
Township of Guelph/Eramosa

Request for Quotes
Reference number: FD2015-1

Quote to Supply and Deliver

GEFD Medium Duty Pumper
Tender Specifications

Closing Date: Friday September 4, 2015
Time: 1:00 pm

Contact: Richard Renaud, Deputy Fire Chief
519-856-9637
rrenaud@get.on.ca

SEALED QUOTATIONS will be received by the Township of Guelph/Eramosa, until **Friday September 4, 2015 at 1:00 pm.**

For supplying, complete as specified, one (1) Pumper Fire Apparatus.

The lowest or any tender will not necessarily be accepted.

Fax responses will not be accepted.

For more information about the specifications, please contact Richard Renaud, Deputy Fire Chief at 519-856-9637 or via email at rrenaud@get.on.ca

***** Please note Canada Post does not physically deliver to this location. All other courier services do *****

**THE CORPORATION OF THE TOWNSHIP OF GUELPH/
ERAMOSIA
FORM OF TENDER**

SUPPLY AND DELIVERY OF ONE (1)

PUMPER FIRE APPARATUS

REFERENCE NUMBER: FD2015-1

I/We, the undersigned, have read and understood, and herewith agree to supply and deliver the above in accordance with specifications issued by the Township of Guelph/Eramosa at the following price(s).

DECLARATION

I/WE, the undersigned authorized signing officer of the Bidder, HEREBY DECLARE that no person, firm or corporation other than the one represented by the signature (or signatures) of proper officers as provided below, has any interest in this tender.

I/WE further declare that all statements, schedules and other information provided in this tender are true, complete and accurate in all respects to the best knowledge and belief of the Bidder.

I/WE further declare that this tender is made without collusion, connection, knowledge, comparison of figures or arrangement with any other company, firm or persons making a tender and is in all respects fair and without collusion for fraud. I/we understand that this may result in the rejection of the tender.

I/WE further declare that no employee or member of Council of the Township of Guelph/Eramosa is or will become interested, directly or indirectly as a contracting party or otherwise in the supplies, work or business to which it relates or in any portion of the profits thereof, or in any such supplies to be therein or in any of the monies to be derived there from.

I/WE further declare that we have read, understood and agree to pages 5 to 14

I/WE further declare that the undersigned is empowered by the Bidder to negotiate all matters with the Township of Guelph/Eramosa representatives, relative to this tender.

ALL PRICING IS TO BE QUOTED IN CANADIAN DOLLARS

NEW VEHICLE

DESCRIPTION OF ITEM	QTY	PRICE/EACH
PUMPER APPARATUS	1	\$ _____

(Refer to Price Notation on page 6)

Maximum number of calendar days required after receipt of the Purchase Order for the completed unit to be delivered to the Township of Guelph/Eramosa _____

Cash discount offered for prompt payment _____

COMPANY NAME: _____

ADDRESS: _____

CITY: _____ POSTAL CODE _____

SIGNATURE: _____

NAME (please print or type): _____

TITLE: _____

PHONE NUMBER: (____) _____

EMAIL ADDRESS _____

DATE OF TENDER: _____

TOWNSHIP OF GUELPH/ERAMOSA

TENDER DOCUMENT

SUPPLY AND DELIVERY OF ONE(1)

PUMPER FIRE APPARATUS

REFERENCE NUMBER: FD2015-1

INSTRUCTIONS TO BIDDERS

Sealed tenders, for the above, will be received ONLY at the Township of Guelph/Eramosa Township office, 8348 Wellington Road 124, Rockwood, Ontario, Canada, N0B 2K0, **BEFORE ONE (1:00) p.m., local time Friday September 4, 2015.**

GENERAL

These terms, conditions and specifications are intended to govern the supply and delivery of One (1) Pumper Fire Apparatus.

RECEIPT OF SUBMISSIONS

The Township of Guelph/Eramosa will not accept a response to this tender by any telegraphic facsimile machine or e-mail. You are to provide 2 two copies of the tender documents, one copy that must be marked as ORIGINAL and shall contain all original signatures and 1 copy of all requested documents (Form of Tender etc).

All Tenders shall be submitted with the Submission Label completed in full and affixed to the submission envelope.

CONFLICT OF INTEREST

An employee of the Township of Guelph/Eramosa shall not have a direct or indirect interest in a company or own a company, which sells goods or services to the Township of Guelph Eramosa.

WITHDRAWAL

The Township of Guelph/Eramosa reserves the right to withdraw, at its discretion, this tender at any time and shall not be liable for any expense, cost, loss or damage incurred or suffered by any bidder as a result of such withdrawal.

TIME OPEN FOR ACCEPTANCE

This Tender is irrevocable and is to continue open for acceptance by the Township of Guelph/Eramosa for a period of ninety (90) calendar days after the date and time set for submission of Tender. The Township of Guelph/Eramosa may at any time within the above ninety (90) calendar day period accept this Tender whether or not any other Tender has previously been accepted

DOCUMENT INTENT

The intent of this document is to procure for the Township of Guelph/Eramosa (subject to availability/approval of Township budgetary funding), the goods indicated, in accordance with the minimum specifications outlined herein and to set forth the terms of reference of requirement.

Notwithstanding certain detail of specifications, goods of similar design and construction will receive consideration if, in the opinion of the using department, they are considered to be suitable for the intended application and generally conform to performance requirements. All bids on goods not fully meeting the specifications shall be accompanied by a statement fully outlining any departures from the specifications and fully describing the commodities offered, referencing Item number where appropriate.

This document (and response thereto) shall form part of the Purchase Order Contract issued to the successful bidder.

PRICE

Prices shall be tendered on the attached Form of Tender in **Canadian** dollars and will be net prices including all **duty, delivery charges, setup, etc fully prepaid by the vendor.** You must provide prices for all options. **All sales tax must be excluded. HST extra**

PAYMENT

Lump sum payment will only be made 30 days after final acceptance of delivery of the vehicle, including **ALL** pre-acceptance delivery servicing **ALL** specified equipment and **ALL** specified information documents.

PAYMENT TERMS

You can indicate on the Form of Tender any discounts for prompt payment example (2% 10 days). The Township's standard payments terms are Net 30 days from date of acceptance of unit(s) or your invoice date whichever is later.

BRAND NAME

Any manufacturer's names, trade names, brand names or catalogue numbers mentioned are for the purpose of establishing and describing general performance and quality levels, unless specified otherwise. Such references are not intended to be restrictive and bids are invited on approved generic no-name equals and comparable equipment of any manufacturer. However, if a product other than the one specified is bid, it is the bidder's responsibility to name such product and prove to the Township that said product is equal to the specifications, and to submit brochures, samples upon request and/or specifications in detail on the item(s) bid. The Township shall be the sole judge concerning the merits of bids submitted.

AWARD

The Township will review all tenders and will be the sole judge of the merit of each tender submitted. The Township reserves the right to select any or all components of the tender to the best overall advantage to the Township.

REJECTION OF TENDERS

The Township reserves the right to reject any, or any part of, or all tenders and also reserves the right to award a contract to other than the bidder submitting the lowest total acquisition cost.

The Township will not consider tenders unless properly made out and complete on the Form of Tender furnished by the Township, and unless accompanied by the prescribed Bid Bond, or Certified Cheque, or Agreement to Bond, if requested.

Tenders presented to the Township of Guelph/Eramosa Township office, 8348 Wellington Road 124, Rockwood, Ontario, Canada, N0B 2K0 will not be received after the designated closing time on the due date and will not be considered regardless of the circumstances, which resulted in the late arrival to the Township of Guelph/Eramosa township office regardless of the postal cancellation date that may be imprinted on them.

ACCEPTANCE OF UNITS

The units delivered under this tender shall remain the property of the seller until a physical inspection and actual usage of the units is made and thereafter accepted to the satisfaction of the Township, and must comply with the terms herein and be fully in accord with the specifications and of the highest quality. In the event the units supplied to the Township are found to be defective, or do not conform to specifications, the Township reserves the right to cancel the order upon written notice to the seller and return the units to the seller at the seller's expense.

VARIATION OF TENDER PRICES

No variation in the unit prices or total price bid will be permitted after a sealed bid has been submitted to the authorized representative, except in the instance of variation due solely to an increase or decrease in the rate of eligible taxes, beyond the control of the Bidder, occurring after the time and date of submission of their bid. An increase or a decrease in the rate of eligible taxes, under these circumstances, shall alter the price of the bid, but only to the extent of the tax increase or decrease.

In the event that a tax increase does occur after the submission of bid, the Bidder must prove to the satisfaction of the Township that they will not benefit in any way by reason of the increase.

DEFINITIONS

The terms proponent, bidder, and contractor, are synonymous. The terms successful proponent, successful bidder, and successful contractor, are also intended to be synonymous and are intended to refer to the proponent whose tender has resulted in its being awarded a binding contract with the Township.

Owner: Refers to the Township of Guelph/Eramosa

Township: Refers to the Township of Guelph/Eramosa

Total Acquisition Cost: shall mean the most cost efficient and effective manner and shall be the sum of all costs, including purchase price, all taxes, warranty, life cycle cost, operating

and disposal costs, incurred for determining the lowest acceptable bid meeting the specifications.

ACCEPTANCE OF MATERIAL

The Township reserves the right to reject any or any part of, or all tenders and award a contract to other than the lowest total acquisition cost.

DESCRIPTIVE LITERATURE

Descriptive literature with detailed specifications of the equipment offered shall be submitted with the tender. Bidders shall list **ALL** items in their tender that are not specified in this specification.

DEFECTIVE/INFERIOR GOODS

Should the Township, in its sole discretion, be of the opinion that goods received are defective/inferior or substandard, then the Township shall have the right to:

- a) reject the goods outright;
- b) return the goods whether they have previously been accepted or not;
- c) require the vendor to retrieve the goods at its own expense;
- d) use the goods and adjust the price accordingly; or
- e) require the vendor to replace the goods forthwith at no additional cost.

Under no circumstances will the Township be responsible for re-stocking charges.

PRODUCT RETURNS

Any products delivered that do not meet the specifications of the item(s) bid will be returned to the vendor at vendor's expense. When a shipment or product is returned, the vendor is expected to make immediate replacement with acceptable product.

SAFETY STANDARDS

This specification lists only the major details of the unit; therefore it is the supplier's responsibility to deliver a fully equipped unit with compatible components to provide dependable efficient service.

These vehicles shall be supplied with all STANDARD EQUIPMENT plus all other equipment outlined in this specification if not standard with no deletions.

DEMONSTRATION

When required, the Township may request a full demonstration of any unit(s) bid prior to awarding an order.

DELIVERY TIME

You are to indicate on the Form of Tender the maximum delivery time from date of order placement.

Delivery Location - F.O.B. is Township of Guelph/Eramosa

FORCE MAJEURE

- a) If the Contractor is delayed in delivery by labour disputes, strikes, lock-outs, fire, or by any cause of any kind whatsoever beyond the manufacturer's control then the time of delivery shall be extended for a period of time equal to the time lost due to such delays, at no cost penalty to the Township.
- b) No such delivery time extension shall be made for delays unless written notice of same is given to the Township within seven (7) days of its commencement. Other than in the case of a continuing cause of delay only one claim shall be necessary.

LIQUIDATED DAMAGES

It is agreed by the parties to the Contract that in case the vehicles called for under the Contract are not delivered by the date of delivery specified, damage will be sustained by the Township of Guelph/Eramosa, and that it is and will be impractical and extremely difficult to ascertain and determine the actual damage that the Township of Guelph/Eramosa will sustain in the event of and by reason of such delay and the parties hereto agree that the Manufacturer will pay to the Township of Guelph/Eramosa the sum of \$150 as liquidated damages for each and every calendar days delay in delivery beyond the date of delivery prescribed and it is agreed that this amount is an estimate of actual damage to the Township of Guelph/Eramosa which will accrue during the period in excess of the prescribed date of completion. The Township of Guelph/Eramosa may deduct any amount under this paragraph from any monies that may be due or payable to the Manufacturer on any account whatsoever. The Manufacturer shall not be responsible for any damages, costs or losses incurred by the Township of Guelph/Eramosa as a result of default or delays in the delivery, except for the sum specified above payable as liquidated damages, provided that the Manufacturer shall not be liable for such liquidated damages as a result of default or delays in delivery where such default or delay is excused under FORCE MAJEURE.

ADVERTISING PROHIBITED

Dealer's name or any other advertising slogan other than the usual insignia applied by the manufacturer shall not appear on the new unit upon delivery.

MATHMATICAL ERRORS

Should there be any error in extensions, additions or computations, the Township shall be entitled to correct such errors based on the unit prices shown, and the corrected total shall be considered as representing the intention of the bidder and shall be used as the basis to comparison of bid submissions.

OWNERSHIP OF SUBMISSION MATERIAL

In consideration of the right to bid being extended, the bidder (by responding) releases all rights to the bid documents, which, on acceptance by the Township, become the property of the Township.

INCURRED COSTS

The Township will not be liable nor reimburse any bidders for costs incurred in the preparation of bids, or any other services that may be requested as part of the evaluation process.

ADDENDUM

The Township will issue any changes/additions/deletions to specifications and/or terms and conditions. Any and all addenda issued prior to the closing date shall form part of the document. The cost of complying with the addenda requirement (if any) shall be included in the price. The Township will assume no responsibility for oral instruction or suggestion.

MISUNDERSTANDINGS AND DISPUTES

In all cases of misunderstandings and disputes, verbal arrangements will not be considered, but the vendor must produce written authority in support of their contentions, and shall advance no claim in the absence of such written authority, or use, or attempt to use any conversation with any parties against the Township or in prosecuting any claim against the Township.

CANCELLATION

Failure by the successful vendor to comply with all terms, conditions and general provisions of this Tender to the satisfaction of the Township, shall be just cause for the cancellation of the contract award. The Township shall then have the right to award this contract to any other vendor, or to re-issue the Request.

GUARANTEE

Successful vendor covenants and agrees:

- that all goods furnished by it shall be new and of first grade and fit for the purpose for which they are required. Successful vendor is responsible for and will make good any defects in workmanship and/or materials, covered by the Purchase Order. Successful vendor is not relieved of the responsibility imposed by this clause, either as to proper packing, quality of materials or specifications by reason of acceptance by Township designated inspectors.
- that all goods supplied will conform with all laws, ordinances and regulations and will defend and save harmless the Township from loss, cost or damage by reason of any actual or alleged violation thereof. With respect to patent infringement, bidder warrants that the materials delivered/bid hereunder, the processes by which they were made and the use thereof for which they were specifically designed, will not per se infringe any patent of Canada (and of the country of manufacture, if other than Canada).

VENDOR DEFAULT

In cases of vendor performance default, the Township shall, at their discretion, procure the product(s)/service(s) from other sources and hold the vendor responsible for any cost incurred including, but not limited to, excess cost of handling charge. The Township designee reserves the right to cancel the contract with the defaulted vendor and negotiate with an alternative bidder or call a new Request for Quotation. The Township designee shall have the right to remove any vendor who defaults on any contract with the Township from its current and future bidder listings.

NON-ASSIGNMENT

It is mutually agreed and understood that the vendor shall not assign, transfer, convey, sublet or otherwise dispose of their contract or their right, title or interest therein, or their power to execute the contract, to any other person, firm, company or corporation without the previous written consent of the Township.

LEGAL COMPLIANCE

The contract resulting from the Request for Tender shall be governed by, subject to and interpreted in accordance with the laws of the Province of Ontario; e.g. the Sale of Goods Act. The successful bidder will be also be required to comply with all local, municipal, provincial and federal license requirements, laws, regulations, ordinances and codes.

INDEMNIFICATION

The vendor shall indemnify and save harmless the Township its officers and employees from and against all claims, losses, costs, damages, expenses (including legal fees and disbursements initially and with any and all appeals), suits, proceedings, or actions arising in any way out of or related to the vendor activities in executing the work pursuant to the provision of the contract, including his omissions, improper act or delays in executing the work.

EVALUATION OF QUOTATIONS

The evaluation process, in determining which vendor document submission will result in an award, will consist of but not be limited to consideration of price, delivery, payment terms, specifications, quality of goods and services offered, performance, reputation, any special or extra costs involved therein, enhancement to minimum specifications, vendors' qualifications and reliability, payment terms, reference checks.

AWARD/REJECTION OF BIDS

Neither the issuance of this document nor the acceptance of a reply shall constitute any obligation or imply any commitment on the part of the Township. Award of this requirement shall be as recommended by the designated Township Selection Committee and conveyed as a Purchase Order contract to the successful bidder by the Purchasing Department. The lowest or any quotation shall not necessarily be accepted. In the evaluation of tenders, it is understood by the bidder that the Township reserves the right to reject any or all tenders for any reason whatever, and to accept any quotation if, upon ultimate need evaluation, it is considered to be in the Township's best interest. Award of the contract in its entirety or in part shall be in accordance with Township requirements.

INSPECTION COST

You must include the cost of transportation, (i.e. all travel costs to and from point of origin) accommodations and meals for a maximum of four representatives from the Township for a minimum of two inspection visits to your location.

The cost of transportation (i.e. all travel costs to and from point of origin) accommodation and meals will be the sole responsibility of the successful vendor for any re-inspection required by the Township.

OCCUPATIONAL HEALTH AND SAFETY

The bidder warrants that the items supplied to the Township conform in all respects to the standards set forth by Federal and Provincial agencies and failure to comply with this condition will be considered a breach of contract

MANUFACTURING SCHEDULE

The manufacturing dates on the Form of Tender are to be completed and expressed as in days, as defined to be calendar days only and including all holidays and vacation periods, required to complete and deliver the specified vehicle and equipment.

The successful bidder will provide the following:

1. A copy of their purchase order to the chassis supplier for the acquisition of the vehicle chassis within 30 calendar days of receipt of a faxed copy of the purchase order issued by the Township. The copies will be sent to the Township's representatives listed in the communications section of this tender.
2. A copy of their **ACKNOWLEDGED** purchase order to the chassis supplier for the acquisition of vehicle chassis within 60 calendar days of receipt of faxed copy of the purchase order issued by the Township. This copy will be sent to the Township's representative listed in the communications section of this tender.

