

# CUSTOM - SIDE CONTROL PUMPER

	<b>SPECIFICATIONS</b>	<b>YES</b>	<b>NO</b>	<b>DETAILS</b>
<b>1.1</b>	<b>TECHNICAL REQUIREMENTS</b>			
1.1.1	This fire apparatus shall conform to this specification, and to the most recent CAN/ULC-S515 standard. The vehicle shall meet the NFPA 1901-2009 standard.			
1.1.2	The fire apparatus shall be ULC certified. A pump test shall be made by ULC at the apparatus manufacturer plant, and all costs incurred to perform this test shall be covered by the bidder. A ULC certificate shall be provided prior to delivery.			
1.1.3	The vehicle shall meet the Canadian Motor Vehicles Safety Standards (CMVSS).			
1.1.4	All components used to manufacture the vehicle shall be brand new and of high quality. The choice of all elements or all parts shall correspond to the best-recognized quality standards in the fire apparatus vehicle manufacturing industry. When a part number is specified, no substitute shall be accepted.			
1.1.5	The vehicle should have no more than 375" in overall length and 128" in height.			
<b>1.2</b>	<b>DOCUMENTATION UPON DELIVERY</b>			
1.2.1	Two (2) digital copies of chassis operation manuals.			
1.2.2	Two (2) digital copies of wiring, for the chassis and the body. The diagram shall be « As Built Wiring Diagrams ».			
1.2.3	Two (2) digital copies of engine and transmission operation manuals.			
1.2.4	Two (2) digital copies of ULC documentation (CD or USB flash drive).			
1.2.5	One (1) copy of warranties, instruction and/or maintenance manuals of equipments added to the vehicle.			
1.2.6	Two (2) operation manuals of the truck, including operation of the pump, the foam system and a troubleshooting guide.			

	<b>SPECIFICATIONS</b>	<b>YES</b>	<b>NO</b>	<b>DETAILS</b>
<b>2.1</b>	<b>CUSTOM CHASSIS WITH TILT CAB</b>			
2.1.1	A “CUSTOM” chassis developed and designed for the application of a fire vehicle, by a recognized manufacturer in the market, and having dealers established in CANADA. YEAR : 2016 or more recent TYPE : Tilt cab, four door			
2.1.2	The chassis shall be designed for Canada. The apparatus shall be a pumper vehicle designed for emergency service use which shall be equipped with a permanently mounted fire pump.			
<b>2.2</b>	<b>CAB</b>			
2.2.1	The crew cab section will have a 10” raised roof, with an overall cab height of approximately 110.00”.			
2.2.2	The cab shall have successfully completed the preload side impact, static roof load application and frontal impact without encroachment to the occupant survival space when tested in accordance with ECE-29.			
2.2.3	The front fascia shall include a stainless steel front grille.			
2.2.4	Minimum of 60" from the center of the front axle to the backwall of crew cab.			

	<b>SPECIFICATIONS</b>	<b>YES</b>	<b>NO</b>	<b>DETAILS</b>
<b>2.3</b>	<b>VEHICLE DATA RECORDER</b>			
2.3.1	<p>The chassis shall have a Vehicle Data Recorder (VDR) system installed to meet NFPA 1901 requirements.</p> <p>The following data shall be monitored:</p> <ul style="list-style-type: none"> <li>-Vehicle speed;</li> <li>-Acceleration;</li> <li>-Deceleration;</li> <li>-Engine speed : RPM;</li> <li>-Engine throttle position : % of full throttle;</li> <li>-ABS Event : On/Off;</li> <li>-Seat occupied status : Yes/No by position;</li> <li>-Seat belt buckled status : Yes/No by position;</li> <li>-Master Optical Warning Device Switch : On/Off;</li> <li>-Time : 24 hour time;</li> <li>-Date : Year/Month/Day;</li> </ul>			
<b>2.4</b>	<b>ENGINE</b>			
2.4.1	Cummins ISL9 engine shall offer a rating of 450 HP at 2000 RPM. The torque rating shall feature 1250 lb-ft of torque at 1400 RPM.			
2.4.2	There shall be one (1) control for the diesel particulate regeneration.			
2.4.3	Manual high idle switch. Engine preset at 1250 RPM.			
2.4.4	Cummins exhaust brake integral with Variable Geometry Turbo.			
2.4.5	A 1000 watt, 120 volt engine heater with automatic thermostat shall be installed. The block heater shall be connected to the electrical inlet in the driver step.			
<b>2.5</b>	<b>COOLING</b>			
2.5.1	<p>A Horton fan clutch shall be provided. The fan clutch shall be constantly engaged when in the "Pump»position.</p> <p>A switch shall be provided on the instrument panel to turn the fan off when in "Pump". The fan clutch shall return to normal operation when either the override switch or ignition is turned off.</p>			

	<b>SPECIFICATIONS</b>	<b>YES</b>	<b>NO</b>	<b>DETAILS</b>
2.5.2	The cooling package shall include Extended Life Coolant (ELC). Freeze-up protection: -34°F (-37 °C).			
2.5.3	A heat exchanger shall be installed between the engine and the radiator. This shall allow the use of water from the discharge side of the fire pump to assist in cooling the engine.			
2.5.4	Rubber hoses shall be used for all engine coolant lines.			
<b>2.6</b>	<b>AIR INLET</b>			
2.6.1	Air intake with NFPA compliant ember screen.			
<b>2.7</b>	<b>EXHAUST</b>			
2.7.1	The exhaust system shall be mounted below the frame for pumper application. The system shall be mounted as not to reduce the depth of the R1 compartment in any way.			
<b>2.8</b>	<b>TRANSMISSION</b>			
2.8.1	Allison 5th generation, model EVS 3000.			
2.8.2	5-speed, with “Package 198”.			
2.8.3	The transmission fluid shall be monitored electronically.			
2.8.4	The transmission shall include a cooler system.			
<b>2.9</b>	<b>PTO</b>			
2.9.1	Space intended for future installation on the side of the transmission.			
<b>2.10</b>	<b>DRIVELINE</b>			
2.10.1	All drivelines shall be equipped with Spicer 1710 universal joints.			
<b>2.11</b>	<b>FUEL SYSTEM</b>			
2.11.1	Spin-on style primary filter.			
2.11.2	A 65 gallon fuel tank shall be provided and mounted at the rear of the chassis.			
2.11.3	The fuel tank straps shall be constructed of STAINLESS STEEL.			
2.11.4	No fuel pump for repriming fuel system.			

	<b>SPECIFICATIONS</b>	<b>YES</b>	<b>NO</b>	<b>DETAILS</b>
<b>2.12</b>	<b>FRONT AXLE</b>			
2.12.1	DANA front axle shall be rated to 18,000 lb.			
<b>2.13</b>	<b>FRONT SUSPENSION</b>			
2.13.1	The front axle shall be furnished with shock absorbers.			
2.13.2	The parabolic front suspension spring capacity shall be rated at 18,000 lb.			
<b>2.14</b>	<b>STEERING</b>			
2.14.1	The steering wheel shall be 18.00" in diameter, have tilting and telescoping capabilities, and a 2-spoke design.			
2.14.2	The chassis shall have a front axle cramp angle of 50-degrees to the left and right.			
2.14.3	Power steering fluid level electronic indicator.			
<b>2.15</b>	<b>REAR AXLE</b>			
2.15.1	DANA rear axle shall have a rated capacity of 24,000 lb. A driver controlled differential lock shall be installed on the rear axle.			
2.15.2	The top speed of the vehicle shall be approximately 110 km/h (68 MPH) +/-3 Km/h.			
2.15.3	The axle ratio shall be 5.22.			
<b>2.16</b>	<b>REAR SUSPENSION</b>			
2.16.1	A multi-leaf spring suspension shall be provided. The rear suspension capacity shall be rated for 24,000 lb.			
<b>2.17</b>	<b>TIRES</b>			
2.17.1	Front tires shall be Goodyear, G291, 315/80R22.50, 20 Ply. Capacity of 18,180 lb per axle with a speed rating of 110 km/h when inflated to 120 psi.			
2.17.2	Rear tires shall be Goodyear, G622, 11R22.5, 16 Ply "H" tubeless. Capacity shall be 24,040 lb per axle with a speed rating of 112 km/h when inflated to 120 psi.			
2.17.3	Front and rear RealWheels LED AirSecure™ tire pressure sensors.			

