INCH-POUND
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SUPERSEDING
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COMMERCIAL ITEM DESCRIPTION

TRUCK, FIRE FIGHTING (WILDLAND)

The General Services Administration has authorized the use of this commercial item description, for all federal agencies.

1. SCOPE. This commercial item description (CID) covers a commercial wildland fire truck. It will have a 4x4 chassis with a diesel engine, an automatic transmission, and a four person cab with four doors. The wildland fire truck will have a mounted utility body, containing a modular agent and pump and roll delivery system, as well as fire fighting tools and equipment. The truck will be equipped with a compressed air foam system (CAFS). The wildland fire truck is intended to combat wildland and brush type fires.

2. SALIENT CHARACTERISTICS. The vehicle shall be in accordance with the National Fire Protection Association (NFPA) 1906, Standard for Wildland Fire Apparatus, current edition. The vehicle will have a 4x4 chassis with a diesel engine, an automatic transmission, and a four person cab with four doors and gross vehicle weight rating (GVWR) of between 33,000 and 35,000 pounds. The vehicle shall have a body containing integrated agent and delivery system as well as compartment space for firefighting tools and equipment. The vehicle is intended to combat wildland and brush type fires.

2.1 Administration.

2.1.1 Environmental conditions.

2.1.1.1 Altitude. Unless otherwise specified, the vehicle, including the pumping system, shall be designed for operation at 2,000 feet above sea level. When specified, the vehicle, including the pumping system, shall be designed for operation at the altitude specified.

Beneficial comments, recommendations, additions, deletions, clarifications, etc. and any data that may improve this document should be sent to: AFLCMC/EZSS, 2145 Monahan Way, Area B, Bldg 28, Wright-Patterson AFB, OH 45433 or email engineering.standards@us.af.mil. Since contact information can change, you may want to verify the currency of this address information using the ASSIST Online database at https://assist.dla.mil.

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2.1.1.2 Temperature range. The vehicle shall be capable of satisfactory storage and operation in temperatures ranging from 0 to 125 °F. The vehicle shall be equipped with a cab, chassis, and firefighting agent winterization system, permitting full operation at 0 °F. The winterization system shall not detract from the performance of the vehicle or the firefighting system in ambient temperatures up to 125 °F. The vehicle chassis winterization system shall maintain the engine coolant, lubricants, fuel, and electrical systems operational at ambient temperatures of 0 °F. The vehicle agent winterization shall provide protection of the agent pump, agent piping system(s), firefighting systems, and water tank to 0 °F. The winterization system shall include heaters for engine coolant and a battery heater (a blanket type battery heater is not acceptable). The vehicle agent winterization system shall provide sufficient insulation and heating capacity, by means of either hot circulating liquids, immersion heaters, 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 0 °F with the vehicle fully operational and the engine running. At the end of this 2-hour period, the vehicle shall be capable of successfully discharging its agents from all discharges. All compartments not winterized shall be marked on the interior of the compartment as not winterized and not to be used for storage of items subject to freezing. While in operation, the systems requiring winterization shall be powered by the vehicle. The winterization system shall incorporate high-temperature shutoff switches to prevent overheating of any fluid or component. The winterization system shall have a labeled activation switch with a pilot light. While in storage, the winterization system shall be powered through the electrical shoreline connection (see 2.10.1).

2.1.2 Foreign object damage. All loose metal parts, such as pins or connector covers, shall be securely attached to the vehicle with wire ropes or chains. "Dog tag" style beaded chains shall not be provided. Removable panels, if provided, shall be attached with captive fasteners.

2.1.3 Roadability.

2.1.3.1 Operating terrain. The vehicle shall operate on paved and graded gravel roads and off-road (cross-country) terrain.

2.1.3.2 Acceleration. The fully loaded vehicle shall accelerate from 0 to 35 miles per hour (mph) within 25 seconds on a level, paved road.

2.1.3.3 Maximum speed. The fully loaded vehicle shall attain a minimum top speed of 50 mph and maximum of 68 mph on a level, paved road.

2.1.3.4 Gradeability. The fully loaded vehicle shall be able to maintain a speed of at least 20 mph while ascending any paved slope up to and including 6 percent. The fully loaded vehicle shall also be able to maintain a speed of at least 5 mph while ascending any paved slope up to and including 25 percent.

2.1.3.5. Side slope stability. The fully loaded vehicle shall be stable on a 27 degree side slope. If an adjustable height suspension system is provided, the suspension system may be set to the height normally used on hard pavement.

2.1.4 Weight and dimensions. Overall dimensions shall not exceed:

Length	360 inches
Width	96 inches (excluding mirrors)
Height	124 inches

2.1.4.1 Capacity. The vehicle shall have a minimum GVWR of 33,000 and a maximum of 35,000 pounds. The GVWR shall be certified by the chassis manufacturer. Derating the axles shall be prohibited. The fully loaded vehicle shall weigh less than the manufacturer certified GVWR.

2.1.5 Turning diameter. The vehicle shall have a wall-to-wall turning diameter not to exceed three times the vehicle's length.

2.1.6 Clearances. Ground clearance, ramp break over angle, and angles of approach and departure shall be in accordance with NFPA 1906.

2.1.7 Vehicle Stability. The vehicle shall comply with roll over stability criteria as defined by NFPA 1906.

2.1.8 Manuals.

2.1.8.1 Technical manuals. The overall format for the manuals may be military specification, commercial, or a combination of both. Each technical manual shall have a title page. One set of engine and transmission parts, service, and operator's manuals shall be packed with each vehicle. An additional complete set of manuals shall be submitted on a rewriteable compact disc (CD) to the procuring activity for stock.

a. The contractor shall validate the technical manuals for accuracy prior to submission to the procuring activity for verification. The contractor shall submit one complete set to the procuring activity for verification 30 days before the first production inspection. Any changes or corrections noted by the procuring activity shall be corrected and updated pages or manuals shall be submitted to the procuring activity.

b. Once approved by the procuring activity, the contractor shall pack two complete sets of technical manuals with each vehicle. An additional complete set shall be submitted to the procuring activity for stock.

c. Once approved by the procuring activity and a Technical Order (TO) number is assigned, the contractor shall pack two complete sets of both hard copy and CDs with each vehicle and one complete set on a rewriteable CD shall be submitted to the procuring activity for stock. The procuring activity's address will be provided.

d. The contractor shall grant the United States Air Force (USAF) a non-exclusive, non-assignable, royalty free U.S. Government (Government) Purpose License, to scan into CENTRA (the USAF repository) and to reproduce and distribute (either electronically

or via hard medium) copies or facsimiles of manuals produced and distributed by the contractor for this CID. These rights extend to Government agencies only, and the data contained in the technical manuals is not to be sold, disclosed, or otherwise provided to any other entity or entities outside the Government. The license shall remain in effect as long as the vehicles described in the required technical manuals remain under Government control and usage. In addition, the contractor shall grant permission for the Government to place an Air Force TO number and publication date as well as distribution, warning, handling, and destruction statements on the cover/title pages of the TO.

