FORM A: BID
(See B7)

1. Contract Title — SUPPLY AND DELIVERY OF FIRE PUMPER APPARATUS

2. Bidder

_____
Name of Bidder

_____
Usual Business Name of Bidder as it appears on Invoice (if different from above)

_____
Street

_____
City Province Postal Code

(Mailing address if different)

_____
Email Address of Bidder

_____
Facsimile Number

_____
Street or P.O. Box

_____
City Province Postal Code

(Choose one)

_____
GST Registration Number (if applicable)

The Bidder is:

☐ a sole proprietor

☐ a partnership

☐ a corporation

carrying on business under the above name.

3. Contact Person — The Bidder hereby authorizes the following contact person to represent the Bidder for purposes of the Bid.

_____
Contact Person Title

_____
Telephone Number Facsimile Number

_____
Email Address

4. Definitions — All capitalized terms used in the Contract shall have the meanings ascribed to them in the General Conditions and D3.

5. Offer

The Bidder hereby offers to perform the Work in accordance with the Contract for the price(s), in Canadian funds, set out on Form B: Prices, appended hereto.

6. Commencement of the Work

The Bidder agrees that no Work shall commence until he/she is in receipt of a notice of award from the Award Authority authorizing the commencement of the Work.

7. Contract

The Bidder agrees that the Bid Opportunity in its entirety shall be deemed to be incorporated in and to form a part of this offer notwithstanding that not all parts thereof are necessarily attached to or accompany this Bid.

8. Addenda

The Bidder certifies that the following addenda have been received and agrees that they shall be deemed to form a part of the Contract:

No. _____ Dated _____

_____ _____

_____ _____

9. Time

This offer shall be open for acceptance, binding and irrevocable for a period of sixty (60) Calendar Days following the Submission Deadline.

10. Signatures

The Bidder or the Bidder's authorized official or officials have signed this

_____ day of _____ , 20_____ .

Signature of Bidder or
Bidder's Authorized Official or Officials

_____

_____
(Print here name and official capacity of individual whose signature appears above)

_____

_____
(Print here name and official capacity of individual whose signature appears above)

FORM B: PRICES
(See B8)

SUPPLY AND DELIVERY OF FIRE PUMPER APPARATUS

UNIT PRICES

ITEM NO.	DESCRIPTION	SPEC. REF.	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1.	**Fire Pumper Apparatus**	11066	Each	8	$	$

TOTAL BID PRICE (GST and MRST extra) (in figures) $ _____

(in words) _____

_____

_____
Name of Bidder

FORM N: DETAILED SPECIFICATIONS 11066

1.0 INTENT-

1.1 It is the intent of these specifications to describe a **Fire Pumper Apparatus**

1.2 The Fire Pumper Apparatus, hereinafter referred to as "Custom Build Unit", shall be new 2012 or newer model as specified within this document. The Fire Pumper Apparatus shall be furnished complete and ready for use. Any parts not specifically mentioned but which are required to complete and place the apparatus in successful operation shall be furnished as though specifically mentioned in these specifications.

1.3 The ratings specified herein state the values acceptable to the City of Winnipeg Fire Department, not implying that those values are sufficient for the design of the particular apparatus being bid.

2.0 SAFETY STANDARDS-

2.1 The Fire Pumper Apparatus must comply with **National Fire Protection Association Standard NFPA 1901 (current edition**), with latest revisions, form an integral part of these specifications and any conflict with the specifications shall be brought to the attention of the Contract Administrator in Clause D4.1 of the Supplemental Conditions.

2.2 All applicable **SAE standards** form an integral part of the chassis specifications and shall have precedence in any conflict concerning minimum acceptable standards.

2.3 The **Fire Pumper Apparatus** and **all associated equipment** as stated in the contract shall comply with the applicable standards:

- Highway Traffic Act = http://web2.gov.mb.ca/laws/statutes/ccsm/h060e.php
- Manitoba Motor Vehicle Act = http://www.tc.gc.ca/acts-regulations/GENERAL/M/mvsa/menu.htm
- Canadian Motor Vehicle Safety Standards, CMVSS = http://www.gnb.ca/0062/regs/83-163.htm
- Transport Canada = http://laws.justice.gc.ca/en/notice/index.html?redirect=%2Fen%2FM-10.01%2F250448.html
- National Safety Mark, NSM = http://www.tc.gc.ca/acts-regulations/GENERAL/M/mvsa/regulations/mvsrg/001/mvsr3-5.html
- Manitoba/Winnipeg Safety and Health Act, Parts 12, 22 = http://web2.gov.mb.ca/laws/statutes/ccsm/w210e.php and http://www.gov.mb.ca/labour/safety/
- Canadian Standards Association, CSA = http://www.csa.ca/about/Default.asp?language=english
- Under Writers of Canada, U/L = http://www.ulc.ca/
- Society of Automotive Engineers, SAE = http://en.wikipedia.org/wiki/Society_of_Automotive_Engineers

2.4 The chassis being supplied for the apparatus shall be the same model that has been tested to demonstrate that it meets the requirements European Crash Test Standards, ECE R-29 Uniform Provisions Concerning the Approval of Vehicles with Regard to the Occupants of the Cab of a Commercial Vehicle. The Bidder shall submit within (48) hours of the request of the Contract Administrator, proof of compliance with E.C.E. Reg. 29, including the test results, certified by a registered Professional Engineer and satisfactory to the Contract Administrator.

3.0 INSTRUCTIONS FOR COMPLETION OF SPECIFICATIONS-

3.1 All items in these specifications must be answered indicating compliance or non-compliance. **Bidders shall state "yes" for compliance** or **state the deviation**, or state the information requested. All deviations shall be clearly stated and fully detailed.

3.2 Each bidder is required to fill in every blank. Failure to do so may be used as a basis for rejection of bid.

4.0 ELIGIBLE CHASSIS TYPE-

4.1 Shall be a Spartan Metro Star EMFD (Extended Medium Four Door) Chassis 10" raised roof with winter insulation package or equivalent in accordance to B5. Substitutes. _____

5.0 PERFORMANCE-

5.1 The apparatus shall be designed and built to operate on a high continuous usage basis in the climatic conditions common to the City of Winnipeg. _____

Note: The City of Winnipeg has four seasons with ambient temperatures ranging from approximately 95F (35C) to -40F (-40C), with an average annual snowfall of approximately 42 in. (1070 mm). The apparatus when not in use will be stored in a heated building.

5.2 The apparatus shall be capable of carrying 1 Driver & 4 Fire Fighters wearing protective clothing and gear, a full water tank, foam tank, and a full complement of fire fighting equipment and hose in a safe and efficient manner on an emergency response call. _____

5.3 It should be noted that the successful Bidder will be documented regarding Performance when the vehicles are put into service. This Performance Documentation will be used for consideration for future purchases. _____

5.4 **Responsibility for the design**- The responsibility for the design of the complete apparatus, its performance and reliability shall rest upon the Contractor. _____

5.5 **Repeated failures**- Where the apparatus develops "repeated failures" in service, the Contractor shall make any necessary engineering changes, repairs, alterations or modifications in order to guarantee reliability of performance, at no cost to the City with a reapplied, full warranty. _____

6.0 SERVICE FACILITY & QUALIFICATIONS OF MANUFACTURER-

6.1 For the purpose of warranty repairs and service support, the supplier shall have an authorized service facility located within 25 kilometres of the City of Winnipeg Fire Department Emergency Mechanical Services Branch located at 2546 McPhillips Street, Winnipeg Manitoba (no exceptions). _____

The facility, or a portion thereof, shall be dedicated to the service and maintenance of the type equipment being offered. Further to B9.1, Bidders shall provide a description of the service facility including, but not limited to, number of qualified service staff, years of service experience, and general service capabilities within three (3) Business Days upon request of the Contract Administrator. _____

6.2 All components of the apparatus requiring regular scheduled servicing or lubrication shall be easily accessible. The design and construction of the apparatus shall be such that the removal of drive train components including, but not limited to, the engine, transmission and transfer case, can be accomplished without dismantling the apparatus body. _____

6.3 The manufacturer of the apparatus shall have five (5) years continuous experience manufacturing apparatus of the triple combination fire pumper apparatus. The manufacturer shall have in effect a complete and documented

quality control program ensuring compliance with all applicable standards. _____

6.4 A list of at least five (5) references for the type of triple combination fire pumper apparatus be included. The list shall include the fire department's name, location, contact person, telephone number and the length of time the apparatus has been in service. The manufacturer of the apparatus shall have successfully demonstrated the operation of the type of apparatus being offered in cold weather (-40°C) conditions. _____

6.5 The City of Winnipeg Fire Apparatus Committee and the Contract Administrator shall determine if the service facility meets the required qualifications. _____

7.0 GVWR, DIMENSIONS, WEIGHT DISTRIBUTION & TURNING RADIUS-

7.1 The Complete **Pumper Fire Apparatus** shall not exceed the City of Winnipeg's limit for gross vehicle weight, axle and tire loads. _____

Note: The City of Winnipeg and the Province of Manitoba limits the gross vehicle weight and axle and tire loads to:

7.2 **Front axle** (steering axle) – 7300 kg (16,094 lbs.). _____

7.3 **Rear axle** (single axle) – 9100 kg (20,062 lbs.). _____

7.4 **Tire load** – 9 kilograms for each millimetre width of tire (approx. 500 lbs. per inch of tire width). _____

7.5 **Weight distribution**- **State** weight distribution with water and foam and all associated tools and equipment. _____

- **Front-** _____

- **Rear-** _____

7.6 **Weigh scale ticket** – The Contractor shall provide a certified weigh scale ticket upon delivery of the completed unit. The scale ticket shall include front and rear axle weights including five (5) occupants, full of water, foam and all equipment as specified in this tender. _____

7.7 **Center of Gravity**- the vehicles shall meet all safety standards in relation to center of gravity. _____

7.8 **GVWR**- Gross vehicle weight rating (GVWR), **state-** _____

7.9 **Front (GAWR)-**Gross axle weight rating front (GAWR), must be a 10% greater than actual vehicle weight carried on front axle, **state-** _____

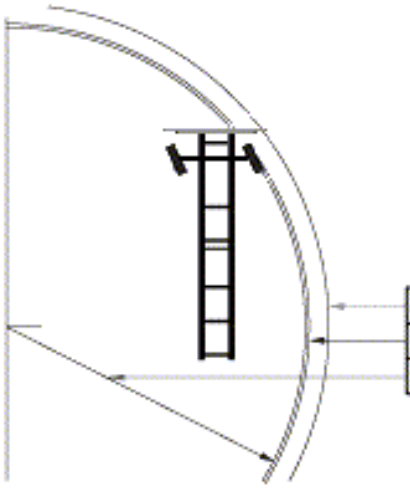
7.10 **Rear (GAWR)-** Gross axle weight rating rear (GAWR), must be 10% greater than actual vehicle weight carried on rear axle, **state-** _____

7.11 **Tare Weight**- State the tare weight of the apparatus being bid:
- **Front-** _____
- **Rear-** _____
- **Total-** _____

7.12 **Dimensions-** State the following dimensions: (***Note: No part of the vehicle, including lights, shall exceed the maximum overall height specified)***

a) **Overall width** – Shall not exceed 102 in. _____
b) **Overall height** – Shall not exceed 120 in. _____
c) **Overall length** – Shall not exceed 32 ft. _____
d) **Wheelbase** – **State-** _____
e) **Ground clearance** – Shall not be less than 8 in. _____
f) **Turning Radius**- State turning radius- See example:

7.13 **Turning Radius- State** the vehicle turning radius, wall to wall. Curb to Curb.
Example:



	Left Turn	Right Turn	Tolerance
Wall to Wall Diameter (ft)	130.9	111.4	+/- 3.0
Curb to Curb Diameter (ft)	127.2	106.9	+/- 3.0
Turning Radius (ft)	62.9	52.7	+/- 1.5

a) Wall to Wall (ft)- _____
b) Curb to Curb(ft)- _____
c) Turning Radius (ft)- _____

8.0 ENGINE AND ENGINE EQUIPMENT-

8.1 **Engine** – Cummins ISC, 6-cylinder in-line diesel engine, 380 hp, 1050 torque. The engine shall provide sufficient horsepower and torque to enable the pump to meet and exceed its rated performance. All applicable power deductions and parasitic losses associated with the specified equipment shall be considered as required. _____

8.2 **Engine location** – over the front axle. _____

8.3 **Engine governor** – electronic, compatible with fire pumper operation. _____

8.4 **Oil drain plug** – magnetic type. _____

8.5 **Oil filter** – as recommended by the engine manufacturer, full flow, spin-on filter. _____

8.6 **Fuel filter/primary** – as recommended by the engine manufacturer, spin-on filter, remote mounted on the chassis frame such that it is easily accessible for servicing. _____

8.7 **Fuel filter, secondary**- (if recommended) spin-on filter. The filter shall be remote mounted on the chassis frame, easily accessible for servicing. _____

8.8 **Starter –** 12-volt electric. The starter shall be shielded from exhaust heat where required. _____