PURCHASE ORDER

The Purchase Order will constitute a binding contract between the Township of Guelph /Eramosa and the successful bidder in accordance with the terms and conditions set out in these specifications, their addenda and any related correspondence.

NON-FULFILMENT AND FORFEIT

In the event of default or failure, neglect or refusal on the part of the successful bidder to complete the contract including the delivery of vehicle as specified, providing of ALL certificates, ALL drawings, ALL manuals, ALL vehicle equipment, ALL other pertinent information and services specified in the specifications, to the satisfaction of the Township; the Township will be at liberty to accept the next lowest, or any tender, or call for new tenders, holding the successful bidder and any surety provided, liable for any increase in cost to the Township.

Award of this requirement shall be as recommended by the Township Selection Committee and conveyed as a Purchase Order contracted to the successful bidder. In the evaluation of tenders, it is understood by the bidder that the Township reserves the right to reject any or all tenders for any reason whatever, and to accept any quotation if, upon ultimate need evaluation, it is considered to be in the Township's best interest. Award of the contract in its entirety or in part shall be in accordance with the Township requirements.

INFERIOR MATERIAL AND/OR FAILURE TO SUPPLY SPECIFIED INFORMATION DOCUMENTS

Should the successful bidder, at any time, offer for acceptance, any material which is of inferior quality, or not as specified or agreed to in the opinion of Purchasing or the Township, or any person appointed by them, or is inconsistent with the specifications or

fails to supply such material or documents, that will not be accepted and will be removed at once or provided as required by the successful bidder at his own expense. Should the successful bidder refuse to remove any material so condemned, or fail to supply equipment, or provide specified information documents, then the Township may take action to remove such materials or to secure the equipment, information, certificates, etc., and recover any costs by whatever means available from the successful bidder arising from such removal or obtaining of the said equipment.

INSURANCE

The successful bidder shall maintain, during the term of the contract with the Township, Property Damage and Public Liability Insurance, including Product Liability coverage and provisions for cross-liability as between the Township and the successful bidder, in amounts and with policies in a form satisfactory from time to time to the Township, with insurers acceptable to the Township.

In particular:

- a) Standard Garage Policy with:
 - i) Limits not less than **\$3,000,000**; and
 - ii) Legal Liability for Collision and Comprehensive Perils with a limit at least equal to the value of the chassis and completed vehicle or work, as the case may be; and
 - iii) Term not to expire before final acceptance by the Township of the completed vehicle or work, as the case may be, in accordance with the terms of the tender.
- b) Garage Premises Liability with:
 - i) Limits of not less than **\$3,000,000**; and
 - ii) Term to include the guarantee on the completed vehicle or work, as the case may be, set out in this tender.
- c) The above-mentioned policies shall be endorsed to provide that thirty (30) days' notice of any change or amendment to or cancellation, termination or expiry of the policy is to be given to the Township of Guelph Eramosa.
- d) The above-mentioned policies shall name the Township of Guelph Eramosa as an additional insured as its interest may appear.
- e) The successful bidder shall be solely responsible for the payment of all deductibles payable under such policies.

The successful bidder shall furnish to the Township certificates or certified copies of all such policies, as may be required by the Township, for all such policies and evidence of the continuation of such coverage not less than thirty (30) days prior to the respective expiry dates.

WARRANTY

The successful bidder will supply a three (3) year warranty, unless stated otherwise, on the complete vehicle and all supplied apparatus inclusive of parts and labor and will be the

single source of said parts and labor. This warranty will start from the date of final acceptance by the Township.

WARRANTY REPAIR SERVICE

Warranty repair service will be provided by one of the following methods:

- A) The successful bidder must have a fully equipped, factory authorized service centre complete with parts to repair the apparatus in a timely period with undue delay. The service centre must be within 100 km of the Township of Guelph Eramosa.

OR

- B) The successful bidder must authorize the following companies to do warranty repairs as indicated:

- 1) Cummins Eastern Canada

7175 Pacific Circle

Mississauga, Ontario

L5T 2A5

FOR - Engine (proper), transmission (proper), and all related electrical engine and transmission management systems etc.

WARRANTY REPAIR SERVICE

All costs incurred by these companies as a result of warranty repair will be the responsibility of the successful bidder.

The successful vendor will reimburse the Township for any costs incurred by the Township as a result of warranty repairs for whichever method of providing this warranty service is indicated on the Form of Tender.

DELIVERY

The successful bidder will deliver; at its expense, the completed vehicle(s) and equipment to the Township of Guelph Eramosa, address listed below; For final inspection and pre acceptance service: The vehicle(s) remains entirely at risk of the successful bidder until final acceptance by the Township and the successful bidder will be responsible to insure the vehicle(s) for any loss or damage thereto. In no event will the Township of Guelph Eramosa be responsible for any loss, damage to or destruction of the vehicle(s) prior to final acceptance. Nor will the Township of Guelph Eramosa be liable to make any payment to the successful bidder pursuant to this contract, prior to final acceptance unless stated otherwise.

Deliver to: 5141 Wellington Road 27,
Rockwood ON N0B 2K0

Two (2) weeks prior to delivery of the apparatus, the successful bidder must notify the Township of Guelph Eramosa, giving the exact date the vehicle(s) will be delivered.

DEVIATIONS

You must quote as per the specification provided. You must list all deviations from the specifications and provide detailed information on the deviations requested.

QUOTATION SPECIFICATIONS FOR: One (1) Pumper Fire Apparatus

CENTER OF GRAVITY

The apparatus, prior to acceptance, will be required to meet the vehicle stability of the applicable NFPA Automotive Fire Apparatus Standard.

A calculated center of gravity shall be provided. The calculated or measured center of gravity (CG) shall be no higher than 80-percent of the rear axle track width.

BUMPER TO BUMPER WARRANTY

The manufacturer shall provide a three (3) year bumper-to-bumper warranty. The manufacturer shall supply details of their warranty information with their bid submission.

ALUMINUM BODY WARRANTY - TEN YEAR

The manufacturer shall provide a ten (10) year structural and corrosion perforation warranty for the fabricated aluminum body. The manufacturer shall supply details of their warranty information with their bid submission.

PAINT WARRANTY TEN YEAR

The manufacturer shall provide a ten (10) year paint warranty for all portions of the apparatus that they have painted. The manufacturer shall supply details of their warranty information with their bid submission.

PUMP WARRANTY

The manufacturer warrants, to the original buyer only, that products and parts manufactured by the manufacturer will be free from defects in material and workmanship under normal use and service for a period of five (5) years from the date the product is first placed in service, provided the buyer notifies the manufacturer in writing, of the defect in said product within the warranty period, and said product is found by the manufacturer to be conforming with the aforesaid warranty.

When required in writing by the manufacturer, defective products must be promptly returned by the buyer to the manufacturer plant or at such other place as may be specified by the manufacturer with transportation and other charges prepaid. The aforesaid warranty excludes any responsibility or liability of the manufacturer for:

A. Damages or defects due to accident, abuse, misuse, abnormal operating conditions, negligence, accidental causes or improper maintenance, or attributable to written specifications or instructions furnished by buyer;

- B. Defects in products manufactured by others and furnished by the manufacturer hereunder, it being understood and agreed by the parties that the only warranty provided for such products shall be the warranty provided by the manufacturer thereof which, if assignable, the manufacturer will assign to the buyer, if requested by Buyer;
- C. Any product or part, altered, modified, serviced or repaired other than by the manufacturer, without its prior written consent.
- D. The cost of dismantling, removing, transporting, storing, or insuring the defective product or part and the cost of reinstallation.
- E. Normal wear items (packing, strainers, filters, light bulbs, anodes, intake screens, etc.)

All other warranties are excluded, whether expressed or implied by operation of law or otherwise, including all implied warranties of merchantability or fitness for purpose. The manufacturer shall not be liable for consequential or incidental damages directly or indirectly arising or resulting from breach of any of the terms of this limited warranty or from the sale, handling, or use of any other product or part. The manufacturer liability hereunder, either for breach of warranty or for negligence, is expressly limited at the manufacturer option:

- A. To the replacement at the agreed point of delivery of any product or part, which upon inspection by the manufacturer or its duly authorized representative, is found not to conform to the limited warranty set forth above, or
- B. To the repair of such product or part, or
- C. To the refund or crediting to buyer of the net sales price of the defective product or part.

Buyer's remedies contained herein are exclusive of any other remedy otherwise available to the buyer.

OPERATION AND FAMILIARIZATION MANUAL

The apparatus manufacturer shall supply, at delivery, *customized Operation & Familiarization Manual*, complete with full-color photos of the actual, completed apparatus with each feature and control identified and its function explained.

Safety, Operation, Maintenance and Troubleshooting sections will include information about each major component of the apparatus (chassis, pump, foam system, generator, electrical devices, etc.). The manual shall be specific to the apparatus (or group of apparatus) being delivered.

All safety and warning labels shall be represented in the manual for subsequent safety inspections to ensure their continued presence on the apparatus.

The manufacturer shall submit a sample manual with the bid proposal. Failure to do so will result in rejection of the proposal. Reference to "on delivery" or "at pre-build" submission is not an acceptable response for the bid document.

“Similar” or “Representative” manuals will not be accepted.

"ON-LINE" SERVICE MANUAL SUPPORT

As part of the standard delivery manual, **THE MANUFACTURER** shall give a password-protected link to the end user, allowing access to the manufacturers' database on service parts. The internet-based system shall allow the end user to access the major component supplier's service parts listing such as Hale, Waterous, Akron, etc. This shall be accomplished with simplistic point and click features on the manufacturer line item within the "stripper" or "line item sheet". This will include, automatic updates, printable schematics and manufacturer's web links and is available in the commercially available format of Adobe Acrobat Reader to access these documents. The manufacturer shall submit with the bid proposal, a sample set of on line Adobe formatted material that has been printed from the manufacturer's website.

Parts Listings within Manuals

The manuals will include cross-reference part numbers from **THE MANUFACTURER** part number to the vendor parts. Example: **THE MANUFACTURER** Hydraulic Ladder Rack, Part #LR-MN-0002 cross- referenced to Ziamatic Corporation Part 098-MN2345. This will allow for reference between individual parts and complete installation assemblies as completed by the body builder. The manuals will list all components of the vehicle that includes a vendor part utilized in a complete installation via the manufacturer's "line item sheet" or "stripper" utilized to manufacture the completed vehicle. These are "As Built" and proposals with "typical" or "generic" manuals will be rejected.

Illustrative Schematics within Manuals

THE MANUFACTURER shall include installation diagrams and drawings of all major sub assemblies. This will include components such as hydraulic ladder rack assemblies, pump panels, tanks, fire pumps, etc. The drawings shall be linked via an Internet based service program, in an electronic format from the manufacturers "stripper" (line item listing) of the manufacturing document. **THE MANUFACTURER** shall submit, upon request, a sample schematic.

Digital Images within Manuals

In addition to two and three-dimensional installation drawings, **THE MANUFACTURER** shall make accessible, via an internet based link, the actual photos of the installed components listed within the "stripper" or line sheet. This will include, but not limited to wiring terminals, main body distribution strips, fire pump shifting, auxiliary components, etc. **THE MANUFACTURER** shall submit a sample of these upon request.

Installation Instructions within Manuals

THE MANUFACTURER "work instructions" or "installation instructions" shall be included with the service manuals. These documents shall be accessible via a web-based link to the individual vehicle manufactured. The work instructions shall give systematic instructions of the component installation process. **THE MANUFACTURER** shall submit, upon request, a sample set of instructions.

Automatic Updates of Manuals and Parts Listings

The online manuals will include automatic updates that are accessible via the web link. When clicking on the part within the manufacturer's stripper or line sheet, it will allow the end user to access the component manufacturer website for updated information. This will allow for latest parts and service components from the individual part manufacturer or vendor.

Electrical Schematics

To maintain the vehicles electrical systems, the manufacturer shall provide to the purchaser the instructional manuals, complete electrical information and schematics on the vehicle. The electrical information shall be provided as follows:

Wiring Systems 12 and 120 Volt:

- Graphic symbols for electrical diagrams.
- Wire labeling, imprinting codes and index.
- Computer generated electrical schematics indicating the circuit number, wire size, switches, circuit breaker and terminals on the vehicle.

THE MANUFACTURER shall submit, upon request, a sample set of diagrams.

Freightliner Chassis

Freightliner Chassis

M2 PRL-09M (EFF:08/05/2014)

Data Version

SPECPRO21 DATA RELEASE VER 014

Vehicle Configuration

M2 106 CONVENTIONAL CHASSIS 2016 MODEL YEAR SPECIFIED SET
BACK AXLE --- TRUCK STRAIGHT TRUCK PROVISION LH PRIMARY
STEERING LOCATION

General Service

TRUCK CONFIGURATION DOMICILED, CANADA (OTHER THAN QUEBEC)
VARIABLE CANADIAN EXCHANGE FIRE SERVICE
EMERGENCY VEHICLES BUSINESS SEGMENT
LIQUID BULK COMMODITY TERRAIN/DUTY: 100% (ALL) OF THE TIME, IN TRANSIT, IS SPENT ON PAVED ROADS
MAXIMUM 8% EXPECTED GRADE SMOOTH CONCRETE OR ASPHALT PAVEMENT - MOST SEVERE IN- TRANSIT (BETWEEN SITES) ROAD SURFACE
MEDIUM TRUCK WARRANTY EXPECTED FRONT AXLE(S) LOAD :
14000.0 lbs
EXPECTED REAR DRIVE AXLE(S) LOAD : 26000.0 lbs
EXPECTED GROSS VEHICLE WEIGHT CAPACITY : 40000.0 lbs

Truck Service

FIRE TANK/PUMPER - MAIN DRIVELINE DRIVEN SPLIT-SHAFT PTO/PUMP
EXPECTED TRUCK BODY LENGTH :
0.0 ft
EXPECTED BODY/PAYLOAD CG HEIGHT ABOVE FRAME "XX" INCHES :
32.0 in

Engine

CUM ISL 330HP @ 2000 RPM, 2200 GOV RPM, 1000 LB/FT @ 1400 RPM

Electronic Parameters

68 MPH ROAD SPEED LIMIT CRUISE CONTROL SPEED LIMIT SAME AS ROAD SPEED LIMIT PTO MODE ENGINE RPM LIMIT ---1100 RPM
PTO MODE BRAKE OVERRIDE ---SERVICE BRAKE APPLIED PTO RPM WITH CRUISE SET SWITCH---700 RPM
PTO RPM WITH CRUISE RESUME SWITCH---800 RPM
PTO MODE CANCEL VEHICLE SPEED---5 MPH
PTO GOVERNOR RAMP RATE --- 250 RPM PER SECOND
PTO MINIMUM RPM --- 700 REGEN INHIBIT SPEED THRESHOLD---0 MPH

Engine Equipment

2015 ONBOARD DIAGNOSTICS/2010 EPA/CARB/GHG14
NO 2008 CARB EMISSION CERTIFICATION STANDARD OIL PAN
ENGINE MOUNTED OIL CHECK AND FILL

ONE PIECE VALVE COVER
SIDE OF HOOD AIR INTAKE WITH NFPA COMPLIANT EMBER SCREEN
AND FIRE RETARDANT DONALDSON AIR CLEANER

LN 12V 270 AMP 4949PGH PAD MOUNT ALTERNATOR WITH AC TAPS
(2) ALLIANCE MODEL 1231, GROUP 31, 12 VOLT MAINTENANCE FREE
2250 CCA THREADED STUD BATTERIES
BATTERY BOX FRAME MOUNTED STANDARD BATTERY JUMPERS
SINGLE BATTERY BOX FRAME MOUNTED LH SIDE UNDER CAB WIRE
GROUND RETURN FOR BATTERY CABLES WITH ADDITIONAL FRAME
GROUND RETURN
NON-POLISHED BATTERY BOX COVER
POSITIVE LOAD DISCONNECT WITH CAB MOUNTED CONTROL
SWITCH MOUNTED OUTBOARD DRIVER SEAT
CUMMINS TURBOCHARGED 18.7 CFM AIR COMPRESSOR WITH
INTERNAL SAFETY VALVE STANDARD MECHANICAL AIR
COMPRESSOR GOVERNOR
AIR COMPRESSOR DISCHARGE LINE GVG, FIRE AND EMERGENCY
SERVICE VEHICLES ENGINE WARNING
CUMMINS EXHAUST BRAKE INTEGRAL WITH VARIABLE GEOMETRY
TURBO WITH ON/OFF DASH SWITCH

RH OUTBOARD UNDER STEP MOUNTED HORIZONTAL
AFTERTREATMENT SYSTEM ASSEMBLY WITH RH HORIZONTAL
TAILPIPE EXITING FORWARD OF REAR TIRES
ENGINE AFTERTREATMENT DEVICE, AUTOMATIC OVER THE ROAD
REGENERATION AND DASH MOUNTED REGENERATION REQUEST
SWITCH
STANDARD EXHAUST SYSTEM LENGTH
RH HORIZONTAL TAILPIPE, EXIT FORWARD OF REAR TIRES AT 90
DEGREES
6 GALLON DIESEL EXHAUST FLUID TANK
100 PERCENT DIESEL EXHAUST FLUID FILL
LH UNDER CAB DIESEL EXHAUST FLUID TANK LOCATION STANDARD
DIESEL EXHAUST FLUID PUMP MOUNTING STANDARD DIESEL
EXHAUST FLUID TANK CAP
HORTON DRIVEMASTER ON/OFF FAN DRIVE
AUTOMATIC FAN CONTROL WITH DASH SWITCH AND INDICATOR
LIGHT, NON ENGINE MOUNTED CUMMINS SPIN ON FUEL FILTER
COMBINATION FULL FLOW/BYPASS OIL FILTER 1100 SQUARE
INCH ALUMINUM RADIATOR
ANTIFREEZE TO -60F, ETHYLENE GLYCOL PRE-CHARGED SCA HEAVY
DUTY COOLANT
GATES BLUE STRIPE COOLANT HOSES OR EQUIVALENT

