

Town of Wascott
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QUOTE

For a 2017 Fire Department T300 Series Conventional Truck-Pumper

Information for Contractors

Sealed proposals are desired from reputable manufacturers of automotive fire apparatus in accordance with these specifications and with the advertisement, a copy of which is attached, for the piece of apparatus as follows:

Fire Truck, 2200 gallon capacity tanker, hosebody, booster tank, and all other appurtenances in accordance with the following:

GENERAL REQUIREMENTS:

Each bid must be accompanied by bidders accurate written and detailed specifications covering the apparatus and equipment which it is proposing to furnish and to which the apparatus furnished under the Contract must conform. It is the intent of these specifications to cover the furnishing and delivering to the purchaser, complete apparatus equipped as specified. Minor details of construction and materials where not otherwise specified are left to the discretion of the Contractor who shall be solely responsible for the design and construction of all features. Such details and other construction not specifically covered herein or not at variance with these specifications should conform with the intent of the specifications as outlined in Booklet No. 1901 dated 2016.

The apparatus being furnished under these specifications shall conform to the requirements specific to tanker fire apparatus NFPA Booklet 1901 version 2009. Any test equipment required or expense incurred for the Certification Tests shall be borne by the Contractor supplying this equipment.

RELIABILITY OF CONTRACTOR:

Contractor shall furnish satisfactory evidence that he has the ability to design, engineer, and construct the apparatus specified and shall state the location of the factory where the apparatus is to be manufactured and tested. The apparatus design shall be an "original" generated by the Contractor/Bidder and not reproductions of fire apparatus designs previously engineered by other Contractors/Manufacturers.

DESIGN:

The design of the equipment shall be in accordance with the best engineering practices. The equipment design and accessory installation shall permit accessibility for use, maintenance, and service. All components and assemblies shall be free of hazardous protrusions, sharp edges, cracks or other elements which might cause injury to personnel or equipment. NOTE: Where "nibbled" or non-continuous cutting methods are used to machine the body material, all edges shall be reworked/machine smoothed for injury prevention and appearance reasons.

All oil, hydraulic, and air tubing lines and electrical wiring shall be located in protective positions, properly attached to the frame or body structure and shall have protective loom or grommets at each point where they pass through structural members.

Parts and components shall be located or positioned for rapid and simple inspection and recognition of excessive wear or potential failure. Whenever functional layout of operating components determines that physical or visual interference between items cannot be avoided, the item predicted to require the most maintenance shall be located for the best accessibility.

Cover plates which must be removed for component adjustment or part removal will be equipped with disconnect fastenings or hinged panels.

Drains, filler plugs, grease fittings, hydraulic lines, bleeders and check points for all components will be located so that they are readily accessible and do not require special tools for proper servicing. Design practices shall minimize the number of tools required for maintenance.

All components shall be designed and protected so that heavy rain or other adverse weather conditions will not interfere with normal servicing or operation.

All specified stainless steel shall be type 304, 2-B where used for exterior painted panels and #4-brushed where used for pump panel overlays and unpainted compartment and body panels. All specified smooth surface aluminum, where used for painted or machined swirl natural finish, shall be 5052-H32 alloy of the specified thickness. All 4-way aluminum treadplate shall be "polished" finish with NFPA approved pattern on walking and step surfaces, type 3003 of specified thickness. All specified bolted fasteners shall be coated stainless steel "low profile" button socket head cap screws. All nut fasteners to be Ny-Lok or approved equal, designed to prevent loosening. No substitute will be acceptable to stainless steel where specified.

NOTE: Lighter gauges of specified materials will not be acceptable.

The materials specified are considered absolute minimum. Exceptions to these material requirements will not be permitted since all raw materials of the specified type are available to all manufacturers. Since all custom manufacturers have the ability to shear, brake, and weld as these specifications require - all basic requirements must be complied with.

Each Bidder shall be prepared, if so requested by the Purchaser, to present evidence of his design experience/capabilities and manufacturing ability to carry out the terms of the contract. The Purchaser does not, in any way, obligate itself to accept the lowest or any Bid.

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CONSTRUCTION METHODS, STAINLESS STEEL FABRICATIONS

Since any reputable original equipment manufacturer (OEM) of Fire Fighting Apparatus possesses the means and capability to provide the specified press-brake fabricated construction and bolted assembly method, the purchaser will ONLY consider proposals of such manufacture. Proposals' specifying weld-together stainless steel structural's or weld-together stainless steel fabrications do not meet the intent of this requirement and will be rejected. Furthermore, proposals that include the practice of mating or engaging stainless steel materials into structural aluminum extrusions will not be considered.

All proposals must be compliant to the specified sheet and plate stainless steel construction materials, including type of alloy, thickness, and surface finish.

Bidders will be required to demonstrate, by example of their previously delivered apparatus; precision of metal cut profiles, accuracy of fastener spacing, fit-and-finish of assembled fabrications, absence of imperfections in metal finishing, and ease of which the assembled fabricated body components may be disassembled and removed for modifications, repairs or replacement.

The apparatus body assembly shall consist only of individual press-brake-formed structural fabrications, each of which is precisely machined from high quality 304 alloy stainless steel sheets, and assembled with integral 90-degree flanges at mating surfaces. All mating surfaces are to be assembled using the specified removable threaded fasteners. Bidders will be required to demonstrate: precision of metal cut profiles, fit-and-finish of assembled fabrications, and ease of which the assembled parts may be disassembled and removed for modifications, repairs or replacement.

Due to the requirement that the apparatus body be easily repairable, proposals that include the practice of stitch-welding, seam-welding, or plug-welding mating body fabrications shall not be submitted. Likewise, apparatus body designs that rely on metal fusion, adhesives, encapsulating welded extrusions, or non-removable fasteners, as a method of permanent assembly, or apparatus body designs and construction methods that have compartment modules welded to their understructures will not be considered.

NOTE: THERE SHALL BE NO STRUCTURALS USED TO FORM THE SHAPE OF AND SUBSEQUENTLY WELDED TO THE APPARATUS BODY COMPARTMENTS, THUS ALLOWING FOR PARTIAL OR COMPLETE DISASSEMBLY FOR REPAIRS.

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TYPE 304 STAINLESS STEEL CONSTRUCTION MATERIALS - NO EXCEPTIONS

Since all manufacturers of Fire Fighting Apparatus have the means and ability to purchase and fabricate their compartmented bodies of Type 304 Stainless Steel, it is the only grade of stainless steel that will be accepted.

Apparatus proposals that incorporate lesser grades, or combinations of Type 304 and lesser grades of stainless steel, will not be considered.

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ENGINEERED APPARATUS BODY DESIGN REQUIREMENT

The contractor shall verify, **within the Bid Proposal Package**, that their proposed fire apparatus body design will be "fully engineered", meaning that ALL body fabrications have been computer 3-D modeled, on-screen precision assembled, and each individual part can be traced to an engineered drawing, including but not limited to: compartment corners, wheel well housings, compartment door jambs, compartment floors and roofs, compartment dividers/bulkheads, interior compartment wire covers, compartment shelves/shelf brackets/shelf adjustable tracks, inner and outer door panels (hinged doors), door bundle brackets (roll-up), roll-out trays/drawers/tool boards, hose bed dividers, etc: Contractor shall demonstrate their compliance by submitting sample 3-D "exploded-view" drawings within the Bid Proposal Package. Hand-made/built apparatus bodies, without digitally recorded dimensional and fabricated shape information (which allows for precision part reproduction), DO NOT MEET THE INTENT OF THIS SPECIFICATION.

Apparatus body designs that are not "fully" engineered, with all assembly fastener holes, lighting fixture holes, outlet fitting/inlet fitting holes, door handle/latch holes, and accessory equipment/trim mounting holes included in the design engineering will not be considered.

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SERVICEABILITY:

To insure the Purchaser a source of service and parts over a 25 year anticipated life of the apparatus, the Bidder shall provide factory service, fabrication/manufacturing, and testing facilities within a 250 mile radius of the Fire Department. This same facility must stock a complete line of all fire fighting equipment and parts for this apparatus. Records as to the purchase source for all auxiliary components of the specified apparatus shall be available to Purchaser upon request. This purchase information shall include manufacturer name, model number, authorized distributor, current part number, and special installation instructions.

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PRINTED PROPOSALS

All proposals shall be submitted in typed format. Casual, hand-written proposals shall be considered informal and immediately rejected and the bid will be returned in its entirety to manufacturer. The only handwriting acceptable on the proposal forms will be on the signature lines.

PROPOSAL SIGNATURES REQUIRED

All bids must be signed by the President of the manufacturer of the apparatus being proposed. Bids signed by a sales representative shall be declared informal and will be rejected. Each bid must give the full business address of the manufacturer. Bids by a Corporation must be authorized and signed by the President. Same signature is required on Bid Bond, if specified.

BID WITHDRAWALS

Bids may be withdrawn by certified mail or acknowledged facsimile request from Bidders prior to the time fixed for opening. Negligence on the part of the Bidder in preparing the Bid Proposal confers no right for the withdrawal of the Bid after it has been opened. No Bidder may withdraw their Bid after the time set for the opening thereof.

DETAILED PROPOSAL SPECIFICATIONS

All Bidders shall furnish complete "Proposal Specifications", printed on their own stationery, copies or reproduction of these "advertised specifications" can only be used as an attachment to the proposal specifications, for comparison/ compliance purposes.

All Bid Proposal Specifications must be in the same sequence as these Advertised Specifications for ease of comparison. Any bid not in this sequence will be disregarded and rejected.

LETTER OF EXCEPTIONS

It is the intent of the Fire Department to receive proposals on equipment/apparatus meeting the attached detailed specifications in their entirety. Any proposals being submitted, without "Full Compliance" with the advertised specifications shall so state on the Bid Proposal Page, followed by a detailed "Letter of Exceptions" listing the areas of non-compliance and equipment or designs being substituted.

DELIVERY AND OPENING OF PROPOSAL

Each proposal and all papers bound and attached thereto, together with the proposal guarantee, shall be placed in an envelope and securely sealed therein. The envelope shall be marked "Bid on Fire Equipment".

Proposals will be received at or prior to the time set for the opening of bids. Proposals received after the "Bid Opening" will be returned unopened.

The bids will be opened publicly and read aloud at the time and date stated on the advertisement for bids.

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CORPORATE OWNERSHIP OF MANUFACTURER

The manufacturer of the apparatus must be fully owned and managed by a Parent Company, Corporation, or Individual(s) that is 100% held by United States of America based Company, Corporation, or United States citizens(s).

Proposals from any manufacturer that is fully or partially owned and/or operated by a foreign company, Corporation or Individual(s) under any type of ownership, partnership, or any similar type of agreement will be immediately rejected.

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INSURANCE REQUIREMENTS

Each Bidder must submit with their bid proposal a Certificate of Insurance listing the proposed manufacturer's product liability insurance coverage. Liability insurance shall be a minimum amount of \$11,000,000 million dollars with coverage attained with a minimum of \$1,000,000.00 underlying insurance and \$10,000,000.00 umbrella coverage. Submitted Certificate shall name the apparatus manufacturer, insurance company, policy number, and effective dates of the insurance policy. Bids submitted without the required Certificate, or for Certificates listing less than One (1) million dollars of underlying coverage, plus the Ten (10) million dollar umbrella coverage, will be considered non responsive and automatically rejected. No exceptions are allowed to the minimum insurance coverage requirement.

The manufacturer shall maintain full coverage on the purchaser's cab and chassis from time of first possession by the manufacturer until the apparatus is delivered and accepted by the purchaser. No exceptions. Purchaser reserves the right to require proof of insurance from the manufacturer's insurance carrier prior to entering into a contract for the apparatus.

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PROPOSAL PRINT/DRAWING

Each Bid shall be submitted with a complete detailed print of the apparatus as is specified. The print shall be to scale, minimum of 1 inch = 30 inches, of the exact apparatus being proposed, and not a stock print of a similar unit. All dimensions are subject to a +/- 1/4 inch tolerance. The print shall have complete views of the driver side with chassis cab, passenger side with chassis cab, and the rear of body. The print shall include all of the following depicted items:

CHASSIS: exact replication of model of chassis cab, air horns, chassis cab step housings, 120-volt shore power receptacle, air system keep-fill receptacle, emergency lighting fixtures, hand rails, and vertical exhaust system with heat shield / horizontal exhaust system outlet.

APPARATUS BODY: the apparatus body subframe, underbody tow eyes, water tank profile with baffles and suction sump, underbody folding wheel chocks, all exterior 4-way treadplate pattern areas, body access steps, hand rails, interior compartment shelving, emergency and non-emergency lighting fixtures, ladders and pike poles and storage area(s), hard suction hose and storage area(s), side and rear compartmentation showing dimensions and D-ring door hardware, / roll-up door slats/bundles/bar type handle/latches, and hosebed arrangement with dividers and grating material. / dividers, grating material, and hosebed covers.

ADDITIONAL OPTIONAL FEATURES: other optional features, if specified, shall also be included on the proposal drawing, this includes; front bumper extension with attached accessories/treadplate gravel shield/preconnect hosebed, interior compartment roll-out trays, drop down ladder rack, drop-down folding tank compartment, booster tank with tank fill(s), dump valve(s) and associated chute(s), rewind air/hydraulic/cord reels, SCBA bottle storage compartments/racks, cascade air storage bottles with fill station, generator installation, permanent quartz lighting, hand operated 120-Volt floodlighting, 120-volt exterior body receptacles, extendible light tower, and other detailed accessories and features so as to provide a "picture" of the proposed apparatus.

COMPLIANCE: this required drawing shall become a part of the Proposal. As with the specified Bidder's Bond, failure to submit the above required drawing, with the sealed bid proposal, will cause immediate rejection of the bidder's proposal.

Quality and accuracy of Bidder's Proposal Drawing will be a major consideration, for determining of most acceptable proposal.

PHOTO DOCUMENTATION: Bidder shall refer to the following specifications and include any asked for photos, or drawings of required feature enhancements such as step modules, pump panel inserts, and etc., documenting they have provided these features in the past and are prepared to provide them as required for this Bid Proposal.

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AWARD OF CONTRACT

The contract will be awarded, as soon as possible to the most "Responsible Bidder", provided their Bid is reasonable and it is in the best interest of the Fire Department. The purchaser reserves the right to waive any formality in bids received once such waiver is in the interest of the Purchaser. Also, to accept any item in the Bid, found to be of superior quality or otherwise preferred by the Purchaser.

The competency and responsibility of Bidders along with content of proposal specifications and accuracy/quality of proposal drawing will be considered in making the award. The Purchaser reserves the right to reject any or all Bids when such rejection is in the interest of the Purchaser and to reject the Bid of a Bidder who, in the judgment of the Purchaser, is not in a position to perform the contract. The Purchaser does not, in any way, obligate itself to accept the lowest or any Bid.

The Fire Department reserves the right to reject any or all Bid Proposals and purchase the equipment it prefers.

Bidders taking "Total Exception" to these advertised specifications are hereby advised that such statement will result in immediate REJECTION of the Bid Proposal.

