



Tender Advertisement

The Corporation of the Municipality of Highlands East

Tender for 04-2018

2018/19

Pumper/Tanker with 4 Door Chassis

Tenders on the prescribed Tender Form and **sealed in an envelope clearly marked** as such shall be received by the Acting Fire Chief, Chris Baughman at the following address:

The Municipality of Highlands East
Box 295, 2249 Loop Road
Wilberforce, ON K0L 3C0

Deadline for Tender Submission:

Friday, May 25th, 2018 at 1:00 p.m. (Local Time)

Tender Forms will be opened on **Friday, May 25th, 2018 at 1:05 PM**

For further information contact: Acting Fire Chief, Chris Baughman at 705-455-2747

Tender for 2018/19 Pumper/Tanker with 4 Door Chassis

2018/19 Pumper/Tanker with 4 Door Chassis

\$ _____

HST

\$ _____

Total (must equal lump sum of bid above)

\$ _____

The completion/delivery date shall be on or before

Tender # 2018-04

The following specifications are prepared with the intention of providing a basis for securing competitive bids.

All bids on equipment, not fully meeting the specifications, shall be accompanied by a statement outlining any departures from the specifications and fully describing the equipment offered. Bidders must also complete the column indicated "Specify" after each specification statement.

Only the major details of a unit are listed. It is the supplier's responsibility to deliver a fully equipped unit with compatible components to provide dependable efficient service. Where minimums are given, the unit must meet or exceed the capacity, size or performance specified.

General:

- The vehicle shall be supplied with all standard equipment. Plus all other equipment outlined in this specification, if not standard.
- The vehicle shall meet or surpass requirements of the "Canadian: Motor Vehicle Safety Regulations" (S.O.R. 79-487), as amended. All specifications are minimum.
- Unit described shall be new, current year, cab and chassis. That is the Manufacturer's latest design and production. Complete, serviced, ready for work, and includes all standard equipment.
- The bidder shall be a licensed Motor Vehicle dealer in the Province of Ontario. **A copy of the dealer's license shall be attached to the Tender.**
- From time to time the successful Bidder may be required to transport the vehicle to and from a Municipality of Highlands East facility for service and repair. As such, **please enclose proof of valid Motor Vehicle Liability Insurance of not less than two million dollars, (\$2,000,000.00)**

Specifications

1.		General Design and Construction – Single Source Manufacture	
	<p>All aspects of the fire apparatus body, specifically the pump module and body are to be entirely designed, assembled and painted by the prime vehicle manufacturer, which minimizes third party involvement on engineering, design, service and warranty issues.</p> <p>The bidder shall make accurate statements as to the apparatus weight and dimensions and provide detailed analysis of the engineering requirements to insure the apparatus has been suitably designed.</p>	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____</p>	
2.		Quality and Workmanship	
	<p>The Manufacturer shall maintain certification under the Canadian Welding Bureau to CAS W47.2 (Certification of Companies for Fusion Welding of Aluminum). A copy of the current certification shall be submitted with the tender response.</p>	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____</p>	
3.		Intent of Specifications	
	<p>It shall be the intent of these specifications to cover the furnishing and delivery of a complete fire apparatus. These detailed specifications cover the requirements as to the type of construction, finish, equipment and tests to which the fire apparatus shall conform. Minor details of construction and materials, which are not otherwise specified, are left to the discretion of the contractor.</p>	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____</p>	

4.	Instructions	
	<p>Bidders shall provide a full set of detailed specifications to describe the methods, materials and other pertinent information used in the manufacture of the proposed apparatus, to aid the Municipality of Highlands East Fire Department in making an informed decision. Use of these specifications as response to this requirement will not be accepted. Failure to provide a full set of detailed specifications shall render the bid non responsive and therefore disqualified.</p>	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____</p>
5.	Warranties	
	<p>Bidders shall provide all applicable warranty details with the specifications.</p> <p>The warranty minimums shall be:</p> <ul style="list-style-type: none"> • 1 year bumper to bumper warranty • Chassis warranty as provided by manufacturer • Engine warranty as provided by manufacturer • Transmission warranty as provided by manufacturer • Apparatus body warranty • Apparatus body paint warranty • Any other applicable warranties 	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____</p>
6.	ULC S515-13 Compliance	
	<p>The apparatus shall be constructed to ULC S515-04 requirements and the unit shall also meet Department of Transportation regulations.</p>	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____</p>

7.	ULC Testing - Pumper	
	<p>This unit shall be tested by Underwriters' Laboratories of Canada (third party not accepted) at the Manufacturing plant in order to ensure compliance with applicable standards. The tests include:</p> <ul style="list-style-type: none"> • Pump capacity test, to check pump output from draft as well as a tank flow test • Drafting test, to ensure that the unit can flow water from draft in 30 seconds • Vacuum test, to ensure that there are no vacuum leaks • Relief Valve test, to ensure proper operation of the relief valve • Weight test, to ensure that the vehicle is not overweight on either axle or in total • Road test, to check acceleration and braking <p>After this test, a plate shall be installed showing the pump capacity and RPM, as well as the test date, unit serial number, and no load governed speed of the engine. CMVSS certification and safety mark are also installed.</p>	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____</p>
8.	General Construction	
	<p>The GVWR of the chassis shall be adequate to carry the fully equipped apparatus including full water and other tanks, the specified hose load, unequipped personnel weight, ground ladders, and a miscellaneous equipment allowance in accordance with specified standards.</p>	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____</p>

9.	Manuals – Two (2) copies	
	<p>At the time of delivery, two (2) copies of complete operation and service manuals will be provided covering the completed apparatus (body and equipment) as delivered and accepted, including the pump, wiring diagrams, lubrication charts, and firefighting equipment delivered with the apparatus. Chassis manuals are those supplied by the chassis manufacturer.</p>	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____</p>
10.	Delivery – Fire Department	
	<p>The successful bidder shall, at his expense, deliver the apparatus to the Fire Department. A factory trained and authorized delivery instructor shall then remain with the apparatus to train Fire Department personnel. Training of personnel is essential to ensure that the purchaser and user are aware of, and instructed in the proper operation, care and maintenance of the apparatus delivered.</p>	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____</p>
11.	Hose Bed Capacity – Standard ULC Pumper	
	<p>The hose bed on this vehicle is designed for the standard ULC hose storage requirement:</p> <ul style="list-style-type: none"> • Minimum 39 cubic feet for 2-1/2" hose, minimum 5' long • Minimum 2 areas 3.5 cubic feet each for minimum 1-1/2" pre-connect hose <p>The hose load expected on this vehicle is:</p> <ul style="list-style-type: none"> • 1200' of 2-1/2" double jacket hose • 400' of 1-1/2" double jacket hose 	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____</p>

