



CITY OF KANSAS CITY, MISSOURI

Procurement Services Division
1st Floor, Room 102 W, City Hall
414 East 12th Street
Kansas City, Missouri 64106-2793
(816) 513-1161 FAX (816) 513-1156

BID NO.: EV1439

BID ISSUED: 12-20-11

BID CLOSES: 01-31-12, AT 2:00 P.M.

INVITATION FOR BID

AIRCRAFT RESCUE AND FIRE FIGHTING (ARFF) VEHICLE

BID DUE: JANUARY 31, 2012, 2:00 P.M. (CT)

**Donna Williford, CPPB
Senior Buyer
City of Kansas City, Missouri
1st Floor, Room 102 W, City Hall
414 East 12th Street
Kansas City, MO 64106-2793
Telephone Number: (816) 513-1593
E-mail: donna.williford@kcmo.org**

- **READ CAREFULLY THE ATTACHED INSTRUCTIONS AND CONDITIONS, PAGES A-1 TO A-8.**
- **Bid is subject to all conditions listed on this form and any attachments.**
- **Bid must be on this form 1215-035C.**
- **Each Bid must be returned signed and sealed in a separate envelope with the bid number, bid closing date and hour shown on the face of the envelope. Multiple copies, when requested, may be packaged together and should be marked Original and Copy #1, etc.**



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STANDARD INSTRUCTIONS AND CONDITIONS

AIRCRAFT RESCUE AND FIRE FIGHTING (ARFF) VEHICLE

1. INTENT

To solicit competitive bids for two aircraft rescue and fire fighting (ARFF) vehicles. One (1) ARFF vehicle with High Reach Extendable Turret (HRET) and one (1) ARFF vehicle without HRET.

2. AWARD

Award will be made in the best interest of the City of Kansas City, to the lowest and best responsive and responsible bidder.

3. ORDERING AND SHIPPING INSTRUCTIONS AND LIMITATIONS

- 3.1 Products/services needed by the City will usually be ordered against a blanket purchase order issued by the Procurement Services Division. The purchase order will be for a stated dollar amount and will terminate at time shown on purchase order or expiration of contract, whichever is earlier. Purchase orders for specific items and quantities may also be issued against this contract.
- 3.2 The City department named in the "Ship to Address" on the purchase order is required to provide the Supplier with the names of persons authorized to place orders against the contract. Personnel picking up merchandise must show official identity card of the City of Kansas City, Missouri, and provide the purchase order number to the Supplier at the time of pick up.
- 3.3 Any material still on back order thirty (30) days beyond the expiration of the contract or the order date will be considered cancelled and any subsequent deliveries will be refused.

4. TAX CLEARANCE FOR CITY

Prior to the City making the first payment under any contract or contract renewal term, Contractor must provide a tax clearance letter from the City's Commissioner of Revenue dated not more than ninety days from the date of submission. Bidders may obtain this tax clearance letter from the City's Revenue Division at (816) 513-1135 or (816) 513-1089. <http://www.kcmo.org>

5. MISSOURI SECRETARY OF STATE BUSINESS ENTITY REGISTRATION

Prior to execution of a contract with the City, the apparent successful Bidder must submit a current copy of Bidder's Certificate of Good Standing from the Missouri Secretary of State's website at www.sos.mo.gov.



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6. CITY OF KANSAS CITY MISSOURI BUSINESS LICENSE

Prior to execution of a contract with the City, the apparent successful Proposer must submit a current copy of Proposer's valid business license. Proposers may obtain this business license from the City's Revenue Division/Business License section at (816) 513-1135 or at <http://www.kcmo.org>.

7. PROHIBITED ACTIVITIES BY FORMER CITY EMPLOYEES AND OFFICIALS

Section 2-1018 of the City's Code prohibits former elected City officials and former executive or administrative employees of the City from trying to influence a decision of the City on behalf of an employer or client for one (1) year after that former employee or official leaves the City's employ. By submitting a Bid, Bidder affirms that Bidder and its team members and employees are in compliance with the requirements of Section 2-1018. Failure to comply with the requirements of Section 2-1018 may cause the Bid to be rejected.

8. SUPPLIER PRICING GUARANTEE

The contracting Supplier guarantees that as a certified Supplier of the City, and by entering into this agreement, agrees not to sell to any other governmental agency at lower prices than specified in this contract. If lower prices are offered to other governmental agencies for the same product or service, then those same lower prices will be offered to the City and the contract modified to reflect the lower price change.

9. BUY AMERICAN AND MISSOURI PREFERENCE POLICIES

(a) Buy American Preference

It is the policy of the City that any manufactured goods or commodities used or supplied in the performance of any City contract or any subcontract thereto shall be manufactured or produced in the United States whenever possible. When Bids offer quality, price, conformity with specifications, term of delivery and other conditions imposed in the specifications that are equal, the City shall select the Bid that uses manufactured goods or commodities that are manufactured or produced in the United States.

(b) Buy Missouri Preference

It is the policy of the City to give preference to all commodities manufactured, produced, or grown within the State of Missouri and to all firms, corporations, or individuals doing business as Missouri firms, corporations, or individuals, when the quality is equal or better and delivered price is the same or less. It is the Bidder's responsibility to claim these preferences.



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10. NON-PERFORMANCE OPTION TO TERMINATE

The City reserves the right to terminate the contract for non-performance if service is deemed unacceptable or not in accordance with the listed specifications. The date of termination shall be stated in written notice to the Supplier. The City shall be the sole judge of non-performance under the contract.

All notices to be given hereunder shall be in writing and may be given, served or made by depositing the same in the United States mail addressed to the party to be notified, postpaid and registered or certified with return receipt requested or by delivering the same in person to such person. Notice deposited in the mail in accordance with the provisions hereof shall be effective unless otherwise stated in such notice or in this contract from and after the second day next following the date postmarked on the envelope containing such notice. Notice given in any other manner shall be effective only if and when received by the party to be notified.

11. CONTRACT EXTENSION

This contract may be extended by the City at its sole option under the same terms and conditions despite the expiration of the original contract or any option to renew as long as the contract has not been expired for more than ninety (90) days.

12. CERTIFICATE OF INSURANCE

The successful Bidder is required to furnish evidence of the following insurance in accordance with paragraphs 58G to 58I, INSTRUCTIONS AND CONDITIONS. Satisfactory evidence of insurance will be required by completion of a Certificate of Insurance or by other means outlined in Paragraph 58 G through I. Certificates must be provided within twenty-one (21) calendar days after receipt of a request for an insurance certificate. Work may not commence until the Certificate of Insurance showing evidence of contractual liability is received. Failure to provide the Certificate in a timely manner may be grounds for disqualification of a bid or default of a contract. Payment of invoices will be withheld until the Certificate is approved.

12.1 The City's Certificate of Insurance form has all City required language included. An insurance agent must indicate coverage and complete and sign the form. The coverage requirements are as follows:

General Liability:

\$1,000,000.00 Combined Single Limit per Occurrence

Automobile Liability:

\$1,000,000.00 Combined Single Limit per Occurrence

Workers' Compensation and Employer's Liability shall meet statutory requirements.



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12.2 If other non-standard City form for insurance certification is utilized, it must:

Name the City of Kansas City, Missouri as the certificate holder;
Name the City of Kansas City, Missouri as an additional insured; and
Provide cancellation notification to the City thirty (30) days before cancellation.
Standard cancellation clauses must have the wording "endeavor to" or "try to" deleted.
Any reference absent of obligation for failure to notify certificate holder must be deleted.

12.3 Please refer to the front of this document for the name of the Buyer and the Bid Number.
This information must be included on your Insurance Certificate and/or Bid/Performance Bond.

13. GREEN, ECO-FRIENDLY, SUSTAINABLE INITIATIVES

It is the desire of the City of Kansas City, Missouri to purchase and use as much "green, eco-friendly, sustainable" product as possible. From a "Lifestyle" prospective, this could include:

- a) Product Content
- b) Pre-Manufacture
- c) Manufacture
- d) Product Design
- e) Packaging and Distribution
- f) Use/Re-use and maintenance
- g) Waste Management

As a governmental entity, the City is uniquely positioned to drive affordable, market based environmental products/purchases.

The City recognizes EcoLogo, EnergyStar, and GreenSeal among others.



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14. EMERGENCIES

- (a) Disaster means any large scale event such as an act of terrorism, fire, wind, flood, earthquake or other natural or man-made calamity which results in, or has the potential to result in a significant loss of life or property.
- (b) During and after a disaster, CONTRACTOR shall provide special services to the CITY including CONTRACTOR shall open CONTRACTOR's facilities even on nights and weekends as necessary to meet the needs of the City during a disaster.
- (c) CONTRACTOR shall not charge CITY any fee for opening facilities during an emergency or for extending CONTRACTOR's hours of operation during a disaster. CITY shall pay CONTRACTOR the agreed upon contract prices for all purchases made by CITY during the disaster and CONTRACTOR shall not charge CITY any additional mark-up, fee or cost for any purchases made by CITY during a disaster.
- (d) CONTRACTOR shall quickly mobilize CONTRACTOR's internal and external resources to assist CITY when a disaster unfolds.
- (e) Extended hours and personnel. During disasters, CONTRACTOR's facilities shall stay open 24 hours if requested by the CITY. CONTRACTOR shall utilize additional CONTRACTOR personnel to take CITY orders if necessary. CONTRACTOR's Call Center shall accept phone orders 24 hours a day.
- (f) CONTRACTOR shall have contingency plans with CONTRACTOR's suppliers to provide additional supplies and equipment quickly to CITY as needed.
- (g) CONTRACTOR shall cooperate with CITY to properly document any and all expenses incurred by CITY with CONTRACTOR and CONTRACTOR shall assist CITY in meeting any and all documentation requirements of the Federal Emergency Management Agency (FEMA).



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15. BID INFORMATION

The public bid opening will be held on January 31, 2012 at 2:30 P.M., at the address listed below.
Bids are mailed to the following address:

Procurement Services Division
City of Kansas City, Missouri
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414 East 12th Street
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The bid results will be available ten (10) days after the bid opening. Please contact Donna Williford at (816) 513-1593.

16. QUESTIONS AND ANSWERS

For further information or clarification, any and all questions must be submitted in writing via internet e-mail to: donna.williford@kcmo.org.

Donna Williford, Senior Buyer
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FAX: (816) 513-1156
E-Mail: donna.williford@kcmo.org

All questions submitted will be answered in writing. If your question results in a change in the Specifications, an Addendum will be sent to all prospective Bidders.

THE DEADLINE FOR QUESTIONS CONCERNING THIS IFB IS DECEMBER 27, 2011.

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BID NO.: EV1439**BID ISSUED: 12-20-11****BID CLOSING: 01-31-12, AT 2:00 P.M.****AIRCRAFT RESCUE AND FIRE FIGHTING (ARFF) VEHICLE WITHOUT HRET****PROCUREMENT SPECIFICATION****CLASS 5, AC 150/5220 – 10E****1. SCOPE**

This Procurement Specification (PS) covers a commercially produced diesel engine driven ARFF vehicle for an **Index E** airport. It includes a 3000-4500 gallon water/Aqueous Film Forming Foam (AFFF) fire suppression system:

450 lbs potassium-based dry chemical only.

The ARFF vehicle is intended to carry rescue and firefighting equipment for the purpose of rescuing aircraft passengers, preventing aircraft fire loss, and combating fires in aircraft.

2. CLASSIFICATION

The ARFF vehicle(s) covered by this (PS) are classified in accordance with Part 139, Certification and Operations: Land Airports Serving Certain Air Carriers, Section 315, Aircraft Rescue and Firefighting: Index Determination; Section 317, Aircraft Rescue and Firefighting: Equipment and Agents; and Federal Aviation Administration (FAA) Advisory Circular (AC) 150/5220-10, Guide Specification for Aircraft Rescue and Fire Fighting (ARFF) Vehicles, as follows:

Airport Index	Vehicle Class	Minimum Rated Capacities (gallons/liters)
Index E	5	3000 gallons/11,356 liter water/AFFF solution
Index E	5	3500 gallons/13,249 liter water/AFFF solution
Index E	5	4000 gallons/15,142 liter water/AFFF solution
Index E	5	4500 gallons/17,034 liter water/AFFF solution



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3. VEHICLE CONFORMANCE/PERFORMANCE CHARACTERISTICS

The ARFF vehicle will be in accordance with the applicable requirements of National Fire Protection Association (NFPA) 414, Standard for Aircraft Rescue and Fire Fighting Vehicles (2007 Edition), and AC 150/5220-10, Guide Specification for Aircraft Rescue and Fire Fighting (ARFF) Vehicles.

3.1 General Administration Requirements

3.1.1 Manuals - Technical manuals will consist of operator, service, and parts manuals. All manuals are required to be provided in hardcopy and in digital format on CDs when requested.

3.1.1.1 Technical manuals - The overall format for the manuals will be commercial. Each technical manual will have a title page. Line art will be used to the maximum extent possible for illustrations and parts lists. One complete set of engine and transmission parts, service and operator's manuals will be packed with each vehicle.

- a. The contractor will provide digitized manuals in CD format when requested in addition to or in place of printed paper copies.
- b. The contractor will provide two complete sets of hardcopy manuals and / or CDs when requested.

3.1.1.1.1 Operator's manual - The operator's manual will include all information required for the safe and efficient operation of the vehicle, including fire extinguishing systems, equipment, and any special attachments or auxiliary support equipment. As a minimum, the operator's manual will include the following:

- a. The location and function of all controls and instruments will be illustrated and functionally described.
- b. Safety information that is consistent with the safety standards established by the Occupational Safety and Health Administration (OSHA) and NFPA.
- c. All operational and inspection checks and adjustments in preparation for placing the vehicle into service upon receipt from the manufacturer.
- d. Tie down procedures for transport on a low-boy trailer.
- e. Warranty information and the period of the warranty coverage for the complete vehicle and for any component warranty that exceeds the warranty of the complete vehicle. Addresses and telephone numbers will be provided for all warranty providers.



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- f. General description and necessary step-by-step instructions for the operation of the vehicle and its fire extinguishing system(s) and auxiliary equipment.
 - g. A description of the post-operational procedures (draining, flushing, re-servicing, et cetera).
 - h. Daily maintenance inspection checklists that the operator is expected to perform, including basic troubleshooting procedures.
 - i. Disabled vehicle towing procedures.
 - j. Procedures and equipment required for changing a tire.
 - k. Schedules (hours, miles, and time periods) for required preventative maintenance and required periodic maintenance.
 - l. Line art drawing of the vehicle, including panoramic views (front, rear, left, and right sides) showing basic dimensions and weights (total vehicle and individual axle weight for the unloaded and fully loaded vehicle). For the purposes of this AC, "unloaded" is defined as a lack of agent, occupants and compartment load, and "loaded" is defined as including agent, occupants and compartment load.

3.1.1.1.2 Service manual - The service manual will identify all special tools and test equipment required to perform servicing, inspection, and testing. The manual will cover troubleshooting and maintenance as well as minor and major repair procedures. The text will contain performance specifications, tolerances, and fluid capacities; current, voltage, and resistance data; test procedures; and illustrations and exploded views as may be required to permit proper maintenance by qualified vehicle mechanics. The manual will contain an alphabetical subject index as well as a table of contents. The service manual will contain at least the following, where applicable:

- a. Fire fighting system schematic(s).
- b. Hydraulic schematic.
- c. Pneumatic schematic.
- d. Electrical schematic.
- e. Winterization schematic.
- f. Fuel schematic.



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g. Schedules for required preventative maintenance and required periodic maintenance.

h. Lubrication locations, procedures, and intervals for parts of the vehicle and equipment that require lubrication.

3.1.1.1.3 Parts identification manual - The parts manual will include illustrations or exploded views (as needed) to identify properly all parts, assemblies, subassemblies, and special equipment. All components of assemblies shown in illustrations or exploded views will be identified by reference numbers that correspond to the reference numbers in the parts lists. All purchased parts will be cross-referenced with the original equipment manufacturers (OEM) name and part number. The parts identification manual will provide the description and quantity of each item used for each vehicle. The size, thread dimensions, torque specifications, and special characteristics will be provided for all nonstandard nuts, bolts, screws, washers, grease fittings, and similar items. The manual will contain a numerical index. The parts manual will contain a list of all of the component vendor names, addresses, and telephone numbers referenced in the parts list.

3.1.2 Painting, plating, and corrosion control

3.1.2.1 Finish - Exterior surfaces will be prepared, primed, and painted - in accordance with all of the paint manufacturer's instructions and recommendations. Vehicles will be painted and marked in accordance with AC 150/5210-5, Painting, Marking, and Lighting of Vehicles Used on an Airport. The interior finish of all compartments will be based on the manufacturer's standard production practice. This may include painting, texturing, coating or machine swirling as determined by the manufacturer. All bright metal and anodized parts, such as mirrors, horns, light bezels, tread plates, and roll-up compartment doors, will not be painted. All other surfaces capable of being painted must be in the appropriate yellow-green color.

3.1.2.2 Dissimilar metals - Dissimilar metals, as defined in MIL-STD-889, Dissimilar Metals, will not be in contact with each other. Metal plating or metal spraying of dissimilar base metals to provide electromotively compatible abutting surfaces is acceptable. The use of dissimilar metals separated by suitable insulating material is permitted, except in systems where bridging of insulation materials by an electrically conductive fluid can occur.

3.1.2.3 Protection against deterioration - Materials that deteriorate when exposed to sunlight, weather, or operational conditions normally encountered during service will not be used or will have a means of protection against such deterioration that does not prevent compliance with performance requirements. Protective coatings that chip, crack, or scale with age or extremes of climatic conditions or when exposed to heat will not be used.

3.1.2.4 Reflective stripes - A minimum eight (8) inch horizontal band of high gloss white paint or white reflective tape (Retroreflective, ASTM-D 495 6-09, *Standard Specification for Retroreflective Sheeting for Traffic Control*, TYPE III & above) must be applied around the vehicle's surface.



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3.1.2.5 Lettering - The manufacturer will apply the airport's 'Name' and 'Insignia' (if available) in a contrasting color or by decal on both sides of the vehicle in long radius elliptical arches above and below the lettering center line. The size of the lettering will be a minimum of 2 1/2-inches to a maximum of 6-inches. Reflective lettering is allowed if the material is the same as that which is used for the reflective stripe (as specified in AC 150/5210-5).

3.1.3 Vehicle identification plate

A permanently marked identification plate will be securely mounted at the driver's compartment. The identification plate will contain the following information:

- a. NOMENCLATURE
- b. MANUFACTURER'S MAKE AND MODEL
- c. MANUFACTURER'S SERIAL NUMBER
- d. VEHICLE CURB WEIGHT: kg (pounds)
- e. PAYLOAD, MAXIMUM: kg (pounds)
- f. GROSS VEHICLE WEIGHT (GVW): kg (pounds)
- g. FUEL CAPACITY AND TYPE: gals (gallons)
- h. DATE OF DELIVERY (month and year)
- i. WARRANTY (months and km (miles))
- j. CONTRACT NUMBER
- k. PAINT COLOR AND NUMBER

A second permanently marked information data plate will be securely mounted on the interior of the driver's compartment. The plate will contain the information required by NFPA 414, Standard for Aircraft Rescue and Fire Fighting Vehicles (2007 Edition), Section 1.3.5 Vehicle Information Data Plate. A single plate that combines or contains the information required for both plates is acceptable.



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3.1.4 Environmental conditions

3.1.4.1 Vehicle operation and storage temperature conditions will vary with geographical location. Thus, the locality temperature range can go from -40° to 110°F. Refer to NFPA 414 for vehicle winterization criteria.

3.1.4.2 Extreme temperature range - The vehicle will be capable of satisfactory storage and operation in temperatures ranging from -40° to 110°F The vehicle will be equipped with a cab, chassis, and agent winterization system, permitting operation at -40°F The winterization system will not detract from the performance of the vehicle or the firefighting system in ambient temperatures up to 110°F The vehicle chassis winterization system will maintain the engine coolant, lubricants, fuel, and electrical systems operational at ambient temperatures of -40°F The vehicle agent winterization system will provide sufficient insulation and heating capacity, by means of hot circulating liquids and/or forced air heat exchangers, to permit satisfactory operation of the vehicle and firefighting systems for a 2-hour period at ambient temperatures as low as -40° F with the vehicle fully operational and the engine running At the end of this 2-hour period, the vehicle will be capable of successfully discharging its agents All compartments not winterized will be marked as such on the interior of the compartment The marking will state that the compartment is not winterized and cannot be used for the storage of items capable of freezing.

3.1.5 Reduction of potential foreign object damage - All loose metal parts, such as pins, will be securely attached to the vehicle with wire ropes or chains. Removable exterior access panels, if provided, will be attached with captive fasteners.

3.1.6 Vehicle Mobility

3.1.6.1 Operating terrain - The vehicle will be capable of operating safely on paved roads, graded gravel roads, cross country terrain, and sandy soil environments. Cross country terrain consists of open fields, broken ground, and uneven terrain. An off-road, high-mobility suspension system resulting in no more than 0.5 Grms acceleration at the driver's seat of the vehicle when traversing an 8-inch (20 cm) diameter half round at 35 mph (56 kph) must be provided. The suspension design by which the manufacturer meets the suspension performance requirements is at the manufacturer's discretion.

3.1.6.2 Gradeability - The fully loaded vehicle will be able to ascend any paved slope up to and including 50-percent.

3.1.6.3 Side slope stability - The fully loaded vehicle will be stable on a 300 side slope when tested in accordance with NFPA 414.

3.1.6.4 Cornering stability - The fully loaded vehicle will be stable in accordance with NFPA 414 when tested in accordance with NFPA 414.

3.2 Weights and dimensions

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3.2.1 Overall dimensions - The maximum dimensions listed below are desirable to ensure vehicles can be accommodated in existing fire stations. Likewise, the overall dimensions should be held to a minimum that is consistent with the best operational performance of the vehicle and the design concepts needed to achieve this performance and to provide maximum maneuverability in accordance with NFPA 414.

Vehicle Capacity/Dimensions	3000 Gallon	4500 Gallon
Length (inches/cm)	480/1219	540/1372
Width (inches/cm, excluding mirrors)	124/315	122/310
Height (inches/cm)	154/391	154/391

NOTE: For Airport Operator Validation: Consult AC 150/5210-15, Aircraft Rescue and Fire Fighting Station Building Design, Appendix A, to ensure vehicles measurements do not exceed existing airport fire station dimensions.

VEHICLE MEASUREMENT VALIDATION

Not applicable.

ADO/FAA Approval: _____

3.2.2 Angles of approach and departure - The fully loaded vehicle will have angles of approach and departure of not less than 30°.

3.2.3 Field of vision - The vehicle will have a field of vision in accordance with NFPA 414.

3.2.3.1 Mirrors - Combination flat and convex outside rearview mirrors will be installed on each side of the cab. The flat mirrors will be of the motorized remote control type, providing not less than 60 degrees horizontal rotational viewing range. The flat mirrors will also have electrically heated heads. Mirror remote and heating controls will be located on the instrument panel within reach of the seated driver. To provide the driver a clear view of the area ahead of the vehicle and to eliminate potential blind spots, a rectangular mirror will be installed on the lower corner of each side of the windshield, having a minimum area of 35 square inches.



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The vehicle will have a back-up (rear-view) camera with a display monitor mounted above the driver in the cab. Cameras and monitors that are designed to replace the function of the side-view mirrors are not an approved option in this specification.

3.3 Chassis and vehicle components

3.3.1 Engine - The vehicle will have a turbocharged diesel engine that is certified to comply with the Environmental Protection Agency (EPA) and state laws for off-highway emission requirements at the time of manufacture. The engine and transmission must operate efficiently and without detrimental effect to any drive train components when lubricated with standard, commercially available lubricants according to the recommendations of the engine and transmission manufacturers.

3.3.1.1 Acceleration - The fully loaded vehicle will accelerate from 0 to 50 miles per hour (mph) on a level paved road within 35 seconds.

3.3.1.2 Maximum speed - The fully loaded vehicle will attain a minimum top speed of 70 mph on a level, paved road.

3.3.1.3 Pump and roll on a 40-percent grade - The fully loaded vehicle will be capable of pump and roll operations on a paved, dry, 40-percent grade in accordance with NFPA 414.

