



INVITATION TO BID

FINANCE DEPARTMENT

GREGORY N. L'HEUREUX
Finance Director

KRISTIE BRADBURY
Deputy Finance Director

COLLEEN C. SELBERG
Purchasing Agent

TRIPLE COMBINATION PUMPER

Sealed bids for furnishing a Triple Combination Pumper to the City of South Portland Fire Department, as specified below, in the attached specifications entitled "Engine 4 Specification" and proposal, will be received by the City Purchasing Agent, 25 Cottage Road, South Portland, Maine 04106, until 2:00 p.m., Thursday, September 15, 2016, at which time, they will be publicly opened and read aloud.

Bids shall be submitted on the attached bid form in sealed envelopes, plainly marked "Triple Combo Pumper" and shall be addressed to the Purchasing Agent at the above address.

All bidders shall provide a bid bond as security for the bid in the form of a **10%** bid bond to accompany their bid. This bid bond shall be issued by a Surety Company who is listed on the U.S. Treasury Departments list of acceptable sureties as published in Department Circular 570. The bid bond shall be issued by an authorized representative of the Surety Company and shall be accompanied by a certified power of attorney dated on or before the date of bid. The bid bond shall include language, which assures that the bidder/principal shall give a bond or bonds as may be specified in the bidding or contract documents, with good and sufficient surety for the faithful performance of the contract, including the Basic One (1) Year Limited Warranty, and for the prompt payment of labor and material furnished in the prosecution of the contract.

Proposals received from bidders who do not manufacture the chassis shall provide a warranty that shall be issued jointly and severally by, and signed by, both the bidder and the chassis manufacturer.

If the successful bidder does not manufacture the chassis, the bidder shall supply a warranty bond, in addition to their performance bond, along with their signed contract. This warranty bond shall guarantee all terms and conditions of the Basic One (1) Year Limited Warranty and names both the bidder and chassis manufacturer as co-principals. This warranty bond shall be issued for the contract amount and shall remain in force for a term which is consistent with the term of the Basic One (1) Year Limited Warranty.

Notwithstanding any document or assertion to the contrary, any surety bond related to the sale of a vehicle shall apply only to the Basic One (1) Year Limited Warranty for such vehicle. Any surety bond related to the sale of a vehicle shall not apply to any other warranties that are included within this bid (OEM or otherwise) or to the warranties (if any)

of any third party of any part, component, attachment or accessory that is incorporated into or attached to the vehicle. In the event of any contradiction or inconsistency between this provision and any other document or assertion, this provision shall prevail.

PERFORMANCE BOND, 1 YEAR

The successful bidder shall furnish a Performance and Payment bond (Bond) equal to 100 percent of the total contract amount within 30 days of the notice of award. Such Bond shall be in a form acceptable to the Owner and issued by a surety company included within the Department of Treasury's Listing of Approved Sureties (Department Circular 570) with a minimum A.M. Best Financial Strength Rating of A and Size Category of XV. In the event of a bond issued by a surety of a lesser Size Category, a minimum Financial Strength rating of A+ is required.

Bidder and Bidder's surety agree that the Bond issued hereunder, whether expressly stated or not, also includes the surety's guarantee of the vehicle manufacturer's Basic One (1) Year Limited Warranty period included within this proposal. Owner agrees that the penal amount of this bond shall be simultaneously amended to 100% percent of the total contract amount upon satisfactory acceptance and delivery of the vehicle(s) included herein. Notwithstanding anything contained within this contract to the contrary, the surety's liability for any warranties of any type shall not exceed one (1) year from the date of such satisfactory acceptance and delivery, or the actual Basic One (1) Year Limited Warranty period, whichever is shorter.

Delivery to be made upon receipt of purchase order and shall be F.O.B., City of South Portland Fire Department, 684 Broadway, South Portland, Maine.

All equipment offered on this bid shall be brand new and the latest type available. Bidder will state in his bid the name and model number of the equipment he is offering and will include with his bid a catalog or brochure marked to indicate the standard factory equipment of the model on which he is bidding.

Bidder must attach a separate sheet to his bid listing any deviation from the minimum specifications shown. If no attachment is provided, it will be assumed that the item being bid meets the minimum specifications.

If the equipment offered by a bidder under the attached specifications meets the specifications except for minor factors or reasonably small amounts in dimensions, and if it shall be determined by the City that these minor variations from the specifications do not prevent the equipment being bid from performing as satisfactorily or from being as good as equipment fully meeting these specifications, then these minor variations from the specifications may be waived by the City, if it deems it to be to its advantage, and the equipment with the waived variations in specifications will be accepted as fully meeting these specifications.

Since a prompt delivery is need, delivery time as well as price may be made a factor in determining the award of this bid.

Price shall include a 14-day plate and State of Maine Certificate of Title or Certificate of Origin, which shall be made out to the City of South Portland, Maine and mailed to the Purchasing Agent, P.O. Box 9422, and South Portland, Me 04116-9422. A copy of the title application is to be delivered with each vehicle.

There shall be within a four-hour drive of the City of South Portland a service facility which shall maintain a stock of spare parts for any make and model of any vehicle that a bidder offers in the proposal

It is the custom of the City of South Portland to pay its bills within 20 to 30 days following delivery of and receipt of bills for all items covered by the purchase order. In submitting bids under attached specifications, bidders should take into consideration all discounts, both trade and time, allowed in accordance with the above payment policy. All bidders should quote net prices, therefore, exclusive of all Federal Excise Taxes.

The City of South Portland reserves the right to waive all informalities in bids, to accept any bid or any portion thereof, or to reject any or all bids should it be deemed in its best interest to do so. Except as otherwise required by law or as specifically provided to the contrary herein, the award of this bid shall be governed by the City's purchasing ordinance.

Colleen C. Selberg
Purchasing Agent

Mailing address: P.O. Box 9422, South Portland, ME 04116-9422
Telephone (207) 767-3201 Fax (207) 767-7620

PROPOSAL

The UNDERSIGNED hereby proposes to furnish One Triple Combination Pumper to the City of South Portland Fire Department, in accordance with the attached Invitation to Bid and Fire Apparatus Specifications, and at the following price, warranty, and delivery time:

<u>Item</u>	<u>Description</u>
1	Triple Combo Pumper Fire Truck as described in the Invitation to Bid and Specifications
	Total \$ _____
	Year, Make & Model # of Cab & Chassis _____

	Warranty _____

	Delivery Time _____

Signed: _____
(Corporation, Firm or Company)

By: _____
(Officer, Authorized Individual or Owner)

Title: _____

Mailing
Address: _____

Zip Code _____

Telephone: _____ Fax: _____

Email: _____

Note: Bids must bear the handwritten signature of a duly authorized member or employee of the organization making the bid.

Date: _____

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p style="text-align: center;"><u>SPECIFICATIONS FOR A TRIPLE COMBINATION PUMPER</u></p> <p>Sealed bids will be received by City of South Portland, ME for the furnishing of all necessary labor, equipment and material for the Fire Apparatus and other equipment as outlined in the following specifications.</p> <p><u>INTENT OF SPECIFICATIONS</u></p> <p>It shall be the intent of these specifications to cover the furnishing and delivery of a complete fire apparatus. These detailed specifications cover the requirements as to the type of construction, finish, equipment and tests to which the fire apparatus shall conform. Minor details of construction and materials, which are not otherwise specified, are left to the discretion of the contractor.</p> <p>Images and illustrative material in this specification are as accurate as known at the time of publication, but are subject to change without notice. Images and illustrative material is for reference only, and may include optional equipment and accessories and may not include all standard equipment.</p> <p><u>INSTRUCTIONS TO BIDDERS</u></p> <p>The purchaser's standards for bidding automotive fire apparatus must be strictly adhered to, and all bid forms and questions must be complete and submitted with the bid. Omissions and variations shall result in immediate rejection of the bid.</p> <p>Bids shall only be considered from companies that have an established reputation in the field of fire apparatus construction and have been in business for a minimum of 20 years. Furthermore, in order to insure fair, ethical, and legal competition, neither the original equipment manufacturer (O.E.M.) nor parent company of the O.E.M. shall have ever been fined or convicted of price fixing, bid rigging, or collusion in any domestic or international fire apparatus market (no exception).</p> <p>If a bidder represents more than one fire apparatus company or brands of apparatus, they must only bid the top of the line that meets specification.</p> <p>Each bidder shall furnish satisfactory evidence of their ability to construct the apparatus specified.</p> <p>Any apparatus manufacturer or their parent company who has had a performance bond called in the last 10 years, shall not be eligible to bid. Any bids from these manufactures shall be immediately rejected (no exception).</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>Each bid shall be accompanied by a set of manufacturer's set of specifications consisting of a detailed description of the apparatus, construction methods, and equipment proposed to which the apparatus furnished under contract shall conform. These specifications shall indicate size, type, model and make of all components parts and equipment, providing proof of compliance with each and every item in the departments advertised specifications. A letter only, even though written on company letterhead, shall not be sufficient. An exception to this requirement shall not be acceptable.</p> <p>In accordance with the current edition of NFPA 1901 standards, the proposal shall specify whether the fire department or apparatus dealership shall provide required loose equipment.</p> <p>The purchaser will utilize this advertised specification to compare all submitted bid proposals. To facilitate comparison, all bid proposal specifications shall be submitted in the same sequence as the advertised specification. Any bidder who fails to submit a set of bid proposal specifications, or who photo copies and submits these specifications as their own construction details will be considered non responsive. This shall render such proposal ineligible for award.</p> <p>The purchaser's specification shall, in all cases, govern the construction of the apparatus, unless a properly documented exception or deviation was approved. Any bid indicating that the manufacturer's proposal shall supersede the purchaser's specification will be considered a complete substitute and immediately rejected.</p> <p>THE PURCHASER HAS THE RIGHT TO REJECT ANY BIDS WHICH DOES NOT MEET THESE SPECIFICATIONS AND IS THE SOLE DECIDER TO DEEM WHICH BID IS IN THE BEST INTEREST OF THE PURCHASER.</p> <p><u>EXCEPTIONS</u></p> <p>These specifications are based upon design and performance criteria which have been developed by the fire department as a result of extensive research and careful analysis. Subsequently these specifications reflect the only type of fire apparatus that is acceptable at this time and all specifications herein contained are considered as minimum. Therefore exceptions to the specifications may not be accepted.</p> <p>Bidders shall indicate in the "yes/no" column if their bid complies on each item (paragraph) specified.</p> <p>If a product brand name is specified and is commercially available to all bidders, an exception to such items is not acceptable and such bid may be rejected.</p> <p>Exceptions shall be allowed if they are equal to or superior to that specified and provided they are listed and fully explained on a separate page. All deviations, no matter how slight, shall be clearly explained on a separate sheet, in the bid sequence, citing the page and paragraph</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>number(s) of the specifications, how the proposal deviation is different, how the deviation meets or exceeds the specifications and why it is necessary, and entitled "EXCEPTIONS TO SPECIFICATIONS". The buyer reserves the right to require a bidder to provide proof in each case that a substituted item is equal to that specified. The buyer shall be the sole judge in determination of acceptable substitutes.</p> <p>Proposals that are found to have deviations without listing them or bids taking total exceptions to these advertised specifications will be rejected (no exception).</p> <p>Bids not including all exceptions is a material breach and shall result in the bid being immediately rejected (no exception).</p> <p><u>GENERAL DESIGN AND CONSTRUCTION</u></p> <p>The cab, chassis, pump module, and body are to be entirely designed, assembled and painted by the prime vehicle manufacturer, which minimizes third party involvement on engineering, design, service and warranty issues.</p> <p>All bidders shall provide a list of the company, manufacturing location, and engineering source for each individual major component, including but not limited to the welded cab assembly, the pumphouse module assembly, the chassis assembly, body and electrical system. Apparatus using any subcontracted cab, chassis, pump module, electrical system or body will not be acceptable.</p> <p>The apparatus shall be designed with due consideration to distribution of load between the front and rear axles. Weight balance and distribution shall be in accordance with the recommendations of the National Fire Protection Association.</p> <p>The bidder shall make accurate statements as to the apparatus weight and dimensions.</p> <p><u>QUALITY AND WORKMANSHIP</u></p> <p>All steel welding shall follow American welding Society D1.1-2004 recommendations for structural steel welding. All aluminum welding shall follow American welding Society and ANSI D1.2-2003 requirements for structural welding of aluminum. All sheet metal welding shall follow American Welding Society B2.1-2000 requirements for structural welding of sheet metal. Flux core arc welding to use alloy rods, type 7000, American welding Society standards A5.20-E70T1. Employees classified as welders are tested and certified to meet the American Welding Society codes upon hire and every three (3) years thereafter. The manufacturer shall be required to have an American welding Society certified welding inspector in plant during working hours to monitor weld quality.</p> <p>The manufacturer shall also be certified to operate a Quality Management System under the requirements of ISO 9001. These standards sponsored by the International organization for</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>Standardization (ISO) specify the quality systems that shall be established by the manufacturer for design, manufacture, installation and service. A copy of the certificate of compliance shall be included with the bid.</p> <p>To demonstrate the quality of the product and service, each bidder shall provide a list of at least ten (10) fire departments/municipalities in the region that have bought a second time from the representing dealer. An exception to this requirement shall not be acceptable.</p> <p><u>DELIVERY</u></p> <p>Apparatus, to insure proper break in of all components while still under warranty, shall be delivered under its own power - rail or truck freight shall not be acceptable. A qualified delivery representative shall deliver the apparatus and remain for a sufficient length of time to instruct personnel in proper operation, care and maintenance of the equipment delivered.</p> <p><u>MANUALS AND SERVICE INFORMATION</u></p> <p>The manufacturer shall supply at time of delivery, complete operation and maintenance manuals covering the complete apparatus as delivered. A permanent plate shall be mounted in the drivers compartment which specifies the quantity and type of fluid required including engine oil, engine coolant, transmission, pump transmission lubrication, pump primer and drive axle.</p> <p><u>SAFETY VIDEO</u></p> <p>Since video is much more effective than written documentation and can be replayed for new personnel and as a refresher for existing personnel, an apparatus safety video, in DVD format shall be provided at time of delivery. This video shall address key safety considerations for personnel to follow when they are driving, operating, and maintaining the apparatus. Safety procedures for the following shall be included on the video: vehicle pre trip inspection, chassis operation, pump operation and maintenance.</p> <p><u>PERFORMANCE TESTS AND REQUIREMENTS</u></p> <p>A road test shall be conducted with the apparatus fully loaded and a continuous run of ten (10) miles or more shall be made under all driving conditions, during which time the apparatus shall show no loss of power or overheating. The transmission drive shaft or shafts, and rear axle shall run quietly and be free from abnormal vibration or noise throughout the operating range of the apparatus. Vehicle shall adhere to the following parameters:</p> <p>A) The apparatus, when fully equipped and loaded, shall have not less than 25 percent nor more than 50 percent of the weight on the front axle, and not less than 50 percent nor more than 75 percent on the rear axle.</p> <p>B) The apparatus shall be capable of accelerating to 35 mph from a standing start within 25 seconds on a level concrete highway without exceeding the maximum governed rpm of the engine.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>C) The service brakes shall be capable of stopping a fully loaded vehicle in 35 feet at 20 mph on a level concrete highway. The air brake system shall conform to Federal Motor vehicle Safety Standards (FMVSS) 121.</p> <p>D) The apparatus, fully loaded, shall be capable of obtaining a speed of 50 mph on a level concrete highway with the engine not exceeding the governed rpm (full load).</p> <p><u>FAILURE TO MEET TEST</u></p> <p>In the event the apparatus fails to meet the test requirements of these specifications on the first trial, second trials may be made at the option of the bidder within 30 days of the date of the first trial. Such trials shall be final and conclusive and failure to comply with these requirements shall be cause for rejection. failure to comply with changes to conform to any clause of the specifications, within 30 days after notice is given to the bidder of such changes, shall also be cause for rejection of the apparatus. Permission to keep or store the apparatus in any building owned or occupied by the purchaser or its use by the purchaser during the above-specified period with the permission of the bidder shall not constitute acceptance.</p> <p><u>SERVICE AND WARRANTY SUPPORT (DEALERSHIP)</u></p> <p>TO INSURE FULL SERVICE AFTER DELIVERY, THE SELLING BIDDER/DEALERSHIP MUST BE CAPABLE OF PROVIDING SERVICE WHEN REQUIRED.</p> <p>The bidder/dealership shall show that the company is in position to render prompt service and to furnish replacement parts.</p> <p>Each bidder/dealership must be able to display that they are actively in the fire apparatus service business by operating a factory authorized service center and parts repository capable of satisfying the warranty service requirements and parts requirements of the vehicle(s) being purchased.</p> <p>The bidder/dealership must state the location of this authorized service center. This service center must have a staff of factory-trained mechanics, well versed in all aspects of service for all major components of the apparatus. The service center must be within one hundred fifty (150) miles of the Fire Department.</p> <p><u>SERVICE AND WARRANTY SUPPORT (MANUFACTURER)</u></p> <p>To provide an additional layer of service support, the successful manufacturer must also own a least two separate service facilities, one located in the northern portion of the US to service both Canada and the northern US states and one in the south to service the southern states.</p> <p>The manufacturer shall stock 1 million parts equating to \$5,000,000 of inventory dedicated to service and replacement parts to ensure quick response and minimize down time. Furthermore, the manufacturer shall house the inventory in a dedicated facility, with a dedicated shipping area</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>that ensures service parts are given priority. The bidder shall provide detailed documentation of service and replacement part resources.</p> <p>Parts identification shall be provided to both the dealer and the Fire Department through an on line web based application for the specific truck reflected in this specification. Access will be granted using the specific VIN number of the vehicle. The online web application will provide the ability to view complete bills of materials, digital photographs, parts drawings, assembly drawings, and access to all current operation, maintenance and service publications.</p> <p>The manufacturer must also maintain a 24 hour/ 7 day a week, toll free emergency hot line.</p> <p>The manufacturer shall employ a staff of adequate size (a minimum of 30 personnel) specifically dedicated to providing customer support and parts for the fielded fleet of vehicles it has produced.</p> <p>The manufacturer must be capable of providing both in-house and on-site service for the apparatus.</p> <p>The manufacturer shall offer regional factory hands-on repair and maintenance training classes.</p> <p>The manufacturer shall employ a minimum of four certified EVT technicians on staff, not only providing technical expertise in the repair of fire apparatus, but also demonstrating the commitment to service after the sale.</p> <p><u>LIABILITY</u></p> <p>The successful bidder shall defend any and all suits and assume all liability for the use of any patented process including any device or article forming a part of the apparatus or any appliance furnished under the contract. To ensure this will occur, the bidder shall carry the following minimum insurance.</p> <p><u>COMMERCIAL GENERAL LIABILITY INSURANCE</u></p> <p>The successful bidder shall, during the performance of the contract and for three (3) years following acceptance of the product, keep in force at least the following minimum limits of commercial general liability insurance:</p> <p style="padding-left: 40px;">Each Occurrence\$1,000,000</p> <p style="padding-left: 40px;">Products/Completed Operations Aggregate\$1,000,000</p> <p style="padding-left: 40px;">Personal and Advertising Injury\$1,000,000</p> <p style="padding-left: 40px;">General Aggregate\$5,000,000</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>Coverage shall be written on a Commercial General Liability form. The policy shall be written on an occurrence form and shall include Contractual Liability coverage for bodily injury and property damage subject to the terms and conditions of the policy. The policy shall include Owner as an additional insured when required by written contract.</p> <p><u>COMMERCIAL AUTOMOBILE LIABILITY INSURANCE</u></p> <p>The successful bidder shall, during the performance of the contract keep in force at least the following minimum limits of commercial automobile liability insurance:</p> <p style="padding-left: 40px;">Each Accident Combined Single Limit:\$1,000,000</p> <p>Coverage shall be written on a Commercial Automobile liability form.</p> <p><u>UMBRELLA/EXCESS LIABILITY INSURANCE</u></p> <p>The successful bidder shall, during the performance of the contract and for three (3) years following acceptance of the product, keep in force at least the following minimum limits of umbrella liability insurance:</p> <p style="padding-left: 40px;">Aggregate:\$25,000,000</p> <p style="padding-left: 40px;">Each Occurrence: \$25,000,000</p> <p>The umbrella policy shall be written on an occurrence basis and at a minimum provide excess to the Bidder's General Liability, Automobile Liability and Employer's Liability policies.</p> <p>The required limits can be provided by one (1) or more policies provided all other insurance requirements are met.</p> <p>Coverage shall be provided by a carrier(s) rated A- or better by A.M. Bests.</p> <p>All policies shall provide a 30 day notice of cancellation to the named insured. The Certificate of Insurance shall provide the following cancellation clause: Should any of the above described policies be cancelled before the expiration date thereof, notice shall be delivered in accordance with the policy provisions. Bidder agrees to furnish owner with a current Certificate of Insurance with the coverages listed above along with its bid. The certificate shall show the purchaser as certificate holder.</p> <p><u>SINGLE SOURCE MANUFACTURER</u></p> <p>Bids shall only be accepted from a single source apparatus manufacturer. The definition of single source is a manufacturer that designs and manufactures their products using an integrated approach, including the chassis, cab weldment, cab, pumphouse (including the sheet metal enclosure, valve controls, piping and operators panel) and body being designed, fabricated and assembled on the bidder's premises. The electrical system (hardwire or multiplex) shall be both</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>designed and integrated by the same apparatus manufacturer. The warranties relative to these major components (excluding component warranties such as engine, transmission, axles, pump, etc.) must be from a single source manufacturer and not split between manufacturers (i.e. body, pumphouse, cab weldment and chassis). The bidder shall provide evidence that they comply with this requirement.</p> <p>The bidder shall state the location of the factory where the apparatus is to be built.</p> <p><u>NFPA 2016 STANDARDS</u></p> <p>This unit shall comply with the NFPA standards effective January 1, 2016, except for fire department specifications that differ from NFPA specifications. These exceptions shall be set forth in the Statement of Exceptions.</p> <p>Certification of slip resistance of all stepping, standing and walking surfaces shall be supplied with delivery of the apparatus.</p> <p>All horizontal surfaces designated as a standing or walking surface that are greater than 48.00" above the ground must be defined by a 1.00" wide line along its outside perimeter. Perimeter markings and designated access paths to destination points shall be identified on the customer approval print and are shown as approximate. Actual location(s) shall be determined based on materials used and actual conditions at final build. Access paths may pass through hose storage areas and opening or removal of covers or restraints may be required. Access paths may require the operation of devices and equipment such as the aerial device or ladder rack.</p> <p>A plate that is highly visible to the driver while seated shall be provided. This plate shall show the overall height, length, and gross vehicle weight rating.</p> <p>The manufacturer shall have programs in place for training, proficiency testing and performance for any staff involved with certifications.</p> <p>An official of the company shall designate, in writing, who is qualified to witness and certify test results.</p> <p><u>NFPA COMPLIANCY</u></p> <p>Apparatus proposed by the bidder shall meet the applicable requirements of the National Fire Protection Association (NFPA) as stated in current edition at time of contract execution. Fire department's specifications that differ from NFPA specifications shall be indicated in the proposal as "non-NFPA".</p> <p><u>VEHICLE INSPECTION PROGRAM CERTIFICATION</u></p> <p>To assure the vehicle is built to current NFPA standards, the apparatus, in its entirety, shall be third-party, independent, audit-certified through Underwriters Laboratory (UL) that it is built and</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>complies to all applicable standards in the current edition of NFPA 1901. The certification includes: all design, production, operational, and performance testing of not only the apparatus, but those components that are installed on the apparatus (no exception).</p> <p>A placard shall be affixed in the driver's side area stating the third party agency, the date, the standard and the certificate number of the whole vehicle audit.</p> <p><u>PUMP TEST</u></p> <p>The pump shall be tested, approved, and certified by Underwriter's Laboratory at the manufacturer's expense. The test results and the pump manufacturer's certification of hydrostatic test; the engine manufacturer's certified brake horsepower curve; and the manufacturer's record of pump construction details shall be forwarded to the Fire Department.</p> <p><u>INSPECTION TRIP(S)</u></p> <p>The bidder shall provide two (2) factory inspection trip(s) for Two (2) South Portland Fire Department customer representative(s). The inspection trip(s) shall be scheduled at times mutually agreed upon between the manufacturer's representative and the customer. All costs such as travel, lodging and meals shall be the responsibility of the bidder.</p> <p><u>TRAINING</u></p> <p>A qualified training engineer shall be provided by the bidder. The training engineer shall instruct the South Portland Fire Department personnel in the operation and maintenance of the chassis, pump, and foam operation for a period of not less than four (4) days.</p> <p><u>CONTRACT</u></p> <p>The contract for the specified apparatus shall be directly with the City of South Portland, Maine and the manufacturer. <u>Contracts with dealers or representatives of the manufacturer will not be executed.</u></p> <p><u>NEW AND UNUSED</u></p> <p>All components shall be new and unused (with the exception of use incidental to the construction, testing, transport and delivery of the apparatus). Any old or used components shall constitute grounds for automatic rejection of the entire apparatus.</p> <p>Bidders must identify by manufacturer and model number purchased components utilized in the apparatus proposed in the bid submission. In order to make valid comparisons between bids, components must be accurately identified. Therefore any bid or technical proposal which does not so identify the components being offered will not be considered.</p> <p>Any potential to utilize progress payment discounts must be defined clearly in the (“bidder’s) proposal.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p><u>CONSTRUCTION REVIEW AND WEEKLY PROGRESS REPORTS</u></p> <p>The successful bidder shall also provide weekly photographic progress reports and inspection services, provided by an independent third party.</p> <ol style="list-style-type: none"> 1) Comprehensive review of the bid documents with the factory order to ensure accuracy. 2) Weekly progress reports including photographs of the apparatus or the major components as they are being constructed. The reports shall commence at the beginning of the manufacturing process and shall continue until just prior to the final inspection. The reports shall show the progress of the apparatus through the course of each week. Special attention shall be given to show the unique features and aspects of the apparatus as construction progresses. 3) In addition, after the final inspection has been completed by the customer or third party, the third party inspector shall review all items noted in the inspection for completion prior to the apparatus leaving the manufacturing facility for delivery to the local service area for pre-delivery service. <p><u>BID BOND</u></p> <p>All bidders shall provide a bid bond as security for the bid in the form of a 10% bid bond to accompany their bid. This bid bond shall be issued by a Surety Company who is listed on the U.S. Treasury Departments list of acceptable sureties as published in Department Circular 570. The bid bond shall be issued by an authorized representative of the Surety Company and shall be accompanied by a certified power of attorney dated on or before the date of bid. The bid bond shall include language, which assures that the bidder/principal shall give a bond or bonds as may be specified in the bidding or contract documents, with good and sufficient surety for the faithful performance of the contract, including the Basic One (1) Year Limited Warranty, and for the prompt payment of labor and material furnished in the prosecution of the contract.</p> <p>Proposals received from bidders who do not manufacture the chassis shall provide a warranty that shall be issued jointly and severally by, and signed by, both the bidder and the chassis manufacturer.</p> <p>If the successful bidder does not manufacture the chassis, the bidder shall supply a warranty bond, in addition to their performance bond, along with their signed contract. This warranty bond shall guarantee all terms and conditions of the Basic One (1) Year Limited Warranty and names both the bidder and chassis manufacturer as co-principals. This warranty bond shall be issued for the contract amount and shall remain in force for a term which is consistent with the term of the Basic One (1) Year Limited Warranty.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>Notwithstanding any document or assertion to the contrary, any surety bond related to the sale of a vehicle shall apply only to the Basic One (1) Year Limited Warranty for such vehicle. Any surety bond related to the sale of a vehicle shall not apply to any other warranties that are included within this bid (OEM or otherwise) or to the warranties (if any) of any third party of any part, component, attachment or accessory that is incorporated into or attached to the vehicle. In the event of any contradiction or inconsistency between this provision and any other document or assertion, this provision shall prevail.</p> <p><u>PERFORMANCE BOND, 1 YEAR</u></p> <p>The successful bidder shall furnish a Performance and Payment bond (Bond) equal to 100 percent of the total contract amount within 30 days of the notice of award. Such Bond shall be in a form acceptable to the Owner and issued by a surety company included within the Department of Treasury's Listing of Approved Sureties (Department Circular 570) with a minimum A.M. Best Financial Strength Rating of A and Size Category of XV. In the event of a bond issued by a surety of a lesser Size Category, a minimum Financial Strength rating of A+ is required.</p> <p>Bidder and Bidder's surety agree that the Bond issued hereunder, whether expressly stated or not, also includes the surety's guarantee of the vehicle manufacturer's Basic One (1) Year Limited Warranty period included within this proposal. Owner agrees that the penal amount of this bond shall be simultaneously amended to 100% percent of the total contract amount upon satisfactory acceptance and delivery of the vehicle(s) included herein. Notwithstanding anything contained within this contract to the contrary, the surety's liability for any warranties of any type shall not exceed one (1) year from the date of such satisfactory acceptance and delivery, or the actual Basic One (1) Year Limited Warranty period, whichever is shorter.</p> <p><u>APPROVAL DRAWING</u></p> <p>A drawing of the proposed apparatus shall be provided for approval before construction begins. The sales representative shall also have a copy of the same drawing. The finalized and approved drawing shall become part of the contract documents. This drawing shall indicate the chassis make and model, location of the lights, siren, horns, compartments, major components, etc.</p> <p>A "revised" approval drawing of the apparatus shall be prepared and submitted by the manufacturer to the purchaser showing any changes made to the approval drawing.</p> <p><u>WARRANTIES</u></p> <p>The warranty on the apparatus shall begin upon transfer of title, certification of origin to the City of South Portland.</p> <p><u>ELECTRICAL WIRING DIAGRAMS</u></p> <p>Two (2) electrical wiring diagrams, prepared for the model of chassis and body, shall be provided.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p><u>CHASSIS</u> Chassis provided shall be a new, tilt-type custom fire apparatus. The chassis shall be manufactured in the apparatus body builder's facility eliminating any split responsibility. The chassis shall be designed and manufactured for heavy-duty service, with adequate strength, capacity for the intended load to be sustained, and the type of service required. The chassis shall be the manufacturer's heavy-duty line tilt cab.</p> <p><u>WHEELBASE</u> The wheelbase of the vehicle shall be no greater than 188.50.</p> <p><u>GVW RATING</u> The gross vehicle weight rating shall be a minimum of 49,800.</p> <p><u>FRAME</u> The chassis frame shall be built with two (2) steel channels bolted to five (5) cross members or more, depending on other options of the apparatus.</p> <p>The side rails shall have a 13.38" tall web over the front and mid sections of the chassis, with a continuous smooth taper to 10.75" over the rear axle.</p> <p>Each rail shall have a section modulus of 25.992 cubic inches and a resisting bending moment (rbm) of 3,119,040 in-lb over the critical regions of the frame assembly, with a section modulus of 18.96 cubic inches with an rbm of 2,275,200 in-lb over the rear axle.</p> <p>The frame rails shall be constructed of 120,000 psi yield strength heat-treated 0.38" thick steel with 3.50" wide flanges.</p> <p><u>FRAME REINFORCEMENT</u> In addition, a mainframe inverted "L" liner shall be provided. It shall be heat-treated steel measuring 12.00" x 3.00" x 0.25". Each liner shall have a section modulus of 7.795 cubic inches, yield strength of 110,000 psi, and rbm of 857,462 in-lb. Total rbm at wheelbase center shall be 3,976,502 lb in-lb.</p> <p>The frame liner shall be mounted inside of the chassis frame rail, beginning at the front edge of the mainframe rail and extending to the rear cab cross member.</p> <p><u>FRONT NON DRIVE AXLE</u> The front axle shall be of the independent suspension design with a ground rating of 22,800 lb.</p> <p>Upper and lower control arms shall be used on each side of the axle. Upper control arm castings shall be made of 100,000 psi yield strength 8630 steel and the lower control arm casting shall be made of 55,000 psi yield ductile iron.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>The center cross members and side plates shall be constructed out of 80,000 psi yield strength steel.</p> <p>Each control arm shall be mounted to the center section using elastomer bushings. These rubber bushings shall rotate on low friction plain bearings and be lubricated for life. Each bushing shall also have a flange end to absorb longitudinal impact loads, reducing noise and vibrations.</p> <p>There shall be nine (9) grease fittings supplied, one (1) on each control arm pivot and one (1) on the steering gear extension.</p> <p>The upper control arm shall be shorter than the lower arm so that wheel end geometry provides positive camber when deflected below rated load and negative camber above rated load.</p> <p>Camber at load shall be 0 degrees for optimum tire life.</p> <p>The ball joint bearing shall be of low friction design and be maintenance free.</p> <p>Toe links that are adjustable for alignment of the wheel to the center of the chassis shall be provided.</p> <p>The wheel ends must have little to no bump steer when the chassis encounters a hole or obstacle.</p> <p>The steering linkage shall provide proper steering angles for the inside and outside wheel, based on the vehicle wheelbase.</p> <p>The axle shall have a third party certified turning angle of 45 degrees. Front discharge, front suction, or aluminum wheels shall not infringe on this cramp angle.</p> <p><u>FRONT SUSPENSION</u></p> <p>Front independent suspension shall be provided with a minimum ground rating of 22,800 lb.</p> <p>The independent suspension system shall be designed to provide maximum ride comfort. The design shall allow the vehicle to travel at highway speeds over improved road surfaces and at moderate speeds over rough terrain with minimal transfer of road shock and vibration to the vehicle's crew compartment.</p> <p>Each wheel shall have torsion bar type spring. In addition, each front wheel end shall also have energy absorbing jounce bumpers to prevent bottoming of the suspension.</p> <p>The suspension design shall be such that there is at least 10.00" of total wheel travel and a minimum of 3.75" before suspension bottoms.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>The torsion bar anchor lock system allows for simple lean adjustments, without the use of shims. One can adjust for a lean within 15 minutes per side. Anchor adjustment design is such that it allows for ride height adjustment on each side.</p> <p>The independent suspension shall be put through a durability test that has simulated a minimum of 140,000 miles of inner city driving.</p> <p><u>FRONT SHOCK ABSORBERS</u> KONI heavy-duty telescoping shock absorbers shall be provided on the front suspension.</p> <p><u>FRONT OIL SEALS</u> Oil seals with viewing window shall be provided on the front axle.</p> <p><u>FRONT TIRES</u> Front tires shall be Goodyear® 425/65R22.50 radials, 20 ply G296 MSA tread, rated for 22,800 lb maximum axle load and 68 mph maximum speed.</p> <p>The tires shall be mounted on 22.50" x 12.25" steel disc type wheels with a ten (10)-stud, 11.25" bolt circle.</p> <p><u>REAR AXLE</u> The rear axle shall be a Meritor™, Model RS-26-185, with a capacity of 27,000 lb.</p> <p><u>TOP SPEED OF VEHICLE</u> A rear axle ratio shall be furnished to allow the vehicle to reach a top speed of 68 mph.</p> <p><u>REAR SUSPENSION</u> The rear springs shall be Standens semi-elliptical, 3.00" x 52.00", 12 leaves main with a ground rating of 27,000 lb. Spring hangers shall be castings with provisions for lubrication. The grease fittings shall be 90 degree type and shall be accessible without removing the wheels or cutting any sheet metal. Two (2) top leaves shall wrap the forward spring hanger pin and the top leaf shall wrap the rear spring hanger pin on both the front and rear suspensions.</p> <p>Kaiser spring pins shall be provided, with double figure-eight grease grooves and a layer of electroless nickel plating, 1.0 mil thick, around the entire pin. The bushing that holds the spring pin in place shall also have a grease groove.</p> <p><u>REAR OIL SEALS</u> Oil seals shall be provided on the rear axle(s).</p> <p><u>REAR TIRES</u> Rear tires shall be four (4) Goodyear® 12R22.50 radials, 16 ply all season G622 RSD tread, rated for 27,120 lb maximum axle load and 75 mph maximum speed.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>The tires shall be mounted on 22.50" x 8.25" steel disc type wheels with a ten (10)-stud, 11.25" bolt circle.</p> <p><u>TIRE BALANCE</u></p> <p>All tires shall be balanced with Counteract balancing beads. The beads shall be inserted into the tire and eliminate the need for wheel weights.</p> <p><u>TIRE PRESSURE MANAGEMENT</u></p> <p>There shall be a RealWheels LED AirSecure™ tire alert pressure management system provided, that shall monitor each tire's pressure. A sensor shall be provided on the valve stem of each tire for a total of six (6) tires.</p> <p>The sensor shall calibrate to the tire pressure when installed on the valve stem for pressures between 10 and 200 psi. The sensor shall activate an integral battery operated LED when the pressure of that tire drops 5 to 8 psi.</p> <p>Removing the cap from the sensor shall indicate the functionality of the sensor and battery. If the sensor and battery are in working condition, the LED shall immediately start to flash.</p> <p><u>FRONT HUB COVERS</u></p> <p>Stainless steel hub covers shall be provided on the front axle. An oil level viewing window shall be provided.</p> <p><u>REAR HUB COVERS</u></p> <p>A pair of stainless steel high hat hub covers shall be provided on rear axle hubs.</p> <p><u>CHROME LUG NUT COVERS</u></p> <p>Chrome lug nut covers shall be supplied on front and rear wheels.</p> <p><u>MUD FLAPS</u></p> <p>Mud flaps shall be installed behind the front and rear wheels of the apparatus.</p> <p><u>MUD FLAPS</u></p> <p>Mud flaps shall be installed ahead of the rear wheels on the apparatus.</p> <p><u>WHEEL CHOCKS</u></p> <p>There shall be one (1) pair of folding Ziamatic, Model SAC-44-E, aluminum alloy, Quick-Choc wheel blocks with easy-grip handle provided.</p> <p><u>WHEEL CHOCK BRACKETS</u></p> <p>There shall be one (1) pair of Zico, Model SQCH-44-H, horizontal mounting wheel chock brackets provided for the Ziamatic, Model SAC-44-E, folding wheel chocks. The brackets shall be made of aluminum and consist of a quick release spring loaded rod to hold the wheel chocks</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>in place. The brackets shall be mounted one (1) forward and one (1) rearward of the left side rear tire.</p> <p><u>ANTI-LOCK BRAKE SYSTEM</u></p> <p>The vehicle shall be equipped with a Meritor WABCO 4S4M, anti-lock braking system. The ABS shall provide a 4-channel anti-lock braking control on both the front and rear wheels. A digitally controlled system that utilizes microprocessor technology shall control the anti-lock braking system. Each wheel shall be monitored by the system. When any particular wheel begins to lockup, a signal shall be sent to the control unit. This control unit shall then reduce the braking of that wheel for a fraction of a second and then reapply the brake. This anti-lock brake system shall eliminate the lockup of any wheel thus helping to prevent the apparatus from skidding out of control.</p> <p><u>BRAKES</u></p> <p>The service brake system shall be full air type.</p> <p>The front brakes shall be Knorr/Bendix disc type with a 17.00" ventilated rotor for improved stopping distance.</p> <p>The brake system shall be certified, third party inspected, for improved stopping distance.</p> <p>The rear brakes shall be Meritor™ 16.50" x 7.00" cam operated with automatic slack adjusters. Dust shields shall be provided.</p> <p><u>BRAKE SYSTEM AIR COMPRESSOR</u></p> <p>The air compressor shall be a Cummins/WABCO with 18.7 cubic feet per minute output.</p> <p><u>BRAKE SYSTEM</u></p> <p>The brake system shall include:</p> <ul style="list-style-type: none"> • Bendix® dual brake treadle valve with vinyl covered foot surface • Heated automatic moisture ejector on air dryer • Total air system capacity of 4,362 cubic inches • Two (2) air pressure gauges with a red warning light and an audible alarm, that activates when air pressure falls below 60 psi • Spring set parking brake system • Parking brake operated by a push-pull style control valve • A parking "brake on" indicator light on instrument panel • Park brake relay/inversion and anti-compounding valve, in conjunction with a double check valve system, with an automatic spring brake application at 40 psi 		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> • A pressure protection valve to prevent all air operated accessories from drawing air from the air system when the system pressure drops below 80 psi (550 kPa) <p>The air tank shall be primed and painted to meet a minimum 750 hour salt spray test.</p> <p>To reduce the effects of corrosion, the air tank shall be mounted with stainless steel brackets (no exception).</p> <p><u>BRAKE SYSTEM AIR DRYER</u></p> <p>The air dryer shall be WABCO System Saver 1200 with spin-on coalescing filter cartridge and 100 watt heater.</p> <p><u>BRAKE LINES</u></p> <p>Color-coded nylon brake lines shall be provided. The lines shall be wrapped in a heat protective loom where necessary in the chassis.</p> <p><u>AIR INLET</u></p> <p>One (1) air inlet with type "H" male coupling shall be provided. It shall allow station air to be supplied to the apparatus brake system through a shoreline hose. The inlet shall be located in the driver side lower step well of cab. A check valve shall be provided to prevent reverse flow of air. The inlet shall discharge into the "wet" tank of the brake system. A mating female fitting shall also be provided with the loose equipment.</p> <p><u>AIR OUTLET</u></p> <p>One (1) air outlet shall be installed with a female coupling and shut off valve, located on the driver side pump panel. This system shall tie into the "wet" tank of the brake system and include an 85-psi pressure protection valve in the outlet line to prevent the brake system from losing all air.</p> <p>Female coupling and male fitting shall be .25" thread.</p> <p>A mating male fitting shall be provided with the loose equipment.</p>		