8.9 **Air cleaner** – heavy-duty replaceable element, dry type, as recommended by the engine manufacturer. _____

8.10 **Emergency shutdown** – air intake flap valve. _____

8.11 **Auxiliary Coolant Heater-** A Webasto engine coolant heater is required. Webasto auxiliary coolant heater shall provide 'engine-off' engine preheat and supplemental cab heat. _____

9.0 ENGINE COOLING SYSTEM-

9.1 **Engine Cooling**- The engine cooling system shall be in accordance with the engine manufacturer's recommendations for front-engine fire pumper application and an ambient temperature range of 95F (35C) to -45F (-43C).
The cooling system shall be of adequate capacity to maintain the coolant temperature within the recommended range during operation of the fire pump and under high ambient temperature conditions without the use of an auxiliary cooler. The normal operating temperature of the coolant system shall be approximately 180F (92C). _____

9.2 **Radiator –** pressurized type with surge tank or coolant recovery system. _____

9.3 **Fan drive** – thermostatically controlled fan clutch, viscous type or air clutch. _____

9.4 **Coolant –** ethylene glycol based coolant protected to -35F (-37C) compatible with the engine. _____

9.5 **Coolant filter** – spin-on type, as recommended by the manufacturer. _____

9.6 **Hoses** – High performance and high quality _____

9.7 **Hose clamps** – spring loaded, constant torque type. _____

10.0 ELECTRICAL SUPPLY SYSTEM-

10.1 **Electrical Supply-** 12-Volt automotive style electrical supply system. _____

10.2 **Batteries** – Severe duty batteries. 760 CCA per battery, with 210 minute Reserve capacity. _____

10.3 **Battery location** – **State battery location-** _____

10.4 **Battery cables** – 4/0 gauge, colour coded welding type cable, with connector ends crimped, pull tested and sealed with heat shrink tubing at all connections. _____

10.5 **Battery charging system** – on-board system with a 0-20 Amp rated automatic charger for charging of the batteries from an external 120-Volt power supply. _____

10.6 **Ground wire** – the electrical wiring harness shall have a dedicated ground wire running the full length of the truck. Weather tight junction boxes shall be provided at the dash, pump panel and the rear of the truck. This ground wire shall be connected directly to the battery negative post. All electrical systems shall be grounded to this ground wire. The total resistance of this ground wire shall not exceed 0.2 Volts drop at any point with all circuits turned on. The conventional grounding system using the frame shall be maintained.

10.7 **Charging system plug-in** – located between drivers door and the rear passenger door. Automatic ejector type with a 20 Amp receptacle. Located approx.

60 to 80 in. (1524 – 2032 mm) above ground level. _____

10.8 **Jump Start Stubs** – A central location shall be supplied by the Body Builder to connect power and ground. The ground shall be connected directly to the batteries and positive is directly to the positive terminal of the batteries. _____

10.9 **Alternator** – 270 alternator with compatible 8 grove belt drive system to match full load capacity. The regulator shall be remote mounted and away from heat sources. The alternator shall be shielded from heat sources where required. The alternator output capacity shall be sufficient to match and/or exceed vehicle full load demands at 11% duty cycle. _____

10.10 **Power disconnect** – power to all electrical systems shall be wired through a power disconnect system with the master switch or switches located in the cab for operation by the driver. The system shall be designed to prevent alternator damage in the event that the master switch is placed in the off position while the engine is running. _____

- **State details of the power disconnect system**-

_____

_____

11.0 FUEL SYSTEM-

11.1 **Fuel tank** – approximate 50 Imp. Gallons (227 L) capacity. _____

11.2 **Fuel transfer pump** - Fuel transfer pump is required. Pump is to be external to fuel tank, back flow checked and in line with fuel supply lined _____

12.0 EXHAUST SYSTEM-

12.1 **Horizontal muffler and exhaust**- Horizontal muffler and exhaust, aluminized or stainless steel. _____

12.2 **Tailpipe** – located on the right side of the apparatus, suitable for use with an exhaust extraction system. The tailpipe shall be 90 degree to the rub rail, shall extend ½ in. (13 mm) beyond the rub rail and shall be 3 in. (76 mm) below the rub rail. Hanger brackets shall be 18 in. (457 mm) from the rub rail. _____

12.3 Exhaust system (muffler) enclosed within under slung pump winter pan. _____

Note: The tailpipe configuration is intended for use with a "Plymovent" automatic exhaust disconnection system and shall include the installation of the appropriate adapter.

13.0 TRANSMISSION-

13.1 **Transmission**- Transmission shall be an Allison EVS 3000 automatic transmission as for Fire and Emergency use and rated for the requested horsepower and torque. _____

13.2 **Torque converter** – as recommended by the Manufacturer. _____

13.3 **Direct drive lockup**-Direct drive lockup for pumping operation. _____

13.4 **Shifter**– as recommended by the Manufacturer. _____

13.5 **Transmission oil filter** – as recommended by the Manufacturer.

13.6 **Drain plug** – magnetic type. _____

13.7 **Oil level dipstick** – easy access steel ribbon bayonet type with high and low level markings. _____

13.8 **PTO opening** – required for application. _____

13.9 **Transmission output retarder** – c/w an in cab, driver's area, on/off selector and shall be brake pedal activated. Degree of retardation shall be modulated by degree of brake application. The greater the degree of brake pedal application, the greater the degree of retarder application. _____

14.0 DRIVE SHAFTS-

14.1 **Drive shaft**- Drive shaft Spicer 1710 Series, drive shafts with Glide-coat splines. Bidder to provide engine/transmission SCAN and OEM recommendations for best suited match. _____

14.2 **Drive shaft clearance-** Adequate clearance shall be provided to allow greasing of the drive shaft U-joints from underneath the vehicle. _____

15.0 AXLES AND SUSPENSIONS-

15.1 **Front axle –** 18,000 lbs. capacity c/w oil lubricated wheel bearings. _____

15.2 **Front suspension** – Ridewell Air ride suspension to best match front GAWR. Comes with individual levelling valve for each air spring. _____

15.3 **Shock absorbers**- Shock absorbers, front – heavy duty, double acting. _____

15.4 **Rear axle** – Meritor single speed axle, 24,000 lbs. capacity. _____

15.5 **Drive ratio** – Capable to achieve 62 mph (100 km/h) _____

15.6 **Differential drain plugs** – magnetic type.

15.7 **Differential vent** – remote vent. Vent to c/w 10 micron breathable filter, water/dust cap and check valve. _____

15.8 **Rear suspension** – Ridewell Air ride suspension with capacity to best match GAWR to come with levelling valve for each spring. _____

16.0 WHEELS AND TIRES-

16.1 **Front wheels** – polished aluminum hub piloted, 10 bolt. _____

16.2 **Front tires** – Michelin, 315/80R 22.5 20PR XZ3 equal or better. _____

16.3 **Rear wheels** – polished aluminum hub piloted, 10 bolt. _____

16.4 **Rear tires** – Michelin 11R22.5 16PR, XDN2 equal or better. _____

16.5 **Spare wheel & tire** – one (1) wheel and tire to match front wheel and tire. Spare wheel & tire to be shipped loose. _____

17.0 BRAKE SYSTEM-

17.1 **Brake system-** Full air service brake system with spring loaded parking brakes and an anti-lock system. _____

17.2 **Antilock braking system** – comes with roll stability control, Meritor/Wabco four channel systems, providing independent antilock braking control at four wheels and traction control at rear drive wheels. _____

17.3 **Drum brakes** – Meritor outboard drum brakes front and rear. _____

17.4 **Slack adjusters** – Meritor automatic type. _____

17.5 **Parking brake** – spring set parking brakes on rear service brake system. _____

17.6 **Air lines** – colour-coded, reinforced nylon tubing. _____

17.7 **Air compressor** – water cooled, pressure lubricated compressor, 18.7cfm capacity. The compressor air intake shall be plumbed into the engine air intake after the air cleaner. _____

17.8 **Air dryer** – heated, spin-on desiccant type. _____

17.9 **Moisture ejector** – heated, automatic, in wet tank only. _____

17.10 **Drain valves** – cable operated, in each air tank except the wet tank. The cables shall be vinyl coated and shall terminate at the bottom edge of the cab or at the rub rail on the body. _____

17.11 **Auxiliary air reservoir** – nominal 1200 in^3 (20 L) air reservoir to operate the vehicle air horns and to function as an emergency parking brake release. A dash mounted control, located directly below the main parking brake release, shall allow the air in the reservoir to be used to release the parking brakes. The control shall be non-detented, spring return type such that it cannot be left engaged in the brake release position.

17.12 **External air inlet** – Milton A style air fitting installed on left side of chassis so the WFD can plug their shop air lines into the truck. Shall be plumbed to the outlet side of the air dryer for the option to put alcohol into the air system without going through the dryer. _____

17.13 **Air line sources** – all air lines shall be sourced after the air dryer. _____

17.14 **Auxiliary Air Pump-** Kussmaul pump plus 1000 with compressor required – on-board air compressor for maintaining pressure in the air reservoirs when the vehicle is parked in a fire hall. Electrical power for the compressor shall be provided through the charging system plug-in. _____

18.0 STEERING-

18.1 **Power Steering**- Hydraulic power steering, rated for front GVWR rating. _____

18.2 **Steering column** – tilt and telescopic type. _____

18.3 **Steering wheel** – 2 spoke, padded type. _____

19.0 FRAME-

19.1 **Frame-** Steel channel frame rail designed and constructed to match the GVWR and the application of the vehicle as a **triple combination pumper fire apparatus**. _____

19.2 **RBM-** Resisting bending moment combined for both frame rails 3,200,000 in.-lbs. RBM shall be rated for GVWR request, application and intended use. _____

19.3 **Front frame extension** – bolt on as required for front bumper stated herein. _____

19.4 **Trash hose storage compartment** – approximately 21" x 12" x 12" deep, to accommodate 75 ft. of 1¾" hose with nozzle, c/w aluminum cover, located in front bumper extension. Compartment open and close latch to be designed to be operator glove friendly. Latch to be spring loaded _____

19.5 **Front bumper** – Heavy Duty Front Bumper, polished stainless steel bumper bolted to the chassis frame. Bumper apron to be 3/16" – Anti Slip material _____

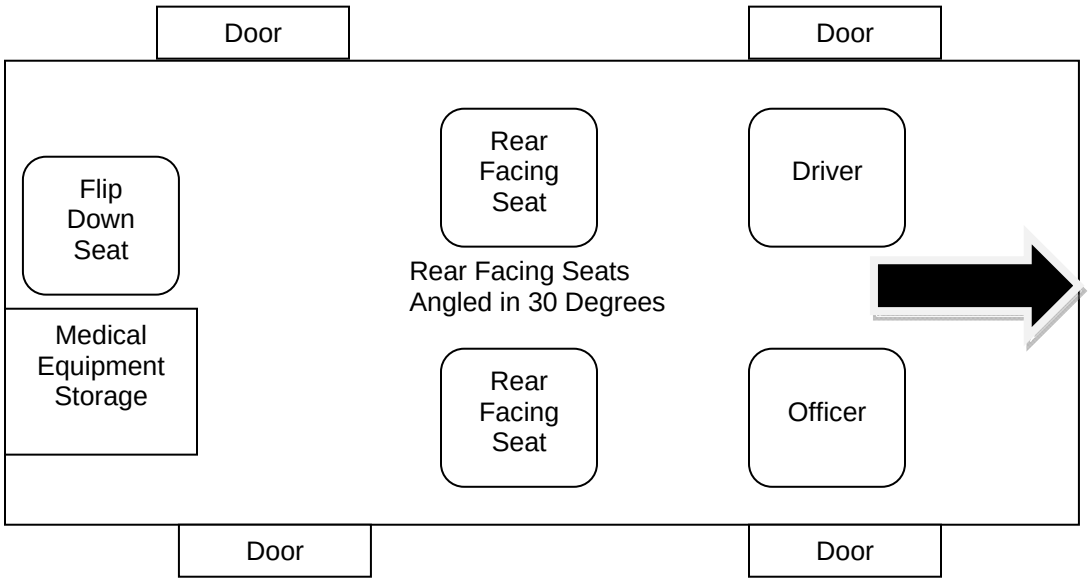
19.6 **Corner indicators** – blaze orange, flexible sight rods, approx. 24 in. (610 mm) high. _____

19.7 **Front tow hooks** – Frame shall have forward "forks" to which the eye hooks are affixed. _____

19.8 **Rear tow hooks** – two (2) eye hooks, bolted to the chassis frame. A cross-member shall be located in the chassis frame at the tow hook location. The tow hooks shall be easily accessible. _____

20.0 CAB AND CAB EQUIPMENT-

The cab shall be a custom, fully enclosed, EMFD model with a 10.00 inch raised roof over the driver, officer, and crew area, designed and built specifically for use as an emergency response vehicle by a company specializing in cab and chassis design for all emergency response applications. The cab shall be designed for heavy-duty service utilizing superior strength and capacity for the application of protecting the occupants of the vehicle. This style of cab shall offer up to five (5) seating positions. _____