3.3.1.4 Altitude - Where justified, the vehicle, including the pumping system, will be designed for operation at 2,000 feet above sea level.

JUSTIFICATION

ADO/FAA Approval: _____

3.3.2 Engine cooling system - The engine cooling system will be in accordance with NFPA 414. A label will be installed near the engine coolant reservoir reading "Engine Coolant Fill."

3.3.3 Fuel system - The fuel system will be in accordance with NFPA 414.

3.3.3.1 Fuel priming pump - The vehicle will be equipped with an electric or pneumatic fuel pump in addition to the mechanical fuel pump. The electric/pneumatic pump will be used as a priming pump capable of re-priming the engines fuel system.



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3.3.3.2 Fuel tank - The vehicle will have one or two fuel tanks with a minimum usable capacity in accordance with NFPA 414, as amended by NFPA 414. Each tank will have a fill opening of 3 inches minimum, readily accessible to personnel standing on the ground and designed to prevent fuel splash while refueling. Each tank will be located and mounted so as to provide maximum protection from damage, exhaust heat, and ground fires. If more than one tank is furnished, means will be provided to assure equalized fuel level in both tanks. An overturn fuel valve will be provided for each tank to prevent spillage in the event of a rollover. Each fuel tank must be prominently labeled "Diesel Fuel Only".

3.3.4 Exhaust system - The exhaust system will be in accordance with NFPA 414. The exhaust system will be constructed of high grade rust resistant materials and protected from damage resulting from travel over rough terrain. The muffler(s) will be constructed of aluminized steel or stainless steel. Exhaust system outlet(s) will be directed upward or to the rear, away from personnel accessing equipment compartments and the engine air intake, and will not be directed toward the ground.

3.3.5 Transmission - A fully automatic transmission will be provided. The transmission will be in accordance with NFPA 414.

3.3.6 Driveline - The vehicle driveline will be in accordance with NFPA 414. If the driveline is equipped with a differential locking control, a warning/caution label will be placed in view of the driver indicating the proper differential locking/un-locking procedures. The operator's manual will also include a similar warning/caution. All moving parts requiring routine lubrication must have a means of providing for such lubrication. There must be no pressure lubrication fittings where their normal use would damage grease seals or other parts.

3.3.7 Axle capacity - Each axle will have a rated capacity, as established by the axle manufacturer, in accordance with NFPA 414.

3.3.8 Suspension - The suspension system will be in accordance with NFPA 414 and AC 150/5220-10, .Guide Specification for Aircraft Rescue and Fire Fighting (ARFF) Vehicles.

3.3.9 Tires and wheels - Tires and wheels will be in accordance with NFPA 414. The vehicle will be equipped with single tires and wheels at all wheel positions. The vehicle will be equipped with tubeless steel belted radial tires with non-directional on/off-road type tread mounted on disc wheel assemblies. Tire and wheel assemblies will be identical at all positions. Tires and wheels will be certified by the manufacturer for not less than 25 miles of continuous operation at 60 mph at the normal operational inflation pressure. A spare tire and wheel assembly will be provided; however, the spare tire and wheel assembly are not required to be mounted on the vehicle. Tires will be new. Retreads, recaps, or re-grooved tires will not be permitted.

Tire bead locks, where justified, may be installed on all tires and rims.



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Current vehicles all have bead locks. To be used to prevent the vehicle from becoming disabled in the event of a tire failure during an emergency.

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3.3.10 Towing connections - The vehicle will be equipped with towing connections in accordance with NFPA 414. The vehicle will be designed for flat towing; the capability to lift and tow the vehicle is not required. The tow connections may intrude into the 30 degree approach angle.

3.3.11 Brake system - The vehicle will be equipped with a multi-channel all-wheel antilock brake system with at least one channel for each axle. The brakes will be automatic, self-adjusting and fully air-actuated. Brakes will be in accordance with CFR 49 CFR 393.40 through 393.42(b)), 393.43, and 393.43 through 393.52. The braking system, complete with all necessary components will include:

- a. Air compressor having a capacity of not less than 16 standard cubic feet per minute (scfm).
- b. Air storage reservoir(s), each tank equipped with drain (bleed) valves, and with safety and check valves between the compressor and the reservoir tank.
- c. Automatic moisture ejector on each air storage reservoir. Manual air tank drains are acceptable if they are labeled, are centrally located in one compartment and are accessible by an individual standing at the side of the vehicle.
- d. Automatic slack adjusters on cam brakes or internal self-adjusting brakes on wedge brakes on all axles.
- e. Spring set parking brakes.

All components of the braking system will be installed in such a manner as to provide adequate road clearance when traveling over uneven or rough terrain, including objects liable to strike and cause damage to the brake system components. No part of the braking system will extend below the bottom of wheel rims, to ensure, in case of a flat tire, that the weight of the vehicle will be supported by the rim and the flat tire and not be imposed on any component of the braking system. Slack adjusters and air chambers will be located above the bottom edge of the axle carrier.



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3.3.11.1 Air dryer - A replaceable cartridge desiccant air dryer will be installed in the air brake system. The dryer will have the capability of removing not less than 95 percent of the moisture in the air being dried. The dryer will have a filter to screen out oil and solid contaminants. The dryer will have an automatic self-cleaning cycle and a thermostatically controlled heater to prevent icing of the purge valve.

3.3.11.2 Compressed air shoreline or vehicle-mounted auxiliary air compressor - A flush mounted, check valved, auto-eject compressed air shoreline connection will be provided to maintain brake system pressure while the vehicle is not running. The shoreline will be flush mounted (not to extend outside the body line), located on the exterior of the vehicle, either on the left side rear corner of the cab, or at the rear of the vehicle. In lieu of a compressed air shoreline connection, the vehicle may be equipped with a 110 volt shoreline connected vehicle-mounted auxiliary air compressor. In lieu of a compressed air shoreline connection, the vehicle may be equipped with an electrical shoreline connected vehicle mounted auxiliary air compressor.

3.3.12 Steering - The vehicle will be equipped with power steering. Rear-wheel steering technology is not an approved vehicle option.

3.3.12.1 Steering effort - The steering system performance will be in accordance with NFPA 414.

3.3.12.2 Turning diameter - The fully loaded vehicle will have a wall to wall turning diameter of less than three times the overall length of the vehicle in both directions in accordance with NFPA 414.

3.3.13 License plate bracket - A lighted license plate bracket will be provided at the left rear and left front of the vehicle. The location of the left front bracket will be placed so as not to interfere with the operation of fire fighting systems.

3.4 Cab - The vehicle will have a fully enclosed two door cab of materials which are corrosion resistant, such as aluminum, stainless steel, or glass reinforced polyester construction. Steps and handrails will be provided for all crew doors, and at least one grab handle will be provided for each crew member, located inside the cab for use while the vehicle is in motion. The lowermost step(s) will be no more than 22 inches above level ground when the vehicle is fully loaded. A tilt and telescoping steering column will be provided.

3.4.1 Windshield and windows - The windshield and windows will be of tinted safety glass. Each door window will be capable of being opened far enough to facilitate emergency occupant escape in the event of a vehicle accident. The vehicle windows will have an electric control system.

3.4.2 Cab interior sound level - The maximum cab interior sound level will be in accordance with NFPA 414.

3.4.3 Instruments and controls - All instruments and controls will be illuminated and designed to prevent or produce windshield glare. Gauges will be provided for oil pressure, coolant temperature,



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and automatic transmission temperature. In addition to the instruments and controls required by NFPA 414, the following will be provided within convenient reach of the seated driver:

- a. Master warning light control switch
- b. Work light switch(es), and
- c. Compartment "Door Open warning light and intermittent alarm that sounds when a compartment door is open and the parking brakes are released or the transmission is in any position other than neutral.

3.4.4 Windshield deluge system - The vehicle will be equipped with a powered windshield deluge system. The deluge system will be supplied from the agent water tank and will have an independent pumping system. The deluge system activation switch will be located within reach of the seated driver and turret operator.

3.4.5 Forward Looking Infrared (FLIR) - A forward looking infrared (FUR) camera and in-cab monitor, meeting the requirements of NFPA 414, will be provided. In addition, the FUR monitor described in NFPA 414 will have a minimum dimension of 10 in (25 cm) (measured diagonally) and be located in a position where it is visible to both the seated driver and turret operator.

3.4.6 Climate control system - The offeror/contractor's standard heater/defroster and air conditioning system will be provided. The climate control system will induct at least 60 cubic feet per minute of fresh air into the cab. Cab mounted components will be protected from inadvertent damage by personnel.

3.4.7 Seats - The driver seat will be adjustable fore and aft and for height. The turret operator's seat, located to the right front of the driver's seat, will be a fixed (non-suspension) type. Each seat will be provided with a Type 3 seat belt assembly (i.e., 3-point retractable restraint) in accordance with CFR 49 CFR 571.209. Seat belts must be of sufficient length to accommodate crew members in full Personal Protective Equipment (PPE).

3.4.7.1. Seat Options - Two types of seat options are allowed in the vehicle. A standard seat contains a hard/fixed back. For these seats, a remote-mounted bracket designed to store a Self—Contained Breathing Apparatus (SCBA) will be provided. The remote-mounted bracket for the driver and turret operator (at a minimum) must be placed inside the cab. The brackets for seat positions #3 and #4 may be placed outside of the cab if necessary. An SCBA seat, on the other hand, contains an opening which can accommodate someone wearing an SCBA. The chart below represents the user's stated preference for the vehicle seating configuration.

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Position	Standard	SCBA-Seat	N/A
Driver	X		
Turret		X	
#3		X	
#4		X	

JUSTIFICATION

To be used for training and staff.

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3.4.8 Windshield wipers and washer - The vehicle will be equipped with electrically powered windshield wipers. The wiper arms and blades will be of sufficient length to clear the windshield area described by SAE J198, Windshield Wiper Systems - Trucks. Individual wiper controls will include a minimum of two speed settings and an intermittent setting. The wiper blades will automatically return to a park position, out of the line of vision. The vehicle will be equipped with a powered windshield washer system, including an electric fluid pump, a minimum one gallon fluid container, washer nozzles mounted to the wiper arms (wet arms), and a momentary switch.

3.4.9 Warning signs - Signs that state "Occupants must be seated and wearing a seat belt when apparatus is in motion" will be provided in locations that are visible from each seated position in accordance with NFPA 414."

3.4.10 Lateral accelerometer and/or stability control system - The vehicle will be equipped with a lateral accelerometer and/or an electronic stability control system in accordance with NFPA 414.



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3.4.11 Monitoring and Data Acquisition System (MADAS). The vehicle will be equipped with a MADAS as prescribed by NFPA 414.

3.5 Body, compartments, and equipment mounting.

3.5.1 Body - The vehicle will have a corrosion-resistant body.

3.5.2 Compartments - The vehicle body will have lighted compartments in accordance with NFPA 414 with a minimum of 10 cubic feet of enclosed storage space.

3.5.2.1 Compartment doors - Storage compartments will have clear anodized aluminum, counterbalanced, non-locking, roll-up or single hinged doors as determined by the manufacturer. Door latch handles on roll-up doors will be full-width bar type. Door straps will be provided to assist in closing the compartment doors when the rolled up or hinged door height exceeds six feet above the ground.

3.5.2.2 Scuffplates - Replaceable scuffplates will be provided at each compartment threshold to prevent body damage from sliding equipment in and out of the compartments. The scuffplates will be securely attached to the compartment threshold but will be easily replaceable in the event of damage.

3.5.2.3 Drip rails - Drip rails will be provided over each compartment door.

3.5.2.4 Shelves - An adjustable and removable compartment shelf will be provided for every 18 inches of each vertical storage compartment door opening. Shelving adjustments will require no more than common hand tools, and will not require disassembly of fasteners. Shelves will support a minimum of 200 pounds without permanent deformation. Each shelf will be accessible to crew members standing on the ground or using a pull out and tip-down configuration. Each shelf will have drain holes located so as to allow for drainage of any water from the stowed equipment.

3.5.2.5 Drainage mats - Each compartment floor and shelf will be covered with a removable black mat designed to allow for drainage of any water from the stowed equipment.

3.5.3 SCBA storage tubes - A single compartment or tubes for storage of four SCBA bottles will be provided. If tubes are provided, two will be installed on each side of the vehicle. The tubes will be of sufficient size to accommodate the procuring agencies SCBA cylinders.

3.5.4 Ladder, handrails, and walkways - Ladder, stepping, standing, and walking surfaces will be in accordance with NFPA 414. Handrails will be provided in accordance with NFPA 414. The lowermost step(s) or ladder rungs will be no more than 22 inches (56 cm) above level ground when the vehicle is fully loaded. The lowermost steps may extend below the angle of approach or departure or ground clearance limits if they are designed to swing clear. The tread of the bottom steps must be at least 8 inches (20 cm) in width and succeeding steps at least 16 inches (40 cm) in width. The full width of all steps must have at least 6 inches (15 cm) of unobstructed toe room or depth when measured from, and perpendicular to, the front edge of the weight-bearing surface of the step.



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3.5.5 Ancillary equipment - Ancillary equipment listed in NFPA 414 A.4.2.1 (1)-(17) is not covered by this Procurement Specification in accordance with AC 150/5220-10, Guide Specification for Aircraft Rescue and Fire Fighting (ARFF) Vehicles. Ancillary equipment is funded separately by other sources.

NOTE: Equipment funding will be obtained as a separate contract under the provisions of AC 150/5210-14, Aircraft Rescue and Fire Fighting Equipment, Tools, and Clothing.

3.6 Agent system.

3.6.1 Agent (fire) pump - The vehicle will be equipped with a centrifugal pump capable of providing the performance specified herein as prescribed by NFPA 414.

3.6.1.1 Agent system piping - All piping, couplings, and valves and associated components that come into contact with the agent will be in accordance with NFPA 414.

3.6.1.2 Tank to pump connection - A check valve and shutoff valve will be provided in each tank to pump line.

3.6.1.3 Piping, couplings, and valves. All agent system piping will conform to NFPA 414 criteria.

3.6.1.4 Overheat protection - The agent system will be equipped with an overheat protection system in accordance with NFPA 414. Overheat protection is not required on vehicles utilizing a pre-mixed pressurized foam system.

3.6.1.5 Pressure relief valves - The agent system will be equipped with pressure relief valves in accordance with NFPA 414.

3.6.1.6 Drains - The agent system will be equipped with a drainage system in accordance with NFPA 414.

3.6.2 Water tank - The vehicle will have a water tank with a manufacturer certified minimum capacity of at least 3000 gallons.

3.6.2.1 Water tank construction - The water tank will be constructed of passivated stainless steel, polypropylene, or Glass Reinforced Polyester (GRP) construction. All materials used will be capable of storing water, foam concentrate, and water/AFFF solutions.

3.6.2.2 Water tank overhead fill cover and drain - The water tank will be equipped with a 20 inch fill tower. The tower will be designed to allow for video inspection of the water tank interior. The water tank will incorporate a drainage system in accordance with NFPA 414.

3.6.2.3 Water tank overflow system and venting - The water tank will, incorporate a venting system to relieve pressure on the tank during fill and discharge operations at maximum flow rates. It will have an overflow system to relieve excess fluid in the event of tank overflow. Drainage from the vent and overflow system will not flow over body panels or other vehicle components and will not be in the track of any of the



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tires. Tank vent hoses will be of the non- collapsible type.

3.6.2.4 Water tank top fill opening. A top fill opening of not less than 8 inches internal diameter with a readily removable ¼-inch mesh strainer will be provided. The fill opening may be incorporated as part of the manhole cover, and will be sized to accommodate a 2¼-inch fill hose.

3.6.2.5 Water tank fill connections. The water tank will incorporate National Hose thread connections and will be in accordance with NFPA 414. If the vehicle is fitted with the "structural fire fighting capability option," the additional requirements listed in paragraph 3.6.8 must be incorporated.

3.6.3 Foam system (NOTE: *The requirements of section 3.6.3 do not apply to pre-mixed pressurized foam systems.*)

3.6.3.1 Foam concentrate tank - The foam concentrate tank(s) will have a manufacturer certified working capacity sufficient for two tanks of water at the maximum tolerance specified in NFPA 412, Standard for Evaluating Aircraft Rescue and Fire-Fighting Foam Equipment for 3 to 6 percent foam concentrate (i.e., 7.0-percent).

3.6.3.1.1 Foam tank construction - The foam tank will be constructed of passivated stainless steel, polypropylene, or GRP construction. All materials used will be capable of storing foam concentrate.

3.6.3.1.2 Foam tank drain - The foam tank will incorporate a drain and drain valve. The valve will be on the left side of the vehicle and controlled by a crew member standing on the ground. The drain line will have a minimum 1 ½-inch I.D. The foam tank drain outlet will be located so that the contents of the tank can be drained into 5-gallon cans and 55-gallon drums.

3.6.3.1.3 Foam tank top fill trough - The foam tank will incorporate a top fill trough mounted in the top of the tank readily accessible to at least two crew members on top of the vehicle. The top fill trough will incorporate a cover, latch, and sealed so as to prevent spillage under any operating condition. The top fill trough will be designed to allow two standard 5- gallon foam concentrate containers to be emptied simultaneously. The top fill trough neck will extend sufficiently close to the bottom of the tank to reduce foaming to a minimum during the fill operation. The top fill trough will incorporate readily removable, rigidly constructed 10 mesh stainless steel, brass or polyethylene strainers. All components in and around the top fill trough will be constructed of materials that resist all forms of deterioration that could be caused by the foam concentrate or water.

3.6.3.2 Foam tank fill connections - The foam tank will incorporate a 1.5-inch National Hose thread female hose connection on both sides of the vehicle to permit filling by an external transfer hose at flow rates up to 25-gpm. The connections will be provided with chained-on long handled plugs or rocker lug plugs. The top of the connections will be no higher than 48 inches above the ground and readily accessible. The fill lines will incorporate check valves and readily removable, rigidly constructed ¼-inch mesh strainers. All components in the foam tank fill system will be constructed of materials that resist all forms of deterioration that could be caused by the foam concentrate or water.



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3.6.3.2.1 Foam tank vent and overflow system - The foam tank will incorporate a vent system to relieve pressure on the tank during fill and discharge operations at maximum flow rates and an overflow system to relieve excess liquid in the event of tank overflow. Drainage from the vent and overflow system will not flow over body panels or other vehicle components and will not be in front of or behind any of the tires. Tank vent hoses will be of the non-collapsible type.

3.6.3.3 Foam transfer pump - A foam transfer pump will be provided and mounted in a compartment on the vehicle. The pump will be capable of transferring and thawing foam liquid concentrate at adjustable flow rates up to 25-gpm directly through the pump and loading connections (see 3.6.3.2). All materials and components that come in contact with the foam will be compatible with the foam concentrate. The pump and its plumbing will have provisions for flushing with water from the water tank. A suitable length of hose with appropriate connections will be provided for filling the foam tank from an external foam storage container.

3.6.3.4 Foam flushing system - The foam concentrate system will be designed in accordance with NFPA 414 so that the system can be readily flushed with clear water.

3.6.3.5 Foam concentrate piping - All metallic surfaces of the piping and associated components that come into contact with the foam concentrate will be of brass, bronze, or passivated stainless steel. The foam concentrate piping will be in accordance with NFPA 414.

3.6.4 Foam proportioning system - The vehicle will have a foam proportioning system for Aqueous Film-Forming Foam (AFFF) (whether 3- or 6-percent foam concentrate) in accordance with NFPA 414. If a fixed orifice plate system is used, a plate will be provided for each percentage foam concentrate; the additional plate will be securely mounted in a protected location on the vehicle. A fire vehicle mechanic will be able to interchange the plates using common hand tools.

3.6.5 Primary vehicle turret. The vehicle will be equipped with a standard roof-mounted turret, high reach extendable turret, and/or high flow bumper mounted turret to serve as the primary source of agent delivery, as specified below:

3.6.5.1 Roof turret The roof turret will be mounted near the front of the roof of the vehicle. It will have a non-air-aspirating, constant flow, variable stream nozzle with dual flow rates for foam or water rated as specified in NFPA 414. The discharge pattern will be infinitely variable from straight stream to fully dispersed. The roof turret will be power operated, power controls will be positioned for use by the driver and the crew member seated to the right of the driver. The type of nozzle or turret drain will be per the manufacturer's recommendation.



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3.6.6 Bumper turret - The vehicle will be equipped with a joystick controlled, constant flow, non-air-aspirating, variable stream type:

low angle high volume dual rate (minimum 600/1200 GPM) bumper turret.

The bumper turret will be capable of discharging at a minimum flow rate of foam or water as specified by the user, with a pattern infinitely variable from straight stream to fully dispersed. The bumper turret will be capable of automatic oscillation, with the range of oscillation adjustable up to 90° each side of center (left and right) with vertical travel capabilities of +45°/- 20° meeting section 4.20.2 in NFPA 414.

3.6.7 Preconnected handline(s) - One 200 foot, 1.75-inch pre-connected woven jacket handline(s), with a 1.50-inch control valve and a pistol grip nozzle, will be located on (or accessible from) left side of the vehicle. A safety system will be provided to prevent charging of the hose until the hose has been fully deployed. The handline(s) and nozzle(s) will be in accordance with NFPA 414, and will allow for a minimum of 95 gpm at 100 psi nozzle pressure. A control for charging the handline will be provided for operation by both the driver and the turret operator.

3.6.7.1 In addition, the vehicle will be equipped with the following handline: 100 feet of twinned 1-inch dry chemical / foam-water hose on a reel

3.6.8 Structural fire fighting capability - The vehicle will be equipped with an agent system structural control panel, on the left side of the vehicle, operable while standing on the ground Structural panel activation will be interlocked to operate only with the vehicle parking brakes set and the transmission in neutral position Controls and instruments will be grouped by function The control panel will be hinged or accessible from the rear for maintenance Instruments will be lighted for night operation.

3.6.8.1 The structural panel will include, as a minimum, the following:

- a. Panel activation switch, including the panel lights
- b. Engine tachometer
- c. Engine oil pressure gauge with low pressure warning light
- d. Engine coolant temperature gauge with high temperature warning light
- e. A liquid filled gauge, or digital indicator for pump suction, -30 inches Hg vacuum to 600 psi
- f. A liquid filled gauge, or digital indicator for pump pressure, 0 to 600 psi
- g. An adjustable pump pressure using either an electronic pressure governor or manual control with a relief valve will be provided. . . .
- h. Foam or water selection. . . .
- i. Water and foam tank liquid level indicators, located adjacent to the water and foam tank fills.



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3.6.8.2 The structural fire fighting capability will also require installation of the following items:

- a. A priming pump and control (for drafting using the large intake connection)
- b. Water tank isolation valve
- c. Discharge connections Two 2½-inch discharge connections with male National Hose threads will be provided One 2½-inch discharge will be provided on each side of the vehicle Each connection will be equipped with a cap, a quarter-turn control valve, a bleeder valve, and a pressure gauge Each connection will be rated at 250-gpm minimum
- d. Intake connections The vehicle will be equipped with one valved 4½-inch intake connection on the left side The vehicle will be equipped with one valved 2 ½-inch intake connection on the left side adjacent to the 4½-inch intake connection with both having either a 30° or 45° turn-down fitting The 4½-inch intake connection will have male National Hose threads, a quarter-turn control valve, a bleeder valve, a strainer, and a cap The 2½-inch intake connection will have rocker lug female National Hose threads, a quarter-turn control valve, a bleeder valve, a strainer, and a plug The vehicle will be capable of filling its water tank by pumping from a draft, a hydrant, or a nurse truck through either of the intake connections without the use of a hose from a discharge connection to a tank fill connection

3.6.9 Primary turret discharge nozzle - The vehicle will be equipped with a combination dry chemical AFFF nozzle of the entrainment type on the primary turret mounted on the cab roof

3.7 Dry chemical agent system - The vehicle will be equipped with a 450 lb minimum capacity potassium bicarbonate dry chemical auxiliary agent system The propellant gas cylinder will be replaceable within fifteen minutes by two crew members standing on the ground and be equipped with a cylinder replacement hoisting system The propellant gas cylinder will be secured to withstand off-road operations. A pressure indicator will be visible to any person opening the tank fill cap Blow-down piping will be directed beneath the vehicle The dry chemical agent tank will include lifting rings and will have a nameplate indicating, as a minimum, the following;

- a. Extinguishing agent
- b. Capacity
- c. Weight full
- d. Weight empty
- e. Operating pressure
- f. Hydrostatic test date
- g. Type of agent required for re-servicing

3.7.1 Not applicable.



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3.7.2 Dry chemical hose reel - A hose reel, equipped with at least 100 feet of dry chemical hose, will be mounted in a compartment. Handline agent and purge controls will be mounted in or adjacent to the compartment. All electrical components will be sealed against entry of water. The hose reel will have both electric and manual rewind provisions. The manual rewind handle will be bracket mounted and stored in the compartment. A quick acting control will be provided to activate the handline from the cab of the vehicle.