South Portland Fire Department

		Bidder Complies	
		Yes	No
<u>ENGINE</u>			
The chassis shall be powered by an electronically controlled engine as described below:			
Make:	Cummins		
Model:	ISL9		
Power:	400 hp at 2100 rpm		
Torque:	1250 lb-ft at 1400 rpm		
Governed Speed:	2200 rpm		
Emissions Level:	EPA 2016		
Fuel:	Diesel		
Cylinders:	Six (6)		
Displacement:	543 cubic inches (8.9L)		
Starter:	Delco Remy 39MT™		
Fuel Filters:	Spin-on style primary filter with water separator and water-in-fuel sensor. Secondary spin-on style filter		
<p>The engine shall include On-board diagnostics (OBD), which provides self diagnostic and reporting. The system shall give the owner or repair technician access to state of health information for various vehicle sub systems. The system shall monitor vehicle systems, engine and after treatment. The system shall illuminate a malfunction indicator light on the dash console if a problem is detected.</p>			
<u>HIGH IDLE</u>			
<p>A high idle switch shall be provided, inside the cab, on the instrument panel, that shall automatically maintain a preset engine rpm. A switch shall be installed, at the cab instrument panel, for activation/deactivation.</p>			
<p>The high idle shall be operational only when the parking brake is on and the truck transmission is in neutral. A green indicator light shall be provided, adjacent to the switch. The light shall illuminate when the above conditions are met. The light shall be labeled "OK to Engage High Idle."</p>			
<u>ENGINE BRAKE</u>			
<p>A Jacobs® engine brake is to be installed with the controls located on the instrument panel within easy reach of the driver.</p>			
<p>The driver shall be able to turn the engine brake system on/off and have a high, medium and low setting.</p>			

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>The engine brake shall activate when the system is on and the throttle is released.</p> <p>The high setting of the brake application shall activate and work simultaneously with the variable geometry turbo (VGT) provided on the engine.</p> <p>The engine brake shall be installed in such a manner that when the engine brake is slowing the vehicle the brake lights are activated.</p> <p>The ABS system shall automatically disengage the auxiliary braking device, when required.</p> <p><u>CLUTCH FAN</u> A Horton® fan clutch shall be provided. The fan clutch shall be automatic when the pump transmission is in "Road" position, and fully engaged in "Pump" position.</p> <p><u>FUEL SEPARATOR</u> The engine shall be equipped with a Racor in-line spin-on fuel and water separator in addition to the engine fuel filters.</p> <p>An in-bowl heater for cold weather starting shall be provided. The heater shall have an internal thermostat.</p> <p><u>ENGINE AIR INTAKE</u> The air intake with an ember separator shall be mounted high on the passenger side of the cab, to the front of the crew cab door. The ember separator is designed to prevent road dirt and recirculating hot air from entering the engine.</p> <p>The ember separator shall be easily accessible through a hinged stainless steel grille, with one (1) flush quarter turn latch.</p> <p><u>EXHAUST SYSTEM</u> The exhaust system shall be stainless steel from the turbo to the inlet of the selective catalytic reduction (SCR) device, and shall be 4.00" in diameter. The exhaust system shall include a diesel particulate filter (DPF) and an SCR device to meet current EPA standards. An insulation wrap shall be provided on all exhaust pipes between the turbo and DPF to minimize the transfer of heat to the cab. The exhaust shall terminate horizontally ahead of the right side rear wheels. A tailpipe diffuser shall be provided to reduce the temperature of the exhaust as it exits. Heat deflector shields shall be provided to isolate chassis and body components from the heat of the tailpipe diffuser.</p> <p><u>EXHAUST MODIFICATION</u> The exhaust pipe shall be brought out from under the body at a 90 degree angle from the truck. An adapter shall be provided on the tail pipe, allowing use of an MagneGrip magnetic mount exhaust hose. The diameter of the pipe shall be 6.00". There shall be a clearance of 4.00"</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>completely around the pipe once past the side of the body. A stop shall be provided on the tail pipe that shall prevent the nozzle from sliding too far on.</p> <p><u>RADIATOR</u></p> <p>The radiator and the complete cooling system shall meet or exceed NFPA and engine manufacturer cooling system standards.</p> <p>For maximum cooling performance, the radiator core shall be made of copper fins having a serpentine design, soldered to brass tubes. The tubes shall be welded to brass headers using the patented Beta-Weld process for increased strength, longer road life and solder-bloom corrosion protection. The radiator core shall have a minimum frontal area of 1,396 square inches. Steel supply and return tanks shall be bolted to the core headers and steel side channels to complete the radiator assembly. The radiator shall be compatible with commercial antifreeze solutions.</p> <p>The radiator shall be mounted in such a manner as to prevent the development of leaks caused by twisting or straining when the apparatus operates over uneven ground. The radiator assembly shall be isolated from the chassis frame rails with rubber isolators.</p> <p>The radiator shall include an integral de-aeration tank, with a remote-mounted overflow tank. For visual coolant level inspection, the radiator shall have a built-in sight glass. The radiator shall be equipped with a 15 psi pressure relief cap.</p> <p>A drain port shall be located at the lowest point of the cooling system and/or the bottom of the radiator to permit complete flushing of the coolant from the system.</p> <p>A heavy-duty fan shall draw in fresh, cool air through the radiator. Shields or baffles shall be provided to prevent recirculation of hot air to the inlet side of the radiator.</p> <p><u>COOLANT LINES</u></p> <p>Gates, or Goodyear, rubber hose shall be used for all engine coolant lines installed by the chassis manufacturer.</p> <p>Hose clamps shall be stainless steel constant torque type to prevent coolant leakage. They shall react to temperature changes in the cooling system and expand or contract accordingly while maintaining a constant clamping pressure on the hose.</p> <p><u>FUEL TANK</u></p> <p>A 65 gallon fuel tank shall be provided and mounted at rear of chassis. The tank shall be constructed of unpainted stainless steel. It shall be equipped with swash partitions and a vent. To reduce the effects of corrosion, the fuel tank shall be mounted with stainless steel straps. (no exception).</p> <p>A .75" drain plug shall be provided in a low point of the tank for drainage.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>A fill inlet shall be located on the left hand side of the body and be covered with a hinged, spring loaded, stainless steel door that is marked "Ultra Low Sulfur - Diesel Fuel Only".</p> <p>A .50" diameter vent shall be provided running from top of tank to just below fuel fill inlet.</p> <p>The tank shall meet all FHWA 393.67 requirements, including a fill capacity of 95 percent of tank volume.</p> <p>All fuel lines shall be provided as recommended by the engine manufacturer.</p> <p><u>DIESEL EXHAUST FLUID TANK</u></p> <p>A 4.5 gallon diesel exhaust fluid (DEF) tank shall be provided and mounted in the driver's side body forward of the rear axle.</p> <p>A 0.50" drain plug shall be provided in a low point of the tank for drainage.</p> <p>A fill inlet shall be located on the driver's side of the body and be covered with a hinged, spring loaded, polished stainless steel door that is marked "Diesel Exhaust Fluid Only".</p> <p>The tank shall meet the engine manufacturers requirement for 10 percent expansion space in the event of tank freezing.</p> <p>The tank shall include an integrated heater unit that utilizes engine coolant to thaw the DEF in the event of freezing.</p> <p><u>FUEL SHUTOFF</u></p> <p>A fuel line shutoff valve shall be installed on both the inlet and outlet of the primary fuel filter.</p> <p><u>FUEL COOLER</u></p> <p>An air to fuel cooler shall be installed in the engine fuel return line.</p> <p><u>FUEL DOOR LABEL</u></p> <p>There shall be a label provided on the inside of the stainless steel fuel door, to read "Ultra Low Sulfur Diesel Fuel Only".</p> <p><u>TRANSMISSION</u></p> <p>An Allison 5th generation, Model EVS 3000P, electronic torque converting automatic transmission shall be provided.</p> <p>The transmission shall be equipped with prognostics to monitor oil life, filter life, and transmission health. A wrench icon on the shift selector's digital display shall indicate when service is due.</p>		

South Portland Fire Department

		Bidder Complies													
		Yes	No												
<p>Two (2) PTO openings shall be located on both sides of converter housing (positions 4 o'clock and 8 o'clock) as viewed from the rear.</p> <p>A transmission temperature gauge with red light and audible alarm shall be installed on the cab dash.</p> <p><u>TRANSMISSION SHIFTER</u></p> <p>A five (5)-speed push button shift module shall be mounted to right of driver on console. Shift position indicator shall be indirectly lit for after dark operation.</p> <p>The transmission ratio shall be:</p> <table border="1" style="margin-left: 20px; border-collapse: collapse;"> <tbody> <tr> <td style="padding: 2px;">1st</td> <td style="padding: 2px;">3.49 to 1.00</td> </tr> <tr> <td style="padding: 2px;">2nd</td> <td style="padding: 2px;">1.86 to 1.00</td> </tr> <tr> <td style="padding: 2px;">3rd</td> <td style="padding: 2px;">1.41 to 1.00</td> </tr> <tr> <td style="padding: 2px;">4th</td> <td style="padding: 2px;">1.00 to 1.00</td> </tr> <tr> <td style="padding: 2px;">5th</td> <td style="padding: 2px;">0.75 to 1.00</td> </tr> <tr> <td style="padding: 2px;">R</td> <td style="padding: 2px;">5.03 to 1.00</td> </tr> </tbody> </table> <p><u>TRANSMISSION COOLER</u></p> <p>A transmission oil cooler shall be provided that is integral to the radiator and located at the bottom of the radiator. The cooler shall use engine coolant to control the transmission oil temperature.</p> <p><u>DRIVELINE</u></p> <p>Drivelines shall be a heavy-duty metal tube and be equipped with Spicer® 1710 universal joints.</p> <p>The shafts shall be dynamically balanced before installation.</p> <p>A splined slip joint shall be provided in each driveshaft, slip joint shall be coated with Glidecoat® or equivalent.</p> <p><u>STEERING</u></p> <p>Dual Sheppard, Model M110, steering gears, with integral heavy-duty power steering, shall be provided. For reduced system temperatures, the power steering shall incorporate an air to oil cooler and an Eaton, Model VN20, hydraulic pump with integral pressure and flow control. All power steering lines shall have wire braded lines with crimped fittings.</p> <p>A tilt and telescopic steering column shall be provided to improve fit for a broader range of driver configurations.</p>		1st	3.49 to 1.00	2nd	1.86 to 1.00	3rd	1.41 to 1.00	4th	1.00 to 1.00	5th	0.75 to 1.00	R	5.03 to 1.00		
1st	3.49 to 1.00														
2nd	1.86 to 1.00														
3rd	1.41 to 1.00														
4th	1.00 to 1.00														
5th	0.75 to 1.00														
R	5.03 to 1.00														