CONSTANT TENSION HOSE CLAMPS FOR COOLANT HOSES
RADIATOR DRAIN VALVE LOWER RADIATOR GUARD ALUMINUM
FLYWHEEL HOUSING ELECTRIC GRID AIR INTAKE WARMER

DELCO 12V 38MT HD STARTER WITH INTEGRATED MAGNETIC SWITCH

Transmission

ALLISON 3000 EVS AUTOMATIC TRANSMISSION WITH PTO PROVISION

Transmission Equipment

ALLISON VOCATIONAL PACKAGE 198 --- AVAILABLE ON 3000/4000 PRODUCT FAMILIES WITH VOCATIONAL MODEL EVS ALLISON VOCATIONAL RATING FOR FIRE TRUCK/EMERGENCY VEHICLE APPLICATIONS AVAILABLE WITH ALL PRODUCT FAMILIES
PRIMARY MODE GEARS, LOWEST GEAR 1, START GEAR 1, HIGHEST GEAR 6, AVAILABLE FOR 3000/4000 PRODUCT FAMILIES ONLY
SECONDARY MODE GEARS, LOWEST GEAR 1, START GEAR 1, HIGHEST GEAR 6, AVAILABLE FOR 3000/4000 PRODUCT FAMILIES ONLY
NEUTRAL AT STOP ---DISABLED, FUELSENSE --- DISABLED VEHICLE INTERFACE WIRING WITH BODY BUILDER CONNECTOR MOUNTED END OF FRAME, NO BLUNT CUTS

ELECTRONIC TRANSMISSION CUSTOMER ACCESS CONNECTOR FIREWALL MOUNTED

(2) CUSTOMER INSTALLED MUNCIE CS10 SERIES PTO'S

PTO MOUNTING, LH SIDE AND TOP RH SIDE OF MAIN TRANSMISSION
MAGNETIC PLUGS, ENGINE DRAIN, TRANSMISSION DRAIN, AXLE(S) FILL AND DRAIN

PUSH BUTTON ELECTRONIC SHIFT CONTROL, DASH MOUNTED
TRANSMISSION PROGNOSTICS---ENABLED 2013

WATER TO OIL TRANSMISSION COOLER, IN RADIATOR END TANK
TRANSMISSION OIL CHECK AND FILL WITH ELECTRONIC OIL LEVEL CHECK

SYNTHETIC TRANSMISSION FLUID (TES-295 COMPLIANT)

Front Axle and Equipment

DETROIT DA-F-14.7-3 14,700# FF1

71.5 KPI/3.74 DROP SINGLE FRONT AXLE

MERITOR 16.5X5 Q+ CAST SPIDER CAM FRONT BRAKES, DOUBLE ANCHOR, FABRICATED SHOES FIRE AND EMERGENCY SEVERE SERVICE, NON-ASBESTOS FRONT LINING

CONMET CAST IRON FRONT BRAKE DRUMS

FRONT BRAKE DUST SHIELDS SKF SCOTSEAL PLUS XL FRONT OIL SEALS

VENTED FRONT HUB CAPS WITH WINDOW, CENTER AND SIDE PLUGS - --OIL

STANDARD SPINDLE NUTS FOR ALL AXLES

MERITOR AUTOMATIC FRONT SLACK ADJUSTERS

TRW TAS-85 POWER STEERING POWER STEERING PUMP
2 QUART SEE THROUGH POWER STEERING RESERVOIR ORGANIC
SAE 80/90 FRONT AXLE LUBE

Front Suspension

14,600# TAPERLEAF FRONT SUSPENSION MAINTENANCE FREE
RUBBER
BUSHINGS---FRONT SUSPENSION FRONT SHOCK ABSORBERS

Rear Axle and Equipment

RS-26-185 26,000# T-SERIES SINGLE REAR AXLE
6.14 REAR AXLE RATIO
IRON REAR AXLE CARRIER WITH STANDARD AXLE HOUSING MXL
17N MERITOR EXTENDED
LUBE MAIN DRIVELINE WITH FULL ROUND YOKES
DRIVER CONTROLLED TRACTION DIFFERENTIAL --- SINGLE REAR
AXLE
(1) DRIVER CONTROLLED DIFFERENTIAL LOCK REAR VALVE FOR
SINGLE DRIVE AXLE BLINKING LAMP WITH EACH MODE SWITCH,
DIFFERENTIAL UNLOCK WITH IGNITION OFF, ACTIVE <5 MPH
MERITOR 16.5X7 P CAM REAR BRAKES, DOUBLE ANCHOR, CAST
SHOES
FIRE AND EMERGENCY SEVERE SERVICE NON-ASBESTOS REAR BRAKE
LINING
BRAKE CAMS AND CHAMBERS ON FORWARD SIDE OF DRIVE AXLE(S)

WEBB HEAVY WEIGHT CAST IRON REAR BRAKE DRUMS
REAR BRAKE DUST SHIELDS SKF SCOTSEAL PLUS XL REAR OIL SEALS
HALDEX GOLDSEAL LONGSTROKE 1-DRIVE AXLE SPRING PARKING
CHAMBERS
HALDEX AUTOMATIC REAR SLACK ADJUSTERS
ORGANIC SAE 80/90 REAR AXLE LUBE

Rear Suspension

26,000# FLAT LEAF SPRING REAR SUSPENSION WITH HELPER AND
RADIUS ROD
SPRING SUSPENSION --- NO AXLE SPACERS
STANDARD AXLE SEATS IN AXLE CLAMP GROUP

FORE/AFT CONTROL RODS

Brake System

AIR BRAKE PACKAGE WABCO 4S/4M ABS WITHOUT TRACTION
CONTROL REINFORCED NYLON, FABRIC
BRAID AND WIRE BRAID CHASSIS AIR LINES
FIBER BRAID PARKING BRAKE HOSE

STANDARD BRAKE SYSTEM VALVES
STANDARD AIR SYSTEM PRESSURE PROTECTION SYSTEM
STD U.S. FRONT BRAKE VALVE RELAY VALVE WITH 5-8 PSI CRACK
PRESSURE, NO REAR PROPORTIONING VALVE
BW AD-9 BRAKE LINE AIR DRYER WITH HEATER

AIR DRYER MOUNTED INBOARD ON LH RAIL
STEEL AIR BRAKE RESERVOIRS, NO TRIPLE OR TORPEDO TANKS
CLEAR FRAME RAIL FROM TRANSMISSION PTO OPENING TO 36
INCHES BACK OF CAB OUTBOARD/INSIDE/BELOW RH RAIL
BW DV-2 AUTO DRAIN VALVE WITHOUT HEATER ON ALL TANK(S)

Trailer Connections

UPGRADED CHASSIS MULTIPLEXING UNIT UPGRADED BULKHEAD
MULTIPLEXING UNIT

Wheelbase & Frame

4850MM (191 INCH) WHEELBASE
11/32X3-1/2X10-15/16 INCH STEEL FRAME
(8.73MMX277.8MM/0.344X10.94 INCH) 120KSI
1/4 INCH (6.35MM) C-CHANNEL INNER FRAME REINFORCEMENT
1900MM (75 INCH) REAR FRAME OVERHANG
FRAME OVERHANG RANGE: 71 INCH TO 80 INCH
CALC'D BACK OF CAB TO REAR SUSP C/L (CA) : 78.2 in CALCULATED
EFFECTIVE BACK OF CAB TO REAR SUSPENSION C/L (CA) : 75.2 in
CALC'D FRAME LENGTH---OVERALL
: 295.39
CALC'D SPACE AVAILABLE FOR DECKPLATE : 78.2 in CALCULATED
FRAME SPACE LH SIDE : 160.15 in

CALCULATED FRAME SPACE RH SIDE : 134.01 in
SQUARE END OF FRAME FRONT CLOSING CROSSMEMBER
STANDARD WEIGHT ENGINE CROSSMEMBER
STANDARD MIDSHIP #1 CROSSMEMBER(S) STANDARD REARMOST
CROSSMEMBER STANDARD SUSPENSION CROSSMEMBER

Chassis Equipment

THREE-PIECE 14 INCH CHROMED STEEL BUMPER WITH COLLAPSIBLE
ENDS
FRONT TOW HOOKS---FRAME MOUNTED
BUMPER MOUNTING FOR SINGLE LICENSE PLATE
FENDER AND FRONT OF HOOD MOUNTED FRONT MUDFLAPS GRADE
8 THREADED HEX HEADED FRAME FASTENERS

Fuel Tanks

50 GALLON/189 LITER SHORT RECTANGULAR ALUMINUM FUEL TANK
---LH
RECTANGULAR FUEL TANK(S) PLAIN ALUMINUM/PAINTED STEEL
FUEL/HYDRAULIC TANK(S) WITH PAINTED BANDS
FUEL TANK(S) FORWARD PLAIN STEP FINISH FUEL TANK CAP(S)
ALLIANCE FUEL FILTER/WATER SEPARATOR
EQUIFLO INBOARD FUEL SYSTEM HIGH TEMPERATURE REINFORCED
NYLON FUEL LINE

FUEL COOLER MOUNTED LEFT HAND IN RAIL

Tires

MICHELIN XZE 12R22.5 16 PLY RADIAL FRONT TIRES MICHELIN XDN2
12R22.5 16 PLY RADIAL REAR TIRES

Hubs

CONMET PRESET PLUS IRON FRONT HUBS
CONMET PRESET PLUS IRON REAR HUBS

Wheels

ALCOA LVL ONE 88367X 22.5X8.25 10-HUB PILOT 5.79 INSET
ALUMINUM DISC FRONT WHEELS ALCOA LVL ONE 88367X 22.5X8.25
10-HUB PILOT ALUMINUM DISC REAR WHEELS
POLISHED FRONT WHEELS; OUTSIDE ONLY POLISHED REAR
WHEELS;
OUTSIDE OF OUTER WHEELS ONLY FRONT WHEEL MOUNTING NUTS
REAR WHEEL MOUNTING NUTS

Cab Exterior

154 INCH BBC HIGH-ROOF ALUMINUM CONVENTIONAL CREW CAB
AIR CAB MOUNTS
LH AND RH EXTERIOR GRAB HANDLES WITH SINGLE RUBBER INSERT
HOOD MOUNTED CHROMED PLASTIC GRILLE
CHROME HOOD MOUNTED AIR INTAKE GRILLE
FIBERGLASS HOOD
HOOD LINER INSULATION WITH SINGLE FIREWALL INSULATION
SINGLE ELECTRIC HORN

DOOR LOCKS AND IGNITION SWITCH KEYED THE SAME
REAR LICENSE PLATE MOUNT END OF FRAME
INTEGRAL HEADLIGHT/MARKER ASSEMBLY WITH CHROME BEZEL

(5) AMBER MARKER LIGHTS DAYTIME RUNNING LIGHTS OMIT
STOP/TAIL/BACKUP LIGHTS AND PROVIDE WIRING WITH SEPARATE
STOP/TURN WIRES TO 4 FEET BEYOND END OF FRAME STANDARD
FRONT TURN SIGNAL LAMPS
DUAL WEST COAST BRIGHT FINISH HEATED MIRRORS WITH LH AND
RH REMOTE
DOOR MOUNTED MIRRORS 102 INCH EQUIPMENT WIDTH
LH AND RH 8 INCH BRIGHT FINISH CONVEX MIRRORS MOUNTED
UNDER PRIMARY MIRRORS STANDARD SIDE/REAR REFLECTORS
63X14 INCH TINTED REAR WINDOW
TINTED DOOR GLASS LH AND RH WITH TINTED NON-OPERATING
WING WINDOWS
RH AND LH ELECTRIC POWERED WINDOWS
TINTED WINDSHIELD
2 GALLON WINDSHIELD WASHER RESERVOIR WITHOUT FLUID
LEVEL INDICATOR, FRAME MOUNTED

Cab Interior

OPAL GRAY VINYL INTERIOR MOLDED PLASTIC DOOR PANEL
MOLDED PLASTIC DOOR PANEL BLACK MATS WITH SINGLE
INSULATION
FORWARD ROOF MOUNTED CONSOLE WITH UPPER STORAGE
COMPARTMENTS WITHOUT NETTING
IN DASH STORAGE BIN
GRAY/CHARCOAL FLAT DASH SMART SWITCH EXPANSION MODULE
HEATER, DEFROSTER AND AIR CONDITIONER
STANDARD HVAC DUCTING MAIN HVAC CONTROLS WITH
RECIRCULATION SWITCH STANDARD HEATER PLUMBING DENSO
HEAVY DUTY AIR CONDITIONER COMPRESSOR BINARY CONTROL, R-
134A PREMIUM INSULATION
SOLID-STATE CIRCUIT PROTECTION AND FUSES 12V NEGATIVE
GROUND ELECTRICAL SYSTEM
DOOR ACTIVATED DOME/RED MAP LIGHTS, FORWARD LH AND RH
AND REAR LH, RH AND CENTER LH AND RH ELECTRIC DOOR LOCKS
H.O. BOSTROM SIERRA AIR-50 HIGH BACK AIR SUSPENSION DRIVER
SEAT WITH ADJUSTABLE RECLINE, FIXED LUMBAR AND NFPA 1901-
2009 COMPLIANT SEAT SENSOR

H.O.BOSTROM TANKER 450 AIR-50 SCBA HIGH BACK AIR SUSPENSION
PASSENGER SEAT WITH SECUREALL READY CUSHION AND NFPA 1901-
2009 COMPLIANT SEAT SENSOR

H.O. BOSTROM TANKER 450 NON SUSPENSION LH, RH AND CENTER
REAR PASS SEATS W/UNDER SEAT STORAGE, SECUREALL READY
CUSHION AND NFPA 1901-2009 COMPLIANT SEAT SENSOR
LH AND RH INTEGRAL DOOR PANEL ARMRESTS
GRAY AND BLACK DURAWEAR FABRIC DRIVER SEAT COVER, SEAT
BOLSTER AND INSERT
GRAY AND BLACK DURAWEAR FABRIC PASSENGER SEAT COVER,
SEAT BOLSTER AND INSERT GRAY AND BLACK DURAWEAR FABRIC
REAR PASSENGER SEAT COVER, SEAT BOLSTER AND INSERT
3 POINT HIGH VISIBILITY ORANGE RETRACTOR DRIVER, RH FRONT
AND LH, CENTER AND RH REAR PASSENGER SEAT BELTS WITH NFPA
1901-2009 COMPLIANT SENSOR AND DASH HARNESS ADJUSTABLE
TILT AND TELESCOPING STEERING COLUMN 4-SPOKE 18 INCH
(450MM) STEERING WHEEL
DRIVER AND PASSENGER INTERIOR SUN VISORS
BACKUP CAMERA

Instruments & Controls

GRAY DRIVER INSTRUMENT PANEL GRAY CENTER INSTRUMENT
PANEL
ENGINE REMOTE INTERFACE WITH PARK BRAKE AND NEUTRAL
INTERLOCKS
BLACK GAUGE BEZELS
LOW AIR PRESSURE INDICATOR LIGHT AND AUDIBLE ALARM
2 INCH PRIMARY AND SECONDARY AIR PRESSURE GAUGES
ENGINE COMPARTMENT MOUNTED AIR RESTRICTION INDICATOR
WITH GRADUATIONS, WITH WARNING LIGHT IN DASH ELECTRONIC
CRUISE CONTROL WITH SWITCHES IN LH SWITCH PANEL
KEY OPERATED IGNITION SWITCH AND INTEGRAL START POSITION;
4 POSITION OFF/RUN/START/ACCESSORY ICU3S, 132X48 DISPLAY
WITH DIAGNOSTICS, 28 LED WARNING LAMPS AND DATA LINKED
DIAGNOSTIC INTERFACE CONNECTOR, 9 PIN, SAE J1939, LOCATED
BELOW DASH
2 INCH ELECTRIC FUEL GAUGE ENGINE REMOTE INTERFACE NOT
CONFIGURED
ENGINE REMOTE INTERFACE CONNECTOR IN ENGINE
COMPARTMENT
ELECTRICAL ENGINE COOLANT TEMPERATURE GAUGE
2 INCH TRANSMISSION OIL TEMPERATURE GAUGE

ENGINE AND TRIP HOUR METERS INTEGRAL WITHIN DRIVER
DISPLAY
CUSTOMER FURNISHED AND INSTALLED PTO CONTROLS

NO OBSTACLE DETECTION SYSTEM NO LANE DEPARTURE WARNING SYSTEM
ELECTRIC ENGINE OIL PRESSURE GAUGE
OVERHEAD INSTRUMENT PANEL, FRONT USB PORT, FRONT AND REAR AUXILIARY INPUTS AND J1939
DASH MOUNTED RADIO
(2) RADIO SPEAKERS IN CAB ELECTRONIC KPH SPEEDOMETER WITH SECONDARY MPH SCALE, WITHOUT ODOMETER STANDARD VEHICLE SPEED SENSOR
ELECTRONIC 3000 RPM TACHOMETER
IDLE LIMITER, ELECTRONIC ENGINE
DIGITAL VOLTAGE DISPLAY INTEGRAL WITH DRIVER DISPLAY
SINGLE ELECTRIC WINDSHIELD WIPER MOTOR WITH DELAY
MARKER LIGHT SWITCH INTEGRAL WITH HEADLIGHT SWITCH
ONE VALVE PARKING BRAKE SYSTEM WITH DASH VALVE CONTROL
AUTONEUTRAL AND WARNING INDICATOR

SELF CANCELING TURN SIGNAL SWITCH WITH DIMMER, WASHER/WIPER AND HAZARD IN HANDLE
INTEGRAL ELECTRONIC TURN SIGNAL FLASHER WITH HAZARD LAMPS OVERRIDING STOP LAMPS

Design

PAINT: ONE SOLID COLOR

Color

CAB COLOR A: L2225EB CANDY APPLE RED ELITE BC
BLACK, HIGH SOLIDS POLYURETHANE CHASSIS PAINT NO UNDERCOAT

Certification / Compliance

CANADA CMVSS CERTIFICATION, EXCEPT SALES CABS AND GLIDER KITS

LOW VOLTAGE ELECTRICAL SYSTEM SPECIFICATIONS

The electrical system shall include all panels, electrical components, switches and relays, wiring harnesses and other electrical components. The electrical equipment installed by the apparatus manufacturer shall conform to current automotive electrical system standards, the latest Federal DOT standards, and the requirements of the applicable NFPA standards.