	<b>SPECIFICATIONS</b>	<b>YES</b>	<b>NO</b>	<b>DETAILS</b>
2.17.4	All tires shall be balanced with Counteract balancing beads. The beads shall be inserted into the tire and eliminate the need for wheel weights.			
<b>2.18</b>	<b>WHEELS</b>			
2.18.1	Aluminum, ALCOA front wheel 9.00 x 22.5 polished.			
2.18.2	Aluminum, ALCOA (outside) and steel (inside) rear wheel 8.25 x 22.5 polished with wheel guard between wheels.			
2.18.3	Rear interior wheels shall be painted black.			
2.18.4	Front and rear wheels shall have chrome nut covers on each nut. Rear wheels shall have a "high hat" style center chrome cover.			
<b>2.19</b>	<b>BRAKE</b>			
2.19.1	Meritor WABCO, anti-lock braking system shall be supplied.			
2.19.2	Front brakes shall be Model ADB22X™, disc type with 17.00" rotors.			
2.19.3	Rear brakes shall be drum, dimension 16.5" x 7.00", with automatic slack adjusters.			
<b>2.20</b>	<b>AIR SYSTEM</b>			
2.20.1	Air compressor shall be a Cummins/WABCO with a capacity of 18.7 CFM.			
2.20.2	Manual petcock type drain valves shall be installed on all reservoirs of the air supply system.			
2.20.3	The air dryer shall be a WABCO System Saver 1200 IWT, with heater.			
2.20.4	The air system on the chassis shall be plumbed with color coded nylon tubing air lines.			
<b>2.21</b>	<b>FRAME</b>			
2.21.1	Each simple rail shall have yield strength of 110,000 psi.			
2.21.2	Frame components shall be treated with epoxy E-coat protection.			
<b>2.22</b>	<b>FRONT BUMPER</b>			
2.22.1	Painted steel front bumper.			

	<b>SPECIFICATIONS</b>	<b>YES</b>	<b>NO</b>	<b>DETAILS</b>
2.22.2	<p>The bumper will be extended 19.00" from front face of cab. Fabricated "U" shaped channel supports the weight of the bumper and provides the main strength in frontal crash. ¼" steel is formed into "C" shaped backing plates for mounting of the bumper and providing protection to the cab.</p> <p>The front bumper will have a hose capacity of 100' of 1¾" double jacket cotton-polyester hose.</p> <p>Two (2) straps with quick attach.</p> <p>Drain holes will be provided in the bottom of hose bed.</p>			
2.22.3	<p>Two (2) air horns «EMERGENCY TONE» shall be recessed in the front bumper and controlled with two (2) push buttons, driver and officer.</p>			
2.22.4	<p>Two (2) chromed steel tow hooks shall be installed under the bumper and attached to the front frame members.</p>			



	<b>SPECIFICATIONS</b>	<b>YES</b>	<b>NO</b>	<b>DETAILS</b>
<b>2.23</b>	<b>CAB TILT</b>			
2.23.1	Lift controls shall be located on the right side of the pump panel or front area of the body, in a convenient location. An instruction plate shall be installed near the control.			
2.23.2	An incandescent NFPA compliant light shall be mounted under the engine tunnel for area work lighting on the engine. The light shall activate automatically when the cab is tilted.			
2.23.3	An access hatch shall be provided to allow engine oil level checking.			
<b>2.24</b>	<b>WINDOWS</b>			
2.24.1	According to manufacturer's standard.			
2.24.2	All cab entry doors shall contain a conventional roll down window.			
<b>2.25</b>	<b>CLIMATE CONTROL</b>			
2.25.1	Heater-defroster units shall be provided inside the cab. <ul style="list-style-type: none"> <li>- One (1) 43,500 BTU heater-defroster unit with 350 CFM of air flow.</li> <li>- Two (2) 44,180 BTU auxiliary heaters with 276 CFM (each unit) of air flow shall be provided inside the crew cab, one (1) in each outboard rear-facing seat riser.</li> </ul>			
2.25.2	The heater/defroster and crew cab heaters shall be controlled by a single integral electronic control panel. The heater control panel shall allow the driver to control heat flow to the front and rear simultaneously. The control panel shall include highly visible, progressive LED indicators for both fan speed and temperature.			
2.25.3	In addition to the standard heating system, a customized air conditioning system will be furnished inside the cab and crew cab on the roof interior cab. Mounting the condenser on the roof, outside, behind the lightbar At minimum, 10 adjustable air outlets will be strategically located on the Cab. The air conditioner refrigerant will be R-134A and will be installed by a certified technician. For ease of operation, the control panel will include variable adjustment for temperature and fan control and be conveniently located on the dash in clear view of the driver.			

	<b>SPECIFICATIONS</b>	<b>YES</b>	<b>NO</b>	<b>DETAILS</b>
<b>2.26</b>	<b>INTERIOR</b>			
2.26.1	One (1) 12V, 15 amp, power point plug with rubber cover.			
2.26.2	The door panels shall include a stainless steel mirror finish.			
2.26.3	Each front door shall include one (1) chromed handle.			
2.26.4	Each rear door shall include one (1) chromed handle.			
2.26.5	Interior cab color and vinyl/fabric shall be Silver/Gray and the engine tunnel cover shall be gray painted.			
2.26.6	A 12V positive and negative wiring shall be located on the dash for future radio installation.			
<b>2.27</b>	<b>SEATS</b>			
2.27.1	A NFPA compliant seat belt monitoring system (SBMS) shall be provided.			
2.27.2	Air driver seat without SCBA rack, Seats Incorporated, 911 Series.			
2.27.3	Officer seat with SCBA rack, Seats Incorporated, 911 Series.			
2.27.4	One (1) rear facing seat (behind driver's seat) with SCBA rack, Seats Incorporated, 911 Series.			
2.27.5	One (1) rear facing seat (behind officer's seat) with SCBA rack, Seats Incorporated, 911 Series.			
2.27.6	Two (2) seats on crew area, ABTS with SCBA. The seats shall be front facing, center of the cab.			
2.27.7	All SCBA type seats in the cab shall have a Ziamatic, Model ULLH, SCBA holder bracket, except driver's seat.			
2.27.8	All seating positions shall be furnished with three (3)-point shoulder type red seat belt including "ready reach" device.			
2.27.9	All seat upholstery shall be gray Turnout Tuff material.			
2.27.10	Six (6) helmet holders will be installed in the cab. All helmet storage brackets provided in the cab shall be Ziamatic model UHH-1.			
<b>2.28</b>	<b>CAB EXTERIOR</b>			
2.28.1	Windshield wiper control shall have high, low, and intermittent modes.			