12.	Equipment Carrying Capacity – ULC “ Pumper Fire Fighting Apparatus”	
	This vehicle is designed to carry the standard ULC miscellaneous equipment load of 2000 pounds for a vehicle with less than 250 cubic feet of compartment space.	Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____
13.	Chassis Motor Vehicle Inspection required	
	Prior to delivery, the apparatus shall undergo a PMVI in accordance with Province of Ontario standards. The appropriate yellow sticker shall be displayed in the chassis window and confirmation of the test in documentation shall be provided on delivery.	Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____
14.	Licensing required	
	The apparatus shall be delivered with appropriate Ontario Motor Vehicle license plates provided with associated ownership indicating transfer of the vehicle to the Municipality.	Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____
15.	Fluid Capacity Plate	
	A permanent plate shall be affixed in the driver's compartment specifying the quantity and type of the following fluids used in the vehicle as applicable: <ul style="list-style-type: none"> • Engine Oil • Engine Coolant • Transmission Fluid • Pump Transmission Lubrication Fluid • Air Conditioning Refrigerant • Air Conditioning Lubricant 	Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____

	<ul style="list-style-type: none"> • Power Steering Fluid • Air Compressor System Lubricant • Front Tire Cold Pressure • Rear Tire Cold Pressure 	
16.	Pumping Test Plate	
	A plate shall be provided at the pump operator's panel that gives the rated discharges and pressures together with the speed of the engine as determined by the certification test, the position of the parallel/series pump as used, and the governed speed of the engine.	Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____
17.	Maximum Rider Sign – 5 Persons	
	An accident prevention sign shall be affixed in the cab stating the maximum number of personnel the vehicle is designed to carry per NFPA standards. The sign shall be located in an area visible to the driver.	Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____
18.	Seat Belt Warning Labels – 4 Door Chassis	
	Signs that state "Occupants must be seated and belted when apparatus is in motion" shall be provided. They shall be visible from each seated position.	Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____

19.	Tire Pressure Indicator	
	<p>The completed apparatus shall be equipped with tire pressure indicators to monitor the individual tire pressure and warn of adequate or below adequate pressure levels. All indicators shall be directed so as to be visible from the open side of the tire.</p>	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____</p>
20.	Apparatus Information Label	
	<p>An information label shall be provided in the chassis shall be cab, visible to the driver, stating: "When manufactured, this vehicle was: ** m high ** m long ** kg GVW</p> <p>Changes in height since the apparatus was manufactured shall be noted on this plate by the Fire Department"</p>	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____</p>
21.	Non Removable Key	
	<p>The ignition key shall be made non-removable from the cab interior by installation of a chain which attaches the key to the cab dash.</p>	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____</p>
22.	No Step Label	
	<p>An accident prevention sign shall be located at the rear step area of the vehicle. The label shall warn personnel that standing on the step while the vehicle is in motion is prohibited.</p>	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____</p>

23.	Mud Flaps	
	Heavy duty mud flaps shall be installed behind the rear wheels to guard against road wash and debris. Front mud flaps shall be provided with the chassis.	Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____
24.	Diesel Fuel Label	
	A label indicating "Ultra Low Sulfur Diesel Only" shall be installed at each chassis fuel tank fill connection.	Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____
25.	Chassis Cab Steps	
	The OEM chassis steps shall be removed and replaced with aluminum tread plate steps installed one each side over fuel tank and battery box. The original step supports shall be left to allow safe access to the cab as originally designed by the chassis manufacturer.	Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____
26.	Chassis Cab Step Compartments	
	To the size that is possible, compartments shall be installed in the chassis cab steps below the rear crew doors. The compartments shall be fitted with aluminum checkerplate tight fitting doors with door seals. The doors shall be latched with a D ring handle and equipped with LED strip lighting. The doors shall be interlocked to the door ajar circuit. The compartment floor shall be equipped with a drain hole and turtle tile floor matting.	Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____

27.	Chassis Paint by the Manufacturer	
	<p>The chassis for this vehicle will be painted by Manufacturer and is not intended to be repainted by the apparatus manufacturer. The body will be painted to match the colour of the chassis.</p>	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____</p>
28.	Auxiliary Braking disabled when pumping	
	<p>An interlock shall be installed to disable the auxiliary braking system when the pump is operating.</p>	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____</p>
29.	Transmission Programming	
	<p>The electronic control for the transmission shall be programmed to meet ULC and NFPA standards.</p>	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____</p>
30.	Extend Exhaust Pipe – RS front of rear wheels	
	<p>The exhaust pipe shall be extended to exit ahead of the rear wheels on the right side in compliance with the chassis manufacturer's specifications for current emissions.</p>	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____</p>

31.	Fuel Fill at step under cab	
	Fuel fill shall be located under the cab as provided by the chassis manufacturer.	Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____
32.	Rear Tow Hooks – under body	
	Towing devices will be installed at the rear of the unit, attached directly to the frame of the chassis.	Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____
33.	Master Battery Disconnect included with Chassis	
	A two pole master disconnect shall be provided with the chassis to isolate the batteries from electrical loads.	Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____
34.	Back Up Alarm included with Chassis	
	The backup alarm provided with the chassis shall be installed at the rear of the unit, wired to operate when the transmission is in Reverse.	Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____

35.	Air Inlet with matching fitting - LS	
	A male air inlet fitting with integral check valve will be installed near the driver's door to allow an external air compressor to keep the chassis air brake system charged. The matching female fitting shall be provided.	Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____
36.	Protection Valve Installed for Air Operated Accessories	
	An air pressure protection valve shall be installed to prevent loss of air to brakes from air operated accessories.	Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____
37.	120 volt 20 A Shore Line Connection	
	Two (2) 120 volt 5-20R duplex receptacles shall be installed in the chassis cab as required, wired to the 120 volt shoreline connection to provide power to required locations.	Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____
38.	Kussmaul Pump Plus Conditioner/Compressor	
	A Kussmaul Pump Plus 1000 combination battery conditioner and air compressor shall be installed with a 120 volt shore line connection mounted on the left side of the body near the driver's door. This is designed to keep batteries at peak charge and the chassis air brake system charged at all times to ensure immediate response of the vehicle when required. The battery charger has an output of 15 A and a 3 A battery saver circuit shall be included to provide power for parasitic loads such as	Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____

	radio and light chargers. The battery charger draws 3.5 A/120 VAC maximum	
39.	Electric System Manager	
	<p>The apparatus shall be equipped with a Class1 Electrical System Manager (ESM) for performing electrical load management. The ESM shall be capable of controlling up to (7) loads according to the voltages which are present.</p> <p>The ESM shall monitor both main and isolated battery banks and indicate low voltage independently when voltage drops below 11.8 volts for more than 2 minutes. The ESM will sequence loads on and off at exact intervals when the master switch is toggled. The ESM will shed loads when voltage drops below corresponding shed point for 30 seconds. An output shall activate to indicate over-voltage when battery voltage is over 14.5 volts. A fast idle output shall activate when voltage drops below 12.3 volts for more than 1 minute and the appropriate interlocks are in place.</p>	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____</p>
40.	Super Auto Eject for 120 v – 20 A with Sealed Enclosure	
	<p>A Kussmaul Super Auto Eject shore line inlet shall be installed in the driver's side chassis steps to allow for an external AC source to be connected to the apparatus. A mating plug for the auto eject shall be shipped loose with the vehicle.</p>	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____</p>

