

SOLICITATION, OFFER, AND AWARD			1. Caption Foam Truck		Page of Pages 1 136		
2. Contract Number		3. Solicitation Number DCFB-2008-B-0127		4. Type of Solicitation <input checked="" type="checkbox"/> Sealed Bid (IFB) <input type="checkbox"/> Sealed Proposals (RFP) <input type="checkbox"/> Sole Source <input type="checkbox"/> COG		5. Date Issued 9/22/2008	
				6. Type of Market <input checked="" type="checkbox"/> Open <input type="checkbox"/> Set Aside <input type="checkbox"/> Open Market with Set-Aside SBE Designated Category:			
7. Issued By: Office of Contracting and Procurement Transportation Specialty Equipment Commodity Group 2000 14th Street, NW, 6th Floor Washington, DC 20009				8. Address Offer to: Office of Contracting and Procurement Bid Room Reeves Center 3rd Floor 2000 14th Street, NW Washington, DC 20009			
NOTE: In sealed bid solicitations "offer" and "offeror" means "bid" and "bidder"							
SOLICITATION							
9. Sealed offers in original and <u>2</u> copies for furnishing the supplies or services in the Schedule will be received at the place specified in Item 8, or if hand carried to the bid counter located at <u>2000 14th Street, NW, 3rd Floor, Bid Room, Washington, DC</u> until <u>2:00 p.m.</u> <u>24-Oct-08</u> (Hour) (Date)							
CAUTION: Late Submissions, Modifications and Withdrawals: See 27 DCMR chapters 15 & 16 as applicable. All offers are subject to all terms & conditions contained in this solicitation.							
10. For Information Contact		A. Name Ronald W. Davis Jr.		B. Telephone (Area Code) 202 (Number) 671-2389 (Ext)		C. E-mail Address ronald.davis@dc.gov	
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OFFER							
12. In compliance with the above, the undersigned agrees, if this offer is accepted within <u>120</u> calendar days from the date for receipt of offers specified above, to furnish any or all items upon which prices are offered at the price set opposite each item, delivered at the designated point(s), within the time specified herein.							
13. Discount for Prompt Payment <input checked="" type="checkbox"/>		10 Calendar days %		20 Calendar days %		30 Calendar days %	
		___ Calendar days %					
14. Acknowledgement of Amendments (The offeror acknowledges receipt of amendments to the SOLICITATION):				Amendment Number		Date	
15A. Name and Address of Offeror		16. Name and Title of Person Authorized to Sign Offer/Contract					
15B. Telephone (Area Code) (Number) (Ext)		15 C. Check if remittance address is different from above - Refer to Section G <input type="checkbox"/>		17. Signature		18. Offer Date	
AWARD (TO BE COMPLETED BY GOVERNMENT)							
19. Accepted as to Items Numbered			20. Amount		21. Accounting and Appropriation		

SECTION B: SUPPLIES OR SERVICES AND PRICE

B.1 The Government of the District of Columbia, Office of Contracting and Procurement, on behalf of DC Fire Department Fire, Emergency Medical Services the (District), is seeking a contractor to provide a foam truck.

B.2 The District contemplates award of a firm fixed price contract.

B.3 PRICE SCHEDULE

Contract Line Item Number (CLIN)	Supplies or Services	Quantity	Unit Price	Total Price
0001	Foam Truck chassis Tilt-type. State Make and Model Offered _____	1	\$ _____	\$ _____

SECTION C: SPECIFICATIONS/WORK STATEMENT

C.1 SCOPE:

The Government of the District of Columbia, Office of Contracting and Procurement, on behalf of DC Fire Department, Fire and Emergency Medical Services (the District), is seeking a contractor to provide a foam truck in accordance with the specifications enumerated herein.

It shall be the intent of these specifications to cover the furnishing and delivery of a complete apparatus equipped as hereinafter specified. These specifications cover only the general requirements as to the type of construction and test to which the apparatus shall conform, together with certain details as to finish, equipment and appliances with which the successful bidder shall conform. Minor details of construction and materials, which are not otherwise specified, are left to the discretion of the contractor, who shall be solely responsible for the design and construction of all features. Loose equipment shall be provided only as stated in the following pages.

Each bidder shall furnish satisfactory evidence of their ability to construct the apparatus specified and shall state the location of the factory where the apparatus is to be built. The bidder shall also show that the company is in position to render prompt service and to furnish replacement parts for said apparatus.

Each bid shall be accompanied by a set of "Contractor's Specifications" consisting of a detailed description of the apparatus and equipment proposed and to which the apparatus furnished under contract shall conform. These specifications shall indicate size, type, model and make of all component parts and equipment.

The vehicles, components, assemblies and accessories to be delivered under this contract shall meet or exceed the requirements of these specifications. All chassis items shall be as represented in the chassis manufacturer's technical data book. Special bodies or mounted equipment shall be as represented in the body and equipment manufacturer's technical data. The chassis model furnished shall not be older than the chassis manufacturer's current model on the date of issuance of this solicitation. The vehicle shall comply with all Federal Motor Vehicles Safety Standards (FMVSS) Regulations applicable to the specified vehicle on the date of manufacture.

C.2 QUALITY AND WORKMANSHIP

C.2.1 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 to the following points: Accessibility of the various units which require periodic maintenance, ease of operation (including both pumping and driving) and symmetrical proportions. Construction shall be rugged and ample safety factors shall be provided to carry the loads specified and to meet both on and off road requirements and speed conditions as set forth under “Performance Tests and Requirements”. Welding shall not be employed in the assembly of the apparatus in a manner that shall prevent the ready removal of any component part for service or repair. All steel welding shall follow American Welding Society D1.1-2004 recommendations for structural steel welding. All aluminum welding shall follow American Welding Society and ANSI D1.2-2003 requirements for structural welding of aluminum. All sheet metal welding shall follow American Welding Society B2.1-2000 requirements for structural welding of sheet metal. Flux core arc welding to use alloy rods, type 7000, American Welding Society standards A5.20-E70T1. Employees classified as welders are tested and certified to meet American Welding Society codes upon hire and every three (3) years thereafter. The manufacturer shall be required to have an American Welding Society certified welding inspector in plant during working hours to monitor weld quality.

C.3 DEFINITIONS

C.3.1 Single Source Manufacturer – Bids shall only be accepted from single source apparatus manufacturer. Single source is a manufacturer that designs and manufactures their products using an integrated approach, including the chassis, cab and body being fabricated and assembled on the bidder’s premises. The warranties relative to the chassis and body design (excluding component warranties such as engine, transmission, axles, pump must be from a single source manufacturer and not split between manufacturers (body and chassis). The bidder shall provide evidence that they comply with this requirement.

C.4 GENERAL CONSTRUCTION

C.4.1 The apparatus shall be designed with due consideration to distribution of load between the front and rear axles. Weight balance and distribution shall be in accordance with the recommendations of the National Fire Protection Association (NFPA).

C.5 TOTAL VEHICLE ASSESSMENT CERTIFICATION

C.5.1 The apparatus shall be third-party, independent, audit-certified through Underwriters Laboratory (UL) to the current edition of NFPA 1901 standards. The certification includes: all design, production, operational and performance testing of the apparatus. (no exception)

C.6 PUMP TEST

C.6.1 The pump shall be tested, approved, and certified by Underwriter's Laboratory at the manufacturer's expense. The test results and the pump manufacturer's certification of hydrostatic test; the engine manufacturer's certified brake horse power curve; and the manufacturer's record of pump construction details shall be forwarded to the District along with the submittal of their bid.

C.7 TARGET OVERALL HEIGHT

C.7.1 The target overall height of the apparatus shall be height of 10' 6".

C.8 ANGLE OF DEPARTURE

C.8.1 The angle of departure shall be as close to 15 degrees as possible. This shall be effective with the truck in an unloaded state.

C.9 ANGLE OF APPROACH

C.9.1 The angle of approach shall be as close to 15 degrees as possible degrees. This shall be effective with the truck in an unloaded state.

C.10 APPROVAL DRAWING

C.10.1 A drawing of the proposed apparatus shall be provided for approval before construction begins. The sales representative shall also have a copy of the same drawing. The finalized and approved drawing shall become part of the contract documents. This drawing shall indicate the chassis make and model, location of the lights, siren, horns compartments, and major components. Drawing shall be submitted two weeks after opening of bids.

C.11.1 A "revised" approval drawing of the apparatus shall be prepared and submitted by the manufacturer to the District showing any changes made to the approved drawing .

C.11.2 Provide 4 sets of line drawings of the items specified below. The drawings are to be at least 22"x"34. In addition to the drawings, the manufacturer shall provide computer aided design drawings on CD ROM disks.

C.12.3 FINAL ACCEPTANCE DRAWINGS AND DOCUMENTS

C.12.4 The Contractor shall, following the final acceptance of the vehicle and following any corrections and/or modifications, provide the department 3 updated and complete sets of drawings and written specifications.

C.13 DRAWING, PIPING

C.13.1 Detailed drawing of the piping shall be provided at time of bid opening. The drawing shall include all the valves, outlets, inlets, that will be located in the plumbing of the apparatus.

C.14 DRAWING, PUMP OPERATOR'S PANEL

C.14.1 A detailed drawing to scale of the pump operator's panel shall be provided for approval prior to construction. This drawing shall include all of the gauges and controls located on the pump operator's panel.

C.15 DRAWING, PASSENGER SIDE PUMP PANEL

C.15.1 A detailed drawing to scale of the passenger side pump panel shall be provided for approval prior to construction. This drawing shall include all of the gauges and controls located on the passenger side pump panel.

C.16 DIAGRAM, AS BUILT AIR BRAKE SCHEMATIC

C.16.1 There shall be a detailed diagram of the air brake system provided upon delivery. The diagram shall include air lines and parts that shall be located within the system.

C.17 DRAWING, CAB TOP VIEW

C.17.1 Detailed drawings, to scale of the top view of the cab, shall be provided for "Reference Only" after the approval drawing is signed and prior to construction.

C.18 SCOPE OF DRAWINGS

C.18.1 A detailed drawing giving 5 views of apparatus (Right, Side, Left Side, Front, Rear, and Top). This drawing shall include all mounted and manufactured items that are specified by these requirements.

C.18.2 A detailed drawing of the cab interior, both side views and top down, which include dimensions, step heights and a graphic layout of the interior.

C.18.3 A detailed drawing of the complete front cab interior which includes all switch panels, dash panels, controls and mountings. All items are to be labeled as to function.

- C.18.4** A detailed drawing of the complete rear cab interior which includes the location of all windows, fold down seats, bench seats, and any other items that would be mounted thereon.
- C.18.5** A detailed drawing of the pump operators panel which shall indicate the location of all intakes, discharges, valve controls, gauges, drains, steps, microphone compartments, speakers, and any other items that would be mounted thereon.
- C.18.6** A detailed drawing of the side opposite the pump panel which shall indicate the location of all intakes, discharges, valve controls, drains, steps, and any other items that would be mounted thereon.
- C.18.7** A drawing of the water tank and foam tank including dimensions and orientation on the chassis.
- C.18.8** A detailed drawing of any shop manufactured items contained in these requirements shall be provided.

C.19 DRAWING REQUIREMENTS

- C.19.1** A drawing, both hard copy and diskette, will include, at a minimum the following body/chassis dimension:
- C.19.2** Heights: Ground to top of back step, Ground to bottom of a.) Crosslay hosebeds, and b.) Rear hose bed. Ground to highest projection of apparatus (front and rear). Ground to lowest projection (front & rear) (ground clearance). Top of back step to bottom of rear hose bed. Top of back step to top of rear hose bed (body height).
- C.19.3** Lengths: Overall length. Wheelbase. From front bumper to face of cab. From front bumper to center of front wheel. From center of front wheel to rear of cab. From rear of cab to front of body (pump panel width). From front of body to rear of body. From center of rear wheel to rear of back step. Back step. Hosebed interior lengths.
- C.19.4** Widths: Body: Body including bumper. Body to outermost projects (mirrors). All hosebeds. Backstep: Backstep between beaver tails.
- C.19.5** Engineering: Angles of approach & departure. Breakover. Turning radius. Center of gravity from both front and side views. A cut-away showing the dimensions of the well area above the tank.
- C.19.6** These drawing shall include dimensions of all compartments & troughs. All drawings, both hard copy and diskette, shall be made to scale. An initial set of drawings and diskettes, as outlined above, shall be provided with the initial price quotation. Failure to provide them may cause a contractor to be deemed as non-responsive and his/her bid may be rejected.
- C.19.7** Updates and modifications shall be made by E-mail. The manufacturer shall return updated drawings by E-mail to the Department (Ronald.Gill@dc.gov) for review and comments. This exchange of computer aided design information shall continue until

a final set of line drawings is agreed upon to the end that there is a reduction in the amount of hard copy drawings produced and exchanged. After a final set of drawings is agreed to, the manufacturer shall provide 4 sets of final drawings.

C.20 MEETINGS AND CORRESPONDENCE

C.20.1 All meetings, phone conversations or other discussions regarding the awarded contract and the construction of the vehicle, changes and/or modifications shall be followed by a written summary of the meeting, phone conversation or discussion. This summary shall be prepared as mutually agreed by the District and forwarded to the Chief of the Fire and Emergency Medical Services upon completion. The Chief shall review the summary to ensure that the contents are accurate. The use of E-mail is encouraged.

C.21 CHASSIS

C.21.1 Chassis provided shall be a new, tilt-type custom fire apparatus. The chassis shall be manufactured in the apparatus body builder's facility eliminating any split responsibility. The chassis shall be designed and manufactured for heavy-duty service, with adequate strength, capacity for the intended load to be sustained, and the type of service required. The chassis shall be the manufacturer's heavy-duty line tilt cab.

C.22 SEATING CAPACITY

C.22.1 The seating capacity in the cab shall be six (6).

C.23 WHEELBASE

C.23.1 The wheelbase of the vehicle shall be no greater than 242.50".

C.24 GVW RATING

C.24.1 The gross vehicle weight rating shall be a minimum of 60,800.

C.25 FRAME

C.25.1 The chassis frame shall be built with two (2) steel channels bolted to a five (5) cross members or more, depending on other options of the apparatus.

C.26 FRAME REINFORCEMENT

C.26.1 In addition, a main frame liner shall be provided. The frame liner shall be mounted inside of the chassis frame rail and extend the full length of the frame.

C27 FRONT NON DRIVE AXLE

C27.1 The front axle shall be of the spring suspension design with a ground rating of 22,800 pounds.

C.27.2 The axle shall have a third party certified turning angle of 45 degrees. Front discharge, front suction, or aluminum wheels shall not infringe on this cramp angle.

C.28 OIL SEALS

C.28.1 Oil seals with viewing window shall be provided on the front axle.

C.29 SHOCK ABSORBERS

C.29.1 Heavy-duty telescoping shock absorbers shall be provided on the front suspension.

C.30 REAR AXLE

C.30.1 The rear axle shall be a Meritor™, Model RT-46-160, tandem axle assembly with a capacity of 48,000 pounds.

State Make and Model Offered _____

C.30.2 An inter-axle differential, which divides torque evenly between axles, shall be provided with an indicator light mounted on the cab instrument panel.

C.31 TOP SPEED OF VEHICLE

C.31.1 A rear axle ratio shall be furnished to allow the vehicle to reach an approximate top speed of 65 MPH.

C.32 OIL SEALS

C.32.1 Oil seals shall be provided on the rear axle.

C.33 DRIVER CONTROL DIFFERENTIAL LOCK (DCDL)

C.33.1 A rear tandem axle shall be equipped with a driver controlled differential lock (DCDL). The control shall be located within easy reach of the driver.

C.34 VENT, (REAR DIFFERENTIAL)

C.34.1 Rear differential vent shall be remote mounted between the frame rails, directly below the water tank.

C.35 FRONT SUSPENSION

C.35.1 Front spring suspension shall be provided with a minimum ground rating of 22,800 pounds.

The spring suspension system shall be designed to provide maximum ride comfort. The design shall allow the vehicle to travel at highway speeds over improved road

surfaces and at moderate speeds over rough terrain with minimal transfer of road shock and vibration to the vehicle's crew compartment.

C.36 REAR SUSPENSION

C.36.1 The rear suspension shall be a Hendrickson RT-503 steel spring system with an equalizing beam design that distributes the load equally between the two (2) axles. Ground rating of the suspension shall be 48,000 pounds.

State Make and Model Offered_____

C.37 ELECTRONIC STABILITY CONTROL

C.37.1 A vehicle control system shall be provided as an integral part of the ABS brake system from Meritor Wabco.

C.37.2 The system shall monitor and update the lateral acceleration of the vehicle and compare it to a critical threshold where a side roll event may occur. If the critical threshold is met, the vehicle control system shall automatically reduce engine RPM, engage the engine retarder (if so equipped) and selectively apply brakes to the individual wheel ends of the front and rear axles to reduce the possibility of a side roll event.

C.37.3 The system shall monitor directional stability through a lateral accelerometer, steer angle sensor and yaw rate sensor. If spinout or driftout is detected, the vehicle control system shall selectively apply brakes to the individual wheel ends of the front and rear axles to bring the vehicle back to its intended direction.

C.38 ANTI-LOCK BRAKE SYSTEM

C.38.1 The vehicle shall be equipped with a Wabco 6S6M, anti-lock braking system. The ABS shall provide a six (6) channel anti-lock braking control on both the front and rear wheels. It shall be a digitally controlled system that utilizes microprocessor technology to control the anti-lock braking system. Each wheel shall be monitored by the system. When any wheel begins to lockup, a signal shall be sent to the control unit. This control unit shall then reduce the braking of that wheel for a fraction of a second and then reapply the brake. This anti-lock brake system shall eliminate the lockup of any wheel thus helping to prevent the apparatus from skidding out of control.

State Make and Model Offered_____

C.39 AUTOMATIC TRACTION CONTROL

C.39.1 An anti-slip feature shall be included with the ABS. The Automatic Traction Control shall be used for traction in poor road and weather conditions. The Automatic Traction Control shall act as an electronic differential lock which shall not allow a driving wheel to spin, Thereby supplying traction at all times. The ABS electronic control unit (ECU) shall work with the engine ECU, sharing information concerning wheel slip. Engine ECU shall use information to control engine speed, allowing only as much throttle application as required for the available traction, regardless of how much the driver is asking for. A “mud/snow” switch shall be provided on the instrument panel. Activation of the switch shall allow additional tire slip to let the truck climb out and get on top of deep snow or mud.

C.40 BRAKES

C.40.1 The service brake system shall be full air type.

C.40.2 The front brakes shall be Knorr/Bendix disc type with a 17.00” ventilated rotor for improved stopping distance.

State type offered_____

C.40.3 The brake system shall be certified, third party inspected, for improved stopping distance.

C.40.4 The rear brakes shall be Meritor™ disc operated with automatic slack adjusters.

State rear brakes offered_____

C.41 DRIVELINE RETARDER

C.41.1 A Telma inline-driveline retarder shall be provided. The retarder shall be the electro-magnetic type automatically actuated with application of the brake pedal. Cab dash mounted indicator lights shall be provided to show retarder activation stages applied. The Telma retarder model that is suitable for the application, based on vehicle weight and axle ratio shall be provided.

State inline offered_____

C.41.2 The Telma retarder shall be set up so that stage 1 and 2 operate off of the accelerator and 3 and 4 operate off of the brake pedal. There shall also be an on/off switch and an indicator light provided as well.

State retarder offered_____

C.41.3 The ABS system shall automatically disengage the auxiliary braking device, when required.

C.42 AIR COMPRESSOR, BRAKE SYSTEM

C.42.1 The air compressor shall be a Bendix BA-921 with 15.8 cubic feet per minute output at 1250 RPM.

State Make and Model Offered _____

C.43 BRAKE SYSTEM

C.43.1 The brake system shall include:

a. Bendix Westinghouse dual brake treadle valve with vinyl covered foot surface.

State Brand Name Offered _____

b. Heated automatic moisture ejector on air dryer.

c. Total air system capacity of 6,653 cubic inches

d. Two (2) air pressure gauges with a red warning light and an audible alarm, that activates when air pressure falls below 60 psi.

e. MGM spring set parking brake system.

State Brand Name Offered _____

f. Parking brake operated by a Bendix-Westinghouse PP-1 control valve.

State Brand Name Offered _____

State Brand Name Offered _____

g. A parking “brake on” indicator light on instrument panel

h. Bendix-Westinghouse SR-1 valve, in conjunction with a double check valve system, shall be provided with an automatic spring brake application at 40 ps.

State Brand Name Offered _____

i. Wabco System Saver 1200 air dryer.

State Brand Name Offered _____

C.44 BRAKE LINES (COLOR CODED)

C.44.1 Wire braided reinforced rubber brake lines shall be provided for the chassis air brake system, up to the aluminum manifold/junction block, located in the chassis frame just to the rear of transmission mount.

C.44.2 The manifold/junction block shall be the separation point for all airlines going to the front of chassis and into the cab.

C.44.3 The only wire braided lines forward of the manifold/junction are the front brake lines that run from the QR1 valve to the front air chambers.

C.44.4 The airlines going into the cab shall be nylon, wrapped in loom.

C.44.5 The area where the nylon airlines run shall be well protected inside the frame rails.

C.44.6 The brake lines shall not be painted.

C.45 AIR OUTLET

C.45.1 One (1) air outlet shall be installed with a female coupling and shut off valve, located on the driver side pump panel. This system shall tie into the “wet” tank of the brake system and include an 85 psi pressure protection valve in the outlet line to prevent the brake system from losing all air.

C.45.2 A mating male fitting shall be provided with the loose equipment.

C.46 AIR HOSE, SHIPPED LOOSE

C.46.1 One (1) 50 foot length of air hose shall be furnished with the air valve, tire pressure gauge, and complete with fittings.

C.46.2 An air chuck shall be provided with the air hose. The air chuck shall fit the valve terms that are provided on the tires.

C.47 AIR TANK, ADDITIONAL FOR AIR HORN USE

C.47.1 An additional air tank with 1454 cubic inch displacement shall be provided to increase the capacity of the air system. This tank shall be dedicated for air horn use.

C.48 AIR TANK, ADDITIONAL AIR SYSTEM CAPACITY

C.48.1 An additional air tank with 1454 cubic inch displacement shall be provided to increase the capacity of the main air brake system. This tank shall be plumbed into the rear half of the brake system.

C.49 U-BOLT GUARD OVER PARKING BRAKE KNOB

C.49.1 A U-bolt type protective guard shall installed over the main “Parking Brake” knob to prevent accidental activation of the brake.

C.50 PARK BRAKE CONTROL (ADDITIONAL)

C.50.1 A second park brake control valve shall be installed on the officer side of instrument panel. This valve shall only activate the brakes if manually pulled out; low air pressure shall not activate this valve.

C.51 COVER, OVER PARKING BRAKE CONTROL (ADDITIONAL CONTROL)

C.51.1 There shall be a stainless steel hinged cover provided over for the officer's side brake control parking brake knob to prevent accidental activation of the brake. The cover shall be labeled "Emergency Parking Brake".

C.52 GLAD-HANDS, TOWING

C.52.1 There shall be two (2) Glad-Hands, one (1) red and one (1) blue, provided at the front bumper. The Glad-Hands shall be plumbed into the brake system, allowing the tow vehicle to apply the service brakes and release the parking brakes of the disabled unit.

C.53 MANUAL MOISTURE EJECTORS

C.53.1 Seven (7) manual moisture ejectors shall be installed in the brake system. The moisture ejectors shall be remote mounted as close to the edge of vehicle as possible.

C.53.2 A loop shall be provided at the moisture ejector to allow for ease of pulling the drain.

C.53.3 Each moisture ejector shall have a label directly under the ejector stating "air tank drain".

C.53.4 Nylon tubing, .38" diameter shall be routed from the air tank to the moisture ejector. The nylon tubing shall be covered with protective split loom.

C.53.5 A moisture ejector shall be provided on all of the reservoirs.

C.54 ENGINE

C.54.1 The chassis shall be powered by a Detroit Diesel electronically controlled engine as described below:

C.54.2 Model: Series 60, 14.0L (855 cubic inches)

C.54.3 Maximum Horsepower: 515 bhp at 1800 rpm

C.54.4 Peak Torque: 1650 lb-ft at 1200 rpm

C.54.5 Governed Speed: 2000 rpm

C.54.6 Bore and Stroke: 5.24" x 6.61"

C.54.7 Number of Cylinders: Six (6)

C.54.8 Compression Ratio: 17.25:1

C.55 Standard equipment on the engine shall include the following:

- C.55.1 Governor: Limiting speed type
- C.55.2 Injectors: Cam operated, unit type, clean tip.
- C.55.3 Starting Motor: 12-volt
- C.55.4 Turbocharger
- C.55.5 Air To Air Aftercooled
- C.55.6 Lube Oil Cooler
- C.55.7 Lube Oil Filter: Full flow
- C.55.8 Air Cleaner: Farr or equal
- C.55.9 Fuel Filters: Dual, with check valve
- C.55.10 Coolant Filter: Spin-on with shut off valves on the supply and return line (precharged with coolant inhibitor)

State Make and Model Offered _____

C.56 ENGINE INSTALLATION CERTIFICATION

- C.56.1 The fire apparatus manufacturer shall provide, at the time of delivery, a letter from the engine manufacturer stating they approve of the engine installation in the bidder's chassis. The approval of the engine installation shall be at full horsepower rating in a continuous duty application under all operating conditions, including road and pump. No type of automatic horsepower reduction feature shall be allowed.
- C.56.2 There shall be no exception to any portion of the engine installation certification. Nonconformance shall lead to immediate rejection of bid.

C.57 CONTROLS AND INDICATOR LIGHTS

- C.57.1 The following amber indicator lights shall be located on the driver's side of the cab to denote engine information:
 - Diesel Particulate Filter (DPF)
 - High Exhaust Temperature (HET)
 - Malfunction Indicator Lamp (MIL)
- C.57.2 A switch to initiate the diesel particulate filter regeneration cycle shall be located on the driver's side instrument panel.

C.58 ENGINE AIR INTAKE

C.58.1 The air intake with Ember Separator shall be mounted high on the passenger side of cab, to the front of crew cab door to prevent road dirt and recirculating hot air from entering the engine.

C.58.2 The Ember Separator shall be easily accessible through a hinged stainless steel grille, with one (1) flush quarter turn latch.

C.59 EXHAUST SYSTEM

C.59.1 The exhaust system shall be stainless steel from the turbo to the inlet of the diesel particulate filter and shall be 5.00” in diameter. The exhaust system shall include a diesel particulate filter and a diesel oxidation catalyst to meet current EPA standards. The exhaust shall terminate horizontally ahead of the passenger side rear wheels. A tailpipe diffuser shall be provided to reduce the temperature of the exhaust as it exits. An insulation wrap shall be provided on the exhaust pipe between the turbo and DPF inlet to minimize the transfer of heat to the cab. Heat deflector shields shall be provided to isolate chassis and body components from the heat of the tailpipe diffuser.

C.60 EXHAUST MODIFICATION

C.60.1 The exhaust system shall have all Niederman Exhaust Removal System components installed and provided by the manufacturer. The exhaust pipe shall be brought straight out from under the body. The exhaust pipe shall extend a maximum of 2.00’ past the body side. The diameter of the pipe shall be 7.00”.

C.61 CLUTCH FAN

C.61.1 A Horton fan clutch shall be provided. The fan clutch shall be automatic when the pump transmission is in “Road” and “Pump” position.

State Make and Model Offered _____

C.62 DIPSTICK (COLOR CODED)

C.62.1 The engine oil and transmission oil dipstick handles shall be color coded, along with color coded labels.

C.63 BY-PASS FUEL FILTER

C.63.1 A Detroit Diesel Fuel Pro-382 filtering system shall be provided. The fuel filtering system shall be remote mounted on the chassis.

State Make and Model Offered _____

C.63.2 The system shall have the following features:

- Self priming port
- Clear cover
- Single filter system (replaces primary and secondary filters)
- Fuel heater
- Drain valve
- Aluminum cylinder (act as fuel cooler).

C.64 HIGH IDLE

- C.64.1** A high idle switch shall be provided, inside the cab, on the instrument panel, that shall automatically maintain a preset engine rpm. A switch shall be installed, at the cab instrument panel, for activation/deactivation.
- C.64.2** The high idle shall be operational only when the parking brake is on and the truck transmission is in neutral. A green indicator light shall be provided adjacent to the switch. The light shall illuminate when the above conditions are met. The light shall be labeled “OK to Engage High Idle”.

C.65 COOLANT LINES

- C.65.1** EPDM hoses shall be used for all 0.75” and 1.00” engine/heater coolant lines installed by the chassis manufacturer. The larger coolant hoses may be silicone based on availability. Hose clamps shall be stainless steel “constant torque type” to prevent coolant leakage. They shall react to temperature changes in the cooling system and expand or contract accordingly while maintaining an constant clamping pressure on the hose. Coolant hose fittings on the engine shall be stainless steel.

State Make and Model Offered _____

C.66 RADIATOR

- C.66.1** Radiator and the complete cooling system shall meet or exceed NFPA cooling system standards. Cooling system capacity shall exceed all cooling requirements specified by the engine manufacturer under all truck operating conditions. It shall have a built-in low coolant sight glass and an electronically controlled low coolant display mounted on the instrument panel. An integral surge and deaeration tank shall be provided to optimize the cooling system for all operating conditions.
- C.66.2** The cooling system shall be designed to maintain a minimum pressure of nine (9) psi. A drain valve shall be located at the lowest point of the cooling system and at other points to permit complete flushing of the coolant from the system. Cooling air shall be drawn in by a heavy-duty fan, shrouded by recirculation shields that permit only fresh cool air through the radiator.
- C.66.3** Radiator shall be of the serpentine design and bonded together by the patented “beta-weld” process for increased strength, longer road life and solder-bloom corrosion protection. Radiator shall be mounted in a manner to prevent the development of leaks caused by twisting or straining when the apparatus operates over uneven

ground. Radiator core shall be compatible with commercial antifreeze solutions. Cooling system shall exhibit rapid warm-up without use of radiator shutters.

