hatch or cut in panel is located. When the wing swings out, the door/hatch or cut in panel would be swung closed or a panel placed in the fuselage location.

**B.30.** The tail section of the training prop will be square without slope to provide for additional space for interior training. A ramp will be installed to load and unload the trainer; safety officer can view operations and assist with negative pressure ventilation. The rear opening will be a minimum of 6 ft. wide and 6 feet high. The ramp will be designed to provide full trailer width opening access for observing operations. The ramp will swing up and secure to the trailer for travel.

**B.31. Liquid** and propane header pipe will be installed in frame of MARFFT to provide connection points at the 4 corners of MARFFT to hook up propane lines to spill pan grids.

**B.32. Spill** pans will be designed with 3 separate units and each will cover 300 square feet. The sections will be designed so if half (150 sq. ft.) is desired, the 150 sq. ft. can stand alone.

**B.33** Truck and trailer to transport 900 sq. ft. portable fuel spill burn area with all associated equipment for the fuel spill fire area simulator operation will be provided.

**B.34.** Spill pans can be 6 ft. by 7 ft. made out of aluminum and capable of standing on side and sliding into a rail system on the support truck. The space between pans, when set up on the ground, will be 18 inches with an 18" x 18" grate at two corners to hold the pans together.

**B.35.** Fire along 70% of each side of the fuselage to depict fire engulfing the MARFFT fuselage on both sides.

**B.36.** The outside skin on the MARFFT, sides and top, will be 3/16" minimum.

**B.37.** The MARFFT control cab/deck will be mounted on the tractor that will pull the MARFFT as a self contained unit. An amber warning light, visible 360° around the training site, to be mounted on top of the control cab. This warning light to be automatically activated when the safety pendant is active.

**B.38.** The MARFFT will be capable of operating all fireplaces at the same time or each one separately. Fuel spill, flight deck, galley, cabin, cargo, flashover, fuselage both sides, APU, wing engines, tail engine, brake assembly and all other fires will be capable of burning simultaneously or individually for training scenarios.

**B.39.** Locking mechanisms. If any cabinets or padlocks are used, all the cabinets and padlocks will be keyed alike.

## Section A- Specs for MARFFT Trailer

**B.40.** The MARFFT, when traveling without fuel spill pans, shall be a standalone unit consisting of a Semi-tractor to pull the Mobile Trainer aircraft fuselage. The Semi-tractor shall have the propane tank(s), control center deck and, portions of or all, support equipment mounted on the Semi-tractor. The current MARFFT shall be an example of this concept which will allow for new concepts and designs to be utilized in developing the new MARFFT. Some of the training locations won't need the fuel spill pan fires, so the fuel spill pan components will be transported on a separate trailer which will be pulled by a separate vehicle which the bidder will include in the bid process.

**C.1. Support Equipment, Operations-**The MARFFT shall be equipped with the following items:

**C.1.A.** 10-man first aid kit.

**C.1.B.** Portable oxygen kit for medical first responder use on patients.

**C.1.C.** 4 rechargeable light packs, Similar quality as "Stream light" AC/DC rechargeable, 50,000 cp, for 3.75 hours.

**C.1.D.** 2 rescue mannequins, similar quality as "Rescue Randy" 110 lb., or equivalent and one (1) child rescue mannequin approx. 70 lbs. and one infant mannequin.

**C.1.E.** The MARFFT and all components shall be constructed with over the counter components that can be purchased by MHTC to perform maintenance on the unit.

### **D. Factory Progress Reviews**

**D.1.A** The MHTC reserves the right to inspect the unit while in production at any time with prior notice. At a minimum, the MHTC will inspect the unit at the following three stages of production:

- At the mounting of primary components to the frame of the transport vehicle and trailer.
- Before the components are painted.
- Before the unit is shipped for MHTC to observe the manufacturer performing operation and performance tests.
- Bidder must notify a MHTC representative, giving a two (2) week notice, to schedule these inspections.

**D.1.B.** Travel for factory inspection isn't the responsibility of the bidder.

**D.1.C.** The MARFFT shall be delivered upon completion to Columbia Regional Airport, Columbia, MO. MHTC reserve the right to send a representative to visit the plant at any stage of construction of the unit.

**D.2. Inspection and Acceptance.** Inspection and Acceptance (I&A) shall include operational testing. Acceptance shall be accomplished within 30 days of receipt. Bidders shall provide bids in response to this solicitation on the basis of FOB Destination, Columbia Regional Airport, in Columbia, MO. Inspection and acceptance shall be at destination. The successful Bidder shall provide onsite representatives to answer questions and assist during the I & A process for the unit, however, it shall be at no additional cost to MHTC. The Bidder shall be responsible for all repairs, travel costs, etc. for deficiencies that arise during the acceptance period. This includes response to poor technical data that precludes MHTC involved in the I&A process from operating the unit.

**E.** The MARFFT shall produce no substances, which would be considered pollutants to air, ground, or water. A water discharge analysis report, conducted by an independent testing laboratory, shall accompany the delivered MARFFT. All plumbing and electrical wiring shall be in accordance with Best Commercial Practice manufacturing standards.

# **Technical Specifications for Mobile Aircraft Rescue Fire Fighting Trainer (MARFFT) Tractor and Support Vehicle**

## **General Performance Use and Information**

- a. This semi-tractor will be primarily used to pull the MARFFT which will be 50 to 53 feet long, 102 inches wide, and no higher than 13 feet 6 inches high on a semi trailer frame. The MARFFT will be constructed of stainless steel and resemble an aircraft fuselage when being transported. Maximum anticipated load is 80,000 pounds.
- b. The tractor will have the following items mounted to the tractor frame which will dictate the tractor be designed and configured so the front axle doesn't exceed 12,000 pounds and rear dual axles don't exceed 32,000 pounds.
  - i. 24 K generator powered by the engine PTO or propane fired motor.
  - ii. One 500 gallon propane tank or two 250 gallon propane tanks. The bidder shall identify which tank setup is in bid.
  - iii. Control cab/deck to operate all associated controls for full operation of the MARFFT.
- c. Truck and trailer will be operated on public roads anywhere in the United States and Canada. We do not anticipate off road driving, but off-road parking on firm ground is anticipated.
- d. Designs and options available from manufacturer's change frequently. MHTC understands there may be a better way to build the MARFFT and components. Any exceptions to these specifications must be accompanied by a complete explanation of the reason and rationale for the exception in order to gain full consideration. While exceptions are not automatically disallowed, it is the responsibility of the bidder to justify that the exception meets or exceeds the performance called for in the specification. In the absence of this justification and explanation, the item will be considered as not complying with the specifications.

## **Engine**

The Engine shall have an electronic control system, which shall be capable of limiting the maximum road speed of the unit to 75 mph.

- a. Gross 425 hp at 2100 rpm minimum or greater diesel engine with internal Engine Brake/turbo Brake: three-stage, compression type, cruise control activated. It is desired that this system be equipped with a manual override. If this is not standard equipment, the successful bidder must list costs of this system in the optional equipment section.
- b. Electrical engine integral shutdown protection system.
- c. Block Heater: 120 volt, 1250 watts minimum. Block Heater Receptacle mounted conveniently close to the driver's door.
- d. Full Flow oil filtering system.
- e. Air cleaner restriction gauge with graduations.
- f. Easily accessible oil check and fill station(s).
- g. Electronic engine control road speed limited to 75 mph.
- h. Magnetic plugs, engine drain, transmission fill drain; axle(s) fill & drain.
- i. Air compressor-15.5 CFM or greater air compressor with Teflon compressor discharge lines.
- j. Fan: Air operated, positive on-off temperature controlled clutch type, with automatic mechanical lockup for loss of air pressure. Viscous drives and electric clutches not acceptable.
- k. Exhaust: Vertical RH stack, shielded along full height of cab. Dual stack exhaust acceptable.