41.	Engine Compartment Lights (pair)	
	Incandescent work lights shall be installed in the engine compartment.	Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____
42.	Air Horns with Chassis	
	The completed apparatus shall be equipped with dual air horns mounted on each side of the chassis hood. The air horn control shall be determined at the preconstruction meeting.	Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____
43.	Air Horn Control on Pump Panel	
	A weatherproof switch shall be located at the pump panel for emergency activation of the air horns.	Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____
44.	Pump – Waterous CXVPA – 1050 IGPM	
	A Waterous CXVPA 1050 IGPM, Single stage, centrifugal, single suction impeller, shall be supplied and installed on the completed apparatus.	Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____

45.	Valves and Controls – Side Mount	
	<p>Valves and Controls – Compartment Mounted Panel</p> <p>The pump panel controls shall be side mount and enclosed in compartment behind a roll up door. For safety purposes, the discharges and intakes shall be offset to the controls to eliminate dangerous straddling of pressurized hoselines.</p> <p>All 1" or larger in-line valves will be full flow, drop-out type valves.</p> <p>All In-line valves will be controlled by chrome plated locking "T" handles with rods designed to permit easy operation and minimal distortion when opening or closing a valve.</p> <p>All 2-1/2" valves for discharges located on the right and left side pump panels will be operated using lever type controls or by chrome plated locking "T" handles located on the pump operators panel unless otherwise specified.</p> <p>All 3" and larger discharge valves will be designed to slow the opening and closing of the valve to comply with applicable ULC and NFPA standards.</p>	<p>Specify:</p> <p>Yes: _____ No: _____</p> <p>Exception/Comments: _____</p> <p>_____</p> <p>_____</p>
46.	Valves - Akron	
	<p>All suction and discharge valves shall be AKRON brand.</p>	<p>Specify:</p> <p>Yes: _____ No: _____</p> <p>Exception/Comments: _____</p> <p>_____</p> <p>_____</p>
47.	Stainless Steel Plumbing	
	<p>All piping will be heavy duty stainless steel type and piping components in contact with water will be non-corrosive materials.</p> <p>Where vibration or chassis flexing may damage or loosen piping, all plumbing</p>	<p>Specify:</p> <p>Yes: _____ No: _____</p>

	<p>exiting the pump enclosure area will be equipped with Victaulic or rubber couplings as necessary.</p> <p>Wherever threaded joints are used, the sealing compound will be of the non-hardening type to ensure ease of removal for repair or replacement of couplings.</p> <p>All piping will be subjected to hydrostatic test consisting of pressurizing the entire pump and valves, including suction lines. Following the pressure test, a vacuum test will be applied to the entire pump and valves. This test consists of developing 24 inches of vacuum and holding that vacuum for 10 minutes while not losing in excess of 10 inches of vacuum.</p>	<p>Exception/Comments: _____</p> <p>_____</p> <p>_____</p>
48.	Threads	
	<p>All 38mm plumbing shall be fitted with NPSH threads.</p> <p>All 65mm plumbing shall be fitted with CSA threads.</p>	<p>Specify:</p> <p>Yes: _____ No: _____</p> <p>Exception/Comments: _____</p> <p>_____</p> <p>_____</p>
49.	Hydrostatic Plumbing Test	
	<p>The pump and plumbing shall be hydrostatically tested to a pressure of 250 psi. The Tank Fill and Tank to Pump valves shall be closed; all other inlets and outlets shall be open and capped. This pressure shall be maintained for 3 minutes.</p>	<p>Specify:</p> <p>Yes: _____ No: _____</p> <p>Exception/Comments: _____</p> <p>_____</p> <p>_____</p>
50.	Anodes – Suction and Discharge Piping	
	<p>Two anodes are installed, one in the suction side of the pump and one in the discharge side of the pump to protect the pump and piping from galvanic corrosion.</p>	<p>Specify:</p> <p>Yes: _____ No: _____</p> <p>Exception/Comments: _____</p>

51.	Tank to Pump – Stainless Steel with Check Valve	
	A 3" quarter turn valve with check valve to prevent accidental pressurization of the water tank through the pump connection shall be installed in the supply line from the tank to the pump.	Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____
52.	Pump to Tank – 2"	
	A 2" quarter turn valve shall be installed in the supply line from the pump to the tank.	Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____
53.	Main Intakes – 6"	
	Two 6" (not gated) - 1 each side shall be provided. The intakes shall be equipped with long handle chrome caps and will have removable strainers.	Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____
54.	Suction – 2-1/2" Left Side SS, Bleeder, Non-Manifold Pump	
	One (1) 2-1/2" left side, quarter turn ball valve with chrome plated female swivel connection, bleeder valve, including chrome plug and chain shall be provided on the left side of the pump panel. This valve shall be controlled by a lever control or a locking pull control at the valve.	Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____

55.	2-1/2" RS Discharge SS, Bleeder, Non-Manifold Pump	
	Two (2) 2-1/2" left side discharges plumbed with 2-1/2" discharge valve, includes 30 degree chrome plated droop snoot, bleeder valve, and rocker lug chrome cap with chain shall be provided.	Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____
56.	2-1/2" rear Discharge SS, Bleeder, Non-Manifold Pump	
	One (1) 2-1/2" rear preconnect under the hose bed, plumbed with 2-1/2" valve. Includes 30 degree droop, bleeder valve, rocker lug chrome cap and chain shall be provided.	Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____
57.	1-1/2" Crosslay, 2" Valve with Bleeder	
	Two (2) 1-1/2" preconnects with hosebed shall be located transverse above the pump. The discharges shall be equipped with swivel to allow use from either side of the unit, plumbed with 2" valve to allow the use of 1-3/4" discharge hose. The transverse hose bed shall be equipped with stainless steel rollers on each end for easier hose removal. A bleeder valve shall be provided on pump panel. The height of the crosslays shall be as low as possible above the pump.	Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____
58.	Pump Shift – PTO Pump and Roll	
	The Pump Shift for the PTO will include interlocks and an indicator light stating "Ok To Pump" allowing pumping in neutral only when transmission is in neutral, park brake is set, and PTO control energized. The remote electronic throttle will be energized in this mode.	Specify: Yes: _____ No: _____

