CITY OF KNOXVILLE

REQUEST FOR PROPOSALS

HAZMAT Truck

Proposals to be Received by 11:00:00 a.m., Eastern Time
May 23, 2018

Submit Proposals to:
City of Knoxville
Office of Purchasing Agent
City/County Building
Room 667-674
400 Main Street
Knoxville, Tennessee 37902

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I. Statement of Intent

The City of Knoxville is requesting proposals from responsible firms or teams to provide all necessary labor, equipment, design, materials, and construction of a hazmat truck for the Knoxville Fire Department.

Proposers shall indicate full compliance with the instruction and specifications detailed herein. Proposers shall initial in the appropriate area as to compliance or non-compliance. Any erasures, strike overs, and/or changes to prices written in numerals should be initialed by the proposer. Failure to initial may be cause to reject the proposal as irregular and disqualified from consideration.

The City intends to award a fixed price agreement to the most responsive, responsible proposer for the period of twelve months, with an initial purchase of one such vehicle immediately upon award.

II. RFP Time Line

Availability of RFP .....April 25, 2018

Pre-proposal conference..... May 8, 2018

Deadline for questions to be submitted in writing to the Procurement Specialist .....May 16, 2018

Proposals Due Date ..... **May 23, 2018**

This timetable is for the information of submitting entities. These dates are subject to change. **However, in no event shall the deadline for submission of the proposals be changed except by written modification from the City of Knoxville Purchasing Division.**

PRE-PROPOSAL MEETING

A **MANDATORY** pre-proposal meeting will be held at the Knoxville Fire Department administrative offices, May 8, 2018; at 10:30 a.m. Eastern Time. Facility is located at **900 Hill Avenue, Suite 430; Knoxville, TN 37915.** Proposers are **REQUIRED** to attend in order to submit proposals for this project.

III. Background

The City of Knoxville Fire Department (KFD) is currently in process of replacing their front line hazardous materials response apparatus. The Knoxville Fire Department operates this apparatus to respond daily to hazardous materials incidents in the City of Knoxville, as well as occasional

aide to sixteen surrounding counties. In addition to hazardous materials response, the apparatus also responds to structure fires and some vehicle accidents. This apparatus is capable of carrying a wide variety of specialty equipment, personal, and function as a command post on some incidents.

IV. General Conditions

4.1 The following data is intended to form the basis for submission of proposals to provide a HAZMAT Truck for the City of Knoxville.

4.2 This material contains general conditions for the procurement process, the scope of service requested, contract requirements, instructions for submissions of proposals, and submission forms that must be included in the proposal. The RFP should be read in its entirety before preparing the proposal.

4.3 All materials submitted pursuant to this RFP shall become the property of the City of Knoxville.

4.4 To the extent permitted by law, all documents pertaining to this Request for Proposals shall be kept confidential until the proposal evaluation is complete and a recommendation submitted to City Council for review. No information about any submission of proposals shall be released until the process is complete, except to the members of the Evaluation Committee and other appropriate City staff. All information provided shall be considered by the Evaluation Committee in making a recommendation to enter into an agreement with the selected consultant.

4.5 Any inquiries, suggestions or requests concerning interpretation, clarification or additional information pertaining to the RFP shall be made **in writing and be in the hands of the Procurement Specialist, Julie Smith Maxwell, by the close of the business day on May 16, 2018.** Questions can be submitted by letter, fax (865-215-2277), or email to jmaxwell@knoxvilletn.gov. The City of Knoxville is not responsible for oral interpretations given by any City employee, representative, or others. The issuance of written addenda is the only official method whereby interpretation, clarification, or additional information can be given. If any addenda are issued to this Request for Proposals, the Purchasing Division will post them to the City's website at www.knoxvilletn.gov/proposals. Submitting organizations are strongly encouraged to view this website often to see if addenda are posted. Failure of any proposer to receive such addendum or interpretation shall not relieve such Proposer from any obligation under his proposal as submitted. All addenda so issued shall become part of the Contract Documents.

4.6 The City of Knoxville reserves the right to (a) accept or reject any and/or all submissions of proposals; (b) to waive irregularities, informalities, and technicalities; and (c) to accept any alternative submission of proposals presented which, in its opinion, would best serve the interests of the City. The City shall be the sole judge of the proposals, and the resulting negotiated agreement that is in its best interest, and its decision shall be final. The City also reserves the right to make such investigation as it deems necessary to determine the ability of any submitting entity to perform the work or service requested. Information the City deems necessary to make this determination shall be provided by the submitting entity. Such information may include, but

is not limited to, current financial statements by an independent CPA, verification of availability of equipment and personnel, and past performance records.

4.7 Included in the Contract Documents is an affidavit that the undersigned has not entered into any collusion with any person with respect to this proposal. The qualifier is required to submit this affidavit with the submission. Also included is the Diversity Business Program contracting packet. Submissions must indicate on the enclosed form whether or not the proposer/qualifier intends to use subcontractors and/or suppliers from one of the defined groups. Proposers/Qualifiers are advised that the City tracks use of such use, but it does not influence or affect evaluation or award.

4.8 Subsequent to the Evaluation Committee's review and the Mayor's recommendation of a firm(s), Knoxville City Council approval may be required before the final contract may be executed.

4.9 All expenses for making a submission of proposal shall be borne by the submitting entity.

4.10 Any submission of proposals may be withdrawn up until the date and time for opening of the submissions. **Any submission not so withdrawn shall, upon opening, constitute an irrevocable offer for a period of 120 days to the City of Knoxville for the services set forth in the Request for Proposals until one or more of the submissions have been duly accepted by the City.**

4.11 Prior to submitting their proposals, proposers are to be registered with the Purchasing Division by setting up a Vendor Self-Service Account. Instructions for registering on-line are available at www.knoxvilletn.gov/purchasing. **Proposals from un-registered proposers may be rejected.**

4.12 **NO CONTACT POLICY:** After the posting of this solicitation to the Purchasing Division's website, any contact initiated by any proposer with any City of Knoxville representative concerning this proposal is strictly prohibited, unless such contact is made with the Purchasing Division representative listed herein or with said representative's authorization. Any unauthorized contact may cause the disqualification of the proposer from this procurement transaction. Proposals must include a notarized No Contact/No Advocacy Affidavit (to be found in the "Submission Forms" section of this document).

4.13 **INCLEMENT WEATHER:** During periods of inclement weather, the Purchasing Division will enact the following procedures with regard to solicitations and weather delays:

- If City offices are closed due to inclement weather on the date that proposals/proposals/qualifications/letters of interest are due into the Purchasing Office, all solicitations due that same day will be moved to the next operational business day.
- The City of Knoxville shall not be liable for any commercial carrier's decision regarding deliveries during inclement weather.

4.14 **The successful proposer's pricing must be clear and complete.** Any erasures, strike-overs, and/or changes to prices written in numerals should be initialed by the proposer. Failure to initial may be cause to reject the proposal as irregular and disqualified from consideration. **All**

items required in the specifications must be included in the total proposal price. Any option prices must be clearly labeled as such so as not to be confused with the grand total.

V. Scope of Service

1. INTENT OF SPECIFICATIONS

It is not the intent of these specifications to limit competitiveness based on a single brand or manufacturer. Rather, it is the intent of these specifications to clearly describe the furnishing and delivery to the purchaser of a complete apparatus equipped as specified. The primary objective of these specifications is to obtain the most acceptable apparatus for service in the fire department. These specifications cover specific requirements as to the type of construction and tests the apparatus must conform, together with certain details as to finish, material preferences, equipment and appliances with which the successful Proposer must conform.

Note: No substitutions will be accepted for brand named components/parts in order to ensure repair flexibility and uniformity of parts inventory.

2. QUALITY AND WORKMANSHIP

The design of the apparatus shall embody the latest approved automotive engineering practices. The workmanship shall be of the highest quality in its respective field. Special consideration shall be given for service access to areas needing periodic maintenance, ease of operation, and symmetrical proportions. Construction must be heavy-duty and provide ample safety factors to carry loads as specified. The construction method employed will be in such a manner as to allow ready removal of any component for service or repair.

The apparatus shall conform to the National Fire Protection Association standard for automotive fire apparatus, number 1901, in its most recent edition, unless otherwise specified in this document. Only the specified firefighting support equipment listed in these specifications shall be provided.

The apparatus shall further conform to all federal motor vehicle safety standards with no exception.

Each proposal must be accompanied by a set of detailed contractor's specifications consisting of a thorough description of the apparatus and equipment proposed**.**

Each proposer shall furnish satisfactory evidence of their ability to design, engineer, and construct the apparatus specified and shall state the location of the factory producing the apparatus.

3. SERVICE, SUPPORT, AND REPLACEMENT PARTS – LIQUIDATED DAMAGES

The critical response duties of these vehicles urgently require their prompt repair and the rapid fulfillment of parts replacement orders. While the City anticipates that warranty work shall by performed by the City of Knoxville Department of Fleet Services, the vendor shall be required to (1) provide diagnostic and technical support within 24 hours of receiving the City's call for assistance, with such support available every day of the year, including weekends and holidays; and (2) replacement parts shall be delivered to the City within 14 days of placement of order. Failure to provide support response or delivery of parts within the time frames here specified may result in the assessment of liquidated damages against the vendor in the amount of five hundred dollars ($500.00) for each consecutive calendar day thereafter that, in the case of requested support, the response has not been provided or, in the case of replacement parts, the part or parts have not been delivered.

Entities submitting proposals to the City of Knoxville in response to this request for proposals agree to the following: the time frames for support response and delivery of replacement parts as set forth above have been fixed to provide for the timely repair of emergency vehicles. Failure to meet these time requirements within the limits specified will interfere with the proper and necessary function of the vehicle being repaired, thereby putting both life and property at risk. From the nature of the case, it would be impracticable and extremely difficult to fix the actual damages sustained in the event of any such delay. The City and the vendor, therefore, presume that in the event of any such delay, the amount of damage which will be sustained from a delay will be in the amount of $500 per consecutive calendar day that the requested response/delivery is not made; they further agree that in the event of any such delay, the vendor shall pay such amount as liquidated damages and not as a penalty.
The City shall notify the vendor in writing of any claim for liquidated damages pursuant to this paragraph.

A. If the contractor does not completely fulfill the response or delivery in the time frame specified, the contractor shall pay to the City, as fixed and agreed liquidated damages, for each calendar day between the date specified and the date of response or completed delivery, an amount of **$500.00 per day**.

B. Exception: the contractor shall not be liable for liquidated damages when delays arise out of acts of god or of the public enemy, acts of the City in either its sovereign or contractual capacity, fire, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and unusually severe weather: but in each of these specific cases, the delays must be beyond the control and without the fault or negligence of the contractor; no other sources or causes of delay will be acceptable to the City. Manufacturer shortages, backorder situations, or competing demand will not be acceptable as an exception to the assessment of liquidated damages. As an emergency response agency of the City of Knoxville, the Knoxville Fire Department expects priority response or delivery, as the case may

be, of requested support or requested replacement parts, as the case may be.

4. DELIVERY

The Proposer shall state the time required for delivery of the completed unit below. The completed unit shall be delivered to the Knoxville Fire Department and include a minimum of three (3) full days of hands-on training provided to fire department and fleet services personnel on operation, care, and maintenance of apparatus at the Knoxville Fire Department's location.

Failure to deliver the apparatus within the stated time frame may result in liquidated damages of $100 per consecutive day under the terms and conditions detailed above.

Number of days to deliver following issuance of City of Knoxville purchase order _____

5. EXCEPTIONS

The following apparatus specifications are considered minimum design and construction standards against which the apparatus will be inspected. It is the intent to receive proposals on equipment/apparatus that meets the attached detailed specifications in their entirety. **All deviations, no matter how slight, must be clearly explained on a separate cover sheet entitled "Exceptions to Specifications."** Each exception or variation must be set forth on a separate sheet, **indicating page number(s) of the original specification**, and must be submitted with the proposal. Any proposals deemed as taking total exception to these published specifications will result in immediate rejection of the proposal. Any proposals taking exception to any specification noting "No exceptions allowed" within these published specifications will result in immediate rejection of the proposal.

Failure to follow this format, provided for the convenience of the City of Knoxville, may render the vendor's proposal non-responsive and ineligible for award of contract.

6. ADDITIONAL ITEMS

The City reserves the right to exercise the option to purchase additional vehicles as well as any and all associated equipment as specified herein at the same terms and conditions within the (12) twelve month period following award. Vendor will be given sufficient time, based upon the nature of the items being acquired, to meet the requirements of the City in a reasonable and workman like manner. The City does not guarantee nor does it commit to the purchase of additional vehicles.

7. ISO COMPLIANCE

The manufacturer shall operate a quality management system meeting the requirements of ISO 9001:2000.

The International Organization for Standardization (ISO) is a recognized world leader in establishing and maintaining stringent manufacturing standards and values. The manufacturer‘s certificate of compliance affirms that these principles form the basis for a quality system that unswervingly controls design, manufacture, installation, and service.

The manufacturer‘s quality systems shall consist of, but not be limited to, all written quality procedures and other procedures referenced within the pages of the manufacturer‘s quality manual, as well as all work instructions, workmanship standards, and calibration administration that directly or indirectly impact products or processes.

In addition, all apparatus assembly processes shall be documented for traceability and reference. The manufacturer shall also engage the services of a certified third party for testing purposes where required and shall provide evidence of such third party testing to the City upon request.

If the manufacturer operates more than one manufacturing facility, each facility must be ISO certified. By virtue of its ISO compliance the manufacturer shall provide an apparatus that is built to exacting standards, meets the City’s expectations, and satisfies the City’s requirements. A copy of the manufacturer’s certificate of ISO compliance for each manufacturing facility shall be provided with the proposal.

Proposer fully complies without exception or deviation YES_____ NO_____

8. REFERENCE LIST

Each proposal shall be accompanied by a list of at least three (3) similarly constructed apparatus presently in service. Each reference must be apparatus built of the same construction style as detailed in these specifications. This list shall include customer name, address, date apparatus was placed in service, and a current contact with phone number.

Proposer fully complies without exception or deviation YES_____ NO_____

9. PROPOSAL DRAWING

Proposer shall provide a drawing of the front, rear, and both sides of the apparatus included with the proposal. Compartment dimensions shall be listed on the drawing or on a separate page.

Proposer fully complies without exception or deviation YES_____ NO_____

10. WARRANTY REPAIRS BY CITY OF KNOXVILLE

In order to ensure timely repairs, the manufacturer shall authorize the City of Knoxville Fleet Services Department to perform all warranty repairs and shall reimburse the City at an agreed upon labor rate. Winning proposer must allow the City of Knoxville to become Warranty Certified thru the **manufacturer** of the apparatus, not the distributor.

All necessary repairs shall be pre-approved by the manufacturer's warranty center.

Proposer fully complies without exception or deviation YES_____ NO_____

11. NFPA COMPLIANCE

The manufacturer, Proposer, and/or third party-supplied components of the apparatus shall be compliant with NFPA 1901, current edition.

Proposer fully complies without exception or deviation YES_____ NO_____

12. OVERALL HEIGHT RESTRICTION

The apparatus shall have overall height restriction of 11’ 6” (unloaded condition).

The height of the apparatus shall be measured with no equipment loaded.

Proposer MUST fully comply without exception.

13. OVERALL LENGTH RESTRICTION

The completed unit shall have an overall length restriction of 36’ 4”. The wheelbase shall have an overall length restriction of 230”.

Proposer MUST fully comply without exception.

14. OVERALL WIDTH RESTRICTIONS

The overall width of the vehicle not including mirrors, shall not exceed 100”.

Proposer MUST fully comply without exception.

15. EQUIPMENT CAPACITY

Equipment allowance on the apparatus shall be at least 6000 lbs.

Proposer MUST fully comply without exception.

16. FRONT BUMPER EXTENSION

The bumper shall be extended approximately 20" from the face of the cab as required.

Proposer fully complies without exception or deviation YES_____ NO_____

17. BUMPER

A heavy duty 12" high steel channel type front bumper shall be provided. The front corners of the bumper shall be angled to reduce swing clearance. Bumper shall be painted job color.

Proposer fully complies without exception or deviation YES_____ NO_____

18. BUMPER GRAVEL SHIELD

The extended front bumper gravel shield shall be made of 3/16" (.375") aluminum treadplate material. The shield shall fully cover the top flange of the heavy duty front bumper.

Proposer fully complies without exception or deviation YES_____ NO_____

19. BUMPER TRAY - OFFICER SIDE

A hose tray constructed of 1/8" aluminum shall be recessed into the front bumper extension. The tray shall be located on the officer side of the bumper outboard of the frame rail and be approximately 12" deep (11" from the top of the slats). One-inch thick aluminum slats shall be included in the bottom of the tray to aid in the dissipation of water from the tray.

Proposer fully complies without exception or deviation YES_____ NO_____

20. LID, BUMPER TRAY

The officer side bumper tray shall have a diamond plate lid. The lid shall be hinged and include a D-Ring latch, rubber seal and held open with a pneumatic shock.

Proposer fully complies without exception or deviation YES_____ NO_____

21. WINCH

The winch shall be a Warn Model 16.5ti or approved equivalent, 16,500 lb. electric reversible winch with 90` of 7/16" galvanized aircraft type cable. A replaceable clevis hook shall be mounted to the chassis frame extension centered at the front bumper area. The winch shall be controlled with a 30` remote control switch. An access door with a quarter turn latch and spring hold open shall be provided in the front bumper extension gravel shield to allow for maintenance of the winch components.

A 4-way roller cable guide shall be provided through the front bumper.

Proposer fully complies without exception or deviation YES_____ NO_____

22. FRAME ASSEMBLY

The frame shall consist of two (2) C-channel frame rails with heavy-duty cross-members. Each frame rail shall have the following minimum specifications in order to minimize frame deflection under load and thereby improve vehicle ride and extend the life of the frame:

- Dimensions: 10-1/4" x 3-1/2" x 3/8"
- Material: 110,000 psi min. yield strength, high strength, low alloy steel
- Section Modulus: 16.61 cu. in.
- Resistance to Bending Moment (RBM): 1,827,045 in. lbs.

If larger rails are provided, the maximum height of each frame rail shall not exceed the 10-1/4" dimension by more than 1/2" in order to ensure the lowest possible body height for ease of access as well as the lowest possible vehicle center of gravity for maximum stability.

There shall be a minimum of six (6) cross-members joining the two (2) frame rails in order to make the frame rigid and hold the rails/liners in alignment. The cross-members shall be a combination of a formed steel C-channel design along with heavy duty steel fabricated designs as required for the exact chassis configuration.

The cross-members shall be attached to the frame rails with not less than four (4) bolts at each end arranged in a bolt pattern to adequately distribute the cross-member load into the rail/liner and minimize stress concentrations.

All frame fasteners shall be high-strength Grade 8, flanged-head threaded bolts and nuts for frame strength, durability, and ease of repair. The nuts shall be Stover locknuts to help prevent loosening. The frame fasteners shall be tightened to the proper torque at the time of assembly.

The frame rails shall be hot-dip galvanized and powder coated for improved corrosion resistance. The galvanization shall be a minimum of 4 mils thick and

done in accordance with ASTM A123. The powder coat shall be 6.5 mils thick (+/- 1.5 mils) and pass ASTM D3359 testing. The frame cross-members and frame mounted components (suspensions, axles, air tanks, battery boxes, fuel tank, etc.) shall be painted black.

The apparatus manufacturer shall supply a full lifetime frame warranty including cross-members against defects in materials or workmanship. Warranties that provide a lifetime warranty for only the frame rails, but not the cross-members, are not acceptable. NO EXCEPTIONS.

The custom chassis frame shall have a WHEEL ALIGNMENT in order to achieve maximum vehicle road performance and to promote long tire life. The alignment shall conform to the manufacturer`s internal specifications. All wheel lug nuts and axle U-bolt retainer nuts shall be tightened to the proper torque at the time of alignment. The wheel alignment documentation shall be made available at delivery upon request.

Proposer fully complies without exception or deviation YES_____ NO_____

23. FRAME LINER

A 9-3/8" x 3-1/8" x 3/8" channel frame liner shall be bolted to each frame rail for added strength and rigidity. Frame liners shall be made of 110,000 psi minimum yield, high strength, low alloy steel. The frame rail liners shall be hot-dip galvanized and powder coated for improved corrosion resistance. The galvanization shall be a minimum of 4 mils thick and done in accordance with ASTM A123. The powder coat shall be 6.5 mils thick (+/- 1.5 mils) and pass ASTM D3359 testing.

Each frame rail with liner shall have the following minimum characteristics:

- Section Modulus: 28.74 cu. in.
- RBM: 3,161,400 in. lbs.

The frame liners shall be inserted inside the open portion of the frame rails and shall run continuously from the rear of the frame to the centerline of the front axle to provide maximum frame strength at all critical load points.

Proposer fully complies without exception or deviation YES_____ NO_____

24. COATED FASTENERS

The custom chassis frame assembly shall be assembled using GEOMET 720 or approved equivalent, coated fasteners for corrosion resistance.

Proposer fully complies without exception or deviation YES_____ NO_____

25. REAR AXLE

The vehicle shall be equipped with an ArvinMeritor RS-25-160 single rear axle with single-reduction hypoid gearing and a manufacturer`s rated capacity of 27,000 lbs. The axle shall be equipped with oil-lubricated wheel bearings with ArvinMeritor oil seals.

The rear axle hubs shall be made from ductile iron and shall be designed for use with 10-hole hub-piloted wheels to improve wheel centering and extend tire life.

A 2-year/unlimited miles parts and 2-year labor rear axle warranty shall be provided as standard by ArvinMeritor Automotive.

Proposer fully complies without exception or deviation YES_____ NO_____

26. INDEPENDENT FRONT SUSPENSION

The vehicle shall utilize a Reyco Granning Independent Front Suspension (IFS), with a maximum capacity of 24,000 lbs. The suspension shall utilize ductile iron upper and lower control arms with separate caster and camber adjustments. The front hubs shall be made from ductile iron and shall be designed for use with 10-hole hub-piloted wheels in order to improve wheel centering and extend tire life. The hubs shall utilize synthetic oil-lubricated wheel bearings with a sight glass on the hub.

The suspension shall include rolling lobe type air springs to optimize ride and handling. The air springs coupled with a transverse steel leaf spring shall provide a maximum capacity of 24,000 lbs. at the ground. Dual height control valves shall be installed to provide a constant ride height regardless of load. The suspension shall include Koni shocks mounted at a near one-to-one ratio.

The apparatus shall be equipped with dual TRW model TAS85 steering gears. The steering assembly shall be rated to statically steer up to a maximum front axle load of 24,000lbs. Relief stops shall be provided to reduce system pressure upon full wheel cut. The system shall operate mechanically should the hydraulic system fail.

The vehicle shall have a nominal cramp angle of 45 degrees (plus zero degrees to minus two degrees) with 425/65R22.5 tires.

The front GAWR shall be 21,500 lbs due to front tire selection.

A 3-year/150,000 mile/parts and labor warranty shall be provided as standard.

In order to achieve maximum vehicle road performance and to promote long tire life, a wheel alignment shall be performed on the vehicle. The alignment shall conform to the manufacturer`s internal specifications. All wheel lug nuts and axle

U-bolt retainer nuts shall be tightened to the proper torque at the time of alignment. The wheel alignment documentation shall be made available at delivery.

Proposer fully complies without exception or deviation YES_____ NO_____

27. REAR SUSPENSION

The vehicle shall be equipped with a FIREMAAX® EX model FMX-272 air ride suspension, or approved equivalent. The suspension shall include dual height control valves that allow uneven, side heavy loads to be balanced, Quik-Align for easy axle alignment and two (2) hydraulic shock absorbers. The suspension shall be rated for the maximum axle capacity.

Proposer fully complies without exception or deviation YES_____ NO_____

28. FRONT WHEEL TRIM PACKAGE

The front wheels shall have stainless steel lug nut covers for use with aluminum wheels. The front axle shall be covered with Real Wheels brand mirror finish, 304L grade, non-corrosive stainless steel universal baby moons. All stainless steel baby moons shall carry a lifetime warranty plus a 2 year re-buffing policy. There shall be two (2) baby moons and twenty (20) lug nut covers.

Proposer fully complies without exception or deviation YES_____ NO_____

29. REAR WHEEL TRIM PACKAGE, SINGLE AXLE

The rear wheels shall have stainless steel lug nut covers. The rear axle shall be covered with Real Wheels brand mirror finish, 304L grade, non-corrosive stainless steel, spring clip band mount high hats, DOT user friendly. All stainless steel high hats shall carry a lifetime warranty plus a two (2) year re-buffing policy. There shall be two (2) high hats and twenty (20) lug nut covers.

Proposer fully complies without exception or deviation YES_____ NO_____

30. VALVE STEM EXTENSIONS

Each inside rear wheel on the rear axle shall have valve extensions.

Proposer fully complies without exception or deviation YES_____ NO_____

31. FRONT WHEELS

The vehicle shall have two (2) Accuride polished aluminum disc wheels. They shall be forged from one-piece corrosion-resistant aluminum alloy and sized appropriately for the tires.

The wheel shall have a load rating of up to 11,000 lbs. each (up to 11,400 lb rating available with speed limited to 60 MPH)

Proposer fully complies without exception or deviation YES_____ NO_____

32. REAR WHEELS

The vehicle shall have four (4) Accuride polished (on outer wheel surfaces only) aluminum disc wheels. They shall be forged from one-piece corrosion-resistant aluminum alloy and sized appropriately for the tires.

Proposer fully complies without exception or deviation YES_____ NO_____

33. FRONT TIRES

The front tires shall be two (2) Michelin 425/65R22.5 tubeless type 20 PR radial tires with XFE highway tread.

The tires with wheels shall have the following weight capacity and speed rating:

- Max front rating 22,800 @ 65 mph.
- Max front rating with Alco aluminum wheels - 24,400 @ 65 MPH (intermittent fire service rating if GAW is over 22,800)

The wheels and tires shall conform to the Tire and Rim Association requirements.

Proposer fully complies without exception or deviation YES_____ NO_____

34. REAR TIRES

The rear tires shall be Michelin 12R22.5 tubeless type radial tires with XDN2 all weather tread.