2.1.8.1.1 Operator's manuals. The operator's manual shall include all information required for the safe and efficient operation of the vehicle, including the fire extinguishing equipment, and any special attachments or auxiliary equipment. The operator's manual shall include at least the following:

a. Location and function of all controls and instruments shall be illustrated and fully described.

b. Safety information that is consistent with the safety standards established by the Occupational Safety and Health Administration (OSHA).

c. Checks and adjustments in preparation for placing the vehicle for service upon receipt from the contractor.

d. Preparation for shipment or storage.

e. Warranty information and period of the warranty for the complete vehicle and for any component warranty that exceeds the warranty of the complete vehicle. Addresses and telephone numbers shall be provided for all warranty providers.

f. General description of, and step-by-step instructions, for the operation of the vehicle and its auxiliary equipment.

g. Description of the post-operational procedures (draining, flushing, et cetera).

h. Checklists for the daily maintenance inspection and mission readiness checks that the operator is expected to perform.

i. Procedures for towing a disabled vehicle.

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

2.1.8.1.2 Service manuals. The service manual shall identify any special tools and test equipment required and shall cover troubleshooting and maintenance as well as minor and major repair procedures. The text shall contain performance specifications, tolerances, and fluid capacities; current, voltage, and resistance data; test procedures; and such illustrations and exploded views as

may be required to permit proper maintenance by qualified mechanics. The service manual shall contain an alphabetical subject index as well as a table of contents. The service manual shall 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. Schedules for required preventative maintenance and required periodic maintenance.

g. Location, procedure, and interval for parts of the vehicle and equipment which require lubrication.

2.1.8.1.3 Parts manual. The parts manual shall include illustrations and exploded views, as needed, to properly identify all parts, assemblies, subassemblies, and special equipment. All components of assemblies shown in illustrations or exploded views shall be identified by reference numbers which correspond to the reference numbers in the parts lists. All purchased parts shall be cross-referenced with the original manufacturer's name and part number. The parts identification manual shall provide the description, length, dimensions, and quantity of each item used per vehicle. The manual shall contain a numerical index. The parts manual shall contain a list of all of the component vendor names, addresses, and telephone numbers referenced in the parts list.

2.1.9 Painting, plating, and corrosion control.

2.1.9.1 Dissimilar metals. Dissimilar metals, as defined in MIL-STD-889, shall not be used in intimate contact with each other.

2.1.9.2 Finish. Exterior surfaces shall be prepared, primed, and painted with polyurethane paint in accordance with all of the paint manufacturer's instructions and recommendations. Unless otherwise specified (see 6.2), the exterior finish color shall be Candy Apple Red, Sikkens color number FLNA3021, DuPont color number 97902U or 4737U, PPG color number 71528 (the PPG name for this color is Cardinal Red), or equal. When specified, the exterior finish color shall be Desert Sand, color number 30313 of SAE AMS-STD-595. When specified, the exterior finish color shall be Olive Drab with flat finish, color number 34064 of SAE AMS-STD-595. The interior of all compartments shall be painted with an impact resistant, textured coating that resists stains, scuffs, chips, and scratches.

a. For vehicles painted Candy Apple Red, the cab upper body (from the bottom of the windshield) and roof shall be painted White, color number 17875 of SAE AMS-STD-595. All bright-metal and anodized parts, such as mirrors, horns, light bezels, tread

plate, and roll-up compartment doors, shall not be painted. Compartment interiors shall be gray.

b. For vehicles painted Desert Sand or Olive Drab, all exterior surfaces, including all normally bright-metal and anodized parts and any interior surfaces visible with any compartment door open (but not the interior of the cab), shall be painted body color. This includes fenders, compartment doors, shelves, and mounting hardware, but does not include items mounted in the compartments. Non-metallic materials may be black or gray.

2.1.9.3 Horizontal reflective striping. Horizontal reflective striping in accordance with 15.9.3 of NFPA 1901 shall be applied around the vehicle in an approximate plane with the headlights. Bright metal trim or anodized parts may interrupt the reflective stripes. The pattern shall be 10 inches wide with three reflective stripes (one-inch reflective, one-inch body color, six inches reflective, one-inch body color, and one-inch reflective). The reflective stripes shall be white.

2.1.9.4 Protective coatings. Materials that deteriorate when exposed to sunlight, weather, or operational conditions normally encountered during the service life of the vehicle shall not be used or shall have means of protection against such deterioration that does not prevent compliance with the performance requirements specified herein. Protective coatings that chip, crack, or scale with age or extremes of climatic conditions or when exposed to heat shall not be used. Fasteners, handles, and fittings used in the assembly of the vehicle shall also be primed and painted.

2.1.9.5 Exclusion of water. The design of the vehicle shall be such as to prevent water leaking into, or being driven into, any part of the vehicle interior when either in an operating or travelling configuration. All windows, doors, panels, covers, etc., shall be provided with sealing arrangements such that the entry of water is minimized when these items are correctly closed. Particular care shall be taken to prevent wetting of equipment inside compartments, and prevent wetting of heat and sound proofing materials. Sharp corners and recesses shall be avoided so that moisture and solid matter cannot accumulate to initiate corrosion. Sealed floors with suitable drainage shall be provided for storage compartments, engine compartments, and other areas in the vehicle that could collect and retain water.

2.1.9.5.1 Fluid traps and faying surfaces. There shall be no fluid traps on the vehicle. Faying surfaces of all structural joints, except welded joints, shall be sealed to preclude fluid intrusion.

2.1.9.5.2 Ventilation. Ventilation shall be sufficient to prevent moisture retention and buildup.

2.1.9.5.3 Drainage. Drain holes shall be provided to prevent collection or entrapment of water or other unwanted fluid in areas where exclusion is impractical. All designs shall include considerations for the prevention of water or fluid entrapment and ensure that drain holes are located to effect maximum drainage of accumulated fluids. The number and location of drain holes shall be sufficient to permit drainage of all fluids when the unit is stored on level ground. The minimum size of the drain holes shall be 0.25-inch. Each compartment floor and shelf shall be covered with a removable mat designed to allow for drainage of any water from the stowed equipment.

2.1.9.6 Chevron striping. In accordance with 15.9.3 of NFPA 1901 at least 50 percent of the rear-facing vertical surfaces, visible from the rear of the apparatus, excluding any pump panel areas not covered by a door, shall be equipped with retroreflective striping in a chevron pattern sloping downward and away from the centerline of the vehicle at an angle of 45 degrees. 3M part number 983-17 (red) and 983-23 (florescent yellow/green) reflective diamond grade or equivalent shall be utilized. Each stripe in the chevron shall be a single color alternating between red and fluorescent yellow in accordance with 15.9.3 of NFPA 1901. Each stripe shall be 6 inches (150 millimeter) in width in accordance with 15.9.3 of NFPA 1901 and the example provided below.

