December 27, 2006

INVITATION TO BID

Sealed bids will be received by the City of Auburn, until 10:00 a.m. local time, on Friday, January 19, 2007, in the Office of the City Manager, 144 Tichenor Avenue, Auburn, Alabama, and then publicly opened and read for furnishing the following:

One (1) 95' Aerial Platform Quint Truck

Bid specifications are attached. The City is requesting bid prices on one (1) 95' Aerial Platform Quint Truck. Please direct any questions to Larry Langley (334) 501-3160. Bids must be submitted within a sealed envelope addressed:

City Manager, City of Auburn
144 Tichenor Avenue, Suite 1
Auburn, Alabama 36830

The envelope must be plainly marked on the outside as follows:

BID: One (1) 95' Aerial Platform Quint Truck
OPENING: 10:00 a.m., local time
DATE: January 19, 2007

The City of Auburn reserves the right, as the best interest of the city may require, to award the purchase contract from any of the bids, to reject any or all bids, and to waive any informalities in bids received. Bids will be good for ninety (90) days after being opened by the City of Auburn, Alabama. The City reserves the right to revert to the State of Alabama Contract if the bid price is higher than the contracted amount through the State.

The successful bidder will note that the City pays by invoice on each Friday of the month. Invoices must be received by accounts payable at least seven working days before the scheduled check write. If you have any questions concerning billing, contact our accounts payable office at (334) 501-7238.

CITY OF AUBURN

Karen S. Broome
Purchasing Officer

INTENT OF SPECIFICATIONS

It is the intent of these specifications to cover the furnishing and delivery to the purchaser a complete apparatus equipped as hereinafter specified. With a view of obtaining the best results and the most acceptable apparatus for service in the fire department, these specifications cover only the general requirements as to the type of construction and tests to which the apparatus must conform, together with certain details as to finish, equipment and appliances with which the successful bidder must conform. Minor details of construction and materials where not otherwise specified are left to the discretion of the contractor, who shall be solely responsible for the design and construction of all features. The apparatus shall conform to the requirements of the current (at the time of bid) National Fire Protection Association Pamphlet #1901 for Motor Fire Apparatus unless otherwise specified in these specifications.

Bids shall only be considered from companies which have an established reputation in the field of fire apparatus representation and have been in business for a minimum of ten (10) years.

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 must conform. Computer run-off sheets are not acceptable as descriptive literature.

The specifications shall indicate size, type, model and make of all component parts and equipment.

The mention of specific manufacturers in these specifications are used as a point of reference only. Equivalent models and manufactures may be used.

QUALITY AND WORKMANSHIP

The design of the apparatus must embody the latest approved automotive engineering practices.

The workmanship must be the highest quality in its respective field. Special consideration shall be given to the following points: Accessibility to various areas requiring periodic maintenance, ease of operation (including both pumping and driving) and symmetrical proportions.

Construction must be rugged and ample safety factors must be provided to carry loads as specified and to meet both on and off road requirements and speed as set forth under "Performance Test and Requirements."

PERFORMANCE TESTS AND REQUIREMENTS

A road test shall be documented 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 free from abnormal vibration or noise throughout the operating range of the apparatus. The apparatus, when loaded, shall be approximately 66% on the rear axle. The successful bidder shall furnish a weight certification showing weight on the front and rear axle, and the total weight of the completed apparatus at the time of delivery.

a. The apparatus must be capable of accelerating to 30 MPH from a standing start within 25 seconds on a level concrete highway without exceeding the maximum governed engine RPM.

b. The service brakes shall be capable of stopping the fully loaded vehicle within 35 feet from a speed of 25 MPH on a level concrete highway.

c. The apparatus, fully loaded, shall be capable of obtaining a speed of 50 MPH on a level highway with the engine not exceeding 95% of its governed RPM (full load).

d. The apparatus shall be tested and approved by a qualified testing agency in accordance with their standard practices for pumping engines.

e. The contractor shall furnish copies of the Pump Manufacturer's Certification of Hydrostatic Test (if applicable), the Engine Manufacturer's current Certified Brake Horsepower Curve and the Manufacturer's Record of Construction Details.

FAILURE TO MEET TESTS

In the event the apparatus fails to meet the test requirements of these specifications on the first trial, a second trial may be made at the option of the bidder within thirty (30) days of the date of the first trials. Such trials shall be final and conclusive and failure to comply with these requirements shall be cause for rejection. Permission to keep and/or store the apparatus in any building owned or occupied by the purchaser shall not constitute acceptance of same.

EXCEPTIONS TO SPECIFICATIONS

The following specifications shall be strictly adhered to. Exceptions shall be considered if they are deemed equal to or superior to the specifications, provided they are fully explained on a separate page entitled "EXCEPTIONS TO SPECIFICATIONS." Exceptions shall be listed by page and paragraph.

Failure to denote exceptions in the above manner shall result in immediate rejection of the proposal. In addition a general statement taking "TOTAL EXCEPTION" to the specifications shall result in immediate rejection of bid.

GENERAL CONSTRUCTION

The apparatus shall be designed and the equipment mounted with due consideration to distribution of load between the front and rear axles so that all specified equipment, including filled water tank, a full complement of personnel and fire hose shall be carried without injury to the apparatus. Weight balance and distribution shall be in accordance with the recommendations of the International Association of Fire Chiefs and National Fire Association (or American Insurance Association). Certified Laboratories certificate shall be submitted by the manufacturer. Weight of apparatus shall meet all federal axle load laws.

DELIVERY REQUIREMENTS

The apparatus shall be completely equipped as per these specifications upon arrival and on completion of the required tests shall be ready for immediate service in the fire department of the purchaser. Any and all alterations required at the scene of delivery to comply with these specifications must be done at the contractor's expense.

PURCHASER RIGHTS

The Purchaser reserves the right to accept or reject any bid. The purchaser also reserves the right to award in their best interest and reserves the right to waive any formalities.

U.S.A. MANUFACTURER

The entire apparatus shall be assembled within the borders of the Continental United States to insure more readily available parts (without added costs and delays caused by tariffs and customs) and service, as well as protecting the purchaser should legal action ever be required.

MANUFACTURER'S EXPERIENCE

Each manufacturer shall have been in business making similar apparatus for a minimum of twenty (20) years and must have had single ownership for more than twenty-five (25) years.

ELIMINATION OF DIVIDED RESPONSIBILITY

It is required that each bidder produce both the chassis and complete apparatus. To eliminate divided responsibility and service, the chassis and body must be manufactured by the same Company. Manufacturer shall state the number of years the Company has been producing their own chassis and body. Manufacturer shall state compliance with the paragraph. NO EXCEPTIONS.

FAMA COMPLIANCE

Manufacturer must be a current member of the Fire Apparatus Manufacturer's Association.

BID SEQUENCE

For ease of evaluation, all bid proposals shall be submitted in the same order as the fire department's specification. **NO EXCEPTIONS.**

PROPOSAL DRAWING

A general layout drawing depicting the apparatus layout and appearance shall be provided with the bid. The drawing shall consist of left side, right side, frontal and rear elevation views. Apparatus equipped with a fire pump, shall have a general layout view of the pump operators panel scaled the same as the elevation views. The drawing shall be a depiction of the actual apparatus proposed and not of a generic similar product.

APPROVAL DRAWING

After the award of bid and pre-construction conference, a detailed layout drawing depicting the apparatus layout and appearance including any changes agreed upon shall be provided for customer review and signature. The drawing shall become part of the contract documents. The drawing shall consist of left side, right side, frontal and rear elevation views. Apparatus equipped with a fire pump, shall have a general layout view of the pump operators panel scaled the same as the elevation views.

PRE-CONSTRUCTION CONFERENCE

After award of the contract, and prior to construction of the apparatus, a pre-construction conference shall be held at the facility of the manufacturer. A provision shall be provided in the bid price for all travel, food and lodging to accommodate three (3) Fire Department personnel.

INSPECTION TRIPS

An inspection trip at the manufacturer's facility prior to delivery of the completed apparatus shall be provided. Accommodations for three (3) Fire Department personnel to include all transportation, food and lodging shall be included in the bid price.

PROPOSAL GUARANTEE

A certified check or bid bond in the sum of ten percent (10%) of the total bid price shall be submitted with the "Bid Proposal" at the time of the bid. The full amount of the bid surety shall be returned to the unsuccessful bidders following the award of the contract to the successful bidder.

PERFORMANCE BOND

Within twenty (20) days of notification to the successful bidder by the purchaser, prior to any work commencing on the proposed apparatus, the successful bidder shall, at their own expense, obtain and submit to the purchasing entity a performance bond in the amount of 100% equal to the total contract price.

Additionally, each bidder must disclose the price/amount it pays for bonding, per $1,000. This is to demonstrate the economic stability and credit worthiness of the bidder. NO EXCEPTIONS.

CHASSIS

The chassis shall be manufactured in the factory of the bidder. The chassis shall be designed and manufactured for heavy duty service with adequate strength and capacity of all components for the intended load to be sustained and the type of service required. There shall be no divided responsibility in the production of the apparatus.

ALUMINUM CAB

The cab shall be a **full tilt 6-person 10" rear raised roof cab** designed specifically for the fire service and manufactured by the chassis builder.

Cab shall be built entirely by the apparatus manufacturer within the same facilities (no exceptions). The outside of the rear cab wall shall be aluminum diamond plate.

CAB DESIGN

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

The apparatus chassis shall be of an engine forward, fully enclosed tilt cab design. There shall be four (4) side entry doors.

The cab shall be of a fully open design with no divider wall or window separating the front and rear cab sections.

The framework shall be of a welded construction that fully unitizes the structural frame of the cab.

The structural extrusion framework shall support and distribute the forces and stresses imposed by the chassis and cab loads and shall not rely on the sheet metal skin for any structural integrity.

CAB DIMENSIONS

The vehicle shall have an all-welded aluminum fully enclose tilt cab designed exclusively for the fire service to ensure long life. It shall incorporate a welded substructure of high-strength aluminum alloy extrusions that surround and protects the perimeter of the occupant compartment for increase safety. Cab dimensions and

constructions shall be specified in the bid per manufacture specifications.

CAB MOUNTING

The cab mounting system shall use a steel sub frame, isolated from the cab with rubber mounts, to minimize chassis vibration and torsion loads from being induced into the cab structure. The two tilt pivot points shall have stainless steel bushing and grease fittings for lubrication and smooth tilting of the cab.

INTERIOR

The cab interior shall be gray or black in color. All cab floors shall be covered with a black, rubberized, mar resistant, textured finish floor, or mat that provides an aggressive slip-resistant surface in accordance with current NFPA 1901.

FENDER CROWNS

Polished front axle fenderettes with full depth radius wheel well liners shall be provided.

GRILLE

The front of the cab shall be equipped with a grille with sufficient area to allow proper airflow into the cooling system and engine compartment.

CAB INSULATION

The cab shall be insulated to ensure the sound (dba) level is within the limits stated in the current edition of NFPA 1901.

ROOF DESIGN

The cab shall be of a 10” one-half rear raised roof design with side drip rails.

DIAMOND PLATE, CAB ROOF

The roof of the cab shall have a diamond plate overlay. The overlay shall be constructed of .125” aluminum serrated diamond plate and measure 30” x 60”.

DOORS

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

The cab doorframes shall be constructed from aluminum extrusions fitted with an aluminum sheet metal skin and shall be equipped with weather seals. The cab doors shall be equipped with heavy-duty door latching hardware, which complies with FMVSS 206. The mechanics of the door operation shall utilize rod linkage for positive operation. A rubber coated nylon web doorstop shall be provided. The doors shall be lap type with

a full-length stainless steel 3/8" diameter hinge and shall be fully adjustable.

EXTERIOR GLASS

The cab windshield shall be of a two piece curved design utilizing tinted, laminated, automotive approved safety glass. The window shall be held in place by an extruded rubber molding with a chrome plated decorative locking bead. The cab shall be finished painted prior to the window installation.

Two (2) fixed position side windows shall be provided between the forward cab area and the crew cab area, one (1) each side and shall utilize tinted, tempered automotive approved safety glass. The widows shall be approximately 20.5" high x 16.50" wide to provide maximum visibility. The side windows shall be held in place by an extruded rubber molding with a chrome plated decorative locking bead

The cab door and canopy windows shall utilize tinted, automotive approved safety glass.

SUN VISORS

The sun visors shall be made of dark smoke colored transparent polycarbonate. There shall be a visor located at both the driver and officer positions.

CAB TILT SYSTEM

An electric over hydraulic cab tilt system shall be provided in order to facilitate the lifting of the cab allowing full access to the engine and accessories mounted under the cab.

The cab shall be mounted to a steel sub-frame through the use of rubber mounts. The raising of the tilt cab shall be accomplished through a hydraulic lift system consisting of two (2) hydraulic lift cylinders, an electrically driven hydraulic pump, two (2) hydraulically activated latches, and an electrical control switch. The hydraulic lift cylinders shall be coupled to the steel cab sub-frame (not directly to the cab) with greaseable bushing for the pivot point. The above-described sub-frame shall be used to minimize stress to the cab during lifting operations.