Cab Configuration

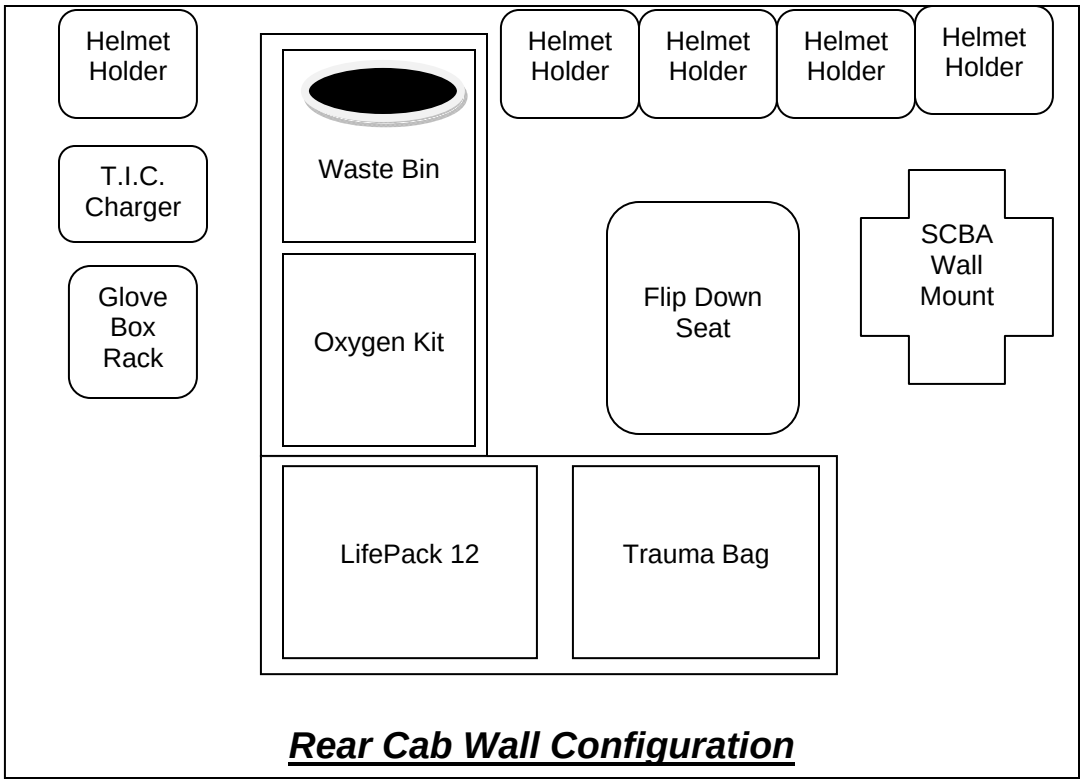
20.1 The cab shall incorporate a fully enclosed design with side wall roof supports, allowing for a spacious cab area with no partition between the front and rear sections of the cab. To provide a superior finish by reducing welds that fatigue cab metal; the roof, the rear wall and side wall panels shall be assembled using a combination of welds and proven industrial adhesives designed specifically for aluminum fabrication for construction. _____

20.2 The cab shall be constructed using multiple aluminum extrusions in conjunction with aluminum plate, which shall provide proven strength and the truest, flattest body surfaces ensuring less expensive paint repairs if needed. All aluminum welding shall be completed to the American Welding Society and ANSI D1.2-96 requirements for structural welding of aluminum. _____

20.3 All interior and exterior seams shall be sealed for optimum noise reduction and to provide the most favourable efficiency for heating and cooling retention. _____

20.4 The cab shall be constructed of 5052-H32 corrosion resistant aluminum plate. The cab shall incorporate tongue and groove fitted 6061-T6 0.13 & 0.19 inch thick aluminum extrusions for extreme duty situations. A single formed, one (1) piece extrusion shall be used for the "A" pillar, adding strength and rigidity to the cab as well as additional roll-over protection. The cab side walls and lower roof skin shall be 0.13 inch thick; the rear wall and raised roof skins shall be 0.09 inch thick; the front cab structure shall be 0.19 inch thick. _____

20.5 The exterior width of the cab shall be 94.00 inches wide with a interior width of 88.00 inches. The overall cab length shall be 137.10 inches with 60.00 inches from the centerline of the front of the axle to the back of the cab or equivalent. _____



Rear Cab Wall Configuration

NOTE: Interior Storage Compartment on rear wall of cab beside flip up seat to contain equipment: Cabinet to be made of metal -dimensions approximately 36" wide under seat, and 15" wide, full height of cab with 4 latching doors (see attached drawing) All cabinets to 12 "deep. Waste Bin to have a cut out in door to dispose of waste.

20.6 The cab interior shall be designed to afford the maximum usable interior space and attention to ergonomics with hip and legroom while seated which exceeds industry standards. The crew cab floor shall be flat across the entire walking area for ease of movement inside the cab. _____

20.7 The cab shall offer an interior height of 57.50 inches from the front floor to the headliner and a rear floor to headliner height of 65.00 inches in the raised roof area, at a minimum. The cab shall offer an interior measurement at the floor level from the rear of the engine tunnel to the rear wall of the cab of 55.88 inches. All interior measurements shall include the area within the interior trimmed surfaces and not to any unfinished surface. _____

20.8 The cab shall include a driver and officer area with two (2) cab doors large enough for personnel in full firefighting gear. The front doors shall offer a clear opening of 40.25 inches wide X 53.50 inches high, from the cab floor to the top of the door opening. The cab shall also include a crew area with up to two (2) cab doors, also large enough for personnel in full firefighting gear. The rear doors shall offer a clear opening of 32.25 inches wide X 61.00 inches high, from the cab floor to the top of the door opening. The cab shall incorporate a progressive two (2) step configuration from the ground to the cab floor at each door opening. The progressive steps are vertically staggered and extend the full width of each step well allowing personnel in full firefighting gear to enter and exit the cab easily and safely. _____

20.9 The first step for the driver and officer area shall measure approximately

11.50 inches deep X 31.50 inches wide. The intermediate step shall measure approximately 8.50 inches deep X 33.00 inches wide. The height from the first step to the intermediate step and the intermediate step to the cab floor shall not exceed 11.00 inches. _____

20.10 The first step for the crew area shall measure approximately 11.50 inches deep X 21.50 inches wide. The intermediate step shall measure approximately 10.25 inches deep X 22.50 inches wide. The height from the first step to the intermediate step and the intermediate step to the cab floor shall not exceed 12.50 inches. _____

20.11 **Construction** – 5052-H32 aluminum or equivalent. _____

20.12 **Insulating material-** Insulating material to prevent galvanic corrosion shall be provided at all possible areas of contact between aluminum and steel. The insulation material used shall be nonporous. _____

20.13 **Entrance doors** – two (2) per side.

20.14 **Door handles / latches, exterior** – as recommended by manufacturer. _____

20.15 **Door handles / latches, interior** – flush-mounted, paddle handle type, located such as to prevent accidental actuation. _____

20.16 **Door latch striker pins** – recessed such as not to protrude into the door opening area. _____

20.17 **Door hinges** – as recommended by manufacturer. _____

20.18 **Weather stripping** – automotive style. _____

20.19 **Grab handles** – grab handles as per NFPA standard. Grab Handles shall be 3 Piece Squared Top Hanger in order to hang Fire Fighter Jacket _____

20.20 **Step area lights –** LED recessed, side mounted light in each entrance step area. The lights shall be activated by door switches. _____

20.21 **Seats/Seating Layout –** all seats shall manufactured by H. O. Bostrom with grey, heavy-duty grey tweed Durawear upholstery. Upholstery inserts must be approved by the Contract Administrator to be acceptable. The three (3) rear seats and the officer's seat is to have HO Bostrom Tanker # 450 ABTS Secure All SCBA brackets.

- Front Driver & Officer Seat
- Mid ship of cab, two seats rear facing 30 Degree Angled inward.
- One Flip up Front Facing seat on rear wall of cab drivers side
- Storage Compartment on rear wall of cab beside flip up seat, located Curbside c/w Rollup Door

20.22 **Seat Brackets-** (Five SCBA Brackets in total) with Brackets on Officer's Seat, Two Rear Facing Seats, and One Front Facing Fold Up. One Wall Mounted Bracket without bolsters in rear area of cab near rear interior cabinet _____

20.23 **Drivers seat –** H.O. Bostrom Sierra Air 50 HBRX with 5" Fore/Aft Adjust and occupancy switch _____

20.24 **Officer's seat –** H.O. Bostrom Tanker 450 Air 50 with 5" Fore/Aft Adjust, SecureAll Locking System, and occupancy switch _____

20.25 **Air Seat Supply-** Air supply for the seats shall be taken from the auxiliary air

reservoir. _____

20.26 **Rear seats** – _____

Rear Facing Crew (2) – H.O. Bostrom Tanker 450/ABTS with SecureAll Locking System and occupancy switch and angled inwards 30 degrees _____

Forward Facing Crew (1) – H.O. Bostrom Tanker 400CT ABTS Flip Up with SecureAll Locking System and occupancy switch _____

Note: Walkaway brackets for the officer's and rear seats shall be compatible with 45 minute high pressure M.S.A. air bottles and S.C.B.A. harness.

20.27 **Seat belts** – three-point, retractable type for all seats. Seat belts shall be designed to be long enough for large operators, and female connections to extend so as to be easily accessible. _____

20.28 **Floor covering** – heavy-duty rubber floor-mat, or approved equivalent. _____

20.29 **Winter Insulation**– full insulation under cab, roof, ceiling, fire wall, and walls and vinyl padding package for walls and ceiling. Insulation shall be non-hygroscopic, mildew proof and fire retardant. Vinyl shall be grey, heavy-duty automotive type. Also as required to meet HVAC needs and acceptable sound suppression requirements. _____

20.30 **Headliner** – grey, heavy duty vinyl with padding. _____

20.31 **Windows –** tinted safety sunglass for all windows including windshield. _____

20.32 **Door windows, rear doors –** fully opening roll-up windows or sliding type windows. **State** _____

20.33 **Window fans –** if recommended by the manufacturer to assist in defrosting the windows, four (4) auxiliary defroster fans with metal blade guards and individual switches. Two (2) located at the front windshield and two (2) in the rear section. A master power switch for all fans shall be provided on the driver's switch panel. _____

20.34 **Sun visors** – Two (2) swivel visors. One positioned each in the front of the driver and officer. These visors swivel to provide coverage of the front door windows. _____

20.35 **Mirrors, exterior**– Chassis mounted mirrors, (door mounted not acceptable). Chrome finish mirrors c/w convex mirror built into the mirror head, electric defroster with driver operable remote controls. _____

20.36 **Front/Rear heater and air conditioner-(**Heating/Ventilating/Air Conditioning System) high output, fresh air type with multi-speed fan, controlled by the driver. Outlets shall be provided at dashboard level and in the driver's and officer's foot area to ensure occupant comfort when heat is required. Defroster outlets shall be provided to defrost entire windshield and the drivers and officers side windows. Coolant flow (preferred) in the heater circuit shall be passively controlled by a dash mounted heat control device. The system/s shall meet or exceed the BTU's required to heat/cool the cab for the temperatures common to the City of Winnipeg, i.e., -35° C, to -40°C. _____

20.37 **Rear heater/air conditioner/Aux. Coolant heater-** Rear heater and air conditioner shall meet or exceed the BTU requirements necessary to ensure floor area heating and cooling the rear of the cab to ensure occupant comfort and shall be

separately controlled from the front of the cab. _____

Note: The Heating/Ventilation/Air conditioning systems (front and rear) shall dehumidify the air in the defrost mode to assist in preventing the fogging or frosting of the windows due to excess humidity from wet firefighter clothing.

20.38 **Dome lights –** LED four (4) lights, two (2) in the front and two (2) in the rear portion of the cab to fully illuminate the cab interior. Dome lights shall be combination type with clear and red lenses. All lights shall be operated by door switches. Each light shall be equipped with an individual switch at the light. _____

20.39 **Instrumentation** – full instrumentation on a removable or flip down panel, or pull-out gauges. _____

20.40 **Metric instrumentation**- shall include, but not be limited to:

a) Speedometer / odometer – metric. _____

b) Tachometer. _____

c) Oil pressure gauge. _____

d) Coolant temperature gauge. _____

e) Transmission oil temperature gauge or warning light. _____

f) Low oil pressure / high water temperature warning light(s). _____

g) Voltmeter. _____

h) Fuel level gauge. _____

i) Air reservoir pressure gauge(s). _____

j) Engine hour meter. _____

k) Air cleaner restriction indicator gauge. _____

l) Engine oil filter bypass indicator lights. _____

m) Fuel filter bypass indicator lights. _____

n) Transmission filter bypass indicator lights if recommended. _____

20.41 **Ignition switch** – keyless type. _____

20.42 **Doors –** heavy duty construction _____

20.43 **Warning System-** OEM engine warning system. _____

20.44 **Radio –** AM/FM stereo, mounted inside of dash, controlled by the driver. _____

20.45 **Additional Electrical Provisions-**

a) **Mobile Radio** – 12V power & ground located at center dash area
(To be prewired during manufacture as determined at pre production meeting) _____

b) **Lap top computer** - 12V power & ground at center dash area (purchaser to supply support bracket) (To be prewired during manufacture as determined at pre production meeting) _____

c) **Charger** for Bullard TMX3 Thermal camera- 12V power & ground at center of rear cab wall _____

d) **Switch Activated Vehicle Immobilizer** - unmarked dash mounted switch so when activated, will disable vehicle from moving

20.46 **Cab Door Hardware**- Hardware shall be heavy duty in design and shall be Operator glove friendly. _____

20.47 **Portable Radio Holders** – four (4) radio holders installed in cab – location to be determined at pre production meeting _____

21.0 FIRE PUMP AND ASSOCIATED EQUIPMENT-

21.1 **Waterous or Hale Fire pump**– mid-ship factory mounted, single stage centrifugal fire pump with a rated capacity of 1500 (US) GPM @ 150 psi (6635 L/min @ 10.3 Bar). _____

21.2 **Pump overheat protection system** – thermal relief valve with automatic reset, complete with panel mounted warning light. _____

21.3 **Relief valve system-** Relief valve system shall provide discharge and suction protection (against excess pressures), control located on pump operator's panel. _____

Note: Inlet relief valve to be plumbed to drain when pump not in use, c/w manual drain if required.

