MUNICIPALITY OF
GREENSTONE

REQUEST FOR TENDER
RFT-FS-2022-01

Supply and Delivery of
One (1) New Mobile Water Supply Fire Apparatus

Contents

Section 1 Tender Information

1.1 Submission of Tenders

The Corporation of the Municipality of Greenstone shall hereinafter be referred to as "the Municipality" or "the Owner".

Tender Submissions for RFT-FS-2022-01 Supply and Delivery of One (1) New Mobile Water Supply Fire Apparatus will be received in duplicate in a sealed envelope, clearly marked as to its contents using the cover page provided by the Municipality of Greenstone at the end of this document.

Tenders will be received at the Administration Office of:

The Municipality of Greenstone
ATTN: Clerk
1800 Main Street, PO Box 70
Geraldton, Ontario P0T 1M0

Not later than **2:00 p.m. local time, Thursday, June 23, 2022**

a) Tenders received later than the time specified will not be accepted regardless of the postal cancel date.
b) Tenders will be opened in public at 2:15 PM the same day.
c) All "Form of Tender" are to be received on the printed form provided.
d) The lowest or any Tender not necessarily accepted.

1.2 Schedule of Events

The schedule provided is for guidance only and the Municipality reserves the unqualified right to issue an addendum to modify or eliminate any aspect of the schedule.

Event	Date, Location
Tender Release Date	Thursday, June 2, 2022
Question Submission Deadline	Tuesday, June 14, 2022, 12:00 pm
Posting of Addenda Deadline	Thursday, June 16, 2022, 3:00 pm
Closing Date and Time	Thursday, June 23, 2022 No Later than 2:00 pm
Estimated Award of Contract	Friday, July 15, 2022
Expected Delivery of Apparatus	November 1, 2023

1.3 Extent and Location of Work

The Supply and Delivery of One (1) New Mobile Water Supply Fire Apparatus will be F.O.B. The Municipality of Greenstone Administration Office, located at 1800 Main Street, Geraldton, ON, between the hours of 8:30 a.m. and 4:30 p.m.

The Corporation of the Municipality of Greenstone is part of the Broader Public Service of the Province of Ontario and as such may be eligible for concessions (discounts) on vehicles included in the Ministry of Government Services Vendor of Record arrangement.

1.4 Right to Accept or Reject Tenders

The Tender shall be based upon the whole of the Specifications and Contract Documents, without reservation.

The lowest or any Tender not necessarily accepted

The Tender must be submitted on the forms provided, which shall be completely filled out and shall be duly executed by signing officer(s) of the corporation. Tenders may be deemed invalid if the forms are not properly or fully completed. All blanks must be legibly and properly filled in on the printed forms supplied for that purpose. **If a bid for an item is no cost, enter 0.**

Tenders which are incomplete, conditional or obscure, or which contain additions not called for, erasures, alterations, or irregularities of any kind, may be rejected. Should any uncertainty arise as to the proper manner of doing so, the Contract Administrator will, upon request, give the requisite information.

If the Unit Prices and total amount of the extensions named by the Bidder in the proposal do not agree, the Unit Prices will be accepted as correct. The corrected extensions will be considered as representing the Bidders intentions. The Municipality of Greenstone will award this contract to one (1) bidder.

1.5 Conditions

The award of this contract is subject to Council Approval and budgetary allocations.

The Municipality of Greenstone reserves the right, in its sole discretion, to cancel any or all bid calls.

The Municipality of Greenstone reserves the right, in its sole discretion, to reject any or all bids, and the lowest or highest bid, as the case may be, will not necessarily be accepted.

1.6 Award of Contract(s)

The Municipality of Greenstone intent is to award the entire contract to one bidder.

1.7 **Litigation**

No bid or offer will be accepted from any bidder, inclusive of the bidder's subcontractors, who has a claim or has instituted a legal proceeding against the Municipality, or against whom the Municipality has a claim or instituted a legal proceeding, without prior approval of Council. For purposes of this provision, where such bidder is a corporation, bidder shall include any non-arm's length corporation of the bidder.

Bids from any bidder in any of the above circumstances shall be rejected as informal, irregular and non-compliant.

1.8 **Unacceptable or Unbalanced Tenders**

Each item in the Tender shall be a reasonable price for such item. Under no circumstance will an unbalanced Tender be considered. The Municipality will be the sole judge of such matters, and should any Tender be considered to be unbalanced, then the Municipality will reject it.

1.9 **Execute Contract**

Tenders shall be open for acceptance for a period of **ninety (90)** days after the closing date. After this time the Tender can only be accepted with the consent of the successful bidder.

When Tenders have been checked, the user department will review the Bids in order to recommend Award.

The Form of Agreement is a written record of the business arrangement between the Municipality and the Bidder.

Immediately after acceptance of the Tender by the Owner(s), the successful Bidder shall provide the Owner(s) with any required documents within 10 business days of the date of notification of award.

1.10 **Indemnification**

The successful Vendor shall indemnify and hold harmless the Municipality, its officers and employees from and against any and all liabilities, claims, demands, loss, cost, damages, actions, suits or other proceedings by whomsoever made, directly or indirectly arising out of the project attributable to bodily injury, sickness, disease or death or to damage or destruction of tangible property cause by any acts or omissions of the Vendor, its officers, agents, servants, employees, customers, invitees or licensees, or occurring in or on the premises or any part thereof and, as a result of activities under this Proposal. Neither the Owner nor the Successful Vendor shall be obligated to indemnify the other party in any manner whatsoever for the other party's own negligence or for the negligence of anyone other than their own officers, agents, servants, employees, customers, invitees or licensees.

This indemnity shall survive the expiration or early termination of this Agreement and continue in full force and effect.

1.11 Ability and Experience of Bidder and Subcontractors

The Municipality reserves the right to reject the Tender of any bidder who does not furnish satisfactory evidence of sufficient capital, resources and experience to successfully execute and complete the work in the specified time.

The contractor agrees to submit a list of any subcontractors who will be carrying out any part of this contract. The list shall show the names of the proposed subcontractors and for what work each subcontractor will be responsible. The Municipality has the right to reject any of the subcontractors so named. In this event, the contractor shall arrange to have the work done by such other subcontractor as may be approved by the Municipality.

1.12 Interpretation of Tender Documents

Bidders shall carefully examine all documentation that encompasses this request including but not limited to specifications, addenda and drawings in order to satisfy themselves as to all conditions affecting the scope of work. No claim for additional costs will be entertained on the grounds of misrepresentation, nor on the grounds that any promise or guarantee was given or provided by the Municipality.

If a Bidder finds discrepancies, omissions, irregularities or is in doubt as to the meaning, the Bidder shall contact the Director of Fire Services/Fire Chief at email jeff.lipskie@greenstone.ca. The Municipality cannot be held liable for any oral explanation or interpretation provided.

Any and all addenda issued prior to the closing date will be posted on the Municipality's website for downloading by bidders. It is the bidder's sole responsibility to download and include all addenda issued with the tender submission.

Bidders attempting to contact Municipality staff or elected officials other than the contact(s) indicated within this request, for whatever reason during the bid process, are advised that such action may result in their disqualification from the process.

1.13 Bidders to Investigate

The Bidder shall be deemed to have satisfied themselves before Tendering as to the correctness and sufficiency of their bid for the completion of the work.

In addition, the Bidder shall obtain their own information on all matters and things that may in any way influence them in making their Tender and fixing the rates entered by them in the "Schedule of Items and Prices". The Bidder shall also satisfy themselves in all respects as to the risks and obligations to be undertaken under terms of contract.

1.14 Commencement of Work

The Tenderer shall be able to commence work on the supply and delivery of the unit upon receipt of the Letter Award and accompanying Purchase of Sale Agreement.

1.15 Requirements at time of Execution/Prior to Commencement of Work

The successful bidder will be required to submit the following documentation, in form satisfactory to the Municipality of Greenstone, at the time of the execution of the contract.

a) Letter of Best Delivery Date

1.16 Accessibility for Ontarians with Disabilities Act (AODA)

The Municipality of Greenstone supports the goals of the Accessibility for Ontarians with Disabilities Act, 2005 (AODA) and establishes policies and practices which are consistent with the accessibility standards and the four core principles of dignity, independence, integration and equal opportunity. Under section 7 of O. Reg. 191/11, Integrated Accessibility Standards established by the AODA, the Municipality of Greenstone must ensure that employees, volunteers and all other personnel, including third party contractors, who deal with staff or members of the public or other third parties on behalf of the Municipality receive training on accessible customer service.

All personnel must complete training that meets the requirements of the Integrated Accessibility Standards regulation and receive any applicable training as required on the AODA and its regulations

Access an e-learning course:
The training requirements can be fulfilled by completing the e-Learning course "Customer Service Standard Module", which can be found on the following website: http://accessforward.ca/

Requirements of the Integrated Accessibility Standards (Ontario Regulation 191/11): https://www.ontario.ca/laws/regulation/110191

Accessible formats or communication supports are available upon request. Email the Clerk at kristina.miousse@greenstone.ca or call 807-854-1100 ext. 2059.

1.17 Municipality Freedom of Information and Protection of Privacy Act

Please note that the Municipal Freedom of Information and Protection of Privacy Act, as it relates to municipalities and local boards, came into force on January 1, 1991. It sets out certain rules regarding the disclosure to third parties of information held by municipalities and local boards.

If the Bidder wishes to protect from disclosure any or all of the documents that are submitted to the Municipality as part of their bid, a letter shall be submitted as an attachment to the Form of Tender to the attention of the Clerk, stating any or all of the

documents that the Bidder wishes to protect, referencing the above-mentioned legislation, and signed by a responsible officer. This letter will not guarantee that there will never be disclosure, but it does provide the groundwork for handling an application for disclosure by a third party under this legislation.

1.18 **Municipality Purchasing Policy**

The Municipality's purchasing policies form an integral part of this tender document. The Policy and Procedures as they are adopted apply to this tender process. A copy of the Municipality's current Purchasing Policy can be found on the Municipal Website www.greenstone.ca. The issuance of this bid call is made under the guidance of By-law 17-23 Procedures for the Procurement of Goods and Services.

The proposed Purchasing of Goods, Services and Construction Policy was presented to Council of the Municipality of Greenstone at the Regular Meeting of May 24, 2022. It was resolved that the policy be brought forward to Council in the form of a by-law for adoption at the Regular Meeting of June 12, 2022.

In the event the proposed by-law is adopted, and Addendum will be issued for this bid call.

Section 2 Standard Specifications

2.1 Order of Precedence

In case of any inconsistency of conflict between the provisions of this Agreement and the Tender or any other document or writing the provisions of such documents shall take precedence and govern in the following order.

a) Form of Agreement
b) Addenda
c) Form of Tender
d) Information to Bidders

2.2 Scope of Work

All bidders must fill the qualifications sheet form (Schedule A) completely. Bids not returned with this form filled out completely will be disqualified.

Any blank spaces or noncompliance to Mandatory Requirements could result in the manufacturers bid submittal being disqualified.

2.3 No Increase in Rates

No Claim for increase in rates in the Form of Tender, or other prices quoted in the Contract will be entertained, nor shall the Bidder be entitled to make any claim on the grounds of misrepresentation, nor on the grounds that they were given any promise or guarantee by the Municipality or their agents or employees or any other persons.

2.4 Description of Work

The scope and purpose of this specification is to outline the specific requirements of the Municipality of Greenstone in respect of the Supply and Delivery of One (1) New Mobile Water Supply Fire Apparatus.

2.5 Demonstration

An authorized representative of the manufacturer shall provide demonstration of the completed vehicle. One (1) day of orientation shall be provided and performed by a qualified representative of the manufacturer.

2.6 Vendor Requirement

The bidder must have been manufacturing fire apparatus continuously, without interruption for a minimum of Twenty (20) years.

2.7 **Permits and Licenses**

The Vendor shall obtain all necessary notices, shall apply for all permits, licenses and inspections, and shall pay all fees associated with such to complete the work.

2.8 **Delays**

If the Vendor is delayed in the performance of the Work by an act or omission of the Vendor or anyone employed or engaged by the Vendor directly or indirectly, or by any cause within the Vendor's control, deductions will be made to the final payment certificate for all reasonable damages associated with such delayed performance in the amount of, but not limited to, any losses or damages due to delays.

2.9 **Insurance**

The Bidder shall indemnify and save harmless The Corporation of the Municipality of Greenstone and against all claims, demands, loss, damages, etc. The Bidder shall keep in force, a comprehensive policy of public liability and property damage insurance acceptable to the Municipality providing insurance coverage in respect of any one accident to the limit of at least Five Million ($5,000,000.00) resulting from, or arising out of any act or omission on the part of the Bidder or any of his servants or agents during the execution of the Contract. The Bidder shall forward with the executed contract documents a certified copy of the policy or certificate naming The Corporation of the Municipality of Greenstone.

2.10 **Health and Safety and WSIB**

The successful bidder is required to conform to the Occupational Health and Safety Act related to the performance of the contract. In addition, the successful Proponent will be required to supply to the Municipality a valid Clearance Certificate issued by the WSIB, or if applicable, a letter from WSIB verifying Independent Operator's Status. A new clearance certificate is required every sixty (60) days.

2.11 **Payments**

A Purchase of Sale Agreement will be executed by the Municipality upon award of contract.

Payment will be made upon delivery of the goods and final inspection by and to the satisfaction of the Municipality of Greenstone.

2.12 **Additional Product Information**

Bidders are encouraged to forward any equipment or warranty information additional to that information required in this Tender Form, which they wish to present with the Tender. This information will be used for confirming the specifications of the Unit and will not be used as an evaluation tool.

Section 3 Form of Tender

3.1 Offer

Submitted by:

_____

_____

_____

_____

To: Municipality of Greenstone, Administration Office
1800 Main Street, PO Box 70
Geraldton, Ontario P0T 1M0

The undersigned also undertakes to do all the Work required to supply and deliver **One (1) New Mobile Water Supply Fire Apparatus** in accordance with the Contract Documents at the prices tendered as follows:

_____

Dollars ($ _____) including HST, or such other sum as may be ascertained in accordance with the Contract Documents.

1. The Schedule of Items and Prices shall form part of this Tender. If there is any conflict between the Tender Sum entered above and the correct summation of the lump sum prices, provisional sums and correct extensions of the unit prices and quantities entered in the aforesaid Schedule, the said summation shall take precedence.

2. This Tender is irrevocable for ninety (90) calendar days after the closing time, whether or not any other Tender has previously been accepted or not and whether notice of acceptance of another Tender has been given or not.

3. Notice of acceptance, or request for additional information, may be addressed to the undersigned at the address set forth below.

SIGNATURE OF INDIVIDUALS, PARTNERS OR OFFICERS OF THE CORPORATION

_____
Duly Authorized Signing Officer

_____
Duly Authorized Signing Officer

3.2 Schedule of Items and Prices

Bidders shall provide an all-inclusive price for the **Supply and Delivery of One (1) New Mobile Water Supply Fire Apparatus**

SCHEDULE OF BID ITEMS AND PRICES

ITEM	DESCRIPTION OF WORKS	TOTAL PRICE
1	Supply and Delivery of One (1) New Mobile Water Supply Fire Apparatus	$
	Applicable H.S.T	$
	Total	$

Section 4 Tender Documents

4.1 Tender Check List

Tender Due Date: **Thursday, June 23, 2022**
Contract Number: **RFT-FS-2022-01**
Contract For: **Supply and Delivery of One (1) New Mobile Water Supply Apparatus**

This checklist is provided for the convenience of the Bidder to ensure that all required Tender documents have been completed and enclosed in the Tender envelope. Please check items required and return with your Tender.