The hydraulic cylinders shall lift the cab to a tilt angle of 42 to 45 degrees, exposing the engine and accessories for service. Manual rod locks with a cable release shall be provided to ensure the cab shall remain in a safe tilted/raised fixed position.

The lift system shall operate in a smooth and safe manner and shall include cylinder interlocks to ensure that the cab shall remain in a fixed position in the event of a failure in the system.

CAB STRUCTURAL INTEGRITY

The cab of the apparatus shall be designed and so attached to the vehicle as to eliminate, to the greatest possible extent, the risk of injury to the occupants in the event of an accident.

The apparatus cab shall be tested to specific load and impact tests with regard to the protection of occupants of a commercial vehicle.

A test shall be conducted to evaluate the frontal impact strength of the apparatus cab to conform to the test J2420 and the "United Nations Regulation 29, Annex 3, paragraph 4, (Test A). A second test shall be conducted to evaluate the roof strength of the apparatus cab to conform to the Society Of Automotive Engineers (SAE) SAE J2422/SAE J2420 and "United Nations Regulation 29, Annex 3, paragraph 5, (Test B) and SAE J2420. The evaluation shall consist of the requirements imposed by ECE Regulation 29, Paragraph 5.

The test shall be conducted by a certified independent third party testing institution.

A letter stating successful completion of the above test on the brand of cab being supplied shall be included in the bid. There shall be **"no exception"** to this requirement.

MANUAL CAB LIFT

There shall be a manually operated hydraulic pump for tilting the cab in case the main pump should fail. The operator shall be located under the left front corner of the front bumper.

POWER WINDOWS

All four cab entry door windows shall be have power windows. Each door shall be individually operated and the driver position shall have master control over all windows.

COMPUTER TRAY

There shall be a slide-out tray in front of the officer's seat for a laptop computer or other use.

MAP BOX

A map box compartment shall be provided between driver and officer. The map box shall have the capacity to hold two (2) 3" and two (2) 2" 3-ring binders. The construction shall be of .125" aluminum plate and finished to match the interior of the cab. The map holder shall be equipped with a Velcro strap to hold the binder in place.

CONSOLE COMPARTMENT

A console compartment shall be provided between the driver's and officer's seat in the front of the cab. The console shall have a hinged door.

LOWER DOOR PANELS

The lower section of the cab entry doors shall have a 304-brushed stainless steel scuff plate. The plate shall be cut to contour the door.

DOOR REFLECTIVE MATERIAL

The lower portion of the cab interior door panels shall have a total of 245 square inches of reflective material on each door exceeding the NFPA requirement of 96 square inches. The layout shall be ruby red “chevron” stripes on each side. The red striping shall be laid over white 3M reflective materials. The reflective decal shall be plainly visible to oncoming traffic when the doors are in the open position.

CAB ACCESSORY FUSE PANEL

The fuse panel shall consist of six (6) battery hot and six (6) ignition switch circuits. Each circuit shall be capable of 10-ampere 12-volt power and total output of 50-amps. The fuse panel shall be capable of powering accessories such as hand held spotlights, radio chargers, hand lantern chargers and other miscellaneous 12-volt electrical components.

AIR HORNS

Two (2) Grover (or equivalent) 2040 Stuttertone rectangular, chrome plated, air horns shall be recess mounted, one (1) each side behind the perforated grille of the bumper. The air horns shall be controlled by a toggle switch wired through the horn button. A foot switch for the air horns shall also be provided on the officer's side.

A second foot switch for the air horns shall be provided.

DUAL ALTERNATORS

Two (2) 270 ampere Prestolite/Leece Neville, Model 4864J (or equivalent) alternators shall be provided with a serpentine belt. Each alternator shall generate 210 amperes at idle for a total output of 420 amperes at idle.

A low voltage alarm, audible and visual, shall be provided.

FRONT AXLE

The front axle shall be a Meritor™ MFS-20-133A (or equivalent) 3.74” drop beam with a capacity of at least 21,500 pounds. The axle shall be hub piloted, 10 stud, furnished with oil seals and come complete with assist cylinder, hoses, and mounting brackets.

FRONT SHOCK ABSORBERS

The front axle shall be equipped with heavy-duty telescopic shock absorbers.

REAR AXLE

The rear axle shall be a Meritor™ RT-40-145 (or equivalent) Tandem drive axle with a capacity of at least 40,000 lbs. The axles shall be hub piloted, 10 studs, furnished with oil seals.

TOP SPEED

Rear axle speed approximately 65 MPH.

BATTERIES

The battery system shall be a single system consisting of four negative ground, 12 volt batteries, cranking performance of 950 CCA each with total of 3800 amps, 185 minute reserve capacity with 25 ampere draw at 80 degrees Fahrenheit. Each battery shall have 114 plates. Warranty shall be accepted nationwide.

The batteries shall be installed in a vented 304 stainless steel battery box with a removable aluminum cover to protect the batteries from road dirt and moisture. The batteries are to be placed on dri-deck and secured with a fiberglass hold down. The batteries shall be wired directly to starter motor and alternator.

The battery cables shall be 3/0 gauge. Battery cable terminals shall be soldering dipped, color-coded and labeled on heat shrink tubing with a color-coded rubber boot protecting the terminals from corrosion.

There shall be a 350-ampere fuse protecting the pump primer and a 250-ampere fuse protecting the electric cab tilt pump and other options as required.

BATTERY CHARGING

A Kussmaul Auto Charge 1200 (or equivalent) battery system charger shall be provided. The Auto Charge 1200 is a fully automatic battery charger with a very high output for vehicles with a single battery system. A remote single bar graph display is provided to indicate the state of charge of the battery system. The rated output shall be 40 amps for the battery system.

A Kussmaul Model 091-55-20-120 (or equivalent) super electric auto-eject with weatherproof cover and power interrupt shall be provided.

An 12 volt Auto Pump air compressor shall also be provided to maintain air within the air brake system.

A miniature air filter, that mounts in the output pressure line of the air pump to trap moisture, shall be provided. The micron filter element removes contaminants from the air line. A transparent bowl permits easy monitoring of water collected and a manual purge valve allows the operator to conveniently drain the bowl. A heated automatic drain valve shall be provided.

BATTERY JUMPER TERMINAL

There shall be one set (two studs) of battery jumper terminals located by the battery box under the cab. The terminals shall have plastic color-coded covers. Each terminal shall be tagged to indicate positive/negative.

BRAKES (Front)

The front brakes shall be Meritor (or equivalent) S-cam style. They shall be 16.5" x 6" with heavy-duty return springs, and a double anchor pin design. They shall also have quick-change shoes for fast easy brake relining.

BRAKES (Rear)

The rear brakes shall be Meritor (or equivalent) S-cam style. They shall be 16.5" x 7" with heavy-duty return springs, and a double anchor pin design. They shall also have quick-change shoes for fast easy brake relining.

BRAKE WARRANTY

The brakes shall carry Meritor's (or equivalent) five (5) year 75,000 mile warranty, exclusive of wear items.

AIR BRAKE SYSTEM

The vehicle shall be equipped with air-operated brakes. The system shall meet or exceed the design and performance requirements of current FMVSS-121 and test requirements of current NFPA 1901 standards.

Each wheel shall have a separate brake chamber. A dual treadle valve shall split the braking power between the front and rear systems.

All main brake lines shall be color-coded nylon type protected in high temperature rated split plastic loom. The brake hoses from frame to axle shall have spring guards on both ends to prevent wear and crimping as they move with the suspension. All fittings for brake system plumbing shall be brass. There shall be no steel fittings.

A Meritor Wabco System Saver 1200 (or equivalent) air dryer shall be provided.

The air system shall be provided with a rapid build-up feature, designed to meet current NFPA 1901 requirements. The system shall be designed so the vehicle can be moved within 60 seconds of startup. The quick build up system shall provide sufficient air pressure so that the apparatus has no brake drag and is able to stop under the intended operating conditions following the 60-second buildup time. The vehicle shall not be required to have a separate on-board electrical air compressor or shoreline hookup to meet this requirement.

Six (6) supply tanks shall be provided. One air reservoir shall serve as a wet tank and a

minimum of one tank shall be supplied for each the front and rear axles. A Schrader (or equivalent) fill valve shall be mounted on the wet tank behind bumper under the cab.

A spring actuated air release emergency/parking brake shall be provided on the rear axle. One (1) parking brake control shall be provided and located on the lower left cab dash within easy reach of the driver. The parking brake shall automatically apply at 35 ±10 PSI reservoir pressure. A Meritor WABCO IR-2 (or equivalent) Inversion Relay Valve, supplied by both the Primary and Secondary air systems, shall be used to activate the parking brake and to provide parking brake modulation in the event of a primary air system failure.

The brake pedal shall be E-7 type with all brake switches inside the cab to eliminate exposure to the elements.

Accessories plumbed from the air system shall go through a pressure protection valve and to a manifold so that if accessories fail they shall not interfere with the air brake system.

AIR OUTLET

One (1) air chuck shall be provided at a customer specified location. The 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. An additional air tank of 1450 cu. in. capacity shall be provided.

Note: Purchaser to specify type of hose fitting.

AIR INLET

An air system inlet/fill connection shall be provided. The inlet shall be connected to the air brake to allow constant air feed. The location of the inlet shall be determined during the pre-construction conference.

AIR BRAKING ABS SYSTEM

A Wabco (or equivalent) ABS system shall be provided to improve vehicle stability and control by reducing wheel lock-up during braking. This braking system shall be fitted to axles and all electrical connections shall be environmentally sealed from water and weather and be vibration resistant.

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

The system shall consist of a sensor clip, sensor, electronic control unit and solenoid control valve. The sensor clip shall hold the sensor in close proximity to the tooth wheel. An inductive sensor consisting of a permanent magnet with a round pole pin and coil shall produce an alternating current with a frequency proportional to wheel speed. The unit shall be sealed, corrosion-resistant and protected from electro-magnetic interference. The electronic control unit shall monitor the speed of each wheel sensor and a microcomputer shall evaluate wheel slip in milliseconds.

BUMPER

There shall be a **10”to12" high** polished stainless steel wrap-around bumper provided at the front of the apparatus. Laser cut perforated grilles shall be incorporated into the bumper and located at the outboard section of the bumper for the air horns and at the center for the siren speaker. The bumper shall be mounted to a reinforcement plate constructed of steel. The frame rail extension shall be a reinforced four-sided boxed frame rail for superior safety protection. A gravel shield shall be provided, constructed of aluminum diamond plate. The bumper extension shall be approximately 18".

DIAMOND PLATE BUMPER LID

There shall be a 1/8” diamond plate cover with latches provided for the front bumper trough.

STORAGE WELL COMPARTMENT

There shall be a hose well compartment located in the center of the front bumper. The compartment shall run the full width of the bumper and measure approximately 4” deep x 66” wide x 12” long (3,400 in²). The compartment shall be able to hold a 150’ of 1 ¾” hose and be constructed of .125” smooth aluminum plate.

COOLING SYSTEM

The cooling system shall have sufficient capacity to keep the engine properly cooled under all conditions of road and pumping operations. The cooling system shall be designed and tested to meet or exceed the engine and transmission manufacturers and EPA requirements. The complete cooling system shall be mounted in a manner to isolate the system from vibration and stress. The individual cores shall be mounted in a manner to allow expansion and contraction at various rates without inducing stress to the adjoining core(s).

RADIATOR

The radiator shall be a cross-flow design constructed completely of aluminum with welded side tanks. The radiator shall be bolted to the bottom of the charge air cooler to allow a single depth core, thus allowing a more efficient and serviceable cooling system.

The radiator shall be equipped with a drain cock to drain the coolant for serviceability.

COOLANT

The cooling system shall be filled with Extended Life Coolant to provide a longer life cycle and reduced change intervals. The coolant makeup shall contain ethylene glycol and deionized water to keep the coolant from freezing to a temperature of –34 degrees F.

HOSES & CLAMPS

Silicone hoses shall be provided for all engine coolant lines.

All radiator hose clamps shall be spring loaded stainless steel constant torque hose clamps for all main hose connections to prevent leaks.

CHARGE AIR COOLER

The charge air cooler shall be of a cross-flow design and constructed completely of aluminum with welded side tanks. The charge air cooler shall be bolted to the top of the radiator to allow a single depth core, thus allowing a more efficient and serviceable cooling system.

FAN DRIVE

The engine cooling system shall incorporate a hydraulic driven, heavy-duty composite 11-blade fan.

A shroud and recirculation shield system shall be used to ensure air that has passed through the radiator is not drawn through again.

The fan tip to radiator core clearance shall be kept at a minimal distance to increase the efficiency of the fan and reduce fan blast noise.

SURGE TANK

The cooling system shall be equipped with a surge tank. The surge tank shall be equipped with a low coolant probe and sight glass to monitor the coolant level. The surge tank shall have a cap that meets the engine manufacturer’s pressure requirements as well as the system design requirements.