	<b>SPECIFICATIONS</b>	<b>YES</b>	<b>NO</b>	<b>DETAILS</b>
2.28.2	Winshield washer tank can be filled without raising the cab.			
2.28.3	Exterior slip-resistant handrails.			
2.28.4	Retrac model #613423 “West coast” style mirrors, heated and remote controlled shall be installed on each side of the front cab doors. Convex mirrors shall be also heated and remote controlled.			
2.28.5	Full circular inner fender liners in the wheel wells shall be provided.			
2.28.6	Mud flaps shall be installed behind the front wheels and behind cab.			
<b>2.29</b>	<b>CHARGING SYSTEM</b>			
2.29.1	There shall be four (4) Group 31 batteries.			
2.29.2	Battery jumper studs shall be located in the front step.			
2.29.3	DELCO REMY, 320 amp, 12V alternator			
<b>2.30</b>	<b>ELECTRICAL POWER DISTRIBUTION</b>			
2.30.1	A Kussmaul 1200 Pump Plus battery conditioner shall be supplied. The battery conditioner shall be mounted in the cab in the LH rear facing outer seating position. The Kussmaul battery conditioner display shall be supplied and installed above front wheel well. A Kussmaul Pump 12V air compressor shall be supplied. The air compressor shall be installed behind the driver's seat. The air compressor shall be plumbed to the air brake system to maintain air pressure.			
2.30.2	A Kussmaul 20 amp super auto-eject electrical receptacle shall be supplied with a red cover. It shall automatically eject the plug when the starter button is depressed. The electrical inlet shall be installed on the left hand side of cab over the wheel well.			
<b>2.31</b>	<b>LIGHTS</b>			
2.31.1	Sides and front of cab shall include LED marker lights.			
2.31.2	Whelen 600 LED turn flashers shall be installed near the front emergency flashers.			
<b>2.32</b>	<b>OPTICAL WARNING DEVICE</b>			

	<b>SPECIFICATIONS</b>	<b>YES</b>	<b>NO</b>	<b>DETAILS</b>
2.32.1	A flashing red light clearly labeled "Do Not Move Apparatus". In addition to the flashing red light, an audible alarm shall be included which shall sound while the light is activated.			
<b>2.33</b>	<b>BACKUP SAFETY DEVICE</b>			
2.33.1	PRECO, Model 1040, back-up alarm.			
2.33.2	A FEDERAL SIGNAL model CCD rearview camera with color 7" LCD screen shall be installed in the back. A protective aluminum cover shall be installed above the rear camera.			
<b>2.34</b>	<b>INSTRUMENTATION</b>			
2.34.1	Instrumentation and gauges shall have metric measurements.			
2.34.2	Engine hour meter required.			
<b>2.35</b>	<b>ADDITIONAL EQUIPEMENT</b>			
2.35.1	One (1) cab fire extinguisher and three (3) safety triangles.			
2.35.2	One (1) emergency road safety kit.			
2.35.3	A total of four (4) door keys for the manual door locks.			

	<b>SPECIFICATIONS</b>	<b>YES</b>	<b>NO</b>	<b>DETAILS</b>
<b>3.1</b>	<b>PUMP</b>			
3.1.1	<p>A brand new current year HALE DSD150 pump NFPA rated at 1500 GPM.</p> <p>The pumping system shall have an Elkhart 40-20 pressure relief valve. The pump shall have mechanical type seal.</p> <p>Pump shall be Class A and shall provide the following ratings at an altitude of less than 600 meters (2000 ft):</p> <ul style="list-style-type: none"> <li>➤ 1250 IGPM-100% of rating at 165 PSI</li> <li>➤ 1250 IGPM-100% of rating at 150 PSI</li> <li>➤ 840 IGPM-70% of rating at 200 PSI</li> <li>➤ 625 IGPM-50% of rating at 250 PSI</li> </ul>			
<b>3.2</b>	<b>PUMP SHIFT</b>			
3.2.1	<p>Pump shift shall be pneumatically-controlled and activated from inside.</p> <p>All indicators lights and pump engagement shall be NFPA 1901-2009 compliant.</p>			
<b>3.3</b>	<b>PRESSURE GOVERNOR</b>			
3.3.1	<p>A Class 1 pressure governor «TPG» shall be installed on the operator control panel.</p> <p>The pressure governor shall be calibrated by the manufacturer in mode « pressure/preset » and the pressure specified by the customer, which is about 120 PSI.</p>			
<b>3.4</b>	<b>PRIMER</b>			
3.4.1	<p>One (1) 12V positive displacement type rotary vane primer of a fluid-less design shall be provided for the fire pump priming system. The priming pump shall be same brand as the water pump.</p>			
<b>3.5</b>	<b>HEAT EXCHANGER</b>			
3.5.1	<p>Water flow from the fire pump shall be used to cool the engine coolant. The control, «¼ turn type» shall be located on pump panel and equipped with a ¾" valve.</p>			

	<b>SPECIFICATIONS</b>	<b>YES</b>	<b>NO</b>	<b>DETAILS</b>
<b>3.6</b>	<b>DRAIN SYSTEM</b>			
3.6.1	<p>A manual master drain valve shall be installed on the pump panel. The master pump drain assembly shall consist of a Trident Emergency bronze master drain with a rubber disc seal. The master drain shall have a rubber seal to prevent water from running out on the running board.</p> <p>The master drain shall provide independent ports for low point drainage of the fire pump and auxiliary devices.</p>			
3.6.2	An Innovative Control brand ¾" bleeder valve with lift-up handle shall be provided for each inlet and discharge. The drain shall be located at lowest point drainage of the fire pump.			
<b>3.7</b>	<b>PLUMBING</b>			
3.7.1	<p>All fabricated piping shall be a minimum of Schedule 10 stainless steel for superior corrosion resistance and decreased friction loss. The pump system shall utilize a stainless steel discharge manifold system and flexible high pressure hoses with stainless steel ends that allows a direct flow of water to discharge valves. The manifold is "foam ready" for Hale Foam Logix or FoamPro system with 3" plumbing.</p> <p>The specified foam system shall be plumbed to 1½" first speedlay, 1½" second speedlay, 2½" rear discharge and center bumper front jumpline.</p>			
3.7.2	<p>All the valves on the truck shall be Akron 8800 series.</p> <p>When flexibility is needed, a "Victaulic" fitting shall be installed.</p>			
3.7.3	The pump and steel accessories shall be painted black. Stainless steel plumbing components are not painted.			
<b>3.8</b>	<b>INTAKES AND DISCHARGES (GENERAL)</b>			
3.8.1	All intake and discharge valves shall be mechanically activated from the pump operator's panel. Control handles for tank supply, tank fill and all discharges shall be All control levers shall be «push-pull» style, including a «T» handle with sufficient space to allow the valve identification. The mounting will be Innovative Controls brand.			