The tires with wheels shall have the following weight capacity:

- 27,000 lbs. (dual) @ 75 MPH

The wheels and tires shall conform to the Tire and Rim Association requirements.

Proposer fully complies without exception or deviation YES_____ NO_____

35. TIRE PRESSURE MONITORING SYSTEM

A PressurePro or approved equivalent pressure monitoring system shall be provided for a single rear axle unit. The pressure reading(s) shall be displayed through the

multiplex display in the cab. A programming display kit shall be provided and shipped loose for programming sensors as required when servicing unit.

Proposer fully complies without exception or deviation YES_____ NO_____

36. REAR BRAKES

The rear axle shall be equipped with Meritor DiscPlus EX225H 17-inch disc brakes with a maximum rated capacity of 27,000 lbs.

The brakes shall be covered by the manufacturer`s standard warranty which is three (3) years, unlimited mileage and parts only.

Proposer fully complies without exception or deviation YES_____ NO_____

37. BRAKE SYSTEM

The vehicle shall be equipped with air-operated brakes and an anti-lock braking system (ABS). The brake system shall meet or exceed the design and performance requirements of the current Federal Motor Vehicle Safety Standard (FMVSS)-121, and the test requirements of the current NFPA 1901 Standard.

A dual-treadle brake valve shall correctly proportion the braking power between the front and rear systems. The air system shall be provided with a rapid pressure build-up feature, designed to meet current NFPA 1901 requirements, to allow the vehicle to begin its emergency response as quickly as possible.

A pressure-protection valve shall be installed to prevent use of the air horns or other air-operated devices should the air system pressure drop below 85 psi. This feature is designed to prevent inadvertent actuation of the emergency/parking brakes while the vehicle is in motion.

Two (2) air pressure needle gauges, one (1) each for front and rear air pressure, with a warning light and buzzer shall be installed at the driver`s instrument panel.

The braking system shall be provided with a minimum of three (3) air tank reservoirs for a total air system capacity of 5,214 cu. in. One (1) reservoir shall serve as the wet tank and a minimum of one (1) tank shall be supplied for each of the front and rear axles. The total system shall carry a sufficient volume of air to comply with FMVSS-121.

Tank Capacities in Cubic Inches:

Wet	Front	Rear	Total
1,738	1,738	1,738	5,214

Each tank will have a drain valve to drain any internal moisture, the valves will be operated by an automatic closing pull cable.

Spring-actuated emergency/parking brakes shall be installed on the rear axle.

A Bendix-Westinghouse SR-1 valve, in conjunction with a double check valve system, shall provide automatic emergency brake application when the air brake system pressure falls below 40 psi in order to safely bring the vehicle to a stop in case of an accidental loss of braking system air pressure.

A four-channel Wabco ABS shall be provided to improve vehicle stability and control by reducing wheel lock-up during braking. This braking system shall be fitted to both front and rear axles. All electrical connections shall be environmentally-sealed for protection against water, weather, and vibration.

The system shall constantly monitor wheel behavior during braking. Sensors on each wheel transmit wheel speed data to an electronic processor, which shall detect approaching wheel lock-up and instantly modulate (or pump) the brake pressure up to five (5) times per second to prevent wheel lock-up. Each wheel shall be individually controlled. To improve field performance, the system shall be equipped with a dual-circuit design configured in a diagonal pattern. Should a malfunction occur in one circuit, that circuit shall revert to normal braking action. A warning light at the driver`s instrument panel shall signal a malfunction.

The system shall also be configured to work in conjunction with all auxiliary engine, exhaust, or driveline brakes to prevent wheel lock-up.

To improve maintenance troubleshooting, provisions in the system for an optional diagnostic tester shall be provided. The system shall test itself each time the vehicle is started, and a dash-mounted light shall turn off once the vehicle is moving above 4 MPH.

A three (3) year/300,000-mile parts and labor Anti-Locking Braking System (ABS) warranty shall be provided as standard by Meritor Automotive.

Proposer fully complies without exception or deviation YES_____ NO_____

38. PARK BRAKE RELEASE

One (1) Bendix-Westinghouse PP-5 parking brake control valve shall be supplied on the lower dash panel within easy reach of the driver.

Proposer fully complies without exception or deviation YES_____ NO_____

39. ELECTRONIC STABILITY CONTROL

The apparatus shall be equipped with a G4 4S4M Electronic Stability Control (ESC) system, or approved equivalent, that combines the functions of Roll Stability Control (RSC) with the added capability of yaw-or rotational-sensing.

RSC focuses on the vehicle's center of gravity and the lateral acceleration limit or rollover threshold. When critical lateral acceleration thresholds are exceeded, RSC intervenes to regulate the vehicle's deceleration functions. The added feature of ESC is to automatically intervene to reduce the risk of the vehicle rotating while in a curve or taking evasive action, prevents drift out through selective braking, and controlling and reducing vehicle speed when lateral acceleration limits are about to be exceeded.

Intervention by the system occurs in three forms - engine, retarder and brake control. The ESC system uses several sensors to monitor the vehicle. These include a steering wheel angle sensor, lateral accelerometer, and yaw position sensor. ESC constantly monitors driving conditions and intervenes if critical lateral acceleration is detected or if the vehicle begins to spin due to low friction surfaces. The system provides control of engine and retarder torque as well as automatically controlling individual wheels to counteract both over steer and under steer.

To further improve vehicle drive characteristics, the unit shall be fitted with Automatic Traction Control (ATC). This system shall control drive wheel slip during acceleration from a resting point. An extra solenoid valve shall be added to the ABS system. The system shall control the engine and brakes to improve acceleration slip resistance. The system shall have a dash mounted light that shall come on when ATC is controlling drive wheel slip.

Three (3) year/300,000 miles parts and labor warranties for ESC, RSC, and ATC shall be provided as standard by Meritor Automotive.

Proposer fully complies without exception or deviation YES_____ NO_____

40. AIR SYSTEM FITTINGS

All air system hoses on the chassis shall be connected by use of compression fittings. This includes air lines in the chassis cab. No push-to-connect fittings shall be acceptable.

Proposer MUST fully comply without exception.

41. FRONT BRAKES

The independent front suspension shall be equipped with Bendix model SN7 17" disc brakes with dual bridge design. A three (3) year/150,000 mile/parts and labor warranty shall be provided as standard.

Proposer fully complies without exception or deviation YES_____ NO_____

42. AIR DRYER

The chassis air system shall be equipped with a Bendix-Westinghouse AD-9 air dryer to remove moisture from the air in order to help prevent the air lines from freezing in cold weather and prolong the life of the braking system components.

Proposer fully complies without exception or deviation YES_____ NO_____

43. AIR INLET

A 1/4" brass quick-release air inlet with a male connection shall be provided. The inlet shall allow a shoreline air hose to be connected to the vehicle, discharging air directly into the wet tank of the air brake system. It shall be located driver door jamb.

Proposer fully complies without exception or deviation YES_____ NO_____

44. AIR LINES

Air brake lines shall be constructed of color coded nylon tubing routed in a manner to protect them from damage. Brass fittings shall be provided.

Proposer fully complies without exception or deviation YES_____ NO_____

45. AIR HORNS

Dual Grover air horns shall be provided and connected to the chassis air system. The horns shall be mounted through the front bumper. The front bumper shall have two (2) holes punched to accommodate the horns. A pressure protection valve shall be installed to prevent the air brake system from being depleted of air pressure.

Proposer fully complies without exception or deviation YES_____ NO_____

46. AIR OUTLET

A 1/4" female quick-disconnect air hose outlet shall be mounted and will be connected to the air reservoir tank. A 1/4" inline check valve shall be installed in the line. It shall be located driver's step well.

Proposer fully complies without exception or deviation YES_____ NO_____

47. ENGINE

The vehicle shall utilize a **Cummins X15 engine (or current model)** as described below:

- 565 maximum horsepower at 1800 RPM
- Peak torque of 1850 lb.ft. at 1150 RPM with a governed RPM of 2100
- Six (6) cylinder
- Variable Geometry Turbocharged
- Charge Air Cooled (CAC) 4-cycle diesel
- Cummins XPI high pressure fuel injection system
- Fuel cooler (when equipped with a fire pump)
- 912 cu.in. (14.9 liter) displacement - 5.39 in bore x 6.65 in stroke
- Compression ratio shall be 17.2:1
- Engine lubrication system shall have a minimum capacity, to include filter, of 56 quarts
- Cooled Exhaust Gas Recirculation (EGR)
- Delco-Remy 39 MD-HD 12 volt starter
- Coolant filter with shut-off and corrosion inhibiting additive
- 18.7 cubic foot per minute air compressor
- After treatment system consisting of a oxidation catalyst and diesel particulate filter and selective catalyst reduction system
- Ember separator compliant with current NFPA 1901 standard
- Engine shall be compliant with 2017 EPA Emission standards

The engine air intake shall draw air through the front cab grill. The intake opening shall be located on the officer (right) side behind front cab face with a plenum that directs air to the air filter. The air cleaner intake piping shall be made from aluminized steel tubing with flexible rubber hoses. The intake piping clamps shall be heavy-duty, constant-torque, T-bolt style to ensure proper sealing under all temperatures in order to keep dust and other contaminants out of the engine intake air stream and protect the engine.

The air cleaner shall be an 11" diameter K&N for lower restriction and high air flow. The filtration media shall be washable and easily accessed for service. The air filter shall have a three (3) year / 300,000-mile warranty.

The engine exhaust piping shall be a minimum of 5" diameter welded stainless steel tubing up to and including the particulate filter and the catalyst canisters. The aftertreatment system shall be mounted horizontally under the right-hand frame rail in back of the cab in order to minimize heat transmission to the cab and its occupants. The exhaust shall be directed away from the vehicle on the right side ahead of the rear wheels in order to keep exhaust fumes as far away as possible from the cab and pump operator position.

A five (5) year/100,000 miles parts and labor warranty will be provided as standard by Cummins.

The engine installation shall not require the operation of any type of "power-down" feature to meet engine installation tests.

Proposer MUST fully comply without exception.

48. ENGINE DIAGOSTICS KIT

There shall be an engine diagnostics kit. To be detailed further in document, but the kit shall be the latest version at time of delivery of the apparatus.

Proposer fully complies without exception or deviation YES_____ NO_____

49. TRANSMISSION

The vehicle shall utilize an Allison EVS4000P, electronic, 5-speed automatic transmission (or current model).

The transmission shall have a gross input torque rating of 1850 lb. ft. and a gross input power rating of 600 HP.

The gear ratios shall be as follows:

1 - 3.51
2 - 1.91
3 - 1.43
4 - 1.00
5 - .74
R - 4.80

The transmission shall be equipped with a fluid level sensor (FLS) system, providing direct feedback of transmission oil level information to the operator.

The transmission shall have a lubricant capacity of 51 quarts.

A transmission oil cooler shall be provided in the lower tank of the radiator.

The transmission shall contain two engine driven PTO openings located at the 1 and 8 o`clock positions.

The automatic transmission shall be equipped with a power lock-up device. The transmission lock-up shall prevent down shifting of transmission when engine speed is decreased during pump operations, thereby maintaining a constant gear ratio. Transmission lock-up shall be automatically activated when placing pump in gear and shall be automatically deactivated when disengaging pump for normal road operation.

A five (5) year/unlimited miles parts and labor warranty shall be provided as standard by Allison Transmission.

Proposer MUST fully comply without exception.

50. AUTOMATIC SHIFT TO NEUTRAL

The transmission shall be programmed to comply with NFPA 1901 and automatically shift to neutral upon application of the parking brake.

Proposer fully complies without exception or deviation YES_____ NO_____

51. TRANSMISSION SELECTOR

A push-button transmission shift module, Allison model 29538373, shall be located to the right side of the steering column within easy reach of the driver. The shift position indicator shall be indirectly lit for after dark operation. The shift module shall have a "Do Not Shift" light and a "Service" indicator light. The shift module shall have means to enter a diagnostic mode and display diagnostic data including oil life monitor, filter life monitor, transmission health monitor, and fluid level. A transmission temperature gauge with warning light and buzzer shall be installed on the cab instrument panel.

Proposer fully complies without exception or deviation YES_____ NO_____

52. TRANSMISSION FLUID

The transmission fluid shall be TransSynd synthetic.

Proposer fully complies without exception or deviation YES_____ NO_____

53. VEHICLE SPEED

The maximum speed shall be electronic limited to be compliant with NFPA 1901 and/or the maximum allowed by the specified tire rating.

Proposer fully complies without exception or deviation YES_____ NO_____

54. JACOBS ENGINE BRAKE

One (1) Jacobs engine brake shall be installed to assist in slowing and controlling the vehicle as required by NFPA 1901 for vehicles with gross vehicle weight ratings (GVWR) of 36,000 lbs. or greater. An on-off control switch and a high-medium-low selector switch shall be mounted in the cab accessible to the driver.

When activated, the Jacobs engine brake shall cut off the flow of fuel to the cylinders and alter the timing of the exhaust valves. This shall transform the engine into a high-pressure air compressor, driven by the wheels, and the horsepower absorbed by the engine in this mode shall slow the vehicle. The selector switch allows the driver to select the amount of retarding power.

When the on-off switch is in the "on" position, the engine brake shall be automatically applied whenever the accelerator is in the idle position and the automatic transmission is in the lock-up mode. If the accelerator is depressed or if

the on-off switch is placed in the "off" position, the engine brake shall immediately release and allow the engine to return to its normal function.

Proposer fully complies without exception or deviation YES_____ NO_____

55. TRANSMISSION PROGRAMMING

The transmission shall include the Allison 2nd gear Pre-Select feature. This option will direct the transmission to down shift to second gear when the throttle is released and the Jacobs engine brake is engaged. This feature is designed to increase brake life and aid vehicle braking.

Proposer fully complies without exception or deviation YES_____ NO_____

56. EXHAUST END MODIFICATION

The end of the exhaust tail pipe shall be modified to accommodate a Plymovent in-house exhaust extraction system. The tail pipe will be at 90 degrees and straight out below the side of body. A stop ring shall be provided on the tail pipe to properly position the Magnetic Plymovent nozzle. The exhaust outlet shall be vented for use with 2013 and newer EPA engines.

Proposer fully complies without exception or deviation YES_____ NO_____

57. EXHAUST WRAP

The exhaust shall be wrapped with an adhesive backed silica-based woven textile material designed for high temperature usage. The material shall be installed in a spiraled configuration from the engine turbo to the Diesel Particulate Filter (DPF) (except flex pipe if equipped). Stainless steel tie wraps shall then be installed over the material to securely hold it in place.

Proposer fully complies without exception or deviation YES_____ NO_____

58. RADIATOR

The cooling system shall include an aluminum tube-and-fin radiator with a minimum of 1,408 total square inches of frontal area to ensure adequate cooling under all operating conditions. There shall be a drain valve in the bottom tank to allow the radiator to be serviced. A sight glass shall be included for quick fluid level assessment. The radiator shall be installed at the prescribed angle in order to achieve the maximum operational effectiveness. This shall be accomplished according to established work instructions and properly calibrated angle measurement equipment.

Proposer fully complies without exception or deviation YES_____ NO_____

59. SILICONE HOSES

All radiator and heater hoses shall be silicone. Pressure compensating band clamps shall be used to eliminate hose pinching on all hoses 3/4" diameter and larger. All radiator hoses shall be routed, loomed, and secured so as to provide maximum protection from chafing, crushing, or contact with other moving parts.

Proposer fully complies without exception or deviation YES_____ NO_____

60. COOLANT

The cooling system shall be filled with a 50/50 mixture of water and antifreeze/coolant conditioner to provide freezing protection to minus 40 (- 40) degrees Fahrenheit for operation during severe winter temperatures.

Proposer fully complies without exception or deviation YES_____ NO_____

61. COOLANT RECOVERY

There shall be a coolant overflow recovery system provided.

Proposer fully complies without exception or deviation YES_____ NO_____

62. CHARGE AIR COOLER SYSTEM

The system shall include a charge air cooler to ensure adequate cooling of the turbocharged air for proper engine operation and maximum performance.

Proposer fully complies without exception or deviation YES_____ NO_____

63. CHARGE AIR COOLER HOSES

Charge air cooler hoses shall be made from high-temperature, wire-reinforced silicone to withstand the extremely high temperatures and pressures of the turbocharged air. The hoses shall incorporate a flexible hump section to allow motion and misalignment of the engine relative to the charge air cooler. Charge air cooler hose clamps shall be heavy-duty, constant-torque, T-bolt clamps to ensure proper sealing under all temperatures in order to keep dust and other contaminants out of the engine intake air stream and protect the engine.

Proposer fully complies without exception or deviation YES_____ NO_____

64. FAN/SHROUD

The fan shall be 30” in diameter with eleven (11) blades for maximum airflow and dynamic balance. It shall be made of nylon for strength and corrosion resistance.

The fan shall be installed with grade 8 hardware which has been treated with thread locker for additional security. A fan shroud attached to the radiator shall be provided to prevent recirculation of engine compartment air around the fan in order to maximize the cooling airflow through the radiator. The fan shroud shall be constructed of fiber-reinforced high temperature plastic. The shroud shall be specifically formed with curved surfaces which improves air flow and cooling.

Proposer fully complies without exception or deviation YES_____ NO_____

65. TRANSMISSION COOLER

The cooling system shall include a liquid-to-liquid transmission cooler capable of cooling the heat generated from the transmission. When a transmission retarder is selected, the cooler shall have an increased capacity to handle the additional heat load.

Proposer fully complies without exception or deviation YES_____ NO_____

66. FUEL SYSTEM

One (1) 65-gallon fuel tank shall be provided. The tank shall be of an all-welded, aluminized-steel construction with anti-surge baffles and shall conform to all applicable Administration (FHWA) 393.65 and 393.67 standards. The tank shall be mounted below the frame rails at the rear of the chassis for maximum protection.

The tank shall be secured with two (2) wrap-around T-bolt type stainless steel straps. Each strap shall be fitted with protective rubber insulation and shall be secured with Grade 8 hardware. This design allows for tank removal from below the chassis.

The fuel tank shall be equipped with a 2" diameter filler neck. The filler neck shall extend to the rear of the vehicle behind the rear tires and away from the heat of the exhaust system as required by NFPA 1901 Standard for Automotive Fire Apparatus. The open end of the filler neck shall be equipped with a twist-off filler cap with a retaining chain.

The tank shall be plumbed with top-draw and top-return fuel lines in order to protect the lines from road debris. Bottom-draw and/or bottom-return fuel lines are not acceptable. A vent shall be provided at the top of the tank. The vent shall be connected to the filler neck to prevent splash-back during fueling operations. A .50" NPT drain plug shall be provided at the bottom of the tank.

The tank shall have a minimum useable capacity of 65 gallons of fuel with a sufficient additional volume to allow for thermal expansion of the fuel without overflowing the vent.

A fuel pump shall be provided and sized by the engine manufacturer as part of the engine.

Proposer fully complies without exception or deviation YES_____ NO_____

67. FUEL LINE HOSE

Wire braided fuel hose meeting SAE J-1402 shall be provided for the chassis fuel system. The hose shall have a working temperature rating of -55 degree Fahrenheit to 300 degree Fahrenheit.

The ends of the hose shall have connections that shall allow the hose to be reattached if removed.

Proposer fully complies without exception or deviation YES_____ NO_____

68. 320 AMP ALTERNATOR

There shall be a 320-amp Leece Neville alternator installed as specified. The alternator shall be a Leece Neville 4890JB series brushless type with integral rectifier and adjustable voltage regulator with an output of 272 amps per NFPA 1901 rating (320 amps per SAE J56).

Proposer fully complies without exception or deviation YES_____ NO_____

69. BATTERY SYSTEM

The manufacturer shall supply five (5) heavy duty Group 31 12-volt maintenance-free batteries. Each battery shall be installed and positioned so as to allow easy replacement of any single battery. Each battery shall be equipped with carrying handles to facilitate ease of removal and replacement. There shall be two (2) steel frame-mounted battery boxes, one (1) on the left frame rail and one (1) on the right frame rail. Each battery box shall be secured to the frame rail with Grade 8 hardware. The boxes shall hold two (2) batteries on the left side and three (3) on the right side. The batteries shall have a minimum combined rating of 5,000 (5 x 1000) cold cranking amps (CCA) @ 0 degrees Fahrenheit and 1025 (5 x 205) minutes of reserve capacity for extended operation. The batteries shall have 3/8-16 threaded stud terminals to ensure tight cable connections. The battery stud terminals shall each be treated with concentrated industrial soft-seal after cable installation to promote corrosion prevention. The positive and negative battery stud terminals and the respective cables shall be clearly marked to ensure quick and mistake-proof identification.

Batteries shall be placed on non-corrosive rubber matting and secured with hold-down brackets to prevent movement, vibration, and road shock. The hold-down bracket J-hooks shall be cut to fit and shall have all sharp edges removed. The batteries shall be placed in plastic trays to provide preliminary containment should

there be leakage of hazardous battery fluids. There shall be two (2) plastic trays, one (1) for each set of batteries.

Each battery tray shall be equipped with a rubber hose to facilitate drainage. The rubber hose shall be routed to drain beneath the battery box. The batteries shall be positioned in well-ventilated areas.

One (1) positive and one (1) negative jumper stud shall be provided.

Battery jumper studs shall be provided to allow jump-starting of the apparatus without having to tilt the cab.

Batteries shall have a warranty of twelve (12) months that shall commence upon the date of delivery of the apparatus.

Proposer fully complies without exception or deviation YES_____ NO_____

70. DRIVELINES

Drivelines shall have a heavy-duty metal tube and shall be equipped with Spicer 1810 series universal joints, or approved equivalent, to allow full-transmitted torque to the axle(s). Drive shafts shall be axially straight, concentric with axis and dynamically balanced.

Proposer fully complies without exception or deviation YES_____ NO_____

71. FRONT TOW HOOKS

Two (2) heavy duty painted front tow hooks shall be securely bolted to the front chassis frame rail extensions to allow towing (not lifting) of the apparatus without damage. They shall be mounted in the downward position and painted chassis color.

Proposer fully complies without exception or deviation YES_____ NO_____

72. COLD WEATHER CAB PACKAGE

Additional insulation shall be provided on the front cab wall. The insulation shall consist of reflective backing covered air core insulation.

Insulation shall be provided on the rear cab heater hose lines (if equipped).

Two (2) adjustable 8” windshield fans with an individual switch shall be mounted centered below the overhead console. The fans shall be 12 volts and shall be rated at 280 CFM.

A thermostatically controlled clutch type cooling fan shall be installed on the chassis engine.

Proposer fully complies without exception or deviation YES_____ NO_____

73. ON-SPOT TIRE CHAINS

The chassis shall be provided with On-Spot automatic tire chain system. The system shall include:

- An air cylinder containing one diaphragm, one return spring, one pushrod and a collapsible dust boot held in place with an Oetiker® style retainer to prevent foreign material from entering the air cylinder. The cylinder will be assembled with a two-piece cylinder clamp. The air cylinder will be cast aluminum and the lid will be threaded to receive a 90-degree DOT approved air fitting. The cylinder and lid must be anodized for corrosion resistance. Each cylinder will have six (6) strengthening ribs. The cylinder wall thickness will be a minimum of 6mm.
- An extension rod and ball joint assembly that is fastened to the cylinder pushrod by means of a left-hand thread. The ball joint must have a provision for greasing.
- A swing arm that is connected to the ball joint assembly with a nylock lock nut on one side and is fastened to the cylinder bracket at the pivot point. The arm will be supported by two (2) greaseable arm bushings. The arm will be one-piece hardened alloy material that is formed in such a fashion that it allows the chainwheel to contact the vehicle tire at 3-1/2 to 4 inches off the ground.
- A chainwheel that is fastened to the arm with one 20mm bolt that is hardened to Metric Grade 8.8 along with a hardened lock nut. The bolt will also come with one chainwheel spacer for wheel height adjustment. The chainwheel will be 7-3/4 inches in diameter and will be constructed of a one-piece cast aluminum center hub that contains two (2) maintenance-free sealed bearings. The circumference of the chainwheel will be rubber coated so that it may ride on the inside of the vehicle tire without causing any damage to the tire. There will be six (6) lengths of chains approximately 13 inches long that will be welded to a single steel ring at 60-degree intervals. The steel ring will be bolted to the center hub with six (6) Grade 8 cap screws and locknuts. Each length of chain will contain up to ten (10) twisted links that are square-cut to provide for maximum traction in forward and reverse. Each chainwheel will be delivered with a chainwheel helmet to protect the chainwheel bearing and casting.

A switch shall be provided in the cab for activation of the tire chains.

Proposer fully complies without exception or deviation YES_____ NO_____

74. DEF TANK

A diesel exhaust fluid (DEF) tank with a five (5) gallon capacity shall be provided.

The DEF tank shall include a heater fed by hot water directly from the engine block to prevent the DEF from becoming too cool to operate correctly per EPA requirements. The tank shall include a temperature sensor to control the heater control valve that regulates the feed of hot water from the engine to the DEF tank heater.

A sender shall be provided in the DEF tank connected to a level gauge on the cab dash.

The preferred tank location is under the rear of the cab, if not the tank shall be floor mounted in compartment R3. If the tank is compartment mounted, a cover shall be installed over the tank and shall include a hinged door to access the DEF tank fill. Material and finish of the cover shall match the compartment walls.

Proposer fully complies without exception or deviation YES_____ NO_____

75. POWER STEERING COOLER

A heat exchanger (cooler) shall be installed to maintain desired power steering fluid temperature. The cooler shall have an air / oil design rated at 6300 BTU/HR @10 GPM. The cooler shall be mounted in front of the radiator and plumbed with #10 lines.

Proposer fully complies without exception or deviation YES_____ NO_____

76. SHORT CAB, 2 DOOR

The vehicle shall be distinguished by an all-welded aluminum and fully enclosed tilt cab. The cab shall be designed exclusively for rescue service and shall be pre-engineered to ensure long life. It shall incorporate an integral welded substructure of high-strength aluminum alloy extrusions that creates an occupant compartment that is essentially a protective perimeter. The end result is a distinctive structure that is aesthetically appealing, functionally durable, and characterized by increased personnel safety.