DRIVELINE

The driveline shall consist of Spicer series (or equivalent) dual grease fitting universal joints with "Half-Round" end yokes. The drive shaft shall be built with a heavy-duty steel tube. The shafts shall be dynamically balanced prior to installation into the chassis. A splined slip joint shall be provided in each shaft assembly. Universal joints shall be extended life. There shall be two (2) fittings in each universal joint assembly so the joint can be greased without turning the shaft.

ENGINE ENCLOSURE

An integral, formed aluminum engine enclosure shall be provided. The engine enclosure shall be of a contoured design to blend in an aesthetically pleasing manner with the interior dash and flooring of the cab. The enclosure shall be kept as low as possible to provide the maximum space.

The enclosure shall be covered in gray Durawear (or equivalent) type fabric. The inside of the engine enclosure shall have a sound deadening insulation system. The cab interior shall have a sound-deadening package to help minimize the noise (DB) levels and eliminate engine heat from the front and rear of the cab.

A work light shall be installed in the engine enclosure with an individual switch located on the base of the light.

ENGINE

The apparatus shall be powered by a Cummins Diesel ISM (or equivalent) 500 H.P. @ 2100 R.P.M., 1550 ft. lb. torque @ 1200 R.P.M.

ENGINE WARRANTY

The engine shall have a five year or 100,000 mile warranty and approval by Cummins (or equivalent) for installation in the chassis.

AIR COMPRESSOR

The air compressor shall be an 18.7 CFM engine driven Wabco (or equivalent).

STARTER

The starter shall be a 12-volt Delco Remy model 42MT (or equivalent) controlled by a switch on the left lower cab dash.

FUEL FILTERS

The engine fuel filters shall be mounted in a manner that is easily accessible for service or replacement. A primary and secondary filter shall be provided and shall be approved for use by the engine manufacturer.

AIR CLEANER/INTAKE

The engine air cleaner shall be sized in accordance with the engine manufacturer's recommendations. The air cleaner shall be manufactured from a fire retardant media and shall incorporate and ember separator in accordance with NFPA 1901 to protect the engine from hot embers.

A restriction gauge shall be provided and located on the cab dash.

ENGINE BRAKE

The engine shall be equipped with a Jacobs (or equivalent) compression engine brake. An “On/Off” switch and a control for “Low/High” shall be provided on the instrument panel within easy reach of the driver.

The engine brake shall interface with the Wabco (or equivalent) ABS brake controller to prevent engine brake operations during adverse braking conditions.

A pump shift interlock circuit shall be provided to prevent the engine brake from activating during pumping operations.

The brake light shall activate when the engine brake is engaged.

EXHAUST SYSTEM

The engine exhaust system shall be horizontal design constructed from heavy-duty truck components. All exhaust tubing shall be stainless steel. Flexible couplings shall be utilized to absorb the torque and vibration of the engine. The outlet shall be directed to the forward side of the rear wheels, exiting the right side, with a chrome straight tip. The system shall be equipped with single canister consisting of a Diesel Oxidation Catalyst (DOC) and a Diesel Particulate Filter (DPF). The canister shall be mounted under the right side frame rail, and meeting the engine manufacturer's specifications and current noise level tests. An orange fiberglass heat-absorbing sleeve shall be used on the exhaust pipe in the engine compartment area to reduce the heat, to protect the alternator, and also to protect hands when checking or adding oil in the engine compartment.

FRAME

The chassis frame shall be designed utilizing industry accepted engineering best practices. The frame shall be specifically designed for fire apparatus use.

The frame shall be painted glossy black prior to installing wiring harness and other components.

A lifetime warranty shall be provided.

FUEL TANK

The chassis shall be equipped with a 65-gallon rear mounted, behind the rear. The fuel tank shall be certified to meet FMVSS 393.67 tests. There shall be two (2) tank baffles.

The fuel tank shall be equipped with a 2 1/4" filler neck assembly with a 3/4" vent. located on the left hand side of the tank. A fuel fill cap attached with a lanyard shall be provided. The bottom of the fuel tank shall contain a 1/2" drain plug.

The fuel lines shall be nylon braid reinforced fuel hose with crimped brass fittings. The lines shall be carefully routed along the inside of the frame rails. All fuel lines are covered in high temperature rated split plastic loom. Single suction and return fuel lines

shall be provided.

CAB HANDRAILS

There shall be four (4) 24" long, handrails provided and installed, one (1) at each cab entrance. The handrails shall be constructed of 1-1/4” diameter, knurled and anodized, 3/8” heavy wall extruded aluminum and mounted utilizing chrome stanchions, which shall provide sufficient space to allow for a gloved hand to grip the rail.

There shall be one (1) rubber coated grab handle provided mounted on the interior of the cab on the officer's side windshield post for ingress assistance.

HEATER/DEFROSTER/AIR CONDITIONER

There shall be a minimum 35,000 cool BTU and 26,000-heat BTU unit, heater/air conditioner. Unit shall have a shutoff valve at the front of the cab. Airflow of the heater/air conditioner shall be a minimum 828 CFM. Lighted control panel for the heater, air conditioner and defroster shall be provided on the cab dash in a location easily accessible in front of the driver.

The defroster/heater shall be a minimum of 39,000 BTU and shall be a separate unit mounted over the windshield. Defroster louver/defuser shall be provided, one (1) each side of the front windshield. There shall be ductwork to the floor of the cab, facing forward to provide heat for the front of cab floor area. Airflow of the defroster/heater shall be a minimum 350 CFM. The unit shall be painted to match the cab ceiling.

The condenser shall be roof mounted and have 55,000 BTU rating. The unit shall include two fan motors. Airflow of the condenser shall be a minimum 1950 CFM. (This roof-mounted condenser shall work at full rated capacity at an idle with no engine heat problems.)

HEATER/DEFROSTER/AIR CONDITIONING CONTROLS

The heater/defroster/air conditioning shall be located in the overhead console in the center of the apparatus cab within easy reach of the driver and officer. The controls shall be illuminated for easy locating in dark conditions. The controls shall be located in such a way that the driver shall not be forced to turn away from the road to make climate control adjustments. Control of all heater/defroster/air conditioning functions for the entire apparatus cab shall be achieved through these controls.

AUXILIARY DEFROSTER FAN

There shall be a 12-volt fan mounted in the cab ceiling, directed at the driver's side windshield. The fan shall be activated by a 3-position toggle switch located at the base of the fan. The switch positions shall be High, Low and Off.

AUXILIARY DEFROSTER FAN

There shall be a 12-volt fan mounted in the cab ceiling, directed at the Officer’s side

windshield. The fan shall be activated by a 3-position toggle switch located at the base of the fan. The switch positions shall be High, Low and Off. The fan shall be silver.

LOAD MANAGER

Load manager shall have the ability to sequence loads on and off. It shall also be able to shed 8 loads when the vehicle is stationary, starting at 12.7 volts lowest priority load to be shed, then respectively at 12.6, 12.4, 12.2, 12.0, 11.8, 11.4 and 11.0 volts DC. Any load that has been shed shall be off for a minimum of five minutes, and then if voltage has rebounded above shed voltage, the shed load shall automatically come on. There shall also be an indicator panel along side the rocker switches, which indicate power is on, battery warning and fast idle. Battery warning indicator shall flash at a rate proportional to the voltage discharge rate.

AUTOMATIC HIGH IDLE ACTIVATION

The load management system shall be capable of activating the apparatus high idle system when the system voltage drops below 12.3 volts DC. The system shall raise engine speed for a minimum of five minutes until voltage exceeds 13.0 volt DC. The load management system shall activate the high idle feature before any devices are automatically shed OFF. The high idle function request from the load management device shall function only if the appropriate interlocks are present; that is, control of the high idle system is monitored and shall be superseded by the state of the interlock control module. The automatic high idle system shall be deactivated whenever the brake pedal is pressed, and shall remain inactive for two minutes thereafter to allow an operator to override the high idle function and return the engine to idle before PTO engagement.

INSTRUMENT PANEL

The main dash shroud, which covers the area directly in front of the driver from the doorpost to the engine hood, shall be custom molded and covered with a non-glare black or gray vinyl. The dash shall be a one (1) piece hinged panel that tilts outward for easy access to service the internal components. The gauge panel shall be constructed of durable aesthetically pleasing light gray polymer material. The gauges shall be Maxima Technologies/Datcon gauges or equivalent with built-in self-diagnostics and red warning lights to alert the driver of any problems. All gauges and controls shall be backlit for night vision and identified for function. All main gauges and warning lights shall be visible to the driver through the steering wheel.

The vehicle shall be equipped with a keyless ignition, with a two (2)-position rocker switch, "Ignition Off/On" and a two (2)-position rocker switch, "Off/Start".

Instrumentation on dash panel:

- Tachometer/hourmeter with built in re-settable hour meter
- Speedometer/odometer with built in re-settable trip odometer
- Ammeter

- Voltmeter
- Fuel gauge
- Engine oil pressure
- Transmission temperature
- Engine temperature
- Primary air pressure
- Secondary air pressure

Indicators and warning lights visible to driver:

- Battery on
- Parking brake engaged
- Low air with buzzer
- Turn signals
- Hi-beam
- Engine temperature with buzzer
- Engine oil pressure with buzzer
- Transmission temperature with buzzer
- Do not shift transmission
- Check transmission
- Stop engine with buzzer
- Check engine
- Regeneration
- High exhaust temperature
- Back pressure
- Cab door open (flashing)
- Compartment door open (flashing)
- Antilock brake warning
- Fasten seat belt

Other indicator and warning lights

- Differential locked
- PTO engaged
- Upper power
- Auto-slip response
- Retarder engaged
- Retarder temperature
- Jacks out
- Jacks down

Controls located on main dash panel:

- Master power disconnect with ignition switch
- Engine start switch

- Headlight switch
- Windshield wiper/washer switch
- Differential lock switch (if applicable)
- Dimmer switch for backlighting
- Parking brake control

Controls included in steering column:

- Horn button
- Turn signal switch
- Hi-beam low-beam switch
- 4-way flasher switch
- Tilt-telescopic steering wheel controls

Controls, gauges and indicator lights located to the right of driver's position:

- Transmission shifter
- Air filter restriction light
- Pump shift control with OK TO PUMP and PUMP ENGAGED lights
- Heater/defroster controls
- Eighteen (18) illuminated rocker switches

Driving compartment warning labels shall include:

- HEIGHT OF VEHICLE
- OCCUPANTS MUST BE SEATED AND BELTED WHEN APPARATUS IS IN MOTION
- DO NOT USE AUXILIARY BRAKING SYSTEMS ON WET OR SLIPPERY ROADS

ENGINE WARNING SYSTEM

An engine warning system shall be provided to monitor engine conditions such as low oil pressure, high engine temperature and low coolant level. Warning indication shall include a STOP ENGINE (red) light with audible buzzer activation and a CHECK ENGINE (amber) light

Note: (Some engine configurations may also include a fluid warning light.)

There shall be a master information light bar with 24 lights located across the center of the dash panel that covers up to 24 functions. These are defined under Indicators and Warning Lights above.

WIRING

All wiring shall have XL high temperature crosslink insulation and shall be **10 gauge, 12 gauge, 14 gauge and 18 gauge depending on load**. All wiring shall be color-coded, and the function and number stamped at **3" intervals** on each wire. All wiring shall be covered with high temperature rated split loom for easy access to wires when trouble shooting. All electrical connectors and main connectors throughout the chassis shall be

treated to prevent corrosion.

DOOR AJAR INDICATION

Four (4) red 2" diameter lights are provided in the forward cab overhead console area, visible to both driver and officer. Upon releasing the apparatus parking brake one or more of these lights shall automatically illuminate (flash) if any cab door is open, compartment door is open, any ladder or equipment rack is not in stowed position, stabilizer system deployed or any other device has not been properly stowed that may cause damage if the apparatus is moved.

MASTER ELECTRICAL PANEL

The chassis main breaker panel shall be wired through the master disconnect solenoid and controlled with a three-position ignition rocker switch. Circuit breakers and flashers shall be located at officer's right side lower interior firewall with removable cover and schematic provided with notebook holder on outside cover.

A deluxe breaker panel with up to 22 ground switched relays with circuit breaker protection shall be provided.

An integrated electrical sub-panel shall be provided and interfaced to the body and chassis through an engineered wire harness system.

Twelve (12) 20-ampere and one (1) 70-ampere relay for cab lightbar and assemblies shall be provided.

Additional four relay boards with circuit breaker protection for additional loads. Maximum two boards (8 relays) per breaker panel. All relay boards set up to trip with input from switch of positive-negative or load manager by moving connector on board (no tools needed to do this).

All relay boards shall be equipped with a power-on indicator light (red), input indicator light (green) and power output indicator light (red).

Up to 23 additional automatic reset circuit breakers for non-switched loads that are remotely switched (ie: heater fans, hood lights, etc.).

All relays and circuit breakers on the relay boards shall be pull-out/push-in replaceable.

All circuit breakers on the relay boards shall be 20 ampere automatic reset which can be doubled or tripled for 40 or 60-ampere capacity.