	<b>SPECIFICATIONS</b>	<b>YES</b>	<b>NO</b>	<b>DETAILS</b>
3.8.2	All discharges and intake located at the sides and rear panels shall be provided with Innovative Controls brand. Chrome bezel with color identification.  These bezels shall be screwed into the panel without nuts at the back.			
3.8.3	All discharges, except the 1½" and 2" discharges shall have a 30 degree chrome droop adapter.			
3.8.4	The hoses threads shall be on the vehicle will be : 1½'' : NPSH 2½'' : CSA (3.125" X 5 tpi ) 6'' : NH			
<b>3.9</b>	<b>INTAKES</b>			
3.9.1	Two (2) 6" diameter suction ports with 6" NST male threads and removable zinc screens shall be provided, one (1) each side.			
3.9.2	One (1) ELECTRIC butterfly valve will be provided on the driver's side main pump inlet. The 6.00" inlet valve will be provided with a built-in, adjustable pressure relief valve and a 3/4" bleeder valve will be provided on the inlet side of the valve.  A HALE PVG priming valve shall be installed for independent priming the inlet.			
<b>3.10</b>	<b>DISCHARGES</b>			
3.10.1	All 2½" discharges shall be equipped with a 2½" female chrome-plated reducer to a male 1½" with a 1½" chrome plug retained by a chrome chain.			
3.10.2	Four (4) 2½" discharges, with 2½" valves, 30 degree chrome droop adapter shall be installed on each side and rear of the apparatus.  These discharges shall be located as follows:  Two (2) discharges left side with control on pump panel operator.  One (1) discharge right side with control on pump panel operator.  One (1) discharge rear, left side with control on pump panel operator.			

	<b>SPECIFICATIONS</b>	<b>YES</b>	<b>NO</b>	<b>DETAILS</b>
3.10.3	<p>Two (2) speedlay discharges shall be provided. Each speedlay section shall include one (1) 2" brass swivel above each hose compartment with a 1½" hose connection to allow the use of the hose from either side of the apparatus.</p> <p>The speedlay piping shall consist of two (2) 2" heavy duty hoses coming from the pump discharge manifold to the 2" swivel.</p>			
3.10.4	<p>One (1) discharge, 3" valve shall be installed on the top of the truck, for a deck gun, with the control on the pump panel.</p> <p>Flange #ANSI 150 shall be installed on this discharge.</p>			
3.10.5	<p>One (1) discharge, 3" valve shall be installed on right side on the pump panel with a 3.00" (F) National Standard hose thread x 4.00" Storz elbow adapter with Storz cap.</p>			
3.10.6	<p>There will be one (1) ½" discharge outlets piped to the front of the apparatus and located in the front bumper extension. Plumbing will consist of 2.00" piping and flexible hose with a 2.00" full flow ball valve controlled at the pump operator's panel. The discharges will terminate with a 1.50" with 90 degree swivel. A swivel will be located in the bottom of each hose bed and will swing from side to side.</p> <p>There will be Class 1 automatic drains provided at all low points in the plumbing.</p>			
<b>3.11</b>	<b>TANK FILL AND TANK-TO-PUMP</b>			
3.11.1	<p>One (1) 2" valve to fill water tank shall be provided and installed.</p> <p>The adapter on the tank shall be in stainless steel.</p>			
3.11.2	<p>The tank shall be connected to the pump with 4" piping and one (1) 3" valve. This pipe shall have a check valve, an anti-swirl mechanism to avoid pump cavitation and shall be connected to the tank.</p>			
<b>3.12</b>	<b>FOAM SYSTEM:</b>			
3.12.1	<p>A FOAMPRO 2002 12-volt electric motor drive positive displacement foam concentrate pump, rated up to 5 gpm (19 L/min) @ 150 psi with operating pressures up to 400 psi (27.6 BAR),</p>			



	<b>SPECIFICATIONS</b>	<b>YES</b>	<b>NO</b>	<b>DETAILS</b>
3.12.2	A foam level indicator shall be installed on pump panel, same model than the water level			
3.12.3	The system shall be capable of handling Class A foam			
3.12.4	Full flow Stainless Steel check valve shall be provided to prevent foam contamination of fire pump and water tank or water contamination of foam tank.			
3.12.5	The foam system shall be plumbed to two (2) speedlay and one (1) 2½” at the rear. If applicable, the front bumper discharge shall also plumbed to the foam system.			
3.12.6	The system shall be installed in a suitable, accessible location. The system must be installed and calibrated by the manufacturer before delivery.			
3.12.7	A label placed near foam concentrate tank fill opening that specifies the warning message “ DO NOT MIX BRANDS AND TYPE OF FOAM”			
3.12.8	A system rating panel placard shall be install near to the foam controller			

	SPECIFICATIONS	YES	NO	DETAILS																										
<b>4.1</b>	<b>PUMP OPERATOR CONTROL PANEL</b>																													
4.1.1	<p>Controls and gauges shall be located on driver side.</p> <p>The side intake/discharge pump panels shall be 14-gauge stainless steel with a brushed finish. Each panel shall be removable for easier maintenance access to plumbing components.</p> <p>Pump operator control panel shall be 14-gauge stainless steel with a brushed finish. The panel section shall be full hinged on one side for easier maintenance access to electrical components.</p> <p>The 2 (two) inspection doors shall open from the top and they shall be held in the open position with gas cylinders.</p> <p>Color coded pump panel labels shall be in accordance with the recommendations of NFPA 1901as follows:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;">Discharge</th> <th style="width: 40%;">Color</th> </tr> </thead> <tbody> <tr> <td>Preconnect #1 or front bumper jump line</td> <td>Orange</td> </tr> <tr> <td>Preconnect #2</td> <td>Red</td> </tr> <tr> <td>Preconnect #3 or discharge #1</td> <td>Yellow</td> </tr> <tr> <td>Preconnect #4 or discharge #2</td> <td>White</td> </tr> <tr> <td>Discharge #3</td> <td>Blue</td> </tr> <tr> <td>Discharge #4</td> <td>Black</td> </tr> <tr> <td>Discharge #5</td> <td>Green</td> </tr> <tr> <td>Deluge/deck gun</td> <td>Silver</td> </tr> <tr> <td>Large-diameter hose</td> <td>Yellow with white border</td> </tr> <tr> <td>Foam line(s)</td> <td>Red with white border</td> </tr> <tr> <td>Booster reel(s)</td> <td>Gray</td> </tr> <tr> <td>Inlets</td> <td>Burgundy</td> </tr> </tbody> </table>	Discharge	Color	Preconnect #1 or front bumper jump line	Orange	Preconnect #2	Red	Preconnect #3 or discharge #1	Yellow	Preconnect #4 or discharge #2	White	Discharge #3	Blue	Discharge #4	Black	Discharge #5	Green	Deluge/deck gun	Silver	Large-diameter hose	Yellow with white border	Foam line(s)	Red with white border	Booster reel(s)	Gray	Inlets	Burgundy			
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	<b>SPECIFICATIONS</b>	<b>YES</b>	<b>NO</b>	<b>DETAILS</b>
4.1.2	<p>Innovative Controls gauges reading in psi and kPa. All 4½" and 2½" pressure gauges shall be filled with interlube.</p> <p>There shall be one (1) 4½" diameter, 30"-0-400 psi (100-0-2800 kPa) gauge connected to the pressure manifold and another one (1) connected at the pump inlet, the whole thing in a single assembly with chrome bezel and colored labels.</p> <p>There shall also be one (1) 2½" diameter, 30"-0-400 psi (100-0-2800 kPa) connected to every discharge.</p>			
4.1.3	<p>Pump control panel shall include the following elements:</p> <ul style="list-style-type: none"> <li>➤ Instruments showing battery voltage, engine temperature, engine oil pressure and engine RPM.</li> <li>➤ An LED 4-lights CLASS 1 water level.</li> <li>➤ A vacuum and pressure port for pump performance testings.</li> <li>➤ Four (4) rocker watertight switches in a chrome switch bank for scene lights (if option selected), hose bed light, pump heater and pump lights. The heater shall have a red pilot light.</li> <li>➤ Water tank drain valve control.</li> <li>➤ Auxiliary heat exchanger control.</li> </ul>			
<b>4.2</b>	<b>COLD PACKAGE</b>			
4.2.1	A 42,000 BTU heater shall be installed in the pump compartment. This heater shall use the truck coolant system.			
4.2.2	A 2-section aluminum heat pan shall be installed below the pump house to prevent freezing and shall be removable without any tools.			