_____ Correct Forms (as provided) Properly

_____ Signed

_____ All Items Bid

_____ All Addendum Returned with Tender (if applicable) Completed

_____ Form of Tender Returned

I/We have read the Tender procedures, instructions to bidders and other supporting documentation and understand such procedures, instructions and documentations and agree to the terms and conditions set forth in this Tender.

_____

Signed by Bidder

4.2 Tender Submission Label

From: _____

_____

_____

Contact: _____

Telephone: _____

Deliver to:

The Corporation of the Municipality of Greenstone
Administration Office
Attn: Municipal Clerk
1800 Main Street, PO Box 70
Geraldton, Ontario P0T 1M0

TENDER NUMBER:	**RFT-FS-2022-01**
CLOSING DATE AND TIME:	**THURSDAY June 23, 2022** **No later than 2:00 p.m.**
DESCRIPTION:	**Supply and Delivery of One (1) New Mobile Water Supply Apparatus**

Section 5 Schedule A

SCHEDULE OF SPECIFICATIONS

For each of the specific requirements, please indicate if the vehicle and equipment supplied conforms to the Municipality of Greenstone's actual specification. If not, please indicate manufacturer's actual deviation in the space provided in the "STATE ACTUAL" column and list additional information on a separate sheet of paper and/or supply pamphlets supporting the deviation. The Municipality reserves the right to review all stated deviations to determine acceptance or non-acceptance as best meets the needs of the Municipality, without penalty.

Municipality's REQUIREMENTS	**SPECIFICATION**	**CONFORM YES**	**NO**	**STATE ACTUAL**
Standard Compliance	Unit will be manufactured and tested to current ULC guidelines			
	French tags shall be provided in addition to standard English tags as defined for ULC Compliance.			
	The proposed apparatus shall be built by an ISO certified manufacturer to ensure that a quality control program will be in place through the entire build. The ISO certificate shall be provided as part of the proposal documents. Failure to provide the ISO certificate will result in an automatic rejection of the proposal			
Body/Chassis	Freightliner M2 106 Conventional as per attached manufacturers specification sheet **(Schedule B)**			
	Aluminium wheels will be supplied by the commercial chassis manufacturer. Includes front wheels and rear wheels.			

Municipality's REQUIREMENTS	SPECIFICATION	CONFORM YES	CONFORM NO	STATE ACTUAL
	The front wheels shall have stainless steel lug nut covers (for use with aluminum wheels) OR chrome plated plastic (for use with steel wheels). The wheels shall be covered with American made Real Wheels brand mirror finish, 304L grade, non-corrosive stainless steel universal baby moons for the front wheels and high hats for the rear outer wheels. All shall carry a lifetime warranty plus a 2 year re-buffing policy. There shall be two (2) baby moons and twenty (20) lug nut covers.			
	The Commercial Cab shall be supplied with a Metric Gauge Cluster, metric dominant, as required with ULC compliance.			
	Heavy-duty black rubber mud flaps will be provided behind the rear wheels. The mud flaps will be bolted in place.			
	The cab shall be painted by the OEM. One solid colour - FLNA 3225 RED			
	An engine cooler shall be supplied on the commercial chassis as provided by the commercial chassis supplier			
	The rear fenders of the apparatus shall be fully removable to allow for servicing of the apparatus suspension system.			
	A driver controlled main differential lock shall be supplied. Operated from within the cab, it reduces wheel spin-outs by transferring power from the slipping wheel to the wheel with traction. An indicator shall be provided visible to the driver to show when the lock is engaged			
APPARATUS BODY	The body shall be fabricated with the highest quality components available, and acceptable to the fire service industry. Only new components shall be in the manufacturing process.			

Municipality's REQUIREMENTS	SPECIFICATION	CONFORM YES	NO	STATE ACTUAL
	The body shall be engineered and designed to provide a low center of gravity and carry a correct load distribution.			
	Skilled craftsmen shall perform all welding operations on the body. All welding shall be electronically with the highest quality components.			
	Certified welders shall perform all welding. Proof of welder certification shall be provided with the completed vehicle.			
	The rear section of the apparatus body shall be finished with 1/8" aluminum plate panels. The panels shall have a natural finish for installation of Chevron. The panels shall be fastened to the rear body framework with stainless steel fasteners. The stainless steel fasteners are drill tapped. Sheet metal screws or self tapping screws are not acceptable. (Mandatory Requirement)			
BODY COMPARTMENTS	The body compartments shall be fabricated with 1/8" aluminum panels. These panels shall be non-corrosive, durable, and add strength and integrity to the body construction.			
	The interior compartment seams shall be sealed and caulked with a permanent, pliable automotive type sealer.			
	All compartments shall have a 1" drop on the lower edge of the door opening to accommodate the door seal, and to stop moisture from entering the compartment.			
	All compartments shall have sweep out floors.			
	All compartments shall be fitted with vinyl matting.			
	All compartments shall be weatherproof.			

Municipality's REQUIREMENTS	SPECIFICATION	CONFORM YES	NO	STATE ACTUAL
ENGINE	Cummins L9 – 360EV HP @2200 RPM; 1150 lb/ft @ 1200 RPM			
	Cummins L9 – 360EV HP @2200 RPM; 1150 lb/ft @ 1200 RPM			
	Side of hood air intake with NFPA compliant ember screen and fire retardant Donaldson or equal air cleaner.			
	Minimum 320 amp alternator			
	Exhaust brake integral with variable geometry turbo and ON/OFF dash switch. Must automatically activate apparatus stop lamps.			
	Engine aftertreatment device, automatic over the road active regeneration and dash mounted single regeneration request/inhibit switch			
	Diesel exhaust fluid tank – 6 gallon under left cab aft of fuel tank			
	1100 square inch aluminum radiator			
Transmission	Allison 3000 EVS automatic			
	PTO provision for Chelsea 280 series PTO (2)			
	Vocation package 198 for fire vehicle applications			
	Push-button electronic shift control – dash mounted			
	Synthetic fluid			
Brake System	WABCO 4S/4M ABS			
	Air system pressure protection and 85 psi pressure protection for air horns			
	Relay valve with 5-8 psi crack pressure			
	WABCO System Saver HP with integral air governor and heater			

Municipality's REQUIREMENTS	SPECIFICATION	CONFORM YES	NO	STATE ACTUAL
	Auto Drain valve – wet tank			
Fuel Tank & System	Minimum 50 gallons/189 liter rectangular polished aluminum mounted beneath left front cab door.			
Tires & Wheels	Front: Michelin or equal XZE 12R22.5 16 ply radial			
	Rear: Michelin or equal XDN2 315R22.5 20 ply radial			
	22.5x8.25 10-hub piloted steel disc (6)			
Cab Interior	Moulded inner door panels			
	Opal gray vinyl interior			
	Black mats with single insulation			
	Heater, defroster and air conditioner with standard HVAC ducts and controls with recirculation switch			
	Premium cab insulation			
	Manual cab door locks			
	NFPA compliant high visibility orange seatbelts			

Municipality's REQUIREMENTS	SPECIFICATION	CONFORM YES	NO	STATE ACTUAL
	All seating positions shall have a seat sensor that advises the driver through a visual display on the dash within the driver zone of seatbelt status for all positions in the apparatus. The sensors shall be connected directly to the VDR (vehicle data recorder (VDR) integrated into the dash. Connection for downloading recorded data shall be through the J1939 port.			
	Adjustable tilt and telescoping steering column with 4-spoke 18 inch steering wheel			
INSTRUMENTS & CONTROLS	Engine remote interface with park brake interlock			
	Low air pressure indicator light and audible alarm			
	2 inch primary and secondary air pressure gauges			
	Engine compartment mounted air restriction indicator with graduations and warning light in dash			
	Electronic cruise control with switches in left switch panel			
	Ignition switch with non-removable key			
	Electronic MPH speedometer with secondary KPH scale without odometer			
	Electric windshield wiper motor and display			
	Alternating flashing headlamp system with fire apparatus controlled engagement			
	Parking brake system with dash valve control auto/neutral and warning indicator			

Municipality's REQUIREMENTS	SPECIFICATION	CONFORM YES	NO	STATE ACTUAL
	Self-cancelling turn signal switch with dimmer, washer/wiper and hazard in handle			
CAB DOOR RETRO-REFLECTIVE STRIPING	Chevron style retro-reflective striping shall be added to the inside of the cab doors in accordance to NFPA requirements. It shall cover not less than 96 sq.in of each door meeting MFPA 1901			
TIRE PRESSURE MONITORING SYSTEM	There shall be a RealWheels LED AirGuard Set and Go, six (6) wheel stabilizer kit, for 2.00 inch round holes and LED indicators proper air pressure in the tire			
METRIC GAUGES	Metric Pump Panel Gauges (PSI/KPA) shall be provided in place of standard as required for ULC Compliance. The gauges shall display a range from 0-2750KPA/0-400PSI with black graphics on a white background.			
CROSSLAY PRECONNECTIONS	Two (2) crosslay hosebeds shall be provided on the pump module. Each of the two (2) crosslay areas shall have a capacity for up to 200` of 2.0" double-jacket fire hose double stacked.			
PUMP COMPARTMENT	The complete apparatus pump compartment will be constructed of a combination of structural tubing and formed sheet metal. The same materials used in the body will be utilized in the construction of the pump compartment. The structure will be welded utilizing the same A.W.S. Certified welding procedure as used on the structural body module. These processes will ensure the quality of structural stability of the pump compartment module.			

Municipality's REQUIREMENTS	SPECIFICATION	CONFORM YES	NO	STATE ACTUAL
LEFT SIDE OPERATORS PANEL & PUMP PANEL	The pump operator's panel will be located on the left side of the apparatus pump compartment. The panel will be split into an upper and lower section.			
	The panels will be hinged stainless steel with brushed finish and thumb-release latches.			
	The upper panel will house gauges and controls and be hinged downward to allow easy access to mounted components. The door will have a stainless steel hinge and push button latches			
	The lower panel on the left side will be hinged as described above to allow swinging the panel toward the front of the apparatus.			
RUNNING BOARDS	The pump compartment running boards will be made of a structural tubular framework. They will be not less than 12 inches deep. The tubular frame support all loads by transmitting the loads through the pump compartment structure directly to the chassis frame rails.			
Heat Pan	The pump compartment shall have a heat pan installed under the pump area. The heat pan shall be constructed of smooth aluminium plate and shall be easily removable for fair weather operations.			
Pump Compartment Heater	One single 24,000 BTU heater shall be installed in the lower pump compartment area. The heaters shall be connected to the chassis engine coolant system and shall include 12 volt blowers. The heaters shall be controlled at the pump operator`s panel			

Municipality's REQUIREMENTS	SPECIFICATION	CONFORM YES	NO	STATE ACTUAL
PLUMBING SYSTEM	The pump will have a capacity of minimum 1050 gallons per minute, measured in U.S. Gallons. The pump will be a single stage.			
	The entire pump will be assembled and tested at the pump manufacturer's factory. The pump will be driven by a drive line from the truck transmission. The engine will provide sufficient horsepower and RPM to enable pump to meet and exceed its rated performance			
	The entire pump will be hydrostatically tested to a pressure of 600 PSI. The pump will be fully tested at the pump manufacturer's factory to the performance spots as outlined by (NFPA) 1901, Standard for Automotive Fire Apparatus. Pump will be free from objectionable pulsation and vibration.			
	The pump body and related parts will be of fine grain alloy cast iron, with a minimum tensile strength of 30,000 PSI (2069 bar). All metal moving parts in contact with water will be of high quality bronze or stainless steel. Pump utilizing castings made of lower tensile strength cast iron not acceptable.			
	Pump body will be vertically split, on a single plane for easy removal of entire impeller assembly including clearance rings.			
	Pump shaft to be rigidly supported by two bearings for minimum deflection. The bearings will be heavy-duty, deep groove ball bearings in the gearbox and they will be splash lubricated. Shaft seal comes standard with face-type, self-adjusting corrosion- and wear-resistant mechanical seals.			

Municipality's REQUIREMENTS	SPECIFICATION	CONFORM YES	NO	STATE ACTUAL
	Impeller clearance rings will be bronze, easily renewable without replacing impeller or pump volute body.			
	The pump shaft will be heat-treated, electric furnace, corrosion resistant stainless steel. Pump shaft must be sealed with double-lip oil seal to keep road dirt and water out of gearbox.			
GEAR BOX	Pump gearbox will be of sufficient size to withstand up to 16,000 lbs. ft. of torque of the engine. The drive unit will be designed of ample capacity for lubrication reserve and to maintain the proper operating temperature.			
	The gearbox drive shafts will be of heat-treated chrome nickel steel and at least 2.75 inches in diameter, on both the input and output drive shafts. They will withstand the full torque of the engine.			
	All gears, drive and pump, will be of highest quality electric furnace chrome nickel steel. Bores will be ground to size and teeth integrated and hardened, to give an extremely accurate gear for long life, smooth, quiet running, and higher load carrying capability. An accurately cut spur design will be provided to eliminate all possible end thrust.			
	The pump ratio will be selected by the apparatus manufacturer to give maximum performance with the engine and transmission selected.			

Municipality's REQUIREMENTS	SPECIFICATION	CONFORM YES	NO	STATE ACTUAL
	For automatic transmissions, three green warning lights will be provided to indicate to the operator(s) when the pump has completed the shift from Road to Pump position. Two green lights to be located in the truck driving compartment and one green light on pump operator's panel adjacent to the throttle control. For manual transmissions, one green warning light will be provided for the driving compartment. All lights to have appropriate identification/instruction plates.			
APPARATUS PLUMBING LABELING	Verbiage tag bezels will be installed for each control. The bezel assemblies will be used to identify apparatus components. These tags will be designed and manufactured to withstand the specified apparatus service environment and will be backed by a warranty equal to that of the exterior paint and finish. The verbiage tag bezel assemblies will include a chrome-plated panel-mount bezel with durable easy-to-read UV resistant polycarbonate inserts featuring the specified verbiage and color coding. These UV resistant polycarbonate verbiage and color inserts will be subsurface screen printed to eliminate the possibility of wear and protect the inks from fading. Both the insert labels and bezel will be backed with 3M permanent adhesive, which meets UL969 and NFPA standards.			

Municipality's REQUIREMENTS	SPECIFICATION	CONFORM YES	CONFORM NO	STATE ACTUAL
PRESSURE GOVERNOR AND MONITORING DISPLAY	The pump shall be controlled by a Class 1, "TPG" Total Pressure Governor installed on the pump operator's panel. It shall be interfaced with a SAE J1939 Controller Area Network (CAN) device that controls engine speed using data communications directly to the engine ECU or with an analog control signal. Operating on the J1939 network, the governor is able to monitor engine RPM and other pertinent data directly from the engine ECU. Control algorithms shall be optimized to take advantage of the J1939 CAN data to yield crisp and accurate control of engine and subsequently pump speed and pressure output. Graphic diagnostics shall be integrated that provides wiring and troubleshooting information.			
	It shall control the engine fuel to maintain a desired pump pressure, or engine speed setting. Additionally the TPG will display important engine information specifically battery voltage, engine coolant temperature, oil pressure and RPM.			