The system shall utilize weather resistant connectors at the breaker panel, toe board and main dash connections.

All internal wire end terminals, including locking connectors, shall be mechanically affixed to the wire ends by matching terminal crimping presses to assure the highest quality terminations.

All internal splices shall be ultrasonically welded connections and all internal wiring shall be high temperature GXL type wire that is protected by wiring duct wherever possible.

All switches shall be ground controlled; no power going through any rocker switch.

Any switch controlling a relay in the breaker panel shall be capable of being set to function only when the parking brake is set. All relays shall be tagged with the function that the relay is controlling.

PUMP SHIFT MODULE

A pump shift module with indicating lights shall be located within easy reach of the driver. A gear lockup shall be provided to hold the transmission in direct drive for pump operation.

HIGH IDLE

The engine shall have a "high idle" switch shall be located within easy reach of the driver that shall automatically maintain an engine RPM as preset. The "high idle" mode shall become operational only when the parking brake is on and the truck transmission is in neutral.

AUXILIARY POWER POINT

Three (3) 12-volt 15-ampere auxiliary lighter socket type plug-in's, shall be provided in the cab near the officer.

INTERIOR

The cab interior shall be finished in gray or black Durawear or equivalent material. It shall include full front and rear headliners, rear firewall, panel behind the seats, engine cover, and upper door panels. The bottom of the door interior panels shall be brushed stainless steel.

LIGHTING CAB EXTERIOR

Exterior lighting and reflectors shall meet or exceed Federal Motor Vehicle Safety Standards and National Fire Protection Association requirements in effect at this time.

There shall be dual sealed beam halogen rectangular headlights in custom housings on each side of the front of the cab.

ALTERNATING HEAD LAMP

The headlights shall have an alternating flash feature for emergency response use.

CORNERING LIGHTS

Cornering lights shall be provided; one (1) on each side of the bumper tread plate.

HAND HELD SPOTLIGHT

One 400,000-candle power hand-held spotlight shall be provided, installed at officer's side of cab.

LIGHTING CAB INTERIOR

Interior lighting shall be provided inside the cab for passenger safety. Two (2) ceiling mounted red/clear dome lights with a push on/off feature in the light lens. One light shall be located over the officer and driver's position. The lights shall also activate from the open door switch located in each cab doorjamb.

LIGHTING CREW CAB INTERIOR

Interior lighting shall be provided inside the crew cab for passenger safety. Two (2) ceiling mounted red/clear dome lights with a push on/off feature in the light lens shall be provided. The lights shall also activate from the open door switch located in each cab doorjamb.

MIRRORS

Two (2) chrome plated or stainless steel aero style main and convex mirrors shall be installed on each side of the vehicle. The main mirror shall be 4-way power adjustable 7" x 16" 2nd surface chromed flat glass. The convex shall be a 4-way manual adjustable w/at least a 4" x 6" 2nd surface chromed 400 mm radius glass. Each mirror housing assembly shall be constructed of lightweight textured chrome ABS with on truck glass and housing back cover replacement. In the event the mirror breaks the glass shall be replaceable in (3) minutes or less. The glass shall include a safety adhesive backing to keep broken glass in place. The mirror assembly shall be supported by a "C" loop bracket constructed of polished stainless steel tube utilizing two point mounting reducing vibration of mirror glass during normal vehicle operation. The lower section of the holder shall include a spring loaded single detent position 20 degrees forward with easy return to operating position without refocusing.

DRIVER'S SEAT

The driver's seat shall be a Bostrom Sierra FX or 911 or equivalent air ride high back, adjustable fore/aft, upholstered with gray/black tweed Durawear or wear resistant material. A 3-point seat belt shall be provided.

OFFICER'S SEAT

The officer's seat shall be a Bostrom Firefighter™ or 911 or eqivalent SCBA seat. The seat shall have the following features:

- Integrated 3-point seat belt
- “Auto-Pivot & Return” head rest
- Built in lumbar support
- Durawear or wear resistant gray/black tweed seat material

CREW SEATS

The crew cab area shall have four (4) Bostrom Firefighter™ or 911 or equivalent seats. The seating arrangement shall be: two (2) rear facing SCBA seats and two (2) forward facing SCBA flip up seats. The seats shall have the following features:

- Integrated 3-point seat belts
- “Auto-Pivot & Return” head rest
- Built in lumbar support
- Durawear™ or wear resistant gray/black tweed seat material

STEERING

Power steering shall be provided. The steering gear shall be bolted to the frame at the cross-member for steering linkage rigidity. Four (4) turns from lock to lock with an 18" diameter slip resistant rubber covered steering wheel. Steering column shall have six-position tilt and 2" telescopic adjustment. A 40 degree cramp angle shall be provided in each direction providing very tight turning ability.

SUSPENSION (Front)

The front suspension shall be a variable rate taper-leaf design, 54 inches long. All spring and suspension mounting shall be attached directly to frame with high strength Huck or equivalent bolts and self-locking round collars.

Kaiser or equivalent spring bushings and pins shall be provided with fluted “figure eight” grease groves. The pins shall be nickel plated for long life.

Oil seals shall be provided.

TANDEM AIR RIDE SUSPENSION

A rear suspension shall be a Raydan Manufacturing, Air Link™ walking beam air ride suspension or equivalent. This suspension shall incorporate a quad air spring system. The air suspension bags shall have internal rubber stops giving the ability to operate without air if the need arises. Heavy-duty shock absorbers shall be provided, inboard mounted, to dampen load forces, reduce tire hops, and improve stopping. Torque rods shall be incorporated to restrict lateral movement of the differentials and to reduce

bushing and tire wear. Dual height control valves shall be provided to maintain even, balanced loads. Suspension shall have a ground rating of 40,000 pounds.

FRONT TIRES

Front tires shall be Goodyear or equivalent 425/65R22.5, load range L, G286 highway tread, single tubeless type with a GAWR of 22,000 pounds.

FRONT HUB COVERS

Polished stainless steel hub covers shall be provided for the front axle.

REAR HUB COVERS

Polished stainless steel hub covers shall be provided for the rear axle.

REAR TIRES

Rear tires shall be Goodyear or equivalent 11R22.5, load range H, G159 highway tread, dual tubeless type with a GAWR of 40,000 pounds .Chrome plated lug nut caps shall be provided.

MUD FLAPS

Hard rubber mud flaps shall be provided for front and rear tires.

WHEELS

Aluminum wheels shall be provided for the front and for the inside and outside of the rear wheels. The aluminum wheels shall match the tire and axle capacities of the apparatus. **NO EXCEPTIONS**

TOW HOOKS (Front)

There shall be two chrome plated front tow hooks attached directly to the chassis frame.

TOW EYES (Rear)

There shall be two tow eyes attached directly to the chassis frame rail under the rear compartment.

TRANSMISSION

The chassis shall be equipped with a Generation IV Allison EVS4000 six (6) speed automatic transmission or equivlent. It shall be programmed five (5) speed, sixth gear locked out, for fire apparatus vocation, in concert with the specified engine.

An electronic oil level indicator shall be provided as well as a diagnostic reader port connection. The fifth gear shall be an overdrive ratio, permitting the vehicle to reach its top speed at the engine's governed speed. The dipstick is dipped in a rubber coating for ease in checking oil level when hot.

The chassis to transmission wiring harness shall utilize Metri-Pack 280 or equivalent connectors with triple lip silicone seals and clip-type positive seal connections to protect electrical connections from contamination without the use of coatings.

Ratings:	Max Input (HP)	600
	Max Input (Torque)	1850 (lb ft)
	Max Turbine (Torque)	2600 (lb ft)

Mechanical Ratios:	1st -	3.51:1
	2nd -	1.91:1
	3rd -	1.43:1
	4th -	1.00:1
	5th -	0.74:1
	Reverse -	-5.00

TRANSMISSION SHIFTER

An Allison or equivalent "Touch Pad" shift selector shall be mounted to the right of the driver on the engine cover accessible to the driver. The shift position indicator shall be indirectly lit for nighttime operation.

FRONT TURN SIGNALS

There shall be two LED rectangular amber turn signal lights mounted one each side in the front of the headlight housing and one mounted on each side of the warning light housing.

WHEELBASE

The approximate wheelbase shall be 252".

WINDSHIELD WIPERS

Two (2) black anodized finish two speed synchronized electric windshield wiper system. Dual motors with positive parking. System includes dual arm pantographic wipe with built in washer system. One (1) master control works the wiper, washer and intermittent wipe features. Washer bottle is a remote fill with a 4-quart capacity. Washer fill is located just inside of officer cab door.

MISCELLANEOUS CHASSIS EQUIPMENT

Fluid capacity plate affixed below driver's seat.

Chassis filter part number plate affixed below driver's seat.

Tire pressure label near each wheel location.

Cab occupancy capacity label affixed next to transmission shifter.

NFPA compliant seat belt and standing warning plates provided.

FIRE PUMP HALE QMAX-2000 or Equivalent

Fire pump shall be mid-ship mounted. The fire pump shall be of the double suction single stage centrifugal type, carefully designed in accordance with good modern practice.

The pump shall be of fine grain alloy cast iron, with a minimum tensile strength of 30,000 PSI.

The pump body shall be horizontally split, on a single plane, casing type with removable lower casing for easy removal of the entire impeller assembly including wear rings and bearings from beneath the pump without disturbing piping or the mounting of the pump in the chassis.

All moving parts in contact with water shall be of high quality bronze or stainless steel. Easily replaceable bronze labyrinth wear rings shall be provided. Discharge passage shall be designed to accomplish uniform pressure readings as the actual pump pressure. The rated capacity of the fire pump shall be 2000 gallons per minute in accordance with NFPA# 1901.

The pump shaft shall be rigidly supported by three bearings for a minimum deflection. One high lead bronze sleeve bearing to be located immediately adjacent to the impeller (on side opposite the drive unit). The sleeve bearing shall be lubricated by a force fed, automatic lubrication system, pressure balanced to exclude foreign material. The remaining bearings shall be heavy duty type, deep groove ball bearings in the gear box and they shall be splash lubricated.

The pump shaft shall have only one packing gland located on the inlet side of the pump. It shall be of split design for ease of repacking. The packing gland must be a full circle threaded design to exert uniform pressure on the packing to prevent "cocking" and uneven packing load when it is tightened. It shall be easily adjustable by hand with a rod or screw driver and requiring no special tools or wrenches. The packing rings shall be of a unique combination of braided graphite filament and braided synthetic packing and have sacrificial zinc foil separators to protect the pump shaft from galvanic corrosion.

PUMP TRANSFER CASE

The drive unit shall be designed of ample capacity for lubricating reserve and to maintain the proper operating temperature. Pump drive unit shall be of sufficient size to

withstand up to 16,000 lbs. ft. torque of the engine in both road and pump operating conditions.

The gearbox drive shafts shall be heat-treated chrome nickel steel input and output shafts shall be at least 2-3/4" in diameter, on both the input and output shafts. They shall withstand the full torque of the engine in both road and pump operating conditions.

The engagement of the pump transmission shall be of such design so as to permit transfer of power from road to pump operation only after vehicle is completely stopped. The pump shift shall be air actuated from the cab and have both a green "Pump Engaged" light, and a green "O.K.-To-Pump" light. A Third green light shall be provided on the pump operator's panel for "Throttle Ready".

The pump drive unit shall be cast and completely manufactured and tested at the pump manufacturer's factory.

PRIMING SYSTEM

The pump shall be capable of priming the pump within 30 seconds using 20 ft. of suction hose on a 10 ft. lift. The pump shall be electric positive displacement type. Both pump and priming valve shall be actuated by a single T-handle pull control on the operator's panel.

PUMP ANODE

A Hale pump anode kit assembly # 529-0080-00-0 or equivalent shall be provided and installed in the pump body. A minimum of two (2) anodes shall be installed one (1) in the suction side and one (1) in the discharge side of the pump.

PUMP CERTIFICATION

The pump, when dry, shall be capable of taking suction and discharging water in compliance with NFPA #1901 chapter 14. The pump shall be tested by National Testing and shall deliver the percentages of rated capacities at pressures indicated below:

100% of rated capacity @ 150 PSI net pump pressure.
70% of rated capacity @ 200 PSI net pump pressure.
50% of rated capacity @ 250 PSI net pump pressure.

MECHANICAL PUMP SEAL

The pump seal shall be a maintenance free mechanical pump type seal.

PUMP WARRANTY

A five-year warranty on the Hale or equivalent fire pump shall be provided.

THREAD TERMINATION

National Standard Thread shall terminate the inlets and outlets of the apparatus.

PUMP PRESSURE GOVERNOR CONTROL

An electronic pressure governor shall be provided which is capable of automatically maintaining a desired preset discharge pressure. Logic for the governor system shall be incorporated into the Electronic Control Module on the engine. When operating in the "pressure control" mode, the system shall automatically maintain the discharge pressure set by the operator regardless of flow, within the discharge capabilities of the pump and water supply. Engine speed shall return to idle if the discharge pressure is lost for more than 5 seconds, thus offering cavitation protection. While operating in the "throttle control" mode, the system shall automatically maintain the engine speed set by the operator. A preset is also available which allows a predetermined pressure or RPM to be set. The preset pressure or RPM shall be displayed on the message display of the information center. In addition to providing normal throttle functions the "throttle control" mode shall also be used to back up the pressure mode.