	An additional indicator light will show "Ok To Pump and Roll" when the transmission is not in neutral, the park brake is not set, and the PTO control is energized. The remote electronic throttle will not be energized in this mode.	Exception/Comments: _____ _____ _____
59.	Power Shift PTO – Automatic Transmission	
	The power takeoff will be equipped with a power shift. An electric in-cab control for shifting the automatic transmission will be provided.	Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____
60.	Class One "TPG Plus" Governor/Throttle	
	This apparatus shall be equipped with a Class 1 Total Pressure Governor Plus engine/pump governor/throttle system that is connected directly to the engine Electronic Control Module (ECM) via J1939. The TPG is to operate as a pressure sensor (regulating) governor eliminating any need for a relief valve on the discharge side of the pump. Battery voltage, engine/transmission temperature, engine oil pressure, and engine RPM are also displayed on the TPG along with audible alarms. The TPG Plus also acts as a Master Pump Discharge and Intake Gauge. A special preset feature shall permit a predetermined pressure or RPM to be set. The preset shall be easily adjustable by the operator.	Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____
61.	Suction Side Relief V/V, Manifold Pump	
	A pre-set, spring-loaded 2-1/2" adjustable relief valve shall be installed to protect against excessive incoming pressure. The	Specify:

	<p>valve shall be adjustable from 75 to 250 PSI, shall be preset at 125 PSI, and shall attach directly to the pump suction manifold. The outlet shall be piped away from, but within sight of the pump operator and shall terminate with a 2-1/2" male adapter labelled "Intake pressure relief outlet - Do not cap". Shut-off valves or other means to disable the operation of the relief system shall not be permitted. Caps will not be installed in this line.</p>	<p>Yes: _____ No: _____ Exception/Comments: _____ _____ _____</p>
62.	Trident Air Primer, Single Location, Manual	
	<p>The apparatus shall be equipped with a manual air primer. Controls for the air primer shall be located on the pump operator's panel.</p>	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____</p>
63.	Heat Exchanger Included with Chassis	
	<p>The chassis shall be equipped with a closed circuit heat exchanger, which uses pump flow to reduce engine heat without contaminating engine coolant. The system shall be controlled by a 1/4-turn valve on the pump operator's panel. A drain shall be furnished in the engine cooler line.</p>	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____</p>
64.	Master Drain Valve	
	<p>A master drain valve will be provided. The valve will be located on the left side pump panel and connected in such a manner as to allow complete water drainage. Water will be drained below the apparatus body away from the pump operator.</p>	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____</p>

65.	Drain Valve for Foam System Header	
	<p>A drain valve shall be provided to relieve pressure in the foam system header beyond the check valve and reduce the chance of foam infiltration in the pump.</p>	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____</p>
66.	Foam System – Foam Pro 1600	
	<p>A Foam Pro 1600 Class A foam system shall be supplied and installed on the apparatus. The system shall be an electronic powered plunger type, fully automatic, variable speed, direct injection, discharge side foam proportioning system. The foam system shall be capable of injecting Class "A" or Class "B" foam from 0.1% to 1% based on the direct measurement of water flows and remain consistent within the specified flows and pressures.</p> <p>The System shall be equipped with a control module, suitable for installation on the pump panel with a single ON/OFF switch and a Manual Dial foam percentage control. Incorporated within the motor driver shall be a microprocessor that receives input from the system flowmeter, while also monitoring foam concentrate pump output, comparing values to ensure that the operator preset proportional amounts of foam concentrate is injected into the discharge side of the water pump.</p> <p>The system shall have the ability for continuous firefighting operation while refilling the foam concentrate tank.</p>	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____</p>

67.	Foam Concentrate Label and Instruction Plates	
	<p>A label shall be applied next to the foam fill area specifying the type of foam concentrate to be used, any restrictions on the type of foam concentrate that can be used, and "Warning: Do Not Mix Brands and Types of Foam"</p> <p>An instruction plate shall be installed at the operator's position including a piping schematic of the system and basic operating instructions.</p> <p>An additional plate shall be installed at the operator's position which provides the following specifications:</p> <ul style="list-style-type: none"> - Foam Classification type (Class A; Class B; Class A and B) - Types of foam concentrate compatible with the system design (see operating manual) - Maximum/minimum water flows (gpm) - Maximim/minimum operating pressures 	<p>Specify:</p> <p>Yes: _____ No: _____</p> <p>Exception/Comments: _____</p> <p>_____</p> <p>_____</p>
68.	Foam System Certification Test	
	<p>Certification by manufacturer required stating (NFPA 21.11.1):</p> <ul style="list-style-type: none"> - Foam system, as installed, complies with the foam equipment manufacturer's installation recommendations. - Foam system has been calibrated and tested to meet the foam equipment manufacturers and the purchaser's performance requirements. - The accuracy of the foam proportioning system meets the requirements of 21.10 (-0/+40% for ratios less than 1%; -0/+30% or one percentage point, whichever is less, for rations of 1% and greater) 	<p>Specify:</p> <p>Yes: _____ No: _____</p> <p>Exception/Comments: _____</p> <p>_____</p> <p>_____</p>

Water and Foam Tank

69.	Water Tank	
	<p>The tank shall have the capacity specified within this proposal complete with a Lifetime Warranty. Tank shall be constructed of 1/2" thick non-corrosive stress relieved Copolymer Polypropylene thermoplastic. The booster tank shall be so designed to be completely independent of the unit body and compartments and shall be of specified configuration. Standard tank cover shall be fabricated of 1/2" Copolymer Polypropylene in three pieces recessed 3/8" from the top of the tank. All covers shall be welded to both the outer walls and longitudinal partitions for maximum integrity. Copolymer Polypropylene solid stock shall be installed through each cover and shall serve as both the anchorage location for lifting eyes and reinforcing the rigidity of the cover under fast filling conditions. The tank shall be equipped with a manual fill tower combined with vent and 1/4" Polypropylene removable screen. The fill tower shall be constructed of 1/2" Copolymer Polypropylene with a minimum dimension of 8"x 8" and shall have a hinged type cover. Inside the fill tower approximately half way from the top shall be fastened a vent overflow pipe. The vent overflow pipe shall be a minimum 4" ID schedule 40 Polypropylene designed to run through the water tank and discharge behind the rear axle at a location specified by the purchaser to better maximize vehicle traction. The fill tower shall be located in the front left corner of the tank unless</p>	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____</p>