C.67 FUEL TANK

C.67.1 A 65-gallon fuel tank shall be provided and mounted at rear of chassis. The tank shall be constructed of unpainted stainless steel. It shall be equipped with swash partitions and a vent.

C.67.2 A .75” drain plug shall be provided in a low point of the tank for drainage.

C.67.3 A fill inlet shall be located on the driver’s side of the body and be covered with a hinged, spring loaded, stainless steel door that is marked “Diesel Fuel Only”.

C.67.4 A .50” diameter vent shall be provided running from top of tank to just below fuel fill inlet.

C.67.5 The tank shall meet all FHWA 393.67 requirements including a fill capacity of 95% of tank volume.

C.67.6 All fuel lines shall be of the wire braided type.

C.68 AUXILIARY FUEL COOLING SYSTEM

C.68.1 A supplementary fuel cooling system shall be provided to allow the use of water from the discharge side of the pump for cooling the chassis engine fuel. The heat exchanger shall be a cylindrical type and shall be a separate unit. The cooler shall operate any time the pump is discharging water and shall be plumbed to the master drain valve.

C.69 FUEL CAP

C.69.1 A Protectoseal fuel cap shall be provided.

State Make and Model Offered_____

C.70 FUEL RING

C.70.1 Provide and install appropriate V.I.T. (Vehicle Information Transmitter)/Candometer fueling devices. Contact Mr. Lee Christiansen at E.J. Ward Inc. (210) 824-7383 for information and pricing.

C.71 AUXILIARY FUEL PUMP

C.71.1 An auxiliary electric fuel pump shall be added to the fuel line for priming the engine. A switch located on the cab instrument panel shall be provided to operate the pump.

C.72 FUEL SHUTOFF@FILTER

C.72.1 A shutoff valve shall be installed in the fuel line, near the filter.

C.73 FUEL SHUTOFF@FUEL TANK

C.73.1 A shutoff valve shall be installed in the fuel line, at the fuel tank.

C.74 DRIVELINE SAFETY LOOP

C.74.1 A driveline safety loop shall be provided to help retain the drive shaft in the event of a drive shaft or cardan joint failure.

C.75 TRANSMISSION

C.75.1 An Allison Gen IV, model EVS 4000P, electronic, torque converting, automatic transmission shall be provided.

State Make and Model Offered _____

C.75.2 Two (2) PTO openings shall be located on left side and top of converter housing positions 8 o'clock and 1 o'clock).

C.75.3 A transmission temperature gauge with red light and buzzer shall be installed on the cab instrument panel.

C.76 TRANSMISSION SHIFTER

C.76.1 A six (6) speed push button shift module with the 4 + 2 "Mode" button shall be mounted to right of driver on console. Shift position indicator shall be indirectly lit for after dark operation.

C.76.2 The Allison shifter shall be a "double-digit" display model.

C.76.3 The transmission ratio shall be: 1st-3.51 to 1.00, 2nd – 1.91 to 1.00, 3rd – 1.43 to 1.00, 4th – 1.00 to 1.00, 5th – 0.75 to 1.00, 6th – 0.64 to 1.00, R – 4.80 to 1.00.

C.77 TRANSMISSION COOLER

C.77.1 A transmission oil cooler shall be provided in the lower tank of the radiator.

C.78 TRANSMISSION FLUID

C.78.1 The transmission shall be provided with TranSynd.

C.79 DRIVELINE

C.79.1 Drivelines shall be a heavy duty metal tube and be equipped with Spicer 1810 universal joints.

State Make and Model Offered _____

C.79.2 The shafts shall be dynamically balanced before installation.

C.79.3 A splined slip joint shall be provided in each driveshaft, slip joint shall be coated with Glidecoat or equivalent.

C.80 STEERING

C.80.1 Heavy-duty power steering with a power assist cylinder shall be provided. The power steering shall incorporate a hydraulic pump with integral pressure and flow control.

C.80.2 The steering wheel shall be 18.00” in diameter, and capable of tilting and telescoping.

C.81 TIRES/WHEELS

C.81.1 Front tires shall be Michelin radials 425/65R22.50, 20 ply “all position” XZY 3 tread. The tires shall be mounted on Alcoa 22.50” x 12.25” Dura-Bright® aluminum disc-type wheels with a ten (10) stud, 11.25” bolt circle.

State Make and Model Offered _____

C.81.2 The rear tires shall be eight (8) Michelin radials 315/80R22.50, 20 ply “on/off road” XDY3 tread. The tires shall be mounted on Alcoa Dura-Bright® aluminum disc-type wheels with a ten (10) stud, 11.25” bolt circle, 22.50” x9.00” polished aluminum disc wheels with a ten (10) stud-11.25 bolt circle.

State Make and Model Offered _____

C.81.3 All rear wheels shall have Dura-Bright finish.

C.82 LUG NUT COVERS

C.82.1 Chrome plated lug nut covers shall be installed on all lug nuts.

C.83 WHEEL CHOCKS

C.83.1 There shall be one (1) set of folding Ziamatic SAC-44-E, aluminum alloy, Quick-Choc wheel blocks with easy-grip handle and SQCH-44-H horizontal mounting brackets provided. The chocks shall be mounted – one in front and one to the rear of the driver’s side rear wheels-mounted as high as possible.

State Make and Model Offered _____

C.84 HUB COVERS (FRONT)

C.84.1 Stainless steel hub covers shall be provided on the front axle. An oil level viewing window shall be provided.

C.85 HUB COVERS (REAR)

C.85.1 A set of four (4) stainless steel, baby moon style, hub covers shall be provided on the rear axle hubs.

C.86 LUG NUT COVERS, WHEEL

C.86.1 Chrome lug nut covers shall be supplied on front and rear wheels.

C.87 AUTOMATIC TIRE CHAINS

C.87.1 One (1) pair of “On Spot” automatic tire chains shall be provided at the rear. System shall be electric over air operated with switch on cab instrument panel. System to be operable at speeds up to 35 mph.

C.88 MUD FLAPS

C.88.1 Mud flaps shall be installed behind the front and rear wheels of the apparatus.

C.89 CAB

C.89.1 The cab shall be designed specifically for the fire service and manufactured by the chassis builder.

C.89.2 Construction of the cab shall be aluminum or stainless steel welded framing and skin.

C.89.3 The cab shall be built by the apparatus manufacturer in a facility located on the manufacturer’s premises. (no exceptions)

C.89.4 The cab shall be 96.00” wide and an interior minimum width of 87.50’.

C.89.5 The overall height (from the cab roof to the ground) shall be approximately 103.00”. The overall height listed shall be calculated based on a truck configuration with the lowest suspension weight ratings, the smallest diameter tires for the suspension, no

water weight, no loose equipment weight and no personnel weight. Larger tires, wheels and suspension shall increase the overall height listed.

- C.89.6** The floor to ceiling height inside the crew cab shall be 54.00” in the center and 59.75” in the outboard positions.
- C.89.7** The crew cab floor shall measure 44.50” from rear wall to the back side of engine tunnel.
- C.90.8** The engine tunnel, at the rearward highest point (knee level), shall measure 50.88” to the back wall.
- C.89.9** The crew cab shall be of the totally enclosed design, with access doors constructed in the same manner as the driver and passenger doors.
- C.89.10** The cab shall be a full tilt cab style. The engine shall be easily accessible and capable of being removed with the cab tilted. The cab shall be capable of tilting 45 degrees and 90 degrees with crane assist.
- C.89.11** The cab shall have three (3)-point rubber mounting and shall be tilted by a hydraulic pump connected to two (2) cab lift cylinders. The cab shall then be locked down by a two (2)-point automatic locking mechanism that actuates after the cab has been lowered.
- C.89.12** The cab access steps shall be 23.25” wide, crew cab shall be 21.25” wide x 8.00” minimum depth and shall be the half-height style door, blistered inward at the bottom.
- C.89.13** The lower exposed step area at each door location shall be trimmed with aluminum treadplate and have a grip strut insert in the bottom step.
- C.89.14** The inside cab steps shall not exceed 18.00” high.
- C.89.15** The crew cab entrance shall be a one (1) step design to the cab floor, for easy access.
- C.89.16** A 20.00”, slip resistant, handrail shall be provided adjacent to all door openings to assist entrance into the cab.
- C.89.17** A chrome handrail shall be provided on the inside each front cab door, for ease of entry.
- C.89.18** The cab doors shall be 37.00” wide x 58.50” high.

- C.89.19** The crew cab doors shall be 34.25” wide x 57.00” high for easy entry, and located on the side of the cab.
- C.89.20** The cab and crew cab doors shall be constructed of extruded aluminum with a nominal material thickness of .125”. The exterior skins shall be constructed from .090” aluminum.
- C.89.21** All cab and crew cab entry doors shall contain a conventional roll down window.
- C.89.22** Flush mounted, chrome plated paddle type door handle shall be provided on the exterior of the cab doors.
- C.89.23** All interior cab door handles shall also have flush paddle handles.
- C.89.24** The cab doors shall be provided with both interior (rotary knob) and exterior TM-202 (keyed) locks as required by FMVSS 206. The locks shall be cable of activating when the doors are open or closed. The doors shall remain locked if locks are activated when the doors are opened, then closed.
- C.89.25** The door hinge shall be a stainless steel piano type with a .25” pin.
- C.89.26** There shall be double automotive type rubber seals around the perimeter of the door framing and door edges to ensure a weather tight fit.
- C.89.27** Full height brushed stainless steel scuff plates shall be installed on the inside of all cab doors.
- C.89.28** Cab door panels shall be removable without disconnecting door and window mechanisms.
- C.89.29** Engine hood side walls shall be constructed of .50” aluminum, top shall be constructed of .19” aluminum and shall be tapered at top to allow for more driver and passenger elbow room.
- C.89.30** The engine hood shall be insulated for protection from heat and sound. The noise insulation keeps the DBA level within the limits stated in the current NFPA series 1900 pamphlet. There shall be access, 15.00” wide x 11.25” high, at the rear of the engine tunnel to access the engine fluid checks.
- C.89.31** Full circular inner fender liners, in the wheel wells, shall be provided.

- C.89.32** Bright aluminum treadplate shall be overlaid on the outside rear wall of the crew cab except for areas that are not typically visible when the cab is lowered.
- C.89.33** A curved, safety glass windshield shall be provided, with over 2,754 square inches of clear viewing area.
- C.89.34** The cab windshield shall have bright trim inserts in the rubber molding holding the glass in place.
- C.89.35** All cab glass shall be tinted.
- C.89.36** Economical windshield replacement glass shall be readily available from local auto glass suppliers.
- C.89.37** Two (2) smoked Lexan sunvisors, 8.75" x 31.00" long, shall be provided. The sunvisors shall be located above the windshield with one (1) mounted on each side of the cab.
- C.89.38** Two (2) Electric windshield wipers with washer shall be provided that meet FM/VSS and SAE requirements.
- C.89.39** The washer reservoir shall be able to be filled without raising the cab.
- C.89.40** A glove box with a drop-down door shall be installed in the front dash panel in front of the officer's position.
- C.89.41** A certification letter from Dana, stating they approve of the wiper system shall be furnished upon request. The wiper system shall have run through 3,000,000 cycles, and shall have achieved certification parameters.

C.90 CAB INTEGRITY CERTIFICATION

- C.90.1** The fire apparatus manufacturer shall provide a cab crash test certification with this bid. The certification states that the cab must meet or exceed the requirements below:
- C.90.2** European Occupant Protection Standard ECE Regulation No. 29
- C.90.3** SAE J2422 Cab Roof Strength Evaluation – Quasi-Static Loading Heavy Trucks
- C.90.4** SAE J2420 COE Frontal Strength Evaluation – Dynamic Loading Heavy Trucks-Roof Crush.
- C.90.5** The cab will be subjected to a roof crush force of 100,000 lbs. This value will be 450% of the ECE 29 criteria, which must be equivalent to the front axle rating up to a maximum of 10 metric tons.

C.90.6 **SIDE IMPACT:** The cab shall be subjected to dynamic preload with a 13,275 lb moving barrier is slammed into the side of the cab at 5.5 mph, striking with an impact of 13,000 ft-lbs of energy. This test shall closely represent the forces a cab will see in a roll-over incident.

C.90.7 **FRONTAL IMPACT:** The cab shall withstand a frontal force produced from 65,200 ft-lbs of energy using a swing-bob type platen.

C.90.8 There shall be no exception to any portion of the cab integrity certification.

C.91 **CAB MODIFICATION**

C.91.1 The engine tunnel shall be designed to provide maximum occupant space, and required clearance to the engine and related components. The engine tunnel shall include a modification on the passenger side to accommodate the Turbo and related components.

C.92 **CAB FLOOR**

C.92.1 The cab and crew cab floor areas shall be covered with Polydamp™ acoustical floor mat consisting of a black pyramid rubber facing and closed cell foam decoupler.

State Make and Model Offered _____

C.92.2 The top surface of the material has a series of raised pyramid shapes evenly spaced, which offer a superior grip surface. Additionally, the material has .25" thick closed cell foam (no water absorption) which offers a sound dampening material for reducing sound levels.

C.93 **CREW CAB WINDOWS**

C.93.1 Vertically sliding windows, with tinted glass, shall be provided on each side of the crew cab for additional ventilation.

C.93.2 The rear wall of the crew cab shall have two (2) windows, each being 17.00" wide x 14.50" high. Each window shall slide to the side for ventilation.

C.93.3 The side windows in the crew area of the cab shall be a two way horizontal or vertical slider. The rear wall windows in the cab shall be approximately 12" x 17" and shall be of the sliding type (horizontally sliding). These windows shall slide inboard. Additionally, 2 vertical windows, measuring approximately 9" x 30" and of the vertically sliding type, shall be provided on the rear cab wall so as to provide visibility by members dis-mounting the crew cab. A similar type of configuration will also be acceptable (approved by District at pre-construction).

C.94 KEY STORAGE

C.94.1 A metal plate for key storage shall be mounted in the cab at a location specified during the pre-construction conference. The plate shall be 7.50" high x 12.00" wide. The plate shall contain twelve (12) key rings.

C.95 STORAGE COMPARTMENTS, CAB

C.95.1 Provided on each side of the cab, to the rear of the crew cab access doors, shall be a storage compartment. The compartments shall be 11.25" wide x 14.00" deep x 19.00" high.

C.95.2 The doors shall be painted aluminum, single pan construction with one (1) flush quarter turn latch. A rubber covered bumper shall be used as a door stop.

C.96 LINE-X-ENGINE COVER

C.96.1 Line-X shall be sprayed on the interior side of the engine tunnel in place of vinyl.

C.96.2 HANDRAIL (INSTRUMENT PANEL)

C.96.3 A 16.00" long x 1.25" diameter handrail shall be mounted on the instrument panel across from the officer's seating position. The handrail shall be securely mounted in a location that is helpful for entering the cab. The handrail shall be an anodized aluminum extrusion with a ribbed design to provide a positive gripping surface.

C.97 RADIO MOUNTING PLATE

C.97.1 A grounded metal plate, for customer supplied radio installation, shall be mounted to be determined at preconstruction conference in the cab. The plate shall be 4.00" high x 7.00" wide x 1/8" thick. The plate shall be spaced 1.00" away from the wall it is mounted against.

C.98 SUNVISORS

C.98.1 Two (2) vinyl sunvisors shall be provided, one (1) above each windshield.

C.99 4-WAY ALUMINUM REAR WALL LINERS

C.99.1 4-Way aluminum wall liners shall be provided on the rear wall of crew cab. Liners shall extend from the upper cab floor to the ceiling.

C.100 FENDER CROWNS

C.100.1 Stainless steel fender crowns shall be installed at cab wheel openings. The fender crowns shall have a radius outside corner that allows the fender crown to extend beyond the side wall of the front tires and also allow the crew cab doors to open fully.

C.100 SCUFFPLATE, ENGINE TUNNEL

C.100.1 A brushed stainless steel scuffplate shall be provided on the entire rear vertical surface of the engine tunnel.

C.102 DOOR JAM SCUFFPLATES

C.102.1 All cab door jambs shall be furnished with a stainless steel scuffplate, mounted on the striker side of the jam.

C.103 SCUFFPLATES, REAR CAB CORNER GUARDS

C.103.1 Both rear cab corners shall be furnished with a full height, polished stainless steel corner guard scuffplate. The guard shall extend 1.00' from the corner to protect paint from damage when pulling items (such as booster hose) around the cab.

C.104 CAB DOOR INTERIOR PANELS

C.104.1 A full height stainless steel scuffplate shall be provided on the cab and crew cab interior doors. Scuffplates to be installed with hex head fasteners with plus nut inserts for frequent removal. Scuffplates shall be brushed finish.

C.105 MOLDING (ON SIDES OF CAB)

C.105.1 Chrome molding shall be provided on both sides of the cab.

C.106 MAP BOX

C.106.1 A map box, open from the side, shall be installed in a location determined at preconstruction conference. The map box shall be 19.75" wide x 8.25" high x 15.01" long. The map box shall be constructed of .125" aluminum and shall be painted to match the cab interior. Four (4) shelf slots and one (1) shelf shall be included. The entire outside of the box shall be sprayed with black Linex material.

C.107 CAB LIFT

C.107.1 A hydraulic cab lift system shall be provided consisting of an electric powered hydraulic pump, dual lift cylinders, and necessary hoses and valves.

C.107.2 Lift controls shall be on a panel located on the pump panel or front area of the body in a convenient location.

C.107.3 Cab shall be locked down by a two (2)-point automatic spring loaded hook mechanism that actuates after the cab has been lowered.

C.107.4 The hydraulic cylinders shall be equipped with a velocity fuse that protects the cab from accidentally descending when the control is located in the tilt position.

C.107.5 A redundant mechanical stay arm shall automatically be engaged once the cab has been fully raised. Before lowering the cab, this device must be disengaged using the stay arm control located near the cab raise/lower switch.

C.107.6 Shall utilize Dexron III fluid.

State type of fluid used_____

C.108 INTERLOCK, CAB LIFT TO PARKING BRAKE

C.108.1 The cab lift system shall be interlocked to the parking brake. The cab tilt mechanism shall be active only when the parking brake is set and the ignition switch is in the on position, if the parking brake is released the cab tilt mechanism shall be disabled.

C.109 MIRRORS

C.109.1 A Vel-Vac West Coast polished mirror, 6" x 16" flat glass and a 8" round convex glass shall be mounted on each side of the front cab doors.

State Make and Model Offered_____

C.110 SIDE VIEW MIRRORS

C.110.1 A 8.00" diameter convex mirror shall be provided over the officer's side front corner of the cab. The mirror shall provide the driver with a view of the passenger side of the vehicle. The mirror housing, tubing, clamps and hardware shall be constructed of corrosion resistant stainless steel.

C.111 BUMPER, FRONT

C.111.1 A one piece bumper manufactured from .25" formed steel with a .38" bend radius shall be provided. The bumper shall be a minimum of 10.00" high with a 1.50" top and bottom flange, and shall extend 22.00" from the face of the cab. The bumper shall be 95.28" wide with 45 degree corners and side plates. The bumper shall be metal finished and painted job color. To provide adequate support strength, the bumper shall be mounted directly to the front of the C channel frame. The frame shall be a bolted modular extension frame constructed of 50,000 psi tensile steel.

C.112 GRAVEL PAN, FRONT BUMPER

C.112.1 A gravel pan, constructed of bright aluminum treadplate, shall be furnished between the bumper and cab face. The gravel pan shall be properly supported from the underside to prevent flexing and vibration of the aluminum treadplate.

C.113 SIGHT RODS, FRONT BUMPER

C.113.1 Two (2) fiberglass sight rods shall be mounted to the outside corners of the front bumper extension. Each of these rods shall include a spring base and be 44” in height.

C.114 TOW EYES

C.114.1 Two (2) Chicago style tow eyes shall be mounted through the top of the bumper extension. The inner and outer edges of the utility eyes shall have a 0.25 radius.

State Make and Model Offered_____

C.115.2 The tow eyes shall be designed and positioned to allow up to a 6,000 pound straight horizontal pull in line with the centerline of the vehicle. The tow eyes shall not be used for lifting of the apparatus. The utility eyes shall be painted job color.

C.116 CAB INTERIOR

C.116.1 The cab dash fascias shall be a flat faced design to provide easy of maintenance and shall be constructed out of painted aluminum.

C.116.2 The engine tunnel shall be sprayed with Line-X polyurethane/ployurea elastomer abrasive resistant material.

State type of sprayed_____

C.116.3 Headliner material shall be Imperial 1200 vinyl coated polyester fabric. A sound barrier shall be part of its composition. Material shall be installed on aluminum sheet and securely fastened to interior cab ceiling.

State type of material_____

C.116.4 Cab headliner shall provide easy access for servicing electrical wiring or for other maintenance needs without removing the entire unit.

C.117 CAB INTERIOR UPHOLSTERY

C.117.1 The cab interior that includes Line-X material shall be black in color.

C.117.2 The cab interior that includes Imperial 1200 material shall be black in color. The headliner shall be Gray-Tweed Dura-Wear.

C.118 INTERIOR PAINT (CAB)

C.118.1 The cab interior metal surfaces shall be painted gray, vinyl texture paint.

C.119 GRAB HANDLE

C.119.1 A black rubber covered grab handle shall be mounted on the lower portion of the driver's side cab entrance to assist in entering the cab. The grab handle shall be securely mounted to the post area between the door and steering wheel column. A long rubber grab handle shall be mounted in the dash board in front of the officer.

C.120 CAB SEATING

C.120.1 A Seats Inc. #911 Magnum 100 "knee-action" air-ride style seat with high-back shall be provided in the cab for the driver black Imperial 1200 upholstery.

State Make and Model Offered _____

C.120.2 The seat shall have 3.00" of height adjustment, in addition to the "knee-action" suspension.

C.120.3 An HO Bostrom Tanker 450 fixed suspension SCBA seat shall be provided in the cab for the officer. The SCBA cavity in each seat shall be adjustable front to rear in 1.50" increments to accommodate different size SCBA bottles.

State Make and Model Offered _____

C.120.4 Moving the SCBA cavity shall be accomplished by unbolting, relocating and rebolting in the desired location.

C.120.5 The seat shall be a special design for the Washington D.C. Fire Department. The Bostrom part number is 224000-665F.

State Make and Model Offered _____

C.120.6 The driver and officer seats shall be furnished with three point shoulder type seat belts. The seat belts shall be furnished with automatic retractors. Extensions shall be provided with the seat belts so the male end can be easily grasped and the female end easily located while sitting in a normal position.

C.121 RADIO COMPARTMENT

C.121.1 A radio compartment shall be provided under the officer's seat.

C.121.2 The inside compartment dimensions shall be 14.25" deep x 15.75" across x 8.75" high.

C.121.3 A drop-down door with a chrome plated lift and turn latch shall be provided for access.

C.121.4 The compartment shall be constructed of smooth aluminum and painted to match the cab interior.

C.122 SEATING (CREW CAB)

C.122.1 Two (2) rear facing HO Bostrom Tanker 450 SCBA seats shall be provided in the outboard positions in the crew cab. The SCBA cavity in each seat shall be adjustable front to rear in 1.50" increments to accommodate different size SCBA bottles. These seats shall be the same design as the officer's seat. Part# 224000-665F.

State Make and Model Offered _____

C.122.2 Moving the SCBA cavity shall be accomplished by unbolting, relocating and rebolting in the desired location.

C.122.3 Two (2) forward facing seats shall be provided in the center positions, against the cab rear wall. The seats shall share a one (1) piece bottom cushion, hinged on the forward edge, allowing access to the space below. The area below the seats shall measure approximately 16.00"H x 19.00"W x 38.00"L.

C.122.4 In addition to the stationary crew cab seats two (2) fold up seats with retractable 3 point seat belts shall be provided on the rear wall in the outboard positions.

C.122.5 The seats shall be constructed of a heavy grade vinyl over foam rubber and shall have the bottom covered with brushed stainless steel for a pleasant appearance when the seat is in the up position.

C.122.6 Crew cab seats shall be furnished with three (3) point shoulder type seat belts. The seat belts shall be furnished with automatic retractors. Extensions shall be provided with the seat belts so the male end can be easily grasped and the female end easily located while sitting in a normal position.

C.122.7 All seating positions furnished with three (3)-point shoulder type seat belts shall include a height adjustment. This adjustment shall optimize the belts effectiveness and comfort for the seated firefighter.

C.122.8 All seating positions in cab and crew cab shall have red seat belts.

C.123 SEAT UPHOLSTERY

C.123.1 All Bostrom seat upholstery shall be black Dura-Wear, waterproof fabric.

C.123.2 All Seats Inc., 911 seat upholstery shall be black Imperial 1200, waterproof fabric.

C.124 AIR BOTTLE HOLDERS

C.124.1 Three (3) SCBA type seats in the cab shall have a Bostrom “SecureAll” SCBA locking holder bracket installed directly into the Bostrom seats. This bracket shall be compliant with NFPA 1901-04 Section 14.1.10.1.

C.125 AIR BOTTLE MOUNTING BRACKETS

C.125.1 Two (2) 45 degree mounting brackets shall be provided in the crew cab, one each side of the forward facing crew cab seats.

C.125.2 Each mounting bracket shall be designed to hold two (2) Ziamatic SCBA holders.

C.125.3 The bottom bottle holder shall be 2.00” off the floor and the top bracket shall be spaced 4.00” above the bottom one.

C.126 STORAGE COMPARTMENT IN CREW CAB

C.126.1 The forward facing seat riser shall be fitted with three (3) polished stainless steel doors. One (1) full width on the front and one (1) on each end of the seat riser. The door on the front shall be hinged on the bottom. The doors on each end shall be vertically hinged at the rear and fitted with a flush lift and turn latch.

C.127 HEADREST, FOLD UP SEATS

C.127.1 There shall be a headrest for the two (2) fold up seats in the crew cab.

C.128 BACK REST INSERTS

C.128.1 Provided with the Bostrom SCBA seats shall be back rest inserts which cover the SCBA cavity.

C.128.2 The insert covers shall be padded and covered with same material as the seat. A total of three (3) insert covers shall be provided.

C.129 ENGINE COMPARTMENT LIGHT

C.129.1 An engine compartment light shall be installed under the engine hood, of which the switch is an integral part. Light shall have a .125” diameter deep hole in its lens to prevent moisture retention.

C.130 CAB DOME LIGHTS

C.130.1 There shall be two (2) Whelen, Red/Clear LED 7”x 3” dome lights located one over the driver side and one over the passenger side, controlled by the following:

- a. Clear forward light controlled by the door switch and a switch on the lens.
- b. Red rearward light controlled by the lens switch.
- c. Two (2) Adjustable Map Lights with switches mounted on the cab ceiling.
- d. A Courtesy Light at Each Door Opening controlled by automatic door switches.

State Make and Model Offered _____

C.131 CREW CAB INERIOR LIGHTING

C.131.1 Auxiliary lights shall be provided in the crew cab and consist of:

- a. Two (2) Whelen, Red/Clear LED 7" x 3" dome light locted in the center, controlled by the following:
- b. Clear forward light controlled by the door switch and a switch on the lens.
- c. Red rearward light controlled by the lens switch.
- d. A courtesy light at each door opening, controlled by automatic door switches.

State Make and Model Offered _____

C.132 STEP LIGHTS

C.13321 There shall be four (4) Ritar, Model M27HW2, LED, step lights provided. The lights shall be installed at each cab and crew cab door, one (1) per step, in the driver side front doorstep, driver side crew cab doorstep, passenger side front doorstep and passenger side crew cab doorstep. The lights shall be activated when the adjacent door is opened.

State Make and Model Offered _____

C.133 CAB DEFROSTER

C.133.1 There shall be a 41,000 BTU/hr defroster in the cab located under the engine tunnel.

C.133.2 The defroster ventilation shall be built into the design of the cab dash instrument panel and shall be easily removable for maintenance.

C.133.3 The defroster shall have a three (3) speed blower, and temperature controls accessible to the driver and officer.

C.133.4 The defroster ducts shall be designed to provide maximum defrosting capabilities for the front cab windows.

C.134 CAB/CREW CAB HEATER

C.134.1 Two (2) auxiliary heaters with 32,000 BTU/hr each shall be provided in the cab. The heaters shall have a three (3) speed blower, and temperature controls accessible to the driver and officer. There shall also be louvers located below the rear facing seat riser and below the driver and officer positions for airflow.

C.134.2 The heaters shall be mounted, one (1) within each rear facing seat riser.

C.135 AIR CONDITIONING

C.135.1 A high performance air conditioning system shall be furnished inside the cab and crew cab.

C.135.2 The air conditioning system shall perform as follows:

C.135.3 In 100 degree Fahrenheit ambient temperature with 50 percent relative humidity and at maximum compressor speed, the cab and crew cab shall cool down to 75 degrees Fahrenheit within 30 minutes. Actual test results of the air conditioning system, verifying this performance requirement, shall be submitted at delivery.

C.135.4 A 19.1 cubic inch compressor shall be installed on the engine.

C.135.5 The entire unit shall be mounted externally in a 4-way diamond plate enclosure, with adequate BTU to meet the performance specification, shall be installed on the cab roof.

C.135.6 There shall be air flow outlets located in the following locations:

- a. Two (2) in the ceiling, just above the driver and the officer
- b. Six (6) in the crew cab, mounted in ceiling, positioned to maximize cooling
- c. The evaporator units shall have an adequate BTU rating to meet the performance specifications.
- d. The air conditioning system shall have adjustable air outlets incorporated into the cab ceiling at both the driver, officer, and crew cab positions.
- e. The air conditioner refrigerant shall be R-134A, installed by a certified technician.