The cab shall be constructed from 3/16” (0.188”) 3003 H14 aluminum alloy plate roof, floor, and outer skins welded to a high-strength 6063-T6 aluminum alloy extruded subframe.

Wall supports and roof bows are 6061 T6 aluminum alloy. This combination of a high-strength, welded aluminum inner structure surrounded on all sides by load-bearing, welded aluminum outer skins provides a cab that is strong, lightweight, corrosion-resistant, and durable.

The inner structure shall be designed to create an interlocking internal "roll-cage" effect by welding two (2) 3" x 3" x 0.188" wall-thickness 6063-T5 aluminum upright extrusions between the 3" x 3" x 0.375" wall-thickness 6061-T6 roof crossbeam and the 2.25" x 3" x 0.435" wall-thickness 6063-T6 subframe structure in the front. An additional two (2) aluminum upright extrusions within the back-of-cab structure shall be welded between the rear roof perimeter extrusion and the subframe structure in the rear to complete the interlocking framework. The four (4) upright extrusions (two (2) in the front and two (2) in the rear) shall be designed to effectively transmit roof loads downward into the subframe structure to help protect the occupant compartment from crushing in a serious accident. All joints shall be electrically seam welded internally using aluminum alloy welding wire.

The subframe structure shall be constructed from high-strength 6061-T6 aluminum extrusions welded together to provide a structural base for the cab. It shall include a side-to-side 3" x 1.5" .375 thick C-channel extrusion across the front, with 3/4" x 2-3/4" (.75" x 2.75") full-width crossmember tubes spaced at critical points between the front and rear of the cab.

The cab floor shall be constructed from 3/16" (0.188") 3003 H14 smooth aluminum plate welded to the subframe structure to give the cab additional strength and help protect the occupants from penetration by road debris and under-ride collision impacts.

The cab roof shall be constructed from 3/16" (0.188") 3003 H14 aluminum treadplate supported by a grid of fore-aft and side-to-side aluminum extrusions to help protect the occupants from penetration by falling debris and downward-projecting objects. **Molded fiberglass or other molded fiber-reinforced plastic roof materials are not acceptable**.

The cab roof perimeter shall be constructed from 4" x 6-5/8" (4" x 6.625") 6063-T5 aluminum extrusions with integral drip rails. Cast aluminum corner joints shall be welded to the aluminum roof perimeter extrusions to ensure structural integrity. The roof perimeter shall be continuously welded to the cab roof plate to ensure a leak-free roof structure.

The cab rear skin shall be constructed from 3/16" (0.188") 3003 H14 aluminum plate. Structural extrusions shall be used to reinforce the rear wall.

The left-hand and right-hand cab side skins shall be constructed from 3/16" (0.188") 3003 H14 smooth aluminum plate. The skins shall be welded to structural aluminum extrusions at the top, bottom, and sides for additional reinforcement.

The cab front skins shall be constructed from 3/16" (0.188") 3003 H14 smooth aluminum plate. The upper portion shall form the windshield mask, and the lower portion shall form the cab front. Each front corner shall have a full 9" outer radius for strength and appearance. The left-hand and right-hand sides of the windshield mask shall be welded to the left-hand and right-hand front door frames, and the

upper edge of the windshield mask shall be welded to the cab roof perimeter extrusion for reinforcement. The cab front shall be welded to the subframe C-channel extrusion below the line of the headlights to provide protection against frontal impact.

Proposer fully complies without exception or deviation YES_____ NO_____

77. CAB EXTERIOR

The exterior of the cab shall be minimum 94" wide x 102" long to allow sufficient room in the occupant compartment for two personnel. The cab roof shall be approximately 101" above the ground. The back-of-cab to front axle length shall be approximately 30".

Front axle fenderette trim shall be brushed aluminum for appearance and corrosion resistance. Bolt-in front wheel well liners shall be constructed of 3/16" (0.188") composite material to provide a maintenance-free, damage-resistant surface that helps protect the underside of the cab structure and components from stones and road debris.

A large stainless-steel cooling air intake grille with an open area of no less than 81% shall be at the front of the cab. The cab windshield shall be of a two-piece replaceable design for lowered cost of repair. The windshield shall be made from 1/4" (0.25") thick curved, laminated safety glass with a 75% light transmittance automotive tint. A combined minimum viewing area of 2,700-sq. in. shall be provided. Forward visibility to the ground for the average (50th percentile) male sitting in the driver`s seat shall be no more than 11 feet 7 inches from the front of the cab to ensure good visibility in congested areas.

Proposer fully complies without exception or deviation YES_____ NO_____

78. CAB TRANSVERSE COMPARTMENT

A transverse compartment shall be provided to the rear of the front cab doors above the wheel wells. The compartment shall be constructed of 1/8" (.125") 3003 H14 aluminum alloy plate and finished with the same color as the cab interior. The compartment shall be approximately 23" wide x 35" high x 94" deep (transverse) and contain approximately 43.79 cubic feet of storage space. The door opening shall be approximately 31" wide x 39" high.

Transverse cab compartment shall have the following layout: Driver's side shall be approximately 26 inches deep with a fixed rear wall to accommodate driver's gear and Mounted SCBA. The remaining portion of the compartment will be accessed from the officer's side. A pullout tray shall be mounted on the officer's side the remaining length of the compartment.

Proposer fully complies without exception or deviation YES_____ NO_____

79. CAB MOUNTS AND CAB TILT SYSTEM

The cab shall be independently mounted from the body and chassis to isolate the cab structure from stresses caused by chassis twisting and body movements.

Mounting points shall consist of two (2) forward-pivoting points: one (1) on each side; two (2) intermediate rubber load-bearing cushions located midway along the length of the cab: one (1) on each side; and two (2) combination rubber shock mounts and cab latches located at the rear of the cab: one (1) on each side.

An electric-over-hydraulic cab tilt system shall be provided to provide easy access to the engine. It shall consist of two (2) large-diameter, telescoping, hydraulic lift cylinders: one (1) on each side of the cab, with a frame-mounted electric-over-hydraulic pump for cylinder actuation.

Safety flow fuses (velocity fuses) shall be provided in the hydraulic lift cylinders to prevent the raised cab from suddenly dropping in case of a burst hydraulic hose or other hydraulic failure. The safety flow fuses shall operate when the cab is in any position, not just the fully raised position.

The hydraulic pump shall have a manual override system as a backup in the event of an electrical failure. Lift controls shall be located in a compartment to the rear of the cab on the right side of the apparatus. A parking brake interlock shall be provided as a safety feature to prevent the cab from being tilted unless the parking break is set.

The entire cab shall be tilted through a 42-45 degree arc to allow for easy maintenance of the engine, transmission, and engine components. A positive-engagement safety latch shall be provided to lock the cab in the full tilt position to provide additional safety for personnel working under the raised cab.

In the lowered position, the cab shall be locked down by two (2) automatic, spring-loaded cab latches at the rear of the cab. A "cab ajar" indicator light shall be provided on the instrument panel to warn the driver when the cab is not completely locked into the lowered position.

Proposer fully complies without exception or deviation YES_____ NO_____

80. CAB INTERIOR

The interior of the cab shall be of the open design with an ergonomically-designed driver area that provides ready access to all controls as well as a clear view of critical instrumentation.

Proposer fully complies without exception or deviation YES_____ NO_____

81. ENGINE COVER

The engine cover shall blend in smoothly with the interior dash and flooring of the cab. The upper left and right sides shall have a sloped transition surface running front to rear providing increased space for the driver and officer.

The engine cover between the driver and the officer shall be a low-rise contoured design to provide sufficient seating and elbow room for the driver and the officer. An all-aluminum subframe shall be provided for the engine cover for strength. The overall height of the engine enclosure shall not exceed 23” from the floor at each side and 27” in the center section. The engine cover shall not exceed 41” in width at its widest point.

The rear portion of the engine cover shall be provided with a lift-up section to provide easy access for checking transmission fluid, power steering fluid, and engine oil without raising the cab. The engine cover insulation shall consist of 3/4” dual density fiberglass composite panels with foil backing manufactured to specifically fit the engine cover without modification to eliminate “sagging” as found with foam insulation. The insulation shall meet or exceed DOT standard MVSS 302-1 and V-0 (UI subject 94 Test).

The rear engine cover area shall be covered with molded 18 lb/cu. ft. (+/-0.5) flexible integral skinned polyurethane foam at a Durometer of 60 (+/- 5.0) per ASTM F1957-99. The cover shall be approximately .5" thick with a minimum skin thickness of 0.0625 inches. The cover shall be provided to reduce the transmission of noise and heat from the engine. The cover shall be black with a pebble grain finish for slip resistance.

A minimum of 57.25” of floor-to-ceiling height shall be provided in the seating area of the cab. The interior side to side dimensions shall be minimum 87" from wall padding to wall padding and minimum 89.5" from door to door.

The floor area in front of the front seat pedestals shall be no less than 24" side to side by up to 25.0” front to rear for the driver and no less than 24" side to side by up to 27.0” front to rear for the officer to provide adequate legroom. All exposed interior metal surfaces shall be pretreated using a corrosion prevention system.

The interior of the cab shall be insulated to ensure the sound (dbA) level for the cab interior is within the limits stated in the current edition of NFPA 1901. The insulation shall consist of 2 oz. wadding and 1/4” (0.25”) foam padding. The padding board shall be backed with 1/4” (0.25”) thick reflective insulation. The backing shall be spun-woven polyester. Interior cab padding shall consist of a rear cab headliner, a rear wall panel, and side panels between the front and rear cab doors.

Proposer fully complies without exception or deviation YES_____ NO_____

82. CAB DASH - SEVERE DUTY

The center and officer side dash shall be constructed from .125" smooth aluminum plate painted to match the cab interior. The officer side dash panel shall be lowered to provide increased visibility. A hinged access panel shall be provided on top of the center dash to provide easy access to components within.

The lower kick panels below the dash to be constructed from .125" aluminum smooth plate painted to match cab interior. The panels shall be removable to allow for servicing components that may be located behind the panels.

Proposer fully complies without exception or deviation YES_____ NO_____

83. OVERHEAD CONSOLE

A severe duty forward overhead console, air conditioning plenum, and rear facing blower cover shall be provided. Each overhead console section shall be constructed of aluminum smooth plate painted to match the cab interior. The console shall be installed using stainless steel fasteners.

Proposer fully complies without exception or deviation YES_____ NO_____

84. SEVERE DUTY DRIVER DASH

The driver side upper dash shall be provided and constructed of smooth aluminum painted to match the cab interior.

Proposer fully complies without exception or deviation YES_____ NO_____

85. SEVERE DUTY INTERIOR WALLS

Severe duty interior panels (includes all ceilings panels, back wall, and side walls) shall be .125" aluminum smooth plate painted to match cab interior.

Proposer fully complies without exception or deviation YES_____ NO_____

86. OVERLAY FLOOR D/P EMBOSSED

There shall be 3/16" (.188") embossed diamond plate overlay for the driver and officer side floor.

Proposer fully complies without exception or deviation YES_____ NO_____

87. CAB FLOOR OVERLAY COATING

Cab floor overlays shall be coated with a tough, durable protective spray-on type coating similar to LINE-X (front and rear as applicable).

Proposer fully complies without exception or deviation YES_____ NO_____

88. CAB COMPONENTS

The vehicle shall use a seven-position tilt and telescopic steering column to accommodate various size operators. An 18" padded steering wheel with a center horn button shall be provided.

Storage areas, with hinged access doors, shall be provided below the driver and officer seats. The driver side compartment shall be approximately 20" x 12" x 3.5" high and the officer side compartment shall be approximately 20.25" x 22.75" x 11" high.

The cab steps shall be a minimum of 8" deep x 24" wide. The first step shall be no more than 24.0" above the ground with standard tires in the unloaded condition per NFPA 1901 standards. The steps are to be located inside the doorsill, where they are protected against mud, snow, ice, and weather. The step surfaces shall be aluminum diamond plate with a multi-directional, aggressive gripping surface incorporated into the aluminum diamond plate in accordance with current NFPA 1901.

A grip handle shall be provided on the interior of each door below the door window to ensure proper hand holds while entering and exiting the cab. An additional black grip handle shall be provided on the left and right-side windshield post for additional handholds.

Proposer fully complies without exception or deviation YES_____ NO_____

89. CAB DOORS

Two (2) side-opening cab doors shall be provided. Doors shall be constructed of a 3/16" (0.188") aluminum plate outer material with an aluminum extruded inner framework to provide a structure that is as strong as the side skins.

Cab door openings shall be approximately 36" wide x 71.5" high, and shall open approximately 75 degrees.

The doors shall be securely fastened to the doorframes with full-length, stainless steel piano hinges, with 3/8" (0.375") diameter pins for proper door alignment, long life, and corrosion resistance. Mounting hardware shall be treated with corrosion-resistant material prior to installation. For effective sealing, an extruded rubber gasket shall be provided around the entire perimeter of all doors.

Stainless steel paddle-style door latches shall be provided on the interiors of the doors. The latches shall be designed and installed to protect against accidental or inadvertent opening as required by NFPA 1901.

The door windows shall provide a minimum viewing area of 530 sq. in. each. All windows shall have 75% light transmittance automotive safety tint. Full roll-down windows shall be provided for the cab doors with manual operation, **electric operated windows are not acceptable. Scissors or gear-and-sector drives are not acceptable.**

The cab door interior shall be stainless steel finish. This shall aid in long life and corrosion resistance.

There shall be reflective signs on each cab door in compliance with all NFPA requirements.

Proposer fully complies without exception or deviation YES_____ NO_____

90. CAB INSTRUMENTS AND CONTROLS

Two (2) pantograph-style windshield wipers with two (2) separate electric motors shall be provided for positive operation. **Air-operated windshield wipers are not acceptable** because of their tendency to accumulate moisture, which can lead to corrosion or to freezing in cold weather. The wipers shall be a wet-arm type with a one (1) gallon washer fluid reservoir, an intermittent-wipe function, and an integral wash circuit. Wiper arm length shall be approximately 28", and the blade length approximately 20". Each arm shall have a 70 degree sweep for full coverage of the windshield.

Cab controls shall be located on the cab instrument panel in the dashboard on the driver`s side where they are clearly visible and easily reachable. Emergency warning light switches shall be installed in removable panels for ease of service. The following gauges and/or controls shall be provided:

- Master battery switch/ignition switch (rocker with integral indicator)
- Starter switch/engine stop switch (rocker)
- Heater and defroster controls with illumination
- Marker light/headlight control switch with dimmer switch
- Self-canceling turn signal control with indicators
- Windshield wiper switch with intermittent control and washer control
- Master warning light switch
- Transmission oil temperature gauge
- Air filter restriction indicator
- Parking brake controls with red indicator light on dash
- Automatic transmission shift console
- Electric horn button at center of steering wheel
- Cab ajar warning light on the message center enunciator

Controls and switches shall be identified as to their function by backlit wording adjacent to each switch, or indirect panel lighting adjacent to the controls.

Proposer fully complies without exception or deviation YES_____ NO_____

91. FAST IDLE SYSTEM

A fast-idle system shall be provided and controlled by the cab-mounted switch. The system shall increase engine idle speed to a preset RPM for increased alternator output.

Proposer fully complies without exception or deviation YES_____ NO_____

92. ELECTRICAL SYSTEM

The cab and chassis system shall have a centrally located electrical distribution area. All electrical components shall be located such that standard operations shall not interfere with or disrupt vehicle operation. An automatic thermal-reset master circuit breaker compatible with the alternator size shall be provided. Automatic-reset circuit breakers shall be used for directional lights, cab heater, battery power, ignition, and other circuits. An access cover shall be provided for maintenance access to the electrical distribution area.

A six place, constantly hot, and six place ignition switched fuse panel and ground for customer-installed radios and chargers shall be provided at the electrical distribution area. Radio suppression shall be sufficient to allow radio equipment operation without interference.

All wiring shall be mounted in the chassis frame and protected from impact, abrasion, water, ice, and heat sources. The wiring shall be color-coded and functionally-labeled every 3" on the outer surface of the insulation for ease of identification and maintenance. The wiring harness shall conform to SAE 1127 with GXL temperature properties. Any wiring connections exposed to the outside environment shall be weather-resistant. All harnesses shall be covered in a loom that is rated at 280 degrees Fahrenheit to protect the wiring against heat and abrasion.

A Vehicle Data Computer (VDC) shall be supplied within the electrical system to process and distribute engine and transmission Electronic Control Module (ECM) information to chassis system gauges, the message center, and related pump panel gauges. Communication between the VDC and chassis system gauges shall be through a 4-wire multiplexed communication system to ensure accurate engine and transmission data is provided at the cab dash. The VDC shall be protected against corrosion, excessive heat, vibration, and physical damage.

Two (2) dual rectangular chrome plated headlight bezels shall be installed on the front of the cab. The low beam headlights shall activate with the release of the parking brake to provide daytime running lights (DRL) for additional vehicle conspicuity and safety. The headlight switch shall automatically override the DRL for normal low beam/high beam operation.

Proposer fully complies without exception or deviation YES_____ NO_____

93. CAB CRASHWORTHINESS REQUIREMENT

The apparatus cab shall meet and/or exceed relevant NFPA 1901 load and impact tests required for compliance certification with the following:

- Side Impact Dynamic Pre-Load per SAE J2422 (Section 5).

Testing shall meet and/or exceed defined test using 13,000 ft-lbs of force as a requirement. The cab shall be subject to a side impact representing the force seen in a roll-over. The cab shall exhibit minimal to no intrusion into the cab's occupant survival space, doors shall remain closed, and cab shall remain attached to frame.

- Quasi-static Roof Strength (proof loads) per SAE J2422 (Section 6) / ECE R29, Annex 3, paragraph 5.

Testing shall meet and/or exceed defined test using 22,046 lbs of mass as a requirement. Testing shall be completed using platen(s) distributed uniformly over all bearing members of the cab roof structure. The cab shall exhibit minimal to no intrusion into the cab's occupant survival space and doors shall remain closed.

Additional cab testing shall be conducted using 117,336 lbs of mass **exceeding** testing requirements by **over five (5) times**. The cab shall exhibit minimal to no intrusion into the cab's occupant survival space and the doors shall remain closed.

- Frontal Impact per SAE J2420.

Testing shall meet and/or exceed defined test using 32,549 ft-lbs of force as a requirement. The cab shall be subject to a frontal impact as defined by the standard. The cab shall exhibit minimal to no intrusion into the cab's occupant survival space, doors shall remain closed, and cab shall remain attached to frame.

The cab shall meet all requirements to the above cab crash worthiness; A copy of a certificate or letter verifying compliance to the above performance by an independent, licensed, professional engineer shall be provided upon request.

For any or all of the above tests, the cab manufacturer shall provide either photographs or video footage of the procedure upon request.

Proposer MUST fully comply without exception.

94. SEAT MOUNTING STRENGTH

The cab seat mounting surfaces shall be third party tested and in compliance with FMVSS 571.207.

Proposer fully complies without exception or deviation YES_____ NO_____

95. SEAT BELT ANCHOR STRENGTH

The cab seat belt mounting points shall be third party tested and in compliance with FMVSS 571.210.

Proposer fully complies without exception or deviation YES_____ NO_____

96. ISO COMPLIANCE

The manufacturer shall ensure that the construction of the apparatus cab shall be in conformance with the established ISO-compliant quality system. All written quality procedures and other procedures referenced within the pages of the manufacturer`s Quality Manual, as well as all Work Instructions, Workmanship Standards, and Calibration Administration that directly or indirectly impacts this process shall be strictly adhered to.

By virtue of its ISO compliance the manufacturer shall provide an apparatus cab that is built to exacting standards, meets the City's expectations, and satisfies the City's requirements.

Proposer fully complies without exception or deviation YES_____ NO_____

97. CAB ROOF

The cab shall have a flat roof.

Proposer fully complies without exception or deviation YES_____ NO_____

98. CAB FRONT DOOR WINDOWS

Driver and officer door windows shall have the support pillar located toward the front of the window. There shall be a vent that can be opened and closed within the window itself, located towards the front.

Proposer fully complies without exception or deviation YES_____ NO_____

99. CAB FRONT WINDOWS

The front windows of the cab shall have manual actuation.

Proposer fully complies without exception or deviation YES_____ NO_____

100. CAB DOOR LOCKS

Each cab door shall have a manual operated door lock actuated from the interior of each respective door. Exterior of each cab door shall be provided with a barrel style keyed lock below the cab door handle.

Proposer fully complies without exception or deviation YES_____ NO_____

101. CAB DOOR LOCKS

The cab shall have 1250 keyed door locks provided on exterior doors to secure the apparatus.

Proposer fully complies without exception or deviation YES_____ NO_____

102. CAB DOOR PANELS

The inner door panels shall be made from 14-gauge brushed finish stainless steel for increased durability. The cab door panels shall incorporate an easily removable panel for access to the latching mechanism for maintenance or service.

Proposer fully complies without exception or deviation YES_____ NO_____

103. EXTERIOR CAB DOOR LATCHES

All exterior cab door latches shall be paddle style.

Proposer fully complies without exception or deviation YES_____ NO_____

104. CAB DOOR REFLECTIVE MATERIAL

Reflective Red/Fluorescent Yellow Green 3M Diamond Grade material striping shall be supplied on each of the cab doors.

The stripes shall run from the lower outer corner to the upper inside corner of the panel, forming an "A" shape when viewed from the rear. The material shall meet NFPA 1901 requirements for size (96 square inches) and reflectivity.

Proposer fully complies without exception or deviation YES_____ NO_____

105. CAB DOOR AREA LIGHTING

There shall be two (2) clear TecNiq model T440 4" circular LED lights provided to illuminate the cab step well area. Each light shall be mounted in a resilient shock absorbent grommet and be located on each cab door in the inboard position. Each light shall be activated by the cab door ajar circuit.

Proposer fully complies without exception or deviation YES_____ NO_____

106. CAB MIRRORS

Two (2) Ramco model 6001FFR remote controlled polished aluminum mirrors shall be installed. The mirrors shall incorporate a full face main section with a convex mirror with housing model CAS750, mounted to the top. The adjustment of main sections shall be through dash switches. Location: mounted on front corners of cab.

Mirror Extension - There shall be a 3" extension provided for each Ramco mirror.

Proposer fully complies without exception or deviation YES_____ NO_____

107. FRONT MUD FLAPS

Black linear low-density polyethylene mud flaps shall be installed on the rear of the cab front wheel wells. The design of the mud flaps shall have corrugated ridges to distribute water evenly.

Proposer fully complies without exception or deviation YES_____ NO_____

108. HANDRAILS

Cab door assist handrails shall consist of two (2) 1.25" diameter x 18" long 6063-T5 anodized aluminum tubes mounted directly behind the driver and officer door openings one each side of the cab. The handrails shall be machine extruded with integral ribbed surfaces to assure a good grip for personnel safety. Handrails shall be installed between chrome end stanchions and shall be positioned at least 2" from the mounting surface to allow a positive grip with a gloved hand.

Proposer fully complies without exception or deviation YES_____ NO_____

109. REAR CAB WALL CONSTRUCTION

The rear cab exterior wall shall be constructed with the use of 3/16" aluminum diamond plate interlocking in aluminum extrusions.

Proposer fully complies without exception or deviation YES_____ NO_____

110. CAB WHEEL WELL

The cab wheel well shall be increased in size to provide additional clearance for larger tires. The fender trim shall be adjustable in and out to better accommodate various wheel / tire offsets.

Proposer fully complies without exception or deviation YES_____ NO_____

111. RECEPTACLE MOUNTING PLATE

A mounting plate shall be provided for the battery charger receptacle, battery charger indicator and if applicable the air inlet, etc. The plate shall be constructed of 14-gauge brushed finish stainless steel and be removable for service access to the receptacle(s) and indicator.

Proposer fully complies without exception or deviation YES_____ NO_____

112. REAR WALL VENTILATION

The center rear lower cab wall shall be provided with a cut-out for additional ventilation. A custom cover shall be provided for the cut-out.

Proposer fully complies without exception or deviation YES_____ NO_____

113. LIGHT TOWER RISER

Light tower riser shall be installed on the rear cab roof for use with large towers. Installed tower to not exceed over-all height of body roof line. Finish: paint job color.

Proposer fully complies without exception or deviation YES_____ NO_____

114. DEFLECTOR SHIELD

A deflector shall be located on the cab roof and to the rear. The deflector shall be designed with an angled face upward toward the body and shall be sized to best accommodate the height of the body aft of the cab. Deflector to be painted job color.

Proposer fully complies without exception or deviation YES_____ NO_____

115. AIR CONDITIONING

An overhead air-conditioner / heater system with a single roof mounted condenser shall be supplied. The unit shall be mounted to the cab interior headliner in a mid-cab position, away from all seating positions. The unit shall provide six (6) comfort discharge louvers to the front area of the cab. These louvers will be used for AC and heat air delivery. Two (2) additional large front louvers shall be damper controlled to provide defogging and defrosting capabilities to the front windshield as necessary.

The unit shall consist of a high output evaporator coil and heater core with one (1) high output dual blower for front air delivery, and two (2) high performance single wheel blowers for rear air delivery.

A serviceable filter shall be installed on the A/C evaporator. The filter shall consist of a steel perimeter frame with a foam filter.

The control panel shall actuate the air-distribution system with air cylinders, which are to be separated from the brake system by an 85-90 psi pressure protection valve. A three-speed blower switch shall control air speed.

The condenser shall be roof mounted and have a minimum capacity of 65,000 BTU`s and have dual fans with a built-in receiver drier.

Performance Data: (Unit only, no ducting or louvers)
AC BTU: 55,000
Heat BTU: 65,000
CFM: 1300 @ 13.8V (All blowers)

The compressor shall be a ten-cylinder swash plate design with a capacity of 19.1 cu.in. per revolution.

The system shall be capable of cooling the interior of the cab from 100 degrees ambient to 75 degrees or less with 50% relative humidity in 30 minutes or less.

Proposer fully complies without exception or deviation YES_____ NO_____

116. DEFROSTER FANS

Two (2) 6" windshield defroster fans shall be mounted on the overhead console: one for the driver and one for the side of the vehicle.