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p><u>STEERING WHEEL</u> The steering wheel shall be 18.00" in diameter, have tilting and telescoping capabilities, and a 4-spoke design.</p> <p><u>AUTOMATIC CHASSIS LUBRICATION</u> A Vogel Automatic Lubrication System shall be provided. The lubrication shall be supplied while the vehicle ignition switch is active to allow a uniform application of grease to the locations listed. The electronic control unit that forms part of the system shall activate the pump after an adjustable interval time. The unit shall control and monitor pump operation and report any faults via an indicator light on the driver's dashboard of the cab.</p> <p>The lubrication system reservoir, which requires a 15.00" wide x 14.50" high x 6.25" deep mounting area, shall be located in the pumphouse towards the front on the right (Officer's) side on the apparatus.</p> <ul style="list-style-type: none"> - Independent suspension control Arm Pivot Points - Rear Axle Slack Adjusters - Rear Axle Brake Cam Screws - Rear Suspension Spring Pins - Rear Suspension Shackle Pins - Walking Beam Pins Tandem axle, if applicable <p><u>BUMPER</u> A one (1)-piece, ten (10) gauge, 304-2B type polished stainless steel bumper, a minimum of 10.00" high, shall be attached to a bolted modular extension frame constructed of 50,000 psi tensile steel C channel mounted directly behind it to provide adequate support strength.</p> <p>The bumper shall be extended 19.00" from front face of cab.</p> <p>Documentation shall be provided, upon request to show that the options selected have been engineered for fit-up and approval for this modular bumper extension. A chart shall be provided to indicate the option locations and shall include, but not be limited to the following options: air horns, mechanical sirens, speakers, hose trays (with hose capacities), winches, lights, discharge, and suction connections.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p><u>GRAVEL PAN</u> A gravel pan, constructed of bright aluminum treadplate, shall be furnished between the bumper and cab face. The gravel pan shall be properly supported from the underside to prevent flexing and vibration of the aluminum treadplate.</p> <p><u>CENTER HOSE TRAY</u> A hose tray, constructed of aluminum, shall be placed in the center of the bumper extension. The tray shall have a capacity of 125' of 1.75" double jacket cotton-polyester hose. Black rubber grating shall be provided at the bottom of the tray. Drain holes are also provided.</p> <p><u>CENTER HOSE TRAY COVER</u> A bright aluminum treadplate cover shall be provided over the center hose tray. The cover shall be attached with a stainless steel hinge. One (1) D-ring latch shall secure the cover in the closed position and a pneumatic stay arm on each side shall hold the cover in the open position.</p> <p><u>LIFT AND TOW MOUNTS</u> Mounted to the frame extension shall be lift and tow mounts. The lift and tow mounts shall be designed and positioned to adapt to certain tow truck lift systems. The lift and tow mounts with eyes shall be painted the same color as the frame.</p> <p><u>TOW HOOKS</u> No tow hooks are to be provided. This truck shall be equipped with a lift and tow package with integral tow eyes.</p> <p><u>CAB</u> The cab shall be designed specifically for the fire service and shall be manufactured by the chassis builder. The cab shall be built by the apparatus manufacturer in a facility located on the manufacturer's premises (no exception). For reasons of structural integrity and enhanced occupant protection, the cab shall be of heavy duty design, constructed to the following minimal standards. The cab shall have 12 main vertical structural members located in the A-pillar (front cab corner posts), B-pillar (side center posts), C-pillar (rear corner posts) and rear wall areas. The A-pillar shall be constructed of solid A356-T5 aluminum. The B-pillar and C-pillar shall be constructed from 0.25" heavy wall extrusions. The rear wall shall be constructed of two (2) 4.00" x 2.00"</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>outer aluminum extrusions and two (2) 3.00" x 2.00" inner aluminum extrusions. All main vertical structural members shall run from the floor to 6.50" x 4.875" x 0.1875" thick roof extrusions to provide a cage-like structure with the A-pillar and roof extrusions being welded into a 0.36" thick corner casting at each of the front corners of the roof assembly.</p> <p>The front of the cab shall be constructed of a 0.25" thick gusset plate, covered with a 0.090" front skin (for a total thickness of 0.34"), and reinforced with a 95.00" wide x 11.13" deep x 0.50" thick cross-cab support located just below the windshield. The cross-cab support shall run the full width of the cab and weld to each A-pillar, the 0.25" thick gusset plate and the front skin.</p> <p>The cab floors shall be constructed of 0.1875" thick aluminum plate and reinforced at the firewall with an additional 0.50" thick cross-floor support providing a total thickness of 0.6875" of structural material at the front floor area. The front floor area shall also be supported with one (1) 0.50" plate bolted to one (1) 0.78" plate that also provides the mounting point for the cab lift. This tubing shall run from the front of the cab to the 0.187" thick engine tunnel, creating the structure to support the forces created when lifting the cab.</p> <p>The cab shall be 94.75" wide (outside door skin to outside door skin) to maintain maximum maneuverability (no exception).</p> <p>The overall height (from the cab roof to the ground) shall be approximately 103.00". The overall height listed shall be calculated based on a truck configuration with the lowest suspension weight ratings, the smallest diameter tires for the suspension, no water weight, no loose equipment weight, and no personnel weight. Larger tires, wheels, and suspension shall increase the overall height listed.</p> <p>The floor to ceiling height inside the crew cab shall be 54.00" in the center and 59.25" in the outboard positions.</p> <p>The crew cab floor shall measure 40.12" from rear wall to the back side of engine tunnel.</p> <p>The engine tunnel, at the rearward highest point (knee level), shall measure 47.75" to the back wall.</p> <p>The crew cab shall be of the totally enclosed design with access doors constructed in the same manner as the driver and passenger doors.</p> <p>The cab shall be a full tilt cab style.</p> <p>A 3-point cab mount system with rubber isolators shall improve ride quality by isolating chassis vibrations from the cab.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p><u>INTERIOR CAB INSULATION</u> The cab shall include 1.50" insulation in the ceiling and side walls, and 2.00" insulation in the rear wall to maximize acoustic absorption and thermal insulation.</p> <p><u>FENDER LINERS</u> Full circular inner fender liners in the wheel wells shall be provided.</p> <p><u>WINDSHIELD</u> A curved safety glass windshield shall be provided with over 2,754 square inches of clear viewing area. The cab windshield shall have bright trim inserts in the rubber molding holding the glass in place. Economical windshield replacement glass shall be readily available from local auto glass suppliers.</p> <p>All cab glass shall be tinted.</p> <p><u>WINDSHIELD WIPERS</u> Two (2) electric windshield wipers with washer shall be provided that meet FMVSS and SAE requirements.</p> <p>The washer reservoir shall be able to be filled without raising the cab.</p> <p><u>ENGINE TUNNEL</u> Engine hood side walls shall be constructed of 0.50" aluminum. The top shall be constructed of 0.19" aluminum and shall be tapered at the top to allow for more driver and passenger elbow room.</p> <p>The engine hood shall be insulated for protection from heat and sound. The noise insulation keeps the dBA level within the limits stated in the current NFPA 1901 standards.</p> <p><u>CAB REAR WALL EXTERIOR COVERING</u> The exterior surface of the rear wall of the cab shall be overlaid with bright aluminum treadplate except for areas that are not typically visible when the cab is lowered.</p> <p><u>CAB LIFT</u> A hydraulic cab lift system shall be provided consisting of an electric powered hydraulic pump, dual lift cylinders, and necessary hoses and valves.</p> <p>The hydraulic pump shall have a manual override for backup in the event of electrical failure.</p> <p>Lift controls shall be on a panel located on the pump panel or front area of the body in a convenient location.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>The engine shall be easily accessible and capable of being removed with the cab tilted. The cab shall be capable of tilting 45 degrees and 90 degrees with crane assist.</p> <p>Cab shall be locked down by a 2-point automatic spring-loaded hook mechanism that actuates after the cab has been lowered.</p> <p>The hydraulic cylinders shall be equipped with a velocity fuse that protects the cab from accidentally descending when the control is located in the tilt position.</p> <p>For increased safety, a redundant mechanical stay arm shall be provided that must be manually put in place on the driver side between the chassis and cab frame when the cab is in the raised position. This device shall be manually stowed to its original position before the cab can be lowered.</p> <p><u>Cab Lift Interlock</u></p> <p>The cab lift system shall be interlocked to the parking brake. The cab tilt mechanism shall be active only when the parking brake is set and the ignition switch is in the on position. If the parking brake is released, the cab tilt mechanism shall be disabled.</p> <p><u>GRILLE</u></p> <p>A bright finished aluminum mesh grille screen, inserted behind a bright finished grille surround, shall be provided on the front center of the cab.</p> <p><u>SIDE OF CAB MOLDING</u></p> <p>Chrome molding shall be provided on both sides of cab.</p> <p><u>MIRRORS</u></p> <p>One (1) Ramco, Model 6000FFHR-750, polished aluminum mirror shall be mounted on each of the cab doors. The mirrors shall be 9.25" wide x 13.50" high with a full flat face. An additional convex section shall be bolted to the top of each mirror. The mirror head shall have a highly polished aluminum finish.</p> <p>The flat glass in each mirror shall be heated and adjustable, with remote controls that are convenient to the driver.</p> <p>The convex section in each mirror shall be adjusted manually.</p> <p><u>DOORS</u></p> <p>To enhance entry and egress to the cab, the forward cab doors shall be a minimum of 37.50" wide x 61.75" high. The crew cab doors shall be located on the sides of the cab and shall be constructed in the same manner as the forward cab doors. The crew cab doors shall measure a minimum of 34.88" wide x 61.75" high.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>The forward cab and crew cab doors shall be constructed of extruded aluminum with a nominal material thickness of 0.125". The exterior door skins shall be constructed from 0.090" aluminum.</p> <p>A flush mounted, chrome plated paddle type door handle shall be provided on the exterior of each cab door. Each door shall also be provided with an interior flush paddle handle.</p> <p>The cab doors shall be provided with both interior (rotary knob) and exterior (keyed) locks as required by FMVSS 206. The locks shall be capable of activating when the doors are open or closed. The doors shall remain locked if locks are activated when the doors are opened, then closed.</p> <p>A full length, heavy duty, stainless steel, piano-type hinge with a 0.38" pin and 11 gauge leaf shall be provided on all cab doors. There shall be double automotive-type rubber seals around the perimeter of the door framing and door edges to ensure a weather-tight fit.</p> <p>A chrome grab handle shall be provided on the inside of each cab and crew cab door.</p> <p>The cab steps at each door location shall be located below the cab doors and shall be exposed to the exterior of the cab.</p> <p><u>DOOR PANELS</u></p> <p>There shall be a full height brushed stainless steel door panel installed on the inside of all cab doors. The cab door panels shall be removable without disconnecting door and window mechanisms.</p> <p><u>MANUAL CAB DOOR WINDOWS</u></p> <p>All cab entry doors shall contain a conventional roll down window.</p> <p><u>CAB STEPS</u></p> <p>The forward cab and crew cab access steps shall be a full size two (2) step design to provide largest possible stepping surfaces for safe ingress and egress. The bottom steps shall be designed with a grip pattern punched into bright aluminum treadplate material to provide support, slip resistance, and drainage. The bottom steps shall be a bolt-in design to minimize repair costs should they need to be replaced. The forward cab steps shall be a minimum 24.75" wide, and the crew cab steps shall be 21.25" wide with an 8.00" minimum depth. The inside cab steps shall not exceed 18.00" in height and be limited to two (2) steps. Three (3) step entrance designs shall not be acceptable due to safety concerns. A slip-resistant handrail shall be provided adjacent to each cab door opening to assist during cab ingress and egress.</p> <p><u>STIRRUP STEPS</u></p> <p>Stirrup steps with grip strut shall be provided below each cab and crew cab door.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>The stirrup step shall be lit by a white 12 volt DC LED light provided on the step.</p> <p>The step light shall be activated automatically when the battery switch is on and the exit doors are opened or by the same means as the body step lights.</p> <p><u>STEP LIGHTS</u></p> <p>For reduced overall maintenance costs compared to incandescent lighting, there shall be eight (8) white LED, step lights provided. The lights shall be installed at each cab and crew cab door, two (2) per step, in the driver side front doorstep, driver side crew cab doorstep, passenger side front doorstep and passenger side crew cab doorstep.</p> <p>In order to ensure exceptional illumination, each light shall provide a minimum of 25 foot-candles (fc) covering an entire 15" x 15" square placed ten (10) inches below the light and a minimum of 1.5 fc covering an entire 30" x 30" square at the same ten (10) inch distance below the light.</p> <p>The lights shall be activated when the adjacent door is opened.</p> <p><u>FENDER CROWNS</u></p> <p>Stainless steel fender crowns shall be installed at the cab wheel openings. The fender crowns shall have a radius outside corner that allows the fender crown to extend beyond the side wall of the front tires and also allow the crew cab doors to open fully.</p> <p><u>HANDRAILS (ADDITIONAL)</u></p> <p>There shall be two (2) 38.00" long x 1.50" diameter handrail(s) provided One each side of the EMS compartment (horizontal). The handrail shall be an aluminum rod with radiused ends. The entire handrail shall be sprayed with Line-X® polyurethane/polyurea elastomer abrasive resistant material to provide a positive gripping surface. The Line-X color shall be red.</p> <p><u>CREW CAB WINDOWS</u></p> <p>One (1) fixed window with tinted glass shall be provided on each side of the cab, to the rear of the front cab door. The windows shall be sized to enhance light penetration into the cab interior. The windows shall measure 17.50" wide x 21.00" high.</p> <p><u>MOUNTING BRACKET</u></p> <p>A mounting bracket, located At the officers side of the cab dashboard as earmarked by the customer during the final inspection, shall be provided as a base mount for the customer supplied, Factory installed, Knox Box. The mounting surface of the bracket shall be at a 45 degree angle, making access easier for the end user.</p> <p>It shall be made of steel and painted 600T to match the cab interior.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p><u>STORAGE COMPARTMENTS</u></p> <p>Provided on each side of the cab, to the rear of the crew cab access doors, shall be a storage compartment. The compartments shall be 11.25" wide x 14.25" deep x 26.00" high to allow installation of rear wall fold up seats.</p> <p>A false floor shall be added to the bottom of this compartment to create a sweep out floor. The false floor shall decrease the dimensions of the compartment.</p> <p>The doors shall be painted aluminum, single pan construction with one (1) D-ring handle slam style latch. Each door shall have a gas strut placed horizontally to hold the door in the open position.</p> <p>The compartment doors shall be tied to the "Do Not Move Truck" indicator when opened.</p> <p><u>MOUNTING PLATE ON ENGINE TUNNEL</u></p> <p>Equipment installation provisions shall be installed on the engine tunnel.</p> <p>A .25" smooth aluminum plate shall be bolted to the top surface of the engine tunnel. The plate shall be spaced off the engine tunnel 1.00" to allow for wire routing below the plate. The mounting surface shall be painted to match the cab interior.</p> <p><u>UNIVERSAL COMPUTER MOUNT</u></p> <p>There shall be one (1) universal computer mount(s) with tilt / swivel / slide attachment located Officers side in front of the officers position, recessed . The mount shall be adjustable for laptop computers within the following dimensions:</p> <ul style="list-style-type: none"> • Computer widths from 10.62" to 16.50" • Computer depths from 9.00" to 12.38" • Computer thickness up to 1.50" (with screen open) <p>A 12 volt DC, 15 amp power point shall be provided near the mount.</p> <p>The following Gamber Johnson components shall be provided:</p> <ul style="list-style-type: none"> • One (1) Notepad V, Universal computer mount • One (1) Quadmotion TS3, Bracket • One (1) DS-56, Mounting base <p><u>CAB INTERIOR</u></p> <p>The left and right side dash and center console shall be a flat faced design to provide easy maintenance and shall be constructed out of painted aluminum.</p> <p>The engine tunnel shall be padded and covered with Imperial 1200 vinyl coated polyester.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>The headliner shall be installed in both forward and rear cab sections. Headliner material shall be Imperial 1200 vinyl coated polyester. A sound barrier shall be part of its composition. Material shall be installed on an aluminum sheet and securely fastened to interior cab ceiling.</p> <p>Forward portion of cab headliner shall provide easy access for servicing electrical wiring or for other maintenance needs without removing the entire unit.</p> <p><u>CAB INTERIOR UPHOLSTERY</u></p> <p>The cab interior upholstery shall be gray woven with black.</p> <p><u>CAB INTERIOR PAINT</u></p> <p>The cab interior metal surfaces shall be painted red, vinyl texture paint.</p> <p><u>CAB FLOOR</u></p> <p>The cab and crew cab floor areas shall be covered with Polydamp™ acoustical floor mat consisting of a black pyramid rubber facing and closed cell foam decoupler.</p> <p>The top surface of the material has a series of raised pyramid shapes evenly spaced, which offer a superior grip surface. Additionally, the material has a 0.25" thick closed cell foam, for no water absorption, which offers a sound dampening material for reducing sound levels.</p> <p><u>CAB DEFROSTER</u></p> <p>There shall be a 41,000 BTU defroster in the cab located under the engine tunnel.</p> <p>The defroster ventilation shall be built into the design of the cab dash instrument panel and shall be easily removable for maintenance.</p> <p>The defroster shall have a 3-speed blower and temperature controls accessible to the driver and officer.</p> <p>The defroster ducts shall be designed to provide maximum defrosting capabilities for the front cab windows.</p> <p><u>CAB/CREW CAB HEATER</u></p> <p>Two (2) auxiliary heaters with 32,000 BTU each shall be provided in the cab. The heaters shall have a 3-speed blower and temperature controls accessible to the driver and officer. There shall also be louvers located below the rear facing seat riser and below the driver and officer positions for airflow.</p> <p>The heaters shall be mounted, one (1) within each rear facing seat riser.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p><u>AIR CONDITIONING</u></p> <p>A high-performance, customized air conditioning system shall be furnished inside the cab and crew cab. A 19.10 cubic inch compressor shall be installed on the engine.</p> <p>The air conditioning system shall be capable of cooling the average cab temperature from 100 degrees Fahrenheit to 72 degrees Fahrenheit at 50 percent relative humidity within 30 minutes. The cooling performance test shall be run only after the cab has been heat soaked at 100 degrees Fahrenheit for a minimum of 4 hours.</p> <p>A roof-mounted condenser that meets and exceeds the performance specification shall be installed on the cab roof. Mounting the condenser below the cab or body would reduce the performance of the system and shall not be acceptable. The condenser cover to be painted to match the cab roof.</p> <p>An evaporator unit that meets and exceeds the performance specification shall be installed in the cab, located in the center of the cab ceiling over the engine tunnel. The evaporator shall include two (2) high performance cores and plenums with multiple outlets, one (1) plenum directed to the front and one (1) plenum directed to the rear of the cab.</p> <p>The evaporator unit shall be provided with adjustable air outlets strategically located to direct air flow to the driver, officer and crew cab area.</p> <p>All hose used shall be class 1 type to reduce moisture ingress into the air conditioning system.</p> <p>The air conditioner refrigerant shall be R-134A and shall be installed by a certified technician.</p> <p>The air conditioner shall be controlled by a single electronic control panel. For ease of operation, the control panel shall include variable adjustment for temperature and fan control and be conveniently located on the dash in clear view of the driver.</p> <p><u>WINDOW DEFROST FANS</u></p> <p>Two (2) window defrost fans shall be mounted on the ceiling of the cab, one (1) on each side of the cab.</p> <p><u>SUN VISORS</u></p> <p>Two (2) smoked Lexan™ sun visors provided. The sun visors shall be located above the windshield with one (1) mounted on each side of the cab.</p> <p>There shall be no retention bracket provided to help secure each sun visor in the stowed position.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p><u>GRAB HANDLE</u></p> <p>A black rubber covered grab handle shall be mounted on the lower portion of the driver's side cab entrance to assist in entering the cab. The grab handle shall be securely mounted to the post area between the door and steering wheel column.</p> <p>An additional black rubber covered grab handle shall be mounted on the driver's side door post of the driver's side cab door to assist in entering the cab. The grab handle shall be securely mounted to the post area between the door and windshield.</p> <p>A black rubber covered grab handle shall be mounted on the passenger's side door post, above the instrument panel.</p> <p><u>ENGINE COMPARTMENT LIGHTS</u></p> <p>There shall be one (1) Whelen, Model 3SC0CDCR, 12 volt DC, 3.00" white LED light(s) with Whelen, Model 3FLANGEC, chrome flange kit(s) installed under the cab to be used as engine compartment illumination.</p> <p>These light(s) shall be activated automatically when the cab is raised.</p> <p><u>ACCESS TO ENGINE DIPSTICKS</u></p> <p>For access to the engine oil and transmission fluid dipsticks, there shall be a door on the engine tunnel, inside the crew cab. The door shall be on the rear wall of the engine tunnel, on the vertical surface.</p> <p>The engine oil dipstick shall allow for checking only. The transmission dipstick shall allow for both checking and filling.</p> <p>The door shall have a rubber seal for thermal and acoustic insulation. One (1) flush latch shall be provided on the access door.</p> <p><u>VELCRO STRAP(S) FOR MAP BOX</u></p> <p>There shall be one (1) Velcro® strap(s) installed on the map box.</p> <p><u>MAP BOX</u></p> <p>There shall be one (1) map box(es) with three (3) bins, open at top. The map box(es) shall be installed at final inspection. The map box(es) shall be divided into three (3) bins, each being 12.50" wide x 3.00" high x 12.00" deep. Each bin shall slant 30 degrees from horizontal. The map box(es) shall be constructed of 0.125" aluminum and shall be painted to match the cab interior.</p> <p><u>SEATING CAPACITY</u></p> <p>The seating capacity in the cab shall be six (6).</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p><u>DRIVER SEAT</u></p> <p>A seat shall be provided in the cab for the driver. The seat design shall be a cam action type, with air suspension. For increased convenience, the seat shall include a manual control to adjust the horizontal position (6.00" travel). The manual horizontal control shall be a towel-bar style located below the forward part of the seat cushion. To provide flexibility for multiple driver configurations, the seat shall have an adjustable reclining back. The seat back shall be a high back style with side bolster pads for maximum support. For optimal comfort, the seat shall be provided with 17.00" deep foam cushions designed with EVC (elastomeric vibration control).</p> <p>The seat shall be furnished with a 3-point, shoulder type seat belt. The seat belt shall be furnished with dual automatic retractors that shall provide ease of operation in the normal seating position.</p> <p><u>OFFICER SEAT</u></p> <p>A seat shall be provided in the cab for the passenger. The seat shall be a fixed type with no suspension. The seat back shall be a high back style with 9 degree fixed recline angle and side bolster pads for maximum support. For optimal comfort, the seat shall be provided with 17.00" deep foam cushions designed with EVC (elastomeric vibration control). To ensure safe operation, the seat shall be equipped with seat belt sensors in the seat cushion and belt receptacle that shall activate an alarm indicating a seat is occupied but not buckled.</p> <p>The seat shall be furnished with a 3-point, shoulder type seat belt. The seat belt shall be furnished with dual automatic retractors that shall provide ease of operation in the normal seating position.</p> <p><u>RADIO COMPARTMENT</u></p> <p>A radio compartment shall be provided under the officer's seat.</p> <p>The inside compartment dimensions shall be 14.00" wide x 7.50" high x 14.50" deep.</p> <p>A drop-down door with a chrome plated lift and turn latch shall be provided for access.</p> <p>The compartment shall be constructed of smooth aluminum and painted to match the cab interior.</p> <p><u>REAR FACING DRIVER SIDE OUTBOARD SEAT</u></p> <p>There shall be one (1) rear facing seat provided at the driver side outboard position in the crew cab. For optimal comfort, the seat shall be provided with 15.00" deep foam cushions designed with EVC (elastomeric vibration control). To ensure safe operation, the seat shall be equipped with seat belt sensors in the seat cushion and belt receptacle that shall activate an alarm indicating a seat is occupied but not buckled.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>The seat back shall be an SCBA back style with 5 degree fixed recline angle. The SCBA cavity shall be adjustable from front to rear in 1.00" increments, to accommodate different sized SCBA cylinders. Moving the SCBA cavity shall be accomplished by unbolting, relocating, and re-bolting it in the desired location.</p> <p>The seat shall be furnished with a 3-point, shoulder type seat belt. The seat belt shall be furnished with dual automatic retractors that shall provide ease of operation in the normal seating position.</p> <p><u>REAR FACING PASSENGER SIDE OUTBOARD SEAT</u></p> <p>There shall be one (1) rear facing seat provided at the passenger side outboard position in the crew cab. For optimal comfort, the seat shall be provided with 15.00" deep foam cushions designed with EVC (elastomeric vibration control). To ensure safe operation, the seat shall be equipped with seat belt sensors in the seat cushion and belt receptacle that shall activate an alarm indicating a seat is occupied but not buckled.</p> <p>The seat back shall be an SCBA back style with 5 degree fixed recline angle. The SCBA cavity shall be adjustable from front to rear in 1.00" increments, to accommodate different sized SCBA cylinders. Moving the SCBA cavity shall be accomplished by unbolting, relocating, and re-bolting it in the desired location.</p> <p>The seat shall be furnished with a 3-point, shoulder type seat belt. The seat belt shall be furnished with dual automatic retractors that shall provide ease of operation in the normal seating position.</p> <p><u>FORWARD FACING DRIVER SIDE OUTBOARD SEAT</u></p> <p>There shall be one (1) forward facing, foldup seat provided at the driver side outboard position in the crew cab. The seat back shall be a high back style with 9 degree fixed recline angle. For optimal comfort, the seat shall be a minimum of 15.00" from the front of the cushion to the face of the seat back and designed with EVC (elastomeric vibration control). To ensure safe operation, the seat shall be equipped with seat belt sensors in the seat cushion and belt receptacle, that shall activate an alarm indicating a seat is occupied but not buckled.</p> <p>The seat shall be furnished with a 3-point, shoulder type seat belt. The seat belt shall be furnished with dual automatic retractors that shall provide ease of operation in the normal seating position.</p> <p><u>FORWARD FACING CENTER EMS COMPARTMENT</u></p> <p>Two (2) forward facing EMS compartments shall be provided in the crew cab at the center position.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>The upper compartment shall be 24.00" wide x 16.00" high x 16.00" deep with a web netting door. The netting is to be made with 1.00" wide nylon material with 2.00" openings. A metal stiffener shall be provided at the top and bottom of the netting. Permanently attach the top of the netting, to the top of the upper cabinet, and place side release buckles at the bottom of the opening. The door shall face the front of the cab with a clear door opening of 21.50" wide x 13.50" high.</p> <p>The lower compartment shall extend from the rear wall of the crew cab to the engine tunnel. The compartment shall be approximately 36.00" wide x 24.00" high x 44.00" deep. A web netting door shall be provided on each end of the compartment. The netting is to be made with 1.00" wide nylon material with 2.00" openings. A metal stiffener shall be provided at the top and bottom of the netting. This netting shall be installed inboard on each side wall. Two (2) seat belt type buckles shall be used at the top of the netting with a single footman's loop, mounted at the bottom center of the opening. Each clear door opening of the compartment shall be 34.00" wide x 20.00" high. A compartment bottom shall be provided in this compartment to provide a smooth sliding surface for items stored inside.</p> <p>The top of the compartment shall also be reinforced for tool mounting.</p> <p>The compartments shall be constructed of smooth aluminum and painted to match the color of the cab interior.</p> <p><u>Compartment Light</u></p> <p>The lower compartment shall have one (1) LED strip light provided at the front of the compartment shining to the rear. The light shall be mounted as high as possible. The crew cab door switches shall control this lower compartment light.</p> <p><u>FORWARD FACING PASSENGER SIDE OUTBOARD SEAT</u></p> <p>There shall be one (1) forward facing foldup seat provided at the passenger side outboard position in the crew cab. The seat back shall be a high back style with 9 degree fixed recline angle. For optimal comfort, the seat shall be a minimum of 15.00" from the front of the cushion to the face of the seat back and designed with EVC (elastomeric vibration control). To ensure safe operation, the seat shall be equipped with seat belt sensors in the seat cushion and belt receptacle, that shall activate an alarm indicating a seat is occupied but not buckled.</p> <p>The seat shall be furnished with a 3-point, shoulder type seat belt. The seat belt shall be furnished with dual automatic retractors that shall provide ease of operation in the normal seating position.</p> <p><u>MATTING IN EMS COMPARTMENT</u></p> <p>Vinyl grating shall be provided in two (2) EMS compartments.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>The vinyl grating shall be .50" thick and be cross bonded by .25" diameter ribbed sections spaced for aeration.</p> <p><u>SHELVING</u></p> <p>There shall be one (1) shelf provided. Each shelf shall be constructed of 0.090" aluminum with a 1.25" up-turned lip. Shelving shall be infinitely adjustable by means of a threaded tightener sliding in a track.</p> <p>The location shall be one (1) shelf in the center forward facing EMS cabinet.</p> <p><u>SEAT UPHOLSTERY</u></p> <p>All seat upholstery shall be gray Turnout Tuff material.</p> <p><u>AIR BOTTLE HOLDERS</u></p> <p>All SCBA type seats in the cab shall have a "Hands-Free" auto clamp style bracket in its backrest. For efficiency and convenience, the bracket shall include an automatic spring clamp that allows the occupant to store the SCBA bottle by simply pushing it into the seat back. For protection of all occupants in the cab, in the event of an accident, the inertial components within the clamp shall constrain the SCBA bottle in the seat and shall exceed the NFPA standard of 9G. Bracket designs with manual restraints (belts, straps, buckles) that could be inadvertently left unlocked and allow the SCBA to move freely within the cab during an accident, shall not be acceptable.</p> <p>There shall be a quantity of two (2) SCBA brackets.</p> <p><u>SEAT BELTS</u></p> <p>All seating positions in the cab and crew cab shall have red seat belts.</p> <p>To provide quick, easy use for occupants wearing bunker gear, the female buckle and seat belt webbing length shall meet or exceed the current edition of NFPA 1901 and CAN/ULC - S515 standards.</p> <p>The 3-point shoulder type seat belts shall also include the ReadyReach D-loop assembly to the shoulder belt system. The ReadyReach feature adds an extender arm to the D-loop location placing the D-loop in a closer, easier to reach location.</p> <p><u>SHOULDER HARNESS HEIGHT ADJUSTMENT</u></p> <p>All seating positions furnished with 3-point shoulder type seat belts shall include a height adjustment. This adjustment shall optimize the belts effectiveness and comfort for the seated firefighter.</p> <p><u>HELMET STORAGE PROVIDED BY FIRE DEPARTMENT</u></p> <p>NFPA 1901, 2016 edition, section 14.1.7.4.1 requires a location for helmet storage be provided.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>There is no helmet storage on the apparatus as manufactured. The fire department shall provide a location for storage of helmets.</p> <p><u>CAB DOME LIGHTS</u></p> <p>There shall be four (4) dual LED dome lights with black bezels provided. Two (2) lights shall be mounted above the inside shoulder of the driver and officer and two (2) lights shall be installed and located, one (1) on each side of the crew cab.</p> <p>The color of the LED's shall be red and white.</p> <p>The white LED's shall be controlled by the door switches and the lens switch.</p> <p>The color LED's shall be controlled by the lens switch.</p> <p>In order to ensure exceptional illumination, each white LED dome light shall provide a minimum of 10.1 foot-candles (fc) covering an entire 20.00" x 20.00" square seating position when mounted 40.00" above the seat.</p> <p><u>OVERHEAD MAP LIGHTS</u></p> <p>There shall be two (2) white halogen, round adjustable map lights installed in the cab:</p> <ul style="list-style-type: none"> • One (1) overhead in front of the driving position. • One (1) overhead in front of the passenger's position. <p>Each light shall include a switch on the light housing.</p> <p>The light switches shall be connected directly to the battery switched power.</p> <p><u>MAP LIGHT</u></p> <p>There shall be one (1) Sunnex®, Model SL9-22*B25L, LED map light(s) installed Officers side front dash area. Each map light shall have a square base provided with an on/off switch. The map light(s) shall have a 20.00" long flexible neck that exits the top of the base and 25 degree optics and be dimmable.</p> <p>The light switch(es) shall be connected directly to the battery switched power.</p> <p><u>HAND HELD LIGHT</u></p> <p>There shall be four (4) Streamlight, Fire Vulcan, Model #44451, hand lights provided with a vehicle mount with 12VDC direct wire charging rack and quick release buckle strap mounted at pickup.</p> <p>Each light housing shall be orange in color and be provided with a C4, LED and two (2) "ultra bright blue tail light LEDs" The tail light LEDs shall have a dual mode of blinking or steady.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p><u>HAND HELD SPOTLIGHT</u></p> <p>There shall be four (4) lights Streamlight, Model Survivor 90503, LED flashlights with chargers and AC/DC chords provided and installed As directed by the FD at final Pick up.</p> <p>The flashlights shall be connected battery direct and shall charge when the chassis batteries are charging.</p> <p><u>CAB INSTRUMENTATION</u></p> <p>The cab instrument panel shall consist of gauges, an LCD display, telltale indicator lights, alarms, control switches, and a diagnostic panel. The function of instrument panel controls and switches shall be identified by a label adjacent to each item. Actuation of the headlight switch shall illuminate the labels in low light conditions. Telltale indicator lamps shall not be illuminated unless necessary. The cab instruments and controls shall be conveniently located within the forward cab section directly forward of the driver. Gauge and switch panels shall be designed to be removable for ease of service and low cost of ownership.</p> <p><u>CAB INTERIOR</u></p> <p>The wrap-around style high impact ABS plastic cab dash fascia shall be designed to provide unobstructed visibility to instrumentation. The dash layout shall provide the driver with a quick reference to gauges that allows more time to focus on the road.</p> <p><u>GAUGES</u></p> <p>The gauge panel shall include the following ten (10) ivory gauges with chrome bezels to monitor vehicle performance:</p> <ul style="list-style-type: none"> • Voltmeter Gauge (Volts): <ul style="list-style-type: none"> ○ Low volts (11.8 VDC) <ul style="list-style-type: none"> ▪ Amber indicator on gauge assembly with alarm ○ High volts (15 VDC) <ul style="list-style-type: none"> ▪ Amber indicator on gauge assembly with alarm ○ Very low volts (11.3 VDC) <ul style="list-style-type: none"> ▪ Amber indicator on gauge assembly with alarm ○ Very high volts (16 VDC) <ul style="list-style-type: none"> ▪ Amber indicator on gauge assembly with alarm • Tachometer (RPM) • Speedometer (Primary (outside) MPH, Secondary (inside) Km/H) • Fuel Level Gauge (Empty - Full in fractions): <ul style="list-style-type: none"> ○ Low fuel (1/8 full) <ul style="list-style-type: none"> ▪ Amber indicator on gauge assembly with alarm ○ Very low fuel (1/32) fuel <ul style="list-style-type: none"> ▪ Amber indicator on gauge assembly with alarm 		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> • Engine Oil Pressure Gauge (PSI): <ul style="list-style-type: none"> ○ Low oil pressure to activate engine warning lights and alarms <ul style="list-style-type: none"> ▪ Red indicator on gauge assembly with alarm • Front Air Pressure Gauge (PSI): <ul style="list-style-type: none"> ○ Low air pressure to activate warning lights and alarm <ul style="list-style-type: none"> ▪ Red indicator on gauge assembly with alarm • Rear Air Pressure Gauge (PSI): <ul style="list-style-type: none"> ○ Low air pressure to activate warning lights and alarm. <ul style="list-style-type: none"> ▪ Red indicator on gauge assembly with alarm • Transmission Oil Temperature Gauge (Fahrenheit): • High transmission oil temperature activates warning lights and alarm <ul style="list-style-type: none"> ○ Amber indicator on gauge assembly with alarm • Engine Coolant Temperature Gauge (Fahrenheit): <ul style="list-style-type: none"> ○ High engine temperature activates an engine warning light and alarm <ul style="list-style-type: none"> ▪ Red indicator on gauge assembly with alarm • Diesel Exhaust Fluid Level Gauge (Empty - Full in fractions): <ul style="list-style-type: none"> ○ Low fluid (1/8 full) <ul style="list-style-type: none"> ▪ Amber indicator on gauge assembly with alarm <p>All gauges and gauge indicators shall perform prove out at initial power-up to ensure proper performance.</p> <p><u>INDICATOR LAMPS</u></p> <p>To promote safety, the following telltale indicator lamps shall be integral to the gauge assembly and are located above and below the center gauges. The indicator lamps shall be "dead-front" design that is only visible when active. The colored indicator lights shall have descriptive text or symbols.</p> <p>The following amber telltale lamps shall be present:</p> <ul style="list-style-type: none"> • Low coolant • Trac cntl (traction control) (where applicable) • Check engine • Check trans (check transmission) • Aux brake overheat (Auxiliary brake overheat) • Air rest (air restriction) • Caution (triangle symbol) • Water in fuel • DPF (engine diesel particulate filter regeneration) • Trailer ABS (where applicable) 		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> • Wait to start (where applicable) • HET (engine high exhaust temperature) (where applicable) • ABS (antilock brake system) • MIL (engine emissions system malfunction indicator lamp) (where applicable) • SRS (supplemental restraint system) fault (where applicable) • DEF (low diesel exhaust fluid level) • The following red telltale lamps shall be present: • Warning (stop sign symbol) • Seat belt • Parking brake • Stop engine • Rack down <p>The following green telltale lamps shall be provided:</p> <ul style="list-style-type: none"> • Left turn • Right turn • Battery on <p>The following blue telltale lamp shall be provided:</p> <ul style="list-style-type: none"> • High beam <p><u>ALARMS</u></p> <p>Audible steady tone warning alarm: A steady audible tone alarm shall be provided whenever a warning message is present.</p> <p>Audible pulsing tone caution alarm: A pulsing audible tone alarm (chime/chirp) shall be provided whenever a caution message is present without a warning message being present.</p> <p>Alarm silence: Any active audible alarm shall be able to be silenced by holding the ignition switch at the top position for three (3) to five (5) seconds. For improved safety, silenced audible alarms shall intermittently chirp every 30 seconds until the alarm condition no longer exists. The intermittent chirp shall act as a reminder to the operator that a caution or warning condition still exists. Any new warning or caution condition shall enable the steady or pulsing tones respectively.</p> <p><u>INDICATOR LAMP AND ALARM PROVE-OUT</u></p> <p>Telltale indicators and alarms shall perform prove-out at initial power-up to ensure proper performance.