21.4 **Priming pump** –air primer. _____

21.5 **Piping –** all intake and discharge piping shall be sized to meet or exceed the flow capacity corresponding to the intake and outlet discharge size, taking into account flow loss (resistance) due to valves, elbows, port openings, etc. All pipes shall be corrosion resistant, schedule 40, stainless steel, butt welded continuous length pipes. _____

21.6 **Valves –** all intake and discharge valves shall be sized to meet or exceed the flow capacity corresponding to the intake or discharge size. 4 in. valves may be either gate or piston type with 30° elbow, c/w pressure relief valve. Valves 3 in. (76 mm) or larger shall be slow opening type, meeting NFPA requirements. Valves less than 3 in. (76 mm) shall be manually controlled. Valves shall be Akron ball valves. Unless otherwise specified, all valves shall be controlled from the pump operator's panel. Valve sizes at various locations are specified herein. _____

21.7 **Suction relief control valve** – shall be mechanical. _____

21.8 **Pump intakes** – intakes shall be provided as follows: _____

INTAKE LOCATION	QTY	SIZE	THREAD TYPE	GATED
Left Side Pump Panel	1	6 in. (152 mm)	National Standard (Male)	Yes
Right Side Pump Panel	1	6 in. (152 mm)	National Standard (Male)	Yes
Tank-to-Pump Line	1	3 in. (76 mm)	N/A	Yes

21.9 **The 6 in. (152 mm) intakes-**The 6 in. (152 mm) intakes shall be located to provide sufficient clearance for hard suction lines. Both intakes shall be equipped with a Hale Master Intake Valve (MIV)or equivalent, removable strainers and 6 in. to 4 in. storz reducer and suction intake drain. .

Note: Storz cap shall be attached to all storz inlets and outlets with vinyl coated, stainless steel cables or an approved alternative.

21.10 **Tank-to-pump line-** The tank-to-pump line shall be insulated from the water tank to the pump enclosure. A flexible or Victaulic coupling in the line shall prevent transmission of pump vibrations to the tank.

(Design Engineering) Victaulic coupling- A development in which a groove is cut around each end of pipe instead of the usual threads; two ends of pipe are then lined up and a rubber ring is fitted around the joint; two semicircular bands, forming a sleeve, are placed around the ring and are drawn together with two bolts, which have a ridge on both edges to fit into the groove of the pipe; as the bolts are tightened, the rubber ring is compressed, making a watertight joint ,while the ridges fitting in the grooves make it strong mechanically.

21.11 **External tank fill intake** – intake shall be provided as follows: **To fill tank from the top**

INTAKE LOCATION	QTY	SIZE	THREAD TYPE	GATED
Left Side Pump Panel	1	2 ½ in. (64 mm)	Western Canada (Female)	Yes

21.12 **Intake Plumbing-** The intake shall be plumbed into the pump-to-tank fill line such that the tank can be filled from an external source without flooding the pump. The valve for the intake line shall be a manually controlled Akron ball valve with the control handle for the valve located at the pump panel adjacent to the intake. The intake shall be labelled “tank fill” and shall be equipped with a cap with a vinyl coated, stainless steel cable or an approved alternative.

21.13 **Pump discharge outlets** – discharge outlets shall be provided as follows:

DISCHARGE OUTLET LOCATION	QTY	SIZE	THREAD TYPE	GATED
Right Side Pump Panel	1	4 in.	Storz	Yes
Right Side Pump Panel	1	2½ in	WCT (Male)	Yes
Rear, Left	1	4 in.	Storz	Yes
Rear, Right	1	2½ in.	WCT (Male)	Yes
Transverse (Cross Lay) Area	2	1½ in.	National Standard (Male)	Yes
Front bumper	1	1½ in.	National Standard (Male)	Yes
Rearward of Transverse (Deluge)	1	4 in.	National Standard (Male)	Yes
Pump-to-Tank Fill Line	1	1½ in.	National Standard (Male)	Yes

21.14 **Piping for the right and rear**- The piping for the right and rear 4 in. (102 mm). Storz discharge outlets sized to achieve rated flow capacity of outlet. _____

21.15 **Valves for the right and rear-** The valves for the right and rear 4 in. (102 mm). Storz discharge outlets sized to achieve rated flow capacity of outlet. c/w Akron Model # 8840 c/w manual hand wheel _____

21.16 **Piping for the 1¾ transverse and front outlet-** The piping for the 1¾ transverse and front outlet shall be 2 inches. (51 mm) _____

21.17 **Valves for the 1 ¾ transverse and front outlet-** The valves for the 1 ¾ transverse and front outlet shall be 2 inches. (51 mm) _____

21.18 **Rear discharge outlets**- The rear discharge outlets shall be located suitable for pre-connected 4 in. (102 mm) and 2½ in. (64 mm) hose. The piping shall be routed outside the water tank. The outlet height shall be suitable for use from ground level. The outlets shall be equipped with 30° sweep 4 in. storz elbow and cap, c/w automatic drain valves. _____

21.19 **Discharge outlets**- The 1½ in. (38 mm) discharge outlets in the transverse area shall be equipped with chicksan swivel joints located in the forward crosslay area, partially recessed in the centre of the transverse floor such as to prevent the fire hose from kinking when pulled in either direction. The swivel joints shall lay flat and shall not swivel below floor level. _____

21.20 **Vertical discharge outlet-** The vertical discharge outlet shall be located immediately to the rear of the transverse hose bed. The outlet shall be adequately sized for use with the monitor specified herein. _____

21.21 **Monitor – *#3578*** Stream Master Electric Monitor with 1577 Saber Master Nozzle, mounted on the vertical discharge outlet with 360° rotation without hitting the cab with the water steam. The remote control for the monitor shall be located on the pump operator's panel and supplied with a 15 ft. cord. _____

21.22 **Drain valves** – individual or ganged manual ball valve, located in the lowest section of all discharge and intake piping that is not equipped with automatic drains and in the pump to completely drain the entire system. Drain valves shall be ¾ in. (19 mm) diameter. The controls for all manual drains valves shall be located near the drain valve outlet and shall be appropriately labelled. _____

21.23 **Pump compartment** – fully enclosed on all sides including the bottom. The bottom portion of the enclosure shall be a removable, bolt-on, 3/16 in. (5 mm) aluminum pan constructed with a 2 piece loose fitted aluminum panel. All discharge, intake and drain valves in the pump area shall be located inside the pump compartment. _____

21.24 **Pump panels** – the right and left side pump panels shall be 14 ga. stainless steel, designed to permit easy removal without disassembly of any pumps, gauges, controls, inlets, outlets, drains, lighting or electrical componentry. Trim plates, located behind the main pump panels, shall be used to provide a well sealed pump panel and a clean appearance. The trim plates shall be easily removed when the main pump panel is removed. _____

21.25 **Access panel** – a large access panel to the pump compartment shall be provided. The panel shall be easily removable and permit sufficient access to pump and valving for repairs. _____

21.26 **Pump compartment heater** – shall be 35,000 btu name brand Red Dot quantity

(2) heaters, suitable to prevent freezing of the pump and plumbing. The heater shall be located to be protected from damage and water spray. The heater shall be equipped with an on/off switch, located for convenient operation on the pump operator's panel. _____

22.0 PUMP DRIVE-

22.1 **Pump Drive-** The pump shall be driven via a split shaft PTO with a single speed transfer case. _____

22.2 **Shifting mechanism** – air or electric powered shift mechanism with a manual override. _____

22.3 **Shift control** – located in the cab for operation from the driver's position. The shift control lever shall have a positive locking feature or protective cover to prevent accidental disengagement. _____

22.4 **Warning lights** – two warning lights at the shift control and one light at the pump operator's panel, in accordance with N.F.P.A. requirements, shall indicate when the transfer case shift to pump operation has been completed and the transmission is in pump gear. _____

23.0 PUMP OPERATOR'S PANEL-

23.1 **Location –** Driver side with roll up door. The control panel shall be located behind a full length and width roll-up door (Amdor). The LED strip lighting shall illuminate the entire pump panel without causing glare for the operator. _____

23.2 **Pump operator's panel-** The pump operator's panel shall contain the following controls, gauges, warning lights, etc. All gauges must me Standard Pressure Gauges – PSI & Metric. _____

a) Pump drive engagement light. _____

b) Pump overheat warning light. _____

c) FRC Incontrol pressure governor or equal capable of automatically maintaining a desired preset discharge pressure within a range of 0-2756 kpa. Logic for the governor system shall be incorporated into the electronic control module. The system shall be designed so that it can only be operated after the fire pump has been engaged and the vehicle parking brake set. A pump cavitation protection feature shall also be tied into the governor system. Training materials to be included _____

d) Transmission oil temperature gauge with warning light and buzzer. _____

e) Priming control. _____

f) Water tank level gauge, FRC or Class 1 digital tank level gauge. _____

g) Combination gauge: master discharge and intake pressure gauge, and must be FRC, or Class 1 gauges _____

h) Valve controls – control handles for operation of each gated pump intake and discharge outlet. Manually operated valves shall have lock type control handles with linkage connection to valves. **(Manual**

gate valve for deluge gun only) _____

i) Discharge pressure gauge meters. An analogue pressure gauge (FRC, or Class 1) shall be provided for each discharge outlet excluding the pump-to-tank fill line and shall be located above the respective control valve. The approved gauges/meters shall be calibrated in accordance with the manufacturer's recommendation. Combination flow / pressure gauge for deluge gun _____

j) Foam system controls and display. _____

k) Foam tank level gauge – FRC or Class 1, digital tank level gauge. _____

l) PTO shift control display. _____

m) Monitor remote controls. _____

n) Heater controls – for pump compartment heater. _____

o) Manufacturer to supply a label specify the tank size in Imperial Gallons _____

23.3 **Panel plate** – stainless steel plate with slots for the valve control handles. The slots shall be fully sealed using flexible rubber boots. _____

23.4 **Name plates** – color coded, metal name plates, block lettered in English, for all controls, gauges, warning lights, etc. _____

23.5 **NFPA 1901-2009 Test plate** – located on or immediately above the pump operator's panel. The plate shall show discharge flows and pressures in SI units (L/min, kpa).

23.6 **Passenger side pump panel** - The pump panel shall be located behind a full length and width roll-up door (Amdor or equivalent). The LED strip lighting shall illuminate the entire pump panel without causing glare for the operator. _____

23.7 **Tank Capacity Label –** volume of tank in Imperial gallons to be mounted at Tank level indicator

23.8 **Diagram illustrating-** Bidders shall include a diagram illustrating the control panel layout. _____

24.0 WATER TANK-

24.1 **Construction** –polypropylene construction. _____

24.2 **Baffles –** longitudinal and transverse baffles as recommended by the manufacturer to prevent excessive water movement and reaction. _____

24.3 **Capacity –**Between 600-650 Imperial Gallons. _____

24.4 **Fill tower**-top access filler, easily identified and utilized by the user. The top of the fill tower shall be approximately even with the top of the apparatus body side. The fill tower cover shall be clearly labelled "water only". _____

24.5 **Overflow vent** – located to drain directly to ground, clear of any chassis and driveline components. _____

24.6 **Sump –** located in the front of the tank such as to allow use or draining of the total tank capacity. The drain function shall be activated from the left side at the rub rail and from the lowest part of thw tank.