<p>otherwise specified by the purchaser in Special Provisions.</p> <p>The tank shall have one (1) sump and shall be constructed of 1/2" Copolymer Polypropylene and location shall be specified by the purchaser.</p> <p>On tanks that require a front suction, a 3" NPT schedule 40 Polypropylene pipe shall be installed with a dip tube from the front of the tank to the tank sump box. The sump shall have a 3" NPT threaded outlet on the bottom and shall be used as a combination clean out and drain. An antiwhirl plate shall be located on all tanks approximately 2" above the sump.</p> <p>There will be one (1) standard tank-to-pump suction line with a minimum of 3" NPT coupling and one (1) standard tank fill with 2" NPT coupling unless specified otherwise in special provisions. All tank fill couplings shall be equipped with a flow deflector to break up the stream of water entering the tank, and be capable of withstanding sustained fill rates of up to 3750 LPM. All optional fittings, flanges, and pass through sleeves must be specified in Special Provisions and shall meet all NFPA and/or ULC guidelines in effect at the time of manufacture.</p> <p>The tank shall rest on the body cross members and may require additional support so as not to allow for more than 520 square inches of unsupported area under the area of the tank floor, and in cases where overall height of the tank exceeds 38 inches, the unsupported area of the tank floor shall be reduced to not more than 390 square inches. Additionally the tank must have support to the contour of the tank floor and outside perimeter to prevent tank from shifting side to side and from front to rear. Where square tubing</p>	
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	<p>and/or channel sub frames are incorporated in the manufacturer's body structure, corner angles shall be installed having a minimum of 4" x 4" x 1/4" x 6" in height for the purpose of capturing and preventing shifting of the tank. The tank must be completely isolated from the supporting cross members with the use of rubber strips with a minimum thickness and width dimension of 1/4" x 2" and a minimum Rockwell Hardness of 60 durometer. In installations where tank hold downs are not incorporated in the construction of the body, a restraint system shall be installed using angle having the minimum dimension of 3" x 3" x 1/4" with a total length of 6" to 14" long bolted to the side of the body of the vehicle halfway from the front and rear of the tank and extended down to rest on the top outside edge of the tank and shall be isolated from the tank using a hard rubber pad with 1/4" minimum thickness affixed to the underside of the angle. Mounting block and hose bed floor designs shall be fabricated so that the floor slat supports extend from side wall to side wall and shall not be permitted to drop off the edge of the tank or come in contact with the covers where a puncture could occur. Hose floor shall have a loading capacity of 200 pounds per square foot, and whenever possible shall be evenly distributed. The tank shall be completely removable without dismantling or disturbing the apparatus body structure.</p>	
70.	Water Tank Capacity Certification – By Tank Manufacturer	
	<p>A certificate specifying the capacity of the water tank shall be provided by the water tank manufacturer.</p>	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____ _____</p>

71.	Tank Capacity	
	<p>The water tank shall have a minimum capacity of 1200 Imperial Gallons. The foam tank shall be integral to the water than with a capacity of 30 Imperial gallons.</p>	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____</p>
72.	Tank Connections	
	<p>The tank shall be configured to include the following connections:</p> <ul style="list-style-type: none"> • 2" tank fill • 1" water level gauge • 1" foam level gauge 	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____</p>
73.	Dump Valve	
	<p>The apparatus shall be fitted with an A.H. Stock Newton 6012-34 SW painted swivel dump valve. The dump valve shall be operated by a side mounted handle with lock open and lock closed devices. The dump valve shall be fitted with a Newton 4036 – 36" telescoping chute. The dump valve assembly shall be painted job colour.</p>	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____</p>
74.	Rear Tank Fill – 4" Fireman's Friend	
	<p>A 4" fill shall be located at the rear of the unit and plumbed into the fill box so that no valve is required and so that the piping will remain dry when not in use. This line shall be equipped with a 4" 30 degree Storz adapter, blind cap, and drain valve.</p>	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____</p>

75.	Rear Tank Fill – 2.5” Fireman’s Friend	
	<p>A 4" fill shall be located at the rear of the unit and plumbed into the fill box so that no valve is required and so that the piping will remain dry when not in use. This line shall be equipped with a 2.5" 30 degree Storz adapter, blind cap, and drain valve.</p>	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____</p>

Electrical

76.	Basic Electrical	
	<p>All electrical circuit feeder wiring supplied and installed by the apparatus manufacturer shall be stranded alloy copper conductors of a gauge rated to carry 125% of the maximum current for which the circuit is protected. Insulation shall be in accordance with SAE J1128, type SXL, and wired to SAE J1292, for such loading at the potential employed. Voltage drops in all wiring from the power source to the using device shall not exceed 10%. Overall covering of conductors shall be 280 degrees F. minimum flame retardant loom or braid. All connections shall be made with lugs or terminals mechanically secured to the conductors. Wiring shall be thoroughly secured in place and suitable protected against heat, oil and physical damage. All body wiring shall be colour coded and marked every 3" as to function. All circuits are protected by auto reset circuit breakers. The power distribution panel shall be located in the pump compartment or behind the back wall of the front side compartment depending on the muffler location. Circuits are provided with</p>	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____</p>

	<p>properly rated low voltage overcurrent protective breakers. Such circuit breakers are readily accessible and protected against excessive heat, physical damage and water spray. Switches, relays, terminals and connectors have a direct current rating of 125% of maximum current for which the circuit shall be protected. All wiring shall be done to NFPA standards and SAE standards and complies with CMVSS regulations.</p>	
77.	Warning Light Certification	
	<p>Certification from the warning light manufacturer shall be provided to confirm that the lighting system meets current NFPA 1901 standards.</p>	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____</p>
78.	Low Voltage electrical System Test & Documents	
	<p>The completed low voltage electrical system shall be tested prior to delivery. The electrical testing, certifications, and test results shall be submitted with the delivery documents as per the requirements of NFPA 1901.</p> <p>The documentation shall include;</p> <ul style="list-style-type: none"> • Documentation of the electrical system performance tests required above • A written load analysis including; <ul style="list-style-type: none"> ○ Nameplate rating of the alternator ○ Alternator rating under load conditions ○ Each specified component load 	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____</p>