C.136 INTERIOR CAB INSULATION

C.136.1 The cab and crew cab walls shall be insulated with 2.00" insulation where possible and the roof with 1.00" insulation to aid in cooling.

C.136.2 The insulation shall be covered with a vinyl liner or a metal panel painted to match the interior.

C.136.3 An additional red warning light shall be installed to the side of the exterior air conditioning housing. The light shall match the upper zone lighting package to meet NFPA requirements.

C.137 ROOF VENT

C.137.1 Two (2) manual roof vents shall be installed in the crew cab ceiling for fresh air ventilation.

C.138 CAB INSTRUMENTATION

- C.138.1** Instrument panel controls and switches shall be identified to function by imprinted words adjacent to each item. Actuation of the headlight switch shall illuminate (“back-lit”) wording for after dark operation. Turn signal and high beam headlight indicator lights shall also be provided.
- C.138.2** To avoid confusion, warning indicators shall be (where possible) the “dead front” type, meaning the warning light and word identification of the same, does not show up unless it is necessary. The built-in emergency light switch panel shall have a master switch plus individual switches for selective control.
- C.138.3** The switch panel shall be located on top of the engine tunnel within easy reach of the driver.
- C.138.4** Switches shall be rocker type containing an indicator light, which is an integral part of the switch. The emergency switch control panel configuration shall be as such that the driver’s shall be the primary user. Instrument panel gauges, vehicle lights and other electrical accessories shall have proper size wiring to accommodate the expected current load. Wiring shall meet SAE J-1128 specifications for high temperature (250 degrees Fahrenheit minimum) conditions and shall be color, number and function coded.
- C.138.5** Cab instruments and controls shall be conveniently located within the forward cab section. Gauges and emergency vehicle switches shall be installed on removable panels for ease of service. The following gauges and controls shall be furnished:
- a. Speedometer/Odometer: Electric
 - b. Officer Speedometer, A Class I digital display speedometer shall be provided on the officer side overhead position.
 - c. Tachometer: Electric
 - d. Hourmeter for both Engines
 - e. Engine Oil Pressure Gauge: Red warning light and an audible alarm
 - f. Engine Coolant Temperature Gauge: Red warning light and an audible alarm.
 - g. Automatic transmission Oil Temperature Gauge: Red warning Light and an audible alarm.
 - h. Two (2) Air Pressure Gauges: Red warning lights and an audible alarm.
 - i. Voltmeter: Warning light and audible alarm indicating high or low voltage.
 - j. Low Coolant Indicator Light (amber): Audible alarm
 - k. Fuel Gauge
 - l. Low Fuel Indicator Light: Audible alarm
 - m. Ignition Switch: Green indicator light
 - n. Starter Control
 - o. Heater Controls
 - p. Headlight Switch
 - q. Self Canceling Turn Signal Switch (arm): Visual indicators

- r. Headlight Dimmer and Hazard Switch: Incorporated into turn signal arm.
- s. Warning Light Switch Control Panel
- t. Parking Brake Control: Red indicator light
- u. Horn Button: Center of the steering wheel (for dual electric horns)
- w. Control to Check Engine Warning System Indicators.
- x. High Air Restriction Warning Indicator Light (electronic).
- y. (2)-speed Windshield Wiper Control with Intermittent Feature. The control shall also have a “return to park” provision, which allows the wipers to return to the stored position when the wipers are not in use.
- z. Windshield Washer Controls
- aa. A Class 1 Engine Status Center or equivalent shall be provided on cab dash in place of standard gauges. If the ESC will not work with the DDEC software an ENFO IV shall be provided.
- bb. A Pump hour meter for both fire pumps.

C.139 PUMP PRESSURE GAUGE IN CAB

C.139.1 There shall be a pressure gauge installed in the cab and manufactured by Class 1. The display shall be completely electronic using a transducer to sense both vacuum and pressure.

C.140 ON BOARD ENGINE MONITOR

C.140.1 A Detroit Diesel, Model: ProDriver™, DC, Engine monitor shall be installed on the instrument panel.

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C.141 COMMUNICATIONS INSTALLATIONS/RADIO

C.141.1 TWO-WAY RADIO COMMUNICATIONS SYSTEM

C.141.2 Furnished and installed in the cab shall be one (1) Motorola Astro25 XTL5000 two-way radio with “O5” version remote control head and DEK status head. To accommodate the installation of the two-way radio installation, the following components shall be provided and installed:

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C.141.3 One (1) 4” x 7” x 1/8” minimum thickness, grounded metal plate shall be installed on the cab dash, that will be accessible to both the driver and the officer.

C.141.4 One (1) 30 ampere, 12VDC (B+&B-) service drop 18” of extra wire shall be provided and located under the officer’s seat. This shall be a dedicated circuit, and shall be protected by a circuit breaker.

C.141.5 One (1) 15 ampere, 12VDC (B+ switched and B-) service drop with 12” of extra wire shall be provided at the grounded metal plate located on the cab dash. This will be a dedicated circuit and shall be protected by a circuit breaker.

C.141.6 One (1) Antenna Specialist mode #K-794 antenna mount shall be provided and installed on cab roof. The antenna cable shall be routed to the VRS.

C.141.7 One (1) Motorola Model #HKN6169A shall be provided and installed between the grounded plates on the cab dash to the mobile radio under the officer’s seat.

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C.141.8 One (1) Motorola model HSN6001B remote radio speaker shall be provided and installed in the cab ceiling in a position that will allow all cab occupants to hear the radio. The speaker cable shall be routed from the speaker to the grounded plate on the cab dash.

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C.141.9 One (1) David Clark remote speaker, with volume control, shall be provided and installed at the pump panel. The technical aspect of the installation for the Motorola AStro25 XTL5000 two-way radio shall be discussed during the Engineering Conference.

State Make and Model Offered_____

C.141.10 The two-way radio control head shall be connected to the B+ switched battery terminal (battery switch) All terminal connection points shall be protected against accidental contact, and all cabling shall be routed away from heat sources and protected from chafing or excessive stress during cab-tilting.

C.142 AUTOMATIC VEHICLE LOCATOR (AVL)

C.142.1 One (1) Sierra Wireless modem, model #MP555 (or MP595 depending on availability per DC OUC) with GPS shall be furnished and installed as directed by the Fire Department.

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C.142.2 One (1) Antenna Plus model #AP8500 antenna (Cellular/GPS combo) shall be furnished and installed on the cab roof.

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C.142.3 One (1) LEDCO “Chargeguard” shall be provided.

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C.142.4 The installation of the AVL requires one (1) 12VDC constant hot connection, one (1) 12V DC switched connection and a ground connection.

C.143 VEHICULAR REPEATER SYSTEM (VRS)

C.143.1 Two (2) antenna mounting plates for the Vehicular Repeater System (VRS) shall be provided and installed one (1) each side of the cab roof, at the rear corners.

C.143.2 One (1) Futurecom Mobexcom P25 DVRS “in band” vehicular repeater system shall be furnished and installed.

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C.143.3 Two (2) Maxrad model #MP8066 panel antennas shall be furnished and installed, one (1) on each of the antenna mounting bases located on the cab roof.

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C.143.4 The VRS shall be interfaced with the two-way radio system.

C.144 INTERCOM SYSTEM

C.144.1 A David – Clark or equivalent vehicle intercom system shall be provided and connected to the radio system. There shall be 6 interior positions and 1 pump panel position. The Contractor shall coordinate the installation of the intercom system with the Motorola Contractor who performs the radio installation to ensure system integration that does not void either warranty. An additional five (5) spare headsets shall be provided. A Fire Com style head set hanger hook shall be furnished at each head set location. The David Clark radio interface shall also be properly wired and connected to the system. There shall be a remote speaker from David Clark with a volume control in the pump panel area.

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C.144.2 Install wiring for (4) fire department supplied portable radio chargers in the cab.

C.144.3 The Contractor shall ensure that all radio, intercom and headset installations are free from feedback and interference. The Contractor shall install any filters required to accomplish this.

C.145 SWITCH PANELS

C.145.1 The built-in emergency light switch panel shall have a master switch plus individual switches for selective control. The switch panel shall be located in the “overhead” position above the windshield on the driver’s side to allow for easy access. Switches shall be rocker type with an indicator light, of which is an integral part of the switch.

C.146 ELECTRICAL POWER CONTROL SYSTEM

C.146.1 A compartment shall be provided in or under the cab to house the vehicles electrical power and signal circuit protection and components. The power and signal protection and control compartment shall contain circuit protection devices and power control devices. Power and signal protection and control components shall be protected against corrosion, excessive heat, excessive vibration, physical damage and water spray.

C.146.2 Serviceable components shall be readily accessible.

C.146.3 Circuit protection devices, which conform to SAE standard, shall be utilized to protect each circuit. All circuit protection devices shall be sized to prevent wire and component damage when subjected to extreme current overload. General protection circuit breakers shall be Type-1 automatic reset (continuously resetting) and conform to SAE J553 or J258. PTO power circuits shall be protected by Type III manual reset non-cycling circuit breakers conforming to SAE J553 or J258 which remain open until manually reset. When required, automotive type fuses conforming to SAE J554, J1284, J1888 or J2077 shall be utilized to protect electronic equipment.

C.146.4 Power control relays and solenoids shall have a direct current (DC) rating of 125 percent of the maximum current for which the circuit is protected.

C.146.5 Visual status indicators shall be supplied to identify control safety interlocks and vehicle status. In addition to visual status indicators, audible alarms designed to provide early warning of problems before they become critical shall be used.

C.147 VOLTAGE MONITOR SYSTEM

C.147.1 A voltage monitor system shall be provided to indicate the status of each battery system connected to the vehicles electrical load. The monitor system shall provide visual and audio warning when the system voltage is above or below optimum levels.

C.148 POWER AND GROUND STUD

C.148.1 A 12-volt power stud and a grounding stud shall be provided in the electrical component compartment for 2-way radio equipment.

C.149 EM/RFI PROTECTION

C.149.1 The electrical system proposed shall include means to control undesired electromagnetic and radio frequency emissions. State of the art electrical system design and components shall be used to insure radiated and conducted EMI (electromagnetic interference) and RFI (radio frequency interference) emissions are suppressed at their source.

C.149.2 The apparatus proposed shall have the ability to operate in the electromagnetic environment typically found in fire ground operations. The contractor shall be able to demonstrate the EMI and RFI testing has been done on similar apparatus and certifies that the vehicle proposed meets SAE J551 requirements.

C.149.3 EMI/RFI susceptibility shall be controlled by applying immune circuit designs, shielding, twisted pair wiring and filtering. The electrical system shall be designed for full compatibility with low level control signals and high powered 2-way radio communication systems. Harness and cable routing shall be given careful attention to minimize the potential for conducting and radiated EMI-RFI susceptibility.

C.150 DRIVE CAM

C.150.1 There shall be a Drive Cam Driver feedback system installed in the cab and mounted to the windshield. The exact mounting location shall be decided at the pre construction conference. (Licensed to DCFD)

Contact: Dan Hoffman – Fleet Safety Consultant
Drive Cam Video Systems
3954 Murphy Canyon Rd. #D205
San Diego, CA 92123
858-380-3021
www.drivecam.com

C.150 GPS SYSTEM

C.150.1 A Garmin global positioning system shall be provided. A Global positioning navigational system shall be furnished and installed in the cab between the driver and the officer. The exact mounting location will be determined at the preconstruction conference.

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C.151 AUTOMATIC CHASSIS LUBRICATION

C.151.1 A Vogel Automatic Lubrication System shall be provided. The lubrication shall be supplied while the vehicle ignition switch is active to allow a uniform application of grease to the locations listed. The electronic control unit that forms part of the system shall activate the pump after an adjustable interval time. The unit shall control and monitor pumps operation and report any faults via an indicator light on the driver's

dashboard of the cab. The lubrication system reservoir which requires a 15.00” wide x 14.50” high x 6.25” deep mounting area shall be located pump huse on the apparatus.

- Front Suspension components
- Cab Hinge Pins
- Rear Axle Slack Adjusters
- Rear Axle Brake Cam Screws
- Rear Suspension Spring Pins
- Rear Suspension Shackle Pins
- Walking Beam Pins (Tandem axle)

State Make and Model Offered_____

C.153 CAB ROOF COVERING

C.153.1 Horizontal cab roof surfaces shall be covered with bright aluminum treadplate. Edges and fastening screws shall be properly caulked to prevent water from leaking under aluminum. Front and side warning lights shall not be mounted on top of treadplate. The treadplate shall extend and terminate next to the warning lights.

C.154 BATTERY SYSTEM

C.154.1 Six (6)-Deka model 1131XMF, 12 volt, 1000 CCA, 185 reserve capacity, high cycle, maintenance-free, group 31 batteries with a system rating of 6000 CCA at 0 degrees Fahrenheit and 1110 minutes of reserve capacity. The batteries shall be provided with threaded posts.

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C.155 BATTERY SYSTEM

C.155.1 A single starting system shall be provided.

C.155.2 An ignition switch and starter button shall be located on the instrument panel.

C.156 MASTER BATTERY SWITCH

C.156.1 A master battery switch, to activate the battery system, shall be provided inside the cab within easy reach of the driver.

C.156.2 An indicator light shall be provided on the instrument panel to notify the driver of the status of the battery system.

C.157 BATTERY COMPARTMENTS

C.157.1 Batteries shall be placed on non-corrosive mats and be stored in well ventilated compartments located under the cab that are covered in Linex. The battery hold downs shall be of a non-corrosive material. All bolts and nuts shall be stainless steel.

C.157.2 Heavy-duty battery cables shall be used to provide maximum power to the electrical system. Cables shall be color coded.

C.157.3 Battery terminal connections shall be coated with anti-corrosion compound. Battery solenoid terminal connections shall be encapsulated with semi-permanent rubberized compound. There shall be a door in the crew cab floor to provide access to the battery terminals. There shall be access provided to the batteries so that they may be changed out by a mechanic without having to tilt the cab.

C.158 JUMPER STUDS

C.158.1 One (1) set of battery jumper studs with plastic color coded covers shall be installed on the front side of battery box on driver's side. This shall allow enough room for easy jumper cable access. A tag shall be provided for positive/negative terminals.

C.159 BATTERY CHARGER

C.159.1 A Kussmaul Autocharge 1000, model 091-56-12 battery charger with internal battery saver shall be provided. A bar graph display indicating the state of charge shall be included.

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C.159.2 The battery saver circuit shall be capable of supplying up to three (3) amps for external loads such as handlights or auxiliary radio batteries.

C.159.3 The battery charger shall be wired to the 120-volt shoreline to activate automatically when power is connected. Battery charger shall be located in the crew cab seat riser. The battery charger indicator shall be located behind the driver's door on the outside of the cab.

C.160 DUAL ALTERNATORS

C.160.1 A pair of Leece-Neville 270 amp alternators shall be provided. They shall have a rated output current of 540 amps, as measured by SAE method J56. The alternators shall feature an integral, fail-safe regulator and rectifier. The alternators shall be connected to the power and ground distribution system with heavy-duty cables sized to carry the full rated alternator output.

C.160.2 **OR** A single 290 AMP minimum alternator as an option.

C.161 ROTO-RAY WIRING ONLY

C.161.1 The chassis shall be prewired for a Roto-Ray light. The wiring shall be routed from a switch in the cab instrument panel to the cab grille area.

C.162 SPARE CIRCUIT

C.162.1 There shall be two (2) pair of wires installed.

The above wires shall have the following features:

- Wires shall be connected directly to the battery power.
- Wires shall be protected to 15 amps.
- Power and ground shall end at the cab dash.
- Termination shall be with 15 amp, power point plug with rubber cover.
- Wires shall be sized to 125% of the protection.

C.163 SECOND SPARE CIRCUIT

C.163.1 There shall be five (5) pair or wires installed.

The above wires shall have the following features:

- Wires shall be connected directly to the battery switched power.
- Wires are protected to 15 amps.
- Power and ground termination will be determined at preconstruction conference for the department supplied hand light chargers.
- Termination is with water resistant male and female plugs.
- Wires shall be sized to 125% of the protection.

C.164 ELECTRONIC LOAD MANAGEMENT

C.164.1 A Class – One electronic load management system shall be provided that monitors the vehicles 12-volt electrical system, and automatically reduces the electrical load in the event of a low voltage condition and by doing so, ensures the integrity of the electrical system.

C.164.2 The ELM shall monitor the vehicle’s voltage while at the scene (parking brake applied). It shall sequentially shut down individual electrical loads when the system voltage drops below a preset valve. There shall be a automatic high idle feature incorporated into the load manager.

C.165 SEQUENCER

C.165.1 A warning light sequencer shall be provided that automatically turns the emergency lights on and off in a preset sequence. The sequencer shall be wired in conjunction with the emergency master light switch.

When the switch is activated the lights shall be turned on in sequence one by one at ½ second intervals thereby protecting the alternator from power surges. When turned off the same process shall deactivate the warning lights in sequence to allow a gradual decrease in alternator output, rather than dumping the load.

C.166 AMP DRAW REPORT

C.166.1 The bidder shall provide, at the time of bid and delivery, an itemized print out of the expected amp draw of the entire vehicle's electrical system.

C.166.2 The manufacturer of the apparatus shall provide the following:

1. A written load analysis, which shall include the following
 - A. The nameplate rating of the alternator
 - B. The alternator rating under the conditions specified per:
Applicable NFPA 1901 or 1906 (Current Edition).
 - C. The minimum continuous load of each component that is specified per
Applicable NFPA 1901 or 1906 (Current Edition).
 - D. Additional loads that, when added to the minimum continuous load,
determine the total connected load.
 - E. Each individual intermittent load.

All of the above listed items shall be provided by the bidder per the applicable NFPA 1901 or 1906 (Current Edition).

C.167 EXTERIOR LIGHTING

C.167.1 Exterior lighting shall meet or exceed Federal Department of Transportation, Federal Motor Vehicle Safety Standards and National Fire Protection Association requirement in effect at time of bid.

C.167.2 Front headlights shall be halogen, rectangular shape, and one (1) pair mounted in each front trim housing.

C.167.3 The LED directional lights shall wrap-around on the out side corners of the trim housing. The headlight and LED directional lights shall be in the same assembly.

C.167.4 Five (5) Bullet Style LED clearance and marker lights shall be installed across the leading edge of the cab.

C.168 WARNING LIGHTS (CAB FACE)

C.168.1 One (1) pair of Whelen model 60*02*F*R flashing Super LED lights shall be provided on the front of the cab above the headlights.

C.168.2 The color of these lights shall be red Super LED/red lens and shall be provided with a flange kit.

C.168.3 These lights are provided to meet or exceed NFPA required front zone lower optical light output and optical power output.

C.168.4 One (1) switch located on the instrument panel shall activate these lights.

C.169 BACK-UP ALARM

C.169.1 An ECCO, Model SA917-PM2, solid state electronic audible back-up alarm that actuates when the truck is shifted into reverse shall be provided. The device shall sound at 60 pulses per minute and automatically adjust its volume to maintain a minimum five (5) dba above surrounding environmental noise levels.

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C.170 MANUAL, FIRE APPARATUS PARTS

C.170.1 Two (2) custom parts manuals for the complete fire apparatus shall be provided in hard copy and CD format with the completed unit.

C.170.2 The manual shall contain the following:

- Job number
- Part numbers with full descriptions
- Table of contents
- Parts section sorted in functional groups reflecting a major system, component, or Assembly
- Parts section sorted in Alphabetical order
- Instructions on how to locate a part.

The manual shall be specifically written for the chassis and body model being purchased. It shall not be a generic manual for a multitude of different chassis and bodies.

C.171 SERVICE PARTS INTERNET SITE

C.171.1 The service parts information included in this manual is also available on the factory website. The website offers additional functions and features not contained in this manual, such as digital photographs and line drawings of select items. The website also features electronic search tools to assist in locating parts quickly.

C.172 MANUALS, CHASSIS SERVICE

C.172.1 Two (2) chassis service manuals containing parts and service information on major components shall be provided with the completed unit as well as CD Format.

The manuals shall contain the following sections:

- Job number
- Table of contents
- Troubleshooting
- Front Axle/Suspension
- Brakes
- Engine
- Tires
- Wheels
- Cab
- Electrical, DC
- Air Systems
- Plumbing
- Appendix

The manual shall be specifically written for the chassis model being purchased. It shall not be a generic manual for a multitude of different chassis and bodies.

C.173 MANUALS, CHASSIS OPERATION

C.173.1 Two (2) chassis operation manuals shall be provided as well as in CD Format.

C.174 ELECTRICAL WIRING DIAGRAMS

C.174.1 Three (3) compact discs containing “As-Built” electrical wiring diagrams specifically prepared for the chassis and body shall be provided. The diagrams shall consist of information pertaining to the 12 VDC systems only.

C.174.2 Due to the complexity of each custom unit built and change orders that occur; the design of the “as built wiring diagrams” shall begin after the delivery of the unit to the Fire Department. Two (2) CD’s shall be shipped to Fire Department after delivery of the vehicle, upon completion of the wiring diagrams. One (1) CD shall be included with the job folder at apparatus builder’s facility for future reference.

C.174.3 Each CD shall include the following capabilities:

- The capability of viewing each separate diagram.
- The capability of zooming in on any section of each separate diagram.
- The capability of printing each separate diagram.
- The capability of printing each zoomed in area of each separate diagram.

C.174.4 Each CD shall include the following items:

- Title page, identifying the job number and chassis model.
- Table of contents.
- Truck specific electrical compartment and instrument layouts for the chassis.
- Truck specific electrical compartment layouts for the body.
- Applicable drawings from the appropriate standard wiring diagrams.
- All truck specific wiring diagrams (special drawings).
- Harness drawings for all wiring harnesses used on the body.

There shall be two (2) hard copies of these diagrams required for this unit.

C.175 WATER TANK

C.175.1 Booster tank shall have a capacity of 1,000 gallons and be constructed of polypropylene plastic by United Plastic Fabricating, Incorporated.

C.175.2 Tank joints and seams shall be nitrogen welded inside and out.

C.175.3 Tank shall be baffled in accordance with NFPA Bulletin 1901 requirements.

C.175.4 Baffles shall have vent openings at both the top and bottom to permit movement of air and water between compartments.

- C.175.5** Longitudinal partitions shall be constructed of .38” polypropylene plastic and shall extend from the bottom of the tank through the top cover to allow for positive welding.
- C.175.6** Transverse partitions shall extend from 4.00” off the bottom of the tank to the underside of the top cover.
- C.175.7** All partitions shall interlock and shall be welded to the tank bottom and sides.
- C.175.8** Tank top shall be constructed of .50” polypropylene. It shall be recessed .38” and shall be welded to the tank sides and the longitudinal partitions.
- C.175.9** Tank top shall be sufficiently supported to keep it rigid during fast filling conditions.
- C.175.10** Construction shall include 2.00” polypropylene dowels spaced no more than 30.00” apart and welded to the transverse partitions. Two (2) of the dowels shall be drilled and tapped (.50” diameter, 13.00” deep) to accommodate lifting eyes.
- C.175.11** A sump that is 8.00” long x 8.00” wide x 6.00” deep shall be provided at the bottom of the water tank.
- C.175.12** Tank shall be installed in a fabricated cradle assembly constructed of structural steel.
- C.175.13** Sufficient crossmembers shall be provided to properly support bottom of tank. Crossmembers shall be constructed of steel bar channel or rectangular tubing.
- C.175.14** Tank shall “float” in cradle to avoid torsional stress caused by chassis frame flexing. Rubber cushions, .50” thick x 3.00” wide, shall be placed on all horizontal surfaces that the tank rests on.
- C.175.15** Stops or other provision shall be provided to prevent an empty tank from bouncing excessively while moving vehicle.
- C.175.16** Mounting system shall be approved by the tank manufacturer.
- C.175.17** Fill tower shall be constructed of .50” polypropylene and shall be a minimum of 8.00” wide x 14.00” long.
- C.175.18** Fill tower shall be furnished with a .25” thick polypropylene screen and a hinged cover.
- C.175.19** An overflow pipe, constructed of 4.00” schedule 40 polypropylene, shall be installed approximately halfway down the fill tower and extend through the water tank and exit to the rear of the rear axle.

C.175.20 The water tank fill dome shall be located the water and foam domes shall be located in the forward corners of the hosebed.

C.176 MANHOLE COVER

C.176.1 A removeable manhold cover shall be provided on the foam tank for access to the tank sump.

C.177 HOSE BED

C.177.1 The hose body shall be fabricated of stainless steel.

C.177.2 The sides shall not form any portion of the fender compartments.

C.177.3 Hose body width shall be a minimum of 70.00” inside.

C.177.4 Upper and rear edges of side panels shall have a double break for rigidity; a split tube finish shall not be acceptable.

C.177.5 The upper inside area of the beavertails shall be covered with brushed stainless steel to prevent damage to painted surface when hose is removed.

C.177.6 Flooring of the hose bed shall be removable aluminum grating with the top surface corrugated to aid in hose aeration. The grating stats shall be a minimum of .50” x 4.50” with spacing between slats for hose ventilation.

C.177.7 Hose bed shall accommodate 1250 feet of 5.00” DJP; 1250 feet of 5.00” DJP; 900 feet of 3.00”DJP.

C.177.8 Two (2) adjustable stainless steel hosebed dividers shall be furnished for separating hose.

C.177.9 Each divider shall be constructed of a .125” brushed aluminum sheet fitted and fastened into a slotted, 1.50” diameter raduised extrusion along the top, bottom and rear edge.

C.177.10 Partition shall be fully adjustable by sliding in tracks, located at the front and rear of the hose bed.

C.177.11 Divider shall be held in place by tightening bolts, at each end. Acorn nuts shall be installed on all bolts in the hose bed, which have exposed threads.

C.178 HOSE RESTRAINT

C.178.1 The hose in the hosebed shall be restrained by black nylon Velcro straps at the top of the hosebed and a black nylon web strap netting at the top and rear of the hosebed. The netting shall include quick release fasteners.

C.179 CUTOUTS, HANDHOLD

C.179.1 A cutout with raduised corners shall be provided at the rear of the two (2) hose bed dividers.

C.180 RUNNING BOARDS

C.180.1 Running boards shall be fabricated of .125” bright aluminum treadplate with a grip-strut insert if there is not a hose well provided.

C.180.2 Each running board shall be supported by a welded 2.00” square tubing and channel assembly, which shall be bolted to the pump compartment substructure.

C.180.3 Running boards shall be 12.75” deep and spaced .50” away from the pump panel.

C.180.4 A splashguard shall be provided above the running board treadplate.

C.181 TAILBOARD

C.181.1 Rear step shall also be constructed of .125” bright aluminum treadplate and spaced .50” from the body, as well as supported by a structural steel assembly.

C.181.2 The rear tailboard shall b 18.00” deep and 8.00” deep of the extended body compartments with angled corners and grip strut inserts.

C.181.3 The exterior sides shall be flanged down and in.

C.181.4 Flanges shall not be notched.

C.181.5 Entire rear surface between the beavertails shall be covered with a smooth aluminum overlay panel.

C.181.6 Inside surface of each beavertail in the hose bed area shall be covered with polished stainless steel to protect the paint finish.

C.181.7 The remaining inside surface of the beavertails shall be covered with bright aluminum treadplate.

C.182 TOW EYES

C.182.1 Two (2) rears painted tow eyes shall be located at the rear of the apparatus and shall be mounted directly to the chassis frame rails. The inner and outer edges of the tow eyes shall have a radius.

C.183 GRIP STRUT MATERIAL

C.183.1 A Grip Strut insert shall be in assembled into the running boards and rear tailboard.

C.184 HOSE TRAY

C.184.1 One (1) hose tray shall be recessed in the passenger side running board.

C.184.2 Capacity of the tray shall be 50 feet of 3.0”.

C.184.3 Extruded aluminum grating shall be installed on the floor of the tray to provide proper ventilation.

C.185 STRAPS FOR HOSE TRAY

C.185.1 One (1) hose tray shall have two (2) straps with seat belt style buckle fasteners to secure items located in the hose tray. The location shall be in the passenger side running board.

C.186 COMPARTMENTATION

C.186.1 Body and compartments shall be fabricated of 304L stainless steel.

C.186.2 Side compartments shall be an integral assembly with the rear fenders.

C.186.3 Circular fender liners shall be provided for prevention of rust pockets and ease of maintenance.

C.186.4 Compartment flooring shall be 12 gauge and of the sweep out design, with the floor higher than the compartment door lip.

C.186.5 The compartment door opening shall be framed by flanging the edges in 1.75” and bending out again .75” to form an angle.

C.186.6 Drip protection shall be provided above the doors by means of bright aluminum extrusion, formed bright aluminum treadplate, or polished stainless steel.

C.186.7 The top of the compartment shall be covered with bright aluminum treadplate rolled over the edges on the front, rear, and outward side. These covers shall have the corners “TIG” welded.

C.186.8 Side compartment covers shall be separate from the compartment tops.

C.186.9 Front facing compartment walls shall be covered with bright aluminum treadplate.

C.186.10 All screws and bolts which protrude into a compartment shall have acorn nuts on the ends to prevent injury.

C.187 UNDERBODY SUPPORT SYSTEM

- C.187.1** Due to the severe loading requirements of this pumper, a method of body and compartment support suitable for the intended load shall be provided.
- C.187.2** The backbone of the support system shall be the chassis frame rails, which is the strongest component of the chassis and designed for sustaining maximum loads.
- C.187.3** Support system shall include .375" thick steel vertical angle supports bolted to the chassis frame rails with .50" diameter bolts.
- C.187.4** Attached to the bottom of the steel vertical angles shall be horizontal angles gusseted and welded to the vertical members, extending to the outside edge of the body.
- C.187.5** A design with body compartments hanging on the chassis, unsupported, shall not be acceptable.