	<b>SPECIFICATIONS</b>	<b>YES</b>	<b>NO</b>	<b>DETAILS</b>
<b>5.1</b>	<b>TANK</b>			
5.1.1	A 1000 gallon (U.S.) booster tank and a 30 gallon (U.S.) foam tank shall be supplied. The booster tank shall be completely removable without disturbing or dismounting the apparatus body structure.			
5.1.2	The booster tank shall be entirely in ½" thick copolymer polypropylene with 3/8" swash partitions. The assembly shall be welded utilizing thermoplastic welding technology. The booster tank shall have lifting eyelets for facilitating the removal.			
5.1.3	The water/foam tank design shall be in accordance with CAN/ULC-S515 and NFPA 1901 requirements. The foam tank shall have one (1) air intake installed on the top of the foam tank. The tank shall provide two (2) openings, one (1) for the injection system supply and the second one to allow tank cleaning with a 1" hose with Class 1, model BV10, 1" valve.			
5.1.4	At the front, under the tank, there shall be a dirt collector with a 1½" drain and a 3" plug. The drain shall be installed at the bottom of the collector to allow fully draining of the tank. This drain control shall be on the operator pump panel, not in a compartment. The valve shall be enclosed in the heat pan assembly to prevent freezing.			
5.1.5	One (1) manual fill tower shall be located to the left forward area of the tank. The tower shall be 14"x14" and a 6" vent/overflow pipe shall be installed halfway-up the tower. This pipe shall empty behind rear wheels.			

	<b>SPECIFICATIONS</b>	<b>YES</b>	<b>NO</b>	<b>DETAILS</b>
<b>6.1</b>	<b>GENERAL (BODY AND PUMP HOUSE)</b>			
6.1.1	<p>The aluminum used to build the body and pump house shall be 5052-H32 marine grade.</p> <p>The thickness of the aluminum shall be 3/16" for the bottom and the back of each compartment and for the front and back of the body. Only the wall between compartments shall be 1/8" thick.</p> <p>The aluminum tread plates shall be 3003-H22, 1/8" thick and shall meet NFPA slip resistance, when specified.</p>			
6.1.2	<p>All joints that may corrode or degrade by calcium and water infiltration shall be sealed by a continuous welding cord outside.</p> <p>Where there is a possibility of water infiltration between aluminum tread plates and painted aluminum, gray silicon sealer shall be applied.</p>			
6.1.3	The design of the body is such that the water tank of the truck shall not be visible outside. Any type of "WET SIDE" design shall be refused.			
6.1.4	All joints and weldings shall be polished and so leave no sharp edge.			
<b>6.2</b>	<b>PUMPHOUSE</b>			
6.2.1	A step shall be installed each side of the pump house, on its full width. The step shall have 1 1/4" in depth built from aluminum grip-strut.			
6.2.2	<p>The top of the pump house shall be made of aluminum tread plates and shall meet ULC requirements.</p> <p>The front of the pump house shall be covered by tread plates. Between the cab and the pump house there shall be an access door to access to the pump without any tools.</p>			

	SPECIFICATIONS	YES	NO	DETAILS
6.2.3	<p>The pump module shall have a total width of 26" and two upper storage areas. The lower transverse storage area shall accommodate two preconnected handlines (150' of 1¾" hose with nozzle). The bottom of this compartment shall at approx 65" from the ground.</p> <p>The speedlay areas shall include two storage trays. The trays shall be constructed of 3/16" (.187") smooth aluminum plate with an exterior sanded finish. The walls and floor of the tray shall be slotted to prevent the accumulation of water and allow for ventilation of wet hose.</p> <p>A protective strip of 0.375" UHMW Polyethylene shall be bolted to the bottom of outside edge speedlay tray. Two (2) 1" stainless steel rolls, one on each side, to facilitate the removal and insertion of the trays in this compartment. The speedlay side access shall have a restraint system consist of a vinyl tarp with Velcro along the entire perimeter.</p> <p>Pump service access doors shall be provided four (4) access to the pump. One (1) in L1, One (1) in R1, one (1) in the front pump house when the cab is open and one (1) on the top in front of the body. The doors shall be secured with tool-free hardware.</p>			
6.2.4	A «P» shaped rubber gasket of about 1" shall be installed between the pumphouse and the body to avoid friction of the modules.			
6.2.5	The pumphouse shall be attached to the chassis with rubber insulation between the pump house and the chassis.			
6.2.6	<p>An enclosed compartment shall be built above the pump side panels.</p> <p>Two (2) aluminum tread plates doors shall be built to give access to this compartment, one each side. The doors shall be equipped with a D-Ring handle. Doors shall open from the top and they shall be held in the open position with a gas cylinder.</p> <p>The compartment shall be lit by two (2) LED lights Amdor Lumabar, 12".</p>			
6.2.7	The pumphouse shall have the same height as the body.			
<b>6.3</b>	<b>BODY ATTACHMENT</b>			

	<b>SPECIFICATIONS</b>	<b>YES</b>	<b>NO</b>	<b>DETAILS</b>
6.3.1	<p>The main body shall be attached to the chassis frame rails with six (6) U-bolts.</p> <p>U-bolts shall be made of two (2) 5/8" diameter steel bolts and two (2) 1/2" thick x 2" width steel plates. There shall be insulation between U-bolts and body.</p> <p>The mounting shall allow easy removal of the body in case of major repair.</p>			
6.3.2	<p>There shall be a rubber insulation to avoid contact between the aluminum body and the steel frame rails.</p>			

	<b>SPECIFICATIONS</b>	<b>YES</b>	<b>NO</b>	<b>DETAILS</b>
<b>6.4</b>	<b>BODY</b>			
6.4.1	The wheel well shall have monohull fiberglass fenders.			
6.4.2	A "P" shaped fenderette shall be constructed from fiber glass with a bright black finish.			
6.4.3	The wheel well outer side face shall be made of 3/16" aluminum thick and shall be painted the same color as the body.			
6.4.4	The body shall have rubrails mounted along the sides and at the rear. The rubrail shall be C-channel in design and constructed of 3/16" thick aluminum extrusion. The rubrail shall be 2-1/4" height x 1-1/4" deep and shall extend beyond the body width to protect compartment doors and the body sides. The depth shall allow marker and/or warning lights to be recessed inside for protection.			
6.4.5	The body structure shall be made from aluminum extrusion 2" x 3" x 1/4" and 3" x 3" x 1/8". The body design shall allow the booster tank to be completely removable without disturbing or dismounting the apparatus body structure in case of repair.			
<b>6.5</b>	<b>HOSE BED</b>			
6.5.1	The hose bed shall be made above the water tank and shall have a width of at least 60", a length of at least 116" and a height of at least 14". The sides of the hose bed shall be made from aluminum tread plate. The hose bed floor shall be made of easily removable interlocking plastic tiles, minimum 5/8" thick.			
6.5.2	The one (1) hose bed divider shall be constructed of 3/16" brushed aluminum plate with a reinforced aluminum base welded to the bottom. The rear end of the divider shall have a 3" radius corner and a handle shall be integrated to the divider.			