2.1.9.7 Lettering. Vehicles painted Candy Apple Red shall have the letters "UNITED STATES" and "AIR FORCE", or any other applicable military service lettering, applied in synthetic or encapsulated gold leaf, with outline and black shadow, on the front door on both sides in long radius elliptical arches above and below the lettering center line. The size of the lettering shall be a minimum of 2½ inches to a maximum of 6 inches. The Air Force Fire Emergency Services logo shall be placed at a location to be determined during the post award meeting. Vehicles painted Desert Sand or Olive Drab shall have no lettering or logo.

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

a. Nomenclature.

b. Manufacturer's make and model.

c. Manufacturer's serial number.

d. USAF vehicle registration number.

e. National Stock Number (NSN).

f. Vehicle curb weight: pounds/kilograms.

g. Payload, maximum: pounds/kilograms.

h. Gross vehicle weight (GVW): pounds/kilograms.

i. Fuel capacity and type: gallons/liters.

j. Date of delivery (month and year).

k. Warranty (months and miles/kilometers).

l. Contract number.

m. Order number.

n. Paint color and number.

o. Length, width, and height of vehicle in inches and centimeters.

2.1.11 Delivery. All units shall be driven to the receiving installation for continental United States (CONUS) locations or port of call for outside continental United States (OCONUS) locations.

2.1.12 Warranty. The warranty period shall not begin until training has been completed at the receiving installation.

2.1.13 Air Force registration numbers. The manufacturer shall maintain a list of Air Force registration numbers and corresponding serial numbers for the purposes of identifying vehicles affected by service bulletins.

2.2 General requirements.

2.2.1 Hose storage.

2.2.1.1 Hose storage areas. The vehicle body shall have a hose bed with at least 41 cubic feet of storage space. A diamond plate hose bed cover with end flaps shall be provided. An elastic webbing material to secure the hose shall be provided.

2.2.1.2 Deadlay hose bed. A deadlay hose bed without plumbing shall be provided in the upper front area of the pump module. It shall be positioned so that a left and a right side discharge can be used to supply the hose with water. The deadlay shall accommodate 200 feet of 1.5-inch single jacket hose stored as a speed lay. Removable polypropylene trays shall be supplied in the deadlay.

They shall be mounted on slide out strips. The approximate opening size in the pump module will be 9 inches wide by 13½ inches high. The deadlay bed flooring shall consist of perforated brushed aluminum. The interior of the deadlay shall be unpainted aluminum.

2.2.1.3 Optional crosslay hose bed. When specified (see 6.2), a crosslay hose bed shall be installed in lieu of a deadlay. The crosslay shall hold 200 feet of single stacked 1.5-inch single jacket hose. A 1.5-inch mechanical swivel hose connector shall be used for access of the hose in either direction. Stainless steel rollers with nylon guides will be mounted on both ends. The crosslay will have a front hinged lid with fastener to prevent opening while driving.

2.2.1.4 Rear hose bed. A rear hose bed capable of storing 200 feet of 1.5-inch single jacket and a minimum 400 feet of 2.5-inch double jacket shall be provided.

2.2.2 Suction hoses.

2.2.2.1 Hard suction hose. Two 6-foot long and one 4-foot long, light weight 4-inch hard suction hoses shall be provided. Each hard suction hose shall have 4-inch National Hose rocker lug handle female couplers on one end and 4-inch National Hose thread rocker lug male couplers on the other. Cabinet space shall be provided for hard suction hose storage. The hose and suction strainer mounting system design shall be subject to approval by the procuring activity.

2.2.2.2 Soft suction hose. The vehicle shall be equipped with a 20-foot long, 2.5-inch soft suction hose, with a 2.5-inch National Hose thread rocker coupler on both ends. Dedicated storage shall be provided for the soft suction hose and couplers.

2.2.3 Wheel chocks. Two folding wheel chocks and mounting hardware shall be provided as loose equipment. The wheel chocks shall hold the apparatus, when loaded to its GVWR or gross combined weight rating (GCWR), on a hard surface with a 20 percent grade with the transmission in neutral and the parking brake released.

2.3 Chassis and vehicle components.

2.3.1 Engine. The vehicle shall have a diesel engine that is certified to comply with the Environmental Protection Agency (EPA) on-highway emission requirements at the time of manufacture. The engine shall run on Ultra-Low Sulfur Diesel Fuel unless otherwise specified (see 6.2).

2.3.1.1 Fuel filters. Primary and secondary fuel filters and a fuel/water separator shall be provided. The fuel/water separator shall include a water coalescer and a drain valve, and shall be in accordance SAE J1839. A combination fuel filter and fuel/water separator may be provided. Fuel filter elements shall be replaceable without loss of engine prime.

2.3.1.2 High-idle switch. A high-idle switch, which does not increase engine speed more than 100 percent above normal low idle speed and does not exceed the engine manufacturer's recommendation, shall be provided to increase alternator, air compressor, or air conditioning compressor output to meet the maximum load requirements. A lighted rocker switch, accessible

from the driver's seated position, shall activate the high-idle control unit. The high-idle switch shall operate only when the vehicle is out of gear and the parking brake is engaged and shall automatically disengage if the transmission is placed in gear or the parking brake is released. The cruise control feature of the apparatus will not be disabled to achieve the high-idle function.

2.3.1.3 Regeneration inhibition switch. A switch will be provided inside the cab that will manually prevent the emissions system from initiating its regeneration mode.

2.3.2 Exhaust system. The exhaust system outlet(s) shall be directed away from personnel accessing equipment compartments.

2.3.2.1 Vehicle-mounted diesel-exhaust filter system. A vehicle-mounted, direct-source capture, exhaust filter system shall be supplied with the vehicle that shall prevent exposure to, and contamination from, exhaust emissions in addition to the manufacturers after treatment device (ATD) in accordance with NFPA 1500. This system shall be installed after the engine manufacturer's ATD and before the diffuser tip in the end-tailpipe. This filter system shall work automatically whenever the vehicle exits and returns to the station. In addition, the system shall have the capability to be used while on-scene, outside of the station. The diesel-exhaust removal system shall travel with the vehicle. The system shall not require building modifications or hanging hoses for the system to operate. The installation of the system shall be performed by the exhaust removal system manufacturer and shall not subcontracted. The vehicle-mounted exhaust filter system shall meet all NFPA, National Institute for Occupational Safety and Health, and OSHA standards for preventing exposure to carcinogenic compounds that exist in diesel exhaust.

2.3.3 Brake system. The vehicle shall be equipped with an all-wheel antilock brake system; the brakes shall be fully air-actuated. The vehicle shall be equipped with electronic stability control. The brake system shall have the following characteristics:

a. Air compressor having a capacity of not less than 13.2 standard cubic feet per minute (scfm).

b. Air storage reservoir(s), each tank equipped with drain, and with safety and check valves between the compressor and the reservoir tank.

c. Automatic moisture ejector on air storage reservoir.

d. Automatic slack adjusters on cam brakes or internal self-adjusting brakes on wedge and disc brakes on all axles.

e. Spring set parking brakes located on the rear axle service brake with a control located within reach of both the driver and the officer.

f. All components of the braking system shall be installed in such a manner as to provide maximum 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 shall 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 shall be located above the bottom edge of the axle carrier and rotated up and forward from the standard location. All brake lines located below the chassis frame rails shall be covered with protective fire wrap for protection against fire and embers.