All wiring shall be stranded copper or copper alloy conductors of a gauge rated to carry 125 percent of the maximum current for the protected circuit. Voltage drops in all wiring from the power source to the using device shall not exceed 10 percent. The wiring and wiring harness and insulation shall be in conformance to applicable SAE and NFPA standards. The wiring harness shall conform to SAE J-1128 with GXL temperature properties. All exposed wiring shall be protected in a loom with a minimum 289 degree Fahrenheit rating. All wiring looms shall be properly supported and attached to body members. The electrical conductors shall be constructed in accordance with applicable SAE standards, except when good engineering practice requires special construction.

The wiring connections and terminations shall use a method that provides a positive mechanical and electrical connection and shall be installed in accordance with the device manufacturer's instructions. Electrical connections shall be with mechanical type fasteners and large rubber grommets where wiring passes through metal panels.

The wiring between the cab and body shall be joined using Deutsche type connectors or an enclosed in a terminal junction panel area. This system will permit body removal with minimal impact on the apparatus electrical system. All connections shall be crimp-type with insulated shanks to resist moisture and foreign debris such as grease and road grime. Weather-resistant connectors shall be provided throughout to ensure the integrity of the electrical system.

There shall be no exposed electrical cabling, harnesses, or terminal connections located in compartments, unless they are enclosed in a junction box or covered with a removable electrical panel. The wiring shall be secured in place and protected against heat, liquid contaminants and damage. Wiring shall be uniquely identified every three-inches (3") by color coding or permanent marking with a circuit function code and identified on a reference chart or electrical wiring schematic per requirements of applicable NFPA #1901 standards.

The electrical circuits shall be provided with low voltage over current protective devices. Such devices shall be accessible and located in required terminal connection locations or weather resistant enclosures. The over current protection shall be suitable for electrical equipment and shall be automatic reset type and meet SAE standards. All electrical equipment, switches, relays, terminals, and connectors shall have a direct current rating of 125 percent of maximum current for which the circuit is protected. The system shall have electro-magnetic interference suppression provided as required in applicable SAE standards.

The electrical system shall include the following:

- Electrical terminals in weather exposed areas shall have a non-conductive grease or spray applied. A corrosion preventative compound shall be applicable to all terminal plugs located outside of the cab or body.
- The electrical wiring shall be harnessed or be placed in a protective loom.
- Holes made in the roof shall be caulked with silicone. Large fender washers shall be used when fastening equipment to the underside of the cab roof.
- Any electrical component that is installed in an exposed area shall be mounted in a manner that will not allow moisture to accumulate in it.
- A coil of wire must be provided behind an electrical appliance to allow them to be pulled away from mounting area for inspection and service work.
- All lights that have their sockets in a weather exposed area shall have corrosion preventative compound added to the socket terminal area.

The warning lights shall be switched in the chassis cab with labeled switches in an accessible location. Individual rocker switches shall be provided only for warning lights provided over the minimum level of warning lights in either the stationary or moving modes. All electrical equipment switches shall be mounted on a switch panel mounted in the cab convenient to the operator. The warning light switches shall be of the rocker type. For easy night-time operation, an integral indicator light shall be provided to indicate when the circuit is energized. All switches shall be appropriately identified as to their function.

A single warning light switch shall activate all required warning lights. This switch will allow the vehicle to respond to an emergency and "call for the right of way". When the parking brake is applied, a "blocking right of way" system shall automatically activate per requirements of the applicable NFPA standards. All "clear" warning lights shall be automatically turned off upon application of the parking brake.

NFPA REQUIRED TESTING OF ELECTRICAL SYSTEM

The apparatus shall be electrically tested upon completion of the vehicle and prior to delivery. The electrical testing, certifications, and test results shall be submitted with delivery documentation per requirements of the applicable NFPA standards. The following minimum testing shall be completed by the apparatus manufacturer:

1. Reserve capacity test:

The engine shall be started and kept running until the engine and engine compartment temperatures are stabilized at normal operating temperatures and the battery system is fully

charged. The engine shall be shut off and the minimum continuous electrical load shall be activated for ten (10) minutes. All electrical loads shall be turned off prior to attempting to restart the engine. The battery system shall then be capable of restarting the engine. Failure to restart the engine shall be considered a failed test.

2. Alternator performance test at idle:

The minimum continuous electrical load shall be activated with the engine running at idle speed. The engine temperature shall be stabilized at normal operating temperature. The battery system shall be tested to detect the presence of battery discharge current. The detection of battery discharge current shall be considered a test failure.

3. Alternator performance test at full load:

The total continuous electrical load shall be activated with the engine running up to the engine manufacturer's governed speed. The test duration shall be a minimum of two (2) hours. Activation of the load management system is permitted during this test. However, if an alarm sounds due to excessive battery discharge, as detected by the system requirements in the NFPA standards, or a system voltage of less than 11.7 volts dc for more than 120 seconds is present, the test has failed.

4. Low voltage alarm test:

Following the completion of the above tests, the engine shall be shut off. The total continuous electrical load shall be activated and shall continue to be applied until the excessive battery discharge alarm activates. The battery voltage shall be measured at the battery terminals. With the load still applied, a reading of less than 11.7 volts dc for a 12 volt system shall be considered a test failure. The battery system shall then be able to restart the engine. Failure to restart the engine shall be considered a test failure.

NFPA REQUIRED DOCUMENTATION

The following documentation shall be provided on delivery of the apparatus:

- a. Documentation of the electrical system performance tests required above.
- b. A written load analysis, including:
 1. The nameplate rating of the alternator.
 2. The alternator rating under the conditions.
 3. Each specified component load.
 4. Individual intermittent loads.

WEATHER RESISTANT ELECTRICAL JUNCTION BOX

The electrical junction or terminal boxes shall be weather resistant and located away from water spray conditions. In addition, the main body junction panel shall house the automatic reset breakers and relays where required. The main body junction panel shall be located in the pump compartment.

LOAD MANAGER 2

The apparatus shall be equipped with a Kussmaul model 091-79 Automatic Load Shedding System for performing continuous electrical load management. The Load Manager shall have the following features:

- Monitor 12-volt system and detect low voltage.
- Capability to control two (2) loads.
- Automatic reset when voltage rises.
- Adjustable voltage setpoint.

The load manager shall be protected against reverse polarity and shorted outputs, and be enclosed in an enclosure to enhance EMI/RFI protection. The manufacturer shall provide for all electrical loads in excess of the NFPA minimum electrical requirements that exceed the alternator output.

ELECTRICAL CONSOLE WITH EMERGENCY LIGHT SWITCH PANEL – THERMAL COATED

An electrical console shall be constructed of .125" black thermoplastic coated smooth aluminum material, and mounted in the cab of the truck chassis. Console shall be designed and installed between the driver and passenger seats. The top face of the console shall be designed as the switch panel for all emergency light switches. The switch panel shall be hinged for easy access to the switch connections.

All emergency light switches shall be lighted, rocker style. Switches shall be internally lit when the switch circuit is in the on position. A plug-in identification label is to be provided and installed adjacent to each rocker switch with backlighting provided behind the label.

SWITCHES

A rocker style internally lighted switch shall be provided and wired through a heavy-duty relay to activate power to the emergency lights. The emergency lights shall be activated by a single "MASTER SWITCH" on the electrical console.

BATTERY CHARGER AND AIR COMPRESSOR

One (1) Kussmaul Pump Plus 1200 model #091-187-12-R-B1 battery charger and air compressor system shall be installed. The 120 volt compressor system shall be designed to maintain the air pressure in the chassis brake system whenever the pressure drops below a predetermined level.

The battery charger shall be supplied from the 120 volt shore power receptacle and be a fully automatic high output charging system. The unit shall be mounted in a clean dry area and will be accessible for service and/or maintenance.

BATTERY CHARGER DISPLAY

One (1) Kussmaul single battery bank voltage display shall be supplied with the charger.

AUTO-EJECT

A Kussmaul "Super Auto-Eject" 20-amp automatic disconnect device shall be provided and installed on the 110 volt shoreline connection complete with weatherproof cover and matching plug. The Auto-Eject shall be activated by the chassis starter switch to disconnect the plug. The Super Auto-Eject shall be completely sealed to prevent contamination of the mechanism by inclement weather and road conditions. The Super Auto-Eject shall have an internal switch to open and close the AC circuit after the mating connector is inserted and before the connector is removed.

SHORE POWER PLUG

The shore power plug shall be located at the left front cab door.

AIR HORNS

Two (2) 24.5" Stuttertone chrome plated air horns shall be recess mounted into the front bumper or on the front fenders with one positioned on each side. An air protection valve shall be provided in the air horn piping that will not allow the chassis air brake system to drop below 90 PSI.

ELECTRIC TRAFFIC HORN AND AIR HORN SELECTOR SWITCH

One (1) selector switch shall be provided on the cab's dash that will allow the chassis steering wheel horn button to activate either the electric traffic horn or air horn system.

ENGINE COMPARTMENT LIGHT

One (1) 12 volt LED light with switch shall be mounted in the engine enclosure. The control switch shall be mounted on the light head.

PUMP ENCLOSURE LIGHTS

One (1) LED work light shall be provided in the pump enclosure. The control switch shall be mounted on the light head.

BACK-UP ALARM

One (1) automatic electric back-up alarm shall be wired to the back-up light circuit, and mounted under the rear of the apparatus body.

BACK-UP CAMERA

One (1) rear view/back up camera shall be installed. The camera shall turn on automatically when the apparatus is placed in reverse. The display screen shall be visible from the driver's seat.

TRAILER TOW PACKAGE

Trailer tow package class 4 hitch assembly. To include an in cab mounted, heavy duty Electronic brake controller, sway protection system and S.A.E. round type 7-pin rear connector.

MARKER LIGHTS

LED marker lights shall be installed on the vehicle in conformance to the Canadian Motor Vehicle Safety Standard requirements.

MARKER LIGHTS

Additional LED marker lights shall be installed on the vehicle. These lights are in addition to the lights required by Canadian Motor Vehicle Safety Standards.

REAR LEFT AND RIGHT MARKER LIGHTS

Two (2) extendable rubber marker lights model TU EGG 017-95 shall be installed on the rear bumper of the apparatus. The front side shall display amber LED light. From the rear a red LED

light shall be visible. These lights shall be installed on rubber extensions extending at a 45 degree angle from the bumper of the apparatus.

LICENSE PLATE BRACKET

One (1) license plate mounting provisions shall be provided at the rear bumper and be illuminated by a LED light.

TAIL LIGHTS

Two (2) Whelen M6 LED tail/brake lights shall be provided. The rectangular 4"x6" light shall be red.

TURN SIGNALS

Two (2) Whelen M6 LED turn signals with populated sequential chevron arrow shall be provided.

BACKUP LIGHTS

Two (2) Whelen Series M6 LED backup lights shall be installed on the rear of the apparatus body. The dimensions shall be 4" x 6" and the lens color shall be clear.

FOUR LIGHT HOUSING

Two (2) chrome plated tail light housings shall be supplied. Each housing shall be designed to hold four (4) Whelen M6 rear lights located at the lower rear corners of the body.

MID BODY LED TURN SIGNALS

Two (2) mid body LED turn signals shall be provided. The location of the turn lights shall be at mid-body near the rear wheel axle.

CAB GROUND LIGHTS

Four (4) LED ground lights shall be installed under the cab doors, one (1) under each door.

CAB STEP LIGHTS

There shall be LED cab step lights supplied below the chassis cab doors. The lights shall be mounted below the cab doors and illuminate the chassis cab steps. There shall be two (2) LED lights located on each side of the chassis cab.

MID BODY GROUND LIGHTS

Two (2) LED ground lights shall be installed under the mid-body of the apparatus. One (1) light shall be located on the driver's side and one (1) light located on the officer's side of the apparatus.

REAR STEP GROUND LIGHTS

Two (2) LED ground lights shall be installed under rear step of the apparatus.

REAR BODY GROUND LIGHTS

Two (2) LED ground lights shall be installed under the compartments located behind the rear wheels. One (1) light shall be located on the driver's side and one (1) light located on the officer's side of the apparatus.

The ground lights shall automatically activate when the parking brake is applied.

REAR TAILBOARD LIGHTS

Two (2) LED step lights with clear lens shall be installed to illuminate the step surfaces at the rear of the apparatus body.

The step/walkway light switch shall be installed and wired to the parking brake.

SCENE LIGHT

Six (6) Whelen M9 Series Super-LED 7-1/8" x 9-1/8" gradient scene light(s) with chrome plated surface mount flange shall be installed.

Two-(2) scene light shall be located on the left side of the apparatus body.

Two-(2) scene light shall be located on the right side of the apparatus body.

Two-(2) scene light shall be located on the rear of the apparatus body.

One (1) scene light switch with indicator shall be installed on the cab main switch panel to control the left side scene lights. The switch shall be labeled "LEFT SCENE".

One (1) scene light switch with indicator shall be installed on the cab main switch panel to control the right side scene lights. The switch shall be labeled "RIGHT SCENE".

One (1) scene light switch with indicator shall be installed on the cab main switch panel to control the rear scene lights. The switch shall be labeled "REAR SCENE".

SCENE LIGHT SWITCHING

The rear scene lights shall activate automatically upon placing the transmission into reverse.

FRONT SCENE LIGHT - BROW LIGHT

One (1) PFP2 Dual Pioneer Plus Flood Lights (12V) with PBA0130 Brow Brackets shall be installed below the front light bar located on the front of the apparatus.

One (1) scene light switch with indicator shall be installed on the cab main switch panel to control the front brow light. The switch shall be labeled "BROW LIGHT".

DOOR OPEN LIGHT

One (1) red flashing, warning light shall be provided and installed in the driver's compartment to indicate an open passenger or apparatus compartment door. The warning light shall also be attached to folding equipment racks and light towers as specified. The light shall be a flashing Whelen OS red LED light and shall be properly marked and identified.

ELECTRONIC SIREN

One (1) Whelen, dual stage amplifier siren, model 295HFSA7, 100/200 watt full function electronic siren, with one (1) control head, shall be provided. The siren shall include a remote mount noise canceling microphone and volume control. The siren shall have the following features: air horn, wail, yelp, hi-lo, and manual. The 2.3" x 9.5" control head shall feature illuminated legends, LED indicators and (6) large durable switches for easy control. The siren shall be capable of driving (2) 100-watt speakers. The system shall automatically be protected from short circuits.

The siren shall have the TAP II feature enabled and wired for use.

SPEAKER

Two (2) Whelen 100-watt speaker, Model SA122FMP, shall be installed in the front bumper. The speakers shall feature a Neodymium driver and a high strength composite housing that is chemical resistant and maintains rigidity at high temperatures.

A Whelen recess mount, stainless steel polished trim ring shall be used to flush mount each speaker.

SPEAKER LOCATION

The siren speakers shall be installed in the apparatus front bumper extension, as determined by the body manufacturer.

SCREAMING EAGLE SIREN LOCATION

One screaming eagle siren model C 9-11 P/F 12 V shall be installed on or inside the front right side bumper. There shall be controls for the siren on both the driver's side and the passenger's side of the front cab on the dash. A siren shut off/brake shall be installed on the front dash and be accessible by the driver.

LIGHTBAR

One (1) Whelen Ultra Freedom light bar shall be included with the apparatus cab. The light bar shall be a model FN60QLED and shall be mounted on the roof of the cab, towards the front, above the windshield.

The light bar shall feature:

- A 60" light bar designed for high performance
- Two (2) red Linear Super LED corner modules facing front
- Two (2) red 400 series Linear Super LED endcap lights
- Two (5) red 400 series Linear Super LED lights facing front
- Two (2) white 400 series Linear Super LED lights with clear optic lenses facing front
- Two (2) red Linear Super LED corner modules facing rear
- Seven (7) red Linear Super LED lights facing rear
- Clear hard coated lenses to provide extended life/luster protection against UV & chemical stresses
- Designed in accordance with NFPA Zone A requirements

LIGHTBAR ACTIVATION

The front upper light bar activation shall be wired into the master warning switch.

UPPER REAR WARNING LIGHTS

One (1) pair of Whelen model M9 LED warning lights shall be installed, one each side on the upper rear of the apparatus body. The dimensions of the lights shall be 6-1/2" x 10-3/8".

The driver side warning light shall be a Whelen Model M9R red Super-LED™ with color lens.

The officer side warning light shall be a Whelen Model M9R red Super-LED™ with color lens.

Each light shall be mounted with a Whelen Model M9FC chrome flange.

UPPER SIDE FRONT WARNING LIGHTS

One (1) pair of Whelen model M9 LED warning lights shall be installed, on the upper portion of the body side, towards the front. The dimensions of the lights shall be 6-1/2" x 10-3/8".

The driver side warning light shall be a Whelen Model M9R red Super-LED™ with color lens.

The officer side warning light shall be a Whelen Model M9R red Super-LED™ with color lens.

Each light shall be mounted with a Whelen Model M9FC chrome flange.

UPPER SIDE REAR WARNING LIGHTS

One (1) pair of Whelen model M9 LED warning lights shall be installed, one each side on the upper portion of the body side, towards the rear of the body. The dimensions of the lights shall be 6-1/2" x 10-3/8".

The driver side warning light shall be a Whelen Model M9R red Super-LED™ with color lens.

The officer side warning light shall be a Whelen Model M9R red Super-LED™ with color lens.

Each light shall be mounted with a Whelen Model M9FC chrome flange.

LOWER FRONT WARNING LIGHTS

Two (2) pairs of Whelen model M6 LED warning lights shall be installed, Two each side of the front of the chassis cab grill. The dimensions of the lights shall be 4-5/16" x 6-3/4".