Prior to award, the Bidder Representative will meet with purchasing officials (at Purchaser's location) to personally discuss all facets of these specifications to insure a complete and satisfactory understanding of the Purchaser's specifications and the Bidder's proposal.

STAINLESS STEEL REQUIREMENT

Bidder's experience with specified construction methods, and previous use of stainless steel as a construction material, will be considered in making the award. Bidder shall disclose the number of years they have been fabricating apparatus bodies, built entirely of Stainless Steel.

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INSPECTION TRIPS

The Truck Committee members shall be advised as to the date of the following phases of construction: Pre-Construction (prior to bending of metal), Pre-Paint (final design/equipment layout), and Pre-Delivery. Truck Committee members reserve the right to travel to the factory during these stages of construction.

Bidder shall arrange for, and the Customer will pay the expenses of, the above specified "Pre-Construction Conference", to be held at the manufacturer's factory, at which time all final designs and equipment mounting locations will be approved. Any changes to original proposal specifications, as approved at the Pre-Construction Conference, shall be noted on a "revised specification", provided by the manufacturer and distributed to Truck Committee members within five working days after Pre-Construction Conference.

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ACCEPTANCE TESTS AND REQUIREMENTS

Acceptance tests on behalf of the purchaser shall be prescribed and conducted prior to delivery or within 10 days after delivery, by the manufacturer's representative in the presence of such person or persons as the purchaser may designate in the requirements for delivery.

The apparatus, when fully equipped and loaded per "Carrying Capacity", shall be capable of the following performance on dry/level/paved roads in good condition: From a standing start the vehicle shall attain a true speed of 35 MPH within 25 seconds. From a steady speed of 15 MPH the vehicle shall accelerate to 35 MPH within 30 seconds (without moving gear selector). The vehicle shall attain a minimum top speed of 50 MPH. The apparatus shall be able to maintain a speed of at least 20 MPH on any grade up to and including 6%. Specified acceleration tests shall consist of two runs in opposite directions over the same route.

From a standing start, through the gears, the vehicle shall attain a true speed of 35 mph within 25 seconds in the case of pumpers, and a true speed of 55 mph within 60 seconds. The vehicle shall attain a top speed of not less than 62 mph.

The service brakes shall bring the fully laden apparatus to a complete stop from an initial speed of 20 MPH in a distance not exceeding 35 ft., on a substantially hard level surface road free from loose material, oil, or grease.

Responsibility for the apparatus and equipment shall remain with the contractor until acceptance by the purchaser.

DELIVERY MANUAL

The Manufacturer must supply at the time of delivery, a hard copy of:

1. Manufacturer's record of apparatus construction details, per NFPA 1901.
2. Weight documents from four (4) individual certified scales showing actual loading on the sides of front axle, sides of rear axle(s), and overall (four total) vehicle (without personnel, and equipment) shall be

supplied with the completed vehicle to determine compliance with NFPA section 10-1. Weights shall be for each tire or dual set of tires, so as to verify side-to-side loading, to be in compliance with NFPA section 4.12.2.3.3.

3. At least two copies of the complete operation and maintenance manual covering the completed apparatus as delivered including the emergency lighting and siren, generator, or other furnished accessories.

4. Wiring diagrams of 12-volt electrical systems, installed by apparatus body manufacturer (prime contractor). Diagrams must be "vehicle specific", describing all 12-volt electrical functions as furnished on this **and only this** apparatus.

5. A finalized drawing of apparatus as completed.

6. A "Delivery Manual", consisting of a 3-ring notebook type binder with reference tabs for each section, shall be furnished to include the following items: invoice copy(ies), proof of insurance, Manufacturer's Statement of Origin, acceptance forms, certifications, specifications, individual component manufacturer instructions and parts manuals, warranty forms for body, warranty forms for all major components, warranty instructions and format to be used for compliance with warranty obligations, routine service forms/publications, technical publications or training guide for major components, and apparatus body print "as built".

7. Paint numbers of all color coatings.

8. Certifications of water tank capacity.

9. Written load analysis of 12-volt electrical system as installed by body builder.

NOTE: Exceptions to the above requirements will not be acceptable.

The contractor shall affix a permanent plate in the driver's compartment specifying the quantity and type of the following fluids use in the vehicle:

All nameplates and instruction plates shall be metal or plastic with the information permanently engraved, stamped, or etched thereon. Metal nameplates to be installed with plated screws. All nameplates to be mounted in a conspicuous place.

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DELIVERY TO FIRE DEPARTMENT - NO EXCEPTIONS

The completed unit shall be delivered to the purchaser with full instructions provided to Fire Department personnel on operation, care, and maintenance of apparatus at the purchaser's fire station.

DELIVERY ENGINEER:

Delivery shall be performed by a factory trained Delivery Engineer only employed by the Bidder. Delivery Engineer shall remain in the community a reasonable time for training of Fire Department personnel and making normal adjustments.

Delivery shall be considered to include, but not be limited to:

A. Transportation of the Fire Apparatus.

B. Conducting day or evening classes for instruction of Fire Department personnel and Drivers for operation.

The Delivery Engineer shall be factory trained, fully capable of conducting informative classes on the complete operation of the vehicle. This means familiarity with engine, running gear, transmission, driving skill, as well as handling of pump and/or dumping equipment and all controls.

The Delivery Engineer shall set delivery and instruction schedule with the person appointed by Purchaser, recognizing the need for either daytime or evening classes. Advance notice of at least one (1) week will be given, advising the specific day on which the new apparatus will arrive.

The Purchaser shall make all housing arrangements for the Delivery Engineer and provide him with transportation to and from lodging and nearest available airport or rental car agency (if it applies). The cost of all housing and other living expenses are to be paid for by the Delivery Engineer.

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PROGRESS PAYMENT

In order to eliminate interest and handling charges for the chassis portion, a "Progress Payment" shall be made upon receipt of chassis, at Bidder's factory. This amount shall be for an equivalent portion of the contract and is to be identified on the Bid Proposal page.

BALANCE PAYMENT TERMS

All Bidders shall be required to detail on the Proposal Page, and in their own exact words, the balance payment terms for said apparatus.

Final delivery price shall not include any Local, State, or Federal taxes. The Bidder shall not be liable for any State or Federally mandated tax or program after the sale of this apparatus.

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DEMONSTRATOR/SHOW TRUCK CREDITS

The Customer may consider the Bidder's demonstrator use of this apparatus, after the completed delivery of the same. The Bidder shall disclose in the Proposal the Fire Department's earnings on a per month basis, all of which is to be deducted from the initial contract amount, for the Bidder's utilization of the apparatus as a show vehicle. Bidder shall also disclose the maximum monthly mileage to be put on the vehicle during its use as a show truck. The Independent Third Party Certifications Test shall be completed AFTER the demonstration use, immediately prior to its return to the customer. For the period of show truck use, the Bidder shall provide all necessary liability/comprehensive/physical damage insurances, with the City and Fire Department listed as "Loss Payees".

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SPECIAL PAYMENT INCENTIVES

All Bidders shall be required to detail, in exact terms, on their apparatus proposal, the final balance payment or payments for said apparatus, including:

All Bidders/Contractors shall be required to furnish interest payment (to the Customer) terms and conditions for pre-payment of all or part of any undue contract amount.

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GENERAL WARRANTY

The new fire Pumper apparatus manufactured per these specifications shall be warranted for a period of ONE (1) year from the date of delivery, except for chassis and other components noted herein.

Under this warranty, Bidder agrees to furnish any parts to replace those that have failed due to defective material or workmanship where there is no indication of abuse, neglect, unusual or other than normal service providing that such parts are, at the option of the Bidder, made available for inspection upon request, returned to Bidder's factory or other location designated by Bidder with transportation prepaid within 30 days after the date of failure or within ONE (1) year from the date of delivery of the apparatus to the original purchaser, whichever occurs first, and inspection indicates the failure was attributed to defective material or workmanship. Accessories/components warranted by their original manufacturer may be subject to reinstallation charges under the terms of their respective warranties, especially if such warranties exceed the above 1-year warranty terms.

The warranty on the chassis and chassis supplied components, storage batteries, valves, generators, electrical lamps and other devices subject to deterioration is limited to the warranty of the manufacturer thereof and adjustments for the same are to be made directly with the chassis manufacturer by the Purchaser.

This warranty will not apply to any fire apparatus which has been repaired or altered outside the Manufacturer factory or designated facility in any way, which, in the manufacturer's opinion might affect its stability or reliability. Each warranty claim needing repair or service at the designated facility must receive pre authorization by Manufacturer prior to performance of any work.

This warranty will not apply to those items which are usually considered to be normal maintenance and upkeep services: including, but not limited to, normal lubrication or proper adjustment or minor auxiliary pumps or reels.

Refer to the "FIRE PUMP" section and "BOOSTER TANK" section for specific extended Manufacturer's warranties on the provided Fire Pump and Water (Foam) Tank(s).

This warranty is in lieu of all other warranties, expressed or implied, all other representations to the original purchaser, and all other obligations or liabilities, including liabilities for incidental or consequential damage on Bidder's part. Without limiting the foregoing, any express or implied warranties of merchantability or fitness for a particular purpose or warranties arising by Customer usage or by operation of law with regard to any products delivered pursuant hereto are expressly disclaimed. Bidder neither assumes nor authorizes any person to assume for Bidder, any liability in connection with the sales of Bidder's apparatus unless made in writing by the Bidder.

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20-YEAR WARRANTY ON STAINLESS STEEL BODY FABRICATIONS

The fire apparatus manufacturer (body builder) shall warrant to the original purchaser only, that the stainless steel body components as fabricated by the body builder, under normal use and with reasonable maintenance, be structurally sound and shall remain free from corrosion perforation for a period of TWENTY (20) years.

This warranty does not apply to the following items which are covered by a separate warranty: paint finish, hardware, moldings, and other accessories attached to this body.

FIRE APPARATUS MANUFACTURER MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED, WITH RESPECT TO THE STAINLESS STEEL BODY AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED.

The body builder shall replace, without charge, repair at the factory, or make a fair allowance for any defect in material or workmanship demonstrated to the satisfaction to have existed at the time of delivery or not due to misuse, negligence, or accident. If the body builder elects to repair the body, the extent of such repair shall be determined solely by the body builder, and shall be performed solely at the body builder's factory, or at an approved facility. The expense of any transportation to or from such repair facility shall be borne by the purchaser and is not an item covered under this warranty.

The fire apparatus manufacturer (body builder) shall not be liable for consequential damages and under no circumstances shall its liability exceed the price for a defective body. The remedies set forth herein are exclusive and in substitution for all other remedies to which the purchaser would otherwise be entitled.

The fire apparatus manufacturer (body builder) shall be given a reasonable opportunity to investigate all claims. The purchaser must commence any action arising out of, based upon or relating to agreement or the breach thereof, within twelve months from the date the cause of the action occurred.

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7-YEAR APPARATUS PAINT WARRANTY

The SEVEN (7) year paint performance guarantee will cover the areas of the vehicle as are originally finished by the apparatus body builder with the specified product for a period of SEVEN (7) years beginning the day the vehicle is delivered to the purchaser.

The areas as outlined on the Guarantee Certificate, will be covered for the following paint failures:

GUARANTEE INCLUSIONS:

FULL APPARATUS BODY:

- * Peeling or de lamination of the topcoat and/or other layers of paint.
- * Cracking or checking
- * Loss of gloss caused by cracking, checking, or hazing.
- * Any paint failure caused by defective finishes which are covered by this guarantee.

All guarantee exclusions, limitations, and methods of claims are covered in the full certificate provided to the original owner.

The warranty on the chassis paint is limited to the warranty of the chassis manufacturer thereof and adjustments for the same are to be made directly with the chassis manufacturer by the Purchaser. Where painted shutter style doors are provided the warranty is limited to that which is provided by the manufacturer thereof. Graphics are excluded from refinishing under warranty.

LIFETIME SUB-FRAME WARRANTY - STAINLESS STEEL

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The specified tubular stainless steel apparatus body sub frame shall be warranted to the original owner, for the vehicle lifetime, against cracks, corrosion and rubber isolator deterioration.

2-YEAR WARRANTY - ELECTRICAL SYSTEM - 12 VOLT DC

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The Apparatus 12-volt DC Electrical System (exclusive of chassis) shall be covered, by the apparatus manufacturer (bidder) under normal use with normal service and maintenance, for a period of two (2) years, of which one (1) year is for Parts & Labor, and year two is for Parts Only. This warranty shall cover: Power Distribution System (PDC), Looms and Harnesses, Multi-Pin Connectors, and Workmanship as provided by the apparatus manufacturer. Individual emergency and non emergency electrical devices, light fixtures, audible equipment, intercoms, and motors shall be covered by the prevailing manufacturer's warranty.

LIFETIME WARRANTY - WATER TANK

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The water tank, and its installed accessories, shall be covered by a "Lifetime" Warranty, against cracks, corrosion, or other failures caused by the tanks design and normal use of the same. The warranty shall be between the tank manufacturer, and the customer.

TANK CRADLE STRUCTURE WARRANTY

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The tank cradle is to have a lifetime warranty, covering both structural and corrosion, as provided by body builder.

PUMP WARRANTY

Y__N__

The specified Waterous fire pump and Waterous accessories shall carry a Waterous **five (5) year warranty** covering defective parts only.

Refer to above "Fire Pump System" section for furnished pump manuals.

PUMP PLUMBING WARRANTY

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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 internal or external corrosion, provided the apparatus pumping system is used in a normal and reasonable manner. This warranty is extended only to the original purchaser for a period of ten (10) years from the date of delivery.

This warranty shall apply only to the piping for the discharges and intakes plumbed to the truck's main water pump and shall not include the pump, valves or any aspects of the product that are covered by specific Supplier warranties.

Additionally, labor to replace defective components and fittings will be covered for a period of One (1) year beyond the delivery date.

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COMMERCIAL STYLE CHASSIS

The following specified commercial chassis shall be furnished, by the apparatus body builder, and included in the total Bid Proposal Package.

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NEW KENWORTH T-370 TWO DOOR:

See Chassis Specification attached

Y__N__

MODIFICATIONS TO CHASSIS, AS TO BE PROVIDED BY BODY BUILDER:

The following special modifications are to be made by the fire apparatus body builder/manufacturer, to the specified fire apparatus truck cab and chassis.

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CHASSIS MODIFICATIONS: COMMERCIAL CHASSIS APPLICATION:

SPEED GOVERNOR TEST

Engine limiting speed governor is to be tested, upon arrival at the Body Builder's factory for compliance with the maximum no-load engine operating speed, as determined on appropriate engine power curve sheet.

SUSPENSION AND FRAME CORROSION PROTECTION

Rear axle suspension brackets, left and right sides, front and rear, are to be caulked with silicone sealant preventing build-up of road salts and moisture that may cause future corrosion of bracket-to-frame-rail attachment points.

FRAME RAIL MOUNTING PROCEDURE

All chassis frame rail mounted brackets, supports, pump flanges, and apparatus body subframe components are to be bolted to the frame rail sides. No holes are to be drilled in the frame flanges, only the web may be drilled. No welding will be allowed to the chassis frame, web, or flanges, ahead of the rear most spring shackles. Frame flange sandwich clamping devices (U-bolts) will not be used.