Municipality's REQUIREMENTS	SPECIFICATION	CONFORM YES	CONFORM NO	STATE ACTUAL
	The following parameters shall be visible at all times: • Pump Intake Pressure • Pump Discharge Pressure • Engine RPM • Engine Oil Pressure • Engine Coolant Temperature • Transmission Temperature • System Voltage • Throttle Ready Interlock Status • Pump Engaged Interlock Status • OKAY to Pump Interlock Status • Operating Mode Status (RPM or Pressure) • Target Pressure Indication (when in pressure mode)			
TESTING PORTS	Test port connections for pressure and vacuum will be provided at the pump operator's panel. One (1) will be connected to the intake side of the pump, and the other to the discharge manifold side of the pump.			
	Each port will have 0.25 inch (6.35 mm) standard pipe thread connection and be manufactured of non-corrosive polished stainless steel or brass plugs			
PRESSURE RELIEF VALVE	A pressure relief valve will be provided. The valve will have an easy to read adjustment range from 90 to 300 PSI with 90, 125, 150, 200, 250 and 300 PSI adjustment settings and an "OFF" position. Pressure adjustments will be made utilizing a 1/4" hex key, 9/16" socket or 14mm socket.			

Municipality's REQUIREMENTS	SPECIFICATION	CONFORM YES	CONFORM NO	STATE ACTUAL
	For normal pumping operations, the relief valve will not be capped and there will be a placard stating "DO NOT CAP" installed.			
TANK LEVEL GAUGE	There will be a tank level gauge provided and installed at the pump operator's panel location.			
	The tank level gauge will indicate the liquid level for water in increments of 1/20th of a tank with a visual warning at 1/4 of a tank.			
	The tank level gauge will include a pressure transducer mounted on the outside of the tank, a super bright LED display with visual indication and weather resistant connectors			
PUMP COMPARTMENT WORK LIGHT	A LED work light will be installed in the pump compartment module to illuminate the piping and plumbing components.			
MASTER DRAIN VALVE	A manifold type drain valve will be installed in the pump compartment. All pump drains will be connected to the master drain valve. The drain valve will be controlled from the left side lower pump house sill. The control will be a hand wheel knob marked "open" and "closed".			
	The drain will be located such that it will not interfere with pumping operations or function such as soft suction hoses, etc. nor will it protrude past the outer edge of the apparatus, to prevent damage to the valve.			
PUMP SHIFT	The drive unit will be provided with an air pump shift system. The control valve will be a spring loaded guard lever that locks in "Road" or "Pump" mode.			

Municipality's REQUIREMENTS	SPECIFICATION	CONFORM YES	NO	STATE ACTUAL
	To the left of the pump shift control, there will be two indicator lights to show the position of the pump when the control is moved to "Pump" position. A green light will be energized when the pump shift has been completed and will be labeled "PUMP ENGAGED"; a second green light will be labeled "OK TO PUMP" energized when both the pump shift has been completed and the chassis automatic transmission is engaged.			
	A third green indicator light will be installed adjacent to the throttle on the pump operator's panel. This light will be labeled "Throttle Ready".			
	In addition to this indicator light, an additional indication will be provided to the pump operator at the panel when the pump is ready to pump. This additional indication will be that one (1) of the operator's panel illumination lights will only activate when the "OK TO PUMP" indicator is lit.			
PUMP ANODE	One (1) pump anode will be installed on the suction side of the pumping system to prevent damage from galvanic corrosion within the pump system			
MAIN PUMP INLET - LEFT & RIGHT SIDE	A 6.00 inch pump manifold inlet will be provided on the left side of the pump. The inlet will protrude up to 2.00 inches away from the side panel and maintain a low connection height.			
	The main pump inlet will have National Standard Threads and includes a removable screen designed to provide cathodic protection for reducing deterioration in the pump.			
6" CHROME PLATED BRONZE CAP	There will be one (1) 6.00 inch long handled chrome plated cap installed on each Steamer Inlet.			

Municipality's REQUIREMENTS	SPECIFICATION	CONFORM YES	CONFORM NO	STATE ACTUAL
PUMP INSPECTION DOOR	The pump house interior shall be accessible by an inspection door on the right side. The inspection door shall be constructed from .125" aluminum high shine checker plate			
AUXILIARY HEAT EXCHANGER	There shall be an auxiliary heat exchanger mounted on the chassis. The heat exchanger will allow tank water to cool the chassis engine.			
CROSS LAY HOSEBED	Two (2) cross lay hose beds shall be provided and installed transversely above the pump house and shall have vinyl hose matting flooring to allow for water drainage and air movement under the hose. A 3/16" aluminum divider shall separate the hose beds. Each hose bed shall be sized to hold 200' of 1 3/4" hose.			
ALL VAVLES	The valve shall be Akron Brass Style 8820 Swing-Out™ Valves, or equivalent. The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats. The valve shall be capable of dual directional flow while incorporating a self-locking ball feature using an automatic friction lock design and specially designed flow optimizing stainless steel ball. All stainless steel parts must be 316 grade for increased resistance to corrosion. The valve shall not require lubrication of seats or any other internal waterway parts, and must be capable of swinging out of the waterway for maintenance by the removal of six bolts. Product must carry a 10 year manufacturer's warranty			

Municipality's REQUIREMENTS	SPECIFICATION	CONFORM YES	CONFORM NO	STATE ACTUAL
ALL VALAVE ACTUATORS	The valves shall have chrome T handle actuators. For chemical and wear resistance a Lamacoid label specifying the discharge shall be inset into the T handle actuator. The label shall be color coded as per NFPA 1901 requirements.			
ALL DISCHARGE GAUGES	A 2.5" discharge gauges shall be mounted adjacent to the discharge valve control handle. A removable bright metal or color coded trim ring shall be supplied. The gauge shall be fully filled with pulse and vibration dampening Interlube to lubricate the internal mechanisms to prevent lens condensation and to ensure proper operation. To prevent internal freezing and to keep contaminants from entering the gauge, the stem and Bourdon tube shall be filled with low temperature oil and be sealed from the water system using an isolating diaphragm located in the stem (no exceptions). The gauges shall be in dual scale and measure in increments of 0-400 psi and 0-2800 kPa.			
ALL DRAIN VAVLES	A drain shall be installed at the pump panel. The drain shall have 3/4" Synflex drain lines tied to a 1/4 turn drain valve with high pressure brass fittings.			
CROSS LAY TARP	A heavy duty vinyl tarp cover shall be provided over the cross lay compartments and held in position with a combination of shock cord fastener and 1/4 turn fasteners. The vinyl tarp shall be black in color.			

Municipality's REQUIREMENTS	SPECIFICATION	CONFORM YES	CONFORM NO	STATE ACTUAL
MASTER PRESSURE AND INTAKE GAUGES – DUAL SCALE	Two (2) 4.5" master pump gauges shall be supplied and mounted in close proximity to the throttle, primer, and engine instrumentation. The intake gauge shall be to the left of the discharge gauge. Bright metal trim rings shall be supplied with each gauge. They shall be fully filled with pulse and vibration dampening Inter lube to lubricate the internal mechanisms to prevent lens condensation and to ensure proper operation. The nylon cases shall be temperature compensated with an internal breathing diaphragm to permit fully filled cases and to allow a rigid lens with a distortion free viewing area. To prevent internal freezing and to keep contaminants from entering the gauge, the stem and Bourdon tube shall be filled with low temperature oil and be sealed from the water system using an isolating diaphragm located in the stem The gauges shall be in dual scale and measure in increments of 0-400 psi and 0-2800 kPa.			
PUMP OPERATION WARNING LABEL	There shall be a warning label mounted on the pump operator's panel that states the following: **Warning: Death or serious injury might occur if proper operating procedures are not followed. The pump operator as well as individuals connecting supply or discharge hoses to the apparatus must be familiar with water hydraulics hazards and component limitations.**			
PUMP SHAFT SEAL - MECHANCIAL SEAL	The pump shall have the mechanical shaft seal.			

Municipality's REQUIREMENTS	SPECIFICATION	CONFORM YES	NO	STATE ACTUAL
3" DELUGE GUN DISCHARGE WITH SLO-CLOZ	A 3" deluge gun discharge shall be provided and installed above the pump house. The plumbing leading to the monitor standpipe shall be schedule 40 stainless steel plumbing. A threaded cap shall come with the monitor standpipe if no monitor is ordered.			
SUCTION RELIEF VALVE	A 2-1/2" mounted adjustable suction relief valve shall be provided and installed in the suction side of the pump. The discharge side of the valve shall be plumbed to the area below the running board, away from the pump operator. The relief valve shall have an adjustable working range of 75 PSIG to 250 PSIG and be pre-set at 125 PSI.			

MONITOR	An Akron P/N 3482 StreamMaster II electric remote control monitor shall be supplied. An equivalent monitor may be approved. The 1500 gpm (5700 lpm) rated monitor is to be an all-electric, single waterway monitor constructed of lightweight Pyrolite. The monitor shall have a 3”(75 mm), 150lb flanged inlet and 2-1/2” (65 mm) NH outlet. The monitor shall have cast-in turning vanes in each elbow. The monitor shall have fully enclosed motors and gears with manual overrides for both horizontal and vertical rotation and may be operated simultaneously. The monitor is not to exceed 15” (381 mm) high and 11-5/8” (295 mm) wide. The vertical travel shall be from 45° below to 120° above horizontal with adjustable stops at -15°, +45° and +90. The horizontal rotation shall be 355° with physical stops at ±45°, ±90°, ±135° and at ±157°. The monitor shall have absolute position feedback to provide programmable soft stops anywhere within the physical travel range. The control system shall also provide programmable oscillation and obstacle avoidance functions. The electronic control system shall be attached to the inlet base of the monitor and be totally encapsulated to prevent moisture intrusion and use locking IP 67 rated electrical connectors for all motor control outputs and control inputs. The control system shall have one environmentally sealed USB port to facilitate control system updates. The control system shall receive commands from J1939 CAN network control devices to control elevation, rotation, nozzle pattern, and electric valve open/close. The control system shall have a built in wireless transceiver to facilitate operation from wireless remote control devices.			

Municipality's REQUIREMENTS	SPECIFICATION	CONFORM YES	NO	STATE ACTUAL
ELECTRIC MONITOR CONTROL BOX	The control for the Akron Deckmaster Monitor (or approved equivalent) shall be a panel mounted control that is flush mounted to the pump operator panel. The control shall allow for Auto Stow and monitor control as well as fog or stream nozzle control. An Akron SaberMaster™ electric operated Pyrolite monitor nozzle (#1578), or approved equivalent, shall be supplied with the monitor. The monitor nozzle shall have a built in stream shaper and be capable of remotely switching between solid bore and fog streams. The nozzle shall have the capacity to flow 1250gpm of water.			
THREAD TYPE - DISCHARGE 2.5"	The threads that shall be provided for the 2.5" Discharges and 2.5" Suction Inlets shall be CSA.			
BOOSTER TANK	The booster tank shall have the following minimum capacities: 1500 Imperial gallons 6819 Liter The tank shall be provided with a lifetime tank manufacturer warranty.			
	The transverse and longitudinal swash partitions shall be manufactured of Polypropylene Copolymer material. All partitions shall be equipped with vent and air holes to permit movement of air and water between compartments. The partitions shall be designed to provide maximum water flow and meet NFPA rules.			

Municipality's REQUIREMENTS	SPECIFICATION	CONFORM YES	CONFORM NO	STATE ACTUAL
	The tank shall have a combination vent and fill tower. The fill tower shall be constructed of .5" thick Polypropylene Copolymer and shall be a minimum dimension of 8"x 8" outer perimeter. The tower shall be located in the left front corner of the tank unless otherwise specified by the purchaser. The tower shall have a .25" thick removable Polypropylene Copolymer screen and a Polypropylene Copolymer hinged-type cover. Inside the fill tower, there shall be a combination vent overflow pipe. The vent overflow shall be a minimum of schedule 40 pipe with a minimum I.D. of 4", unless a dump chute is included in the design in which case the I.D shall be 6". Both shall be of a design to run through the tank. The tank overflow shall be piped behind the rear wheels.			
	There shall be one (1) sump standard per tank. The sump shall be constructed of .5" Polypropylene Copolymer and be located in the left front corner of the tank and shall meet the requirements of NFPA.			
	Although the tank is designed as a free-floating suspension unit, it is required that the tank has adequate hold down restraints to minimize movement during vehicle operation. If proper retention has not been incorporated into the apparatus hose floor structure, an optional mounting restraint system shall be located on the top of the tank, halfway between the front and rear on each side of the tank.			
	There shall be a picture frame type cradle mount system utilized for the purpose of capturing the tank. There shall be a support system across the top of the tank to prevent excessive bouncing when the tank is empty.			

Municipality's REQUIREMENTS	SPECIFICATION	CONFORM YES	NO	STATE ACTUAL
	The tank must be isolated from the cross members through the use of hard rubber strips with a minimum thickness and width dimension of .25" x 2" and a minimum Rockwell hardness of 60 durometers. Additionally, the tank must be supported around the entire bottom outside perimeter and capture both front and rear as well as side to side to prevent tank from shifting during vehicle operation.			
FIREMAN'S FRIEND - 4" EXTERNAL TANK FILL - REAR RIGHT	There shall be a 4" external tank fill with a Storz fitting provided at the rear right of the apparatus body. The internally mounted check-type fill valve shall be capable of flowing at a rate in excess of 1,000 gallons per minute. The internal valve shall be self deflecting, requiring no additional diffusion device. The check valve shall be stainless steel and a spring actuated piston-type sealing mechanism to minimize seal wear and provide positive sealing of valve after shutting off at feed source. Valve seal designed to be self-cleaning, utilizing EPDM rubber. The valve body shall have a mounting plate and the TTMA 6-bolt attachment pattern (2 1/2" to 3" valve body) positioned on outside of and attached directly to tank wall. All valve components constructed of highly corrosive resistant stainless steel. External attachment fitting corrosion resistant aluminum. Available with connections from 2 1/2" to 5" fittings.			

Municipality's REQUIREMENTS	SPECIFICATION	CONFORM YES	CONFORM NO	STATE ACTUAL
10" NEWTON DUMP VALVE - 180º DEGREE SWIVEL (or approved equivalent)	One (1) 10" Newton "Quick - Dump", or approved equivalent, with manual valve shall be provided at the rear of the apparatus. This valve shall extend out the center of the rear body with the control lever offset to the left side of the dump valve. The telescopic dump chute shall have a dimension of 8"H x 12.5"W to allow for a maximum dump rate and extend up to 36". The chute shall have the capability of swinging 180º so it can be used on the left, rear and right side of the truck. A Newton, or approved equivalent, manually operated 36" telescoping extension chute shall be provided for the dump valve. The dump chute shall be painted to match the apparatus color. 1/8" checker plate aluminum shall be used to trim around the rear dump chute. The aluminum shall be attached with stainless steel fasteners. EPDM rubber shall be attached to the aluminum to seal the dump chute.			
TANK DRAIN	The tank shall have a 1.5" tank drain installed in the bottom of the tank and accessible from the ground.			
COMPARTMENT SHELVING - ADJUSTABLE	Four (4) adjustable 3/16" aluminum compartment shelves with upturned edges shall be provided. Each shelf shall be provided with plastic matting.			
ADJUSTABLE SHELVING UNI-STRUT SIDE TRACKS	Four (4) set(s) of four (4) aluminum Unistrut side tracks shall be provided for installation of adjustable shelves.			
	Two (2) set(s) of six (6) aluminum Unistrut side tracks shall be provided for installation of adjustable shelves.			