## **Cooling System**

- a. Radiator must maintain engine operating temperatures within normal operating range even under full load highway speeds or, stationary running on 100+ °F days.
- b. Radiator must include automatic temperature controls to ensure fast warm-ups and maintaining operating temperatures on cold days.
- c. Radiator must include a snap-on winter front or zippered radiator cover.
- d. Configuration must include premium radiator hoses with constant tension hose clamps.

## Section B- Specs for MARFFT Tractor and Support Vehicle

- e. Radiator must include automatic control on/off fan drive with manual dash switch to aid in keeping engine cool in extreme conditions.
- f. Cooling system must include a coolant filter.
- g. Cooling system must incorporate and use (pre-charged for delivery) SCA heavy duty coolant to -34°F, ethylene glycol.

### Exhaust System

- a. Single Right hand exhaust directed down toward pavement or extended above the cab.
- b. No side discharging exhaust will be accepted.

### Transmission

Transmission shall be 10 speed auto-shift, such as Eaton/fuller RTO-16910 B-AS2; or Full automatic with Smart shift (electronic shift control) or Allison.

- a. Torque-limiting clutch break.
- b. Backup alarm clearly audible 60 feet from the cab. This alarm must sound automatically anytime the transmission is in reverse gear. No manual override shall be provided.
- c. Low Gear Ratio and Overdrive Ratio will be engineered to move the tractor, tractor mounted propane tank(s) (one each 500 gallon or 2 each 250 gallon), tractor mounted control cab and the mobile aircraft fire fighting trainer (MARFFT) on highways anywhere in the continental United States and Canada at 70 to 75 mph with limited slowdown on average inclines. Overpasses and half mile inclines shouldn't inhibit the operational speed.
- d. Magnetic plugs, engine drain, transmission fill & drain, axle(s) fill & drain.
- e. Transmission oil cooler.

Note: A standard clutch and transmission option will not be considered as meeting this specification.

### Drive Axle Ratio

Drive axle ratio shall be between 3.70:1 and 4.33:1. If this ratio is inappropriate for the load, bidder will submit justification to modify to MHTC for review.

### Chassis

- a. Business class extended cab. Cab will seat two comfortably for 1,600 mile trips.
- b. Maximum expected GCWR: 80,000 lbs.
- c. Expected front axle load 12,000 lbs
- d. Expected rear axle load 34,000 lbs
- e. Expected GVW 60,000 lbs
- f. 2 front frame mounted Tow hooks
- g. Left and right hand rear steps with grab handles for easy access to rear deck plate for attaching cables to trailer.
- h. Rear deck plate (working surface between rails). This is a working surface when securing trailer connections.
- i. Aerodynamic front bumper.
- j. Recessed step in front bumper
- k. License plate brackets front and rear
- l. Rear stainless steel (or chrome plated) spring mounted mud flap brackets with mud flaps.
- m. Stainless steel quarter fenders if forward of the front set of duals to reduce flying objects from tires.
- n. Front anti-spray cab mounted mud flaps.

### Wheel Base

- a. Wheel base and C/A dimensions shall be suitable for installation of an air up/down pusher axle

### Steer Axle

## Section B- Specs for MARFFT Tractor and Support Vehicle

- b. 13,200 lb. minimum w/wet (oil) hubs
- c. 13,200 lb. minimum parabolic springs
- d. Set forward axle preferred, set back axle acceptable.
- e. Front axle with power steering, air brakes with automatic slack adjusters, and Tapered Leaf springs; (Meritor, Eaton, or Dana Spicer brands or equivalent).
- f. Cast iron front brake drums.
- g. Taper leaf front suspension.
- h. Front shock absorbers.
- i. Power steering pump.

### Drive Axles

- a. 46,000 lb minimum tandem, power divider w/air actuated lockout.
- b. 4-bag air suspension, 8-bag acceptable.
- c. Tandem 40,000 lb axles with air suspension, driver controlled Posi-traction differential lock (Meritor, Eaton or Dana Spicer Brand or equivalent.)
- d. Inter axle lock with driver control with indicating light(s). The intent of this item is to provide the capability of locking all rear driving wheels for slow speed special applications.
- e. Rear Air suspension (air ride).
- f. Manual dump valve for air suspension with indicator light, with gauge, and with buzzer.
- g. Single air rear suspension leveling valve.
- h. Rear shock absorbers-two axles (tandem) (air ride suspension).
- i. Magnetic axel plugs for fill & drain.

### Wheels

- a. Hub piloted, 10 bolt Budd style wheels at all positions.
- b. Dual wheels at all drive positions. Super singles are not acceptable.
- c. Front tires, Hubs, and wheels.
  - i. Appropriate size and rating for the GVW of this vehicle with a highway tread pattern
  - ii. Preset Bearing Aluminum front hubs.
  - iii. Front wheels: Appropriate size and rating for the GVW of this vehicle with a 10 bolt pattern hub.
  - iv. Wheels shall be polished aluminum.
- d. Rear tires, Hubs, and wheels.
  - i. Appropriate size and rating for the GVW of this vehicle with a lug tread pattern.
  - ii. Pre-Set Bearing aluminum rear hubs.
  - iii. Rear wheels 10 bolt pattern hub.
  - iv. Wheels shall be polished aluminum.
  - v. Inner dual tires/wheels will include inflation valve extenders with stabilizers to allow easy checking and inflating tires.

### Tires

- a. Steer- tubeless radials, highway tread, matching.
- b. Drive- tubeless radials, highway or all-season tread, matching.

### Brakes

- a. Cam actuated drum brakes, all wheels.
- b. Spring set parking brake chambers, all drive wheels.
- c. Automatic slack adjusters, all wheels.
- d. 4 channel anti-lock brake system, Bendix preferred.
- e. Heated air dryer with automatic purge valve and replaceable desiccant cartridge.
- f. Air brake system with standard controls (parking trailer, and trailer lever controller) with air dryer.
- g. Brake shall employ Antilock Braking System (ABS) technology.
- h. Steel air brake reservoirs.
- i. Pull cables on all air reservoirs.
- j. Quick disconnect fitting with hose for tire inflation kit.
- k. An electric brake controller must be installed to accommodate trailers with electric brakes. The controller must be mounted to accommodate easy use by the driver.

## Section B- Specs for MARFFT Tractor and Support Vehicle

### Trailer Hookup

- a. Sliding 5<sup>th</sup> wheel w/cab controlled air lock. Must be able to center pin between drive axles.
- b. 12' coiled blue service air hose with gladhand.
- c. 12' coiled red emergency air hose with gladhand.
- d. 12' coiled trailer lighting cable with 7-pin plug.
- e. Cab mounted hose tender for securing hoses and cable when not in use.
- f. Must be compatible with trailer ABS.
- g. 18" stainless steel slide bar w/spring type trailer air hose hanger.
- h. Combination dummy glad hands and light plug holder.
- i. Switch & indicator light for primary receptacle center pin, label 'Trlr Aux'.
- j. 7 way primary trailer cable receptacle designed to accommodate a trailer with air brakes.
- k. 7 way primary trailer cable receptacle designed to accommodate a trailer with electric Brakes.

NOTE: It is acceptable for trailer connections for both air and electronic brake receptacles to be combined into one connection if possible.

### Cab

Business class extended cab. Sleeper is not acceptable. Cab shall be one integral (aerodynamic) unit. Specific length of the extended cab must be stated in the bid. The extended portion of the unit shall not be a box bolted on in back of the cab. This unit must be incorporated as an integral part of the vehicle cab.