The driver side warning light shall be a Whelen Model M6R red Super-LED™ with color lens.
The officer side warning light shall be a Whelen Model M6R red Super-LED™ with color lens.
Each light shall be mounted with a Whelen Model M6FC chrome flange.

INTERSECTION WARNING LIGHTS

One (1) pair of Whelen model M6 LED warning lights shall be installed one each side of the chassis cab. The dimensions of the lights shall be 4-5/16" x 6-3/4".

The driver side, upper grill area, warning light shall be a Whelen Model M6R red Super-LED™ with color lens.

The driver side, lower grill area, warning light shall be a Whelen Model M6G Green Super-LED™ with color lens.

The officer side, upper grill area, warning light shall be a Whelen Model M6R red Super-LED™ with color lens.

The officer's side, lower grill area, warning light shall be a Whelen Model M6G green Super-LED™ with color lens.

Each light shall be mounted with a Whelen Model M6FC chrome flange.

LOWER MID-BODY WARNING LIGHTS

One (1) pair of Whelen model M2 LED warning lights, model M2WR, shall be installed, one each side of the apparatus, mid-body in the rub rail. The dimensions of the lights shall be 4-1/4" x 2-11/16".

The driver side warning light shall be a Whelen Model M2WR wide-angle red Super-LED™ with color lens.

The officer side warning light shall be a Whelen Model M2WR wide-angle red Super-LED™ with color lens.

Each light shall be mounted with a Whelen Model M2FC chrome flange.

LOWER REAR SIDE WARNING LIGHTS

One (1) pair of Whelen model M2 LED warning lights shall be installed, one each side of the apparatus, towards the rear of the body, in the rub rail. The dimensions of the lights shall be 4-1/4" x 2-11/16".

The driver side warning light shall be a Whelen Model M2WR wide-angle red Super-LED™ with color lens.

The officer side warning light shall be a Whelen Model M2WR wide-angle red Super-LED™ with color lens.

Each light shall be mounted with a Whelen Model M2FC chrome flange.

LOWER REAR WARNING LIGHTS

One (1) pair of Whelen model M6 LED warning lights shall be installed, one each side on the lower rear of the apparatus body. The dimensions of the lights shall be 4-5/16" x 6-3/4".

The driver side warning light shall be a Whelen Model M6R red Super-LED™ with color lens.

The officer side warning light shall be a Whelen Model M6R red Super-LED™ with color lens.

TRAFFIC ARROW LIGHT

One (1) Whelen Model #TAM85 Traffic Advisor shall be installed. The light shall be equipped with eight (8) 500 Series TIR6™ Super-LED lights in a low profile flat style lamps measuring 46-7/8" (119cm) in length. The unit shall be mounted at the rear of the apparatus body. The Traffic Advisor control head shall be mounted inside the cab and be accessible by the driver and officer.

FLUID DATA PLAQUE

One (1) fluid data plaque containing required information shall be provided based on the applicable components for this apparatus, compliant with NFPA Standards:

- Engine oil
- Engine coolant
- Chassis transmission fluid
- Drive axle lubricant
- Power steering fluid

- Pump transmission lubrication fluid
- Other NFPA applicable fluid levels or data as required

Location shall be in the driver's compartment or on driver's door.

DATA LABEL

HEIGHT LENGTH & WEIGHT

A highly visible label indicating the overall height, length, and weight of the vehicle shall be installed in the cab dash area.

CAB SEATING POSITION LIMITS

The label shall also include the seating positions for firefighters. A weight allowance of 250 pounds for each shall be factored into the gross vehicle weight rating of the chassis.

NO RIDE LABEL

One (1) "NO RIDERS" label shall be applied on the vehicle at the rear step area or other applicable areas. The label shall warn personnel that riding in or on these areas, while the vehicle is in motion is prohibited.

TIRE PRESSURE PLAQUE

A label shall be placed in a visible area that indicates the front and rear tire pressure.

HELMET WARNING TAG

One (1) label shall be installed in the cab, visible from each seating position. The label shall read "CAUTION: DO NOT WEAR HELMET WHILE SEATED." Helmets must be properly stowed while the vehicle is in motion according to the current edition of NFPA 1901.

HELMET HOLDERS

Fire (5) On Scene Solutions helmet holders shall be installed in the cab of the apparatus. One holder shall be accessible from each seat.

REAR TOWING PROVISIONS

There shall be two tow eyes furnished under the rear of the body and attached directly to each chassis frame rail. There shall be a reinforcement spreader bar connecting the two tow eyes.

Tow eyes are to be constructed of 3/8" plate steel with a 4" I.D. hole, large enough for passing through a tow chain end hook.

The tow plates shall be painted black.

HUB AND LUG NUT COVERS

The apparatus shall have chrome or stainless steel hub and lug nut covers on the front and single rear axles.

TIRE PRESSURE INDICATOR

There shall be a tire pressure indicator at each tire's valve stem on the vehicle that shall indicate if there is insufficient pressure in the specific tire.

EXHAUST SYSTEM

The chassis exhaust shall be modified and redirected to the right side of the apparatus and will exit ahead of the rear wheel.

EXHAUST HEAT SHIELD

A heat shield shall be installed under the body in the areas where the exhaust system is routed.

REAR MUD FLAPS

One (1) pair of black mud flaps shall be installed behind the rear wheels.

CAB STEP ENCLOSURE

The left side of the Freightliner 4-door chassis shall be equipped with a modular step/fuel tank enclosure constructed from slip resistant aluminum tread plate to conform to applicable NFPA standards. The step/enclosure is to completely cover the fuel tank, and is to include a radius cut-out allowing access to the fuel tank fill. The entire step/enclosure is to be of a one piece design, bolted in place for ease of removal.

Heavy channel steel underbody supports shall be provided to support the right and left side cab entrance steps. Supports shall be attached directly to the chassis frame rails, and shall provide adequate support to the steps to minimize flex and distortion.

The overlay shall be provided with a storage compartment. A hinged door with latch shall be provided on the storage compartment.

CAB STEP ENCLOSURE

The right side of the Freightliner 4-door chassis shall be equipped with a modular step/fuel tank enclosure constructed from slip resistant aluminum tread plate to conform to applicable NFPA standards. The step/enclosure is to completely cover the fuel tank, and is to include a radius cut-out allowing access to the fuel tank fill. The entire step/enclosure is to be of a one piece design, bolted in place for ease of removal.

Heavy channel steel underbody supports shall be provided to support the right and left side cab entrance steps. Supports shall be attached directly to the chassis frame rails, and shall provide adequate support to the steps to minimize flex and distortion.

The overlay shall be provided with a storage compartment. A hinged door with latch shall be provided on the storage compartment.

SCBA BRACKET

Four (4) SCBA bracket shall be provided for installation in the cab mounted SCBA seat. An NFPA approved cylinder retention strap shall be supplied. The bracket shall accommodate a Scott 60 minute Carbon Fiber bottle.

THE FIRE PUMP

A Hale fire pump shall be mounted and installed. The rear mounted pump system shall have a rated capacity of 1250 IGPM (imperial gallons per minute) and shall meet all applicable sections of NFPA standards. The pump shall be constructed and mounted in accordance with the following specifications.

Pump shall deliver the percentage of rated discharge at pressures indicated below: 100%

of rated capacity at 150 pounds net pressure
70% of rated capacity at 200 pounds net pressure
50% of rated capacity at 250 pounds net pressure
100% of rated capacity at 165 pounds net pressure

IMPELLER AND SHAFT

The high-grade light alloy impellers shall be accurately balanced and mounted on a stainless steel pump shaft. The shaft shall be supported by three roller bearings; two located in the gearbox

and one in the suction inlet. Bearings shall be protected from water and sediment by maintenance free self-adjusting mechanical seals.

PUMP DRIVE SYSTEM

Fire pump shall be a powered by a driveline powered gear box.

Pump Body Material

The pump body is to be of high quality seawater resistant light alloy. All parts that come into contact with water shall be special treated light alloy or stainless steel. Heavy cast iron pumps are not acceptable.

PRESSURE GOVERNOR AND ENGINE-PUMP MONITORING

One (1) pressure governor and monitoring display kit shall be installed. The kit shall include a control module, intake pressure sensor, discharge pressure sensor, and cables. The control module case shall be waterproof. Inputs for monitored information shall be from a J1939 databus or independent sensors. Outputs for engine control shall be on the J1939 databus or engine specific wiring.

The following continuous displays shall be provided:

- Pump discharge; shown with four daylight bright LED digits more than 1/2" high
- Pump Intake; shown with four daylight bright LED digits more than 1/2" high
- Pressure / RPM setting; shown on a dot matrix message display
- Pressure and RPM operating mode LEDs
- Throttle ready LED
- Engine RPM; shown with four daylight bright LED digits more than 1/2" high
- Check engine and stop engine warning LEDs
- Oil pressure; shown on a dual color (green/red) LED bar graph display
- Engine coolant temperature; shown on a dual color (green/red) LED bar graph display
- Transmission Temperature: shown on a dual color (green/red) LED bar graph display
- Battery voltage; shown on a dual color (green/red) LED bar graph display.

The dot-matrix message display shall show diagnostic and warning messages as they occur. It shall show monitored apparatus information, stored data, and program options when selected by the operator. All LED intensity shall be automatically adjusted for day and night time operation.

The program shall store the accumulated operating hours for the pump and engine to be displayed with the push of a button. It shall monitor inputs and support audible and visual warning alarms for the following conditions:

- High Battery Voltage
- Low Battery Voltage (Engine Off)
- Low Battery Voltage (Engine Running)
- High Transmission Temperature
- Low Engine Oil Pressure
- High Engine Coolant Temperature
- Out of Water (visual alarm only)
- No Engine Response (visual alarm only).

The program features shall be accessed via push buttons located on the front of the control panel. There shall be an USB port located at the rear of the control module to upload future firmware enhancements.

Inputs to the control panel from the pump discharge and intake pressure sensors shall be electrical. The discharge pressure display shall show pressures from 0 to 600 psi. The intake pressure display shall show pressures from -30 in. Hg to 600 psi.

The governor shall operate in two control modes, pressure and RPM. No discharge pressure or engine RPM variation shall occur when switching between modes. A throttle ready LED shall light when the interlock signal is recognized. The governor shall start in pressure mode and set the engine RPM to idle. In pressure mode the governor shall automatically regulate the discharge pressure at the level set by the operator. In RPM mode the governor shall maintain the engine RPM at the level set by the operator except in the event of a discharge pressure increase. The governor shall limit a discharge pressure increase in RPM mode to a maximum of 30 psi. Other safety features shall include recognition of no water conditions with an automatic programmed response and a push button to return the engine to idle.

The pressure governor, monitoring and master pressure display shall be programmed to interface with a specific engine.

PRIMER – AUTOMATIC

An automatic fire pump priming system shall be provided and installed. The system shall be oil-less type and environmentally safe. Once engaged, the system shall be fully automatic and not require any action from the pump operator/engineer when pump draft is lost. This feature provides an additional safety margin by maintaining pump flow from the available water source automatically during drafting operations. When air is introduced during a drafting operation from conditions such as whirlpools or turbulence from portable tank refill operations, the priming system shall automatically engage to remove the air and stabilize water flow and pump pressure. For additional safety, the entire system shall operate at less than 70dBA of ambient noise.

The priming system shall engage automatically whenever the pump discharge falls below five (5) psi and shall remain engaged until a pump prime has been achieved. The priming system shall automatically disengage when a positive pump discharge pressure has been established. The

electrical current draw from the chassis batteries shall not exceed four (4) amps at any given time of operation and allow for unlimited run time without causing an overheat condition for of any of the system components.

A single engagement switch shall be provided on the pump control panel that will allow the operator to engage the automatic pump priming system. There shall be a light provided on the pump control panel to indicate when the system is engaged. The pump shall be capable of taking suction and discharging water with a lift of 10 feet in not more than 30 seconds with the pump dry, through 20 feet of suction hose of appropriate size. The priming system shall comply with applicable sections of NFPA standards.

PUMP ANODES

There shall be sacrificial, zinc anodes in the pump steamer ports which shall protect the pump and piping from electrolysis. These anodes shall also act as screens.

PUMP PLUMBING SYSTEM

The fire pump and plumbing shall be hydrostatically tested in compliance to applicable sections of NFPA standards. The test results shall be included in the delivery documentation.

FIRE PUMP MASTER DRAIN

The fire pump plumbing system and fire pump shall be piped to a single push-pull type master pump drain assembly.

ADDITIONAL LOW POINT DRAINS

The plumbing system shall be equipped with additional low point manually operated drain valves to allow total draining of the fire pump plumbing system. These valves shall be accessible from the side of the vehicle and labeled.

INTAKE MANIFOLD

The suction manifold assembly shall have radiused sweep elbows to minimize water turbulence into the suction volute. The suction manifold shall be welded and pressure tested prior to installation. The standard steel manifold assembly shall be attached to the pump intake volute with a heavy-duty, flexible Victaulic coupling.

DISCHARGE MANIFOLD

The discharge manifold assembly shall have radiused sweep elbows to minimize water turbulence. The manifold shall be welded and pressure tested prior to installation.

FIRE PUMP & PLUMBING SYSTEM PAINTING

The fire pump and plumbing system shall be painted by the fire apparatus manufacturer. The fire pump and the plumbing shall be painted metallic silver.

GATED 6" INTAKE -- REAR CENTER

One (1) rear center 6" gated suction intake shall be provided. Intake shall be gated with an Elkhart Model EB6B electrically operated 6" butterfly valve and shall have control at the pump operator's panel. The valve operating mechanism shall prevent movement of the valve from the fully closed position to the fully open position or vice versa, in less than three seconds. The valve control shall have a colored identification label.

There shall be an adjustable suction relief/dump valve installed on the supply side of the valve.

An inlet fitting with 6" NST thread shall be provided, complete with a removable strainer screen.

An Innovative Controls ¾" cast bronze quarter-turn drain/bleeder valve shall be installed. The valve shall be complete with a chrome plated bronze ball, reinforced teflon seals, and blow-out proof stem rated to 600 PSI. A chrome plated zinc handle shall be provided on each drain valve complete with a recessed ID label provision. The handle shall lift, to open and push down, to close.

One (1) 6" chrome plated cap shall be provided. The threads shall be NST and the cap shall be equipped long handles.

WATER TANK TO PUMP LINE

One (1) 3" water tank to the rear mounted fire pump line shall be provided with a full flow quarter turn ball valve, 4" piping, and with flex hose and stainless steel hose clamps. The tank to pump line shall be equipped with a check valve to prevent pressurization of the water tank.

The line shall be flow tested during the fire pump testing and shall meet applicable requirements of NFPA standards.

The valve shall be an Akron 8000 Series three-inch (3") valve with a stainless ball.

One (1) Akron valve equipped with a manually operated pull rod, with quarter-turn locking feature shall be provided on the intake. The handle shall be equipped with a color-coded name plate.

FIRE PUMP TO WATER TANK FILL LINE

One (1) 2" fire pump to water tank refill and pump bypass cooler line shall be provided. The valve shall be a full flow quarter turn ball valve with 2" piping and flex hose to tank. The valve control handle shall have a nameplate located near the valve control.

The valve shall be an Akron 8000 Series two-inch (2") valve with a stainless ball.

One (1) Akron valve equipped with a manually operated pull rod, with quarter-turn locking feature shall be provided on the intake. The handle shall be equipped with a color-coded name plate.

INTAKE RELIEF/DUMP VALVE

One (1) TFT A18 series, 2-1/2" intake relief/dump valve preset at 125 psi shall be permanently installed on the suction side of the fire pump. The valve shall have an adjustment range of 75 psi to 250 psi, and shall be designed to automatically self-restore to a non-relieving position when excessive pressure is no longer present.

Discharge side of the intake relief valve shall be plumbed away from the pump operator.

FIRE PUMP COOLING

The fire pump shall be equipped with 3/8" cooling line from the pump to the water tank. This recirculation line shall be controlled by a pump panel control valve with nameplate label noting it as the "fire pump bypass cooler". There shall be a check valve installed in the pump cooler line to prevent tank water from back flowing into the pump when it is not in use.

CHASSIS ENGINE HEAT EXCHANGER COOLING SYSTEM

The apparatus shall be equipped with a heat exchanger for supplementary chassis engine cooling during fire pump operations. A manually opened valve, mounted at the operator's panel, shall direct water from the fire pump to the heat exchanger that is mounted in the engine radiator cooling hose. The system shall provide cooling water from the fire pump to circulate around the engine radiator coolant without mixing or coming in direct contact with the engine coolant. The complete installation shall be done by the fire apparatus manufacturer.

A nameplate label shall be installed on the pump panel noting "engine cooling system" with "on-off" opening directions noted.

CANADIAN UNDERWRITERS LABORATORIES CERTIFICATION

The apparatus shall undergo a Canadian Underwriters Laboratories Incorporated inspection and test per current ULC standards, prior to delivery of the completed apparatus. These tests shall include pump, tank, weight, brake, and other applicable ULC inspection and testing. The test shall be performed on site by UL/ULC staff and shall include a listing of the apparatus as a fire fighting appliance. The manufacturer shall be ULC certified as a listed fire firefighting appliance manufacturer.

The ULC acceptance certificate and listing label shall be furnished with the apparatus on delivery.

FIRE PUMP TEST LABEL

A fire pump performance and rating label shall be installed on the fire apparatus pump panel. The label shall denote levels of pump performance and testing completed at factory. These shall include GPM at net pump pressure, RPM at such level, and other pertinent data as required by applicable NFPA standards. In addition, the pressure control device, tank to pump flow tests, and other required testing shall be completed.

In addition, the entire pump, suction and discharge passages shall be hydrostatically tested to a pressure as required by applicable NFPA standards. The pump shall be fully tested at the pump manufacturer's factory to the performance specifications as outlined by applicable NFPA standards. Pump shall be free from objectionable pulsation and vibration.

If applicable, the fire pump shall be tested and rated as follows:

- 100% of rated capacity at 150 pounds net pressure.
- 70% of rated capacity at 200 pounds net pressure.
- 50% of rated capacity at 250 pounds net pressure.
- 100% or rated capacity at 165 pounds net pressure.