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p><u>CONTROL SWITCHES</u></p> <p>For ease of use, the following controls shall be provided immediately adjacent to the cab instrument panel within easy reach of the driver:</p> <ul style="list-style-type: none"> • Emergency master switch: A molded plastic push button switch with integral indicator lamp shall be provided. Pressing the switch shall activate emergency response lights and siren control. A green lamp on the switch provides indication that the emergency master mode is active. Pressing the switch again disables the emergency master mode. • Headlight / Parking light switch: A three (3)-position maintained rocker switch shall be provided. The first switch position shall deactivate all parking lights and the headlights. The second switch position shall activate the parking lights. The third switch position shall activate the headlights. • Panel back lighting intensity control switch: A three (3)-position momentary rocker switch shall be provided. The first switch position decreases the panel back lighting intensity to a minimum level as the switch is held. The second switch position is the default position that does not affect the back lighting intensity. The third switch position increases the panel back lighting intensity to a maximum level as the switch is held. <p>The following standard controls shall be integral to the gauge assembly and are located below the right hand gauges. All switches have backlit labels for low light applications:</p> <ul style="list-style-type: none"> • High idle engagement switch: A two (2)-position momentary rocker switch with integral indicator lamp shall be provided. The first switch position is the default switch position. The second switch position shall activate and deactivate the high idle function when pressed and released. The "Ok To Engage High Idle" indicator lamp must be active for the high idle function to engage. A green indicator lamp integral to the high idle engagement switch shall indicate when the high idle function is engaged. • "Ok To Engage High Idle" indicator lamp: A green indicator light shall be provided next to the high idle activation switch to indicate that the interlocks have been met to allow high idle engagement. • The following standard controls shall be provided adjacent to the cab gauge assembly within easy reach of the driver. All switches shall have backlit labels for low light applications. • Ignition switch: A three (3)-position maintained/momentary rocker switch shall be provided. The first switch position shall deactivate vehicle ignition. The second switch position shall activate vehicle ignition. The third momentary position shall disable the Command Zone audible alarm if held for three (3) to five (5) seconds. A green indicator lamp shall be activated with vehicle ignition. • Engine start switch: A two (2)-position momentary rocker switch shall be provided. The first switch position is the default switch position. The second switch position shall 		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>activate the vehicle's engine. The switch actuator is designed to prevent accidental activation.</p> <ul style="list-style-type: none"> • 4-way hazard switch: A two (2)-position maintained rocker switch shall be provided. The first switch position shall deactivate the 4-way hazard switch function. The second switch position shall activate the 4-way hazard function. The switch actuator shall be red and includes the international 4-way hazard symbol. • Turn signal arm: A self-canceling turn signal with high beam headlight and windshield wiper/washer controls shall be provided. The windshield wiper control shall have high, low, and intermittent modes. • Parking brake control: An air actuated push/pull park brake control valve shall be provided. • Chassis horn control: Activation of the chassis horn control shall be provided through the center of the steering wheel. <p><u>CUSTOM SWITCH PANELS</u></p> <p>The design of cab instrumentation shall allow for emergency lighting and other switches to be placed within easy reach of the operator thus improving safety. There shall be positions for up to three (3) switch panels in the overhead console on the driver's side, up to four (4) switch panels in the engine tunnel console facing the driver, up to three (3) switch panels in the overhead console on the officer's side and up to three (3) switch panels in the engine tunnel rear facing console accessible to both driver and officer. All switches shall have backlit labels for low light applications.</p> <p><u>DIAGNOSTIC PANEL</u></p> <p>A diagnostic panel shall be accessible while standing on the ground and located inside the driver's side door left of the steering column. The diagnostic panel shall allow diagnostic tools such as computers to connect to various vehicle systems for improved troubleshooting providing a lower cost of ownership. Diagnostic switches shall allow engine and ABS systems to provide blink codes should a problem exist. The diagnostic panel shall include the following:</p> <ul style="list-style-type: none"> • Engine diagnostic port • Transmission diagnostic port • ABS diagnostic port • SRS diagnostic port (where applicable) • Command Zone USB diagnostic port • Engine diagnostic switch (blink codes flashed on check engine telltale indicator) • ABS diagnostic switch (blink codes flashed on ABS telltale indicator) • Diesel particulate filter regeneration switch (where applicable) • Diesel particulate filter regeneration inhibit switch (where applicable) 		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p><u>CAB LCD DISPLAY</u></p> <p>A digital four (4)-row by 20-character dot matrix display shall be integral to the gauge panel. The display shall be capable of showing simple graphical images as well as text. The display shall be split into three (3) sections. Each section shall have a dedicated function. The upper left section shall display the outside ambient temperature. The upper right section shall display odometer, trip mileage, PTO hours, fuel consumption, engine hours, and other configuration specific information. The bottom section shall display INFO, CAUTION, and WARNING messages. Text messages shall automatically activate to describe the cause of an audible caution or warning alarm. The LCD shall be capable of displaying multiple text messages should more than one caution or warning condition exist.</p> <p><u>AIR RESTRICTION INDICATOR</u></p> <p>A high air restriction warning indicator light LCD message with amber warning indicator and audible alarm shall be provided.</p> <p><u>"DO NOT MOVE APPARATUS" INDICATOR</u></p> <p>A Whelen Model 3SR00FRR flashing red LED indicator light with a Whelen, Model 3FLANGEC chrome surface mount flange located in the driving compartment, shall be illuminated automatically per the current NFPA requirements. The light shall be labeled "Do Not Move Apparatus If Light Is On".</p> <p>The same circuit that activates the Do Not Move Apparatus indicator shall activate a pulsing alarm when the parking brake is released.</p> <p><u>DO NOT MOVE TRUCK MESSAGES</u></p> <p>Messages shall be displayed on the Command Zone™, color display located within sight of the driver whenever the Do Not Move Truck light is active. The messages shall designate the item or items not in the stowed for vehicle travel position (parking brake disengaged).</p> <p>The following messages shall be displayed (where applicable):</p> <ul style="list-style-type: none"> • Do Not Move Truck • DS Cab Door Open (Driver Side Cab Door Open) • PS Cab Door Open (Passenger's Side Cab Door Open) • DS Crew Cab Door Open (Driver Side Crew Cab Door Open) • PS Crew Cab Door Open (Passenger's Side Crew Cab Door Open) • DS Body Door Open (Driver Side Body Door Open) • PS Body Door Open (Passenger's Side Body Door Open) • Rear Body Door Open • DS Ladder Rack Down (Driver Side Ladder Rack Down) • PS Ladder Rack Down (Passenger Side Ladder Rack Down) 		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> • Deck Gun Not Stowed • Lt Tower Not Stowed (Light Tower Not Stowed) • Hatch Door Open • Fold Tank Not Stowed (Fold-A-Tank Not Stowed) • Aerial Not Stowed (Aerial Device Not Stowed) • Stabilizer Not Stowed • Steps Not Stowed • Handrail Not Stowed <p>Any other device that is opened, extended, or deployed that creates a hazard or is likely to cause major damage to the apparatus if the apparatus is moved shall be displayed as a caution message after the parking brake is disengaged.</p> <p><u>SWITCH PANELS</u> The emergency light switch panel shall have a master switch for ease of use plus individual switches for selective control. Each switch panel shall contain up to six (6) rocker-type switches each rated for two hundred thousand (200,000) cycles. Panels with less than six (6) switches shall include indicators or blanks. The switch panel(s) shall be located in the "overhead" position above the windshield on the driver side overhead to allow for easy access.</p> <p>The switches shall be rocker-type and include an integral indicator light. For quick, visual indication the switch shall be illuminated whenever the switch is active. A 2-ply, scratch resistant laser engraved Gravoply label indicating the use of each switch shall be placed below the switches. The label shall allow light to pass through the letters for improved visibility in low light conditions. Switches and light source are integral to the switch panel assembly.</p> <p><u>WIPER CONTROL</u> For simple operation and easy reach, the windshield wiper control shall be an integral part of the directional light lever located on the steering column. The wiper control shall include high and low wiper speed settings, a one (1)-speed intermittent wiper control and windshield washer switch. The control shall have a "return to park" provision, which allows the wipers to return to the stored position when the wipers are not in use.</p> <p><u>SPARE CIRCUIT</u> There shall be four (4) pair of wires, including a positive and a negative, installed on the apparatus.</p> <p>The above wires shall have the following features:</p> <ul style="list-style-type: none"> • The positive wire shall be connected directly to the battery power • The negative wire shall be connected to ground 		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> Wires shall be protected to 15 amps at 12 volts DC Power and ground shall terminate officer side dash area and on the officer's side of the engine tunnel Termination shall be with 15 amp, power point plug with rubber cover Wires shall be sized to 125 percent of the protection <p>The circuit(s) may be load managed when the parking brake is set.</p> <p><u>SPARE CIRCUIT</u></p> <p>There shall be one (1) pair of wires, including a positive and a negative, installed on the apparatus.</p> <p>The above wires shall have the following features:</p> <ul style="list-style-type: none"> The positive wire shall be connected directly to the battery power The negative wire shall be connected to ground Wires shall be protected to 30 amps at 12 volts DC Power and ground shall terminate In the instrument panel to the rear of the HVAC controls, S/A job 26538 Termination shall be with a 10-place bus bar with screws and removable cover Wires shall be sized to 125% of the protection <p>This circuit(s) may be load managed when the parking brake is set.</p> <p><u>INSTRUMENT PANEL RECESS</u></p> <p>The instrument panel across from the officer shall be recessed to accommodate the mounting of miscellaneous items. The glove box shall be replaced with a painted sheet metal mounting platform/shelf. The recess shall be 8.00" down x 8.00" back and 17.00" wide.</p> <p><u>RADIO WITH CD PLAYER</u></p> <p>There shall be one (1) Sony, AM/FM/CD/ stereo radio, with front auxiliary input for use with Apple™, or other USB devices installed within reach of the officer.</p> <p>There shall be one (1) pair of 5.25" speakers in the cab and one (1) pair of 5.25" speakers in the crew cab.</p> <p>There shall be a roof-mounted rubber antenna located in an open space, on the cab roof.</p> <p><u>INFORMATION CENTER</u></p> <p>An information center employing a 7.00" diagonal touch screen color LCD display shall be encased in an ABS plastic housing.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>The information center shall have the following specifications:</p> <ul style="list-style-type: none"> • Operate in temperatures from -40 to 185 degrees Fahrenheit • An Optical Gel shall be placed between the LCD and protective lens • Five weather resistant user interface switches • Grey with black accents • Sunlight Readable • Linux operating system • Minimum of 1000nits rated display • Display can be changed to an available foreign language • A LCD display integral to the cab gauge panel shall be included as outlined in the cab instrumentation area. • Programmed to read US Customary <p><u>GENERAL SCREEN DESIGN</u></p> <p>Where possible, background colors shall be used to provide "At a Glance" vehicle information. If information provided on a screen is within acceptable limits, a green background shall be used.</p> <p>If a caution or warning situation arises the following shall occur:</p> <ul style="list-style-type: none"> • An amber background/text color shall indicate a caution condition • A red background/text color shall indicate a warning condition • The information center shall utilize an "Alert Center" to display text messages for audible alarm tones. The text messages shall be written to identify the item(s) causing the audible alarm to sound. If more than one (1) text message occurs, the messages shall cycle every second until the problem(s) have been resolved. The background color for the "Alert Center" shall change to indicate the severity of the "warning" message. If a warning and a caution condition occur simultaneously, the red background color shall be shown for all alert center messages. • A label for each button shall exist. The label shall indicate the function for each active button for each screen. Buttons that are not utilized on specific screens shall have a button label with no text or symbol. <p><u>HOME/TRANSIT SCREEN</u></p> <p>This screen shall display the following:</p> <ul style="list-style-type: none"> • Vehicle Mitigation (if equipped) • Water Level (if equipped) • Foam Level (if equipped) • Seat Belt Monitoring Screen 		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> • Tire Pressure Monitoring (if equipped) • Digital Speedometer • Active Alarms <p><u>ON SCENE SCREEN</u></p> <p>This screen shall display the following and shall be auto activated with pump engaged (if equipped):</p> <ul style="list-style-type: none"> • Battery Voltage • Fuel • Oil Pressure • Coolant Temperature • RPM • Water Level (if equipped) • Foam Level (if equipped) • Foam Concentration (if equipped) • Water Flow Rate (if equipped) • Water Used (if equipped) • Active Alarms <p><u>VIRTUAL BUTTONS</u></p> <p>There shall be four (4) virtual switch panel screens that match the overhead and lower lighting and HVAC switch panels.</p> <p><u>PAGE SCREEN</u></p> <p>The page screen shall display the following and allow the user to progress into other screens for further functionality:</p> <ul style="list-style-type: none"> • Diagnostics <ul style="list-style-type: none"> ○ Faults <ul style="list-style-type: none"> ▪ Listed by order of occurrence ▪ Allows to sort by system ○ Interlock <ul style="list-style-type: none"> ▪ Throttle Interlocks ▪ Pump Interlocks (if equipped) ▪ Aerial Interlocks (if equipped) ▪ PTO Interlocks (if equipped) ○ Load Manager <ul style="list-style-type: none"> ▪ A list of items to be load managed shall be provided. The list shall provide a description of the load. 		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> <ul style="list-style-type: none"> ▪ The lower the priority numbers the earlier the device shall be shed should a low voltage condition occur. ▪ The screen shall indicate if a load has been shed (disabled) or not shed. ▪ "At a glance" color features are utilized on this screen. ○ Systems <ul style="list-style-type: none"> ▪ Command Zone <ul style="list-style-type: none"> • Module type and ID number • Module Version • Input or output number • Circuit number connected to that input or output • Status of the input or output • Power and Constant Current module diagnostic information ▪ Foam (if equipped) ▪ Pressure Controller (if equipped) ▪ Generator Frequency (if equipped) ○ Live Data <ul style="list-style-type: none"> ▪ General Truck Data • Maintenance <ul style="list-style-type: none"> ○ Engine oil and filter ○ Transmission oil and filter ○ Pump oil (if equipped) ○ Foam (if equipped) ○ Aerial (if equipped) • Setup <ul style="list-style-type: none"> ○ Clock Setup ○ Date & Time <ul style="list-style-type: none"> ▪ 12 or 24 hour format ▪ Set time and date ○ Backlight <ul style="list-style-type: none"> ▪ Daytime ▪ Night time ▪ Sensitivity ○ Unit Selection ○ Home Screen ○ Virtual Button Setup ○ On Scene Screen Setup ○ Configure Video Mode <ul style="list-style-type: none"> ▪ Set Video Contrast ▪ Set Video Color 		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> <li style="margin-left: 40px;">▪ Set Video Tint • Do Not Move <ul style="list-style-type: none"> ○ The screen shall indicate the approximate location and type of item that is open or is not stowed for travel. The actual status of the following devices shall be indicate <ul style="list-style-type: none"> ▪ Driver Side Cab Door ▪ Passenger's Side Cab Door ▪ Driver Side Crew Cab Door ▪ Passenger's Side Crew Cab Door ▪ Driver Side Body Doors ▪ Passenger's Side Body Doors ▪ Rear Body Door(s) ▪ Ladder Rack (if applicable) ▪ Deck Gun (if applicable) ▪ Light Tower (if applicable) ▪ Hatch Door (if applicable) ▪ Stabilizers (if applicable) ▪ Steps (if applicable) • Notifications <ul style="list-style-type: none"> ○ View Active Alarms <ul style="list-style-type: none"> ▪ Shows a list of all active alarms including date and time of the occurrence is shown with each alarm ▪ Silence Alarms - All alarms are silenced • Timer Screen • HVAC (if equipped) • Tire Information (if equipped) <p>Button functions and button labels may change with each screen.</p> <p><u>VEHICLE DATA RECORDER</u></p> <p>There shall be a vehicle data recorder (VDR) capable of reading and storing vehicle information provided.</p> <p>The information stored on the VDR can be downloaded through a USB port mounted in a convenient location determined by cab model. A USB cable can be used to connect the VDR to a laptop to retrieve required information. The program to download the information from the VDR will be available to download on-line.</p> <p>The vehicle data recorder shall be capable of recording the following data via hardwired and/or CAN inputs:</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> • Vehicle Speed - MPH • Acceleration - MPH/sec • Deceleration - MPH/sec • Engine Speed - RPM • Engine Throttle Position - % of Full Throttle • ABS Event - On/Off • Seat Occupied Status - Yes/No by Position • Seat Belt Buckled Status - Yes/No by Position • Master Optical Warning Device Switch - On/Off • Time - 24 Hour Time • Date - Year/Month/Day <p><u>Seat Belt Monitoring System</u></p> <p>A seat belt monitoring system (SBMS) shall be provided on the color display. The SBMS shall be capable of monitoring up to 10 seating positions indicating the status of each seat position per the following:</p> <ul style="list-style-type: none"> • Seat Occupied & Buckled = Green LED indicator illuminated • Seat Occupied & Unbuckled = Red LED indicator with audible alarm • No Occupant & Buckled = Red LED indicator with audible alarm • No Occupant & Unbuckled = No indicator and no alarm <p>The seat belt monitoring screen shall become active on the color display when:</p> <ul style="list-style-type: none"> • The home screen is active: <ul style="list-style-type: none"> ○ and there is any occupant seated but not buckled or any belt buckled with an occupant. ○ and there are no other Do Not Move Apparatus conditions present. As soon as all Do Not Move Apparatus conditions are cleared, the SBMS shall be activated. <p>The SBMS shall include an audible alarm that shall warn that an unbuckled occupant condition exists and the parking brake is released, or the transmission is not in park.</p> <p><u>RADIO ANTENNA MOUNT</u></p> <p>There shall be four (4) standard 1.125", 18 thread antenna-mounting base(s) installed Rear of crew cab near the EMS compartment on the cab roof with high efficiency, low loss, coaxial cable(s) routed to the crew cab compartment located Evenly spaced behind he light bar . A weatherproof cap shall be installed on each mount.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p><u>KNOX-BOX</u></p> <p>There shall be a Knox-Box® KeySecure® 3b, Model 2650, with key pad access provided. The system shall allow all administration functions to be performed via a USB port. The box shall be surface mounted and installed Location to be forward at the officer side cab area, coil extra wire for placement at the final inspection, S/A job 26538, within the cab.</p> <p><u>ELECTRICAL POWER CONTROL SYSTEM</u></p> <p>The primary power distribution shall be located forward of the officer's seating position and be easily accessible while standing on the ground for simplified maintenance and troubleshooting. Additional electrical distribution centers shall be provided throughout the vehicle to house the vehicle's electrical power, circuit protection, and control components. The electrical distribution centers shall be located strategically throughout the vehicle to minimize wire length. For ease of maintenance, all electrical distribution centers shall be easily accessible. All distribution centers containing fuses, circuit breakers and/or relays shall be easily accessible.</p> <p>Distribution centers located throughout the vehicle shall contain battery powered studs for supplying customer installed equipment thus providing a lower cost of ownership.</p> <p>Circuit protection devices, which conform to SAE standards, shall be utilized to protect electrical circuits. All circuit protection devices shall be rated per NFPA requirements to prevent wire and component damage when subjected to extreme current overload. General protection circuit breakers shall be Type-I automatic reset (continuously resetting). When required, automotive type fuses shall be utilized to protect electronic equipment. Control relays and solenoid shall have a direct current rating of 125 percent of the maximum current for which the circuit is protected per NFPA.</p> <p><u>SOLID-STATE CONTROL SYSTEM</u></p> <p>A solid-state electronics based control system shall be utilized to achieve advanced operation and control of the vehicle components. A fully computerized vehicle network shall consist of electronic modules located near their point of use to reduce harness lengths and improve reliability. The control system shall comply with SAE J1939-11 recommended practices.</p> <p>The control system shall operate as a master-slave system whereas the main control module instructs all other system components. The system shall contain patented Mission Critical software that maintains critical vehicle operations in the unlikely event of a main controller error. The system shall utilize a Real Time Operating System (RTOS) fully compliant with OSEK/VDX™ specifications providing a lower cost of ownership.</p> <p>For increased reliability and simplified use the control system modules shall include the following attributes:</p> <ul style="list-style-type: none"> • Green LED indicator light for module power 		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> Red LED indicator light for network communication stability status Control system self test at activation and continually throughout vehicle operation No moving parts due to transistor logic Software logic control for NFPA mandated safety interlocks and indicators Integrated electrical system load management without additional components Integrated electrical load sequencing system without additional components Customized control software to the vehicle's configuration Factory and field re programmable to accommodate changes to the vehicle's operating parameters Complete operating and troubleshooting manuals USB connection to the main control module for advanced troubleshooting <p>To assure long life and operation in a broad range of environmental conditions, the solid-state control system modules shall meet the following specifications:</p> <ul style="list-style-type: none"> Module circuit board shall meet SAE J771 specifications Operating temperature from -40C to +70C Storage temperature from -40C to +70C Vibration to 50g <p>IP67 rated enclosure (Totally protected against dust and also protected against the effect of temporary immersion between 15 centimeters and one (1) meter)</p> <p>Operating voltage from eight (8) volts to 16 volts DC</p> <p>The main controller shall activate status indicators and audible alarms designed to provide warning of problems before they become critical.</p> <p><u>CIRCUIT PROTECTION AND CONTROL DIAGRAM</u></p> <p>Copies of all job-specific, computer network input and output (I/O) connections shall be provided with each chassis. The sheets shall indicate the function of each module connection point, circuit protection information (where applicable), wire numbers, wire colors and load management information.</p> <p><u>ON-BOARD ADVANCED/VISUAL ELECTRICAL SYSTEM DIAGNOSTICS</u></p> <p>The on-board information center shall include the following diagnostic information:</p> <ul style="list-style-type: none"> Text description of active warning or caution alarms Simplified warning indicators Amber caution indication with intermittent alarm Red warning indication with steady tone alarm 		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>All control system modules, with the exception of the main control module, shall contain on-board visual diagnostic LEDs that assist in troubleshooting. The LEDs shall be enclosed within the sealed, transparent module housing near the face of the module. One LED for each input or output shall be provided and shall illuminate whenever the respective input or output is active. Color-coded labels within the modules shall encompass the LEDs for ease of identification. The LED indicator lights shall provide point of use information for reduced troubleshooting time without the need for an additional computer.</p> <p><u>TECH MODULE WITH WIFI</u></p> <p>An in cab module will provide Wifi wireless interface and data logging capability. (No Exception) The Wifi interface will comply with IEEE 802.11 b/g/n capabilities while communicating at 2.4 Gigahertz. The module will provide an external antenna connection allowing a line of site communication range of up to 300 feet with a roof mounted antenna.</p> <p>The module will transmit a password protected web page to a wifi enabled device (i.e. most smart phones, tablets or laptops) allowing two levels of user interaction. The firefighter level will allow vehicle monitoring of the vehicle and firefighting systems on the apparatus. The technician level will allow diagnostic access to inputs and outputs installed on the Command Zone™, control and information system.</p> <p>The data logging capability will record faults from the engine, transmission, ABS and Command Zone™, control and information systems as they occur. No other data will be recorded at the time the fault occurs. The data logger will provide up to 2 Gigabytes of data storage.</p> <p>A USB connection will be provided on the Tech Module. It will provide a means to download data logger information and update software in the device.</p> <p><u>PROGNOSTICS</u></p> <p>A software based vehicle tool shall be provided to predict remaining life of the vehicles critical fluid and events (no exceptions).</p> <p>The system shall send automatic indications to the Command Zone, color display and/or wireless enabled device to proactively alert of upcoming service intervals.</p> <p>Prognostics shall include:</p> <ul style="list-style-type: none"> • Engine oil and filter • Transmission oil and filter • Pump oil (if equipped) • Foam oil (if equipped) • Aerial oil and filter (if equipped) 		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p><u>ADVANCED DIAGNOSTICS</u></p> <p>An advanced, Windows-based, diagnostic software program shall be provided for this control system. The software shall provide troubleshooting tools to service technicians equipped with a Windows-based computer or wireless enabled device.</p> <p>The service and maintenance software shall be easy to understand and use and have the ability to view system input/output (I/O) information.</p> <p><u>INDICATOR LIGHT AND ALARM PROVE-OUT SYSTEM</u></p> <p>A system shall be provided which automatically tests basic indicator lights and alarms located on the cab instrument panel.</p> <p><u>VOLTAGE MONITOR SYSTEM</u></p> <p>A voltage monitoring system shall be provided to indicate the status of the battery system connected to the vehicle's electrical load. The system shall provide visual and audible warning when the system voltage is below or above optimum levels.</p> <p>The alarm shall activate if the system falls below 11.8 volts DC for more than two (2) minutes.</p> <p><u>DEDICATED RADIO EQUIPMENT CONNECTION POINTS</u></p> <p>There shall be three (3) studs provided in the primary power distribution center located in front of the officer for two-way radio equipment.</p> <ul style="list-style-type: none"> • The studs shall consist of the following: • 12-volt 40-amp battery switched power • 12-volt 60-amp ignition switched power • 12-volt 60-amp direct battery power <p>There shall also be a 12-volt 100-amp ground stud located in or adjacent to the power distribution center.</p> <p><u>ENHANCED SOFTWARE</u></p> <p>The solid-state control system shall include the following software enhancements:</p> <p>All perimeter lights and scene lights (where applicable) shall be deactivated when the parking brake is released.</p> <p>Cab and crew cab dome lights shall remain on for ten (10) seconds for improved visibility after the doors close. The dome lights shall dim after ten (10) seconds or immediately if the vehicle is put into gear.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>Cab and crew cab perimeter lights shall remain on for ten (10) seconds for improved visibility after the doors close. The dome lights shall dim after ten (10) seconds or immediately if the vehicle is put into gear.</p> <p><u>EMI/RFI PROTECTION</u></p> <p>To prevent erroneous signals from crosstalk contamination and interference, the electrical system shall meet, at a minimum, SAE J551/2, thus reducing undesired electromagnetic and radio frequency emissions. An advanced electrical system shall be used to ensure radiated and conducted electromagnetic interference (EMI) or radio frequency interference (RFI) emissions are suppressed at their source.</p> <p>The apparatus shall have the ability to operate in the electromagnetic environment typically found in fire ground operations to ensure clean operations. The electrical system shall meet, without exceptions, electromagnetic susceptibility conforming to SAE J1113/25 Region 1, Class C EMR for 10KHz-1GHz to 100 Volts/Meter. The vehicle OEM, upon request, shall provide EMC testing reports from testing conducted on an entire apparatus and shall certify that the vehicle meets SAE J551/2 and SAE J1113/25 Region 1, Class C EMR for 10KHz-1GHz to 100 Volts/Meter requirements. Component and partial (incomplete) vehicle testing is not adequate as overall vehicle design can impact test results and thus is not acceptable by itself.</p> <p>EMI/RFI susceptibility shall be controlled by applying appropriate circuit designs and shielding. The electrical system shall be designed for full compatibility with low-level control signals and high-powered two-way radio communication systems. Harness and cable routing shall be given careful attention to minimize the potential for conducting and radiated EMI/RFI susceptibility.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p><u>ELECTRICAL</u></p> <p>All 12-volt electrical equipment installed by the apparatus manufacturer shall conform to modern automotive practices. All wiring shall be high temperature crosslink type. Wiring shall be run, in loom or conduit, where exposed and have grommets where wire passes through sheet metal. Automatic reset circuit breakers shall be provided which conform to SAE Standards. Wiring shall be color, function and number coded. Function and number codes shall be continuously imprinted on all wiring harness conductors at 2.00" intervals. Exterior exposed wire connectors shall be positive locking, and environmentally sealed to withstand elements such as temperature extremes, moisture and automotive fluids.</p> <p>Electrical wiring and equipment shall be installed utilizing the following guidelines:</p> <ol style="list-style-type: none"> 1. All holes made in the roof shall be caulked with silicon, rope caulk is not acceptable. Large fender washers, liberally caulked, shall be used when fastening equipment to the underside of the cab roof. 2. Any electrical component that is installed in an exposed area shall be mounted in a manner that shall not allow moisture to accumulate in it. Exposed area shall be defined as any location outside of the cab or body. 3. Electrical components designed to be removed for maintenance shall not be fastened with nuts and bolts. Metal screws shall be used in mounting these devices. Also a coil of wire shall be provided behind the appliance to allow them to be pulled away from mounting area for inspection and service work. 4. Corrosion preventative compound shall be applied to all terminal plugs located outside of the cab or body. All non-waterproof connections shall require this compound in the plug to prevent corrosion and for easy separation (of the plug). 5. All lights that have their sockets in a weather exposed area shall have corrosion preventative compound added to the socket terminal area. 6. All electrical terminals in exposed areas shall have silicon (1890) applied completely over the metal portion of the terminal. <p>All lights and reflectors, required to comply with Federal Motor Vehicle Safety Standard #108, shall be furnished. Rear identification lights shall be recessed mounted for protection. Lights and wiring mounted in the rear bulkheads shall be protected from damage by installing a false bulkhead inside the rear compartments.</p> <p>An operational test shall be conducted to ensure that any equipment that is permanently attached to the electrical system is properly connected and in working order.</p> <p>The results of the tests shall be recorded and provided to the purchaser at time of delivery.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p><u>BATTERY SYSTEM</u></p> <p>There shall be six (6) 12 volt Exide®, Model 31S950X3W, batteries that include the following features shall be provided:</p> <ul style="list-style-type: none"> • 950 CCA, cold cranking amps • 190 amp reserve capacity • High cycle • Group 31 • Rating of 5700 CCA at 0 degrees Fahrenheit • -140 minutes of reserve capacity • Threaded stainless steel studs <p>Each battery case shall be a black polypropylene material with a vertically ribbed container for increased vibration resistance. The cover shall be manifold vented with a central venting location to allow a 45 degree tilt capacity.</p> <p>The inside of each battery shall consist of a "maintenance free" grid construction with poly wrapped separators and a flooded epoxy bottom anchoring for maximum vibration resistance.</p> <p><u>BATTERY SYSTEM</u></p> <p>There shall be a single starting system with an ignition switch and starter button provided and located on the cab instrument panel.</p> <p><u>MASTER BATTERY SWITCH</u></p> <p>There shall be a master battery switch provided within the cab within easy reach of the driver to activate the battery system.</p> <p>An indicator light shall be provided on the instrument panel to notify the driver of the status of the battery system.</p> <p><u>BATTERY COMPARTMENTS</u></p> <p>Batteries shall be stored in well-ventilated compartments that are located under the cab and bolted directly to the chassis frame. The battery compartments shall be constructed of 0.188" steel plate and be designed to accommodate a maximum of three (3) group 31 batteries in each compartment. The battery hold-downs shall be of a non-corrosive material. All bolts and nuts shall be stainless steel.</p> <p>The compartments shall include formed fit heavy duty roto-molded polyethylene battery trays with drain tubes for the batteries to sit in.</p> <p>Heavy-duty battery cables shall be used to provide maximum power to the electrical system. Cables shall be color-coded.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>Battery terminal connections shall be coated with anti-corrosion compound. Battery solenoid terminal connections shall be encapsulated with semi-permanent rubberized compound.</p> <p><u>JUMPER STUDS</u></p> <p>One (1) set of battery jumper studs with plastic color-coded covers shall be installed on the bottom of the driver's side battery box. This shall provide for easy jumper cable access.</p> <p><u>BATTERY CHARGER</u></p> <p>There shall be a Kussmaul™ 1200, Model 091-187-12-Remote, battery charger provided. A bar graph display indicating the state of charge shall be provided.</p> <p>The charger shall have a maximum output of 40 amps and a fully automatic regulation.</p> <p>The battery charger shall be wired to the AC shoreline inlet through an AC receptacle adjacent to the battery charger.</p> <p>The battery charger shall be located in the left body compartment mounted on the left wall as high as possible.</p> <p>The battery charger indicator shall be located in the driver's step area.</p> <p><u>SHORELINE</u></p> <p>There shall be one (1) 20 amp 120 volt AC straight blade inlet(s) NEMA 5-20 with gray cover(s) provided to operate the dedicated 120 volt AC circuits on the apparatus.</p> <p>The shoreline shall be connected to To the battery charger in D3.</p> <p>A mating connector body shall also be supplied with the loose equipment.</p> <p>There shall be a label installed near the inlet(s) that state the following:</p> <ul style="list-style-type: none"> • Line Voltage • Current Rating (amps) • Phase • Frequency <p>The shoreline receptacle shall be located in the driver side lower step well of cab.</p> <p><u>BATTERY TRAYS</u></p> <p>Formed fit heavy-duty roto-molded polyethylene battery trays with drain tubes shall be provided for the batteries to sit in.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p><u>ALTERNATOR</u> A Delco Remy®, Model 55SI, alternator shall be provided. It shall have a rated output current of 430 amps, as measured by SAE method J56. The alternator shall feature an integral regulator and rectifier system that has been tested and qualified to an ambient temperature of 257 degrees Fahrenheit (125 degrees Celsius). The alternator shall be connected to the power and ground distribution system with heavy-duty cables sized to carry the full rated alternator output.</p> <p><u>DUAL USB SOCKET</u> There shall be four (4) Kussmaul, 091-219, dual USB type A charger sockets installed Two (2) on the Officers Instrument Panel, One (1) on the Drivers Instrument Panel, One (1) to be Determined. Power shall be directly to the battery power .</p> <p><u>ELECTRONIC LOAD MANAGER</u> An electronic load management (ELM) system shall be provided that monitors the vehicles 12-volt electrical system, automatically reducing the electrical load in the event of a low voltage condition, and automatically restoring the shed electrical loads when a low voltage condition expires. This ensures the integrity of the electrical system.</p> <p>For improved reliability and ease of use, the load manager system shall be an integral part of the vehicle's solid state control system requiring no additional components to perform load management tasks. Load management systems which require additional components shall not be allowed.</p> <p>The system shall include the following features:</p> <ul style="list-style-type: none"> • System voltage monitoring. • A shed load shall remain inactive for a minimum of five minutes to prevent the load from cycling on and off. • Sixteen available electronic load shedding levels. • Priority levels can be set for individual outputs. • High Idle to not be controlled by the load manager. <ul style="list-style-type: none"> ○ If enabled: <ul style="list-style-type: none"> ▪ "Load Man Hi-Idle On" shall display on the information center. ▪ Hi-Idle shall not activate until 30 seconds after engine start up. • Individual switch "on" indicator to flash when the particular load has been shed. • The information center indicates system voltage. <p>The information center, where applicable, includes a "Load Manager" screen indicating the following:</p> <ul style="list-style-type: none"> • Load managed items list, with priority levels and item condition. 		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> • Individual load managed item condition: <ul style="list-style-type: none"> ○ ON = not shed ○ SHED = shed <p><u>SEQUENCER</u></p> <p>A sequencer shall be provided that automatically activates and deactivates vehicle loads in a preset sequence thereby protecting the alternator from power surges. This sequencer operation shall allow a gradual increase or decrease in alternator output, rather than loading or dumping the entire 12 volt load to prolong the life of the alternator.</p> <p>For improved reliability and ease of use, the load sequencing system shall be an integral part of the vehicle's solid state control system requiring no additional components to perform load sequencing tasks. Load sequencing systems which require additional components shall not be allowed.</p> <p>Emergency light sequencing shall operate in conjunction with the emergency master light switch. When the emergency master switch is activated, the emergency lights shall be activated one by one at half-second intervals. Sequenced emergency light switch indicators shall flash while waiting for activation.</p> <p>When the emergency master switch is deactivated, the sequencer shall deactivate the warning light loads in the reverse order.</p> <p>Sequencing of the following items shall also occur, in conjunction with the ignition switch, at half-second intervals:</p> <ul style="list-style-type: none"> • Cab Heater and Air Conditioning • Crew Cab Heater (if applicable) • Crew Cab Air Conditioning (if applicable) • Exhaust Fans (if applicable) • Third Evaporator (if applicable) <p><u>HEADLIGHTS</u></p> <p>There shall be four (4) rectangular halogen lights mounted in the front quad style, chrome housing on each side of the cab grille:</p> <ul style="list-style-type: none"> • The outside light on each side shall contain a halogen low and high beam module. • The inside light on each side shall contain a halogen high beam module only. 		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p><u>DIRECTIONAL LIGHTS</u></p> <p>There shall be two (2) Whelen® 600 series, LED combination directional/marker lights provided. The lights shall be located on the outside cab corners, next to the headlights.</p> <p>The color of the lenses shall be the same color as the LED's.</p> <p><u>INTERMEDIATE LIGHT</u></p> <p>There shall be two (2) Weldon, Model 9186-8580-29, amber LED turn signal marker lights furnished, one (1) each side, in the rear fender panel. The light shall double as a turn signal and marker light.</p> <p><u>CAB CLEARANCE/MARKER/ID LIGHTS</u></p> <p>There shall be seven (7) amber LED lights provided to indicate the presence and overall width of the vehicle in the following locations:</p> <ul style="list-style-type: none"> • Three (3) amber LED identification lights shall be installed in the center of the cab above the windshield. • Two (2) amber LED clearance lights shall be installed, one (1) on each outboard side of the cab above the windshield. • Two (2) amber LED marker lights shall be installed, one (1) on each side above the cab doors. <p><u>FRONT CAB SIDE DIRECTIONAL/MARKER LIGHTS</u></p> <p>There shall be two (2) Truck-Lite®, Model 19036Y, amber LED lights installed to the outside of the chrome wrap around bezel, one (1) on each side of the cab.</p> <p>The lights shall activate as marker lights with the headlight switch and directional lights with the corresponding directional circuit.</p> <p><u>REAR CLEARANCE/MARKER/ID LIGHTING</u></p> <p>There shall be a three (3) LED light bar used as identification lights located at the rear of the apparatus per the following:</p> <ul style="list-style-type: none"> • As close as practical to the vertical centerline • Centers spaced not less than 6.00" or more than 12.00" apart • Red in color • All at the same height <p>There shall be two (2) LED lights installed at the rear of the apparatus used as clearance lights located at the rear of the apparatus per the following:</p> <ul style="list-style-type: none"> • To indicate the overall width of the vehicle 		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> • One (1) each side of the vertical centerline • As near the top as practical • Red in color • To be visible from the rear • All at the same height <p>There shall be two (2) LED lights installed on the side of the apparatus used as marker lights as close to the rear as practical per the following:</p> <ul style="list-style-type: none"> • To indicate the overall length of the vehicle • One (1) each side of the vertical centerline • As near the top as practical • Red in color • To be visible from the side • All at the same height <p>There shall be two (2) red reflectors located on the rear of the truck facing to the rear. One (1) each side, as far to the outside as practical, at a minimum of 15.00", but no more than 60.00", above the ground.