24.7 **Outlet fitting** – 4 inch NPT female flange fitting for the tank to pump line, located in the front of the sump. An anti-swirl device shall be provided on the inside of the sump at the outlet. _____

24.8 **Fill line fitting** – 2½ in. (64 mm) NPT female fitting for the pump-to-tank fill line. A deflector shield inside the tank shall direct the water flow when filling. _____

24.9 **Mounting** – the tank shall be securely mounted in such a manner as to allow the tank to float sufficiently to prevent damage due to chassis frame movement including twisting. The tank shall be supported along its entire perimeter by a aluminum cradle bolted to the chassis frame. The cradle shall be lined with ¼ in. (6 mm) thick rubber at all points of contact with the tank. _____

24.10 **Lift eyes –** threaded bosses for attaching lift eyes for removal of the tank shall be built into the top of the tank. _____

24.11 **Water tank warranty** – 20-year _____

24.12 **External Tank Drain** – located at lowest part of tank and operated from pump panel

25.0 FOAM SYSTEM-

25.1 **Foam system** – electronic, direct injection, foam concentrate proportioning system with Class "A" foam capability, Foam Pro System 2002 preferred. Foam system is to be installed as per manufacturer's instruction and must be capable of supplying the lines. _____

25.2 **Foam injector** – located in the outlet manifold to supply foam concentrate to both 1½ in. (38mm) cross-lays, trash line and to the 2½ in. (64mm) rear outlet. _____

25.3 **Controller** – digital display/controller located at the pump operator's panel. _____

25.4 **Foam tank** – 30 Imp. gallons (136 L) capacity tank, designed specifically for foam system use. The foam tank shall be securely mounted or an integral part of the water tank. _____

25.5 **Fill tower** – top access filler, located adjacent to the water tank fill tower. The fill cover shall be equipped with a latch, easily operated by a mitted hand, and may be held in the open position without the use of a prop rod. The top of the fill tower shall be even with the water tank fill tower. The fill tower cover shall be clearly labelled "A FOAM ONLY" and shall positively seal when closed. _____

26.0 APPARATUS BODY-

NOTE: COMPARTMENT CONFIGURATIONS TO BE FINALIZED AT PRE- PRODUCTION MEETING

26.1 **Type –** Rescue style, heavy-duty style body, 5052-H321Grade aluminum. Extruded aluminum body only, (no exceptions). Shall be tongue and groove or interlocking of the components. _____

Note: Aluminum body on steel sub frame shall not be acceptable.

26.2 **Rub rail** – extruded aluminum rub rail, bolted in place and located along the lower edge of the body, both sides non-conductive.

26.3 **Compartment floors -** All compartment floors shall be 3/16 in. (5 mm) 5052-H321 aluminum, welded continuous. _____

26.4 **Insulating material**- Insulating material to prevent galvanic corrosion shall be provided at all possible areas of contact between aluminum and steel. The insulation material used shall be nonporous. _____

26.5 **Rub rail** – extruded aluminum rub rail, bolted in place and located along the lower edge of the body, both sides. _____

26.6 **Drip mouldings** – located above all compartment door openings. _____

26.7 **Storage compartments** – located along each side and rear of the body and the storage compartments shall provide a combined interior volume _____

*****All Compartment will have roll up doors*****

26.8 **Compartment design** – all compartments shall have vents for ventilation. All compartments shall have sweep-out style compartments. Bottom shelves to have provisions for water drainage _____

26.9 **Compartment doors** – Amdor roll-up doors lock/lifting bars c/w door ajar warning circuit c/w magnetic sensor located near top of door. (Sensors on door handles not acceptable) All compartment doors shall have anodized aluminum slats. _____

26.10 **Warning circuit-** "Door ajar" warning circuit to indicate an open storage compartment door with a nominal 2 in. (51 mm) diameter flashing red warning light located in the cab and shielded to protect from visibility from oncoming traffic _____

26.11 **Compartment lights** – LED rope lighting in each compartment to the right and left of opening, full length of opening. The lights in each compartment shall be activated by the opening of each compartment door. _____

26.12 **Shelves** – all compartment shelves shall be 3/16 in. (5 mm) aluminum and shall cover the full width of the compartment. Shelves shall be lined with an interlocking matting, dry-deck or equal. _____

26.13 **Slide-out trays** – all slide-out trays shall be 3/16 in. (5 mm) aluminum with heavy-duty steel sliders, with ball bearing rollers capable of supporting a capacity of 500 lbs.. The slide-out trays shall have paddle-handle type latches with dual point locks or dual T-handle type latches. The trays shall lock in the open and closed positions. _____

26.14 **Compartment Descriptions-**

a**) Left side, front compartment (L1)** – 3 adjustable full width shelves. Shelf rails to start 18' from bottom of compartment. Location for remote controls for Command Light Shadow RT Model SL 442 and Monitor. _____

b**) Left side, center compartment (L2)** – equipped with two adjustable shelves

c) **Left side, rear compartment (L3)** – to include a 12" wide, full height storage area. The remainder of the compartment shall have 2 adjustable shelves and 1 roll out tray at the bottom of the compartment. Shelf rails to start 18' from bottom of compartment. _____

d) **Right side, front compartment (R1)** – 2 adjustable full width shelves. Adjustable bracket rail to start 18' from bottom of compartment. Horizontal slide in compartments to accommodate three portable fire extinguishers _____

e) **Right side, center compartment (R2)** – equipped with a "GEARGRID" single swing out -tool board tofit into standard 12" deep compartment. If compartment is 18" or greater in depth, substitute Double Panel GEARGRID model. _____

f) **Right side, rear compartment (R3)** – Two full width adjustable shelves and one pull out tray at the bottom of the compartment. Shelf rails to start 18' from bottom of compartment. The tray shall accommodate two smoke ventilator as specified in Section 31.1) The smoke ventilators shall be securely mounted but easily removed without the use of tools. _____

g) **Rear Compartment (optional)** if a rear compartment can be provided it shall have one full with slide out tray located at the bottom of the compartment _____

26.15 **Equipment Compartments/Ladders/ Back Board/Scoop –**

a) **Ladder storage** shall be in an enclosed compartment shall be incorporated into the body design and shall be easily accessible to operators. Ladder storage shall be able to accommodate the below. Bottom of compartment no higher than 72" from the ground

b) **Ladders-** the below ladders are required and shall be supplied:

- One (1) 24 ft. 2-section extension ladder, Duo-Safety 1200 Series _____
- One (1) 14 ft. (4.3 m) roof ladder with folding roof hooks, Duo-Safety
- 1200 Series _____
- One (1) 10 ft. (3.0 m) folding (attic) ladder, Duo-Safety 585-A Series. _____

c) **Back Board & Scoop Storage Compartment** – storage capability for one (1) Back Board measuring 6' X 18" and one (1) Scoop Stretcher measuring 6' X 18" With a width of approximately 12" and with the bottom of the compartment at or below 72" high from the ground _____

d) **Pike Poles** – to be incorporated into a compartment no higher than 72" from the ground and may be part of the ladder compartment

e) **Equipment Compartments**- The bidder shall design all equipment compartments To accommodate the equipment specified in item 31.0 and item 39.0 tool appendix. The bidder shall be responsible for it location, securing, and weight distributions. All tool brackets shall be Zico tool mounting hardware included within the compartment construction as per attached tool list. Fire Extinguishers stored horizontally in compartments _____

26.16 **SCBA storage** – (4) SCBA high pressure (45) minutes cylinder storage pods within rear wheel well fenders. The pods shall be equipped with weather tight doors c/w slam locks. _____

26.17 **Rear step** – NFPA compliant and the step height shall be 22 in. (559 mm) above ground level. Step surfaces shall be non-slip and drain opening shall be provided to facilitate cleaning of the non-slip surfaces. _____

26.18 **Hose bed access steps** – located to allow personnel to climb from the rear step onto the hose bed. Step surfaces shall be aluminum anti-slip grip strut. _____

26.19 **Handrails** – NFPA handrails, located to assist in access to hose bed. _____

26.20 **Wheel wells** – equipped with full liners-5052-H321 aluminum or composite materials wheel fender and lined with Line-X or Full Metal Jacket protective spray on liner. _____

26.21 **Checker plate** – the front corners and the area immediately above the wheel wells shall be covered with polished aluminum or stainless steel checker plate. _____

27.0 HOSE BED-

27.1 **Hose bed dividers**- All hose bed dividers shall run longitudinally. _____

27.2 **Hose bed loading (floor) height** – Shall not exceed 72 in. above ground level. _____

27.3 **Hose bed bottom-** The hose bed shall have a flat bottom of removable vinyl or aluminum slats and a smooth interior free of any projections such as bolts, brackets, etc., which may damage the fire hose. The hose bed dividers shall be adjustable partitions running full length front to back. _____

a) Space on the left for 1000 ft. of 4 in. (102 mm) high volume rubber covered fire hose. _____

b) Centre walkway -slip resistant walkway required from the rear of the apparatus to the front of the hose bed (at the water and foam fill towers) nominal width 18 in. wide _____

c) Space on the right-centre for 500 ft. of 2½ in. (64 mm) synthetic double jacket, rubber lined fire hose _____

d) 200' - 2 ½"preconnected c/w nozzle on extreme right side of hose bed _____

***Note: Fire hose shall be supplied with the apparatus*.**

27.4 **Grab handles** – required at the rear of the centre walkway to the left and right side. The handles shall allow for a clear walkway and shall not interfere with the hose. _____

27.5 **Hose bed cover** –heavy duty anti-slip aluminum clam shell hose bed cover, with locking mechanism.

28.0 TRANSVERSE (CROSSLAY) AREA-

28.1 **Transverse (cross-lay**)- The transverse (cross-lay) area shall be located ahead of the hose bed and deluge standpipe. _____

28.2 **Transverse area**- The transverse area shall be covered by checker plate aluminum panels (lids), hinged at the front. A rubber ball and socket, friction fit type locking device shall be used to secure each lid in the down position. The lids shall not interfere with the operation of the deluge gun or fill tower lids when in an open or closed position. _____

28.3 **Hose capacity** – the transverse area shall provide sufficient space for two (2) cross-lays of 200 ft. (4 x 15 m) each, of 1¾ in. (44 mm) double jacket, rubber lined fire hose. A centre divider shall separate the two (2) cross-lays bins measuring 8" wide.. Both cross-lays shall be separately pre-connected to

discharge outlets in the centre of the transverse floor. The transverse shall be large enough to hold the specified hose and pistol grip-nozzles. _____

28.4 **Transverse floor** – lined with removable vinyl or aluminum slats. _____

28.5 **Guide rollers** – full length, stainless steel rollers mounted along the bottom and sides of the transverse opening on each side of the apparatus. _____

28.6 **Handrails** – aluminum or stainless steel handrails with rubber grip inserts, located on the left side, right side and below the cross-lay area, on each side of the apparatus. _____

29.0 ELECTRICAL SYSTEMS, GENERAL-

29.1 **Electrical**- The complete Fire Pumper Apparatus shall be multiplexed. All electrical wiring harness shall be encased in pre-engineered weatherproof loom. All harness connections shall be weather tight connections. Each circuit shall be colour coded and/or marked the entire length. The marking shall be easy to read. Individual wires shall be multi-strand copper with cross linked polyethylene insulation. Volts drop in any electrical wiring circuit shall not exceed 0.5 volts at highest operating temperature within normal working range. _____

29.2 **Wiring-** All wiring shall be in pre-engineered harnesses with weatherproof, guided pin-snap-together connectors. Each circuit shall be colour coded and marked the entire length of the wire with easily read numbers and/or letters for identification. _____

29.3 **Connectors**- Where crimp-on type electrical connectors are necessary, the connectors shall be fastened to the wiring, pull tested to 40 lbs., then sealed using heat shrink tubing. _____

29.4 **Solder**- Any soldered connections shall be performed using flux core solder, then sealed using heat shrink tubing. Acid and/or acid core solder shall not be used. _____

29.5 **Electrical Standard**- All wiring shall be properly secured and routed. All holes required for routing shall be grommetted and sealed as required. _____

29.6 **Circuit breakers**- Circuit breakers shall be used in lieu of fuses for all circuits requiring overload protection (reset type circuit breakers preferred).All circuit breakers and relays shall be located behind quick removable panels, located to be readily accessible for servicing. All circuit breakers and relays shall be labelled to indicate their function. Circuit breaker box cleared and labelled. _____

29.7 **Electrical distribution panels**- The electrical distribution panels for the apparatus body shall be located in an easily accessible location for the maintenance people to access. The panels shall have a removable weather tight front cover. The dedicated ground cable shall have a ground terminal in these panels with sufficient connection point available for all circuits. _____

30.0 VEHICLE LIGHTING AND WARNING EQUIPMENT-

30.1 **Canada Motor Vehicle Safety Act and the Manitoba Highway Traffic Act**- The apparatus shall be equipped with all vehicle lighting equipment required under the Canada Motor Vehicle Safety Act and the Manitoba Highway Traffic Act. **ALL LIGHTING (EXCLUDING THE TOP MOUNTED LIGHT TOWER) SHALL BE**

WHELEN LIGHTING PRODUCTS ONLY, NO EXEPTIONS. _____

30.2 **LED optical warning system**- The apparatus shall have an LED optical warning system that meets and exceeds NFPA 1901. _____

30.3 **Light bar (LED only)** – Light Bar (LED only) Whelen Freedom FN60VLED c/w dual alley lights on each side, and one PFP1 LED Pioneer flood light mounted at the center of the Lightbar, located on the front of the cab roof mounted ahead of 10' raised roof section. Individual switches shall be provided for the alley lights. _____