3.8 Not applicable.

3.9 Electrical systems and warning devices - The vehicle will have a 12-volt or 24-volt electrical and starting system in accordance with NFPA 414.

3.9.1 Alternator - An appropriate charging system, in accordance with NFPA 414, will be provided. The minimum continuous electrical load will include operation of the air conditioning system.

3.9.2 Batteries - Batteries will be of the maintenance-free type; addition of water will not be required during normal service life. The battery cover and vent system will be designed to prevent electrolyte loss during service and to keep the top of the battery free from electrolyte.

3.9.2.1 Battery compartment - The batteries will be enclosed in a weatherproof enclosure, cover, or compartment and be readily accessible.

3.9.3 Battery charger or conditioner - The vehicle will have a DC taper type battery charger or an automatic battery conditioner, or voltage monitoring system, providing a minimum 12 amp output. The charger/conditioner will be permanently mounted on the vehicle in a properly ventilated, accessible location. The charger/conditioner will be powered from the electrical shoreline receptacle (see 3.10.1). A charging indicator will be installed next to the receptacle. When a battery conditioner is provided, the conditioner will monitor the battery state of charge and, as necessary, automatically charge or maintain the batteries without gassing, depleting fluid level, overheating, or overcharging. A slave receptacle will be provided at the rear or on either side of the vehicle cab. Battery jump studs may be installed on the exterior of the battery box in lieu of a slave receptacle.

3.9.4 Electromagnetic interference - The vehicle electrical system will be in accordance with SAE J55 1-2 for electromagnetic interference.

3.9.5 Work lighting.

3.9.5.1 Cab interior lights - Cab interior light levels will be sufficient for reading maps or manuals. At least one red and one white cab interior dome light will be provided.

3.9.5.2 Compartment lights - White lighting sufficient to provide an average minimum illumination of 1.0 foot-candle will be provided in each compartment greater than 4.0 cubic feet and having an opening greater than 144 square inches. Where a shelf is provided, this illumination will be provided both above and below the shelf. All compartments will be provided with weatherproof lights that are switched to automatically



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illuminate when compartment doors are opened and the vehicle master switch is in the 'on' position. Light switches will be of the magnetic (non-mechanical) type.

3.9.5.3 Ladder, step, walkway, and area lights - Non-glare white or amber lighting will be provided at ladders and access steps where personnel work or climb during night operations. In addition, ground lighting will be provided. Ground lights will be activated when the parking brake is set in accordance with AC 150/5220-10, Guide Specification for Aircraft Rescue and Fire Fighting (ARFF) Vehicles. These area lights will be controlled with three-way switches on the cab instrument panel and near the light sources. The switch located in the cab will be a master switch and must be turned on before auxiliary switches near the light sources are operational.

3.9.5.4 Spot/Floodlights - Two spot/floodlights will be attached at the end of the primary turret or at the end of the HRET assembly. The lights will illuminate the area covered by the turret. Both lights will be controlled from switches in the cab. Halogen lights will be used.

3.9.5.5 Flood Lights - Two telescoping floodlights will be provided. One light will be mounted on the left and right sides of the vehicle. 1000W Halogen lights will be used. Both lights will be mounted on extension tubes and controlled from switches in the cab and manually raised. To prevent these lights from accidental damage, the cab will be equipped with a visual warning signal to alert the driver if the lights are inadvertently left in the up position.

3.9.5.6 Scene Lights - A total of six high mounted floodlights will be provided to illuminate the work areas around the vehicle. Two lights will be mounted on the front and two will be mounted on each side of the vehicle. The lights will be powered by the vehicle alternator driven system or auxiliary generator, and the lights in the front will be controlled from switches in the cab. Halogen lights will be used.

3.9.6 Audible warning devices.

3.9.6.1 Siren. The vehicle will be equipped with an electronic siren system. The amplifier unit will include volume control and selection of "Radio," "PA," "Manual," "Yelp," "Wail," and "Hi-Lo" (European) modes, and a magnetic noise canceling microphone. The amplifier, microphone, and controls will be within reach of the driver and the turret operator. Siren activating foot switches will be located in front of the driver and the turret operator. The siren speaker will be rated at 100 watts minimum and will be located in a guarded position as low and as far forward on the vehicle as practical.

3.9.6.2 Horn - Dual forward facing air horns will be installed in protected locations near the front of the vehicle. Air horn activating foot switches will be located in front of the driver and the turret operator.

3.9.7 Emergency warning lights All emergency warning lights must meet the requirements of AC 150/5210-5. Where applicable, LED lights will be used as the primary light type. Lighting units will be installed on the top front, sides, and rear of the vehicle to provide 360° visibility. A switch will be provided on the instrument panel to control all of the top, side, front and rear emergency warning lights. A switch will also be provided on the instrument panel to disable all lower emergency warning lights when desired. All lighting systems will meet NFPA 414 emergency lighting criteria.



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3.9.7.1 Emergency warning light color - All emergency warning lights will meet the requirements of AC 150/5210-5.

3.9.7.2 Headlight flashing system. A high beam, alternating/flashing, headlight system will be provided. The headlight flasher will be separately switched from the warning light panel.

3.9.8 Radio circuit - The vehicle will have three separate 30 amp circuits with breakers and connections provided in a space adjacent to the driver and turret operator for installation of radios and other communications equipment after the vehicle has been delivered. To facilitate the installation of the communications equipment the manufacturer will provide three antennas pre-installed on top of the cab. ***Radios are an airport responsibility and not part of this specification.***

3.9.9 Power receptacles

3.9.9.1 Primary power receptacles - The vehicle will have two duplex 15-amp 110-volt power receptacles, one installed adjacent to the cab door on each side of the vehicle. Each duplex receptacle will include one straight blade and one twist-lock connection. These outlets will be powered by the generator.

3.9.9.2 Auxiliary Dower receptacles - The vehicle will have 2-12-volt auxiliary power receptacles mounted adjacent to the driver and crew member positions, preferably in the instrument panel.

3.9.9.3 Cable reel - The vehicle will be equipped with an electrical cable reel, located within a compartment. The reel will be equipped with 200 feet of 20 amp, 600 volt, 90°C insulated electrical cable. The electrical cable will be equipped with a rubber ball stop to prevent cable pull through during rewinding operations. A four-way roller guide will be provided on the cable reel to prevent chafing of cable insulation. The cable reel will have an electric rewind motor with provisions for manual rewind in the event of motor failure; the manual rewind handle will be securely stored near the cable reel. A portable weatherproof duplex outlet box, with built-in circuit breakers and twist-lock receptacles, will be provided for on the cable end. The cable reel will be powered by the auxiliary generator.

3.9.10 Auxiliary generator. A minimum 10 kilowatt (kW) (continuous rating), 120/240-volt, 60 hertz, diesel, hydraulic, or split shaft Power Takeoff (PTO)-driven generator will be provided.

3.10 Line voltage electrical system

3.10.1 Electrical shoreline connection - The battery charger/conditioner will be powered from a covered, polarized, insulated, labeled, recessed (flush mounted), male, 110 volt AC auto-eject receptacle. The connection will be located on the exterior of the vehicle at the rear or on either side of the cab. A weatherproof charge meter will be installed next to the receptacle. A 15 amp rated, 110-120-volt, AC straight blade (non twist-lock) connector will be provided.



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3.11 • Air systems

3.11.1 Air hose reel - An air hose reel will be provided in an enclosed compartment on the vehicle. The hose reel will be equipped with 200 feet of 3/8-inch I.D. hoseline. A 3/8 inch National Pipe Taper (NPT) fitting and female style quick disconnect will be connected to the end of the hoseline. A four-way roller guide will be provided for the hose reel to prevent hose chafing and kinking. The hoseline will be equipped with a rubber ball stop to prevent hose pull through on roller guides during rewinding operations. The hose reel will have an electric rewind motor and provisions for manual rewind in the event of motor failure, the manual rewind handle will be securely stored near the hose reel. A pressure protected air supply from the chassis air system will be connected to the hose reel. The air supply lines will be routed with minimum bends and located or guarded from damage from the carried equipment.

3.12 Quality of Workmanship - The vehicle, including all parts and accessories, will be fabricated in a thoroughly workmanlike manner. Particular attention will be given to freedom from blemishes, burrs, defects, and sharp edges; accuracy of dimensions, radii of fillets, and marking of parts and assemblies; thoroughness of welding, brazing, soldering, riveting, and painting; alignment of parts; tightness of fasteners; et cetera. The vehicle will be thoroughly cleaned of all foreign matter.

4. REGULATORY REQUIREMENTS.

4.1 Recoverable Materials - The contractor is encouraged to use recovered materials to the maximum extent practicable, in accordance with Title 48: Federal Acquisition Regulations System, Part 2823—Environment, Conservation, Occupational Safety, and Drug-free Workplace, Subpart 2823.4 Use of Recovered Material, 403 Policy and 404 Procedures.

4.2 Green Procurement Program - Green Procurement Program (GPP) is a mandatory federal acquisition program that focuses on the purchase and use of environmentally preferable products and services. GPP requirements apply to all acquisitions using appropriated funds, including services and new requirements. FAR 23.404(b) applies and states the GPP requires 100% of EPA designated product purchase that are included in the Comprehensive Procurement Guidelines list that contains recovered materials, unless the item cannot be acquired:

- a. competitively within a reasonable timeframe;
- b. meet appropriate performance standards, or
- c. at a reasonable price.

The prime contractor is responsible for ensuring that all subcontractors comply with this requirement.

Information on the GPP can be found at:

http://www.dot.gov/ost/m60/DOT_policy_letters/apl8_04.pdf or FAR 23.404(b):

<http://www.acquisition.gov/far/current/html/Subpart%2023.4.html>.



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5. PRODUCT CONFORMANCE PROVISIONS.

5.1 Classification of inspections - The inspection requirements specified herein are classified as follows:

- a. Performance inspection (see 5.2).
- b. Conformance inspection (see 5.3).

5.2 Performance inspection - The vehicle will be subjected to the examinations and tests described in 5.6.3.1 through 5.6.3.5 (if applicable). The contractor will provide or arrange for all test equipment, personnel, schedule, and facilities.

5.3 Conformance inspection - The vehicle will be subjected to the examinations and tests described in 5.6.3.1 through 5.6.3.5 (if applicable). The contractor will provide or arrange for all test equipment, personnel, and facilities.

5.4 Product conformance. The products provided will meet the performance characteristics of this PS, conform to the producer's own drawings, specifications, standards, and quality assurance practices, and be the same product offered for sale in the commercial marketplace. The purchaser reserves the right to require proof of such conformance.

5.5 Technical proposal. - The offeror/contractor will provide an itemized technical proposal that describes how the proposed model complies with each characteristic of this PS; a paragraph by paragraph response to the characteristics section of this PS will be provided. The offeror/contractor will provide two copies of their commercial descriptive catalogs with their offer as supporting reference to the itemized technical proposal. The offeror/contractor will identify all modifications made to their commercial model in order to comply with the requirements herein. The vehicle furnished will comply with the "commercial item" definition of FAR 2.101 as of the date of award. The purchaser reserves the right to require the offeror/contractor to prove that their product complies with the referenced commerciality requirements and each conformance/performance characteristics of this PS.

5.6 Inspection requirements

5.6.1 General inspection requirements - Apparatus used in conjunction with the inspections specified herein will be laboratory precision type, calibrated at proper intervals to ensure laboratory accuracy.

5.6.2 Test rejection criteria - Throughout all tests specified herein, the vehicle will be closely observed for the following conditions, which will be cause for rejection:

- a. Failure to conform to design or performance requirements specified herein or in the contractor's technical proposal.



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b. Any spillage or leakage of any liquid, including fuel, coolant, lubricant, or hydraulic fluid, under any condition, except as allowed herein.

c. Structural failure of any component, including permanent deformation, or evidence of impending failure.

d. Evidence of excessive wear.

e. Interference between the vehicle components or between the vehicle, the ground, and all required obstacles, with the exception of normal contact by the tires.

f. Misalignment of components.

g. Evidence of undesirable roadability characteristics, including instability in handling during cornering, braking, and while traversing all required terrain.

h. Conditions that present a safety hazard to personnel during operation, servicing, or maintenance.

i. Overheating of the engine, transmission, or any other vehicle component.

j. Evidence of corrosion.

k. Failure of the fire fighting system and sub-systems.

5.6.3 Detailed inspection requirements

5.6.3.1 Examination of product - All component manufacturers' certifications, as well as the prototype and production/operational vehicle testing outlined in Table 1, will be examined to verify compliance with the requirements herein. Attention will be given to materials, workmanship, dimensions, surface finishes, protective coatings and sealants and their application, welding, fastening, and markings. Proper operation of vehicle functions will be verified as defined by NFPA 414, Acceptance Criteria chapter. A copy of the vehicle manufacturer certifications will be provided with each vehicle in accordance with NFPA 414. The airport may accept a manufacturer or third party certification for any/all prototype and production/operational vehicle testing performed prior to delivery which proves that the vehicle meets the performance parameters of NFPA 414.

Table 1. Vehicle Test Data

NFPA 414 paragraph	Test
Production Vehicle Operational Tests (NFPA 414 - Section 6.4)	

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(6.4.1)	Vehicle Testing, Side Slope
(6.4.2)	Weight / Weight Distribution
(6.4.3)	Acceleration. NOTE: <i>With the modification that the instrumentation must be a GPS-based electronic data collection system.</i>
(6.4.4)	Top Speed
(6.4.5)	Brake Operational Test
(6.4.6)	Air System / Air Compressor Test
(6.4.7)	Agent Discharge Pumping Test
(6.4.8)	Dual Pumping System Test (As Applicable)
(6.4.9)	Pump and Maneuver Test
(6.4.10)	Hydrostatic Pressure Test
(6.4.11)	Foam Concentration Test
(6.4.12)	Primary Turret Flow Rate Test
(6.4.13)	Piercing/Penetration Nozzle Testing (As Applicable)
Prototype Vehicle Tests (NFPA 414 — Section 6.3)	
(6.3.1)	•Rated Water and Foam Tank Capacity Test
(6.3.2)	Cornering Stability. NOTE: <i>With the modification that the evasive maneuver / double-lane change test must be conducted at 35 mph (56 kph).</i>
(6.3.3)	Vehicle Dimensions

NFPA 414 paragraph	Test
(6.3.4)	Driver Vision Measurement

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(6.3.5)	Pump and Roll on a 40 Percent Grade
(6.3.6)	Electrical Charging System
(6.3.7)	Radio Suppression
(6.3.8)	Gradability Test
(6.3.9)	Body and Chassis Flexibility Test
(6.3.10)	Service/Emergency Brake Test
(6.3.11)	Service/Emergency Brake Grade Holding Test
(6.3.12)	Steering Control Test
(6.3.13)	Vehicle Clearance Circle Test
(6.3.14)	Agent Pump(s)/Tank Vent Discharge Test
(6.3.15)	Water Tank Fill and Overflow Test
(6.3.16)	Flushing System Test
(6.3.17)	Primary Turret Flow Rate Test
(6.3.18)	Primary Turret Pattern Test
(6.3.19)	Primary Turret Control Force Measurement
(6.3.20)	Primary Turret Articulation Test
(6.3.21)	Handline Nozzle Flow Rate Test
(6.3.22)	Handline Nozzle Pattern Test
(6.3.23)	Ground Sweep/Bumper Turret Flow Rate Test
(6.3.24)	Ground Sweep/Bumper Turret Pattern Control Test
(6.3.25)	Undertruck Nozzle Test
(6.3.26)	Foam Concentration/Foam Quality Test



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(6.3.27)	Warning Siren Test
(6.3.28)	Propellant Gas
(6.3.29)	Pressure Regulation
(6.3.30)	AFFF Premix Piping and Valves
(6.3.31)	Pressurized Agent Purging and Venting
(6.3.32)	Complementary Agent Handline Flow Rate and Range
(6.3.33)	Dry Chemical Turret Flow Rate and Range
(6.3.34)	Cab Interior Noise Test

6. PACKAGING

6.1 Preservation, packing, and marking will be as specified in the Procurement Specification, contract or delivery order.

6.2 The vehicle must be delivered with full operational quantities of lubricants, brake and hydraulic fluids, and cooling system fluid all of which must be suitable for use in the temperature range expected at the airport.

6.3 The vehicle must be delivered with one complete load of firefighting agents and propellants. One complete load is defined as all of the agents and propellants necessary for the vehicle to be fully operational. One load would include, at a minimum: one fill of a foam tank; one fill of a dry chemical tank (if applicable); one fill of a halogenated tank (if applicable); one spare nitrogen cylinder for a dry chemical system (if applicable); and one spare argon cylinder for a halogenated system (if applicable). Agents and propellants for required testing or training are not included. For the initial training period, water should be used in place of other extinguishing agents. The manufacturer may pre-ship agents and propellants to a receiving airport to reduce overall procurement costs.

6.4. The vehicle manufacturer must provide initial adjustments to the vehicle for operational readiness and mount any ancillary appliances purchased through the vehicle manufacturer as part of the vehicle.

7. TRAINING

7.1 Upon delivery of the vehicle to the airport, the manufacturer must, at no additional cost, provide the services of a qualified technician for five consecutive days (or up to eight days for an high reach extendable turret) for training. This is considered sufficient time for the purchaser to adjust shift work schedules to get maximum employee attendance to training sessions at some point during the training period. During this



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time sufficient repetitive learning opportunities must be provided by the manufacturer to allow various shifts to complete the training requirements.

7.2 The technician must provide thorough instruction in the use, operation, maintenance and testing of the vehicle. This setup must include operator training for the primary operators, which will give them sufficient knowledge to train other personnel in the functional use of all fire fighting and vehicle operating systems. Prior to leaving the vehicle, the technician should review the maintenance instructions with the purchaser's personnel to acquaint them with maintenance procedures as well as how to obtain support service for the vehicle.

7.3 Training must include written operating instructions, electronic training aids (videos/power point), or other graphics that depict the step-by-step operation of the vehicle. Written instructions must include materials that can be used to train subsequent new operators.

8. REFERENCED DOCUMENTS.

8.1 Source of documents.

8.1.1 The CFR may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington DC 20402.

Title 14, Code of Federal Regulations (CFR), Part 139, Certification of Airports (14 CFR Part 139)

Section 139.315 Aircraft Rescue and Firefighting: Index Determination.

Section 139.317 Aircraft Rescue and Firefighting: Equipment and Agents.

Section 139.319 Aircraft Rescue and Firefighting: Operational Requirements.

Title 49; Code of Federal Regulations (CFR), Part 393: Parts and Accessories Necessary for Safe Operation: Subpart C—Brakes.

Title 49; Code of Federal Regulations (CFR), Part 571, Motor Carrier Vehicle Safety Standards, Part 209, Standard No. 209; Seat Belt Assemblies.

8.1.2 SAE documents may be obtained from SAE, Inc., 400 Commonwealth Drive, Warrendale PA 15096.

8.1.3 National Fire Protection Association (NFPA): NFPA documents may be obtained from NFPA, Batterymarch Park, Quincy MA 02269-9101.

NFPA 412, Standard for Evaluating Aircraft Rescue and Fire-Fighting Foam Equipment (2009 Edition)

NFPA 414, Standard for Aircraft Rescue and Fire Fighting Vehicles (2007 Edition) NFPA 1901, Standard for Automotive Fire Apparatus (2009 Edition)

8.1.4 Federal Aviation Administration (FAA): FAA ACs may be obtained from the FAA website: http://www.faa.gov/regulations_policies/advisory_circulars/



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AC 150/5220-10, Guide Specification for Aircraft Rescue and Fire Fighting (ARFF) Vehicles

AC 150/5210-5, Painting, Marking, and Lighting of Vehicles Used on an Airport

FAA Orders, Specifications, and Drawings may be obtained from: Federal Aviation Administration, ATO-W
CM-NAS Documentation, Control Center, 800 Independence Avenue, SW, Washington, DC 20591.

Telephone: (202) 548-5256, FAX: (202) 548-5501 and website:

http://www.faa.gov/about/office_org/headquarters_offices/ato/service_units/techops/atc_facilities/cm/cm_documentation/



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AIRCRAFT RESCUE AND FIRE FIGHTING (ARFF) VEHICLE WITH HRET

**PROCUREMENT SPECIFICATION
Class 5, AC 150/5220 – bE**

AIRCRAFT RESCUE AND FIRE FIGHTING (ARFF) VEHICLE

1. **SCOPE.** This Procurement Specification (PS) covers a commercially produced diesel engine driven ARFF vehicle for an Index E airport. It includes a 3000-4500 gallon water/Aqueous Film Forming Foam (AFFF) fire suppression system: 450 lb potassium-based dry chemical only

The ARFF vehicle is intended to carry rescue and fire fighting equipment for the purpose of rescuing aircraft passengers, preventing aircraft fire loss, and combating fires in aircraft.

2. **CLASSIFICATION.** The ARFF vehicle(s) covered by this PS are classified in accordance with Part 139, Certification and Operations: Land Airports Serving Certain Air Carriers, Section 315, Aircraft Rescue and Firefighting: Index Determination; Section 317, Aircraft Rescue and Firefighting: Equipment and Agents; and Federal Aviation Administration (FAA) Advisory Circular (AC) 150/5220-10, Guide Specification for Aircraft Rescue and Fire Fighting (ARFF) Vehicles, as follows:

3. **VEHICLE CONFORMANCE/PERFORMANCE CHARACTERISTICS.** The ARFF vehicle will be in accordance with the applicable requirements of National Fire Protection Association (NFPA) 414, Standard for Aircraft Rescue and Fire Fighting Vehicles (2007 Edition), and AC 150/5220-10, Guide Specification for Aircraft Rescue and Fire Fighting (ARFF) Vehicles.

3.1 **General Administration Requirements.**

3.1.1 **Manuals.** Technical manuals will consist of operator, service, and parts manuals. All manuals are required to be provided in hardcopy and in digital format on CDs when requested.

3.1.1.1 **Technical manuals.** The overall format for the manuals will be commercial. Each technical manual will have a title page. Line art will be used to the maximum extent possible for illustrations and parts lists. One complete set of engine and transmission parts, service and operator's manuals will be packed with each vehicle.

a. The contractor will provide digitized manuals in CD format when requested in addition to or in place of printed paper copies.

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Airport Index	Vehicle Class	Minimum Rated Capacities (gallons/liters)
Index E	5	3000 gallon/i 1,356 liter water/AFFF solution
Index E	5	3500 gallon/13,249 liter water/AFFF solution
Index E	5	4000 gallon/15,142 liter water/AFFF solution
Index E	5	4500 gallon/i 7,034 liter water/AFFF solution

b. The contractor will provide two complete sets of hardcopy manuals and / or CDs when requested.