Proposer fully complies without exception or deviation YES_____ NO_____

117. HEAT, SUPPLEMENTAL

A single 40,000 BTU water heater shall be supplied in the front area of the cab. The unit shall heat the lower section of the driver`s and officer`s footwell.

Climate control will be achieved via switch installed on a front instrument panel.

Proposer fully complies without exception or deviation YES_____ NO_____

118. SEAT, DRIVER

One (1) H. O. Bostrom Sierra EX8/ABTS seat with high back styling shall be installed for the driver`s position.

The ABTS (All-Belts-To-Seat) design shall include a bright red 3-point integrated seat belt with an additional 8-12″ of useable belt webbing for easy access and comfort—increasing seat belt usage amongst firefighters and rescue personnel.

Seat features shall include:

- Power fore/aft with 8" adjustment
- Power height with 2" adjustment
- Power front seat tilt
- Power rear seat tilt
- Power back recline
- Built in lumbar support

Proposer fully complies without exception or deviation YES_____ NO_____

119. SEAT, OFFICER

One (1) Bostrom Tanker 450 ABTS seat with high back SCBA storage shall be provided in the officer position.

The ABTS (All-Belts-To-Seat) design shall include a bright red 3-point integrated seat belt with an additional 8-12″ of useable belt webbing for easy access and comfort—increasing seat belt usage amongst firefighters and rescue personnel.

Seat features shall include:

- Removable "Store-All" side cushions
- Auto-pivot and return headrest to open for improved exit with SCBA
- 12.5" wide SCBA cavity to store leading SCBA brands
- Shoulder strap holder
- Replaceable seat, side, and headrest cushions

Proposer fully complies without exception or deviation YES_____ NO_____

120. SEAT COVER MATERIAL

All seats shall have Durawear seat cover material.

Proposer fully complies without exception or deviation YES_____ NO_____

121. SEAT FABRIC COLOR

All seats shall be gray in color.

Proposer fully complies without exception or deviation YES_____ NO_____

122. SEATING CAPACITY TAG

A tag that is in view of the driver stating seating capacity of four (4) personnel shall be provided.

Proposer fully complies without exception or deviation YES_____ NO_____

123. SCBA BRACKET SMARTDOCK

Officers's seat shall have an IMMI SmartDock Gen2 SCBA storage bracket. The SmartDock is a strap-free docking station that offers single-motion SCBA insertion and hands-free release when the firefighter stands up to exit the seat. SmartDock has undergone extensive testing to ensure that it meets or exceeds industry standards. When evaluated to the NFPA 1901 Standard for Automotive Fire Apparatus, SmartDock met requirements for retaining both the cylinder and the pack in dynamic testing.

Proposer fully complies without exception or deviation YES_____ NO_____

124. CAB INTERIOR COLOR

Cab instrument panel, overhead console, trim panels, headliner, and door panels shall be gray.

Proposer fully complies without exception or deviation YES_____ NO_____

125. SUN VISORS

Lexan sun visors shall be provided for the driver and officer matching the interior trim of the cab and shall be flush mounted into the underside of the overhead console.

Proposer fully complies without exception or deviation YES_____ NO_____

126. AIR HORN SWITCH

A heavy-duty metal push-button switch shall be installed on the officer`s side floor and driver's side floor to operate the air horn.

Proposer fully complies without exception or deviation YES_____ NO_____

127. CAB ROLLOVER PROTECTION - MASTER CONTROL MODULE

A RollTek rollover occupant protection system, or approved equivalent, shall be installed in the apparatus cab. The system shall include an Integrated Roll Sensor (master module), Integrated Head Curtains, and Integrated Seat Belt pretensioners.

The Integrated Roll Sensor (IRS) shall be a microprocessor-controlled solid-state sensing device that utilizes vehicle-specific calibrations to detect rollovers. The IRS

shall be equipped with eight (8) pyrotechnic loops for connection to the protective countermeasures (Integrated Head Curtains and Integrated Seat Belt pretensioners).

The IRS shall continually monitor the truck`s acceleration and angle, and upon detection of an imminent roll-over, shall activate protective countermeasures in a pre-programmed sequence. The entire process from activation to deployment shall take less than ¼ of a second (.234). In addition to acting as the "brain" of the RollTek system, the IRS shall also act as a "black box," recording crash events for post-crash evaluation.

Proposer fully complies without exception or deviation YES_____ NO_____

128. CAB ROLLOVER PROTECTION - SLAVE MODULE FOR MASTER CONTROL

A slave module shall be installed with the RollTek Integrated Roll Sensor (IRS), or approved equivalent, to expand the system's capabilities. The slave module shall include connections for up to eight (8) additional pyrotechnic loops for use with up to a total of sixteen (16) protective countermeasures (Integrated Head Curtains and Integrated Seat Belt pretensioners).

Proposer fully complies without exception or deviation YES_____ NO_____

129. CAB ROLLOVER PROTECTION - SIDE AIR BAGS (QTY: 2)

RollTek Integrated Head Curtains (IHC), or approved equivalent, shall be installed in the apparatus cab. The pillow-shaped side air bags shall be attached either to the ABTS seats or the rear cab wall. The air bags shall be optimally placed to deploy across the window and side of the vehicle interior to protect the occupant's heads during impact. The air bags shall use a combination of high-pressure stored argon and oxygen (and a pyrotechnic charge for initiation) to inflate the bags to a relatively cool (120° Fahrenheit) inflation temperature and remain inflated for several seconds. **NO EXCEPTIONS.**

Proposer MUST fully comply without exception.

130. CAB ROLLOVER PROTECTION - SEAT BELT PRETENSIONERS (QTY: 2)

RollTek Integrated Seat Belt Pretensioners (ISB), or approved equivalent, shall be installed in the apparatus cab.
The special seat belt buckles shall be designed to receive a signal from the Integrated Roll Sensor during a roll for the pretensioners on the buckles to tighten the seat belts to the occupant, better positioning the occupant in the seats. **NO EXCEPTIONS**.

Proposer MUST fully comply without exception.

131. FRONT OCCUPANT PROTECTION

A front occupant protection system shall be installed in the apparatus cab. The system shall inflate three (3) air bags in the following locations:

- Steering wheel air bag to protect the head and neck of the driver
- Knee bolster air bag to protect the driver's legs
- Knee bolster air bag to protect the officer's legs

The air bags shall use a combination of high-pressure stored argon and oxygen (and a pyrotechnic charge for initiation) to inflate the bags to a relatively cool (120° Fahrenheit) inflation temperature and remain inflated for several seconds.

The system shall be connected to the crash detection sensor that will also activate the driver and first officer Integrated Belt Pretensioners if it detects a frontal crash. **NO EXCEPTIONS.**

Proposer MUST fully comply without exception.

132. CAB DOME LIGHTS

A Weldon LED dome light assembly with one (1) white lens and one (1) red lens and plastic housing shall be installed. The white light activates with appropriate cab door and light assembly switch, the red light activates with light assembly mounted switch only.

There shall be two (2) mounted in the front of the cab: one (1) in the driver and one (1) in the officer ceiling.

Proposer fully complies without exception or deviation YES_____ NO_____

133. AUTO-EJECT BATTERY CHARGER RECEPTACLE

The battery charger receptacle shall be a Kussmaul 20-amp NEMA 5-20 Super Auto-Eject #091-55-20-120 with a cover. The Super Auto-Eject receptacle shall be completely sealed and have an automatic power line disconnect.

The receptacle shall be located outside driver's door next to handrail and the cover color shall be yellow.

Proposer fully complies without exception or deviation YES_____ NO_____

134. HORN BUTTON SWITCH

A two (2) position rocker switch shall be installed in the cab accessible to the driver and properly labeled to enable operator to activate the OEM traffic horn or air horn from the steering wheel horn button.

Proposer fully complies without exception or deviation YES_____ NO_____

135. ENGLISH DOMINANT GAUGE CLUSTER

The cab operational instruments shall be located in the dashboard on the driver side of the cab and shall be clearly visible. The gauges in this panel shall be English dominant and shall be the following:

- Speedometer/Odometer
- Tachometer with integral hour meter
- Engine oil pressure gauge with warning light and buzzer
- Engine water temperature gauge with warning light and buzzer
- Two (2) air pressure gauges with warning light and buzzer (front, rear air)
- Fuel gauge
- Voltmeter
- Transmission oil temperature gauge

This panel shall be backlit for increased visibility during day and night time operations.

Proposer fully complies without exception or deviation YES_____ NO_____

136. HEADLIGHTS

The front of the cab shall have four (4) headlights. The headlights shall be mounted on the front of the cab in the lower position. The headlights shall be day time operational. The headlights shall be JW Speaker LED headlight model 8800. LED lights shall be provided in the low and high beam position of the head lamp assembly.

Proposer fully complies without exception or deviation YES_____ NO_____

137. PRE-WIRE

The chassis shall be pre-wired for installation of tire chains.

Proposer fully complies without exception or deviation YES_____ NO_____

138. 12 VOLT (OR 24 VOLT) OUTLET

A plug-in type receptacle for hand held spotlights, cell phones, chargers, etc. shall be installed officer side dash. The receptacle shall be wired battery hot.

Proposer fully complies without exception or deviation YES_____ NO_____

139. ANTENNA BASE QTY (2)

There shall be a Tessco P/N 90942, or approved equivalent, universal antenna base mounted on the cab roof with a weatherproof connector. The antenna base shall be NMO Motorola Style (equivalent to a MATM style) with RG58U coax cable. The antenna shall be located officer side forward with coaxial cable terminating at the interior cab wall near officer's seat.

There shall be a Tessco P/N 90942, or approved equivalent, universal antenna base mounted on the walk-in module roof with a weatherproof connector. The antenna base shall be NMO Motorola Style (equivalent to a MATM style) with RG58U coax cable. The antenna shall be located above the office area on the officer side forward with coaxial cable terminating above the work counter.

Proposer fully complies without exception or deviation YES_____ NO_____

140. CAB TURN SIGNALS

There shall be a pair of Whelen M6 LED (Light Emitting Diode) turn signal light heads with populated arrow pattern and amber lens mounted upper headlight bezel wired with weatherproof connectors.

Proposer fully complies without exception or deviation YES_____ NO_____

141. OFFICER SPEEDOMETER

A speedometer shall be provided in the officer side multiplex display in the cab.

Proposer fully complies without exception or deviation YES_____ NO_____

142. BATTERY CHARGER

A Kussmaul LPC 40 battery charger with remote mounted LED display shall be installed.

A fully automatic charging system shall be installed on the apparatus. The system shall have a 120 volt, 60 hertz, 7 amp AC input with an output of 40 amps 12 volts DC. The battery charging system shall be connected directly to the shoreline to ensure the batteries remain fully charged while the vehicle is in the fire station.

The system shall include a remote charging status indicator panel. The panel shall consist of two (2) LED lights to provide a visual signal if battery voltage is good or drops below 11.5 volts. The microprocessor shall be continuously powered from the battery to provide the charge status.

The battery charger shall be located behind driver's seat.

Proposer fully complies without exception or deviation YES_____ NO_____

143. CAB USB CHARGING PORT

A dual USB charging port for cell phones, chargers, etc. shall be installed officer side dash. The receptacles shall be wired battery hot.

Proposer fully complies without exception or deviation YES_____ NO_____

144. DPF REGENERATION OVERRIDE

A momentary override switch shall be provided for the Diesel Particulate Filter (DPF) regeneration. The switch will inhibit the regeneration process until the switch is reset or the engine is shut down and restarted. The switch shall be located within reach of the driver.

Proposer fully complies without exception or deviation YES_____ NO_____

145. STEERING WHEEL SWITCHES

The steering wheel shall be supplied with two (2) switch pods. Each switch pod shall include five (5) switches. The pods shall include switching for wipers, master warning, air horns and auxiliary engine brake (on/off). In addition, there shall be three (3) auxiliary switches that can be programmed to meet department specified functions.

The wiper switches shall include high / low speed, intermittent, wipe / wash and off. The wiper motors shall be synchronized so as to wipe each windshield simultaneously.

Programming Instructions
Auxiliary switch 1 on the steering wheel switch pod shall be programmed to operate the Driver side cab brow light. (Requires relay option if lights are not 12v).

Programming Instructions
Auxiliary switch 2 on the steering wheel switch pod shall be programmed to operate the Front brow light. (Requires relay option if lights are not 12v).

Programming Instructions
Auxiliary switch 3 on the steering wheel switch pod shall be programmed to operate the Officer side cab brow light. (Requires relay option if lights are not 12v).

Proposer fully complies without exception or deviation YES_____ NO_____

146. COMBO BODY SPEC- EXTRUDED ALUMINUM

The apparatus body shall be constructed entirely of aluminum plate and extrusions. The interlocking framework, constructed from beveled 6061T5, 6061T6 and 6063T5 extrusions, shall be electrically seam welded both internally and externally at each joint using 5356 aluminum alloy welding wire. The entire exterior body shall be completely sanded and deburred to assure a smooth finish prior to painting. All horizontal surfaces, rear steps, and the rear body surface shall be constructed from aluminum fire apparatus quality diamond plate.

Proposer fully complies without exception or deviation YES_____ NO_____

147. <u>BODY</u>

Each body corner rail shall be a 5" X 5" aluminum 6063T5 alloy corner section with 1/8" (.125) wall thickness and shall be welded as an integral part of the body. The corner extrusions shall have a 1-1/2" (1.5) outside radius and a full length 1/8" (.125) internal extruded gusset. The non-walk-in body shall utilize a 5" x 5" aluminum 6063T5 alloy corner extrusion as the apparatus top rail. The horizontal body side extrusions shall be 1.5" x 4" 6063T6 aluminum tube with 3/16" (.187) wall thickness and 3/16" (.187) outside corner radius. The frame crossmember extrusions shall be 3" x 3" 6061T6 aluminum with 3/8" (.375) wall thickness. These crossmembers shall extend the full width of the body to support the compartment framing, and shall be welded to a 1-3/16" (1.187) x 3" solid aluminum, 6061T5 frame sill extrusion that shall be shaped to contour with the chassis frame rails. The wheel well frame, constructed from 1.5" x 4" 6063T5 aluminum extrusions shall be slotted the full length to permit an internal fit of 1/8" (.125) aluminum diamond plate. The front exterior of the body shall be constructed of 3/16" (.187) and the roof of the body shall be constructed of 1/8" (.125) fire apparatus quality diamond plate. All of the smooth aluminum plate and fire apparatus quality diamond plate shall be 3003 H-14 aluminum alloy.

The rear tailboard step, formed from 3/16" (.187) treadplate and reinforced with a 1.5" x 3" aluminum extrusion and .5" x 3" aluminum flatbar, shall be bolted on to the body from the underside, thereby assuring a clean surface.

Body handrails shall consist of two (2) 36" length of 1.25" O.D. anodized aluminum installed between chrome end stanchions on each side of B1 opening. The handrail extrusion shall be ribbed to assure a good grip for personnel safety.

All body compartment shall be constructed from 1/8" (.125) formed aluminum 3003 H-14 alloy plate. All compartment floors shall be constructed of 1/8" (.125) aluminum fire apparatus quality diamond plate welded in place. Compartment floors shall be supported by a minimum 3/16" (.187) walled aluminum extrusions. The compartment seams shall be sealed by using a permanent pliable silicone caulking. The compartments shall be machine louvered for adequate ventilation.

The body shall have a body side protection rubrail along the length of the body on each side and at the rear. The rubrail shall be constructed of minimum 3/16" (.187)

thick anodized aluminum 6463T6 extrusion. The rubrail shall be constructed of minimum .1875" thick 6463T6 aluminum extrusion. The rubrail shall be a minimum of 2.75" high X 1.25" deep and shall extend beyond the body width to protect the compartment doors and the body side. The design of the rubrail shall protect any specified marker lights that are mounted inside its C-channel. The top surface of the rubrail shall have five (5) serrations raised a minimum of 0.1" high with cross grooves designed to provide a slip resistant edge for the rear step and running boards. The rubrail shall be spaced away from the body using .1875" nylon spacers. The ends of each section shall be provided with a rounded corner piece.

The area inside the rubrail C-channel shall be inset with a white reflective material for increased visibility.

A wheel well liner shall be provided for each wheel well. SAE chain clearance shall be provided.

The upper rear compartment doors shall be constructed of 3/16" (.188) smooth plate with the inner door pans being constructed of smooth aluminum plate. The latches and hinges shall be of the same make and model as the side compartments. The door springs shall be gas shock style for ease of operation.

The apparatus body structure shall be securely fastened to the chassis with 5/8" (.625) O.D. steel U-bolts. Chassis frame rails shall be lined with 5/16" (.312) x 2" fiber reinforced rubber strips to protect the body frame sills from contact with the rails.

A permanent plate mounted in the driver`s compartment shall be supplied. It shall specify the quantity and type of the following fluids used in the vehicle: engine oil, engine coolant, chassis transmission fluid, and drive axle lubrication.

All stepping surfaces shall be non-slip.

Proposer fully complies without exception or deviation YES_____ NO_____

148. WALK-IN MODULE

The lower interior side walls and ceiling shall be constructed of 1/8" (.125) fire apparatus quality diamond plate. The ceiling area and upper side wall finish shall be plywood. The upper interior side walls of the body, above the exterior compartments, and the ceiling area, shall be insulated with 1" solid styrofoam insulation. The walk-in standing area floor shall be constructed of 3/16" (.187) fire apparatus quality embossed diamond plate.

Proposer fully complies without exception or deviation YES_____ NO_____

149. 18' NON-WALK-IN BODY

There shall be an 18’ non- walk in body.

There shall be four (4) compartments on each side of the body. Each compartment is described below:

(L1/R1) Front- Left and right side

There shall be one (1) compartment, each side of the body, at the forward most portion of the body. This compartment shall be a transverse compartment from the left side to the right side. The lower section shall be approximately 20" high x 26" deep on each side. Extend the transverse floors in compartments L1 and R1 to the door opening. The floors shall be made from 3/16’ 3003 H230 diamond plate. Floors shall be welded in place. The compartment door opening shall be approximately 36`` wide x 70`` high. These compartments shall contain a total of 119 cubic feet of storage space.

(L2/R2) Left and right side

There shall be one (1) compartment, each side of the body, directly ahead of the rear wheels. This compartment shall be a transverse compartment from the left side to the right side. The lower section shall be approximately 20" high x 26" deep on each side. Extend the transverse floors in compartments L1 and R1 to the door opening. The floors shall be made from 3/16" 3003 H230 diamond plate. Floors shall be welded in place. The compartment door opening shall be approximately 48`` wide x 70`` high. These compartments shall contain a total of 159 cubic feet of storage space.

(L3/R3) Left and right side over the rear wheels

There shall be one (1) compartment, each side of the body, over the rear wheels. This compartment shall be a transverse compartment from the left side to the right side. The compartment door opening shall be approximately 60`` wide x 39`` high. These compartments shall contain a total of 127 cubic feet of storage space.

(L4/R4) Rear - left and right side

There shall be one (1) compartment, each side of the body, directly behind the rear wheels. The compartment shall be approximately 60`` wide x 70`` high x 27`` deep. The compartments shall each contain 65 cubic feet of storage. The door opening shall be 60`` wide x 70`` high.

L4/R4 compartment shall be 27” deep to accommodate SCBA bottle storage.

Proposer fully complies without exception or deviation YES_____ NO_____

150. PERIMETER ROOF

A perimeter roof shall be sunk in from top of truck to allow a storage and walking area on top of the truck. There shall be a staircase at the rear of the truck for entrance to the catwalk. Catwalk shall run between two (2) sets of roof compartments. The catwalk width shall be 30" minimum and shall have LED lights along the walk way. Slip resistant embossed diamond plate shall be used on all stepping surfaces.

The walkway shall be welded together using 3/16" 3003 H230 diamond plate and at least 3/16" thick t5-6063 extrusions.

Proposer fully complies without exception or deviation YES_____ NO_____

151. ROOF COMPARTMENTS FOR PERIMETER ROOF

There shall be five (5) roof compartments for 18' perimeter roof body made of extruded aluminum. This includes the box located at front of body spanning side to side. Design provides for a pan area along the officer side aft of the forward side to side compartment to accommodate open stored generator.

The roof compartments shall be made from 1/8" 3003 H230 diamond plate. A hinged diamond plate lid with turn latches shall cover each compartment. For compartments 40" or longer two (2) LED lights shall be provided and for compartments under 40" one (1) LED light shall be provided, and mounted to the underside of the lid. Each lid shall be wired to the door ajar indicator in the cab. These compartments shall be waterproof.

- (2) two roof compartments on driver side each shall be approx. 91" long x 24" wide x 30" deep.
- (1) one roof compartment on officer side forward shall be approx. 39" long x 24" wide x 30" deep.
- (1) one roof compartment on officer side aft shall be approx. 91" long x 24" wide x 30" deep.
- (1) roof compartment at front of body spanning side to side shall be approx. 86" long x 24" wide x 30" deep.

Proposer fully complies without exception or deviation YES_____ NO_____

152. RESCUE REAR BODY STAIRCASE COMPARTMENTS

Rescue rear body staircase compartments shall have 10 to 12-inch-deep steps.

The rear of the apparatus shall be equipped with four (4) compartments: three (3) compartments over the frame rails and (1) compartment between the frame rails. These compartments shall be "stepped forward" to form three (3) 32" wide x 10" to 12" deep steps for access to the top of the apparatus body.

The bottom step shall be between the frame rails and the next step over the end of the chassis frame rails. The upper steps shall be divided equally to the upper body walkway. Railings shall be installed from the rear step to top of body, on each side of the step, and compartment assembly for access to top of body. The step areas shall be lighted with recessed lights. The step surfaces, railings, and lighting shall be compliant to NFPA standards.

B-1: upper compartment over compartment B-2 shall have approximate dimensions of 15" high x 32" wide x 20" deep. A tunnel shall be provided for long handle tool storage 60 in. deep and wide as possible. Finish shall be sanded smooth aluminum. Locate: B1 high as possible. Height of tunnel to be maximized so as to not limit transverse utility in L3/R3.

B-2: center compartment over compartment B-3 shall have approximate dimensions of 15" high x 32" wide x 28" deep.

B-3: center compartment over the frame rails above compartment B-4 shall have approximate dimension of 15" high x 32" wide x 90" deep to accommodate (1) Model 71 stokes basket. Height of compartment to be minimized so as to not limit transverse utility in L3/R3. A secondary fixed shelf shall be placed above the stokes basket if any usable space remains.

B-4: lower compartment between the frame rails shall have approximate dimensions of 16" high x 24" wide x 26" deep.

Each compartment shall be equipped with an aluminum plate hinged drop down door.

Proposer fully complies without exception or deviation YES_____ NO_____

153. 10-INCH TAILBOARD

There shall be a 10" tailboard made out of 3/16" diamond plate, supported by T6 extrusions. Tailboard shall be gator grip and run full width of the body. Both corners of the tailboard shall be angled to reduce swing clearance. The tailboard shall be bolted to the body.

Proposer fully complies without exception or deviation YES_____ NO_____

154. EXTERIOR COMPARTMENTATION

There shall be two (2) entry doors: one (1) forward on the officer side and one (1) forward on the driver side of the module.

Aluminum entry door with sliding window: The doors external plate shall be made with a 3/16" painted Alum plate and an 1/8" internal plate. The door "viewed from outside of the body" shall be hinged on the right side with a stainless-steel hinge.

There shall be 2 locking mechanisms on the latch: standard key and dead bolt. Dead bolt shall be keyed unique to lock. An aluminum hand rail shall be provided across the door under the sliding window.

Approximate entry door opening sizes shall be 34" wide by 80" high.

Compartments: The officer and driver side shall have two (2) compartments oriented over each other in a stacked configuration just to the rear of the entry doors. The lower compartments shall each be 22" wide x 16" tall x 26" deep.

The upper openings are to access an interior module compartment. The side body opening are to be 22" wide x 18" tall x 22" deep.

Proposer fully complies without exception or deviation YES_____ NO_____

155. RESCUE BODY WALK-IN AREA

Aluminum Walk-in Module. Module shall be 69 in. long with entry doors on each side.

Proposer fully complies without exception or deviation YES_____ NO_____

156. INTERIOR COUNTER TOP

Counter top work station - A straight counter top work station shall be provided 30 inches off module floor and shall include raceway with removable back splash cover for mounting receptacles and wire routing. Construction shall be smooth aluminum. Finish shall be sanded smooth aluminum. Location: inside walk-in module facing forward on rear bulkhead wall between rear wall corner cabinets. The rear wall behind the counter top work station shall be constructed of white dry erase compatible material to be used as a writing surface.

There shall be four (4) 110 volt receptacles mounted near the counter top work station. A dual USB charging port for cell phones, chargers, etc. shall be installed near the counter top work station. LED lighting shall be provided directly above the counter top work station to include an on/off switch accessible while seated at the work station.

Proposer fully complies without exception or deviation YES_____ NO_____

157. RESOURCE AREA WEATHER STATION

A Coastal Environmental System Weatherpak VM-MTR, or approved equivalent, shall be installed. Weather station with radio receiver for weather Pack TRX shall be installed. It shall be wired to the resource area laptop docking station. This system shall automatically update cameo/aloha plume tracing software. A

Weatherpak side-mount, collapsible telescoping mast shall be installed at the rear of the apparatus body at the rear staircase.

Proposer fully complies without exception or deviation YES_____ NO_____

158. REAR BODY HEATER

A 30,000 BTU heater shall be installed and connected to the engine water system. Heater shall have a 12-volt blower. Expanded metal openings shall be used on the bench seat walls or cover walls for both air inlet and outlet in order to circulate the water heater air flow.

Proposer fully complies without exception or deviation YES_____ NO_____

159. CABINET INTERIOR – DRIVER SIDE

Provide one (1) aluminum storage corner cabinet with three (3) equal sized forward-facing openings 19 in. wide x 13 in. tall x 26 in. deep and fixed floor at bottom of each opening, one (1) vertically hinged door with D-handle latch and 1250 key. Location: inside body module on driver side in rear corner below overhead cabinet. Finish: sanded aluminum unless otherwise specified.