- a. Wipers Heavy-duty windshield wiper system w/intermittent operation.
- b. Electric powered mirrors west coast style, heated, left and right mirrors will electrically adjust left, right, up and down.
- c. Air cab mounts.
- d. Hood tunnel/firewall noise abatement and insulation.
- e. Dual 24" round polished air horns.
- f. Electric horn.
- g. Dual horn shields.
- h. All locks keyed the same.
- i. Halogen front headlights.
- j. Day time running lights (lights that remain on automatically when the engine is running).
- k. LED lights wherever possible.
- l. Back up lights. Back up lights may be mounted on the back of cab or frame.
- m. Front and rear turn signals.
- n. Four work lights dual controls driver positioned switch and rear of cab accessible from ground (backup lights may be part of the work light specification provided that they can be controlled/operated independent of the transmission being in reverse gear).
- o. Front removable grille bug screen.
- p. Left and right grab handles to aid in getting in and out of cab.
- q. Left and Right hand mirrors
  - i. Heated, power, and dual axis (in and out as well as up and down movement) compatible with a 102" trailer width.
  - ii. Convex mirrors, Integral with primary mirrors for extended vision both sides
  - iii. Right hand down mirror.
  - iv. Left and right hand fender mounted 8" convex mirrors and brackets, bright standard side and rear reflectors.
  - v. All external mounted mirrors must be "break-away" mirrors designed to break away from the cab with minimal damage to the cab in the event of the mirror being torn off by an external force.
- r. Tinted cab windows and windshield.
- s. Windshield washer reservoir with fluid level indicator (this specification may be met via a clear or translucent container/reservoir).
- t. Look out window on the lower right hand door.
- u. Premium noise abatement must be provided throughout the cab, including walls, ceiling/roof and floors.

## Section B- Specs for MARFFT Tractor and Support Vehicle

- v. Three Triangular reflectors and a 10 lb. ABC rated Fire extinguisher for use during highway emergencies that are compatible with USDOT hazardous materials transportation.
- w. Vinyl interior with vinyl/carpet door trim in a complimentary color (grey or tan preferred).
- x. Two dash or console mounted 12 volt power port for auxiliary equipment and devices (lighter socket style).
- y. Forward roof mounted glove box/storage compartments; driver and passenger side.
- z. Left and right hand door storage pockets integrated into molded door panels.
- aa. Heater, defroster and air conditioner with constant outlet temperature control.
  - i. HVAC ducting with main fresh air filter.
  - ii. Main HVAC controls with recirculation switch.
  - iii. HVAC controls set in cab easily accessible from driver position.
- bb. Door activated dome/reading/red map lights left and right hand overhead for all doors.
- cc. High back air suspension driver and passenger seats with adjustable seat cushion and lumbar support.
- dd. Dual arm rests driver and passenger seats.
- ee. Vinyl w/cloth insert for driver and passenger seat.
- ff. Three point adjustable d-ring retractor driver and passenger seatbelts.
- gg. Steering wheel air bag supplemental restraint system.
- hh. Passenger side air bag if available. Bid shall state if this item is included in the bid.
- ii. Adjustable tilt and telescoping steering column.
- jj. Driver/passenger interior sun visors with vanity mirrors.
- kk. No seating in the extended cab.

### Instruments and Controls

- a. Back lighted gauges when possible.
- b. Low air pressure light and buzzer.
- c. Gauges shall include the following gauges as a minimum.
  - i. Fuel gauge.
  - ii. Engine coolant temp gauge.
  - iii. Engine oil pressure gauge.
  - iv. Voltmeter.
  - v. Speedometer/mileage meter/odometer.
  - vi. Tachometer.
  - vii. Hour meter.
  - viii. Primary & secondary air pressure gauges.
  - ix. Outside temperature.
  - x. Compass to indicate the direction the tractor is pointed/traveling.
- d. Cruise control-electronic engine control, with steering wheel or dash mounted controls.
- e. Key operated ignition switch & integral start position; 4 position off/run/ start/acc.
- f. Diagnostic interface connector.
- g. Performance connector and any associated programs. This is used to down load drivers/engine performance to our laptop/PDA not to control engine settings.
- h. CD/AM/FM/WB/radio with 2 speakers with capability to plug in external source.
- i. Multi-band am/fm/wb/cb dual mirror mounted antenna system.
- j. Tractor protection valve.
- k. Trailer brake valve, hand control.
- l. Single electric windshield wiper motor with intermittent operation and washer.
- m. Marker lights and headlight switch with separate interrupter for clearance lights.
- n. Two valve parking brake system with warning indicator.
- o. Self canceling turn signal switch (turn signals must include an audible device to indicate when the turn signal is engaged).
- p. 12 volt 25 amp heavy duty electronic flasher.
- q. Power door locks, left and right hand.
- r. Power windows, left and right hand.

### Color

- a. White
- b. Door decal with MoDOT/MU FRTI designated design on driver and passenger front doors. Decal

## Section B- Specs for MARFFT Tractor and Support Vehicle

will be designed and approved by MoDOT/MU FRTI.

### Electrical System

- a. 12volt, 150 amp alternator with remote battery volt sensor & temperature compensated regulator.
- b. Auto self reset circuit breakers.
- c. Batteries: 12 volt negative ground, stud batteries. Batteries must be easily accessible for maintenance and have a minimum of 3000 cold cranking amps.
- d. 12 Volt starter with over load protection.
- e. Battery shutoff switch or switches in cab mounted outboard of driver's seat.
- f. One Positive post located for jump-starting from an external source.
- g. Low voltage battery disconnect at 12.3 volts for isolated circuits with one minute alarm (to provide protection for the electronics within the unit).
- h. Appropriate DOT highway lighting.
- i. LED light(s) where possible.

### Fuel tanks

- a. Prefer fuel tanks in forward position.
- b. Minimum total fuel carrying capacity of 200 gallons.
- c. Two equal sized tanks, one placed on each side of the tractor.
- d. Tanks polished aluminum with polished stainless steel bands.
- j. If fuel tanks are mounted in a cab forward position, tanks must include nonskid steps for cab access.
- e. Fuel/water separator with heated bowl and primer pump.
- f. Separate fuel filter, accessible for driver to clean/change during travel.
- g. Fuel tanks shall have equalizer plumbing such as the Equiflo system with right and left
- a. Hand shut off valves.
- h. Reinforced fuel lines.
- i. Tank(s) shall be constructed of aluminum. Steel tanks will not be accepted.

### **Additional Requirements**

MHTC reserves the right to set up a visual inspection **and/or test drive** of proposed unit before acceptance for purchase.

### Manuals

- a. Unit shall be delivered with Operator's Manuals for all supplied components.
- b. One copy of the service/repair manual for this vehicle must be provided. This manual will be used by technicians in maintaining and servicing this unit.
- c. Manual may be on a standard Compact Disk (CD) provided the document format is PDF or another common format that does not require proprietary software.
- d. If the format of a CD requires proprietary software to view, the service manual must be provided in printed form.
- e. One copy of any software (if needed) and appropriate cable(s) for customer downloading of information on truck performance via on-board data terminal(s).

NOTE: The intent of this requirement is to download vehicle and driver performance information. It is not the intent of this requirement to gain access to proprietary engine system controls.

### Access Doors

One access door on each side of the vehicle allowing access into the extended (interior) portions of the cab from the exterior of the truck is a desirable option. These access doors should be hinged and operated from interior pull cables accessible from the ground via the passenger doors (similar to those on a Class 8 Semi-Tractor). Exterior handles are not desirable. These access doors should be as large as engineering requirements allow. The size of the doors should be identified in the bid.