FIRE SERVICE FRAME PREPARATION

In order to assure maximum apparatus body compartmentation along the entire length of the left and right frame rails ahead of and behind the rear axles, all exterior frame mounted accessories are to be removed and relocated inside the frame rails so as to not interfere with location of the fire pump, piping, water tank sump, pump transmission, or exhaust system. Where more than one (1) chassis frame cross-member is removed to facilitate installation of the fire pump and water tank, new cross-member(s) are to be provided and installed. Relocation of air dryer and air tanks is to facilitate access for maintenance of these same components. Where rivets or permanent fasteners are provided by the chassis OEM, to mount accessories to be relocated, they are to be removed and replaced by hardened threaded fasteners.

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NFPA RELATED STANDARDS:

GROUND CLEARANCE STANDARDS

Axle housings are to clear the road surface by at least 8" and an angle of departure of at least 8 degrees is to be maintained at rear of the vehicle when fully loaded.

VISIBLE WARNING DEVICE AND PLACARDS

The specified "Door Ajar" indicator light is to be mounted inside chassis cab so as to be visible to the driver.

Y__N__

APPARATUS SIZE

Total overall length of apparatus is not to exceed:26'

Overall Width is not to exceed:101

NOTE: Any peripherals that are 'removable' are not be incorporated into this Overall Width measurement. Items that are considered 'removable' are: Rub Rails, Fenderettes, Mirrors, Lights, Handrails, Etc.

Highest point of apparatus is not to exceed:120"

Chassis wheelbase is not to exceed:186"

Y__N__

ROLLOVER STABILITY - NFPA 1901: CHASSIS ESC SYSTEM

The apparatus shall meet the rollover stability criteria defined in NFPA 1901 2009 Edition by being equipped with an Electronic Stability Control (ESC) system as provided by the chassis manufacturer. The system shall have, at a minimum, a steering wheel position sensor, a vehicle yaw sensor, a lateral accelerometer, and individual wheel brake controls.

Y__N__

FLUID DATA LABEL

A printed Fluid Data Field label is to be provided, installed inside the chassis and visible from exterior ground level. Data Field is to provide the following information, **as is applicable** to the particular apparatus:

1. Engine Oil
2. Engine Coolant
3. Chassis Transmission Fluid
4. Pump Transmission Lubrication Fluid
5. Pump Primer Fluid
6. Drive Axle Lubrication Fluid
7. Air Conditioning Refrigerant
8. Air Conditioning lubrication oil
9. Power Steering Fluid
10. CAFS System Lubricant
11. Transfer Case Fluid
12. Front Tire Cold Pressure
13. Cab Tilt Mechanism Fluid
14. Transfer Case Fluid (chassis)

15. Equipment Rack Fluid
16. Generator System Lubricant
17. Chassis Manufacturer
18. OEM Production Number
19. Paint Number
20. Year Built
21. Date Shipped
22. Vehicle Identification Number (VIN)
23. Rear Tire Cold Pressure

Fluid Data label is to be permanently encased in a chrome full surround bezel.

Y__N__

SEATING/OCCUPANCY LABEL

A label is to be installed in the cab to denote the exact number of passengers to be carried in the chassis cab and/or crew cab. Label is to be permanently encased in a chrome full surround bezel.

DATA LABEL: OVERALL VEHICLE HEIGHT-LENGTH-WEIGHT-OCCUPANCY

There is to be a printed data field label located in direct view of the seated Driver, which indicates, in feet-and-inches; the overall height of the vehicle (to the highest permanent point-except antennas), and overall length of vehicle (bumper to tailboard). The delivered apparatus shall have a certified G.V.W.R. weight sticker applied to the vehicle on delivery which indicates chassis VIN number, front and rear axle capacity, manufacturers contact information and vehicle type. The data label is to indicate, in pounds, the vehicle's total "as delivered" weight (with water load), and the maximum for seated occupants (250 pounds allowance for each person). Label is to be permanently encased in a chrome full surround bezel.

The dimensions and weight are to be "as manufactured", and the customer must revise the data plate, if they so change the height (by permanent loading and accessory equipment/device installations), and the weight by adding loose equipment, products, and supplies.

Y__N__

SEAT BELT LABELS

Labels are to be provided in all seating areas, to WARN all occupants to wear their seatbelts. Labels are to be visible to each and every seated position. Labels are to be permanently encased in a chrome full surround bezel.

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HELMET STORAGE SAFETY LABEL

One or more permanent labels to be installed in the cab visible to each seating position, to read: HELMETS MUST BE STORED IN APPROVED BRACKET, OR ENCLOSED COMPARTMENT ON THE APPARATUS, WHILE VEHICLE IS IN MOTION.

Y__N__

AIR SYSTEM PRESSURE PROTECTION VALVE

The chassis air system shall be furnished with a Pressure Protection Valve/Device, located at point of air supply to auxiliary accessories. The Pressure Protection Valve shall prevent the passage of air pressure, to

apparatus builders installed accessories, such as: Air Horns, PTO or Pump Shift, Air Actuators, and other air operated accessories, whenever system air pressure is below 80 psi.

Y__N__

2-DOOR CAB ENTRANCE STEPS TRIM

The originally furnished chassis cab entrance steps, driver's side and passenger's side, shall be "trimmed", with polished 4-way aluminum trim fabrications, bolted to the OEM cab steps and/or step brackets. A "LOW SULFUR DIESEL FUEL ONLY" green (color) nametag shall be furnished, adjacent to the fuel fill pipe/cap.

Y__N__

CHASSIS TO HAVE A 2010 COMPLIANT DPF/DEF EXHAUST SYSTEM, BY CHASSIS OEM

The original equipment chassis engine exhaust system, downstream of the DPF/DEF (diesel particulate filter/diesel exhaust fluid) canisters shall be as provided by the OEM, without aftermarket body builder modifications.

Y__N__

AIR INTAKE EMBER SEPARATOR

The chassis engine air intake system shall be equipped with an intake screen or filter provided by chassis manufacture that will block particulate matter larger than 0.039" from reaching the air filter element, to prevent ignition of the same.

Y__N__

DIESEL FUEL FILL, AS PROVIDED BY CHASSIS OEM

The Diesel Fuel Fill Port, is to be as is provided by the commercial chassis manufacturer. Access for Diesel fill is available through the optionally specified cab step housing.

Y__N__

UREA FILL, AS PROVIDED BY CHASSIS OEM

The Urea Fill Station, is to be as is provided by the commercial chassis manufacturer. Access for Urea fill is available through the optionally specified cab step housing.

Y__N__

UREA RESERVOIR TO BE FILLED UPON DELIVERY

The chassis provided Urea Reservoir is to be "topped-off" (filled) upon the vehicle's delivery to the purchaser.

Y__N__

GATED COOLANT LINES: AUXILIARY HEATER(S)

Engine cooling system chassis cab heater return-to-engine line shall be separated and equipped with a 1/2" i.d. bronze NRS screw type gate valve and 5/8" i.d. neoprene rubber heater hose extending to specified auxiliary heater(s). An additional 1/2" bronze NRS gate valve is to be provided on the auxiliary heater(s)-to-engine return line. Gate valves shall allow complete shut-off of the chassis cab and remote auxiliary heating system(s) that are downstream of the chassis cab heater. Gate valves shall prevent hot water circulation during warm weather periods, and allow shut-down should a hose or heater core leak develop.

Y__N__

COOLANT "BOOST" PUMP

The specified pump compartment heater core shall be piped to the engine coolant system, installation to include: 12-volt in-line Groco "free-flow" centrifugal cast bronze bodied coolant "boost" pump, parallel run of high grade coolant hoses with stainless steel screw type hose clamps, and chassis cab mounted rocker switch control with engraved nameplate to read: "COOLANT PUMP", accessible to driver. Installation of coolant pump shall provide increased rate of coolant flow to assure maximum available chassis cab and auxiliary heater core temperatures during extreme winter conditions.

Y__N__

TIRE PRESSURE WARNING DEVICE, LED CAPS FOR 6 TIRES

There shall be a VECSAFE LED, tire alert pressure management system provided that shall monitor each tire's pressure. A chrome plated brass sensor shall be provided on the valve stem of each tire for a total of six (6) tires. The sensor shall activate an integral battery operated LED when the pressure of a tire drops 8 psi, from the nominal pressure when the cap was installed. 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 blinking.

Y__N__

TIRE VALVE CORE EXTENSIONS

Two (2) each "rigid" metal valve core threaded extensions shall be provided, installed on the inside dual rear tires of the vehicle's rear axle. Inside dual wheels shall be positioned so that the valve core extensions protrude through the outside dual wheels, located directly across from the outside dual wheel's valve core.

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LUG NUT COVERS

The specified front and rear driver's and passenger's side wheels shall be equipped with chrome plated friction fit lug nut covers.

Y__N__

HUB COVERS - FRONT - OIL VIEW

Stainless steel front center hub (only) covers to be provided, 1-driver's side and 1-passenger's side front axle, covers to be solid single piece with no center hole. Hub covers to be friction fit.

HUB COVERS - REAR - HIGH HAT

One pair (2 each) stainless steel "high hat" axle hub covers shall be provided driver's side and passenger's side of single rear axle. Hub cover brim flanges are to be sandwiched between inner and outer rear wheels. Entire axle center hub is to be enclosed by the hub cover.

Y__N__

STAINLESS CLAD FRONT & REAR WHEELWELL MUD FLAPS, FOUR (4) EACH

Driver side and passenger's side rear body wheel well and front chassis wheel well (four each) stainless steel "clad" mud flaps are to be furnished, made of fabric reinforced neoprene rubber, bolted to the rear wheel well bulkheads and front chassis fenders, using stainless steel strap brackets and bolts. Each mud

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flap is to consist of a fabric reinforced neoprene rubber belting and two (2) panels of polished stainless steel on front and back surfaces of rubber.

The four (4) rear facing polished stainless steel panels are to have laser-cut letters machined into the panels, each side customized, with a purchaser designated text.

Sandwiched between the rear facing stainless steel panel and the rubber belting is to be a colored reflective material, so as to accent the laser cut-out letters.

The stainless steel clad mud flaps are to extend approximately 16" below body rub rail level.

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MOUNTING OF CUSTOMER'S FURNISHED ONE (1) EACH 2-WAY RADIO

Customer's furnished 2-way radio, one (1) each, is to be installed inside chassis cab. Installation to include: mounting of "customer provided" interior chassis cab radio control console, the radio remote pack, the radio powered transceiver, and the interior speaker (see above for antenna(s) installation).

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800 MHZ RADIO ANTENNA & CABLE

One (1) each, 800 MHZ radio antenna shall be furnished, along with appropriate cable, both to compatible with the Customer's furnished 800 MHZ radio. Antenna to be roof mounted (exact location to be determined at Pre-Build), with cable ran to the prescribed radio location. NOTE: Customer will provide installation of 800 MHZ radio unit, after completed delivery.

Y__N__

HELMET HOLDERS, STAINLESS STEEL

The two (2) driver and passenger seats in the chassis and/or crew cabs shall each be assigned, and interior(s) equipped with a custom-built helmet holder, designed to accommodate the single brand of helmet as designated by the customer. Helmet holders shall be fabricated of 12-gauge stainless steel, equipped with a stretch cord retainer, and located as instructed by the customer and approved by NFPA.

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MANUALS, CERTIFICATIONS, AND DIAGRAMS, IN ENGLISH LANGUAGE

At the time of delivery, one (1) hard copy(ies) of: each of the following manuals will be provided.

1. Engine manufacturer's certified brake horsepower curve showing the maximum no-load governed speed.
2. Manufacturer's record of pumper construction details, per NFPA 1901.
3. Manufacturer's Run-In Certification with preliminary test results.
4. Pump Manufacturer's Certification of Hydrostatic Tests.
5. Pump Manufacturer's Certification of Pump Test Results.
6. The Certification of Inspection/Test of Fire Department Pumper by an Independent Third Party per NFPA 1901 standards.

7. Weight documents shall be supplied with the completed vehicle to determine compliance with NFPA section 10-1. Weights shall be for each tire or dual set of tires, so as to verify side-to-side loading, to be in compliance with NFPA section 4.12.2.3.3.

8. The complete operation and maintenance manual covering the completed apparatus as delivered including the pump, emergency lighting and siren, generator, or other furnished accessories.

9. A finalized drawing of apparatus as completed.

10. A "Delivery Manual", consisting of a 3-ring notebook type binder with reference tabs for each section, shall be furnished to include the following items: invoice copy(ies), proof of insurance, Manufacturer's Statement of Origin, acceptance forms, certifications, specifications, individual component manufacturer instructions and parts manuals, warranty forms for body, warranty forms for all major components, warranty instructions and format to be used for compliance with warranty obligations, routine service forms/publications, technical publications or training guide for major components, and apparatus body print "as built".

11. Paint numbers of all color coatings.

12. Certifications of tank(s) capacity.

13. Written load analysis of 12-volt electrical system as installed by body builder.

A test data plate shall be provided at the pump operator's position which gives the rated discharges and pressures together with the speed of the engine as is determined by the manufacturer's test for this particular unit. Plate shall also include delivery date, pump serial number(s), original Customer, and the apparatus manufacturer's serial number.

Y___N___

FIRE PUMP SYSTEM

Y___N___

500 GPM P.T.O. DRIVEN FIRE PUMP

A Waterous model CLK single-stage centrifugal cast iron 500 GPM fire pump, with gear style cast iron transmission shall be furnished, complete with heavy duty Chelsea "hot shift" gear style PTO and Spicer driveline. Pump shall be of iron construction, bronze fitted, with mechanical seal assembly.

The pump transmission ratio, in combination with the chassis transmission mounted PTO ratio shall allow the pump to deliver the percentage of rated capacity at discharge pressures indicated below, during stationary pumping operations, while the drive engine is running in it's peak performance range/RPM:

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

In addition to stationary pumping, the specified pump drive system shall allow for "Pump & Drive" operations, at less than rated capacity.

PUMP MANUFACTURER'S TEST

The specified pump system shall be tested by Waterous, hydrodynamically at rated capacity, and hydrostatically at a pressure of 600 psig. Certification by Waterous shall be provided in the specified delivery manual.

Apparatus Manufacturer's pump performance test to be performed after construction. Factory certification to be provided, along with the delivery manual.

PUMP ASSEMBLY PROCEDURES

The pump is to be installed so as to be easily removable, equipped with cast iron 4-bolt flanged discharge and 4" Victaulic suction fittings, and flexible victolic clamp couplers on the suction and discharge piping. The pump is to be mounted between chassis frame rails, with the specified discharge and suction piping located above the chassis frame rails. The Waterous K-style pump transmission shall be bolted to a fabricated heavy steel, precision machined, mounting plate supported between the chassis frame rails, discharge and suction piping to include bolted frame supports.

ADDITIONAL PUMP FEATURES

Additional pump features shall include: single-suction bronze replaceable impeller and impeller seal ring, stainless steel impeller shaft oil lubricated rear bearings, vertically split main pump body, and all moving parts which come into contact with water to be bronze or stainless steel.