30.4 **LED lights**- shall be directed to front and sides only. Back of front light bar shall not be equipped with lighting. Individual switches shall be provided for alley included in light bar. All lights to be LED _____

30.5 **Red flashing lights front**- red flashing lights front two (2). _____

30.6 **Red flashing lights rear-** Whelen Series 900 LED red flashing lights rear two (2). _____

30.7 **Intersection lights** – Whelen Series 600 LED two (2) in the side at the front bumper area, two (2) in the rear wheel well area and two (2) in the rear tail board area. _____

30.8 **Arrow stick** – Whelen 500 Series TAL 85 LED, c/w controller. The arrow stick shall be mounted in the rear of the body below the hose bed. Wiring shall run continuously to the in cab controller _____

30.9 **Scene lights** – (**30:9** Scene lights – a)One per side at the top front corner of the body – Whelen 900 Series Model (9SCOEN2R) b) Two at the rear top (left & right) Whelen 600 Series (OCOELZR) _____

30.10 **Load management system** – an automatic electrical load management system shall be provided. _____

30.11 **Taillights** – Whelen PLAST4VL bezel with LED warning/brake/turn/and tail light _____

30.12 **Turn signals** – LED as per C.M.V.S.S. plus side-mounted turn signals located approximately midway of vehicle, as per NFPA 1901 (current edition). _____

30.13 **Wig wags** – alternately flashing headlights operating on high beam only. _____

30.14 **Siren** – siren system with two (2) speakers with mounted in the front bumper, spaced as wide apart as possible. _____

30.15 **Warning lights and siren controllers**- The warning light controller shall be mounted with the arrow stick controller mounted to the right of the driver for primary operation by the driver from the normal seated position. The officer's position shall be equipped with a siren tone control switch. This switch when activated shall only be able to change siren tones of siren wail, yelp and electronic air horn. It will not select stand by or on/off selection. The switch position shall be to the left of the officer. Officer to operate Siren to be a Federal PA 4000 _____

30.16 **Air horns** – two (2) heavy duty air horns mounted in the front bumper. The air horns shall be operable from the driver's position via the steering wheel horn activator and a centre mounted chain _____

30.17 **Back-up alarm** – electronic, self-adjusting (87-112 dB) type. _____

30.18 **Spotlight** – LED heavy duty hand held spotlight with momentary switch, dash mounted in the officer area. _____

30.19 **Light Tower –** Command Light Shadow RT Model SL 442 – LED. Tower shall be self sustaining and capable to supplying power required for the lighting system. To be run off vehicle 12 Volt system. To be mounted on top of rear body. _____

31.0 FIRE FIGHTING EQUIPMENT

31.1 The following equipment **shall be supplied as part of the apparatus** and shall be mounted where applicable.

31.2 **VARIABLE SPEED PPV BLOWER**-

a) Tempest Model # 700 - 261 VR2 16" electrical variable speed PPV blower 12/3 cord with 20 amp twist lock plug complete with 15 meters 10/3 cold weather rated cord with 20 amp twist lock ends. _____

31.3 **GROUND LADDERS**-

a) One (1) 24 ft. 2-section extension ladder, Duo-Safety 1200 Series. _____

b) One (1) 14 ft. roof ladder with folding roof hooks, Duo-Safety 1200 Series. _____

c) One (1) 10 ft. folding (attic) ladder, Duo-Safety 585-A Series. _____

d) One (1) Little Giant ladder Type 1A Model 17. _____

31.4 **PIKE POLES**-

a) One (1) 8 ft. fibreglass pike pole with non slip "D" handle. _____

b) One (1) 6 ft fibreglass pike pole with non slip **"**D" handle. _____

c) One (1) 4 ft. fibreglass pike pole with non slip "D" handle. _____

31.5 **AXES-**

a) Axes – two (2) 6 lb. (2.7 kg) two pickhead fire axes with fibreglass handles. _____

31.6 **SLEDGEHAMMER-**

a) Sledgehammer – one (1) 10 lb. (4.5 kg) sledgehammer with fibreglass handle. _____

31.7 **PRYBARS**-

a) One (1) 50 in. (1270 mm) pry bar. _____

b) One (1) Kelly tool. _____

c) Three (3) 24 inch goose neck pry bars. _____

31.8 **SHOVELS**-

a) Two (2) square mouth shovel. _____

31.9 **EXTINGUISHERS**-

a) One (1) 2½ gal. (11 L) stainless steel pressurized water extinguisher supplied c/w a separate hand pump to pressurize. _____

b) One (1) 15 lb. (6.8 kg) BC rated CO2 extinguisher. _____

c) One (1) 20 lb. (9.1 kg) BC rated pressurized dry chemical extinguisher. _____

31.10 **DOOR OPENER** –

a) one (1) hydraulic powered door opener with hand pump, prybar, hammer c/w carry bag, Rabbit Tool by Hurst Jaws of Life (no substitutes). _____

31.11 **NOZZLES-**

a) Two (2) 2½ in. (64 mm) WCT Akron Model 4825 Nozzles. (500-1100) _____

b) One (1) 2½ in. (64 mm) WCT Akron Model 2393 Axial Play Pipe c/w stacked tips. _____

c) Four (4) 1½ in (38 mm) Akron Model 4820 Assault nozzle with Pistol Grip (350-550) _____

d) One (1) 1½ in (38 mm) Akron Model 1720 Turbojet Nozzle with Pistol Grip (500) _____

e) One (1) 1½ in. (38 mm) nozzle, Akron Style 4715, (350-550) _____

f) One (1) Akron 777 Quick Attack Foam Tube _____

31.12 **VALVES-**

a**)** One (1) light weight, ball valve water thief, Akron style 1573, 2½ in. (64 mm) female swivel Western Canada thread x one 2½ in. (64 mm) male Western Canada thread and two 1½ in. (38 mm) male National pipe thread, with protective caps on male threads. _____

b**)** Two (2) 2½ in. (64 mm) hydrant gate, Akron style 2285, Western Canada thread. _____

c**)** One (1) Akron 2582 4" stortz to 3 x 2½ WCT male valve c/w thread protectors and mount. _____

31.13 **WYE** –

a) One (1) 2½ in. (64 mm) WCT x two (2) 1½ in. (38 mm) male Western Canada thread wye, Pyrolite, with protective caps on male threads. _____

31.14 **ADAPTERS-**

a) Two (2) 2½ in. (64 mm) double male adapters, Akron style 336 – Pyrolite, Western Canada thread. _____

b) Two (2) 2½ in. (64 mm) double female swivel adapters, Akron style 335 – Pyrolite, Western Canada thread. _____

c) Two (2) 4 in. (102 mm) Storz x 2½ in. (64 mm) male Western Canada thread adapter, with protective cap on male thread. _____

d) Two (2) 4 in. (102 mm) Storz x 2½ in. (64 mm) female swivel Western Canada thread x 30°, 4 in. (102 mm) Storz adapter. _____

e) Two (2) 2½ in. (64 mm) Western Canada thread male to 1½ in. (38 mm) NPT female adapter, Pyrolite or brass. _____

f) Three (3) 6" hydrant to 4" stortz swivel hydrant adaptor. _____

31.15 **PORTABLE MONITOR**-

a) Demountable, portable monitor with tip-over protection, Crossfire TFT or equal, complete with 4 in. (102 mm) single Storz inlet, 2499 quad stacked tips and stream straightener (18 in.) (457 mm) long. Stream straightener and quad stacked tips shall be adaptable to Akron monitor _____

b) Portable monitor compartment storage bracket – required. Mounting brackets shall also be required for the stream straightener and tips. _____

31.16 **HOSE-**

a) 11 lengths of 1¾ in. Angus ULTIMA double jacket, rubber lined fire hose coupled with 1½ in. NPSH

b) One (1) 75 ft. 1¾ in. rubber trash line yellow in colour _____

c) Twelve (12) 64 mm hose Angus ULTIMA double jacket, rubber lined fire hose coupled WCT

d) Eight (8) 100mm X 33 M Angus Hi-Vol Storz _____

e) Two (2) 100mm X 15M Angus Hi-Vol Storz _____

f) Two (2) 44mm X 2 M Aqua Flow Plus _____

31.17 **STIHL RESCUE SAW-**

a) Stihl Rescue Saw c/w one (1) 12 in. 24 tooth carbide blade, one (1) 14 in. metal blade and one (1) 14 in. concrete blade. _____

31.18 **MISCELLANEOUS**

a) Lennox Hacksaw c/w 3 blades. _____

b) One (1) set of wheel chocks. (mounted) _____

c) 30 in. bolt cutter. _____

d) One (1) – Tempest Ventilation Fan Model 700-086 – 16" PPV, 5.5 HP Honda c/w with catalytic convertor _____

e) Two (2) combination Storz wrenches with mount _____

f) Two (2) combination Stroz wrenches loose _____

g) One (1) hose clamp.(manual able to accept 4 inch hose) _____

h) One (1) Honda EU2000i Portable Generator _____

i) Two (2) Portable LED Lights c/w Cord Reels _____

j) Four (4) Energizer Hard Case Lanterns. With batteries _____

k) One (1) Bullard T3 truck mount battery charger. _____

l) Two (2) (50') extension cord 12/3 (20 amp twist lock plugs) _____

m) Two (2) 100' extension cord 12/3 (20 amp twist lock plugs) _____

n) Two (2) 12" 12/3 adapter (20 amp twist lock female to 15 amp u ground male)_____

o) Two (2) 12" 12/3 adaptor (15 amp u ground female to 20 amp twist lock male)_____

p) One (1) 1 gallon gas can metal with built in spout _____

q) One (1) 2 gallon gas can metal with built in spout _____

r) One (1) braid on braid 150' utility rope w/ bag _____

s) One (1) Chainsaw Stihl MS 260 c/w Wrench _____

t) One (1) bracket for 3 Oxygen D cylinders _____

u) Two (2) poly bush fire backpacks (folding) _____

v) One (1) Halligan Tool _____

32.0 PAINT COLOUR-

The City of Winnipeg Fire Department takes pride in the aesthetics and appearance of their Fire Trucks. The apparatus shall be painted as follows:

32.1 **Cab –** painted two tone, with bottom half red to match Dupont C8053U (Candy Apple Red) and top half white to match Dupont DU 1300 (Super White), using a polyurethane enamel paint. (DuPont Imron or Sikkons paint) _____

32.2 **Apparatus body** – painted red to match the bottom half of the cab. _____

32.3 **Apparatus body compartments, interior** – painted with a light grey, scratch resistant, automotive grade paint. _____

32.4 **Chassis frame, axles, etc.** – painted using smooth black corrosion resistant paint. _____

32.5 **Paint Application** – All paint shall be applied in accordance with the paint manufacturer's recommendations. All surfaces shall be properly cleaned, prepared and primed with a suitable primer prior to painting. Painting shall have been performed in an atmosphere controlled spray booth. The cab and apparatus body shall have been painted with all trim and hardware removed. All mounting holes shall have been drilled and deburred and nutserts shall be installed in blind holes prior to painting. Any caulking of body seams shall be performed prior to painting. Caulking material shall be of the highest Industry standards. _____

32.6 **Reflective striping** – all reflective striping shall be 3M 4000 diamond grade

striping where ever possible. The reflective striping shall be red on white and/ or aluminum background and white on red background. The side striping shall be stylized Z pattern front to back of vehicle. The striping shall be composed of 5 bands. The band width shall be 10". Example: white stripe on red background. From top down shall be: one 1" white stripe, one 1' red stripe, one 6'"white stripe, one 1" red stripe, one 1" white stripe. The stripes shall not be spaced apart to reveal background. The stripe shall be edge sealed as per 3M guidelines. Incorporated within the cab reflective stripe shall be stylized WFD. Cab drivers and officers door shall be location of Winnipeg Fire Department crest (size 12 ¾ "x 12" wide) crest shall be within reflective stripe. Were 4000 diamond grade reflective striping is difficult to apply; series 680 reflective film shall be allowable Example: on roll up door slats. The reflective striping shall at all times meet and/or exceed NFPA 1901 as the standard guideline. _____

32.7 The reflective striping on the cab rear entrance doors shall incorporate the Fire Department's stylized "WFD" logo. (A diagram of the logo shall be provided to the Contractor by the City). _____

33.0 NOISE LEVELS-

33.1 **Sound Level**- The sound level in the cab at all seated positions shall not exceed 80 dB(A), measured in accordance with SAE J336, with the apparatus traveling at any speed up to governed speed with the sirens off and doors and windows closed. **State dba**- _____

34.0 DELIVERY-

34.1 **Delivery Point-** The complete unit shall be serviced, ready for operation and delivered F.O.B. with the freight prepaid, including invoice and N.I.V.S. (if applicable) to the WFMA 185 Tecumseh Street, Winnipeg MB. _____

34.2 **Delivery Time**- Within three hundred and sixty-five days (365) Calendar Days from the date of official notification of award of Contract. Equipment shall be delivered between 8:00 am and 3:00 pm on Business Days. _____

34.3 **Delivery Contact**- The Contractor shall contact the Contract Administrator prior to delivery of the equipment.