Municipality's REQUIREMENTS	SPECIFICATION	CONFORM YES	NO	STATE ACTUAL
HOSE BED	The main hose bed shall be located above the booster tank and be sized to meet the requirements for a Pumper Fire Apparatus as specified in NFPA 1901 (Latest Edition) and ULC S515-13			
	The rear track shall have come with 10' of snap cover to prevent the hose couplings from catching the track. The snap cover shall be shipped loose for customer installation after the hose bed dividers have been set up.			
HOSE BED MATTING	The hose bed flooring shall be fitted with vinyl type matting to allow for air movement under the hose.			
HOSE BED DIVIDER - ADJUSTABLE	There shall be One (1) adjustable hose bed divider(s) provided. The divider(s) shall be easily adjustable in the hose bed slide tracks. Each divider shall be constructed from 3/16" aluminum which shall be welded into a custom aluminum extrusion base frame. Each hose bed divider shall have an oval handhold provided at the rear portion of the divider. <<< Hose Bed Divider - 18" or Less In Height >>>			
HOSE BED TARP	One (1) vinyl hose bed tarp shall be provided with shock cord fasteners or depending on hose bed obstructions, a combination of shock cord fasteners and nickel plated quarter turn fasteners for the main hose bed. The hose bed tarp shall have an end flap with Velcro fasteners provided to cover the rear of the hose bed. The tarp shall be black in color.			

Municipality's REQUIREMENTS	SPECIFICATION	CONFORM YES	CONFORM NO	STATE ACTUAL
CHEVRON STRIPPING	There shall be versatile PVC matting supplied on the all body compartment floors. The matting shall be interlocking and 1" high to allow for air movement			
LEFT SIDE BODY COMPARTMENTS - HIGH	The following compartments shall be provided on the driver's side of the apparatus body. Two (2) compartments forward of the rear wheel measuring 36"W x 65"H x 13.5"/ 26"D frame opening. One (1) compartment over the rear wheel measuring 60"W x 35"H x 13.5"D frame opening.			
	One (1) compartment behind the rear wheel measuring 36"W x 65"H x 13.5"/ 26"D frame opening. The interior compartment seams shall be sealed and caulked with a permanent, pliable automotive type sealer. All compartments shall have a 1" drop on the lower edge of the door opening to accommodate the door seal, and to stop moisture from entering the compartment. (Mandatory Requirement) All compartments shall have sweep out floors. All compartments shall be weatherproof.			

Municipality's REQUIREMENTS	SPECIFICATION	CONFORM YES	CONFORM NO	STATE ACTUAL
RIGHT SIDE BODY COMPARTMENTS	The following compartments shall be provided on the curbside of the apparatus body. One (1) compartment forward of the rear wheel measuring 74"W x 40"H x 13.5"/ 26"D frame opening. One (1) compartment behind the rear wheel measuring 36"W x 40"H x 13.5" / 26"D frame opening. The interior compartment seams shall be sealed and caulked with a permanent, pliable automotive type sealer.			
	All compartments shall have a 1" drop on the lower edge of the door opening to accommodate the door seal, and to stop moisture from entering the compartment. (Mandatory Requirement) All compartments shall have sweep out floors. All compartments shall be weatherproof.			
PIKE POLE STORAGE	Two (2) aluminum tubes shall be mounted on the driver side for storing two (2) pike poles up to 12'.			
PORTABLE TANK CARRYING BRACKETS	One (1) hinged aluminum Quic-Lift portable tank rack, 12 volt hydraulically actuated with mechanical locks on the left side of body, above side running board compartments, shall be provided. This rack shall swing down to a level the same as the running board compartments for ease of removing and installing the portable tank.			

Municipality's REQUIREMENTS	SPECIFICATION	CONFORM YES	NO	STATE ACTUAL
PORTABLE TANK RACK ENCLOSURE - ALUMINUM PAINTED	There shall be an enclosure installed on the porta tank rack for storage of the porta tank. The enclosure shall be manufactured from aluminum and painted with the same process as the body.			
FRAMED PORTABLE TANK	One (1) Husky 1750 IG / 2100 USG collapsible portable tank made with 22 oz. EXLON® with a full tubular aluminum frame shall be provided, or approved equivalent. The liner includes a 10" quick-drain tube which will empty the tank in seconds. Specify Color:Red			
AMDOR ROLL UP DOORS (or approved equivalent)	The doors shall be Amdor Roll-Up type doors, or approved equivalent, to include: double wall aluminum box section slats with integral hinge joint and recessed slat seal, reusable end shoes with snap-in securement, double wall aluminum reinforced bottom rail with either Stainless Steel Lift Bar door latching system, aluminum track with side frame, sill plate, and top gutter with non-marring top seal, side seals, bottom seal, with all wear component material to be Type 6 Nylon.			
	All compartment doors that exceed comfortable open reach height of the 5th percentile adult female specified in the Canadian Motor Vehicle Safety Regulations shall receive a nylon loop pull strap.			

Municipality's REQUIREMENTS	SPECIFICATION	CONFORM YES	NO	STATE ACTUAL
REAR TOW EYES - PAINTED	Two (2) heavy duty steel painted tow eyes shall be bolted directly to the rear frame rails. These tow hooks shall be easily accessible from the rear of the apparatus body.			
TAILBOARD	A heavy-duty 8" deep tailboard shall be provided The tailboard shall be covered with slip resistant 3/16" embossed checker plate. The aluminum checker plate shall be bolted to the tailboard sub frame with non-corrosive stainless steel bolts. The bolt on aluminum tread plate shall allow for easy removal for service. The forward section of the tailboard shall be gapped to allow washing without dirt being trapped and for the drainage of accumulated water.			
BODY HAND RAIL	The following hand rails shall be installed on the apparatus body. Two (2) 48" mounted vertically on the rear. One (1) 42" mounted horizontally on the upper rear for hose bed access. One (1) 12" mounted on the roadside upper rear hose bed area			
FOLDING STEPS - CURB SIDE REAR	One (1) folding aluminum steps shall be installed on the curb side rear of the apparatus.			
CAST STEPS - ROAD SIDE REAR	Three (3) cast aluminum fixed steps shall be installed on the road side rear of the apparatus. Each step shall come with a hand hold built into the step.			
FOLDING STEPS - ROAD SIDE REAR	One (1) folding aluminum steps shall be installed on the road side rear of the apparatus.			

Municipality's REQUIREMENTS	SPECIFICATION	CONFORM YES	NO	STATE ACTUAL
FOLDING STEPS - ROAD SIDE FRONT	One (1) folding aluminum steps shall be installed on the road side front of the apparatus.			
HARD SUCTION HOSE STORAGE – THRU TANK	Suction hose storage for up to four (4) lengths of hard suction hose shall be installed. The storage shall be an integral structure with the water tank with access from the rear of the apparatus. The storage area shall come with a aluminum checker plate door. The door shall be fastened with a stainless steel hinge.			
HARD SUCTION HOSE – KOCHEK, or approved equivalent	Two (2) ten foot section(s) of 6" Kochek, or approved equivalent, PVC lightweight, flexible, hard suction hose shall be provided with lightweight male and long handle fem threaded couplings.			
TRAFFIC CONTROL DIRECTIONAL LIGHT - LED	One (1) Whelen model TAL85 LED directional light shall be mounted on the rear of the vehicle as high as possible for best visibility. Equivalent light may be approved. The light shall have a manufacturer 5 year warranty. Traffic Advisor - Installation - Standard Electrical			

Municipality's REQUIREMENTS	SPECIFICATION	CONFORM YES	CONFORM NO	STATE ACTUAL
LIGHT TOWER	A Shadow-RT, manufactured by Command Light, part number SL442D-W2, light tower shall be provided for installation on the apparatus. Equivalent light towers may be approved. The location of the light tower and its controls shall be installed according to instructions given by the customer and the requirements of the light tower manufacturer. The light tower shall extend 55" above the mounting surface and shall extend to full upright position in less than 15 seconds. The overall size of nested light tower shall be 54" long x 33" wide x 8" high and weigh approximately 75 pounds.			
	The light tower shall be a single-stage device with lighting, capable of 350 degree rotation. The light shall be elevated by an electric linear actuator. The actuator shall adjust the light bank angle from 0 to 110 degrees.			
	The tower base shall have a light that illuminates the envelope of motion during any movement of the light tower mast as required by NFPA1901.			
ELECTRICAL SYSTEM - MULTIPLEXED	All wiring shall be SAE J1128 and SAE J1292 GXL type wire, as per fire industry standards.			
	The manufacturer shall design the wiring system for the apparatus in accordance to the SAE, Society of Automobile Engineers.			
	All wiring harnesses shall be properly secured and routed. All passages required for routing shall be grommeted and sealed as required.			
	All wiring shall be easily accessible for servicing.			

Municipality's REQUIREMENTS	SPECIFICATION	CONFORM YES	NO	STATE ACTUAL
	All wiring shall have a strain pull test on wiring connections of 40 pounds			
BATTERY MASTER SWITCH	A 300 amp solenoid master battery switch shall be installed in the cab within reach of the driver. An illuminated rocker switch shall be located on the cab dash and shall come with a label.			
DECALS/BRANDING	All decals and branding for the vehicle will be provided and installed by the manufacturer during the build process. Full design and layout will be discussed during the pre-construction meeting.			
FOLDING LADDER	A 10 foot folding ladder shall be provided.			
	A 14 foot roof ladder shall be provided.			
	A 24 foot, 2-section extension ladder shall be provided.			
QUALIFICATION	The bidder must have been manufacturing fire apparatus continuously, without interruption for a minimum of Twenty (15) years.			
	The vehicle proposed must not be a prototype. Photos of the proposed model to be included with the bid package with the customer's contact information			
	The apparatus manufacturer shall deliver the unit, with all fluids topped up upon delivery and provide up to 8 hours of onsite training.			
	The bidder shall have a quality manual available for inspection by the purchaser			

Municipality's REQUIREMENTS	SPECIFICATION	CONFORM YES	NO	STATE ACTUAL
	The bidder must indicate that they are the prime contractor for this bid, and that all non-purchased components are not subcontracted.			
	The apparatus manufacturer must be a current member of the Fire Apparatus Manufacturers Association (FAMA). A copy of the certificate must be attached with the bid submittal.			
	The apparatus manufacturer must provide documentation of having a certified engineer on staff with the bid submittal. Sub Contracted Engineers Shall Not Be Acceptable And Shall Disqualify The Bid			
	The manufacturer of the apparatus must supply a Certificate of Insurance proving that they carry a minimum of $25,000,000.00 in product liability insurance. Bids not meeting this requirement will not be accepted. A copy of the certificate shall be included with the bid submittal.			
	The manufacturer of the apparatus must be registered with Transport Canada to the National Safety Mark Standards. Bids not meeting this requirement will not be accepted. Copies or registration must be attached with the bid submittal			
	The manufacturer of the apparatus must be certified and in good standing with the Workers Compensation Board. Proof of certification must be supplied with the bid. A manufacturer that is not certified in Factory Manufacturing or not in good standing with their local Workers Compensation Board shall be disqualified			

Municipality's REQUIREMENTS	SPECIFICATION	CONFORM YES	NO	STATE ACTUAL
	The manufacturer of the apparatus must be fully owned and managed by a Parent Company, Corporation, Partnership, or that is a company 100% held in North America.			
	All chassis, pumps and major components must be manufactured in North America and must be able to supply parts for an emergency vehicle within 48 hours.			
	Proposals from any manufacturer that is fully or partially owned and/or operated by a Foreign Company, Corporation, Partnership, or that is a company under any type of ownership partnership, or any similar type of agreement will be rejected immediately and their bid disqualified.			
SERVICE REQUIREMENTS	The bidder shall provide a "24 Hour", "7-Day Per Week" emergency parts and service toll free telephone number. This phone number must be listed on a separate statement included in the bid package, along with the contact name, business name, address, and phone number of the local service agency, which will service the vehicle after being placed into service			
	The service agency shall be capable to perform all required service work, and shall also have at their disposal the ability to have any required subcontracting work, such as engine, transmission, etc. work performed on behalf of the apparatus manufacturer.			
ENGINEERING DRAWINGS	Engineering drawings shall be submitted to the purchaser prior to commencement of the manufacturing process			

Municipality's REQUIREMENTS	SPECIFICATION	CONFORM YES	CONFORM NO	STATE ACTUAL
	This drawing shall show at a minimum the front, left, right and rear views of the vehicle, as it will look at the time of completion.			
	A copy of this drawing shall be signed and returned to the apparatus manufacturer and become part of the vehicle contract.			
BODY MANUAL - ELECTRONIC	Two (2) digitized manual(s) shall be provided on operation of the complete apparatus. The manual(s) shall include a troubleshooting guide complete with recommended daily, weekly and annual maintenance procedures.			
WEIGHT AND BALANCE CALCULATION	The apparatus, prior to acceptance will be required to meet the vehicle stability of the applicable NFPA or ULC automotive fire apparatus standard. A calculated center of gravity shall be performed to ensure the apparatus meets these requirements. The calculated center of gravity shall be no higher than 80 percent of the rear track axle width.			
WARRANTY	The substructure shall be warranted for a period of twenty (20) years on the apparatus sub structure for corrosion perforation.			
	The apparatus body warranty shall cover the entire body against manufacturer defects for a period of twenty 20 years on aluminum and stainless steel full framed bodies.			
	The paint shall be warranted by PPG for a period of Ten (10) years and shall be non prorated.			

Municipality's REQUIREMENTS	SPECIFICATION	CONFORM YES	CONFORM NO	STATE ACTUAL
RUST INHIBITOR	There shall be an application of Krown rust inhibitor, or an approved equivalent, applied to the chassis and the apparatus body as per the suppliers recommendation for maximum rust protection prior to delivery of the apparatus.			
TESTING AND CERTIFICATION	The completed vehicle shall be tested and labeled to CAN/ULC-S515-13 by an independent third party certification organization.			
	The third party organization shall be accredited for testing systems on fire apparatus in accordance with ISO/IEC 17020 or ISO/IEC Guide 65.			
	The certification organization shall not be owned or controlled by manufacturers or vendors of the apparatus being tested.			
	The certification organization shall be primarily engaged in certification work and shall not have a monetary interest in the product's ultimate profitability.			
	The certification organization shall witness all test and shall refuse to certify any test result for a system if the components do not pass the testing required by this system			
	There shall be no conditional, temporary, or partial certification of test results. Appropriate forms of data sheets shall be provided and used during testing. Manufacturer's certification is not acceptable.			
	The manufacturer shall be certified to ISO 9001			

Municipality's REQUIREMENTS	SPECIFICATION	CONFORM YES	CONFORM NO	STATE ACTUAL
	The completed vehicle shall undergo, prior to delivery, a two (2) hour road test with all applicable emergency equipment activated. A certification shall be provided to the purchaser outlining the results of this road test.			
Vehicle Data Recorder	A vehicle data recorder system will be provided to comply with NFPA 1901, 2009 edition. The following data will be monitored: • Vehicle speed MPH • Acceleration (from speedometer) MPH/Sec. • Deceleration (from speedometer) MPH/Sec. • Engine speed RPM • Engine throttle position % of full throttle • ABS Event On/Off • Seat occupied status Occupied Yes/No by position • Seat belt status Buckled Yes/No by position • Master Optical Warning Device Switch On/Off • Time: 24 hour time • Date: Year/Month/Day			

Municipality's REQUIREMENTS	SPECIFICATION	CONFORM YES	CONFORM NO	STATE ACTUAL
Occupant Detection System	There will be a visual and audible warning system installed in the cab that indicates the occupant buckle status of all cab seating positions that are designed to be occupied during vehicle movement. The audible warning will activate when the vehicle's park brake is released and a seat position is not in a valid state. A valid state is defined as a seat that is unoccupied and the seat belt is unbuckled, or one that has the seat belt buckled after the seat has been occupied.			
CARRYING CAPACITY PLATE	A warning label shall be provided in the cab within sight of the driver stating the seating capacity of the cab/crew cab. Another warning label shall be provided in the cab within sight of the driver that the occupants must be seated and belted.			
VEHICLE DIMENSION PLATE	A warning label shall be provided in the cab within sight of the driver stating the following apparatus dimensions: Height and length in standard and metric measurements. Gross vehicle weight rating in pounds and kilograms.			
DIELECTRIC VOLTAGE TESTING	The wiring and permanently connected devices and equipment shall be subject to a dielectric voltage withstand test of 900 volts for one minute. The testing shall be performed after all body work has been completed. The electric polarity of all permanently wired equipment, cord reels, and receptacles shall be tested to verify that wiring connections have been properly made.			