C.188 AGGRESSIVE WALKING SURFACE

- C.188.1** All exterior surfaces designated as stepping, standing, and walking areas shall comply with the required average slip resistance of the current NFPA standards.

C.189 COMPARTMENT VENTILATION

- C.189.1** All compartments shall be ventilated. A louvered vent shall be furnished in a wall of the lower compartments to provide the proper airflow inside the compartment and to prevent water from dripping into the compartment. These louvers shall be formed into the metal and not added to the compartment as a separate plate.

C.190 COMPARTMENTATION, DRIVER'S SIDE

- C.190.1** A full height, vertically hinged, double door compartment ahead of the rear wheels shall be provided. The interior dimensions of this compartment shall be 44.50" wide x 63.63" high x 24.00" deep in the lower 26.00" of the compartment and 10.88" deep in the remaining upper portion. The depth of the compartment shall be calculated with the compartment door closed. The clear door opening of this compartment shall be 40.00" wide x 60.43" high.
- C.190.2** A Cleveland Door Stay positive door holder shall be furnished with this compartment.
- C.190.3** Two (2) vertically hinged, double door compartments over the rear wheels shall be provided. Each compartment to be approximately 44.50" wide x 33.13" high x 10.88" deep inside with a door opening of 43.00" wide x 29.62" high.
- C.190.4** A Cleveland Door Stay positive door holder shall be furnished with these compartments.

C.190.5 A full height, vertically hinged, double door compartment behind the rear wheels shall be provided. The interior dimensions of this compartment shall be 54.50” wide x 63.63” high x 24.00” deep in the lower 26.00” of the compartment and 10.88” deep in the remaining upper portion. The depth of the compartment shall be calculated with the compartment door closed. The clear opening of this compartment shall be 50.00” wide x 60.43” high.

C.190.6 A Cleveland Door Stay positive door holder shall be furnished with this compartment.

C.190.7 **OPTION:** The manufacturer shall be prepared to offer the option at the pre-construction conference at no charge to furnish in place of the 2 large vertically hinged compartment doors in the front and the rear of the body as one lower and one upper vertically hinged compartment.

C.191 PASSENGER’S SIDE COMPARTMENTS

C.191.1 The passenger’s side compartments shall consist of:

C.191.2 A double door compartment shall be ahead of the rear wheels, 44.50” wide x 29.75” high x 24.00” deep inside with a door opening of 40.00” wide x 26.62” high.

C.191.3 A double door compartment shall be behind the rear wheels, 54.50” wide x 29.75” high x 24.00” deep inside, with a door opening of 50.00” wide x 26.62” high.

C.192 DOORS, SIDE COMPARTMENT

C.192.1 All hinged compartment doors shall be lap style with double panel construction and shall be a minimum of 1.50” thick. To provide additional door strength a “C” section reinforcement shall be installed between the outer and interior panels.

C.192.2 Doors shall be provided with a closed cell rubber gasket around the surface that laps onto the body. A second heavy-duty automotive rubber molding with a hollow core shall be installed on the door framing that seals onto the interior panel, to ensure a weather resisting compartment.

C.192.3 All compartment doors shall have polished stainless steel continuous hinge with a pin diameter of .25” that is bolted or screwed on with stainless steel fasteners. (Hinges which are welded on shall not be acceptable.) A strip of dielectric isolation tape shall be provided between the hinge and door jamb.

C.192.4 All door lock mechanisms shall be fully enclosed within the door panels to prevent fouling of the lock in the event equipment inside shifts into the lock area.

C.192.5 Doors shall be latched with recessed, polished stainless steel “D” ring handles and Eberhard 106 locks.

C.192.6 To prevent corrosion caused by dissimilar metals, compartment door handles shall not be attached to outer door panel with screws. A rubber gasket shall be provided between the “D” ring handle and the door.

C.192.7 **Note:** All compartment doors latching shall be as follows: The active door shall be latching at both the top and the bottom of the compartment and the passive door shall be latched at either the top or the bottom of the door depending on whether the door is a lower body or an upper body side compartment.

C.192.8 **Note:** The corners of the lower front portion of the body (both sides), behind the pump panel and the rear corners of the body shall have a diamond plate, brushed aluminum or stainless steel covering to prevent paint/body damage. The edges of this covering are to be sealed.

C.193 REAR COMPARTMENT

C.193.1 A tool compartment shall be provided at the rear of the apparatus. The compartment shall be 26.00” wide x 8.00 high x 7.00” deep. A drop-down door constructed of bright aluminum treadplate shall be provided.

C.194 KEYED LOCKS, COMPARTMENTS

C.194.1 All six (6) compartment doors shall be furnished with a (Hansen 1250) keyed lock.

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C.195 HASP/LATCH, COMPARTMENTS

C.195.1 All six (6) hinged compartment doors (first opening door) shall include a hasp/latch.

C.195.2 Hasps shall be a two (2) piece system for securing doors with a bolt or lock.

C.196 DOORFRAME SCUFFPLATE

C.196.1 Six (6) scuffplates shall be provided for the lower door frames. Each scuffplate shall be brushed stainless steel with a .38” lip down.

C.197 COMPARTMENT GRATING

C.197.1 Hardwood grating shall be provided on all compartment floors and adjustable shelves.

C.197.1 Grating slats shall be 3.50” x .50” with .38” thick binders. Grating shall be sanded to a smooth finish and receive at least two (2) coats of high quality varnish.

C.198 PLYWOOD LINING, COMPARTMENTS

C.198.1 Plywood shall be installed on the back wall of all four (4) high side compartments.

C.198.2 The plywood shall be high quality .75” marine grade without any patches. Stainless steel retainers shall be used to mount the plywood. The plywood shall be sanded to a smooth finish and receive no less than three coats of varnish.

C.199 TRAY, HOSE STORAGE

C.199.1 A hose storage tray shall be provided above the passenger side compartments. The tray shall be fabricated out of bright aluminum treadplate with tig welded ends and an open top. Twelve (12) springs loaded typed or seat belt style hold downs shall be provided to secure the hose. The tray shall have a capacity for two (2) – 100’ lengths of 1.50” hose and 250’ of 2-½” hose.

C.200 ADJUSTABLE SHELVES, COMPARTMENT

C.200.1 There shall be ten (10) shelves, with a minimum capacity of 215 pounds provided. The shelf construction shall consist of .125” pan-shaped aluminum with 2.00” sides. Each shelf shall be infinitely adjustable by means of a threaded fastener, which slides in a track. The location shall be one in each compartment in the lower section and two in each full height in the upper portion, and one in each high side compartment.

C.201 MOUNTING TRACKS, SHELF

C.201.1 There shall be six (6) sets of tracks for mounting the shelves in the compartments. These tracks shall be installed vertically to support the adjustable shelves.

C.202 RUB RAIL, LOWER BODY

C.202.1 The edge of the running boards, tailboard, and the bottom edge of the side compartments shall be trimmed with a black 1.00” thick x 2.50” high plastic “UPF” rub rail. .50” rubber spacers shall be included between the rub rail and the body.

C.202.2 The rub rails shall not be an integral part of the body construction, which allows replacement in the event of damage.

C.203 HARD SUCTION HOSE

C.203.1 Four (4) lengths of 6.00” smooth bore hard suction hose, 10’ in length, shall be provided. The hose shall be equipped with a long handle female coupling on one (1) end and a rocker lug male coupling on the other end. Couplings shall be hard coated aluminum.

C.204 HOSE TROUGHS, RIGHT SIDE

C.204.1 Two (2) troughs for hard suction hose shall be installed on the passenger’s side of hose body.

C.204.2 Troughs shall be constructed of stainless steel and painted job color, V-shaped, and have chrome plated, quarter turn, spring loaded clamps.

C.204.3 Hose troughs shall be adjustable up and down.

C.204.4 Brushed Stainless Steel scuffplates shall be furnished where couplings could hit the body while loading or unloading hose.

C.205 HOSE TROUGHS, LEFT SIDE

C.205.1 Hard suction hose shall be carried above the left compartment in V-shaped troughs and held in place by chrome plated, quarter turn, spring loaded clamps.

C.205.2 Troughs shall be constructed of stainless steel and painted job color.

C.205.3 The size and length of the hard suction hose that shall be carried is 6" x 10 ft.

C.206 HANDRAILS

C.206.1 The handrails shall be 1.25" diameter anodized aluminum extrusion, with a ribbed design, to provide a positive gripping surface.

C.206.2 Chrome plated end stanchions shall support the handrail. Plastic gaskets shall be used between end stanchions and any painted surfaces.

C.206.3 Drain holes shall be provided in the bottom of all vertically mounted handrails.

-Two (2) handrails shall be provided, one above each side pump panel.

-One (1) vertical handrail, not less than 29.00" long, shall be located on each rear beavertail.

-One (1) full width horizontal handrail shall be provided below the hose bed at the rear of the apparatus.

-Eight (8) additional handrails shall be provided with mounting locations determined at the preconstruction conference.

C.207 AIR BOTTLE STORAGE (SINGLE BOTTLE)

C.207.1 A total of four (4) air bottle compartments shall be provided – two on the driver's side and two on the officer's side. Each air bottle compartment shall be in the form of a round tube (7.63" diameter minimum) and of adequate depth to accommodate different size air bottles. Flooring shall be rubber lined and have a drain hole. A stainless steel door with a chrome plated latch shall be provided to contain the air bottle. A dielectric barrier shall be provided between the door hinge fasteners and the body sheet metal.

C.207.2 A stainless steel scuffplate shall be provided around each air bottle compartment opening. The scuffplates shall not be visible when the air bottle compartment door is closed.

C.208 AIR BOTTLE STORAGE BIN

C.208.1 An Oxygen Bottle storage bin shall be provided for storage of three (3) air bottles. This storage bin shall be installed in the officer's side rear compartment. Each storage compartment shall be 5.50" square (clear opening) by 23" deep. The storage bin shall be formed out of aluminum and the flooring lined with rubber.

C.209 GROUND LADDERS

C.209.1 The following Duo-Safety ladders shall be furnished and must meet or exceed the latest NFPA standards:

-24', two (2) section, aluminum, Series 900-A

-14" roof, aluminum, Series 775-A

C.210 LADDER BRACKETS

C.210.1 The ladders shall be installed on the passenger's side of the hose body on brackets and held in place by chrome plated quarter-turn spring loaded clamps. The clamps shall be such that when the roof ladder is removed, the clamps can be moved a half-turn to hold the extension ladder in place. The ladder brackets shall be adjustable up and down.

C.211 FOLDING LADDER

C.211.1 One (1) 10' aluminum, Series 585-A Duo-Safety folding ladder shall be installed in a stainless steel trough mounted below the ladders on the ladder brackets.

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C.212 PIKE POLE COMPARTMENT

C.212.1 One (1) pike pole compartment shall be recessed below the water tank tee at the rear of body on the driver's side. The pike pole compartment shall be equipped with two (2) pvc tubes to hold two (2) pike poles and have a stainless steel drop down door. Two (2) 6' fiberglass '1 Beam" style pike poles shall be provided.

C.213 STEPS

C.213.1 A step shall be provided on the front of each fender compartment. The front step shall be a bright finished, on-skid luminescent folding type. The luminescent coating is rechargeable from any light source and can hold a charge for up to 24 hours. The step can be used as a hand hold with two opening wide enough for a gloved hand.

C.214 REAR FOLDING STEPS

C.214.1 Bright finished, non-skid luminescent folding steps shall be provided at the rear. The luminescent coating is rechargeable from any light source and can hold a charge for up to 24 hours. The steps can be used as a hand hold with two openings wide enough for a gloved hand.

C.214.2 Five (5) additional folding steps shall be located – two (2) on the driver’s side front of the body by the pump panel; and three (3) additional on the rear of the body below the hosebed. The steps shall be bright finished, non-skid luminescent folding type. The luminescent coating is rechargeable from any light source and can hold a charge for up to 24 hours. The steps can be used as a hand hold with two openings wide enough for a gloved hand.

C.215 MIDSHIP FIRE PUMP

C.215.1 Mid-ship fire pump shall be a Hale 8FG, 2000 gpm, and single stage, midship mounted, centrifugal type. This pump shall be rated for 2000 gpm from draft without the foam pump running.

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C.215.2 Pump shall be the class “A” type.

C.215.3 The pump shall deliver the percentage of rated discharges at the pressures indicated below:

- 100% of rated capacity at 100 psi net pumps pressure
- 70% of rated capacity at 150 psi net pumps pressure.
- 50% of rated capacity at 200 psi net pumps pressure.

C.215.4 Entire pump, both suction and discharge passages, shall be hydrostatically tested to a pressure of 600 psi (40.8 bar).

C.215.5 Pump shall be fully tested at the pump manufacturer’s factory to the performance requirements as outlined by the latest NFPA pamphlet #1901, and shall be free from objectionable pulsation and vibration.

C.215.6 Pump body and related parts shall be of fine grain alloy cast iron, with a minimum tensile strength of 30,000 psi (2041.1 bars). Pumps utilizing castings made of lower tensile strength cast iron not acceptable.

C.215.7 Synthetic oil shall be used in the pump gear case. A lube pump and cooler shall be installed to properly cool the pump gear case.

C.216 MECHANICAL SEAL ON PUMP

C.216.1 Only one (1) mechanical seal shall be required on the suction (inboard) side of the pump. The mechanical seal shall be two (2.00) inches in diameter and shall be spring loaded, maintenance-free, and self-adjusting.

C.216.2 The mechanical seal construction shall be a carbon sealing ring, stainless steel coil spring, Viton rubber boot, and a tungsten carbide seat with a Teflon backup seal.

C.217 PUMP TRANSMISSION

C.217.1 The drive unit shall be cast, completely manufactured and tested at the pump manufacturer's factory. The pump drive unit shall be of sufficient size to withstand up to 16,000 foot/pound of torque from the engine in both road and pump operating conditions. The drive unit shall be designed with ample lubrication reserve to maintain the proper operating temperature. The gear box shall be located on the front of the water pump.

C.217.2 The gearbox drive shafts shall be of heat treated, chrome nickel steel and at least 2.75" in diameter, on both the input and output drive shafts. They shall be designed to withstand the full torque of the engine in both road and pump operating conditions. All gears both drive and pump, shall be of the highest quality, electric furnace, and chrome nickel steel. Bores shall be ground to size and teeth integrated, crown-shaved and hardened, to give an extremely accurate gear for long life, smooth, quiet running and higher load carrying capability. An accurately cut spur design shall be provided to eliminate all possible end thrust.

C.217.3 The pump ratio shall be selected by the apparatus manufacturer to provide the maximum performance with the engine and transmission selected. Three (3) green warning lights shall be provided to indicate to the operator when the pump has completed the shift from road to pump position. Two (2) lights shall be located in the truck driving compartment and one (1) light on the pump operator's panel, adjacent to the throttle control.

C.218 AIR PUMP SHIFT

C.218.1 Pump shift engagement shall be made by a two (2) position sliding collar, actuated pneumatically (by air pressure), with a three (3) position air control switch located in the cab. A manual back-up shift control shall also be located on the driver's side pump panel.

C.218.2 Two (2) indicator lights shall be provided adjacent to the pump shift inside the cab. One (1) green light shall indicate the pump shift has been completed and be labeled “pump engaged”. The second green light shall indicate when the pump has been engaged and the chassis transmission is in pump gear. This indicator light shall be labeled “OK to pump”.

C.218.3 Another green indicator light shall be installed adjacent to the hand throttle on the pump panel and indicate either the pump is engaged and the road transmission is in pump gear, or the road transmission is in neutral and the pump is not engaged. The light shall be labeled “Warning: Do not open throttle unless light is on”.

C.219 PUMP SHIFT MANUAL OVER RIDE

C.219.1 The pump shall have a manual engagement over ride feature. This shall be of the push/pull rod or shaft style.

C.220 TRANSMISSION LOCK-UP

C.220.1 The direct gear transmission lock-up for the fire pump operation shall engage automatically when the pump shift control, in the cab, is activated.

C.221 AUXILIARY COOLING SYSTEM

C.221.1 A supplementary heat exchange cooling system shall be provided to allow the use of water from the discharge side of the pump for cooling the engine water. Heat exchanger shall be cylindrical type and shall be a separate unit. It shall be installed in the pump or engine compartment with the control located on the pump operator’s control panel. Exchanger shall be plumbed to the master drain valve. Engine water lines shall be run inside plastic conduit.

C.221.2 A pump transmission cooler shall be provided. The cooler shall consist of a pneumatic oil pump and a shallow tube cooler that is cooled by the water from the discharge side of the water pump.

C.222 INTAKE RELIEF VALVE

C.222.1 Two (2) Elkhart relief valves shall be installed on the suction side of the pump preset at 125 psig. Relief valves shall have a working range of 75 psig to 250 psig.

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C.222.2 Outlets shall terminate below the frame rails with a 2.50” National Standard hose thread adapter and shall have a “do not cap” warning tag. Valve control shall be located behind an access door at the side pump panels.

C.223 PRESSURE CONTROLLER, FIRE COMMANDER

C.223.1 A Fire Commander II electric pressure governor shall be provided which is capable of automatically maintaining a desired preset discharge pressure.

C.224 NUT SERT INSERTS

C.224.1 Nut Serts shall be provided for any components that are installed in or on the pump panel and need replacement that there is limited or no access to for a mechanic to make repairs or install replacement parts.

C.225 HALE ESP DUAL PRIMING PUMPS

C.225.1 The two (2) priming pumps shall be positive displacement vane type, electrically driven, and conforming to standards outlined in NFPA pamphlet #1901.

C.225.2 Two (2) Hale SPV electrically actuated priming valve control shall be used to control the priming pumps.

C.225.3 Primer shall use environmentally safe oil. This primer shall require an oil tank. There shall be an environmentally safe oil priming ump controlled by the pump manufactures controller capable of accepting the labeling outlined herein. The oil reservoir must be easily accessible.

C.226 TEST PLATE

C.226.1 A main pump test plate shall be provided at the left pump operator's panel that states the rated discharges and pressures as determined by the pump certification test.

C.227 RECIRCULATING LINE, WITH CHECK VALVE

C.227.1 A .50" diameter recirculating line, from the pump to the water tank, shall be furnished with a control installed at the pump operator's control panel. A check valve shall be provided in this line to prevent the back flow of water from the tank to the pump if the valve is left in the open position.

C.228 GEAR CASE LUBE

C.228.1 The pump transmission shall be filled with a synthetic 80W90 gear lube.

C.229 ENGINE, SKID PACKAGE

C.229.1 The engine shall be a Cummins QSB 4.5 four cylinder, four cycle diesel developing 121 net horsepower. The engine shall be of the industrial power unit design with direct air, electric start, 12 volt electrical system, spin-on oil filter, fuel filter, heavy duty air filter and muffler. Engine exhaust shall be routed to the top side of the apparatus body and necessary protection shall be provided to eliminate any contact with firefighters operating on top of the apparatus.

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C.229.2 The engine shall draw its fuel from the chassis fuel tank. The chassis electrical system shall be utilized for engine start. An extension hose shall be installed on the engine oil drain with a valve located at the oil pan and a plug installed in the end of the hose to facilitate oil changes.

C.230 WATER PUMP

C.230.1 A Waterous CLVT 500 single stage centrifugal water pump shall be utilized. It shall include a high tensile gray iron body with bronze fittings, balanced bronze impeller, stainless steel shaft, ball bearings, wrap-around wear rings, maintenance free mechanical seal, 4.0” suction inlet and 3” discharge outlet.

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C.230.2 The completed pump system shall achieve the following performance ratings:

- 500 GPM@150psi
- Electric start/stop shall be located inside the cab for pump and roll operation.
- The following cab control shall be provided:
 - Toggle-ignition and kill switch
 - Ignition “on” light
 - Push button starter switch
 - Push button primer switch
 - Class 1 Digital water pressure gauge
 - Class 1 Enfo IV to monitor engine oil pressure, engine water temperature and engine RPM
 - Class 1 Captain Pressure governor
 - Pressure governor selector switch for cab or pump panel operation
- The following pump panel controls shall be provided:
 - Toggle-ignition and kill switch
 - Ignition “on” light
 - Push button starter switch
 - Push button primer switch
 - Class 1 Digital water pressure gauge
 - Class 1 Enfo IV to monitor engine oil pressure, engine water temperature and engine RPM
 - Class 1 Captain Pressure governor
 - Pressure governor selector switch for cab or pump panel operation
 - A key type switch is not acceptable.

C.231 THERMAL RELIEF VALVE

C.231.1 A thermal protection device shall be included on the pump that monitors pump water temperature and opens to relieve water to cool the pump.

- C.231.2** The thermal protection device shall be set to relieve water when the temperature of the pump water exceeds 120° F (49 C).
- C.231.3** The thermal protection device shall include an indicator light and audible buzzer. The components of the thermal protection device shall be manufactured of brass and stainless steel and be compatible with most foam concentrates.
- C.231.4** The thermal protection device shall have 1-1/4 inch NPT threads for easy adaptability to existing pump discharge openings. The discharge line shall be 3/8 inch diameter tubing vented to atmosphere or back to the booster tank.
- C.231.5** The thermal protection device shall have a hydrostatic test rating of 600 PSIG (41 BAR).
- C.231.6** Thermal relief valves with visual and audible indicators shall be provided on both pumps.
- C.231.7** The pumps shall be equipped with a Pump Overheat Indicator Light and alarm.

C.232 PUMP MANUALS

- C.232.1** Two (2) pump manuals from the pump manufacturer shall be furnished with the apparatus. Manuals shall cover pump operation, maintenance, and parts.

C.233 PLUMBING

- C.233.1** All inlet and outlet plumbing shall be plumbed with either stainless steel pipe or synthetic rubber hose reinforced with hi-tensile polyester braid. Small diameter secondary plumbing such as drain lines shall be stainless steel, brass or hose.
- C.233.2** Where vibration or chassis flexing may damage or loosen piping or where a coupling is required for servicing, the piping shall be equipped with Victaulic or rubber couplings.
- C.233.3** All lines to drain through either a master drain valve or shall be equipped with individual drain valves. All individual drain lines for discharges shall be extended with a high pressure hose to drain below the chassis frame and will terminate in hard piping NO PLASTIC nipples shall be used and NO AUTOMATIC style drains will be allowed.
- C.233.4** All water carrying gauge lines shall be of flexible polypropylene tubing.

C.234 MAIN PUMP INLETS

- C.234.1** Four (4) 6.00" pump manifold inlet shall be provided, two (2) on each side. The suction inlets shall include removable die cast zinc screens that are designed to provide cathodic protection for the pump, thus reducing corrosion in the pump. The

main pump inlets shall have National Standard Threads with a long handle chrome cap.

C.235 INLET VALVE/DUMP

C.235.1 Four (4) inlet valves shall be provided on the 6.00" main pump inlets – two (2) each side. Each inlet valve shall be a butterfly valve mounted between ASA bolt pattern flanges. A pressure relief valve and a .75" bleeder valve shall be provided on each intake valve. Each pressure relief valve shall have a range of 75 to 250 psi. Each pressure relief valve shall be factory set to 125 psig.

C.235.2 Each valve shall be fully recessed behind the pump panel.

C.235.3 Each valve shall be operated by a Waterous Hand Crank actuator. A control panel with the electric switch and seven position status indicator lights shall be provided on the pump operator's panel.

C.236 ANODE, INLET

C.236.1 A pair of sacrificial zinc anodes shall be provided in the water pump inlets to protect the pump from corrosion.

C.237 VALVES

C.237.1 All smaller ball valves, shall be Waterous Rack and Sector in-line valves. All 6.00" butterfly valves shall be high pressure Jamesbury style valves.

C.238 VALE REQUIREMENTS

C.238.1 All intakes and discharges shall be provided with (¾) (¼) quarter turn, ball valve drains and bleeders with high pressure drain hoses. All drains and bleeders shall be appropriately labeled using the labeling method outlined herein. All gates shall be connected to its associated valve with the least amount of linkage possible. When linkage is necessary, it should be arranged to provide a mechanical gain when the gate is operated. The amount of force needed to open any push/pull valve shall be as low as possible but shall not exceed 40 lbs. to unseat the valve and 35 lbs. to fully open the valve with the valve under 150 psi pressure. The drains shall terminate with ¾" hard piping (No Plastic piping, tubing, or end caps may be used.)

C.239 INLET (LEFT SIDE)

C.239.1 On the left side pump panel shall be one (1) Waterous Rack and Sector- 2.50" auxiliary suction, terminating in 2.50" National Standard Hose Thread. The auxiliary suction shall be provided with a strainer, chrome swivel and plug. Inlet valve location shall be outside of the pump panel. Control for the side auxiliary inlet shall be located at the inlet valve.

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C.240 INLET (REAR)

- C.240.1 A 6.00” rear inlet with screen shall be provided using 6.00” welded, black iron pipe and a 6.00” butterfly valve.
- C.240.2 Screen shall provide cathodic protection against corrosion in piping.
- C.240.3 Piping shall contain only large radiused elbows, no mitered joints.
- C.240.4 The inlet shall terminate in the rear compartment, above the tailboard.
- C.240.5 The rear suction shall have a National Standard hose thread adapter with a long handle chrome plated cap.
- C.240.6 The cap shall be the VLH, which incorporates a patent pending thread design to automatically relieve stored pressure in the line when disconnected. (NO EXCEPTIONS)

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C.241 CONTROL, REAR INLET

- C.241.1 The rear suction shall be gated with a Hand Crank operated control at the pump operator’s panel. The control shall be momentary to allow the valve to be gated for ease of operation. Indicator lights shall be provided to show the position of the valve.

C.242 INTAKE RELIEF VALVE

- C.242.1 An intake relief valve, preset at 125 psig, shall be installed on the inlet side of the valve. Relief valve shall have a working range of 75 psig to 250 psig.
- C.242.2 Outlet shall terminate below the frame rails.
- C.242.3 A .75” bleeder shall be provided.

C.243 INLET BLEEDER VALVE

- C.243.1 A .75” bleeder valve shall be provided for each side gated inlet. The valves shall be located behind the panel with a swing style handle control extended to the outside of the panel. The handles shall be chrome plated and provide a visual indication of valve position. The swing handle shall provide an ergonomic position for operating the valve without twisting the wrist and provides excellent leverage. The water discharged by the bleeders shall be routed below the chassis frame rails.

C.244 TANK TO PUMP

C.244.1 The booster tank shall be connected to the intake side of the pump with 3.00” piping and a quarter turn 3.50” Waterous valve with the control remotely located at the operator’s panel. Tank to pump line to run straight (no elbows) from the pump into the front face of the water tank and angle down into the tank sump. A rubber coupling shall be included in this line to prevent damage from vibration or chassis flexing.

C.244.2 The control on the pump panel shall be a hand crank style valve with a valve position indicator provided. A check valve shall be provided in the tank to pump supply line to prevent the possibility of “back filling” the water tank.

C.245 TANK REFILL

C.245.1 A 2.50” combination tank refill and pump re-circulation line shall be provided, using a Waterous ball valve controlled from the pump operator’s panel.

C.246 DISCHARGE OUTLETS (LEFT SIDE)

C.246.1 There shall be two (2) discharge outlets with a 2.50” full flow Waterous valve on the left side of the apparatus, terminating with male a 2.50” National Standard hose thread adapter. Plumbing shall consist of 2.50” piping.

C.247 DISCHARGE OUTLET, 4.00”

C.247.1 There shall be a total of two (2) 4.00” discharge outlets with a 3.50” Waterous valve installed on the right side of the apparatus, terminating with a male 4.00” National Standard hose thread adapter. Valves shall be Hand Crank operated. With seven (7) valve position LED indicator lights shall be provided at the pump operator’s panel.

C.248 DISCHARGE OUTLET, 6.00”

C.248.1 There shall be two (2) 6.00” discharge outlets on the passengers side supplied by 6.00” plumbing and a 6.00” butterfly valves that shall terminate with male 6.00” National Standard hose thread adapters. The discharge outlets shall have Hand Crank controls on the pump operator’s panel.

C.248.2 Valve will be Hand Crank operated. A seven (7) valve position LED indicator light shall be provided at the pump operator’s panel.

C.249 FRONT BUMPER TURRET DISCHARGE

C.249.1 There shall be a TASK Force Tips Tornado model Y2-E9-1A front bumper turret piped to the center of the front bumper extension. The monitor shall be equipped with a disconnect to allow the monitor to be easily removed to tilt the cab.

State Make and Model Offered_____

- C.249.2** An automatic 100-500 GPM automatic nozzle TFT model MD-ERP-18A shall be provided. This nozzle shall be capable of functioning as an air aspirating foam nozzle.

State Make and Model Offered_____

- C.249.3** The turret shall have a horizontal rotation of 180 degrees and operate from 90 degrees above to 60 degrees below horizontal. The horizontal rotation and automatic oscillation shall be driven by a 12 volt DC direct drive motor/actuator.

- C.249.4** The turret shall be remotely controlled from a control box located in the cab, between the driver and passenger. A joy stick control shall be provided for water on/off, monitor left/right, monitor up/down, and solid or disperse pattern. A position indicator, TFT model Y4E-Disp, shall be provided near the joystick control. Valves for foam operations using this monitor nozzle shall also be supplied in the cab in close proximity to the monitor nozzle controls.

State Make and Model Offered_____

- C.249.5** Plumbing shall consist of 3.00" piping and flexible hose according to the design requirements of the chassis.

- C.249.6** An electrically controlled 3.00" full flow ball valve shall be used.

- C.249.7** Automatic drains shall be provided at all low points of piping monitor shall have the ability to be disconnected from the base to facilitate tilting the cab. There shall also be a proximity type safety switch provided that will lock out the cab tilting feature unless the monitor nozzle is removed.