</p> <p>There shall be two (2) red reflectors located on the side of the truck facing to the side. One (1) each side, as far to the rear as practical, at a minimum of 15.00", but no more than 60.00", above the ground.</p> <p>Per FMVSS 108 and CMVSS 108 requirements.</p> <p><u>REAR FMVSS LIGHTING</u></p> <p>The rear stop/tail and directional LED lighting shall consist of the following:</p> <ul style="list-style-type: none"> • Two (2) Whelen®, Model M6BTT, red LED stop/tail lights • Two (2) Whelen, Model M6T, amber LED arrow turn lights <p>The lights shall be provided with color lenses.</p> <p>The lights shall be mounted in a polished combination housing.</p> <p>There shall be two (2) Whelen Model M6BUW, LED backup lights provided in the tail light housing.</p> <p><u>LICENSE PLATE BRACKET</u></p> <p>There shall be one (1) license plate bracket mounted on the rear of the body.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>A white LED light shall illuminate the license plate. A polished stainless steel light shield shall be provided over the light that shall direct illumination downward, preventing white light to the rear.</p> <p><u>LIGHTING BEZEL</u></p> <p>There shall be two (2) Whelen, Model M6FCV4P, four (4) place chromed ABS housings provided for the rear M6 series stop/tail, directional, back up, scene lights or warning lights.</p> <p><u>BACK-UP ALARM</u></p> <p>A PRECO, Model 1040, solid-state electronic audible back-up alarm that actuates when the truck is shifted into reverse shall be provided. The device shall sound at 60 pulses per minute and automatically adjust its volume to maintain a minimum ten (10) dBA above surrounding environmental noise levels.</p> <p><u>MARKER LIGHTS</u></p> <p>There shall be one (1) pair of amber and red, Britax, Model L427.203.L12, LED marker lights with rubber arm, located One each side of the truck mounted at the rear of the body as low as practical . The amber lens shall face the front and the red lens shall face the rear of the truck and be the most rearward marker light.</p> <p>These lights shall be activated with the running lights of the vehicle.</p> <p><u>CAB PERIMETER SCENE LIGHTS</u></p> <p>There shall be four (4) Truck-lite, Model 6060C, white LED lights with grommets provided, one (1) for each cab and crew cab door.</p> <p>These lights shall be activated automatically when the battery switch is on and the exit doors are opened or by the same means as the body perimeter scene lights.</p> <p><u>PUMP HOUSE PERIMETER LIGHTS</u></p> <p>There shall be two (2) Truck-Lite, Model 6060C, white LED lights with grommets provided under the pump panel running boards, one (1) each side.</p> <p>The lights shall be controlled by the same means as the body perimeter lights.</p> <p><u>BODY PERIMETER SCENE LIGHTS</u></p> <p>There shall be two (2) Truck-Lite, Model 6060C, white LED lights with grommets provided under at the rear step area of the body, one (1) each side shining to the rear.</p> <p>The perimeter scene lights shall be activated when the parking brake is applied.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p><u>STEP LIGHTS</u></p> <p>There shall be four (4) white LED, step lights provided. One (1) step light shall be provided on each side, on the front compartment face and two (2) step lights at the rear to illuminate the tailboard.</p> <p>In order to ensure exceptional illumination, each light shall provide a minimum of 25 foot-candles (fc) covering an entire 15" x 15" square placed ten (10) inches below the light and a minimum of 1.5 fc covering an entire 30" x 30" square at the same ten (10) inch distance below the light.</p> <p>These step lights shall be actuated when the ignition switch is on and the parking brake is set.</p> <p>All other steps on the apparatus shall be illuminated per the current edition of NFPA 1901.</p> <p><u>12 VOLT LIGHTING</u></p> <p>There shall be one (1) Whelen Model PCP2P, 12 volt DC LED combination spot/floodlight(s) installed on the apparatus.</p> <p>The painted parts of this light assembly to be white.</p> <p>The lights shall be installed Passenger side rear of cab, match the drivers side.</p> <p>The light(s) to be installed on a side body/surface mount push-up pole(s).</p> <p>The length of the outside pole to be 20.00".</p> <p>The inside pole length to be 57.00" long or as long as practical to fit in the location selected.</p> <p>The light pole(s) to be installed without handle holder(s).</p> <p>The lights shall be controlled by the following:</p> <ul style="list-style-type: none"> • a switch at the passenger's side switch panel. • a switch at the pump operator's panel. • A switch at the driver's side switch panel. <p>These light(s) may be load managed when the parking brake is applied.</p> <p><u>12 VOLT LIGHTING</u></p> <p>There shall be one (1) Whelen Model PCP2P, 12 volt DC LED combination spot/floodlight(s) installed on the apparatus.</p> <p>The painted parts of this light assembly to be white.</p> <p>The lights shall be installed on extendable poles Drivers side rear of cab,</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>The light(s) to be installed on a side body/surface mount push-up pole(s).</p> <p>The length of the outside pole to be 20.00".</p> <p>The inside pole length to be 57.00" long or as long as practical to fit in the location selected.</p> <p>The light pole(s) to be installed without handle holder(s).</p> <p>The lights shall be controlled by the following:</p> <ul style="list-style-type: none"> • a switch at the driver's side switch panel. • a switch at the pump operator's panel. • a switch at the passenger's side switch panel. <p>These light(s) may be load managed when the parking brake is applied.</p> <p><u>LIGHT POLE GUARD</u></p> <p>A polished stainless steel guard shall be provided at the rear of the cab to cover the light pole for a telescoping floodlight. This guard shall provide protection for the pole from any damage that may be caused by the hose couplings during removal of hose from the crosslay hose beds.</p> <p>There shall be a total of two (2) guards provided.</p> <p><u>12 VOLT LIGHTING</u></p> <p>There shall be one (1) Whelen, Model PCPSM1*, 12 volt surface mounted LED combination spot/flood light(s) located Drivers side of cab, behind the crew cab door, as high as possible. The lights shall be mounted with black flange(s).</p> <p>The light(s) selected above shall be controlled by the following:</p> <ul style="list-style-type: none"> • a switch at the driver's side switch panel <p>These light(s) may be load managed when the parking brake is set.</p> <p><u>12 VOLT LIGHTING</u></p> <p>There shall be one (1) Whelen, Model PCPSM2*, 12 volt surface mounted LED combination spot/flood light(s) located One (1) on the drivers side body panel, centered above the compartment over the rear wheels. The lights shall be mounted with chrome flange(s).</p> <p>The light(s) selected above shall be controlled by the following:</p> <ul style="list-style-type: none"> • a switch at the driver's side switch panel • a switch at the passenger's side switch panel • a switch at the pump operator's panel 		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>These light(s) may be load managed when the parking brake is set.</p> <p><u>12 VOLT LIGHTING</u></p> <p>There shall be one (1) Whelen, Model PCPSM1*, 12 volt surface mounted LED combination spot/flood light(s) located Passengers side of cab, behind the crew cab door, as high as possible. The lights shall be mounted with black flange(s).</p> <p>The light(s) selected above shall be controlled by the following:</p> <ul style="list-style-type: none"> • a switch at the passenger's side switch panel <p>These light(s) may be load managed when the parking brake is set.</p> <p><u>12 VOLT LIGHTING</u></p> <p>There shall be one (1) Whelen, Model PCPSM2*, 12 volt surface mounted LED combination spot/flood light(s) located One (1) on the Passenger's side body panel, centered above the compartment over the rear wheels. The lights shall be mounted with chrome flange(s).</p> <p>The light(s) selected above shall be controlled by the following:</p> <ul style="list-style-type: none"> • a switch at the driver's side switch panel • a switch at the passenger's side switch panel • a switch at the driver's side pump panel <p>These light(s) may be load managed when the parking brake is set.</p> <p><u>12 VOLT LIGHTING</u></p> <p>There shall be one (1) Whelen® Pioneer™, Model PCP2*, 12 volt LED combination spot/flood light(s) provided on the front visor, centered.</p> <p>The painted parts of this light assembly to be black.</p> <p>The light(s) shall be controlled by the following:</p> <ul style="list-style-type: none"> • a switch at the driver's side switch panel • a switch at the passenger's side switch panel • no additional switch location <p>These light(s) may be load managed when the parking brake is set.</p> <p><u>HOSE BED LIGHTS</u></p> <p>There shall be white 12 volt DC LED light strips with stainless steel protective cover, provided to light the hose bed area.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> One (1) light strip shall be installed the entire length of the driver's side of the hose bed. One (1) light strip shall be installed the entire length of the passenger's side of the hose bed. <p>The lights shall be activated when the parking brake is applied.</p> <p><u>REAR SCENE LIGHTS</u></p> <p>There shall be two (2) Whelen, Model M9LZC, LED scene lights with chrome trim bezels installed at the rear of the apparatus. These lights shall be installed between 30.00" and 102.00" above the ground.</p> <p>The lights shall be controlled by a switch at the driver's side switch panel.</p> <p><u>WALKING SURFACE LIGHT</u></p> <p>There shall be Model FRP, 4" round black 12 volt DC LED floodlight with bolt mount provided to illuminate the entire designated walking surface on top of the body.</p> <p>The light shall be activated when the body step lights are on.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p><u>WATER TANK</u></p> <p>Booster tank shall have a capacity of 500 gallons and be constructed of polypropylene plastic by United Plastic Fabricating, Incorporated.</p> <p>Tank joints and seams shall be nitrogen welded inside and out.</p> <p>Tank shall be baffled in accordance with NFPA Bulletin 1901 requirements.</p> <p>Baffles shall have vent openings at both the top and bottom to permit movement of air and water between compartments.</p> <p>Longitudinal partitions shall be constructed of .38" polypropylene plastic and shall extend from the bottom of the tank through the top cover to allow for positive welding.</p> <p>Transverse partitions shall extend from 4.00" off the bottom of the tank to the underside of the top cover.</p> <p>All partitions shall interlock and shall be welded to the tank bottom and sides.</p> <p>Tank top shall be constructed of .50" polypropylene. It shall be recessed .38" and shall be welded to the tank sides and the longitudinal partitions.</p> <p>Tank top shall be sufficiently supported to keep it rigid during fast filling conditions.</p> <p>Construction shall include 2.00" polypropylene dowels spaced no more than 30.00" apart and welded to the transverse partitions. Two (2) of the dowels shall be drilled and tapped (.50" diameter, 13.00" deep) to accommodate lifting eyes.</p> <p>A sump that is 8.00" long x 8.00" wide x 6.00" deep shall be provided at the bottom of the water tank.</p> <p>Sump shall include a drain plug and the tank outlet.</p> <p>Tank shall be installed in a fabricated cradle assembly constructed of structural steel.</p> <p>Sufficient crossmembers shall be provided to properly support bottom of tank. Crossmembers shall be constructed of steel bar channel or rectangular tubing.</p> <p>Tank shall "float" in cradle to avoid torsional stress caused by chassis frame flexing. Rubber cushions, .50" thick x 3.00" wide, shall be placed on all horizontal surfaces that the tank rests on.</p> <p>Stops or other provision shall be provided to prevent an empty tank from bouncing excessively while moving vehicle.</p> <p>Mounting system shall be approved by the tank manufacturer.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>Fill tower shall be constructed of .50" polypropylene and shall be a minimum of 8.00" wide x 14.00" long.</p> <p>Fill tower shall be furnished with a .25" thick polypropylene screen and a hinged cover.</p> <p>An overflow pipe, constructed of 4.00" schedule 40 polypropylene, shall be installed approximately halfway down the fill tower and extend through the water tank and exit to the rear of the rear axle.</p> <p><u>HOT DIP GALVANIZED WATER TANK CRADLE</u></p> <p>The water tank cradle shall be treated through a hot dip galvanizing process. The cradle shall be immersed in molten zinc to provide a coating that shall help protect against the effects of corrosion.</p> <p>One (1) sleeve shall be provided in the water tank for a 3.00" pipe to the rear.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p><u>HOSE BED</u></p> <p>The hose bed shall be fabricated of corrosion resistant, low carbon austenitic, brushed and painted 304L stainless steel. Due to superior corrosion resistance of 300 stainless grades, other grades of austenitic stainless steels, or any grade of ferritic or martensitic stainless, shall not be acceptable.</p> <p>The sides shall not form any portion of the fender compartments.</p> <p>Standard hose body width shall be minimum of 68.00" inside.</p> <p>Upper and rear edges of side panels shall have a double break for rigidity, a split tube finish shall not be acceptable.</p> <p>The upper inside area of the beavertails shall be covered with brushed stainless steel to prevent damage to painted surface when hose is removed.</p> <p>Flooring of the hose bed shall be removable aluminum grating with the top surface corrugated to aid in hose aeration. The grating slats shall be a minimum of .50" x 4.50" with spacing between slats for hose ventilation.</p> <p>Hose bed shall accommodate Bay #1 400' of 1.75", Bay #2, 400' of 1.75", Bay #3 1200' of 5" LDH, 400' of 2.5".</p> <p><u>HOSE BED DIVIDER</u></p> <p>Four (4) adjustable hosebed dividers shall be furnished for separating hose.</p> <p>Each divider shall be constructed of a .125" brushed aluminum sheet fitted and fastened into a slotted, 1.50" diameter radiused extrusion along the top, bottom, and rear edge.</p> <p>Divider shall be fully adjustable by sliding in tracks, located at the front and rear of the hose bed.</p> <p>Divider shall be held in place by tightening bolts, at each end.</p> <p>Acorn nuts shall be installed on all bolts in the hose bed which have exposed threads.</p> <p>A cross-divider shall be provided just behind the fill tower. The divider shall be bolted to the side sheet.</p> <p><u>HOSE BED COVER</u></p> <p>A two (2) section hose bed cover, constructed of .125" bright aluminum treadplate shall be furnished. The cover shall be hinged with full length stainless steel piano hinge. The sides shall be slanted down with the center of the cover supported by a stationary bridgework support.</p> <p>The cover shall be reinforced so that it can support the weight of a man walking on the cover.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>The cover is designed with the left cover opening first.</p> <p>If access to water tank fill tower is blocked by the hose bed cover, then a hinged door shall be provided in it so that tank may be filled without raising cover doors.</p> <p>Chrome grab handles and gas filled cylinders shall be provided to assist in opening and closing the cover. A handrail is to be provided at the rear, in the center of the support, to assist in opening the cover.</p> <p><u>HOSEBED END FLAP</u></p> <p>There shall be a black vinyl flap shall be installed on the rear of the hosebed.</p> <p>The vinyl flap shall have nylon tie down straps, with quick release thumb spring buckles. Fasnab model 207668 stainless steel buckles shall be attached to the flaps. The vinyl end skirt shall be installed directly to the hosebed frame.</p> <p>Rubber coated hooks and stainless steel footman loops shall secure the end skirt/bed cover to the main body.</p> <p><u>RUNNING BOARDS</u></p> <p>Running boards shall be fabricated of .125" bright aluminum treadplate.</p> <p>Each running board shall be supported by a welded 2.00" square tubing and channel assembly, which shall be bolted to the pump compartment substructure.</p> <p>Running boards shall be 12.75" deep and spaced .50" away from the pump panel.</p> <p>A splash guard shall be provided above the running board treadplate.</p> <p><u>TAILBOARD</u></p> <p>The tailboard shall also be constructed of .125" bright aluminum treadplate and spaced .50" from the body, as well as supported by a structural steel assembly.</p> <p>The tailboard area shall be 18.00" deep and full width of the body.</p> <p>The exterior side shall be flanged down and in for increased rigidity of tailboard structure.</p> <p><u>REAR WALL, SMOOTH ALUMINUM/BODY MATERIAL</u></p> <p>The rear facing surfaces of the center rear wall shall be smooth aluminum.</p> <p>The bulkheads, the surface to the rear of the side body compartments, shall be smooth and the same material as the body.</p> <p>Any inboard facing surfaces below the height of the hosebed shall be aluminum diamondplate .</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p><u>TOW BAR</u></p> <p>A tow bar shall be installed under the tailboard at center of truck.</p> <p>Tow bar shall be fabricated of 1.00" CRS bar rolled into a 3.00" radius.</p> <p>Tow bar assembly shall be constructed of .38" structural angle. When force is applied to the bar, it shall be transmitted to the frame rail.</p> <p>Tow bar assembly shall be designed and positioned to allow up to a 30-degree upward angled pull of 17,000 lb, or a 20,000 lb straight horizontal pull in line with the centerline of the vehicle.</p> <p>Tow bar design shall have been fully tested and evaluated using strain gauge testing and finite element analysis techniques.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p><u>COMPARTMENTATION</u></p> <p>Body and compartments shall be fabricated of corrosion resistant, low carbon austenitic, brushed and painted 304L stainless steel. Due to superior corrosion resistance of 300 stainless grades, other grades of austenitic stainless steels, or any grade of ferritic or martensitic stainless, shall not be acceptable.</p> <p>Side compartments shall be an integral assembly with the rear fenders.</p> <p>Circular fender liners shall be provided for prevention of rust pockets and ease of maintenance.</p> <p>Compartment flooring shall be of the sweep out design with the floor higher than the compartment door lip.</p> <p>The compartment door opening shall be framed by flanging the edges in 1.75" and bending out again .75" to form an angle.</p> <p>Drip protection shall be provided above the doors by means of bright aluminum extrusion, formed bright aluminum treadplate or polished stainless steel.</p> <p>The top of the compartment shall be covered with bright aluminum treadplate rolled over the edges on the front, rear and outward side. These covers shall have the corners TIG welded.</p> <p>Side compartment covers shall be separate from the compartment tops.</p> <p>Front facing compartment walls shall be covered with bright aluminum treadplate.</p> <p>All screws and bolts which protrude into a compartment shall have acorn nuts on the ends to prevent injury.</p> <p><u>UNDERBODY SUPPORT SYSTEM</u></p> <p>Due to the severe loading requirements of this pumper a method of body and compartment support suitable for the intended load shall be provided.</p> <p>The backbone of the support system shall be the chassis frame rails which is the strongest component of the chassis and is designed for sustaining maximum loads.</p> <p>The support system shall include .375" thick steel vertical angle supports bolted to the chassis frame rails with .625" diameter bolts.</p> <p>Attached to the bottom of the steel vertical angles shall be horizontal angles, with gussets welded to the vertical members, which extend to the outside edge of the body.</p> <p>A steel frame shall be mounted on the top of these supports to create a floating substructure which shall result in a 500 lb equipment support rating per lower compartment.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>The floating substructure shall be separated from the horizontal members with neoprene elastomer isolators. These isolators shall reduce the natural flex stress of the chassis from being transmitted to the body.</p> <p>The isolators shall have a broad load range, proven viability in vehicular applications, be of a fail safe design and allow for all necessary movement in three (3) transitional and rotational modes.</p> <p>The neoprene isolators shall be installed in a modified V three (3)-point mounting pattern to reduce the natural flex of the chassis being transmitted to the body.</p> <p>A design with body compartments simply hanging on the chassis in an unsupported fashion shall not be acceptable.</p> <p><u>AGGRESSIVE WALKING SURFACE</u></p> <p>All exterior surfaces designated as stepping, standing, and walking areas shall comply with the required average slip resistance of the current NFPA standards.</p> <p><u>LOUVERS</u></p> <p>Louvers shall be stamped into compartment walls to provide the proper airflow inside the body compartments and to prevent water from dripping into the compartment. Where these louvers are provided, they shall be formed into the metal and not added to the compartment as a separate plate.</p> <p><u>TESTING OF BODY DESIGN</u></p> <p>Body structural analysis shall be fully tested. Proven engineering and test techniques such as finite element analysis, model analysis, stress coating and strain gauging have been performed with special attention given to fatigue, life and structural integrity of the cab, body and substructure.</p> <p>The body shall be tested while loaded to its greatest in-service weight.</p> <p>The criteria used during the testing procedure shall include:</p> <ul style="list-style-type: none"> - Raising opposite corners of the vehicle tires 9.00" to simulate the twisting a truck may experience when driving over a curb. - Making a 90 degree turn, while driving at 20 mph to simulate aggressive driving conditions. - Driving the vehicle on at 35 mph on a washboard road. - Driving the vehicle at 55 mph on a smooth road. - Accelerating the vehicle fully, until reaching the approximate speed of 45 mph on rough pavement. 		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>Evidence of the actual testing techniques shall be made available upon request.</p> <p><u>COMPARTMENTATION, DRIVER'S SIDE</u></p> <p>A full height, vertically hinged, single door compartment ahead of the rear wheels shall be provided. The interior dimensions of this compartment shall be 34.50" wide x 66.63" high x 25.88" deep in the lower 26.00" of the compartment and 12.00" deep in the remaining upper portion. The depth of the compartment shall be calculated with the compartment door closed. The compartment interior shall be fully open from the compartment ceiling to the compartment floor and designed so that no permanent dividers are required between the upper and lower sections. The clear door opening of this compartment shall be 30.00" wide x 62.00" high.</p> <p>A positive door holder shall be furnished with this compartment.</p> <p>A horizontally hinged, single lift-up door compartment over the rear wheels shall be provided. The interior dimensions of this compartment shall be 66.50" wide x 32.88" high x 12.00" deep. The depth of the compartment shall be calculated with the compartment door closed. The clear door opening of this compartment shall be 59.50" wide x 28.25" high.</p> <p>The lift-up door shall be furnished with two (2) gas-charged cylinders to assist in the opening of the door and to maintain the door in an open position. There shall be a field adjustable, three-position bracket mounted on the vertical side door opening that shall allow the door to be held open at 87°, 90°, or 93°.</p> <p>Closing of the door shall not require releasing, unlocking, or unlatching any mechanism.</p> <p>A full height, vertically hinged, double door compartment behind the rear wheels shall be provided. The interior dimensions of this compartment shall be 47.50" wide x 67.63" high x 25.88" deep in the lower 26.00" of the compartment and 12.00" deep in the remaining upper portion. The depth of the compartment shall be calculated with the compartment door closed. The compartment interior shall be fully open from the compartment ceiling to the compartment floor and designed so that no permanent dividers are required between the upper and lower sections. The clear door opening of this compartment shall be 46.00" wide x 63.00" high.</p> <p>Positive door holders shall be furnished with this compartment.</p> <p><u>COMPARTMENTATION, PASSENGER'S SIDE</u></p> <p>A full height, vertically hinged, single door compartment ahead of the rear wheels shall be provided. The interior dimensions of this compartment shall be 34.50" wide x 67.63" high x 25.88" deep in the lower 26.00" of the compartment and 12.00" deep in the remaining upper portion. The depth of the compartment shall be calculated with the compartment door closed. The compartment interior shall be fully open from the compartment ceiling to the compartment</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>floor and designed so that no permanent dividers are required between the upper and lower sections. The clear door opening of this compartment shall be 30.00" wide x 63.00" high.</p> <p>A positive door holder shall be furnished with this compartment.</p> <p>A horizontally hinged, single lift-up door compartment over the rear wheels shall be provided.. The interior dimensions of this compartment shall be 66.50" wide x 32.88" high x 12.00" deep. The depth of the compartment shall be calculated with the compartment door closed. The clear door opening of this compartment shall be 59.50" wide x 28.25" high.</p> <p>The lift-up door shall be furnished with two (2) gas-charged cylinders to assist in the opening of the door and to maintain the door in an open position. There shall be a field adjustable, three-position bracket mounted on the vertical side door opening that shall allow the door to be held open at 87°, 90°, or 93°. Closing of the door shall not require releasing, unlocking, or unlatching any mechanism.</p> <p>A full height, vertically hinged, double door compartment behind the rear wheels shall be provided. The interior dimensions of this compartment shall be 47.50" wide x 67.63" high x 12.00" deep. A section of this compartment shall be 25.88" deep x 47.50" wide x 26.00" high directly behind the rear wheels. The depth of the compartment shall be calculated with the compartment door closed. The compartment interior shall be fully open from the compartment ceiling to the compartment floor and designed so that no permanent dividers are required between the upper and lower sections. The clear door opening of this compartment shall be 46.00" wide x 63.00" high.</p> <p>A positive door holder shall be furnished with this compartment.</p> <p><u>DOORS, SIDE COMPARTMENT</u></p> <p>All hinged compartment doors shall be lap style with double panel construction and shall be a minimum of 1.50" thick. To provide additional door strength a "C" section reinforcement shall be installed between the outer and interior panels.</p> <p>Doors shall be provided with a closed cell rubber gasket around the surface that laps onto the body. A second heavy-duty automotive rubber molding with a hollow core shall be installed on the door framing that seals onto the interior panel, to ensure a weather resisting compartment.</p> <p>All compartment doors shall have polished stainless steel continuous hinge with a pin diameter of .25" that is bolted or screwed on with stainless steel fasteners. (Hinges which are welded on shall not be acceptable.)</p> <p>All door locking mechanisms shall be fully enclosed within the door panels to prevent fouling of the lock in the event equipment inside shifts into the lock area.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>Doors shall be latched with recessed, polished stainless steel "D" ring handles and FMVSS approved door locking mechanisms.</p> <p>To prevent corrosion caused by dissimilar metals, compartment door handles shall not be attached to outer door panel with screws. A rubber gasket shall be provided between the "D" ring handle and the door.</p> <p><u>COMPARTMENTATION, REAR</u></p> <p>A roll-up door compartment above the rear tailboard shall be provided.</p> <p>Interior dimensions of this compartment shall be 40.00" wide x 47.63" high x 41.88" deep in the lower 38.75" of height and 31.75" deep in the remaining upper portion. Depth of the compartment shall be calculated with the compartment door closed.</p> <p>For a chassis with a rear mounted fuel tank, a louvered removable access panel shall be furnished on the back wall of the compartment.</p> <p>Rear compartment shall be open into the rear side compartments.</p> <p>Clear door opening of this compartment shall be 33.25" wide x 38.75" high.</p> <p>Closing of the door shall not require releasing, unlocking, or unlatching any mechanism and shall easily be accomplished with one hand.</p> <p><u>ROLLUP DOOR, REAR COMPARTMENT</u></p> <p>The rear compartment shall have a rollup door.</p> <p>The door shall be double faced, aluminum construction, satin aluminum and manufactured by AMDOR™ brand rollup doors.</p> <p>The door shall be constructed using 1.00" extruded double wall aluminum slats which shall feature a flat smooth interior surface to provide maximum protection against equipment hang-up. The slats shall be connected with a structural driven ball and socket hinge designed to provide maximum curtain diaphragm strength. Mounting and adjusting the curtain shall be done with a clip system that connects the curtain to the balancer drum allowing for easy tension adjustment without tools. The slats shall be mounted in reusable slat shoes with positive snap-lock securement.</p> <p>Each slat shall incorporate weather tight recessed dual durometer seals. One (1) fin shall be designed to locate the seal within the extrusion. The second shall serve as a wiping seal which shall also allow for compression to prevent water ingress.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>The door shall be mounted in a one (1)-piece aluminum side frame with recessed side seals to minimize seal damage during equipment deployment. All seals including side frames, top gutters and bottom panel are to be manufactured utilizing non-marring materials.</p> <p>Bottom panel flange of rollup door shall be equipped with two (2) cut-outs to allow for easier access with gloved hands.</p> <p>A stainless steel lift bar to be provided for opening the door and located at the bottom of each door with latches on the outer extrusion of the door frame. A ledge to be supplied over lift bar for additional area to aid in closing the door. The lift bar shall be located at the bottom of door with striker latches installed at the base of the side frames. Side frame mounted door strikers shall include support beneath the stainless steel lift bar to prevent door curtain bounce, improve bottom seal life expectancy and to avoid false door ajar signals.</p> <p>All injection molded rollup door wear components shall be constructed of Type 6 nylon.</p> <p>The door shall have a 3.00 inch diameter balancer/tensioner drum to assist in lifting the door (garage door style) shall not acceptable.</p> <p>The header for the rollup door assembly shall not exceed 4.00".</p> <p>A heavy-duty magnetic switch shall be used for control of open compartment door warning lights.</p> <p><u>DOOR GUARD</u></p> <p>There shall be seven (7) compartment doors that shall include a guard/drip pan designed to protect the rollup door from damage when in the retracted position and contain any water spray. The guard shall be fabricated from stainless steel and installed driver side forward compartment, driver side over the wheel compartment, driver side rearward compartment, rear compartment, passenger side forward compartment, passenger side over the wheel compartment and passenger side rearward compartment.</p> <p><u>DOOR FRAME SCUFFPLATE</u></p> <p>Two (2) scuffplates shall be provided for the lower door frame of D2, P2. Each scuffplate shall be polished stainless steel with a .38" lip down.</p> <p>The scuffplate shall extend underneath the rubber door seal. No painted areas shall be visible on the horizontal area of the door frame.</p> <p><u>SCUFFPLATE ON INTERIOR OF COMPARTMENT DOOR(S)</u></p> <p>The six (6) compartment doors shall include a polished stainless steel scuffplate to cover the entire width and height on the inside panel of each door pan.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>Scuffplate shall be located D1 (2), D3 (1), P1 (2), P3 (1).</p> <p><u>COMPARTMENT LIGHTING</u></p> <p>There shall be seven (7) compartments with Amdor, Model AY-9220, white 12 volt DC LED compartment light strips. The lights shall be mounted with mechanical fasteners.</p> <p>There shall be two (2) strip lights installed vertically in each compartment opening per the latest NFPA requirements.</p> <p>The lights shall be activated when the battery switch is on and the respective compartment door is opened.</p> <p><u>COMPARTMENT LIGHTING</u></p> <p>Metal clamps shall be used to retain the strip lighting in all body compartments.</p> <p><u>ADDITIONAL COMPARTMENT LIGHTING</u></p> <p>There shall be three (3) Amdor, Model AY-9220-21, 21.27" long white 12 volt DC LED light stick(s) provided. These light shall be installed One (1) Inside the ladder storage compartment on the hinge side, One (1) on each side under the storage compartment in the cab, mounted at the top.. The lights shall be mounted with mechanical fasteners.</p> <p>Opening the compartment door(s) shall automatically turn the compartment lighting on.</p> <p>These lights may be load managed when the parking brake is applied.</p> <p><u>MOUNTING TRACKS</u></p> <p>There shall be seven (7) sets of tracks for mounting shelf(s) in D3, D2, D1, R1, P1, P2 and P3. These tracks shall be installed vertically to support the adjustable shelf(s), and shall be full height of the compartment. The tracks shall be painted to match the compartment interior.</p> <p><u>ADJUSTABLE SHELVES</u></p> <p>There shall be six (6) shelves with a capacity of 500 lb provided. The shelf construction shall consist of .188" aluminum with 2.00" sides. Each shelf shall be painted to match the compartment interior. Each shelf shall be infinitely adjustable by means of a threaded fastener, which slides in a track.</p> <p>The shelves shall be held in place by .12" thick stamped plated brackets and bolts.</p> <p>The location shall be To be determined.</p> <p><u>SLIDE-OUT ADJUSTABLE HEIGHT TRAY</u></p> <p>There shall be one (1) slide-out tray provided.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>Each tray shall have 2.00" high sides and a capacity rating of up to 500 lb in the extended position.</p> <p>Each tray shall be mounted on a pair of side mounted slides. The slide mechanisms shall have ball bearings for ease of operation and years of dependable service. The slides shall be mounted to shelf tracks to allow the tray to be adjustable up and down within the designated mounting location.</p> <p>An automatic lock shall be provided for both the in and out tray positions. The lock trip mechanism shall be located at the front of the tray and shall be easily operated with a gloved hand.</p> <p>The tray(s) shall be located R1.</p> <p><u>SLIDE-OUT FLOOR MOUNTED TRAY</u></p> <p>There shall be four (4) floor mounted slide-out tray(s) provided.</p> <p>Each tray shall have 2.00" high sides and a minimum capacity rating of 500 lb in the extended position.</p> <p>Each tray shall be constructed of aluminum [Material Finish, Tray].</p> <p>There shall be two undermount-roller bearing type slides rated at 250lb each provided. The pair of slides shall have a safety factor rating of 2.</p> <p>To ensure years of dependable service, the slides shall be coated with a finish that is tested to withstand a minimum of 1,000 hours of salt spray per ASTM B117.</p> <p>To ensure years of easy operation, the slides shall require no more than a 50lb force for push-in or pull-out movement when fully loaded after having been subjected to a 40 hour vibration (shaker) test under full load. The vibration drive file shall have been generated from accelerometer data collected from a heavy truck chassis driven over rough gravel roads in an unloaded condition. Proof of compliance shall be provided upon request.</p> <p>Automatic locks shall be provided for both the "in" and "out" positions. The trip mechanism for the locks shall be located at the front of the tray for ease of use with a gloved hand.</p> <p>The location(s) shall be D1, P1, D3 and R1.</p> <p><u>SWING OUT TOOLBOARD</u></p> <p>A swing out aluminum toolboard shall be provided.</p> <p>It shall be a minimum of .188" thick without holes in the board.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>A 1.00" x 1.00" aluminum tube frame shall be welded to the edge of the pegboard.</p> <p>The board shall be mounted on a pivoting device at the back of the compartment on the top and bottom to allow easy movement in and out of the compartment. The maximum tool load shall be 400 pounds.</p> <p>The board shall have positive lock in the stowed and extended position.</p> <p>The board shall be mounted on adjustable tracks from front to back within the compartment.</p> <p>There shall be One (1) toolboard(s) provided. The toolboard(s) shall be finished to match the compartment interior and installed P2.</p> <p><u>SCBA HOLDER</u></p> <p>A total of two (2) Ziamatic model ULLH SCBA holder bracket. This bracket shall be compliant with NFPA 1901-04 Section 14.1.10.1 and shall include a backplate, two seats, a footplate and the model LLS ("Load & Lock") strap to hold the bottle in the bracket. The bracket seats shall be a "one size fits all" style seat and shall accommodate SCBA cylinders from the high pressure 30-minute to the high pressure 60-minute.</p> <p>The brackets shall be mounted To be mounted at Pick Up, in body compartments.</p> <p><u>BACKBOARD STORAGE</u></p> <p>A transverse area over the pump and rearward of the crosslays shall hold one (1) storage trough.</p> <p>A blister shall be supplied at each side to enclose the backboards due to their length.</p> <p>The backboards shall be accessible from either side of the vehicle through the aluminum treadplate door(s) with a pair of flush lift and turn latches.</p> <p>The size of the backboard(s) to be stored shall be 20" x 72" x 3.0" thick .</p> <p><u>MATTING, COMPARTMENT SHELVING</u></p> <p>Turtle Tile compartment matting shall be provided in ten (10) shelves. The locations are, each compartment shelf and tray.</p> <p>The color of Turtle Tile shall be gray.</p> <p><u>MATTING, COMPARTMENT FLOOR</u></p> <p>Turtle Tile compartment matting shall be provided in five (5) compartments on the compartment floor. The locations are, To be determined.</p> <p>The Turtle Tile shall be gray and the leading edge of the matting shall include the beveled edge. The beveled edge shall be gray .</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>Pac Trac equipment mounting system shall be installed on the walls of four (4) compartment(s), Upper portion of P1, P3, D1, D2.</p> <p><u>RUB RAIL</u> Bottom edge of the side compartments shall be trimmed with a bright aluminum extruded rub rail.</p> <p>Trim shall be 2.12" high with 1.38" flanges turned outward for rigidity.</p> <p>The rub rails shall not be an integral part of the body construction, which allows replacement in the event of damage.</p> <p>The rub rails shall be spaced out far enough to protect the lift bars on the rollup doors.</p> <p><u>BODY FENDER CROWNS</u> Stainless steel fender crowns shall be provided around the rear wheel openings.</p> <p>A rubber welting shall be provided between the body and the crown to seal the seam and restrict moisture from entering.</p> <p>A dielectric barrier shall be provided between the fender crown fasteners (screws) and the fender sheet metal to prevent corrosion.</p> <p><u>HARD SUCTION HOSE</u> Hard suction hose shall not be required.</p> <p><u>HANDRAILS</u> The handrails shall be 1.25" diameter anodized aluminum extrusion, with a ribbed design, to provide a positive gripping surface.</p> <p>Chrome plated end stanchions shall support the handrail. Plastic gaskets shall be used between end stanchions and any painted surfaces.</p> <p>Drain holes shall be provided in the bottom of all vertically mounted handrails.</p> <p>Handrails shall be provided to meet NFPA 1901 section 15.8 requirements. The handrails shall be installed as noted on the sales drawing.</p> <p><u>HANDRAILS</u> One (1) vertical handrail, not less than 29.00" long, shall be located on each rear beavertail.</p> <ul style="list-style-type: none"> • One (1) full width horizontal handrail shall be provided below the hose bed at the rear of the apparatus. 		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p><u>AIR BOTTLE STORAGE (TRIPLE)</u></p> <p>A quantity of two (2) air bottle compartments designed to hold (3) air bottles up to 7.25" in diameter x 26.00" deep shall be provided on the passenger side forward of the rear wheels and on the passenger side rearward of the rear wheels. A polished stainless steel door with a chrome plated flush lift & turn latch shall be provided to contain the air bottle. A dielectric barrier shall be provided between the door hinge, hinge fasteners and the body sheet metal.</p> <p>Inside the compartment, black rubber matting shall be provided.</p> <p><u>AIR BOTTLE COMPARTMENT STRAP</u></p> <p>A strap shall be provided in the air bottle compartment(s) to help contain the air bottles when the vehicle is parked on an incline. The strap shall wrap around the neck and attach to the wall of the compartment.</p> <p><u>EXTENSION LADDER</u></p> <p>There shall be a 24' two-section aluminum Duo-Safety Series 900-A extension ladder provided.</p> <p><u>ROOF LADDER</u></p> <p>There shall be a 14' aluminum Duo-Safety Series 775-A roof ladder provided.</p> <p><u>LADDER STORAGE</u></p> <p>The ladders shall be stored between the water tank and the passenger's side compartments.</p> <p>The ladders shall extend into the pump compartment just to the rear of the water pump discharges.</p> <p>The ladder storage area shall be enclosed as practical by means of sheet metal to protect the ladders from road dirt. The ladders that extend into the pump house shall also be enclosed. A black rubber boot shall be provided to enclosed the ladders in the gap between the pump house and the body.</p> <p>Each ladder shall be stored vertically in a separate stainless steel storage trough. Each stainless steel trough shall be lined with Dura-Surf nylon slides.</p> <p>A bright aluminum treadplate enclosure shall be provided at the rear of the body to properly contain the ladders. This enclosure shall extend to the rear of the side body compartments.</p> <p>The enclosure shall also include a vertically hinged stainless steel door with a D-handle latch to access the ladders.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p><u>FOLDING LADDER</u> One (1) 10.00' aluminum, Series 585-A, Duo-Safety folding ladder shall be installed in a U-shaped trough inside the ladder storage compartment.</p> <p><u>PIKE POLE, 8'</u> One (1) pike pole, 8' long Akron with a fiberglass I-beam shaped handle, shall be provided and located Inside ladder storage compartment.</p> <p><u>PIKE POLE, 6'</u> One (1) pike pole, 6' long Akron with a fiberglass handle, shall be provided and located in the ladder storage compartment.</p> <p><u>PIKE POLE STORAGE</u> Stainless steel trough be used for the storage of two (2) pike poles, with D-handle style grip, shall be provided and installed Ladder Storage compartment.</p> <p><u>PIKE POLE STORAGE</u> Aluminum tubing shall be used for the storage of two (2) pike poles and shall be located in ladder storage compartment. If the head of a pike pole can come in contact with a painted surface, a stainless steel scuffplate shall be provided.