REAR LEFT SIDE 2-1/2" GATED INTAKE

One (1) 2-1/2" gated suction intake shall be installed on rear left side of apparatus to supply the fire pump from an external water supply. The control valve shall be a quarter turn ball valve and shall have 2-1/2" CSA female thread of brass, chrome plated, or stainless steel material. The intake shall be provided with a removable screen and equipped with a 3/4" drain and bleeder valve, controlled at the base of the pump panel or rear panel of apparatus.

An Innovative Controls 3/4" cast bronze quarter-turn drain/bleeder valve shall be installed. The valve shall be complete with a chrome plated bronze ball, reinforced teflon seals, and blow-out proof stem rated to 600 PSI. A chrome plated zinc handle shall be provided on each drain valve

complete with a recessed ID label provision. The handle shall lift to open and push down to close.

One (1) 2-1/2" chrome plated plug shall be provided. The threads shall be CSA and the plug shall be equipped rocker lugs and chain or cable securement.

The valve shall be an Akron 8000 Series two and one half-inch (2-1/2") valve with a stainless ball.

The valve shall be equipped with one (1) manually operated, swing-type manual control located adjacent the intake. The valve shall be equipped with a color-coded name plate.

RIGHT SIDE REAR OF HOSEBED -- 1-1/2" DISCHARGE

One (1) 1-1/2" discharge shall be installed to the right side rear of hosebed area and controlled by a quarter turn ball valve on the rear mount pump panel. The discharge shall have 2" NPT x 1-1/2" NPSH male hose threads. An engraved nameplate label shall be provided adjacent the control handle.

A Class 1 automatic type 3/4" bleeder valve shall be installed.

The specified valve shall be an Akron 8000 Series two-inch (2") valve with a stainless ball.

For valve actuation, the specified discharge shall be equipped with a side mount valve control.

The ergonomically designed 1/4 turn push-pull T-handle shall be chrome plated zinc with recessed labels for color coding and signage. The gear-control rod, double laminated locking clips, and rod housing shall be stainless steel and provide true positive lock that will eliminate valve drift. Bronze and Teflon impregnated stainless steel bushings in both ends of rod housing shall eliminate rod deflection, never need lubrication and ensure consistent long-term operation.

The control assembly shall include a decorative chrome-plated zinc panel mounted bezel with recessed color-coded label.

One (1) 2-1/2" (65mm) diameter Noshok pressure gauge with (Dual Scale PSI/kPa) shall be provided. The face of the gauge shall be a WHITE dial with black letters. The gauges will be located on the pump instrument panel.

RIGHT SIDE REAR OF HOSEBED -- 1-1/2" DISCHARGE

One (1) 1-1/2" discharge shall be installed to the right side rear of hosebed area and controlled by a quarter turn ball valve on the rear mount pump panel. The discharge shall have 2" NPT x

1-1/2" NPSH male hose threads. An engraved nameplate label shall be provided adjacent the control handle.

A Class 1 automatic type 3/4" bleeder valve shall be installed.

The specified valve shall be an Akron 8000 Series two-inch (2") valve with a stainless ball.

For valve actuation, the specified discharge shall be equipped with a side mount valve control.

The ergonomically designed 1/4 turn push-pull T-handle shall be chrome plated zinc with recessed labels for color coding and signage. The gear-control rod, double laminated locking clips, and rod housing shall be stainless steel and provide true positive lock that will eliminate valve drift. Bronze and Teflon impregnated stainless steel bushings in both ends of rod housing shall eliminate rod deflection, never need lubrication and ensure consistent long-term operation.

The control assembly shall include a decorative chrome-plated zinc panel mounted bezel with recessed color-coded label.

One (1) 2-1/2" (65mm) diameter Noshok pressure gauge with (Dual Scale PSI/kPa) shall be provided. The face of the gauge shall be a WHITE dial with black letters. The gauges will be located on the pump instrument panel.

REAR CENTER PUMP PANEL LEFT SIDE -- 2-1/2" DISCHARGE

One (1) 2-1/2" discharge shall be installed on the left side of the rear center pump panel and shall be controlled by a quarter turn ball valve on the rear mount pump control panel. The discharge shall have 2-1/2" NPT x 2-1/2" NST male hose threads. An engraved nameplate label shall be installed adjacent the valve control handle.

A 3/4" quarter turn bleeder valve shall be installed.

One (1) chrome plated elbow with rocker lugs shall be provided with 2-1/2" NST swivel female x 2-1/2" CSA male hose threads.

One (1) 2-1/2" CSA rocker lug chrome plated vented cap and cable or chain securement shall be provided.

The specified valve shall be an Akron 8000 Series two and one half-inch (2-1/2") valve with a stainless ball.

For valve actuation, the specified discharge shall be equipped with a side mount valve control.

The ergonomically designed 1/4 turn push-pull T-handle shall be chrome plated zinc with recessed labels for color coding and signage. The gear-control rod, double laminated locking clips, and rod housing shall be stainless steel and provide true positive lock that will eliminate

valve drift. Bronze and Teflon impregnated stainless steel bushings in both ends of rod housing shall eliminate rod deflection, never need lubrication and ensure consistent long-term operation.

The control assembly shall include a decorative chrome-plated zinc panel mounted bezel with recessed color-coded label.

One (1) 2-1/2" (65mm) diameter Noshok pressure gauge with (Dual Scale PSI/kPa) shall be provided. The face of the gauge shall be a WHITE dial with black letters. The gauges will be located on the pump instrument panel.

REAR CENTER PUMP PANEL LEFT CENTER -- 2-1/2" DISCHARGE

Two (2) 2-1/2" discharge shall be installed to the left of center on the rear center pump panel and shall be controlled by a quarter turn ball valve on the rear mount pump control panel. The discharge shall have 2-1/2" NPT x 2-1/2" NST male hose threads. An engraved nameplate label shall be installed adjacent the valve control handle.

A 3/4" quarter turn bleeder valve shall be installed.

Two (2) chrome plated elbow with rocker lugs shall be provided with 2-1/2" NST swivel female x 2-1/2" CSA male hose threads.

Two (2) 2-1/2" CSA rocker lug chrome plated vented cap and cable or chain securement shall be provided.

The specified valve shall be an Akron 8000 Series two and one half-inch (2-1/2") valve with a stainless ball.

For valve actuation, the specified discharge shall be equipped with a side mount valve control.

The ergonomically designed 1/4 turn push-pull T-handle shall be chrome plated zinc with recessed labels for color coding and signage. The gear-control rod, double laminated locking clips, and rod housing shall be stainless steel and provide true positive lock that will eliminate valve drift. Bronze and Teflon impregnated stainless steel bushings in both ends of rod housing shall eliminate rod deflection, never need lubrication and ensure consistent long-term operation.

The control assembly shall include a decorative chrome-plated zinc panel mounted bezel with recessed color-coded label.

Two (2) 2-1/2" (65mm) diameter Noshok pressure gauge with (Dual Scale PSI/kPa) shall be provided. The face of the gauge shall be a WHITE dial with black letters. The gauges will be located on the pump instrument panel.

REAR CENTER PUMP PANEL RIGHT SIDE -- 4" DISCHARGE

One (1) 4" discharge shall be installed on the right side of the rear center pump panel and shall be controlled by a quarter turn ball valve on the rear mount pump control panel. The discharge shall have 4" NPT x 4" NST male hose threads. An engraved nameplate label shall be installed adjacent the valve control handle.

A 3/4" quarter turn bleeder valve shall be installed.

One (1) color coded elbow with 30 degree slant shall be provided. Threads shall be 4" Storz with lugs and manual locks x 4" female swivel NST with rocker lugs.

One (1) 4" color coded Storz cap with cable or chain securement shall be provided.

The specified valve shall be an Akron 8000 Series three-inch (3") valve with a stainless ball.

One (1) Akron valve equipped with a manually operated pull rod, with quarter-turn locking feature and a manual slow-close device shall be provided on the specified discharge. The handle shall be equipped with color-coded name plate.

One (1) 2-1/2" (65mm) diameter Noshok pressure gauge with (Dual Scale PSI/kPa) shall be provided. The face of the gauge shall be a WHITE dial with black letters. The gauges will be located on the pump instrument panel.

4" MONITOR DISCHARGE

One (1) 4" discharge shall be piped to the top of the body with 4" NPT male threads provided. The pipe shall be equipped with Victaulic couplings (if necessary) and shall be properly secured to prevent movement when a monitor is attached. The quarter turn ball valve shall be controlled on pump panel.

A color-coded nameplate label shall be provided adjacent the valve control handle.

An Innovative Controls 3/4" cast bronze quarter-turn drain/bleeder valve shall be installed. The valve shall be complete with a chrome plated bronze ball, reinforced teflon seals, and blow-out proof stem rated to 600 PSI. A chrome plated zinc handle shall be provided on each drain valve complete with a recessed ID label provision. The handle shall lift, to open and push down, to close.

The specified valve shall be an Akron 8000 Series four-inch (4") valve with a stainless ball.

One (1) Akron valve equipped with an electronically operated open and close system. The device shall be provided on the specified discharge. The device shall be equipped with color-coded name plate.

One (1) 2-1/2" (65mm) diameter Noshok pressure gauge with (Dual Scale PSI/kPa) shall be provided. The face of the gauge shall be a WHITE dial with black letters. The gauges will be located on the pump instrument panel.

REARMOUNT PUMP ENCLOSURE

The rearmount pump enclosure, rear pump, and plumbing installation shall be contained entirely in the rear compartment and shall be supported from the rear body sub-structure. The pump, plumbing, and controls shall be totally enclosed in the rear compartment to contain the system inside the body.

Nameplates labels shall be furnished for the discharges and intakes and for other controls and indicators.

Located within the module shall be:

- Automatic primer.
- Pump area service lights.
- All gauge piping and hoses.
- Intake dump valve.
- Pressure control device and throttle control.
- Pump engagement lights.
- Engine instruments.
- Master intake and discharge gauges
- Tank fill control.
- Tank-to-pump control.

PUMP PANEL LOCATION -- REAR CENTER

The operator's instrument panel for the rearmount pump shall be located at the rear center of the apparatus body.

PUMP CONTROL PANEL ROLL-UP DOOR -- REAR CENTER

The rearmount pump operator's panel shall be located at the rear center of the apparatus body.

A roll-up style compartment door shall be provided for the door opening.

PUMP CONTROL PANEL -- REARMOUNT

The pump operator's instrument panel for the rearmount pump shall be constructed of 14 gauge #304 brushed stainless steel and be fastened to the pump enclosure with 1/4" stainless steel bolts.

REARMOUNT PUMP AND PLUMBING ACCESS

The rearmount pump enclosure and plumbing area shall be accessible through removable panels, with stainless steel bolts in rear side compartment walls.

PUMP PANEL COLOR TRIM PANELS

Innovative Controls intake and discharge trim rings shall be installed to the apparatus with mounting bolts. These bezel assemblies will be used to identify intake and discharge ports with color and verbiage. These trim rings are designed and manufactured to withstand the specified apparatus service environment and shall be backed by a warranty equal to that of the exterior paint and finish. The specified assemblies feature a chrome-plated panel-mount bezel with durable UV resistant polycarbonate inserts. These UV resistant polycarbonate graphic inserts shall be sub-surface screen printed to eliminate the possibility of wear and protect the inks from fading. All insert labels shall be backed with 3M permanent adhesive (200MP), which meets UL969 and NFPA standards

PUMP COMPARTMENT HEATER SYSTEM

The interior of the pump enclosure shall be equipped with a minimum of 30,000 BTU hot water heater system. The unit shall be piped to the chassis radiator system with standard heater hose. The hose shall be properly clamped and secured in place, and be properly protected from engine exhaust or mechanical damage.

The heater unit shall be equipped with a 12-volt blower fan with control located on the pump operator's panel.

LABELS

Safety, information, data, and instruction labels for apparatus shall be provided and installed at the operator's instrument panel.

The labels shall include rated capacities, pressure ratings, and engine speeds as determined by the certification tests. The no-load governed speed of the engine, as stated by the engine manufacturer, shall also be included.

The labels shall be provided with all information and be attached to the apparatus prior to delivery.

COLOR CODED PUMP PANEL LABELING AND NAMEPLATES

Discharge and intake valve controls shall be color coded in compliance to guidelines of applicable sections of NFPA standards.

Innovative Controls permanent type nameplates and instruction panels shall be installed on the pump panel for safe operation of the pumping equipment and controls.

REARMOUNT PUMP PANEL LIGHTS

Two (2) 36" long Whelen Fluorent Plus Model F36PC LED lights shall be installed, one each side of the door opening. The lights shall be controlled by a switch located on the operator's instrument panel, or by opening the door.

PUMP ENGAGED LIGHT

One (1) green pump panel indicator light shall be illuminated in the switch panel at the time the fire pump is engaged into operation.

MASTER DISCHARGE AND INTAKE GAUGE BEZEL

Two (2) 4" (100mm) diameter Noshok discharge pressure and intake gauges Dual Scale (PSI/kPa, 30"-0-600 PSI & -100-0-4140 kPa) shall be provided. The gauges and test ports shall be mounted in an IC bezel assembly, part number 3002590. The gauges will be located on the pump instrument panel.

The master gauges shall have clear scratch resistant molded crystals with captive O-ring seals shall be used to ensure distortion free viewing and to seal the gauge. The gauges shall be filled with a synthetic mixture to dampen shock and vibration, lubricate the internal mechanisms, prevent lens condensation and ensure proper operation from -40°F to +160°F. Each gauge shall exceed ANSI B40.1 Grade A requirements with an accuracy of +/- 1.5% full scale and include a size appropriate phosphorous bronze bourdon tube with a reinforced lap joint and large tube base to increase the tube life and gauge accuracy. A polished chrome-plated brass bezel shall be provided to prevent corrosion and protect the lens and gauge case.

WATER TANK LEVEL GAUGE - PUMP PANEL

The apparatus shall be equipped with three (3) Innovative Controls SL Series Tank Level Monitor System shall be installed. The system shall include an electronic display module, a pressure transducer-based sender unit, and a 15' connection cable. The display module shall show the volume of water in the tank using 14 super bright easy-to-see LEDs to easily distinguish the tank level at a glance. Tank level indication is enhanced by the use of green LEDs at the full and near-full levels, amber LEDs between $\frac{3}{4}$ and $\frac{1}{4}$ tank levels, and red LEDs at the near-empty and empty levels. The electronic display module shall be waterproof and shock resistant being encapsulated in a urethane-based potting compound. The potted display module shall be mounted to a chrome plated panel-mount bezel with a durable easy-to-read polycarbonate insert featuring blue graphics and a water icon.

All programming functions shall be accessed and performed from the front of the display module. The programming includes self-diagnostics, manual or self-calibration, and networking capabilities to connect remote slave displays. Low tank level warnings shall include flashing red LEDs starting below the $\frac{1}{4}$ level and an output for an audible alarm.

The display module shall receive an input signal from a pressure transducer. This stainless steel sender unit shall be installed on the outside of the water tank near the bottom. All wiring, cables and connectors shall be waterproof without the need for sealing grease.

Locations of water tank level monitors shall be at the pump panel, on the driver's side of the apparatus and on the passenger's side of the apparatus.

WATER TANK - 500 GALLON

The apparatus shall be equipped with a five-hundred (500) gallon polypropylene water tank.

The tank shall be equipped with a four-inch (4") overflow pipe.

WATER TANK

The apparatus shall be equipped with a rectangular tank.

WATER TANK FILL TOWER

A fill tower measuring approximately 10" x 10" square shall be provided on the water tank up to and including 500 gallons total capacity.

The apparatus shall be equipped with a polypropylene water tank. The tank body and end bulkheads shall be constructed of .75" thick, polypropylene, nitrogen-welded and tested inside and out. Tank construction shall conform to applicable NFPA standards. The tank shall carry a lifetime warranty.

The transverse and longitudinal .375" thick swash partitions shall be interlocked and welded to each other as well as to the walls of the tank. The partitions shall be designed and equipped with vent holes to permit air and liquid movement between compartments.

The .5" thick cover shall be recessed .375" from the top of the side walls. Hold down dowels shall extend through and be welded to both the covers and the transverse partitions, providing rigidity during fast fill operations. Drilled and tapped holes for lifting eyes shall be provided in the top area of the booster tank.

A combination vent/water fill tower shall be provided at front of the tank. The 0.5" thick polypropylene fill and overflow tower shall be equipped with a hinged lid and a removable polypropylene screen. The overflow tube shall be installed in fill tower and piped with a minimum schedule 40 PVC pipe through the tank.

The water tank sump shall be located in the forward area of the tank. There will be a schedule 40 polypropylene tank suction pipe from the front of the tank to the tank sump. The tank drain and clean out shall be located in the bottom of the tank sump. The sump shall have a minimum 3" threaded outlet on the bottom to be used for a combination clean out and drain. The pump to tank refill connection shall be a sized to mate with tank fill discharge line. A deflector shield inside the tank will also be provided.

The tank shall rest on the body cross members in conjunction with such additional cross members, spaced at a distance that would not allow for more than 530 square inches of unsupported area under the tank floor. In cases where overall height of the tank exceeds 40 inches, cross member spacing must be decreased to allow for not more than 400 square inches of unsupported area.

The tank must be isolated from the cross members through the use of hard rubber strips with a minimum thickness and width dimension of 1/4" x 1" and a hardness of approximately 60 durometer.

The rubber must be installed so it will not become dislodged during normal operation of the vehicle. Additionally, the tank must be supported around the entire bottom outside perimeter and captured both in the front and rear as well as side to side to prevent tank from shifting during vehicle operation.

A picture frame type cradle mount with a minimum of 2" x 2" x 1/4" mild steel, stainless steel, or aluminum angle shall be provided or the use of corner angles having a minimum dimension of 4" x 4" x 1/4" by 6" high are permitted for the purpose of capturing the tank.