The pressure signal shall come from a pump mounted pressure transducer allowing direct reading of pressure without requiring water flow through the transducer or any part of the control system.
An interlock shall be incorporated into the governor that shall allow the system to become operational only when the parking brake is set and the transmission is in drive with the midship pump engaged.

The governor controls shall be located at the pump operator's panel and consist of a series of indicator lights denoting system mode selection. When the operator chooses either the "pressure control" mode or the "throttle control" mode an amber light shall come on indicating the system selected. A momentary switch shall be used to provide an infinite setting for increasing or decreasing water pressure or engine speed. The operator's panel shall also incorporate a system shutdown push button, which shall return the engine to idle.

Built-in functions include engine tachometer readout, voltmeter readout, engine oil pressure readout, engine temperature readout, check-engine light and stop-engine light and buzzer, low coolant level sensor, throttle control for the engine and other key engine functions.

THERMAL RELIEF VALVE

There shall be a Hale TRV120 or equivalent Thermal Relief Valve (TRV) supplied. The valve shall automatically dump a controlled amount of water to atmosphere when the pump water exceeds 120 degrees Fahrenheit. The valve shall re-set automatically.

INTAKE RELIEF

There shall be an Elkhart Model 40 or equivalent intake relief valve installed on the intake side of the pump. The surplus water shall be discharged away from the pump operator and terminate with Male NST hose thread. System is field adjustable.

AUXILIARY COOLER

An auxiliary cooler shall be furnished to provide additional cooling to the engine under extreme pumping conditions. Water from the pump is to be piped to the coils of the heat exchanger allowing the engine fluid to be cooled as required.

VALVES

All valves shall be Akron or equivalent Heavy-Duty swing out 8800/8600 series unless otherwise noted. The valve shall have an all cast brass body with flow optimizing nickel-chrome plated brass ball, and dual polymer seats. The valve shall be capable of dual directional flow while incorporating a self-locking ball feature using an automatic friction lock design and specially designed flow optimizing brass ball. The valve shall not require the lubrication of seats or any other internal waterway parts, and be capable of swinging out of the waterway for maintenance by the removal of six bolts. The valve shall be compatible with a slow close device. This valve shall be actuated using manual handles, a Rack & Sector, manual gear, or electric actuator. The manual handles shall be quickly adjustable to one of eight handle positions, and require only 90 degrees travel.

VALVE WARRANTY

The valves shall carry a 5-year warranty.

PUMP CONNECTIONS

All suction and discharge lines (except pump manifolds) 1" and larger shall be heavy-duty stainless steel pipe. **NO EXCEPTIONS** Where vibration or chassis flexing may damage or loosen piping or where a coupling is necessary for servicing, a flexible connection shall be furnished. All lines shall be drained by a master drain valve or a separate drain provided at the connection. All individual drain lines for discharges shall be extended with a rubber hose in order to drain below the chassis frame. All water carrying gauge lines shall utilize nylon tubing.

6” PUMP INLETS

Two 6" diameter suction ports with 6” NST male threads shall be provided, one on each side of vehicle. The inlets shall extend through the side pump panels and come complete with removable strainer and long handle chrome-plated cap.

INTAKE VALVE

A Hale Master or equivalent Intake valve shall be installed on the main pump inlet. It shall be manually actuated from the pump panel. The valve shall include a pressure

relief valve to guard against incoming pressure surges.

PISTON INTAKE

A Snap-Tite or equivalent 6" NST female x 5" Storz or equivalent Piston Intake relief valve with cap and chain shall be provided.

2-1/2” RIGHT SIDE INLET

One 2-1/2" gated inlet valve shall be provided on the right side pump panel. The valve shall be supplied with chrome plate female swivel, plug, chain, and removable strainer.

The valve shall attach directly to the suction side of the pump with the valve body behind the pump panel.

2-1/2” LEFT SIDE INLET

One 2-1/2" gated inlet valve shall be provided on the left side pump panel. The valve shall be supplied with chrome plate female swivel, plug, chain, and removable strainer.

The valve shall attach directly to the suction side of the pump with the valve body behind the pump panel.

TANK TO PUMP

The booster tank shall be connected to the intake side of the pump with a 1/4 turn 3" full flow valve with check valve, with the remote control located at the operator's panel. The 3" tank to pump line shall run from a bottom sump into the 3" valve. To prevent damage due to chassis flexing or vibration, a short 3" flexible rubber hose coupling shall be used to connect the tank to the intake valve.

OUTLETS

The discharge valves shall be an inline Tork-Lock constructed of brass and be of the quarter turn type of fixed pivot design to allow for ease of operation at all pressures. The valves shall be controlled from the operator's panel and shall be equipped with swing type locking handles. Each valve shall be supplied with 2-1/2” National Standard Threads and come with chrome plated female caps and chains. 2-1/2" or larger discharge outlet shall be supplied with a 3/4" quarter turn drain valve located at the outlet. All 2-1/2" and larger discharges shall be supplied with a 30 degree angle down elbow.

2-1/2” LEFT SIDE DISCHARGES

Two (2) 2-1/2” gated discharges shall be located on the left side pump panel. The valves shall be of the quarter turn tork-lok ball type of fixed pivot design to allow for ease of operation at all pressures. The valve shall be connected to the discharge side of the pump with the valve bodies behind the pump panel. A chrome swing type handle

located on the pump operator's panel shall control the side discharges.

2-1/2" RIGHT SIDE DISCHARGES

Two (2) 2-1/2" gated discharges shall be located on the right side pump panel. The valves shall be of the quarter turn tork-lok ball type of fixed pivot design to allow for ease of operation at all pressures. The valve shall be connected to the discharge side of the pump with the valve bodies behind the pump panel. A chrome swing type handle located on the pump operator's panel shall control the right side discharges.

4.00" RIGHT SIDE DISCHARGES

One (1) 4.00" gated discharge shall be located on the right side pump panel. The valves shall be of the quarter turn tork-lok ball type of fixed pivot design to allow for ease of operation at all pressures. The valve shall be connected to the discharge side of the pump with the valve bodies behind the pump panel. A chrome swing type handle located on the pump operator's panel shall control the right side discharge.

2-1/2" OUTLET

There shall be a 2-1/2" gated outlet piped to the left rear, adjacent to the hose bed or as additional crosslay. The outlet shall be installed with proper clearance for spanner wrenches or adapters. Plumbing shall be 3" piping and a full flow 2-1/2" ball valve with the control at the pump operator's panel.

CROSSLAYS

Two (2) crosslay hose beds shall be supplied. The piping and valves shall be 2", the swivel shall be 1-1/2". The valves shall be the "drop-out" style, push/pull controlled from the pump panel.

Each compartment shall hold 200 ft. of 1-3/4" double jacket hose. Both beds shall be of the same dimension.

CROSSLAY COVER

A vinyl cover shall be provided to enclose the top and sides of the crosslays, capable of being secured at the top and sides.

TANK FILL

A 1-1/2" tank fill shall be provided, using a quarter turn full flow ball valve controlled from the pump operator's panel.

PUMP AND GAUGE PANELS

The panels shall be constructed of brushed stainless steel for maximum protection against abrasion caused during normal use.

Pump panels on both sides shall be easily removable. The gauge and control panels shall be two separate panels for ease of maintenance.

VALVE CONTROLS

The pump controls and gauges shall be located at the left side of the apparatus and properly marked.

The control panel shall be laid out in a user-friendly manner. Where possible, horizontally operated swing type locking handles shall be used for 2-1/2" and larger discharges. Horizontally operated swing handles shall be required to provide better leverage as valves wear and become more difficult to open and close. The smaller valves shall be controlled by pull type locking handles.

All valve controls shall have the corresponding discharge gauge located immediately adjacent to control handle to allow operator to view the discharge pressure without searching the panel.

ESCUTCHEON PLATES

The pump panel shall be equipped with color-coded removable escutcheon plates around the suction and discharge valves.

COLOR CODING

Each discharge valve control, outlet, and corresponding line gauge shall be color-coded. The color-coding shall be:

#1 Discharge - Yellow
#2 Discharge – White
#3 Discharge – Navy Blue
#4 Discharge - Black
#5 Discharge - Green
#1 Pre-Connect - Orange
#2 Pre-Connect - Red
#3 Pre-Connect - Brown
#4 Pre-Connect - Magenta
Front Bumper Line - Turquoise
Large Diameter Discharge – Yellow With White Border
Left Hose Bed Pre-Connect - Tan
Right Hose Bed Pre-Connect - Lavender
Left Rear Discharge - Olive
Right Rear Discharge – Light Blue
Deck Gun – Silver
Inlets – Burgundy
Tank fill Lime Green

Tank to Pump - Burgundy

PUMP PANEL LIGHTS

The pump panel shall be illuminated by two (2) Truck-lite® model #40003 or equivalent grommet mounted lights. The lights shall be located one each side of the body area and positioned to properly light the panel.

PUMP PANEL GAUGES AND CONTROLS

The following gauges and controls shall be provided at the pump panel:

- Two (2) certified laboratory test gauge outlets.
- Pump primer control.
- Master drain control and additional drains as needed.
- Tank-fill and pump cooler valve controls.
- Tank to pump valve control.
- Pump capacity rating plate.
- All discharge controls.
- Two (2) master pump gauges.
- Gauges on all 1-1/2" and larger discharge lines.

ENGINE STATUS CENTER

The apparatus shall be equipped with a Class1 Engine Status Center (ESC**)** for providing engine information and critical warnings. The ESC shall be a weatherproof display with super-bright digits.

The ESC shall continuously display engine RPM, oil pressure, and voltage along with providing critical warnings. The warning levels for low oil pressure, high engine temperature, low voltage, and high voltage shall be independently programmable. The ESC shall provide visual warnings and an output for controlling an audible warning when alarm levels are reached.

The ESC shall also have a message center that displays engine hours, power take off hours, incident time, user defined hours, service time, low fuel warning, and user defined warnings.

AIR HORN BUTTON

A push button switch shall be provided on pump operators panel to activate the air horns.

AIR OUTLET

One (1) air chuck shall be provided adjacent to the pump operator's panel on the left side. The 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. An additional air tank of 1450 cu. in. capacity shall be provided along with a 25 ft.

air hose.

Note: Purchaser to specify type of hose fitting.

4” MASTER GAUGES

NoShok or equivalent liquid filled pump pressure and vacuum gauges shall be provided. The gauges shall be 4" in diameter with white faces and black lettering. The gauges shall have a pressure range of 30"-0-400 psi.

2-1/2” PRESSURE GAUGES

NoShok or equivalent liquid filled individual line pressure gauges shall be provided. The gauges shall be 2-1/2" in diameter with white faces and black lettering. The gauges shall have a pressure range of 0-400 psi.

WATER TANK GAUGE

An Innovative Controls or equivalent weather proof encapsulated (14) super bright LED light indicator shall monitor the water tank level and shall be mounted on the pump operator's panel. The fourteen LED lights are arranged in a "V" pattern for easy identification of liquid level. When the liquid level reaches less than a 1/4 full the refill level begins to flash. The tank-sensing probe shall be chemical resistant PVC with stainless steel sensing wires. The cover plate shall be aluminum sub-plate, black background and blue graphics, with an outdoor exposure rated composite overlay.

APPARATUS BODY

All side metal, compartments and compartment floors shall be of aluminum or stainless steel. The body shall be mounted on heavy-duty stainless steel channel sills with bracing for extreme rigidity.

The compartment body, pump housing and the engine compartment shall be separate modules (segmented body design) that are not to be fastened together in any manner in order to provide "flex joints" to alleviate stress and cracking of body compartments and running boards.

Compartments shall have sweep-out flooring (no obstruction at the floor bottom).

Each compartment shall be properly vented with louvers.

ROLL-UP COMPARTMENT DOORS

The apparatus body shall be equipped with R.O.M Robinson or equivalent shutter doors where not stated otherwise. The door slats shall be double wall box frame, manufactured from anodized aluminum. The doors shall have the following features:

- Manufactured wholly in the United States.

- Concave individual slat design to prevent loose equipment from hindering door operation.
- Co-Extruded stretch resistant inner seal between slats to prevent metal-to-metal contact and inhibit moisture and dust penetration.
- Interlocking swagged/dimpled end shoes shall be utilized to provide a tight fitting assembly and allow for easy removal in the event of damage.
- Effective counter balancing for ease of lifting and lowering the doors.
- One-piece side rail and track to provide and unobstructed slide area and reduce the risk of binding.
- Non-abrasive replaceable water and dust barrier compartment equipment clean and dry.
- A magnetic type switch integral to the door shall be supplied for door ajar indication and compartment light activation.
- A full width positive latch bar shall be operable with one hand, even with heavy gloves.

A door open indicator light shall be provided in the cab.