</p> <p><u>FMVSS LABEL IN CAB (ADDITIONAL)</u> An additional FMVSS yellow label shall be provided and attached to the driver's side cab door stainless steel panel. The label shall be enlarged to an 8.50" x 11.00" size and installed as far to the inside as possible, next to the web strap of the door.</p> <p><u>STEPS</u> A folding step shall be provided on the front of each fender compartment. The step shall be bright finished, non-skid with a luminescent coating that is rechargeable from any light source and can hold a charge for up to 24 hours. Each step shall incorporate an LED light to illuminate the stepping surface. The step can be used as a hand hold with two openings wide enough for a gloved hand.</p> <p><u>REAR FOLDING STEPS</u> Bright finished, non-skid folding steps with a black coating shall be provided at the rear. Each step shall incorporate an LED light to illuminate the stepping surface. The steps can be used as a hand hold with two openings wide enough for a gloved hand.</p> <p>Four (4) additional folding steps shall be located Two (2) each side of the front body. The step(s) shall be bright finished, non-skid, with a luminescent coating. The luminescent coating is rechargeable from any light source and can hold a charge for up to 24 hours. Each step shall</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>incorporate an LED light to illuminate the stepping surface. The step(s) can be used as a hand hold with two openings wide enough for a gloved hand.</p> <p><u>ADDITIONAL STEP</u> An 8.00" deep, full width bright aluminum treadplate step shall be provided at the rear of the body.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p><u>MIDSHIP FIRE PUMP</u></p> <p>Midship fire pump shall be a Hale QMAX-200, 2000 gpm single (1) stage midship mounted centrifugal type.</p> <p>Pump shall be the class "A" type.</p> <p>Pump shall deliver the percentage of rated discharges at the pressures indicated below:</p> <ul style="list-style-type: none"> - 100% of rated capacity at 150 psi net pump pressure. - 100% of rated capacity at 165 psi net pump pressure. -70% of rated capacity at 200 psi net pump pressure. -50% of rated capacity at 250 psi net pump pressure. <p>Entire pump and both suction and discharge passages shall be hydrostatically tested to a pressure of 500 psi.</p> <p>Pump shall be fully tested at the pump manufacturer's factory to the performance requirements as outlined by the current NFPA 1901 standards and shall be free from objectionable pulsation and vibration.</p> <p>Pump body and related parts shall be of fine grain, alloy cast iron with a minimum tensile strength of 30,000 psi (2041.2 bar).</p> <p>All moving parts in contact with water shall be of high quality bronze or stainless steel. Pumps utilizing castings made of lower tensile strength cast iron shall not be acceptable.</p> <p>Pump body shall be horizontally split, on a single plane in two (2) sections, for easy removal of entire impeller assembly, including wear rings and bearings from beneath the pump, without disturbing pump piping or the mounting of the pump in the chassis.</p> <p>Pump shall have one (1) double suction impeller. The pump body shall have two (2) opposed discharge volute cutwaters to eliminate radial unbalance.</p> <p>Pump impeller shall be hard, fine grain bronze of the mixed flow design; accurately machined, hand-ground and individually balanced. The vanes of the impeller intake eyes shall be hand-ground and polished to a sharp edge. They shall be of sufficient size and design to provide ample reserve capacity utilizing minimum horsepower.</p> <p>Impeller clearance rings shall be bronze and easily renewable without replacing impeller or pump volute body. They shall be of the wrap-around double labyrinth design for maximum efficiency.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>Pump shaft shall be electric furnace heat-treated, corrosion resistant stainless steel. It shall be super-finished under packing with galvanic corrosion (zinc separators in packing) protection for longer shaft life. Pump shaft shall be sealed with double oil seal to keep road dirt and water out of drive unit.</p> <p>Pump shaft shall be rigidly supported by three (3) bearings for minimum deflection. A high lead bronze sleeve bearing shall be located immediately adjacent to the impeller (on the side opposite of the drive unit). The sleeve bearing shall be automatically oil lubricated and pressure balanced to exclude foreign material. The remaining bearings shall be heavy-duty, deep groove ball bearings in the gearbox and shall be splash lubricated.</p> <p>Pump shaft shall have one (1) packing gland located on inlet side of the pump, and shall be of the split design for ease of repacking.</p> <p>Packing gland shall be a full-circle threaded design to exert uniform pressure on packing and prevent "cocking" and uneven packing load when it is tightened (no exception).</p> <p>The packing gland shall be easily adjusted by hand (with a rod or screwdriver), no special tools or wrenches required.</p> <p>Packing rings shall be of a unique, permanently lubricated, long-life graphite composition, and have sacrificial zinc foil separators to protect the pump shaft from galvanic corrosion.</p> <p><u>PUMP TRANSMISSION</u></p> <p>The drive unit shall be cast and completely manufactured and tested at the pump manufacturer's factory. The pump drive unit shall be of sufficient size to withstand up to 16,000 foot/pound of torque from the engine in both road and pump operating conditions. The drive unit shall be designed with ample lubrication reserve to maintain the proper operating temperature.</p> <p>The gearbox drive shafts shall be of heat treated chrome nickel steel and at least 2.75 inches in diameter, on both the input and output drive shafts. They shall be designed to withstand the full torque of the engine in both road and pump operating conditions. All gears, both drive and pump, shall be of the highest quality, electric furnace, chrome nickel steel. Bores shall be ground to size and teeth integrated, crown-shaved and hardened, to give an extremely accurate gear for long life, smooth, quiet running and higher load carrying capability. An accurately cut spur design shall be provided to eliminate all possible end thrust.</p> <p>The pump ratio shall be selected by the apparatus manufacturer to provide the maximum performance with the engine and transmission selected. Three (3) green warning lights shall be provided to indicate to the operator(s) when the pump has completed the shift from Road to Pump position. Two (2) lights shall be located in the truck driving compartment and one (1) light on pump operator's panel, adjacent to the throttle control.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p><u>PUMPING MODE</u></p> <p>An interlock system shall be provided to ensure that the pump drive system components are properly engaged so that the apparatus can be safely operated. The interlock system shall be designed to allow stationary pumping only.</p> <p><u>AIR PUMP SHIFT</u></p> <p>Pump shift engagement shall be made by a two (2) position sliding collar, actuated pneumatically (by air pressure), with a three (3) position air control switch located in the cab. A manual back-up shift control shall also be located on the left side pump panel.</p> <p>Two (2) indicator lights shall be provided adjacent to the pump shift inside the cab. One (1) green light shall indicate the pump shift has been completed and be labeled "pump engaged". The second green light shall indicate when the pump has been engaged and the chassis transmission is in pump gear. This indicator light shall be labeled "OK to pump".</p> <p>Another green indicator light shall be installed adjacent to the hand throttle on the pump panel and indicate either the pump is engaged and the road transmission is in pump gear, or the road transmission is in neutral and the pump is not engaged. This light shall be labeled "Warning: Do not open throttle unless light is on".</p> <p>The pump shift shall be interlocked to prevent the pump from being shifted out of gear when the chassis transmission is in gear to meet NFPA requirements.</p> <p>The pump shift control in the cab shall be illuminated to meet NFPA requirements.</p> <p><u>TRANSMISSION LOCK-UP</u></p> <p>The direct gear transmission lock-up for the fire pump operation shall engage automatically when the pump shift control in the cab is activated.</p> <p><u>AUXILIARY COOLING SYSTEM</u></p> <p>A supplementary heat exchange cooling system shall be provided to allow the use of water from the discharge side of the pump for cooling the engine water. Heat exchanger shall be cylindrical type and shall be a separate unit. It shall be installed in the pump or engine compartment with the control located on the pump operator's control panel. Exchanger shall be plumbed to the master drain valve.</p> <p><u>INTAKE RELIEF VALVE</u></p> <p>An Elkhart relief valve shall be installed on the suction side of the pump preset at 125 psig.</p> <p>Relief valve shall have a working range of 75 psig to 250 psig.</p> <p>Outlet shall terminate below the frame rails with a 2.50" National Standard hose thread adapter and shall have a "do not cap" warning tag.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>Control shall be located behind an access door at a side pump panel.</p> <p><u>PRESSURE CONTROLLER</u></p> <p>A Pressure Governor shall be provided. An electric pressure governor shall be provided which is capable of automatically maintaining a desired preset discharge pressure in the water pump. When operating in the pressure control mode, the system shall automatically maintain the discharge pressure set by the operator (within the discharge capabilities of the pump and water supply) regardless of flow, within the discharge capacities of the water pump and water supply.</p> <p>A pressure transducer shall be installed in the water discharge of the pump. The transducer continuously monitors pump pressure sending a signal to the Electronic Control Module (ECM).</p> <p>The governor can be used in two (2) modes of operation, RPM mode and pressure modes.</p> <p>In the RPM mode, the governor can be activated after vehicle parking brake has been set. When in this mode, the governor shall maintain the set engine speed, regardless of engine load (within engine operation capabilities).</p> <p>In the pressure mode, the governor system can only operate after the fire pump has been engaged and the vehicle parking brake has been set. When in the pressure mode, the pressure controller monitors the pump pressure and varies engine speed to maintain a precise pump pressure. The pressure controller shall use a quicker reacting J1939 database for engine control.</p> <p>A preset feature allows a predetermined pressure or rpm to be set.</p> <p>A pump cavitation protection feature is also provided which shall return the engine to idle should the pump cavitate. Cavitation is sensed by the combination of pump pressure below 30 psi and engine speed above 2000 rpm for more than five (5) seconds.</p> <p>The throttle shall be a vernier style control, with a large control knob for use with a gloved hand. A throttle ready light shall be provided adjacent to the throttle control. A large 0.75" RPM display shall be provided to be visible at a glance.</p> <p>Check engine, and stop engine indicator lights shall be provided for easy viewing.</p> <p>Large 0.75" push buttons shall be provided for menu, mode, preset, and silence selections.</p> <p>The water tank level indicator shall be incorporated in the pressure governor.</p> <p>A fuel level indicator shall be incorporated in the pressure controller.</p> <p>A pump hour meter shall be incorporated in the pressure controller.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>The pressure controller shall incorporate monitoring for engine temperature, oil pressure, fuel level alarm, and voltage. Pump monitoring shall include, pump gearcase temperature, error codes, diagnostic data, pump service reminders, and time stamped data logging, to allow for fast accurate trouble shooting. It shall also notify the driver/engineer of any problems with the engine and the apparatus. Complete understandable messages shall be provided in a 20-character display, providing for fewer abbreviations in the messages. An automatic dim feature shall be included for night operations.</p> <p>The pressure controller shall include a USB port for easy software upgrades, which can be downloaded through a USB memory stick, eliminating the need for a laptop for software installations.</p> <p>A complete interactive manual shall be provided with the pressure controller.</p> <p><u>PRIMING PUMP</u></p> <p>The priming pump shall be a Trident Emergency Products compressed air powered, high efficiency, multistage venturi based AirPrime System, conforming to standards outlined in the current edition of NFPA 1901.</p> <p>All wetted metallic parts of the priming system are to be of brass and stainless steel construction.</p> <p>One (1) priming control shall open the priming valve and start the pump primer.</p> <p><u>PUMP WITNESS</u></p> <p>A witness of the functionality of the pump shall be provided at final inspection. This shall be a detailed test where the pump is run at full capacity, inside the pump test facility.</p> <p>Also, each discharge shall be connected, flowed and checked for capacity.</p> <p>Assistance shall be provided by plumbing personnel at the time of inspection.</p> <p>There shall be no recertification of the pump performance.</p> <p><u>PUMP DRAIN</u></p> <p>A Class 1 multi port pump drain shall be used in place of the standard pump drain.</p> <p><u>RECIRCULATING LINE WITH CHECK VALVE</u></p> <p>A 0.50" diameter recirculating line, from the pump to the water tank, shall be furnished with a control installed at the pump operator's control panel. A check valve shall be provided in this line to prevent the back flow of water from the tank to the pump if the valve is left in the open position.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p><u>PUMP MANUALS</u></p> <p>There shall be a total of two (2) pump manuals provided by the pump manufacturer and furnished with the apparatus. The manuals shall be provided by the pump manufacturer in the form of two (2) CDs. Each manual shall cover pump operation, maintenance, and parts.</p> <p><u>PLUMBING, STAINLESS STEEL AND HOSE</u></p> <p>All inlet and outlet lines shall be plumbed with either stainless steel pipe, flexible polypropylene tubing or synthetic rubber hose reinforced with hi-tensile polyester braid. All hose's shall be equipped with brass or stainless steel couplings. All stainless steel hard plumbing shall be a minimum of a schedule 10 wall thickness.</p> <p>Where vibration or chassis flexing may damage or loosen piping or where a coupling is required for servicing, the piping shall be equipped with victaulic or rubber couplings.</p> <p>Plumbing manifold bodies shall be ductile cast iron or stainless steel.</p> <p>All piping lines are to be drained through a master drain valve or shall be equipped with individual drain valves. All drain lines shall be extended with a hose to drain below the chassis frame.</p> <p>All water carrying gauge lines shall be of flexible polypropylene tubing.</p> <p>All piping, hose and fittings shall have a minimum of a 500 PSI hydrodynamic pressure rating.</p> <p><u>MAIN PUMP INLETS</u></p> <p>A 6.00" pump manifold inlet shall be provided on each side of the vehicle. The suction inlets shall include removable die cast zinc screens that are designed to provide cathodic protection for the pump, thus reducing corrosion in the pump.</p> <p><u>MAIN PUMP INLET CAP</u></p> <p>The main pump inlets shall have National Standard Threads with a long handle chrome cap.</p> <p>The cap shall incorporate a thread design to automatically relieve stored pressure in the line when disconnected (no exception).</p> <p><u>INLET VALVE/DUMP</u></p> <p>One (1) butterfly valve shall be provided on the driver's side main pump inlet. The inlet valve shall be a combination butterfly valve and pressure relief valve with a .75" bleeder valve. The pressure relief valve shall have a range of 75 to 250 PSI and shall be factory set to 125 PSIG. The valve, less relief valve, shall be rated for 600 PSI hydrostatic pressure and 26 inHg of vacuum. The valve shall cycle from full open to full closed in ten (10) turns of the handwheel.</p> <p>An indicator light shall be provided to show when the valve is in the closed position.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>The valve shall be fully recessed behind the pump panel.</p> <p>A chrome plated handwheel shall be provided next to the inlet valve.</p> <p><u>INLET VALVE/DUMP</u></p> <p>One (1) butterfly valve shall be provided on the passenger's side main pump inlet. The inlet valve shall be a combination butterfly valve and pressure relief valve with a .75" bleeder valve. The pressure relief valve shall have a range of 75 to 250 PSI and shall be factory set to 125 PSIG. The valve, less relief valve, shall be rated for 600 PSI of hydrostatic pressure and 26 inHg of vacuum. The bleeder valve controls shall be located at the threaded connection and at the pump operator's panel.</p> <p>The valve shall be fully recessed behind the pump panel and shall be operated by an electric 12 VDC motor. A control panel with the electric switch and three (3) status indicator lights shall be provided on the pump operator's panel.</p> <p>A manual override handwheel shall be provided next to the inlet valve on the side pump panels.</p> <p><u>VALVES</u></p> <p>All ball valves shall be Akron® Brass in-line valves. The Akron valves shall be the 8000 series heavy-duty style with a stainless steel ball and a simple two-seat design. No lubrication or regular maintenance is required on the valve.</p> <p>Valves shall have a ten (10) year warranty.</p> <p><u>LEFT SIDE INLET</u></p> <p>There shall be one (1) auxiliary inlet with a 2.50" valve at the left side pump panel, terminating with a 2.50" (F) National Standard hose thread adapter.</p> <p>The auxiliary inlet shall be provided with a strainer, chrome swivel and plug.</p> <p>The location of the valve for the one (1) inlet shall be recessed behind the pump panel.</p> <p><u>ANODE, INLET</u></p> <p>A pair of sacrificial zinc anodes shall be provided in the water pump inlets to protect the pump from corrosion.</p> <p><u>INLET CONTROL</u></p> <p>The side auxiliary inlet(s) shall incorporate a quarter-turn ball valve with the control located at the inlet valve. The valve operating mechanism shall indicate the position of the valve.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p><u>INLET BLEEDER VALVE</u></p> <p>A 0.75" bleeder valve shall be provided for each side gated inlet. The valves shall be located behind the panel with a swing style handle control extended to the outside of the panel. The handles shall be chrome plated and provide a visual indication of valve position. The swing handle shall provide an ergonomic position for operating the valve without twisting the wrist and provides excellent leverage. The water discharged by the bleeders shall be routed below the chassis frame rails.</p> <p><u>TANK TO PUMP</u></p> <p>The booster tank shall be connected to the intake side of the pump with heavy duty piping and a quarter turn 3.00" full flow line valve with the control remotely located at the operator's panel. Tank to pump line shall run straight (no elbows) from the pump into the front face of the water tank and angle down into the tank sump. A rubber coupling shall be included in this line to prevent damage from vibration or chassis flexing.</p> <p>A check valve shall be provided in the tank to pump supply line to prevent the possibility of "back filling" the water tank.</p> <p><u>TANK REFILL</u></p> <p>A 1.50" combination tank refill and pump re-circulation line shall be provided, using a quarter-turn full flow ball valve controlled from the pump operator's panel.</p> <p><u>LEFT SIDE DISCHARGE OUTLETS</u></p> <p>There shall be two (2) discharge outlets with a 2.50" valve on the left side of the apparatus, terminating with a 2.50" (M) National Standard hose thread adapter.</p> <p><u>RIGHT SIDE DISCHARGE OUTLETS</u></p> <p>There shall be one (1) discharge outlet with a 2.50" valve on the right side of the apparatus, terminating with a 2.50" (M) National Standard hose thread adapter.</p> <p><u>LARGE DIAMETER DISCHARGE OUTLET</u></p> <p>There shall be a 4.00" discharge outlet with a 3.50" Akron valve with a 3.00" ball, installed on the right side of the apparatus, terminating with a 4.00" (M) National Standard hose thread adapter. This discharge outlet shall be actuated with a handwheel control with position indicator at the pump operator's control panel.</p> <p><u>FRONT DISCHARGE OUTLET</u></p> <p>There shall be one (1) 2.50" discharge outlet piped to the front of the apparatus and located on the top of the left side of the front bumper.</p> <p>Plumbing shall consist of 2.50" piping and flexible hose with a 2.50" full flow valve with control at the pump operator's panel. A fabricated weldment made of stainless steel pipe shall be used in</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>the plumbing where appropriate. The piping shall terminate with a 2.50" NST with 90 degree stainless steel swivel.</p> <p>There shall be Class 1 automatic drains provided at all low points of the piping.</p> <p><u>FRONT OF HOSE BED DISCHARGE OUTLET</u></p> <p>There shall be three (3) discharges located at the front of the hose bed, Two (2) 1.5" on the drivers side, One (1) 2.5" on the passengers side. Plumbing for the 2.50" outlet shall consist of 2.50" piping with a 2.50" full-flow ball valve and plumbing to the 1.50" outlets shall consist of 2.00" piping and 2.00" full-flow ball valves. All three (3) outlets shall be controlled at the pump operator's panel. The discharges shall terminate with a one (1) 2.50" and two (2) 1.50" (M) National Standard hose thread adapter.</p> <p><u>DISCHARGE CAPS</u></p> <p>Chrome plated, rocker lug, caps with chains shall be furnished for all side discharge outlets.</p> <p>The caps shall incorporate a thread design to automatically relieve stored pressure in the line when disconnected (no exception).</p> <p><u>OUTLET BLEEDER VALVE</u></p> <p>A 0.75" bleeder valve shall be provided for each outlet 1.50" or larger. Automatic drain valves are acceptable with some outlets if deemed appropriate with the application.</p> <p>The valves shall be located behind the panel with a swing style handle control extended to the outside of the side pump panel. The handles shall be chrome plated and provide a visual indication of valve position. The swing handle shall provide an ergonomic position for operating the valve without twisting the wrist and provides excellent leverage. Bleeders shall be located at the bottom of the pump panel. They shall be properly labeled identifying the discharge they are plumbed in to. The water discharged by the bleeders shall be routed below the chassis frame rails.</p> <p><u>LEFT SIDE OUTLET ELBOWS</u></p> <p>The 2.50" discharge outlets located on the left side pump panel shall be furnished with a 2.50" (F) National Standard hose thread x 2.50" (M) National Standard hose thread, chrome plated, 45 degree elbow.</p> <p>The elbow shall incorporate a thread design to automatically relieve stored pressure in the line when disconnected (no exception).</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p><u>RIGHT SIDE OUTLET ELBOWS</u></p> <p>The 2.50" discharge outlets located on the right side pump panel shall be furnished with a 2.50" (F) National Standard hose thread x 2.50" (M) National Standard hose thread, chrome plated, 45 degree elbow.</p> <p>The elbow shall incorporate a thread design to automatically relieve stored pressure in the line when disconnected (no exception).</p> <p><u>LARGE DIAMETER OUTLET ELBOWS</u></p> <p>The 4.00" outlet(s) shall be furnished with one (1) 4.00" (F) National Standard hose thread x 5.00" Storz elbow adapter with Storz cap.</p> <p><u>SPECIAL THREAD ADAPTERS</u></p> <p>There shall be three (4) adapters with 2.5" NST Female to 1.5" NST Male and cap. These adapters shall be installed on Two (2) on the drivers side pump panel, One (1) on the passenger side pump panel, One(1) on the front bumper line swivel.</p> <p><u>DISCHARGE OUTLET CONTROLS</u></p> <p>The discharge outlets shall incorporate a quarter-turn ball valve with the control located at the pump operator's panel. The valve operating mechanism shall indicate the position of the valve.</p> <p>If a handwheel control valve is used, the control shall be a minimum of a 3.9" diameter stainless steel handwheel with a dial position indicator built in to the center of the handwheel.</p> <p><u>DELUGE RISER</u></p> <p>A 3.00" deluge riser shall be installed above the pump in such a manner that a monitor can be mounted and used effectively. Piping shall be installed securely so no movement develops when the line is charged. The riser shall be gated and controlled at the pump operator's panel.</p> <p><u>MONITOR</u></p> <p>An Akron Model 3431 Apollo Hi-Riser monitor shall be properly installed on the deluge riser.</p> <p>Included shall be a fixed mounting base.</p> <p>The monitor shall be painted to match the body.</p> <p><u>NOZZLE, DELUGE</u></p> <p>Akron model #2499 Quad Stacked pyrolite deluge tips shall be provided.</p> <p>The tip sizes shall be 1.375", 1.50", 1.75", and 2.00".</p> <p>This shall include an Akron 3488 pyrolite stream shaper.</p> <p>The deluge riser shall have male National Pipe Threads for mounting the monitor.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p><u>CROSSLAY HOSE BEDS</u></p> <p>Two (2) crosslays with 1.50" outlets shall be provided. Each bed to be capable of carrying 200' of 1.75" double jacketed hose and shall be plumbed with 2.00" i.d. pipe and gated with a 2.00" quarter turn ball valve.</p> <p>Outlets to be equipped with a 1.50" National Standard hose thread 90 degree swivel located in the hose bed so that hose may be removed from either side of apparatus.</p> <p>The crosslay controls shall be at the pump operator's panel.</p> <p>The center crosslay dividers shall be fabricated of 0.25" aluminum and shall provide adjustment from side to side. The divider shall be unpainted with a brushed finish.</p> <p>Vertical scuffplates, constructed of stainless steel shall be provided at the front and rear ends of the bed on each side of vehicle.</p> <p>Crosslay bed flooring shall consist of removable perforated brushed aluminum.</p> <p><u>CROSSLAY/DEADLAY HOSE RESTRAINT</u></p> <p>There shall be a one (1) piece black vinyl cover provided across the top and each end of two (2) crosslay/deadlay(s) to secure the hose during travel. The vinyl top shall be attached at the front and rear of the crosslay/deadlay(s) with quarter turn. Each vinyl end flap shall have 1.00" web straps that loop through footman loops at the bottom of the crosslay/deadlay(s) and fasten with 1.00" cam buckle fasteners.</p> <p><u>CROSSLAY 8.00" LOWER THAN STANDARD</u></p> <p>The crosslays shall be lowered 8.00" from standard.</p> <p><u>BOOSTER HOSE REEL</u></p> <p>A Hannay electric rewind booster hose reel shall be installed over the pump in a recessed open compartment on the right side of the apparatus.</p> <p>The exterior finish of the reel shall be painted job color matching the body exterior.</p> <p>A polished stainless steel roller and guide assembly shall be mounted on the reel side of the apparatus.</p> <p>Discharge control shall be provided at the pump operator's panel. Plumbing to the reel shall consist of 1.50" Aeroquip hose and a 1.50" valve.</p> <p>Reel motor shall be protected from overload with a circuit breaker rated to match the motor.</p> <p>An electric rewind control switch shall be installed on the reel side pump panel.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>Booster hose, 1.00" diameter and 100 feet, with chrome plated Barway, or equal couplings shall be provided.</p> <p>Working pressure of the booster hose shall be a minimum of 800 psi.</p> <p>Capacity of the hose reel shall be 100 feet of 1.00" booster hose.</p> <p>An Elkhart, model SM3FG, booster hose nozzle with pistol grip shall be provided.</p> <p><u>PRESSURE GAUGE</u></p> <p>There shall be a pressure gauge provided for one (1) hose reel(s). The gauge shall be located Drivers side pump panel. The gauge shall match the discharge outlet gauges.</p> <p><u>NOZZLE CUP AND BRACKET</u></p> <p>A Zico nozzle cup and chrome plated mounting bracket shall be provided for storage of the booster reel nozzle.</p> <p>There shall be one (1) provided. The nozzle cup(s) shall have a 5-1/2" inside diameter and shall be located To be mounted at the final inspection on the passengers side.</p> <p><u>FOAM PROPORTIONER</u></p> <p>A foam proportioning system shall be provided that is an on demand, automatic proportioning, single point, direct injection system suitable for all types of Class "A" & "B" foam concentrates, including the high viscosity (6000 cps), alcohol resistant Class B foams. Operation shall be based on direct measurement of water flow, and remain consistent within the specified flows and pressures. The system shall automatically balance and proportion foam solution at rates from 0.1% to 9.9% regardless of variations in water pressure and flow, up to the maximum rated capacity of the foam concentrate pump.</p> <p>The design of the system shall allow operation from draft, hydrant, or relay operation. This shall provide a versatile system to meet the demands at a fire scene.</p> <p><u>SYSTEM CAPACITY</u></p> <p>The system shall have the ability to deliver the following minimum foam solution flow rates at accuracys that meet or exceed NFPA requirements at a pump rating of 250 PSI.</p> <p>200GPM @ 6%</p> <p>400GPM @ 3%</p> <p>1200 GPM @ 1%</p> <p>Class A foam setting in .1 % increments from .1% to 1%. Typical settings of 1%, .5% and .3% (Maximum capacity shall be limited to the plumbing and water pump capacity)</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p><u>CONTROL SYSTEM</u></p> <p>The system shall be equipped with a digital electronic control display located on the pump operators panel. Push button controls shall be integrated into the panel to turn the system on/off, control the foam percentage, direct which foam to use on a multi-tank system, and to set the operation modes (automatic, manual, draft, calibration, or flush).</p> <p>The percent of injection shall have presets for class A and class B foam. These presets can be changed at the fire department as desired. The percent of injection shall be able to be easily changed at the scene to adjust to changing demands.</p> <p>In order to minimize the use of abbreviations and interpretations, system information shall be displayed on the panel by way of .50 tall LEDs that total fourteen characters (two lines of 7 each). System on and foam pump on indicator lights shall also be included. Information displayed shall include mode of operation (automatic, manual, draft, calibration, or flush), foam supply selected (Class A or Class B), water total, foam total, foam percentage, remaining gallons, and time remaining.</p> <p>The control display shall direct a microprocessor, which receives input from the systems water flow meter while also monitoring the position of the foam concentrate pump. The microprocessor shall compare the values of the water flow versus the position/rate of the foam pump, to ensure the proportion rate is accurate. One (1) check valve shall be installed in the plumbing to prevent foam from contaminating the water pump.</p> <p><u>LOW LEVEL, FOAM TANK</u></p> <p>The control head shall display a warning message when the foam tank in use is below a quarter tank.</p> <p><u>HYDRAULIC DRIVE SYSTEM</u></p> <p>The foam concentrate pump shall be powered by a hydraulic drive system, which is automatically activated, whenever the vehicle water pump is engaged. A system that drives the foam pump via an electric motor shall not be acceptable. A large parasitic electric load used to power the foam pump can cause an overload of the chassis electrical system.</p> <p>Hydraulic oil cooler shall be provided to automatically prevent overheating of the hydraulic oil, which is detrimental to system components. The oil/water cooler shall be designed to allow continuous system operation without allowing hydraulic oil temperature to exceed the oil specifications.</p> <p>The hydraulic oil reservoir shall be of four (4) gallons minimum capacity and shall also be of sufficient size to minimize foaming and be located to facilitate checking oil level or adding oil without spillage or the need to remove access panels.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p><u>FOAM CONCENTRATE PUMP</u></p> <p>The foam concentrate pump shall be of positive displacement, self-priming; linear actuated design, driven by the hydraulic motor. The pump shall be constructed of brass body; chrome plated stainless steel shaft, with a stainless steel piston. In order to increase longevity of the pump, no aluminum shall be present in its construction.</p> <p>A relief system shall be provided which is designed to protect the drive system components and prevent over pressuring the foam concentrate pump</p> <p>The foam concentrate pump shall have minimum capacity for 12 gpm with all types of foam concentrates with a viscosity at or below 6000 cps including protein, fluoroprotein, AFFF, FFFP, or AR-AFFF. The system shall deliver only the amount of foam concentrate flow required, without recirculating foam back to the storage tank. Recirculating foam concentrate back to the storage tank can cause agitation and premature foaming of the concentrate, which can result in system failure. The foam concentrate pump shall be self-priming and have the ability to draw foam concentrate from external supplies such as drums or pails.</p> <p><u>EXTERNAL FOAM CONCENTRATE CONNECTION</u></p> <p>An external foam pick-up shall be provided to enable use of a foam agent that is not stored on the vehicle. The external foam pick-up shall be designed to allow continued operation after the on-board foam tank is empty. The external foam pick-up shall be designed to allow use with training foam or colored water for training purposes.</p> <p><u>PANEL MOUNTED STRAINER / EXTERNAL PICK-UP CONNECTION</u></p> <p>A bronze body strainer / connector unit shall be provided. The unit shall be mounted to the pump panel. The external foam pick-up shall be one (1) - 1.00" male connection with chrome-plated cap integrated to a 2.00" strainer cleanout cap. A check valve shall be installed in the pick-up portion of the cleanout cap. A basket style stainless steel screen shall be installed in the body of the strainer / connector unit. Removal of the 2.00" cleanout cap shall be all that is required to gain access to and remove the stainless steel basket screen. The strainer / connector unit shall be ahead of the foam concentrate pump inlet port to insure that all agent reaching the foam pump has been strained.</p> <p><u>PICK-UP HOSE</u></p> <p>A 1.00" flexible hose with an end for insertion into foam containers shall be provided. The hose shall be supplied with a 1.00" female swivel NST thread swivel connector. The hose shall be shipped loose.</p> <p><u>DISCHARGES</u></p> <p>The foam system shall be plumbed to four (4) discharges. The discharges capable of dispensing foam shall be 3 rear discharges, One pump discharge.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p><u>SYSTEM ELECTRICAL LOAD</u> The foam proportioning shall not impose an electrical load on the vehicle electrical system any greater than five (5) amps at 12VDC.</p> <p><u>TANK SELECTOR</u> An electric valve shall be used for the foam supply valve. The foam supply valve shall be controlled at the foam system control head for ease of operation. The supply valve shall be electric, remote controlled, to eliminate air pockets in the foam tank supply hose.</p> <p><u>MAINTENANCE MESSAGE</u> A message shall be displayed on the control head to advise when system maintenance needs to be performed. The message shall display interval for cleaning the foam strainer, cleaning for the water strainers, and changing the hydraulic oil.</p> <p><u>FLUSH SYSTEM</u> The system shall be designed such that a flush mode shall be provided to allow the system to flush all foam concentrate with clear water. The flush circuit control logic shall ensure the foam tank supply valve is closed prior to opening the flush valve. The flush valve shall be operated at the foam system control head for ease of operation. The valve shall be electrically controlled and located as close to the foam tank supply valve as possible. A manual flush drain valve shall be labeled and located under the drivers side running board.</p> <p><u>REFILL, SINGLE FOAM TANK</u> The foam system's proportioning pump shall be used to fill the Class B foam tank. This shall allow use of the auxiliary foam pick-up to pump the foam from pails or a drum on the ground into the foam tank. A foam shut-off switch shall be installed in the fill dome of the tank to shut the system down when the tank is full. The fill operation shall be controlled by a mode in the foam system controller stating TANK FILL. While the proportioner pump is filling the tank, the controller shall display FILL TANK. When the tank is full, as determined by the float switch in the tank dome, the pump shall stop and the controller shall display TANK FULL.</p> <p><u>FOAM TANK</u> The foam tank shall be an integral portion of the polypropylene water tank. The cell shall have a capacity of 200 gallons of foam with the intended use of Class B foam. The brand of foam stored in this tank shall be National. The foam cell shall not reduce the capacity of the water tank. The foam cell shall have a screen in the fill dome and a breather in the lid.</p> <p><u>FOAM TANK DRAIN</u> A system of 1.00" foam tank drains shall be provided, integrated into the foam systems strainer and tank to foam pump valve management system. The tank to pump hoses running from the tank(s) to the panel mounted strainer shall 1.00" diameter. The foam system controller shall have</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>a mode that allows for a given foam valve to be opened at will. Flow of foam from the tank valve to the strainer shall be usable as a tank drain mode.</p> <p>An adaptor shall be supplied, that allows the 1.00" foam intake screen to assembly to be used as a drain outlet. The standard supplied 1.00" foam pick up hose shall be attached to the screen assembly by way of the adapter. The drain mode shall allow the operator to open and close the tank valve as required from the control head, to drain foam and re-fill foam containers through the connected hose, without foam spillage beneath the vehicle.</p> <p><u>PUMP COMPARTMENT</u></p> <p>The pump compartment shall be separate from the hose body and compartments so that each may flex independently of the other. It shall be a fabricated assembly of steel tubing, angles and channels which supports both the fire pump and the side running boards.</p> <p>The pump compartment shall be mounted on the chassis frame rails with rubber biscuits in a four point pattern to allow for chassis frame twist.</p> <p>Pump compartment, pump, plumbing and gauge panels shall be removable from the chassis in a single assembly.</p> <p><u>PUMP MOUNTING</u></p> <p>Pump shall be mounted to a substructure which shall be mounted to the chassis frame rail using rubber isolators. The mounting shall allow chassis frame rails to flex independently without damage to the fire pump.</p> <p><u>LEFT SIDE PUMP CONTROL PANELS</u></p> <p>All pump controls and gauges shall be located at the left (driver's) side of the apparatus and properly identified.</p> <p>Layout of the pump control panel shall be ergonomically efficient and systematically organized.</p> <p>The pump operator's control panel shall be removable in two (2) main sections for ease of maintenance:</p> <p>The upper section shall contain sub panels for the mounting of the pump pressure control device, engine monitoring gauges, electrical switches, and foam controls (if applicable). Sub panels shall be removable from the face of the pump panel for ease of maintenance. Below the sub panels shall be located all valve controls and line pressure gauges.</p> <p>The lower section of the panel shall contain all inlets, outlets, and drains.</p> <p>All push/pull valve controls shall have 1/4 turn locking control rods with polished chrome plated zinc tee handles. Guides for the push/pull control rods shall be chrome plated zinc castings</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>securely mounted to the pump panel. Push/pull valve controls shall be capable of locking in any position. The control rods shall pull straight out of the panel and shall be equipped with universal joints to eliminate binding.</p> <p><u>IDENTIFICATION TAGS</u></p> <p>The identification tag for each valve control shall be recessed in the face of the tee handle.</p> <p>All discharge outlets shall have color coded identification tags, with each discharge having its own unique color. Color coding shall include the labeling of the outlet and the drain for each corresponding discharge.</p> <p>All line pressure gauges shall be mounted directly above the corresponding discharge control tee handles and recessed within the same chrome plated casting as the rod guide for quick identification. The gauge and rod guide casting shall be removable from the face of the pump panel for ease of maintenance. The casting shall be color coded to correspond with the discharge identification tag.</p> <p>All remaining identification tags shall be mounted on the pump panel in chrome plated bezels.</p> <p>The pump panel on the right (passenger's) side shall be removable with lift and turn type fasteners.</p> <p>Trim rings shall be installed around all inlets and outlets.</p> <p>The trim rings for the side discharge outlets shall be color coded and labeled to correspond with the discharge identification tag.</p> <p><u>PUMP PANEL CONFIGURATION</u></p> <p>The pump panel configuration shall be arranged and installed in an organized manner that shall provide user-friendly operation.</p> <p><u>PUMP AND GAUGE PANEL</u></p> <p>The pump and gauge panels shall be constructed of aluminum with a black vinyl finish. A polished aluminum trim molding shall be provided around each panel.</p> <p>The passenger's side pump panel shall be removable and fastened with swell type fasteners.</p> <p><u>PUMP COMPARTMENT LIGHT</u></p> <p>There shall be one (1) Whelen®, Model 3SC0CDCR, 3.00" white 12 volt DC LED light(s) with Whelen, Model 3FLANGEC, flange(s) installed in the pump compartment.</p> <p>There shall be a switch accessible through a door on the pump panel included with this installation.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>Engine monitoring graduated LED indicators shall be incorporated with the pressure controller.</p> <p>Also provided at the pump panel shall be the following:</p> <p>- Master Pump Drain Control</p> <p><u>COLOR CODED NAME TAGS</u></p> <p>There shall be eight (8) outlet discharges with special color coded name tags. These tags shall be used for labeling the discharge pressure gauges, controls, outlets and drains.</p> <p><u>VACUUM AND PRESSURE GAUGES</u></p> <p>The pump vacuum and pressure gauges shall be liquid filled and manufactured by Class 1 Incorporated ©.</p> <p>The gauges shall be a minimum of 6.00" in diameter and shall have white faces with black lettering, with a pressure range of 30.00"-0-600#.</p> <p>The pump pressure and vacuum gauges shall be installed adjacent to each other at the pump operator's control panel.</p> <p>Test port connections shall be provided at the pump operator's panel. One(1) shall be connected to the intake side of the pump, and the other to the discharge manifold of the pump. They shall have 0.25 in. standard pipe thread connections and polished stainless steel plugs. They shall be marked with a label.</p> <p><u>PRESSURE GAUGES</u></p> <p>The individual "line" pressure gauges for the discharges shall be interlube filled and manufactured by Class 1©.