Although the tank is designed on a free floating suspension principle, it is required that the tank have adequate vertical 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 top of the tank, half way between the front and the rear on each side of the tank. These stops can be constructed of steel, stainless steel or aluminum angle having minimum dimensions of 3" x 3" x 1/4" and shall be approximately 6" to 12" long. These brackets must incorporate rubber isolating pads with a minimum thickness of 1/4" inch and a hardness of 60 durometer affixed on the underside of the angle. The angle should then be bolted to the body side walls of the vehicle while extending down to rest on the top outside edge of the upper side wall of the tank.

Hose beds floors must be so designed that the floor slat supports extend full width from side wall to side wall and are not permitted to drop off the edge of the tank or in any way come in contact with the individual covers where a puncture could occur. Tank top must be capable of supporting loads up to 200 lbs per sq. foot when evenly distributed. Other equipment such as generators, portable pumps, etc. must not be mounted directly to the tank top unless provisions have been designed into the tank for that purpose. The tank shall be completely removable without disturbing or dismantling the apparatus structure.

The tank construction shall include PolyProSeal™ technology wherein a sealant shall be installed between the plastic components prior to being fusion welded. This sealing method shall provide a liquid barrier, offering leak protection in the event of a weld compromise.

The tank shall be equipped with Polychromatic fill towers. The water fill tower shall be blue in color. The foam tank fill towers, if applicable, shall be yellow for foam A and green for foam B and black for any additional foam fill towers.

The water tank shall be certified for the capacity of the water tank prior to delivery of the apparatus. This capacity shall be recorded on the manufacturer's record of construction and the certification shall be provided to the purchaser when the apparatus is delivered.

The tank shall be manufactured by United Plastic Fabricating (UPF).

WATER TANK WARRANTY

UNITED PLASTIC FABRICATION INC. Warrants each UPF POLY-TANK IIE Booster/Foam tank to be free from manufacturing defects in material and workmanship for the service life of the vehicle (vehicle must be actively used in fire suppression). The UPF POLY-TANK IIE must be installed in accordance with the United Plastic Fabricating installation manual. Every UPF POLY-TANK IIE is thoroughly inspected and tested for leaks before leaving our facility. Should any problems develop with your UPF POLY-TANK IIE booster/foam tank and will not meet performance criteria during the service life of the vehicle, notify UPF in writing or call our TOLL FREE SERVICE HOT LINE 1-800-USA-POLY. Provide UPF with the serial number and a description of the problem. If the tank problem would render the truck out of service, UPF will

dispatch a service technician WITHIN 48 HOURS (2 DAYS) to repair the tank. (This time period is for North America only). If the vehicle can remain in service, UPF will dispatch a service technician within a mutually agreed upon time period.

We will repair, or at our option, replace the tank with a new UPF POLY-Tank IIE. UPF will cover customary and reasonable costs to remove and install the UPF POLY-TANK IIE. This warranty will not cover tanks that have been improperly installed, misused or abused, and the serial number must not have, been altered, defaced or removed. UPF will not cover any unauthorized third party repairs or alterations. Any of these actions may void the warranty.

THERE ARE NO WARRANTIES, EXPRESSED OR IMPLIED, WHICH EXTEND BEYOND THE DESCRIPTION OF THE FACE HEREOF. THERE IS NO EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY OR A WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE. ADDITIONALLY, THIS WARRANTY IS IN LIEU OF ALL OTHER OBLIGATIONS OR LIABILITIES ON THE PART OF UNITED PLASTIC FABRICATION, INC.

This warranty contains the entire warranty. It is the sole warranty and price agreements or representation, whether oral or written, are either merged herein or expressly cancelled. UNITED PLASTIC FABRICATION, INC. Neither assumes, nor authorizes any person supposing to act on its behalf, to change, nor assume for it, any warranty or liability concerning its product.

IN NO EVENT WILL UNITED PLASTIC FABRICATION, INC BE LIABLE FOR AN AMOUNT IN EXCESS OF THE PRESENT RETAIL, PURCHASE PRICE PLUS INSTALLATION AND REMOVAL COST OF THE BOOSTER TANK, FOR ANY LOSS OR DAMAGE, WHETHER DIRECT OR INDIRECT, INCIDENTAL, CONSEQUENTIAL, OR OTHERWISE ARISING OUT OF FAILURE OF ITS PRODUCT.

This warranty gives you specific legal rights, and you may have other rights, which vary from state to state. Some states do not allow exclusion or limitation of incidental or consequential damage, so the above limitation or exclusion may not apply to you. Some states do not allow limitation on how long an implied warranty lasts, so the above limitation may not apply to you.

ALUMINUM HOSEBED GRATING

The hose bed compartment deck shall be constructed entirely from maintenance-free, extruded aluminum slats. The slats shall have an anodized, radiused ribbed top surface. The slats shall be of widths approximately 3/4" high x 6" wide and shall be assembled into a one-piece grid system to prevent the accumulation of water and allow ventilation to assist in drying hose.

The apparatus hose body shall be properly reinforced without the use of angles or structural shapes and free from all projections that might injure the fire hose.

The main apparatus hose body shall run the full length of the apparatus body from behind the pump panel area to the rear face of the body as well as the full width of the apparatus bed.

The upper rear interior of the hose body on the right and left sides shall be overlaid with brushed stainless steel to protect the painted surface from damage by hose couplings.

HOSE BED STORAGE CAPACITY

The hose bed shall be designed to have a storage capacity for a minimum of 55 cubic feet of fire department supplied fire hose.

The hose bed shall be designed to have storage capacity for ten (10) 50-ft lengths of 1.75" Double Jacket fire hose.

The hose bed shall be designed to have storage capacity for ten (10) 50-ft lengths of 2.5" Double Jacket fire hose.

The hose bed shall be designed to have storage capacity for six (6) 100-ft lengths of 4" LDH Single Jacket rubber fire hose.

ALUMINUM HOSEBED DIVIDER

Three (3) adjustable hosebed divider constructed of .250" aluminum shall be installed on the apparatus.

Each hosebed divider installed on the apparatus shall be provided with a hand hole cut-out approximately 3" wide x 8" long.

ALUMINUM HOSEBED COVER

The hosebed shall be equipped with a reinforced hinged .125" aluminum diamond plate cover. The covers shall be of the sloped design for proper water runoff. The walking surface on the cover shall be a NFPA #1901 compliant surface. Positive hold-open devices shall be provided to hold the door in the open position.

The cover shall have a center opening. It shall be installed the full length and width of the hose bed. It shall have a cutout for the booster tank fill tower.

MAIN HOSEBED DIVIDER

One (1) stationary hosebed divider shall be provided in the main hosebed.

The hosebed divider shall be fabricated of 1/4" smooth aluminum sheet stock, pressed into a "T" shaped aluminum extrusion for added strength along the bottom and front edges of the divider.

Divider shall be bolted in place, front and rear, to allow for ease of removal or relocation.

HOSEBED LED LIGHTS

Four (4) 36" long OnScene Solutions Night Axe LED light shall be installed and contain 24 LEDs producing approximately 148 lumens per light (six LEDs and 37 lumens every 9"). The light stick shall be rated at 100,000 hours of service and shall be provided with a 5 year free replacement warranty. The light shall have a 5/8" LEXANTTM polycarbonate tube enclosure for severe duty applications. The light sticks shall be waterproof and be connectible via a jumper wire to add additional lights in series if required.

The LED lights shall be recessed into the underside of the hinged aluminum hosebed covers to provide illumination for repacking of fire hose. The 12 volt LED lights shall be automatically controlled by a switch which activates upon opening of the door. The lights shall also be connected to the hazard light in the chassis cab to indicate when the hose bed covers are in the open position.

REAR VINYL FLAPS FOR ALUMINUM COVER

There shall be a vinyl flaps attached to each aluminum hosebed cover. The vinyl flaps shall cover the area on the rear of the hosebed from top to bottom. The flaps shall be independent of each other but attachable with velcro in the center. The bottom edge of the flap shall be secured utilizing a hook and loop fastening system.

1/8" ALUMINUM BODY

The body shall be fabricated of aluminum extrusions, smooth aluminum sheet and aluminum treadplate.

The aluminum extrusion alloy shall be 6061 with a temper rating of T6, and have a tensile strength of 45,000 PSI and yield strength of 40,000 pounds. The aluminum extrusions shall 3" x 3" aluminum tubing, 1-3/4" x 3" aluminum tubing and 3" x 3" aluminum angle and specially designed extrusions, up to .250" wall thickness where applicable.

The smooth aluminum sheet material alloy shall be 5052 with a temper rating of H32, and have a tensile strength of 33,000 PSI and yield strength of 28,000 pounds.

The aluminum treadplate alloy shall be 3003 with a temper rating of H22, and have a tensile strength of 30,000 PSI and yield strength of 28,000 pounds.

The extrusions shall be designed as structural-framing members with the smooth aluminum and treadplate fabricated to form compartments, hosebeds, and floors. All aluminum material shall be welded together using the latest mig spray pulse arc welding system.

Compartment floors shall be of the sweep out design with the floor higher than the compartment door lip and to be water and dust proof. All compartments shall be made to the maximum practical dimensions to provide maximum storage capacity. To ensure maximum storage space, the apparatus shall be constructed without any void spaces between the body and the compartment walls. Double wall construction does not meet this requirement.

All exterior compartments shall have polished aluminum drip moldings installed above the doors where necessary to prevent water from entering the compartments.

Wheel well panels shall be formed aluminum that is welded in place. There shall be no visible bolt heads, retention nuts or fasteners on the exterior surface of the panel. To fully protect the wheel well area from road debris and to aid in cleaning, a full depth radius wheel well liner shall be provided. The frame side of the wheel well area on each side of the opening shall be attached to the frame side of the front and rear compartments. All seams on the frame side of the body shall be welded and caulked to prevent moisture from entering the compartments.

The rear wheel wells shall be radius cut for a streamlined appearance. A fenderette shall be furnished at each rear wheel well opening, held in place with stainless steel fasteners.

FASTENERS

All aluminum and stainless steel components shall be attached using stainless steel fasteners.

Compartment door hinges, handrails and running boards shall be attached using minimum 1/4" diameter machine bolt fasteners.

3/16" diameter fasteners shall only be used in nonstructural areas such as; door handles, trim moldings, gauge mounting, etc.

ELECTROLYSIS CORROSION CONTROL

The apparatus shall be assembled using ECK or electrolysis corrosion control, on all high corrosion potential areas, such as door latches, door hinges, trim plates, fenderettes, etc. This coating is a high zinc compound that shall act as a sacrificial barrier to prevent electrolysis and corrosion between dissimilar metals. This shall be in addition to any other barrier material that may be used.

All 1/4" diameter and smaller screws and bolts shall be stainless steel with a powdered aluminum coating. This coating shall be bonded metallurgically to the stainless screws to prevent peeling and flaking. This coating is designed to reduce the potential for electrolysis and corrosion to occur where items are assembled and attached.

Due to the expected life of the vehicle, proposals will only be acceptable from manufacturers that include these corrosion features.

COMPARTMENT FLOORS

The compartment floors shall be constructed of aluminum treadplate material.

SUB-FRAME

The apparatus body subframe shall be constructed entirely of heavy steel structural channel material.

Two full frame lengths, three-inch (3") 3.4 pound per foot longitudinal steel channels shall form the sides of the body subframe and sides of the water tank cradle. Subframe crossmembers shall be fabricated with three inch (3") 3.4 pound per foot heavy steel channel cross members welded to the longitudinal body subframe sides and the full length frame pads.

Two full frame length 1/2" x 3" flat steel frame pads shall be attached to the body subframe and rest on top of the chassis frame rails for proper frame weight distribution.

The steel frame pads, longitudinal steel channels and subframe crossmembers shall be attached to the chassis frame rails using heavy "U" bolt fasteners to allow removal of the subframe and body assembly from the chassis. There shall be a barrier provided between the subframe and body to prevent electrolysis.

The rear subframe and lower body platform support members shall be of the "two piece" design, fabricated of 3.4 lb. Per foot heavy channel and welded to the full length subframe channel liners at the rear. A minimum of two rear platform support channels shall be provided and constructed of 3.4 lb. Per foot heavy steel material. Each support channel shall have welded in gusset where the support meets the rear subframe rails.

After fabrication the entire subframe assembly shall be hot dip galvanized to prevent corrosion. The hot dip galvanized subframe shall have a lifetime warranty against failure due to corrosion.

This steel subframe shall carry the weight of the apparatus body, tank, water and equipment.

BODY CONFIGURATION

The aluminum apparatus body shall be between 144"- 168" long. A concept drawing shall be provided with the submission.

SINGLE AXLE WHEEL AREA

For ease of accessibility and maintenance, wheel well panels shall be double break formed painted smooth plate that is welded in place.

To fully protect the wheel well area from road debris and to aid in cleaning, a full depth (minimum of 25") radius wheel well liner shall be provided. Wheel well liner shall be smooth aluminum to prevent corrosion.

FENDERETTES

The rear wheel wells shall be radius cut for a streamlined appearance. A polished aluminum fenderette shall be furnished at each rear wheel well opening, held in place with concealed stainless steel fasteners.

HOSEBED WIDTH

The hosebed shall be the full width of the pumper body.

COMPARTMENT HEIGHT

The left side body compartments shall be 63" high.

COMPARTMENT HEIGHT

The right side body compartments shall be 63" high.

RIGHT FRONT COMPARTMENT

There shall be one (1) full height compartment located ahead of the rear wheels. The compartment shall be equipped with barn doors.

The compartment shall be equipped with the following:

One (1) louver with filter shall be installed in the compartment.

ADJUSTABLE SHELVING TRACKS

The compartments shall be equipped with two (2) aluminum adjustable tracks, vertically mounted, that are bolted in place for adjustable shelving and equipment mounting.

ROLL-OUT ALUMINUM TOOL BOARDS

Two (2) full height roll-out tool board panels shall be mounted vertically within compartment. The panel and tracks shall be rated to a maximum load of 500 lb. Panel to be formed of .188" smooth aluminum with an opening to accommodate a gloved-hand to slide tool board.

The tool board shall slide out to full extension of the compartment, with a device to hold CODE4 edraulic tools in both fully-extended and stored positions.

SHELF, TRAY & TOOLBOARD REFLECTIVE STRIPE

The outer edge and both sides of each shelf, tip-down tray, slide-out tray and tool board shall have alternating red and white reflective DOT (Department of Transportation) stripe material applied for safety.

The floor area of the compartment shall be fitted with removable vinyl Turtle Tile matting. The matting shall be interlocking modules approximately 12" square by 9/16" thick. This material shall be resistant to heat, cold, ultra-violet radiation, mechanical impacts, chemical actions and is corrosion resistant.

COMPARTMENT LIGHTS

Two (2) ROM vertically mounted roll-up compartment LED V3 door lights shall be installed one each side of the door opening. The compartment lights shall be integrated into the roll-up door tracks with the light actuation with the door opening.

The lights shall have a polycarbonate lens to eliminate breakage from impact and eliminate heat buildup.

The compartment light will be controlled by a magnetic "On-Off" switch located on each compartment door.

RIGHT OVERWHEEL COMPARTMENT

There shall be one (1) compartment above the rear wheels. The compartment shall be equipped with barn doors.

The compartment shall be equipped with the following:

One (1) louver with filter shall be installed in the compartment.

ADJUSTABLE SHELVING TRACKS

The compartments shall be equipped with two (2) aluminum adjustable tracks, vertically mounted, that are bolted in place for adjustable shelving and equipment mounting.

PULL-OUT AND DROP-DOWN

One (1) roll-out and tilt-down equipment tray shall be installed in the customer-specified compartment. The tray with roller bearing tracks shall be rated to a maximum load of 250 lb. Construction shall consist of four (4) inch tall extruded aluminum sides. Reflective material measuring 1" x 6" shall be installed on the each front corner both on the face and side of tray for firefighter safety.

Track assembly shall allow tray to roll out and tilt down at approximately a 30-degree angle.

The tray shall be fitted with removable vinyl Turtle Tile matting. The matting shall be interlocking modules approximately 12" square by 9/16" thick. This material shall be resistant to heat, cold, ultra-violet radiation, mechanical impacts, chemical actions and is corrosion resistant.

The floor area of the compartment shall be fitted with removable vinyl Turtle Tile matting. The matting shall be interlocking modules approximately 12" square by 9/16" thick. This material shall be resistant to heat, cold, ultra-violet radiation, mechanical impacts, chemical actions and is corrosion resistant.

COMPARTMENT LIGHTS

Two (2) ROM vertically mounted roll-up compartment LED V3 door lights shall be installed one each side of the door opening. The compartment lights shall be integrated into the roll-up door tracks with the light actuation with the door opening.

The lights shall have a polycarbonate lens to eliminate breakage from impact and eliminate heat buildup. The compartment light will be controlled by a magnetic "On-Off" switch located on each compartment door.

RIGHT REAR COMPARTMENT

There shall be one (1) full height compartment located behind the rear wheels. The compartment shall be equipped with barn doors.

The compartment shall be equipped with the following:

One (1) louver with filter shall be installed in the compartment.

ADJUSTABLE SHELVING TRACKS

The compartments shall be equipped with two (2) aluminum adjustable tracks, vertically mounted, that are bolted in place for adjustable shelving and equipment mounting.

ROLLOUT TRAY

One (1) SlideMaster SM3-MP Series mid profile telescoping equipment tray(s) shall be installed in a standard depth compartment. The tray assembly shall have a silver powder coated steel slide frame with sealed roller bearings rated to 600 pounds. A tray constructed of .190" smooth aluminum plate with four 3" sides shall be mounted to the slide frame. The slide frame shall extend 100% allowing the tray to be completely accessible from outside the compartment. An integrated manual quarter turn lock shall hold tray in both the "in" and "out" positions. The slide shall have a 3-1/4" deck height.

The tray shall be fitted with removable vinyl Turtle Tile matting. The matting shall be interlocking modules approximately 12" square by 9/16" thick. This material shall be resistant to heat, cold, ultra-violet radiation, mechanical impacts, chemical actions and is corrosion resistant.