C.250 DISCHARGE CAPS

- C.250.1** Chrome plated, rocker lug, caps with chains shall be furnished for all side discharge outlets.

C.251 OUTLET BLEEDER VALVE

- C.251.1** A .75" bleeder valve shall be provided for each outlet 1.50" or larger. NO Automatic drain valves will be permitted.

- C.251.2** The valves shall be located behind the panel with a swing style handle control extended to the outside of the side pump panel. The handles shall be chrome plated and provide a visual indication of valve position. The swing handle shall provide an ergonomic position for operating the valve without twisting the wrist and provides excellent leverage. Bleeders shall be located at the bottom of the pump panel. They shall be properly labeled identifying the discharge they are plumbed in to. The water discharged by the bleeders shall be routed below the chassis frame rails.

C.252 ELBOWS, LEFT SIDE OUTLETS

C.252.1 The 2.50" discharge outlets, located on the left side pump panel, shall be furnished with a 2.50" (F) National Standard hose thread x 2.50" (M) National Standard hose thread, chrome plated, 45 degree elbow.

C.252.2 The elbow shall be the VLH, which incorporates a patent pending thread design to automatically relieve stored pressure in the line when disconnected. (NO EXCEPTION)

State Make and Model Offered_____

C.253 ELBOW, 4.00" OUTLET

C.253.1 The 4.00" outlets shall be furnished with a 4.00" (F) National Standard hose thread x 5.00" Storz elbow adapter with Storz cap.

C.254 ELBOW, 6.00" OUTLETS

C.254.1 The 6.00" passenger side outlets shall be furnished with a 6.00" (F) National Standard hose thread x 5.00" Storz 30 degree elbow adapter with Storz cap.

C.255 RACK AND SECTOR

C.255.1 There shall be five (5) discharge outlets controlled by a rack and sector style control. The outlets shall incorporate a Waterous rack and sector control with a chrome plated tee handle. These controls shall be located on the following discharges driver's side 2.50" and crosslay discharges.

C.255.2 A 4.00" deluge riser shall be installed above the pump in such a manner that a monitor can be mounted and used effectively.

C.255.3 Piping shall be installed securely so no movement develops when the line is charged.

C.255.4 The riser plumbing shall include a 4.00" Jamesbury full flow valve and 4.00" i.d. plumbing.

C.255.5 Valve shall be Hand Crank operated with a seven (7) valve position indicator lights shall be provided at the pump operator's panel.

C.255.6 The deluge riser shall have ASA 150# 4" mounting flange for mounting the monitor.

C.256 MONITOR

C.256.1 A Task Force Tips Monsoon 2,000 GPM electric monitor shall be properly installed on the deluge riser.

C.256.2 The monitor shall be painted to match the body.

- C.256.3 This monitor shall include all electric 12 VDC controls for the monitor.
- C.256.4 A remote control switch panel shall be installed on the pump operator's panel.
- C.256.5 A remote control switch panel shall be installed on the pump operator's panel and a wireless remote control.

C.257 NOZZLE

- C.257.1 One (1) Task Force Tip Master Stream 2000 (2,000gpm) Model MS-ER electronically controlled nozzle shall be provided. The nozzle shall be capable of operating as an air aspirating foam nozzle as well as a water nozzle.

State Make and Model Offered _____

C.258 CROSSLAY HOSE BEDS

- C.258.1 Two (2) crosslays with 1.50" outlets shall be provided. Each bed to be capable of carrying 200 feet of 1.75" double jacketed hose and shall be plumbed with 2.00" i.d. pipe and gated with a 2.50" Waterous valve.
- C.258.2 Outlets to be equipped with a 1.50" National Standard hose thread 90 degree swivel located in the hose bed so that hose may be removed from either side of apparatus.
- C.258.3 The crosslay controls shall be at the pump operator's panel.
- C.258.4 Stainless steel vertical scuffplates shall be provided at hose bed ends (each side of vehicle). Bottom of hose bed ends (each side) shall also be equipped with a stainless steel scuffplate.
- C.258.5 Crosslay bed flooring shall consist of removable perforated brushed aluminum.

C.259 CROSSLAY HOSE BEDS, 1.50" SPECIAL CAPACITY

- C.259.1 One (1) crosslay with 1.50" outlets shall be provided. This bed to be capable of carrying 400 feet of 1.50" double jacketed hose and shall be plumbed with 2.00" i.d. pipe and gated with a 2.50" quarter turn Waterous ball valve.
- C.259.2 Outlet to be equipped with a 1.50" National Standard hose thread 90 degree swivel located in the hose bed so that hose may be removed from either side of apparatus.
- C.259.3 The crosslay control shall be at the pump operator's panel.
- C.259.4 The center crosslay dividers shall be fabricated of .25" aluminum and shall provide adjustment from side to side. The divider shall be unpainted with a DA finish. The remainder of the crosslay bed shall be painted job color.

C.259.5 Stainless steel vertical scuffplates shall be provided at hose bed ends (each side of vehicle). Bottom of hose bed ends (each side) shall also be equipped with a stainless steel scuffplate.

C.259.6 Crosslay bed flooring shall consist of removable perforated brushed aluminum.

C.260 CROSSLAY HOSE RESTRAINT

C.260.1 A 1.00" nylon webbing design restraint shall be provided across the ends of three (3) crosslays to secure the hose during travel. The webbing assembly is to be attached at the bottom of the crosslays with footman loops and is to loop through the upper footman loops at the top of the crosslays. The 1.00" web straps are to come down outboard and lock into a cam lock style buckle located down approx 2/3 of the height dimension, one each leg.

C.261 CROSSLAY COVER

C.261.1 A bi-fold aluminum treadplate cover shall be installed over the crosslay hose beds. It shall include a latch at each end of the cover to hold it securely in place, a chrome grab handle at each end for opening and closing the cover and a foam rubber gasket where the cover comes into contact to a painted surface.

C.262 CROSSLAY 8.00" LOWERED

C.262.1 The crosslays shall be lowered 8.00" from the standard height.

C.263 FOAM SYSTEM

C.263.1 A Balanced Pressure foam proportioning system shall be provided that is an on demand type, balanced pressure system suitable for all types of foam concentrates. The system shall automatically balance and proportion foam solution at rates from 1% to 6% regardless of variations in water pressure and flow, up to the maximum rated capacity of the foam concentrate pump. The design of the system shall allow operation from draft, hydrant, or relay operation.

C.264 SYSTEM CAPACITY

The system shall have the ability to deliver the following minimum foam solution flow rates:

-160 gpm foam concentrate = 2666 gpm foam solution @ 6%

-160 gpm foam concentrate = 5333 gpm foam solution @ 3%

-160 gpm foam concentrate = 16000 gpm foam solution @ 6%

(Maximum capacity shall be limited to the water pump/plumbing capacity)

C.264.2 All foam solution discharges shall be independent of the other discharges and be capable of foam or water operation, regardless of the status of other foam outlets.

Individual foam concentrate metering valves shall allow operation various outlets at different concentrations simultaneously, as conditions dictate.

C.264.3 Balance Pressure Control System: A foam pressure manager shall be provided for the management of a hydraulic form pump drive system. The foam pressure manager shall monitor the water and foam pressures by way of precision electric pressure transducers. The foam pressure manager shall then control the displacement of a piston type hydraulic pump. The varying displacement of the pump shall result in the varying of the rotational speed of a gear type foam pump. Varying the speed of the foam pump shall result in the varying of the foam pressure delivered by the foam pump. The varying pressure shall be precisely controlled and matched to the operational water pressure in the pumping system at a given time. The resultant “balance” shall be the basis for proportioning of foam concentrate into water by way of the metered venture balance pressure method. Energizing the foam pressure manager shall start the foam system in the automatic pressure balance mode. The foam proportioning shall not impose an electrical load on the vehicle electrical system 12VDC.

C.264.4 The foam pressure control system shall feature a manual override system. The manual override shall consist of a change over valve and manual control proportional valve. The manual override valves shall be mounted to the control panel. The manual override system shall operate without any electrical power and override the electronic system at any time that the change over valve is moved to the manual position. An analog differential pressure gauge that displays the foam/water pressure balance shall be provided and placed near the manual controls. This gauge shall be centered in its display when the foam/water pressures are equal and shall move to one side or the other when the pressures are unequal. No exceptions to override without electrical components allowed.

C.265 HYDRAULIC DRIVE SYSTEM

C.265.1 The foam concentrate pump shall be powered by a hydraulic drive system, which is PTO driven and activated by a PTO switch in the cab. A hydraulic oil reservoir shall be provided with a maximum of five (5) gallons. The reservoir shall be located to facilitate checking oil level or adding oil without spillage or the need to remove access panels. A hydraulic oil cooler shall be provided to automatically prevent overheating of the hydraulic oil, which is detrimental to system components. An oil cooler shall be provided so as to allow continuous system operation without allowing hydraulic oil temperature to exceed 180 degrees Fahrenheit. A system relief valve shall be provided which is designed to protect drive system components and prevent over pressuring the foam concentrate pump. The relief valve shall not come in contact with foam concentrate, which can cause clogging.

C.266 FOAM CONCENTRATE PUMP

C.266.1 The foam concentrate pump shall be of positive displacement self priming spur gear design, driven by the hydraulic motor. The pump shall be constructed of bronze body, gears, and cover plates, stainless steel shafts, with bronzes sleeve bearings to support the gear shafts.

C.266.2 The foam concentrate pump shall have minimum capacity for 160 gpm at 250 psi with all types of foam concentrates with a viscosity below 3200 cps including protein, fluoroprotein, AFFF, FFFP, or AR-AFFF. The system shall deliver only the amount of foam concentrate flow required, without recirculating foam back to the storage tank. The foam concentrate pump shall be self priming and have the ability to draw foam concentrate from external supplies such as drums or pails.

C.267 EXTERNAL FOAM CONCENTRATE CONNECTIONS

C.267.1 External concentrate connections with ball valves having 2.50" swivel female thread shall be provided. Two (2) shall be provided and they shall be equipped with plugs and chains. The connections shall be located one (1) each on the driver and passenger side pump panel. These connections shall permit the uninterrupted external pick-up of foam concentrate when the on board tank is depleted. Two (2) 2.50" flexible tubes with 2.50" female NST thread shall be provided and shipped loose. A 2.50" male NST concentrate discharge connection shall be included. The discharge shall be located on the driver's side control panel.

C.267.2 **Strainer:** A strainer with stainless steel screen shall be installed ahead of the foam concentrate pump inlet port.

C.267.3 **Flush System:** A system flush shall be provided to allow the system to flush all foam concentrate with clear water. A control shall be provided on the control panel to control the flush system.

C.267.4 **Foam Tank Fill:** A foam tank fill valve shall be provided that is connected to the foam concentrate manifold system. The tank fill valve shall allow for the refilling of the foam tank by way of the foam pump. The tank fill valve shall be an electrically controlled 1.50" valve.

C.267.5 **Foam Concentrate Metering Valves:** An individual adjustable metering valve shall control foam concentrate at each foam discharge connection. The valve shall be manually operated and infinitely adjustable from 1% to 6%. The valve shall include full 360-degree scale indicator plate with an adjustable metal pointer to indicate concentrate rate. The valve shall have the ability to be externally recalibrated to suit new types of foam concentrates without the need to disassemble the valve or remove it from the vehicle.

C.267.6 **Ratio Flow Proportioner:** Each foam discharge connection shall be provided with an individual proportioner which has a solution capacity equal to the maximum capacity of the discharge. A check valve shall be provided upstream of each ratio controller in the foam concentrate piping to insure that water cannot back flow into the foam concentrate supply, from a ratio controller.

C.268 FOAM METERING AND RATIO CONTROL, 2.0" PLUMBING

C.268.1 A total of three (3) discharges with 2" plumbing shall be provided, in the following locations-the three crosslays. A blocking valve shall be installed in the metering

valve supply to allow the metering valve to be in a preset percentage of injection position. The discharges with 2" plumbing shall have a flow range of 60 to 200 GPM.

C.269 FOAM METERING AND RATION CONTROL, 2.5" & 3.0" PLUMBING

C.269.1 A total of one (1) discharges with 3.0" plumbing shall be provided, in the following locations-front turret. A blocking valve shall be installed in the metering valve supply to allow the metering valve to be in a preset percentage of injection position. The discharges with 3" plumbing shall have a flow range of 150 to 625 GPM.

C.270 FOAM METERING AND RATIO CONTROL, 6.0" AND 4.0" PLUMBING

C.270.1 A total of three (3) discharges with 6.0" plumbing shall be provided, in the following locations –one officer's side 6" and the 4.0" deluge. A blocking valve shall be installed in the metering valve supply to allow the metering valve to be in a present percentage of injection position. The discharges with 6" plumbing shall have a flow range of 1,000 to 3,000 GPM.

C.271 SYNTHETIC OIL

C.271.1 The foam system hydraulics shall be supplied with synthetic oil.

State Brand Name Offered_____

C.272 FOAM CONTROLS

C.272.1 A foam system engagement switch and foam tank to pump switch with indicators shall be installed inside the cab, in addition to the standard system controls on the pump panel.

C.273 FOAM CONCENTRATE OUTLET

C.273.1 Two (2) 1.50" valves shall be provided on the discharge side of the foam pump to allow the transfer of the concentrate from the on board foam tank to an external source. The control for the valve shall be on the driver's side pump panel and on the officer's side pump panel.

C.274 MASTER FLUSH SWITCH

C.274.1 In addition to the standard foam flush switch, a master foam flush switch shall be provided behind the top mount hinged pump panel. The master switch shall have a cover that keeps the switch in the OFF position when the cover is down. The switch shall be wired so that both the master switch and the standard switch need to be turned on in order to activate the flush system valve.

C.275 CHECK VALVES IN FOAM SOLUTION DISCHARGES

- C.275.1** The foam solution discharges equipped with a check valve in the water line shall prevent foam concentrate from entering the water pump.
- C.275.2** Check valves for ten (10) foam outlets shall be provided, on offer's side 4.0", the front turret, driver's side 2.50" and the crosslays outlets.

C276 MANUAL CONTROLS, FOAM SYSTEM

- C.276.1** The manual control used for override of the automatic foam system controls shall be located on a small panel. The panel shall be located on the pump panel in a prominent area that is easy to use. The controls shall be clearly labeled and easy for the operator to use.
- C.276.2** The digital foam pressure gauge shall be manufactured by Class 1, Inc., and shall have a .50" digital readout.
- C.276.3** The pump pressure and foam gauges shall be installed adjacent to each other on the pump operator's control panel to allow monitoring of the automatic or manual balance mode of the foam system.
- C.276.4** A demonstration shall be provided on the operation of the foam system.
- C.276.5** This demonstration shall include:
- Review of the foam system manual, highlighting key areas.
 - A walk around review of the system components, on the finished truck.
 - A hands on foam system start-up and discharge session.
 - Instructions on the use of the manual overrides.
 - The proper way to shutdown and flush the foam system.
 - The demonstration shall be done with water to simulate foam.

C.277 FOAM TANK

- C.277.1** The foam tank shall have a capacity of 2000 gallons with the intended use of Class "B" foam. The brand of foam stored in this tank shall be to be determined at preconstruction conference. This foam tank shall be separate from the water tank. The tank construction shall be of .50" polypropylene plastic with joints and seams nitrogen welded inside and outside. The fill tower shall contain a screen and nonfoaming 4.00" diameter bottom fill tube.

C.278 FOAM CONCENTRATE

C.278.1 Included with the vehicle shall be two thousand (2000) gallons of Universal Gold 1% x 3% foam concentrate as well as seven hundred fifty (750) gallons of training foam. Two hundred and fifty (250) gallons of training foam should be available for use during pump testing at the final inspection by the District.

State Brand Name Offered_____

C.279 FOAM TANK DRAIN

C.279.1 The foam tank drain shall be a 2.00” drain valve terminating in a male 2.50” NST thread located under the driver’s side front body compartment. The drain shall have a chrome plated cap and chain.

C.280 PUMP COMPARTMENT

C.280.1 The pump compartment shall be separate from the hose body and compartments so that each may flex independently of the other. It shall be a fabricated assembly of steel tubing, angles and channels which supports both the fire pump and the side running boards.

C.280.2 The pump compartment shall be mounted on the chassis frame rails with rubber biscuits in a four point pattern to allow for chassis frame twist.

C.280.3 Pump compartment, pump, plumbing and gauge panels shall be removable from the chassis in a single assembly.

C.281 PUMP MOUNTING

C.281.1 Pump shall be mounted to a substructure which shall be mounted to the chassis frame rail using rubber isolators. The mounting shall allow chassis frame rails to flex independently without damage to the fire pump.

C.282 PUMP CONTROL PANELS (SIDE CONTROL)

C.282.1 All pump controls and gauges shall be located at the left (driver’s) side of the apparatus and properly marked.

C.282.2 All pump controls and gauges shall be located at the left (driver’s) side of the apparatus and properly marked.

C.282.3 The pump panel on the right (passenger’s) side is removable with lifts and turn type fasteners.

C.282.4 There shall also be a compartment

C.282.5 There shall also be a compartment door provided on the right side to access the Vogel Lube reservoir as well as nay access door to any manual overrides for electric valving if provided.

C.282.6 The control panels shall be 72.00” wide.

C.282.7 The gauge and control panels shall be two (2) separate panels for ease of maintenance.

C.282.8 The side gauge panel shall be hinged at the bottom with a full length stainless steel hinge. The fasteners used to hold the panel in the upright position shall be quarter turn type. Vinyl covered cable or chains shall be used to hold the gauge panel in the dropped position.

C.282.9 Polished stainless steel trim collars shall be installed around all inlets and outlets.

C.282.10 All push/pull valve controls shall have ¼ turn locking control rods with polished chrome plated zinc tee handles. Guides for the push/pull control rods shall be chrome plated zinc castings securely mounted to the pump panel. Push/pull valve controls shall be capable of locking in any position. The control rods shall pull straight out of the panel and shall be equipped with universal joints to eliminate binding. The part number for the “U” joints to be used is as follows ALVIS BB1250 1-¼” OD (outside diameter) with a 5/8” bore and 1250 low profile boot used on all linkage for the hand crank and push/pull valves.

State Make and Model Offered_____

C.282.11 The identification tag for each valve control shall be recessed in the face of the tee handle. All discharge outlets shall have color coded identification tags, with each discharge having its own unique color. Color coding shall include the labeling of the outlet and the drain for each corresponding discharge.

C.282.12 All line pressure gauges shall be mounted in individual chrome plated castings with the identification tag recessed in the casting below the gauge. All remaining identification tags shall be mounted on the pump panel in chrome plated bezels. Mounting of the castings and identification bezels shall be done with a threaded peg cast on the back side of the bezel or screws.

C.283 PUMP PANEL CONFIGURATION

C.283.1 The pump panel configuration shall be neat and orderly.

C.284 PUMP AND GAUGE PANEL

C.284.1 The pump and gauge panels shall be constructed of stainless steel with a brushed finish. A polished aluminum trim molding shall be provided on both sides of the pump panel.

C.284.2 The passenger's side pump panel shall be removable and fastened with swell type fasteners.

C.285 PUMP PANEL GAUGES AND CONTROLS

C.285.1 The following shall be provided on the pump and gauge panels in a neat and orderly fashion:

- Engine Oil Pressure Gauge: With visual and audible warning.
- Engine Water Temperature Gauge: With visual and audible warning.
- Tachometer: Electric
- Master Pump Drain Control
- Voltmeter
- Check Transmission Warning Indicator Light
- Stop Engine Warning Indicator Light
- Check Engine Warning Indicator Light
- A pump RPM test port.

C.286 COMPARTMENT, CAB LIFT CONTROL PANEL

C.286.1 A compartment shall be provided at the pump panel, driver's side. This compartment shall be large enough to house the control panel for the cab lift. A stainless steel door shall be provided.

C.287 RADIO SPEAKER

C.287.1 A David Clark weather proof model radio speaker with a volume control shall be provided and mounted at the pump panel. A jack and connector shall be provided for the pump operator for use of a head set at the pump panel.

C.288 COLOR CODED NAME TAGS

C.288.1 There shall be ten (10) outlet discharges with special color coded name tags. These tags shall be used for labeling the discharge pressure gauges, controls, outlets and drains.

C.289 GAUGES, VACUUM AND PRESSURE

C.289.1 The pump vacuum and pressure gauges shall be silicone filled and manufactured by Class 1, Inc.

C.289.2 The gauges shall be a minimum of 6.00" in diameter and shall have white faces with black lettering, with a pressure range of 30.00"-0-600#.

C.289.3 Gauge construction shall include a Zytel nylon case with adhesive mounting gasket and threaded retaining nut.

C.289.4 The pump pressure and vacuum gauges shall be installed adjacent to each other at the pump operator's control panel.

C.289.5 Test port connections shall be provided at the pump operator's panel. One shall be connected to the intake side of the pump, and the other to the discharge manifold of the pump. They shall have 0.25 in. standard pipe thread connections and polished stainless steel plugs. They shall be marked with a label.

C.289.6 This gauge shall include a 10 year warranty against leakage, pointer defect, and defective bourdon tube.

C.290 PRESSURE GAUGES

C.290.1 The individual "line" pressure gauges for the discharges shall be interlube filled and manufactured by Class 1.

C.290.2 They shall be a minimum of 2.00" in diameter and shall have white faces with black lettering.

C.290.3 Gauge construction shall include a Zytel nylon case with adhesive mounting gasket and threaded retaining nut.

C.290.4 Gauges shall have a pressure range of 30"-0-400#.

C.290.5 The individual pressure gauge shall be installed as close to the outlet control as practical.

C.290.6 This gauge shall include a 10 year warranty against leakage, pointer defect, and defective bourdon tube.

C.291 WATER LEVEL GAUGE

C.291.1 The water tank gauge shall be a Fire Research LED style FRC Tank Vision gauge. A mini level gauge inside the cab and an additional level gauge shall be located at the rear of the apparatus.

C.291.2 To further alert the pump operator, the lights shall flash sequentially when the water tank is empty.

C.291.3 The level measurement shall be based on the sensing of head pressure of the fluid in the tank.

C.292 FOAM LEVEL GAUGE

C.292.1 The Foam tank gauge shall be a fire Research LED style FRC Foam Tank Vision gauge. An electric foam level gauge shall be provided on the operator's panel that registers foam level by means of LED lights.

State Make and Model Offered _____

C.292.2 The level measurement shall be ascertained by sensing the head pressure of the fluid in the tank or cell. This method provides accuracy with an array of multiviscosity foams.

C.292.3 The foam level probe shall be constructed of chemical resistant PVC plastic with a 3.00" diameter anodized flange. The internal wire connectors and electronics shall be fully encapsulated to protect against water, dirt, and vibration.

C.293 FOAM LEVEL GAUGE, ADDITIONAL

C.293.1 A mini electric foam level gauge shall be provided inside the cab that registers the foam level by means of five (5) brightly colored LED. The foam level indicators shall be as follows:

- Full = Green
- $\frac{3}{4}$ = Yellow
- $\frac{1}{2}$ = Yellow
- $\frac{1}{4}$ = Yellow
- Refill = Red

C.293.2 To further alert personnel, the refill light shall start flashing when the foam level drops below the $\frac{1}{4}$ mark.

C.293.3 The display shall be constructed of a solid plastic material to reduce vibrations that can cause broken wires and loose electronic components. The encapsulated design shall provide complete protection from water and environmental elements.

C.293.4 The cover plate panel bezel shall be of a chrome plated die cast design. The overlay graphics shall be on the inside surface of the composite overlay to provide protection from wear. The composite overlay shall be scratch resistant and immune to cleaning solvents and UV light weathering.

C.294 LIGHT SHIELD, PUMP PANEL, DRIVER SIDE

C.294.1 Illumination shall be provided by Whelen PSCOCDCR 6 diode LED lights shall be provided, six (6) LED lights for controls, switches, essential instructions, gauges, and instruments necessary for the operation of the apparatus and the equipment provided on it.

State Make and Model Offered _____

C.294.2 Lights shall be installed under a stainless steel shield. One (1) pump panel light shall come on at the operator's panel when the pump is shifted into gear from inside the cab. This is to afford the operator some illumination when first approaching the control panel. The remaining light to be actuated from a switch located on the pump panel.

C.295 ADDITIONAL LIGHT SHIELD, PASSENGER SIDE

C.295.1 Six (6) additional Whelen PSCOCDR 6 diode LED lights shall be provided, LED light shield shall be provided above passenger's side pump panel. The pump panel shall be illuminated by LED lights installed under the light shield.

C.295.2 The lights shall be operated from a switch on the pump panel.

C.296 ELECTRICAL

C.296.1 All 12-volt electrical equipment installed by the apparatus manufacturer shall conform to modern automotive practices. All wiring shall be high temperature type. Wiring shall be run in loom, where exposed, and have grommets where wire passes through sheet metal. Automatic reset circuit breakers shall be provided which conform to SAE Standards. Wiring shall be color, function and number coded. Function and number codes shall be continuously imprinted on all wiring harness conductors at 2.00" intervals. Exterior exposed wire connectors shall be positive locking, and environmentally sealed to withstand elements such as temperature extremes, moisture and automotive fluids.

C.296.2 Electrical wiring and equipment shall be installed utilizing the following guidelines:

C.296.3 All holes made in the roof shall be caulked with silicon, rope caulk is not acceptable. Large fender washers, liberally caulked, shall be used when fastening equipment to the underside of the cab roof.

C.296.4 Any electrical component that is installed in an exposed area shall be mounted in a manner that shall not allow moisture to accumulate in it. Exposed area shall be defined as any location outside of the cab or body.

C.296.5 Electrical components designed to be removed for maintenance shall not be fastened with nuts and bolts. Metal screws shall be used in mounting these devices. Also a coil of wire shall be provided behind the appliance to allow them to be pulled away from mounting area for inspection and service work.

C.296.6 Corrosion preventative compound shall be applied to all terminal plugs located outside of the cab or body. All non-waterproof connections shall require this compound in the plug to prevent corrosion and for easy separation (of the plug).

C.296.7 All lights that have their sockets in a weather exposed area shall have corrosion preventative compound added to the socket terminal area.

C.296.8 All electrical terminals in exposed areas shall have silicon (1890) applied completely over the metal portion of the terminal. All emergency light switches shall be mounted on a separate panel installed in the cab. A master warning light switch and individual switches shall be provided to allow pre-selection of emergency lights. The

light switches shall be “rocker” type with an internal indicator light to show when switch is energized. All switches shall be properly identified and mounted in a removable panel for ease in servicing. Identification of the switches shall be done by either printing or etching on the switch panel. The switches and identification shall be illuminated.

C.296.9 All lights and reflectors, required to comply with Federal Motor Vehicle Safety Standard #108, shall be furnished. Rear identification lights shall be recessed mounted for protection. Lights and wiring mounted in the rear bulkheads shall be protected from damage by installing a false bulkhead inside the rear compartments.

C.296.10 An operational test shall be conducted to ensure that any equipment that is permanently attached to the electrical system is properly connected and in working order.

C.296.11 The results of the tests shall be recorded and provided to the purchaser at time of delivery.

C.297 WIRING

C.297.1 Extreme care shall be exercised to provide for easy serviceability of the system in future years.

C.297.2 Circuit connections shall be made on a barrier style terminal block, utilizing stud and nut fasteners for positive mechanical connections or a modular plug system. The Department reserves the right to approve the modular plug system.

C.297.3 All wiring terminals shall be closed barrel style. These shall be machine crimped to insure uniform and positive connections throughout the wiring harness. Soldered connections or the use of “Scotch-Lock” type fasteners is not acceptable. NO butt connectors shall be used.

State Make and Model Offered_____

C.297.4 To insure minimal voltage drop and secure connections, NO splices shall be allowed in the wiring harness.

C.297.5 There shall be service loops at all junction points.

C.297.6 There shall be direct access to all junction points.

C.297.7 All wiring shall be a minimum of 14 AWG with SXL insulation.

C.297.8 All cables larger than 10 AWG shall have the terminals mechanically crimped to insure a minimal voltage drop. The Contractor shall submit the crimping method and tool used for crimping to the Department for approval prior to construction.

C.297.9 All wire loom is to be rated at 250 degrees F., minimum.

- C.297.10** In lieu of the electrical requirements C.321.1 through C.321.8, a written 10 year bumper to bumper electrical system warranty may be furnished at no cost to FEMS. This warranty shall be furnished prior to beginning construction.
- C.297.11** 1/0 Braided copper ground straps are to be installed between the engine and cab, the engine and frame and the hose body and frame.
- C.297.12** All switch panels shall be labeled and grouped by function.
- C.297.13** The electrical system shall be calculated and wired in such a manner that no power spikes occur during the use of any electrically operated component installed on the vehicle. Additionally, the contractor shall ensure that the system manager delays power flow to all 12v lighting at engine start-up until the start-up power has stabilized.
- C.297.14** All terminal connection points shall be adequately protected against accidental contact.
- C.297.15** The wiring shall be mounted in protective nylon loom in all areas. All wiring shall be specially harnessed with wire locks and clipped to body members using rubber covered, metal retention clips. All wiring shall be hidden to prevent unauthorized access. Wiring harnesses between the cab and the body shall be in Carflex or Sealtight conduit for protection. Wiring clamps shall be rubber lined securely bolted to chassis frame and body. Plastic ties may be used to form bundles, but should not be used to secure bundles to vehicle. The Carflex or Sealtight will terminate with a water tight connector designed for the type of conduit used inside of the wiring terminal box for the cab and the body. "NO EXCEPTION" plastic junction boxes and connectors will not be permitted.
- C.297.16** Wiring shall not be secured to brake lines and/or fuel lines.
- C.297.17** Where wire passes through sheet metal, large rubber grommets shall be used to protect both the wiring and the wire looms. All electrical connections shall be with mechanical type fasteners. Where pigtailed from lights are connected Weather Pak type connectors shall be used.
- C.297.18** All 12 volt wiring to the rear of the body shall be routed down each side of the exterior body compartments in enclosed electrical raceways over the exterior compartment doors. Raceways shall be enclosed full length, easily accessible and protected from damage.
- C.297.19** 12 volt wiring from the cab to the body shall be connected at a weathertight box designed for this purpose and/ or the main terminal panel box. At this point all wiring shall be split, so that the body may be removed from the chassis at a later date. The main wiring harness shall be run in Carflex or Sealtight, or equivalent conduit. A weather tight PMA style conduit, covered, or protected wiring harness will be an acceptable alternative to the Carflex or Sealtight conduit.