PUMP DRAIN

The fire pump discharge volute, bottom side, shall be provided with a single 1/2" or larger Drain Valve, with remote pump operator's panel control.

TANK-TO-PUMP CHECK VALVE

A bronze "in-line" suction check valve to be furnished, to ensure one-way water flow from tank sump to pump suction inlet.

DRIVELINE COMPONENTS

Spicer 1300 series driveline components to be furnished to facilitate pump removal, components shall include: pump and PTO end yokes, slip stub shafts, slip yokes, and cross-and-bearings. Driveline to be high speed balanced.

PUMP SHIFT

The pump/PTO shall be engaged with a cab dash mounted illuminated rocker switch shift.

PUMP CONTROL LINKAGES

All pump control linkage rods, to be cadmium plated, equipped with threaded adjustable clevis or swivel ball joints one end and chrome plated or black phenolic control handles outboard end.

PUMP MAINTENANCE ACCESSORIES

The pump's gear style transmission shall be accessible, for both draining and re-filling the gear oil, where underside access is obstructed, an extension line shall allow for convenient re-fill access.

PUMP OPERATOR MANUALS

Two (2), Waterous "digital" instruction manuals to be provided upon delivery of the apparatus. Manuals to be pump model and serial number specific, to include but not be limited to operation instructions, maintenance (lubrication), and illustrated parts break-down.

PUMP DATA PLATE

The pump shall be provided with a metal plate giving the rated "capacity" and "pressure". Data plate shall also indicate pump model number, serial number, gear ratio and date of manufacture. A second data plate shall be furnished, located on the exterior pump control panel.

PUMP FLUID PLACARD

A permanently mounted metal plate shall be furnished, located inside driver's compartment, specifying the quantity and type of the PTO pump fluids.

Additional information to be provided for pump accessory equipment fluids not listed, and so designated by Customer.

Y__N__

MECHANICAL PUMP SEAL

The Waterous end suction pump is to be equipped with a mechanical self-adjusting impeller shaft seal assembly.

Y__N__

DRIVER'S COMPARTMENT PUMP/PTO SHIFT CONSOLE

The specified PTO pump system is to be provided with a rocker style PTO engagement switch, which in turn activates the transmission mounted PTO, driving the Fire Pump. PTO switch is to be illuminated when activated, and easily accessible from the driver's seated position, and provided.

Y__N__

INDICATOR LIGHTS - PUMP SHIFT

The specified PTO pump system shall be provided with the following indicator lights:

Two (2), green indicator lights shall be provided in the driving compartment as follows: one (1) of the lights shall be energized when the pump drive has been engaged and shall be marked "Pump Engaged". The second light shall be energized when both the pump drive has been engaged and the chassis transmission is in neutral and shall be marked "OK to stationary pump."

One (1) green and one (1) red indicator light shall be provided on the pump operator's panel. The green light shall be energized when the chassis transmission is in neutral, pump, and the parking brake are engaged. The green light shall be positioned adjacent to, and preferably above, the throttle and shall be marked "OK to Stationary Pump." The red light shall be energized when the pump is engaged and the chassis transmission is not in neutral or the park brake is not applied and shall be located adjacent to, and preferably above, the throttle, and shall be marked "Pump and Roll Mode."

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PUMP TEST DATA LABEL

The pump control panel is to be provided with a printed data field indicating the rated flow at 150, 165, 200 and 250 test pressures, together with the RPM of the engine at those pressures and deliveries. Test Label is to be mounted in clear view of the pump operator's position, as per NFPA 1901 compliance.

Test label is to also indicate the following information:

- Pump Make and Model
- Pump Capacity
- Apparatus Date of Manufacture
- Apparatus Model Designation
- Apparatus Serial Number
- Apparatus Production Number

Engine Governed Speed
Pump Transmission Gear Ratio (to Engine)

Data field is to be permanently encased in a chrome full surround bezel.

Y__N__

GATED INLET WARNING LABEL(S)

At any gated suction inlets, a permanent label is to be provided to read: "WARNING - DEATH OR SERIOUS INJURY COULD OCCUR IF PROPER OPERATING PROCEDURES ARE NOT FOLLOWED".

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WATEROUS PUMP VOLUTE DRAIN

Pump volute drain valve, quarter-turn style with bronze or stainless steel body is to be furnished installed inside pump compartment, with pump panel rotary control. Drain valve is to originate at the lowest point on the pump volute, piped with high pressure nylon tubing, to a remote "lower" location so as to allow gravity draining.

Y__N__

PRESSURE GOVERNOR and MONITORING DISPLAY

Fire Research PumpBoss model PBA400-A00 pressure governor and monitoring display kit is to be provided and installed. The kit is to include a control module, pressure sensor, and cables. The control module case is to be waterproof and have dimensions not to exceed 6 3/4" high by 4 5/8" wide by 1 3/4" deep. Inputs for monitored information shall be from a J1939 data bus or independent sensors. Outputs for engine control shall be on the J1939 data bus or engine specific wiring.

FUNCTION INDICATORS

The following continuous displays shall be provided:

- CHECK ENGINE and STOP ENGINE warning LEDs
- Engine RPM; shown with four daylight bright LED digits more than 1/2" high
- Engine OIL PRESSURE; shown on an LED bar graph display in 10 psi increments
- Engine TEMPERATURE; shown on an LED bar graph display in 10 degree increments
- BATTERY VOLTAGE; shown on an LED bar graph display in 0.5 volt increments
- PSI / RPM setting; shown on a dot matrix message display
- PSI and RPM mode LEDs
- THROTTLE READY LED.

MESSAGE DISPLAY

A dot-matrix message display shall show diagnostic and warning messages as they occur. It shall show monitored apparatus information, stored data, and program options when selected by the operator.

The program shall store the accumulated operating hours for the pump and engine, previous incident hours, and current incident hours in a non-volatile memory.

Stored elapsed hours shall be displayed at the push of a button.

It shall monitor inputs and support audible and visual warning alarms for the following conditions:

- High Engine RPM
- High Transmission Temperature

- Low Battery Voltage (Engine Off)
- Low Battery Voltage (Engine Running)
- High Battery Voltage
- Low Engine Oil Pressure
- High Engine Coolant Temperature

CONTROL MODES

The governor shall operate in two control modes, pressure and RPM. No discharge pressure or engine RPM variation shall occur when switching between modes. A control knob that uses optical technology shall adjust pressure or RPM settings. It shall be 2" in diameter with no mechanical stops, a serrated grip, and have a red idle push button in the center.

THROTTLE INDICATOR

A throttle ready LED shall light when the interlock signal is recognized. The governor shall start in pressure mode and set the engine RPM to idle.

PRESSURE CONTROL

In pressure mode the governor shall automatically regulate the discharge pressure at the level set by the operator.

ENGINE RPM CONTROL

In RPM mode the governor shall maintain the engine RPM at the level set by the operator except in the event of a discharge pressure increase.

The governor shall limit a discharge pressure increase in RPM mode to a maximum of 30 psi. Other safety features shall include recognition of no water conditions with an automatic programmed response and a push button to return the engine to idle.

ENGINE APPLICATION

The pressure governor and monitoring display shall be programmed for Cummins IS series engines.

LOCATION

Location of the governor and monitoring display shall be at pump operator's panel.

Y___N___

PRIMER PERFORMANCE REQUIREMENTS

The pump shall be capable of taking suction and discharging water with a lift of 10 ft. in not more than 30 seconds with the pump dry, through 20 ft. of suction hose of appropriate size. It shall be capable of developing a vacuum of 22" at an altitude of up to 1000 ft.

WATEROUS VPOS PUMP PRIMER

A high capacity positive displacement self lubricating priming system is to be furnished, consisting of: a Waterous VPO "oil-less" rotary vane priming pump with 12-volt electric motor drive, and a and push-button priming valve control on pump operator's panel. Priming pump is to be mounted beneath fire pump, with bottom water and lubricant discharge directed to the ground.

WATEROUS VAP VACCUM ACTIVATED PRIMING VALVE

There shall be a Waterous model VPA vacuum activated priming valve supplied with the pump. The valve shall open automatically when the priming system is activated. The valve shall be installed on the

pump or mounted remotely.

WATEROUS OIL LUBRICATED SYSTEM

A 5-quart oil reservoir is to be provided, piped to the priming pump housing, for oil lubrication of the rotary vane pump. Primer oil reservoir mounting location is to allow for easy access to check level and refill.

Y__N__

PRE-PRIME - DRIVER'S SIDE SUCTION

A driver's side suction inlet "pre-prime" system shall be furnished, consisting of: one (1) remote mounted electric priming valve assembly, non-collapsible vacuum hose between priming valve and above specified priming pump, non-collapsible vacuum hose between priming valve and driver's side suction inlet (upstream of gate valve), and operator's panel mounted push button control with nameplate. Installation of this priming valve assembly shall allow "pre-priming" of the driver's side suction with its gate valve closed.

Y__N__

HEAT ENCLOSURE, ALUMINUM

A removable heater casing is to be provided, completely enclosing the underside of the fire pump compartment module. Heater casing side and end panels are to be fabricated entirely of natural finish smooth sheet aluminum, bolted to and easily removable from the bottom perimeter of the pump module. So as to allow maximum ground clearance, the heater casing shall be the minimum depth required to enclose the pump transmission, horizontal engine exhaust system, and all pump accessories. Two (2) individual smooth aluminum slide-out bottom panels are to be provided, criss-cross reinforced with drain holes and ¼-turn butterfly clamp latch, removal of which allows for inspection of and access to the fire pump and chassis components. NOTE: A center bottom slide-out panel brace shall be provided, off-set to one side so as to not obstruct the pump transmission lubricating fluid drain.

Y__N__

PUMP WARRANTY

The specified Waterous fire pump and Waterous accessories shall carry a Waterous **five (5) year warranty** covering defective parts only.

Refer to above "Fire Pump System" section for furnished pump manuals.

Y__N__

"ROUND TUBULAR" HIGH-FLOW SUCTION MANIFOLD PIPING

A stainless steel "high-flow" round tubular suction manifold shall be furnished, flange bolted or Victaulic coupled to and easily removable from, the fire pump's volute suction inlet. All auxiliary side threaded taps and/or Victaulic risers shall be "coped" to conform to radius of larger size waterway, so as to provide unsurpassed flow characteristics.

NOTE: Due to the poor flow characteristics, a suction manifold fabricated of square or rectangular tubing with flat-mount weld spuds and/or riser pipes for auxiliary suction taps, is not an acceptable substitute to a tubular manifold.

The suction manifold itself shall contain multiple Victaulic and threaded outlet ports, to facilitate the installation of all the specified gated suction(s), tank-to-pump suction(s) line, and intake relief valve.

Heavy wall threaded stainless steel pipe and pipe fittings shall be used, wherever possible, upstream of the specified 2-1/2" suction valves.

All suction manifolds and fittings, suction valves, tubing's, and hoseline assemblies shall be pressure tested after installation.

Y__N__

PUMP SUCTION INLETS

Following specified pump manifold inlets shall be of proper inside diameter for rated pump capacity, equipped with zinc die cast screens so as to provide cathode protection for pump waterways.

All intakes shall be provided with suitable closures capable of withstanding 500 psi, threaded caps shall be chrome plated brass, rocker lug 3" and smaller, long handled larger than 3".

SUCTION INLET VALVE STANDARDS (WHERE OPTIONALLY SPECIFIED)

Following optionally specified 3" or larger gated intakes (except the tank-to-pump intake) shall include a remote controlled valve mechanism that shall not permit changing the position of the flow regulating element of the valve from full close to full open, or vice versa, in less than 3 seconds. Where air type actuators are employed, they shall include dual (2-each) adjustable needle valve restrictors, bench set/tested, so as to facilitate the slow movement. Where manual gear or electric gear style actuators are employed, the crank or motor shall regulate movement speed.

SHORT SUCTION TUBE

The specified side pump suction inlet(s) shall be of minimum length to allow for exterior stacking of adapters or pre-connected hose.

INLET BLEEDER VALVES

Where specified, each gated intake shall be equipped with a bleeder valve located inside pump compartment (inside rear compartment-for rear suction), upstream gate valve, with remote bleeder control in close proximity to the intake. The gated inlet bleeders shall consist of: 3/4" high pressure flexible hose assemblies extending between suction valve and bleeder valve, 3/4" cast bronze or stainless steel bleeder valve, exterior bleeder valve control handle, and an engraved or printed identification label. Bleeder controls for side gated inlets are to be located below the inlet, in a single row immediately above the runningboard/floor level. Bleeder controls for optionally specified rear inlets are to be located below the inlet, above the tailboard level. The bleeder valves shall be rotating quarter-turn style equipped with rectangular chrome plated control handles, which are horizontal when closed.

HOSE THREADS

Where specified, all screw-on/off threads shall be NST (National Standard Threads), all "sexless" couplings shall be Storz.

Y__N__

SELF BLEEDING SUCTION CAPS

The specified "threaded" suction caps shall be the VLH Class-1, Trident or equivalent which incorporates a cross-machined thread design to automatically relief stored pressure in the line during un-capping.

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ALL DISCHARGE VALVES ARE TO BE WATEROUS BRAND

All 2-1/2" and 3-1/2" discharges are to be equipped with Waterous brand, ball style, in-line valves. The valves shall be equipped with stainless steel or chrome plated brass ball and a "**spring-loaded**" **seal assembly**. No lubrication or regular maintenance shall be required on the Waterous valves.

Y__N__

DRIVER'S SIDE SUCTION(S)

Y__N__

6" GATED MASTER SUCTION, 6" NST CAPPED, CRANK CONTROL AT INLET

A driver's side gated 6" pump suction intake is to be provided with: 6" NST 500 psi chrome plated long handle cap, 6" removable zinc strainer, 6" NST male x 6" ASA flanged extension nipple (inlet extending through pump panel), bronze bleeder valve located inboard pump panel with exterior control handle, 6" Weco butterfly style gate valve with mechanical crank actuator inboard pump panel, crank type hand wheel valve control with revolving handle adjacent to inlet, and the appropriate interior pump compartment 6" ASA flanged suction intake fitting. Suction inlet is to have a minimum extension outboard of the pump panel so as to allow for preconnected soft suction hose.

Y__N__

SUCTION CAP, LONG HANDLED, 6" NST

One (1) each 6" NST vented long handled chrome plated suction cap.

Y__N__

SUCTION INTAKE RELIEF VALVE - INBOARD DRIVER SIDE PUMP PANEL

A Class-1 adjustable stainless steel suction intake relief valve shall be furnished, enclosed inboard the driver's side pump panel. Intake relief valve to be located upstream of the above specified butterfly style gate valve, "sandwiched" between gate valve and specified external inlet fitting. Intake relief valve shall be mounted so as to self-drain and dump excessive suction inlet pressure below the pump compartment.

Y__N__

TANK-TO-PUMP CONNECTIONS

Y__N__

WATEROUS 3-1/2" TANK-TO-PUMP VALVE

A 3-1/2" Waterous 1/4-turn ball style tank-to-pump valve to be furnished. The gated suction line from specified water tank suction sump to the tank suction valve shall be furnished with a banded flexible "hump hose" connection, and at least 4" i.d. stainless steel piping within the fire pump compartment. Hump hose shall be "upstream" of the specified check valve, to prevent pressurizing of the hose connection. Tank-to-pump suction shall allow a flow rate exceeding 600 GPM.