3.1.1.1.1 Operator's manual. The operator's manual will include all information required for the safe and efficient operation of the vehicle, including fire extinguishing systems, equipment, and any special attachments or auxiliary support equipment. As a minimum, the operator's manual will include the following:

- a. The location and function of all controls and instruments will be illustrated and functionally described.
- b. Safety information that is consistent with the safety standards established by the Occupational Safety and Health Administration (OSHA) and NFPA.
- c. All operational and inspection checks and adjustments in preparation for placing the vehicle into service upon receipt from the manufacturer.
- d. Tie down procedures for transport on a low-boy trailer.
- e. Warranty information and the period of the warranty coverage for the complete vehicle and for any component warranty that exceeds the warranty of the complete vehicle. Addresses and telephone numbers will be provided for all warranty providers.
- f. General description and necessary step-by-step instructions for the operation of the vehicle and its fire extinguishing system(s) and auxiliary equipment.
- g. A description of the post-operational procedures (draining; flushing, re-servicing, et cetera).
- h. Daily maintenance inspection checklists that the operator is expected to perform, including basic troubleshooting procedures.
- i. Disabled vehicle towing procedures.
- j. Procedures and equipment required for changing a tire.
- k. Schedules (hours, miles, time periods) for required preventative maintenance and required periodic maintenance.
1. Line art drawing of the vehicle, including panoramic views (front, rear, left, and right sides) showing basic dimensions and weights (total vehicle and individual axle weight for the unloaded and fully loaded vehicle). For the purposes of this AC, "unloaded" is defined as a lack of agent, occupants and compartment load, and "loaded" is defined as including agent, occupants and compartment load.



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3.1.1.1.2 Service manual. The service manual will identify all special tools and test equipment required to perform servicing, inspection, and testing. The manual will cover troubleshooting and maintenance as well as minor and major repair procedures. The text will contain performance specifications, tolerances, and fluid capacities; current, voltage, and resistance data; test procedures; and illustrations and exploded views as may be required to permit proper maintenance by qualified vehicle mechanics. The manual will contain an alphabetical subject index as well as a table of contents. The service manual will contain at least the following, where applicable:

- a. Fire fighting system schematic(s).
- b. Hydraulic schematic.
- c. Pneumatic schematic.
- d. Electrical schematic.
- e. Winterization schematic.
- f. Fuel schematic.
- g. Schedules for required preventative maintenance and required periodic maintenance.
- h. Lubrication locations, procedures, and intervals for parts of the vehicle and equipment that require lubrication.

3.1.1.1.3 Parts identification manual. The parts manual will include illustrations or exploded views (as needed) to identify properly all parts, assemblies, subassemblies, and special equipment. All components of assemblies shown in illustrations or exploded views will be identified by reference numbers that correspond to the reference numbers in the parts lists. All purchased parts will be cross-referenced with the original equipment manufacturers (OEM) name and part number. The parts identification manual will provide the description and quantity of each item used for each vehicle. The size, thread dimensions, torque specifications, and special characteristics will be provided for all nonstandard nuts, bolts, screws, washers, grease fittings, and similar items. The manual will contain a numerical index. The parts manual will contain a list of all of the component vendor names, addresses, and telephone numbers referenced in the parts list.

3.1.2 Painting, plating, and corrosion control.

3.1.2.1 Finish. Exterior surfaces will be prepared, primed, and painted in accordance with all of the paint manufacturer's instructions and recommendations. Vehicles will be painted and marked in accordance with AC 150/5210-5, Painting, Marking, and Lighting of Vehicles Used on an Airport. The interior finish of all compartments will be based on the manufacturer's standard production practice. This may include painting, texturing, coating or machine swirling as determined by the manufacturer. All bright metal and anodized parts, such as mirrors, horns, light bezels, tread plates, and roll-up compartment doors, will not be painted. All other surfaces capable of being painted must be in the appropriate yellow-green color.

3.1.2.2 Dissimilar metals. Dissimilar metals, as defined in MIL-STD-889, Dissimilar Metals, will not be in contact with each other. Metal plating or metal spraying of dissimilar base metals to provide electromotively compatible abutting surfaces is acceptable. The use of dissimilar metals separated by suitable insulating material is permitted, except in systems where bridging of insulation materials by an electrically conductive fluid can occur.



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3.1.2.3 Protection against deterioration. Materials that deteriorate when exposed to sunlight, weather, or operational conditions normally encountered during service will not be used or will have a means of protection against such deterioration that does not prevent compliance with performance requirements. Protective coatings that chip, crack, or scale with age or extremes of climatic conditions or when exposed to heat will not be used.

3.1.2.4 Reflective stripes. A minimum eight (8) inch horizontal band of high gloss white paint or white reflective tape (Retroreflective, ASTM-D 4956-09, *Standard Specification for Retroreflective Sheeting for Traffic Control*, TYPE III & above) must be applied around the vehicle's surface.

3.1.2.5 Lettering. The manufacturer will apply the airport's Name' and 'Insignia' (if available) in a contrasting color or by decal on both sides of the vehicle in long radius elliptical arches above and below the lettering center line. The size of the lettering will be a minimum of 2 1/2-inches to a maximum of 6-inches. Reflective lettering is allowed if the material is the same as that which is used for the reflective stripe (as specified in AC 150/5210-5).

3.1.3 Vehicle identification plate. A permanently marked identification plate will be securely mounted at the driver's compartment. The identification plate will contain the following information:

- a. NOMENCLATURE
- b. MANUFACTURER'S MAKE AND MODEL
- c. MANUFACTURER'S SERIAL NUMBER
- d. VEHICLE CURB WEIGHT: kg (pounds)
- e. PAYLOAD, MAXIMUM: kg (pounds)
- f. GROSS VEHICLE WEIGHT (GVW): kg (pounds)
- g. FUEL CAPACITY AND TYPE: gals (gallons)
- h. DATE OF DELIVERY (month and year)
- i. WARRANTY (months and km (miles))
- j. CONTRACT NUMBER
- k. PAINT COLOR AND NUMBER

A second permanently marked information data plate will be securely mounted on the interior of the driver's compartment. The plate will contain the information required by NFPA 414, Standard for Aircraft Rescue and Fire Fighting Vehicles (2007 Edition), Section 1.3.5 Vehicle Information Data Plate. A single plate that combines or contains the information required for both plates is acceptable.

3.1.4 Environmental conditions.

3.1.4.1 Vehicle operation and storage temperature conditions will vary with geographical location. Thus, the locality temperature range can go from -40° to 110°F. Refer to NFPA 414 for vehicle winterization criteria.

3.1.4.2 Extreme temperature range The vehicle will be capable of satisfactory storage and operation in temperatures ranging from -40° to 110°F The vehicle will be equipped with a cab, chassis, and agent winterization system, permitting operation at 40°F .The winterization system will not detract from the



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performance of the vehicle or the firefighting system in ambient temperatures up to 110°F The vehicle chassis winterization system will maintain the engine coolant, lubricants, fuel, and electrical systems operational at ambient temperatures of -40°F The vehicle agent winterization system will provide sufficient insulation and heating capacity, by means of hot circulating liquids and/or forced air heat exchangers, to permit satisfactory operation of the vehicle and firefighting systems for a 2-hour period at ambient temperatures as low as -40° F with the vehicle fully operational and the engine running At the end of this 2-hour period, the vehicle will be capable of successfully discharging its agents All compartments not winterized will be marked as such on the interior of the compartment The marking will state that the compartment is not winterized and cannot be used for the storage of items capable of freezing

3.1.5 Reduction of potential foreign object damage. All loose metal parts, such as pins, will be securely attached to the vehicle with wire ropes or chains. Removable exterior access panels, if provided, will be attached with captive fasteners.

3.1.6 Vehicle Mobility.

3.1.6.1 Operating terrain. The vehicle will be capable of operating safely on paved roads, graded gravel roads, cross country terrain, and sandy soil environments. Cross country terrain consists of open fields, broken ground, and uneven terrain. An off-road, high-mobility suspension system resulting in no more than 0.5 G, acceleration at the driver's seat of the vehicle when traversing an 8-inch (20 cm) diameter half round at 35 mph (56 kph) must be provided. The suspension design by which the manufacturer meets the suspension performance requirements is at the manufacturer's discretion.

3.1.6.2 Gradeability. The fully loaded vehicle will be able to ascend any paved slope up to and including 50-percent.

3.1.6.3 slope stability. The fully loaded vehicle will be stable on a 30° side slope when tested in accordance with NFPA 414.

3.1.6.4 Cornering stability. The fully loaded vehicle will be stable in accordance with NFPA 414 when tested in accordance with NFPA 414.

3.2 Weights and dimensions.

3.2.1 Overall dimensions. The maximum dimensions listed below are desirable to ensure vehicles can be accommodated in existing fire stations. Likewise, the overall dimensions should be held to a minimum that is consistent with the best operational performance of the vehicle and the design concepts needed to achieve this performance and to provide maximum maneuverability in accordance with NFPA 414.

Vehicle Capacity 3000 4500

/Dimensions **Gallon Gallon**

Length (inches/cm) 480/1219 540/1372

Width (inches/cm, excluding mirrors) 124/3 15 122/3 10

Height (inches/cm) 154/391 154/391

NOTE: For Airport Operator Validation: Consult AC 150/5210-15, Aircraft Rescue and Fire Fighting Station



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Building Design, Appendix A, to ensure vehicles measurements do not exceed existing airport fire station dimensions.

VEHICLE MEASUREMENT VALIDATION

Not applicable.

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3.2.2 Angles of approach and departure. The fully loaded vehicle will have angles of approach and departure of not less than 30°.

3.2.3 Field of vision. The vehicle will have a field of vision in accordance with NFPA 414.

3.2.3.1 Mirrors. Combination flat and convex outside rearview mirrors will be installed on each side of the cab. The flat mirrors will be of the motorized remote control type, providing not less than 60° horizontal rotational viewing range. The flat mirrors will also have electrically heated heads. Mirror remote and heating controls will be located on the instrument panel within reach of the seated driver. To provide the driver a clear view of the area ahead of the vehicle and to eliminate potential blind spots, a rectangular mirror will be installed on the lower corner of each side of the windshield, having a minimum area of 35 square inches. The vehicle will have a back-up (rear-view) camera with a display monitor mounted above the driver in the cab. Cameras and monitors that are designed to replace the function of the side-view mirrors are not an approved option in this specification.

3.3 Chassis and vehicle components.

3.3.1 Engine. The vehicle will have a turbocharged diesel engine that is certified to comply with the Environmental Protection Agency (EPA) and state laws for off-highway emission requirements at the time of manufacture. The engine and transmission must operate efficiently and without detrimental effect to any drive train components when lubricated with standard, commercially available lubricants according to the recommendations of the engine and transmission manufacturers.

3.3.1.1 Acceleration. The fully loaded vehicle will accelerate from 0 to 50 miles per hour (mph) on a level paved road within 35 seconds.

3.3.1.2 Maximum speed. The fully loaded vehicle will attain a minimum top speed of 70 mph on a level, paved road.

3.3.1.3 Pump and roll on a 40-percent grade. The fully loaded vehicle will be capable of pump and roll operations on a paved, dry, 40-percent grade in accordance with NFPA 414.

3.3.1.4 Altitude. Where justified, the vehicle, including the pumping system, will be designed for operation at 2,000 feet above sea level.



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3.3.2 Engine cooling system. The engine cooling system will be in accordance with NFPA 414. A label will be installed near the engine coolant reservoir reading "Engine Coolant Fill."

3.3.3 Fuel system. The fuel system will be in accordance with NFPA 414.

3.3.3.1 Fuel priming pump. The vehicle will be equipped with an electric or pneumatic fuel pump in addition to the mechanical fuel pump. The electric/pneumatic pump will be used as a priming pump capable of re-priming the engines fuel system.

3.3.3.2 Fuel tank. The vehicle will have one or two fuel tanks with a minimum usable capacity in accordance with NFPA 414, as amended by NFPA 414. Each tank will have a fill opening of 3 inches minimum, readily accessible to personnel standing on the ground and designed to prevent fuel splash while refueling. Each tank will be located and mounted so as to provide maximum protection from damage, exhaust heat, and ground fires. If more than one tank is furnished, means will be provided to assure equalized fuel level in both tanks. An overturn fuel valve will be provided for each tank to prevent spillage in the event of a rollover. Each fuel tank must be prominently labeled "Diesel Fuel Only".

3.3.4 Exhaust system. The exhaust system will be in accordance with NFPA 414. The exhaust system will be constructed of high grade rust resistant materials and protected from damage resulting from travel over rough terrain. The muffler(s) will be constructed of aluminized steel or stainless steel. Exhaust system outlet(s) will be directed upward or to the rear, away from personnel accessing equipment compartments and the engine air intake, and will not be directed toward the ground.

3.3.5 Transmission. A fully automatic transmission will be provided. The transmission will be in accordance with NFPA 414.

3.3.6 Driveline. The vehicle driveline will be in accordance with NFPA 414. If the driveline is equipped with a differential locking control, a warning/caution label will be placed in view of the driver indicating the proper differential locking/un-locking procedures. The operator's manual will also include a similar warning/caution. All moving parts requiring routine lubrication must have a means of providing for such lubrication. There must be no pressure lubrication fittings where their normal use would damage grease seals or other parts.

3.3.7 Axle capacity. Each axle will have a rated capacity, as established by the axle manufacturer, in accordance with NFPA 414.

3.3.8 Suspension. The suspension system will be in accordance with NFPA 414 and AC 150/5220-10, Guide Specification for Aircraft Rescue and Fire Fighting (ARFF) Vehicles.

3.3.9 Tires and wheels. Tires and wheels will be in accordance with NFPA 414. The vehicle will be equipped with single tires and wheels at all wheel positions. The vehicle will be equipped with tubeless



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steel belted radial tires with non-directional on/off-road type tread mounted on disc wheel assemblies. Tire and wheel assemblies will be identical at all positions. Tires and wheels will be certified by the manufacturer for not less than 25 miles of continuous operation at 60 mph at the normal operational inflation pressure. A spare tire and wheel assembly will be provided; however, the spare tire and wheel assembly are not required to be mounted on the vehicle. Tires will be new. Retreads, recaps, or re-grooved tires will not be permitted.

Tire bead locks, where justified, may be installed on all tires and rims.

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Current vehicles all have bead locks. To be used to prevent the vehicle from becoming disabled in the event of a tire failure during and emergency.

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3.3.10 Towing connections. The vehicle will be equipped with towing connections in accordance with NFPA 414. The vehicle will be designed for flat towing; the capability to lift and tow the vehicle is not required. The tow connections may intrude into the 30 degree approach angle.

3.3.11 Brake system. The vehicle will be equipped with a multi-channel all-wheel antilock brake system with at least one channel for each axle. The brakes will be automatic, self-adjusting and fully air-actuated. Brakes will be in accordance with CFR 49 CFR 393.40 through 393.42(b)), 393.43, and 393.43 through 393.52. The braking system, complete with all necessary components will include:

- a. Air compressor having a capacity of not less than 16 standard cubic feet per minute (scfm).
- b. Air storage reservoir(s), each tank equipped with drain (bleed) valves, and with safety and check valves between the compressor and the reservoir tank.
- c. Automatic moisture ejector on each air storage reservoir. Manual air tank drains are acceptable if they are labeled, are centrally located in one compartment and are accessible by an individual standing at the side of the vehicle.
- d. Automatic slack adjusters on cam brakes or internal self-adjusting brakes on wedge brakes on all axles.
- e. Spring set parking brakes.

All components of the braking system will be installed in such a manner as to provide adequate road clearance when traveling over uneven or rough terrain, including objects liable to strike and cause damage to the brake system components. No part of the braking system will extend below the bottom of wheel rims, to ensure, in case of a flat tire, that the weight of the vehicle will be supported by the rim and the flat tire and not be imposed on any component of the braking system. Slack adjusters and air chambers will be located above the bottom edge of the axle carrier.

3.3.11.1 Air dryer. A replaceable cartridge desiccant air dryer will be installed in the air brake system. The dryer will have the capability of removing not less than 95 percent of the moisture in the air being dried. The dryer will have a filter to screen out oil and solid contaminants. The dryer will have an automatic self-cleaning cycle and a thermostatically controlled heater to prevent icing of the purge valve.



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3.3.11.2 Compressed air shoreline or vehicle-mounted auxiliary air compressor. A flush mounted, check valved, auto-eject compressed air shoreline connection will be provided to maintain brake system pressure while the vehicle is not running. The shoreline will be flush mounted (not to extend outside the body line), located on the exterior of the vehicle, either on the left side rear corner of the cab, or at the rear of the vehicle. In lieu of a compressed air shoreline connection, the vehicle may be equipped with a 110 volt shoreline connected vehicle-mounted auxiliary air compressor. In lieu of a compressed air shoreline connection, the vehicle may be equipped with an electrical shoreline connected vehicle mounted auxiliary air compressor.

3.3.12 Steering. The vehicle will be equipped with power steering. Rear-wheel steering technology is not an approved vehicle option.

3.3.12.1 Steering effort. The steering system performance will be in accordance with NFPA 414.

3.3.12.2 Turning diameter. The fully loaded vehicle will have a wall to wall turning diameter of less than three times the overall length of the vehicle in both directions in accordance with NFPA 414.

3.3.13 License plate bracket. A lighted license plate bracket will be provided at the left rear and left front of the vehicle. The location of the left front bracket will be placed so as not to interfere with the operation of fire fighting systems.

3.4 Cab. The vehicle will have a fully enclosed two door cab of materials which are corrosion resistant, such as aluminum, stainless steel, or glass reinforced polyester construction. Steps and handrails will be provided for all crew doors, and at least one grab handle will be provided for each crew member, located inside the cab for use while the vehicle is in motion. The lowermost step(s) will be no more than 22 inches above level ground when the vehicle is fully loaded. A tilt and telescoping steering column will be provided.

3.4.1 Windshield and windows. The windshield and windows will be of tinted safety glass. Each door window will be capable of being opened far enough to facilitate emergency occupant escape in the event of a vehicle accident. The vehicle windows will have an electric control system.

3.4.2 Cab interior sound level. The maximum cab interior sound level will be in accordance with NFPA 414.

3.4.3 Instruments and controls. All instruments and controls will be illuminated and designed to prevent or produce windshield glare. Gauges will be provided for oil pressure, coolant temperature, and automatic transmission temperature. In addition to the instruments and controls required by NFPA 414, the following will be provided within convenient reach of the seated driver:

- a. Master warning light control switch,
- b. Work light switch(es), and

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c. Compartment "Door Open" warning light and intermittent alarm that sounds when a compartment door is open and the parking brakes are released or the transmission is in any position other than neutral.

3.4.4 Windshield deluge system. The vehicle will be equipped with a powered windshield deluge system. The deluge system will be supplied from the agent water tank and will have an independent pumping system. The deluge system activation switch will be located within reach of the seated driver and turret operator.

3.4.5 Forward Looking Infrared (FUR). A forward looking infrared (FUR) camera and in-cab monitor, meeting the requirements of NFPA 414, will be provided. In addition, the FUR monitor described in NFPA 414 will have a minimum dimension of 10 in (25 cm) (measured diagonally) and be located in a position where it is visible to both the seated driver and turret operator.

3.4.6 Climate control system. The offeror/contractor's standard heater/defroster and air conditioning system will be provided. The climate control system will induct at least 60 cubic feet per minute of fresh air into the cab. Cab mounted components will be protected from inadvertent damage by personnel.

3.4.7 Seats. The driver seat will be adjustable fore and aft and for height. The turret operator's seat, located to the right front of the driver's seat, will be a fixed (non-suspension) type. Each seat will be provided with a Type 3 seat belt assembly (i.e., 3-point retractable restraint) in accordance with CFR 49 CFR 571.209. Seat belts must be of sufficient length to accommodate crew members in full Personal Protective Equipment (PPE).

3.4.7.1. Seat Options. Two types of seat options are allowed in the vehicle. A standard seat contains a hard/fixed back. For these seats, a remote-mounted bracket designed to store a Self—Contained Breathing Apparatus (SCBA) will be provided. The remote-mounted bracket for the driver and turret operator (at a minimum) must be placed inside the cab. The brackets for seat positions #3 and #4 may be placed outside of the cab if necessary. An SCBA seat, on the other hand, contains an opening which can accommodate someone wearing an SCBA. The chart below represents the user's stated preference for the vehicle seating configuration.

Position	Standard	SCBA-Seat	N/A
Driver	X		
Turret		X	
#3		X	
#4		X	:

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3.4.8 Windshield wipers and washer. The vehicle will be equipped with electrically powered windshield wipers. The wiper arms and blades will be of sufficient length to clear the windshield area described by SAE J1 98, Windshield Wiper Systems - Trucks. Individual wiper controls will include a minimum of two speed settings and an intermittent setting. The wiper blades will automatically return to a park position, out of the line of vision. The vehicle will be equipped with a powered windshield washer system, including an electric fluid pump, a minimum one gallon fluid container, - washer nozzles mounted to the wiper arms (wet arms), and a momentary switch.

3.4.9 Warning signs. Signs that state "Occupants must be seated and wearing a seat belt when apparatus is in motion" will be provided in locations that are visible from each seated position in accordance with NFPA 414."

3.4.10 Lateral accelerometer and/or stability control system. The vehicle will be equipped with a lateral accelerometer and/or an electronic stability control system in accordance with NFPA 414.

3.4.11 Monitoring and Data Acquisition System (MADAS). The vehicle will be equipped with a MADAS as prescribed by NFPA 414

3.5 Body, compartments, and equipment mounting.

3.5.1 Body. The vehicle will have a corrosion-resistant body.

3.5.2 Compartments. The vehicle body will have lighted compartments in accordance with NFPA 414 with a minimum of 10 cubic feet of enclosed storage space.

3.5.2.1 Compartment doors. Storage compartments will have clear anodized aluminum, counterbalanced, non-locking, roll-up or single hinged doors as determined by the manufacturer. Door latch handles on roll-up doors will be full-width bar type. Door straps will be provided to assist in closing the compartment doors when the rolled up or hinged door height exceeds six feet above the ground.

3.5.2.2 Scuffplates. Replaceable scuffplates will be provided at each compartment threshold to prevent body damage from sliding equipment in and out of the compartments. The scuffplates will be securely attached to the compartment threshold but will be easily replaceable in the event of damage.

3.5.2.3 Drip rails. Drip rails will be provided over each compartment door.

3.5.2.4 Shelves. An adjustable and removable compartment shelf will be provided for every 18 inches of each vertical storage compartment door opening. Shelving adjustments will require no more than common hand tools, and will not require disassembly of fasteners. Shelves will support a minimum of 200 pounds without permanent deformation. Each shelf will be accessible to crew members standing on the ground or



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using a pull out and tip-down configuration. Each shelf will have drain holes located so as to allow for drainage of any water from the stowed equipment.

3.5.2.5 Drainage mats. Each compartment floor and shelf will be covered with a removable black mat designed to allow for drainage of any water from the stowed equipment.

3.5.3 SCBA storage tubes. A single compartment or tubes for storage of four SCBA bottles will be provided. If tubes are provided, two will be installed on each side of the vehicle. The tubes will be of sufficient size to accommodate the procuring agencies SCBA cylinders.

3.5.4 Ladder, handrails, and walkways. Ladder, stepping, standing, and walking surfaces will be in accordance with NFPA 414. Handrails will be provided in accordance with NFPA 414. The lowermost step(s) or ladder rungs will be no more than 22 inches (56 cm) above level ground when the vehicle is fully loaded. The lowermost steps may extend below the angle of approach or departure or ground clearance limits if they are designed to swing clear. The tread of the bottom steps must be at least 8 inches (20 cm) in width and succeeding steps at least 16 inches (40 cm) in width. The full width of all steps must have at least 6 inches (15 cm) of unobstructed toe room or depth when measured from, and perpendicular to, the front edge of the weight-bearing surface of the step.

3.5.5 Ancillary equipment. Ancillary equipment listed in NFPA 414 A.4.2.1 (I)-(17) is not covered by this Procurement Specification in accordance with AC 150/5220-10, Guide Specification for Aircraft Rescue and Fire Fighting (ARFF) Vehicles. Ancillary equipment is funded separately by other sources.

NOTE: Equipment funding will be obtained as a separate contract under the provisions of AC 150/5210-14, Aircraft Rescue and Fire Fighting Equipment, Tools, and Clothing.

3.6 Agent system.

3.6.1 Agent (fire pump). The vehicle will be equipped with a centrifugal pump capable of providing the performance specified herein as prescribed by NFPA 414.

3.6.1.1 Agent system piping. All piping, couplings, and valves and associated components that come into contact with the agent will be in accordance with NFPA 414.