	○ Individual intermittent loads	
79.	Master Switch Panel	
	A rocker switch panel shall be installed with a Master switch to control all emergency lighting to comply with applicable standards.	Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____
80.	Siren Speaker	
	One (1) 100 watt siren speaker shall be located in the front bumper on the driver's side. The speaker grille shall be flush with the face of the bumper.	Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____
81.	Siren – Whelen 295SLSA1 or Federal PA300	
	A 100 watt siren shall be mounted in the cab with the following functions supported: - yelp, wail, and Priority tone - PA operation, microphone included - manual operation of siren - capability of broadcasting radio transmissions through the siren speaker.	Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____
82.	Light Bar – ULC Compliant LED	
	This unit shall be equipped with a full width Whelen or Federal LED light bar mounted on the cab, which shall be reinforced to carry the weight. This light shall be controlled from the cab.	Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____

83.	Rear LED Traffic Advisor – Flush Mount	
	<p>An 8 lamp amber LED flashing directional light shall be installed under the rear hose bed with control head in cab. This system shall be used for traffic control and additional visibility when vehicle is parked on highway.</p>	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____</p>
84.	Twelve (12) Warning Lights	
	<p>The warning lights shall be installed in compliance with the requirements of NFPA 1901 as follows:</p> <p>Two (2) Whelen 300 LED warning lights in the front grille of the chassis Two (2) Whelen 600 LED warning lights on each side of the chassis hood Two (2) Whelen 600 LED warning lights one each side in the rear fender wells Two (2) Whelen 900 LED warning lights one each side at the rear upper corners of the body Two (2) Whelen 600 LED warning lights, one each side, in the upper rear corners of the body Two (2) Whelen 600 LED warning lights installed in the taillight cluster</p>	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____</p>
85.	Six (6) Scene Lights	
	<p>Two (2) Whelen 900 LED scene lights shall be installed at the rear of the apparatus body, one each side, as high as possible. These lights shall be controlled from a three way switch on the dash (labelled REAR SCENE) in the apparatus chassis and from a switch at the rear of the apparatus body.</p> <p>Two (2) Whelen 600 Super LED scene lights shall be installed in the upper front and rear corners of the apparatus body on</p>	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____</p>

	each side, (four in total) paired with the warning lights above. These lights shall be controlled from switches on the dash in the apparatus chassis, labelled left scene and right scene.	
86.	Two (2) Scene Lights	
	Two (2) FRC Spectra LED telescoping scene lights shall be installed on the front of the apparatus body. The lights shall be individually controlled by switches on the light. The telescopic poles shall be integrated into the door ajar circuit so as to warn the operator that the light has remained extended when the park brake is released.	Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____
87.	Compartment Lights - LED	
	Two (2) vertical LED tube type compartment lights will be provided in each enclosed compartment, and will be controlled automatically when compartment door is opened.	Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____
88.	Door Ajar Warning Light	
	An LED warning light with a minimum diameter of 1.5" shall be installed to indicate when a compartment or chassis door is open.	Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____
89.	"Equipment Rack Not Stowed" Warning Light	
	An LED warning light with a minimum diameter of 1.5" shall be installed to indicate when an equipment rack is not in the stowed position. This shall be used to indicate if either the ladder rack or portable	Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____

	water tank rack is not fully stowed. The light will be activated when the parking brake is disengaged and either component is not stowed. Optional – Pricing for Manual Storage	_____ _____
90.	LED Step Lights	
	LED step lights shall be installed to light all body work surfaces, steps, and walkways. LED step lights shall be installed to light all required surfaces of the chassis steps.	Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____
91.	LED Clearance Lights and Reflectors	
	LED clearance and marker, and a license plate light, along with reflectors will be mounted in accordance with federal regulations.	Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____
92.	Taillight Assembly	
	A Whelen 64 LED CAST 4V tail/brake-turn-backup-warning module (pr)module including a red tail/brake LED light, an amber LED turn signal, a clear LED back up light, and an LED warning light in a chrome housing shall be installed at the rear of the unit on each side.	Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____
93.	Ground Lighting - LED	
	Lighting shall be installed under chassis steps, operable when the cab door is opened and when the ground light switch is turned on.	Specify: Yes: _____ No: _____ Exception/Comments: _____ _____

	Lighting shall be installed under the pump panel and rear steps, operable when the ground light switch is turned on.	_____
94.	Two Way Radio Antenna Base	
	An antenna base and cable shall be supplied and installed on the roof of the vehicle and the cable shall be routed to the dash area of the chassis cable and labelled as to its location.	Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____
95.	Hosebed Lighting – LED strip	
	Hosebed lighting shall be provided by LED strip lighting located in the hosebed area. The lights shall automatically activate when the hosebed cover is opened.	Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____

Body

96.	Single Axle Extruded Aluminum Body – Formed Bodies will not be accepted	
	The body of this unit shall be designed to ensure correct load distribution on the chassis and is constructed of custom engineered aluminum extrusions with 3/16" alloy aluminum plate used for sides, compartments, and exterior panels. The body panels are interlocked with these extrusions, and then MIG or TIG welded for high strength and rigidity. The body shall be fabricated on a sub frame of min. 3" x 3" 1/4" aluminum square tubing, and shall be attached to the frame of the truck by a spring loaded mounting system and UMHW	Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____

<p>plastic sills which reduce flexing in the tank and body.</p> <p>The body is fabricated on a subframe of 3" x 3" x 1/4" Aluminum tubing. The subframe is attached to the chassis frame using 4 spring loaded holdowns, two at the front and two at the rear of the subframe. The subframe is isolated from the chassis frame using 3/4" UMHW. The spring mounting system reduces flexing in the tank and body.</p> <p>Full Aluminum fender liners fabricated from 1/8" Aluminum plate are installed on the body.</p> <p>All compartments are of the sweep out type. The compartments and body frame are constructed with interlocking extrusions, then MIG or TIG welded. The extrusions used shall be custom designed and engineered for use in the fabrication of the Apparatus. NO EXCEPTION. Designs using generic Aluminum tubing and angles will not meet the intention of this requirement and will not be accepted. The use of extrusions provides a stronger compartment and body frame. By using the engineered extruded aluminum design, all compartments are stitched welded on the exterior side of the compartment. Automotive seam sealant is used between the welds to completely seal the compartment.</p> <p>Each compartment is also equipped with floor drains and louvered vents. The vents shall be machined/punched into the compartment wall. Bolt on plates or grills do not meet the intent of this requirement. Compartment fender tops overall side compartments shall have a flange formed out to provide protection against water runoff.</p> <p>The rear of the body shall have an inset rear step above the rear compartment.</p>	
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	The stepping surface of the rear step shall be open strut aluminum with non slip surface, and rigidly reinforced. Embossed aluminum checkerplate will not satisfy the requirement of this specification.	
97.	Painted Fender Surround	
	The vertical trim around each rear wheel shall be painted to match the rest of the body.	Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____
98.	Integral Aluminum Fender Trim	
	Extruded aluminum trim shall be installed around each rear wheel and is an integral part of the body.	Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____
99.	Pump House Steps	
	The running boards will be made of open strut aluminum with non-slip surface. Each step will be rigidly reinforced with a heavy duty support structure. Running boards will not form any part of compartment design.	Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____
100.	Rear Step	
	The rear step shall be a removable, 19 inches deep, made of open strut aluminum with non-slip surface, and rigidly reinforced. The step shall be bolted to the body and installed with sufficient space to allow the	Specify: Yes: _____ No: _____ Exception/Comments: _____ _____