2.3.3.1 Compressed air shoreline. A checked, auto-eject compressed air shoreline connection shall be provided to maintain brake system pressure while the vehicle is not running. The shoreline shall be flush mounted (not to extend outside the body line). It shall be located on the exterior of the vehicle, between the driver's door and the left side crew member cab entry door. A minimum 50-foot long air supply hose equipped with an appropriate mating shoreline connector and an air fitting shall be provided with the vehicle. The shoreline connection's location shall not pose a tripping hazard to pedestrians walking by the vehicle when the shore line is connected.

2.3.3.2 Auxiliary braking system. The service brakes shall be augmented by a system which opens all or some of the engine exhaust valves near the end of the compression stroke, thereby converting vehicle motion to a pumping loss. The engine brake shall be approved by the engine manufacturer. A dash mounted switch shall be provided to activate, modulate, or cut out the brake augmentation. The switch shall be marked to indicate its position. When active, the system shall be fully controlled by means of the conventional driving controls to apply retardation during vehicle deceleration, and to cut it out in the other operating modes.

2.3.4 Tires and wheels. The vehicle shall be equipped with tubeless, steel-belted radial tires with highway type tread rated for specified highway speeds as well as off-road conditions, mounted on steel disc wheel assemblies. If all tire and wheel assemblies are identical, one spare tire and wheel assembly shall be provided. If two different tire and wheel assemblies are provided, two spare tire and wheel assemblies shall be provided, one of each configuration. Spare tire tread patterns, size, and type will be the same as those mounted on the vehicle. Spare tires and wheels are not required to be mounted on the vehicle. The spare tire(s) and rim(s) shall be inventoried, crated, and shipped as loose equipment.

2.3.5 Suspension. The vehicle shall have a suspension system in accordance with NFPA 1906. The front suspension shall be of a spring mounted, parabolic, taper leaf type. The rear suspension shall be vari-rate with a capacity of 23,500 pounds. Auxiliary springs with a capacity of 4,500 pounds shall be included.

2.3.6 Fenders. Rear fenders and fender liners shall be provided. For vehicles painted desert sand or olive drab, the fender flares shall be painted the job color.

2.3.7 Steering. The vehicle shall have a power steering system in accordance with NFPA 1906. The steering wheel shall be supplied with a tilt feature.

2.3.8 Transmission. A fully automatic transmission with a hydraulic torque converter and at least four forward speeds shall be provided. The normal driving range selector position shall provide at least four gear ratios without movement of the selector. The net torque capacity and the net power rating of the transmission shall exceed the output ratings of the engine. Openings shall be supplied

for two PTOs.

2.3.9 Fuel tank. Fuel tank(s) having a minimum usable capacity in accordance with NFPA 1906 or 70 gallons, whichever is greater, shall be provided. The tank shall be designed so that the vehicle can be operated on a 25 percent incline in any plane. The tank shall be provided with corrosion protection and baffles. A 0.25 to 0.375-inch nominal drain valve shall be provided for emptying fuel and sediment into a container underneath the vehicle without removal of the tank or any other major component. The fuel tank shall have a fuel fill opening of not less than three inch inside diameter and shall be designed to drain fuel spillage overboard for collection outside the vehicle. The fuel cap shall be equipped with a retention device to prevent loss and becoming FOD. The fuel fill opening, fuel cap, and fuel cap retention device shall be fabricated from non-sparking material. The fuel tank(s) shall have a minimum total capacity of 70 gallons. Signage shall be provided at the fill point to indicate “Diesel Fuel Only” or “Ultra-Low Sulfur Fuel Only”.

2.3.10 License plate bracket. A lighted license plate bracket shall be provided at the left rear of the vehicle.

2.4 Low-voltage electrical systems. The vehicle shall have a 12-volt electrical and starting system.

2.4.1 Alternator. A single or dual alternator charging system in accordance with NFPA 1906 shall be provided. The minimum continuous electrical load shall include operation of the air conditioning system.

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

2.4.2.1 Battery compartment. The batteries shall be enclosed in a ventilated, corrosion-resistant, weather-resistant box or compartment, and shall be readily accessible.

2.4.3 Battery charger or conditioner. The vehicle shall have a DC taper type battery charger or an automatic battery conditioner, providing a minimum 15-amp output. The charger/conditioner shall be permanently mounted on the vehicle in a properly ventilated, accessible location. The charger/conditioner shall be powered from the electrical shoreline receptacle (see 2.10.1). A charging indicator shall be installed next to the receptacle. When a battery conditioner is provided, it shall monitor the battery state of charge and, as necessary, automatically charge or maintain the batteries without gassing, depleting fluid level, overheating, or overcharging.

2.4.4 Warning lights. All warning lights shall use light emitting diode (LED) elements. The warning light system, related components, and devices shall be in accordance with NFPA 1906.

2.4.4.1 Light bar. A six element LED light bar, with both forward and side facing heads, shall be mounted on the cab roof. Forward facing lenses shall be red-white-red-red-white-red, with the white lights switched off in blocking right-of-way mode. Rearward facing lenses shall be red-amber-red-red-amber-red. The light bar shall be separately switched from the warning light panel. All vehicles shall be equipped with a steady red front warning light as required by California state

law regardless of shipping destination.

2.4.4.2 Warning light color. When specified (see 6.2), the rearward, red LED lights shall be replaced with amber. When specified (see 6.2), all red warning and LED lights shall be replaced with blue.

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

2.4.5 Audible warning devices.

2.4.5.1 Siren. The vehicle shall be equipped with an electronic siren system. The amplifier unit shall 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 shall be within reach of the driver and officer. Siren activating foot switches shall be located in front of the driver and the officer. The siren speaker shall be rated at 100 watts minimum and shall be located in a guarded position in the front bumper.

2.4.5.2 Horn. At least one air horn shall be installed near the front of the vehicle. An air horn activating foot switches shall be located in front of the driver and the officer.

2.4.5.3 Back-up alarm. A back-up alarm shall be provided in accordance with NFPA 1906.

2.4.6 Work lighting.

2.4.6.1 Cab interior lights. Cab interior light levels shall be sufficient for reading maps or manuals.

2.4.6.2 Compartment lights. Rope style LED lights shall be used to provide white lighting sufficient to provide an average minimum illumination of 2 foot-candle in each compartment greater than 4 cubic feet and having an opening greater than 144 square inches. Rope style LED lights shall be provided on both sides of the compartment opening. Where a shelf is provided, this illumination shall be provided both above and below the shelf. Lights shall automatically illuminate only when the respective doors are opened.