3.6.1.2 Tank to pump connection. A check valve and shutoff valve will be provided in each tank to pump line.

3.6.1.3 Piping, couplings, and valves. All agent system piping will conform to NFPA 414 criteria.

3.6.1.4 Overheat protection. The agent system will be equipped with an overheat protection system in accordance with NFPA 414. Overheat protection is not required on vehicles utilizing a pre-mixed pressurized foam system.



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3.6.1.5 Pressure relief valves. The agent system will be equipped with pressure relief valves in accordance with NFPA 414.

3.6.1.6 Drains. The agent system will be equipped with a drainage system in accordance with NFPA 414.

3.6.2 Water tank. The vehicle will have a water tank with a manufacturer certified minimum capacity of at least 3000 gallons.

3.6.2.1 Water tank construction. The water tank will be constructed of passivated stainless steel, polypropylene, or Glass Reinforced Polyester (GRP) construction. All materials used will be capable of storing water, foam concentrate, and water/AFFF solutions.

3.6.2.2 Water tank overhead fill cover and drain. The water tank will be equipped with a 20 inch fill tower. The tower will be designed to allow for video inspection of the water tank interior. The water tank will incorporate a drainage system in accordance with NFPA 414.

3.6.2.3 Water tank overflow system and venting. The water tank will incorporate a venting system to relieve pressure on the tank during fill and discharge operations at maximum flow rates. It will have an overflow system to relieve excess fluid in the event of tank overflow. Drainage from the vent and overflow system will not flow over body panels or other vehicle components and will not be in the track of any of the tires. Tank vent hoses will be of the non-collapsible type.

3.6.2.4 Water tank top fill opening. A top fill opening of not less than 8 inches internal diameter with a readily removable 1/4-inch mesh strainer will be provided. The fill opening may be incorporated as part of the manhole cover, and will be sized to accommodate a 2 1/2-inch fill hose.

3.6.2.5 Water tank fill connections. The water tank will incorporate National Hose thread connections and will be in accordance with NFPA 414. If the vehicle is fitted with the "structural fire fighting capability option," the additional requirements listed in paragraph 3.6.8 must be incorporated.

3.6.3 Foam system. (NOTE: The requirements of section 3.6.3 do not apply to pre-mixed pressurized foam systems.)

3.6.3.1 Foam concentrate tank. The foam concentrate tank(s) will have a manufacturer certified working capacity sufficient for two tanks of water at the maximum tolerance specified in NFPA 412, Standard for Evaluating Aircraft Rescue and Fire-Fighting Foam Equipment for 3 to 6 percent foam concentrate (i.e., 7.0-percent).

3.6.3.1.1 Foam tank construction. The foam tank will be constructed of passivated stainless steel, polypropylene, or GRP construction. All materials used will be capable of storing foam concentrate.

3.6.3.1.2 Foam tank drain. The foam tank will incorporate a drain and drain valve. The valve will be on the left side of the vehicle and controlled by a crew member standing on the ground. The drain line will have a minimum 1 1/2-inch I.D. The foam tank drain outlet will be located so that the contents of the tank can be



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drained into 5-gallon cans and 55-gallon drums.

3.6.3.1.3 Foam tank top fill trough. The foams tank will incorporate a top fill trough mounted in the top of the tank readily accessible to at least two crew members on top of the vehicle. The top fill trough will incorporate a cover, latch, and sealed so as to prevent spillage under any operating condition. The top fill trough will be designed to allow two standard 5- gallon foam concentrate containers to be emptied simultaneously. The top fill trough neck will extend sufficiently close to the bottom of the tank to reduce foaming to a minimum during the fill operation. The top fill trough will incorporate readily removable, rigidly constructed 10 mesh stainless steel, brass or polyethylene strainers. All components in and around the top fill trough will be constructed of materials that resist all forms of deterioration that could be caused by the foam concentrate or water.

3.6.3.2 Foam tank fill connections. The foam tank will incorporate a 1.5-inch National Hose thread female hose connection on both sides of the vehicle to permit filling by an external transfer hose at flow rates up to 25-gpm. The connections will be provided with chained-on long handled plugs or rocker lug plugs. The top of the connections will be no higher than 48 inches above the ground and readily accessible. The fill lines will incorporate check valves and readily removable, rigidly constructed ¼-inch mesh strainers. All components in the foam tank fill system will be constructed of materials that resist all forms of deterioration that could be caused by the foam concentrate or water.

3.6.3.2.1 Foam tank vent and overflow system. The foam tank will incorporate a vent system to relieve pressure on the tank during fill and discharge operations at maximum flow rates and an overflow system to relieve excess liquid in the event of tank overflow. Drainage from the vent and overflow system will not flow over body panels or other vehicle components and will not be in front of or behind any of the tires. Tank vent hoses will be of the non-collapsible type.

3.6.3.3 Foam transfer pump. A foam transfer pump will be provided and mounted in a compartment on the vehicle. The pump will be capable of transferring and drawing foam liquid concentrate at adjustable flow rates up to 25-gpm directly through the pump and loading connections (see 3.6.3.2). All materials and components that come in contact with the foam will be compatible with the foam concentrate. The pump and its plumbing will have provisions for flushing with water from the water tank. A suitable length of hose with appropriate connections will be provided for filling the foam tank from an external foam storage container.

3.6.3.4 Foam flushing system. The foam concentrate system will be designed in accordance with NFPA 414 so that the system can be readily flushed with clear water.

3.6.3.5 Foam concentrate piping. All metallic surfaces of the piping and associated components that come into contact with the foam concentrate will be of brass, bronze, or passivated stainless steel. The foam concentrate piping will be in accordance with NFPA 414.

3.6.4 Foam proportioning system. The vehicle will have a foam proportioning system for Aqueous Film-Forming Foam (AFFF) (whether 3- or 6-percent foam concentrate) in accordance with NFPA 414. If a fixed orifice plate system is used, a plate will be provided for each percentage foam concentrate; the additional plate will be securely mounted in a protected location on the vehicle. A fire vehicle mechanic will be able to



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interchange the plates using common hand tools.

3.6.5 Primary vehicle turret. The vehicle will be equipped with a standard roof-mounted turret, high reach extendable turret, and/or high flow bumper mounted turret to serve as the primary source of agent delivery, as specified below:

3.6.5.1 The vehicle will be equipped with a high reach extendable turret (capable of penetrating the second level of the New Large Aircraft (NLA) class of aircraft, in accordance with paragraph

3.6.5.2 The NLA class aircraft are equivalent to the Airplane Design Group VI' category, as specified in AC 150/5300-13, Airport Design

NOTE AC 150-5220-10 allows one vehicle equipped with a high reach extendable turret for an Index B-E airport at each airport station

3.6.5.2 High Reach Extendable Turret (capable of penetrating all aircraft except the second level of an NLA) The high reach extendable turret (HRET) must be in accordance with NFPA 414 and will have the vertical and horizontal reach necessary to service the highest placed engine of the aircraft being serviced It will have a non-air-aspirating, constant flow, variable stream nozzle with dual flow rates for foam or water rated as specified in NFPA 414 The discharge pattern will be infinitely variable from straight stream to fully dispersed The type of nozzle or turret drain will be per the manufacturer's recommendation The ET will be controlled by one or two joysticks, each with a pistol grip handle, positioned for use by the driver and the crew member seated to the right of the driver (the turret operator) The cab design will provide clear visibility of the turret to both the driver and the turret operator with the turret in any position

3.6.5.2.1 Video camera and monitor. The HRET will be equipped with a remote video camera and a cab mounted monitor The system will be a complete video system consisting of a single color camera equipped with auto-focus and a cab controlled zoom The camera/lens assembly will be protected from the heat of the fire and from the same climatic extremes as the truck A color video monitor with a minimum dimension of 10 inches (measured diagonally) will be positioned in the cab within view of both the driver's and the turret operator's seated positions One monitor may be provided for both the FLIR (see 3.4.5) and the camera with a switch to change between the FLIR and the camera

3.6.5.2.2 Aircraft skin penetrator The HRET will be equipped with an aircraft skin penetrator and agent application tool The skin penetrator will be a minimum of 20 inches long, installed at the tip of the HRET, and connected to the water/AFFF agent discharge line Agent application through the skin penetrator will be controlled from the cab **NOTE** If a high reach extendable turret is specified by the purchaser, a skin penetrating nozzle must be provided The penetrating nozzle must be movable to allow for proper alignment of the penetrator to the aircraft fuselage for piercing operations It must be capable of the minimum water/flow rate and pattern requirements of NFPA 414, Tables 4 11(c) and 4 11(d)



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3.6.6 Bumper turret. The vehicle will be equipped with a joystick controlled, constant flow, non-air-aspirating, variable stream type:

low angle high volume dual rate (minimum 600/1200 GPM) bumper turret.

The bumper turret will be capable of discharging at a minimum flow rate of foam or water as specified by the user, with a pattern infinitely variable from straight stream to fully dispersed. The bumper turret will be capable of automatic oscillation, with the range of oscillation adjustable up to 90° each side of center (left and right) with vertical travel capabilities of +45°/- 20° meeting section 4.20.2 in NFPA 414.

3.6.7 Preconnected handline(s). One 200 foot, 1½-inch pre-connected woven jacket handline(s), with a 1½-inch control valve and a pistol grip nozzle, will be located on (or accessible from) left side of the vehicle. A safety system will be provided to prevent charging of the hose until the hose has been fully deployed. The handline(s) and nozzle(s) will be in accordance with NFPA 414, and will allow for a minimum of 95 gpm at 100 psi nozzle pressure. A control for charging the handline will be provided for operation by both the driver and the turret operator.

3.6.7.1 In addition, the vehicle will be equipped with the following handline 100 feet of twinned 1-inch dry chemical / foam-water hose on a reel

3.6.8 Structural fire fighting capability The vehicle will be equipped with an agent system structural control panel, on the left side of the vehicle, operable while standing on the ground Structural panel activation will be interlocked to operate only with the vehicle parking brakes set and the transmission in neutral position Controls and instruments will be grouped by function The control panel will be hinged or accessible from the rear for maintenance Instruments will be lighted for night operation

3.6.8.1 The structural panel will include, as a minimum, the following

- a. Panel activation switch, including the panel lights
- b. Engine tachometer
- c. Engine oil pressure gauge with low pressure warning light
- d. Engine coolant temperature gauge with high temperature warning light
- e. A liquid filled gauge, or digital indicator for pump suction, -30 inches Hg vacuum to 600 psi.
- f. A liquid filled gauge, or digital indicator for pump pressure, 0 to 600 psi
- g. An adjustable pump pressure using either an electronic pressure governor or manual control with a relief valve will be provided.
- h. Foam or water selection.
Water and foam tank liquid level indicators, located adjacent to the water and foam tankfills.

3.6.8.2 The structural fire fighting capability will also require installation of the following items

- a. A priming pump and control (for drafting using the large intake connection)
- b. Water tank isolation valve
- c. Discharge connections Two 2¼-inch discharge connections with male National Hose threads will be provided One 2¼-inch discharge will be provided on each side of the vehicle Each connection will be equipped with a cap, a quarter-turn control valve, a bleeder valve, and a pressure gauge Each connection will be rated at 250-gpm minimum
- d. Intake connections The vehicle will be equipped with one valved 4¼-inch intake connection on the left side The vehicle will be equipped with one valved 2¼-inch intake connection on



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the left side adjacent to the 4 1/4-inch intake connection with both having either a 30° or 45° turn-down fitting. The 4 1/4-inch intake connection will have male National Hose threads, a quarter-turn control valve, a bleeder valve, a strainer, and a cap. The 2 1/2-inch intake connection will have rocker lug female National Hose threads, a quarter-turn control valve, a bleeder valve, a strainer, and a plug. The vehicle will be capable of filling its water tank by pumping from a draft, a hydrant, or a nurse truck through either of the intake connections without the use of a hose from a discharge connection to a tank fill connection.

3.6.9 Primary turret discharge nozzle The vehicle will be equipped with a combination dry chemical/AFFF nozzle of the entrainment type on the primary turret mounted on the cab roof.

3.7 Dry chemical agent system The vehicle will be equipped with a 450 lb minimum capacity potassium bicarbonate dry chemical auxiliary agent system. The propellant gas cylinder will be replaceable within fifteen minutes by two crew members standing on the ground and be equipped with a cylinder replacement hoisting system. The propellant gas cylinder will be secured to withstand off-road operations. A pressure indicator will be visible to any person opening the tank fill cap. Blow-down piping will be directed beneath the vehicle. The dry chemical agent tank will include lifting rings and will have a nameplate indicating, as a minimum, the following:

- a Extinguishing agent
- b Capacity
- c Weight full
- d Weight empty
- e Operating pressure
- f Hydrostatic test date
- g Type of agent required for re-servicing

3.7.1

Not

applicable

3.7.2 Dry chemical hose reel A hose reel, equipped with at least 100 feet of dry chemical hose, will be mounted in a compartment. Handline agent and purge controls will be mounted in or adjacent to the compartment. All electrical components will be sealed against entry of water. The hose reel will have both electric and manual rewind provisions. The manual rewind handle will be bracket mounted and stored in the compartment. A quick acting control will be provided to activate the handline from the cab of the vehicle.

3.8 Not applicable.

3.9 Electrical systems and warning devices. The vehicle will have a 12-volt or 24-volt electrical and starting system in accordance with NFPA 414.

3.9.1 Alternator. An appropriate charging system, in accordance with NFPA 414, will be provided. The minimum continuous electrical load will include operation of the air conditioning system.

3.9.2 Batteries. Batteries will be of the maintenance-free type; addition of water will not be required during normal service life. The battery cover and vent system will be designed to prevent electrolyte loss during



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service and to keep the top of the battery free from electrolyte.

3.9.2.1 Battery compartment. The batteries will be enclosed in a weatherproof enclosure, cover, or compartment and be readily accessible.

3.9.3 Battery charger or conditioner. The vehicle will have a DC taper type battery charger or an automatic battery conditioner, or voltage monitoring system, providing a minimum 12 amp output. The charger/conditioner will be permanently mounted on the vehicle in a properly ventilated, accessible location. The charger/conditioner will be powered from the electrical shoreline receptacle (see 3.10.1). A charging indicator will be installed next to the receptacle. When a battery conditioner is provided, the conditioner will monitor the battery state of charge and, as necessary, automatically charge or maintain the batteries without gassing, depleting fluid level, overheating, or overcharging. A slave receptacle will be provided at the rear or on either side of the vehicle cab. Battery jump studs may be installed on the exterior of the battery box in lieu of a slave receptacle.

3.9.4 Electromagnetic interference. The vehicle electrical system will be in accordance with SAE J55 1-2 for electromagnetic interference.

3.9.5 Work lighting.

3.9.5.1 Cab interior lights. Cab interior light levels will be sufficient for reading maps or manuals. At least one red and one white cab interior dome light will be provided.

3.9.5.2 Compartment lights. White lighting sufficient to provide an average minimum illumination of 1.0 footcandle will be provided in each compartment greater than 4.0 cubic feet and having an opening greater than 144 square inches. Where a shelf is provided, this illumination will be provided both above and below the shelf. All compartments will be provided with weatherproof lights that are switched to automatically illuminate when compartment doors are opened and the vehicle master switch is in the 'on' position. Light switches will be of the magnetic (non-mechanical) type.

3.9.5.3 Ladder, step, walkway, and area lights. Non-glare white or amber lighting will be provided at ladders and access steps where personnel work or climb during night operations. In addition, ground lighting will be provided. Ground lights will be activated when the parking brake is set in accordance with AC 150/5220-10, Guide Specification for Aircraft Rescue and Fire Fighting (ARFF) Vehicles. These area lights will be controlled with three-way switches on the cab instrument panel and near the light sources. The switch located in the cab will be a master switch and must be turned on before auxiliary switches near the light sources are operational.

3.9.5.4 Spot/Floodlights. Two spot/floodlights will be attached at the end of the primary turret or at the end of the HRET assembly. The lights will illuminate the area covered by the turret. Both lights will be controlled from switches in the cab. Halogen lights will be used.

3.9.5.5 Flood Lights. Two telescoping floodlights will be provided. One light will be mounted on the left and right sides of the vehicle. 1000W Halogen lights will be used.



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Both lights will be mounted on extension tubes and controlled from switches in the cab and manually raised To prevent these lights from accidental damage, the cab will be equipped with a visual warning signal to alert the driver if the lights are inadvertently left in the "up" position.

3.9.5.6 Scene Lights. A total of six high mounted floodlights will be provided to illuminate the work areas around the vehicle. Two lights will be mounted on the front and two will be mounted on each side of the vehicle. The lights will be powered by the vehicle alternator driven system or auxiliary generator, and the lights in the front will be controlled from switches in the cab. Halogen lights will be used.

3.9.6 Audible warning devices.

3.9.6.1 Siren. The vehicle will be equipped with an electronic siren system. The amplifier unit will include volume control and selection of "Radio," "PA," "**Manual**" "Yelp," "Wail," and "Hi-Lo" (European) modes, and a magnetic noise canceling microphone. The amplifier, microphone, and controls will be within reach of the driver and the turret operator. Siren activating foot switches will be located in front of the driver and the turret operator. The siren speaker will be rated at 100 watts minimum and will be located in a guarded position as low and as far forward on the vehicle as practical.

3.9.6.2 Horn. Dual forward facing air horns will be installed in protected locations near the front of the vehicle. Air horn activating foot switches will be located in front of the driver and the turret operator.

3.9.7 Emergency warning lights. All emergency warning lights must meet the requirements of AC 150/5210-5. Where applicable, LED lights will be used as the primary light type. Lighting units will be installed on the top front, sides, and rear of the vehicle to provide 360° visibility. A switch will be provided on the instrument panel to control all of the top, side, front and rear emergency warning lights. A switch will also be provided on the instrument panel to disable all lower emergency warning lights when desired. All lighting systems will meet NFPA 414 emergency lighting criteria.

3.9.7.1 Emergency warning light color. All emergency warning lights will meet the requirements of AC 150/5210-5.

3.9.7.2 Headlight flashing system. A high beam, alternating/flashing, headlight system will be provided. The headlight flasher will be separately switched from the warning light panel.

3.9.8 Radio circuit. The vehicle will have three separate 30 amp circuits with breakers and connections provided in a space adjacent to the driver and turret operator for installation of radios and other communications equipment after the vehicle has been delivered. To facilitate the installation of the communications equipment the manufacturer will provide three antennas pre-installed on top of the cab. ***Radios are an airport responsibility and not part of this specification.***

3.9.9 Power receptacles.

3.9.9.1 Primary power receptacles. The vehicle will have two duplex 15-amp 110-volt power receptacles, one installed adjacent to the cab door on each side of the vehicle. Each duplex receptacle will include one



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straight blade and one twist-lock connection. These outlets will be powered by the generator.

3.9.9.2 Auxiliary power receptacles. The vehicle will have 2-12-volt auxiliary power receptacles mounted adjacent to the driver and crew member positions, preferably in the instrument panel.

3.9.9.3 Cable reel The vehicle will be equipped with an electrical cable reel, located within a compartment. The reel will be equipped with 200 feet of 20 amp, .00 volt, 90°C insulated electrical cable.. The electrical cable will be equipped with a rubber ball stop to prevent cable pull through during rewinding operations A four-way roller guide will be provided on the cable reel to prevent chafing of cable insulation The cable reel will have an electric rewind motor with provisions for manual rewind in the event of motor failure, the manual rewind handle will be securely stored near the cable reel. A portable weatherproof duplex outlet box, with built-in circuit breakers and twist-lock receptacles, will be provided for on the cable end The cable reel will be powered by the auxiliary generator

3.9.10 Auxiliary generator- A minimum 10 kilowatt (kW) (continuous rating), 120/240-volt, 60 hertz, diesel, hydraulic, or split shaft Power Takeoff (PTO)-driven generator will be provided.

3.10 Line voltage electrical system.

3.10.1 Electrical shoreline connection. The battery charger/conditioner will be powered from a covered, polarized, insulated, labeled, recessed (flush mounted), male, 110 volt AC auto-eject receptacle. The connection will be located on the exterior of the vehicle at the rear or on either side of the cab. A weatherproof charge meter will be installed next to the receptacle. A 15 amp rated, 110-120-volt, AC straight blade (non twist-lock) connector will be provided.

3.11 Air systems

3.11.1 Air hose reel - An air hose reel will be provided in an enclosed compartment on the vehicle The hose reel will be equipped with 200 feet of 3/8-inch I D hoseline A 3/8 inch National Pipe Taper (NPT fitting and female style quick disconnect will be connected to the end of the hoseline A four-way roller guide will be provided for the hose reel to prevent hose chafing and kinking The hoseline will be equipped with a rubber ball stop to prevent hose pull through on roller guides during rewinding operations The hose reel will have an electric rewind motor and provisions for manual rewind in the event of motor failure, the manual rewind handle will be securely stored near the hose reel. •A pressure protected air supply from the chassis air system will be connected to the hose reel. The air supply lines will be routed with minimum bends and located or guarded from damage from the carried equipment

3.12 Quality of Workmanship. The vehicle, including all parts and accessories, will be fabricated in a thoroughly workmanlike manner. Particular attention will be given to freedom from blemishes, burrs, defects, and sharp edges; accuracy of dimensions, radii of fillets, and marking of parts and assemblies; thoroughness of welding, brazing, soldering, riveting, and painting; alignment of parts; tightness of fasteners; et cetera. The vehicle will be thoroughly cleaned of all foreign matter.



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4. REGULATORY REQUIREMENTS.

4.1 Recoverable Materials. The contractor is encouraged to use recovered materials to the maximum extent practicable, in accordance with Title 48: Federal Acquisition Regulations System, Part 2823—Environment, Conservation, Occupational Safety, and Drug-free Workplace, Subpart 2823.4 Use of Recovered Material, 403 Policy and 404 Procedures.

4.2 Green Procurement Program. Green Procurement Program (GPP) is a mandatory federal acquisition program that focuses on the purchase and use of environmentally preferable products and services. GPP requirements apply to all acquisitions using appropriated funds, including services and new requirements. FAR 23.404(b) applies and states the GPP requires 100% of EPA designated product purchase that are included in the Comprehensive Procurement Guidelines list that contains recovered materials, unless the item cannot be acquired:

- a. competitively within a reasonable timeframe;
- b. meet appropriate performance standards, or
- c. at a reasonable price.

The prime contractor is responsible for ensuring that all subcontractors comply with this requirement. Information on the GPP can be found at:

http://www.dot.gov/ost/m60/DOT_policy_letters/apl8_04.pdf or FAR 23.404(b):

<http://www.acquisition.gov/far/current/html/Subpart%2023.4.html>.

5. PRODUCT CONFORMANCE PROVISIONS.

5.1 Classification of inspections. The inspection requirements specified herein are classified as follows:

- a. Performance inspection (see 5.2).
- b. Conformance inspection (see 5.3).

5.2 Performance inspection. The vehicle will be subjected to the examinations and tests described in 5.6.3.1 through 5.6.3.5 (if applicable). The contractor will provide or arrange for all test equipment, personnel, schedule, and facilities.

5.3 Conformance inspection. The vehicle will be subjected to the examinations and tests described in 5.6.3.1 through 5.6.3.5 (if applicable). The contractor will provide or arrange for all test equipment, personnel, and facilities.

5.4 Product conformance. The products provided will meet the performance characteristics of this PS, conform to the producer's own drawings, specifications, standards, and quality assurance practices, and be the same product offered for sale in the commercial marketplace. The purchaser reserves the right to require proof of such conformance.



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5.5 Technical proposal. The offeror/contractor will provide an itemized technical proposal that describes how the proposed model complies with each characteristic of this PS; a paragraph by paragraph response to the characteristics section of this PS will be provided. The offeror/contractor will provide two copies of their commercial descriptive catalogs with their offer as supporting reference to the itemized technical proposal. The offeror/contractor will identify all modifications made to their commercial model in order to comply with the requirements herein. The vehicle furnished will comply with the "commercial item" definition of FAR 2.101 as of the date of award. The purchaser reserves the right to require the offeror/contractor to prove that their product complies with the referenced commerciality requirements and each conformance/performance characteristics of this PS.

5.6 Inspection requirements.

5.6.1 General inspection requirements. Apparatus used in conjunction with the inspections specified herein will be laboratory precision type, calibrated at proper intervals to ensure laboratory accuracy.