PAINTED ROLL-UP DOORS

The doors shall be wet painted before assembly by the door manufacturer. The paint shall be the same as the apparatus to achieve an exact match of paint color and have the look and durability same as on the rest of the truck.

SCBA CYLINDER COMPARTMENTS

There shall be seven (7) spare breathing air cylinder compartments recessed in the rear fender wells, three (3) left and four (4) right. The compartments shall have cast aluminum doors with equipped with a weather resistant flush fitting thumb latch. The interior of the door shall incorporate a rubber “O”-ring seal to keep the compartment free of road debris and moisture. The interior compartment shall be constructed of a high-density polyethylene plastic.

COMPARTMENT MATTING

Turtle Tile or equivalent interlock matting material shall be provided in each compartment.

COMPARTMENTATION

There shall be at least a 170 cubic feet of compartment space. Compartmentation will be left up to manufacture suggestion due to the different compartment body styles.

ADJUSTABLE SHELF

There shall be ten (10) adjustable shelves provided and installed in the compartments. The shelf shall be fabricated of .188" aluminum plate.

ADJUSTABLE VERTICAL SLIDE-OUT PANEL

There shall be two (2) adjustable vertical slide-out tool boards with a 250 lb. capacity supplied and mounted on unistrut tracks. Extra compartment lights shall be provided and located as needed to properly illuminate the compartment.

ADJUSTABLE ROLLOUT DRAWER

There shall be a 250 lb. capacity rollout drawer supplied and installed in a compartment. The drawer shall be approximately 3" deep and shall be mounted on adjustable tracks.

600# SLIDE-MASTER TRAY

There shall be a Slide-Master or equivalent pullout drawer provided and installed. The drawer shall have a distributed load capacity of 600 lbs. and be capable of extending 70% of its depth. The tray shall be fabricated of .188" aluminum plate and have a formed lip that measures 2".

HOSE BED

The rear hose bed shall be completely wide open to allow for quick and easy loading and unloading of hose thus preventing hose and hose couplings from being caught or tangled.

Any rear hose bed opening(s) requiring hose chutes shall not be acceptable.

Hose bed flooring shall be removable slatted aluminum.

HOSE BED DIVIDER

The hose bed shall be divided by a 3/16" aluminum partition that is fully adjustable by sliding in tracks located at the front and rear of the hose bed. The divider shall be located as needed.

HOSE BED COVER

There shall be a red nylon/vinyl hose bed cover for the main hose bed. The cover shall be capable of being securely fastened at the front, sides and rear.

HANDRAILS

Handrails shall be constructed of **1-1/4" diameter knurled anodized aluminum 3/8" heavy wall extrusion**. The handrail shall be mounted utilizing chrome stanchions, which shall provide sufficient space to allow for a gloved hand to grip the rail. The rails shall be located in the following areas: (Note: These are in addition to those previously mentioned in the chassis section)

There shall be one (1) handrail at the side of the pedestal. This handrail is covered with

slip resistant ribbed rubber.

There shall be two (2) handrails, one (1) each side of access door to the platform.

STEPS

There shall be a fold-down access step to the platform, made of 1.5" square aluminum tubing. This step provides direct access to the platform with the ladder nested in cradle without having to climb down the ladder or having to place the platform on the ground.

There shall be a cast aluminum fold-down step mounted on each side of the front face of body to provide access to the top of the pump module and dunnage area. The steps shall have a footing area of 42 square inches.

The quantity and location of steps and handrails shall meet the Current NFPA 1901 pamphlet in effect at the time the apparatus is ordered.

RUB RAILS

The body shall be equipped with anodized aluminum channel style rub rails at the sides. Rub rails shall be spaced away from the body by 1/2" polymer spacers. The rub rails shall be polished to a bright finish.

ALUMINUM TREADPLATE

All load bearing aluminum treadplate running boards shall be .155 thick bright annealed with a serrated embossed finish. Running boards and rear step edges shall be flanged down for added strength. Running boards shall also be flanged up to form kick plates. All non-load bearing aluminum shall be .125" thick bright annealed finish. In areas where aluminum treadplate shall function as a load-bearing surface, there shall be a heavy steel sub-structure. This structure shall consist of 3" channel and 1-1/2" angle welded support. This shall assure that there shall be no flexing or cracking of running boards. The aluminum shall be insulated from the steel by closed cell foam body barrier material.

Treadplate locations:

1. Skirting around front bumper.
2. The step at the cab entrance.
3. The jump seat steps.
4. The running boards.
5. The rear step.
6. The top of the compartments.

RUNNING BOARD TROUGH

A trough shall be provided in the right side running board to hold a 15-foot length of 5" hose.

BOOSTER TANK

The booster tank capacity shall be **500 gallons**. **NO EXCEPTIONS** The tank shall be built to rigid standards to meet the requirements and performance of the unit in which it is to be installed. The tank shall have a freeze resistance sump, which shall allow water to be taken from the tank rapidly without attracting air. There shall be a 3" clean out in sump.

The tank shall be fiber reinforced plastic, seamless, molded tank. Tank shall be F.R.P. molded construction, comprised of fiber strand and woven fiber matting, molded together by wax free pure pol-e resin and rest on neoprene cushions. The cushions shall be placed on 3" tubular cross members, which comprise the initial body framework. The tank shall be held in place by corner stops. There are to be no bolts or welds securing the tank to the body or frame. A 12" x 6" fill tower shall be located at the left front corner of the tank with a screen and hinged cover that shall be labeled "water tank". A 1" vent that shall eliminate trapped air shall extend from rear of tank to fill tower.

The tank shall have transverse baffles dividing the tank into compartments to meet N.F.P.A. Pamphlet 1901 requirements. A 4" tank over flow shall be provided to divert water behind the rear wheels.

ELECTRIC SYSTEM

All electrical wiring in the chassis should be XLP cross link-insulated type. Wiring is to be color-coded and include function codes every three (3) inches. Wiring harnesses should be routed in protective, heat resistant loom, securely and neatly installed. Two power distribution centers should be provided in central locations for greater accessibility. The power distribution centers contain automatic thermal self-resetting breakers, power control relays, flashers, diode modules, daytime driving light module, and engine and transmission data links. All breakers and relays are utilized in circuits which amp loads are substantially lower than the respective component rating thus ensuring long component life. Power distribution centers should be composed of a system of interlocking plastic modules for ease in custom construction. The power distribution centers are function oriented. The first is to control major truck function and the second controls overhead switching and interior operations. Each module is single function coded and labeled to aid in troubleshooting. The centers also have accessory breakers and relays for future installations. All harnesses and power distribution centers should be electrically tested prior to installation to ensure the highest system reliability.

All external harness interfaces should be of a triple seal type connection to ensure a proper connection. The cab/chassis and the chassis/body connection points should be mounted in accessible locations. Complete chassis wiring schematics should be supplied with the apparatus.

The wiring harness contained on the chassis should be designed to utilize wires of stranded copper or copper alloy of a gauge rated to carry 125% of maximum current for

which the circuit is protected without exceeding 10% voltage drop across the circuit. The wiring shall be uniquely identified by color code or circuit function code, labeled at a minimum of every three (3) inches. The identification of the wiring should be referenced on a wiring diagram. All wires conform to SAEJ1127 (Battery Cable), SAEJ1128 (Low Tension Primary Cable), SAEJ1560 (Low Tension Thin Wall Primary Cable).

All harnesses should be covered with moisture resistant loom with a minimum rating of 300 Degrees Fahrenheit and a flammability rating of VW-1 as defined in UL62. The covering of jacketed cable has a minimum rating of 289 degree Fahrenheit.

All harnesses are securely installed in areas protected against heat, liquid contaminants and damage. The harness connections and terminations use a method that provides a positive mechanical and electrical connection and are in accordance to the device manufacturers instructions. No connections within the harness utilize wire nut, insulation displacement, or insulation piercing.

All circuits conform to SAE1292. All circuits are provided with low voltage over current protective devices. These devices are readily accessible and protected against heat in excess of component rating, mechanical damage, and water spray. Star washers are not used for ground connections.

BACK-UP ALARM

An automatic self-adjusting electronic back-up alarm producing 87-112 db shall be installed at the rear between the frame rails. It shall operate whenever the transmission's reverse gear is selected.

COMPARTMENT LIGHTING

Each compartment shall be equipped with one (1) ROM LED light strip.

A second LED light strip shall be for each compartment.

ELECTRICAL PROVISION

Wiring shall be provided in the cab and canopy for the future installation of electrical chargers. The location shall be determined during the pre-construction conference.

ANTENNA MOUNTING

The customer supplied radio antenna shall be installed in the cab roof with the coax cable run to the radio mounting area. The radio location shall be determined at the pre-construction meeting.

LICENSE PLATE BRACKET

A license plate bracket shall be provided at the rear of the apparatus.

REAR VISION CAMERA

Provided and mounted on the apparatus there shall be a Safety Vision 5000 series or equivalent dual rear vision camera system. The system shall consist of one (1) cab mounted model SV-511 5.5” monitor and two (2) model SV-510 high resolution 1/3” CCD cameras, one (1) SV-512 cable and one (1) SV-522 cable. The monitor shall be dash mounted in plan view of the driver.

TAIL/STOP/TURN LIGHTS

The taillights are to be LED style. The brake/tail lights to be four (4) red and exceed SAE requirements. The turn signal shall be populated in an arrow pattern, amber in color. The backup lights are to be halogen. A backup alarm, actuated by backup light circuit, shall be provided.

LED ICC/MARKER LIGHTS

LED type ICC/marker lights shall be provided to meet D.O.T. requirements.

STEP LIGHTS

Step lights shall be provided, one each side on the front compartment face at pump panels, one at turntable step, and one each side of rear step.

GROUND LIGHTING

The apparatus shall be equipped with lighting capable of illumination to meet NFPA requirements. Lighting shall be provided at areas under the driver and crew riding area exits and shall be automatically activated when the exit doors are opened. Lighting required in other areas such as work areas, steps and walkways shall be activated when the parking brake is applied, provided the ICC lights are on.

WORK LIGHTS

There shall be two (2) Unity brand AG 6" chrome plated sealed beam flood lights provided. The lights shall be securely mounted at the upper rear of the apparatus body. Each light shall be supplied with individual switches.

OPTICAL WARNING SYSTEM

The optical warning system shall be capable of two separate signaling modes during emergency operations. One mode shall signal to drivers and pedestrians that the apparatus is responding to an emergency and is calling for the right-of-way and the other mode shall signal that the apparatus is stopped and is blocking the right-of-way. Switching shall be provided that senses the position of the parking brake.

A master optical warning device switch shall be provided to energize all of the optical warning devices provided. All lights shall operate at not less than the minimum flash rate per minute as specified by NFPA.

UPPER LEVEL WARNING DEVICES

The upper level is divided into zones A, B, C and D and the approved lighting package to be provided shall be as follows:

Zone A (front) shall have one (1) Whelen Model FN72QLED 12 LED Freedom Series 72" Lightbar or equivalent model.

Zone B (right side) shall be covered by the module from the lightbar and the right rear stanchion beacon.

Zone C (rear) shall have two (2) Whelen Model MCFLED2R Micro Edge Freedom LED or equivalent model light bars mounted on the rear stanchions and two (2) Whelen Model 60A00FAA or equivalent amber LED , mounted at upper rear of apparatus.

Zone D (left side) shall be covered by the module from the lightbar and the left rear stanchion beacon.

LOWER LEVEL WARNING DEVICES

The lower level is divided into zones A, B, C and D and the approved lighting package to be provided shall be as follows**: Whelen models are being use in the specifications but equivalent models can be used.**

Zone A (front) shall have a stainless steel warning light housing each side with Two (2) Whelen 64R00FRR red LED lights mounted in the front of each housing. The inboard pair of lights is in addition to the minimum NFPA warning system and shall be wired through a load-shedding device.

Zone B (right side) shall have four (4) Whelen 64R00FRR LED red lights mounted one on the side of the headlight housing, one at the middle of the apparatus, one on the body side at rear of apparatus, and one on the side of the aerial device.

Zone C (rear) shall have two (2) Whelen 64R00FRR LED, red lights mounted one each side of the rear of the apparatus.

Zone D (left side) shall have four (4) Whelen 64R00FRR LED, red lights mounted one on the end of the headlight housing, one at the middle of the apparatus, one on the body side at rear of apparatus and one on the side of the aerial device.

REAR DIRECTIONAL LIGHT

One (1) Whelen or equivalent LED "Traffic Advisor", model TA837L, eight lamps LED rear directional light will be recess mounted in the vertical rear surface of the body. The directional light will be activated by a control module, which will only operate when the "master" light switch is turned on. The control module will be conveniently located near the driver's position. The rear directional light will be wired through the load management system of the unit.

SIREN

One (1) Whelen Model 295 HFSA1 or equivalent electronic siren shall be installed at the cab instrument panel complete with noise canceling microphone. The horn button in the steering wheel, an the control on the siren head shall actuate the siren. A selector switch shall be provided on the instrument panel for control of horn or siren by steering wheel button.