	<b>SPECIFICATIONS</b>	<b>YES</b>	<b>NO</b>	<b>DETAILS</b>
6.5.3	<p>A black vinyl tarp shall cover the hose bed, retained by a Velcro strip fixed all around the hose bed. A hole shall be made around the fill tower, allowing opening of the fill tower cover freely.</p> <p>The tarp for the speedlays shall be made from the same black vinyl.</p> <p>An orange strap shall be installed to visually show where to open the tarp.</p>			
<b>6.6</b>	<b>COMPARTMENTS</b>			
6.6.1	<p>Each compartment seam shall be sealed using a permanent pliable silicone caulk.</p> <p>The walls of each compartment shall have openings for adequate ventilation.</p> <p>Each compartment shall have aluminum extrusion tracks for use with adjustable shelves. The tracks shall be vertically mounted and attached to the side and/or rear walls of the compartments.</p> <p>The flooring shall have drain holes to prevent the accumulation of water.</p> <p>The flooring shall be covered by plastic interlocking tiles 5/8" thick.</p>			
6.6.2	<p>Compartments doors shall be roll-up type with anodized aluminum finish except fo L3 and R3.</p> <p>Doors shall be AMDOR brand.</p> <p>Compartments lights switch shall be located at the top of the door. The switch shall be magnetic type AMDOR brand.</p> <p>A drip pan shall be supplied under each roll-up door. The drip pan shall be made from a high strength aluminum alloy. A drain shall be installed on each drip pan.</p>			
6.6.3	<p>The top and the front of the compartments shall be covered by 1/8" thick aluminum tread plate.</p>			

	<b>SPECIFICATIONS</b>	<b>YES</b>	<b>NO</b>	<b>DETAILS</b>
6.6.4	<p>One (1) adjustable shelf shall be installed on each compartment <b>upper section</b> and above rear wheel compartment.</p> <p>The shelves shall be constructed of 3/16" (.187") smooth aluminum plate, with a minimum 2" front and rear lips. The adjustable shelves shall a minimum capacity of 400 lbs.</p> <p>The shelves shall be sized, width and depth, to match the size and location in the compartment.</p> <p>The shelves are cover by a plastic interlocking plastic tile system shall have minimum 5/8" thick.</p>			
6.6.5	<p>Each bottom compartment shall be equipped by a roll-out tray shall be constructed of 3/16" smooth aluminum plate with a sanded finish and welded corners for increased strength and rigidity. The tray shall be sized in width and depth as applicable.</p> <p>Each tray are cover by a plastic interlocking plastic tile system shall have minimum 5/8" thick.</p>			
<b>6.7</b>	<b>LEFT SIDE COMPARTMENTS</b>			
	<b>(Front of rear wheels) – L1</b>			
6.7.1	The compartment door opening shall be approximately 26" wide x 13" deep x 61" height. This compartment is the pump panel operator.			

	<b>SPECIFICATIONS</b>	<b>YES</b>	<b>NO</b>	<b>DETAILS</b>
	<b>(Front of rear wheels) – L2</b>			
6.7.2	The compartment door opening shall be approximately 28" wide x 28"/19" deep x 61" height.			
	<b>(Above rear wheels) – L3 (Painted pan door)</b>			
6.7.3	The compartment door opening shall be approximately 58" wide x 19" deep x 27" height.			
	<b>(Rear of rear wheels) – L4</b>			
6.7.4	The compartment door opening shall be approximately 46" wide x 28"/19" deep x 61" height.			
	<b>(Top-Left-Front coffin) – TLF</b>			
6.7.5	This compartment, accessible from the top is located at the front of the body, driver side. The compartment shall be 85 " length x 19 " width x 15 " depth. The compartment top lid shall be built from aluminum treadplate and shall include a stainless steel grab handle and shall be held in the open position by gas cylinders. This compartment shall be weatherproof.			
	<b>(Top-Left-Rear coffin) – TLR</b>			
6.7.6	This compartment, accessible from the top is located at the rear of the body, driver side. The compartment shall be 85 " length x 19 " width x 15 " depth. The compartment top lid shall be built from aluminum treadplate and shall include a stainless steel grab handle and shall be held in the open position by gas cylinders. This compartment shall be weatherproof.			

	<b>SPECIFICATIONS</b>	<b>YES</b>	<b>NO</b>	<b>DETAILS</b>
<b>6.8</b>	<b>RIGHT SIDE COMPARTMENTS</b>			
	<b>(Front of rear wheels) – R1</b>			
6.8.1	The compartment door opening shall be approximately 24" width x 28"/19" depth x 51" height.			
	<b>(Front of rear wheels) – R2</b>			
6.8.2	The compartment door opening shall be approximately 21" width x 28"/19" depth x 51" height.			
	<b>(Above of rear wheels) – R3 (Painted pan door)</b>			
6.8.3	The compartment door opening shall be approximately 58" width x 14" depth x 19" height.			
	<b>(Rear of rear wheels) – R4</b>			
6.8.3	The compartment door opening shall be approximately 35" width x 28"/19" depth x 51" height.			
<b>6.9</b>	<b>REAR COMPARTMENT</b>			
6.9.1	The compartment door opening shall be approximately 39" width x 28" depth x 31" height.			
6.9.2	A storage compartment for pike poles and folding ladder shall be built left rear side under the hose bed. It shall contain one (1) 10' folding ladder and three (3) 6' pike poles with « D handles ».  This compartment door shall be covered by chevron striping.			
6.9.3	The upper compartment shall be approximately 44" wide x 15" high x 9" deep. The door shall be in aluminum with a « D-ring » handle and shall be held in the open position by gas cylinders.  The door shall be made from aluminum and cover by chevron striping.			
<b>6.10</b>	<b>REAR ACCESS</b>			
6.10.1	A full wide step shall be built above the rear compartment made of aluminum tread plate meeting NFPA requirement.			

	<b>SPECIFICATIONS</b>	<b>YES</b>	<b>NO</b>	<b>DETAILS</b>
6.10.2	<p>A tailboard step shall be provided at the rear of the body. The tailboard shall have 11 ¾" in depth.</p> <p>The tailboard step shall be formed from 1/8" aluminum tread plate shall be in accordance with current ULC requirements and shall include three (3) grip strut inserts incorporated into the diamond plate.</p>			
6.10.3	<p>All handrails on body and pump compartment will be 1.25" diameter aluminum extrusion with rubber insert, to provide a positive gripping surface.</p> <p>Chrome plated end stanchions will support the handrail. Plastic gaskets will be used between end stanchions and any painted surfaces.</p> <p>Drain holes will be provided in the bottom of all vertically mounted handrails.</p> <p>Handrails will be provided to meet NFPA 1901 section 15.8 requirements.</p>			
6.10.4	<p>Six (6) CAST PRODUCTS with LED, 8" x 8" folding steps, shall be installed at the back, three (3) on each side to allow access to the hose bed.</p> <p>The step light shall be activated when the parking brake is set, or when the vehicle marker lights are activated.</p>			
6.10.5	<p>The rear tires shall have a set of black mud flaps mounted behind the rear chassis wheels.</p>			
6.10.6	<p>Two (2) heavy duty tow eyes made from steel having 2-1/2" diameter shall be mounted below the body at the rear of the vehicle to allow towing (not lifting).</p> <p>The tow eyes shall be painted black.</p> <p>There shall be a plate specifying the capacity of the assembly.</p>			
<b>6.11</b>	<b>LADDER RACK:</b>			
6.11.1	<p>The rack will be made of extruded aluminum and has two hydraulic cylinders, one in a front and another at the rear. A grease point shall be installed on each cylinder pivot. This shall allow for easier access from ground level and shall allow the ladder to be stowed parallel to the body.</p> <p>The system will be equipped with 2 electric actuators, one on each arm. Everything interlocked as stipulated in the ULC-S515 standard.</p> <p>The system is made to contain two suction tubes 6 "x10', one 3-section ladder with pole, one 24-foot 2-section ladder and</p>			