NOTE: PVC tank-to-pump piping is not acceptable.

TANK-TO-PUMP CHECK VALVE

A 4" i.d. bronze corrosion resistant tank-to-pump suction check valve is to be furnished, 600 GPM flow capable, to prevent "back-flow" of water from the pump-to-tank if the tank suction valve is inadvertently left open.

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WATER TANK-TO-PUMP CONTROL, "PULL TO OPEN"

Specified tank-to-pump suction valve is to be remote controlled with lever style valve actuator and a manual push-pull style T-handle twist-to-lock operator's panel control. Tank-to-pump suction valve control is to be "In-Closed" and "Out-Open".

Y__N__

TANK REFILL, 2" BALL VALVE

One (1), gated 2" tank fill discharge line, extending from pressure side of fire pump to water tank is to be provided, with: female TIPT tank fill spud located in upper portion of water tank, high pressure wire reinforced 2" hose with stainless steel grooved Victaulic end couplings, 2" Akron 8000 series bronze 1/4-turn self-locking ball style discharge valve configured for manual valve control located on the pump operator's control panel, and a nameplate to read: "TANK FILL".

Y__N__

WATER TANK REFILL CONTROL, "PULL TO OPEN"

Specified water tank refill discharge valve is to be remote controlled with lever style valve actuator and a manual push-pull style T-handle twist-to-lock (for throttling) operator's panel control. Tank refill valve control is to be "In-Closed" and "Out-Open".

Y__N__

TANK RECIRCULATING - PUMP COOLER

One (1), gated 3/8" pump recirculating/cooling line, from pressure side of fire pump to water tank top to be provided with: 3/8" female TIPT spud located at top front of water tank, high pressure tubing, and 3/8" bronze body 1/4-turn ball style valve with chrome handle located on operator's control panel. Valve is to be identified as pump cooling line.

Y__N__

PUMP DISCHARGE OUTLET CONTROLS AND ACTUATORS

All discharge valves shall have operating controls and actuators that allow the valve to be positioned incrementally from closed to full open, and locked in any selected position. Each valve control is to be adjacent to its respective pressure instrument.

Each of the specified 3" diameter or larger discharge valves are to have an operating mechanism which shall not permit changing the position of the flow regulating element of the valve from full close to full open, or vice versa, in less than 3 seconds.

DISCHARGE OUTLET BLEEDERS

Each of the following specified gated discharges shall be equipped with a "discharge outlet bleeder". The outlet bleeders shall consist of: 3/4" high pressure flexible hose assemblies extending between discharge valve and bleeder valve, 3/4" cast bronze or stainless steel bleeder valve mounted interior of pump compartment (inside rear compartment-for rear discharges), and an exterior bleeder valve control handle with color coded (to match corresponding discharge outlet) engraved or printed identification label. Bleeder controls for side discharges are to be located below the outlet, in a single row immediately above the runningboard/floor level. Bleeder controls for optionally specified rear discharges are to be located below the outlet, above the tailboard level. The bleeder valves shall be rotating quarter-turn style equipped with rectangular chrome plated control handles, which are horizontal when closed.

HOSE THREADS

Where specified, all screw-on/off threads shall be NST (National Standard Threads), all "sexless" couplings shall be Storz.

Y__N__

PUMP FITTINGS & "ROUND TUBULAR" PTO PUMP S/S DISCHARGE MANIFOLD

A stainless steel "round tubular" discharge manifold shall be furnished, flange bolted or Victaulic clamped to and easily removable from, the fire pump's large diameter discharge outlet taps.

NOTE: Due to the likelihood of high pressure deformation (regardless of wall thickness), manifolds fabricated of square or rectangular tubing's, are not acceptable

The tubular manifolds main waterway shall be commensurate in diameter to feed the quantity and size of auxiliary discharge line "branches". So as to provide unsurpassed flow characteristics, all auxiliary branch reducers shall be concentric bell reducers, and all couplings and risers shall be "coped" to conform to the radius of the larger size feed waterway. Flat-mount weld spuds and non-coped risers welded to rectangular fabrications and end plates are not acceptable.

All stainless steel welding shall be TIG, to assure proper penetration and conformity with original tubing and weld fitting outside diameters. All elbows shall be smooth sweep weld fittings.

See following specifications describing the number/size/locations of outlet gate valves to be furnished.

Heavy wall threaded pipe and pipe fittings shall be used, wherever possible, downstream of the specified side outlet and top deluge discharge valves.

All flexible discharge lines and bleeder lines, downstream of respective valves, shall be reinforced high pressure hose assemblies with stainless steel or brass end fittings.

Pressure gauge tubing lines shall be clear polypropylene with brass fittings, manifold drain lines (that are not high pressure hose assemblies) shall be copper tubing.

All discharge manifolds and fittings, suction manifolds and fittings, discharge and suction valves, tubing's, and hoseline assemblies shall be pressure tested before and after installation.

Y__N__

DRIVER'S SIDE DISCHARGE(S)

Y__N__

DRIVER SIDE 2-1/2" DISCHARGE

One (1), driver's side 2-1/2" gated discharge to be provided with: 2-1/2" NST chrome plated brass rocker lug cap with chain, 2-1/2" NST male x 2-1/2" NST rocker lug swivel female 45 degree chrome plated brass elbow outlet extension, 2-1/2" NST male chrome plated brass outlet adapter, 3/4" bleeder valve and hose assembly, 2-1/2" i.d. stainless steel pipe nipple, 2-1/2" Waterous 1/4-turn discharge valve with chrome plated ball and spring loaded self-adjusting seal assembly (located inside pump enclosure), and push-pull chrome "locking-style" discharge control handle located on the pump operator's control panel.

Y__N__

SECOND DRIVER SIDE 2-1/2" DISCHARGE

One (1) second driver'sside 2-1/2" gated discharge to be provided with: 2-1/2" NST chrome plated brass rocker lug cap with chain, 2-1/2" NST male x 2-1/2" NST rocker lug swivel female 45 degree chrome plated brass elbow outlet extension, 2-1/2" NST male chrome plated brass outlet adapter, 3/4" bleeder valve and hose assembly, 2-1/2" i.d. stainless steel pipe nipple, 2-1/2" Waterous 1/4-turn discharge valve

with chrome plated ball and spring loaded self-adjusting seal assembly (located inside pump enclosure), and push-pull chrome "locking-style" discharge control handle located on the pump operator's control panel.

Y__N__

SELF-BLEEDING DISCHARGE CAPS, AND ELBOWS

Where specified, the rocker lug discharge caps and outlet elbow extensions are to be VLH, Class-1, Trident, or equivalent which incorporates a cross-machined thread design to automatically relieve stored pressure in the line during uncapping/unthreading.

Y__N__

HOSE REEL DISCHARGE(S)

Y__N__

HOSE REEL 1-1/2" DISCHARGE

One (1) booster hose reel(s) 1" gated discharge to be provided, each with: 1-1/2" i.d. high pressure wire reinforced discharge hose extending from hose reel inlet to hose reel discharge valve and one (1) 1-1/2" ball style 1/4-turn full flow bronze bodied self-locking discharge valve (located inside pump compartment). An air cylinder valve actuator shall be furnished to include: appropriate nylon high pressure air lines, clevis joint with removable pin (to allow manual closing), remote valve control console with recessed color coded nameplate and "OPEN" indicator light, and a mechanical air valve (not electric) toggle switch. The hose reel control console shall be located on the pump operator's control panel.

Y__N__

HOSE REEL AIR BLOW-OUT LINE

One (1), 1/4" i.d. hose reel "blow-out" air line(s) to be furnished, each to include: pump panel mounted Class One 3/8" 1/4-turn blow-out valve, and necessary 1/4" nylon air line piping to a point immediately down stream of specified booster hose reel discharge valve. Hose reel blow-out system to be piped to chassis air system, with a manual emergency shut-off valve located inside pump compartment, a one-way check valve located upstream blow-out valve, and second one-way check valve at booster discharge valve.

Y__N__

BOOSTER REEL

One (1), Hannay electric rewind type 1" i.d. booster hose reel to be furnished, permanently mounted interior of the specified rear apparatus body compartment. Hose reel to be located in the upper rear compartment. Reel to be steel construction with 12-volt electric motor rewind and friction brake. Electric rewind push button switch to be furnished, located adjacent to hose reel per Customer approval.

HOSE

150 ft. of 1" i.d. Fire Department 800 psi Reel Tex or Darley flexible booster hose, coupled in one (1) 100-ft. length and one (1) 50 ft. length, with 1" CHT couplings to be furnished.

NOZZLE

One (1) Akron model 1702, 1" pistol grip nozzle to be furnished.

Y__N__

HOSE REEL ACCESS DOOR(S)

The specified reel(s) shall be accessed through the hose reel compartment roll-up door. Reel door(s), when open, shall completely expose the hose reel, with no obstruction for hose deployment. Specified

hose roller assemblies shall prevent contact with/damage to door weatherstripping and/or painted surfaces.

HOSE ROLLERS

A Hannay FH-3 or equivalent chrome plated metal and polished stainless steel 3-way hose roller assembly shall be furnished, interior of the hose reel compartment(s), providing roller guide for booster hose deployment.

Y__N__

FIRE PUMP INSTALLATION, MIDSHIP OF APPARATUS

Y__N__

MID-SHIP INTRA-BODY PUMP ENCLOSURE, DRIVER SIDE CONTROLS

A forward "mid-ship" transverse pump enclosure (pump cavity) is to be furnished, located between the back walls of the apparatus body front side compartments D1 and P1, rear of the body front cross panel, and ahead of the specified water tank. Pump cavity is to provide full enclosure of the fire pump, its related plumbing and discharge and suction valves. The specified water tank is to be "notched" full width, at the front bottom, so as to allow for a minimum pump cavity and water tank length.

The pump control panel is to be located in the forward most portion of compartment D1, bolted to a stainless steel enclosure, of approximately 23" front-to-rear width and 42" height above compartment floor. The enclosure is to extend outboard of the compartment back wall, no more than 17" in order to conserve interior compartment space. A rear facing removable access panel is to be provided, on the side wall of the enclosure.

Y__N__

PUMP MOUNTING, END SUCTION MID-SHIP PUMP WITH PTO-DRIVE

The specified Waterous midship mounted "end suction" pump, with its integral pump transmission, shall be independently mounted on a "pump house" subframe which itself is to be bolted to and easily removable from the chassis frame rails. The subframe shall consist of a two (2) each 5/16" steel plate fabricated Z-irons which rest on the top flange of the chassis frame rails; and are sandwich bolted to the outboard chassis frame webs. This design shall provide for a "rigid" mount of the pump house, and perfect horizontal and vertical alignment with the apparatus body, runningboards always remaining in alignment with apparatus body rubrails. The pump house is to be located no more than one (1) inch forward of apparatus body, and two (2) inches rearward of the chassis cab.

The fire pump shall be mounted to the pump house subframe with brackets that are custom-machined and fabricated so as to bolt to the fire pump casting at the same relative angle as engine/transmission and the rear axle. The pump mounting brackets shall position the fire pump to be located centerline between the chassis frame rails. Pump bracket design shall also facilitate easy disassembly, allowing for removal of the entire fire pump and its split-shaft transmission.

Pump mounting brackets and pump house subframe shall be primer painted and urethane painted to match pump or chassis frame rails.

Y__N__

PRESSURE GAUGES/INSTRUMENTS ALIGNED WITH DISCHARGE CONTROLS

The specified pump panel mounted discharge controls are to be located adjacent to or immediately below and in line with corresponding individual discharge pressure gauge. The pump operator's control panel is to be configured in an organized manner, "user-friendly", side-to-side across the entire panel.

Y__N__

MIDSHIP PUMP DRIVER SIDE CONTROLS

The pump operator's control panel shall be located on driver's side "midship" of vehicle. So as to permit operation of the pump from one central location, all Manual style gated discharge valve controls, and Air or Manual style remote gated suction controls are to be mounted on this side facing pump operator's control panel.

All mechanical pump actuator rods, rotating and/or push-pull, are to be heavily cadmium or zinc plated solid cold roll steel, provided with adjustable threaded clevis joints or swivel ball joints and chrome plated brass handles or black phenolic control knobs. Where Air style suction valve controls are specified, they are to be of the mechanical toggle style with "open" indicator light.

The upper portion of the driver side pump control panel is to accommodate the specified "opening" instrument panel, the middle portion to accommodate the gate valve and major pump controls, and the bottom portion is to accommodate the inlet and outlet bleeder controls and (where specified) the gravity style master drain control.

Y__N__

SIDE MOUNT VALVE CONTROLS

Three (3) Innovative Controls brand chrome plated, side mount push-pull controls, with ergonomically designed chrome plated T-handles, and encapsulated UV-resistant printed color-coded (ILO engraved) verbiage labels shall be furnished.

DISCHARGE CONTROL NAME PLATES

The specified individual discharge control engraved color coded identification name plate's nomenclature shall, describe: the physical location of outlet, the size of hose to be attached, and the type of discharge. Where an outlet is Foam Capable, the name plate shall so describe.

DISCHARGE OUTLET NAME PLATES

Individual Discharge Outlet name plates are to be provided adjacent to the outlet or hosebed. Outlet name plates are to be of the same color as the discharge valve control name plate, pressure instrument/gauge name plate, and the bleeder valve control name plate.

Y__N__

OVERHEAD PUMP PANEL 12-VOLT LED LIGHTS

In addition to the specified doorway lighting, multiple incandescent 12-volt light fixtures, each protected by a clear acrylic lens shall be furnished, located overhead the pump operator's panel.

The pump panel lights shall be activated by the pump operator's compartment door being opened.

Y__N__

PUMP SYSTEM WIRING HARNESSES

04/04/17

All pump system wiring for specified 12-volt electrical equipment is to be suitably protected inside heat resistant vinyl, forming one or more wiring harness(es). Harnesses are to originate at a dedicated Pump System PDC (power distribution center) located within the cavity, extend to the individual electrical devices, and secured with loom clips. Harness individual wires are to be legend imprinted multi-stranded copper, SAE-J 1128 automotive compliant. Spare wires are to be provided, so as to allow for future installations of additional electrical accessories.

All 12-volt switches, relays, terminals, connectors, and wiring to have a direct current rating of 125% of maximum current for which the current is protected. All wiring terminals to be closed barrel style, mechanically crimped, and insulated

PUMP SYSTEM POWER DISTRIBUTION CENTER

A fabricated metal power distribution center (PDC) is to be provided, located interior of the pump cavity, accessible from an access door or removable panel. PDC is to contain engineered electrical components and pin/socket bulkhead connectors. Multiple circuit breaker sockets shall be furnished for future use.

PUMP SYSTEM WIRING SCHEMATICS

Vehicle Specific wiring information is to be provided for this particular apparatus "as configured" upon completed delivery of the same. Information is to be in a drawing format, describing origination and termination connections and functions.