Warranties are considered part of the purchase. Please list base warranties that have been included in your bid. Additional warranty and warranty extension options may be listed with associated costs.

## Section B- Specs for MARFFT Tractor and Support Vehicle

### SUPPORT VEHICLE

#### General Performance Use and Information

This tractor-trailer will be primarily used to support the MARFFT. The support vehicle will be designed to transport 900 square feet of spill fire components. Trailer to be industry standard quality, 53' in length, 102" width, and not more than 13'6" in height. Rear doors to be swing, roof to be translucent.

#### Engine

The Engine shall have an electronic control system, which shall be capable of limiting the maximum road speed of the unit to 75 mph.

- a. Gross 425 hp at 2100 rpm minimum or greater diesel engine with internal Engine Brake/turboBrake: three-stage, compression type, cruise control activated. It is desired that this system be equipped with a manual override. If this is not standard equipment, the successful bidder must list costs of this system in the optional equipment section.
- b. Electrical engine integral shutdown protection system.
- c. Block Heater: 120 volt, 1250 watts minimum. Block Heater Receptacle mounted conveniently close to the driver's door.
- d. Full Flow oil filtering system.
- e. Air cleaner restriction gauge with graduations.
- f. Easily accessible oil check and fill station(s).
- g. Electronic engine control road speed limited to 75 mph.
- h. Magnetic plugs, engine drain, transmission fill drain; axle(s) fill & drain.
- i. Air compressor-15.5 CFM or greater air compressor with Teflon compressor discharge lines.
- j. Fan: Air operated, positive on-off temperature controlled clutch type, with automatic mechanical lockup for loss of air pressure. Viscous drives and electric clutches not acceptable.
- k. Exhaust: Vertical RH stack, shielded along full height of cab. Dual stack exhaust acceptable.

#### Cooling System

- a. Radiator must maintain engine operating temperatures within normal operating range even under full load highway speeds or, stationary running on 100+ °F days.
- b. Radiator must include automatic temperature controls to ensure fast warm-ups and maintaining operating temperatures on cold days.
- c. Radiator must include a snap-on winter front or zippered radiator cover.
- d. Configuration must include premium radiator hoses with constant tension hose clamps.
- e. Radiator must include automatic control on/off fan drive with manual dash switch to aid in keeping engine cool in extreme conditions.
- f. Cooling system must include a coolant filter.
- g. Cooling system must incorporate and use (pre-charged for delivery) SCA heavy duty coolant to - 34°F, ethylene glycol.

#### Exhaust System

- a. Single Right hand exhaust directed down toward pavement or extended above the cab.
- b. No side discharging exhaust will be accepted.

#### Transmission

Transmission shall be 10 speed auto-shift, such as Eaton/fuller RTO-16910 B-AS2; or Full automatic with Smart shift (electronic shift control) or Allison.

- a. Torque-limiting clutch break.
- b. Backup alarm clearly audible 60 feet from the cab. This alarm must sound automatically anytime the transmission is in reverse gear. No manual override shall be provided.

## Section B- Specs for MARFFT Tractor and Support Vehicle

- c. Low Gear Ratio and Overdrive Ratio will be engineered to move the tractor, tractor mounted propane tank(s) (one each 500 gallon or 2 each 250 gallon), tractor mounted control cab and the mobile aircraft fire fighting trainer (MARFFT) on highways anywhere in the continental United States and Canada at 70 to 75 mph with limited slowdown on average inclines. Overpasses and half mile inclines shouldn't inhibit the operational speed.
- d. Magnetic plugs, engine drain, transmission fill & drain, axle(s) fill & drain.
- e. Transmission oil cooler.

Note: A standard clutch and transmission option will not be considered as meeting this specification.

### **Drive Axle Ratio**

Drive axle ratio shall be between 3.70:1 and 4.33:1. If this ratio is inappropriate for the load, bidder will submit justification to modify to RFB Coordinator for review.

### **Chassis**

- a. Cab to be crew cab. Sleeper will not meet this requirement. Cab will seat four comfortably for 1,600 mile trips.
- b. Maximum expected GCWR: 80,000 lbs.
- c. Expected front axle load 12,000 lbs
- d. Expected rear axle load 34,000 lbs
- e. Expected GVW 60,000 lbs
- f. 2 front frame mounted Tow hooks
- g. Left and right hand rear steps with grab handles for easy access to rear deck plate for attaching cables to trailer.
- h. Rear deck plate (working surface between rails). This is a working surface when securing trailer connections.
- i. Aerodynamic front bumper.
- j. Recessed step in front bumper
- k. License plate brackets front and rear
- l. Rear stainless steel (or chrome plated) spring mounted mud flap brackets with mud flaps.
- m. Stainless steel quarter fenders if forward of the front set of duals to reduce flying objects from tires.
- n. Front anti-spray cab mounted mud flaps.

### Wheel Base

Wheel base and C/A dimensions shall be suitable for installation of an air up/down pusher axle.

### Steer Axle

- a. 13,200 lb. minimum w/wet (oil) hubs
- b. 13,200 lb. minimum parabolic springs
- c. Set forward axle preferred, set back axle acceptable.
- d. Front axle with power steering, air brakes with automatic slack adjusters, and Tapered Leaf springs; (Meritor, Eaton, or Dana Spicer brands or equivalent).
- e. Cast iron front brake drums.
- f. Taper leaf front suspension.
- g. Front shock absorbers.
- h. Power steering pump.

### Drive Axles

- a. 46,000 lb minimum tandem, power divider w/air actuated lockout.
- b. 4-bag air suspension, 8-bag acceptable.
- c. Tandem 40,000 lb axles with air suspension, driver controlled Posi-traction differential lock (Meritor, Eaton or Dana Spicer Brand or equivalent.)
- d. Inter axle lock with driver control with indicating light(s). The intent of this item is to provide the

## Section B- Specs for MARFFT Tractor and Support Vehicle

- capability of locking all rear driving wheels for slow speed special applications.
- e. Rear Air suspension (air ride).
- f. Manual dump valve for air suspension with indicator light, with gauge, and with buzzer.
- g. Single air rear suspension leveling valve.
- h. Rear shock absorbers-two axles (tandem) (air ride suspension).
- i. Magnetic axel plugs for fill & drain.

### Wheels

- a. Hub piloted, 10 bolt Budd style wheels at all positions.
- b. Dual wheels at all drive positions. Super singles are not acceptable.
- c. Front tires, Hubs, and wheels.
  - v. Appropriate size and rating for the GVW of this vehicle with a highway tread pattern
  - vi. Preset Bearing Aluminum front hubs.
  - vii. Front wheels: Appropriate size and rating for the GVW of this vehicle with a 10 bolt pattern hub.
  - viii. Wheels shall be polished aluminum.
- d. Rear tires, Hubs, and wheels.
  - vi. Appropriate size and rating for the GVW of this vehicle with a lug tread pattern.
  - vii. Pre-Set Bearing aluminum rear hubs.
  - viii. Rear wheels 10 bolt pattern hub.
  - ix. Wheels shall be polished aluminum.
  - x. Inner dual tires/wheels will include inflation valve extenders with stabilizers to allow easy checking and inflating tires.

### Tires

- a. Steer- tubeless radials, highway tread, matching.
- b. Drive- tubeless radials, highway or all-season tread, matching.