Municipality's REQUIREMENTS	SPECIFICATION	CONFORM YES	NO	STATE ACTUAL
HELMET HOLDERS	There shall be five (5) helmet holders supplied with the apparatus. The helmet holder shall comply with the 2009 edition of NFPA 1901 for use inside of crew cabs. It holds both traditional and contemporary style helmets without any adjustment needed.			
LED Hosebed Flood Light	There will be an LED minimum 6:00 x 3.00 inch LED flood light with clear lens located at the front of the hosebed rated at not less than 1900 lumens capable of illuminating the entire hosebed area.			
LED Crosslay Flood Light	There will be one (1) LED light with clear LED wide flood lamp rated at not less than 750 lumens installed on the top center of the cross compartment. It will be capable of illuminating the entire crosslay hose bed area.			
Compartment Lighting	One (1) LED Strip light, Techiq E45, will be installed in each body compartment. The tube light will be centered vertically along the forward side of the door framing and at maximum length available to fit the opening. The light in each compartment will be on a separate circuit, turning on only those lights that have open compartment doors.			
LED Intermediate Turn Signal Lighting	There will be two (2) amber intermediate turn signals and two (2) amber intermediate marker lights on the sides of the apparatus (one (1) each per side) between the front and rear axles.			

Municipality's REQUIREMENTS	SPECIFICATION	CONFORM YES	CONFORM NO	STATE ACTUAL
Under Body Lights	There will be one (1) perimeter light mounted centered under the front bumper to illuminate the ground area under the bumper. The under bumper perimeter lights will illuminate the area with the activation of the work light switch in the cab dash and with the parking brake applied. One (1) under each side of the pump house running boards and two (2) under the rear tailboard.			
Cab Step Lights	There will be a LED light installed underneath each of the apparatus cab steps meeting NFPA1901 lumen requirements. The lights will be positioned to provide illumination to the ground area or the lower step under the cab entry doors. The lights will be activated by the opening of any cab door and work light switch in the cab console.			
Engine Compartment Light	There will be one (1) 12 volt LED work light installed in the engine compartment on the firewall. The light will have an integrated on/off switch.			

Municipality's REQUIREMENTS	SPECIFICATION	CONFORM YES	CONFORM NO	STATE ACTUAL
Rear Tail Light Assembly	There will be Super LED rear tail light assemblies provided and installed with the apparatus, one (1) each side at the rear. The following will be installed in each taillight stack: One (1) 60BTT red brake/tail light One (1) 60A00TAR amber arrow turn signal light One (1) 60C00VCR clear backup light One (1) 60R02FCR warning light on the bottom of the stack They will be mounted in PLAST4V chrome flanges provided for each tail light assembly			
DOT Lighting	There will be seven (7) lights located on the rear of the apparatus. Three (3) of the lights will be mounted on the rear of the apparatus center location, for use as identification lamps. Two (2) additional lights will be located on the rear outboard locations, one (1) each side as high as possible. Two (2) lights will be mounted in the rubrails on the sides facing the side at the rear corners, for use as clearance lamps.			

Municipality's REQUIREMENTS	SPECIFICATION	CONFORM YES	CONFORM NO	STATE ACTUAL
Shoreline Receptacle w/ Auto Eject	A Kussmaul "Super Auto-Eject" 120 volt 20 amp shoreline receptacle will be installed on the apparatus. It will automatically eject the plug when the starter button is depressed. The electrical current will be interrupted before the plug is automatically ejected to prevent arcing. The plug for the receptacle will be shipped loose for installation on the shoreline cord. The shoreline connection will be installed under the driver's door step area at the lower step level and placed forward of the immediate stepping area where space allows. The electrical inlet will be connected to the battery charger. The shoreline inlet connection will include a yellow cover.			
Battery Charger	A minimum 45-amp (12 volt) battery charger/conditioner will be provided and installed in the "best fit" location as determined by the apparatus manufacture. The battery charger will automatically regulate operation output to a single battery bank. A built in sensing circuit will check the battery voltage 120 times per second, to compensate for voltage drop in charging wires and provide quick recharge, with no overcharge.			

Municipality's REQUIREMENTS	SPECIFICATION	CONFORM YES	CONFORM NO	STATE ACTUAL
Hazard Light in Cab	There will be a LED "Door Open" indicator light provided and installed in the chassis cab. The light will be installed on the console and will activate when the parking brake is released and a compartment door or any additional specified accessible devices are not in the completely closed positions. A warning placard will be installed in the apparatus cab near the light, stating "Do Not Move Apparatus When Light Is On."			
BROW LIGHT	A FireTech 46" long brow flood light with white housing shall be installed beneath the lightbar over the cab roof. The flood light will be 18,000 lumens with split optics The brow light will be activated by separate switches located on the cab console, scene, spot and flood.			
SCENE LIGHTS	There will be four (4) Super-LED scene lights installed on the body sides of the apparatus, two (2) on each side; one (1) located at the front and one (1) located at the rear corner of the body side walls for a total of four (4). They will be activated by a switch marked "Work Light" located on the cab console.			
REAR VIEW CAMERA	There will be a shielded camera mounted up high at the rear of the vehicle to provide a wide angle rear view with audio. A minimum 5.6" color monitor will be mounted on cab console with swivel capability.			

Municipality's REQUIREMENTS	SPECIFICATION	CONFORM YES	CONFORM NO	STATE ACTUAL
EMERGENCY LIGHTING – ZONE A UPPER	The zone A upper emergency lighting zone shall have the following: A Whelen Justice 56" light bar (Model: JE2NFPA), or approved equivalent, warning system shall be furnished and mounted to the chassis using a Whelen Stainless steel mount, or approved equivalent. The mount shall allow for adjustment of the lightbar angle. The light bar shall have a manufacturer 5 year warranty.			
EMERGENCY LIGHTING- ZONE A LOWER	The zone A lower emergency lighting zone shall have the following lights and shall be mounted to the chassis grill: Two (2) Whelen 600 Series Super-LED® model P/N 60R02FRR lights, or approved equivalent. These lights shall have a red lens, red LED's and come with a chrome bezel. The light shall have a manufacturer 5 Year warranty.			
EMERGENCY LIGHTING – ZONE B UPPER	The zone B upper emergency lighting zone shall have the following: Two (2) Whelen 600 Series Super-LED® model P/N 60R02FRR lights, or approved equivalent. These lights shall have a red lens, red LED's and come with a chrome bezel. The light shall have a manufacturer 5 Year warranty.			
EMERGENCY LIGHTING- ZONE B LOWER	The zone B lower emergency lighting zone shall have the following: Two (2) Whelen 600 Series Super-LED® model P/N 60R02FRR lights, or approved equivalent. These lights shall have a red lens, red LED's and come with a chrome bezel. The light shall have a manufacturer 5 Year warranty.			

Municipality's REQUIREMENTS	SPECIFICATION	CONFORM YES	CONFORM NO	STATE ACTUAL
EMERGENCY LIGHTING – ZONE C UPPER	The zone C upper emergency lighting zone shall have the following: Two (2) Whelen 600 Series Super-LED® model P/N 60R02FRR lights, or approved equivalent. These lights shall have a red lens, red LED's and come with a chrome bezel. The light shall have a manufacturer 5 Year warranty.			
EMERGECY LIGHTING – ZONE C LOWER	The zone C lower emergency lighting zone shall have the following: Two (2) Whelen 600 Series Super-LED® model P/N 60R02FRR lights, or approved equivalent. These lights shall have a red lens, red LED's and come with a chrome bezel. The light shall have a manufacturer 5 Year warranty.			
EMERGENCY LIGHTING – ZONE D UPPER	The zone D upper emergency lighting zone shall have the following: Two (2) Whelen 600 Series Super-LED® model P/N 60R02FRR lights, or approved equivalent. These lights shall have a red lens, red LED's and come with a chrome bezel. The light shall have a manufacturer 5 Year warranty.			
EMERGENCY LIGHTING – ZONE D LOWER	The zone D lower emergency lighting zone shall have the following: Two (2) Whelen 600 Series Super-LED® model P/N 60R02FRR lights, or approved equivalent. These lights shall have a red lens, red LED's and come with a chrome bezel. The light shall have a manufacturer 5 Year warranty.			

Municipality's REQUIREMENTS	SPECIFICATION	CONFORM YES	CONFORM NO	STATE ACTUAL
REAR WARNING LIGHTS	Two (2) Whelen, model RB6, or approved equivalent, rotating halogen beacon lights, one (1) red & one (1) amber, with 60w standard rotators shall be provided and mounted for upper Zone C lighting, one (1) each side, and controlled by a switch located in the cab. Each beacon shall produce 150 flashes per minute utilizing a single parabolic reflector.			
HEADLIGHT WIG WAG FLASHER	The chassis high beam headlights shall be equipped with an alternating flashing, wig wag headlight system. An electronic flasher shall be used to control the lights. A control switch panel shall activate the flashing system.			

ELECTRONIC SIREN	A Whelen Siren Amplifier model # 295SLSA1 shall be provided, or an approved equivalent. The siren amplifier shall incorporate a 12V/200W siren installed on an aluminum alloy chassis covered by a black polycarbonate powder coated housing for maximum protection. The 295SLSA1 shall have the ability for either 100 or 200 watt output. The front overlay shall be made of velvet Lexan™ with a matte finish. The lettering and artwork on the overlay shall be illuminated with adjustable backlighting of soft LED non-glaring green. The operating controls will consist of a power switch, manual button, PA volume switch, horn button, and rotary switch. The 295SLSA1 PC board shall have input polarity protection, output short circuit protection. The siren amplifier shall include a 20A/32V fuse. The solid state siren speaker amplifier shall be vibration resistant. The microphone shall be hardwired to the 295SLSA1. The 295SLSA1 shall have 21 Scan-Lock™, or approved equivalent, siren tones with two manual functions for additional siren tones. The siren amplifier shall have the ability to customize the placement of each siren tone with the rotary switch. The siren amplifier shall have a "Siren in Use" icon driver and adjustable preset repeat radio volume. The 295SLSA1 shall have a "Park Kill" feature that disables the siren when the vehicle is in park. The PTT (push to talk) switch on the microphone shall override all siren functions. The 295SLSA1 shall have a combination On/Off and horn ring transfer switch with Bi-polarity horn/ring activation control. The 295SLSA1 shall have SI Test® capability to perform a complete diagnostic silent test of amplifier and speaker(s). The siren amplifier shall have a quick disconnect plug. The 295SLSA1 shall have the ability to			

Municipality's REQUIREMENTS	SPECIFICATION	CONFORM YES	NO	STATE ACTUAL
	activate siren tones with "Aux Enable" input either with a slide switch, power controls, or relay-to-ground connector. The 295SLSA1 shall meet Class A requirement for SAE, AMECA, KKK1822, and California Title XII. The sire amplifier shall have an adjustable bail bracket with installation hardware. The 295SLSA1 is covered by a two year factory warranty.			

GREENSTONE ONTARIO FD 16 AND 31 4 DOOR

6.1 SPECIFICATION PROPOSAL

Data Code	Description	Weight Front	Weight Rear
Price Level			
PRL-26M	M2 PRL-26M (EFF:7/26/21)		
Data Version			
DRL-048	SPECPRO21 DATA RELEASE VER 048		
Vehicle Configuration			
001-172	M2 106 CONVENTIONAL CHASSIS	5,709	3,503
004-223	2023 MODEL YEAR SPECIFIED		
002-004	SET BACK AXLE - TRUCK		
019-002	STRAIGHT TRUCK PROVISION		
003-001	LH PRIMARY STEERING LOCATION		
General Service			
AA1-002	TRUCK CONFIGURATION		
AA6-003	DOMICILED, CANADA (OTHER THAN QUEBEC)		
RCE-00F	FIXED CANADIAN EXCHANGE		
A85-020	FIRE SERVICE		
A84-1EV	EMERGENCY VEHICLES BUSINESS SEGMENT		
AA4-002	LIQUID BULK COMMODITY		
AA5-002	TERRAIN/DUTY: 100% (ALL) OF THE TIME, IN TRANSIT, IS SPENT ON PAVED ROADS		
AB1-008	MAXIMUM 8% EXPECTED GRADE		
AB5-001	SMOOTH CONCRETE OR ASPHALT PAVEMENT - MOST SEVERE IN-TRANSIT (BETWEEN SITES) ROAD SURFACE		
995-091	MEDIUM TRUCK WARRANTY		

Data Code	Description	Weight Front	Weight Rear
A66-99D	EXPECTED FRONT AXLE(S) LOAD : 16000.0 lbs		
A68-99D	EXPECTED REAR DRIVE AXLE(S) LOAD : 31000.0 lbs		
A63-99D	EXPECTED GROSS VEHICLE WEIGHT CAPACITY : 47000.0 lbs		
Truck Service			
AA3-027	FIRE TANK/PUMPER - MAIN DRIVELINE DRIVEN SPLIT-SHAFT PTO/PUMP		
AF3-2ET	FORT GARRY FIRE TRUCKS		
AF7-99D	EXPECTED BODY/PAYLOAD CG HEIGHT ABOVE FRAME "XX" INCHES : 32.0 in		
Engine			
101-3B0	CUM L9 360EV HP @ 2200 RPM, 2200 GOV RPM, 1150 LB-FT @ 1200 RPM, R/F/E	640	30
Electronic Parameters			
79A-075	75 MPH ROAD SPEED LIMIT		
79B-000	CRUISE CONTROL SPEED LIMIT SAME AS ROAD SPEED LIMIT		
79M-001	PTO MODE BRAKE OVERRIDE - SERVICE BRAKE APPLIED		
79P-007	PTO RPM WITH CRUISE SET SWITCH - 1100 RPM		
79Q-007	PTO RPM WITH CRUISE RESUME SWITCH - 1100 RPM		
79S-001	PTO MODE CANCEL VEHICLE SPEED - 5 MPH		
79U-007	PTO GOVERNOR RAMP RATE - 250 RPM PER SECOND		
79V-001	FUEL DOSING OF AFTERTREATMENT ENABLED IN PTO MODE-CLEANS HYDROCARBONS AT HIGH TEMPERATURES ONLY		
80G-002	PTO MINIMUM RPM - 700		
80J-002	REGEN INHIBIT SPEED THRESHOLD - 5 MPH		
Engine Equipment			
99C-021	2010 EPA/CARB/GHG21 CONFIGURATION		
99D-010	NO 2008 CARB EMISSION CERTIFICATION		
13E-001	STANDARD OIL PAN		