Y__N__

DEACTIVATE ENGINE COMPRESSION BRAKE - WITH PTO PUMP SHIFT

Specified engine compression brake is to be automatically deactivated with the engagement of the transmission mounted Pump-Drive PTO.

Y__N__

PUMP COMPARTMENT LIGHT, LED

One (1), clear lens 4" round grommet mount 12-volt LED interior pump compartment light to be furnished, mounted beneath the ceiling of interior pump module. Light to be activated by an adjacent switch.

Y__N__

PUMP GAUGE PANEL

Y__N__

SIDE MOUNT PUMP INSTRUMENT PANEL - TILT OUT STYLE

The specified pump pressure gauges, discharge pressure gauges, and engine monitors/ instruments shall be installed on a brushed stainless steel hinged gauge panel, located in top portion of pump control panel. The gauge panel is to be equipped with a polished stainless steel piano hinge on the bottom and two adjustable-grip chrome plated lift-and-turn latches, located in upper corners. Gauge panel to be of the "tilt-out" style, to allow access to back of gauges.

Y__N__

PUMP MODULE EXTERIOR LIGHTING

All optionally specified light fixtures and/or strips are to be 12-volt, LED style, recessed, shielded, or guarded to protect the lenses. Where optionally specified pump module steps are provided, at least one

(1) dedicated LED light is to be provided, illuminating step surface. Such light(s) to activated by pump panel light switch or illumination of ground lights.

Y__N__

PUMP GAUGE & INSTRUMENT PANEL 12-VOLT LED LIGHTING

A 12-volt LED "light stick" with multiple clear LED elements is to be provided, located beneath of and protected by a fabricated stainless steel light shield. Shielded light stick is to be positioned so as to illuminate all gauges, instruments, and instrument panel mounted controls.

Light stick is to be activated by a switch on the operator's panel.

Y__N__

PUMP OPERATOR'S INSTRUMENTS AND GAUGES

Y__N__

ENGINE INSTRUMENTATION

The engine instrumentation is to be included in the specified fire pump pressure control system "engine governor". Instrumentation shall be integral with the Governor Control.

Y__N__

AIR HORN SWITCH - PUMP GAUGE PANEL, RED MOMENTARY TOGGLE STYLE

A weatherproof momentary rocker style RED switch is to be furnished on the pump gauge panel, with a nametag to read: "EMERGENCY AIR HORN." Switch is to activate the optionally specified high capacity 12-volt air horn solenoid.

Y__N__

HEATER, PUMP COMPARTMENT

Y__N__

HOT WATER TYPE HEATER, 16,000 BTU

A 16,000 BTU Badger R-254-0 or equivalent hot water type automotive heater to be furnished and installed inside pump compartment. Heater installation to include: gated engine coolant feed and return lines, 12-volt electric fan, and fan control located on pump control panel.

Y__N__

PUMP HEATER HOSES AND CLAMPS

The hot water heater core feed and return lines shall be minimum 3/4" i. d. rubber construction.

Hose clamps are to be screw-to-tighten style, constructed of non-corrosive material.

Y__N__

COLOR CODED DISCHARGE NAMEPLATES: NOMENCLATURE

Discharge name plates and/or control diagrams are to be permanently engraved into colored media or encapsulated color coded printing, as specified below. Name plate colors are to match the designated color of the individual outlets and pressure instruments.

Suction name plates are to be of the same single color, contrasting to the discharge colors

The name plate's nomenclature is to identify: physical location, size of hose to be attached, and type of discharge. Example: REAR PASSENGER SIDE 2-1/2" PRECONNECT DISCHARGE

Color matching name plates are to be provided for: Discharge Outlet (or Hosebed Pre-Connect), Discharge Control, Discharge Pressure Instrument, and the Discharge Bleeder Control.

Apparatus locations are to be identified as: FRONT (forward facing), PASSENGER SIDE (curb side facing), REAR (rearward facing), and DRIVER SIDE (street side facing).

On sides of apparatus, left-to-right locations are to be identified as FORWARD and REARWARD.

At rear of apparatus, locations are to be identified as INBOARD, OUTBOARD, OR CENTER.

NOTE: The terms LEFT and RIGHT are not to be utilized, unless specifically instructed to do so by customer.

Y__N__

COLOR CODED DISCHARGE AND SUCTION NAME PLATES

The name plates, as provided for identification of the following devices, are to be permanently printed on a colored background with nomenclature as specified above, attached with permanent adhesive. NOTE: Name plates are not to be screwed or riveted in position.

Color matching name plates are to be provided for: Suction Inlet, Suction Control (when gated), Suction Bleeder, Discharge Outlet, Discharge Control, Discharge Pressure Instrument, and Discharge Bleeder Control.

Y__N__

MASTER GAUGES, VACUUM & PRESSURE

Y__N__

NO-SHOK LIQUID FILLED GAUGES

Master pump intake and pump discharge pressure indicating devices shall be located within 8" of each other, edge to edge, with the intake (suction) pressure indicating device to the left of the pump discharge pressure indicating device.

A 4" diameter NoShok compound style pressure gauge to be furnished, registering 0 x 600 psi, "**enhanced**" black numerals on white background. Gauge needle shall have a "bright orange" tip for improved visibility. Gauge to be piped to discharge volute of fire pump, equipped with a black permanently engraved identification nameplate installed below the gauge, to read: "DISCHARGE."

A 4" diameter NoShok compound style pressure gauge to be furnished, registering -30 x 400 psi, "**enhanced**" black numerals on white background. Gauge needle shall have a "bright orange" tip for improved visibility. Gauge to be piped to suction volute of fire pump, equipped with a black permanently engraved identification nameplate installed below the gauge, to read: "SUCTION."

TEST GAUGE PANEL

A test plug assembly to be furnished, installed on specified gauge panel adjacent to respective pump suction and pump discharge gauge. Test plugs to be piped to pump suction cavity and discharge cavity using high pressure clear nylon tubing with brass fittings.

Y__N__

INDIVIDUAL DISCHARGE GAUGES, 2-1/2" DIAMETER

Two (2), 2-1/2" diameter NoShok compound style discharge pressure gauges to be furnished, registering 0 x 400 psi, "**enhanced**" black numerals on white background. Gauge needle shall have a "bright orange" tip for improved visibility. Gauges to be located in a uniform manner no more than 6" from its respective discharge valve control.

Each gauge and respective discharge valve control to be equipped with color coded permanently engraved identification nameplate to describe numerical sequence, location, type and size of outlet.

All above specified pressure gauges to be analog style, liquid filled, vibration dampened, and capable of operations to -40 degrees F. Master gauges and individual discharge pressure gauges shall have a 7 year warranty.

The specified engine monitors, pump suction and discharge gauges, and individual gated discharge pressure gauges shall be installed on the specified gauge panel.

Pressure gauges to be piped to the individual discharge valves and pump suction and discharge volutes using high pressure clear nylon tubing with brass fittings.

Y__N__

CAST METAL PRESSURE GAUGE SURROUND BEZELS

The specified individual pump discharge, pump intake, and individual discharge pressure gauges shall be encased/surrounded by chrome or polished trim bezels. Color coded placards/name tags are to be recessed into the gauge trim bezels.

Y__N__

TANK LEVEL INDICATOR(S)

Y__N__

WHELEN PSTANK STRIP-LITE SYSTEM

Three (3) Whelen Strip-Lite PSTANK, water tank level status lights shall be furnished, with green/blue/amber/red colors. Lights to be signaled by the specified tank level driver, with information provided by the specified primary level indicator. Red 1/4-level lights to flash, other colors to be steady illumination when activated. Strip-Lites to be furnished, one on each exterior side of apparatus, as specified.

Y__N__

TANK INDICATOR REMOTE LIGHT DRIVER, FRC SYSTEM

Fire Research TankVision model WLA290-A00 remote light driver shall be furnished and installed. The driver shall provide four (4) separate signal outputs to the optionally specified remote tank level lights. The driver shall signal 1/4, 1/2, 3/4, and full tank liquid levels. When power is applied the driver shall run a test and cycle each remote light on and off. When the tank is less than 1/4 full the driver shall "blink" the 1/4 level light.

The remote light driver shall receive input information over a single wire from the specified Fire Research tank level primary indicator, which is mounted on the pump operator's panel.

Y__N__

4-COLOR TANK LEVEL LIGHT FIXTURE LOCATION

The above specified water tank level multiple color light strip(s) to be located: match current trucks location.

Y__N__

WATER LEVEL INDICATOR - TANK VISION

One (1), FRC, "Tankvision" WLA200-A00 water tank level indicator to be furnished with: weatherproof encapsulated high intensity LED light indicator, tank level sending unit, and protected wiring loom. Water tank level indicator to be mounted on pump control panel. Tank level sensing unit to be located front of specified water tank to properly sense water capacity.

Y__N__

WATER TANK "MAXIMUM PRESSURE" DATA LABEL

The one (1) optionally specified Water Tank Re-Fill Inlet(s) to be furnished with permanently printed or engraved Data Plate(s) to indicate the **MAXIMUM ALLOWED TANK FILL INLET PRESSURE**. Inlet pressure is to be determined by the piping/valve size (inside diameter) and Tank Manufacturer's Restrictions. Label(s) to be permanently encased in a chrome full surround bezel, located adjacent to the inlet fitting(s).

Y__N__

MASTER DUMP VALVE SWITCH

One (1) backlit momentary rocker switch shall be furnished and installed inside chassis cab, adjacent to dump valve controls, to provide power and allow operation of dump valves and/or chutes. Switch is to reset to "off" when the vehicle master battery switch is turned off.

Switch shall be sufficiently labeled for easy identification and operational instructions as to its use.

Y__N__

DUMP VALVE CHUTE DEPLOYMENT TO ACTIVATE HAZARD WARNING LIGHT

The interior driver's cab ceiling or dashboard mounted Hazard Light is to illuminate anytime any of the three (3) each Dump Valve Chutes is deployed, and the chassis park brake is released.

Y__N__

DRIVER SIDE DROP-DOWN DUMP CHUTE

One (1) stainless steel 10" wide drop-down dump chute shall be furnished and installed on driver side of body.

Dump chute shall extend 30" past side of apparatus body when lowered.

DUMP CHUTE ACTIVATION

Rear driver (street) side dump chute motion shall be equipped with manual polished stainless steel D-ring latch.

Y__N__

REAR CENTER TELESCOPING DUMP CHUTE

One (1) stainless steel Newton brand 10" telescoping dump chute shall be furnished and installed at rear center of apparatus body.

Dump chute shall extend 18" past rear vertical body panel.

DUMP CHUTE ACTIVATION

Rear dump chute shall telescope with linear actuator operation.

Telescoping action shall be controlled by rocker switch control located exterior of body, adjacent to dump chute opening.

Y__N__

CURB SIDE DROP-DOWN DUMP CHUTE

One (1) stainless steel 10" wide drop-down dump chute shall be furnished and installed on curb side of body.

Dump chute shall extend 30" past side of apparatus body when lowered.

DUMP CHUTE ACTIVATION

Rear passenger (curb) side dump chute motion shall be equipped with manual polished stainless steel D-ring latch.

Y__N__

DRIVER SIDE DUMP VALVE

One (1) stainless steel Newton brand 10" plunger style dump valve shall be furnished and installed on driver side of body.

DUMP VALVE ACTIVATION

Rear driver side dump valve shall open and close with hand lever operation mounted overhead the dump valve housing. Hand lever is accessed through the body side dump chute opening.

Valve control lever shall be equipped with over-the-center safety lock to secure closed position of valve when not in use.

Y__N__

REAR CENTER DUMP VALVE

One (1) stainless steel Newton brand 10" door style dump valve shall be furnished and installed

on rear center of body, behind rear wheels.

DUMP VALVE ACTIVATION

Rear dump valve shall open and close with linear actuator operation.

Valve operation shall be controlled by rocker switch control located exterior of body, adjacent to dump chute opening.

Y__N__

CURB SIDE DUMP VALVE

One (1) stainless steel Newton brand 10" plunger style dump valve shall be furnished and installed on curb side of body, behind rear wheels.

DUMP VALVE ACTIVATION

Rear curb side dump valve shall open and close with hand lever operation mounted overhead the dump valve housing. Hand lever is accessed through dump chute opening on side of body.

Valve control lever shall be equipped with over-the-center safety lock to secure closed position of valve when not in use.

Y__N__

CAB INTERIOR DUMP VALVE CONTROL

One (1) backlit momentary rocker switch shall be furnished and installed inside chassis cab for remote operation of rear dump valve.

Switch shall be sufficiently labeled for easy identification.

Y__N__

CAB INTERIOR DUMP CHUTE CONTROL

One (1) backlit momentary rocker switch shall be furnished and installed inside chassis cab for remote operation of rear dump chute.

Switch shall be sufficiently labeled for easy identification.

Y__N__

FULL HEIGHT DRIVER SIDE REAR BODY CORNER

Rear driver side body corner shall be constructed full height of body, minimum 70" above tailboard, to completely conceal and provide flush mounted enclosure for specified drop down dump chute.

Dump chute shall recess flush with side of body corner when stowed and be equipped with polished stainless steel perimeter frame.

Rear facing surface shall provide rigid mounting surface of specified body lighting and optional access steps and handrails.

Body corner shall be constructed of specified body material and bolted into position flush with surrounding apparatus body sides for ease of repair, replacement and pleasing appearance.

Y__N__

FULL HEIGHT CURB SIDE REAR BODY CORNER

Rear curb side body corner shall be constructed full height of body, minimum 70" above tailboard, to completely conceal and provide flush mounted enclosure for specified drop down dump chute.

Dump chute shall recess flush with side of body corner when stowed and be equipped with polished stainless steel perimeter frame.

Rear facing surface shall provide rigid mounting surface of specified body lighting and optional access steps and handrails.

Body corner shall be constructed of specified body material and bolted into position flush with surrounding apparatus body sides for ease of repair, replacement and pleasing appearance.

Y__N__

DRIVER SIDE FLOODED DUMP VALVE

The bottom of specified water tank shall be furnished with a large water-collection-sump, integral with the water tank, and designed to facilitate "below-the-tank-bottom" mounting of the specified driver side rear square gravity dump valve.

The sump shall allow a minimum of 34" from ground level to the bottom of specified gravity dump valve and extension chute.

Gravity valves which are simply mounted to the lower rear wall of the tank (flanged gravity valves do not allow water-way on tank bottom), leaving a quantity of water in tank at all times, are not acceptable.

Y__N__

CENTER REAR FLOODED DUMP VALVE

The bottom of specified water tank shall be furnished with a large water-collection-sump, integral with the water tank, and designed to facilitate "below-the-tank-bottom" mounting of the specified rear rear square gravity dump valve.

The sump shall allow a minimum of 34" from ground level to the bottom of specified gravity dump valve and extension chute.

Gravity valves which are simply mounted to the lower rear wall of the tank (flanged gravity valves do not allow water-way on tank bottom), leaving a quantity of water in tank at all times, are not acceptable.

Y__N__

CURB SIDE FLOODED DUMP VALVE

The bottom of specified water tank shall be furnished with a large water-collection-sump, integral with the water tank, and designed to facilitate "below-the-tank-bottom" mounting of the specified curb side rear square gravity dump valve.