34.4 **P.D.I-** A pre-delivery inspection shall be performed by the Contractor on the equipment. Proof upon inspection including completed check list _____

35.0 MANUALS-

35.1 Manuals supplied under this contract shall be in English and shall be specifically for the apparatus supplied and in electronic form. General purpose manuals are not acceptable. The manuals shall cover the complete equipment including all components thereof. _____

35.2 The following manuals shall be supplied under this Contract. The manuals shall be supplied at the time of delivery of the apparatus.

a) Operator's manuals – two (2) sets in total. _____

b) Parts and service manuals, including as per unit built detailed wiring schematics and preventative maintenance schedules – two (2) sets in total. _____

Note: The wiring schematics shall identify the location of all relays, switches, etc.

c) **Diagnostic tools-** Spartan 9or equivalent) diagnostic system and software or equivalent with most recent updates. Modem and data logger to be supplied on all units. Diagnostics shall be on engine, transmission (New World) ABS brakes and multiplex electrical system, etc. _____

36.0 TRAINING-

36.1 The Supplier shall provide at their expense, detailed operational and maintenance training to EVT certified staff and Academy personnel. The training shall be conducted in separate sessions for each group of personnel. Each session shall be sufficient in duration and shall provide adequate familiarization and orientation on the apparatus, to the satisfaction of the Contract Administrator. The training shall be conducted in Winnipeg at a location to be designated by the Contract Administrator. The training shall be divided into two separate sessions, one for maintenance personnel and one for operating personnel. The training shall be conducted in separate or combined sessions for each group of personnel. _____

36.2 The duration of the sessions shall be as long as required for adequate familiarization and orientation of the equipment to the satisfaction of the Contract Administrator. _____

36.3 The training shall be conducted within two (2) calendar weeks from date of delivery and shall be coordinated through the Contract Administrator. _____

36.4 The training shall be conducted in Winnipeg at a time and location designated by the Contract Administrator.

36.5 Pricing should be based on two (2) business days for maintenance personnel and two (2) business days for operating personnel. _____

36.6 Training Aides:
a) On the type of equipment being offered**, state if CD Rom training aides or on-line training are available**- _____

36.7 **What is the recommended minimum training duration?**

Primary unit: _____
For major attachments (if applicable): _____

36.8 **State what other training aids are available (videos, CDs).**

For the primary unit: _____
For major attachments (if applicable) _____

36.9 **Training Materials-** Training Materials and applicable manuals or on-line training material information must be provided to the Winnipeg Fire Paramedic Service Training Academy at the earliest possible opportunity, no later than (4) weeks prior to delivery, when supplying vehicles, equipment and related attachments. Send these materials, preferably in both electronic format and hard copy (training videos are to be supplied on either CD or DVD) to:

Winnipeg Fire Paramedic Service Training Academy
2546 McPhillips Street
Winnipeg, Manitoba

Office- (204).986.8398
Fax- (204).986.4266

37.0 WARRANTY-

37.1 The warranty on the apparatus shall include 100% replacement parts and labour at no cost to the City and shall cover the complete equipment and all parts thereof against any defects of workmanship, construction and materials from the effective date of in-service. **State warranty details on the following**:

- Chassis basic coverage
- Chassis engine
- Chassis transmission
- Chassis Driveline
- Chassis Axles
- Chassis Electrical
- Chassis Tires
- Chassis Frame Rails
- Chassis Cab Structural
- Chassis Paint
- Body Apparatus basic coverage
- Body Apparatus hardware (handles, latches, roll-up doors)
- Body Apparatus Electrical
- Body Apparatus Lighting
- Body Apparatus Paint

37.2 **Importance to the City-** The apparatus is of vital importance to the City in providing essential services and, accordingly, all warranty items brought to the attention of the Contractor by the City shall be rectified expediently. The City reserves the right to affect warranty repairs to the apparatus, at full cost to the Contractor, should the Contractor fail to perform in a timely manner.

37.3 **Warranty Administration Coordinator**- The successful Bidder shall have a dedicated person allocated and available 24/7 to receive phone calls and determine, co-ordinate, schedule and have the ability to authorize all warranty related issues which arise during the warranty period.

State the name of the person responsible and alternate along with the 24hr. emergency phone number-

38.0 Appendix # 1 – Listing of Equipment on WFD Engines (The purpose of this appendix is to illustrate what a typical WFD engine carries as a full equipment load. This list will not match the equipment being purchased in section 31.0 and is for compartment configurations only.

Cab:

1 Medeco Key/ Ace Lock Box Key (ea)
1 Bullard Thermal Imaging Camera w Charger & Battery
1 Panasonic Toughbook Computer
4 Hand Lanterns
4 SCBA w Air Cylinders

2 Sherlock Map Book
4 Portable Radios w Remote Microphones
1 Fuel Card
4 Helmet Patches
2 Quick Fit Sprinkler Tongs
1 Cab Jack Bar
3 Radio Headsets (in office)
1 Garbage Container
1 Seat Belt Cutter
1 CO Detector
2 Hand Sanitizers
1 Emergency Response Guide book
1 Medical Clipboard
1 Fire Alarm Clipboard / CO Detector
1 Tactical Clipboard
1 Inventory Clipboard
1 After the Fire Kit
2 Erik Kits
1 Thermal Scan
1 44mm Flake cw Akron 4820 Pistol Grip Nozzle and Reducer
1 Vehicle Registration

COMPARTMENT

1 O2 Cylinder
1 K.E.D.
1 Frac Pac
1 Trauma Bag

COMPARTMENT

2 Storz to 65 mm Male
1 Storz to 65mm Female
2 65 mm Double Female Adaptors
2 65 mm Double Male Adaptors
1 Rubber Mallet
1 44mm Flake cw Akron 4820 Pistol Grip Nozzle and Reducer
1 High Pressure Kit cw High Pressure Hydrant Key, 1- 3 1/2 " Female to 4 ½ " male, 1- 3 ½ Female to 100mm Storz, 1- 65mm Male to 100 Storz
2 Hydrant Keys
4 Storz keys
2 65 mm Spanner Wrenches
3 Hose Hangers
1 65 mm Akron AssaultFog Nozzle
1 65 mm Akron Smooth bore w Tips 1 ¾", 1 3/8", & 1"
1 Turbojet Foam Nozzle
1 Cellar Nozzle
1 Socket Set
1 Set Road Deflectors (triangles)
1 65 mm Hydrant Gate
1 100mm Storz Manifold to 3- 65 mm Outlets
1 65 mm to 44 mm Gated Wye
1 Command Light Control
1 Deluge Gun Control
1 Spray Bottle R.V. Anti-freeze
2 Scene Tape (rolls)
1 Tool Box cw:Crescent wrench, Needlenose Pliers, Linesman Pliers, Waterpump Pliers, side Cutters,Cable Cutter, Utility Knife, Hacksaw c/w 3 blades, Screwdriver set, Pipe Wrench, BallPeen Hammer, Vise Grip Pliers, adjustable rubber strap wrench

COMPARTMENT

1 Piercing Nozzle
2 Water Back Packs
1 Plug N Dyke (container) & Wedges
1 Medical Bag (collars, blankets, headblocks)

COMPARTMENT

2 Sand Bags & 2 Containers of Sand
1 Sledge Hammer
1 Halligan/ Axe New York Tool
1 Axe
1 Bolt Cutter
1 Kelly Tool
1 20' Pony Length 100mm w Hyd. Adaptor
1 30' Pony Length 100mm w Hydrant Adaptor
1 50' roll 44mm Hose
1 50' Roll 44mm Hose cw Akron 4820Pistol Grip Nozzle w Reducer
1 24" Pry Bar
1 High Rise Kit

COMPARTMENT

1 Hydrant Kit w: hydrant gate, 1- Storz to 65mm Female Adaptor, 2 Storz Keys, 1-Adjustable Hydrant Key,1-Hydrant Key
1 Retractable Power Supply Box 200'
1 K-960 Rescue Saw w Masonary, Carbide, & Stell Cutting Blades
1 Chainsaw (Stihl MS 260)
1 Container Mixed Gas
1 Container Straight Gas
1 Chainsaw / K12 Tool (wrench)
1 Heavy Gauge Electrical Cord 30'
1 Heavy Guage Electrical cord 50'
2 Sliding Female to 3 Prong Male Electical Adaptors
2 Sliding Male to 3 Prong Female Electrical Adaptors

COMPARTMENT

1 Burn Bundle / OB Kit
1 SAED/ &/ or Life Pak 12 Lead Monitor
1 O2 Therapy Kit
1 Incident Command Board/ Pas Kit
1 Universal Precautions Kit
2 Trauma Bears

COMPARTMENT

1 Foam Tank Filler Hose

COMPARTMENT

1 Hose Clamp 100mm
2 24' Pry Bars
1 Axe
1 Dry Chemical Extinguisher
1 CO2 Extinguisher
1 Pressurized Water Extinguisher
1 Air Pump (hand)
1 Water Cooler
1 Bag w 3 Mustang Jackets and Set Throwballs

1 Rabbit Tool

COMPARTMENT

4 Tarps
1 Utility Rope (bag)

COMPARTMENT

1 PPV Fan (electric) w Adaptor
1 PPV Fan (gas)
2 Portable Lights w Cord Reels
1 Ground Monitor w 4 Tips
1 Little Giant Ladder
1 D-Handle Pike Pole (short) 4'

WHEEL WELL STORAGE

4 SCBA Air Cylinders

BACKBOARD COMPARTMENT

1 Spine Board w Straps, Head Bed
1 Scoop Stretcher

TOP OF PUMP

2 Corn Brooms
1 30' Extension Ladder
1 14' Roof Ladder
1 6' Pike Pole
1 10' Pike Pole
1 10' Collapsible Attic Ladder
1 4' Straight Lining Bar
2 Squeegees
2 Square Mouth Shovels

HOSE BED

8 100' Lengths of 100mm Hose cw Hydrant Adaptor
8 50' Lengths of 65mm Hose w Water Thief

FRONT BUMPER

1 Trash Line (75') cw Nozzle

CROSS-LAY HOSE BED

2 4 -50' Lengths 44mm Preconnected Hose c/w Nozzle
1 4 -50' Lengths 65mm Preconnected Hose c/w Nozzle

Form O-Preventative Maintenance Schedule

Make:
Model:
Year:

Service/Parts Contact info:

PM Checklist and Adjustments

Please fill in all applicable areas and add any missing service intervals or component part numbers that are applicable to the supplied unit.

All items required to maintain warranties must be listed.

Description:	Capacity:	Type:	Description:	Capacity:	Type:
Engine Oil	Litres		Transmission	Litres	
Cooling System	Litres		Transfer Case	Litres	
Hydraulic Tank	Litres		Hydraulic System	Litres	
A/C Refrigerant	Lbs	R-134a	Brake Reservoir	Litres	
Fuel System	Litres		Differential (Front)	Litres	
Final Drives	Litres		Differential (Rear)	Litres	

Type of Filter:	OEM:	Wix:	Purolator:	Fram:	Baldwin:	Fleetguard:
Engine Oil						
Air Primary						
Air Secondary						
Primary Fuel						
Secondary Fuel Filter						
Cab Air Filter						
Hydraulic (pressure)						
Hydraulic (return)						
Transmission						
A/C Belt						
Alt Belt						
Water Pump Belt						
Serpentine Belt						

Make
Model:

Year:

Item	Recommended Service Intervals. Kms/Hours	Comments
List any one time services		
List any one time adjustments		
List regular Adjustments		
Initial Oil and Filter Change		
Engine Valve Lash and Fuel Injector, Timing Check.		
Engine Oil and Filter Changes and/or Oil Sample Intervals		
Lubrication Points and Intervals		
Transmission Filter/Screens-Replace/Clean and/or Obtain Oil Sample		
Primary Fuel Filter (Replace)		
Secondary Fuel Filter (Replace)		
Differential Oil Sample (Front)		
Final Drive Oil Sample (front)		
Hydraulic Filter (Replace and Obtain Oil Sample)		
Front Differential Fluid (Change)		
Rear Differential Fluid (Change)		
Differential Vents		
Transmission Oil (Change)		
Clean Transmission Magnetic Screen		

Make
Model:
Year:

Item	Recommended Service Intervals Kms/Hours	Comments
Change Final Drive Oil (Front)		
Clean Engine Crankcase Breather		
Hydraulic System Oil (Change)		
Engine Valve Lash and Fuel Inj. Timing (Check)		
Cooling system Water Temperature Regulator (Replace)		
Cooling System Coolant Extender (ELC)-Add		
Cooling System		
Wheel nut Torque and Intervals		
Check wheel Nut torque At Every service interval		
Refrigerant dryer (Replace)		