5.6.2 Test rejection criteria. Throughout all tests specified herein, the vehicle will be closely observed for the following conditions, which will be cause for rejection:

- a. Failure to conform to design or performance requirements specified herein or in the contractor's technical proposal.
- b. Any spillage or leakage of any liquid, including fuel, coolant, lubricant, or hydraulic fluid, under any condition, except as allowed herein.
- c. Structural failure of any component including permanent deformation, or evidence of impending failure.
- d. Evidence of excessive wear.
- e. Interference between the vehicle components or between the vehicle, the ground, and all required obstacles, with the exception of normal contact by the tires.
- f. Misalignment of components.
- g. Evidence of undesirable roadability characteristics, including instability in handling during cornering, braking, and while traversing all required terrain.
- h. Conditions that present a safety hazard to personnel during operation, servicing, or maintenance.
- i. Overheating of the engine, transmission, or any other vehicle component.
- j. Evidence of corrosion.
- k. Failure of the fire fighting system and sub-systems.

5.6.3 Detailed inspection requirements.

5.6.3.1 Examination of product. All component manufacturers' certifications, as well as the prototype and production/operational vehicle testing outlined in Table 1, will be examined to verify compliance with the requirements herein. Attention will be given to materials, workmanship, dimensions, surface finishes, protective coatings and sealants and their application, welding, fastening, and markings. Proper operation of vehicle functions will be verified as defined by NFPA 414, Acceptance Criteria chapter. A copy of the vehicle manufacturers certifications will be provided with each vehicle in accordance with NFPA 414. The airport may accept a manufacturer or third party certification for any/all prototype and production/operational vehicle testing performed prior to delivery which proves that the vehicle meets the

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performance parameters of NFPA 414.

Table 1. Vehicle Test Data**CLASS 5 155**

<i>NFPA 414 Test paragraph</i>	
Production Vehicle Operational Tests (NFPA 414 - Section 6.4)	
(6.4.1)	Vehicle Testing, Side Slope
(6.4.2)	Weight / Weight Distribution
(6.4.3)	Acceleration. NOTE: <i>With the modification that the instrumentation must be a GFS-based electronic data collection system.</i>
(6.4.4)	Top Speed
(6.4.5)	Brake Operational Test
(6.4.6)	Air System / Air Compressor Test
(6.4.7)	Agent Discharge Pumping Test
(6.4.8)	Dual Pumping System Test (As Applicable)
(6.4.9)	Pump and Maneuver Test
(6.4.10)	Hydrostatic Pressure Test
(6.4.11)	Foam Concentration Test
(6.4.12)	Primary Turret Flow Rate Test
(6.4.13)	Piercing/Penetration Nozzle Testing (As Applicable)
Prototype Vehicle Tests (NFPA 414 — Section 6.3)	
(6.3.1)	Rated Water and Foam Tank Capacity Test
(6.3.2)	Cornering Stability. NOTE: <i>With the modification that the evasive maneuver/ double-lane change</i>

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	<i>test must be conducted at 35 mph (56 kph).</i>
(6.3.3)	Vehicle Dimensions

6. PACKAGING.

6.1 Preservation, packing, and marking will be as specified in the Procurement Specification, contract or delivery order.

6.2 The vehicle must be delivered with full operational quantities of lubricants, brake and hydraulic fluids, and cooling system fluid all of which must be suitable for use in the temperature range expected at the airport.

6.3 The vehicle must be delivered with one complete load of firefighting agents and propellants. One complete load is defined as all of the agents and propellants necessary for the vehicle to be fully operational. One load would include, at a minimum: one fill of a foam tank;

NFPA 414 f Test paragraph	
(6.3.4)	Driver Vision Measurement
(6.3.5)	Pump and Roll on a 40 Percent Grade
(6.3.6)	Electrical Charging System
(6.3.7)	Radio Suppression
(6.3.8)	Gradability Test
(6.3.9)	Body and Chassis Flexibility Test
(6.3.10)	Service/Emergency Brake Test
(6.3.11)	Service/Emergency Brake Grade Holding Test
(6.3.12)	Steering Control Test
(6.3.13)	Vehicle Clearance Circle Test
(6.3.14)	Agent Pump(s)/Tank Vent Discharge Test

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(6.3.15)	Water Tank Fill and Overflow Test
(6.3.16)	Flushing System Test
(6.3.17)	Primary Turret Flow Rate Test
(6.3.18)	Primary Turret Pattern Test
(6.3.19)	Primary Turret Control Force Measurement
(6.3.20)	Primary Turret Articulation Test
(6.3.21)	Handline Nozzle Flow Rate Test
(6.3.22)	Handline Nozzle Pattern Test
(6.3.23)	Ground Sweep/Bumper Turret Flow Rate Test
(6.3.24)	Ground Sweep/Bumper Turret Pattern Control Test
(6.3.25)	Tjndertruck Nozzle Test
(6.3.26)	Foam Concentration/Foam Quality Test
(6.3.27)	Warning Siren Test
(6.3.28)	Propellant Gas
(6.3.29)	Pressure Regulation
(6.3.30)	AFFF Premix Piping and Valves
(6.3.31)	Pressurized Agent Purging and Venting
(6.3.32)	Complementary Agent Handline Flow Rate and Range
(6.3.33)	Dry Chemical Turret Flow Rate and Range
(6.3.34)	Cab Interior Noise Test



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one fill of a dry chemical tank (if applicable); one fill of a halogenated tank (if applicable); one spare nitrogen cylinder for a dry chemical system (if applicable); and one spare argon cylinder for a halogenated system (if applicable). Agents and propellants for required testing or training are not included. For the initial training period, water should be used in place of other extinguishing agents. The manufacturer may pre-ship agents and propellants to a receiving airport to reduce overall procurement costs.

6.4. The vehicle manufacturer must provide initial adjustments to the vehicle for operational readiness and mount any ancillary appliances purchased through the vehicle manufacturer as part of the vehicle.

7. TRAINING.

7.1 Upon delivery of the vehicle to the airport, the manufacturer must, at no additional cost, provide the services of a qualified technician for five consecutive days (or up to eight days for an high reach extendable turret) for training. This is considered sufficient time for the purchaser to adjust shift work schedules to get maximum employee attendance to training sessions at some point during the training period. During this time sufficient repetitive learning opportunities must be provided by the manufacturer to allow various shifts to complete the training requirements.

7.2 The technician must provide thorough instruction in the use, operation, maintenance and testing of the vehicle. This setup must include operator training for the primary operators, which will give them sufficient knowledge to train other personnel in the functional use of all fire fighting and vehicle operating systems. Prior to leaving the vehicle, the technician should review the maintenance instructions with the purchaser's personnel to acquaint them with maintenance procedures as well as how to obtain support service for the vehicle.

7.3 Training must include written operating instructions, electronic training aids (videos/power point), or other graphics that depict the step-by-step operation of the vehicle. Written instructions must include materials that can be used to train subsequent new operators.

8. REFERENCED DOCUMENTS.

8.1 Source of documents.

8.1.1 The CFR may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington DC 20402. Title 14, Code of Federal Regulations (CFR), Part 139, Certification of Airports (14 CFR Part 139)

Section 139.3 15 Aircraft Rescue and Firefighting: Index Determination.

Section 139.317 Aircraft Rescue and Firefighting: Equipment and Agents.

Section 139.319 Aircraft Rescue and Firefighting: Operational Requirements.

Title 49; Code of Federal Regulations (CFR), Part 393: Parts and Accessories Necessary for Safe Operation: Subpart C—Brakes.

Title 49; Code of Federal Regulations (CFR), Part 571, Motor Carrier Vehicle Safety Standards, Part 209,



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Standard No. 209; Seat Belt Assemblies.

8.1.2 SAE documents may be obtained from SAE, Inc., 400 Commonwealth Drive, Warrendale PA 15096.

8.1.3 National Fire Protection Association (NFPA): NFPA documents may be obtained from NFPA, Batterymarch Park, Quincy MA 02269-9101.
NFPA 412, Standard for Evaluating Aircraft Rescue and Fire-Fighting Foam Equipment (2009 Edition)
NFPA 414, Standard for Aircraft Rescue and Fire Fighting Vehicles (2007 Edition) NFPA 1901, Standard for Automotive Fire Apparatus (2009 Edition)

8.1.4 Federal Aviation Administration (FAA): FAA ACs may be obtained from the FAA website:
http://www.faa.gov/regulations_policies/advisory_circulars/ -
AC 150/5220-10, Guide Specification for Aircraft Rescue and Fire Fighting (ARFF) Vehicles
AC 150/5210-5, Painting, Marking, and Lighting of Vehicles Used on an Airport
FAA Orders, Specifications, and Drawings may be obtained from: Federal Aviation Administration, ATO-W
CM-NAS Documentation, Control Center, 800 Independence Avenue, SW, Washington, DC 20591.
Telephone: (202) 548-5256, FAX: (202) 548-5501 and website:
http://www.faa.gov/about/officeorg/headquarters/offices/ato/serviceunits/techops/atc_facilities/cm/cm_documentation/



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OPTIONAL EQUIPMENT

Ancillary Equipment: Used for pricing purposes, this line item will not be used in any way for basis of award.

1. 14 foot NFPA Compliant roof ladder, 750 lb, aluminum, channel rail construction.
2. 25 foot section of 4" hydrant fill hose, 4" storz connectors, Rubber covered, yellow, 750 psi burst pressure
3. 50 foot sections of 4" LDH, 4" Storz connectors, Rubber covered, yellow, 750 psi burst pressure.
4. 600 feet of 1 3/4 " double jacket fire hose, 50 foot length, EPDM rubber lined, 100% polyester, 600 lb test, orange.
5. Akron Assault Nozzle, 125 gpm, 1 1/2 ", Pistol grip.
6. Rocker lug spanner wrench set with mounted base.
7. Storz spanner wrench set with mounted base.
8. 100 foot length of 1/2 inch utility rope in storage bag.
9. ARFF axe, 6 pound, fiberglass handle, serrated, with mounting hardware.
10. Crash Rescue Kit, tool roll, assorted hand tools.
11. Percussive Rescue Kit, Paratech,
12. Saw, 16"
13. Reciprocating Saw, Battery powered, with case and extra Battery. 18 volt, 2.4 amp
14. Hydraulic Spreader/Cutter combo Rescue tool with 4-Cycle Power unit, hoses, rams
15. Pike Pole, 12 foot, fiberglass I-Beam handle, Aluminum D handle, mounting hardware
16. Pike Pole, 6 foot, fiberglass I-Beam handle, Aluminum D handle, mounting hardware
17. Bolt cutter, 30 inch, with mounting hardware.
18. Halligan tool, one piece, with mounting hardware.
19. Crowbar, pinch point, 60 inch, with mounting hardware.
20. 3-Streamlight Fire Vulcan LED hand lights, 12 volt charger base.
21. 2- Harness cutting tool, V-Blade with replacement blades



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-
- 22. 8 pound sledge hammer, fiberglass handle, mounting hardware.
 - 23. Fire Retardant Blanket, 62" X 80", Vinyl storage bag.
 - 24. 1-20 pound CO2 extinguisher, heavy duty mounted bracket*
 - 25. 1-15 ½ pound halotron extinguisher, heavy duty mounted*Bracket.
 - 26. 1-30 pound Metal-X extinguisher, heavy duty mounted* Bracket
 - 27. 1-20 pound Purple K extinguisher, stored pressure, heavy duty mounted bracket *
 - 28. 1- 2 ½ gallon water extinguisher, with mounted bracket**
 - 29. Little Giant Ladder mounting bracket. Accessible from

Crash Gate Bumper: Used for pricing purposes, this line item will not be used in any way for basis of award.

Crash gate bumpers shall be installed at the front of the chassis secured to the frame structure of the truck. They shall be heavy duty and capable of protecting the front bumper turret during crash gate impact.

Steering: Used for pricing purposes, this line item will not be used in any way for basis of award.

The rearmost axle of the rear tandem axle shall include, mechanical steering provisions to provide a 7° degree cramp angle to facilitate a tight cornering radius, to reduce tire scrubbing on the rear tandem, and to provide maximum tire life.

SUSPENSION: Used for pricing purposes, this line item will not be used in any way for basis of award.

The vehicle shall be equipped with an All-Wheel Independent Suspension to meet the desired ride quality and handling characteristics for an Off-Road High Mobility Vehicle.

Driver's Enhanced Vision System (DEVS)

The vehicle will be equipped with the latest Driver's Enhanced Vision System (DEVS) to meet AC 150\5210-19A. Will include Low-Visibility Vision Enhancement, Navigation, and Tracking.

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WE HAVE READ THE INSTRUCTIONS AND CONDITIONS (STANDARD, SPECIAL, AND THE 8-PAGE ATTACHMENT) AND SPECIFICATIONS, AND PROPOSE TO FURNISH THE FOLLOWING F.O.B. DESTINATION:

CLASS/ITEM CODE(S)	ITEM NO.	ITEM AND SPECIFICATION	QUANTITY	UNIT	UNIT PRICE	TOTAL
		<u>AIRCRAFT RESCUE AND FIRE FIGHTING VEHICLE</u>				
	1.	AIRCRAFT RESCUE AND FIRE FIGHTING VEHICLE WITHOUT HIGH REACH EXTENDABLE TURRET	1	EACH	\$ _____	\$ _____
	2.	AIRCRAFT RESCUE AND FIRE FIGHTING VEHICLE WITH HIGH REACH EXTENDABLE TURRET	1	EACH	\$ _____	\$ _____
	3.	ANCILLARY EQUIPMENT (SEE ATTACHED SHEET)	2	EACH	\$ _____	\$ _____
	4.	CRASH GATE BUMPER	2	EACH	\$ _____	\$ _____
	5.	STEERABLE REAR AXLE	2	EACH	\$ _____	\$ _____
	6.	SUSPENSION	2	EACH	\$ _____	\$ _____
	7.	Drivers Enhanced Vision System (DEVS)	2	EACH	\$ _____	\$ _____

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CLASS/ITEM CODE(S)	ITEM NO.	ITEM AND SPECIFICATION	QUANTITY	UNIT	UNIT PRICE	TOTAL
		TOTAL				\$ _____



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ADDITIONAL INFORMATION

1. CONTRACT PERIOD

THE CONTRACT PERIOD SHALL BE FROM FEBRUARY 1, 2012 TO JANUARY 31, 2013.

2. COOPERATIVE PROCUREMENT WITH OTHER JURISDICTIONS

The Bidder agrees to provide products and/or services to any municipality, county, state, governmentally public utility, non-profit hospital, educational institute, special governmental agency, and non-profit corporation performing governmental functions that participates in or is represented by the Mid-America Council of Public Purchasing (MACPP) in the greater Kansas City Metropolitan Trade Area and any member of the Mid-America Regional Council (MARC).

Yes _____ No _____



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3. AUTHORIZED SIGNATURE

By submission of the IFB, the undersigned certifies that:

- It has not paid or agreed to pay any fee or commission, or any other thing of value contingent upon the award of this contract, to any City of Kansas City, Missouri employee or official or to any current consultant to the City of Kansas City, Missouri;
- It has not paid or agreed to pay any fee or commission or any other thing of value contingent upon the award of this contract, to any broker or agent or any other person;
- The prices contained in this bid have been arrived at independently and without collusion, consultation, communication or agreement intended to restrict competition;
- It has the full authority of the Offeror to execute the bid and to execute any resulting contract awarded as the result of, or on the basis of, the bid;
- Bidder will not withdraw the bid for ninety (90) days;
- By the below signature, I hereby certify that I have both the legal authority from my company and the right to enter into this contractual agreement with the City of Kansas City, Missouri, and have read, understood, and hereby fully accept all the terms, conditions, specifications, and pricing information contained within this document as well as any and all subsequent pages, addenda, and notices.

Authorized Representative: _____

Signature: _____

Title: _____

Company Name: _____

Address: _____

City, State, Zip: _____

Telephone Number: _____

Fax Number: _____

E-mail Address: _____



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EMPLOYEE ELIGIBILITY VERIFICATION AFFIDAVIT

(Required for any contract with the City of Kansas City, Missouri in excess of \$5,000.00)

STATE OF _____)
) ss
COUNTY OF _____)

On this _____ day of _____, 20____, before me appeared _____, personally known by me or otherwise proven to be the person whose name is subscribed on this affidavit and who, being duly sworn, stated as follows:

I am of sound mind, capable of making this affidavit, and personally swear or affirm that the statements made herein are truthful to the best of my knowledge. I am the _____ (title) of _____ (business entity) and I am duly authorized, directed or empowered to act with full authority on behalf of the business entity in making this affidavit.

I hereby swear or affirm that the business entity does not knowingly employ any person in connection with the contracted services who does not have the legal right or authorization under federal law to work in the United States as defined in 8 U.S.C. § 1324a(h)(3).

I hereby additionally swear or affirm that the business entity is enrolled in an electronic verification of work program operated by the United States Department of Homeland Security (E-Verify) or an equivalent federal work authorization program operated by the United States Department of Homeland Security to verify information of newly hired employees, under the Immigration Reform and Control Act of 1986, and that the business entity will participate in said program with respect to any person hired by the business entity to perform any work in connection with the contracted services. I have attached hereto documentation sufficient to establish the business entity's enrollment and participation in the required electronic verification of work program.

I am aware and recognize that unless certain contractual requirements are satisfied and affidavits obtained as provided in Section 285.530, RSMo, the business entity may face liability for violations committed by its subcontractors, notwithstanding the fact that the business entity may itself be compliant.



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I acknowledge that I am signing this affidavit as the free act and deed of the business entity and that I am not doing so under duress.

Affiant's signature

Subscribed and sworn to before me this _____ day of _____, _____.

Notary Public

My Commission expires:



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NO BID RESPONSE

If you choose not to submit a bid, please complete and return only this form, on or before the due date. Thank you for taking this opportunity to help us update and improve our solicitation process.

Senior Buyer: Donna Williford

Telephone: (816) 513-1593

Return by Fax: (816) 513-1156

Due Date: 1-31-11

Number:

Description: AIRCRAFT RESCUE AND FIRE FIGHTING (ARFF) VEHICLE

Please check the appropriate response(s). We respectfully submit "No Response" for the following reason(s):

- ☐ 1. We are unable to meet the required delivery date.
- ☐ 2. We cannot provide a product/service to meet the required specifications.
- ☐ 3. We no longer provide the requested product/service.
- ☐ 4. We do not represent the required brand name product.
- ☐ 5. The closing date does not allow adequate time to prepare a response.
- ☐ 6. The specifications are too restrictive.
- ☐ 7. We have chosen not to do business with the City.
- ☐ 8. Other (comment below or provide your response on your company letterhead).

Company Name _____ Supplier No. _____

Authorized Signature _____

Print Name _____

Title _____

Date _____ Telephone No. _____



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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 local 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 Owner 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 at: http://www.faa.gov/airports_airtraffic/airports/resources/advisory_circulars/.

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 owner, of the successful bidder's proposal.

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

Bid Documents: A collective term for all project documents that a prospective bidders shall base it's 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
- Proposal Form with attachments
- Form of Contract Agreement
- All authorized addenda issued by the Owner
- 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 proposal 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 Proposal; The Performance Bond; The



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Payment Bond; 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 proposal, allowed for completion of the contract, including authorized time extensions. If a calendar date of completion is stated in the proposal, 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 owner

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 owner (sponsor) to be responsible for 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, and 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 Owner 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 Owner 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.



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Notice-Of-Award: A written notice of the acceptance of the bid proposal 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.

Owner (Sponsor): 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.

Payment Bond: The approved form of security furnished by the Contractor and his/her surety as a guaranty that he will pay in full all bills and accounts for materials and labor used in the construction of the work.

Performance Bond: The approved form of security furnished by the Contractor and his/her surety as a guaranty that the Contractor will complete the work in accordance with the terms of the contract.

Project: The agreed scope of work for acquisition of specific vehicle(s) or equipment as stated in the invitation for bids.

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.

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

PROPOSAL GUARANTY: THE SECURITY FURNISHED WITH A PROPOSAL TO GUARANTEE THAT THE BIDDER WILL ENTER INTO A CONTRACT IF HIS/HER PROPOSAL IS ACCEPTED BY THE OWNER.

Purchase Order: An order issue by the owner 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.

SRE: Snow Removal Equipment

Surety: The corporation, partnership, or individual, other than the Contractor, executing payment or performance bonds that are furnished to the owner by the Contractor.



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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 Owner and Owner'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 Owner 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
5. Vendor Certifications



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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 Owner. The warranty for this period shall cover all parts, labor, and shipping costs for the repair and replacement of any defective component. The Owner 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 Owner'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 OWNER 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 200 calendar days of the date of the Notice-to-Proceed or issues Purchased Order. 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.

*City of Kansas City Missouri
Aviation Department
Fleet Maintenance Division
125 Paris St.
Kansas City Mo. 64153*

Attn: Mitch Cox

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 Owner 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.



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ON-SITE ACCEPTANCE TESTING

At no additional expense to the owner, 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 Owner. 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 Owner.

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

Unless otherwise specified, the Owner will make payment in full within thirty (30) calendar days after final acceptance of the equipment/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 proposal and subsequent acceptance of the contract, the CONTRACTOR understands and agrees that time is of essence for completion of the Work and that the OWNER will suffer additional expense and financial loss if said Work is not completed within the authorized Contract Time. Furthermore, the CONTRACTOR and OWNER 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 OWNER as liquidated damages the non-penal sum of \$[REDACTED] per day for each [REDACTED] day required in excess of the authorized Contract Time.

Furthermore, the CONTRACTOR understands and agrees that;

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



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SUPPLEMENTARY 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.

FEDERAL PROVISIONS

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.



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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 AMERICAN 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. 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
2. The inclusion of domestic material will increase the cost of the overall project by more than 25 percent.
- 3.

As a condition of bid responsiveness, Bidder must indicate on the Buy American certification whether it intends to meet Buy American requirements buy 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 Owner approval of the requested waiver is contingent upon approval by the FAA.

ACCESS TO RECORDS AND REPORTS:
(49 CFR PART 18.36(l))

The Contractor shall maintain an acceptable cost accounting system. The Contractor agrees to provide the Sponsor, the Federal Aviation Administration and the Comptroller General of the United States or any of their duly authorized representatives access to 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



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under this contract for a period of not less than three 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 thereunder 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))

- (a) The Sponsor may, by written notice, terminate this contract in whole or in part at any time, either for the Sponsor's convenience or because of failure 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 Sponsor.
- (b) If the termination is for the convenience of the Sponsor, an equitable adjustment in the contract price shall be made, but no amount shall be allowed for anticipated profit on unperformed services.
- (c) If the termination is due to failure to fulfill the Contractor's obligations, the Sponsor may take over the work and prosecute the same to completion by contract or otherwise. In such case, the Contractor shall be liable to the Sponsor for any additional cost occasioned to the Sponsor thereby.
- (d) If, after notice of termination for failure to fulfill contract obligations, it is determined that the Contractor had not so failed, the termination shall be deemed to have been effected for the convenience of the Sponsor. In such event, adjustment in the contract price shall be made as provided in paragraph 2 of this clause.
- (e) The rights and remedies of the sponsor provided in this clause are in addition to any other rights and remedies provided by law or under this contract.

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.



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- 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 Sponsor 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 through 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 Sponsor 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,



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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)

Contract Assurance (§26.13) - The Contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The Contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT assisted contracts. Failure by the Contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy, as the recipient deems appropriate.

Prompt Payment (§26.29) - The prime Contractor agrees to pay each subcontractor under this prime contract for satisfactory performance of its contract no later than **30** days from the receipt of each payment the prime Contractor receives from *[Name of recipient]*. The prime Contractor agrees further to return retainage payments to each subcontractor within [specify the same number as above] days after the subcontractor's work is satisfactorily completed. Any delay or postponement of payment from the above referenced time frame may occur only for good cause following written approval of the *[Name of Recipient]*. This clause applies to both DBE and non-DBE subcontractors.

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 thereunder;
- 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;



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- c. 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)

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)

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

As a condition of bid responsiveness, the bidder must certify its compliance with the Buy American 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.