	<b>SPECIFICATIONS</b>	<b>YES</b>	<b>NO</b>	<b>DETAILS</b>
	<p>one 14-foot roof ladder. (Duo Safety ladders not provided).</p> <p>Three (3) red flashing LED lights shall be installed to indicate that the hydraulic rack is ajar. Two (2) lights shall be installed at each end of the rack and the third light in the vehicle cab.</p> <p>An audible alarm shall also be installed on that cab light.</p> <p>A FEDERAL SIGNAL 97-decibel alarm, model 210331 shall be installed outside the vehicle and will operate only when the rack is in motion.</p> <p>Controls of the rack shall be placed at the rear of the vehicle. The switch will be in a CAST PRODUCTS weatherproof aluminum box.</p> <p>The hydraulic pump shall be powered by a high gauge wire adequately protected by a 200-amp fuse easily accessible.</p>			
<b>6.12</b>	<b>6" SUCTION TUBE RACK</b>			
6.12.1	Suction tubes shall be installed on the hydraulic rack..			
<b>6.13</b>	<b>REAR WHEELS WELL OUTFITTING</b>			
6.13.1	<p>Four (4) compartments for pneumatic cylinders shall be installed in the wheels well.</p> <p>The rear left compartment shall contained one (1) cylinder whereas the three (3) other could each contain two (2) cylinders.</p> <p>Every cylinder compartment shall be built with aluminum pipes and the bottom shall be covered with rubber mat according to the CAN/ULC-S515 section.</p> <p>Every compartment shall an aluminum door of the same color as the vehicle with a “compression type” latch.</p> <p>The doors shall be designed to avoid water and dust infiltration with reinforcement inside the door..</p>			

	<b>SPECIFICATIONS</b>	<b>YES</b>	<b>NO</b>	<b>DETAILS</b>
<b>7.1</b>	<b>ELECTRICAL SYSTEM</b>			
7.1.1	<p>The electrical system shall meet CAN/ULC S515 and NFPA 1901 requirements.</p> <p>The electrical system shall include the following:</p> <ul style="list-style-type: none"> <li>a) The wiring in the body shall be securely fastened with stainless steel bolts attached to all each 8"-10";</li> <li>b) Electrical terminals in weather exposed areas shall have a non-conductive grease or spray applied;</li> <li>c) Adhesive device shall be not acceptable;</li> <li>d) Every electrical wiring shall be covered by a plastic split sleeve;</li> <li>e) Any electrical component that is installed in a exposed area shall be mounted in a manner that shall not allow moisture to accumulate in it;</li> <li>f) Heat shrink material and sealed connectors shall be used to protect exposed connections;</li> <li>g) A coil of wire must be provided behind an electrical appliance to allow them to be pulled away from mounting area for inspection and service work;</li> <li>h) All lights that have their sockets in a weather exposed area shall have corrosion preventative compound added to the socket terminal area.</li> </ul>			
7.1.2	The wiring of the body shall be color coded and number coded at each 3".			
7.1.3	<p>Every circuits added to the chassis shall be protected by internal electronic circuit breakers with transistor outputs. The system shall operate in accordance with the J1939 communication protocol.</p> <p>The system shall comprise three nodes of at least 8 inputs and 16 outputs, each node shall be protected by an individual breaker GROTE model 54-852PL. They shall be located to optimize the wiring, two (2) back into the compartments and one (1) in the pumphouse.</p> <p>The vehicle shall have one (1) programming plug installed near the multiplex node in the pumphouse.</p>			
7.1.4	The switches in cab and pump panel shall have an identification meets ULC and NFPA.			

	<b>SPECIFICATIONS</b>	<b>YES</b>	<b>NO</b>	<b>DETAILS</b>
<b>7.2</b>	<b>WARNING AND EMERGENCY</b>			
7.2.1	Two (2) WHELEN M6 SERIES red light heads, red lens, shall be provided. The lights shall include chrome flanges. The lights shall be mounted facing forward of the apparatus, above the headlights.			
7.2.2	Four (4) WHELEN M6 SERIES red light heads, red lens, shall be provided. The lights shall include chrome flanges. <ul style="list-style-type: none"> <li>➤ Two (2) each side in the rear wheel well</li> <li>➤ Two (2) each corner of the front bumper</li> </ul>			
7.2.3	A lightbar WHELEN # FREEDOM IV-V - 72" red and white LED shall be installed on the cab roof. The lens color shall be clear.			
7.2.4	Two (2) LED beacon Whelen # L31H shall be supplied and installed on upper of the rear body.			
7.2.5	Headlights shall be alternative on high beam position.			
7.2.6	A Whelen 295SLSA1 electronic siren shall be mounted in the cab.			
7.2.7	The siren shall feature 100-watt output, with one (1) 100w speakers.			
7.2.8	The front bumper shall include a mechanical Federal Q2B™ siren. The siren shall be recess in the bumper on the furthest outboard section of the bumper on the driver side. The siren shall be actuated by two (2) foot switches mounted in the front section of the cab for use by the driver and officer. A momentary siren brake switch shall be provided in the switch panel on the dash.  A push button identified “Evacuation Alert” will be installed to the pump operator panel and plugged to the siren manual mode.			
<b>7.3</b>	<b>LIGHTING</b>			
7.3.1	LED, GROTE model 47962 / 47963 clearance/marker lights.			
7.3.2	The center top rear marker lights shall be a GROTE model 253-4400-1 for marker light AND for brake light signal.			



	<b>SPECIFICATIONS</b>	<b>YES</b>	<b>NO</b>	<b>DETAILS</b>
7.3.3	<p>Two (2) kits of WHELEN M6 SERIES LED lights shall be installed in a four (4) light vertical housing # M6FCV4 each side at rear. Light functions shall be as follows : two (2) red running light with red brake light, two (2) clear backup light, two (2) amber populated arrow pattern turn signal, two (2) lower NFPA warning light.</p> <p>The rear lights wiring in body compartment will be entirely covered with a protective aluminum cover.</p> <p>Two (2) amber, one each side, GROTE # 47963 LED auxiliary turn lights each side front of body, recessed in the rubrail.</p>			
7.3.4	<p>One (1) white LED GROTE #60681 licence plate light mounted at the rear of the body.</p> <p>The plate shall be mounted with four (4) stainless steel bolts.</p>			
<b>7.4</b>	<b>AUXILIARY LIGHTS</b>			
7.4.1	<p>Two (2) 20" AMDOR, LUMABAR # AY-9700-012 LED lights shall be mounted under the control panel light shield, one (1) each side.</p> <p>These lights shall automatically turn on when the pump is engaged or when the "pump light" switch is on and when the park brake is set.</p>			
7.4.2	<p>One (1) Amdor AY9220-032 LED light shall be installed in the pumphouse and it shall be controlled by the "pump light" switch on the pump panel.</p>			
7.4.3	<p>Two (2) LED lights AMDOR LUMABAR compartment light strips shall be mounted in each body compartment.</p> <p>Lentgh of each light is the same as the door opening height (+/- 5").</p>			
7.4.4	<p>All perimeter lights under cab and body shall be Truck Lite 60 series LED lights, as follow :</p> <ul style="list-style-type: none"> <li>➤ Four (4) under cab steps</li> <li>➤ Two (2) under pumphouse steps</li> <li>➤ Two (2) under rear bumper</li> </ul> <p>The ground lighting shall be activated by the opening of a cab door, or when the parking brake is set and the vehicle marker lights are activated, or when the transmission is on reverse.</p>			