Proposer fully complies without exception or deviation YES_____ NO_____

160. CABINET INTERIOR- OFFICER SIDE

Provide one (1) aluminum storage corner cabinet with three (3) equal sized forward-facing openings 19 in. wide x 13 in. tall x 26 in. deep and fixed floor at bottom of each opening, one (1) vertically hinged door with D-handle latch and 1250 key. Locate: inside body module on officer side in rear corner below overhead cabinet. Finish: sanded aluminum unless otherwise specified.

Proposer fully complies without exception or deviation YES_____ NO_____

161. CABINET INTERIOR

Provide (1) One aluminum storage cabinet with two (2) equal sized and divided forward facing openings full width of module. Cabinet shall have a 12 inches tall opening and be 12 inches deep. Includes: hinged lift up access door with lever type latches and hold open device for each opening. Locate: inside body module on rear wall up high. Finish: sanded aluminum unless otherwise specified.

Proposer fully complies without exception or deviation YES_____ NO_____

162. CABINET EXTERIOR

There shall be two (2) cabinets: One (1) located above the battery compartment on each side of the walk in module. These cabinets shall be approximately 18 inches high by 22 inches wide and 19 inches deep. These cabinets shall be accessed by one (1) vertically hinged door with D-handle latch and 1250 key on the exterior, and open to the interior of the module on each side. The interior opening shall be covered with heavy duty red cargo net with mating buckles. (R2A, L2A)

The upper interior wall of each compartment shall have a minimum of four (4) 110 volt receptacles. These receptacles should be powered by both shore power and generator power.

Proposer fully complies without exception or deviation YES_____ NO_____

163. BODY INTERIOR JUMP SEAT

The front center of body of the interior walkway shall have double person flip-down bench seat. Seat shall be mounted on cast iron heavy duty spring hardware. The seat shall return to the vertical position automatically when personnel leave the seat. The seating area shall be approximately 36" wide x 12" deep and shall be mounted along the vertical side panel. The spring brackets shall be reinforced with heavy reinforcement plates on the inside of the exterior compartment rear walls to prevent deflection of the walls with the weight of personnel.

Heavy duty foam cushion shall be 4" thick on the seat base. The seat covering shall be heavy duty vinyl with cushion sewed beaded corners. Color of seat shall be Black.

Proposer fully complies without exception or deviation YES_____ NO_____

164. SEAT BELTS FOR INTERIOR JUMP SEATS (QTY: 2)

Seat belts shall be located on each seat on front center of body of the interior.

Proposer fully complies without exception or deviation YES_____ NO_____

165. FRONT BODY TRIM

The front head board of the body shall be 1/8" aluminum diamond plate.

Proposer fully complies without exception or deviation YES_____ NO_____

166. ROOF MOUNTED AIR CONDITIONER

The apparatus shall be equipped with a Duo-Therm Penguin Model #600315 low profile 120-volt air conditioner rated at 13,500 BTU and Heat Strip providing 5,600 BTU of heat, or approved equivalent. The system shall include an air distribution

box to cool the interior. An analog thermostatic shall be installed to maintain the desired temperature.

The air conditioning unit shall be powered by the shore power receptacle or the on-board generator (Requires auto transfer switch option). The unit shall be located on body roof

Proposer fully complies without exception or deviation YES_____ NO_____

167. STAINLESS STEEL AC PAN

A stainless-steel pan constructed of 14ga brushed stainless steel shall be provided for the body roof mounted A/C unit. The pan shall be equipped with a drain that does not drip on drivelines.

Proposer fully complies without exception or deviation YES_____ NO_____

168. DEFLECTOR SHIELD

There shall be an aluminum diamond plate deflector mounted on the roof of the apparatus to provide minor protection to A/C unit from minor damage due to low branches, etc. Deflector shall be installed in front of the forward most component.

Proposer fully complies without exception or deviation YES_____ NO_____

169. ROOF COMPARTMENT LIGHTS

One (1) ROM V4 LED compartment light strip shall be mounted in each roof top compartment in place of standard lights.

The light bar shall include super bright white LEDs mounted to circuit boards that have acrylic conformal coating for corrosion protection. The light shall produce 250 lumens per foot and be waterproof up to 1 meter (3.3 feet).

The light shall be wired to the compartment door open switch.

Proposer fully complies without exception or deviation YES_____ NO_____

170. COMPARTMENT DOOR

A compartment door shall be constructed using a box pan configuration. The outer door pan shall bevel and be constructed from 3/16” (0.188”) aluminum plate. The inner door pan shall be constructed from 3/32" (0.090”) smooth aluminum plate and shall have nutsert fittings to attach hold-open hardware. The inner pan shall have a 95-degree bend to form an integral drip rail.

The compartment door shall have a 1” x 9/16” (1” x 0.43”) closed-cell “P” EPDM sponge gasket meeting ASTM D-1066 2A4 standards installed around the perimeter of the door to provide a seal that is resistant to oil, sunlight, and ozone.

A drain hole shall be installed in the lower corner of the inside door pan to assist with drainage.

A polished stainless-steel D-ring style twist-lock door handle with #459 latch shall be provided on the door. The 4-1/2” (4.5”) D-ring handle shall be mounted directly to the door latching mechanism with screws that do not penetrate the door material for improved corrosion resistance.

The compartment door shall be securely attached to the apparatus body with a full-length stainless steel 1/4” (0.25”) rod piano-type hinge isolated from the body and compartment door with a dielectric barrier. The door shall be attached with machine screws threaded into the doorframe. The door shall have a gas shock-style hold-open device.

An anodized aluminum drip rail shall be mounted over the compartment opening to assist in directing water runoff away from the compartment.

Two (2) doors total shall be provided: one on each side of the cab.

Proposer fully complies without exception or deviation YES_____ NO_____

171. PAINTED ROLL UP COMPARTMENT DOOR

A ROM brand roll up door painted job color shall be provided on each body compartment, for a total of eight (8) doors. The doors shall be installed in the following locations: L1, L2, L3, L4, R1, R2, R3, R4.

The Robinson door slats shall be double wall box frame and manufactured from anodized aluminum. The slats shall have interlocking end shoes on each slat. The slats shall have interlocking joints with a PVC/vinyl inner seal to prevent any metal to metal contact and inhibit moisture and dust penetration.

The track shall be painted aluminum with a finishing flange incorporated to provide a finished look around the perimeter of the door without additional trim or caulking. The track shall have a replaceable side seal to prevent water and dust from entering the compartment.

The doors shall be counterbalanced for ease in operation. A full width latch bar is required and shall be operable by one hand wearing heavy gloves. Securing method shall be a positive latch device.

A magnetic type switch integral to the door shall be supplied for door ajar indication and compartment light activation.

Proposer fully complies without exception or deviation YES_____ NO_____

172. DRIP PAN

A ROM drip pan shall be supplied for each roll-up door for a total of eight (8) drip pans. The drip pan shall be made from a high strength aluminum alloy. The splashguard and end caps shall be made from extruded and injection molded high-impact plastic. Drip pan locations: L1, L2, L3, L4, R1, R2, R3, R4.

Proposer fully complies without exception or deviation YES_____ NO_____

173. SINGLE WIDTH COMPARTMENT DOOR

A single width compartment door shall be constructed using a box pan configuration. The outer door pan shall bevel and be constructed from 3/16" (0.188") aluminum plate. The inner door pan shall be constructed from 3/32" (0.090") smooth aluminum plate and shall have nutsert fittings to attach hold-open hardware. The inner pan shall have a 95-degree bend to form an integral drip rail.

The compartment door shall have a 1" x 9/16" (1" x 0.43") closed-cell "P" EPDM sponge gasket meeting ASTM D-1066 2A4 standards installed around the perimeter of the door to provide a seal that is resistant to oil, sunlight, and ozone.

A drain hole shall be installed in the lower corner of the inside door pan to assist with drainage.

A polished stainless-steel D-ring style twist-lock door handle with #459 latch shall be provided on the door. The 4-1/2" (4.5") D-ring handle shall be mounted directly to the door latching mechanism with screws that do not penetrate the door material for improved corrosion resistance.

The compartment door shall be securely attached to the apparatus body with a full-length stainless steel 1/4" (0.25") rod piano-type hinge isolated from the body and compartment door with a dielectric barrier. The door shall be attached with machine screws threaded into the doorframe. The door shall have a gas shock-style hold-open device.

An anodized aluminum drip rail shall be mounted over the compartment opening to assist in directing water runoff away from the compartment.

The doors shall be installed in the following locations: office module exterior, left and right sides. One (1) door shall be provided for each side of the module, for a total of two (2) doors.

Proposer fully complies without exception or deviation YES_____ NO_____

174. BATTERY TRAYS

There shall be two (2) slide out battery trays, allowing access for maintenance, constructed of 1/8" (.125) aluminum smooth plate. The tray shall hold two (2) or three (3) standard optional Group 31 1000-amp batteries. The trays shall have lock out attached to each side on aluminum angle. The trays shall be located in L2 floor mounted and R2 floor mounted and shall include battery tie downs and a cover.

Proposer fully complies without exception or deviation YES_____ NO_____

175. SHELVES, TRAYS, AND MOUNTS

Compartment L1 shall have two (2) pull out trays and two (2) pullout tilt down trays mounted in adjustable shelf track.

Compartment L2 shall have two (2) pull out trays and two (2) pullout tilt down trays mounted in adjustable shelf track.

Compartment L3 shall have two (2) pull out trays and two (2) adjustable shelves mounted in adjustable shelf track.

Compartment L4 shall have one (1) Pac Trac vertical slide out tool board. The bottom of the tool board shall have two (2) 12 inch wide aluminum shelves: one (1) located on each side capable of holding a Scott brand RIT bag, mounted in a horizontal position, and extinguishers on the other side.

Compartment R1 shall have two (2) pull out trays and two (2) pullout tilt down trays mounted in adjustable shelf track.

Compartment R2 shall have two (2) pull out trays and two (2) pullout tilt down trays mounted in adjustable shelf track.

Compartment R3 shall have two (2) pull out trays and two (2) adjustable shelves mounted in adjustable shelf track.

Compartment R4 shall have three (3) pull out trays and three (3) pullout tilt down trays mounted in adjustable shelf track. Pac wall board shall be installed on the upper 36 inches of the rear wall of R4.

The lower portion of compartment R2 shall have a heavy duty red cargo net with mating buckles for the purpose of retaining bagged oil dry.

Pac Trac Brand tool mounts shall be provided for the following equipment:

Two (2) Axes
One (1) Sledge Hammer
Two (2) Halligan
Four (4) Short Pike Poles

One (1) Chainsaw
One (1) Sawzall
One (1) One gallon fuel can
One (1) Windshield saw
Two (2) Fire Extinguishers
Four (4) SCBA brackets to hold Scott brand 60 minute SCBAs.
Two (2) SCBA brackets to hold Scott brand 45 minute SCBAs.
Two (2) Super Adjustamount Kits to hold RIT pack.
One (1) Battery powered spreader (brand to be determined)
One (1) Battery powered cutter (brand to be determined)
One (1) Battery powered combi-tool (brand to be determined)
Two (2) Battery powered Rams (brand to be determined)
Two (2) "V" type rescue struts (brand to be determined)

Proposer fully complies without exception or deviation YES_____ NO_____

176. PAC SCBA STORAGE RACK

PAC Cylinder Mate system, or equal, shall be installed horizontally for the purpose of holding twenty-eight (28) 30 to 45-minute SCBA cylinders. Each unit shall measure 8" square by 24.125" long and shall hold one cylinder. Units shall bolt together and be positioned horizontally. The unit shall be black in color. The units shall be built into a rack that is 4 units wide and 7 units high. The rack will be located in L4.

Proposer fully complies without exception or deviation YES_____ NO_____

177. PARTITION VERTICAL BOLT-IN

A bolt-in vertical partition wall shall be located in L6. Partition shall be constructed out of 3/16" 3003 smooth plate. Partition shall be mounted against the PAC SCBA storage rack. The rear facing surface of the partition shall be covered with PAC wall board.

Proposer fully complies without exception or deviation YES_____ NO_____

178. POLY TOOLBOX WITH OPEN TOP

There shall be five (5) poly boxes provided for storage of various pieces of equipment. There shall be a 6" hand access opening (centered from left to right, and 4" from the top) for each box.
Locations:
Two (2) for Compartment L3 lower section.
Two (2) for Compartment L4 lower section.
One (1) for Compartment R3 lower section.

The boxes shall be max width, depth, and height so that they fit in the compartments.

Proposer fully complies without exception or deviation YES_____ NO_____

179. STREAMLIGHT FLASHLIGHTS

There shall be four (4) Streamlight Vulcan 180 flashlights supplied with the apparatus. The chargers shall be mounted and wired (at a location to be determined) on the apparatus.

Proposer fully complies without exception or deviation YES_____ NO_____

180. STEP AUTO KWIKEE [QTY: 2]

An approximately 24" wide x 10-3/4" deep cast aluminum Kwikee non-skid surface step shall be provided. The step shall be powered by a 12-volt electric actuator and have an in-line locking mechanism. The step shall be locked out when parking brake is activated. One step shall be provided on each side of the office module for a total of two (2) steps.

Proposer fully complies without exception or deviation YES_____ NO_____

181. FOLDING STEP

Innovative Controls dual lighted LED folding step(s) shall be located one (1) each side of staircase for access to staircase. The folding step(s) shall meet current NFPA in step height and surface area.

Innovative Controls dual lighted LED folding step with LED lights integral to the step on the top to provide NFPA requirements of 2 fc (20 lx) on the stepping surface. Folding step shall also have a LED light integral to the bottom of the step to meet NFPA requirements of a stepping surface up to 18" below the step. The folding step shall sustain a minimum static load of 500 lb with a 3 to 1 safety factor. The folding step shall also meet NFPA slip resistance qualifications. Corrosion resistance shall be demonstrated by a 1000 hr salt spray test with no visible signs of deterioration of the step body or hardware.

One (1) handrail shall be installed in compliance with current NFPA. The handrail shall be constructed of 6063T5 1.25" OD anodized aluminum tube, with an integral ribbed surface to assure a good grip for personnel safety, mounted between chrome stanchions.

Proposer fully complies without exception or deviation YES_____ NO_____

182. SPLASH GUARD

A two (2) piece splash guard shall be installed under the body full width behind the rear axle. The design and material of the splash guard shall be poly bristle (grass skirt) style, designed to keep rear of vehicle clean of road spray and debris. Each splash guard to be 18"H x 48"L.

Proposer fully complies without exception or deviation YES_____ NO_____

183. FUEL FILL

A recessed fuel fill shall be provided at the driver side rear wheel well area.

Proposer fully complies without exception or deviation YES_____ NO_____

184. BODY WHEEL WELL

The body wheel well frame shall be constructed from 6063-T5 aluminum extrusion with a slot the full length to permit an internal fit of 3/16" (0.188") aluminum smooth plate painted job color. The wheel well trim shall be constructed from 6063-T5 formed aluminum extrusion. The wheel well liners shall be constructed of a 3/16" (.187") composite material. The liners shall be bolt-on and shall provide a maintenance-free and damage-resistant surface.

Proposer fully complies without exception or deviation YES_____ NO_____

185. TILT JACK LOCATION

The cab tilt jack shall be located R3.

Proposer fully complies without exception or deviation YES_____ NO_____

186. SCBA STRAP

Straps shall be provided in each exterior storage compartment to provide secondary means to hold each SCBA bottle in the compartment. The straps shall be constructed from 1" nylon webbing formed in a loop. The strap(s) shall be mounted to the storage compartment ceiling directly inside the door opening at each bottle location. There shall be one strap per bottle compartment for a total of seven (7) straps.

Proposer fully complies without exception or deviation YES_____ NO_____

187. SCBA SINGLE BOTTLE STORAGE

One (1) SCBA bottle storage constructed with aluminum plate with hinged door and push button latch shall be provided in the body wheel well area. The door shall

match wheel well area material and finish. The door shall cover the recessed fuel fill if located adjacent to the SCBA storage.

U-shaped trough made out of aluminum smooth plate with rubber insert shall be provided to store SCBA bottles.

Location: driver side rear wheel well offset rearward

Proposer fully complies without exception or deviation YES_____ NO_____

188. SCBA DOUBLE BOTTLE STORAGE

Three (3) Double SCBA bottle storage constructed with aluminum plate with hinged door and push button latch shall be provided in the body wheel well area. The door shall match wheel well area material and finish. The door shall cover the recessed fuel fill if located adjacent to the SCBA storage.

U-shaped troughs made out of aluminum smooth plate with rubber inserts shall be provided to store standard size SCBA bottles up to 7.25" in diameter and 24.5" in length. Troughs shall also have the capability to store a standard size 20lbs ABC Extinguisher or 2.5 gallon Water Extinguisher in each trough.

Location: driver side rear wheel well offset forward, officer side rear wheel well offset forward, and officer side rear wheel well offset rearward

Proposer fully complies without exception or deviation YES_____ NO_____

189. AWNING

There shall be one (1) awning located on the Driver's side of the apparatus mounted above the roll up compartments. The awning brand shall be Carefree, the awning model shall be Mirage, or approved equivalent, and shall be 18 feet in width. The fabric color shall be cadet gray. The controls to operate the awning shall be mounted inside the command area door. The awning shall be recessed into the body so that no part protrudes when the awning is in the stowed position.

Proposer fully complies without exception or deviation YES_____ NO_____

190. MULTIPLEX MODEM

A modem shall be provided for the multiplex electrical system. The modem shall allow for remote diagnostic and software updates via a telephone line. The modem connection shall be located below the driver`s side dash.

Proposer fully complies without exception or deviation YES_____ NO_____

191. ELECTRICAL SYSTEM

The apparatus shall incorporate a Weldon V-MUX multiplex 12-volt electrical system. The system shall have the capability of delivering multiple signals via a CAN bus. The electrical system installed by the apparatus manufacturer shall conform to current SAE standards, the latest FMVSS standards, and the requirements of the applicable NFPA 1901 standards.

The electrical system shall be pre-wired for optional computer modem accessibility to allow service personnel to easily plug in a modem to allow remote diagnostics.

The electrical circuits shall be provided with low voltage over-current protective devices. Such devices shall be accessible and located in required terminal connection locations or weather-resistant enclosures. The over-current protection shall be suitable for electrical equipment and shall be automatic reset type and meet SAE standards. All electrical equipment, switches, relays, terminals, and connectors shall have a direct current rating of 125 percent of maximum current for which the circuit is protected. The system shall have electro-magnetic interference suppression provided as required in applicable SAE standards.

Any electrical junction or terminal boxes shall be weather-resistant and located away from water spray conditions.

Proposer fully complies without exception or deviation YES_____ NO_____

192. MULTIPLEX SYSTEM

For superior system integrity, the networked multiplex system shall meet the following minimum component requirements:

- The network system must be Peer to Peer technology based on RS485 protocol. No one module shall hold the programming for other modules. One or two modules on a network referred to as Peer to Peer, while the rest of the network consists of a one master and several slaves **is not considered Peer to Peer for this application**.
- Modules shall be IP67 rated to handle the extreme operating environment found in the fire service industry.
- All modules shall be solid state circuitry utilizing MOS-FET technology and utilize Deutsch series input/output connectors.
- Each module that controls a device shall hold its own configuration program.
- Each module should be able to function as a standalone module. **No "add-on" module will be acceptable to achieve this form of operation.**
- Load shedding power management (8 levels).
- Switch input capability for chassis functions.
- Responsible for lighting device activation.
- Self-contained diagnostic indicators.
- Wire harness needed to interface electrical devices with multiplex modules.
- The grounds from each device shall return to main ground trunk in each sub harness by the use of ultrasonic splices.

Proposer MUST fully comply without exception.

193. WIRING

All harnessing, wiring, and connectors shall be manufactured to the following standards/guidelines. **No exceptions.**

- NFPA 1901-Standard for Automotive Fire Apparatus
- SAE J1127 and J1127
- IPC/WHMA-A-620 – Requirements and Acceptance for Cable and Wire Harness Assemblies. (Class 3 – High Performance Electronic Products)

All wiring shall be copper, or copper alloys of a gauge rated to carry 125 of the maximum current for which the circuit is protected. Insulated wire and cable 8 gauge and smaller shall be SXL, GXL, or TXL per SAE J1128. Conductors 6 gauge and larger shall be SXL or SGT per SAE J1127.

All wiring shall be colored coded and imprinted with the circuits function. Minimum height of imprinted characters shall not be less than .082" plus or minus .01". The imprinted characters shall repeat at a distance not greater than 3".

A coil of wire shall be provided behind electrical appliances to allow them to be pulled away from mounting area for inspection and service work.

Proposer MUST fully comply without exception.

194. WIRING PROTECTION

The overall covering of the conductors shall be loom or braid. Braid style wiring covers shall be constructed using a woven PVC-coated nylon multifilament braiding yarn. The yarn shall have a diameter of no less than .04" and a tensile strength of 22 lbs. The yarn shall have a service temperature rating of -65 Fahrenheit to 194 Fahrenheit. The braid shall consist of 24 strands of yarn with 21 black and three (3) yellow. The yellow shall be oriented the same and be next to each other.

Wiring loom shall be flame retardant black nylon. The loom shall have a service temperature of -40 Fahrenheit to 300 Fahrenheit and be secured to the wire bundle with adhesive-backed vinyl tape.

Proposer fully complies without exception or deviation YES_____ NO_____

195. WIRING CONNECTORS

All connectors shall be Deutsch series unless a different series of connector is needed to mate to a supplier's component. The connectors and terminals shall be assembled per the connector/terminal manufacturer's specification.

Crimble/Solderless terminals shall be acceptable. Heat shrink style shall be utilized unless used within the confines of the cab.

Proposer fully complies without exception or deviation YES_____ NO_____

196. NFPA REQUIRED TESTING OF ELECTRICAL SYSTEM

The apparatus shall be electrical tested upon completion of the vehicle and prior to delivery. The electrical testing, certifications, and test results shall be submitted with delivery documentation per requirements of NFPA 1901. The following minimum testing shall be completed by the apparatus manufacturer:

1. Reserve capacity test:

The engine shall be started and kept running until the engine and engine compartment temperatures are stabilized at normal operating temperatures and the battery system is fully charged. The engine shall be shut off and the minimum continuous electrical load shall be activated for ten (10) minutes. All electrical loads shall be turned off prior to attempting to restart the engine. The battery system shall then be capable of restarting the engine. Failure to restart the engine shall be considered a test fail.

2. Alternator performance test at idle:

The minimum continuous electrical load shall be activated with the engine running at idle speed. The engine temperature shall be stabilized at normal operating temperature. The battery system shall be tested to detect the presence of battery discharge current. The detection of battery discharge current shall be considered a test failure.

3. Alternator performance test at full load:

The total continuous electrical load shall be activated with the engine running up to the engine manufacturer`s governed speed. The test duration shall be a minimum of two (2) hours. Activation of the load management system shall be permitted during this test. However, an alarm sounded by excessive battery discharge, as detected by the system required in NFPA 1901 Standard, or a system voltage of less than 11.7 volts DC for a 12-volt nominal system, for more than 120 seconds, shall be considered a test failure.

4. Low voltage alarm test:

Following the completion of the above tests, the engine shall be shut off. The total continuous electrical load shall be activated and shall continue to be applied until the excessive battery discharge alarm activates. The battery voltage shall be measured at the battery terminals. With the load still applied, a reading of less than 11.7 volts DC for a 12-volt nominal system shall be considered a test failure. The

battery system shall then be able to restart the engine. Failure to restart the engine shall be considered a test failure.

NFPA Required Documentation

The following documentation shall be provided on delivery of the apparatus:

A. Documentation of the electrical system performance tests required above.

B. A written load analysis, including:

a. The nameplate rating of the alternator.
b. The alternator rating under the conditions.
c. Each specified component load.
d. Individual intermittent loads.

Proposer fully complies without exception or deviation YES_____ NO_____

197. VEHICLE DATA RECORDER

A vehicle data recorder system shall be provided to comply with the 2009 and 2016 editions of NFPA 1901. The following data shall be monitored:

- Vehicle speed MPH
- Acceleration (from speedometer) MPH/Sec.
- Deceleration (from speedometer) MPH/Sec.
- Engine speed RPM
- Engine throttle position % of full throttle
- ABS Event On/Off
- Seat occupied status Occupied Yes/No by position
- Seat belt status Buckled Yes/No by position
- Master Optical Warning Device Switch On/Off
- Time: 24-hour time
- Date: Year/Month/Day

Proposer fully complies without exception or deviation YES_____ NO_____

198. OCCUPANT DETECTION SYSTEM

There shall be a visual and audible warning system installed in the cab that indicates the occupant buckle status of all cab seating positions that are designed to be occupied during vehicle movement.

The audible warning shall activate when the vehicle's park brake is released, and a seat position is not in a valid state. A valid state is defined as a seat that is unoccupied and the seat belt is unbuckled, or one that has the seat belt buckled after the seat has been occupied.

The visual warning shall consist of a graphical representation of each cab seat in the multiplex display screen that will continuously indicate the validity of each seat position.

The system shall include a seat sensor and safety belt latch switch for each cab seating position, audible alarm, and braided wiring harness.

Proposer fully complies without exception or deviation YES_____ NO_____

199. HVAC CONTROLS

The air conditioning and heating systems of the apparatus chassis cab shall be controlled through the multiplex electrical system`s color display(s). The system shall have the capability to provide automatic climate control.

Proposer fully complies without exception or deviation YES_____ NO_____

200. MULTIPLEX DISPLAY

There shall be two (2) multiplex displays.

The V-MUX multiplex electrical system shall include a Vista IV touch screen color display. The display shall have the following features:

- Aspect ratio of 16:9 (Wide Screen)
- Diagonal measurement of no less than 7”
- Touch screen design with “virtual” switch capability
- Master warning switch
- Engine high idle switch
- Five (5) tactile switches to access secondary menus
- Eight (8) multi-function programmable tactile switches
- Specific door ajar indication
- Real time clock
- Provides access to the multiplex system diagnostics
- Video capability for optional back-up camera(s) and GPS display

The display shall be located officer's side engine cover, driver's side engine cover.