	<p>step to be washed and debris cleared from the step area.</p> <p>Rear steps that are welded or permanently attached to the apparatus body so as to be unremovable, will not be accepted.</p>	
101.	Extruded Aluminum Rub Rail	
	<p>A bolt –on removable extruded rub rail extends 3/4" beyond the body on each side. It shall be polished aluminum and shall feature an aggressive non slip surface.</p>	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____</p>
102.	Body Configuration	
	<p>A fully detailed drawing, as previously specified, shall accompany the bid proposal. The drawing shall clearly show the compartment dimensions and layout.</p> <p>One (1) full height compartments ahead of the rear wheels on the driver’s side shall be provided.</p> <p>One (1) intermediate height compartment over the rear wheels on the driver’s side shall be provided. The compartment shall be approximately 12` deep.</p> <p>One (1) full height compartments behind the rear wheels on the driver’s side shall be provided.</p> <p>One (1) intermediate height compartments ahead of the rear wheels on the passenger side shall be provided.</p> <p>Two (2) intermediate height compartment over the rear wheels on the passenger side</p>	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____</p>

	<p>shall be provided, fore and aft of the ladder rack.</p> <p>One (1) intermediate height compartments behind the rear wheels on the passenger side shall be provided.</p> <p>All compartment depths shall be shown on the detailed proposal drawing accompanying the bid.</p>	
103.	Compartment Doors	
	<p>Six (6) compartments (L1,L2, L3, L4 and R1, and R3) shall be fitted with AMDOR™ brand roll up doors. The doors shall be provided with a satin finish and standard latching bar handle.</p> <p>The doors shall be fitted with flex strap pull down handles to facilitate closing the door.</p>	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____</p>
104.	Lighted Folding Steps – Rear and Front of Body	
	<p>Lighted Folding aluminum steps with LED lights shall be installed as follows: Three (3) up each side of the apparatus body face Four (4) up each side on the rear wall of the apparatus body – Total 8</p>	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____</p>
105.	Compartment Matting - Turtle Tile	
	<p>Turtle Tile compartment floor matting will be installed on each compartment floor with no tray, on all trays and all shelves.</p>	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____</p>

106.	SCBA Storage in Fender Well	
	<p>Four (4) double SCBA cylinder storage compartments will be installed in the rear fender wells, two each side. These consist of an aluminum access door and a plastic storage tube to prevent damage to the cylinder. The door shall be fitted with a rubber seal to aid in keeping the cylinder clean.</p> <p>The door shall be fitted with a door switch integrated with "door ajar" alarm circuit. The tube shall be fitted with a cylinder retention strap.</p>	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____</p>
107.	Sliding Tray	
	<p>Three (3) floor mounted 400 # capacity sliding trays with gas strut shall be installed in the designated compartments.</p> <p>Sliding tray(s) equipped with 400 pound capacity sliding hardware and latch to hold in the closed position are installed as directed by the Fire Department. A gas strut shall be installed to help hold the tray in the open and closed positions.</p>	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____</p>
108.	Adjustable Shelves	
	<p>Six (6) Adjustable shelves shall be installed in the designated locations.</p>	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____</p>
109.	Hose Bed Dividers	
	<p>Two (2) Fully adjustable full length 1/4" aluminum hose bed partition(s) will be provided directly on top of the booster tank. Partition(s) will be removable for access to the booster tank.</p>	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____</p>

	<p>Flooring to be aluminum channels and shall be properly spaced for ventilation. The flooring will be smooth and free from sharp edges to avoid hose damage. Floor will be removable for access to booster tank.</p>	<p>_____</p> <p>_____</p>
110.	Paint	
	<p>All compartment doors, removable components, flush mounted lights, drip moldings, accessories and other equipment shall be mounted on the body prior to painting, and then removed for final finishing to assure paint has been applied to surfaces under all equipment and components. All exterior surfaces of the body except tread plate and polished stainless steel are painted to prevent corrosion. The body shall be buffed, primed with acid etching primer, epoxy primed, and painted with 3 full coats of Dupont Elite polyurethane enamel.</p>	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____</p> <p>_____</p> <p>_____</p>
111.	Corrosion Protection	
	<p>Entire cab and body shall be treated with KROWN™ rust protection <u>prior</u> to shipment from the factory. The application shall be completed by a certified applicator and a certificate of application shall be provided with the completed apparatus.</p>	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____</p> <p>_____</p>
112.	Compartment Interior Finish	
	<p>The interior of the aluminum compartments shall be buffed to remove scratches and provide a finished surface.</p>	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____</p> <p>_____</p> <p>_____</p>

113.	Lettering	
	<p>Lettering consisting of up to 80 letters of a size up to 3" tall shall be applied according to Fire Department requirements. The lettering shall be vinyl in the colour specified by the Fire Department and shall consist of one colour letter with two colours of shadow.</p>	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____</p>
114.	Striping – 4” Reflective	
	<p>A four inch high white Scotch lite stripe will be provided. The stripe will be applied on a minimum of 50 percent of each side of the unit, 50 percent on the rear of the unit (unless a chevron shall be provided) and 25 percent on the front of the unit.</p>	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____</p>
115.	Rear Chevrons – Red & Yellow Chevron	
	<p>An NFPA compliant reflective chevron shall be applied to cover at least 50% of the rear facing vertical surface of the vehicle. This consists of alternating red and yellow reflective stripes 6" wide in a chevron pattern sloping down and away from the centerline of the vehicle at an angle of 45 degrees.</p>	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____</p>
116.	Hosebed Cover	
	<p>An aluminum cover shall be installed over the hosebed manufactured using aluminum checkerplate material. The cover shall be fitted with gas assisted shock lifts to aid in opening and closing the covers. The covers shall be further fitted with retention chains to insure against damage due to wind.</p> <p>The rear of the covers shall be fitted with individual black tarp covers. The covers shall be securely attached to the top of the covers using and be retained across the</p>	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____</p>