2.4.6.3 Ladder, step, and area lights. Non-glare white lighting shall be provided at ladders and access steps where personnel work or climb during night operations. Ground lights shall be provided at the front of the body. These area lights shall be controlled with switches on the cab instrument panel and near the light sources. Two manually raised 12-volt LED lights shall be provided in the dunnage area, one on each side. These lights shall be switched from the pump panel.

2.4.7 Scene lights. A total of four flush mounted, 12-volt LED high-mounted floodlights shall be provided to illuminate the work areas around the vehicle: two on each side of the vehicle. Individual switches shall be located in the work areas and on the instrument panel. A switch shall be provided to control the lights on the left side of the vehicle, a second switch shall be provided to control the lights on the right side of the vehicle. Three-way switches shall be used.

2.4.8 Radio circuit. The vehicle shall have two separate 30-amp circuits, with breaker and at least 6-foot of wire routed to a space provided between the driver and the officer for a purchaser provided radio. The wires shall have a tag indicating their purpose.

2.4.9 Radio antennas. An antenna mounting base with coaxial cable and waterproof cap shall be provided for a 2-way radios. The mount shall be located on the cab roof to the rear of the front seats and shall be clear of any obstructions. The cable shall be routed from the roof to the center console. A minimum of 10 feet of excess cable shall be left coiled in the console.

2.5 Driving and crew areas.

2.5.1 Cab. The vehicle shall have a four person, four door, non-tilting cab. At least one grab handle shall be provided for each crew member. Provisions shall be made for fire helmet storage for all seated positions in accordance with NFPA 1901 and 1906. A vehicle data recorder shall be provided in accordance with NFPA 1901. The cab shall have a console for radio mounting, equipped with adjustable work lights, and be located between the driver and front passenger seats. The console shall also provide four spaces for map storage. Each section shall be section will be approximately 5-inch x 13-inch x 12.25-inch. A hinged writing surface shall be provided.

2.5.1.1 Seats. The vehicle shall have seats in accordance with NFPA 1901. All seats shall be of an adjustable air suspension design. Each seat shall be provided with a Type 2 seat belt assembly (i.e., 3-point restraint) in accordance with 49 CFR 571.209. All seats shall be equipped with seat belt sensors in compliance with NFPA 1901. All seat belts shall be red in color.

2.5.1.2 Cab interior sound level. The maximum sound level at any seat location shall not exceed 90 dBA without any warning devices in operation, as measured in accordance with 49 CFR 393.94(c), "Vehicular interior noise levels test procedure," except that the test shall be performed with the vehicle traveling at a steady speed of 45 mph on a level, hard, smooth surface road.

2.5.1.3 Windshield and windows. The windshield and windows shall be tinted safety glass.

2.5.1.4 Heated mirrors. Combination flat and convex outside rearview mirrors shall be installed on each side of the cab, mounted on fold-back west coast style brackets. The flat mirrors shall be of the motorized remote control type, providing not less than 60 degree horizontal rotational viewing range. The flat mirrors shall also have electrically heated heads. Mirror remote and heating controls shall be located on the instrument panel within reach of the seated driver.

2.5.1.5 Climate control system. The manufacturer’s standard heater/defroster system shall be provided. The manufacturer’s standard air conditioning system shall also be provided. In 100 °F ambient temperature with 50 percent relative humidity and at maximum compressor speed, the air conditioning system shall cool the fully occupied cab to 75 °F within 30 minutes.

2.5.1.6 Instruments and controls. Gauges shall be provided for oil pressure, coolant temperature, and automatic transmission temperature. All switches and/or controls that activate systems or system components shall be labeled as to their function. In addition to the instruments and controls

required by NFPA 1901, the following shall be provided within convenient reach of the seated driver:

a. Master warning light control switch.

b. Work light switch(es).

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.

d. An engine hour meter.

2.5.2 Back-up camera. A hard wired, rear vision camera and in-cab monitor shall be provided to aid the driver in safely backing up the vehicle. The monitor shall be located to the right side of the driver. A switch shall be provided to allow the driver to manually activate the back-up camera from within the cab. The back-up camera shall also be switched "on" automatically whenever the vehicle is in the reverse mode of operation.

2.6 Body, compartments, and equipment mounting.

2.6.1 Body. The vehicle shall have a body constructed entirely of non-corroding materials. The body shall be at least as strong as if it were constructed of 0.125-inch thick aluminum. A copy of the fire apparatus manufacturer's warranty shall be included with the bid. The warranty shall state that the body shall be free of structural failures caused by defective design or workmanship for a warranty period of 15 years from the date the new vehicle is first delivered or 100,000 miles, whichever occurs first, and that defective parts under the warranty shall be repaired or replaced without charge to the original purchaser.

2.6.2 Compartments. The vehicle body shall have compartments with a minimum of 80 cubic feet of enclosed storage space. At least one compartment shall be of appropriate size and shape for storage of shovels, rakes, and hoses. The interior of the compartments shall be finished and shall not have metal only.

2.6.2.1 Compartment doors. All compartment doors shall be hinged to open vertically or horizontally. Air shocks shall be provided to hold the door in the opened position. Doors shall be provided with a closed cell rubber gasket around the surface that laps onto the body. A second heavy-duty automotive rubber molding with a hollow core shall be installed on the door framing that seals onto the interior pan, to ensure a weather resisting compartment. All compartment doors shall have continuous stainless steel hinges and shall be bolted or screwed to the vehicle body with stainless steel fasteners. All door lock mechanisms shall be fully enclosed to prevent fouling of the lock in the event equipment inside shifts into the lock area. Doors shall be latched with recessed, polished stainless steel "D" ring handles

2.6.2.2 Scuffplates. Replaceable scuffplates shall be provided to prevent body damage from sliding equipment in and out of the compartments. The scuffplates shall be attached in a manner

that does not allow them to become loose during normal use.

2.6.2.3 Drip rails. Drip rails shall be provided over each compartment door. If the drip rails are not integral with the body, they shall be of anodized extruded aluminum and shall have a bright finish for vehicles painted Candy Apple Red and body color for vehicles painted Desert Sand.

2.6.2.4 Shelves. An adjustable and removable compartment shelf shall be provided for every 18 inches of vertical compartment door opening. Shelving adjustments shall require no more than common hand tools, and shall not require disassembly of fasteners. Shelves shall support a minimum of 500 pounds without permanent deformation. Each shelf shall be accessible to crew members standing on the ground or steps mounted on the vehicle. A pull out and tip-down configuration shall be used for shelving over 54 inches from the ground or step when the compartment is more than 18 inches deep. Each shelf shall have drain holes located so as to allow for drainage of any water from the stowed equipment.

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

2.6.3 SCBA storage tubes. Provisions for the storage of four, 4,500 psi, one-hour, self-contained breathing apparatus (SCBA) bottles will be located in the wheel well areas of the fire body. A positive locking mechanism to secure the doors shall be provided. The tubes shall be in accordance with NFPA 1906. Air pack storage brackets shall be provided on the officer's side of the vehicle.