Data Code	Description	Weight Front	Weight Rear
105-001	ENGINE MOUNTED OIL CHECK AND FILL		
014-1BX	SIDE OF HOOD AIR INTAKE WITH NFPA COMPLIANT EMBER SCREEN AND FIRE RETARDANT DONALDSON AIR CLEANER		
124-1E7	DR 12V 275 AMP 40-SI BRUSHLESS PAD ALTERNATOR WITH REMOTE BATTERY VOLTAGE SENSE	10	
292-235	(2) DTNA GENUINE, FLOODED STARTING, MIN 2000CCA, 370RC, THREADED STUD BATTERIES	10	
290-017	BATTERY BOX FRAME MOUNTED		
281-001	STANDARD BATTERY JUMPERS		
282-001	SINGLE BATTERY BOX FRAME MOUNTED LH SIDE UNDER CAB		
291-017	WIRE GROUND RETURN FOR BATTERY CABLES WITH ADDITIONAL FRAME GROUND RETURN		
289-001	NON-POLISHED BATTERY BOX COVER		
293-058	POSITIVE LOAD DISCONNECT WITH CAB MOUNTED CONTROL SWITCH MOUNTED OUTBOARD DRIVER SEAT	10	
295-029	POSITIVE AND NEGATIVE POSTS FOR JUMPSTART LOCATED ON FRAME NEXT TO STARTER	2	
107-032	CUMMINS TURBOCHARGED 18.7 CFM AIR COMPRESSOR WITH INTERNAL SAFETY VALVE		
108-002	STANDARD MECHANICAL AIR COMPRESSOR GOVERNOR		
131-013	AIR COMPRESSOR DISCHARGE LINE		
152-039	GVG, FIRE AND EMERGENCY SERVICE VEHICLES ENGINE WARNING		
128-076	CUMMINS ENGINE INTEGRAL BRAKE WITH VARIABLE GEOMETRY TURBO ON/OFF	20	
016-1DC	RH OUTBOARD UNDER STEP MOUNTED HORIZONTAL AFTERTREATMENT SYSTEM ASSEMBLY WITH RH HORIZONTAL TAILPIPE EXITING FORWARD OF REAR TIRES	10	5
28F-007	ENGINE AFTERTREATMENT DEVICE, AUTOMATIC OVER THE ROAD ACTIVE REGENERATION AND DASH MOUNTED SINGLE REGENERATION REQUEST/INHIBIT SWITCH		
239-001	STANDARD EXHAUST SYSTEM LENGTH		

Data Code	Description	Weight Front	Weight Rear
237-022	RH HORIZONTAL TAILPIPE, EXIT FORWARD OF REAR TIRES	20	20
23U-001	6 GALLON DIESEL EXHAUST FLUID TANK		
30N-003	100 PERCENT DIESEL EXHAUST FLUID FILL		
43X-002	LH MEDIUM DUTY STANDARD DIESEL EXHAUST FLUID TANK LOCATION		
23Y-001	STANDARD DIESEL EXHAUST FLUID PUMP MOUNTING		
43Y-001	STANDARD DIESEL EXHAUST FLUID TANK CAP		
273-058	AIR POWERED ON/OFF ENGINE FAN CLUTCH		
276-002	AUTOMATIC FAN CONTROL WITH DASH SWITCH AND INDICATOR LIGHT, NON ENGINE MOUNTED		
110-003	CUMMINS SPIN ON FUEL FILTER		
118-008	COMBINATION FULL FLOW/BYPASS OIL FILTER		
266-013	1100 SQUARE INCH ALUMINUM RADIATOR	70	
103-040	ANTIFREEZE TO -60F, OAT (NITRITE AND SILCATE FREE) EXTENDED LIFE COOLANT		
171-007	GATES BLUE STRIPE COOLANT HOSES OR EQUIVALENT		
172-001	CONSTANT TENSION HOSE CLAMPS FOR COOLANT HOSES		
270-016	RADIATOR DRAIN VALVE		
168-002	LOWER RADIATOR GUARD		
138-011	PHILLIPS-TEMRO 1000 WATT/115 VOLT BLOCK HEATER	4	
140-022	CHROME ENGINE HEATER RECEPTACLE MOUNTED UNDER LH DOOR		
134-001	ALUMINUM FLYWHEEL HOUSING		
132-004	ELECTRIC GRID AIR INTAKE WARMER		
155-055	DELCO 12V 39MT HD/OCP STARTER WITH THERMAL PROTECTION AND INTEGRATED MAGNETIC SWITCH	15	
Transmission			
342-1KD	ALLISON 3000 EVS AUTOMATIC TRANSMISSION WITH PTO PROVISION	200	60
Transmission Equipment			

Data Code	Description	Weight Front	Weight Rear
343-331	ALLISON VOCATIONAL PACKAGE 198 - AVAILABLE ON 3000/4000 PRODUCT FAMILIES WITH VOCATIONAL MODEL EVS		
84B-003	ALLISON VOCATIONAL RATING FOR FIRE TRUCK/EMERGENCY VEHICLE APPLICATIONS AVAILABLE WITH ALL PRODUCT FAMILIES		
84C-023	PRIMARY MODE GEARS, LOWEST GEAR 1, START GEAR 1, HIGHEST GEAR 6, AVAILABLE FOR 3000/4000 PRODUCT FAMILIES ONLY		
84D-023	SECONDARY MODE GEARS, LOWEST GEAR 1, START GEAR 1, HIGHEST GEAR 6, AVAILABLE FOR 3000/4000 PRODUCT FAMILIES ONLY		
84E-000	PRIMARY SHIFT SCHEDULE RECOMMENDED BY DTNA AND ALLISON, THIS DEFINED BY ENGINE AND VOCATIONAL USAGE		
84F-000	SECONDARY SHIFT SCHEDULE RECOMMENDED BY DTNA AND ALLISON, THIS DEFINED BY ENGINE AND VOCATIONAL USAGE		
84G-000	PRIMARY SHIFT SPEED RECOMMENDED BY DTNA AND ALLISON, THIS DEFINED BY ENGINE AND VOCATIONAL USAGE		
84H-000	SECONDARY SHIFT SPEED RECOMMENDED BY DTNA AND ALLISON, THIS DEFINED BY ENGINE AND VOCATIONAL USAGE		
84J-003	2ND GEAR ENGINE BRAKE PRESELECT RANGE WITH AGGRESSIVE DOWNSHIFT STRATEGY		
84K-000	ENGINE BRAKE RANGE ALTERNATE PRESELECT RECOMMENDED BY DTNA AND ALLISON, THIS DEFINED BY ENGINE AND VOCATIONAL USAGE		
84N-200	FUEL SENSE 2.0 DISABLED - PERFORMANCE - TABLE BASED		
84U-000	DRIVER SWITCH INPUT - DEFAULT - NO SWITCHES		
84V-001	DIRECTION CHANGE ENABLED WITH MULTIPLEXED SERVICE BRAKES - ALLISON 5TH GEN TRANSMISSIONS		
84M-001	PUMP MODE INPUT ENABLED 3RD/4TH LOCKUP WIRED ON TCM INPUT AJ/BQ - ALLISON 5TH GEN TRANSMISSIONS		

Data Code	Description	Weight Front	Weight Rear
353-022	VEHICLE INTERFACE WIRING CONNECTOR WITHOUT BLUNT CUTS, AT BACK OF CAB		
34C-001	ELECTRONIC TRANSMISSION CUSTOMER ACCESS CONNECTOR FIREWALL MOUNTED		
362-824	(2) CUSTOMER INSTALLED CHELSEA 280 SERIES PTO'S		
363-011	PTO MOUNTING, LH AND RH SIDES OF MAIN TRANSMISSION		
341-018	MAGNETIC PLUGS, ENGINE DRAIN, TRANSMISSION DRAIN, AXLE(S) FILL AND DRAIN		
345-003	PUSH BUTTON ELECTRONIC SHIFT CONTROL, DASH MOUNTED		
97G-004	TRANSMISSION PROGNOSTICS - ENABLED 2013		
370-015	WATER TO OIL TRANSMISSION COOLER, IN RADIATOR END TANK		
346-003	TRANSMISSION OIL CHECK AND FILL WITH ELECTRONIC OIL LEVEL CHECK		
35T-001	SYNTHETIC TRANSMISSION FLUID (TES-295 COMPLIANT)		
Front Axle and Equipment			
400-1A9	DETROIT DA-F-16.0-5 16,000# FL1 71.0 KPI/3.74 DROP SINGLE FRONT AXLE	190	
402-030	MERITOR 16.5X6 Q+ CAST SPIDER CAM FRONT BRAKES, DOUBLE ANCHOR, FABRICATED SHOES	10	
403-026	FIRE AND EMERGENCY SEVERE SERVICE, NON-ASBESTOS FRONT LINING		
419-001	CAST IRON OUTBOARD FRONT BRAKE DRUMS		
427-001	FRONT BRAKE DUST SHIELDS	5	
409-006	FRONT OIL SEALS		
408-001	VENTED FRONT HUB CAPS WITH WINDOW, CENTER AND SIDE PLUGS - OIL		
416-022	STANDARD SPINDLE NUTS FOR ALL AXLES		
405-002	MERITOR AUTOMATIC FRONT SLACK ADJUSTERS		
536-012	TRW TAS-85 POWER STEERING	40	

	Data Code	Description	Weight Front	Weight Rear
	539-003	POWER STEERING PUMP		
	534-015	2 QUART SEE THROUGH POWER STEERING RESERVOIR		
	40T-002	CURRENT AVAILABLE SYNTHETIC 75W-90 FRONT AXLE LUBE		
Front Suspension				
	620-026	16,000# TAPERLEAF FRONT SUSPENSION	200	
	619-005	MAINTENANCE FREE RUBBER BUSHINGS - FRONT SUSPENSION		
	62H-010	FRONT SUSPENSION WITH LEFT HAND OFFSET SHACKLE BRACKET	4	
	410-001	FRONT SHOCK ABSORBERS		
Rear Axle and Equipment				
	420-064	RS-30-185 31,000# U-SERIES FIRE/EMERGENCY SERVICE SINGLE REAR AXLE		300
	421-538	5.38 REAR AXLE RATIO		
	424-001	IRON REAR AXLE CARRIER WITH STANDARD AXLE HOUSING		
N	385-004	JACKSHAFT, TEMPORARY DRIVELINE FOR CUSTOMER FURNISHED FIRE PUMP, TEMPORARILY INSTALLED FOR SHIPPING TO CUSTOMER/TEM	40	40
	386-073	MXL 17T MERITOR EXTENDED LUBE MAIN DRIVELINE WITH HALF ROUND YOKES	40	40
	452-001	DRIVER CONTROLLED TRACTION DIFFERENTIAL - SINGLE REAR AXLE		20
	878-018	(1) DRIVER CONTROLLED DIFFERENTIAL LOCK REAR VALVE FOR SINGLE DRIVE AXLE		
	87B-004	BLINKING LAMP WITH EACH MODE SWITCH, DIFFERENTIAL UNLOCK WITH IGNITION OFF, ACTIVE <5 MPH		
	423-010	MERITOR 16.5X7 P CAST SPIDER CAM REAR BRAKES, DOUBLE ANCHOR, CAST SHOES		20
	433-025	FIRE AND EMERGENCY SEVERE SERVICE NON-ASBESTOS REAR BRAKE LINING		
	434-011	BRAKE CAMS AND CHAMBERS ON FORWARD SIDE OF DRIVE AXLE(S)		
	451-018	WEBB CAST IRON REAR BRAKE DRUMS		50
	425-002	REAR BRAKE DUST SHIELDS		5

Data Code	Description	Weight Front	Weight Rear
440-006	REAR OIL SEALS		
426-100	WABCO TRISTOP D LONGSTROKE 1-DRIVE AXLE SPRING PARKING CHAMBERS		
428-003	HALDEX AUTOMATIC REAR SLACK ADJUSTERS		
41T-002	CURRENT AVAILABLE SYNTHETIC 75W-90 REAR AXLE LUBE		
Rear Suspension			
622-1DG	31,000# FLAT LEAF SPRING REAR SUSPENSION WITH HELPER AND RADIUS ROD FOR FIRE/EMERGENCY SERVICE		180
621-001	SPRING SUSPENSION - NO AXLE SPACERS		
431-001	STANDARD AXLE SEATS IN AXLE CLAMP GROUP		
623-005	FORE/AFT CONTROL RODS		
Brake System			
018-002	AIR BRAKE PACKAGE		
490-100	WABCO 4S/4M ABS		
871-001	REINFORCED NYLON, FABRIC BRAID AND WIRE BRAID CHASSIS AIR LINES		
904-001	FIBER BRAID PARKING BRAKE HOSE		
412-001	STANDARD BRAKE SYSTEM VALVES		
46D-002	STANDARD AIR SYSTEM PRESSURE PROTECTION SYSTEM		
413-002	STD U.S. FRONT BRAKE VALVE		
432-003	RELAY VALVE WITH 5-8 PSI CRACK PRESSURE, NO REAR PROPORTIONING VALVE		
480-086	BW AD-9SI BRAKE LINE AIR DRYER WITH HEATER		
479-003	AIR DRYER MOUNTED INBOARD ON LH RAIL		
460-001	STEEL AIR BRAKE RESERVOIRS		
477-004	PULL CABLES ON ALL AIR RESERVOIR(S)		
Trailer Connections			
335-004	UPGRADED CHASSIS MULTIPLEXING UNIT		
32A-002	UPGRADED BULKHEAD MULTIPLEXING UNIT		

Data Code	Description	Weight Front	Weight Rear
Wheelbase & Frame			
545-705	7050MM (278 INCH) WHEELBASE		
546-101	11/32X3-1/2X10-15/16 INCH STEEL FRAME (8.73MMX277.8MM/0.344X10.94 INCH) 120KSI	480	180
547-001	1/4 INCH (6.35MM) C-CHANNEL INNER FRAME REINFORCEMENT	230	440
552-081	1075MM (42 INCH) REAR FRAME OVERHANG		
55W-004	FRAME OVERHANG RANGE: 41 INCH TO 50 INCH	30	-140
AC8-99D	CALC'D BACK OF CAB TO REAR SUSP C/L (CA) : 164.76 in		
AE8-99D	CALCULATED EFFECTIVE BACK OF CAB TO REAR SUSPENSION C/L (CA) : 161.76 in		
AE4-99D	CALC'D FRAME LENGTH - OVERALL : 349.25 in		
FSS-0LH	CALCULATED FRAME SPACE LH SIDE : 171.78 in		
FSS-0RH	CALCULATED FRAME SPACE RH SIDE : 112.22 in		
553-001	SQUARE END OF FRAME		
587-003	REAR TOW HOOKS		10
550-001	FRONT CLOSING CROSSMEMBER		
559-003	LIGHTWEIGHT HEAVY DUTY ALUMINUM ENGINE CROSSMEMBER	-12	
561-001	STANDARD CROSSMEMBER BACK OF TRANSMISSION		
562-001	STANDARD MIDSHIP #1 CROSSMEMBER(S)		
572-001	STANDARD REARMOST CROSSMEMBER		
565-001	STANDARD SUSPENSION CROSSMEMBER		
Chassis Equipment			
556-1CW	THREE-PIECE 14 INCH CHROME STEEL BUMPER WITH COLLAPSIBLE ENDS AND LH WING CUTOUT FOR FEDERAL MS100/ES100/ES100C SPEAKER	30	
558-001	FRONT TOW HOOKS - FRAME MOUNTED	15	
574-001	BUMPER MOUNTING FOR SINGLE LICENSE PLATE		