Proposer fully complies without exception or deviation YES_____ NO_____

201. ELECTRICAL CONNECTION PROTECTION

The vehicle electrical system shall be made more robust by the application of a corrosion inhibiting spray coating on all exposed electrical connections on the chassis and body. The coating shall use nanotechnology to penetrate at the molecular level into uneven surfaces to create a protective water repellant film. The

coating shall protect electrical connections against the environmental conditions apparatus are commonly exposed to.

Proposer fully complies without exception or deviation YES_____ NO_____

202. LIGHT BAR MOUNT

One (1) **pair** of Whelen 1.5" tall (model MKEZ7) mounts shall be provided on the front light bar. (Two mounts total)

Proposer fully complies without exception or deviation YES_____ NO_____

203. FRONT LIGHT BAR COLOR(S)

The front light bar shall be provided with the following color LED modules: Red/White with clear lenses

If applicable, includes side facing light bars when colors are the same.

Proposer fully complies without exception or deviation YES_____ NO_____

204. LIGHT BAR

One (1) Whelen Freedom IV Series 72" LED light bar model F4X7 with sixteen (16) LED modules shall be provided; two (2) front corner mounted LED modules, ten (10) forward facing LED modules, two (2) side facing LED modules and two (2) rear corner LED modules.

No rear facing LEDs. The light bars shall have clear lenses. The white LEDs (if equipped) shall be switched off in blocking right of way mode.

The light bar shall be installed centered on the front cab roof.

Proposer fully complies without exception or deviation YES_____ NO_____

205. LOWER LEVEL WARNING LIGHT PACKAGE

Eight (8) Whelen M6R Super LED red light heads and two (2) Whelen M2R Super LED red light heads shall be provided.

The lights shall include chrome flanges where applicable. The lights shall be wired with weatherproof connectors and shall be mounted as close to the corner points of the apparatus as is practical as follows:

• Two (2) Whelen M6R Super LED Red lights on the front of the apparatus facing forward

• Two (2) Whelen M6R Super LED Red lights on the rear of the apparatus facing rearward
• Two (2) lights **each side** of the apparatus: one (1) Whelen M6R Super LED Red **each side** at the forward most point (as practical) and one (1) Whelen M2R Super LED Red **each side** at the rearward most point (as practical).
• One (1) Whelen M6R Super LED Red light **each side** of the apparatus centrally located to provide mid ship warning light.

The side facing lights shall be located at forward most position, in rear wheel well offset to front, and side facing at rear of body in rubrail if equipped.

All warning devices shall be surface mounted in compliance with NFPA standards.

Proposer fully complies without exception or deviation YES_____ NO_____

206. WARNING LIGHTS

Four (4) Whelen M9 series Linear Super LED light heads with red lens shall be provided. The rectangular lights shall include chrome flanges where applicable.

Location: One (1) **each side** of body on forward upper body corners and One (1) **each side** of body on rearward upper body corners.

Proposer fully complies without exception or deviation YES_____ NO_____

207. WARNING LIGHTS

Four (4) Whelen M6 series Linear Super LED red light heads with red lens shall be provided. The rectangular lights shall include chrome flanges where applicable.

Location: One (1) **each side** of cab centered over wheel well and One (1) **each side** above tail lights.

Proposer fully complies without exception or deviation YES_____ NO_____

208. WARNING LIGHTS

Four (4) Whelen model M2R Super LED red light heads (red LEDs with red lens) shall be provided.

The rectangular lights shall include chrome flanges. The lights shall be wired with weatherproof connectors.

Specifications include:

- Surface mounted
- Patented Linear LED reflector assembly

- Sealed assembly
- Mounting gasket
- Multiple Scan-Lock flash patterns available
- Chrome mounting flange

Location: One (1) **each side** centered below forward compartments in rubrail if equipped and One (1) **each side** just behind rear wheels in rubrail if equipped.

All warning devices shall be surface mounted in compliance with NFPA standards.

Proposer fully complies without exception or deviation YES_____ NO_____

209. WARNING LIGHTS

Two (2) Whelen Rota-Beam series model 6RBRC Super LED red light heads with clear lens shall be provided. The lights shall include chrome flanges where applicable.

Location: One (1) **each side** of body rear facing up high.

Proposer fully complies without exception or deviation YES_____ NO_____

210. HAZARD (DOOR AJAR) LIGHT

There shall be one (1) Whelen Model M2WR red LED hazard light with black bezel installed as specified.

Light shall be located center overhead.

Proposer fully complies without exception or deviation YES_____ NO_____

211. DIRECTIONAL LIGHT BAR CONTROL LOCATION

The directional light bar control head shall be located in the center overhead console offset to driver side.

Proposer fully complies without exception or deviation YES_____ NO_____

212. SPLIT DIRECTIONAL TRAFFIC WARNING LIGHT

One (1) Whelen TA4437M LED 43.75” long SPLIT Traffic Advisor with amber LEDs' and amber lenses shall be provided.

The directional bar shall include two (2) 21.875" bars and a TACTLD1 control head. The control head shall include a remote flash control and end lamp enable/disable feature.

The light shall be installed at the rear of the body to direct traffic around the vehicle.

Proposer fully complies without exception or deviation YES_____ NO_____

213. DIRECTIONAL LIGHT SHIELD [QTY: 2]

There shall be a diamond plate shield mounted over each of the directional lights to protect it from damage.

Proposer fully complies without exception or deviation YES_____ NO_____

214. DIRECTIONAL LIGHT WIRED TO WARNING LIGHTS

The rear directional light bar shall be activated when the upper level warning lights are activated to provide additional lighting, in addition to the warning lights, when the vehicle is responding to a scene.

Proposer fully complies without exception or deviation YES_____ NO_____

215. ELECTRONIC SIREN

A Whelen 295SLSA1 electronic siren shall be installed in the cab. The siren amplifier and control panel module shall include a rotary selector for six (6) functions: siren tones programed to Wail, Yelp, and Warble; on/off switch; push button switch for manual siren or air horn tones; and noise canceling microphone.

Proposer fully complies without exception or deviation YES_____ NO_____

216. MECHANICAL SIREN

A chrome-plated and pedestal mounted Federal Q2B-P coaster siren shall be installed on top of the front bumper extension. An electric siren brake switch shall be located in the cab accessible to the driver.

The siren shall be located driver side front bumper and shall be mounted so as not to extend past the bumpers edge.

Proposer fully complies without exception or deviation YES_____ NO_____

217. ELECTRONIC SIREN CONTROL LOCATION

The electronic siren control shall be located in the driver side of center dash upper tier (recessed).

Proposer fully complies without exception or deviation YES_____ NO_____

218. SECONDARY SIREN

A Whelen Howler intersection clearing system shall be installed. The Howler low-frequency tones are synchronous with your primary siren tones to penetrate high noise, high traffic situations. The system shall include a timer to allow the tone to sound then automatically shut off.

The system shall include an amplifier, timer, and two (2) subwoofer speakers mounted under the vehicle. A switch shall be installed reachable from the officer to activate the Howler siren function.

Proposer fully complies without exception or deviation YES_____ NO_____

219. SIREN SPEAKER (QTY: 2)

Two (2) Federal Signal model ES100 Dynamax 100-watt speakers shall be flush mounted, as far forward and as low as possible, on the front of the vehicle. A polished model grille shall be provided on the outside of the speakers to prevent road debris from entering the speakers.

Speaker dimensions shall be: 5.5 in. high x 5.9 in. wide x 2.5 in. deep. Weight = 5.5 lbs. The speaker shall produce a minimum sound output of 120 dB at 10 feet to meet current NFPA 1901 requirements.

The speakers shall be located one (1) driver side front bumper and one (1) officer side front bumper.

Proposer fully complies without exception or deviation YES_____ NO_____

220. LED MARKER LIGHTS

LED clearance/marker lights shall be installed as specified.

UPPER CAB:
• Five (5) amber LED clearance lights on the cab roof.

LOWER CAB:
• Two (2) amber LED side turn/marker: One (1) **each side** of cab ahead of the front door hinge.

UPPER BODY:
• Two (2) red Trucklite LED clearance lights: One (1) **each side**, rear of body to the side.
• Two (2) red Trucklite LED clearance lights: One (1) **each side**, rear of body to the rear.
• Two (2) amber Trucklite LED clearance lights: One (1) **each side**, front of body to the side.

• Two (2) amber Trucklite LED clearance lights: One (1) **each side**, front of body to the front (if applicable).

LOWER BODY:
• Three (3) red Trucklite LED clearance lights centered at rear, recessed in the rubrail.
• Two (2) red Trucklite LED clearance lights: One (1) **each side** at the trailing edge of the apparatus body, recessed in the rubrail.
• Two (2) amber Trucklite LED clearance lights: One (1) **each side** front of body, recessed in the rubrail.
• Two (2) amber Trucklite LED clearance/auxiliary turn lights: One (1) **each side** front of body, recessed in the rubrail.

Proposer fully complies without exception or deviation YES_____ NO_____

221. TAIL LIGHTS

Three (3) Whelen model M6 series LED lights shall be installed in a four (4) light vertical housing **each side** at rear and wired with weatherproof connectors.

Light functions shall be as follows:

• LED red running light with red brake light in upper position.
• LED amber populated arrow pattern turn signal in middle position.
• LED clear back-up light in lower position.

A one-piece chrome plastic housing shall be mounted around the three (3) individual lights in a vertical position. The lower space will be used by the M6 or equivalent lower NFPA warning light.

Proposer fully complies without exception or deviation YES_____ NO_____

222. ADDITIONAL AMBER MARKER LIGHTS

Two (2) rectangular shaped Trucklite Model 21 LED clearance lights with an amber colored lens shall be installed. The lights shall be located one (1) **each side** just ahead of rear wheels in rubrail if equipped.

Proposer fully complies without exception or deviation YES_____ NO_____

223. TURN SIGNALS

A **pair** of Weldon model 9186-8580-29 bubble style LED amber auxiliary turn signals with stainless steel bezels shall be installed. Location: One (1) **each side** in body wheel well offset forward.

Proposer fully complies without exception or deviation YES_____ NO_____

224. LICENSE PLATE LIGHT

One (1) EON LED license plate light shall be mounted at the rear of the body.

Proposer fully complies without exception or deviation YES_____ NO_____

225. COMPARTMENT LIGHT PACKAGE

Two (2) Amdor Luma-Bar LED, or approved equivalent, compartment light strips shall be mounted in each body compartment greater than 4 cu. ft. Transverse compartments shall have four (4) lights. Location shall be two (2) **each side** of truck.

Compartment lights shall be wired to a master on/off rocker switch on the cab switch panel.

Proposer fully complies without exception or deviation YES_____ NO_____

226. GROUND LIGHTS

The apparatus shall be equipped with a sufficient quantity of lights to properly illuminate the ground areas around the apparatus in accordance with current NFPA requirements. The lights shall be EON LED with clear lenses. The wiring connections shall be made with a weather resistant plug in style connector.

- Two (2) ground lights shall be supplied: One (1) under **each side** of the front bumper extension.
- Two (2) lights shall be supplied to illuminate the ground: One (1) **below each cab** door. Lights in areas under the driver and crew area exits shall be activated automatically when the exit doors are opened.
- Two (2) ground lights shall be installed: One (1) below **each side** body staircase.
- Three (3) ground lights shall be supplied under the rear of the apparatus.

Ground area lights shall be switched from the cab dash with the work light switch.

Proposer fully complies without exception or deviation YES_____ NO_____

227. STEP LIGHTS

The apparatus shall be equipped with a sufficient quantity of lights to properly illuminate the steps around the apparatus in accordance with current NFPA requirements. The lights shall be EON LED with clear lenses. The wiring connections shall be made with a weather resistant plug in style connector.

The step lights shall be controlled by the work light switch in cab that is accessible by the driver.

Proposer fully complies without exception or deviation YES_____ NO_____

228. WALKWAY LIGHTS

Three (3) LED lights shall be mounted low on the driver's side wall of the upper body compartments to illuminate the rescue walkway. The lights shall be TecNiq EON with polished stainless-steel housings. The work light switch in the cab shall activate the lights when the park brake is set.

Proposer fully complies without exception or deviation YES_____ NO_____

229. DECK/SCENE LIGHT WIRED TO BACK-UP LIGHTS

The rear deck or scene lights shall be activated when the chassis is placed in reverse to provide additional lighting, in addition to the back-up lights, when backing the vehicle.

Proposer fully complies without exception or deviation YES_____ NO_____

230. CAB SCENE LIGHT SWITCHING

The cab scene lights shall be wired to activate through the appropriate side cab door ajar switch. This application allows the cab scene lights to be used as additional illumination of the ground area for personnel entering or exiting the vehicle. The switching for this application is in addition to the standard cab scene light switching.

Proposer fully complies without exception or deviation YES_____ NO_____

231. SCENE LIGHTS

Four (4) Whelen model M9 series Linear Super LED clear scene lights shall be provided.

Each shall have Linear Super LED diodes with internal light deflecting optics. The internal light deflecting optics shall redirect the light without the use of angle brackets.

The lights shall be located: driver side forward and rearward areas of roof top storage compartment, and officer side forward and rearward areas of roof top storage compartment. Lights shall be controlled by a switch in cab accessible to driver (lights on sides of apparatus to be switched separately.)

Proposer fully complies without exception or deviation YES_____ NO_____

232. SCENE LIGHTS

Four (4) Whelen model M6ZC series Linear Super LED clear scene lights shall be provided.

Each shall have Linear Super LED diodes with internal light deflecting optics. The internal light deflecting optics shall redirect the light without the use of angle brackets.

The lights shall be located: One (1) **each side** of cab, rearward of forward doors, up high, and One (1**) each side** of body rear facing up high. Lights shall be controlled by a switch in cab accessible to driver (lights on sides of apparatus to be switched separately.)

Proposer fully complies without exception or deviation YES_____ NO_____

233. ENGINE COMPARTMENT LIGHT

There shall be lighting provided to illuminate the engine compartment area in compliance with NFPA 1901. The light shall be an Optronics ILL22 Series LED that has a polycarbonate lens, sealed / waterproof housing, and integral switch. The light wiring circuit shall activate when the cab is tilted and master power is switched on.

Proposer fully complies without exception or deviation YES_____ NO_____

234. DOOR AJAR ALARM

An audible alarm shall be provided through the multi-plex display in the cab wired into the door ajar indicator.

Proposer fully complies without exception or deviation YES_____ NO_____

235. FOOT SWITCH (QTY:2)

Two (2) heavy-duty metal floor mounted foot switches shall be installed to operate the Q2B siren. One (1) shall be located driver's side and one (1) located officer's side.

Proposer fully complies without exception or deviation YES_____ NO_____

236. ADDITIONAL SWITCH

A 12-volt switch for rear work lights shall be provided and located driver rear of body.

Proposer fully complies without exception or deviation YES_____ NO_____

237. CAMERA SHIELD

A diamond plate protective shield shall be provided for the top and sides of a camera. The shield shall be designed not to impede in the operational envelope of the camera.

Proposer fully complies without exception or deviation YES_____ NO_____

238. CAMERA BACK-UP

There shall be a Safety Vision camera model number SV-625B-KIT, or approved equivalent, provided. The camera shall be mounted up high at the rear of the vehicle to provide a wide-angle rear view with audio. The camera shall include a cable with metallic waterproof threaded O-ring seal connectors to ensure positive connection between video cable and camera to prevent unplugging due to vibration resulting in video loss to vehicle operator. The camera shall be interlocked with the chassis transmission. When the apparatus is placed in reverse the camera shall automatically be activated. When the transmission is placed in any other gear, the screen shall return to the previously displayed screen.

Proposer fully complies without exception or deviation YES_____ NO_____

239. BACK-UP ALARM

An electronic back-up alarm (97-dB alarm) shall be supplied and be wired into the chassis back-up lights to signal when the vehicle is in reverse gear.

Proposer fully complies without exception or deviation YES_____ NO_____

240. 12 VOLT DC POWER DISTRIBUTION MODULE

There shall be a 12 place 12-volt DC power distribution module installed as specified.

The module will have six (6) circuits wired directly to the battery and have six (6) circuits wired through the master battery switch with 12 positions for grounds. Connection to the power module circuit will be through a .250 female spade connector. Each buss will be protected with a 50 amp circuit breaker for overload protection. The module will accept ATC blade type fuses or 22X series circuit breakers.

The module shall be located behind officer's seat.

Proposer fully complies without exception or deviation YES_____ NO_____

241. ELECTRICAL SERVICE PANEL LOCATION

Locate electrical service panel and components in compartment L2.

Electrical components on a multiplex system shall include:

1. All PDM's
2. Relay Panel
3. Strobe Packs
4. Flashers

Proposer fully complies without exception or deviation YES_____ NO_____

242. COMPARTMENT LIGHT PACKAGE

There shall be six (6) Whelen LED model 60CREGCS Red / White Super LED dome lights mounted in the Walk-in body compartment ceiling.

Switching: White lights shall be wired to a master on/off rocker switch on the switch panel located in the corner cabinet and through the entry door. The red lights shall be wired through the light assembly switch only.

The wiring connection for the compartment lights shall be made with a weather-resistant plug in style connector. A single water- and corrosion-resistant switch with a polycarbonate actuator and sealed contacts shall control each compartment light. The switch shall allow the light to illuminate if the compartment door is open.

Proposer fully complies without exception or deviation YES_____ NO_____

243. 15KW HYDRAULIC GENERATOR

An Onan 15KW side draft hydraulic generator, model 15RBAA, shall be provided and installed dunnage pan offset to driver side. The unit shall come equipped with modular generator unit (which includes the hydraulic motor and filter, generator, and cooler), variable displacement hydraulic pump, hydraulic reservoir and a gauge panel.

The gauge panel shall display voltage, hour meter, frequency, and amperage. The hydraulic motor, generator, blower, cooler, and necessary hydraulic components shall be enclosed in stainless steel housing. The housing shall be lined with acoustical material to reduce noise levels.

The modular generator unit shall be 39" long x 15.80" wide x 13.70" high. The reservoir shall be mounted separately. The hydraulic pump shall be driven by a chassis transmission mounted power take off (PTO).

A generator control / PTO engage switch shall be mounted on the cab instrument panel to engage the PTO and start the generator.

Rating and Capacities

15,000 watts continuous
Volts: 120/240 volts
Phase: Single 4 wire
Frequency: 60 HZ
Amperage: 125.00 amps @ 120 volts or 62.50 amps @ 240 volts
Engine speed at engagement: Below 1000 RPM
Operation range: 975 to 2500 RPM

The generator shall be tested operating at 100 percent of its name plate voltage for a minimum of two (2) hours in accordance with current NFPA 1901 standards. All ratings and capacities shall be derived utilizing current NFPA 1901 test parameters. Extreme ambient temperatures could affect generator performance.

Proposer fully complies without exception or deviation YES_____ NO_____

244. 3RD PARTY GENERATOR TESTING

The generator shall be tested at the manufacturer`s facility by an independent, third-party testing service. The conditions and testing of the generator shall be as outlined in current NFPA 1901.

The test shall include operating the generator for two (2) hours at 100% of the rated load. Power source voltage, amps, frequency shall be monitored. The prime mover`s oil pressure, water temperature, transmission temperature (if applicable), and power source hydraulic fluid temperature (if applicable) shall be monitored during testing.

The results of the test shall be recorded and provided with delivery documentation.

Proposer fully complies without exception or deviation YES_____ NO_____

245. GENERATOR AIR DEFLECTOR

An air deflector to allow for exhausting up or down draft for an Onan hydraulic generator shall be provided on the air output side of the generator. The air deflector shall be constructed of stainless steel.

Proposer fully complies without exception or deviation YES_____ NO_____

246. BREAKER PANEL

A twenty (20) place breaker box with up to twenty (20) appropriately sized ground-fault interrupter circuit breakers shall be supplied. The breaker box will include a master breaker sized according to the generator output. The breaker box will be located in the specified compartment, not to exceed 12` run of wire.

Dimensions: 20.92" high x 14.25" wide x 3.75" deep.
Location: L4 lower forward wall.

Proposer fully complies without exception or deviation YES_____ NO_____

247. WHELEN PIONEER 12V LED FLOOD LIGHT (QTY: 3)

Three (3) Whelen Pioneer Plus series 12V flood lights model PFP2 dual panel LED light heads shall be provided on a cab brow mount. The rectangular extruded light fixture with die cast end caps shall measure 14" wide x 4-5/8" high x 3" deep and have a white powder coat finish.

The light fixture shall have dual panel (4) clusters of LED lamps with molded vacuum metalized reflector that draws 12 amps and produce 14,000 usable lumens.

Locations: One (1) located center of front cab brow, One (1) located driver side over canopy area, and One (1) located officer side over canopy area.

Proposer fully complies without exception or deviation YES_____ NO_____

248. WHELEN PIONEER 120V FLOOD LIGHT (QTY: 6)

Six (6) Whelen Pioneer Plus series 120V flood lights model PFP2AC dual panel light heads shall be provided in a model PBA203 recess mount. The rectangular extruded light fixture with die cast end caps shall measure 14" wide x 4-5/8" high x 3" deep and have white powder coat finish. The light fixture shall have a dual panel (4) clusters of LED lamps with molded vacuum metalized reflector that draws 1.25 amps and produce 11,000 usable lumens.

Locations: One (1) located Forward upper body panel officer side (inboard of warning lights if equipped); One (1) located Forward upper body panel driver side (inboard of warning lights if equipped); One (1) located Rearward upper body panel officer side (inboard of warning lights if equipped); One (1) located Rearward upper body panel driver side (inboard of warning lights if equipped); One (1) located on rear body, rear facing, officer side, as high as possible (below warning and scene lights if equipped); One (1) located on rear body, rear facing, driver side, as high as possible (below warning and/or scene lights if equipped).

Proposer fully complies without exception or deviation YES_____ NO_____

249. LIGHT TOWER CL602-LED

One (1) Command Light model CL602 light tower, or approved equivalent, shall be provided. The light tower shall be a two-stage articulating device with a lighting bank on top of a second stage capable of 360 degrees continuous rotation. The light shall be elevated by electric linear actuators: one (1) actuator shall elevate the light bank, and one (1) actuator shall adjust the light bank angle from 0 to 110 degrees. The overall extended height from the base to the top pair of lights shall be 120".

The light bank shall have six (6) Whelen 150-watt output, 120V LED lights. Light heads shall be mounted in three (3) pairs, giving two (2) vertical lines of three (3) when the lights are in the upright position. Power for light bank shall be transmitted through power collecting rings thus allowing 360+ degrees rotation in either direction.

Light tower shall be controlled with a hand-held umbilical line remote control. The storage station for the remote-control unit shall be equipped with a button to activate the "Auto-Park" automatic nesting feature. The controls on the remote box shall be:

1. Three (3) switches: one (1) for each light bank.
2. One (1) light bank rotation switch.
3. One (1) switch for elevating lower stage.
4. One (1) switch for elevating upper stage.
5. One (1) indicator light to indicate when light bank is out of roof nest position.
6. One (1) indicator light to indicate when light bank is rotated to proper nest position.
7. One (1) on/off switch for the top mounted strobe.

The controls shall be located next to the breaker box. The tower base shall have a light that illuminates the envelope of motion during any movements of the light tower mast.

An amber strobe light shall be supplied with the light tower mounted at the highest position. A switch shall be provided on hand-held control head for strobe light.

The Command Light assembly shall be all aluminum construction with stainless steel shafts and bronze bushings for long life and low maintenance.

The overall size of nested light tower shall be approximately 42-3/8" wide x 73-1/4" long x 12" high and weigh approximately 310 lbs. The light tower shall be located rear cab roof mounted side to side.

Proposer fully complies without exception or deviation YES_____ NO_____

250. RECEPTACLE (QTY: 2)

Two (2) 15-amp, 110-volt NEMA L5-15 twist lock receptacles with a weatherproof cover plate shall be installed.

Locations: One (1) located driver side rear wheel well offset forward and One (1) located officer side rear wheel well offset forward.

Proposer fully complies without exception or deviation YES_____ NO_____

251. ROLLERS, CORD REEL (QTY: 2)

Two (2) stainless steel cord reel rollers (captive for cord reel mounted on reel) shall be installed and located on the reel. The rollers shall facilitate smooth removal of the electric cord.

Proposer fully complies without exception or deviation YES_____ NO_____

252. CORD REEL REWIND SWITCH (QTY: 2)

Two (2) heavy duty rubber covered electric reel rewind buttons shall be installed on wall near cord reel.

Proposer fully complies without exception or deviation YES_____ NO_____

253. ELECTRIC 120 VOLT CABLE REEL

Two (2) CMW model 6020 single electric cable reels, or approved equivalent, with electric rewind, shall be provided on the apparatus with 200` of 10/3 yellow cable. The reel shall have three (3) conductor wiring. The cable reel shall be rated for continuous duty and installed to be easily accessible for removal, cord access, maintenance, and servicing.

Locations: One cable reel shall be mounted in L2, ceiling mounted offset rearward. One cable reel shall be mounted in R2, ceiling mounted offset rearward

Proposer fully complies without exception or deviation YES_____ NO_____

254. REEL CAPACITY

The reel shall be designed to hold 110 percent of the capacity (200 ft. of 10/3) needed for the intended cable length. The wire size shall be in accordance with NEC.

Proposer fully complies without exception or deviation YES_____ NO_____

255. LABELING

A label shall be provided in a readily visible location adjacent to any permanently connected reel. It shall indicate the following:

a) Current rating
b) Current type
c) Phase
d) Voltage
e) Total cable length

Proposer fully complies without exception or deviation YES_____ NO_____

256. CUSTOMER SUPPLIED RADIO, KNOX BOX, AND THERMAL IMAGING CAMERA

The City shall supply the radio equipment during the build process to be installed at the manufacturer's facility. The following will be supplied for installation:

- (1) mobile radio to be installed in the front of the cab in the officer's area.
- (1) mobile radio to be installed in the rear work area above the work counter.
- (2) portable radio chargers wired battery hot, both installed front cab area.
- (1) KnoxBox to be installed in the front cab area.
- (1) Thermal Imaging Camera charging base to be installed at a location to be decided.