2.6.4 Ladder, handrails, and walkways. Ladders, stepping, standing, and walking surfaces shall be in accordance with NFPA 1906. Handrails shall be provided in accordance with NFPA 1906.

2.6.5 Body and compartment lighting. All standard body and compartment lighting shall be LED type.

2.6.6 Ladder storage compartment. The vehicle shall have a storage compartment for a 16-foot extension ladder. The storage compartment shall be located at the rear of the vehicle. One 16- foot extension ladder shall be supplied by the manufacturer of the vehicle.

2.6.7 Skid plate. A 1/8-inch removable steel skid plate will be fastened to the bottom side of the fuel tank, diesel exhaust fluid tank, and hydraulic reservoir.

2.6.8 Towing connections. The vehicle shall be equipped with front and rear tow loops or tow eyes in accordance with NFPA 1906. Towing connections shall be attached to the chassis frame to provide maximum strength.

2.6.9 Receivers. Two receivers for the mounting of a removable hose roller will be provided. They will be flush mounted on the bottom side of the front bumper and rear tailboard. These receivers will never be used in conjunction with a portable winch. A tag indicating that the use is only for the "removable hose roller" will be provided. No electrical connections of any type shall be required.

2.6.10 Rear bumper. The vehicle shall be equipped with a 12-inch rear bumper. A swing down step shall be provided for fire fighter convenience and safety.

2.6.11 I-Zone brackets. Two easily removable or flip-out I-Zone brackets shall be provided and mounted at the rear of the vehicle, on either side of the body. The brackets shall be designed with adequate reinforcement to eliminate flexing of the body and not interfere with any of the rear facing lights when carrying hose.

2.6.12 Vehicle protection systems. The vehicle shall be equipped with grill guards and skid plates, which shall be in accordance with NFPA 1906. Skid plates shall be removable.

2.7 Fire pump and associated equipment. The pump and associated equipment shall be in accordance with NFPA 1906. It shall provide for both stationary and pump and roll capability.

2.7.1 Pump. The fire pump shall be a single stage centrifugal design, with a thick walled cast iron pump body and a bronze impeller, capable of providing 500 gpm of water at 150 psig. The pump shall be driven from the chassis propulsion engine through a split shaft power takeoff with ratings to handle the full torque and power applied. The cast iron pump body must not contribute in any way to the premature failure of the fire pump.

2.7.2 Piping and associated components. All metallic surfaces of the piping and associated components that come into contact with the water shall be of passivated stainless steel or bronze capable of storing brackish/saltwater. The discharge piping shall flow water at a minimum of 500 gpm.

2.7.3 Intake connections. The vehicle shall have two 2.5-inch intake connections, one on each side, fitted with 30 degree turn-down fittings. Each intake connection shall be gated and shall have National Hose threads.

2.7.4 Drafting connection. One 4-inch male National Standard Hose (NSH) threaded intake connection shall be provided with cap on the driver's side of the vehicle.

2.7.5 Discharge connections. The vehicle shall be equipped with at least two 2.5-inch discharge connections, one on the right side, and one on the left side of the vehicle. Each 2.5-inch discharge connection shall be equipped with no less than 3-inch full flow piping and valve with a 2.5 inch adapter and a 30 degree turn-down fitting. The vehicle shall be equipped with a 1.5-inch pre-connected swivel discharge outlet to accommodate the crosslay hose. Additionally, there shall be a 1.5-inch pre-connect for the rear hose bed. All discharge connections shall have National Hose threads. All discharge caps shall have cable type retaining devices.

2.7.5.1 Bumper turret. The vehicle shall be equipped with a 125 gpm, low profile, bumper mounted, discharge monitor. The pattern selector and discharge valves on the monitor shall be controlled by high speed motors. A joy stick controller shall be provided to control both the movement of the monitor and the nozzle spray pattern. The controls for the monitor shall be mounted inside the cab of the vehicle and shall be easily accessible by both the driver and the officer. Fire fighting system gauges shall be located at the pump panel and in the vehicle cab-to-

monitor water tank level, pump pressure, tank-to-pump activation, and foam levels.

2.7.5.2 Hose reel. A hose reel with 150 feet of 1-inch hard rubber lined hose shall be provided in an enclosed storage compartment. The storage area shall be smooth and free from all projections that might damage the hose. No other equipment shall be mounted or located where it can obstruct the removal of the hose. The discharge control to the hand line shall be adjacent to the hand line and accessible to the person using the hand line. All electrical components shall be sealed against entry of water. The hose reels shall have both electric and manual rewind provisions. The manual rewind handle shall be bracket mounted and stored in the compartment. A quick acting control to activate the hand line from the cab of the vehicle shall be provided.

2.7.5.3 Front discharge valves. Two front discharge valves with 2-inch, self-locking, one quarter turn, full flow ball valves with 90 degree swivels and 1.5-inch NH male threads shall be provided. The valve for the center and left front bumper hose baskets shall be located on the left side of the front bumper, outboard of the frame rail, and be vertically mounted behind the bumper. The valve for the right side hose basket shall be located outboard of the frame rail, be vertically mounted behind the bumper. The discharge swivel locations shall provide adequate clearance for the use of 1.5-inch gated wyes and be designed so as not to interfere with the opening and closing of the hood.

2.7.6 Extended front bumper. An extended front bumper shall be provided. Hose beds shall be supplied on either side of the bumper. Each hose bed shall be capable of storing 50 feet of 1.5-inch single jacket hose.

2.7.7 Back pack pump filler valve. A 0.75-inch quarter turn ball valve shall be supplied for the refill of back pumps. This outlet is gravity fed from the main water tank sump. The valve plumbing shall be 0.75-inch I.D. A 0.75-inch male garden hose fitting shall extend outside the panel to allow the connection of a garden hose. A label "BACK PACK FILL" shall be provided for this outlet.

2.7.8 Pump engine. If the pump is driven by an auxiliary engine, it shall be a diesel engine in accordance with NFPA 1906. It shall be connected to the vehicle chassis electrical and fuel systems. The starter controls shall be accessible to an operator standing on the ground.

2.8 Water tank. The vehicle shall have a water tank with a certified capacity of at least 500 gallons. Tank shall "float" in cradle to avoid torsional stress caused by chassis frame flexing. Rubber cushions, .50-inch thick x 3.00-inch wide, shall be placed on all horizontal surfaces that the tank rests on. Stops or other provision shall be provided to prevent an empty tank from bouncing excessively while moving vehicle.

2.8.1 Water tank material. The water tank shall be constructed of polypropylene and shall be supplied with a life time warranty.

2.8.2 Water tank baffling. The water tank shall be baffled in accordance with NFPA 1906.

2.8.3 Tank-to-pump intake line. All metallic surfaces of the tank-to-pump intake line and associated components that come into contact with the water shall be capable of storing

brackish/saltwater.

2.8.4 Fill tower. The water tank shall have a fill tower at least 8 inches wide and 12 inches long, with a hinged cover and polypropylene screen.