C.297.20 Additional secondary terminal panels shall be installed in each rear corner compartment, and a separate panel in the cab. Only automatic reset circuit breakers shall be used in the electrical installation for the body wiring.

C.297.21 All wiring shall be color, function, and number coated throughout the installation. The function and numbering system shall correspond with the electrical wiring as built schematic furnished with the apparatus.

C.297.22 Extreme care must be taken in the installation to avoid engine manifold, engine Exhaust, and muffler areas that could expose the wiring to severe overheating during long periods of operation. Proper insulation and heat deflection panels must be installed in such areas.

C.297.23 All compartment door and cab door pin switches as well as any exterior switches shall be weatherproof.

C.297.24 All circuit grounding must be accomplished by using grounding busses attached directly to the chassis frame. It is anticipated that only 3 to 4 busses will be required for the entire vehicle. A direct ground shall be run from the ground on the battery to each grounding terminal. No portions of the cab or body shall be used for attaching grounds. All grounds and grounding buses need to be connected directly to the batteries and not to the frame, cab. Or body.

C.298 BUZZER BUTTONS, REAR OR BODY

C.298.1 A remote buzzer control system shall be provided as space allows. There shall be two (2) controls, one (1) each side mounted on the rear beavertail flange, below 62.00" above the ground. The buzzer system shall not operate through the ignition system. Each control shall be a rubber covered push button. Depressing either button shall operate a buzzer in the cab.

C.299 STEP LIGHTS

C.299.1 Four (4) Ri-Tar, Model M27HW2 LED, step lights shall be provided. One (1) step light shall be provided on each side, on the front compartment face and two (2) step lights at the rear to illuminate the tailboard.

State Make and Model Offered _____

C.299.2 These step lights shall be actuated with the pump panel light switch.

C.300 REAR FMVSS LIGHTING

C.300.1 The rear stop/tail and directional LED lighting shall consist of the following:

- Two (2) Whelen Model 60R00XRR red LED stop/tail lights
- Two (2) Whelen Model 60A00TAR amber LED arrow turn lights.

State Make and Model Offered _____

C.300.2 Each light shall be installed separately at the rear with a flange.

C.300.3 Four (4) red reflectors shall be provided.

C.300.4 A Weldon, Model 23882-2600-00, license plate bracket shall be mounted on the driver's side above the warning lights. A Weldon, Model 9186-23882-30, step lamp shall illuminate the license plate.

State Make and Model Offered_____

C.300.5 Both lights shall be installed with a 6E or 64 flange kit.

C.301 REAR ID/MARKER DOT LIGHTING

C.301.1 The three (3) identification lights located at the rear shall be installed per the following:

- Truck-Lite, Model 33740R (3) lamp LED cluster recessed into the body.
- The center lights shall be as close to the vertical centerline and as high as practical.
- Centers spaced not less than six (6) inches or more than twelve (12) inches apart.
- Red in color.
- All at the same height.

State Make and Model Offered_____

C.301.2 Two (2) red Truck-Lite Model 33050R, recessed LED lights, located as high and as close to the outside as possible facing the rear.

State Make and Model Offered_____

C.301.3 Two (2) red Truck-Lite Model 33050R, recessed LED lights, located at a minimum of 15" above the ground and as far to the rear as practical facing the side.

State Make and Model Offered_____

C.301.4 Two (2) red reflex reflectors shall be located on the rear of the truck facing to the rear. One (1) each side, as far to the outside as practical, at a minimum of 15", but no more than 60", above the ground.

C.301.5 Two (2) red reflex reflectors shall be located on the side of the truck facing to the side. One (1) each side, as far to the rear as practical, at a minimum of 15", but no more than 60", above the ground.

C.301.6 Per FMVSS 108 and CMVSS 108 requirements.

C.302 WATER-RESISTANT LIGHT CONNECTIONS, BODY

C.302.1 All of the lights in and on the body shall have water-resistant connections.

C.303 MAP LIGHT

C.303.1 One (1) map light with goose neck with a switch control on base of light shall be installed as directed at preconstruction. The light shall be a Sunnex, Model 741-20 with a 20.00” long flexible neck that exits the top of the chassis mount.

State Make and Model Offered_____

C.304 LIGHT, INTERMEDIATE

C.304.1 There shall be one (1) pair of Truck-Lite, Model: 60115Y, amber LED turn signal marker lights furnished – one (1) each side horizontally in the rear fender panel. A stainless steel trim shall be included with this installation.

State Make and Model Offered_____

C.305 DO NOT MOVE APPARATUS INDICATOR

C.305.1 A flashing red indicator light (located in the driving compartment) shall be illuminated automatically per NFPA (1996 addition, 9-11 or 1999 addition 11-11). The light shall be labeled “Do Not Move Apparatus If Light Is On”.

C.305.2 An audible alarm shall be provided with the open door indicator light.

C.305.3 The alarm shall be controlled by the parking brake, so that it shall deactivate when the parking brake is set.

C.305.4 The cab shall have a flashing, Whelen Model 5SROOFRR” compartment open” light and buzzer. This shall be operational at all times when the parking brake is released.

State Make and Model Offered_____

C.306 ELEVATION SENSOR WARNING LIGHT

C.306.1 There shall be a separate Elevation Sensor system installed attached to the 120V telescoping lights and the wagon pipe using a Whelen 5SROOFRR Amber flashing light connected to the parking brake.

State Make and Model Offered_____

C.307 OPEN DOOR INDICATOR LIGHT

C.307.1 A Whelen, Model 5SROOFRR, flashing red LED “open door” indicator light shall be provided inside the cab, in clear view of the driver, to warn of an open compartment door.

State Make and Model Offered _____

C.308 COMPARTMENT LIGHTING

C.308.1 Whelen PSCOCDCR 6 diode LED compartment light strips four (4) each shall be provided in each compartment. Strips shall be mounted vertically along each side of the door framing and horizontally along the ceiling. There shall be a total of eight (8) compartments that include these lights. Opening the compartment door shall automatically turn the compartment lighting on.

State Make and Model Offered _____

C.309 PUMP COMPARTMENT LIGHTS

C.309.1 Two (2) pump compartment lights shall be provided inside the pump enclosure and accessible through a door on the pump panel.

C.309.2 A .125” weep hole shall be provided in each light lens, preventing moisture retention.

C.310 PERIMETER SCENE LIGHTS, CAB

C.310.1 There shall be a Truck-lite, Model 44042C, 4.00”, LED, grommet mounted weatherproof light provided for each cab door. Lighting shall be designed to provide illumination on areas under the driver, officer, and crew cab riding area exits, which shall be activated automatically when the exit doors are opened, by the door jam switch and by the same means as the body perimeter lights.

State Make and Model Offered _____

C.310.2 The lighting shall be capable of providing illumination at a minimum level of one (1) foot-candle on ground areas within 30.00” of the edge of the apparatus in areas which personnel climb in or out of the apparatus or descend from the apparatus to the ground level.

C.311 PERIMETER SCENE LIGHTS, BODY

C.311.1 There shall be a total of four (4) Truck-Lite, Model 44042C, LED lights provided on the apparatus. Each light shall consist of a 4.00” weatherproof LED light, rubber mounted and a pigtail kit.

State and Model Offered _____

C.311.2 The lights shall be mounted in the following locations:

- Two (2) lights shall be provided under the rear step area.
- One (1) light shall be provided each side under the pump panel running boards.

C.311.3 The lighting shall be capable of providing illumination at a minimum level of one (1) footcandle on ground areas within 30.00” of the edge of the apparatus in areas designed for personnel to climb onto the apparatus or descend from the apparatus to the ground level.

C.311.4 The lights shall be activated by a rocker switch in the cab.

C.312 DECK LIGHTS

C.312.1 Two (2)-6.00” Unity AG deck lights with swivel mount shall be provided at the rear of the hose bed – one (1) each side.

C.312.2 One (1) light shall be furnished with a 160,000 candle power halogen spot bulb and the other shall be furnished with a 6,000 candle power halogen flood bulb.

C.313 HAND HELD SPOTLIGHT

C.313.1 A Mobile Patrol brand, Model 2150-1, hand held spotlight shall be installed as directed at the preconstruction meeting. The light shall be furnished with the 9.0 feet of coil cord.

State Make and Model Offered _____

C.313.2 This hand-held spotlight features an indestructible one-piece molded neoprene housing, pistol grip, momentary action trigger switch and heavy duty coil cord. 110,000 candlepower sealed beam bulb with filament shield minimizes glare through glass, smoke, and fog. Momentary switch eliminates danger of accidental seat or floor burn and allows for manual flashing. Handle “D” ring is included for convenient hanging storage. Series 2150

Specifications

Lamp Housing One – piece molded black neoprene.

Cord Heavy – duty 18/2 coil cord with cigarette lighter plug (24” retracted – 12’ extended).

Weight 2.5 lbs.

Bulbs 4509X – 110,000CP, 100W, 13V

Dimensions Max. Diameter 4.5”, Max. Length 8.5”

C.314 AIR HORN SYSTEM

C.314.1 Two (2) Hadley round air horns with 6.00” bell shall be provided and located in the front bumper, recessed in the best location. The horn system shall be piped to the air brake system wet tank utilizing .38” tubing. A pressure protection valve shall be installed in-line to prevent loss of air in the air brake system.

State Make and Model Offered _____

C.315 AIR HORN CONTROL

C.315.1 Three (3) lanyard chain pull controls shall be provided, one (1) within reach of the driver, one (1) within reach of the officer, and one (1) centered between the officer and the driver. A weighted ball shall be attached to the bottom of the center chain.

C.315.2 The air horns shall also be actuated by two (2) foot switches, one (1) located on the officer's side and one (1) on the driver's side. Foot switches to be Linemaster Model 632-SC3.

State Make and Model Offered _____

C.315.3 One (1) Air Horn button shall be provided on the pump panel.

C.316 AIR HORN SHUTOFF

C.316.1 A quarter turn shutoff valve shall be provided under the cab instrument panel on the driver's side. The valve shall shut off the air supply to the air horns.

C.317 ELECTRONIC SIREN

C.317.1 An electronic siren Whelen Model 295HFS DCFD with a compatible speaker mounted in the front bumper and covered with a grille. The control head shall be mounted in the cab. The control head shall be easily accessible to both the driver and officer. The siren shall contain a remote siren head and a siren amplifier with a dual system built in to the amplifier.

State Make and Model Offered _____

C.317.2 The siren features shall include:

- Six (6) function siren plus radio repeat and public address
- Will meet California Title 13 and SAE J1849 specifications.
- Model 295HFS7 or 8 will operate two (2) 100 watt speakers
- Operates in dual or mono modes.
- External dip switch selectable modes of operation.
- Outputs 2 independent siren tones creating a "rich harmonic dual tone sound".
- Hands Free" operation. Turn On/Off and access all three siren tones (wail, yelp, and Piercer) without taking hands from the steering wheel.
- PTT (push to talk) switch on microphone overrides all siren functions.
- Prewired unidirectional microphone.
- Adjustable microphone volume.
- Adjustable preset radio repeat volume.
- Input polarity protection.
- Output short circuit protection.
- External mini spade-type fuse.

- Bi-polarity horn/ring control activation.
- Quick disconnect plug for ease of service or replacement.
- Five year HDP “Heavy Duty Professional” warranty on amp.

C.317.3 Siren head shall be located on a swivel bracket mounted on the headliner so that it is accessible to both the driver and officer. The swivel bracket shall be capable of rotating a minimum of 180 degrees.

C.317.4 Siren shall be actuated by a foot switch on the officer’s side and by the horn button in the steering wheel. The driver shall have the option to control the siren or the chassis horns from the horn button by means of a selector switch.

C.318 SPEAKER

C.318.1 There shall be one (1) speaker provided and recessed in the bumper extension. The speaker shall be a Federal, Model MS100, 100 watt, bumper mount. The speaker shall use a Federal, Model MSFMT, flush mount, bumper bracket. The speaker shall be connected to the siren amplifier. The speaker shall be located front bumper. The speaker shall be covered by a protective polished metal grill like cover.

State Make and Model Offered_____

C.319 MECHANICAL SIREN, (AUXILIARY)

C.319.1 A Federal Q2B siren shall be furnished. A siren brake button shall be installed on the switch panel.

State Make and Model Offered_____

C.319.2 The mechanical siren shall be mounted on the bumper deckplate. It shall be mounted on the left side. The siren mounting shall include a reinforcement plate. It shall not protrude beyond the plain of the front bumper. The mechanical siren shall be actuated by two (2) foot switches, one (1) located on the officer’s side and one (1) on the driver’s side.

C.320 WARNING LIGHTS

C.320.1 Three (3) Whelen LED light bars; Installed on the roof. Whelen Part# FN24DCFD, (1) one centered facing forward and (2) Two mounted on an angle at the left and right front corners of the cab roof.

State Make and Model Offered_____

C.320.2 All the lenses shall be clear.

C.320.3 One (1) switch located in the cab, on the switch panel, shall control these lightbars.

C.320.4 To meet NFPA requirements, the clear warning lights shall be disabled when the parking brake is set.

C.321 SIDE ZONE LOWER LIGHTING

C.321.1 Six (6) Whelen Model 60*02F*R flashing “Super” LED lights shall be located at the following positions:

- Two (2) lights – one (1) each side on the bumper extension – red Super LED/red lens.
- Two (2) lights – one (1) each side above the front wheel – red Super LED/red lens.
- Four (4) lights – one (1) each side near rear wheels – red Super LED/red lens.

State Make and Model Offered _____

C.321.2 The lights shall be controlled by a lighted switch on the cab instrument panel.

C.321.3 These lights shall be installed with four (4) pairs of flange kits.

C.322 REAR ZONE LOWER LIGHTING

C.322.1 Two (2) Whelen Model 60*02F*R flashing “Super” LED warning lights shall be located at the rear of the apparatus required to meet or exceed the lower level optical warning and optical power requirements of NFPA.

State Make and Model Offered _____

C.322.2 The color of these lights shall be red Super LED/Red lens. One (1) switch in the cab on the switch panel shall control these lights. These shall be installed with a flange.

C.323 WARNING LIGHTS (REAR OF HOSE BED)

C.323.1 Two (2) Whelen Model: MCFLED2R, LED warning beacons shall be provided at the rear of the truck, located one (1) each side. These lights shall be activated by a lighted switch on the instrument panel. The color of the lights shall be red LEDs with both domes red.

State Make and Model Offered _____

C.324 LIGHT, REAR UPPER ZONE, BLOCKING

C.324.1 Two (2) Whelen Model 60*02F*R, flashing super LED lights shall be provided at the rear of apparatus at a level of 62.00” or higher on the rear of the body, below the hosebed.

State Make and Model Offered _____

C.324.2 The color of these lights shall red Super LED/red lens.

C.324.3 The lights shall be activated with the rear upper warning switch.

C.324.4 These lights shall be installed with a flange.

C.324.5 The rear warning lights shall be mounted on stainless steel brackets with all wiring totally enclosed. These brackets shall also support the rear deck lights and the clearance/marker lights.

C.325 INVERTER

C.325.1 A Vanner Model Bravo 1050 Model QBC10-12/120-60G inverter shall be provided. The inverter shall provide 1050 continuous watts of 120 VAC modified sine wave power to operate lights, tools and appliances. The inverter shall be connected to the batteries through proper fusing and also to shoreline AC power.

State Make and Model Offered_____

C.325.2 An auto transfer switch shall be included allowing AC loads connected to the inverter to be powered from the battery whenever shoreline AC power is not available. If shoreline AC power is available, the AC loads connected to the inverter shall be powered through the shoreline connection.

C.325.3 The inverter shall be mounted in the pump house inside an enclosure and have adequate ventilation. A master on/off switch shall be provided in the driver side cab switch panel.

C.326 LIGHT GUARDS

C.326.1 A brush guard for an Extendalite shall be provided. There shall be one for each light for a total of two (2) guards.

C.327 120-VOLT LIGHTING, CAB MOUNTED

C.327.1 There shall be one (1) Havis-Shields, Model KR-33-NS Magnafire, 350 watt, 120 volt lights provided, centered above the windshield. The lights shall be mounted on a special bracket on the front of the cab roof that allows them to be installed below the visor.

State Make and Model Offered_____

C.327.2 The lights selected above shall be controlled by the circuit breaker located in the breaker panel as well as a switch in the following locations:

- pump operator's panel
- driver side switch panel

C.328 120-VOLT LIGHTING, TELESCOPING

C.328.1 Two (2) Kwik-Raze Model 1133 Magnafire light shall be provided.

State Make and Model Offered_____

C.328.2 The light shall be bottom raising with an inner telescoping pole. The telescoping pole shall be as long as is practical to fit in the location it is mounted.

C.328.3 The light shall be installed with side body mounting brackets and have a Magnafire 3000 head.

C.328.4 The light fixture shall be a single 350 watt 120 volt MagnaFire 3000 Series head.

C.328.5 The light head shall have a minimum of 13,250 lumens, 2.9 amps.

C.328.6 A switch shall be provided in the base of the light bracket to indicate when the light is in the raised position. The “Do Not Move Apparatus” light in the cab shall be connected to this circuit.

C.329 The light selected above shall be controlled by the circuit breaker located in the breaker panel as well as a switch in the following locations:

- driver side switch panel
- pump operator’s panel

C.329.1 The light shall be provided at the rear wall of the cab.

C.330 KUSSMAUL AUTO EJECT FOR SHORELINE

C.330.1 One (1) shoreline receptacle shall be provided to operate the dedicated 120-volt circuits on the truck without the use of the generator.

C.330.2 The shoreline receptacle shall be provided with a NEMA 5-20, 120 volt, 20 amp, straight blade Kussmaul Super auto eject plug with a red weatherproof cover. The cover is spring loaded to close preventing water from entering when the shoreline is not connected.

State Make and Model Offered_____

C.330.3 The unit is completely sealed to prevent road dirt contamination.

C.330.4 A solenoid wired to the vehicle’s starter is energized when the engine is started. This instantaneously drives the plug from the receptacle.

C.330.5 An internal switch arrangement shall be provide to disconnect the load prior to ejection to eliminate arcing of the connector contacts.

C.330.6 The shoreline shall be connected to the battery charger.

C.330.7 A mating connector body shall also be supplied with the loose equipment.

C.330.8 The shoreline receptacle shall be located on the driver side of cab, above the front wheel.

C.331 LOOSE EQUIPMENT

C.331.1 The following equipment shall be furnished with the completed unit:

C.331.2 One (1) bag of chrome, stainless steel, or cadmium plated screws, nuts, bolts and washers, as used in the construction of the unit.

-2500' of 5" double jacket Kocheck firehose.

-1000' of 3" Ponn Supreme double jacket firehose with 2½" Ponn Supreme doubles Jacket firehose.

-500' of 2-½" Ponn Supreme double jacket firehose.

C.331.3 A 25 foot length of 5.00" soft suction hose with a 5.00" Storz swivel coupling on one (1) end and a 5" Storz swivel coupling on the other.

a. Extinguisher brackets Zico Model 3099 quick strap cylinder mounting system to fit an 8" diameter cylinder (max): Order #CYBM-2426-80-11, part# 3099-295-000.

State Make and Model Offered _____

b. 1-HUMAT valve & mounting bracket with strap. Bracket Part #FDB01ST.

State Make and Model Offered _____

c. 1- Red Head T-148-3 triple spanner/hydrant wrench holder (includes wrenches). An Akron Style 15 hydrant wrench shall be provided.

State Make and Model Offered _____

d. 1- Red Head T-146-2 double spanner wrench holder (includes wrenches).

State Make and Model Offered _____

e. 2- Snap-tite FSPH-1 Storz spanner wrenches w/holder.

State Make and Model Offered _____

f. 2- Southpark AH-51 Axe holders with side mount handle holders (SOUTHPARK Model SMA-52.

State Make and Model Offered _____

- g. 1-Ziamatic Quic-Bar and axe mounting bracket p/n MB-3PBA.

State Make and Model Offered _____

- h. 20- Sets – Performance Advantage Co. (PAC) handlelok p/n 1004-2

State Make and Model Offered _____

- i. 10 each – Kocheck MF407 Storz 4” & 5” mounting brackets.

State Make and Model Offered _____

- j. 3- South Park RMP-49 1-1/2” mounting plates.

State Make and Model Offered _____

- k. 5-South Park RMP-49 2-1/2” mounting plates.

State Make and Model Offered _____

- l. 1-South Park RMP-49 4-1/2” mounting plate.

State Make and Model Offered _____

- m. 5- South Park QL-48Z triple prong mounting plates.

State Make and Model Offered _____

- n. 1-25’ section of 5” soft suction hose with a 4” D.C. threaded female, long handled swivel connection on one end and a 5” storz connection on the other end.

State Make and Model Offered _____

- o. 1-50” section of 5” soft suction hose with 5” storz connections on both ends.

State Make and Model Offered _____

- p. 2-5” storz to 4” D.C. thread female long handled swivel adapters. (Kocheck basic number is S54L but must ensure D.C. Thread).

State Make and Model Offered _____

- q. 5-5” Storz to 2-1/2” female NSFT swivel adapters. Kocheck S54R.

State Make and Model Offered _____

- r. 5-5" Storz to 2-1/2" male NSFT adapter. Kocheck
State Make and Model Offered_____
- s. 1-Akron Model 1583 2 way gated Siamese with a 2-1/2" male fitting on the left and a 2-1/2" female swivel fitting on the right (as facing the valve) and (1) 6" NSFT threaded swivel long handled connection for connection to 6" steamer inlet.
State Make and Model Offered_____
- t. 3-4-1/2" Female NSFT long handled swivel to 5" Storz adapter Kocheck p/n S54L.
State Make and Model Offered_____
- u. 3-2-1/2" NSFT double female Kocheck p/n 35R.
State Make and Model Offered_____
- v. 3-2-1/2" NSFT double male Kocheck p/n 36R.
State Make and Model Offered_____
- w. 5-2-1/2" NSFT female to 1-1/2" NSFT male reducer Kocheck p/n 37R.
State Make and Model Offered_____
- x. 1-1-1/2" NSFT female to 2-1/2" NSFT male increaser Kocheck p/n 54R.
State Make and Model Offered_____
- y. 3-Ziamatic Model KD-UH-7-SF-CRS-180 mask brackets to be mounted as specified in these requirements. (Knock down bracket, high cycle clips, short foot plate, collision resistant strap for bostrom seats).
State Make and Model Offered_____
- z. 8-Kocheck 6" NST long handle x 5" Storz fittings.
State Make and Model Offered_____
- aa. 7-6" NST female swivel long handle to 5" Storz elbows.
State Make and Model Offered_____
- bb. 2-Side mounts handle holders (SOUTHPARK Model SMA-52).

State Make and Model Offered_____

- cc. 10-Bottom mount handle holders (SOUTHPARK Model BMA-53).

State Make and Model Offered_____

- dd. 1-portable hydrant Kocheck 51K0525.

State Make and Model Offered_____

- ee. 2 In line 2-1/2" valves Kocheck 09K25225M.

State Make and Model Offered_____

- ff. 1-5" gated wyes Kocheck 23K0505.

State Make and Model Offered_____

- gg. 2-5" gated wyes Kocheck 31K0525.

State Make and Model Offered_____

- hh. 5-4" Storz x 5" Storz Kocheck S60S.

State Make and Model Offered_____

- ii. 2-6" Kocheck floating dock strainers Part #FS60

State Make and Model Offered_____

- jj. 2-6" Akron pyrolite light weight barrel strainers for the hard sleeves.

State Make and Model Offered_____

- kk. The wagon pipe assembly shall be an AKRON 3433 which includes a 2 inlet ground base, liftoff and direct mount. The AKRON #3433 shall be provided with an AKRON #3488 (10-1/2" L) Aluminum barrel type stream straightener, AKRON #2499 stacked tips, and AKRON #3502 mounting bracket. An Akron 489 Aluminum 1-1/2" smooth bore tip shall be provided with the wagon pipe as well.

State Make and Model Offered_____

- ll. The Contractor shall supply and mount 5 Streamlight Vulcan orange hand lamps with the LED rear flashing lights and handlamp charging brackets in locations specified by the Department at pre-construction conference. However, the Contractor shall be responsible to ensure that the charger and handlamp are mounted in such a way that the handlamp can be removed and

inserted freely and easily by the user. The Department shall provide handlamp chargers and 1 handlamp design.

- mm. Provide Five (5) air aspirating foam nozzles for a 1-1/2" hose line. Exact model to be determined at preconstruction.
- nn. Provide Five (5) air aspirating foam nozzles for a 2-1/2" hose line.
- oo. Provide Five (5) air aspirating foam nozzles for use on a portable monitor nozzle. Exact model to be determined at preconstruction.

C.332 PAINT

C.332.1 The exterior custom cab and body painting procedure shall consist of a six (6) step finishing process as follows:

1. Manual Surface Preparation – All exposed metal surfaces on the custom cab and body shall be thoroughly cleaned and prepared for painting. Surfaces that shall not be painted include all chrome plated, polished stainless steel, anodized aluminum and bright aluminum treadplate. Each imperfection on the exterior metal surface shall be removed or filled and then sanded smooth for a smooth appearance. All seams shall be sealed before painting.
2. Chemical Cleaning and Treatment – The metal surfaces shall be properly cleaned using a high pressure and high temperature acid etching system. Surfaces are chemically cleaned to remove all dirt, oil, grease and metal oxides to ensure the subsequent coatings bond well. An ultra pure water final rinse shall be applied to all metal surfaces, excluding undercarriage components, at the conclusion of the metal treatment process.
3. Primer/Surfacer Coats – A two (2) component urethane primer/surfacer shall be hand applied to the chemically treated metal surfaces to provide a strong corrosion protective base coat and to smooth out the surface.
4. Hand Sanding – The primer/surfacer coat shall be lightly sanded to an ultra smooth finish.
5. Sealer Primer Coat – A two (2) component sealer primer coat shall be applied over the sanded primer.
6. Topcoat Paint – Two (2) coats of an automotive grade, two (2) component acrylic urethane paint, shall also be applied.

C.332.2 All removable items such as brackets, compartment doors, door hinges, trim, shall be removed and painted separately to insure paint behind all mounted items. Body assemblies that cannot be finish painted after assembly shall be finish painted before assembly.

C.332.3 The cab shall be two-tone, with the upper section painted white along with a shield design on the cab face and lower section of the cab and body painted red.

C.333 PAINT – ENVIRONMENTAL IMPACT

C.333.1 Contractor shall meet or exceed all current State (his) regulations concerning paint operations. Pollution control shall include measures to protect the atmosphere, water and soil. Controls shall include the following conditions.

-Topcoats and primers shall be chrome and lead free.

-Metal treatment chemicals shall be chrome free. The wastewater generated in the metal treatment process shall be treated on-site to remove any other heavy metals.

-Particulate emission collection from sanding operations shall have a 99.99% efficiency factor.

-Particulate emissions from painting operations shall be collected by a dry filter or water wash process. If the dry filter means is used, it shall have an efficiency rating of 98.00%. Water wash systems shall be 99.97% efficiency.

-Water from water wash booths shall be reused. Solids shall be removed mechanically on a continual basis to keep the water clean.

-Paint wastes are disposed of in an environmentally safe manner. They are used as fuel in kilns used in the cement manufacturing process – thereby extracting energy from a waste material.

-Empty metal paint containers shall be cleaned, crushed and recycled to recover the metal.

-Solvents used in cleanup operations shall be collected, sent off-site for distillation and returned for reuse. Residue from the distillation operation shall be used as fuel in off-site cement kilns. Additionally, the finished apparatus shall not be manufactured with or contain products that have ozone depleting substances. Contractor shall, upon demand, present evidence that his manufacturing facility meets the above conditions and that it is in compliance with his State EPA rules and regulations.

C.334 PAINT CHASSIS FRAME ASSEMBLY

C.334.1 The chassis frame assembly shall be painted job color before the installation of the cab and body and before installation of the engine, drive shafts and transmission assembly, air brake lines, electrical wire harnesses. Components that shall be included with the chassis frame assembly that shall be painted job color shall be frame rails, cross members, drivelines, axles, suspension, steering gear, fuel tank, body substructure supports, miscellaneous mounting brackets.

C.335 CLEARCOAT PAINT SELAER

C.335.1 The exterior of the vehicle and doors shall be painted as standard and then sprayed with two (2) coats of clear sealer. The cab and body exterior paint finish shall be warranted for topcoat durability and appearance, which covers gloss, color retention and cracking at 100% for a period of six (6) years.

C.336 COMPARTMENT INTERIOR FINISH

C.336.1 The interior of all compartments shall be sanded to a uniform finish and not painted.

C.337 REFLECTIVE BAND

C.337.1 A 6.00” reflective band shall be provided across the front of the vehicle and along the sides of the body. A 4.00” band shall be provided at the rear of the apparatus.

C.337.2 The reflective band provided on the cab face shall be at the headlight level.

C.338 CHEVRON/INVERTED “V” STRIPING ON REAR BODY

C.338.1 There shall be alternating chevron striping located on the rear body wall of the apparatus.