Proposer fully complies without exception or deviation YES_____ NO_____

257. FIRECOM SYSTEM

There shall be a Firecom system installed. This system shall have four (4) stations: two (2) wired positions in the front of the cab and two (2) wired located in the rear command area. There shall be four (4) radio capable headsets with hanger brackets supplied. There shall be a radio interconnect cable for the fire department supplied radio. Transmit and intercom capable in all locations.

Proposer fully complies without exception or deviation YES_____ NO_____

258. DOT REQUIRED DRIVE AWAY KIT

Three (3) triangular warning reflectors with carrying case shall be supplied to satisfy the DOT requirement.

Proposer fully complies without exception or deviation YES_____ NO_____

259. TRANSMISSION DIAGNOSTIC KIT

Allison transmission diagnostics kit DOCTM shall be provided with the unit. It shall include the following:

- User selected views of multiple transmission parameters

- View Active and Historical Diagnostic Trouble Codes (DTCs)
- Graphical instrument panel view of transmission parameters
- Strip chart function
- User configurable Snapshot function
- User configurable Print function
- Code driven hotlinks to embedded 1000, 2000, 3000, 4000 Product Families (including Allison 4th Generation Controls), 5610, 6610, 8610, 9610, 9810 Series Transmissions, 5000, 6000, 8000, 9000 Series Transmissions and MT(B)600 Series, CL(B)T, V, HT(B)700 Series Transmissions

Proposer fully complies without exception or deviation YES_____ NO_____

260. ELECTRICAL SYSTEM DIAGNOSTIC KIT

A diagnostic kit shall be provided for the V-MUX electrical system. The transceiver tool used to interface to the V-MUX system shall be USB based and shall function on most Windows and XP systems.

The kit shall include:

Carrying case
One on one cable for 4x12 and 16x0 nodes
One on one cable for Hercules node
Deustch wire removal tool, 14-16-gauge wire (blue)
Deutsch wire removal tool, 18-20 gauge wire (red)
Cable, RS232 9 pin serial pc to trans.
Cable, RS485 trans. to V-MUX
Cable, troubleshoot Hercules outputs, (red)
Cable, troubleshoot mini node outputs (black)
USB Downloader
Downloader manual, PDF
Diagnostics manual, PDF

Proposer fully complies without exception or deviation YES_____ NO_____

261. CAB PAINT

The apparatus cab shall be painted Sikkens FLNA3225E-1 Red. The paint process shall meet or exceed current state regulations concerning paint operations. Pollution control shall include measures to protect the atmosphere, water, and soil. Contractor shall, upon demand, provide evidence that the manufacturing facility is in compliance with State EPA rules and regulations.

The aluminum cab exterior shall have no mounted components prior to painting to assure full coverage of metal treatments and paint to the exterior surfaces. Cab doors and any hinged smooth-plate compartment doors shall be painted separately to assure proper paint coverage on cab, door jambs, and door edges.

Paint process shall feature Sikkens high solid LV products and be performed in the following steps:

- Corrosion Prevention - all aluminum surfaces shall be pre-treated with the Alodine 5700 conversion coating to provide superior corrosion resistance and excellent adhesion of the base coat.
- Sikkens Sealer/Primer LV - acrylic urethane sealer/primer shall be applied to guarantee excellent gloss hold-out, chip resistance, and a uniform base color.
- Sikkens High Solid LVBT650 (Base coat) - a lead-free, chromate-free high solid acrylic urethane base coat shall be applied, providing excellent coverage and durability. A minimum of two (2) coats shall be applied.
- Sikkens High Solid LVBT650 (Clear coat) - high solid LV clear coat shall be applied as the final step in order to ensure full gloss and color retention and durability. A minimum of two (2) coats shall be applied.

Any location where aluminum is penetrated after painting, for the purpose of mounting steps, hand rails, doors, lights, or other specified components shall be treated at the point of penetration with a corrosion inhibiting pre-treatment (ECK Corrosion Control). The pre-treatment shall be applied to the aluminum sheet metal or aluminum extrusions in all locations where the aluminum has been penetrated. All hardware used in mounting steps, hand rails, doors, lights, or other specified components shall be individually treated with the corrosion inhibiting pre-treatment.

After the paint process is complete, the gloss rating of the unit shall be tested with a 20 degree gloss meter. Coating thickness shall be measured with a digital MIL gauge and the orange peel with a digital wave scan device.

Proposer fully complies without exception or deviation YES_____ NO_____

262. <u>BODY PAINT</u>

The apparatus body shall be painted Sikkens FLNA3225E-1 Red. The paint process shall meet or exceed current state regulations concerning paint operations. Pollution control shall include measures to protect the atmosphere, water, and soil. Contractor shall, upon demand, provide evidence that the manufacturing facility is in compliance with State EPA rules and regulations.

The aluminum body exterior shall have no mounted components prior to painting to assure full coverage of metal treatments and paint to the exterior surfaces of the body. Any vertically or horizontally hinged smooth-plate compartment doors shall be painted separately to assure proper paint coverage on body, door jambs, and door edges.

Paint process shall feature Sikkens high solid LV products and be performed in the following steps:

- Corrosion Prevention - all aluminum surfaces shall be pre-treated with the Alodine 5700 conversion coating to provide superior corrosion resistance and excellent adhesion of the base coat.
- Sikkens Sealer/Primer LV - acrylic urethane sealer/primer shall be applied to guarantee excellent gloss hold-out, chip resistance, and a uniform base color.
- Sikkens High Solid LVBT650 (Base coat) - a lead-free, chromate-free high solid acrylic urethane base coat shall be applied, providing excellent coverage and durability. A minimum of two (2) coats shall be applied.
- Sikkens High Solid LVBT650 (Clear coat) - high solid LV clear coat shall be applied as the final step in order to ensure full gloss and color retention and durability. A minimum of two (2) coats shall be applied.

Any location where aluminum is penetrated after painting, for the purpose of mounting steps, hand rails, doors, lights, or other specified components shall be treated at the point of penetration with a corrosion inhibiting pre-treatment (ECK Corrosion Control). The pre-treatment shall be applied to the aluminum sheet metal or aluminum extrusions in all locations where the aluminum has been penetrated. All hardware used in mounting steps, hand rails, doors, lights, or other specified components shall be individually treated with the corrosion inhibiting pre-treatment.

After the paint process is complete, the gloss rating of the unit shall be tested with a 20 degree gloss meter. Coating thickness shall be measured with a digital MIL gauge and the orange peel with a digital wave scan device.

Proposer fully complies without exception or deviation YES_____ NO_____

263. AIR CONDITIONING CONDENSER(S)

The air conditioning condenser cover(s) mounted on the roof of the cab shall be painted job color.

Proposer fully complies without exception or deviation YES_____ NO_____

264. CAB INTERIOR PAINT

The interior of the cab shall be painted Zolatone gray #20-64. Prior to painting, all exposed interior metal surfaces shall be pretreated using a corrosion prevention system.

Proposer fully complies without exception or deviation YES_____ NO_____

265. 3M LETTER (QTY: 78)

(78) 3M letters 6" tall shall be applied. The color shall be 3M Series 7125, Satin Gold 131, Pantone 872C. The letters shall be outlined in black.

For letter details, reference graphics layout drawing supplied in this document.

Proposer fully complies without exception or deviation YES_____ NO_____

266. 3M LETTER (QTY: 27)

(27) 3M letters 4" tall shall be applied. The color shall be 3M Series 7125, Satin Gold 131, Pantone 872C. The letters shall be outlined in black.

For letter details, reference graphics layout drawing supplied in this document.

Proposer fully complies without exception or deviation YES_____ NO_____

267. SCOTCHLITE NUMBERS (QTY: 4)

(4) Scotchlite numbers 12" tall shall be applied. The color shall be white. The numbers shall be outlined in black.

For letter details, reference graphics layout drawing supplied in this document.

Proposer fully complies without exception or deviation YES_____ NO_____

268. SCOTCHLITE NUMBERS (QTY: 4)

(4) Scotchlite numbers 6" tall shall be applied. The color shall be white. The numbers shall be outlined in black.

For letter details, reference graphics layout drawing supplied in this document.
Proposer fully complies without exception or deviation YES_____ NO_____

269. SCOTCHLITE NUMBERS (QTY: 10)

(10) Scotchlite numbers 3" tall shall be applied. The color shall be black.

For letter details, reference graphics layout drawing supplied in this document.

Proposer fully complies without exception or deviation YES_____ NO_____

270. CAB AND BODY STRIPE

A single White Scotchlite stripe, 4” in width shall be installed on the cab and body. The stripe shall have a hockey style design. The stripe shall be NFPA compliant. Reference graphics layout drawing supplied in this document.

Proposer fully complies without exception or deviation YES_____ NO_____

271. CAB AND BODY STRIPE (QTY: 2)

Two (2) additional White Scotchlite stripes, 1” in width shall be installed on the cab and body, above and below the 4” stripe. The stripe shall be NFPA compliant. Reference graphics layout drawing supplied in this document.

Proposer fully complies without exception or deviation YES_____ NO_____

272. REAR BODY 3M DIAMOND GRADE STRIPING

Chevron style 3M Diamond Grade striping shall be provided on the rear of the apparatus. The stripes shall consist of 6" Red/Fluorescent Yellow Green alternating stripes in an "A" pattern. The striping shall be located on the rear facing extrusions, panels and doors inboard and outboard of the beavertails if applicable.

Proposer fully complies without exception or deviation YES_____ NO_____

273. DESIGNATED STANDING / WALKING AREA INDICATION

1" wide yellow perimeter marking consisting of individual Reflexite diamonds shall be applied to indicate the outside edge of designated standing and walking areas above 48" from the ground in compliance with 2016 NFPA 1901. Steps, ladders, and areas with a railing or structure at least 12" high are excluded from this requirement.

Proposer fully complies without exception or deviation YES_____ NO_____

274. LOGO (QTY: 5)

Five (5) Logos shall be installed as specified. For logo details, reference graphics layout drawing supplied in this document.

Proposer fully complies without exception or deviation YES_____ NO_____

275. WARRANTY / STANDARD & EXTENDED AT A MININUM

There shall be a five (5) year mechanical parts and labor warranty, excluding wear items such as light bulbs, wiper blades, brake pads, etc., provided with the apparatus. The apparatus shall be free of defects in material and workmanship for a warranty period of five (5) years after the date on which the apparatus is first delivered to the original purchaser.

Each manufacturer shall supply on company letterhead, **as part of their proposal package**, a copy of the detailed warranty or warranties that they propose to provide, and in no case shall the custom chassis warranty be less than five (5) years. It shall include as the minimum the a/c, defroster and heater systems, spring suspension

components, steering gears, gauge instrumentation, seats, instrument consoles, and a $10,000 collateral damage warranty on the transmission cooler. The electrical system, cab structural, engine, transmission, frame and cross members are to be covered under separate warranties detailed elsewhere in these specifications.

Proposer fully complies without exception or deviation YES_____ NO_____

276. LIFETIME FRAME WARRANTY

The apparatus manufacturer shall provide a full lifetime frame structural warranty. This warranty shall cover all apparatus manufacturer designed frame, frame members, and cross-members against defects in materials or workmanship for the lifetime of the covered apparatus. **A copy of the warranty document shall be provided with the proposal. Frame warranties that do not cover cross-members for the life of the vehicle shall not be acceptable.**

Proposer fully complies without exception or deviation YES_____ NO_____

277. 10 YEAR 100,000 MILE STRUCTURAL WARRANTY

The apparatus manufacturer shall provide a comprehensive 10 year/100,000 mile structural warranty. This warranty shall cover all structural components of the cab and/or body manufactured by the apparatus manufacturer against defects in materials or workmanship for 10 years or 100,000 miles, whichever occurs first. Excluded from this warranty are all hardware, mechanical items, electrical items, or paint finishes. **A copy of the warranty document shall be provided with the proposal.**

Proposer fully complies without exception or deviation YES_____ NO_____

278. 10 YEAR PAINT AND CORROSION WARRANTY

The apparatus manufacturer shall provide a 10-year limited paint and corrosion perforation warranty. This warranty shall cover paint peeling, cracking, blistering, and corrosion provided the vehicle is used in a normal and reasonable manner.

The paint shall be prorated for 10 years as follows:

Topcoat & Appearance:
Gloss, Color Retention, Cracking

0 to 72 months	100%
73 to 120 months	50%

Coating System, Adhesion & Corrosion:
Includes Dissimilar metal corrosion, Flaking, Blistering, Bubbling

0 to 36 months	100%
37 to 84 months	50%
85 to 120 months	25%

Corrosion perforation shall be covered 100% for 10 years. Corrosion perforation is defined as complete penetration through the exterior metal of the apparatus.

The warranty period shall begin upon delivery of the apparatus to the original user-purchaser. **A copy of the warranty document shall be provided with the proposal.**

UV paint fade shall be covered in a separate warranty supplied by Akzo Nobel (Sikkens) and shall be for a minimum of 10 years.

Proposer fully complies without exception or deviation YES_____ NO_____

279. 25 YEAR FRAME RAIL CORROSION WARRANTY

The chassis manufacturer shall provide a 25-year corrosion warranty on the chassis frame rails. This warranty shall cover the chassis frame rails, including frame rail liners (if equipped), for a period of 25 years after the date on which the vehicle is delivered to the original purchaser. **A copy of the warranty document shall be provided with the proposal.** Please refer to warranty document for complete details and exclusions.

Proposer fully complies without exception or deviation YES_____ NO_____

280. APPROVAL DRAWINGS

A general arrangement drawing depicting the vehicle`s appearance shall be provided. The drawing shall consist of left side, right side, front and rear elevation views. The City shall provide signed approval of the drawing prior to order release to production. If a pre-build conference is held at the factory, the drawing shall be available for the meeting.

Proposer fully complies without exception or deviation YES_____ NO_____

281. APPROVAL DRAWINGS - DASH PANEL LAYOUT

A detailed large-scale approval drawing of the dash panel layout shall be provided to the City for approval.

Proposer fully complies without exception or deviation YES_____ NO_____

282. ELECTRICAL DRAWINGS

Two (2) sets of "AS BUILT" electrical drawings shall be provided specific to this vehicle.

Builder shall supply full color 34” wide x 24” high (minimum) blue print style AS BUILT, as well as an electronic copy of complete continuous electrical schematics.

The schematics shall show all circuits in a continuous manner from the front of the apparatus to the rear, and show the entire apparatus on one sheet. All termination and junction points/connections shall also be shown.

Proposer fully complies without exception or deviation YES_____ NO_____

283. ELECTRONIC MANUALS

Two (2) copies of all operator, service, and parts manuals MUST be supplied at the time of delivery in digital format -**NO EXCEPTIONS!** The electronic manuals shall include the following information:

- Operating Instructions, descriptions, specifications, and ratings of the cab, chassis, body, installed components, and auxiliary systems.
- Warnings and cautions pertaining to the operation and maintenance of the fire apparatus and firefighting systems.
- Charts, tables, checklists, and illustrations relating to lubrication, cleaning, troubleshooting, diagnostics, and inspections.
- Instructions regarding the frequency and procedure for recommended maintenance.
- Maintenance instructions for the repair and replacement of installed components.
- Parts listing with descriptions and illustrations for identification.
- Warranty descriptions and coverage.
- Apparatus specific Multiplex Report.

The electronic document shall incorporate a navigation page with electronic links to the operator`s manual, service manual, parts manual, and warranty information, as well as instructions on how to use the manual. Each copy shall include a table of contents with links to the specified documents or illustrations.

The electronic document must be formatted in such a manner as to allow not only the printing of the entire manual, but to also the cutting, pasting, or copying of individual documents to other electronic media, such as electronic mail, memos, and the like.

A find feature shall be included to allow for searches by text or by part number.

These electronic manuals shall be accessible from any computer operating system capable of supporting portable document format (PDF). Permanent copies of all pertinent data shall be kept on file at both the local dealership and at the manufacturer`s location.

NOTE: Engine overhaul, engine parts, transmission overhaul, and transmission parts manuals are not included.

Proposer fully complies without exception or deviation YES_____ NO_____

284. FIRE APPARATUS SAFETY GUIDE

Fire Apparatus Safety Guide published by FAMA, latest edition, shall be provided. This safety manual is intended to point out some of the basic safety situations that may be encountered during the normal operation and maintenance of a fire apparatus and to suggest possible ways of dealing with these situations.

Proposer fully complies without exception or deviation YES_____ NO_____

285. INSPECTION TRIPS

There shall be three (3) inspection trips for (6) six representatives of the Knoxville Fire Department at the facility where the apparatus is being constructed. The inspection trips shall be completed prior to delivery of the apparatus. Factory and sales representatives shall be available at the time of inspection. Cost of transportation, lodging, and meals shall be the responsibility of the winning proposer.

After each inspection trip (pre-build, midpoint, final inspection), any changes made to the specifications (no matter how minor) are to be itemized, in writing, with costs, and sent to Fleet Services and the Fire Department for approval. These change orders shall be sent within three (3) days of the trip return.

IMPORTANT: No changes will be made until Fleet and Fire Department personnel have signed and returned the approval to the vendor/manufacturer. Any changes made without these signed approvals will be unauthorized.

Proposer fully complies without exception or deviation YES_____ NO_____

286. REQUIRED DELIVERY DOCUMENTS

The Manufacturer's Statement of Origin (MSO) must be delivered with apparatus. Payment will NOT be issued until actual MSO is received. **NO EXCEPTION.**

Proposer MUST fully comply without exception.

287. GRAPHICS DRAWING

See drawing attached to this RFP.

Proposer fully complies without exception or deviation YES_____ NO_____

VI. Contract Requirements

Submitting entities, if selected, must be willing to sign a contract with the City which will

include certain provisions, among which are the following:

6.1 Contract Documents. The contract shall consist of (1) the RFP; (2) the proposal submitted by the contractor to this RFP; and (3) the contract. In the event of a discrepancy between the contract, the RFP and the submitted proposal, the terms that provide the greater benefit to the City and/or impose the greater obligation to the contractor will prevail.

6.2 Administration. The contract will be administered by the City of Knoxville Fleet Department.

6.3 Invoices. Invoices for services will be submitted to the City in accordance with the contract terms.

6.4 Independent Contractor. The relationship of contractor to the City will be that of independent contractor. The contractor will be solely and entirely responsible for its acts and for the acts of its agents, employees, servants and subcontractors done during the performance of the contract. All services performed by the contractor shall be provided in an independent contractor capacity and not in the capacity of officers, agents, or employees of the City.

6.5 Assignment. The contractor shall not assign or transfer any interest in this contract without prior written consent of the City of Knoxville.

6.6 Indemnification and Hold Harmless. The successful proposer will be required to sign a contract with the City which contains the following indemnification clause. This indemnification clause will not be altered in any way. Failure to agree with this indemnification clause in the contract may result in the City moving to the next responsible responsive proposer.

Contractor shall defend, indemnify and hold harmless the City, its officers, employees and agents from any and all liabilities which may accrue against the City, its officers, employees and agents or any third party for any and all lawsuits, claims, demands, losses or damages alleged to have arisen from an act or omission of Contractor in performance of this Agreement or from Contractor's failure to perform this Agreement using ordinary care and skill, except where such injury, damage, or loss was caused by the sole negligence of the City, its agents or employees.

Contractor shall save, indemnify and hold the City harmless from the cost of the defense of any claim, demand, suit or cause of action made or brought against the City alleging liability referenced above, including, but not limited to, costs, fees, attorney fees, and other expenses of any kind whatsoever arising in connection with the defense of the City; and Contractor shall assume and take over the defense of the City in any such claim, demand, suit, or cause of action upon written notice and demand for same by the City. Contractor will have the right to defend the City with counsel of its choice that is satisfactory to the City, and the City will provide reasonable cooperation in the defense as Contractor may request. Contractor will not consent to the entry of any judgment or enter into any settlement with respect to an indemnified claim without the prior written consent of the City, such consent not to be unreasonably withheld or delayed. The City shall have the right to participate in the defense against the indemnified claims with counsel of its choice at its own expense.

Contractor shall save, indemnify and hold City harmless and pay judgments that shall be rendered in any such actions, suits, claims or demands against City alleging liability referenced above.

The indemnification and hold harmless provisions of this Agreement shall survive termination of the Agreement.

6.7 Termination. The City may terminate this Agreement at any time, with or without cause, by written notice of termination to the Contractor.

If the City terminates this Agreement, and such termination is not a result of a default by the Contractor, the Contractor shall be entitled to receive as its sole and exclusive remedy the following amounts from the City, and the City shall have no further or other obligations to the Contractor: the amount due to the Contractor for work executed through the date of termination, not including any future fees, profits, or other compensation or payments which the Contractor would have been entitled to receive if this Agreement had not been terminated.

The City may, by written notice of default to the Contractor, terminate the whole or any part of this Agreement if the Contractor fails to perform any provisions of this Agreement and does not cure such failure within a period of ten (10) days (or such longer period as the Purchasing Agent may authorize in writing) after receipt of said notice from the Purchasing Agent specifying such failure. If this Agreement is terminated in whole or in part for default, the City may procure, upon such terms and in such manner as the Purchasing Agent may deem appropriate, supplies or services similar to those terminated.

6.8 Insurance. When applicable and prior to the commencement of the contract, contractor must, at its sole expense, obtain and maintain in full force and effect for the duration of the Agreement and any extension hereof at least the following types and amounts of insurance for claims which may arise from or in connection with this Agreement. Contractor shall furnish the City of Knoxville with properly executed certificates of insurance which shall clearly evidence all insurance required by the City. All insurance must be underwritten by insurers with an A.M. Best rating of A-VIII or better. Such insurance shall be at a minimum the following:

A. **Commercial General Liability Insurance**; occurrence version commercial general liability insurance, and if necessary umbrella liability insurance, with a limit of not less than two million dollars each occurrence for bodily injury, personal injury, property damage, and products and completed operations. If such insurance contains a general aggregate limit, it shall apply separately to the work/location in this Agreement or be no less than $3,000,000.

Such insurance shall:

(a.) Contain or be endorsed to contain a provision that includes the City, its officials, officers, employees, and volunteers as additional insureds with respect to liability arising out of work or operations performed by or on behalf of the Contractor including materials, parts, or equipment furnished in connection with such work or operations. The coverage shall contain no special limitations on the

scope of its protection afforded to the above-listed insureds. Proof of additional insured status up to and including copies of endorsements and/or policy wording will be required.

(b.) For any claims related to this project, Contractor's insurance coverage shall be primary insurance as respects the City, its officers, officials, officers, employees, and volunteers. Any insurance or self-insurance programs covering the City, its officials, officers, employees, and volunteers shall be excess of Contractor's insurance and shall not contribute with it.

(c.) At the sole discretion of the City, dedicated limits of liability for this specific project may be required.

B. **Automobile Liability Insurance**; including vehicles owned, hired, and non-owned, with a combined single limit of not less than $1,000,000 each accident. Such insurance shall include coverage for loading and unloading hazards. Insurance shall contain or be endorsed to contain a provision that includes the City, its officials, officers, employees, and volunteers as additional insureds with respect to liability arising out of automobiles owned, leased, hired, or borrowed by or on behalf of Contractor.

C. **Workers' Compensation Insurance.** Contractor shall maintain workers' compensation insurance with statutory limits as required by the State of Tennessee or other applicable laws and employers' liability insurance with limits of not less than $500,000. Contractor shall require each of its subcontractors to provide Workers' Compensation for all of the latter's employees to be engaged in such work unless such employees are covered by Contractor's workers' compensation insurance coverage.

D. **Other Insurance Requirements.** Contractor shall:

- Prior to commencement of services, furnish the City with original certificates and amendatory endorsements effecting coverage required by this section and provide that such insurance shall not be cancelled, allowed to expire, or be materially reduced in coverage except on 30 days' prior written notice to the City Attorney of Knoxville; P.O. Box 1631; Knoxville, Tennessee 37901. Proof of policy provisions regarding notice of cancellation will be required.

- Upon the City's request, provide certified copies of endorsements and policies if requested by the City in lieu of or in addition to certificates of insurance. Copies of policies will only be requested when contracts are deemed to be extremely or uniquely hazardous, include a dollar amount that is significant to the overall budget of the City or a City Department, or the coverage(s) may not follow standard insurance forms. A policy will only be requested after the City's Risk Manager has reviewed the contract and proof of coverage has been provided. Should the certificate of insurance refer to specific coverage wording or endorsements(s), proof of such policy wording or endorsement(s) will be required.

- Replace certificates, policies, and endorsements for any such insurance expiring prior to completion of services.

- Maintain such insurance from the time services commence until services are completed. Failure to maintain or renew coverage or to provide evidence of renewal may be treated by the City as a material breach of contract.

- If Contractor cannot procure insurance through an insurer having an A.M. Best rating of A-VIII, Contractor may, in the alternative, place such insurance with insurer licensed to do business in Tennessee and having A.M. Best Company ratings of no less than A. Modification of this standard may be considered upon appeal to the City Law Director.

- Require all subcontractors to maintain during the term of the Agreement Commercial General Liability insurance, Business Automobile Liability insurance, and Workers' Compensation/Employer's Liability insurance (unless subcontractor's employees are covered by Contractor's insurance) in the same manner as specified for Contractor. Contractor shall furnish subcontractors' certificates of insurance to the City without expense immediately upon request.

- Large Deductibles; Self-Insured Retentions. Any deductibles and/or self-insured retentions greater than $50,000 must be disclosed to and approved by the City of Knoxville prior to the commencement of services. Use of large deductibles and/or self-insured retentions may require proof of financial ability as determined by the City.

- Waiver of Subrogation Required. The insurer shall agree to waive all rights of subrogation against the City, its officers, officials, and employees for losses arising from work performed by Contractor for the City. Proof of waiver of subrogation up to and including copies of endorsements and/or policy wording will be required.

- Occurrence Basis Requirement. All general liability policies must be written on an occurrence basis, unless the Risk Manager determines that a claims made basis is reasonable in the specific circumstance. Use of policies written on a claims made basis must be approved by the City. Risk Manager and retroactive dates and/or continuation dates must be provided to the City prior to commencement of any work performed. Professional Liability and Environmental Liability (Pollution Coverage) are most commonly written on a claims made basis and are generally acceptable in that form.