	Data Code	Description	Weight Front	Weight Rear
	586-024	FENDER AND FRONT OF HOOD MOUNTED FRONT MUDFLAPS		
	551-007	GRADE 8 THREADED HEX HEADED FRAME FASTENERS		
	605-003	LEVEL FRAME RAILS (+/- 1%) WHEN CHASSIS IS LOADED TO FRONT AND REAR SUSPENSION RATINGS		
*	601-019	3D PARASOLID VEHICLE MODEL		
		GDRASKOVIC@FGFT.CA		
	970-039	TANK BODY 1501 TO 3000 GALLONS		
	607-001	CLEAR FRAME RAILS FROM BACK OF CAB TO FRONT REAR SUSPENSION BRACKET, BOTH RAILS OUTBOARD		
Fuel Tanks				
	204-192	50 GALLON/189 LITER RECTANGULAR ALUMINUM FUEL TANK - LH	20	
	218-005	RECTANGULAR FUEL TANK(S)		
	215-005	PLAIN ALUMINUM/PAINTED STEEL FUEL/HYDRAULIC TANK(S) WITH PAINTED BANDS		
	212-007	FUEL TANK(S) FORWARD		
	664-004	POLISHED STAINLESS STEEL STEP FINISH		
	205-001	FUEL TANK CAP(S)		
	122-1J1	DETROIT FUEL/WATER SEPARATOR WITH WATER IN FUEL SENSOR, HAND PRIMER AND 12 VOLT PREHEATER"	-5	
	216-020	EQUIFLO INBOARD FUEL SYSTEM		
	20E-004	AUXILIARY FUEL SUPPLY AND RETURN PORTS LOCATED ON LH FUEL TANK		
	202-016	HIGH TEMPERATURE REINFORCED NYLON FUEL LINE		
	213-001	INSULATION FOR FUEL LINES	2	
Tires				
	093-13W	MICHELIN X MULTI HLZ 385/65R22.5 20 PLY RADIAL FRONT TIRES	124	
	094-1C1	MICHELIN XDN2 GRIP 315/80R22.5 20 PLY RADIAL REAR TIRES		240
Hubs				
	418-060	CONMET PRESET PLUS PREMIUM IRON FRONT HUBS		
N	450-014	WEBB IRON REAR HUBS		70

Data Code	Description	Weight Front	Weight Rear
Wheels			
502-1H5	ALCOA LVL ONE 82462X 22.5X12.25 10-HUB PILOT 4.68 INSET 10-HAND ALUMINUM DISC FRONT WHEELS	-8	
505-356	ALCOA ULTRA ONE 89U64X 22.5X9.00 10-HUB PILOT 5.99 INSET ALUMINUM REAR WHEELS		-56
524-022	POLISHED DISC SIDE FRONT WHEELS WITH DURA-BRIGHT FINISH		
525-023	POLISHED OUTER (DISHED SIDE) REAR WHEELS WITH OUTER ONLY DURA-BRIGHT FINISH		
496-011	FRONT WHEEL MOUNTING NUTS		
497-011	REAR WHEEL MOUNTING NUTS		
498-1AB	INNER WHEEL EXTENSIONS, OUTBOARD AIRING, ALUMINUM OUTER WHEELS WITH RUBBER STABILIZERS		
Cab Exterior			
829-079	154 INCH BBC HIGH-ROOF ALUMINUM CONVENTIONAL CREW CAB	430	250
650-008	AIR CAB MOUNTING		
648-002	NONREMOVABLE BUGSCREEN MOUNTED BEHIND GRILLE		
754-008	2-1/2 INCH FENDER EXTENSIONS	10	
678-018	LH AND RH EXTERIOR GRAB HANDLES WITH SINGLE RUBBER INSERT		
646-023	HOOD MOUNTED CHROMED PLASTIC GRILLE		
65X-003	CHROME HOOD MOUNTED AIR INTAKE GRILLE		
644-004	FIBERGLASS HOOD		
690-017	HOOD LINER, ADDED FIREWALL AND FLOOR HEAT INSULATION	5	
727-1B1	DUAL 25 INCH ROUND STUTTER TONE HOOD MOUNTED AIR HORNS WITH DUAL LANYARDS	8	
726-002	DUAL ELECTRIC HORNS		
728-002	DUAL HORN SHIELDS		
575-001	REAR LICENSE PLATE MOUNT END OF FRAME		
312-088	LED HEADLIGHT ASSEMBLY AND INCANDESCENT MARKER/TURN LAMP WITH CHROME BEZEL		

Data Code	Description	Weight Front	Weight Rear
302-001	(5) AMBER MARKER LIGHTS		
311-001	DAYTIME RUNNING LIGHTS		
294-017	INTEGRAL STOP/TAIL/BACKUP LIGHTS WITH 7 EXTRA FEET OF WIRE MOUNTED AT END OF FRAME		
300-015	STANDARD FRONT TURN SIGNAL LAMPS		
469-014	AUTOMATIC ON/OFF, ENGINE COMPARTMENT, HOOD ACTIVATED WORK LIGHT WITH MANUAL OVERRIDE	1	
744-103	DUAL WEST COAST BRIGHT FINISH HEATED MIRRORS WITH LED LIGHTS AND LH AND RH REMOTE		
797-001	DOOR MOUNTED MIRRORS		
796-001	102 INCH EQUIPMENT WIDTH		
743-204	LH AND RH 8 INCH BRIGHT FINISH CONVEX MIRRORS MOUNTED UNDER PRIMARY MIRRORS		
74A-001	RH DOWN VIEW MIRROR		
729-001	STANDARD SIDE/REAR REFLECTORS		
677-055	RH AFTERTREATMENT SYSTEM CAB ACCESS WITH POLISHED DIAMOND PLATE COVER		
768-998	NO REAR WINDOW	-20	
661-003	TINTED DOOR GLASS LH AND RH WITH TINTED NON-OPERATING WING WINDOWS		
654-027	RH AND LH ELECTRIC POWERED WINDOWS, PASSENGER SWITCHES ON DOOR(S)	4	4
663-013	1-PIECE SOLAR GREEN GLASS WINDSHELD		
659-019	2 GALLON WINDSHIELD WASHER RESERVOIR WITHOUT FLUID LEVEL INDICATOR, FRAME MOUNTED		
Cab Interior			
707-1AK	OPAL GRAY VINYL INTERIOR		
706-026	MOLDED PLASTIC DOOR PANEL WITHOUT VINYL INSERT WITH ALUMINUM KICKPLATE LOWER DOOR		
708-026	MOLDED PLASTIC DOOR PANEL WITHOUT VINYL INSERT WITH ALUMINUM KICKPLATE LOWER DOOR		
772-006	BLACK MATS WITH SINGLE INSULATION		

Data Code	Description	Weight Front	Weight Rear
694-010	IN DASH STORAGE BIN		
742-007	(2) CUP HOLDERS LH AND RH DASH		
680-006	GRAY/CHARCOAL FLAT DASH		
860-004	SMART SWITCH EXPANSION MODULE		
700-002	HEATER, DEFROSTER AND AIR CONDITIONER		
701-001	STANDARD HVAC DUCTING		
703-005	MAIN HVAC CONTROLS WITH RECIRCULATION SWITCH		
170-015	STANDARD HEATER PLUMBING		
130-041	VALEO HEAVY DUTY A/C REFRIGERANT COMPRESSOR		
702-002	BINARY CONTROL, R-134A		
739-034	PREMIUM INSULATION		
285-027	SOLID-STATE CIRCUIT PROTECTION AND FUSES WITH SPARE FUSE KIT		
280-007	12V NEGATIVE GROUND ELECTRICAL SYSTEM		
324-047	DOOR ACTIVATED DOME/RED MAP LIGHTS, FORWARD LH AND RH AND REAR LH, RH AND CENTER		
657-1A0	ALL UNIT(S) KEYED ALIKE WITH CUSTOMER SPECIFIED KEY NUMBER FT1013		
78G-006	KEY QUANTITY OF 6		
655-005	LH AND RH ELECTRIC DOOR LOCKS		
284-101	(1) 12V POWER SUPPLY (1) DUAL 2.1 AMP USB CHARGER IN DASH		
756-209	SEATS INC 911 UNIVERSAL SERIES HIGH BACK AIR SUSPENSION DRIVER SEAT	60	
760-1BP	SEATS INC 911 UNIVERSAL SERIES SCBA NON SUSPENSION PASSENGER SEAT WITH UNDERSEAT STORAGE	20	
762-1BR	SEATS INC 911 UNIVERSAL SCBA NON SUSPENSION LH, RH AND CENTER REAR PASSENGER SEATS WITH UNDER SEAT STORAGE	130	60
711-004	LH AND RH INTEGRAL DOOR PANEL ARMRESTS		
758-023	GRAY VINYL DRIVER SEAT COVER WITH GRAY CORDURA CLOTH BOLSTER AND HEADREST		

Data Code	Description	Weight Front	Weight Rear
761-022	GRAY VINYL FRONT PASSENGER SEAT COVER WITH GRAY CORDURA CLOTH BOLSTER AND HEADREST		
755-022	GRAY VINYL REAR PASSENGER SEAT COVER WITH GRAY CORDURA CLOTH BOLSTER AND HEADREST		
763-102	HIGH VISIBILITY ORANGE SEAT BELTS		
532-002	ADJUSTABLE TILT AND TELESCOPING STEERING COLUMN	10	
540-015	4-SPOKE 18 INCH (450MM) STEERING WHEEL		
765-002	DRIVER AND PASSENGER INTERIOR SUN VISORS		
67E-006	INTERFACE CONNECTORS AND WIRING FOR CUSTOMER PROVIDED LED STEP LIGHTING		
Instruments & Controls			
732-004	GRAY DRIVER INSTRUMENT PANEL		
734-004	GRAY CENTER INSTRUMENT PANEL		
870-001	BLACK GAUGE BEZELS		
486-001	LOW AIR PRESSURE INDICATOR LIGHT AND AUDIBLE ALARM		
840-002	2 INCH PRIMARY AND SECONDARY AIR PRESSURE GAUGES		
198-003	DASH MOUNTED AIR RESTRICTION INDICATOR WITH GRADUATIONS		
721-001	97 DB BACKUP ALARM		3
149-013	ELECTRONIC CRUISE CONTROL WITH SWITCHES IN LH SWITCH PANEL		
156-007	KEY OPERATED IGNITION SWITCH AND INTEGRAL START POSITION; 4 POSITION OFF/RUN/START/ACCESSORY		
811-042	ICU3S, 132X48 DISPLAY WITH DIAGNOSTICS, 28 LED WARNING LAMPS AND DATA LINKED		
160-038	HEAVY DUTY ONBOARD DIAGNOSTICS INTERFACE CONNECTOR LOCATED BELOW LH DASH		
844-001	2 INCH ELECTRIC FUEL GAUGE		
148-003	PROGRAMMABLE RPM CONTROL - ELECTRONIC ENGINE		
856-001	ELECTRICAL ENGINE COOLANT TEMPERATURE GAUGE		

	Data Code	Description	Weight Front	Weight Rear
	864-001	2 INCH TRANSMISSION OIL TEMPERATURE GAUGE		
	830-017	ENGINE AND TRIP HOUR METERS INTEGRAL WITHIN DRIVER DISPLAY		
	33A-051	WIRING PROVISION FOR CUSTOMER FURNISHED ROOF MOUNTED LIGHTBAR WITH 2 WIRES HANDLE UP TO 30 AMPS OF CURRENT		
	372-051	CUSTOMER FURNISHED AND INSTALLED PTO CONTROLS		
	852-002	ELECTRIC ENGINE OIL PRESSURE GAUGE		
	679-001	OVERHEAD INSTRUMENT PANEL		
N	35M-007	SMARTPLEX HUB MODULE WITH OVERHEAD SWITCH MOUNTING, DRIVER SIDE AND CENTER CONSOLE (18 SWITCH SLOTS, NO CB)	44	
	748-001	POWER AND GROUND STUDS IN/UNDER DASH		
	810-028	ELECTRONIC KPH SPEEDOMETER WITH SECONDARY MPH SCALE, WITHOUT ODOMETER		
	817-001	STANDARD VEHICLE SPEED SENSOR		
	812-001	ELECTRONIC 3000 RPM TACHOMETER		
	162-002	IGNITION SWITCH CONTROLLED ENGINE STOP		
	44R-010	10 ON/OFF LATCHING SMARTPLEX SWITCHES		
	44V-004	BATTERY ON SMARTPLEX INDICATOR LAMP		
	44W-100	1-RED, 0-AMBER, 0-GREEN SMARTPLEX INDICATOR LAMPS		
	264-032	(2) OVERHEAD MOUNTED LANYARD CONTROLS: (1) OFFICER AIR HORN AND (1) DRIVER AIR HORN		
	836-015	DIGITAL VOLTAGE DISPLAY INTEGRAL WITH DRIVER DISPLAY		
	660-001	SINGLE ELECTRIC WINDSHIELD WIPER MOTOR WITH DELAY AND ARCTIC TYPE BLADES		
	304-001	MARKER LIGHT SWITCH INTEGRAL WITH HEADLIGHT SWITCH		
	27D-012	ALTERNATING FLASHING LOW BEAM HEADLAMPS WITH DASH SWITCH, WITH PARK BRAKE RELEASED		

Data Code	Description	Weight Front	Weight Rear
882-018	ONE VALVE PARKING BRAKE SYSTEM WITH DASH VALVE CONTROL AUTONEUTRAL AND WARNING INDICATOR		
299-013	SELF CANCELING TURN SIGNAL SWITCH WITH DIMMER, WASHER/WIPER AND HAZARD IN HANDLE		
298-039	INTEGRAL ELECTRONIC TURN SIGNAL FLASHER WITH HAZARD LAMPS OVERRIDING STOP LAMPS		
Design			
065-000	PAINT: ONE SOLID COLOR		
Color			
980-5D8	CAB COLOR A: L0753EY RED ELITE EY		
986-020	BLACK, HIGH SOLIDS POLYURETHANE CHASSIS PAINT		
963-003	STANDARD E COAT/UNDERCOATING		
Certification / Compliance			
996-002	CANADA CMVSS CERTIFICATION, EXCEPT SALES CABS AND GLIDER KITS		
Secondary Factory Options			
48Q-998	NO TIRE INFLATION DEVICE/SYSTEM		
Raw Performance Data			
AE8-99D	CALCULATED EFFECTIVE BACK OF CAB TO REAR SUSPENSION C/L (CA) : 161.76 in		
Sales Programs			
	NO SALES PROGRAMS HAVE BEEN SELECTED		

T O T A L V E H I C L E S U M M A R Y

Weight Summary

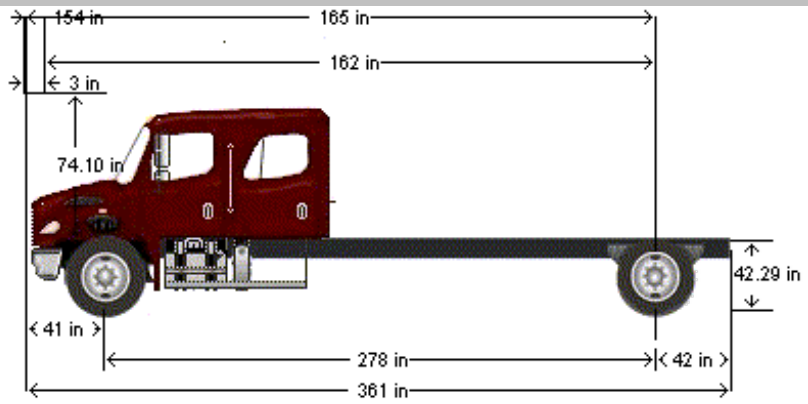
	Weight Front	Weight Rear	Total Weight
Factory Weight+	8857 lbs	5334 lbs	14191 lbs
Total Weight+	8857 lbs	5334 lbs	14191 lbs

(+) Weights shown are estimates only.

If weight is critical, contact Customer Application Engineering.

(***) All cost increases for major components (Engines, Transmissions, Axles, Front and Rear Tires) and government mandated requirements, tariffs, and raw material surcharges will be passed through and added to factory invoices.