The striping shall consist of the following colors:
The first color shall be red diamond grade
The second color shall be white diamond grade
The size of the striping shall be 6.00”.

C.339 CHEVRON/INVERTED “V” STRIPING ON REAR BULKHEADS

C.339.1 There shall be alternating chevron striping located on the rear body wall of the apparatus.

The striping shall consist of the following colors:
The first color shall be red diamond grade
The second color shall be white diamond grade
The size of the striping shall be 6.00”.

C.340 REFLECTIVE, CAB DOORS

C.340.1 There shall be four (4) “stop sign” emblems, 16.00” high x 16.00” wide, installed on the stainless steel door panel. The emblem shall have a red vinyl background with white vinyl lettering. A reflective stop sign shall be provided on the interior of each cab door.

C.340.2 This sign shall meet the NFPA 1901 requirement.

C.341 LETTERING

C.341.1 The lettering shall be totally encapsulated between two (2) layers of clear vinyl.

C.342 LAMINATION WARRANTY

C.342.1 The manufacturer shall provide a three (3) year warranty against defects in material and workmanship with the graphics process. A copy of the fire apparatus manufacturer's warranty shall be included with the bid.

C.343 LETTERING

C.343.1 Shall be genuine reflective scotch-lite gold with a black lettering, outlining and shading shall be provided.

1. The Contractor shall furnish and install a maximum of 4-12" numbers, 8-6" letters/numbers, 20-4" letters/numbers, 20-3" letters/numbers and 10-1" numbers. The colors will be gold scotchlite over black shading. The Department shall specify the lettering/numbering scheme and fonts at pre-construction. (FONT: HELVT.MED.ACCT.A.K.REV.N.)
2. The Department shall furnish 2 door seals to be installed.
3. DCFD shall be installed in the area above the windshield and below the cab roof line.
4. The vehicle shall have a 6" white scotch-lite stripe.
5. The DCFD serial # in 1" scotch-lite decals shall be installed on the left front, left rear, and on the upper dash board area in the cab of the apparatus.
6. The compartment doors shall be numbered using 1-1/2" scotch-lite decals.
7. Stop signs (reflective) shall be installed on the inside of all 4 cab doors.
8. The Company # shall be installed on the roof top using 4" wide scotch-lite.
9. NFPA compliant Chevron style striping (Diamond Grade) shall be provided on the rear face of the body.

C.344 RUSTPROOFING/UNDERCOATING

C.344.1 The apparatus cab shall be properly treated by an authorized Ziebart dealer.

C.344.2 The rustproofing material shall be a transparent coating of an organic based corrosion inhibitor for long-term protection against corrosion.

- C.344.3** The rustproofing material utilized shall be formulated to resist corrosion.
- C.344.4** Coating texture shall be waxy and pliable after drying so it shall not chip, crack, or peel off during normal vehicle operations, Minimum dry film thickness shall be in the range of 3.00 to 4.00 mils.
- C.344.5** The material shall be applied to the following areas:
- Interior of the cab doors.
 - Interior of all double panel style body doors.
- C.344.6** The underside of the apparatus shall be undercoated with asphalt petroleum based material, dark in color.
- C.344.7** The undercoating material utilized on the apparatus shall be formulated to resist corrosion and deaden unwanted sound or road noise.
- C.344.8** Coating texture shall appear firm, flexible, and resistant to abrasion. Minimum dry film thickness shall be in the range of 8.00 to 12.00 mils.
- C.344.9** The material shall be applied to the following areas:
- Body and cab wheel well fender liners, on the back side only.
 - Underside of body and cab sheet metal and structural components.
 - Underside and vertical sides of all sheet metal compartmentation, including support angles.
 - Structural support members under running boards, rear platforms, battery boxes, walkways.
 - Inside surfaces of the pump heat enclosure, (when installed).

SECTION D: PACKAGING AND MARKING

The packaging and marking requirements for the resultant contract shall be governed by clause number (2), Shipping Instructions-Consignment, of the Government of the District of Columbia's Standard Contract Provisions for use with Supplies and Services Contracts, dated March, 2007.

SECTION E: INSPECTION AND ACCEPTANCE

E.1 The inspection and acceptance requirements for the resultant contract shall be governed by clause number five (5), Inspection of Supplies, of the Government of the District of Columbia's Standard Contract Provisions for use with Supplies and Services Contracts, dated March, 2007.

E.2 PRE-DELIVERY INSPECTION

E.2.1 All vehicles shall be inspected by representatives of the Apparatus Selection Committee and others designated by the District. Unless otherwise specified by the District, all vehicles constructed under the awarded contract shall be complete and ready for inspection prior to the arrival of the pre-delivery inspection team. Any vehicle found incomplete and not available for a complete pre-delivery inspection shall result in the manufacturer paying for all expenses for additional pre-delivery inspections until all vehicles have been inspected. Pre-delivery inspections at the manufacturer's warranty facility shall not be accepted. The District reserves the right to make factory inspections on the apparatus that is under construction at anytime during the construction process. One (1) complete set of loose equipment shall be laid out with one of the vehicles at the final inspection "NO EXCEPTIONS"

E.3 DEFICIENCIES/CORRECTIONS/MODIFICATONS

E.3.1 Upon completion of the pre-delivery inspection, all deficiencies, corrections and modifications shall be resolved to the satisfaction of District prior to delivery of the vehicles. No deficiencies, corrections or modifications are to be deferred to the manufacturers warranty facility. Any deficiencies, corrections or modifications found, during the pre-delivery inspection, that have not been repaired or corrected shall result in the vehicle being returned to its place of production for repair or correction at the manufacturer's expense.

E.4 DESTINATION AND FINAL ACCEPTANCE INSPECTION

E.4.1 Upon delivery of the completed vehicles, the District shall conduct a final acceptance inspection of the vehicles. The manufacturer shall provide a factory certified technician on site to make repairs to deficiencies found during this inspection. The provisions of this subsection may be carried out during the training period outlined below, however, deficiencies found during this inspection shall be repaired immediately and not be deferred to the manufacturer's warranty facility nor shall they cause the vehicle to be placed in a truck down status (out-of-service) and cause an interruption or stoppage of the training requirements. It is anticipated that this inspection will take two weeks. At the end of this period, if there is no existing critical failures, payment for the vehicle will be authorized.

SECTION F: DELIVERIES OR PERFORMANCE**F.1 TERM OF CONTRACT**

The term of the contract shall be for a period of one year from date of award specified on the cover page of the contract.

F.2 DELIVERABLES

CLIN	Deliverable	Quantity	Format/Method of Delivery	Due Date
0001	Foam Truck	1	F.O.B. destination	180 days after receipt of order
Note	The following items should accompany each vehicle delivered			
ITEMS	Manufacturer's statement of origin	1 copy each	F.O.B. destination	180 days after receipt of order
	Chassis and service manuals	2 copy each	F.O.B. destination	180 days after receipt of order
	Parts manual	2 copy each	F.O.B. destination	180 days after receipt of order
	Operators manual for mounted equipment	3 copy each	F.O.B. destination	180 days after receipt of order
	Shop Manual	2 copy each	F.O.B. destination	180 days after receipt of order
	Parts book w/illustrated parts breakdown	2 copy each	F.O.B. destination	180 days after receipt of order
	Pump manual	2 copy each	F.O.B. destination	180 days after receipt of order
	Compact disc to include the vehicle shop manual, electrical and vacuum technical manual, and parts book with illustrated parts breakdown	3 copy each	F.O.B. destination	180 days after receipt of order
	Keys	4-sets of keys	F.O.B. destination	180 days after receipt of order
	Radio service manual With schematic	1 copy	F.O.B. destination	180 days after receipt of order
	Seating diagram required	1 copy	F.O.B. destination	180 days after receipt of order

	Submit floor plan	1 copy	F.O.B. destination	Submitted at time of opening.
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F.2.1 The Contractor shall submit to the District, as a deliverable, the report described in section H.3.5 of this contract that is required by the 51% District Residents New Hires Requirements and First Source Employment Agreement. If the Contractor does not submit the report as part of the deliverables, final payment to the Contractor may not be paid.

F.3 QUANTITY INCREASE/DECREASE:

F.3.1 The District reserves the right to increase or decrease the unit quantity specified under Section B by up to one-hundred percent (100%) within 60 days of award at the unit price bid.

F.4 UNIT PRICE AND F.O.B. DELIVERY POINTS:

F.4.1 Unit prices offered herein shall include delivery, all charges prepaid and exclusive of all taxes (see paragraph 12, Standard Contract Provisions), to the following delivery points:

D.C. Fire & EMS
 Apparatus Division
 1103 Half Street S.W.
 Washington, D.C. 20024

Receiving hours: 7:00am – 7:00 pm
 Monday through Friday, Except Holidays
 Contractor shall telephone 48 hours in advance of
 Delivery date
 Contact: Chief Gill
 Telephone No.: 202-673-3395

F.5 DELIVERY

F.5.1 Apparatus, to insure proper break in of all components while still under warranty, shall be delivered under its own power – rail or truck freight shall not be acceptable. A qualified delivery engineer representing the contractor shall deliver the apparatus and remain for a sufficient length of time to instruct personnel in the proper operation, care and maintenance of the equipment delivered.

F.5.3 Bidders shall provide their part numbers preferred down the left column of their bid and shall additionally provide that same number hand written down the left column of the District requirements to facilitate a smooth bid review process for the District when reviewing the bids.

F.6 INFORMATION REQUIRED

F.6.1 The manufacturer shall supply at time of delivery, complete operation and maintenance manuals covering the completed apparatus as delivered. A permanent plate shall be mounted in the driver's compartment which specifies the quantity and type of fluids required including engine oil, engine coolant, transmission, pump transmission lubrication, pump primer and drive axle.

F.7 SAFETY VIDEO

F.7.1 A road test shall be conducted with the apparatus fully loaded and a continuous run of ten (10) miles or more shall be made under all driving conditions, during which time the apparatus shall show no loss of power or overheating. The transmission drive shaft or shafts, and rear axles shall run quietly and be free from abnormal vibration or noise throughout the operating range of the apparatus. Vehicle shall adhere to the following parameters:

F.7.2 The apparatus, when fully equipped and loaded, shall have not less than 25% nor more than 50% of the weight on the front axle, and not less than 50% nor more than 75% on the rear axle.

F.7.3 The apparatus shall be capable of accelerating to 35 mph from a standing start within 25 seconds on a level concrete highway without exceeding the maximum governed rpm of the engine.

F.7.4 The service brakes shall be capable of stopping a fully loaded vehicle in 35 feet at 20 mph on a level concrete highway. The air brake system shall conform to Federal Motor Vehicle Safety Standards (FMVSS) 121.

F.7.5 The apparatus, fully loaded, shall be capable of obtaining a speed of 50 mph on a level concrete highway with the engine not exceeding its governed rpm (full load).

F.8 FAILURE TO MEET TEST

F.8.1 In the event the apparatus fails to meet the test requirements of these specifications on the first trials may be made at the option of the bidder within 30 days of the date of the first trial. Such trials shall be final and conclusive and failure to comply with these requirements shall be cause for rejection. Failure to comply with changes to conform to any clause of the specifications, within 30 days after notice is given to the bidder of such changes, shall also be cause for rejection of the apparatus. Permission to keep or store the apparatus in any building owned or occupied by the purchaser or its use by the purchaser during the above-specified period with the permission of the bidder shall not constitute acceptance.

SECTION G: CONTRACT ADMINISTRATION DATA

G.1 INVOICE PAYMENT

G.1.1 The District will make payments to the Contractor, upon the submission of proper invoices, at the prices stipulated in this contract, for supplies delivered and accepted or services performed and accepted, less any discounts, allowances or adjustments provided for in this contract.

G.1.2 The District will pay the Contractor on or before the 30th day after receiving a proper invoice from the Contractor.

G.2 INVOICE SUBMITTAL

G.2.1 The Contractor shall submit proper invoices on a monthly basis or as otherwise specified in Section G.4. Invoices shall be prepared in duplicate and submitted to the agency Chief Financial Officer (CFO) with concurrent copies to the Contracting Officer's Technical Representative (COTR) specified in Section G.9 below. The address of the CFO is:

Name: Office of the Controller/Agency CFO
Address: Fire and Emergency Medical Services
1923 Vermont Avenue, N.W.
Washington, D.C. 20001

G.2.2 To constitute a proper invoice, the Contractor shall submit the following information on the invoice:

G.2.2.1 Contractor's name, Federal tax ID and invoice date (Contractors shall date invoices on the date of mailing or transmittal);

G.2.2.2 Contract number and invoice number;

G.2.2.3 Description, price, quantity and the date(s) that the supplies or services were delivered or performed.

G.2.2.4 Other supporting documentation or information, as required by the Contracting Officer;

G.2.2.5 Name, title, telephone number and complete mailing address of the responsible official to whom payment is to be sent;

G.2.2.6 Name, title, phone number of person preparing the invoice;

G.2.2.7 Name, title, phone number and mailing address of person (if different from the person identified in G.2.2.6 above) to be notified in the event of a defective invoice; and

G.2.2.8 Authorized signature.

G.3 FIRST SOURCE AGREEMENT REQUEST FOR FINAL PAYMENT

G.3.1 For contracts subject to the 51% District Residents New Hires Requirements and First Source Employment Agreement requirements, final request for payment must be accompanied by the report or a waiver of compliance discussed in section H.3.5.

G.3.2 No final payment shall be made to the Contractor until the CFO has received the Contracting Officer's final determination or approval of waiver of the Contractor's compliance with 51% District Residents New Hires Requirements and First Source Employment Agreement requirements.

G.4 LUMP SUM PAYMENT

The District will pay the full amount due the Contractor under this contract after:

- a) Completion and acceptance of all work; and
- b) Presentation of a properly executed invoice.

G.5 ASSIGNMENT OF CONTRACT PAYMENTS

G.5.1 In accordance with 27 DCMR 3250, the Contractor may assign funds due or to become due as a result of the performance of this contract to a bank, trust company, or other financing institution.

G.5.2 Any assignment shall cover all unpaid amounts payable under this contract, and shall not be made to more than one party.

G.5.3 Notwithstanding an assignment of contract payments, the Contractor, not the assignee, is required to prepare invoices. Where such an assignment has been made, the original copy of the invoice must refer to the assignment and must show that payment of the invoice is to be made directly to the assignee as follows:

Pursuant to the instrument of assignment dated _____,
make payment of this invoice to _____
(name and address of assignee).

G.6 THE QUICK PAYMENT CLAUSE

G.6.1 Interest Penalties to Contractors

G.6.1.1 The District will pay interest penalties on amounts due to the Contractor under the Quick Payment Act, D.C. Official Code §2-221.01 et seq., for the period beginning on the day after the required payment date and ending on the date on which payment of the amount is made. Interest shall be calculated at the rate of 1% per month. No interest penalty shall be paid if payment for the completed delivery of the item of property or service is made on or before:

- a) the 3rd day after the required payment date for meat or a meat product;
- b) the 5th day after the required payment date for an agricultural commodity; or
- c) the 15th day after the required payment date for any other item.

G.6.1.2 Any amount of an interest penalty, which remains unpaid at the end of any 30-day period, shall be added to the principal amount of the debt and thereafter interest penalties shall accrue on the added amount.

G.6.2 Payments to Subcontractors

G.6.2.1 The Contractor must take one of the following actions within 7 days of receipt of any amount paid to the Contractor by the District for work performed by any subcontractor under a contract:

- a) Pay the subcontractor for the proportionate share of the total payment received from the District that is attributable to the subcontractor for work performed under the contract; or
- b) Notify the District and the subcontractor, in writing, of the Contractor's intention to withhold all or part of the subcontractor's payment and state the reason for the nonpayment.

G.6.2.2 The Contractor must pay any lower-tier subcontractor or supplier interest penalties on amounts due to the subcontractor or supplier beginning on the day after the payment is due and ending on the date on which the payment is made. Interest shall be calculated at the rate of 1% per month. No interest penalty shall be paid on the following if payment for the completed delivery of the item of property or service is made on or before:

- a) the 3rd day after the required payment date for meat or a meat product;
- b) the 5th day after the required payment date for an agricultural commodity; or
- c) the 15th day after the required payment date for any other item.

G.6.2.3 Any amount of an interest penalty, which remains unpaid by the Contractor at the end of any 30-day period, shall be added to the principal amount of the debt to the subcontractor and thereafter interest penalties shall accrue on the added amount.

G.6.2.4 A dispute between the Contractor and subcontractor relating to the amounts or entitlement of a subcontractor to a payment or a late payment interest penalty under the Quick Payment Act does not constitute a dispute to which the District of Columbia is a party. The District of Columbia may not be interpleaded in any judicial or administrative proceeding involving such a dispute.

G.7 CONTRACTING OFFICER (CO)

Contracts may be entered into and signed on behalf of the District only by contracting officers. The name, address and telephone number of the Contracting Officer is:

James Roberts
Contracting Officer
Office of Contracting and Procurement
2000 14th Street NW, 6th Floor
Washington, D.C. 20009
(202) 671-2200

G.8 AUTHORIZED CHANGES BY THE CONTRACTING OFFICER

G.8.1 The Contracting Officer is the only person authorized to approve changes in any of the requirements of this contract.

G.8.2 The Contractor shall not comply with any order, directive or request that changes or modifies the requirements of this contract, unless issued in writing and signed by the Contracting Officer.

G.8.3 In the event the Contractor effects any change at the instruction or request of any person other than the Contracting Officer, the change will be considered to have been made without authority and no adjustment will be made in the contract price to cover any cost increase incurred as a result thereof.

G.9 CONTRACTING OFFICER'S TECHNICAL REPRESENTATIVE (COTR)

G.9.1 The COTR is responsible for general administration of the contract and advising the Contracting Officer as to the Contractor's compliance or noncompliance with the contract. In addition, the COTR is responsible for the day-to-day monitoring and supervision of the contract, of ensuring that the work conforms to the requirements of this contract and such other responsibilities and authorities as may be specified in the contract. The COTR for this contract is:

Chief Ronald Gill
Fire and Emergency Medical Services
Fleet Maintenance
1103 Half Street SW
Washington, DC 20024
(202) 673-3395

G.9.2 The COTR shall not have authority to make any changes in the specifications or scope of work or terms and conditions of the contract.

G.9.3 The Contractor may be held fully responsible for any changes not authorized in advance, in writing, by the Contracting Officer; may be denied compensation or other relief for any additional work performed that is not so authorized; and may also be required, at no

additional cost to the District, to take all corrective action necessitated by reason of the unauthorized changes.

SECTION H: SPECIAL CONTRACT REQUIREMENTS

H.1 PUBLICITY

The Contractor shall at all times obtain the prior written approval from the Contracting Officer before it, any of its officers, agents, employees or subcontractors, either during or after expiration or termination of the contract, make any statement, or issue any material, for publication through any medium of communication, bearing on the work performed or data collected under this contract.

H.2 FREEDOM OF INFORMATION ACT

The District of Columbia Freedom of Information Act, at D.C. Official Code § 2-532 (a-3), requires the District to make available for inspection and copying any record produced or collected pursuant to a District contract with a private contractor to perform a public function, to the same extent as if the record were maintained by the agency on whose behalf the contract is made. If the Contractor receives a request for such information, the Contractor shall immediately send the request to the COTR designated in subsection G.9 who will provide the request to the FOIA Officer for the agency with programmatic responsibility in accordance with the D.C. Freedom of Information Act. If the agency with programmatic responsibility receives a request for a record maintained by the Contractor pursuant to the contract, the COTR will forward a copy to the Contractor. In either event, the Contractor is required by law to provide all responsive records to the COTR within the timeframe designated by the COTR. The FOIA Officer for the agency with programmatic responsibility will determine the releasability of the records. The District will reimburse the Contractor for the costs of searching and copying the records in accordance with D.C. Official Code § 2-532 and Chapter 4 of Title 1 of the *D.C. Municipal Regulations*.

H.3 51% DISTRICT RESIDENTS NEW HIRES REQUIREMENTS AND FIRST SOURCE EMPLOYMENT AGREEMENT

H.3.1 The Contractor shall comply with the First Source Employment Agreement Act of 1984, as amended, D.C. Official Code, § 2-219.01 *et seq.* (“First Source Act”).

H.3.2 The Contractor shall enter into and maintain, during the term of the contract, a First Source Employment Agreement, (Section J.2.4) in which the Contractor shall agree that:

- (1) The first source for finding employees to fill all jobs created in order to perform this contract shall be the Department of Employment Services (“DOES”); and
- (2) The first source for finding employees to fill any vacancy occurring in all jobs covered by the First Source Employment Agreement shall be the First Source Register.

H.3.3 The Contractor shall submit to DOES, no later than the 10th each month following execution of the contract, a First Source Agreement Contract Compliance Report (“contract compliance report”) verifying its compliance with the First Source Agreement for the preceding month. The contract compliance report for the contract shall include the:

- (1) Number of employees needed;
- (2) Number of current employees transferred;

- (3) Number of new job openings created;
- (4) Number of job openings listed with DOES;
- (5) Total number of all District residents hired for the reporting period and the cumulative total number of District residents hired; and
- (6) Total number of all employees hired for the reporting period and the cumulative total number of employees hired, including:
 - (a) Name;
 - (b) Social Security number;
 - (c) Job title;
 - (d) Hire date;
 - (e) Residence; and
 - (f) Referral source for all new hires.

H.3.4 If the contract amount is equal to or greater than \$100,000, the Contractor agrees that 51% of the new employees hired for the contract shall be District residents.

H.3.5 With the submission of the Contractor's final request for payment from the District, the Contractor shall:

- (1) Document in a report to the Contracting Officer its compliance with the section H.3.4 of this clause; or
- (2) Submit a request to the Contracting Officer for a waiver of compliance with section H.3.4 and include the following documentation:
 - (a) Material supporting a good faith effort to comply;
 - (b) Referrals provided by DOES and other referral sources;
 - (c) Advertisement of job openings listed with DOES and other referral sources; and
 - (d) Any documentation supporting the waiver request pursuant to section H.3.6.

H.3.6 The Contracting Officer may waive the provisions of section H.3.4 if the Contracting Officer finds that:

- (1) A good faith effort to comply is demonstrated by the Contractor;
- (2) The Contractor is located outside the Washington Standard Metropolitan Statistical Area and none of the contract work is performed inside the Washington Standard Metropolitan Statistical Area which includes the District of Columbia; the Virginia Cities of Alexandria, Falls Church, Manassas, Manassas Park, Fairfax, and Fredericksburg, the Virginia Counties of Fairfax, Arlington, Prince William, Loudoun, Stafford, Clarke, Warren, Fauquier, Culpeper, Spotsylvania, and King George; the Maryland Counties of Montgomery, Prince Georges, Charles, Frederick, and Calvert; and the West Virginia Counties of Berkeley and Jefferson.
- (3) The Contractor enters into a special workforce development training or placement arrangement with DOES; or
- (4) DOES certifies that there are insufficient numbers of District residents in the labor market possessing the skills required by the positions created as a result of the contract.

H.3.7 Upon receipt of the contractor's final payment request and related documentation pursuant to sections H.3.5 and H.3.6, the Contracting Officer shall determine whether the Contractor is in compliance with section H.3.4 or whether a waiver of compliance pursuant to section H.3.6 is justified. If the Contracting Officer determines that the Contractor is in compliance, or that

a waiver of compliance is justified, the Contracting Officer shall, within two business days of making the determination forward a copy of the determination to the Agency Chief Financial Officer and the COTR.

H.3.8 Willful breach of the First Source Employment Agreement, or failure to submit the report pursuant to section H.3.5, or deliberate submission of falsified data, may be enforced by the Contracting Officer through imposition of penalties, including monetary fines of 5% of the total amount of the direct and indirect labor costs of the contract. The Contractor shall make payment to DOES. The Contractor may appeal to the D.C. Contract Appeals Board as provided in the contract any decision of the Contracting Officer pursuant to this section H.3.8.

H.3.9 The provisions of sections H.3.4 through H.3.8 do not apply to nonprofit organizations.

H.4 HIRING OF DISTRICT RESIDENTS AS APPRENTICES AND TRAINEES

H.4.1 For all new employment resulting from this contract or subcontracts hereto, as defined in Mayor's Order 83-265 and implementing instructions, the Contractor shall use its best efforts to comply with the following basic goal and objectives for utilization of bona fide residents of the District of Columbia in each project's labor force:

H.4.1.1 at least fifty-one (51) percent of apprentices and trainees employed shall be residents of the District of Columbia registered in programs approved by the District of Columbia Apprenticeship Council.

H.4.2 The Contractor shall negotiate an Employment Agreement with the DOES for jobs created as a result of this contract. The DOES shall be the Contractor's first source of referral for qualified apprentices and trainees in the implementation of employment goals contained in this clause.

H.5 PROTECTION OF PROPERTY:

The Contractor shall be responsible for any damage to the building, interior, or their approaches in delivering equipment covered by this contract.

H.6 AMERICANS WITH DISABILITIES ACT OF 1990 (ADA)

During the performance of the contract, the Contractor and any of its subcontractors shall comply with the ADA. The ADA makes it unlawful to discriminate in employment against a qualified individual with a disability. See 42 U.S.C. § 12101 *et seq.*

H.7 SECTION 504 OF THE REHABILITATION ACT OF 1973, as amended.

During the performance of the contract, the Contractor and any of its subcontractors shall comply with Section 504 of the Rehabilitation Act of 1973, as amended. This Act prohibits discrimination against disabled people in federally funded program and activities. See 29 U.S.C. § 794 (1983) *et seq.*

H.8 TRAINING

H.8.1 The manufacturer shall provide a factory certified technician to perform training on each (all) vehicles. Training Division – 4600 Shepherd Parkway, S.W., Washington, D.C. 20032 or a designated site established by the Apparatus Division Chief). The technician shall be thoroughly familiar with the operation of all components of the vehicle as outlined in these requirements. Vehicle operator training will commence the first full week following the delivery of the vehicles and will last for four (4) consecutive days. Vehicle mechanical training shall be conducted for two (2) additional consecutive days which will encompass both the day and evening shifts on dates specified by the department. The technician shall be capable of making repairs to the vehicle. Any deficiency causing the vehicle to be in a truck down (out-of-service) condition or causes an interruption in training will be considered a “critical failure”. These repairs, for purposes of this section, must be made within 24 hours which will place the vehicle back into a fully operational condition.

H.9 WARRANTY

H.9.1 Each piece of new fire or rescue apparatus shall be warranted to be free from defects in materials or workmanship under normal use and service. Each manufacturer shall supply, as a part of their bid package, a copy of the warranty or warranties that they propose to provide and in no case shall it be less than five (5) years on the entire apparatus 10 year cab, and 10 year body.

H.9.2 All other warranties, as outlined in these specifications shall be provided in writing as a part of the bid package.

H.9.3 Failure to provide the warranties as outlined throughout these specifications shall be cause for rejection of the bid package.

H.10 WARRANTY REPAIRS

H.10.1 **CRITICAL FAILURE:** The District defines a critical failure as :

- A. Failure of a system or component that prevents the continued operation of the vehicle for the purpose for which it is intended;
- B. Failure of a system or component that impacts on another system or component that prevents the continued operation of the vehicle for the purpose for which it is intended;
- C. Failure that could jeopardize the safety of the personnel utilizing the vehicle.

H.11 The criteria outlined in N.F.P.A. 1915, Sections 2.1.4.1 through 2.1.4.8 establishes the minimum standard that could reduce the operational safety and performance of the apparatus and will serve as a basis for the District to determine if the warranty period failure is a critical failure and thus would fall under the requirements of this section.

H.11.1 All critical failures, under this section, must be repaired within 48 hours. If necessary to affect the 48 hour repair of a critical failure, a factory certified technician shall be dispatched to the District's repair facility upon notification of the critical failure. The manufacturer shall start the repair process immediately if this is a major repair job that will take longer than 24 hours to complete. The manufacturer shall ensure that the designated warranty repair facility is aware of this requirement.

H.11.2 The manufacturer shall respond to all calls for service within 24 hours on warranty repairs.

H.12 CAB WARRANTY

H.12.1 The bidder shall furnish a ten (10) year cab warranty. The warranty shall cover defects in design or workmanship in the cab tubular support and mounting supports and other cab structural components identified in the specifications. A copy of the warranty shall be submitted with the bid. (No exception)

H.13 FRAME RAIL WARRANTY

H.13.1 The frame rails shall be guaranteed for the life of the vehicle, which is the estimated to be 50 years, against defects in design, material or workmanship, excluding accident or abuse. A copy of the fire apparatus manufacturer's warranty shall be included with the bid.

H.14 ENGINE WARRANTY

H.14.1 The engine shall come with a five (5) year or 100,000 mile warranty provided by the Detroit Diesel Corporation.

H.15. TRANSMISSION WARRANTY

H.15.1 The transmission shall have a five (5) year/unlimited mileage warranty covering 100% parts and labor. The warranty is to be provided by Allison Transmission and not the apparatus builder. The shifter shall have a "Mode" button which shall be programmed to indicate the transmission fluid level.

H.16 WATER TANK WARRANTY

H.16.1 The tank shall have a lifetime warranty

H.16.2 If the tank manufacturer determines that the tank problem has rendered the truck out-of-service, the tank manufacturer shall dispatch a service technician within 48 hours (2 days) to repair the tank (this time period is for the United States and Canada only)

H.17 BODY WARRANTY

H.17.1 A copy of the fire apparatus manufacturer's warranty shall be included with the bid. The warranty shall state that the body shall be free of structural failures caused by defective design or workmanship for a warranty period of ten (10) years from the date the new vehicle is first delivered or 50,000 miles, whichever occurs first and the defective parts, under the warranty, shall be repaired or replaced without charge to the original purchaser.

H.18 PUMP WARRANTY

H.18.1 A Hale two (2) year warranty shall be provided for the pump.