### Brakes

- a. Cam actuated drum brakes, all wheels.
- b. Spring set parking brake chambers, all drive wheels.
- c. Automatic slack adjusters, all wheels.
- d. 4 channel anti-lock brake system, Bendix preferred.
- e. Heated air dryer with automatic purge valve and replaceable desiccant cartridge.
- f. Air brake system with standard controls (parking trailer, and trailer lever controller) with air dryer.
- g. Brake shall employ Antilock Braking System (ABS) technology.
- h. Steel air brake reservoirs.
- i. Pull cables on all air reservoirs.
- j. Quick disconnect fitting with hose for tire inflation kit.
- k. An electric brake controller must be installed to accommodate trailers with electric brakes. The controller must be mounted to accommodate easy use by the driver.

### Trailer Hookup

- a. Sliding 5<sup>th</sup> wheel w/cab controlled air lock. Must be able to center pin between drive axles.
- b. 12' coiled blue service air hose with gladhand.
- c. 12' coiled red emergency air hose with gladhand.
- d. 12' coiled trailer lighting cable with 7-pin plug.
- e. Cab mounted hose tender for securing hoses and cable when not in use.
- f. Must be compatible with trailer ABS.
- g. 18" stainless steel slide bar w/spring type trailer air hose hanger.
- h. Combination dummy glad hands and light plug holder.
- i. Switch & indicator light for primary receptacle center pin, label 'Trlr Aux'.
- j. 7 way primary trailer cable receptacle designed to accommodate a trailer with air brakes.
- k. 7 way primary trailer cable receptacle designed to accommodate a trailer with electric
- l. Brakes.

NOTE: It is acceptable for trailer connections for both air and electronic brake receptacles to be combined into one connection if possible.

## Section B- Specs for MARFFT Tractor and Support Vehicle

### Cab

- a. Wipers Heavy-duty windshield wiper system w/intermittent operation.
- b. Electric powered mirrors west coast style, heated, left and right mirrors will electrically adjust left, right, up and down.
- c. Air cab mounts.
- d. Hood tunnel/firewall noise abatement and insulation.
- e. Dual 24" round polished air horns.
- f. Electric horn.
- g. Dual horn shields.
- h. All locks keyed the same.
- i. Halogen front headlights.
- j. Day time running lights (lights that remain on automatically when the engine is running).
- k. LED lights wherever possible.
- l. Back up lights. Back up lights may be mounted on the back of cab or frame.
- m. Front and rear turn signals.
- n. Four work lights dual controls driver positioned switch and rear of cab accessible from ground (backup lights may be part of the work light specification provided that they can be controlled/operated independent of the transmission being in reverse gear).
- o. Front removable grille bug screen.
- p. Left and right grab handles to aid in getting in and out of cab.
- q. Left and Right hand mirrors
  - i. Heated, power, and dual axis (in and out as well as up and down movement) compatible with a 102" trailer width.
  - ii. Convex mirrors, Integral with primary mirrors for extended vision both sides
  - iii. Right hand down mirror.
  - iv. Left and right hand fender mounted 8" convex mirrors and brackets, bright standard side and rear reflectors.
  - v. All external mounted mirrors must be "break-away" mirrors designed to break away from the cab with minimal damage to the cab in the event of the mirror being torn off by an external force.
- r. Tinted cab windows and windshield.
- s. Windshield washer reservoir with fluid level indicator (this specification may be met via a clear or translucent container/reservoir).
- t. Look out window on the lower right hand door.
- u. Premium noise abatement must be provided throughout the cab, including walls, ceiling/roof and floors.
- v. Three Triangular reflectors and a 10 lb. ABC rated Fire extinguisher for use during highway emergencies that are compatible with USDOT hazardous materials transportation.
- w. Vinyl interior with vinyl/carpet door trim in a complimentary color (grey or tan preferred).
- x. Two dash or console mounted 12 volt power port for auxiliary equipment and devices (lighter socket style).
- y. Forward roof mounted glove box/storage compartments; driver and passenger side.
- z. Left and right hand door storage pockets integrated into molded door panels.
- aa. Heater, defroster and air conditioner with constant outlet temperature control.
  - i. HVAC ducting with main fresh air filter.
  - ii. Main HVAC controls with recirculation switch.
  - iii. HVAC controls set in cab easily accessible from driver position.
- bb. Door activated dome/reading/red map lights left and right hand overhead for all doors.
- cc. High back air suspension driver and passenger seats with adjustable seat cushion and lumbar support.
- dd. Dual arm rests driver and passenger seats.
- ee. Vinyl w/cloth insert for driver and passenger seat.
- ff. Three point adjustable d-ring retractor driver and passenger seatbelts.
- gg. Steering wheel air bag supplemental restraint system.
- hh. Passenger side air bag if available. Bid shall state if this item is included in the bid.
  - ii. Adjustable tilt and telescoping steering column.
- jj. Driver/passenger interior sun visors with vanity mirrors.

## Section B- Specs for MARFFT Tractor and Support Vehicle

- kk. No seating in the extended cab.

### Instruments and Controls

- a. Back lighted gauges when possible.
- b. Low air pressure light and buzzer.
- c. Gauges shall include the following gauges as a minimum.
  - i. Fuel gauge.
  - ii. Engine coolant temp gauge.
  - iii. Engine oil pressure gauge.
  - iv. Voltmeter.
  - v. Speedometer/mileage meter/odometer.
  - vi. Tachometer.
  - vii. Hour meter.
  - viii. Primary & secondary air pressure gauges.
  - ix. Outside temperature.
  - x. Compass to indicate the direction the tractor is pointed/traveling.
- d. Cruise control-electronic engine control, with steering wheel or dash mounted controls.
- e. Key operated ignition switch & integral start position; 4 position off/run/ start/acc.
- f. Diagnostic interface connector.
- g. Performance connector and any associated programs. This is used to download drivers/engine performance to our laptop/PDA not to control engine settings.
- h. CD/AM/FM/WB/radio with 2 speakers with capability to plug in external source.
- i. Multi-band am/fm/wb/cb dual mirror mounted antenna system.
- j. Tractor protection valve.
- k. Trailer brake valve, hand control.
- l. Single electric windshield wiper motor with intermittent operation and washer.
- m. Marker lights and headlight switch with separate interrupter for clearance lights.
- n. Two valve parking brake system with warning indicator.
- o. Self canceling turn signal switch (turn signals must include an audible device to indicate when the turn signal is engaged).
- p. 12 volt 25 amp heavy duty electronic flasher.
- q. Power door locks, left and right hand.
- r. Power windows, left and right hand.

### Color

- a. White
- b. Door decal with MoDOT/MU FRTI designated design on driver and passenger front doors. Decal will be designed and approved by MoDOT/MU FRTI.

### Electrical System

- a. 12volt,150 amp alternator with remote battery volt sensor & temperature compensated regulator.
- b. Auto self reset circuit breakers.
- c. Batteries:12 volt negative ground, stud batteries. Batteries must be easily accessible for maintenance and have a minimum of 3000 cold cranking amps.
- d. 12 Volt starter with over load protection.
- e. Battery shutoff switch or switches in cab mounted outboard of driver's seat.
- f. One Positive post located for jump-starting from an external source.
- g. Low voltage battery disconnect at 12.3 volts for isolated circuits with one minute alarm (to provide protection for the electronics within the unit).
- h. Appropriate DOT highway lighting.
- i. LED light(s) where possible.

### Fuel tanks

- a. Prefer fuel tanks in forward position.
- b. Minimum total fuel carrying capacity of 200 gallons.
- c. Two equal sized tanks, one placed on each side of the tractor.
- d. Tanks polished aluminum with polished stainless steel bands.
- j. If fuel tanks are mounted in a cab forward position, tanks must include nonskid steps for cab

## Section B- Specs for MARFFT Tractor and Support Vehicle

- access.
- e. Fuel/water separator with heated bowl and primer pump.
- f. Separate fuel filter, accessible for driver to clean/change during travel.
- g. Fuel tanks shall have equalizer plumbing such as the Equiflo system with right and left
- b. Hand shut off valves.
- h. Reinforced fuel lines.
- i. Tank(s) shall be constructed of aluminum. Steel tanks will not be accepted.