FEDERAL Q2B SIREN

There shall be a Federal Q2B-NN or equivalent siren installed. The siren shall be securely mounted and activated by means of a solenoid and shall include a brake.

There shall be a floor switch on each side provided

SIREN SPEAKER

One Cast Products SA4201-5-A or equivalent weatherproof siren speaker shall be provided, mounted behind the bumper.

GENERATOR

The apparatus shall be equipped with a complete electrical power generation system. A Smart Power or equivalent hydraulic 10.0 KW generator shall be provided and installed. The generator and wiring shall conform to present National Electric Codes as outlined in the National Fire Protection Association Standards.

The output of the generator shall be controlled by an internal hydraulic system. An electrical instrument gauge panel shall be provided for the operator to monitor and control all electrical operations and output. The generator shall be powered by a transmission power take off unit, through a hydraulic pump and motor. The generator shall be operable anytime that the apparatus engine is running and meeting the minimum range of 950 RPM's. A hot shift PTO switch located in the cab dash shall activate the generator.

OPTIONAL GENERATOR W/ ROLL-OUT TRAY

A 5kw Honda or equivalent generator w/roll-out tray shall be constructed of 3/16" smooth aluminum plate mounted on drawer slides. The tray shall allow the generator to roll out from the compartment for ease of operation or service.

LIGHT SWITCH

Two (2) remote switch shall be provided on the cab dash to activate the quartz lights on the sides and the brow of the cab.

BREAKER BOX

A circuit breaker box shall be provided with sixteen (16) spaces for breakers which shall be provided as needed. All wiring shall be installed in liquid tight conduit.

QUARTZ LIGHT BROW 750WATT FOCUS

A Fire Research Focus Model S75 or equivalent Quartz Halogen Lamp shall be provided. The light shall be housed in a heavy-duty aluminum housing.

Watts:	750
Amps:	6.3
Volts:	120
Bulb Type:	Halogen
Width:	10”
Height:	7 5/8”
Depth:	4 7/8”

The light shall be mounted on the front of the apparatus cab.

QUARTZ LIGHT 1000WATT FOCUS

Two (2) Fire Research Focus Model M12 or equivalent Quartz Halogen Lamps shall be provided. The light shall be housed in a heavy-duty aluminum housing.

Watts:	1000
Amps:	4.2
Volts:	240
Bulb Type:	Halogen
Width:	15”
Height:	7 5/8”
Depth:	5 3/8”

The light shall be flush mounted on on each side of the cab at the top .

QUARTZ LIGHT 750WATT FOCUS

Two (2) Fire Research Focus Model S75 or equivalent Quartz Halogen Lamps shall be provided. The light shall be housed in a heavy-duty aluminum housing.

Watts:	750
Amps:	6.3
Volts:	240
Bulb Type:	Halogen
Width:	10”
Height:	7 5/8”

Depth: 4 7/8”

The lights shall be mounted on telescoping poles in the rear corners of the platform. A switch shall be located at the light heads.

QUARTZ LIGHT 750WATT FOCUS

A Fire Research Focus Model S75 or equivalent Quartz Halogen Lamp shall be provided. The light shall be housed in a heavy-duty aluminum housing.

Watts: 750
Amps: 6.3
Volts: 240
Bulb Type: Halogen
Width: 10”
Height: 7 5/8”
Depth: 4 7/8”

The light shall be mounted on the underside of the aerial platform.

CORD REEL

There shall be a Hannay Model ECR1616-17-18 or equivalent electric rewind cable reel furnished and mounted in a compartment. The reel shall come complete with 200 feet of 10/3 Seoprene Water-resistant (SOW) yellow jacketed cable. A Hannay Type "C" roller assembly and HS-3 cable stop ball shall be provided.

FOUR WAY RECEPTACLE

An Akron (GFE) or equivalent four-way receptacle box with light shall be provided and hard wired to the end of the cable. The box shall be securely mounted in the immediate area of the cord reel. The mounting shall be a fabricated aluminum bracket equipped with a Velcro strap to secure the box.

FOUR-WAY RECEPTACLE MOUNTING

The four-way receptacle box shall be mounted on a compartment wall or shelf.

GROUND LADDERS

The apparatus shall be equipped with 115’ of heavy duty, box type "I" beam rail, ground ladders. The ladders shall meet the requirements of NFPA 1931 to ensure proper design and that sufficient strength is available for the service intended. The ground ladders shall be constructed of aluminum with non-welded, field replaceable rung to rail connections to simplify field repairs. Removable plated steel butt spurs shall be utilized for added strength. A full 1/2", non-rotting, poly rope shall be provided for easy ladder operation.

ALCO-LITE (or equivalent) LADDERS

One (1) 10 ft. folding ladder, (mounted in fly section)

One (1) 14 ft. combination ladder

Two (2) 16 ft. roof ladders

One (1) 24 ft. 2-section extension ladder

One (1) 35 ft. 3-section extension ladder

The ladders shall have lifetime Warranty against manufacturing defects.

PIKE POLE TUBES

Pike pole tubes shall be provided, three each side of the rear compartment.

PIKE POLE

Two (2) 4-foot Duo-Safety or equivalent fiberglass pike poles shall be provided and mounted.

PIKE POLE

Two (2) 8-foot Duo-Safety or equivalent fiberglass pike poles shall be provided and mounted.

PIKE POLE

One (1) 10-foot Duo-Safety or equivalent fiberglass pike pole shall be provided and mounted.

PIKE POLE

One (1) 12-foot Duo-Safety or equivalent fiberglass pike pole shall be provided and mounted.

LADDER MOUNTING

The ladders shall be mounted per manufactures specifications.

Nozzles

Three (3) Elkhart SM 20F or equivalent nozzles with pistol grips for 1 1/2”

One (1) Elkhart SM 30F or equivalent nozzle for 2 1/2”

One (1) 1 ½” NST ball shut off with ST 185A Stacked tips

One (1) 2 ½" Playpipe with intergral shutoff with ST190BA Quad stacked tips

One (1) 2 ½" STSM 30BPA combination nozzle

One (1) Elkhart 105 or equivalent 2 ½" NST Swivel x 2 ½" MNST Chrome Plated Discharge Elbow fitting

One (1) 4" NST Female Long Handle Swivel x 5" Storz or equivalent Aluminum Alloy 30 Degree Elbow

One (1) 4" NST Female Long Handle x 5" Storz or equivalent Aluminum Alloy Adapter

Hose

Ten (10) 100' sections of Angus or equivalent 5" HiVol large diameter fire hose w/5" Storz or equivalent couplings

Eleven (11) 50' sections of double jacket fire hose with 1 ½" couplings

Ten (10) 50' sections of double jacket fire hose with 2 ½" couplings

PPV FAN

One (1) Ramfan GF165 5.5HP Honda PPV or equivalent fan

SCBA

Six (6) Scott 50 High Pressure SCBA ,or equivalent, with 30 minute carbon cylinders and 6 spare 30 minute carbon cylinders.

All equivalents must be fully interoperable with purchasers current Scott SCBA.

PAINTING

The apparatus shall undergo extensive pre-paint preparation. All cab and body trim parts are to be removed prior to painting. All appliance-mounting holes are to be drilled and de-burred prior to painting. This allows mounting holes to be primed and painted. Before prime and finish coats are applied, the complete apparatus shall be properly prepared and treated to permit the best possible adhesion of the primer and finish coats.

All materials used in the paint process shall be of the of the highest quality available. Modern methods shall be employed to assure the finest finish surface possible. All priming, surfacing and painting shall be done in a modern down draft or cross flow paint facility. Experienced personnel trained by the paint manufacturer shall perform all paint application in order to provide the highest quality and most enduring paint finish available. Both aluminum and steel surfaces to be painted shall be primed with a two (2)-component primer which is compatible with the finish coat. The apparatus shall be

finish painted with a polyurethane base/clear system. “No Exception”

Utilizing the stainless steel body fabrication, the interior of all compartments, inside hose bed and surrounding areas adjacent to compartments doors shall remain a #4 brushed stainless steel finish. This practice shall eliminate the possibility of paint chipping, and electrolysis of aluminum, which can cause corrosive action between dissimilar metals. The chassis, compartment doors, front and rear jack doors, and rear fender panels shall be painted the color indicated.

A barrier gasket/washer of "High Density Closed Cell Urethane Foam" shall be used behind all lights, handrails, door hardware and any miscellaneous items such as stainless steel snaps, hooks, washers and acorn nuts. The gaskets/washers shall be coated with pressure sensitive acrylic adhesive. All screws used to penetrate painted surfaces shall be pre-treated/coated under the head with nylon and the threads shall have pre-coat #80. This procedure shall be strictly adhered to for corrosion prevention and damage to the finish painted surfaces.

The paint process shall be utilized per manufactures specifications

UNDERCOATING

Ziebart, or equivalent, undercoating shall be applied to visible surfaces on the underside of the truck body and chassis to help reduce noise in the cab caused by tires, stones, sand and water spray. This thick, super-tough coating, being highly abrasion-resistant does not wear off. It also protects underbody components from moisture, mud and salt.

WARRANTY

The application shall come with ten (10) year rust protection limited warranty.

LETTERING

Shall be provided in Scotchlite or equivalent reflective tape per customer recommendations

KEEP BACK SIGN

A "Keep Back 500 Feet" sign of Scotchlite or equivalent reflective tape shall be provided, affixed to the rear of the apparatus.

STRIPING

A 10" Scotchlite or equivalent reflective tape stripe shall be provided across the front of the cab and along each side of the apparatus.

Two (2) additional Scotchlite or equivalent reflective tape stripes shall be provided, one (1) 2” and one (1) 4”

The Scotchlite or equivalent reflective tape stripe shall be a mitered "Z" type on the cab

sides and continuing straight along each side of the apparatus.

BOOM SIGN

A boom sign, approximately 78" x 12", shall be provided on each side of the boom. The background of the boom sign shall be painted primary truck color.

BOOM SIGN LETTERING

Up to twenty (20) 8" Scotchlite or equivalent reflective tape letters, shall be provided on each boom sign.

REFILL HOSE

A 50' length of 5000-psi breathing air hose shall be provided to refill the air bottle. The hose shall be complete with a CGA 347 male fitting on one end and a CGA 347 female fitting on the other end.

MISCELLANEOUS EQUIPMENT FURNISHED

1 pt. touch-up paint

WHEEL CHOCKS

Two (2) Ziamatic #SAC-44 or equivalent folding wheel chocks with SQCH-44H holders shall be provided. The wheel chocks shall be located in a area close to the rear axles easily accessible form the side of the apparatus.

UTILITY AIR HOSE

Twenty-five feet (25') of 300-psi utility air hose shall be provided.

LOOSE EQUIPMENT MOUNTING

All loose equipment supplied with the truck shall be mounted at the manufacturers' facility at the expense of the bidder. Manufacturer must supply mounting hardware for all loose equipment.

AXE

A fiberglass flat head 6-pound axe with chrome mounting hardware shall be provided.

AXE

A fiberglass pick head 6-pound axe with chrome mounting hardware shall be provided.

EXTINGUISHER

One (1) 2-1/2 gallon pressurized water extinguisher with mounting shall be provided.

EXTINGUISHER

One (1) 20 pound ABC Dry Chemical extinguisher with mounting shall be provided.

EXTINGUISHER

One (1) 2-1/2 gallon FFFP extinguisher with mounting shall be provided.

RECHARGEABLE LIGHT

Four (4) Streamlight® liteBox® model 45107 or equivalent shall be provided.

OUTRIGGER PADS

Two (2) jack pads made of black high-density polyethylene material shall be provided. The pads shall be mounted one in each outrigger jack compartment.

AERIAL MAIN FRAME ASSEMBLY

The mainframe assembly shall be mounted mid-ship on the chassis, forward of the pump. NO EXCEPTIONS This shall leave the rear hose bed open for use of large diameter and regular fire hose". **This shall minimize overall vehicle height to not exceed 11' 6". NO EXCEPTIONS.** The mainframe assembly shall be constructed per manufacturer's specifications in accordance with NFPA 1901 (2003 Edition).

PEDESTAL CONTROLS

There shall be three controls located on the pedestal control tower, which shall be positioned on the turntable on the left side of the vehicle when the boom is in the nested position.

The three pedestal controls shall control the functions of raising and lowering, extending and retracting, and rotation of the aerial sections. A guardrail shall be provided at the turntable pedestal control station to prevent the operator from falling.

The turntable pedestal controls shall be of the manual override type and shall be set up in similar style to that of the aerial platform controls, simplifying operational procedure. The control valve shall be a proportional type to allow feathering characteristics during any operation. The lower pedestal controls shall completely override the platform controls under all conditions and shall be grouped in a convenient manner and properly illuminated for nighttime operation.

The pedestal control station shall have removable panels for access to the hydraulic lines, valves and electrical wiring. There shall also be a hinged cover at the top of the control station for additional access.

Each pedestal hydraulic control shall be equipped with an electro magnetic solenoid,

which shall operate the hydraulic valves corresponding to the electrical controls mounted in the platform for aerial boom operation.