</p> <p>They shall be a minimum of 2.50" in diameter and shall have white faces with black lettering.</p> <p>Gauges shall be compound type with a vacuum/pressure range of 30.00"-0-400#.</p> <p>The individual pressure gauge shall be installed as close to the outlet control as practical.</p> <p><u>WATER LEVEL GAUGE</u></p> <p>An electric water level gauge shall be incorporated in the pressure controller that registers water level by means of 9 LEDs. They shall be at 1/8 level increments with a tank empty LED. The LEDs shall be a bright type that is readable in sunlight, and have a full 180-degree of clear viewing.</p> <p>To further alert the pump operator, the gauge shall have a warning flash when the tank volume is less than 25%, and shall have "Down Chasing LEDs when the tank is almost empty.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>The level measurement shall be ascertained by sensing the head pressure of the fluid in the tank or cell.</p> <p><u>FOAM LEVEL GAUGE</u></p> <p>An electronic foam level gauge shall be provided on the operator's panel that registers foam level by means of five (5) colored LED lights. The lights shall be durable, ultra-bright five (5) LED design viewable through 180 degrees. The foam level indicators shall be as follows:</p> <ul style="list-style-type: none"> • 100 percent = Green • 75 percent = Yellow • 50 percent = Yellow • 25 percent = Yellow • Refill = Red <p>The light shall flash when the level drops below the given level indicator to provide an eighth of a tank indication. To further alert the pump operator, the lights shall flash sequentially when the foam tank is empty.</p> <p>The level measurement shall be based on the sensing of head pressure of the fluid in the tank.</p> <p>The display shall be constructed of a solid plastic material with a chrome plated die cast bezel to reduce vibrations that can cause broken wires and loose electronic components. The encapsulated design shall provide complete protection from foam and environmental elements. An industrial pressure transducer shall be mounted to the outside of the tank. The display shall be able to be calibrated in the field and shall measure head pressure to accurately show the tank level.</p> <p><u>STEP/LIGHT SHIELD</u></p> <p>There shall be an aluminum treadplate stepping surface no less than 8.00" deep and properly reinforced to support a man's weight, installed over the pump operators panel.</p> <ul style="list-style-type: none"> • There shall be 12 volt DC white LED lights installed under the step to illuminate the controls, switches, essential instructions, gauges, and instruments necessary for the operation of the apparatus. These lights shall be activated by the pump panel light switch. Additional lights shall be included every 18.00" depending on the size of the pump house. • One (1) pump panel light shall come on when the pump is in ok to pump mode. <p>There shall be a light activated above the pump panel light switch when the parking brake is set. This is to afford the operator some illumination when first approaching the control panel.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>There shall be a green pump engaged indicator light activated on at the operator's panel when the pump is shifted into gear from inside the cab.</p> <p>There shall be one (1) white LED, step light provided above this step. In order to ensure exceptional illumination, each step light shall provide a minimum of 25 foot-candles (fc) covering an entire 15.00" x 15.00" square placed 10.00" below the light and a minimum of 1.5 fc covering an entire 30.00" x 30.00" square at the same 10.00" distance below the light. The step light shall be activated by the pump panel light switch.</p> <p><u>ADDITIONAL STEP/LIGHT SHIELD</u></p> <p>There shall be an additional aluminum treadplate stepping surface no less than 8.00" deep and properly reinforced to support a man's weight, installed over the passenger's side pump panel.</p> <ul style="list-style-type: none"> • There shall be 12 volt DC white LED lights installed under the step to illuminate the controls, switches, essential instructions, gauges, and instruments necessary for the operation of the apparatus. These lights shall be activated by the pump panel light switch. Additional lights shall be included every 18.00" depending on the size of the pump house. <p>There shall be one (1) white LED, step light provided above the step. In order to ensure exceptional illumination, each step light shall provide a minimum of 25 foot-candles (fc) covering an entire 15.00" x 15.00" square placed 10.00" below the light and a minimum of 1.5 fc covering an entire 30.00" x 30.00" square at the same 10.00" distance below the light. The step light shall be activated by the pump panel light switch.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p><u>AIR HORN SYSTEM</u> There shall be two (2) Grover air horns recessed in the front bumper. The horn system shall be piped to the air brake system wet tank utilizing 0.38" tubing. A pressure protection valve shall be installed in-line to prevent loss of air in the air brake system.</p> <p><u>Air Horn Location</u> The air horns shall be located on each side of the bumper, towards the outside.</p> <p><u>AIR HORN CONTROL</u> Two (2) lanyard rope pull controls shall be provided, one (1) within reach of the driver and one (1) within reach of the officer.</p> <p><u>ELECTRONIC SIREN</u> A Code 3®, Model 3692, electronic siren with noise canceling microphone shall be provided. This siren to be active when the battery switch is on and the emergency master switch is on. Electronic siren head shall be recessed in the overhead console above the engine tunnel on the driver side. The electronic siren shall be controlled on the siren head only. No horn button or foot switches shall be required.</p> <p><u>SPEAKER</u> There shall be one (1) speaker, Code 3®, Model PB100C, with chrome finish provided. Connection shall be connected to the siren amplifier. The speaker(s) shall be recessed in the front bumper on the driver's side.</p> <p><u>AUXILIARY MECHANICAL SIREN</u> A Federal Q2B® siren shall be furnished. A siren brake button shall be installed on the switch panel. The control solenoid shall be powered up after the emergency master switch is activated. The mechanical siren shall be mounted on the front grille, partially recessed. The motor shall be mounted behind the front grille and shall include a reinforcement plate for mounting. The mechanical siren shall be actuated by a foot switch on the officer's side and by the horn button in the steering wheel. The driver shall have the option to control the siren or the chassis horns from the horn button by means of a selector switch located on the instrument panel.</p> <p><u>FRONT ZONE UPPER WARNING LIGHTS</u> There shall be one (1) 72.00" Whelen Freedom IV LED lightbar mounted on the cab roof.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>The lightbar shall include the following:</p> <ul style="list-style-type: none"> • One (1) red flashing LED module in the driver's side end position. • One (1) red flashing LED module in the driver's side front corner position. • One (1) red flashing LED module in the driver's side first front position. • One (1) red flashing LED module in the driver's side second front position. • Open in the driver's side third front position. • Open in the driver's side fourth front position. • One (1) white flashing LED module in the driver's side fifth front position. • One (1) 795 LED traffic light controller sent to national standard high priority in the center positions. • One (1) white flashing LED module in the passenger's side fifth front position. • Open in the passenger's side fourth front position. • Open in the passenger's side third front position. • One (1) red flashing LED module in the passenger's side second front position. • One (1) red flashing LED module in the passenger's side first front position. • One (1) red flashing LED module in the passenger's side front corner position. • One (1) red flashing LED module in the passenger's side end position. <p>There shall be clear lenses.</p> <p>The following switches may be installed in the cab on the switch panel to control the lightbar:</p> <ul style="list-style-type: none"> • a switch to control the flashing LED modules. • the traffic light controller by a cab switch with emergency master control. • no momentary switch to activate the traffic light controller <p>The two (2) white flashing LED modules and the traffic light controller shall be disabled when the parking brake is applied.</p> <p>The four (4) red flashing LED modules in the front positions may be load managed when the parking brake is applied.</p> <p><u>CAB FACE WARNING LIGHTS</u></p> <p>There shall be two (2) pairs of Whelen®, Model 60*00F*R, LED lights installed on the cab face, above the headlights, mounted in a common bezel.</p> <ul style="list-style-type: none"> • The color of the outer LED lights shall be red Super LED/clear lens • The color of the inner LED lights shall be red Super LED/clear lens <p>There shall be a switch located in the cab on the switch panel to control both sets of lights.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p><u>DAYTIME RUNNING LIGHTS (HEADLIGHTS)</u></p> <p>The low-beam headlights used as daytime running lights shall be activated with the following measures:</p> <ul style="list-style-type: none"> • Ignition switch is turned on. • Parking brake is released. <p>These lights shall be deactivated with any one of the following measures:</p> <ul style="list-style-type: none"> • Headlight switch is turned on. • High-beam flash is turned on. • Parking brake is set. <p><u>HEADLIGHT FLASHER</u></p> <p>The high beam headlights shall flash alternately between the left and right side.</p> <p>There shall be a switch installed in the cab on the switch panel to control the high beam flash. This switch shall be live when the battery switch and the emergency master switches are on.</p> <p>The flashing shall automatically cancel when the hi-beam headlight switch is activated or when the parking brake is set.</p> <p><u>SIDE ZONE LOWER LIGHTING</u></p> <p>There shall be six (6) Whelen®, Model 60*02F*R, flashing LED lights installed per the following:</p> <ul style="list-style-type: none"> • Two (2) lights located, one (1) each side on the bumper extension. The red Super LED/clear lens each side. • Two (2) lights located, one (1) each side of cab rearward of crew cab doors. The red Super LED/clear lens each side. • Two (2) lights located, one (1) each side above rear wheels. The red Super LED/clear lens each side. • These lights shall be installed with three (3) pairs of flange kits. <p>There shall be a switch in the cab on the switch panel to control the lights.</p> <p><u>REAR ZONE LOWER LIGHTING</u></p> <p>There shall be two (2) Whelen®, Model 60*02F*R, driver side blue Super LED/clear lens, passenger side red Super LED/clear lens lights located at the rear of the apparatus.</p> <p>Each light shall be mounted in a housing.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>There shall be a switch located in the cab on the switch panel to control the lights.</p> <p><u>REAR WARNING LIGHTS</u></p> <p>There shall be two (2) Whelen®, Model M6*C, LED flashing warning light(s) with bezel(s) provided above the taillights.</p> <p>The color of these light(s) shall be one (1) amber light on the left side and one (1) red light on the right side.</p> <p>These light(s) shall be controlled with the rear lower warning switch.</p> <p>These light(s) shall include a lens that is clear.</p> <p><u>REAR OF HOSEBED WARNING LIGHTS</u></p> <p>There shall be two (2) Whelen model B6MM**P Super LED beacons with lower LED flashing warning lights provided at the rear of the truck, one (1) each side.</p> <ul style="list-style-type: none"> • The driver's side light shall be a B6MMB*P with blue LEDs. • The passenger's side light shall be a B6MMR*P with red LEDs. <p>The color of the domes shall be clear.</p> <p>Each light shall include a Super LED flashing beacon and a model 70*02F*R Super LED flashing light mounted in a polished aluminum housing. The color of the LED flashing lights shall be red Super LED/clear lens.</p> <p>There shall be a switch provided in the cab, on the switch panel to control the beacons.</p> <p>The lower Super 700 LEDs shall be activated with the rear upper warning switch.</p> <p>The rear warning lights shall be mounted on top of the compartmentation with all wiring totally enclosed. The rear deck lights shall be mounted on the beavertails as high as possible.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p><u>POWER OUTLET STRIP</u></p> <p>There shall be one (1) 15 amp 120 volt AC straight blade receptacles provided On the rear wall of the EMS compartment approximately 6.0" from the ceiling .</p> <p>The strip(s) selected shall be powered from the shoreline inlet.</p> <p>There shall be a label installed near the receptacle(s) that state the following:</p> <ul style="list-style-type: none"> • Line Voltage • Current Rating (amps) • Phase • Frequency • Power Source <p><u>LOOSE EQUIPMENT</u></p> <p>The following equipment shall be furnished with the completed unit:</p> <p>- One (1) bag of chrome, stainless steel, or cadmium plated screws, nuts, bolts and washers, as used in the construction of the unit</p> <p><u>CO2 EXTINGUISHER</u></p> <p>One (1) extinguisher,,20 pound, CO2 , shall be provided.</p> <p><u>ANSUL EXTINGUISHER</u></p> <p>One (1) extinguisher,, Ansul, Model I-MX-30-G, 30 lb, MET-L-X, shall be provided.</p> <p>There shall be no mounting bracket supplied.</p> <p>- Four (4) brackets shall be mounted on the apparatus as designated. The type of extinguisher(s) shall be The Fire Department will determine the location at final inspection. The location(s) shall be As directed at the final inspection.</p> <p><u>DRY CHEMICAL EXTINGUISHER</u></p> <p>There shall be One (1) extinguisher, 20 lb dry chemical extinguisher(s) provided.</p> <p><u>WATER EXTINGUISHER</u></p> <p>One (1) extinguisher,, 2.50 gallon pressurized water, shall be provided.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p><u>NFPA REQUIRED LOOSE EQUIPMENT PROVIDED BY FIRE DEPARTMENT</u></p> <p>The following loose equipment as outlined in NFPA 1901, 2016 edition, section 5.9.3 and 5.9.4 shall be provided by the fire department.</p> <ul style="list-style-type: none"> • 800 ft (60 m) of 2.50" (65 mm) or larger fire hose. • 400 ft (120 m) of 1.50" (38 mm), 1.75" (45 mm), or 2.00" (52 mm) fire hose. • One (1) handline nozzle, 200 gpm (750 L/min) minimum. • Two (2) handline nozzles, 95 gpm (360 L/min) minimum. • One (1) smoothbore of combination nozzle with 2.50" shutoff that flows a minimum of 250 gpm. • One (1) SCBA complying with NFPA 1981 for each assigned seating position, but not fewer than four (4), mounted in brackets fastened to the apparatus or stored in containers supplied by the SCBA manufacturer. • One (1) spare SCBA cylinder for each SCBA carried, each mounted in a bracket fastened to the apparatus or stored in a specially designed storage space(s). • One (1) first aid kit. • Four (4) combination spanner wrenches. • Two (2) hydrant wrenches. • One (1) double female 2.50" (65 mm) adapter with National Hose threads. • One (1) double male 2.50" (65 mm) adapter with National Hose threads. • One (1) rubber mallet, for use on suction hose connections. • Two (2) salvage covers each a minimum size of 12 ft x 14 ft (3.7 m x 4.3 m). • One (1) traffic vest for each seating position, each vest to comply with ANSI/ISEA 207, <i>Standard for High Visibility Public Safety Vests</i>, and have a five-point breakaway feature that includes two (2) at the shoulders, two (2) at the sides, and one (1) at the front. • Five (5) fluorescent orange traffic cones not less than 28.00" (711 mm) in height, each equipped with a 6.00" (152 mm) retro-reflective white band no more than 4.00" (152 mm) from the top of the cone, and an additional 4.00" (102 mm) retro-reflective white band 2.00" (51 mm) below the 6.00" (152 mm) band. • Five (5) illuminated warning devices such as highway flares, unless the five (5) fluorescent orange traffic cones have illuminating capabilities. • One (1) automatic external defibrillator (AED). • Four (4) ladder belts meeting the requirements of NFPA 1983, <i>Standard on Fire Service Life Safety Rope and System Components</i> (if equipped with an aerial device). • If the supply hose carried does not use sexless couplings, an additional double female adapter and double male adapter, sized to fit the supply hose carried, shall be carried mounted in brackets fastened to the apparatus. 		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> If none of the pump intakes are valved, a hose appliance that is equipped with one or more gated intakes with female swivel connection(s) compatible with the supply hose used on one side and a swivel connection with pump intake threads on the other side shall be carried. Any intake connection larger than 3.00" (75 mm) shall include a pressure relief device that meets the requirements of 16.6.6. If the apparatus does not have a 2.50" National Hose (NH) intake, an adapter from 2.50" NH female to a pump intake shall be carried, mounted in a bracket fastened to the apparatus if not already mounted directly to the intake. If the supply hose carried has other than 2.50" National Hose (NH) threads, adapters shall be carried to allow feeding the supply hose from a 2.50" NH thread male discharge and to allow the hose to connect to a 2.50" NH female intake, mounted in brackets fastened to the apparatus if not already mounted directly to the discharge or intake. <p><u>FLATHEAD AXE PROVIDED BY FIRE DEPARTMENT</u> NFPA 1901, 2016 edition, Section 5.9.4 requires one (1) flathead axe mounted in a bracket fastened to the apparatus.</p> <p>The axe is not on the apparatus as manufactured. The fire department shall provide and mount the axe.</p> <p><u>PICKHEAD AXE PROVIDED BY FIRE DEPARTMENT</u> NFPA 1901, 2016 edition, Section 5.9.4 requires one (1) pickhead axe mounted in a bracket fastened to the apparatus.</p> <p>The axe is not on the apparatus as manufactured. The fire department shall provide and mount the axe.</p> <p><u>PAINT</u> The exterior custom cab and body painting procedure shall consist of a seven (7) step finishing process as follows:</p> <ol style="list-style-type: none"> 1. <u>Manual Surface Preparation</u> - All exposed metal surfaces on the custom cab and body shall be thoroughly cleaned and prepared for painting. Imperfections on the exterior surfaces shall be removed and sanded to a smooth finish. Exterior seams shall be sealed before painting. Exterior surfaces that shall not be painted include; chrome plating, polished stainless steel, anodized aluminum and bright aluminum treadplate. 2. <u>Chemical Cleaning and Pretreatment</u> - All surfaces shall be chemically cleaned to remove dirt, oil, grease, and metal oxides to ensure the subsequent coatings bond well. The 		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>aluminum surfaces shall be properly cleaned and treated using a high pressure, high temperature 4 step Acid Etch process. The steel and stainless surfaces shall be properly cleaned and treated using a high temperature 3 step process specifically designed for steel or stainless. The chemical treatment converts the metal surface to a passive condition to help prevent corrosion. A final pure water rinse shall be applied to all metal surfaces.</p> <ol style="list-style-type: none"> 3. <u>Surfacer Primer</u> - The Surfacer Primer shall be applied to a chemically treated metal surface to provide a strong corrosion protective basecoat. A minimum thickness of 2 mils of Surfacer Primer is applied to surfaces that require a Critical aesthetic finish. The Surfacer Primer is a two-component high solids urethane that has excellent sanding properties and an extra smooth finish when sanded. 4. <u>Finish Sanding</u> - The Surfacer Primer shall be sanded with a fine grit abrasive to achieve an ultra-smooth finish. This sanding process is critical to produce the smooth mirror like finish in the topcoat. 5. <u>Sealer Primer</u> - The Sealer Primer is applied prior to the Basecoat in all areas that have not been previously primed with the Surfacer Primer. The Sealer Primer is a two-component high solids urethane that goes on smooth and provides excellent gloss hold out when topcoated. 6. <u>Basecoat Paint</u> - Two coats of a high performance, two component high solids polyurethane basecoat shall be applied. The Basecoat shall be applied to a thickness that shall achieve the proper color match. The Basecoat shall be used in conjunction with a urethane clear coat to provide protection from the environment. 7. <u>Clear Coat</u> - Two (2) coats of Clear Coat shall be applied over the Basecoat color. The Clear Coat is a two-component high solids urethane that provides superior gloss and durability to the exterior surfaces. Lap style and roll-up doors shall be Clear Coated to match the body. Paint warranty for the roll-up doors shall be provided by the roll-up door manufacture. <p>Each batch of basecoat color shall be checked for a proper match before painting of the cab and the body. After the cab and body are painted, the color shall verified again to make sure that it matches the color standard. Electronic color measuring equipment shall be used to compare the color sample to the color standard entered into the computer. Color specifications shall be used to determine the color match. A Delta E reading shall be used to determine a good color match within each family color.</p> <p>All removable items such as brackets, compartment doors, door hinges, and trim shall be removed and separately if required, to ensure paint behind all mounted items. Body assemblies that cannot be finish painted after assembly shall be finish painted before assembly.</p> <p>The paint finish quality levels for critical areas of the apparatus (cab front and sides, body sides and doors, and boom lettering panels) are to meet or exceed Cadillac/General Motors</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>GMW15777 global paint requirements. Orange peel levels are to meet or exceed the #6 A.C.T. standard in critical areas. These requirements must be met in order for the exterior paint finish to be considered acceptable. The manufacture's written paint standards shall be available upon request.</p> <p>The cab shall be two-tone, with the upper section painted #101 black and lower section of the cab and body painted #90 red.</p> <p><u>PAINT - ENVIRONMENTAL IMPACT</u></p> <p>Contractor shall meet or exceed all current State regulations concerning paint operations. Pollution control shall include measures to protect the atmosphere, water and soil. Controls shall include the following conditions:</p> <ul style="list-style-type: none"> • Topcoats and primers shall be chrome and lead free. • Metal treatment chemicals shall be chrome free. The wastewater generated in the metal treatment process shall be treated on-site to remove any other heavy metals. • Particulate emission collection from sanding operations shall have a 99.99% efficiency factor. • Particulate emissions from painting operations shall be collected by a dry filter or water wash process. If the dry filter is used, it shall have an efficiency rating of 98.00%. Water wash systems shall be 99.97% efficient • Water from water wash booths shall be reused. Solids shall be removed on a continual basis to keep the water clean. • Paint wastes are disposed of in an environmentally safe manner. • Empty metal paint containers shall be to recover the metal. • Solvents used in clean-up operations shall be recycled on-site or sent off-site for distillation and returned for reuse. <p>Additionally, the finished apparatus shall not be manufactured with or contain products that have ozone depleting substances. Contractor shall, upon demand, present evidence that the manufacturing facility meets the above conditions and that it is in compliance with his State EPA rules and regulations.</p> <p><u>GALVANIZED CHASSIS FRAME ASSEMBLY</u></p> <p>The chassis frame assembly shall be hot dip galvanized before the installation of the cab and body, and before installation of the engine and transmission assembly, air brake lines, electrical wire harnesses, etc.</p> <p>Components that are included with the chassis frame assembly that shall be hot dip galvanized are:</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> Frame rails Frame liners Cross members Battery boxes <p>All galvanized components are inspected for compliance with ASTM specifications.</p> <p>The cast iron front frame extension shall be coated with a zinc rich primer and painted silver to blend in with the frame rails.</p> <p>All components that are not galvanized shall be painted #90 RED .</p> <p><u>PAINT, FRONT WHEELS</u> All wheel surfaces, inside and outside, shall be provided with powder coat paint #101 black.</p> <p><u>PAINT, REAR WHEELS</u> All wheel surfaces, inside and outside, shall be provided with powder coat paint #101 black.</p> <p><u>HOT DIP GALVANIZED COMPARTMENT SUBSTRUCTURE</u> The compartment substructure shall be treated through a hot dip galvanizing process. These components shall be immersed in molten zinc to provide a coating that shall help protect against the effects of corrosion.</p> <p><u>PAINTED GRILLE</u> The chassis cab grille shall be painted black. Paint shall include the grille and housing.</p> <p><u>COMPARTMENT INTERIOR PAINT</u> The interior of compartmentation shall be painted with a gray spatter type paint.</p> <p><u>REFLECTIVE STRIPES</u> Three (3) reflective stripes shall be provided across the front of the vehicle and along the sides of the body. The reflective band shall consist of a 1.00" white stripe at the top with a 1.00" gap then a 6.00" white stripe with a 1.00" gap and a 1.00" white stripe on the bottom.</p> <p>The reflective band provided on the cab face shall be at the headlight level.</p> <p><u>REAR CHEVRON STRIPING</u> There shall be alternating chevron striping located on the rear-facing vertical surface of the apparatus. The rear surface, excluding the rear compartment door, shall be covered.</p> <p>The colors shall be red and fluorescent yellow green diamond grade.</p> <p>Each stripe shall be 6.00" in width.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>This shall meet the requirements of the current edition of NFPA 1901, which states that 50% of the rear surface shall be covered with chevron striping.</p> <p><u>CAB DOOR REFLECTIVE STRIPE</u></p> <p>A 6.00" x 16.00" black reflective stripe shall be provided across the interior of each cab door. The stripe shall be located approximately 1.00" up from the bottom, on the door panel.</p> <p>This stripe shall meet the NFPA 1901 requirement.</p> <p><u>LETTERING</u></p> <p>The lettering shall be totally encapsulated between two (2) layers of clear vinyl.</p> <p><u>LETTERING</u></p> <p>One hundred forty-one (141) to one hundred sixty (160) genuine gold leaf lettering, 4.00" high, with highlight and double shade shall be provided.</p> <p><u>LETTERING/NUMERALS ON CAB GRILLE</u></p> <p>Two (2) painted letters/numerals, as determined by the fire department, shall be provided on the cab grille.</p> <p><u>RUSTPROOFING/UNDERCOATING</u></p> <p>The apparatus cab shall be properly treated by an authorized Ziebart dealer.</p> <p>The rust proofing material shall be a transparent coating of an organic based corrosion inhibitor for long-term protection against corrosion.</p> <p>The rust proofing material utilized shall be formulated to resist corrosion.</p> <p>Coating texture shall be waxy and pliable after drying so it shall not chip, crack, or peel off during normal vehicle operations. Minimum dry film thickness shall be in the range of 3.00 to 4.00 mils.</p> <p>The underside of the apparatus shall be undercoated with an asphalt petroleum based material, dark in color.</p> <p>The undercoating material utilized on the apparatus shall be formulated to resist corrosion and deaden unwanted sound or road noise.</p> <p>Coating texture shall appear firm, flexible, and resistant to abrasion. Minimum dry film thickness shall be in the range of 8.00 to 12.00 mils.</p> <p>The material shall be applied to the following areas:</p> <p>Interior of all double panel style body doors.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>Body and cab wheel well fender liners, on the back side only.</p> <p>Underside of body and cab sheet metal, and structural components.</p> <p>Underside and vertical sides of all sheet metal compartmentation, including support angles.</p> <p>Structural support members under running boards, rear platforms, battery boxes, walkways, etc.</p> <p>Inside surfaces of the pump heat enclosure, (when installed).</p> <p><u>UNDERCOATING FUEL TANK</u></p> <p>The apparatus fuel tank shall be fully undercoated by an authorized Ziebart dealer.</p> <p>The fuel tank shall be undercoated with an asphalt petroleum based material, dark in color.</p> <p>The undercoating material utilized on the tank shall be formulated to resist corrosion and deaden unwanted sound or road noise.</p> <p>Coating texture shall appear firm, flexible, and resistant to abrasion. Minimum dry film thickness shall be in the range of 8.00 to 12.00 mils.</p> <p>The material shall be applied to the fuel tank prior to tank installation on the apparatus.</p> <p><u>FIRE APPARATUS PARTS CD MANUAL</u></p> <p>There shall be two (2) custom parts manuals for the complete fire apparatus provided in CD format with the completed unit.</p> <p>The manuals shall contain the following:</p> <ul style="list-style-type: none"> • Job number • Part numbers with full descriptions • Table of contents • Parts section sorted in functional groups reflecting a major system, component, or assembly • Parts section sorted in alphabetical order • Instructions on how to locate parts <p>The manuals shall be specifically written for the chassis and body model being purchased. It shall not be a generic manual for a multitude of different chassis and bodies.</p> <p><u>SERVICE PARTS INTERNET SITE</u></p> <p>The service parts information included in these manuals are also available on the factory website. The website offers additional functions and features not contained in this manual, such as digital</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>photographs and line drawings of select items. The website also features electronic search tools to assist in locating parts quickly.</p> <p><u>CHASSIS SERVICE CD MANUALS</u></p> <p>There shall be two (2) CD format chassis service manuals containing parts and service information on major components provided with the completed unit.</p> <p>The manual shall contain the following sections:</p> <ul style="list-style-type: none"> • Job number • Table of contents • Troubleshooting • Front Axle/Suspension • Brakes • Engine/Tires • Wheels • Cab • Electrical, DC • Air Systems • Plumbing • Appendix <p>The manual shall be specifically written for the chassis model being purchased. It shall not be a generic manual for a multitude of different chassis and bodies.</p> <p><u>CHASSIS OPERATION CD MANUALS</u></p> <p>There shall be two (2) CD format chassis operation manuals provided.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p><u>ONE (1) YEAR MATERIAL AND WORKMANSHIP</u></p> <p>Each new piece of apparatus shall be provided with a minimum one (1) year basic apparatus material and workmanship limited warranty. The warranty shall cover such portions of the apparatus built by the manufacturer as being free from defects in material and workmanship that would arise under normal use and service.</p> <p>A copy of the warranty certificate shall be submitted with the bid package (no exception).</p> <p><u>ENGINE WARRANTY</u></p> <p>A Cummins five (5) year limited engine warranty shall be provided. A copy of the warranty certificate shall be submitted with the bid package.</p> <p><u>STEERING GEAR WARRANTY</u></p> <p>A Sheppard three (3) year limited steering gear warranty shall be provided. A copy of the warranty certificate shall be submitted with the bid package.</p> <p><u>FIFTY (50) YEAR STRUCTURAL INTEGRITY</u></p> <p>The chassis frame and crossmembers shall be provided with a fifty (50) year material and workmanship limited warranty. The warranty shall cover the chassis frame and crossmembers as being free from defects in material and workmanship that would arise under normal use and service.</p> <p>A copy of the warranty certificate shall be submitted with the bid package (no exception).</p> <p><u>FRONT AXLE THREE (3) YEAR MATERIAL AND WORKMANSHIP WARRANTY</u></p> <p>Independent front suspension shall be provided with a three (3) year material and workmanship limited warranty. The manufacturer's warranty shall provide that the independent front suspension and steering gears be free from any defect related to material and workmanship on the portion of the apparatus built by the manufacturer that would arise under normal use and service. A copy of the warranty certificate shall be submitted with the bid package (no exception).</p> <p><u>REAR AXLE TWO (2) YEAR MATERIAL AND WORKMANSHIP WARRANTY</u></p> <p>A Meritor™ Axle two (2) year limited warranty shall be provided.</p> <p><u>ABS BRAKE SYSTEM THREE (3) YEAR MATERIAL AND WORKMANSHIP WARRANTY</u></p> <p>A Meritor Wabco™ ABS brake system three (3) year limited warranty shall be provided.</p> <p><u>TEN (10) YEAR STRUCTURAL INTEGRITY</u></p> <p>The new cab shall be provided with a ten (10) year material and workmanship limited warranty. The warranty shall cover such portions of the cab built by the manufacturer as being free from</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>structural failures caused by defects in material and workmanship that would arise under normal use and service.</p> <p>A copy of the warranty certificate shall be submitted with the bid package (no exception).</p> <p><u>TEN (10) YEAR PAINT AND CORROSION</u></p> <p>Each new piece of apparatus shall be provided with a ten (10) year paint and corrosion limited warranty on the apparatus cab. The warranty shall cover painted exterior surfaces of the body to be free from blistering, peeling, corrosion, or any other adhesion defect caused by defective manufacturing methods or paint material selection that would arise under normal use and service.</p> <p>A copy of the warranty certificate shall be submitted with the bid package (no exception).</p> <p><u>FIVE (5) YEAR MATERIAL AND WORKMANSHIP</u></p> <p>The electronic modules and display(s) shall be provided with a five (5) year material and workmanship limited warranty. The warranty shall cover electronic modules to be free from failures caused by defects in material and workmanship.</p> <p>A copy of the warranty certificate shall be submitted with the bid package (no exception).</p> <p><u>COMPARTMENT LIGHT WARRANTY</u></p> <p>The compartment lights shall not offer an extended warranty.</p> <p><u>TRANSMISSION WARRANTY</u></p> <p>The transmission shall have a five (5) year/unlimited mileage warranty covering 100 percent parts and labor. The warranty is to be provided by Allison Transmission and not the apparatus builder.</p> <p><u>TRANSMISSION COOLER WARRANTY</u></p> <p>The transmission cooler shall carry a five (5) year parts and labor warranty (exclusive to the transmission cooler). In addition, a collateral damage warranty shall also be in effect for the first three (3) years of the warranty coverage and shall not exceed \$10,000 per occurrence. A copy of the warranty certificate shall be submitted with the bid package.</p> <p><u>WATER TANK WARRANTY</u></p> <p>The UPF poly water tank shall be provided with a lifetime material and workmanship limited warranty.</p> <p>A copy of the warranty certificate shall be submitted with the bid package (no exception).</p> <p><u>TEN (10) YEAR STRUCTURAL INTEGRITY</u></p> <p>Each new piece of apparatus shall be provided with a ten (10) year material and workmanship limited warranty on the apparatus body. The warranty shall cover such portions of the apparatus</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>built by the manufacturer as being free from defects in material and workmanship that would arise under normal use and service.</p> <p>A copy of the warranty certificate shall be submitted with the bid package (no exception).</p> <p><u>ROLL UP DOOR MATERIAL AND WORKMANSHIP WARRANTY</u></p> <p>An AMDOR roll-up door limited warranty shall be provided. The roll-up door shall be warranted against manufacturing defects for a period of ten (10) years. A five (5) year limited warranty shall be provided on painted roll up doors.</p> <p>A copy of the warranty certificate shall be submitted with the bid package.</p> <p><u>FIVE (5) YEAR MATERIAL AND WORKMANSHIP</u></p> <p>The Hale pump shall be provided with a five (5) year material and workmanship limited warranty. The labor shall be covered through year three (3).</p> <p>A copy of the warranty certificate shall be submitted with the bid package (No Exception).</p> <p><u>TEN (10) YEAR PUMP PLUMBING WARRANTY</u></p> <p>The stainless steel plumbing components and ancillary brass fittings used in the construction of the water/foam plumbing system shall be warranted for a period of ten (10) years or 100,000 miles. This covers structural failures caused by defective design or workmanship, or perforation caused by corrosion, provided the apparatus is used in a normal and reasonable manner. This warranty is extended only to the original purchaser for a period of ten years from the date of delivery.</p> <p>A copy of the warranty certificate shall be submitted with the bid package (no exception).</p> <p><u>FOAM SYSTEM WARRANTY</u></p> <p>A one (1) year material and workmanship limited warranty shall be provided on the foam system. A five (5) year material and workmanship limited warranty shall be provided on the foam system control head.</p> <p>A copy of the warranty certificate shall be submitted with the bid package (no exception).</p> <p><u>TWELVE (12) YEAR PAINT AND CORROSION</u></p> <p>Each new piece of apparatus shall be provided with a twelve (12) year paint and corrosion limited warranty on the apparatus body. The warranty shall cover painted exterior surfaces of the body to be free from blistering, peeling, corrosion, or any other adhesion defect caused by defective manufacturing methods or paint material selection that would arise under normal use and service.</p> <p>A copy of the warranty certificate shall be submitted with the bid package (No Exception).</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p><u>THREE (3) YEAR MATERIAL AND WORKMANSHIP</u></p> <p>The gold leaf lamination shall be provided with a three (3) year material and workmanship limited warranty. The warranty shall cover the gold leaf lamination as being free from defects in material and workmanship that would arise under normal use and service.</p> <p>A copy of the warranty certificate shall be submitted with the bid package (no exception).</p> <p><u>TWO (2) YEAR EXTENDED</u></p> <p>Each new piece of apparatus shall be provided with a two (2) year basic apparatus material and workmanship limited warranty on the apparatus body. The manufacturer's warranty shall provide for repairs to correct any defect related to material and workmanship on the portion of the apparatus built by the manufacturer that would arise under normal use and service. A copy of the warranty certificate shall be submitted with the bid package (No Exception).</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p><u>VEHICLE STABILITY CERTIFICATION</u></p> <p>The fire apparatus manufacturer shall provide a certification stating the apparatus complies with NFPA 1901, current edition, section 4.13, Vehicle Stability. The certification shall be provided at the time of bid.</p> <p><u>ENGINE INSTALLATION CERTIFICATION</u></p> <p>The fire apparatus manufacturer shall provide a certification, along with a letter from the engine manufacturer stating they approve of the engine installation in the bidder's chassis. The certification shall be provided at the time of bid.</p> <p><u>POWER STEERING CERTIFICATION</u></p> <p>The fire apparatus manufacturer shall provide a certification stating the power steering system as installed meets the requirements of the component supplier. The certification shall be provided at the time of bid.</p> <p><u>CAB INTEGRITY CERTIFICATION</u></p> <p>The fire apparatus manufacturer shall provide a cab crash test certification with this proposal. The certification states that the cab must meet or exceed the requirements below:</p> <ul style="list-style-type: none"> - European Occupant Protection Standard ECE Regulation No.29 - SAE J2422 Cab Roof Strength Evaluation - Quasi-Static Loading Heavy Trucks - SAE J2420 COE Frontal Strength Evaluation - Dynamic Loading Heavy Trucks - Roof Crush <p>The cab shall be subjected to a roof crush force of 100,000 lb. This value shall be 450 percent of the ECE 29 criteria, which must be equivalent to the front axle rating up to a maximum of ten (10) metric tons.</p> <ul style="list-style-type: none"> - Side Impact <p>The cab shall be subjected to dynamic preload with a 13,275-lb moving barrier is slammed into the side of the cab at 5.50 mph, striking with an impact of 13,000 ft-lb of energy. This test shall closely represent the forces a cab shall see in a rollover incident.</p> <ul style="list-style-type: none"> - Frontal Impact <p>The cab shall withstand a frontal force produced from 65,200 ft-lb of energy using a swing-bob type platen.</p> <p>The same cab shall withstand all tests without any measurable intrusion into the survival space of the occupant area.</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>There shall be no exception to any portion of the cab integrity certification. Nonconformance shall lead to immediate rejection of bid.</p> <p><u>CAB DOOR DURABILITY CERTIFICATION</u></p> <p>Robust cab doors help protect occupants. Cab doors shall survive a 200,000 cycle door slam test where the slamming force exceeds 20 G's of deceleration. The bidder shall certify that the sample doors similar to those provided on the apparatus have been tested and have met these criteria without structural damage, latch malfunction, or significant component wear.</p> <p><u>WINDSHIELD WIPER DURABILITY CERTIFICATION</u></p> <p>Visibility during inclement weather is essential to safe apparatus performance. Windshield wipers shall survive a 3 million cycle durability test in accordance with section 6.2 of SAE J198 <i>Windshield Wiper Systems - Trucks, Buses and Multipurpose Vehicles</i>. The bidder shall certify that the wiper system design has been tested and that the wiper system has met these criteria.</p> <p><u>SEAT BELT ANCHOR STRENGTH</u></p> <p>Seat belt attachment strength is regulated by Federal Motor Vehicle Safety Standards and should be validated through testing. Each seat belt anchor design shall withstand 3000 lb of pull on both the lap and shoulder belt in accordance with FMVSS 571.210 Seat Belt Assembly Anchorages. The bidder shall certify that each anchor design was pull tested to the required force and met the appropriate criteria.</p> <p><u>SEAT MOUNTING STRENGTH</u></p> <p>Seat attachment strength is regulated by Federal Motor Vehicle Safety Standards and should be validated through testing. Each seat mounting design shall be tested to withstand 20 G's of force in accordance with FMVSS 571.207 Seating Systems. The bidder shall certify that each seat mount and cab structure design was pull tested to the required force and met the appropriate criteria.</p> <p><u>CAB DEFROSTER CERTIFICATION</u></p> <p>Visibility during inclement weather is essential to safe apparatus performance. The defroster system shall clear the required windshield zones in accordance with SAE J381 Windshield Defrosting Systems Test Procedure And Performance Requirements - Trucks, Buses, And Multipurpose Vehicles. The bidder shall certify that the defrost system design has been tested in a cold chamber and passes the SAE J381 criteria.</p> <p><u>CAB HEATER CERTIFICATION</u></p> <p>Good cab heat performance and regulation provides a more effective working environment for personnel, whether in-transit, or at a scene. The cab heaters shall warm the cab 77 degrees Fahrenheit from a cold-soak, within 30 minutes when tested using the coolant supply methods</p>		