H.19 PUMP PLUMBING WARRANTY

H.19.1 The stainless steel plumbing components and ancillary brass fittings used in the construction of the water/foam plumbing system shall be warranted for a period of ten (10) years or 100,000 miles. This covers structural failures caused by defective design or workmanship, or perforation caused by corrosion, provided the apparatus is used in a normal and reasonable manner. This warranty is extended only to the original purchaser for a period of ten years from the date of delivery. A copy of the warranty shall be submitted with the bid. (NO Exception)

H.20 NFPA STANDARDS

H.20.1 This unit must comply current NFPA standards.

H.20.2 Certification of slip resistance of all stepping, standing and walking surfaces must be supplied with delivery of the apparatus.

H.20.3 A plate that is highly visible to the driver while seated shall be provided. This plate shall show the overall height, length, and gross vehicle weight rating.

H.20.4 The manufacturer shall have programs in place for training, proficiency testing and performance for any staff involved with certifications.

H.20.5 An official of the company shall designate, in writing, who is qualified to witness and certify test results.

H.21 NFPA COMPLIANCY

H.21.1 Apparatus proposed by the contractor shall meet the applicable requirements of the National Fire Protection Association (NFPA) as stated in current edition at time of contract execution.

H.22 TRANSMISSION WARRANTY

H.22.1 The transmission shall have a five (5) year/unlimited mileage warranty covering 100% parts and labor. The warranty is to be provided by Allison Transmission and not the apparatus builder. The shifter shall have a “Mode” button which shall be programmed to indicate the transmission fluid level.

H.23 WARRANTY – PAINT AND CORROSION

H.23.1 The cab and body exterior paint finish shall be warranted against blistering, peeling, corrosion, lack of adhesion or any other manufacturing or material defect for a period of ten (10) years.

H.23.2 The cab and body shall also be warranted against corrosion perforation for a period of ten (10) years.

H.23.3 A copy of the manufacturer’s warranty shall be included with the bid.

SECTION I: CONTRACT CLAUSES

I.1 APPLICABILITY OF STANDARD CONTRACT PROVISIONS

The Standard Contract Provisions for use with District of Columbia Government Supplies and Services Contracts dated November 2004 (“SCP”), are incorporated as part of the contract resulting from this solicitation. To obtain a copy of the SCP go to www.ocp.dc.gov, click on OCP Policies under the heading “Information”, then click on “Standard Contract Provisions – Supplies and Services Contracts”.

I.2 CONTRACTS THAT CROSS FISCAL YEARS

Continuation of this contract beyond the current fiscal year is contingent upon future fiscal appropriations.

I.3 CONFIDENTIALITY OF INFORMATION

All information obtained by the Contractor relating to any employee or customer of the District will be kept in absolute confidence and shall not be used by the Contractor in connection with any other matters, nor shall any such information be disclosed to any other person, firm, or corporation, in accordance with the District and Federal laws governing the confidentiality of records.

I.4 TIME

Time, if stated in a number of days, will include Saturdays, Sundays, and holidays, unless otherwise stated herein.

I.5 OTHER CONTRACTORS

The Contractor shall not commit or permit any act that will interfere with the performance of work by another District contractor or by any District employee.

I.6 SUBCONTRACTS

The Contractor hereunder shall not subcontract any of the Contractor’s work or services to any subcontractor without the prior written consent of the Contracting Officer. Any work or service so subcontracted shall be performed pursuant to a subcontract agreement, which the District will have the right to review and approve prior to its execution by the Contractor. Any such subcontract shall specify that the Contractor and the subcontractor shall be subject to every provision of this contract. Notwithstanding any such subcontract approved by the District, the Contractor shall remain liable to the District for all Contractor's work and services required hereunder.

I.7 INSURANCE

I.7.1 Contractor shall procure and maintain, during the entire period of performance under this contract, the types of insurance specified below. The Contractor shall submit a certificate of insurance giving evidence of the required coverages prior to commencing work. All insurance shall be written with responsible companies licensed by the District of Columbia's Department of Insurance, Securities and Banking. The Contractor shall require all subcontractors to carry the insurance required herein, or Contractor may, at its option, provide the coverage for any or all subcontractors, and if so, the evidence of insurance submitted shall so stipulate. All insurance provided by the Contractor as required by this section, except comprehensive automobile liability insurance, shall set forth the District as an additional named insured. In no event shall work be performed until the required certificates of insurance have been furnished. The insurance shall provide for 30 days' prior written notice to be given to the District in the event coverage is substantially changed, canceled or non-renewed. If the insurance provided is not in compliance with all the requirements herein, the District maintains the right to stop work until proper evidence is provided.

- (a) Commercial General Liability Insurance: \$1,000,000 limits per occurrence, District added as an additional insured.
- (b) Automobile Liability Insurance: \$1,000,000 per occurrence combined single limit.
- (c) Worker's Compensation Insurance: in accordance to the statutes of the District of Columbia, including Employer's Liability, \$100,000 per accident for injury, \$100,000 per employee for disease, \$500,000 policy limit disease.
- (d) Umbrella/Excess Liability Insurance, \$5,000,000 limits per occurrence.
- (e) If District or non-District autos are being towed, serviced or repaired by contractor, Garage Liability Insurance, \$1,000,000 combined single limits.

I.8 EQUAL EMPLOYMENT OPPORTUNITY

In accordance with the District of Columbia Administrative Issuance System, Mayor's Order 85-85 dated June 10, 1985, the forms for completion of the Equal Employment Opportunity Information Report are incorporated herein as Section J.2.2. An award cannot be made to any offeror who has not satisfied the equal employment requirements.

I.9 ORDER OF PRECEDENCE

Any inconsistency in this solicitation shall be resolved by giving precedence in the following order: the Supplies or Services and Price/Cost Section (Section B), Specifications/Work Statement (Section C), the Special Contract Requirements (Section H), the Contract Clauses (Section I), and the SCP.

I.10 CONTRACTS IN EXCESS OF ONE MILLION DOLLARS

Any contract in excess of \$1,000,000 shall not be binding or give rise to any claim or demand against the District until approved by the Council of the District of Columbia and signed by the Contracting Officer.

SECTION J: LIST OF ATTACHMENTS

J.1 INCORPORATED ATTACHMENTS (*The following forms, located at www.ocp.dc.gov shall be completed and incorporated with the bid.*)

J.2 E.E.O. Information and Mayor's Order 85-85

J.2.2 Tax Certification Affidavit

J.2.3 First Source Employment Agreement

SECTION K: REPRESENTATIONS, CERTIFICATIONS AND OTHER STATEMENTS OF BIDDERS

K.1 TYPE OF BUSINESS ORGANIZATION

K.1.1 The bidder, by checking the applicable box, represents that

(a) It operates as:

- a corporation incorporated under the laws of the State of: _____
- an individual,
- a partnership,
- a nonprofit organization, or
- a joint venture.

(b) If the bidder is a foreign entity, it operates as:

- an individual,
- a joint venture, or
- a corporation registered for business in _____
(Country)

K.2 CERTIFICATION AS TO COMPLIANCE WITH EQUAL OPPORTUNITY OBLIGATIONS

Mayor's Order 85-85, "Compliance with Equal Opportunity Obligations in Contracts", dated June 10, 1985 and the Office of Human Rights' regulations, Chapter 11, "Equal Employment Opportunity Requirements in Contracts", promulgated August 15, 1986 (4 DCMR Chapter 11, 33 DCR 4952) are included as a part of this solicitation and require the following certification for contracts subject to the order. Failure to complete the certification may result in rejection of the bidder for a contract subject to the order. I hereby certify that I am fully aware of the content of the Mayor's Order 85-85 and the Office of Human Rights' regulations, Chapter 11, and agree to comply with them in performance of this contract.

Bidder _____ Date _____

Name _____ Title _____

Signature _____

Bidder ____ has ____ has not participated in a previous contract or subcontract subject to the Mayor's Order 85-85. Bidder ____ has ____ has not filed all required compliance reports, and representations indicating submission of required reports signed by proposed sub-bidders. (The above representations need not be submitted in connection with contracts or subcontracts, which are exempt from the Mayor's Order.)

K.3 BUY AMERICAN CERTIFICATION

The bidder hereby certifies that each end product, except the end products listed below, is a domestic end product (as defined in Paragraph 23 of the SCP, "Buy American Act"), and that components of unknown origin are considered to have been mined, produced, or manufactured outside the United States.

_____ EXCLUDED END PRODUCTS
_____ COUNTRY OF ORIGIN

K.4 DISTRICT EMPLOYEES NOT TO BENEFIT CERTIFICATION

Each Bidder shall check one of the following:

_____ No person listed in Clause 13 of the SCP, "District Employees Not To Benefit" will benefit from this contract.

_____ The following person(s) listed in Clause 13 may benefit from this contract. For each person listed, attach the affidavit required by Clause 13 of the SCP.

K.5 CERTIFICATION OF INDEPENDENT PRICE DETERMINATION

(a) Each signature of the bidder is considered to be a certification by the signatory that:

- 1) The prices in this contract have been arrived at independently, without, for the purpose of restricting competition, any consultation, communication, or agreement with any bidder or competitor relating to:
 - (i) those prices
 - (ii) the intention to submit a contract, or
 - (iii) the methods or factors used to calculate the prices in the contract.
- 2) The prices in this Contract have not been and will not be knowingly disclosed by the Bidder, directly or indirectly, to any other Bidder or competitor before Contract opening unless otherwise required by law; and
- 3) No attempt has been made or will be made by the bidder to induce any other concern to submit or not to submit a contract for the purpose of restricting competition.

(b) Each signature on the bid is considered to be a certification by the signatory that the signatory:

- 1) Is the person in the bidder's organization responsible for determining the prices being offered in this contract, and that the signatory has not participated and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) above; or
- 2) Has been authorized, in writing, to act as agent for the following principals in certifying that those principals have not participated, and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) above:

(insert full name of person(s) in the organization responsible for determining the prices offered in this contract and the title of his or her position in the bidder's organization);

- (i) As an authorized agent, does certify that the principals named in subdivision (b)(2) above have not participated, and will not participate, in any action contrary to subparagraphs (a)(1) through (a)(3) above; and
 - (ii) As an agent, has not participated, and will not participate, in any action contrary to subparagraphs (a)(1) through (a)(3) above.
- (c) If the bidder deletes or modifies subparagraph (a)(2) above, the bidder must furnish with its bid a signed statement setting forth in detail the circumstances of the disclosure.

K.6 WALSH-HEALEY ACT

If this contract is for the manufacture or furnishing of materials, supplies, articles or equipment in an amount that exceeds or may exceed \$10,000, and is subject to the Walsh-Healey Public Contracts Act, as amended (41 U.S.C. §§35-45) (the "Act", as used in this section), the following terms and conditions apply:

- (a) All representations and stipulations required by the Act and regulations issued by the Secretary of Labor (41 CFR 50-201.3) are incorporated by reference. These representations and stipulations are subject to all applicable rulings and interpretations of the Secretary of Labor that are now, or may hereafter, be in effect.
- (b) All employees whose work relates to this contract shall be paid not less than the minimum wage prescribed by regulations issued by the Secretary of Labor (41 CFR 50-202.2) (41 U.S.C. §40). Learners, student learners, apprentices, and handicapped workers may be employed at less than the prescribed minimum wage (see 41 CFR 50-202.3) to the same extent that such employment is permitted under Section 14 of the Fair Labor Standards Act (29 U.S.C. §214).

K.7 TAX CERTIFICATION

Each bidder must submit with its bid, a sworn Tax Certification Affidavit, incorporated herein as Section J.2.2.

SECTION L: INSTRUCTIONS, CONDITIONS AND NOTICES TO BIDDERS

L.1 METHOD OF AWARD

- L.1.1** The District reserves the right to accept/reject any/all bids resulting from this solicitation. The Contracting Officer may reject all bids or waive any minor informality or irregularity in bids received whenever it is determined that such action is in the best interest of the District.
- L.1.2** The District intends, but is not obligated, to award a *single* contract resulting from this solicitation to the responsive and responsible bidder who has the lowest evaluated bid.

L.2 PREPARATION AND SUBMISSION OF BIDS

- L.2.1** Bidders shall submit a signed original and two copies. The District will not accept a facsimile copy of a bid as an original bid. All items accepted by the District, all pages of the Invitation for Bids (IFB), all attachments and all documents containing the bidder's offer shall constitute the formal contract. **Each bid shall be submitted in a sealed envelope conspicuously marked: "Bid in Response to Solicitation No. DCFB-2008-B-0127."**
- L.2.2** The original bid shall govern if there is a variance between the original bid and the copy submitted by the bidder. Each bidder shall return the complete solicitation as its bid.
- L.2.3** The District may reject as non-responsive any bid that fails to conform in any material respect to the Invitation for Bids.
- L.2.4** The District may also reject as non-responsive any bids submitted on forms not included in or required by the solicitation. Bidders shall make no changes to the requirements set forth in the solicitation.

L.3 BID SUBMISSION DATE AND TIME

Bids must be submitted no later than **2:00 p.m. as specified in (Section A.9)** local time on page 1.

L.4 WITHDRAWAL OR MODIFICATION OF BIDS

A bidder may modify or withdraw its bid upon written, telegraphic notice, or facsimile transmission if received at the location designated in the solicitation for submission of bids, but not later than the exact time set for opening of bids.

L.5 LATE SUBMISSIONS, LATE MODIFICATIONS, AND LATE WITHDRAWALS

L.5.1 Bids, modifications to bids, or requests for withdrawals that are received in the designated District office after the exact local time specified above, are "late" and shall be considered only if they are received before the award is made and one (1) or more of the following circumstances apply:

- a. The bid or modification was sent by registered or certified mail no later than the fifth (5th) day before the date specified for receipt of bids; or
- b. The bid or modification was sent by mail and it is determined by the Contracting Officer that the late receipt at the location specified in the solicitation was caused by mishandling by the District after receipt.

L.5.2 Postmarks

The only acceptable evidence to establish the date of a late bid, late modification or late withdrawal sent either by registered or certified mail shall be a U.S. or Canadian Postal Service postmark on the wrapper or on the original receipt from the U.S. or Canadian Postal Service. If neither postmark shows a legible date, the bid, modification or withdrawal shall be deemed to have been mailed late. When the postmark shows the date but not the hour, the time is presumed to be the last minute of the date shown. If no date is shown on the postmark, the bid shall be considered late unless the bidder can furnish evidence from the postal authorities of timely mailing.

L.5.3 Late Submissions

A late bid, late request for modification or late request for withdrawal shall not be considered, except as provided in this section.

L.5.4 Late Modifications

A late modification of a successful bid, which makes its terms more favorable to the District, will be considered at any time it is received and may be accepted.

L.5.5 Late Bids

A late bid, late modification or late withdrawal of a bid that is not considered shall be held unopened, unless opened for identification, until after award and then retained with unsuccessful bids resulting from this solicitation.

L.6 HAND DELIVERY OR MAILING OF BIDS

DELIVER OR MAIL TO:

Department of Public Works
Office of Contracting and Procurement
Bid Room
2000 14th Street, N.W. 3rd Floor
Washington, D.C. 20009

L.7 ERRORS IN BIDS

Bidders are expected to read and understand fully all information and requirements contained in the solicitation; failure to do so will be at the bidder's risk. In event of a discrepancy between the unit price and the total price, the unit price shall govern.

L.8 QUESTIONS ABOUT THE SOLICITATION

If a prospective bidder has any questions relative to this solicitation, the prospective bidder shall submit the questions in writing to the Contracting Officer. The prospective bidder shall submit questions no later than **(14 calendar)** days prior to the closing date and time indicated for this solicitation. The District will not consider any questions received less than **(14 calendar)** days before the date set for submission of bids. The District will furnish responses promptly to all other prospective bidders. An amendment to the solicitation will be issued, if that information is necessary in submitting bids, or if the lack of it would be prejudicial to any other prospective bidders. Oral explanations or instructions given before the award of the contract will not be binding.

L.9 FAILURE TO SUBMIT BIDS

Recipients of this solicitation not responding with a bid should not return this solicitation. Instead, they should advise the Contracting Officer, Office of Contracting and Procurement, 2000 14th Street, NW 6th Floor, Washington, DC 20009, telephone (202) 671-2200, by letter or postcard whether they want to receive future solicitations for similar requirements. It is also requested that such recipients advise the Contracting Officer, James Roberts, of the reason for not submitting a bid in response to this solicitation. If a recipient does not submit a bid and does not notify the Contracting Officer, James Roberts, that future solicitations are desired, the recipient's name may be removed from the applicable mailing list.

L.10 BID PROTESTS

Any actual or prospective bidder or contractor, who is aggrieved in connection with the solicitation or award of a contract, must file with the D.C. Contract Appeals Board (Board) a protest no later than 10 business days after the basis of protest is known or should have been known, whichever is earlier. A protest based on alleged improprieties in a solicitation, which are apparent prior to bid opening, or the time set for receipt of initial bids shall be filed with the Board prior to bid opening or the time set for receipt of initial bids. In procurements in

which bids are requested, alleged improprieties which do not exist in the initial solicitation, but which are subsequently incorporated into this solicitation, must be protested no later than the next closing time for receipt of bids following the incorporation. The protest shall be filed in writing, with the Contract Appeals Board, 717 14th Street, N.W., Suite 430, Washington, D.C. 20004. The aggrieved person shall also mail a copy of the protest to the Contracting Officer.

L.11 SIGNING OF BIDS

- L.11.1** The Contractor shall sign the bid and print or type its name on the Solicitation, Offer and Award form of this solicitation. Each bid must show a full business address and telephone number of the bidder and be signed by the person or persons legally authorized to sign contracts. Erasures or other changes must be initialed by the person signing the bid. Bids signed by an agent shall be accompanied by evidence of that agent's authority, unless that evidence has been previously furnished to the Contracting Officer.
- L.11.2** All correspondence concerning the bid or resulting contract will be mailed to the address shown on the bid in the absence of written instructions from the bidder or contractor to the contrary. Any bid submitted by a partnership must be signed with the partnership name by a general partner with authority to bind the partnership. Any bid submitted by a corporation must be signed with the name of the corporation followed by the signature and title of the person having authority to sign for the corporation. Bidders shall complete and sign all Representations, Certifications and Acknowledgments as appropriate. Failure to do so may result in a bid rejection.

L.12 ACKNOWLEDGMENT OF AMENDMENTS

The bidder shall acknowledge receipt of any amendment to this solicitation (a) by signing and returning the amendment; (b) by identifying the amendment number and date in the space provided for this purpose in Section A.14 of the solicitation; or (c) by letter or telegram, including mailgrams. The District must receive the acknowledgment by the date and time specified for receipt of bids. Bidder's failure to acknowledge an amendment may result in rejection of the bid.

L.13 LEGAL STATUS OF BIDDER

Each bid must provide the following information:

- L.13.1** Name, address, telephone number and federal tax identification number of bidder;
- L.13.2** A copy of each District of Columbia license, registration or certification that the bidder is required by law to obtain. This mandate also requires the bidder to provide a copy of the executed "Clean Hands Certification" that is referenced in D.C. Official Code §47-2862 (2001), if the bidder is required by law to make such certification. If the bidder is a corporation or partnership and does not provide a copy of its license, registration or certification to transact business in the District of Columbia, the bid shall certify its intent to obtain the necessary license, registration or certification prior to contract award or its exemption from such requirements; and

L.13.3 If the bidder is a partnership or joint venture, the names and addresses of the general partners or individual members of the joint venture, and copies of any joint venture or teaming agreements.

L.14 STANDARDS OF RESPONSIBILITY

The prospective contractor must demonstrate to the satisfaction of the District the capability in all respects to perform fully the contract requirements, therefore, the prospective contractor must submit the documentation listed below, within five (5) days of the request by the District.

L.14.1 Evidence of adequate financial resources, credit or the ability to obtain such resources as required during the performance of the contract.

L.14.2 Evidence of the ability to comply with the required or proposed delivery or performance schedule, taking into consideration all existing commercial and governmental business commitments.

L.14.3 Evidence of the necessary organization, experience, accounting and operational control, technical skills or the ability to obtain them.

L.14.4 Evidence of compliance with the applicable District licensing and tax laws and regulations.

L.14.5 Evidence of a satisfactory performance record, record of integrity and business ethics.

L.14.6 Furnish evidence of the necessary production, construction and technical equipment and facilities or the ability to obtain them.

L.14.7 Evidence of other qualifications and eligibility criteria necessary to receive an award under applicable laws and regulations

L.14.8 If the prospective contractor fails to supply the information requested, the Contracting Officer shall make the determination of responsibility or nonresponsibility based upon available information. If the available information is insufficient to make a determination of responsibility, the Contracting Officer shall determine the prospective contractor to be nonresponsible.

L.14.9 Bids shall only be considered from companies that have an established reputation in the field of fire apparatus construction and have been in business for a minimum of 20 years. Further, bidder shall maintain dedicated service facilities for the repair and service of products. Evidence of such a facility shall be included with the bid.

L.15 BRAND NAME OR EQUAL:

As used in this chapter, the term “brand name” includes identification of products by make and model.

- A. If items called for by this Invitation for Bids have been identified in the schedule by a “brand name or equal” description, such identification is intended to be descriptive, but not restrictive, and is to indicate the quality and characteristics of products that will be satisfactory. Bid offering “equal” products will be considered for award if such products are clearly identified in the bids and are determined by the government to be equal in all material respects to the brand name products referenced in the Invitation for Bids, in accordance with the salient characteristics in section C.
- B. Unless the bidder clearly indicates in his bid that he is offering an “equal” product, his bid shall be considered as offering a brand name product referenced in the Invitation for Bids.
- C. If the bidder proposes to furnish an “equal” product, the Brand name of the product to be furnished shall be inserted in the space provided in the Invitation for Bids, or such products shall be otherwise clearly identified in the bid.
- D. The evaluation of the bids and the determination as to equality of the product offered shall be the responsibility of the government and will be based on information furnished by the bidder or identified in his bid as well as other information reasonably available to the District. **CAUTION TO BIDDERS:** The District is not responsible for locating or securing any information, which is not identified in the bid and reasonably available to the District.
- E. Accordingly, to insure that sufficient information is available, the bidder must furnish as a part of his bid all descriptive material such as (cuts, illustrations, drawings, or other information) necessary for the District to (i) determine the product offered meets the requirements of the Invitation for Bids, and (ii) establish exactly what the bidder proposes to furnish and what the government would be binding itself to purchasing by making an award. The information furnished may include specific reference to information previously furnished or to information otherwise available to the District.
- F. If the bidder proposes to modify a product so as to make it conform to the requirements of the Invitation for Bids, he shall (i) include in his bid a clear description of such proposed modifications, and (ii) clearly mark any descriptive material to show the proposed modifications.
- G. Modification proposed after bid opening to make a product conform to a brand name product referenced in the Invitation for Bids will not be considered.

L.16 REQUIREMENT FOR DESCRIPTIVE LITERATURE:

- A. Descriptive literature must be furnished as a part of the bid and must be received before the time set for opening bids. The literature furnishes must be identified to show the items in the bid to which it pertains. The descriptive literature is required to establish, for the purpose of bid evaluation and award, details of the products the bidder proposes to furnish as to design, material, quality, construction and performance characteristics.
- B. Failure of descriptive literature to show that the product offered conforms to the specifications and other requirements of this invitation for bids will require rejection of the bid. Failure to furnish the descriptive literature by the time and date set for receipt of bids will require rejection of the bid, except that if the materials are transmitted by mail and is received late, it may be considered under the provision for considering late bids, as set forth in section L.5 of this invitation for bids.
- C. The Contracting Officer may waive the requirement for furnishing descriptive literature if either of the following occurs:
 - (1) The bidder states in the bid that the product being offered is the same as a product previously or currently being furnished to the District; or
 - (2) The Contracting Officer, on advice of technical personnel, determines that the product offered by the bidder complies with the specification requirements of the current invitation for bids.

L.17 ACCEPTANCE PERIOD

L.17.1 The bidder agrees that its bid remains valid for a period of 120 days from the solicitations opening date.

SECTION M: EVALUATION FACTORS

M.1 OPEN MARKET CLAUSES WITH NO SUBCONTRACTING SET-ASIDE (SUPPLIES AND SERVICES)

M.1.1 Preferences for Local Businesses, Disadvantaged Businesses, Resident-owned Businesses, Small Businesses, Longtime Resident Businesses, or Local Businesses with Principal Offices Located in an Enterprise Zone

Under the provisions of the “Small, Local, and Disadvantaged Business Enterprise Development and Assistance Act of 2005” (the Act), Title II, Subtitle N, of the “Fiscal Year 2006 Budget Support Act of 2005”, D.C. Law 16-33, effective October 20, 2005, the District shall apply preferences in evaluating bids or proposals from businesses that are small, local, disadvantaged, resident-owned, longtime resident, or local with a principal office located in an enterprise zone of the District of Columbia.

M.2 General Preferences

For evaluation purposes, the allowable preferences under the Act for this procurement are as follows:

- M.2.1.1** Three percent reduction in the bid price or the addition of three points on a 100-point scale for a small business enterprise (SBE) certified by the Small and Local Business Opportunity Commission (SLBOC) or the Department of Small and Local Business Development (DSLBD), as applicable;
- M.2.1.2** Three percent reduction in the bid price or the addition of three points on a 100-point scale for a resident-owned business enterprise (ROB) certified by the SLBOC or the DSLBD, as applicable;
- M.2.1.3** Ten percent reduction in the bid price or the addition of ten points on a 100-point scale for a longtime resident business (LRB) certified by the SLBOC or the DSLBD, as applicable;
- M.2.1.4** Two percent reduction in the bid price or the addition of two points on a 100-point scale for a local business enterprise (LBE) certified by the SLBOC or the DSLBD, as applicable;
- M.2.1.5** Two percent reduction in the bid price or the addition of two points on a 100-point scale for a local business enterprise with its principal office located in an enterprise zone (DZE) and certified by the SLBOC or the DSLBD, as applicable; and
- M.2.1.6** Two percent reduction in the bid price or the addition of two points on a 100-point scale for a disadvantaged business enterprise (DBE) certified by the SLBOC or the DSLBD, as applicable.

M.2.2 Application of Preferences

The preferences shall be applicable to prime contractors as follows:

- M.2.2.1** Any prime contractor that is an SBE certified by the SLBOC or the DSLBD, as applicable, will receive a three percent (3%) reduction in the bid price for a bid submitted by the SBE in response to an Invitation for Bids (IFB) or the addition of three points on a 100-point scale added to the overall score for proposals submitted by the SBE in response to a Request for Proposals (RFP).
- M.2.2.2** Any prime contractor that is an ROB certified by the SLBOC or the DSLBD, as applicable, will receive a three percent (3%) reduction in the bid price for a bid submitted by the ROB in response to an IFB or the addition of three points on a 100-point scale added to the overall score for proposals submitted by the ROB in response to an RFP.
- M.2.2.3** Any prime contractor that is an LRB certified by the SLBOC or the DSLBD, as applicable, will receive a ten percent (10%) reduction in the bid price for a bid submitted by the LRB in response to an IFB or the addition of ten points on a 100-point scale added to the overall score for proposals submitted by the LRB in response to an RFP.
- M.2.2.4** Any prime contractor that is an LBE certified by the SLBOC or the DSLBD, as applicable, will receive a two percent (2%) reduction in the bid price for a bid submitted by the LBE in response to an IFB or the addition of two points on a 100-point scale added to the overall score for proposals submitted by the LBE in response to an RFP.
- M.2.2.5** Any prime contractor that is a DZE certified by the SLBOC or the DSLBD, as applicable, will receive a two percent (2%) reduction in the bid price for a bid submitted by the DZE in response to an IFB or the addition of two points on a 100-point scale added to the overall score for proposals submitted by the DZE in response to an RFP.
- M.2.2.6** Any prime contractor that is a DBE certified by the SLBOC or the DSLBD, as applicable, will receive a two percent (2%) reduction in the bid price for a bid submitted by the DBE in response to an IFB or the addition of two points on a 100-point scale added to the overall score for proposals submitted by the DBE in response to an RFP.

M.2.3 Maximum Preference Awarded

Notwithstanding the availability of the preceding preferences, the maximum total preference to which a certified business enterprise is entitled under the Act for this procurement is twelve percent (12%) for bids submitted in response to an IFB or the equivalent of twelve (12) points on a 100-point scale for proposals submitted in response to an RFP. There will be no preference awarded for subcontracting by the prime contractor with certified business enterprises.

M.2.4 Preferences for Certified Joint Ventures

When the SLBOC or the DSLBD, as applicable, certifies a joint venture, the certified joint venture will receive preferences as a prime contractor for categories in which the joint venture and the certified joint venture partner are certified, subject to the maximum preference limitation set forth in the preceding paragraph.

M.2.5 Vendor Submission for Preferences

M.2.5.1 Any vendor seeking to receive preferences on this solicitation must submit at the time of, and as part of its bid or proposal, the following documentation, as applicable to the preference being sought:

M.2.5.1.1 Evidence of the vendor's or joint venture's certification by the SLBOC as an SBE, LBE, DBE, DZE, LRB, or RBO, to include a copy of all relevant letters of certification from the SLBOC; or

M.2.5.1.2 Evidence of the vendor's or joint ventures provisional certification by the DSLBD as an SBE, LBE, DBE, DZE, LRB, or RBO, to include a copy of the provisional certification from the DSLBD.

M.2.5.2 Any vendor seeking certification or provisional certification in order to receive preferences under this solicitation should contact the:

Department of Small and Local Business Development
ATTN: LSDBE Certification Program
441 Fourth Street, N.W., Suite 970N
Washington, DC 20001

M.2.5.3 All vendors are encouraged to contact the DSLBD at (202) 727-3900 if additional information is required on certification procedures and requirements.