The Bidder must select the appropriate certification for its proposal from one of the following statements:

- ☐ The bidder hereby certifies that they will comply with Title 49 U.S.C Section 50101 by only installing steel and manufactured products produced in the United States of America.
- ☐ The bidder hereby certifies that they cannot fully comply with the Buy American preferences of Title 49 U.S.C Section 50101(a) and therefore requests a waiver per Title 49 U.S.C Section 50101(b) for the items listed below.

Component/ Item	Country of Origin	Total Component Cost in Project	Total All Components in Project



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NOTES:

- 1) All requested information must be submitted for each individual product/item waiver request.
- 2) All steel used in this project must be produced in the USA. Regional waivers will not be issued for steel not produced in the USA.
- 3) All products, equipment, things requiring assembly must be assembled in the USA. Regional waivers will not be issued for products, equipment, etc. not final assembled in the USA.
- 4) The Owner will submit any requested waiver by the apparent low bidder to the FAA for a determination of AIP eligibility. Bidders are hereby advised there is no implied or expressed guarantee that a requested waiver will be approved by the Owner or the Federal Aviation Administration.

Bidder's Firm Name

Date



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INSTRUCTIONS AND CONDITIONS FOR INVITATIONS FOR BID AND REQUEST FOR QUOTATIONS

1. **SUPPLIER APPLICATION.** In order to qualify as a prospective supplier, all bidders shall complete and return to the City of Kansas City, Missouri, referred to hereafter in these INSTRUCTIONS AND CONDITIONS, as the City, prior to bid opening, a SUPPLIER APPLICATION. This form provides basic information concerning the company and the items it can provide. It is also the document used to establish supplier information in the automated supplier file. The City reserves the right to disqualify any bidder who fails or refuses to provide the application.
2. **PREPARATION OF BIDS.**
 - A. Bidders are expected to examine the complete bid and all attachments including drawings, specifications and instructions. Failure to do so is at the bidder's risk.
 - B. Bidders shall furnish information required by the solicitation in the form requested. The Buyer reserves the right to reject any or all with incomplete information or which are presented in a different form. The original Invitation for Bid in its entirety will be considered as fully applicable to the bid response regardless of the form used unless specifically excepted by the bidder. In the latter case, the bid may be considered nonresponsive to the Invitation for Bid.
 - C. Bids shall indicate the unit price extended to indicate the total price for each item bid. Any difference between the unit price correctly extended and the total price shown for all items bid shall be resolved in favor of the unit price, except when the bidder clearly indicates that the total price for all items bid is based on consideration of being awarded the entire lot and that an adjustment of the total price is being made in consideration of receiving the entire bid.
 - D. If the item has a trade name, brand and/or a catalog number, such shall be stated in the bid. If the supplier proposed to furnish an item of a different manufacturer or supplier other than that mentioned on the face hereof, bidder must specify maker, brand, quality, catalog number, or other trade designation. Unless such is noted on the bid form, it will be deemed that the article furnished is that designated, even though the bid may state or equal."
 - E. Time of proposed delivery shall be stated in definite terms; if stated in a number of days, it shall include Saturdays, Sundays and holidays.
 - F. Samples, when required, shall be furnished prior to the closing date or within time specified in bid. Buyer reserves the right to reject bids submitted without required samples.
3. **ALTERNATE BIDS.** Alternate bids may be submitted and, if deemed advantageous to the City, they may be evaluated and considered. The City is under no obligation to consider or accept an alternate bid and reserves the right to reject any and all such bids. Alternate bids may be made in addition to responding to the terms and conditions of the solicitation or as the only response to the solicitation.
4. **SIGNATURE.** Bidder shall sign the INVITATION FOR BID or the REQUEST FOR QUOTATION, hereafter referred to as bid or solicitation, on first page and on all continuation pages in the proper section and shall enter their title and the date. Erasures or other changes must be initialed by person signing the bid. Signature shall be an original and that of an agent authorized to sign as designated in SUPPLIER APPLICATION, however, other evidence of authority to sign may be provided with the bid.
5. **SUBMISSION OF BID.** Bids and modification thereof shall be returned in a sealed envelope addressed to office specified in bid. The bid number and bid closing date and hour shall be shown on the face of the envelope. Facsimile telegraph and telephone bids will not be considered unless authorized by the bid or the Buyer and must be confirmed in writing. Bids may be modified by facsimile or telegraphic notice, provided such notice is delivered into the hands of the bidding office prior to the bid closing date and hours. Subsequent written confirmation is required. Telephone modifications will not be considered unless authorized by the bid or Buyer and subsequently confirmed in writing. If bid is delivered in person, it is the bidders' responsibility that the bid is time stamped and deposited in the bid box maintained by the Procurement Services Division prior to the bid closing date and hour.
6. **OCCUPATIONAL LICENSE.** All suppliers located in Kansas City, Missouri, must have a valid occupational license for sale of goods or services. Suppliers located outside Kansas City, Missouri, must have an occupational license if services are performed in Kansas City, Missouri. A valid license is required as a condition of all contracts. Contracts will not be considered fully executed until the license is obtained. Failure to obtain the necessary license and to maintain it on a current basis are grounds to disqualify bids and to cancel existing contracts.
7. **EARNINGS AND OTHER TAXES.**
 - A. All suppliers located in Kansas City, Missouri, are required to have a valid earnings tax file number and to pay earnings taxes on wages. Suppliers located outside Kansas City, Missouri, must have a valid earnings tax file number and pay earnings taxes if services are performed in Kansas City, Missouri. Obtaining a file number and payment of taxes are required as a condition of all contracts. Failure to obtain a file number and to pay earnings taxes on a current basis are grounds to disqualify bids and to cancel existing contracts.
 - B. All suppliers located in Kansas City, Missouri, must have all required licenses and permits and pay all fees and taxes that are required by the City. Suppliers located outside Kansas City, Missouri, must, when applicable, have all required licenses and permits and pay all fees and taxes required by the City from nonresident suppliers. Failure to comply with the foregoing is grounds to disqualify bids and to cancel existing contracts.
8. **EXPIRATION OF BID.** All bids shall be considered as firm for a period of forty-five (45) calendar days, commencing the day following the date of the bid closing and expiring at midnight of the last day, unless otherwise stated in the body of the bid by the Buyer. The bidder may state a date his bid expires, provided the date is specific and is entered on the first page of the bid.
9. **MODIFICATION OR WITHDRAWAL OF BIDS.**
 - A. Bids may be modified or withdrawn by written or telegraphic notice received prior to the exact hour and date specified for receipt of bid. A bid may also be withdrawn in person or by a bidder or his authorized representative, prior to the exact hour and date set for receipt of bids. Telephone withdrawals are not permitted (however see paragraph 10).
 - B. If this solicitation is negotiated, bids may be modified (subject to paragraph 10 when applicable) or withdrawn by written or telegraphic notice received at any time prior to award. Bids may be withdrawn in person by a bidder or his authorized representative, provided his identity is made known and he signs a receipt for the bid prior to award.

10. LATE BIDS AND MODIFICATIONS OR WITHDRAWALS.

A. Bids and modifications of bids (or withdrawals thereof, if this solicitation is advertised) received at the office designated in the solicitation after the exact hour and date specified for receipt will not be considered unless: (1) they are received before award is made; and either (2) they are sent by registered mail, or by certified mail for which an official dated post office stamp (postmark) on the original Receipt for Certified Mail has been obtained and it is determined by the City that the late receipt was due to delay in the mails for which the bidder was not responsible; or (3) if submitted by mail (or telegram facsimile if authorized) it is determined by the City that the late receipt was due solely to mishandling by the City after receipt; provided that the timely receipt is established upon examination of an appropriate date or time stamp (if any) or of other documentary evidence of receipt (if readily available) within the control of the City or of the Post Office serving it. However, a modification of a successful bid which makes the terms of the bid more favorable to the City will be considered at any time it is received and may thereafter be accepted.

B. The time of mailing of late bids submitted by registered or certified mail shall be deemed to be the last minute of The date shown in the postmark on the registered mail receipt of registered mail wrapper or on the Receipt for Certified Mail unless the bidder furnishes evidence from the post office station of mailing which establishes an earlier time.

11. MISTAKE IN BID.

A. If the bidder discovers a mistake in bid prior to the hours and date specified for receipt of bid, he may correct the mistake by modifying or withdrawing the bid in accordance with paragraphs 9 and 10 above.

B. If the apparent low and best bidder discovers a mistake in bid of a serious and significant nature which is unfavorable to him prior to the issuance of a purchase order or a contract, he may request consideration be given to modifying the bid if he remains the lowest bidder or to withdrawal of the bid if the result of the correction of the mistake makes another bidder lowest and best bidder. The mistake must be evident and provable. The right is reserved by the City to reject any and all requests for correction of mistakes in bids received after the hour and date of the bid opening. The decision of the Buyer is final as regards acceptance or rejection of request for correction of bids.

C. A MISTAKE IN BID CANNOT BE CONSIDERED ONCE A PURCHASE ORDER OR CONTRACT IS ISSUED.

12. NO BIDS AND FUTURE SOLICITATIONS. It is required that if a supplier does not desire to bid, the bid should be marked "NO BID" and returned in order to maintain the bidders name in supplier file for future solicitations. If a bidder fails to respond to four (4) successive bids without returning a "NO BID", the Buyer reserves the right to delete the bidder, or certain products listed as sold by the supplier, from the supplier file for future solicitations.

13. BID BOND REQUIREMENT. Bid bonds shall be provided when specified by the terms of the INVITATION FOR BID or the REQUEST FOR QUOTATION. The amount shall be that determined by the Procurement Services Manager, City of Kansas City, Missouri, referred to hereafter in these INSTRUCTIONS AND CONDITIONS as the Manager, to be reasonable and necessary to protect the best interest of the City. When required, the bid bond must accompany the bid. Failure to provide the bond prior to the bid opening will be cause for disqualification of the bid. The bond may be in the form of a surety bond, cashier's check, money order, or certified check drawn on a solvent bank. Such bond or deposit shall be forfeited to the City in case the bidder shall fail or refuse to execute the contract.

14. TRADE-IN. If the solicitation requests a price or value for one or more pieces of equipment to be traded in as a part of the purchase of new equipment, the City retains the option to purchase the new equipment at the full price or to reduce the price of the new equipment by the amount of the trade-in offered. The City is not obligated to accept the trade-in offer and may withdraw equipment offered for trade-in at any time up to award.

15. EVALUATION OF BIDS FOR MULTIPLE AWARDS. In addition to other factors, bids will be evaluated on the basis of advantages or disadvantages to the City that might result from making more than one award (multiple awards) to include total cost of ownership and administrative cost to the City for issuing and administering each contract and associated purchase orders awarded under this invitation. Administrative costs will be in a range for the class of procurement as established by the Manager. Individual awards will be for the items and/or services and combinations of items and/or services which result in the lowest aggregate price to the city, including such administration costs.

16. AWARD OF CONTRACT.

A. BIDS WILL BE ANALYZED AND THE AWARD MADE TO THE LOWEST AND BEST RESPONSIVE AND RESPONSIBLE BIDDER whose bid conforms to the solicitation and whose bid is considered to be most advantageous or best value to the City, price and other factors considered. The right to determine the foregoing is reserved to the Manager and is not subject to appeal. In the event equal bids are received, paragraph 20. MISSOURI AND OTHER PREFERENCE will apply. If the preference does not break the tie, then the award will be made by public drawing of lots by the Buyer.

B. The City reserves the right to reject any and all bids and all or part of a bid; to waive informalities, technical defects, and minor irregularities in bids received; and to select the bid(s) deemed most advantageous or best value to the City. The City shall consider bids submitted on an "all or nothing" basis if the bid is clearly designated as such.

C. The City may accept any item or group of items of any bid, unless the bidder qualifies his bid by specific limitations. UNLESS OTHERWISE PROVIDED IN THE SOLICITATION, BIDS MAY BE SUBMITTED FOR ANY QUANTITIES LESS THAN THOSE SPECIFIED AND THE CITY RESERVES THE RIGHT TO MAKE AN AWARD ON ANY ITEM FOR A QUANTITY LESS THAN THE QUANTITY BID AT THE UNIT PRICES BID UNLESS THE BIDDER SPECIFIES OTHERWISE IN HIS BID.

D. UPON ACCEPTANCE BY THE CITY, THE SOLICITATION OR BID AND A PURCHASE ORDER ISSUED TO THE SUCCESSFUL BIDDER WITHIN THE TIME SPECIFIED, SHALL BE DEEMED TO RESULT IN A BINDING CONTRACT WITHOUT FURTHER ACTION BY EITHER PARTY. ITEMS ARE TO BE FURNISHED AS DESCRIBED IN THE BID AND IN STRICT CONFORMITY WITH ALL INSTRUCTIONS, CONDITIONS, SPECIFICATIONS, AND DRAWINGS CONTAINED IN THE COMPLETE CONTRACT.

17. PURCHASE ORDERS. All goods and services will be ordered by means of a purchase order for which funds have been certified and encumbered by the Director of Finance. Goods and services will not be provided in excess of the amount of the purchase order. The City has no obligation to pay invoices in excess of the purchase order amount. Under emergency conditions, the Buyer in the Procurement Services Division may order goods or services and provide a purchase order number by telephone.

18. PERFORMANCE BOND REQUIREMENT. A performance bond shall be provided by the bidder receiving the award when specified by the terms of the bid. The amount shall be that determined by the Manager to be reasonable and necessary to protect the best interest of the City. "THE BOND MAY BE IN THE FORM OF A SURETY BOND, CASHIERS CHECK, BANK OR U.S. POSTAL MONEY ORDER, OR A LETTER OF CREDIT ISSUED BY A BANK SUBJECT TO APPROVAL BY THE CITY OF KANSAS CITY, FINANCE DEPARTMENT." Such bond or deposit shall be forfeited to the City in case the bidder receiving the contract shall fail or refuse to fulfill the requirements and all terms and conditions of the contract. The contract is not considered to be complete until the performance bond is submitted. Purchase orders may not be issued or invoices paid unless the required performance bond is on file. Unless specified otherwise in the bid, the bond must be furnished within twenty-one (21) calendar days after receipt of notification of intent to award the contract or receipt of a request for performance bond. The City has the right to disqualify an otherwise successful bid if the performance bond is not received within the time requested.

19. COMBINED ANNUAL BID AND PERFORMANCE BOND.

A. In lieu of submitting a bid deposit with each bid, a prospective supplier may file with the Manager a surety bond in a minimum amount as specified by the Manager issued by a company licensed to do business in Missouri as a surety, to remain in effect during the fiscal year (May 1 through April 30); such deposit, however, shall not fulfill the Bid Bond Requirements as specified in the solicitation unless such deposit is on file or will be filed prior to or at the time of the bid opening. Security in excess of the minimum surety bond may be requested in those instances where the surety bond is insufficient to meet the total security requirements of all bids outstanding.

B. In lieu of submitting a performance bond when required by the solicitation and the purchase order, a Contractor may file with the Manager a surety bond in a minimum amount as specified by the Manager issued by a surety company licensed to do business in Missouri as a surety, to remain in effect during the fiscal year (May 1 through April 30); such deposit, however, shall not fulfill the performance bond requirements as specified in the solicitation and purchase order, unless such deposit is on file or will be filed prior to the award of the contract. Security in excess of the minimum surety bond may be requested in those instances where the surety bond is insufficient to meet the total security requirements of all bids outstanding.

C. A single combined bond covering both bid and performance is required.

20. MISSOURI AND OTHER PREFERENCE.

A. By virtue of statutory authority, the Buyer shall give preference to all commodities manufactured, produced, or grown within the State of Missouri and to all firms, corporations, or individuals doing business as Missouri firms, corporations, or individuals, when quality is equal or better and delivered price is the same or less. Within the State of Missouri, the same type of preference is given to firms located in the City, as versus other firms located in Missouri but outside the city limits.

B. The City has implemented the Missouri Domestic Procurement Act (Buy American), Sections 34.350 to 34.359 RSMO Supp. 1957, by adopting the following policy on the purchase of American goods. Preference will be given to the purchase or lease of products manufactured, assembled, or produced in the United States if the quality and price are comparable with other goods. Suppliers providing services and/or products under Term Supply and Services Contracts and leases will give preference to providing products manufactured, assembled, or produced in the United States if the quality and price are comparable with other goods.

21. TIME OF DELIVERY. Delivery is REQUIRED to be made in accordance with the schedule shown in the solicitation and purchase order. Bids offering delivery of each quantity within the applicable delivery period specified above will be evaluated equally as regards time of delivery. Bids offering delivery of a quantity under such terms or conditions that delivery will not clearly fall within the applicable delivery period may, as determined by the Buyer, be considered nonresponsive and may be reflected. When a bidder offers an earlier delivery schedule than that called for in the bid, the City reserves the right to award either in accordance with the REQUIRE schedule or in accordance with the schedule offered by the bidder. If the bidder offers no other delivery schedule, the delivery schedule stated above shall apply.

22. F.O.B. DESTINATION. Unless otherwise directed in the solicitation and purchase order, all deliveries shall be F.O.B. Destination and all freight charges shall be included in the total price. Supplies shall be delivered to the destination consignee's warehouse unloading platform, or receiving dock, at the expense of the Contractor. The City shall not be liable for any delivery, storage, demurrage, accessorial, or other charges involved prior to the actual delivery (or "constructive placement" as defined in carrier tariffs) of the supplies to the destination, unless such charges are caused by an act or order of the City acting in its contractual capacity. If rail carrier is used, supplies will be delivered to the specified unloading platform of the consignee. If motor carrier (including "piggy-back") is used, supplies will be delivered to truck tailgate at the unloading platform of the consignee. If the Contractor uses rail carrier or freight forwarder for less than carload shipments, he shall assure that the carrier will furnish tailgate delivery if transfer to truck is required to complete delivery to consignee. One of the following statements usually will appear on the purchase order, although others may be used. If no statement appears, paragraph 22A is applicable.

A. FOB DESTINATION, FREIGHT PREPAID BY SELLER. The seller pays and bears all freight charges.

B. FOB DESTINATION, FREIGHT PREPAID AND CHARGED BACK ON INVOICE. The seller pays the freight and charges the City by adding it to the invoice.

C. FOB DESTINATION, FREIGHT COLLECT. The City pays and bears the freight charges.

D. FOB DESTINATION, FREIGHT COLLECT AND ALLOWED ON INVOICE. The City pays the freight charges and deducts the amount from the seller's invoice.

23. QUALITY. Unless otherwise required by terms of the solicitation, all goods furnished shall be new, in current production, and the best of their kind. When applicable, parts and maintenance service shall be reasonably available. New equipment that is obsolete or technically outdated is not acceptable. Remanufactured or reconditioned items are not considered new. Items shall be properly packaged, packed, labeled, and identified in accordance with commercial standards acceptable to the trade and as required by ICC and other federal and state regulations. Packing slips will accompany the shipment.

24. PRICE. Prices quoted are to be firm and final. All prices quoted shall be net and shall reflect any available discount except for discounts for timely payment. All prices are to be F.O.B. designated delivery point. All shipping, packing and drayage charges are the responsibility of the supplier. C.O.D. shipments will not be accepted unless otherwise agreed to by the City.

25. BRAND NAME OR EQUAL. WHENEVER THE NAME OF THE MANUFACTURER OR THE SUPPLIER IS MENTIONED ON THE FACE HEREOF AND THE WORDS "OR EQUAL" DO NOT FOLLOW, IT SHALL BE DEEMED THAT THE WORDS "OR EQUAL" SHALL FOLLOW SUCH DESIGNATIONS UNLESS THE FACE HEREOF SPECIFIES "NO SUBSTITUTIONS, THE CITY MAY ASSUME THAT ITEMS BID ARE EQUAL OR IT MAY REQUEST SAMPLES AND PROOF THEREOF AND UNLESS APPROVED BEFORE SHIPMENT, CITY RESERVES THE RIGHT TO RETURN AT THE BIDDER'S EXPENSE ALL ITEMS THAT ARE NOT ACCEPTABLE AS EQUALS, SAID ITEMS TO BE REPLACED BY THE BIDDER WITH SATISFACTORY ITEMS AT THE ORIGINAL BID PRICE.

26. COMMERCIAL WARRANTY. The Contractor agrees that the supplies or services furnished under this contract shall be covered by the most favorable commercial warranties the Contractor gives to any customer for such supplies or services and that the rights and remedies provided herein are in addition to and do not limit any rights afforded to the City by any other clause of this contract.

27. FREIGHT CHARGES ON DIRECT SHIPMENTS TO THE CITY. The price or prices mentioned in the bid and carded into this contract are made with reference to lawful freight charges in existence at the time of submission of bids, and said contract prices shall be increased or decreased, as the case may be, by any change in freight rates, provided that any claim for any additional freight must be presented to the City, within thirty (30) days after such advance in freight rates becomes effective. Reductions in freight will be deducted from the contract price. The clause applies to freight on shipments made directly and separately by the manufacturer to the City.

28. VARIATION IN QUANTITY. No variation in the quantity of any item called for by this contract will be accepted unless such variation has been caused by conditions of loading, shipping, or packing, or allowances in manufacturing processes, and then only to the extent, if any, specified elsewhere in this contract.

29. DISCOUNTS.

A. Prompt payment discounts offered for payment within less than twenty (20) calendar days will not be considered in evaluating bids for award, unless otherwise specified in the solicitation. However, offered discounts of less than twenty (20) days will be taken if payment is made within the discount period, even though not considered in the evaluation of bids.

B. In connection with any discount offered, time will be computed from date of delivery of the supplies to the carrier when acceptance is at the point of origin, or from date of delivery at destination when delivery and acceptance is at destination, or from the date the correct invoice or voucher is received in the office specified by the City, if the latter is later than date of delivery. Payment is deemed to be made for the purpose of earning the discount on the date of mailing of the City check.

C. Any discount offered other than for prompt payment should be included in the net price quoted and not included in separate terms. In the event this is not done, the City reserves the right to accept the discount offered and adjust prices accordingly on the purchase order.

30. SELLERS INVOICE. Invoices shall be prepared and submitted in duplicate to address shown on the purchase order. Separate invoices are required for each purchase order. Invoices shall contain the following information: purchase order number, item number description of supplies or services, sizes unit of measure, quantity, unit price, and extended totals.

31. INSPECTION AND ACCEPTANCE. Inspection and acceptance will be at destination unless specified otherwise, and will be made by the City department shown in the shipping address or other duly authorized representative of the City. Until delivery and acceptance, and after any rejection, risk of loss will be on the Contractor unless loss results from negligence of the City. Supplier will be notified of rejected shipments. Unless agreed otherwise, items will be returned freight collect.

32. LOSS AND DAMAGED SHIPMENTS. Risk of loss or damage to items prior to the time of their receipt and acceptance by the City is upon the supplier. The City has no obligation to accept damaged shipments and reserves the right to return at the suppliers expense damaged merchandise even though the damage was not apparent or discovered until after receipt of the items.

33. LATE SHIPMENTS. Supplier is responsible to notify the City department receiving the items and the Buyer of any late or delayed shipments. The City reserves the right to cancel all or any part of an order if the shipment is not made as promised.

34. TAX EXEMPTION—FEDERAL AND STATE.

A. The City is exempt from Federal Excise and Transportation taxes on purchases under Chapter 32, Internal Revenue Code. The federal tax registration number issued by the St. Louis District Director on November 11, 1974 is No. 43740340K.

B. The City is exempt from payment of Missouri Sales and Use Tax in Accordance with Section 39(10) Article 3, of the Missouri Constitution and sections 144.040 and 144.615 RSMo 1969 and supplement thereto. A copy of the exemption from Missouri Sales and Use Tax is available upon request.

35. CITY-FURNISHED PROPERTY.

A. The City shall deliver to the Contractor for use only in connection with this contract, the property described in the schedule or specifications (hereinafter referred to as "City-furnished property"), at the times and locations stated herein. If the City-furnished property, suitable for its intended use, is not so delivered to the Contractor, the Manager shall, upon timely written request made by the Contractor, and if the facts warrant such action, equitably adjust any affected provision of this contract pursuant paragraph 37, AMENDMENTS AND MODIFICATIONS.

B. Title to City-furnished property shall remain in the City. The Contractor shall maintain adequate property control records of City-furnished property in accordance with sound industrial practice.