	bottom of the hosebed using shock cords and retainer clips.	
117.	Crosslay Cover - Aluminum	
	A hinged aluminum cross lay hose bed cover will be provided over the crosslays. The crosslay ends shall be fitted with small tarps with Velcro straps.	Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____
118.	Hard Suction Storage – 6”	
	Storage for two (2) lengths of 6” x 10” hard suction shall be made to slide the suction hose into a tube from the rear of the unit. A door with lift and turn latch shall be provided at the rear. The tubes shall be at a height so as to allow the hard suction to be removed or stored from the ground level without the need to climb the apparatus.	Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____
119.	Hard Suction Storage – 4”	
	Storage for two (2) lengths of 4” x 10” hard suction shall be made to slide the suction hose into a tube from the rear of the unit. A door with lift and turn latch shall be provided at the rear. The hard suction storage shall be fully enclosed in the upper left corner of the hosebed adjacent to the hosebed.	Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____
120.	Pike Pole Storage	
	Two (2) storage tubes for a pike poles shall be installed with access at the rear, one in each corner of the suction hose tube.	Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____

121.	Zico Hydraulic Portable Tank Rack	
	<p>A Zico hydraulic portable tank mounting system shall be installed on the passenger side of the apparatus body to lower the portable tank from the stored position on the side of the truck. The system shall be wired so only operable when park brake is engaged. Flashing lights and reflective tape are installed at front and rear to indicate any areas that protrude beyond the body.</p> <p>The switch to operate the electric portable tank rack shall be installed on the same side of the body as the portable tank rack at the rear, above the tail light.</p> <p>Aluminum tread plate shall be installed on the side of the body behind the portable tank rack to prevent damage to painted surfaces from the portable tank. The rack shall be sized to store a 1500 IMP gallon Husky portable tank.</p> <p>The rack shall include a checkerplate cover to house and protect the tank when in the stored position.</p> <p>Optional – Pricing for Manual Tank Storage System</p>	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____</p>
122.	Zico Horizontal Ladder Access System	
	<p>An electric over hydraulic power Ladder storage system with built in electric safety latch shall installed on the unit. It shall allow lowering the ladder from the stored position over the hose bed. Access to the body compartments shall be available when the rack is up or down. The system shall be wired so only operable when park brake is engaged. Flashing lights and reflective</p>	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____</p>

	<p>tape are installed at front and rear to indicate any areas that protrude beyond the body.</p> <p>The switch to operate the electric ladder rack shall be installed on the same side of the body as the ladder rack at the rear, above the tail light.</p> <p>OPTIONAL - Pricing for Manual Ladder Storage System.</p>	
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Instrumentation

123.	Warning Label – Pump Operators Panel	
	<p>A warning label will be installed on the Pump Operator's Panel stating: WARNING: Death or serious injury might occur if proper operating procedures are not followed. The pump operator, as well as individuals connecting supply or discharge hoses to the apparatus, must be familiar with the operator's manual, water hydraulics hazards, and component limitations.</p>	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____</p>
124.	Pump Operators Panel	
	<p>The pump operator's control panel will be located on the left side of the apparatus in an enclosure to protect the controls and electronics from the elements. Both side pump panels will be completely removable and designed for easy access and servicing.</p> <p>The instrument and pump panels shall be fabricated from 14 gauge 304 stainless steel with brushed finish.</p> <p>Identification plates will be provided for all gauges, controls, connections, switches, inlets and outlets. Plates shall be VISION MARK or INNOVATIVE CONTROLS with</p>	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____</p>

	<p>engraved in color coded polymer material for durability and accurate identification of controls.</p> <p>The right side pump panel will be illuminated by clear lens lights under a polished stainless steel light shield. The shield will be full width of the panel, and will be positioned to cover the lights and prevent glare on operator.</p> <p>The left side pump panel will be illuminated by clear lens lights under a polished stainless steel light shield. The shield will be full width of the panel, and will be positioned to cover the lights and prevent glare on operator.</p>	
125.	Heat Pan & Heat Retention	
	<p>A pump heat pan fabricated from 1/8" aluminum shall be provided on the underside of the pump enclosure to act as a supplementary heating system by entrapping chassis exhaust heat during low temperature pumping operations. This pan will be attached with spring loaded pins for easy removal without tools for servicing and in warm weather. All open areas of the pump module shall be fully enclosed where possible to maximize heat retention.</p> <p>All discharge and intake plumbing through the pump panels shall be gasketed to further maximize heat retention.</p>	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____</p>
126.	Pump Compartment Heater	
	<p>A 30,000 BTU hot water heater shall be installed in the pump compartment with fan controls at the pump panel. The heater shall be located as low as possible in the pump module so as to provide maximum protection the pump and plumbing.</p>	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____</p>

127.	Gauges	
	<p>Seven (7) Dual face (kPa and PSI) pressure gauges, 2-1/2" diameter, are installed on the pump operator's panel, one plumbed to each discharge.</p> <p>Two (2) Dual face (kPa and PSI) master gauges, 4" diameter, shall be installed on the pump operator's panel.</p>	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____</p>
128.	Electronic Pressure Governor	
	<p>A Class One Governor control shall be installed on the pump operator's panel to control pump pressure and engine speed.</p>	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____</p>
129.	Water Level Gauges	
	<p>A water level gauge shall be installed on the pump panel with four indicator lights showing quarter, half, three quarter and full tank levels. The sender has no moving parts.</p> <p>An additional readout shall be installed at the rear of the body.</p>	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____</p>
130.	Foam Level Gauge	
	<p>A foam tank level gauge shall be installed on the pump panel with four indicator lights showing quarter, half, three quarter and full tank levels.</p>	<p>Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____</p>

131.	Test Panel connections	
	Connections for pump vacuum and pressure are installed on the pump panel for use when testing the pump.	Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____
132.	Heat Exchanger Control Valve	
	A quarter turn valve to allow flow of water through the engine heat exchanger shall be mounted on the pump panel.	Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____
133.	Panel Readout for Battery Conditioner	
	A readout for the battery conditioner shall be installed on the pump panel.	Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____
134.	Accessories	
	The following accessories and mounting brackets will be installed on this unit: <ul style="list-style-type: none"> • Two (2) lengths of 6" X 10' lightweight PVC suction hose with threaded pyrolite fittings • One (1) 6" barrel strainer 	Specify: Yes: _____ No: _____ Exception/Comments: _____ _____ _____

	<ul style="list-style-type: none">• One (1) 10 foot pike pole with fiberglass handle• Ladders;<ul style="list-style-type: none">○ 24' two section○ 14' roof○ 10' folding attic• 4" storz to 2.5" swivel adapter for rear fill with cap and chain	
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