	<b>SPECIFICATIONS</b>	<b>YES</b>	<b>NO</b>	<b>DETAILS</b>
7.4.5	<p>A LED TecNiq model E03 light shall be installed under each 6" inlet on pump panel for steps lighting.</p> <p>The lights shall turn on when the parking brake is set and the marker lights are turned on or with the pump light switch.</p>			
7.4.6	<p>One (1) LED light GROTE # 63F61 or JETCO # 300-3161F-8 shall be used for hose bed light and for the deck gun. It shall be installed in the front of the body.</p> <p>The hose bed light shall turn on when the parking brake is set and when the marker lights are turned on, or with the hose bed switch.</p>			
7.4.7	<p>Two (2) LED light GROTE # 63F61 or JETCO # 300-3161F-8 installed at the rear, upper body, close to the beacon warning lights.</p> <p>The rear light lights shall turn on when the parking brake is set and the rear lights switch is "on" or when the transmission is on reverse.</p> <p>The rear lights switch shall be waterproof and installed in a sealed aluminum box CAST PRODUCTS on the left rear side.</p>			
7.4.8	<p>Two (2) FRC model SPA900 LED scene lights shall be installed on the pump compartment. The back of the lights shall be protected to avoid any breakage of the light or the wire.</p> <p>The weatherproof switch shall be located on the pump operator panel. These lights shall turn on when the parking brake is set.</p> <p>Two (2) others FRC model SPA900 LED scene lights shall be installed on the rear face of the vehicle. These lights shall turn on with back up lights or with the rear left side weatherproof switch that turn on the high part of the body lights.</p>			
7.4.9	<p>Fire Research Spectra LED Scene Light model EVOLUTION II #FCA530-V20, 20,000 lumens side mount push up telescopic light shall be installed. The light pole shall be anodized aluminum and have a knurled twist lock mechanism to secure the extension pole in position. The extension pole shall rotate 360 degrees. The outer pole shall be a grooved aluminum extrusion and qualify as an NFPA compliant handrail.</p> <p>The switch was located near at the light base with a waterproof cover.</p>			

	<b>SPECIFICATIONS</b>	<b>YES</b>	<b>NO</b>	<b>DETAILS</b>
<b>8.1</b>	<b>BODY FINISH DETAILS</b>			
8.1.1	All nuts and rivets installed on the apparatus shall be stainless steel			
8.1.2	Where dissimilar metals are to be mounted together, the mounting base material shall have an isolation barrier prior to assembly to prevent dissimilar metal reaction.			
8.1.3	Caution, Warning, Danger and other safety related signs shall meet the requirement of ANSI Z535.4, Product Safety Signs and Labels.			
8.1.4	A rust preventive barrier, Sinto or Tectyl, shall be sprayed under the entire body and body substructure, before their installation on the chassis so that no area is left unprotected.			
<b>8.2</b>	<b>BODY AND CHASSIS PAINT</b>			
8.2.1	The painting shall be conducted in accordance with best practices followed in the heavy equipment industry to ensure the best protection against corrosion and abrasion.			
8.2.2	Paint and primer used shall be of good quality and type « base Coat / Clear Coat ». The painting process shall be in accordance with the paint manufacturer.			
8.2.3	All removable parts such as brackets, lights, doors, and steps shall be removed before painting the body and shall be painted separately if required.			
8.2.4	The cab and body shall be painted red Pierce #90.			
8.2.5	The body compartment interiors shall have a Zolatone grey (20-72) finish.			
8.2.6	The exterior of the pump house shall have a smooth brushed finish.			
8.2.7	All shelves and trays have a Zolatone painted finish as customer specified color.			
<b>8.3</b>	<b>LETTERING, STRIPING</b>			

	<b>SPECIFICATIONS</b>	<b>YES</b>	<b>NO</b>	<b>DETAILS</b>
8.3.1	<p>A reflective stripe, 6'' wide with a «Z» and 2 other 1'' stripe, each side, shall be installed according to the ULC standard :</p> <ul style="list-style-type: none"> <li>➤ At least 50 % of the total length of the vehicle</li> <li>➤ At least 25 % of the width of the front of the vehicle.</li> </ul>			
8.3.2	<p>At minimum, 50 % of the rear body visible surface shall be covered by chevron stripes according to NFPA. The stripes shall be red and yellow, 3M-983 brand, (models 72 and 71).  The front bumper shall be covered by chevron, matching the pattern and color of the rear chevrons.  The reflective strips should be 3M brand.</p>			

	<b>SPECIFICATIONS</b>	<b>YES</b>	<b>NO</b>	<b>DETAILS</b>
<b>9.1</b>	<b>LOOSE EQUIPEMENT TO BE SUPPLIED BY BIDDER</b>			
9.1.1	Two (2) folding wheels chocks ZICO, 44" diameter tires with brackets shall be installed under L1 compartment.			
9.1.2	Two (2) 6" NH chrome caps for pump inlets.			

	<b>SPECIFICATIONS</b>	<b>YES</b>	<b>NO</b>	<b>DETAILS</b>
<b>10.1</b>	<b>WARRANTY</b>			
10.1.1	The warranty is effective upon delivery of the vehicle.			
10.1.2	One (1) year material and workmanship limited warranty (bumper-to-bumper).			
10.1.3	A Cummins five (5) year/160,000 km limited engine warranty will be provided.			
10.1.4	A TRW one (1) year limited steering gear warranty will be provided on the pump.			
10.1.5	The chassis manufacturer fifty (50) year custom chassis frame limited warranty will be provided.			
10.1.6	An Eaton five (5)-year/160,000 km parts and labor warranty will be provided for front axle.			
10.1.7	An Eaton five (5)-year/160,000 km parts and labor warranty will be provided for rear axle.			
10.1.8	A Wabco three (3) year parts and labor limited warranty on brake system ABS/ATC/RSC/ESC.			
10.1.9	Ten (10) year limited warranty on structural integrity custom cab and body.  This warranty will cover all the structural components of the body and cabin against defects in materials and workmanship. Excluded from this warranty is hardware, mechanical and electrical items or paint finish.			
10.1.10	Ten (10) year pro-rated limited warranty on the cab paint.  This warranty will cover the paint and perforations due to corrosion, delaminating and cracking under normal use of the vehicle.			
10.1.11	Five (5) year pro-rated limited warranty on the body paint.  This warranty will cover the paint and perforations due to corrosion, delaminating and cracking under normal use of the vehicle.			
10.1.12	Five (5) year/unlimited km parts and labor warranty will be provided for transmission.			

	<b>SPECIFICATIONS</b>	<b>YES</b>	<b>NO</b>	<b>DETAILS</b>
10.1.13	The transmission cooler will carry a five (5) year parts and labor warranty (exclusive to the transmission cooler). In addition, a collateral damage warranty will also be in effect for the first three (3) years of the warranty coverage and will not exceed \$10,000 in Canadian currency per occurrence.			
10.1.14	Ten (10) year pump stainless steel plumbing components limited warranty.  This warranty will cover all components of the pump except the valves against defects in materials and workmanship. Excluded from this warranty are the breakage caused by freezing.			
10.1.15	A Hale two (2)-year/2,000 hours parts and labor warranty will be provided.  This warranty will cover all components of the pump except the valves against defects in materials and workmanship. Excluded from this warranty are the breakages caused by freezing.			
10.1.16	The water/foam tank parts and labor warranty shall be provided for life (25 years) against any manufacturing defects.			