The lower pedestal control station shall be situated so the operator can easily observe the platform while operating the controls. Choke palm buttons on the pedestal controls shall not be acceptable.

The following additional items shall be mounted at the top of the turntable pedestal control station:

a] on/off control switch for light to display control station for night time operation

b] on/off control switch for boom lights, one light mounted on each side of the boom

c] on/off control switch for high speed foot control of the hydraulic system

d] intercom communication system controls

e] plaque displaying functions for each pedestal boom operation

f] plaque displaying rated load capacity for the platform

g] deactivation switch of the electric platform controls (all upper power) with the turntable pedestal controls remaining operable.

INCLINOMETER

An illuminated inclinometer shall be provided and mounted in plan view of the pedestal operator location.

BOOM TRACKING LIGHTS

Two (2) Unity, 6" spot lights shall be provided, one on each side of the boom base section to light the aerial device for night time operation.

AUXILIARY HYDRAULIC POWER

A 12-volt auxiliary pump shall be provided to supply emergency power to the hydraulic system. This system shall be operated off the truck batteries and provide limited but adequate power to operate the boom and outrigger jacks under emergency conditions.

OUTRIGGER GROUND JACKS

The outrigger control station (main hydraulic valve body) shall be located per manufacturer's specifications. The single outrigger control station shall control all outrigger operations. The centralized location of the outrigger control station shall

accomplish two important functions:

1] Provides for one centralized location for the operator

2] Allows for a quicker deployment and set up of the apparatus.

Individual control valves shall be supplied for each mode of outrigger operation. There shall be a plaque located next to each control valve displaying the function.

A hydraulic transfer valve (diverter valve) shall be installed to direct hydraulic power to either the outrigger operations or the boom operations to prevent operation of both circuits at the same time.

Liquid capacity plate for all lubricants and filter part numbers shall be provided.

There shall be three other controls located at the outrigger control station:

a] on/off switch for auxiliary hydraulic motor

b] high speed control for hydraulic system

c] on/off switch for electrical power to pedestal and platform.

The midship and rear outrigger jacks to be constructed and mounted per manufacturer's specifications.

There shall be an audible alarm and warning light that are automatically activated when the outriggers are being deployed.

TELESCOPIC AERIAL DEVICE

An elevated platform of the telescopic design consisting of a minimum of four sections shall be provided. The telescoping sections shall be constructed from heat treated 6061-T6 aluminum alloy material fastened according to manufacturer's specifications.

The boom and platform shall be left in a natural aluminum finish and painting the boom and platform shall not be acceptable.

The boom shall have the capability to shed ice build up during freezing conditions.

AERIAL PLATFORM DEVICE

An aerial platform device with a minimum 92-feet of vertical reach shall be provided. The height dimension shall be calculated with the boom at 80 degrees. The horizontal reach of the device shall not be less than 88 feet.

WATER SYSTEM TO THE PLATFORM

Water shall be supplied through a telescopic waterway per manufacturer's

specifications.

The waterway and platform nozzles shall have the capability of flowing a minimum of 1000 gallons per minute. An automatic relief valve shall be provided in the waterway to eliminate any damage to the waterway by pressure shock or retracting the boom with the drain valve closed.

There shall be a waterway control at the pump panel. The valve shall be a 3" electrically activated ball valve with manual override on the right side pump panel.

WATERWAY CONTROLLER/FLOWMETER

The valve controller and flowmeter shall be an Akron Navigator model 9305 or equivalent. The control shall be of a current limiting design, requiring no clutches in the motor. The unit shall have momentary open and close booted switches to operate the actuator. The bezel and case shall be brass material. The unit shall be capable of connecting to an auxiliary for operation to another location up to 370 feet away from the master control. The controller shall have individual red, yellow and green long life LED's with light pipes for maximum visibility. The lights shall indicate closed, throttled and open. The unit shall have solid-state electronics to provide easy, accurate flow calibration through electric programming, two-button operation to read pressure, flow and total flow. 5/8" tall LED numerals shall show pressure and flow. The controller shall have a 5-year warranty.

VALVE ACTUATOR

The valve shall be electrically actuated with a 25:1 ratio valve actuator.

PLATFORM AND EQUIPMENT

The platform shall be constructed of heat reflecting reinforced aluminum to protect occupants against flash fires and freezing weather. The platform shall have a minimum floor area of 14 sq. ft. and shall be provided with closed sides, 42" high all around. The platform shall be completely enclosed along the floorboard to protect occupants. There shall be two doors in the platform, each of which shall be provided with a suitable safety latch. Both doors shall latch and open inward to avoid accidentally falling from the platform.

A slip-resistant front access step should be provided, full width of the platform, approximately 8-1/2" wide. The front corners shall be chamfered for accessibility to parapets and roofs.

Drain openings shall be provided to prevent water accumulation in the platform. There shall be a reinforced step located on the underside portion of the platform, which shall double in function as a stretcher carrier.

A platform leveling system shall be provided and so designed that the platform together with its rated load shall be supported and maintained level in relation to the turntable

regardless of the position of the boom or sections. This shall include double hydraulic cylinders (one cylinder on each side of the platform) and a self-contained hydraulic leveling system (fully enclosed) in the end of the boom so that no hydraulic lines, reel or base controls have to travel through the telescoping sections, helping to eliminate service problems or failure of the leveling system due to ruptured lines or leaking reels. As a safety feature should a malfunction occur, there shall be an emergency override control to level the platform.

PLATFORM BOOM OR SECTION BED LOCK

An interlock device shall be provided which shall prevent action and movement of the retracted elevating platform boom or sections in their bed until the ground jacks are placed in position to stabilize the vehicle. The interlock device shall be located at the outrigger control station.

LOAD LIMITATIONS

Load instruction plates shall be located at the turntable pedestal control station and the platform control station indicating the safe load of the platform. The platform shall carry the rated load capacity indicated in the following manner: raise, extend, rotate, retract and lower without exceeding the hydraulic pressures prescribed by the manufacturer. Extensions, retraction, and elevation functions can be operated simultaneously.

THE PLATFORM SHALL BE CAPABLE OF CARRYING ITS RATED LOAD SAFELY IN ANY POSITION OF OPERATION ACCORDING TO NFPA #1901.

PLATFORM SPOT LIGHT

A Unity or equivalent 6" spotlight shall be provided on the top rail of the platform for the use of the operator.

PLATFORM CONTROLS FOR BOOM OPERATION

There shall be three controls located in the platform. The three controls shall control the functions of raising and lowering, extension and retraction and rotation of the aerial.

The controls shall be of the electronic type. This system shall provide diagnostic functions to aid in trouble shooting as well as programmable features to control speed, acceleration and deceleration.

The controls shall be lighted for nighttime operation.

All electrical connections to the control panel shall be made through waterproof connections and be easily removed or replaced for service.

The following additional items shall be located at the platform control station:

1] On/off control switch for light to illuminate controls for nighttime operation.

2] Foot operated switch for high speed control of the hydraulic system.

3] Slave intercom station allowing "hands free" operation of the intercom.

4] A "rungs aligned for climbing" for all high-handrail aerial ladder platforms.

5] A low breathing air pressure warning alarm.

INCLINOMETER

An illuminated inclinometer shall be provided and mounted in plan view of the aerial platform operator.

120 VOLT CIRCUIT TO PLATFORM

One (1) 20 amp electrical circuit utilizing 12 gauge 3 conductor electric cable shall be provided to the tip of the ladder. The circuit shall be wired from an enclosed terminal strip below the turntable through the collector ring assembly.

One (1) (NEMA-L5-20) female, three-prong, twist lock receptacle, with environmental cover, shall be located below the aerial platform controls.

LEFT SIDE PLATFORM MONITOR

The left side platform monitor shall be an Akron Gemini™ style 3473 or equivalent manual hand wheel controlled. The monitor shall have a flow capacity of 1000 GPM. The monitor shall be attached directly to the platform with a valve to control the flow of water.

RIGHT SIDE PLATFORM MONITOR

The right side platform monitor shall be an Akron Gemini™ style 3473 or equivalent manual hand wheel controlled. The monitor shall have a flow capacity of 1000 GPM. The monitor shall be attached directly to the platform with a valve to control the flow of water.

LEFT SIDE MONITOR NOZZLE

The left side monitor shall be equipped with an Akron Turbomaster™ style 1755 or equivalent with selectable gallonage of 500-750-1000-1250 gpm settings.

RIGHT SIDE MONITOR NOZZLE

The right side monitor shall be equipped with an Akron Turbomaster™ style 1755 or equivalent with selectable gallonage of 500-750-1000-1250 gpm settings.

PLATFORM OUTLETS

Directly behind each turret a 2-1/2" NST outlet, reduced to an 1-1/2" with cap and chain,

shall be provided as auxiliary outlets on the platform. A hose carrier for 50 ft. 1-1/2" hose shall be provided in the platform.

WATER CURTAIN

A water spray system shall be provided beneath the platform and controlled by a hand operated valve. The spray system shall provide 75 GPM of water in a 25 ft. diameter water curtain below the platform. As a safety factor, one or both turret nozzles may be directed straight down for large volumes of water directly below.

INTERCOM

A Fire Research Model IC201 or equivalent intercom system shall be provided between the platform and the lower control station. The platform station shall be a "hands free" model while the lower "master" station shall utilize a noise canceling handheld microphone. The finish shall be black chrome powder coat.

BREATHING AIR SYSTEM

Breathing air system to the platform shall be provided. The system shall be complete with low air warning alarm. One 4500-psi cylinder shall be provided with pressure regulator mounted at cylinder with relief valve. All valves, pressure regulators and gauges shall be protected from accidental damage. Low-pressure air hose shall be connected to two quick disconnects. Two breathing mask compartments shall be provided in the platform.

AIR BOTTLE REFILL

There shall be a screw-type shutoff valve and a CGA air fitting supplied on the air system plumbing to which a refill hose can be connected. The fitting shall be installed with a stainless steel tee. There shall be a protective dust cap installed on the air line fittings. The air storage bottle shall be refillable without disconnecting the air line plumbing.

STOKES RACK

An aluminum tubular frame shall be provided for the purpose of holding a stokes basket on the top rail of the platform. It shall be constructed of 1-1/2" square aluminum tubing. The rack shall attach to the rear of the platform and extend over the front door so that the stokes basket is accessible from both sides.

LIFTING EYE

A double lifting eye shall be attached to the fly section of the boom with two eye bolts for the purpose of hoisting a stokes basket. When a stokes basket is suspended from the eye, the basket shall be able to be reached by an attendant in the platform. Capacity of the eyes shall be 250 lb. each and any weight suspended from it shall be subtracted from the rated capacity of the platform.

OPERATION AND SERVICE MANUALS

Two (2) complete "Operation and Service" manuals shall be supplied at the time of delivery. Service manual instructions shall include service, maintenance and troubleshooting for major and minor components of the truck. The apparatus manufacturer shall supply part numbers for major components (i.e. Engine, Axles, Transmission, Pump, etc.). A table of contents, hydraulic, air brake and overall apparatus wiring schematics shall be included.

A video training tape on the operation of the truck shall be supplied at the time of delivery.

WARRANTIES

The following warranties shall be supplied:

1. The apparatus shall be warranted to be free from mechanical defects in workmanship for a period of one (1) year. The apparatus shall be covered for parts and labor costs associated with repairs for a period one (1) year.
2. Life-time warranty on the frame.
3. Seven (7) year warranty on paint.
4. Ten (10) year body structural warranty
5. Ten (10) year cab structural warranty
6. Manufacturers Warranties for all major components.

DELIVERY

The custom built fire apparatus shall be driven from the manufacturing facility to the community by a factory trained delivery engineer who shall thoroughly demonstrate the complete apparatus operation and maintenance to the fire department designated personnel for a period of three consecutive days. **The delivery of the apparatus should be made no sooner than October 1, 2007.**

MANUFACTURING & LOCATIONS

The apparatus shall be manufactured in facilities wholly owned and operated by the company. A complete stock of service parts, and service shall be provided on a 24 hours around the clock basis. The company shall maintain parts and service for a minimum period of twenty (20) years on each apparatus model manufactured.

TO: City of Auburn

We, the undersigned, propose to furnish the item listed below and guarantee that if we are awarded the bid, we will furnish the goods in accordance with the attached specifications. **THIS FORM MAY BE COPIED IF YOU WISH TO BID ALTERNATE MODEL EQUIPMENT.**

YOU MUST SPECIFY THE EXACT EQUIPMENT BEING BID
(Enclose brochures/description documents if needed)

MAKE BID: _____

MODEL BID: _____

TOTAL BID: _____

ESTIMATED DELIVERY DATE: _____
DELIVERY DATE IS IMPORTANT CONSIDERATION

Exceptions: _____

_____

_____

BID PRICE IS GUARANTEED FOR NINETY (90) DAYS AFTER BEING OPENED BY THE CITY OF AUBURN

_____ _____
Authorized Signature Name of Firm

_____ _____
Printed Name of Signee Address

_____ _____
Date City, State, Zip

_____
Phone/Fax No.