2.8.5 Tank fill. A 2-inch combination tank refill and pump re-circulation line will be provided, using a quarter-turn full flow ball valve controlled from the pump operator's panel.

2.9 Foam proportioning system. The vehicle shall be equipped with an electronic, variable speed, fully automatic, discharge side, direct injection foam proportioning system for Class A foam concentrate. It shall be in accordance with NFPA 1906. With 0.5 percent concentration of Class A foam, the system shall properly proportion foam for flow rates of up to and including 200 gpm. The system shall also accommodate 1 percent Class A foam concentrate. A polypropylene tank with a minimum usable capacity of 20 gallons shall be provided for Class A foam concentrate. Foam shall be supplied to all discharge outlets in both stationary and pump and roll modes.

2.9.1 Compressed air foam system (CAFS). The vehicle shall be equipped with a CAFS in accordance with NFPA 1906. The CAFS shall include an air compressor capable of providing 125 standard cubic feet per minute (scfm) at 125 psi of matched air and water flow. The CAFS shall be plumbed to all discharge outlets. The CAFS shall operate in the stationary and pump and roll modes.

2.10 Line voltage electrical system.

2.10.1 Electrical shoreline connection. The battery charger/conditioner shall be powered from a covered, three wire, straight blade, polarized, insulated, labeled, recessed, 120-volt, NEMA 5-20P male plug inlet, in a weatherproof alternating current (AC) auto-eject receptacle. It shall be located on the exterior of the vehicle, either adjacent to the driver's door or within 6 inches of the left side front corner of the body. The shoreline connection’s location shall not pose a tripping hazard to pedestrians walking by the vehicle when the shore line is connected. A weatherproof charge meter shall be installed next to the receptacle. A 50-foot long, three wire, 20-amp rated, 120-volt, AC power cable, with straight blade (non twist-lock), NEMA 5-20R and 5-20P style, in accordance with NEMA WD-6, connectors, shall be provided. When equipped with a winterization system, the winterization system shall have a labeled activation switch with a pilot light. When specified (see 6.2), the receptacle(s) and power cable(s) shall be for 220 volts in lieu of 110 volts.

2.10.2 Additional outlets. Two duplex NEMA 5-20R, 120-volt, 20-amp receptacles shall be provided in cab between the driver and officer’s seats.

2.10.3 Map lights and accessory outlets. Map lights and one duplex NEMA 5-20R, 120-volt, 20-amp shall be provided at each seat in addition to the standard cab lighting. Map lights shall have individual switch for off, on and red for night operations.

2.10.4 Outlet activation. All NEMA outlets shall be energized while the chassis engine is active.

2.11 Winch. A winch with at least 12,000 pound-pull shall be installed, recessed behind the front

bumper. The winch shall be electric or hydraulic powered and shall have one or more forward and reverse speeds of not less than 15 feet per minute. The winch shall be equipped with a minimum 125 feet of 3/8-inch galvanized aircraft cable, with 36-inch end chain and hook. The winch shall include a four way cable guide. A 25-foot minimum remote control cable shall be provided for operation of the winch. If an extended bumper is used, a cover fabricated of treadplate shall be installed over the winch and the space between the cab and bumper. The remote controller shall be inventoried and shipped as loose equipment.

2.12 Trailer towing package. The vehicle shall be equipped with a tow hitch with a square sleeve type receiver used to tow trailers and other ancillary firefighting equipment. The tow hitch and receiver shall be rated at the maximum inherent towing capability of the vehicle such that safety and reliability of the vehicle are not degraded. The trailer hitch shall comply with NFPA 1901. The maximum towing capacity and tongue weight capacity of the vehicle shall be clearly and visibly posted both near the tow hitch receiver and inside the cab of the vehicle. The manufacturer shall describe any hazards, risks, maximum suggested speed limits or restrictions, and special use requirements during the solicitation process. This information shall also be listed near the tow hitch receiver, inside of the cab of the vehicle, as well as in the operator's manual. A brake controller shall be provided for use with a trailer which has an electric braking system. Glad hands in accordance with SAE J318 shall be provided for use with a trailer which has an air braking system.

2.13 Safety chain attachment points. The vehicle shall be equipped with two safety chain attachment points, one located on each side of the receiver sleeve, symmetrical about the receiver sleeve. The vertical centerline of the safety chain attachment points shall be located at a parallel distance of not greater than 6 inches to the left and right of the tanker centerline. Safety chains shall comply with NFPA 1901 and shall have the ability for standard safety chain hooks to be attached. The inside radius of the safety chain hook is between 1-inch and 3 inches.

2.14 Workmanship. The vehicle, including all parts and accessories, shall be constructed and finished in a thoroughly workmanlike manner. Workmanship objectives shall include freedom from blemishes, defects, burrs, and sharp corners and edges; accuracy of dimensions, surface finish, and radii of fillets; thoroughness of welding, painting, and riveting; marking of parts and assemblies; and proper alignment of parts and tightness of assembly fasteners.

2.15 Training. A minimum of three days of training shall be provided at the receiving base following delivery of the vehicle. Training shall consist of driver/operator training, and informational overview training for maintenance personnel.

3. REGULATORY REQUIREMENTS.

3.1 Recycled, recovered, or environmentally preferable, or biobased materials. Recycled, recovered, or environmentally preferable, or biobased materials should be used to the maximum extent possible provided that the material meets or exceeds the operational and maintenance requirements, and promotes economically advantageous life cycle costs. The offeror/contractor is encouraged to use recovered or biobased materials to the maximum extent practicable, in accordance with 23.403 of the Federal Acquisition Regulation (FAR). However, used, rebuilt, or

refurbished items shall not be provided.

3.2 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 percent of EPA designated product purchase that are included in the Comprehensive Procurement Guidelines list that contains recovered materials or biobased content, 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.

4. PRODUCT CONFORMANCE PROVISIONS.

4.1 Product conformance. The products provided shall meet the salient characteristics of this CID, 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 Government reserves the right to require proof of such conformance.

4.2 Commercial item requirement. The vehicle furnished shall comply with the "commercial item" definition of FAR 2.101 as of the date of award. The Government reserves the right to require the manufacturer to prove that their product complies with the referenced commerciality requirements and each salient characteristic of this CID. The manufacturer shall provide an itemized technical proposal that describes how the proposed model complies with each salient characteristic of this CID; a paragraph by paragraph response to the salient characteristics section of this CID shall be provided. The response to each paragraph shall clearly state “Fully Comply” or “Bid with Exception” in addition to other data the contractor wishes to submit. The proposal shall be provided with the pricing submission. Failure to provide this information may deem a manufacturer as non-responsive and their proposal may be rejected. The manufacturer shall provide two copies of their commercial descriptive catalogs with their offer as supporting reference to the itemized technical proposal. The manufacturer shall identify all modifications made to their commercial model in order to comply with the requirements herein.

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

a. First production inspection (see 4.4).

b. Conformance inspection (see 4.5).