C. Unless otherwise provided in this contract the Contractor, upon delivery to him of any City-furnished property, assumes the risk of, and shall be responsible for, any loss thereof or damage thereto except for reasonable wear and tear, and except to the extent that such property is consumed in the performance of this contract.

D. The Contractor shall, upon completion of this contract, prepare for shipment, deliver f.o.b. origin, or dispose of all City-furnished property not consumed in the performance of this contract or not theretofore delivered to the City, as may be directed or authorized by the Manager. The net proceeds of any such disposal shall be credited to the contract price or paid in such other manner as the Manager may direct.

36. LABORATORY AND OTHER TESTS. The City reserves the right to test all articles, commodities, supplies, materials and equipment, referred to hereafter as articles, delivered during the life of the proposed contract, at an independent laboratory, to be designated by the Manager. The laboratory test shall include each item of the specifications to determine whether the articles delivered are in conformity therewith. Tests shall be made on articles selected at random from deliveries made under the proposed contract or contracts. Where the result of such test shows that the articles delivered are not equal or do not conform with the specification, then the expense of making such test shall be paid by the Contractor (the bidder in this bid proposal). If the result of any additional test shall show that the articles delivered and tested conform to the specifications, then in such case the expense of making such test shall be paid by the City. The City further has the right to conduct tests using its own facilities and test methods when adequate facilities and procedures are available.

37. AMENDMENTS AND MODIFICATIONS. The Manager may at any time, by a written order, and without notice to the sureties, make a MODIFICATION to the contract or an amendment to the purchase order, within the general scope of this contract, in (1) drawings, designs, or specifications, where the supplies to be furnished are to be specially manufactured for the City in accordance therewith; (2) method of shipment or packing; and (3) place of delivery. If any such change causes an increase or decrease in the cost of, or the time required for performance of this contract whether changed or not changed by any such order, an equitable adjustment shall be made by written modification of the contract or amendment to the purchase order. Any claim by the Contractor for adjustment under this clause must be asserted within thirty (30) days from the date of receipt by the Contractor of the notification; provided that the Manager, if he decides that the facts justify such action, may receive and act upon any such claim if asserted prior to final payment under this contract. Failure to agree to any adjustment shall be a dispute concerning a question of fact within the meaning of the clause of this contract entitled "Disputes"; however, nothing in this clause shall excuse the Contractor from proceeding with the contract as changed. Any other modifications and amendments made within the general scope of the contract will be by written mutual agreement.

38. DISPUTES.

A. Except as otherwise provided in this contract, any dispute concerning a question of fact arising under this contract which is not disposed of by agreement shall be decided by the Manager, who shall reduce this decision to writing and mail or otherwise furnish a copy thereof to the Contractor. The decision of the Manager shall be final and conclusive unless within thirty (30) days from the date of receipt of such copy, the Contractor mails or otherwise furnishes to the Procurement Services Manager a written appeal addressed to the Director of Finance. The decision of the Director of Finance, or his duly authorized representative for the determination of such appeals shall be final and conclusive unless determined by a court of competent jurisdiction to have been fraudulent, or capricious, or arbitrary, or so grossly erroneous as necessarily to imply bad faith, or not supported by substantial evidence, in connection with any appeal proceeding under this clause the Contractor shall be afforded an opportunity to be heard and to offer evidence in support of his appeal. Pending final decision of a dispute hereunder, the Contractor shall proceed diligently with the performance of the contract and in accordance with the Manager's decision.

B. This DISPUTES clause does not preclude consideration of law questions in connection with decisions provided for in paragraph A above: provided, that nothing in this contract shall be construed as making final the decision of any administrative official, representative, or board on a question of law.

39. TERMINATION FOR DEFAULT.

A. The City may, subject to the provisions of paragraph (c) below, by written notice of default to the Contractor, terminate the whole or any part of this contract in any one of the following circumstances:

- (1) if the Contractor fails to make delivery of the supplies or to perform the services within the time specified herein or any extension thereof; or
- (2) if the Contractor fails to perform any of the other provisions of this contract, or so fails to make progress as to endanger performance of this contract in accordance with its terms, and in either of these two circumstances does not cure such failure within a period of ten (10) days after receipt of notice from the Buyer specifying such failure.

B. In the event the City terminates this contract in whole or in part as provided in paragraph A of this clause, the City may procure, upon such terms and such manner as the Buyer may deem appropriate, supplies or services similar to those so terminated, and the Contractor shall be liable to the City for any excess costs for such similar supplies or services; provided, that the Contractor shall continue the performance of this contract to the extent not terminated under the provisions of this clause.

C. The Contractor shall not be liable for any excess costs if the failure to perform the contract arises out of causes beyond the control and without the fault or negligence of the Contractor. Such causes may include, but are not restricted to, acts of God or of the public enemy, acts of the City in either its sovereign or contractual capacity, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and unusually severe weather; but in every case the failure to perform must be beyond the control and without the fault or negligence of the Contractor.

D. If, after notice of termination of this contract under the provisions of this clause, it is determined for any reason that the Contractor was not in default under the provisions of this clause, or that the default was excusable under the provisions of this clause, the rights and obligations of shall be the same as if notice of termination for convenience had been issued pursuant to such clause.

40. TERMINATION FOR CONVENIENCE. The Manager, by written notice, may terminate this contract, in whole or in part, when it is in the best interest of the City. If this contract is for supplies and is so terminated, the Contractor shall be compensated in accordance with his auditable costs to point of notification of termination. To the extent, that this contract is for services and is so terminated, the City shall be liable only for payment in accordance with the payment provisions of this contract for services rendered to the effective date of termination.

41. EXAMINATION OF RECORDS.

A. If this contract exceeds \$2,500, the Contractor agrees that the City Auditor of the City, or any of his duly authorized representatives shall, until the expiration of three (3) years after final payment under this contract, have access to and the right to examine any directly pertinent books, documents, papers, and records of the Contractor, involving transactions related to this contract.

B. The Contractor agrees to include the clause in A in all his subcontracts hereunder, except purchase orders not exceeding \$2,500.

42. OFFICIALS NOT TO BENEFIT. No regular employee or elected or appointed member of the City government shall be admitted to any share or part of this contract, or to any benefit that may arise therefrom; but this provision shall not be construed to extend to this contract if made with a corporation for its general benefit.

43. CONFLICT OF INTEREST. No employee or member of the employee's immediate family, or elected or appointed member of City government may participate directly or indirectly in the procurement process if they:

A. Have a financial interest or other personal interest which is incompatible with the proper discharge of their official duties in the public interest or would tend to impair their independence, judgment, or action in the performance of their official duties.

B. Are negotiating or have an arrangement concerning prospective employment. The bidder warrants to the best of their knowledge that no such conflict of interest exists. In the event such a conflict occurs, the bidder is required to report it immediately to the Manager. For breach or violation of this warranty, the City shall have the right to annul this contract without liability or at its discretion.

44. COVENANT AGAINST CONTINGENT FEES. The Contractor warrants that no person or selling agency has been employed or retained to solicit or secure this contract upon an agreement or understanding for a commission, percentage, brokerage or contingent fee, excepting bona fide employees or bona fide established commercial or selling agencies maintained by the Contractor for the purpose of securing business. For breach or violation of this warranty, the City shall have the right to annul this contract without liability or at its discretion, to deduct from contract price or consideration, or otherwise recover, the full amount of such commission, percentage, brokerage, or contingent fee. This section shall not prevent an attorney from representing a client in any dispute respecting a contract nor shall it prevent an attorney or an accountant from entering into contract negotiation with the City on behalf of a client.

45. GRATUITIES ILLEGAL TO ANY EMPLOYEE AND FORMER EMPLOYEES. It is unlawful for any person or business to offer, give or agree to give, to any employee of the City, or former employee of the City, to solicit, demand, accept or agree to accept from another person or business, a gratuity, offer of employment or anything of a pecuniary value in connection with any decision, approval, disapproval, recommendation, or preparation of any part of a contract requirement or a purchase request, influencing the content of any specification or procurement standard, rendering of advice, investigation, auditing, or in any other advisory capacity in any proceeding or application, request for ruling, determination, claim or controversy, or other particular matter, pertaining to any contract or subcontract, or to any solicitation or proposal therefor.

46. KICKBACKS ILLEGAL IN SUBCONTRACTING. It is unlawful for any payment, gratuity, or benefit to be made by or on behalf of or solicited from a subcontractor under a contract to the prime contractor or higher tier subcontractor or any person associated therewith as an inducement for the award of a subcontract to a contract of the City. Upon a showing that a subcontractor made a kickback to a prime contractor or a higher tier subcontractor in connection with the award of a subcontract or order thereunder, it shall be conclusively presumed that the amount thereof was included in the price of the subcontract or order and ultimately borne by the City and will be recoverable hereunder from the recipient. In addition, that amount may also be recovered from the subcontractor making such kickbacks. Recovery from one offending party shall not preclude recovery from other offending parties.

47. CONTEMPORANEOUS EMPLOYMENT PROHIBITED. The Contractor warrants and agrees that no employee or elected or appointed member of City government who is participating directly or indirectly in the procurement process is or will become as a result of this contract an employee of the Contractor. For breach or violation of the warranty, the City shall have the right to annul this contract without liability or at its discretion.

48. RECOVERY OF VALUE. The value of anything transferred or received in breach of ethical standards contained in paragraphs 42,43,44,45,46, and 47 of these INSTRUCTIONS AND CONDITIONS by a bidder, Contractor, City employee, elected and appointed City officials, or a non-employee may be recovered from parties involved.

49. CONFIDENTIAL INFORMATION. Any information deemed confidential or proprietary must be clearly marked by the bidder or Contractor as such. It will be protected and treated with confidentiality to the extent permitted by state statutes concerning public information. Any data to be returned must be so marked and will be returned if not essential to the bid or contract record. It is unlawful for an employee, former employee or elected or appointed City official to use confidential information for actual or anticipated personal gain or the anticipated personal gain of another person.

50. DEBARMENT OR SUSPENSION. After reasonable notice to the person or business involved and reasonable opportunity for that person or business to be heard, the Director of Finance, after consulting with the City Attorney, is authorized to debar the person or business or cause from consideration for award of contracts. The debarment shall be for a period of not more than three (3) years. After consultation with the City Attorney, the Director of Finance is authorized to suspend a person or business from consideration for award of contracts if there is probable cause to believe that the person or business has engaged in any activity which might lead to debarment. The suspension shall be for a period not to exceed three (3) months. The causes for debarment include:

- A. Conviction for commission of a criminal offense as an incident to obtaining or attempting to obtain a public or private contract or subcontract, or in the performance of such contract or subcontract;
- B. Conviction under state or federal statutes of embezzlement, theft, forgery, bribery, falsification or destruction of records, receiving stolen property, or any other offense indicating a lack of business integrity or business honesty which currently, seriously, and directly affects responsibility as a City Contractor;
- C. Conviction under state or federal antitrust statutes arising out of the submission of bids or proposals;
- D. Violation of contract provisions, as set forth below, of a character which is regarded by the Manager to be so serious as to justify debarment action:

- (1) Deliberate failure without good cause to perform in accordance with the specifications or within the time limit provided in the contract; or
- (2) A recent record of failure to perform or of unsatisfactory performance in accordance with the terms of one or more contracts; provided that failure to perform or unsatisfactory performance caused by acts beyond the control of the Contractor shall not be considered to be a basis for debarment;

E. Any other cause the Director of Finance determines to be so serious and compelling as to affect responsibility as a City Contractor, including debarment by another governmental entity.

51. EQUAL OPPORTUNITY IN EMPLOYMENT.

A. Affirmative Action Compliance Procedure - Unless previously accomplished, the proposed Contractor (or Franchise Holder) agrees to submit in writing concurrently with his bid proposal, to the Buyer, a properly executed Human Relations Department (HRD) Transmittal Form 1016-021. This form must be executed in duplicate with each copy bearing original signatures. Attached to each copy of HRD Form 1016-021 must be supportive data for one of the following options as defined in Chapter 38 of the Code of General Ordinances of Kansas City, Missouri:

- (1) A proposed Affirmative Action Program
- (2) A certificate of Compliance
- (3) An Affidavit in lieu of a Certificate of Compliance
- (4) A request for exemption from program submission requirements as outlined in Section 26.229(3).

In addition, as part of the provisions of the Affirmative Action Program relating to Contract Conditions, it is required that all subcontractors and on-site suppliers provide proof of current certification from the Director of Human Relations prior to subcontract execution. HRD Form 031-A or HRD Form 031-B relating to subcontractor utilization must be attached to HRD Form 1016-021 as follows:

- (1) Contracts (and Franchises) other than Purchase Orders - If option one, two, or three above is used, HRD Form 031-A or HRD Form 031-B must be executed.
- (2) Purchase Orders - It is presumed that a subcontracting relationship does not exist when a purchase order is executed. However, if a supplier executes a subcontract in order to perform a purchase order, the HRD Form 031-A must be executed and attached.

This certification shall reflect compliance with the provisions of Article IX, Section 26.229, Code of General Ordinances of Kansas City, Missouri. A copy of Article IX, Civil Rights Ordinance of the Code of General Ordinances of Kansas City, Missouri, may be obtained from the City Clerk, 25th Floor, City Hall. Upon request, the Department of Human Relations will furnish an instruction booklet (HRD Form 1016-020) and assistance in preparation of an affirmative action program. The Human Relations Department phone number is 513-1838 and they are located on the 4th Floor, City Hall.

B. Contract Compliance - As a condition of this Contract (or Franchise) with the City, the Contractor (or Franchise Holder) agrees as follows:

- (1) The person receiving this contract (or Franchise) from the City agrees to refrain from any unlawful employment practice as presently defined by Sections 26.211-26.214, Code of General Ordinances of Kansas City, Missouri; and that such person will post their or its premises at the office of employment with notices setting forth the provisions of Sections 26.211-26.214, Code of General Ordinances of Kansas City, Missouri and further setting forth that such person agrees to abide by said provisions; that such person agrees to implement the Certificate of Compliance or Affirmative Action Program submitted by them in connection with this Contract (or Franchise), and that such person shall be bound by the terms of Sections 26.228-26.236, Code of General Ordinances of Kansas City, Missouri, and by the Rules and Regulations promulgated for the administration of Sections 26.228-26.236.
- (2) Every person subject to Sections 26.228-26.236, Code of General Ordinances of Kansas City, Missouri, is hereby deemed to agree to permit the Director of Human Relations, or their duly authorized agents or employees, access at all reasonable times to all such persons, books, papers, records, reports or accounts in the possession of or under the control of such person, as may be necessary to ascertain compliance with Sections 26.228-26.236, and to furnish such further information as may be required of them, all within ten (10) days of the date requested in writing.
- (3) If the Contractor shall fail, refuse or neglect to comply with the terms of these contract conditions, such failure shall be deemed a total breach of this contract and such contract may be terminated, cancelled or suspended, in whole or in part and such Contractor may be declared ineligible for any further City contracts for a period of up to one (1) year. Provided; that if this contract is terminated, cancelled or suspended for failure to comply with Sections 26.228-26.236 the Contractor shall have no claims for damages against the City on account of such termination, cancellation or suspension, or declaration of ineligibility.
- (4) All contracts executed by the Contractor with a Subcontractor and relating to this City contract, shall contain as a condition thereof, the provisions of Sections 26.228-26.236, Code of General Ordinances of Kansas City, Missouri, relating to contract conditions, and such Subcontractor shall be subject to the provisions of Sections 26.228-26.236.

52. ASSISTANCE FOR MINORITY- AND WOMEN-OWNED BUSINESS.

A. It is the policy of the City to encourage and foster participation of minority- and women-owned businesses in purchasing and contracting and to assure that such businesses have an equal opportunity to compete.

B. The Procurement Services Division has a Minority Business Officer available to assist minority- and women-owned businesses: in completing supplier applications; in becoming acquainted with the City purchasing system, departments and Buyers; by providing advice and information on previous bids and bid prices; and assisting in resolving problems on such matters as specifications, bid terms, and bonding requirements.

53. ASSIGNMENT OF CONTRACT AND CLAIMS. A contract or purchase order or the proceeds thereof may not be assigned without the written permission of the Manager.

54. **ASSIGNMENT OF ANTITRUST RIGHTS AND INTEREST.** Submission of this bid constitutes an assignment by the bidder to the City of all rights, title and interest in and to all causes of action it may have under the antitrust laws of the United States or the State of Missouri, which causes of action have accrued or will accrue as a result of or in relation to the particular goods or services purchased or procured by it in fulfillment of any contract with the City arising from this bid.
55. **COMPENSATION INSURANCE.** The Contractor shall furnish adequate compensation insurance to cover all employees furnishing materials and/or services referred to in attached contract to the City and under the control of the Contractor, and shall relieve and hold the City harmless from any costs due to accidents or other liabilities mentioned in the Worker's Compensation Act. If requested, Contractor shall also furnish at the time of delivery of this contract and such other times as may be requested, a copy of such insurance policies herein referred to.
56. **CLAIMS.** Supplier agrees to defend, protect and save the City harmless from any claims and actions arising out of patent infringements and product liability.
57. **LABOR PRACTICES.** The supplier agrees to comply with all Federal and State Laws, and City Ordinances where applicable, relating to fair labor practices and discrimination in the employment of persons.
58. **LIABILITY AND INSURANCE**
- A. The Contractor shall be:
- (1) liable to the City for loss of or damage to property, real and personal, owned by the City or for which the City is liable;
 - (2) responsible for, and hold the City harmless from, loss of or damage to property not included in (1) above; and
 - (3) responsible for, and hold the City harmless from, bodily injury and death of persons, occasioned either in whole or in part by the negligence or fault of the Contractor, his officers, agents, or employees in the performance of work under this contract. For the purpose of this clause, all cargo loaded or unloaded under this contract is agreed to be property owned by the City or property for which the City is liable. The amount of the loss or damage as determined by the Buyer will be withheld from payments otherwise due the Contractor. Determination of liability and responsibility by the Buyer will constitute questions of fact within the meaning of the paragraph 38, DISPUTES. The general liability and responsibility of the Contractor under this clause are subject only to the following specific limitations.
- B. The Contractor shall not be responsible to the City for and does not agree to hold the City harmless from loss or damage to property or bodily injury to or death of persons if the damage, injury or death resulted solely from an act or omission of the City or employees of the Contractor acting within specific directions of the Buyer.
- C. The Contractor shall at his own cost and expense, defend any suits, demands, claims, or actions, in which the City might be named as a codefendant of the Contractor, arising out of or as a result of the Contractor's performance of work under this contract, whether or not such suit, demand, claim, or action arose out of or was the result of the Contractor's negligence. This shall not prejudice the right of the City to appear in such suit, participate in defense and take such actions as may be necessary to protect the interest of the City.
- D. The Contractor shall agree to meet all lawful rules and regulations and to meet all lawful requirements which are now or hereafter may be issued or promulgated under any of the said respective laws by and duly authorized Federal, State, or local official; and agree to indemnify and save harmless the City from such contributions or taxes or liability therefor.
- E. **Place of Suit.** This contract is executed in the city of Kansas City, Missouri. Any action at law, suit in equity, or judicial proceeding for the enforcement of this contract or any provision thereof shall be instituted and prosecuted only in courts located in the city of Kansas city, Missouri. Each party to this contract has waived the right to change of venue.
- F. **Law Governing.** This contract shall be governed by the laws of the State of Missouri, both as to interpretation and performance.
- G. When specifically requested by the Buyer in the solicitation and purchase order, the Contractor shall, at his own expense, procure and maintain the following insurance with a company acceptable to the Director of Finance or his designated representative. Further, the City shall be named as an additional insured on insurance coverages (2) and (3) below.
- (1) Standard Worker's Compensation and Employer's Liability Insurance and Longshoremen's and Harbor Worker's Compensation Insurance, or such of these as may be proper under applicable state or Federal statutes. The Contractor may however, be self-insurer against the risk if he has obtained the prior approval of the Buyer. This approval will be given upon receipt of satisfactory evidence that the Contractor has qualified as such self-insurer under applicable provision of law.
 - (2) Bodily injury liability insurance in the amount stated in the solicitation for any one (1) occurrence and for an aggregate amount per Occurrence.
 - (3) Personal injury liability insurance when applicable in the amount stated in the solicitation for any one occurrence and for an aggregate amount.
- H. All policies of insurance required under the terms of this contract shall, by appropriate endorsement or otherwise, provide that no cancellation thereof shall be effective for such period as may be prescribed by the laws of the State in which this contract is to be performed and in no event less than thirty (30) days after written notice thereof has been given to the Buyer.
- I. Satisfactory evidence of the required insurance endorsed to show the City named as an additional beneficiary and requiring a mandatory thirty (30) day cancellation notice shall be filed with the Buyer prior to performance of any work under this contract. No contract will be considered fully executed until proof of insurance is received. The City has the right to disqualify an otherwise successful bid or cancel a term contract if proof of insurance is not provided within the time requested. Insurance coverage will be considered acceptable when provided in one (1) of the following methods:
- (1) By issuance of an original policy designating the Contractor and the City, by name, as the insured parties under the provisions of the policy.
 - (2) By endorsement to an original policy, which endorsement shall extend to the City, by name, the same coverage and protections stipulated in the paragraph above.
 - (3) By separate contingent policy providing the required insurance coverage for the protection of the City, by name.
 - (4) By issuance of standard Certificate of Insurance modified to show the City as an additional named insured and requiring a thirty (30) day mandatory cancellation notice. The Buyer shall provide a blank modified certificate form to the Contractor.
- J. It is expressly agreed that the provisions contained in G. to I. of this clause shall not in any manner limit the liability or extent of liability of the Contractor as provided in A. to D. of this clause.
- K. In the event that the Contractor is indemnified, reimbursed, or relieved for any loss or damage to City property, he shall equitably reimburse the City. The Contractor shall do nothing to prevent the City's right to recover against third parties for any such loss, or damage and, upon the request of the Buyer, shall at the City's expense, furnish to the City all reasonable assistance and cooperation (including the prosecution of suit and the execution of instruments of assignment in favor of the City) in obtaining recovery.
59. **CLAUSES APPLICABLE TO TERM SUPPLY AND SERVICE CONTRACTS.**
- A. **Term Supply or Service Contract Defined.** A formal contract made by the City with a supplier to purchase repetitive and estimated requirements of products or services from a supplier to be ordered and supplied as needed for a bid price over a period of time stated in the contract. The contract may be exclusive with one (1) Contractor or open to further competition.

B. Approximate Quantities. This bid proposal is based on estimated quantities and it is understood that the estimates are prepared by the City officials for the purpose of comparison of bids, and that the estimated quantities are not guaranteed but are approximate only, and the City reserves the right to increase or diminish the same, or to omit any one or more items, as the Manager may deem desirable.

C. No financial obligation shall accrue against the City until a purchase order is issued encumbering funds.

D. Multiyear term contracts and options to extend term contracts are subject to paragraph 60, ANNUAL APPROPRIATION OF FUNDS.

E. Modifications to term contracts may be made by mutual written agreement, however they must be within the scope and intent of the original contract.

60. ANNUAL APPROPRIATION OF FUNDS.

A. Multi-year term supply and service contracts and leases and the exercise of options to renew term contracts are subject to annual appropriation of funds by the City Council. Payments made under term contracts and leases are considered items of current expense. Purchase orders are funded when issued, therefore are current expense items and are not subject to any subsequent appropriation of funds.

B. In the event sufficient funds are not appropriated for the payment of lease payments or anticipated term contract payments required to be paid in the next occurring lease or contract term and if no funds are legally available from other sources, the lease or contract may be terminated at the end of the original term or renewal term and the City shall not be obligated to make further payments beyond the then current original or renewal term. The City will provide notice of its inability to continue the lease or contract at such time as the Manager is aware of the non-appropriation of funds, however failure to notify does not renew the term of lease or contract. If a lease is cancelled, the events of default will occur as described in the lease and/or paragraph 39, TERMINATION FOR DEFAULT, of these INSTRUCTIONS AND CONDITIONS. The City, has no monetary obligations in event of termination or reduction of a term contract since such contracts represent estimated quantities and are not funded as a contract, but only to the extent of purchase orders issued.