SHELF, TRAY & TOOLBOARD REFLECTIVE STRIPE

The outer edge and both sides of each shelf, tip-down tray, slide-out tray and tool board shall have alternating red and white reflective DOT (Department of Transportation) stripe material applied for safety.

ADJUSTABLE SHELF

One (1) adjustable shelf shall be constructed of .188" smooth aluminum plate with 1.5" formed vertical lip front & back. Shelf supports on each side to be constructed of .188" aluminum and bolted to an aluminum extrusion (mounted vertically) by use of 3/8" bolts and spring-loaded cam locks. If shelf is longer than 40" a reinforcement by aluminum gusset is to be placed full-length on bottom of shelf.

The shelves shall be fitted with removable vinyl Turtle Tile matting. The matting shall be interlocking modules approximately 12" square by 9/16" thick. This material shall be resistant to heat, cold, ultra-violet radiation, mechanical impacts, chemical actions and is corrosion resistant.

The floor area of the compartment shall be fitted with removable vinyl Turtle Tile matting. The matting shall be interlocking modules approximately 12" square by 9/16" thick. This material shall be resistant to heat, cold, ultra-violet radiation, mechanical impacts, chemical actions and is corrosion resistant.

PULL-OUT AND DROP-DOWN

One (1) roll-out and tilt-down equipment tray shall be installed in the customer-specified compartment. The tray with roller bearing tracks shall be rated to a maximum load of 250 lb. Construction shall consist of four (4) inch tall extruded aluminum sides. Reflective material measuring 1" x 6" shall be installed on the each front corner both on the face and side of tray for firefighter safety.

Track assembly shall allow tray to roll out and tilt down at approximately a 30-degree angle.

The tray shall be fitted with removable vinyl Turtle Tile matting. The matting shall be interlocking modules approximately 12" square by 9/16" thick. This material shall be resistant to heat, cold, ultra-violet radiation, mechanical impacts, chemical actions and is corrosion resistant.

COMPARTMENT LIGHTS

Two (2) ROM vertically mounted roll-up compartment LED V3 door lights shall be installed one each side of the door opening. The compartment lights shall be integrated into the roll-up door tracks with the light actuation with the door opening.

The lights shall have a polycarbonate lens to eliminate breakage from impact and eliminate heat buildup.

The compartment light will be controlled by a magnetic "On-Off" switch located on each compartment door.

LEFT FRONT COMPARTMENT

There shall be one (1) full height compartment located ahead of the rear wheels. The compartment shall be equipped with barn doors.

The compartment shall be equipped with the following:

One (1) louver with filter shall be installed in the compartment.

ADJUSTABLE SHELVING TRACKS

The compartments shall be equipped with two (2) aluminum adjustable tracks, vertically mounted, that are bolted in place for adjustable shelving and equipment mounting.

PULL-OUT AND DROP-DOWN

One (1) roll-out and tilt-down equipment tray shall be installed in the customer-specified compartment. The tray with roller bearing tracks shall be rated to a maximum load of 250 lb. Construction shall consist of four (4) inch tall extruded aluminum sides. Reflective material measuring 1" x 6" shall be installed on the each front corner both on the face and side of tray for firefighter safety.

Track assembly shall allow tray to roll out and tilt down at approximately a 30-degree angle.

The tray shall be fitted with removable vinyl Turtle Tile matting. The matting shall be interlocking modules approximately 12" square by 9/16" thick. This material shall be resistant to heat, cold, ultra-violet radiation, mechanical impacts, chemical actions and is corrosion resistant.

ADJUSTABLE SHELF

One (1) adjustable shelf shall be constructed of .188" smooth aluminum plate with 1.5" formed vertical lip front & back. Shelf supports on each side to be constructed of .188" aluminum and bolted to an aluminum extrusion (mounted vertically) by use of 3/8" bolts and spring-loaded cam locks. If shelf is longer than 40" a reinforcement by aluminum gusset is to be placed full- length on bottom of shelf.

The shelves shall be fitted with removable vinyl Turtle Tile matting. The matting shall be interlocking modules approximately 12" square by 9/16" thick. This material shall be resistant to heat, cold, ultra-violet radiation, mechanical impacts, chemical actions and is corrosion resistant.

The floor area of the compartment shall be fitted with removable vinyl Turtle Tile matting. The matting shall be interlocking modules approximately 12" square by 9/16" thick. This material shall be resistant to heat, cold, ultra-violet radiation, mechanical impacts, chemical actions and is corrosion resistant.

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The tray shall be fitted with removable vinyl Turtle Tile matting. The matting shall be interlocking modules approximately 12" square by 9/16" thick. This material shall be resistant to heat, cold, ultra-violet radiation, mechanical impacts, chemical actions and is corrosion resistant.

SHELF, TRAY & TOOLBOARD REFLECTIVE STRIPE

The outer edge and both sides of each shelf, tip-down tray, slide-out tray and tool board shall have alternating red and white reflective DOT (Department of Transportation) stripe material applied for safety.

COMPARTMENT LIGHTS

Two (2) ROM vertically mounted roll-up compartment LED V3 door lights shall be installed one each side of the door opening. The compartment lights shall be integrated into the roll-up door tracks with the light actuation with the door opening.

The lights shall have a polycarbonate lens to eliminate breakage from impact and eliminate heat buildup.

The compartment light will be controlled by a magnetic "On-Off" switch located on each compartment door.

LEFT OVERWHEEL COMPARTMENT

There shall be one (1) compartment above the rear wheels. The compartment shall be equipped with barn doors.

The compartment shall be equipped with the following:

One (1) louver with filter shall be installed in the compartment.

ADJUSTABLE SHELVING TRACKS

The compartments shall be equipped with two (2) aluminum adjustable tracks, vertically mounted, that are bolted in place for adjustable shelving and equipment mounting.

PULL-OUT AND DROP-DOWN

One (1) roll-out and tilt-down equipment tray shall be installed in the customer-specified compartment. The tray with roller bearing tracks shall be rated to a maximum load of 250 lb. Construction shall consist of four (4) inch tall extruded aluminum sides. Reflective material measuring 1" x 6" shall be installed on the each front corner both on the face and side of tray for firefighter safety.

Track assembly shall allow tray to roll out and tilt down at approximately a 30-degree angle.

The tray shall be fitted with removable vinyl Turtle Tile matting. The matting shall be interlocking modules approximately 12" square by 9/16" thick. This material shall be resistant to heat, cold, ultra-violet radiation, mechanical impacts, chemical actions and is corrosion resistant.

The floor area of the compartment shall be fitted with removable vinyl Turtle Tile matting. The matting shall be interlocking modules approximately 12" square by 9/16" thick. This material shall be resistant to heat, cold, ultra-violet radiation, mechanical impacts, chemical actions and is corrosion resistant.

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The lights shall have a polycarbonate lens to eliminate breakage from impact and eliminate heat buildup. The compartment light will be controlled by a magnetic "On-Off" switch located on each compartment door.

LEFT REAR COMPARTMENT

There shall be one (1) full height compartment located behind the rear wheels. The compartment shall be equipped with barn doors.

The compartment shall be equipped with the following:

One (1) louver with filter shall be installed in the compartment.

ADJUSTABLE SHELVING TRACKS

The compartments shall be equipped with two (2) aluminum adjustable tracks, vertically mounted, that are bolted in place for adjustable shelving and equipment mounting.

PULL-OUT AND DROP-DOWN

One (1) roll-out and tilt-down equipment tray shall be installed in the customer-specified compartment. The tray with roller bearing tracks shall be rated to a maximum load of 250 lb. Construction shall consist of four (4) inch tall extruded aluminum sides. Reflective material

measuring 1" x 6" shall be installed on the each front corner both on the face and side of tray for firefighter safety.

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The tray shall be fitted with removable vinyl Turtle Tile matting. The matting shall be interlocking modules approximately 12" square by 9/16" thick. This material shall be resistant to heat, cold, ultra-violet radiation, mechanical impacts, chemical actions and is corrosion resistant.

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The shelves shall be fitted with removable vinyl Turtle Tile matting. The matting shall be interlocking modules approximately 12" square by 9/16" thick. This material shall be resistant to heat, cold, ultra-violet radiation, mechanical impacts, chemical actions and is corrosion resistant.

The floor area of the compartment shall be fitted with removable vinyl Turtle Tile matting. The matting shall be interlocking modules approximately 12" square by 9/16" thick. This material shall be resistant to heat, cold, ultra-violet radiation, mechanical impacts, chemical actions and is corrosion resistant.

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The lights shall have a polycarbonate lens to eliminate breakage from impact and eliminate heat buildup.

The compartment light will be controlled by a magnetic "On-Off" switch located on each compartment door.

REAR BODY CONFIGURATION

The rear of the apparatus body shall be of the flat back design.

REAR STEP - 12" BOLT-ON

A 12" deep step surface shall be provided at the rear of the apparatus body, bolted in place and easily removable for replacement or repair. The tailboard shall be constructed of .188" aluminum diamond plate or equal non-slip surface in compliance with NFPA #1901 standards.

A label shall be provided warning personnel that riding on the rear step while the apparatus is in motion is prohibited.

SLIDE OUT LADDER MOUNTINGS IN HOSEBED WITH DOOR

The ladders shall be stored in the hosebed in a full width enclosed compartment. The area shall house three (3) sets of dual ladder slide in tracks to store specified ladders in a vertical position. The mounting system shall be equipped with fiberglass angles and stop at front of ladders.

Ladders shall be stored in the center of the hosebed.

A full width aluminum diamond plate swing out door, with dual gas operators, shall be installed to enclose the ladder storage area.

PIKE POLE MOUNTING BRACKET

Two (2) tube shall be provided for pike pole mounting. The tube shall have a 2" interior diameter and shall be mounted in the ladder tunnel.

STOKES BASKET COMPARTMENT

One (1) stokes basket compartment shall be installed in the hose bed area on the right side. It shall hold one (1) standard size full length stokes basket. The location shall not interfere with the hose bed usage. The compartment shall have a Velcro strap which will secure the stokes basket in place. The compartment shall be located above the portable tank compartment on the right side of the hose bed.

PORTABLE POND COMPARTMENT

One (1) portable pond compartment shall be installed in the hose bed on the right side. The compartment shall be located underneath the stokes basket compartment. The compartment shall not interfere with the hose bed usage. The compartment shall facilitate a full size portable pond. A Velcro strap shall be installed to secure the portable pond in place.

HARD SUCTION MOUNTING

Two (2) hard suction hose compartment shall be provided in the hose bed compartment on the left side. The design shall allow the hose to be individually removed from the rear of the apparatus. The hard suction hose compartment shall have a hinged door with push to latch door catches. The compartment shall fit 2 X 6 inch 10 foot hoses.

The hinged door shall be constructed of smooth material, with chevron striping applied to match the rear of the apparatus body.

FRONT BODY PROTECTION PANELS

Brushed stainless steel overlays and panels shall be installed on the front corners of the body. The material shall be bolted in place and sealed to prevent any moisture entry between the overlay and the body structure.

FRONT BODY PROTECTION PANELS

Aluminum tread plate overlays and panels shall be installed on the front of the body compartment from the lower edge to the top of the compartment doors.

REAR BODY PROTECTION PANELS

The rear body panels of the body shall be a smooth material, to allow for the proper application and installation of a "Chevron" stripe on the rear.

POLISHED COMPARTMENT TOP WELDS

The compartment top welds to be polished.

FOLDING STEPS RIGHT AND LEFT SIDE REAR

Six (6) folding steps, three (3) on each side, of die cast high-strength zinc/aluminum alloy, plated with a superior automotive grade chrome finish shall be provided. The greater than 42 sq. in. serrated non-skid step traction area also offers an oversized non-slip grasp hand-hold. A heavy duty stainless steel spring design firmly holds the step in the open or closed positions. A rubber stop prevents any transit noise and rattles in the closed position. Step lighting shall be from a LED light mounted above the step.

The step has been third part tested to assure conformation of NFPA 1901 and FHA, 49CFR specifications for stepping surfaces and handhold.

The steps shall be installed on the rear right and left sides of the body.

EXTRUDED ALUMINUM RUB RAILS

Full body length polished aluminum rub rails shall be bolted in place on the lower right and left body sides. The side rub rails shall be a heavy extruded aluminum "C" channel.

The ends of the rub rails will be modified to allow the corner caps to mount in more of a "flush" manner.

WHEEL WELL PROVISION LOCATION

The wheel well provisions shall be located on the left side of the apparatus, ahead of the rear wheels.

One (1) breathing air cylinder storage compartment shall be provided and located in the rear wheel well of the apparatus body.

The cylinder storage compartment shall be constructed entirely of black polymer. The door assemblies shall be provided with a gasket between door and body side, bolted in-place and removable for repair or replacement.

Compartment shall be provided with SCBA cylinder scuff protection. A brushed stainless steel door shall be provided.

One (1) one-inch (1") wide loop of black webbing shall be installed in each SCBA compartment to prevent the bottle from sliding out of the compartment in case of door failure. The loop shall be mounted, centered in the compartment and shall hang within one-inch (1") of the compartment floor to allow the bottle to pass by the strap when the bottle is placed in the compartment. The strap shall loop over the valve.

The compartment shall fit a Scott, 60 minute carbon fiber bottle.

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The compartment shall fit a Scott, 60 minute carbon fiber bottle.

BODY PAINT PROCESS

All bright metal fittings, if unavailable in stainless steel shall be heavily chrome plated. Iron fittings shall be copper plated prior to chrome plating.

All seams shall be caulked both inside and along the exterior edges with a urethane automotive sealant to prevent moisture from entering between anybody panel.

The body and all parts shall be thoroughly washed with a grease cutting solvent prior to any sanding. After the body has been sanded and the weld marks and minor imperfections are filled and sanded, the body shall be washed again to remove any contaminants on the surface.

The first coating to be applied is a pre-treat self etching primer (.5 to 1.0 dry film build) for maximum adhesion to the body material. The next two to four coats (depending on need) shall be an acrylic urethane primer surfacer. The film build shall be 4-6 mils when dry. The primer surfacer coat, after appropriate dry time, shall be sanded to ensure maximum gloss of the paint. The last step is the application of at least three coats of polyurethane two-component color (single stage). The film build being 2-3 mils dry. The single stage polyurethane, when mixed with component catalyst shall provide a UV barrier to prevent fading and chalking.

All products and technicians are certified every two (2) years.

INTERIOR COMPARTMENT FINISH

Six (6) apparatus side compartment interiors are to be painted with a spatter finish material. The compartments shall be cleaned with a grease remover, and then the surface sanded and prepared for painting. The compartment shall be provided with two (2) coats of white epoxy. The compartments are then coated with a splatter paint top coat.

TOUCH-UP PAINT

One (1) five (5) ounce bottle (minimum) of touch-up paint shall be furnished with the completed truck at final delivery.

LETTERING

The dealer shall supply the apparatus lettering.

REFLECTIVE STRIPING

A 1" x 4" x 1" wide 3M brand Scotchlite reflective multi-stripe shall be affixed to the perimeter of the vehicle. There shall be a 1" gap between each of the stripes. Striping shall conform to applicable NFPA requirements. At least 50% of the perimeter length of each side and width of the rear, and at least 25% of the perimeter width of the front of the vehicle shall have reflective striping.

COLOR OF STRIPING MATERIAL

The color of the 3M brand striping material shall be yellow.

CHEVRON STRIPING

The entire rear portion of the body shall have 3M reflective red and amber striping installed. The chevron style striping shall be applied at a 45-degree upward angle pointing towards the center upper portion of the rear panel.

REFLECTIVE STRIPE

Reflective striping shall be installed on the interior of each chassis door.

INTERIOR CAB DOOR LIGHTS - FLASHING WHELEN M2 RED LED SERIES

One (1) Whelen model M2R LED warning light shall be installed on the inside, lower section of each cab door (total of four (4) lights). The light shall be installed in the lower section of the door. The light shall flash when the door is opened. The dimensions of the lights shall be 4- 1/4" x 2- 11/16".

WHEEL CHOCKS WITH MOUNTS

A pair of Zico Model SAC-44 Quic-Chok folding wheel chocks shall be provided and mounted under the apparatus body on the driver's side with model SQCH-44H horizontal mounting brackets.

ROOF LADDER

One (1) Duo Safety Model 775-A, 10 foot aluminum roof ladder with folding steel roof hooks on one end and steel spikes on the other end shall be provided on the apparatus. The ladder shall meet or exceed all latest NFPA Standards.

EXTENSION LADDER

One (1) Duo-Safety Model 1225-A, 28 foot three (3) section aluminum extension ladder shall be provided on the apparatus. The ladder shall meet or exceed all the latest NFPA standards.

FOLDING LADDER

One (1) Duo Safety Model 585-A, 10 foot folding aluminum ladder shall be provided on the apparatus. The ladder shall meet or exceed all the latest NFPA Standards.

PIKE POLE

One (1) 6' pike pole with round handle shall be provided. The pike pole shall be of fiberglass construction.

PIKE POLE

One (1) 8' pike pole with round handle shall be provided. The pike pole shall be of fiberglass construction.

SUCTION HOSE

Two (2) 6.0" x 10 foot length of PVC flexible suction hose shall be supplied. The suction hose shall have light weight couplings provided.

PORTABLE POND – 8000 LITRE OR MORE CAPACITY

One (1) 8000 litres or more capacity portable pond shall be provided. The pond shall fit in the compartment allocated in the right side of the hose bed.

HOSE COUPLINGS

Light weight aluminum couplings shall be provided on the suction hose. A long handle female swivel shall be provided on one end and a rocker lug male shall be provided for the other end.

EMERGENCY ROAD KIT

One (1) DOT emergency kit shall be provided with the completed apparatus and shall include a 2.5 BC fire extinguisher and three reflective triangles.

Options List

Engine - CUM ISL 350 HP @ 2000 RPM, 2200 GOV RPM, 1000 LB/FT @ 1400 RPM

PTO hydraulic driven 6000wt generator

Night scan LED light, 2, 4, and 6 lamp models with tilt

Extended front bumper, plumbed and able to accommodate 150 feet of 38 mm rubber hose