The sump shall allow a minimum of 34" from ground level to the bottom of specified gravity dump valve and extension chute.

Gravity valves which are simply mounted to the lower rear wall of the tank (flanged gravity valves do not allow water-way on tank bottom), leaving a quantity of water in tank at all times, are not acceptable.

Y___N___

POLY WATER TANK -- 2200 GALLONS WATER CAPACITY

The apparatus is to be equipped with a 2200 gallon capacity polypropylene thermoplastic water tank.

The tank body and end bulkheads are to be constructed of 1/2" thick, polypropylene, nitrogen-welded and tested inside and out. Tank construction shall conform to NFPA standards.

The transverse and longitudinal 3/8" thick swash partitions are to be interlocked and welded to each other as well as to the walls of the tank. The partitions are to be designed and equipped with vent holes to permit air and liquid movement between compartments.

The 1/2" thick cover is to be recessed 3/8" from the top of the side walls. Hold down dowels are to extend through and be welded to both the covers and the transverse partitions, providing rigidity during fast fill operations. Drilled and tapped holes for lifting eyes are to be provided in the top area of the booster tank.

The bottom of the tank is to be secured within the specified rubber lined "full perimeter cradle" as described below, design to be in accordance with the tank manufacturer's requirements.

A 12"x12" tank fill tower is to be provided, by a minimum of 12" in height. The water fill tower is to be designed, sized, and located as required by the needs of the apparatus design layout. The fill and overflow tower is to be constructed of 1/2" thick polypropylene, equipped with an INBOARD hinged lid and a removable polypropylene screen. **Location to be in the driver side outboard as far forward as possible. To allow filling using the front body corner steps**

A single 6" i.d. overflow/vent tube is to be installed within the vertical fill tower, internally piped with schedule 40 PVC pipe through the tank, exiting the tank bottom behind the vehicle's rear axle.

Where a fire pump suction is optionally specified, a 10" x 10" x 3" deep water collection sump is to be provided, located on the water tank bottom, inboard the chassis frame rail locations. In addition to the bottom sump, there is to be a 4" i.d. schedule 40 polypropylene short radius elbow pump suction pipe extending from the exterior wall of the tank (inline with fire pump suction port) down into the centerline of the tank sump. A tank drain and clean port is to be provided, consisting of a 3" NPT schedule 80 TIPT female flange with matching threaded PVC plug, located centerline of the tank sump.

INSTALLATION

The tank is to be installed so as to be completely independent of and removable from the apparatus body and body fenders, located immediately on top of the chassis frame rails, for lowest possible center of

gravity. Tank's position within the apparatus body cavity is to provide for best possible front and rear axle weight distribution.

LIFETIME WARRANTY

The booster tank is to have a lifetime warranty as provided by the tank manufacturer, copy of the warranty shall be included in the delivery documents.

Y__N__

WATER TANK SUPPORT STRUCTURE

The specified water tank is to be nested into a full perimeter mounting "picture frame" style support structure consisting of 2" x 2" x 1/4" thick 304 grade stainless steel angle. The front of tank is to be equipped with a full width 1/4" thick front base plate. All stainless cradles are to be wire-feed welded to the specified stainless steel apparatus body sub frame transverse tubings.

Structure is to be tank-specific, and shall provide support in the areas and locations specified by the tank manufacturer.

All mating areas between tank and structure are to be lined with 60 DURO rubber cushion material, 1/2" thick on horizontal and front surfaces and 1/4" thick on sides and back vertical surfaces.

Structure is to be mounted to chassis frame rail side walls by hardened carriage bolts. The use of threaded rod plates or U-bolts will not be considered adequate.

TANK CRADLE STRUCTURE WARRANTY

The tank cradle is to have a lifetime warranty, both structurally and corrosion-free, as provided by body builder

Y__N__

RECTANGULAR T-SHAPE TANK

The specified water tank is to be of a conventional rectangular shape, located beneath the main hose bed cavity, rearward of the front body transverse cross-panel.

The tank bottom is to be T-shape, to allow for rear wheel clearance and optionally specified lower side compartment(s).

Y__N__

FIREMAN'S FRIEND 4" TANKER FILL VALVE

A 4" size Fireman's Friend model 4" FEE Tanker Fill Device shall be furnished, located at rear of apparatus. Fill valve to be equipped with 8-bolt mounting plate attachment, located in the rear lower portion of the tank, so as to not interfere with the specified dump valve, or sump design. Fill valve inlet shall be as following specified:

Y__N__

FIREMAN'S FRIEND 2-1/2" TANKER FILL VALVE(S)

One (1) each, 2-1/2" size Fireman's Friend model 2.5" FFE Tanker Fill Device(s) shall be furnished, located at rear of apparatus. Each fill valve to be equipped with mounting plate attachment, located in the rear lower portion of the tank, so as to not interfere with the specified dump valve, or sump design. Fill valve inlet(s) shall be as following specified:

Y__N__

FFE INLET ADAPTERS

The above specified 4" Fireman's Friend fill device shall be equipped, at inlet, with: 4" NST male fitting, 4" NST female swivel x 4" Locking Storz 30-degree lightweight elbow adapter, 4" Locking Storz x 2-1/2" NST swivel female lightweight adapter, and a 2-1/2" NST plug style cap with chain retainer.

Y__N__

FFE INLET ADAPTER

The above specified 2 1/2" Fireman's Friend fill device shall be equipped, at inlet, with: 2-1/2" NST male fitting, and a 2-1/2" NST cap with chain retainer.

Y__N__

FFE INLET ADAPTER

The above specified Two (2) Each 2 1/2"NST male and female fittings are to be provided with: 2-1/2" NST male&female fitting, with 2 1/2" cam lock male with cap.

Y__N__

DIRECT TANK FILL BLEEDER VALVE

BLEEDER VALVE

A 1/4-turn drain/bleeder valve shall be furnished, with exterior pump panel mounted chrome plated bleeder valve control handle, and recessed permanently engraved identification label.

Y__N__

OVERHEAD HOSE BODY: FORWARD DUNNAGE AND REARWARD HOSE BED

The upper level centerline of hose body, above the water tank, is to include a forward dunnage area, and a rearward hosebed.

OPEN-TOP DUNNAGE AREA

Open dunnage area is to be provided.

A forward hose body transverse divider panel is to be provided, fabricated with perimeter flanges, and bolted in position (so as to be removable) immediately to the rear of the water tank fill stack. Transverse divider panel is to form the forward wall of the main hosebed area, and provide a mounting surface for optionally specified adjustable hose bed divider tracks.

Location of the transverse divider panel is to provide for an "open-top" dunnage area, ahead of the main hose bed, overhead the water tank, rearward of the midship pump module.

Dunnage floor gratings or heavy gauge 4-way aluminum treadplate, notched to custom fit around the specified tank fill stack(s).

HOSE BED: ALUMINUM GRATINGS

The apparatus main hose bed area is to be located to the rear of the transverse hose body divider panel, between passenger's and driver's inboard apparatus body sides, overhead the water tank.

Multiple double-break flange reinforced tank retainer/hose load support beams are to be provided, spanning between and bolted to the inboard apparatus body sides. Beams are to be constructed of body matching material, profile is to be of minimum height to maximize hose bed depth, and the beams are to be positioned no more than twenty (20) inches apart.

Extruded aluminum slatted hose bed floor gratings are to be furnished, running longitudinally the full length of the hosebed. Longitudinal grating slats are to be fastened to underside perpendicular cross-slats which extend the full width of the hose bed cavity. The hose bed floor gratings are to be assembled with bolts (not welded), so as to allow for future modifications and repairs to the grating assembly. Longitudinal gratings are to be single piece full length extrusions, spaced at least 1/2" apart to allow for hose ventilation. Cross-slats are to be positioned to rest on the top surface of the specified overhead tank retainer/ hose load support beams.

Y__N__

STAINLESS STEEL ADJUSTABLE HOSEBED DIVIDER TRACKS

Channel fabricated stainless steel hosebed divider horizontal slide tracks are to be furnished, transverse at the rear of hosebed, designed so as to retain the floor gratings and prevent snagging of hose or couplings during deployment and re-loading operations.

In addition to the rear transverse hosebed divider slide track, two (2) parallel transverse stainless steel horizontal channel tracks shall be furnished, bolted to/removable from the specified forward cross divider. Forward and rear horizontal channel tracks are to be provided with sliding friction clamps and threaded studs with acorn nuts, allowing infinite side-to-side adjustment of hosebed divider location.

Y__N__

HOSEBED DIVIDER, 1/4" PLATE ALUMINUM

One (1) each, full length full depth infinitely adjustable hosebed divider shall be furnished, fabricated of .250" unpainted machine sanded or abraded smooth aluminum with vertical front and bottom reinforcing extrusion. The top rear corner of the divider panel shall have a 3" radius, to prevent damage to tarps and restraints. All horizontal, vertical, and rear radius metal edges are to be DA sanded smooth to prevent personnel injury and hose damage.

Y__N__

HOSE RESTRAINT: BLACK NETTING

The main hosebed shall be equipped with a rear full width black nylon restraint, consisting of strap netting across the rear of hosebed, with quick-release draw-tight clips.

Y__N__

NO RIDE PLACARD

A WARNING label is to be located on the vehicle at the rear step area that is to caution personnel that riding on these areas while the vehicle is in motion is prohibited. Label is to be permanently encased in a chrome full surround bezel.

Y__N__

TAILBOARD, EMBOSSED 3/16" ALUMINUM TREADPLATE

A 101" wide rear step/tailboard shall be furnished, constructed of .187" polished 4-way aluminum treadplate material, with an NFPA approved (as slip-resistant) "embossed" tread top surface.

Tailboard shall be a single piece fabrication, with perimeter fabricated flanges, side and rear same width as the body rubrails, and outboard rear corners "beveled" 45-degrees. The beveled corner flanges and the rear flange of tailboard shall be double-broke, and have a total of five (5) diamond shape cut-outs, exposing the under flange mounted rear corner marker lights and rear center marker light cluster. Tailboard shall be spaced 1/2" away from the rear face of body, for drainage, bolted in position and easily

replaceable in the event of damage. Underside of aluminum treadplate tailboard is to be lined with a dielectric barrier tape, separating the aluminum from the dissimilar metal underbody subframe structure.

Per NFPA: Steps, platforms, or secure ladders shall be provided so that firefighters have access to all working and storage areas of the apparatus. The maximum stepping height from ground to first step shall not exceed 24". Additional steps cannot be more than 18" apart. All steps, platforms, or ladders shall sustain a minimum static load of 500 lbs. without permanent deformation and shall have skid resistant surfaces. Any step shall have a minimum area of 35 sq. in. Platform shall have a minimum depth of 8".

Y__N__

TOW EYES, TWO (2) EACH

Two (2) tow eyes shall be installed below the rear of body, eyes to be 3" in diameter.

The tow eyes shall be machined into 3/4" thick steel plate, properly attached to sides of chassis frame rails, so that the truck can be straight-line pulled from both of the eyes.

Y__N__

REAR TOW EYES, EXPOSED AT REAR OF BODY

Two (2) rear painted "tow" eyes shall be located at the rear of the apparatus and shall be permanently mounted directly to the chassis frame rails. A chassis frame cross member or spreader bar is to be provided, located between the tow eyes. The inner and outer edges of the tow eyes shall be radiused, eyes to be 3" in diameter.

Y__N__

COMPARTMENTED BODY CONSTRUCTION MATERIALS:

FABRICATIONS:

The apparatus body compartments and side panels shall be fabricated of minimum .125" type 5052-H32 smooth sheet aluminum, with tensile strength of 38,000 psi and a yield strength of 31,000 psi. The apparatus body modular wheel well fabrications, including outboard side panels and liners shall be stainless steel.

Any specified interior compartment adjustable shelving, trays, and shelving tracks shall be fabricated of type 5052-H32 smooth aluminum, .125" sheet or .187" plate, and shall have a machined "swirl" finish.

The specified 4-way treadplate apparatus body components shall be type 3003 "Brite" aluminum C-102 or equal pattern treadplate.

FASTENERS:

All apparatus body screw type fasteners shall be stainless steel "low profile" button socket head cap screws with stainless steel hex "Ny-Lok" threaded nuts designed to prevent loosening. Size of fasteners and spacing shall provide for maximum structural integrity and no leakage in flanged areas between fasteners. Any necessary exterior exposed nut fasteners shall be polished stainless steel or chrome plated "acorn" covering fastener threads. **NOTE: Hex head, truss head, phillips pan head, or other large profile fasteners shall not be used for assembly of fabricated sheet metal components.**

Y__N__

COMPARTMENTED BODY CONSTRUCTION MATERIALS:

The apparatus body compartments and side panels shall be fabricated of stainless steel in lieu of the above specified aluminum materials.

Y__N__

APPARATUS BODY DESIGN AND CONSTRUCTION METHODS:

Apparatus body shall be a "dry-side" design, totally separate of specified water tank, allowing for easy removal/replacement of the tank. Design of apparatus body shall also provide for maximum cubic footage "under tank" compartmentation, located ahead of rear axle and extending into chassis frame depth. The total overall width of apparatus body, at specified rubrails shall not to exceed 102".

The entire apparatus body shall be precision machine fabricated, "**all-bolted-construction**", properly reinforced with double break horizontal and vertical integral flanges formed inboard, eliminating the need for add-on structural shapes. All mating body side panels shall be assembled with screw fasteners which are "concealed" inboard of the individual body panels, so as to eliminate fastener heads and nuts from being exposed on exterior sides of the apparatus body. Exposed fasteners will only be permitted on 4-way aluminum fabrications, inside enclosed compartments, and on body front panel (hidden behind the rear of chassis cab).

All individual apparatus body fabricated components shall be: computer designed for repeatable tolerances, precision computer control machined for superior cut edge quality, computer control machine fabricated for individual part accuracy, and assembled with removable fasteners for ease of modifications and repairs. Exterior compartment and hosebody fabrications shall be free of all projections which might injure personnel or fire hose. NOTE: Where "nibbled" or other non-continuous non-smooth cutting methods are used to machine the body material, all edges must be reworked/filed for injury prevention and improved appearance.

Apparatus construction methods which do not allow for disassembly and removal of individual fabricated components, or body designs that are not "fully" engineered with all assembly fastener holes and accessory equipment mounting holes, will not be considered.

The described construction methods are to insure easy disassembly of the apparatus body in the event of damage or need for future modifications. Apparatus designs or construction methods which do not allow for disassembly and removal of major fabricated components are not to be considered "equal" to this construction method.

The following fabricated body components shall have double-break mating perimeter flanges, bolted in position and easily removable for future repairs or modifications: vertical front body cross panels with integral full height front outboard "beveled" corners, horizontal under-tank compartment modules, horizontal upper outboard body panels with triple-break-inboard top flanges, lower level center body outboard wheel well panel with removable radius trim moldings and inner fender liners, horizontal intermediate upper level outboard body panels with triple-break-inboard top flanges, and full body height outboard rear side body panels with integral triple-break-inboard top horizontal and rear vertical flanges.