FORM P-DATA COLLECTION SHEET FOR W.F.M.A

UNIT NUMBER		

ITEMS		**DETAILS FROM VENDOR**
MAKE/MANUFACTURER	(e.g. Ford, Volvo, etc.)	
MODEL	Enter model (e.g. F-350)	
YEAR	(Enter model year)	
DISCRIPTION/TYPE	(e.g. Truck, snow blower, mower, tractor)	
FUEL TYPE	(e.g. gas, diesel, hybrid, propane)	
RATED FUEL CONSUMPTION	(L/100 km, L/hr, etc.)	
GVWR	(In pounds [lbs.] and kilograms)	
GAWR FRONT		
GAWR REAR		
GCWR		
DIMENSION HEIGHT	(Overall height m)	
DIMENSION LENGTH	(Overall length m)	
DIMENSION WIDTH	(Overall width m)	
WHEELBASE		
DELIVERY DATE	(Confirmed date)	
SUPPLIER/DEALER	(Name, phone number, and contact person)	
ODOMETER/HOUR METER	(Upon delivery)	
V.I.N. NUMBER		
SERIAL NUMBER (if applicable)		
CAB CONFIGURATION	(Regular, Extended, Crew)	
M.G.I NUMBER (if applicable)		
KEY DOOR NUM		
KEY IGNITION NUM		
PAINT CODE	(Exterior colour)	
PAINT COLOUR	(Exterior colour)	
PAINT TRIM CODE	(Interior code #/colour)	
ITEMS	**SERVICE ITEMS**	**DETAILS FROM VENDOR**
ENGINE MAKE		
ENGINE MODEL		
ENGINE SERIAL NUMBER		
ENGINE HORSE POWER	(Enter as xxx H.P. @ xxxx RPM	

ENGINE DISPLACMENT	(In cubic inches and litres)	
CPL NUMBER		
ENGINE CYLINDERS	(Number of cylinders)	
ENGINE OIL CAPACITY	(Capacity with filter, in litres)	
ENGINE OIL FILTER PART NUMBER	(Number of filters and part numbers)	
ENGINE OIL TYPE	(e.g. 15W40, regular or synthetic)	
ENGINE AIR FILTER (PRI)	(Make, part number, quantity)	
ENGINE AIR FILTER (SEC)	(Make, part number, quantity)	
CAB FILTER	(Part number and location)	
FUEL TANK CAPACITY	(In litres)	
FUEL FILTER # PRIMARY	(Make, part number, and quantity)	
FUEL FILTER # SECONDARY	(Make, part number, and quantity)	
FUEL SEPARATOR	(Make, part number, and quantity)	
COOLANT TYPE	(Heavy-duty, extended life, or regular)	
COOLANT CAPACITY	(In litres)	
COOLANT FILTER NUMBER	(Part number)	
TRANSMISSION		**DETAILS FROM VENDOR**
TRANSMISSION MAKE	(Enter make & model)	
TRANSMISSION SERIAL NUMBER		
TRANSMISSION TYPE	(Hydrostatic, standard, automatic)	
TRANSMISSION FLUID CAPACITY	(in litres)	
TRANSMISSION FLUID TYPE	(Dextron III, synthetic, weight, etc.)	
TRANSMISSION FILTER(S)	(# of filters and part numbers; internal and external filters)	
TRANSMISSION FILTER KITS	(Gasket, o-ring, secondary filters etc.)	
TRANSMISSION COOLER	(Make and part number if applicable)	
FRONT DIFFERENTIAL		**DETAILS FROM VENDOR**
DIFFERENTIAL MAKE		
DIFFERENTIAL MODEL		
DIFFERENTIAL SERIAL #		
DIFFERENTIAL OIL TYPE	(e.g. 80W90, synthetic)	
DIFFERENTIAL CAPACITY	(In litres)	
REAR DIFFERENTIAL		**DETAILS FROM VENDOR**
DIFFERENTIAL MAKE		

DIFFERENTIAL MODEL		
DIFFERENTIAL SERIAL #		
DIFFERENTIAL OIL TYPE	(e.g. 80W90, synthetic)	
DIFFERENTIAL CAPACITY	(In litres)	
TIRES/WHEELS/ETC.		**DETAILS FROM VENDOR**
TIRE MANUFACTURER & BRAND		
TIRE SIZE FRONT		
TIRE SIZE REAR		
WHEEL NUT TORQUE	(lb-ft)	
WHEEL NUT RE-TORQUE INTERVAL		
FINAL DRIVE/HUB	(Oil type and capacity)	
WHEEL SPINDLES OIL CAPACITY	(In litres)	
WHEEL SPINDLES FLUID TYPE	(e.g. 80w90, Dextron, synthetic)	
POWER STEERING CAPACITY	(In litres)	
POWER STEERING FLUID TYPE	(e.g. ATF or synthetic)	
POWER STEERING FILTER #	(Make, part number, quantity)	
BRAKE FLUID	(Type)	
BRAKE TYPE	(Hydraulic/air)	
MISC. ITEMS		**DETAILS FROM VENDOR**
ALTERNATOR	(Enter make, model, part #)	
ALTERNATOR AMPS	Integers only (e.g. 105, 125, etc.)	
BATTERY MAKE		
BATTERY MODEL		
BATTERY CCA		
BATTERY QTY.		
BATTERY VOLTAGE		
BELT A/C PART #	(Enter make and part number)	
BELT COMPRESSOR PART #		
BELT FAN PART #		
BELT ALTERNATOR PART #		
BELT STEERING	(V-belt or serpentine, quantity)	
BELT STEERING PART #		
BELTS OTHER		

COMPRESSOR CFM	(e.g. 13.2, 15, 18)	
COMPRESSOR MODEL	(Enter make and model)	
COMPRESSOR PART #		
AIR DRYER	(Enter make and model)	
AIR DRYER PART/SERIAL #		
AIR DRYER DESCIANT		
AIR DRYER FILTER	(part number)	
AUX. HEATER TYPE	(Diesel, electric, etc.)	
AUX. HEATER MAKE		
AUX. HEATER MODEL		
AIR CONDITIONING	(Type, 113 etc.)	
AIR CONDITIONING CAPACITY	(lbs)	
A/C RECEIVER DRYER PART #	(part, number)	
ATTACHMENT ITEMS	(Construction equipment)	**DETAILS FROM VENDOR**
SKID SHOE	(part number)	
STINGER BLADES	(part number)	
STINGER TEETH	(Quantity and part number)	
BUCKET TEETH	(Quantity and part number)	
CUTTING TOOTH		
CLAM BUCKET BLADE	(Dimensions and part number)	
UTILITY BUCKET BLADE	(Dimensions and part number)	
BOX SCRAPER BLADE	(Dimensions and part number)	
BUCKET CAPACITY		
BUCKET BLADES AND SIDES	(Quantity and part number)	
GRADER BLADES	(part number)	
GRADER ICE BLADES	(Part number)	
WING BLADES	(Part number)	
BODY UNIT ITEMS		**DETAILS FROM VENDOR**
BODY SUPPLIER	(Name and contact number)	
BODY TYPE		
BODY MAKE		
BODY MODEL		
BODY SERIAL NUMBER		
BOX SIZE	(Length and/or capacity)	

HYDRAULICS		**DETAILS FROM VENDOR**
HYDRAULIC PUMP	(Make, model and capacity)	
PTO	(Make, model and shift type)	
HYDRAULIC TANK CAPACITY	(In litres)	
HYDRAULIC FILTER NUMBER	(Filter number and screen numbers)	
HYDRAULIC FLUID TYPE	(e.g. N22, synthetic)	
HYDRAULIC FILTER	(Make, quantity and part number)	
HYDRAULIC SCREEN	(Make, quantity and part number)	
HYDRAULIC BREATHER	(Make, quantity and part number)	
HYDRAULIC SPINNER		
HYDRAULIC SPINNER MAKE		
HYDRAULIC SPINNER MODEL		
HYDRAULIC SPINNER SERIAL #		
CONVERYOR MOTOR MAKE		
CONVERYOR MOTOR MODEL		
CONVERYOR MOTOR SERIAL #		
CYCLE TIME DOWN		
CYCLE TIME UP		
SANDER/DUMP CONTROLS:		**DETAILS FROM VENDOR**
CONTROL SYSTEM MAKE		
CONTROL SYSTEM MODEL		
CONTROL SYSTEM SERIAL #		
CONTROL SYSTEM PART #		
CONVEYOR CHAIN	(Length and part #)	
SENSORS	(Part #s)	
CALCIUM PUMP MAKE		
CALCIUM PUMP MODEL		
CALCIUM PUMP SERIAL #		
CALCIUM PUMP CAPACITY		
UNIT ITEMS	**ATTACHMENT(S)**	**DETAILS FROM VENDOR**
TYPE	(e.g. snow blower, mower, spreader, etc.)	
MAKE/ MANUFACTURER	(e.g. John Deere, Colpron, etc.)	
MODEL		

YEAR	(Enter year manufactured)	
AUX. ENGINE	(Make and model)	
AUX. ENGINE DISPLACEMENT	(In cubic inches and litres)	
AUX. ENGINE SERIAL #		
SUPPLIER/DEALER	(Name, phone number, and contact person)	
FUEL TYPE	(e.g. gas, diesel, propane)	
ODOMETER/HOUR METER		
AUX. ENGINE HORSE POWER	(Enter as xxx H.P. @ xxxx RPM	
AUX. ENGINE CYLINDERS	(Number of cylinders)	
AUX. ENGINE OIL CAPACITY	(Capacity with filter, in litres)	
AUX. ENGINE OIL FILTER PART #	(Number of filters and part number)	
AUX. ENGINE OIL TYPE	(e.g. 15W40, regular or synthetic)	
AUX. ENGINE AIR FILTER (PRI)	(Make, part number, quantity)	
AUX. ENGINE AIR FILTER (SEC)	(Make, part number, quantity)	
HYDRAULICS	**ATTACHMENT(S)**	**DETAILS FROM VENDOR**
HYDRAULIC DRIVE MAKE	(Enter make & model)	
HYDRAULIC DRIVE MODEL		
HYDRAULIC DRIVE SERIAL #		
HYDRAULIC DRIVE TYPE	(Hydrostatic, standard, automatic)	
HYDRAULIC DRIVE FLUID CAPACITY	(in litres)	
HYDRAULIC DRIVE FLUID TYPE	(Dextron III, synthetic, etc.)	
HYDRAULIC DRIVE FILTER(S)	(# of filters and part numbers; internal and external filters where applicable)	
HYDRAULIC DRIVE COOLER	(Part number if applicable)	
HYDRAULIC BREATHER CAP	(Part number if applicable)	
SWEEPER		**DETAILS FROM VENDOR**
BROOM SEGMENTS	(part #)	
WATER FILTER	(part #)	
WEAR PLATES	(part #)	
ROLLERS	(part #)	
SKID SHOES	(part #)	

PREDICTIVE MAINTENANCE ITEMS	**Predictive maintenance** (**PdM**) techniques help determine the condition of in-service Equipment in order to predict when maintenance should be performed. The ultimate goal of PdM is to per-form maintenance at a scheduled point in time when the maintenance activity is most cost-effective and before the Equipment loses performance.	**DETAILS FROM VENDOR (Intervals in hrs/kms)**

FORM Q-SUSTAINABILITY QUESTIONNAIRE

Product Information (Yes/No)

Product Sustainability: High Quality, Small Ecological Footprint

1. Have you employed environmentally innovative best practices and/or technologies in the goods you are supplying in this Bid Opportunity as compared to similar goods? If yes, please describe them below. _____

Describe: _____

2. Have you obtained 3rd party environmental certifications for any of the products that you are supplying in this Bid Opportunity? _____

Describe: _____

3. Have you performed a life cycle assessment of the goods you are supplying in this Bid Opportunity? If yes, please describe below. _____

Describe: _____

4. Are there any other environmentally innovative best practices and/or technologies in the goods you are supplying in this Bid Opportunity that we could have specified in this tender, but have not? If yes, please describe them below. _____

Describe: _____

Company Information

Energy and Climate: Reducing Energy Costs and Greenhouse Gas Emissions

1. Have you measured your corporate greenhouse gas emissions? If yes, please report your total annual greenhouse gas emissions reported in the most recent year measured? _____

Describe: _____

2. Have you set publicly available greenhouse gas reduction targets? If yes, what are those targets? _____

Describe: _____

Material Efficiency: Reducing Waste and Enhancing Quality

1. Do you measure the total amount of solid waste generated from the facilities that produce your product(s) for this Bid Opportunity? If yes, please report for the most recent year measured. _____

Describe: _____

2. Have you set publicly available solid waste reduction targets? If yes, what are those targets? _____

Describe: _____

3. Do you measure the total water use from facilities that produce your product(s) for this Bid Opportunity? If yes, please report for the most recent year measured. _____

Describe: _____

4. Have you set publicly available water use reduction targets? If yes, what are those targets? _____

Describe: _____

Natural Resources: Responsibly Sourced Raw Materials

1. Have you established publicly available sustainability purchasing guidelines for your direct suppliers that address issues such as environmental compliance, employment practices and product safety? _____

Describe: _____

Social Responsibility: Ensuring Responsible and Ethical Production

1. Do you have a process for managing social compliance at the manufacturing level? _____

Describe: _____

2. Do you work with your supply base to resolve issues found during social compliance evaluations and also document specific corrections and improvements? _____

Describe: _____

3. Do you invest in community development activities in the markets you source from and/or operate within? _____

Describe: _____

_____

_____