### **Additional Requirements**

MHTC reserves the right to set up a visual inspection **and/or test drive** of proposed unit before acceptance for purchase.

#### Manuals

- a. Unit shall be delivered with Operator's Manuals for all supplied components.
- b. One copy of the service/repair manual for this vehicle must be provided. This manual will be used by technicians in maintaining and servicing this unit.
- c. Manual may be on a standard Compact Disk (CD) provided the document format is PDF or another common format that does not require proprietary software.
- d. If the format of a CD requires proprietary software to view, the service manual must be provided in printed form.
- e. One copy of any software (if needed) and appropriate cable(s) for customer downloading of information on truck performance via on-board data terminal(s).

NOTE: The intent of this requirement is to download vehicle and driver performance information. It is not the intent of this requirement to gain access to proprietary engine system controls.

Warranties are considered part of the purchase. Please list base warranties that have been included in your bid. Additional warranty and warranty extension options may be listed with associated costs.

**BID FORM**  
**MHTC**  
 Bid No. **3-110816 MARFFT**

**TO:** The Missouri Highways and Transportation Commission

The undersigned, in compliance with the request for bids for furnishing the following Equipment:

**Mobile Aircraft Rescue and Fire Fighting Trainer (MARFFT) Trailer-** estimated 50 to 53 feet long, 102 inches wide, and no higher than 13 feet 6 inches high with an estimated maximum anticipated load of 80,000 pounds. The MARFFT is to meet FAA AC 150/5220-17B, Aircraft Rescue and Fire Fighting (ARFF) Training Facilities, and contract specifications. It must enable economical, mobile aircraft rescue and live fire fighting training. Multi-skill level training capability is required. It must be easily transportable and carried on the Tractor-trailer Vehicle unit.

**Tractor Vehicle** unit will be primarily used to transport the MARFFT Trailer.

**A support vehicle** capable of transporting 900 square feet of spill fire components:

hereby proposes to furnish all necessary labor, permits, material, machinery, tools, supplies and equipment to faithfully perform all work required for furnishing the equipment identified below in strict accordance with the project documents and all issued Addenda within the specified time of performance for the unit prices stated below:

**BID SCHEDULE**

Bid Item	Specification Reference and Item Description	Quantity	Unit	Unit Price	Extension
1	MARFFT Trailer	1	LS	\$_____.	\$_____.
2	MARFFT Tractor	1	LS	\$_____.	\$_____.
3	Support Tractor Trailer Vehicle	1	LS	\$_____.	\$_____.

**TOTAL BASE BID (Numeral Format)** \$\_\_\_\_\_.

**ACKNOWLEDGEMENTS BY BIDDER**

- a. The BIDDER acknowledges and accepts that the Bid Documents are comprised of the documents identified within the Instructions-to-Bidders. The BIDDER further acknowledges that each the individual documents that comprise the Bid Documents are complementary to one another and together establishes the complete terms, conditions and obligations of the successful BIDDER.
- b. The BIDDER acknowledges and accepts the OWNER'S right to reject any or all bids.
- c. The BIDDER acknowledges and accepts the OWNER'S right to hold all Bids for purposes of review and evaluation and not issue a notice-of-award for a period not to exceed Ninety (90) calendar days from the stated date for receipt of bids. During this evaluation period, the BIDDER agrees to honor the stated price(s) without any adjustment.

- d. Time of Performance: By submittal of this bid, the undersigned acknowledges and agrees to commence work within ten (10) calendar days of the date specified in the written "Notice-to-Proceed" as issued by the OWNER. The undersigned further agrees to complete the Project within **270 Calendar Days** from the commencement date specified as the date of the approval of design drawings.
- e. The undersigned acknowledges and accepts that for each and every Calendar/Working day the project remains incomplete beyond the contract time of performance, the Contractor shall pay the non-penal amount of **\$1,000** per Calendar day as a liquidated damage to the OWNER.
- f. The undersigned acknowledges receipt of the following addenda:
 

Addendum Number _____ dated _____	Received _____
Addendum Number _____ dated _____	Received _____
Addendum Number _____ dated _____	Received _____

**REPRESENTATIONS BY BIDDER**

By submittal of a bid, the BIDDER represents the following:

- a. The BIDDER has read and thoroughly examined the bid documents including all authorized addenda.
- b. The BIDDER has a complete understanding of the terms and conditions required for the satisfactory performance of project work.
- c. The BIDDER has found no errors, conflicts, ambiguities or omissions in the project documents, except as previously submitted in writing to the owner that would affect cost, progress or performance of the work.
- d. The BIDDER is familiar with all applicable Federal, State and local laws, rules and regulations pertaining to execution of the contract and the project work.
- e. The BIDDER has complied with all requirements of these instructions and the associated project documents.

**CERTIFICATIONS BY BIDDER**

- a. The undersigned hereby declares and certifies that the only parties interested in this bid are named herein and that this bid is made without collusion with any other person, firm or corporation. The undersigned further certifies that no member, officer or agent of the MHTC has direct or indirect financial interest in this bid.
- b. **Certification of Non-Segregated Facilities:** (41 CFR Part 60-1.8)  
 The BIDDER, as a potential federally-assisted contractor, certifies that it does not maintain or provide, for its employees, any segregated facilities at any of its establishments and that it does not permit its employees to perform their services at any location, under its control, where segregated facilities are maintained. The BIDDER certifies that it will not maintain or provide, for its employees, segregated facilities at any of its establishments and that it will not permit its employees to perform their services at any location under its control where segregated facilities are maintained. The Bidder agrees that a breach of this certification is a violation of the Equal Opportunity Clause, which is to be incorporated in the contract.

As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms, and washrooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated on the basis of race, color, religion, or national origin because of habit, local custom, or any other reason. The Bidder agrees that (except where it has obtained identical certifications from proposed subcontractors for specific time periods) it will obtain identical certifications from proposed subcontractors prior to the award of subcontracts exceeding \$10,000 which are not exempt from the provisions of the Equal Opportunity Clause and that it will retain such certifications in its files.

c. **Trade Restriction Certification:** (49 CFR Part 30)

The Bidder, by submission of an offer certifies that it:

1. is not owned or controlled by one or more citizens of a foreign country included in the list of countries that discriminate against U.S. firms published by the Office of the United States Trade Representative (USTR);
2. has not knowingly entered into any contract or subcontract for this project with a person that is a citizen or national of a foreign country on said list, or is owned or controlled directly or indirectly by one or more citizens or nationals of a foreign country on said list;
3. has not procured any product nor subcontracted for the supply of any product for use on the project that is produced in a foreign country on said list.

d. **Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion:** (49 CFR Part 32)

The Bidder certifies, by submission of this bid, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency. It further agrees by submitting this bid that it will include this clause without modification in all lower tier transactions, solicitations, bids, contracts, and subcontracts. Where the Bidder or any lower tier participant is unable to certify to this statement, it shall attach an explanation to this solicitation/bid.

e. **Buy America Certification:** (Title 49 U.S.C. Chapter 501)

As a condition of bid responsiveness, the Bidder must show how it intends to comply with the Buy America preferences established under Title 49 U.S.C. Section 50101. Bidders must complete the Buy America Certification included in this Bid Form. If the bidder requests a permissible waiver to the Buy America requirements, the Bidder identified as the low bid must submit a formal waiver request and component cost calculation within the prescribed time identified on the Buy America certification.