6.2 D I M E N S I O N S



VEHICLE SPECIFICATIONS SUMMARY - DIMENSIONS

Model M2106

Wheelbase (545) .....7050MM (278 INCH) WHEELBASE

Rear Frame Overhang (552).....1075MM (42 INCH) REAR FRAME OVERHANG

Fifth Wheel (578)..... NO FIFTH WHEEL

- Mounting Location (577) .....NO FIFTH WHEEL LOCATION
- Maximum Forward Position (in).....0
- Maximum Rearward Position (in).....0
- Amount of Slide Travel (in) 0
- Slide Increment (in) 0
- Desired Slide Position (in) 0.0

Cab Size (829) .....154 INCH BBC HIGH-ROOF ALUMINUM CONVENTIONAL CREW CAB

Sleeper (682).....NO SLEEPER BOX/SLEEPERCAB

Exhaust System (016)..... RH OUTBOARD UNDER STEP MOUNTED HORIZONTAL AFTERTREATMENT SYSTEM ASSEMBLY WITH RH HORIZONTAL TAILPIPE EXITING FORWARD OF REAR TIRES

TABLE SUMMARY - DIMENSIONS

Dimensions	Inches
Bumper to Back of Cab (BBC)	153.5
Bumper to Centerline of Front Axle (BA)	40.7
Front Axle to Back of Cab (AC)	112.8
Min. Cab to Body Clearance (CB)	3.0
Back of Cab to Centerline of Rear Axle(s) (CA)	164.8
Effective Back of Cab to Centerline of Rear Axle(s) (Effective CA)	161.8
Back of Cab Protrusions (Exhaust/Intake) (CP)	2.0
Back of Cab Protrusions (Side Extenders/Trim Tab) (CP)	0.0
Back of Cab Protrusions (CNG Tank)	0.0
Back of Cab Clearance (CL)	3.0
Back of Cab to End of Frame	207.1
Cab Height (CH)	74.1
Wheelbase (WB)	277.6
Frame Overhang (OH)	42.3
Overall Frame Length	349.2
Overall Length (OAL)	360.6
Rear Axle Spacing	0.0
Unladen Frame Height at Centerline of Rear Axle	42.3

Performance calculations are estimates only. If performance calculations are critical, please contact Customer Application Engineering.

6.3 G V W R

VEHICLE SPECIFICATIONS SUMMARY - GVWR

Model M2106

Cab Size (829) ..... 154 INCH BBC HIGH-ROOF ALUMINUM CONVENTIONAL CREW CAB

Expected Front Axle(s) Load (lbs) 16000.0

Expected Pusher Axle(s) Load (lbs) 0.0

Expected Rear Axle(s) Load (lbs) 31000.0

Expected Tag Axle(s) Load (lbs)..... 0.0

Expected GVW (lbs) 47000

Expected GCW (lbs) 0.0

Front Axle (400) ..... DETROIT DA-F-16.0-5 16,000# FL1 71.0 KPI/3.74 DROP SINGLE FRONT AXLE

Front Suspension (620) ..... 16,000# TAPERLEAF FRONT SUSPENSION

Front Hubs (418) ..... CONMET PRESET PLUS PREMIUM IRON FRONT HUBS

Front Disc Wheels (502) ..... ALCOA LVL ONE 82462X 22.5X12.25 10-HUB PILOT 4.68 INSET 10-HAND ALUMINUM DISC FRONT WHEELS

Front Tires (093) ..... MICHELIN X MULTI HLZ 385/65R22.5 20 PLY RADIAL FRONT TIRES

Front Brakes (402)..... MERITOR 16.5X6 Q+ CAST SPIDER CAM FRONT BRAKES, DOUBLE ANCHOR, FABRICATED SHOES

Steering Gear (536) ..... TRW TAS-85 POWER STEERING

Rear Axle (420) ..... RS-30-185 31,000# U-SERIES FIRE/EMERGENCY SERVICE SINGLE REAR AXLE

Rear Suspension (622) ....31,000# FLAT LEAF SPRING REAR SUSPENSION WITH HELPER AND RADIUS ROD FOR FIRE/EMERGENCY SERVICE

Rear Hubs (450) ..... WEBB IRON REAR HUBS

Rear Disc Wheels (505) . ALCOA ULTRA ONE 89U64X 22.5X9.00 10-HUB PILOT 5.99 INSET ALUMINUM REAR WHEELS

Rear Tires (094) ..... MICHELIN XDN2 GRIP 315/80R22.5 20 PLY RADIAL REAR TIRES

Rear Brakes (423)..... MERITOR 16.5X7 P CAST SPIDER CAM REAR BRAKES, DOUBLE ANCHOR, CAST SHOES

Pusher / Tag Axle (443)..... NO PUSHER OR TAG AXLE

Pusher / Tag Suspension (626).....NO PUSHER OR TAG SUSPENSION

Pusher / Tag Hubs (449)..... NO PUSHER OR TAG HUBS

Pusher/Tag Disc Wheels (509)..... NO PUSHER/TAG DISC WHEELS

Pusher / Tag Tires (095).....NO PUSHER/TAG TIRES

Pusher / Tag Brakes (456) .....NO PUSHER/TAG BRAKES

TABLE SUMMARY - GVWR

	Front	Rear
Axle Component Weight Ratings		
Axles	16000	31000
Suspension	16000	31000
Hubs	23000	31000
Brakes	20000	32500
Wheels	24600	40000
Tires	22000	33080
Power Steering	18000	N/A
GAWR (per axle)	16000	31000
GAWR (per axle system)	16000	31000
Expected Load (per axle system)	16000	31000
GVWR due to Frame	90000	
GVWR due to Transmission	300000	
Vehicle GVWR Summary		
Calculated GVWR	47000	
Expected GVWR	47000	
All weights displayed in pounds		

Performance calculations are estimates only. If performance calculations are critical, please contact Customer Application Engineering.

6.4 T R U C K W E I G H T

Payload (lbs), Type = Variable	0
Payload CG from Front of Body (ft)	11.0
GVW (pounds)	18705

Front
9940

Rear
8765

VEHICLE SPECIFICATIONS SUMMARY - TRUCK WEIGHT

Model M2106

Cab Size (829) ..... 154 INCH BBC HIGH-ROOF ALUMINUM CONVENTIONAL CREW CAB

Expected Front Axle(s) Load (lbs) 16000.0

Expected Pusher Axle(s) Load (lbs) 0.0

Expected Rear Axle(s) Load (lbs) 31000.0

Expected Tag Axle(s) Load (lbs)..... 0.0

Expected GVW (lbs) 47000

Expected GCW (lbs) 0.0

Wheelbase (545) ..... 7050MM (278 INCH) WHEELBASE

Pusher / Tag Axle (443)..... NO PUSHER OR TAG AXLE

Front Axle to Back of Cab (in)..... 112.795

Cab to Body Clearance (in)..... 3.0

Front Axle to Body (in) 115.795

Truck Configuration (AA3)..... FIRE TANK/PUMPER - MAIN DRIVELINE DRIVEN SPLIT-SHAFT PTO/PUMP

Body Length (ft) 22.0

Body Weight (lbs) 3600.0

Body Horiz CG from Body Front (ft) 11.0

Body Front to Rear Axle(s) CL (ft) 13.48

Driver Weight (lbs)..... 500.0

Driver Horizontal CG from Front Axle (in)..... 46.302

Left-Hand Primary Fuel/Hydraulic Tank (204) .. 50 GALLON/189 LITER RECTANGULAR ALUMINUM FUEL TANK - LH

Left Fuel Tank Horizontal CG (in) 86.654

Right-Hand Primary Fuel/Hydraulic Tank (206) ..... NO RH FUEL TANK

Right Fuel Tank Horizontal CG (in) 0

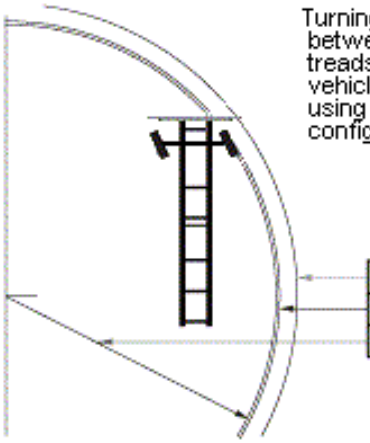
TABLE SUMMARY - TRUCK WEIGHT

Item	Front(s)	Rear(s)	Total
Chassis Tare	8857	5334	**14191**
Fuel / Oil	280	134	**414**
Driver	417	83	**500**
Dealer Installed Options	0	0	**0**
Accessories Total	0	0	**0**
Body Tare	386	3214	**3600**
Truck Tare Weight	**9940**	**8765**	**18705**
Payload Total	0	0	**0**
Calculated Axle Loads	**9940**	**8765**	**18705**
Expected Axle Loads / GVW	16000	31000	**47000**
GAWR / GVWR	16000	31000	**47000**
Payload CG From Front of Body		11 feet	
Payload CG From Front Axle		20.6 feet	
Payload Distribution		Variable	
All weights displayed in pounds			

Item	Front(s)	Rear(s)	Total
Chassis Tare	8857	5334	**14191**
Fuel / Oil	280	134	**414**
Driver	417	83	**500**
Dealer Installed Options	0	0	**0**
Accessories Total	0	0	**0**
Body Tare	386	3214	**3600**
Truck Tare Weight	**9940**	**8765**	**18705**
Payload Total	0	0	**0**
Calculated Axle Loads	**9940**	**8765**	**18705**
Expected Axle Loads / GVW	16000	31000	**47000**
GAWR / GVWR	16000	31000	**47000**
Payload CG From Front of Body		11 feet	
Payload CG From Front Axle		20.6 feet	
Payload Distribution		Variable	
All weights displayed in pounds			

Performance calculations are estimates only. If performance calculations are critical, please contact Customer Application Engineering.

6.5 T U R N I N G R A D I U S



Turning radius graphic and data provided strictly for comparisons between model configurations. Weather, road surfaces, and tire treads affect the results. It is strongly suggested that actual vehicles be measured before constructing any roads/driveways using this information. For specific figures regarding your configuration, please contact your CAE representative.

	Dimensions	Tolerance
Wall to Wall Diameter (ft)	79.2	+/- 3.0
Curb to Curb Diameter (ft)	77.9	+/- 3.0
Turning Radius (ft)	38.3	+/- 1.5

VEHICLE SPECIFICATIONS SUMMARY - TURNING RADIUS

Model M2106

Cab Size (829) ..... 154 INCH BBC HIGH-ROOF ALUMINUM CONVENTIONAL CREW CAB

Wheelbase (545) ..... 7050MM (278 INCH) WHEELBASE

Front Tires (093) ..... MICHELIN X MULTI HLZ 385/65R22.5 20 PLY RADIAL FRONT TIRES

Width (in) 15

Front Axle (400) ..... DETROIT DA-F-16.0-5 16,000# FL1 71.0 KPI/3.74 DROP SINGLE FRONT AXLE

Kingpin Intersection (in) 71

Bumper (556)..... THREE-PIECE 14 INCH CHROME STEEL BUMPER WITH COLLAPSIBLE ENDS AND LH WING CUTOUT FOR FEDERAL MS100/ES100/ES100C SPEAKER

Width (in) 92.5

Bumper Miter to Front Axle (in) 21.458

Primary Steering Location (003) ..... LH PRIMARY STEERING LOCATION

Steering Gear (536) ..... TRW TAS-85 POWER STEERING

Dual Steering Gear.....NONE

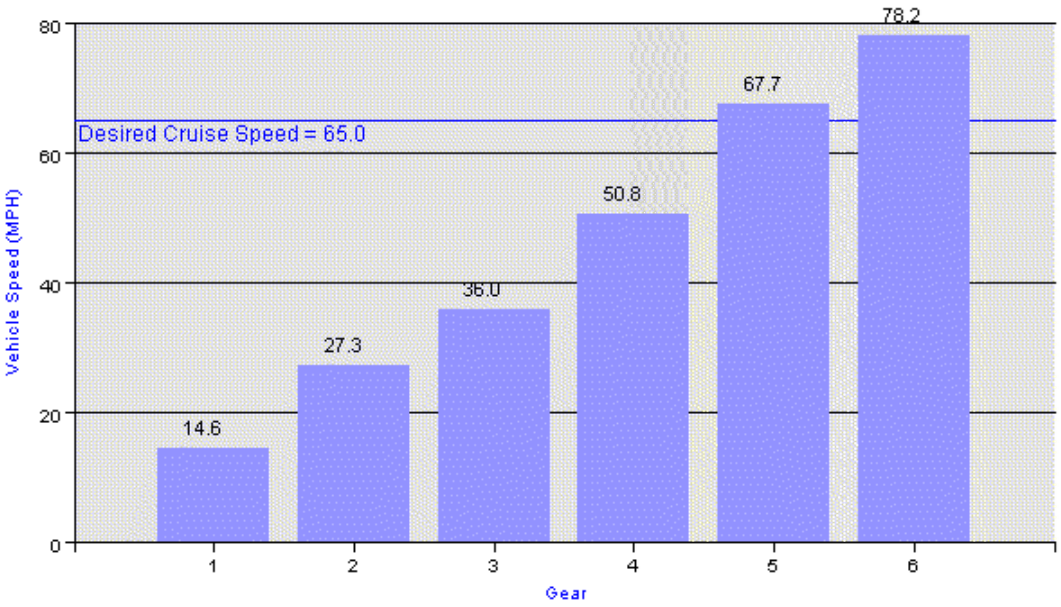
Ram .....NONE

Rear Axle (420) ..... RS-30-185 31,000# U-SERIES FIRE/EMERGENCY SERVICE SINGLE REAR AXLE

Axle Spacing (624).....NO AXLE SPACING

Performance calculations are estimates only. If performance calculations are critical, please contact Customer Application Engineering.

6.6 O P E R A T I N G S P E E D



Rear Axle Ratio = 5.38 Engine RPM = 2200

VEHICLE SPECIFICATIONS SUMMARY - OPERATING SPEED

Model.....M2106

Cab Size (829) ..... 154 INCH BBC HIGH-ROOF ALUMINUM CONVENTIONAL CREW CAB

Top Speed (mph) 78.2

Engine RPM..... 2200.0

Desired Cruise Speed (mph) 65.0

Engine (101)..... CUM L9 360EV HP @ 2200 RPM, 2200 GOV RPM, 1150 LB-FT @ 1200 RPM, R/F/E

Governed RPM..... 2200

Transmission (342).....ALLISON 3000 EVS AUTOMATIC TRANSMISSION WITH PTO PROVISION

Rear Axle (420).....RS-30-185 31,000# U-SERIES FIRE/EMERGENCY SERVICE SINGLE REAR AXLE

Number of Speeds 1

Rear Axle Gear Ratio(s) ..... 5.38 REAR AXLE RATIO

Rear Tires (094) ..... MICHELIN XDN2 GRIP 315/80R22.5 20 PLY RADIAL REAR TIRES

Revolutions per Mile 483

Auxiliary Transmission (352) ..... NO AUXILIARY TRANSMISSION

High Gear Ratio ..... N/A

Low Gear Ratio ..... N/A

Transfer Case (373) ..... NO TRANSFER CASE

High Gear Ratio ..... N/A

Low Gear Ratio ..... N/A

TABLE SUMMARY - OPERATING SPEED

Transmission Gear	Transmission Gear Ratio	Overall Gear Ratio	Vehicle Speed (MPH)
1	3.49	18.78	14.6
2	1.86	10.01	27.3
3	1.41	7.59	36.0
4	1.00	5.38	50.8
5	0.75	4.04	67.7
6	0.65	3.50	78.2
Desired Cruise Speed (mph)			65.0
Engine RPM			2200
Rear Axle Ratio			5.38
*Blue background represents value input by user.			

Performance calculations are estimates only. If performance calculations are critical, please contact Customer Application Engineering.