6.9 Ethical Standards. Attention of all firms is directed to the following provisions contained in the Code of the City of Knoxville: Chapter 24, Article II, Section 24-33 entitled "Debts owed by persons receiving payments other than Salary;" Chapter 2, Article VIII, Division 11. the Contractor hereby takes notice of and affirms that it is not in violation of, or has not participated, and will not participate, in the violation of any of the following ethical standards prescribed by the Knoxville City Code:

A. Section 2-1048. Conflict of Interest.

It shall be unlawful for any employee of the City to participate, directly or indirectly, through decision, approval, disapproval, recommendation, preparation of any part of a purchase request, influencing the content of any specification or purchase standard, rendering of advice, investigation, auditing or otherwise, in any proceeding or application, request for ruling or other determination, claim or controversy or other matter pertaining to any contract or subcontract and any solicitation or proposal therefore, where to the employee's knowledge there is a financial interest possessed by:

(1) the employee or the employee's immediate family;

(2) A business other than a public agency in which the employee or member of the employee's immediate family serves as an officer, director, trustee, partner or employee; or

(3) Any person or business with whom the employee or a member of the employee's immediate family is negotiating or has an arrangement concerning prospective employment.

B. Section 2-1049. Receipt of Benefits from City Contracts by Council Members, Employees and Officers of the City.

It shall be unlawful for any member of council, member of the board of education, officer or employee of the city to have or hold any interest in the profits or emoluments of any contract, job, work or service, either by himself or by another, directly or indirectly. Any such contract for a job, work or service for the city in which any member of council, member of the board of education, officer or employee has or holds any such interest is void.

C. Section 2-1050. Gratuities and Kickbacks Prohibited.

It is unlawful for any person to offer, give or agree to give to any person, while a City employee, or for any person, while a City employee, to solicit, demand, accept or agree to accept from another person, anything of a pecuniary value for or because of:

(1) An official action taken, or to be taken, or which could be taken;

(2) A legal duty performed, or to be performed, or which could be performed; or

(3) A legal duty violated, or to be violated, or which could be violated by such person while a City employee.

Anything of nominal value shall be presumed not to constitute a gratuity under this section.

Kickbacks. It is unlawful for any payment, gratuity, or benefit to be made by or on behalf of a subcontractor or any person associated therewith as an inducement for the award of a subcontract or order.

D. Section 2-1051. Covenant Relating to Contingent Fees.

(a) Representation of Contractor. Every person, before being awarded a contract in excess of ten thousand dollars ($10,000.00) with the City, shall represent that no other person has been retained to solicit or secure the contract with the City upon an agreement or understanding for a commission, percentage, brokerage or contingent fee, except for bona fide employees or bona fide established commercial, selling agencies maintained by the person so representing for the purpose of securing business.

(b) Intentional Violation Unlawful. The intentional violation of the representation specified in subsection (a) of this section is unlawful.

E. Section 2-1052. Restrictions on Employment of Present and Former City Employees. Contemporaneous employment prohibited. It shall be unlawful for any City employee to become or be, while such employee, an employee of any party contracting with the particular department or agency in which the person is employed.

For violations of the ethical standards outlined in the Knoxville City Code, the City has the following remedies:

(1) Oral or written warnings or reprimands;
(2) Cancellation of transactions; and
(3) Suspension or debarment from being a Contractor or subcontractor under City or City-funded contracts.

The value of anything transferred in violation of these ethical standards shall be recoverable by the City from such person. All procedures under this section shall be in accord with due process requirements, included but not limited to a right to notice and hearing prior to imposition of any cancellation, suspension or debarment from being a Contractor or subcontractor under a City contract.

6.10 Firms must comply with the President's Executive Order No. 11246 and 11375 which prohibit discrimination in employment regarding race, color, religion, sex or national origin. Firms must also comply with Title VI of the Civil Rights Act of 1964, Copeland Anti-Kick Back Act, the Contract Work Hours and Safety Standards Act, Section 402 of the Vietnam Veterans Adjustment Act of 1974, Section 503 of the Rehabilitation Act of 1973, and the Americans with Disabilities Act of 1990, all of which are herein incorporated by reference.

6.11 Firms shall give consideration to the inclusion of minority firms or individuals in this project, and shall advise the City in this proposal of their efforts to do so.

6.12 Firms shall give consideration to the use of environmentally sustainable best practices, and shall advise the City in this submittal of qualifications of their efforts to do so.

6.13 Federal, State, and Local Requirements. Each submitting entity is responsible for full compliance with all laws, rules and regulations which may be applicable.

6.14 Licenses. Before a contract is signed by the City, the submitting entity, if selected, **must** provide the City Purchasing Division with a copy of its valid business license **or** with an affidavit explaining why it is exempt from the business licensure requirements of the City or county in which it is headquartered. If a contract is signed, the contractor's business license shall be kept current throughout the duration of the contract, and the contractor shall inform the City of changes in its business name or location. The contractor must be a licensed professional as required by the state of Tennessee, see T.C.A. Sections 62-2-101 et. seq., for any services in this contract requiring such licensure.

6.15 Funding. The City's performance and obligation to pay under this contract is subject to funding contingent upon an annual appropriation.

6.16 Governing Law and Venue. This Agreement shall be governed by and construed in accordance with the substantive laws of the State of Tennessee and its conflict of laws provisions. Venue for any action arising between the City and the Contractor from the Agreement shall lie in Knox County, Tennessee.

6.17 Subcontracts to the Agreement. Contractor shall not enter into a subcontract for any of the services performed under this Agreement without obtaining the prior written approval of the City.

6.18 Amendments. This Agreement may be modified only by a written amendment or addendum that has been executed and approved by the appropriate officials shown on the signature page of the Agreement.

6.19 Captions. The captions appearing in the Agreement are for convenience only and are not a part of the Agreement; they do not in any way limit or amplify the provisions of the Agreement.

6.20 Severability. If any provision of the Agreement is determined to be unenforceable or invalid, such determination shall not affect the validity of the other provisions contained in the Agreement. Failure to enforce any provision of the Agreement does not affect the rights of the parties to enforce such provision in another circumstance, nor does it affect the rights of the parties to enforce any other provision of this Agreement at any time.

6.21 No Benefit for Third Parties. The services to be performed by the Contractor pursuant to the Agreement with the City are intended solely for the benefit of the City, and no benefit is conferred hereby, nor is any contractual relationship established herewith, upon or with any person or entity not a party to the Agreement. No such person or entity shall be entitled to rely on the Contractor's performance of its services hereunder, and no right to assert a claim against the City or the Contractor, its officers, employees, agents, or contractors shall accrue to the Contractor or to any subcontractors, independently retained professional consultant, supplier, fabricator, manufacturer, lender, tenant, insurer, surety, or any other third party as a result of this Agreement or the performance or non-performance of the Contractor's services hereunder.

6.22 Non-Reliance of Parties. Parties explicitly agree that they have not relied upon any earlier or outside representations other than what has been included in the Agreement. Furthermore, neither party has been induced to enter into this Agreement by anything other than the specific written terms set forth herein.

6.23 Force Majeure. Neither party shall be liable to the other for any delay or failure to perform any of the services or obligations set forth in this Agreement due to causes beyond its reasonable control, and performance times shall be considered extended for a period of time equivalent to the time lost because of such delay plus a reasonable period of time to allow the parties to recommence performance of their respective obligations hereunder. Should a circumstance of force majeure last more than ninety (90) days, either party may by written notice

to the other terminate this Agreement. The term "force majeure" as used herein shall means the following: acts of God; strikes, lockouts or other industrial disturbances; acts of public enemies; orders or restraints of any kind of the government of the United States or of the State or any of their departments, agencies or officials, or any civil or military authority; insurrections, riots, landslides, earthquakes, fires, storms, tornadoes, droughts, floods, explosions, breakage or accident to machinery, transmission pipes or canals; or any other cause or event not reasonably within the control of either party.

6.24 EEO/AA. The City of Knoxville is an EE/AA/Title VI/Section 504/ADA/ADEA Employer.

6.25 By submitting a proposal, the submitting entity agrees to all terms and conditions established in this RFP, including its contract requirements.

VII. Instructions to Submitting Entities

All submissions of proposals shall comply with the following instructions. These instructions ensure that (1) submissions contain the information and documents required by the City RFP and (2) the submissions have a degree of uniformity to facilitate evaluation.

7.1 General

Submission forms and RFP documentation may be obtained on or after April 25, 2018, at no charge from:

City of Knoxville Purchasing Division
City/County Building
400 Main Street, Room 667
Knoxville, Tennessee 37902

between 8:30 a.m. and 4:30 p.m. (Eastern Time), Monday through Friday or by calling 865/215-2070. Forms and RFP information are also available on the City web site at www.knoxvilletn.gov/purchasing where it can be read or printed using Adobe Acrobat Reader software.

7.2 Submission Information

Submit only one (1) proposal that meets or exceeds the minimum specifications herewith. Proposals shall include six (6) hard copies (one original and five duplicates—**mark the original as such**) and one electronic copy of the proposal (.pdf format on CD only—**mark the storage device with the company name**); the electronic version shall be an exact duplicate of the original, and the electronic version will be the official document exhibited in the contract. **Electronic submissions must be included with the sealed submissions; do not email your submission.**

IMPORTANT NOTE: A minimum of one of the submitted proposals must bear an original signature, signed in ink (duplicated signatures substituted for original ink

signatures may result in rejection of the proposals). This document is the official, original submission; the required copies may have copied signatures. The signature must be entered above the typed or printed name and title of the signer. All proposals must be signed by an officer of the company authorized to bind the firm to a contract.

Proposals will be received until 11:00:00 a.m. (Eastern Time) on May 23, 2018. Each proposal must be submitted in a sealed envelope addressed to:

City of Knoxville Purchasing Division
City/County Building
400 Main Street, Room 667
Knoxville, TN 37902

IMPORTANT NOTE: Each mailing envelope or carton containing a proposal or multiple copies of the proposal must be sealed and plainly marked on the outside "HAZMAT Truck." Proposers are reminded that the Purchasing Division receives many proposals and proposals for any number of solicitations; **unlabeled submissions are extremely difficult to match to their appropriate solicitations and therefore may be rejected.**

Any proposals received after the time and date on the cover sheet will not be considered. It shall be the sole responsibility of the submitting entity to have the proposal delivered to the City of Knoxville Purchasing Division on or before that date.

Late proposals will not be considered. Proposals that arrive late due to the fault of United States Postal Service, United Parcel Service, DHL, FEDEX, any delivery/courier service, or any other carrier of any sort are still considered late and shall not be accepted by the City. Such proposals shall remain unopened and will be returned to the submitting entity upon request.

7.3 Format

The City is committed to reducing waste. Submissions of qualifications must be typed on 8.5 x 11 inch wide white paper, printed on both sides. DO NOT BIND the document; instead, staple or binder clip the submission together and place in a sealed envelope (see Paragraph 7.2). Pages must be consecutively numbered. A table of contents must be included in the proposal immediately after the title page, and each of the following numbered sections must be tabbed.

Proposals shall be structured as follows. Numbered items listed below should have a numbered tab page:

1. Title Page
2. Table of Contents
3. Submission Forms:
   A. Form S-1
   B. Non-Collusion Affidavit
   C. No Contact/No Advocacy Affidavit
   D. Iran Divestment Act Certification of Noninclusion
   E. Diversity Business Enterprise Program
   F. All REQUIRED Warranty Documents

4. Body of Proposal: Information which addresses the scope of service provided and the evaluation criteria listed below.

NOTE: All required submission forms may be found in this solicitation document.

7.4 Evaluation of Proposals

All qualified submissions received by the deadline will be analyzed by the Evaluation Committee according to the criteria outlined in these specifications. Failure to comply with the provisions of the RFP may cause any proposal to be ineligible for evaluation. Each submittal of proposals will be initially analyzed and judged according to the evaluation criteria below. The maximum score is 100 points.

The City reserves full discretion to determine the capability of proposing entities. Proposers, if asked, will provide, in a timely manner, any and all information that the City deems necessary to make such a decision. In addition to materials provided in the written responses to this RFP, the Committee may request additional material, information, references, a site visit, or a live test demonstration from the submitting entity or others.

The Evaluation Committee may or may not decide to interview any or all proposing entities at a time and date determined by the City in order to address questions and more fully ascertain how the solution to this project satisfies the evaluation criteria. Firms and/or teams responding to this Request for Proposals shall be available for interviews with the Evaluation Committee. Discussions may be conducted with responsible submitting entities for purposes of clarification to assure full understanding of and conformance to the RFP requirements. Selection shall be based on the firms' qualifications applicable to the scope and nature of the services to be performed per this request for proposals. Determination of firms' qualifications shall be based on their written responses to this Request for Proposals and information presented to the Evaluation Committee during oral interviews, if any.

In addition to materials provided in the written responses to this Request for Proposals, the Committee may request additional material, information, or references from the submitting entity or others.

Provided it is in the best interest of the City of Knoxville, the firm or team determined to be the most responsive to the City of Knoxville, taking into consideration the evaluation factors set forth in this Request for Proposals, will be selected to begin contract negotiations. The firm or team selected will be notified at the earliest practical date and invited to submit more comprehensive information if necessary. If no satisfactory agreement can be reached with the "most responsive firm," the City may elect to negotiate with the next best and most responsive firm or team.

VIII. Evaluation Criteria

An evaluation team, composed of representatives of the City, will evaluate proposals on a variety of quantitative and qualitative criteria. Upon receipt of proposals, the City will review to determine whether the proposal is acceptable or non-acceptable based on the criteria outlined

below.

The criteria and the associated weights upon which the evaluation of the proposals will be based include, but are not limited to, the following:

1. **Pricing/Cost – 40 points:** All quoted pricing must be inclusive of delivery and any needed operational or maintenance training costs. Pricing shall be for a turn-key, professional job.

2. **Adherence to Specifications – 35 points**

3. **Qualifications/Experience of Firm – 15 points:** Proposal shall include information regarding trucks of similar size and construction. Proposer additionally shall provide a minimum of three (3) references with contact information.

4. **Delivery Schedule – 10 points:** Proposal shall include a timeline for production of HAZMAT truck and delivery to the City.

Submission Forms

CITY OF KNOXVILLE
REQUEST FOR PROPOSALS
HAZMAT Truck

Submission Form S-1

Proposals to be Received by 11:00:00 a.m., Eastern Time; May 23, 2018; in Room 667-674, City/County Building; Knoxville, Tennessee.

IMPORTANT: Submit only one (1) proposal that meets or exceeds the minimum specifications herewith. Proposals shall include six (6) hard copies (one original and five duplicates—**mark the original as such**) and one electronic copy of the proposal (.pdf format on CD only—**mark the storage device with the company name**); the electronic version shall be an exact duplicate of the original, as the electronic version will be the official document exhibited in the contract. **Electronic submissions must be included with the sealed submissions; do not email your submission.** Proposals shall clearly indicate the legal name, address and telephone number of the submitting entity (company, firm, partnership, individual). A minimum of one of the submitted proposals must bear an original signature, signed in ink (duplicated signatures substituted for original ink signatures may result in rejection of the proposals). This document is the official, original submission; the required copies may have copied signatures. The signature must be entered above the typed or printed name and title of the signer. All proposals must be signed by an officer of the company authorized to bind the firm to a contract.

Please complete the following:

Legal Name of Proposer:_____

Address: _____

Telephone Number: _____

Fax Number: _____

Contact Person: _____

Email Address: _____

Signature: _____

Name and Title of Signer:_____

Note: Failure to use these response sheets may disqualify your submission.

NON-COLLUSION AFFIDAVIT

State of _____

County of _____

_____, being first duly sworn, deposes and says that:

(1) He/She is the _____ of _____, the firm that has submitted the attached Proposal;
(2) He/She is fully informed respecting the preparation and contents of the attached Proposal and of all pertinent circumstances respecting such Proposal;
(3) Such Proposal is genuine and is not a collusive or sham Proposal;
(4) Neither the said firm nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, has in any way colluded, conspired, connived or agreed, directly or indirectly, with any other vendor, firm or person to submit collusive or sham proposal in connection with the contract or agreement for which the attached Proposal has been submitted or to refrain from making a proposal in connection with such contract or agreement, or collusion or communication or conference with any other firm, or, to fix any overhead, profit, or cost element of the proposal price or the proposal price of any other firm, or to secure through any collusion, conspiracy, connivance, or unlawful agreement any advantage against the City of Knoxville or any person interested in the proposed contract or agreement; and
(5) The proposal of service outlined in the Proposal is fair and proper and is not tainted by collusion, conspiracy, connivance, or unlawful agreement on the part of the firm or any of its agents, representatives, owners, employees, or parties including this affiant.

(Signed): _____

Title: _____

Subscribed and sworn to before me this _____ day of _____, 20__.

_____
NOTARY PUBLIC

My Commission expires _____

No Contact/No Advocacy Affidavit

State of_____

County of _____

_____, being first duly sworn, deposes and says that:

(1) He/She is the owner, partner, officer, representative, or agent of _____

_____, the Proposer that has submitted the attached Proposal;

(2) The Proposer _____ swears or affirms that he/she will aproposale by the following "No Contact" and "No Advocacy" clauses:

a) NO CONTACT POLICY**:** After the posting of this solicitation to the Purchasing Division's website, any contact initiated by any proposer with any City of Knoxville representative concerning this proposal is strictly prohibited, unless such contact is made with the Purchasing Agent (Boyce H. Evans) or Procurement Specialist (Julie Smith Maxwell). Any unauthorized contact may cause the disqualification of the proposer from this procurement transaction.

b) NO ADVOCATING POLICY**:** To ensure the integrity of the review and evaluation process, companies and/or individuals submitting proposals for any part of this project, as well as those persons and/or companies representing such proposers, may not lobby or advocate to the City of Knoxville staff including, but not limited to, members of City Council, Office of the Mayor, Department of Redevelopment or any other City staff.

Any company and/or individual who does not comply with the above stated "No Contact" and "No Advocating" policies may be subject to having their proposal rejected from consideration.

Signed:_____

Title:_____

Subscribed and sworn to before me this _____ day of _____, 2_____.

My commission expires:_____

IRAN DIVESTMENT ACT

Certification of Noninclusion

NOTICE: Pursuant to the Iran Divestment Act, Tenn. Code Ann. § 12-12-106 requires the State of Tennessee Chief Procurement Officer to publish, using creditable information freely available to the public, a list of persons it determines engage in investment activities in Iran, as described in § 12-12-105. Inclusion on this list makes a person ineligible to contract with the state of Tennessee; if a person ceases its engagement in investment activities in Iran, it may be removed from the list. A list of entities ineligible to contract in the State of Tennessee Department of General Services or any political subdivision of the State may be found here:

https://www.tn.gov/content/dam/tn/generalservices/documents/cpo/cpo-library/public-information-library/List_of_persons_pursuant_to_Tenn._Code_Ann._12-12-106_Iran_Divestment_Act_updated_7.7.17.pdf

By submission of this proposal, each Proposer and each person signing on behalf of any Proposer certifies, and in the case of a joint proposal each party thereto certifies as to its own organization, under penalty of perjury, that to the best of its knowledge and belief that each Proposer is not on the list created pursuant to T.C.A. § 12-12-106.

Vendor Name (Printed)	Address
By (Authorized Signature)	Date Executed
Printed Name and Title of Person Signing	

NOTARY PUBLIC:

Subscribed and sworn to before me this _____ day of _____, 2_____.

My commission expires:_____

DIVERSITY BUSINESS ENTERPRISE (DBE) PROGRAM

The City of Knoxville strongly encourages prime contractors to employ diverse businesses in the fulfillment of contracts/projects for the City of Knoxville.

The City of Knoxville's Fiscal Year 2017 goal is to conduct 3.33% of its business with minority-owned businesses, 9.21% of its business with woman-owned businesses, and 45.5% with small businesses.

While the City cannot engage (pursuant to state law) in preferential proposalding practices, the City does **strongly encourage** prime contractors to seek out and hire diverse businesses in order to help the City meet its goals as stated above. As such, the City encourages prime contractors to seek out and consider competitive sub-proposals and quotations from diverse businesses.

For DBE tracking purposes, the City requests that prime contractors who are proposalding, proposing, or submitting statements of qualifications record whether or not they plan to employ DBE's as sub-contractors or consultants. With that in mind, please fill out, sign and submit (with your proposal/proposal) the following sub-contractor/ consultant statement.

CITY OF KNOXVILLE DIVERSITY BUSINESS DEFINITIONS

Diversity Business Enterprise (DBE's) are minority-owned (MOB), women-owned (WOB), service-disabled veteran-owned (SDVO), and small businesses (SB), who are impeded from normal entry into the economic mainstream because of past practices of discrimination based on race or ethnic background. These persons must own at least 51% of the entity and operate or control the business on a daily basis.

Minority: A person who is a citizen or lawful admitted permanent resident of the United States and who is a member of one (1) of the following groups:

a. African American, persons having origins in any of the Black racial groups of Africa;

b. Hispanic American, persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish culture or origin, regardless of race;

c. Native American, persons who have origin in any of the original peoples of North America ;

d. Asian American, person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands.

Minority-owned business (MOB) is a continuing, independent, for profit business that performs a commercially useful function, and is at least fifty-one percent (51%) owned and controlled by one (1) or more minority individuals.

Woman-owned business (WOB) is a continuing, independent, for profit business that performs a commercially useful function, and is at least fifty-one percent (51%) owned and controlled by one (1) or more women.

Service Disabled Veteran-owned business (SDOV) is a continuing, independent, for profit business that performs a commercially useful function, owned by any person who served honorably on active duty in the armed forces of the United States with at least a twenty percent (20%) disability that is service connected. Meaning such disability was incurred or aggravated in the line of duty in the active military, naval or air service, and is at least fifty-one percent (51%) owned and controlled by one (1) or more service disabled veteran.

Small Business (SB) is a continuing, independent, for profit business which performs a commercially useful function and has total gross receipts of not more than ten million dollars ($10,000,000) average over a three-year period or employs no more than ninety-nine (99) persons on a full-time basis.

Subcontractor/Consultant Statement

(TO BE SUBMITTED IN THE PROPOSAL/PROPOSAL ENVELOPE)

We_____ do certify that on the
(Proposer/Proposer Company Name)

_____
(Project Name)

$_____
(Amount of Proposal)

Please select one:

☐ **Option A: Intent to subcontract using Diverse Businesses**

A Diversity business will be employed as subcontractor(s), vendor(s), supplier(s), or professional service(s). The estimated **dollar value** of the amount that we plan to pay is:

$_____.
Estimated Amount of Subcontracted Service

Diversity Business Enterprise Utilization			
Description of Work/Project	Amount	Diverse Classification (MOB, WOB, SB, SDOV)	Name of Diverse Business

☐ **Option B: Intent to perform work "without" using Diverse Businesses**

We hereby certify that it is our intent to perform 100 % of the work required for the contract, work will be completed without subcontracting, or we plan to subcontract with non-Diverse companies.

DATE:_____ COMPANY NAME:_____

SUBMITTED BY: _____ TITLE:_____
(Authorized Representative)

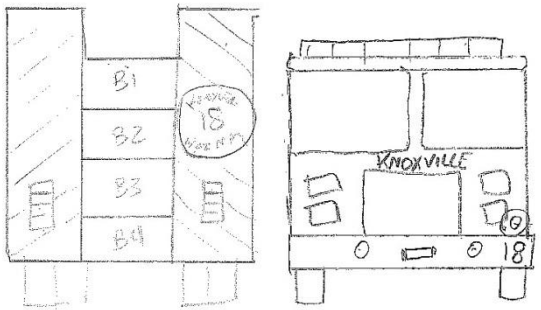
ADDRESS:_____

CITY/STATE/ZIP CODE: _____

TELEPHONE NO: _____

REAR

FRONT



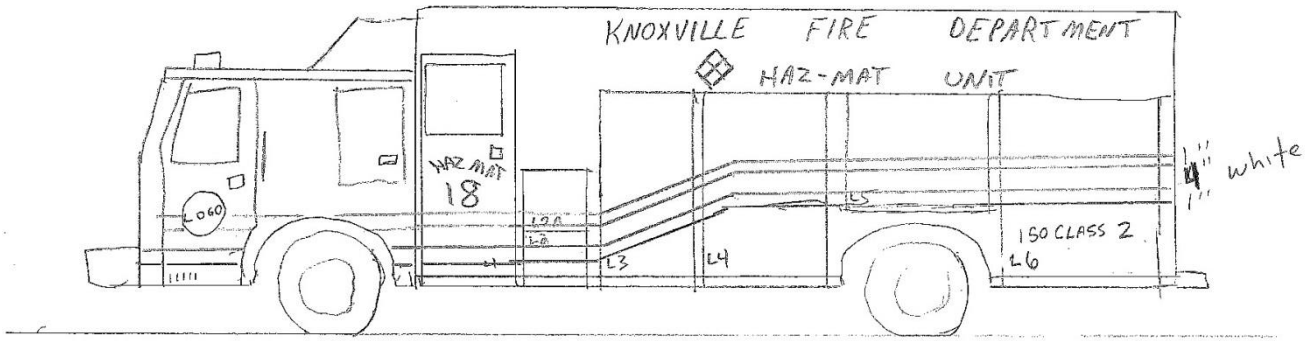
HAZ MAT
18
KNOXVILLE

LOGO
SIZED
TO
FIT

KNOXVILLE (9) 4" gold w/ black outline

18 6" white w/ Black OUTLINE

SIDES



4" white

DOOR LOGO
(Gold)

FLEET #
(5) 3" numbers
BLACK

HAZ MAT (6) 6" LETTERS (Gold)
18 (2) 12" Numbers (white w/ Black outline)

KNOXVILLE FIRE DEPARTMENT
HAZ MAT UNIT (33) 6" LETTERS
GOLD W/ Black OUTLINE

LOGO
SIZED TO
FIT

ISO CLASS 2
SIZED TO FIT
WHITE W/ BLACK
OUTLINE