## Buy America Certification

(Title 49 U.S.C. Section 50101)

This solicitation and any resulting contract are subject to the Buy America requirements of 49 U.S.C. Section 50101. The bidder certifies it and all associated subcontractors will comply with the Buy America preferences established under Title 49 U.S.C. Section 50101 as follows:

### U.S.C. Section 50101 - Buying goods produced in the United States

- (a) Preference. - The Secretary of Transportation may obligate an amount that may be appropriated to carry out section 106(k), 44502(a)(2), or 44509, subchapter I of chapter 471 (except section 47127), or chapter 481 (except sections 48102(e), 48106, 48107, and 48110) of this title for a project only if steel and manufactured goods used in the project are produced in the United States.
- (b) Waiver. - The Secretary may waive subsection (a) of this section if the Secretary finds that -
  - (1) Applying subsection (a) would be inconsistent with the public interest;
  - (2) The steel and goods produced in the United States are not produced in a sufficient and reasonably available amount or are not of a satisfactory quality;
  - (3) When procuring a facility or equipment under section 44502(a)(2) or 44509, subchapter I of chapter 471 (except section 47127), or chapter 481 (except sections 48102(e), 48106, 48107, and 48110) of this title -
    - A. The cost of components and subcomponents produced in the United States is more than 60 percent of the cost of all components of the facility or equipment; and
    - B. Final assembly of the facility or equipment has occurred in the United States; or
  - (4) Including domestic material will increase the cost of the overall project by more than 25 percent.
- (c) Labor Costs. - In this section, labor costs involved in final assembly are not included in calculating the cost of components.

As a matter of bid responsiveness, the bidder or offeror must complete this certification. The bidder/offeror must indicate how they propose to comply with the Buy America provision by selecting one of the following certification statements.

- The bidder hereby certifies that it will comply with Title 49 U.S.C Section 50101(a) by only installing steel and manufactured products produced in the United States of America. The bidder further agrees that if chosen as the apparent low bid, it will submit documentation to the owner that demonstrate all steel and manufactured products are 100% manufactured in the United States.**
- The bidder hereby certifies that it cannot fully comply with the Buy America preferences of Title 49 U.S.C Section 50101(a); the bidder therefore requests a waiver per Title 49 U.S.C Section 50101(b). The bidder further agrees that upon notification from the MHTC, the bidder identified with the apparent low bid agrees to prepare and submit a waiver request and component calculation information to the owner within seven (7) Calendar Days of the date of the notice of apparent low bid.**

NOTE: Waiver on next page (53).

# Buy America Waiver Request

Title 49 U.S.C Section 50101 (b)

## For Equipment and Vehicles (ARFF and SRE) Procured under the Airport Improvement Program

### Type of Waiver Request:

The bidder may request a waiver subject to the provisions of Section 50101 (b)(1), Section 50101 (b)(2), Section 50101(b)(3) or Section 50101(b)(4). The Owner's approval ~~with~~ of the bidders request is contingent upon Federal Aviation Administration (FAA) approval with the waiver request. The bidder must select one of the following applicable waiver provisions:

- Section 50101(b)(1): Bidder hereby requests a waiver to Buy America preferences based upon Section 50101(b)(1). Applying subsection 50101 (a) *Preference*, would be inconsistent with the public interest. (See approval level below).
- Section 50101(b)(2): Bidder hereby requests a waiver to Buy America preferences based upon Section 50101(b)(2). The steel and goods produced in the United States are not produced in a sufficient and reasonably available amount or are not of a satisfactory quality. (See approval level below).
- Section 50101(b)(3): Bidder hereby requests a waiver to Buy America preferences based upon Section 50101(b)(3). The bidder further certifies \_\_\_\_\_ % of the cost of components and subcomponents comprising the facility are produced in the United States and that final assembly occurs with the United States. (*Bidder must attach a copy of the component cost calculation table*).
- Section 50101(b)(4). Bidder hereby requests a waiver to Buy America preferences based upon Section 50101(b)(4). The bidder asserts provision of domestic material increases the cost of the overall project by more than 25%.

### Certification Signature

In accordance with Section 50101(b), we request a waiver to the Buy America provisions based on the above certification and attached documentation.

\_\_\_\_\_

*Bidder's Firm Name*

\_\_\_\_\_

*Date*

\_\_\_\_\_

*Signature*

**Approval level for Waivers:**

Please note that approval of waivers listed under (b)(1) & (2), can only be approved by the FAA Office of Airports in Washington DC and approval is rare. Waivers listed under (b) (3) & (4) may be approved by FAA Regional or District Offices.

**Instructions for Section 50101(b)(3) Waiver:**

1. "Equipment" in Section 50101 shall mean AIP-funded vehicle or single piece of equipment.
2. The bidder must base the U.S. percentage upon the value that results from completing a component cost calculation table similar to the attached format. Bidder shall avoid mere pro forma efforts to establish the waiver request percentage. The Bidder must submit the component cost calculation table as an attachment to the waiver request. The component breakout shall be along major elements/systems of the equipment.
3. Components are the material and products directly incorporated into the "vehicle" at the place of final assembly.
4. The final assembly of the AIP-funded "equipment" must be within the USA (*Section 50101(b)(3)(B)*). Final assembly is the substantial transformation of the components and subcomponents into the end product.
5. All steel used in the "Equipment" must be produced in the USA. FAA will not approve a waiver for products made with non-domestic steel.
6. The Buy American requirements apply to all tier contractors and subcontractors. All contractors/subcontractors are required to provide sufficient documentation that indicates origin of manufacturer and percentage of domestic manufactured product.
7. The bidder is hereby advised there is no implied or expressed guarantee that the Federal Aviation Administration (FAA) will approve any requested waiver. The FAA CANNOT concur with any waiver request for less than 60% US component participation.

**Instructions for Section 50101(b)(4) Waiver:**

1. This waiver is rarely applied. Consult Owner before making this request.
2. Prepare detailed bid costs using domestic product(s) and the overall project cost. Prepare detailed alternate bid costs of the non-domestic product(s) and the overall project cost. If the bid with domestic product(s) is more than 25% of the bid with non-domestic product(s), the bidder may request a waiver under 50101(b)(4).
3. Bidder must attach adequate documentation that supports the use of domestic products results in an increase in the overall project costs that exceeds 25%. The bidder must certify under signature and date that the submittal information is correct and accurate.

**North America Free Trade Act (NAFTA)**

The NAFTA **does not** apply to the AIP. Products and material made in Canada or Mexico must be considered as foreign made products.





**DISADVANTAGED BUSINESS ENTERPRISE (DBE) PARTICIPATION**

The information shown in this section must be completed when a DBE contract goal has been established. The percentage must equal or exceed the DBE contract goal. If the percentage is below the contract goal, then the bidder must submit complete written documentation of good faith efforts taken to meet the DBE contract goal.

- a. The undersigned submits the following list of DBE's to be used in accomplishing the work of this contract. The work, supplies or services, applicable value and percent of total federal contract each DBE is to perform or furnish is as follows:
  
- b. Joint venture with a DBE. The undersigned submits the following list of bid items the DBE prime is responsible for and any items that will be subcontracted out are noted with an asterisk or a similar notation. The work, applicable value and percentage of total federal contract the DBE prime is responsible for are as follows:

DBE Name and Address	Bid Item Number(s) Or Work Performed	\$ Value of DBE Work	% of **\$Value Applicable to DBE Goal	\$ Amount Applicable to DBE Goal	% of Total Federal Contract
TOTAL DBE PARTICIPATION				\$	%

\*\*Cannot exceed contract amount for given item of work.