4.4 First production inspection. The first production vehicle shall be subjected to the analyses, demonstrations, examinations, and tests described in 4.7. The manufacturer shall provide or arrange for all test equipment and facilities.

4.5 Conformance inspection. Each production vehicle shall be subjected to the examination described in 4.7.1.

4.6 Inspection requirements.

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

4.6.2 Test rejection criteria. Throughout all tests specified herein, the vehicle shall be closely observed for the following conditions, which shall 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’s 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 or deterioration.

k. Failure of the firefighting system.

4.7 Detailed inspection requirements.

4.7.1 Examination of product. Each vehicle shall be examined to verify compliance with the salient characteristics herein. A contractor generated checklist that identifies each relevant requirement and the inspection results shall be used. Particular attention shall be given to materials, workmanship, dimensions, surface finishes, protective coatings and sealants, and their application, welding, fastening, and markings. Proper operation of each vehicle function shall be verified. Each production vehicle shall be inspected to a reduced version of the checklist that has

been approved by the procuring activity.

4.7.2 Weight and dimension tests.

4.7.2.1 Weight test. The weight of a first production vehicle shall be measured to demonstrate compliance with 2.1.4.1.

4.7.2.2 Dimension measurement. A first production vehicle shall be measured to demonstrate compliance with the dimensional requirements of 2.1.4.

4.7.3 Road tests. The following tests shall be performed in accordance with NFPA 1906.

4.7.3.1 Operating terrain. The vehicle shall be driven a minimum of 10 miles on paved and graded gravel roads and 10 miles on off-road (cross country) terrain to demonstrate compliance with 2.1.3.1. After the road test is completed, all loads shall be removed and all structure and surfaces shall be visibly inspected for failure or permanent deformation.

4.7.3.2 Acceleration. The fully loaded vehicle shall accelerate from 0 to 35 mph within 25 seconds on a level, paved road to demonstrate compliance with 2.1.3.2.

4.7.3.3 Maximum speed. The fully loaded vehicle shall attain a minimum top speed of 50 mph on a level, paved road to demonstrate compliance with 2.1.3.3. The maximum top speed shall not exceed 68 mph.

4.7.3.4 Gradeability. The fully loaded vehicle shall be tested to demonstrate compliance with 2.1.3.4. The vehicle shall be able to maintain a speed of at least 20 mph while ascending any paved slope up to and including 6.0 percent. The fully loaded vehicle shall also be able to maintain a speed of at least 5.0 mph while ascending any paved slope up to and including 20 percent.

4.7.3.5 Tilt table test. The fully loaded first production vehicle shall be tested to demonstrate compliance with 2.1.3.5. A slip/trip rail with a maximum height of 2 inches may be used. If an adjustable height suspension system is provided, the suspension system may be set to the height normally used on hard pavement.

4.7.4 Turning diameter test. The turning diameter of the first production vehicle shall be tested to demonstrate compliance with 2.1.5.

4.7.5. Brake tests.

4.7.5.1 Parking brake test. The vehicle shall be tested in accordance with NFPA 1906.

4.7.5.2 Service brake test. The vehicle shall be tested in accordance with NFPA 1906. The service brakes shall bring the vehicle to a complete stop from a speed of 20 mph in a distance not exceeding 35 feet.

4.7.6 Cab interior sound level test. The cab interior sound levels of the first production vehicle

shall be measured in accordance with 49 CFR 393.94(c), "Vehicular interior noise levels test procedure," except that the test shall be performed with the vehicle traveling at a steady speed of 45 mph on a level, hard, smooth surface road.

4.7.7 Test of fire pump.

4.7.7.1 Pumping tests. Each vehicle shall be tested in accordance with NFPA 1906.

4.7.7.2 Priming device test. Each vehicle shall be tested in accordance with NFPA 1906.

4.7.7.3 Tank to pump flow test. Each vehicle shall be tested in accordance with NFPA 1906.

4.7.7.4 Water tank capacity test. The water tank capacity of each vehicle shall be determined in accordance with NFPA 1906.

4.7.7.5 Piping integrity test. The pump and piping system of each vehicle shall be tested in accordance with NFPA 1906.

4.7.7.6 Foam proportioning system test. The foam proportioning system of each vehicle shall be tested in accordance with NFPA 1906.

4.7.7.7 Compressed air foam system test. The CAFS installed on each vehicle shall be tested in accordance with NFPA 1906.

5. PACKAGING. Preservation, packing, and marking shall be as specified in the contract or order.

6. NOTES.

6.1 Source of documents.

6.1.1 Government documents. Copies of specifications, standards, and handbooks are available online at https://quicksearch.dla.mil/.

6.1.2 Federal Acquisition Regulations (FAR). Copies of FARs may be obtained from the Superintendent of Documents, Government Printing Office, Washington, DC 20402, or online at https://www.acquisition.gov/?q=browsefar.

6.1.3 National Electrical Manufactures Association (NEMA) documents. Copies of NEMA documents may be obtained from the addressed to National Electrical Manufactures Association, 1300 North 17th Street, Suite 900, Arlington, VA 22209, or online at https://www.nema.org/.

6.1.4 Society of Automotive Engineers (SAE) standards. Copies of SAE standards may be obtained from the Society of Automotive Engineers, 400 Commonwealth Drive, Warrendale, PA 15096, or online at https://www.sae.org/.

6.1.5 National Fire Protection Association (NFPA) documents. Copies of NFPA documents may be obtained from NFPA, Batterymarch Park, Quincy, MA 02269-9101, or online at https://www.nfpa.org/.

6.1.6 Code of Federal Regulations (CFR). Copies of CFRs may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402, or online at https://www.ecfr.gov/.

6.1.7 Environmental Protection Agency (EPA) documents. Copies of EPA documents may be obtained from US EPA National Headquarters Building, 1200 Pennsylvania Avenue N.W., Washington, DC 20004, or online at https://www.epa.gov/.

6.2 Ordering data. The purchaser shall specify the following at time of purchase:

a. Altitude for which vehicle operation is to be designed, if greater than 2,000 feet above sea level (see 2.1.1.1).

b. Finish color required (Desert Sand or Olive Drab, in place of Candy Apple Red) (see 2.1.9.2).

c. If a crosslay is required in lieu of a deadlay hose bed (see 2.2.1.3).

d. Engine fuel type (regular diesel or ultra-low sulfur diesel) and units of volume (gallons or liters) (see 2.3.1).

e. Emergency warning light color required (amber or blue in place of red) (see 2.4.4.2).

f. Electrical shoreline voltage, 220 volts instead of 110 volts. (NOTE: Applies to USAFE only) (see 2.10.1).

6.3 Key words.

4x4 Chassis
Brush
Compressed air foam system
Gallon per minute

6.4 Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extent of the changes.

MILITARY INTERESTS:

Custodian:
Air Force - 184

Preparing activity:
Air Force - 184

Reviewer:
DLA - CC

Agent:
Air Force – 110

Project 4210-2020-002

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at https://assist.dla.mil.