South Portland Fire Department

	Bidder Complies	
	Yes	No
<p>found in SAE J381. The bidder shall certify that a substantially similar cab has been tested and has met these criteria.</p> <p><u>CAB AIR CONDITIONING PERFORMANCE CERTIFICATION</u></p> <p>Good cab air conditioning temperature and air flow performance keeps occupants comfortable, reduces humidity, and provides a climate for recuperation while at the scene. The cab air conditioning system shall cool the cab from a heat-soaked condition at 100 degrees Fahrenheit to an average of 72 degrees Fahrenheit in 30 minutes. The bidder shall certify that a substantially similar cab has been tested and has met these criteria.</p> <p><u>AMP DRAW REPORT</u></p> <p>The bidder shall provide, at the time of bid and delivery, an itemized print out of the expected amp draw of the entire vehicle's electrical system.</p> <p>The manufacturer of the apparatus shall provide the following:</p> <ul style="list-style-type: none"> • Documentation of the electrical system performance tests. • A written load analysis, which shall include the following: <ul style="list-style-type: none"> ○ The nameplate rating of the alternator. ○ The alternator rating under the conditions specified per: <ul style="list-style-type: none"> ▪ Applicable NFPA 1901 or 1906 (Current Edition). ○ The minimum continuous load of each component that is specified per: <ul style="list-style-type: none"> ▪ Applicable NFPA 1901 or 1906 (Current Edition). ○ Additional loads that, when added to the minimum continuous load, determine the total connected load. ○ Each individual intermittent load. <p>All of the above listed items shall be provided by the bidder per the applicable NFPA 1901 or 1906 (Current Edition).</p>		