(Please reproduce the above sheet if additional space is needed.)

**ATTACHMENTS TO THIS BID**

The following documents are attached to and made a part of this Bid:

- 1. Evidence of BIDDER'S qualifications per the requirements of the Instructions-to-Bidders.

**SIGNATURE OF BIDDER**

The undersigned states that the correct LEGAL NAME AND ADDRESS of (1) the individual bidder, (2) each partner or joint venturer (whether individuals or corporations, and whether doing business under a fictitious name), or (3) the corporation (with the state in which it is incorporated) are shown below; that (if not signing with the intention to bind themselves to become responsible and sole bidder) they are the agent of, and they are signing and executing this (as indicated in the proper spaces below) as the bid of a

( ) sole individual                      ( ) partnership                      ( ) joint venture  
 ( ) corporation, incorporated under the laws of state of \_\_\_\_\_.

Executed by bidder this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_\_.

Name of individual,  
all partners  
or joint venturers:

Address of each:

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

doing business under the name of:

Address of principal place of business in Missouri:

\_\_\_\_\_  
(If using a fictitious name, show this name above in addition to legal names)

\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
(If a corporation, show its name above)

\_\_\_\_\_  
\_\_\_\_\_

ATTEST: (SEAL)

\_\_\_\_\_  
(Signature)                      Secretary

\_\_\_\_\_  
(Signature)                      (Title)

\_\_\_\_\_  
Please print name

\_\_\_\_\_  
Please print name

NOTE: If bidder is doing business under a fictitious name, the bid shall be executed in the legal name of the individual partners, joint ventures, or corporation, with the legal address shown, and registration of fictitious name filed with the secretary of state, as required by sections 417.200 to 417.230 RSMo. If the bidder is a corporation not organized under the laws of Missouri, it shall procure a certificate of authority to do business in Missouri, as required by section 351.572 et seq RSMo.



**Article 3 – Contract Price**

In consideration of the faithful performance and completion of the Work by the CONTRACTOR in accordance with the Contract Documents, MHTC shall pay the CONTRACTOR an amount equal to:

\$ \_\_\_\_\_ (\$ \_\_\_\_\_)  
(Amount in Written Words) (Amount in Numerals)

subject to the following;

- a. Said amount is based on the schedule of prices and estimated quantities stated in CONTRACTOR’S Bid, which is attached to and made a part of this Agreement;
- b. Said amount is the aggregate sum of the result of the CONTRACTOR’S stated unit prices multiplied by the associated estimated quantities;

**Article 4 – Payment**

Upon the completion of the work and its acceptance by the MHTC, all sums due the CONTRACTOR by reason of faithful performance of the work, taking into consideration additions to or deductions from the Contract price by reason of alterations or modifications of the original Contract, will be paid to the CONTRACTOR by the MHTC after said completion and acceptance.

Payment for delivery of equipment can be made per each completed vehicle with the payment made after successful delivery. Completed vehicle is classified as:

- Bid Items 1 and 2 combined – MARFFT Tractor and Trailer,
- Bid Item 3 – Support Tractor Trailer Vehicle

The acceptance of final payment by the CONTRACTOR shall be considered as a release in full of all claims against the MHTC, arising out of, or by reason of, the work completed and materials furnished under this Contract.

The MHTC shall make progress payments to the CONTRACTOR in accordance with the terms set forth in the General Terms and Conditions.

**Article 5 – Contract Time**

The CONTRACTOR agrees to commence work within ten (10) calendar days of the date specified in the MHTC’S Notice-to-Proceed. CONTRACTOR further agrees to complete said work within **270** Calendar Days of the commencement date stated as the date of the approval of design drawings.

It is expressly understood and agreed that the stated Contract Time is reasonable for the completion of the Work, taking all factors into consideration. Furthermore, extensions of the Contract Time may only be permitted by execution of a formal modification to this Contract Agreement in accordance with the General Terms and Conditions and as approved by the MHTC.

**Article 6 – Liquidated Damages**

The CONTRACTOR and MHTC understand and agree that time is of essence for completion of the Work and that the MHTC will suffer additional expense and financial loss if said Work is not completed within the authorized Contract Time. Furthermore, the CONTRACTOR and MHTC recognize and understand the difficulty, delay, and expense in establishing the exact amount of actual financial loss and additional expense. Accordingly, in place of requiring such proof, the CONTRACTOR expressly agrees to pay the MHTC as liquidated damages the non-penal sum of **\$1,000** per day for each Calendar day required in excess of the authorized Contract Time.

Furthermore, the CONTRACTOR understands and agrees that;

- a. the MHTC has the right to deduct from any moneys due the CONTRACTOR, the amount of said liquidated damages; and
- b. the MHTC has the right to recover the amount of said liquidated damages from the CONTRACTOR.

**Article 7 – CONTRACTOR'S Representations**

The CONTRACTOR understands and agrees that all representations made by the CONTRACTOR within the Bid shall apply under this Agreement as if fully rewritten herein.

**Article 8 – CONTRACTOR'S Certifications**

The CONTRACTOR understands and agrees that all certifications made by the CONTRACTOR within the Bid shall apply under this Agreement as if fully rewritten herein.

**Article 9 – Miscellaneous**

- a. CONTRACTOR understands that it shall be solely responsible for the means, methods, techniques, sequences and procedures of manufacturer in connection with completion of the Project Work;
- b. CONTRACTOR understands and agrees that it shall not accomplish any work or furnish any materials that are not covered or authorized by the Contract Documents unless authorized in writing by the MHTC or its Representative;
- c. The rights of each party under this Agreement shall not be assigned or transferred to any other person, entity, firm or corporation without prior written consent of both parties;
- d. MHTC and CONTRACTOR each bind itself, their partners, successors, assigns and legal representatives to the other party in respect to all covenants, agreements, and obligations contained in the Contract Documents.

**Article 10 – MHTC'S Representative**

The Representative follows:

**Mr. Joseph Pestka  
MoDOT Aviation  
830 MoDOT Drive  
Jefferson City, MO 65102**

Said REPRESENTATIVE will act as the MHTC'S representative and shall assume all rights and authority assigned to the ENGINEER as stated within the Contract Documents in connection with the completion of the Project Work.

**Article 11 – Indemnification**

The Contractor shall defend, indemnify and hold harmless the Commission, including its members and Missouri Department of Transportation employees, from any claim or liability whether based on a claim for damages to real or personal property or to a person for any matter relating to or arising out of the Contractor's performance of its obligations under this Agreement.

**Article 12 – Law of Missouri to Govern**

This Agreement shall be construed according to the laws of the state of Missouri. The Contractor shall comply with all local, state and federal laws and regulations relating to the performance of this Agreement.

**Article 13 – Venue**

It is agreed by the parties that any action at law, suit in equity, or other judicial proceeding to enforce or construe this Agreement, or regarding its alleged breach, shall be instituted only in the Circuit Court of Cole County, Missouri.

IN WITNESS WHEREOF, MHTC and CONTRACTOR have executed five (5) copies of this Agreement on the day and year first noted herein.

**MHTC**

Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

By: \_\_\_\_\_  
*Signature*  
\_\_\_\_\_  
*Title of Representative*

**ATTEST**

By: \_\_\_\_\_  
*Signature*  
\_\_\_\_\_  
*Title*

Approved as to Form:  
\_\_\_\_\_  
Commission Counsel

**CONTRACTOR**

Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

By: \_\_\_\_\_  
*Signature*  
\_\_\_\_\_  
*Title of Representative*

**ATTEST**

By: \_\_\_\_\_  
*Signature*  
\_\_\_\_\_  
*Title*

Approved as to Form:  
\_\_\_\_\_  
Counsel