The vertical rear full height body side panels shall be single piece construction, bolted to the adjacent outboard lower wheel well panel, and the horizontal intermediate upper level outboard body panel. The rear vertical flange (above the rear tailboard) shall be triple-broke inboard, providing a reinforced mounting surface for the specified rear vertical handrails and the rear facing vertical body panels. Top rear corner of body side panels shall have a 45-degree bevel for streamline appearance.

The driver's and passenger's side vertical outboard rear body side panels shall be precision machine cut-out, inline with the specified gravity dump valve, and the cut-out perimeter lined with polished stainless steel trim moldings. The cut-out shall create a dump chute pocket, allowing for the recessed mounting of specified gravity valve extension chute.

The horizontal top body triple-broke-inboard flanges shall be wrapped with full body length single piece 4-way aluminum treadplate fabrications, installation of which will strengthen the mating body panels and provide non-painted natural finish scuff resistant inboard hosebed sides. The full length hosebed side treadplate fabrications, shall provide for "double-panel" construction, with void area between outer body panels and inboard hosebed sides, thereby eliminating potential visible exterior body damage caused by hose couplings..

For maximum cubic footage of compartments, the back wall of the interior forward side compartments shall be recessed to within 4-inches of the chassis frame rail depth, both driver's side and passenger's side of the apparatus body. Recessed areas shall be full width of the interior of each compartment, vertically at least 30" high, so as to occupy the entire underbody area beneath the outboard portion of the water tank.

The front of body shall have full height 45-degree beveled vertical front outboard corners, for streamline appearance.

Driver's side, passenger's side compartments shall be equipped with "sweep-out" floor, raised at least 1" above compartment bottom door opening. Rubrail/tailboard level side compartment door sills shall extend outboard below compartment doors, with aluminum treadplate or optionally specified rubrail lined 3" flange-down.

Y__N__

CONSTRUCTION FEATURES:

Polished 4-way aluminum treadplate rubrails shall include 3" flange down and 1" return in for rigidity, bolted to lower body sides.

Wheelwell trim shall be furnished as specified below, bolted in position and easily replaceable, surrounding driver's side and passenger's side rear body "radius" wheelwell cut-outs.

A single-piece removable sheet stainless steel circular underside wheelwell liner shall be furnished, inboard of both the driver and passenger side wheelwell housings. Removal of liner shall provide convenient access to the rear axle suspension components.

Where optionally specified, infinitely adjustable full length compartment shelves shall be mounted to and removable from front and rear quad-rail (4-clamping surfaces) vertical track assemblies. Each adjustable rail track assembly shall be bolted in place, removable. NOTE: Weld-on shelving tracks do not meet the intent of this requirement. Each shelf to include four (4) aluminum heavy flat bar track clamps with threaded stainless steel carriage bolts and self-locking nuts, easily accessible for shelf height adjustment. Compartment shelves and quad-rail track assemblies to be unpainted "swirl-finish".

Driver's side and passenger's side compartment interiors shall have non-painted "swirl-finish" back walls, ceilings, and bulkheads.

Y__N__

UNDER BODY STAINLESS STEEL SUBFRAME (painted mild steel is not acceptable):

An apparatus body sub frame shall be furnished, completely independent of the assembled apparatus body module, bolted to and easily removable from the body module. The apparatus body sub frame, including the specified forward yoke assembly with torsion suspension, and rigid rear cantilevered platform, shall be constructed of rectangular heavy wall type 304 stainless steel welded tubing. Sub frame design shall provide a structural "platform" onto which the compartmented apparatus body rests, allowing for any

individual fabricated component or subassembly of the apparatus body to be disassembled and removed from the sub frame.

Top mating surface (body to sub frame) of underbody and tailboard supports shall be fully lined with barrier tape so as to properly isolate any dissimilar metals.

FORWARD BODY SUB-FRAME

An apparatus body forward sub frame "yoke" shall be furnished, with upper level horizontal cross-members supporting the specified water tank cradle, and lower level horizontal members providing under-floor support to the driver and passenger forward (of wheel well) side compartments. To allow for maximum interior depth of the apparatus body side compartments, the vertical members of the sub frame yoke shall remain within 3-inches of the chassis frame rails. Bolt-through rubber cushion "vibration and torsion isolators" shall be provided, at least four (4) each, two (2) per chassis frame side, securing the body sub frame yoke to the side web of chassis frame rails. The bolt-through isolators shall allow unlimited twisting-moment of the chassis frame rails, independent of and not constrained by the apparatus under body sub frame. The yoke's lower level horizontal under-floor supports shall consist of multiple horizontal tubes with fabricated stainless steel channels, spanning between tubes, allowing for a floor load rating of 1000 pounds per compartment.

REARWARD BODY SUB-FRAME & TOW EYES

A rear "cantilevered" under body sub frame platform shall be furnished, with tubular members welded to vertical 3/4" steel glove plates, to be located back of the rear most chassis suspension brackets. The glove plate frame drops are to be bolted to the side web of rear chassis frame rails, and shall include integral bottom 3" diameter machined "closed" tow eyes. A heavy tubular cross member shall span between the tow plates, bolted and removable, so as to allow vertical installation and removal of the sub frame with body intact.

TAILBOARD SUB-FRAME

The specified cantilevered rear under body sub-frame platform shall continue rearward, beyond the rear body corners and rear face of body, providing rigid support of the specified apparatus rear tailboard/bumper. Tailboard/bumper understructure is to consist of the same heavy tubular stainless steel, barrier isolated from any dissimilar metals, its design allowing for the tailboard fabrication to be positioned away from and independent of the body fabrications.

SUB-FRAME MOUNTING PROCEDURE

All apparatus body yoke and platform sub frame components shall be attached to the chassis frame using hardened steel locking thread nut & bolt fasteners, with bolt holes precision machined through chassis frame side webs. Body sub frame horizontal supports shall be positioned parallel/level with chassis frame rails, lowered so as to provide approximately 22" (with vehicle fully loaded) from the ground to top of apparatus body rub rails, runningboards, and rear tailboard.

Bidders shall depict their proposed apparatus body sub frame, in the required bid drawings, and describe with detail same sub frame in their bid proposal specifications. A design with body compartments "hanging" on the chassis, in an unsupported fashion shall not be acceptable.

NOTE: Apparatus body sub frames which are fastened to the chassis frame rails with U-bolts, sandwich clamps, or other temporary fastening methods, AND/OR body sub frames that are permanently welded to any of the body fabrications or extrusions, AND/OR bodies with compartments simply hanging on the chassis in an unsupported fashion and not providing under-compartment-floor support are not acceptable.

Y__N__

LIFETIME SUB-FRAME WARRANTY - STAINLESS STEEL

The specified tubular stainless steel apparatus body sub-frame is to be warranted for the vehicle's lifetime, against cracks, corrosion and rubber isolator deterioration.

Y__N__

FILTERED COMPARTMENT VENTING

Back walls of all apparatus body side compartments, including: six (6) lower level (below top of chassis frame rails) 2-ahead of and 1-behind the wheel well housings, are to be equipped with vented pass-through openings to the body under side. Vented openings are to be covered with 3M water resistant mesh filter media and an interior compartment metal grille. Grille is to be attached to the interior compartment wall with reusable stainless steel screw fasteners with nylon threaded inserts, allowing for removal and cleaning of the filter media from inside of each vented compartment. Vent openings, mesh filter media, and removable grille must allow for dust and moisture free ventilation of the compartment interiors, without reduction of the interior compartment depth.

Y__N__

WARRANTY ON APPARATUS BODY

Refer to the WARRANTY Section of the Specifications, for Terms and Longevity of the Apparatus Body (only) Warranty.

Y__N__

COMPARTMENTED TANKER BODY CONFIGURATION:

A precision engineered, machined, and fabricated fire apparatus compartmented tanker body shall be furnished, designed to be located immediately to rear of specified chassis cab, totally separate of chassis, supported by and mounted to the specified under body sub-frame. So as to provide maximum compartmentation, the apparatus body overall width shall be 100" (not to exceed 101" at runningboards/rub strips).

One (1) passenger's side compartment shall be provided: rubrail level, located ahead of rear wheelwell housing.

Two (2) driver's side compartments shall be provided: rubrail level, located ahead of rear wheelwell housing.

The hosebed area shall be located between inboard body sides, above the specified water tank.

Y__N__

COMPARTMENTATION, DRIVER & PASSENGER SIDE

D1: The driver's front side compartment segment (ahead of wheel well) shall be 26" interior width x 54" interior height x 12" interior depth (full height of compartment). Compartment segment to be fully enclosed and weather sealed, equipped with one (1) roll-up compartment door, size of 26" wide x 54" high, (clear opening size of 23" wide x 50" high).

D2: The driver's forward side compartment segment (ahead of wheel well) shall be 47" interior width x 34" interior height x 24" interior depth (full height of compartment). Compartment segment to be fully

enclosed and weather sealed, equipped with one (1) roll-up compartment door, size of 47" wide x 34" high, (clear opening size of 44" wide x 30" high).

P1: The passenger's front side compartment segment (ahead of wheel well) shall be 77" interior width x 34" interior height x 24" interior depth (full height of compartment). Compartment segment to be fully enclosed and weather sealed, equipped with one (1) roll-up compartment door, size of 77" wide x 34" high, (clear opening size of 74" wide x 30" high).

Y__N__

COMPARTMENT DOORS AND DOOR ACCESSORIES:

The following specified roll-up style compartment door tracks/extrusions to be "flush" with exterior body panels/door jambs. NOTE: Specified roll-up compartment doors shall be manufactured in the United States of America.

Specified compartment door jambs shall be fabricated with inboard flanges which are machined for screw type fasteners and mounting of specified roll-up compartment door aluminum side track extrusions.

All side compartment doors shall be ROM Robinson roll-up shutter style, complete with: Extruded aluminum shutter slats which are anodized satin finish, anodized tubular bar style bottom rail latch, anodized extruded aluminum vertical side tracks with removable neoprene rubber weather-stripping, anodized painted top door opening extrusions with removable neoprene rubber weather-stripping, and spring loaded "front roll" door lift/roll-up mechanism.

Each individual roll-up extruded aluminum door shall be of maximum size for the available door opening. Front and rear extruded aluminum door tracks shall be furnished, bolted to vertical door jambs and interior compartment bulkheads so as to be easily removable for repairs or modifications. All roll-up style compartment doors shall be installed and adjusted during body construction. NOTE: Roll-up door tracks which are riveted or welded in position are not acceptable.

The following specified door opening sizes may be reduced by no more than 3" total width (1-1/2" per side) and 4" total height. Decrease in compartment opening sizes is caused by profile of side track extrusions with weather-stripping and bottom door slat which remains in door opening.

Y__N__

ENCAPSULATED ROLL-UP DOOR PROTECTION

All of the specified three (3) roll-up door "bundles" shall be encapsulated within custom fabricated swirl finish aluminum shrouds, protecting "bundled" door slats from interior compartment damage. Fabricated shrouds to be of minimum size necessary, to accommodate the largest diameter door bundle, and shall span the full width of interior compartment.

The specified door bundle encapsulators are to be removable, from within the compartment interior, so as to allow for door slat and rewind mechanism maintenance/cleaning, without having to remove exterior add-on access panels.

NOTE: Hidden door bundle cavities, which are only accessible by removal of sealed/caulked exterior apparatus body panels, are not acceptable.

Y__N__

ROM VERTICAL STRIP INTERIOR DOORWAY COMPARTMENT LIGHTING

04/04/17

Three (3) pairs of ROM brand 12-volt multiple LED element, interior compartment vertical "strip" tubular lights, shall be furnished for compartments.

Lights to be inboard the specified door tacks or jambs, activated by "opening" of the respective compartment door, using a magnetic bar latch switch where roll-up doors are provided (mechanical plunger switch where hinged doors are provided).

Lighting shall have polycarbonate lens to resist breakage from impact and damage from light element heat.

Y__N__

REAR OF BODY

Exterior rear face of body shall be fabricated of smooth stainless steel, bolted in position and removable. Smooth surface shall allow for application of rear graphics and/or chevrons.

A void cavity shall be provided, ahead of the rear body panel, to enclose the specified gravity dump valve.

Y__N__

ROLL-OUT TRAY

One (1), each fabricated .190" smooth natural unpainted aluminum pull-out pan style tray(s) shall be furnished.

Pan tray(s) are to be of maximum width for specified compartment's door opening, and maximum front-to-rear dimension for the designated compartment's depth.

Tray(s) to be provided with 2-1/2" deep perimeter formed-up flanges, corner closure welded at all four corners, and bolted to specified roller mechanism.

Tray shall be equipped with dual 300# (total of 600#) capacity 110% extension Euro design extruded precision slides and underside mounted air cylinder prop to hold tray in extended and retracted positions.

Outboard edge of tray shall have double broke pull handle along full width of tray.

Y__N__

ADJUSTABLE SHELF TRACKS, LOW PROFILE

Two (2) sets of Laser cut vertically slotted bolt-on "low profile" shelf tracks are to be furnished, mounted two (2) on forward and two (2) on rearward interior side walls of the designated apparatus body side compartments. Tracks are to be designed to accommodate spring-loaded threaded cleats allowing for infinite vertical adjustment of the optionally specified horizontal compartment shelves. NOTE: Cleats are to be provided, only with the optionally specified shelves, four (4) each per shelf.

Shelf tracks are to be fabricated of .125" smooth natural finish aluminum, and their design must allow for the shelving width to match the compartment clear opening width.

Y__N__

TUBULAR HANDRAILS, VERTICAL REAR INBOARD CORNERS

Apparatus body tubular railings are to be furnished, consisting of: 1-1/4" o.d. extruded aluminum tubing, chrome plated double bolt type 3" stand-off end type and center rail brackets, and neoprene rubber surface mounting gaskets furnished between rail bracket and painted body surface.

Tubular railings at step areas are to be provided with an aggressive machined "knurled" non-slip exterior surface. Two (2) tubular railings are to be located: 1-passenger's side and 1-driver's side at vertical rear inboard compartment corners.

Two (2) tubular railings are to be located: 1-passenger's side and 1-driver's side at vertical rear beavertails or inboard or outboard compartment corners, as is appropriate for rear body corner design. Handrails are to begin approximately 24" above tailboard, extending to the full height of inboard rear body corners/beavertails.

Y__N__

HORIZONTAL REAR HANDRAIL, BELOW HOSE BED

Matching material tubular railing is to be provided, horizontally on rear body vertical panel below the hosebed gratings. Railing is to be as wide as is possible, without causing interference with optionally specified rear inlets/outlets or step assemblies.

Y__N__

UPPER LEVEL HORIZONTAL FRONT ROOF TOP HAND RAILS

Two (2), each matching tubular railings with chrome plated double bolted brackets shall be furnished, two (2) driver's side, at front top of body corner. Railings shall be placed best to fill the water tank using tank fill.

Y__N__

DRIVER SIDE WHEELWELL AIRPACK STORAGE

Two (2) triangular shaped fully enclosed compartment(s) shall be furnished, located in upper outboard corner(s) of driver's side wheelwell housing to accommodate one (1) standard SCBA airpack.

Compartment(s) shall be equipped with a single weatherstripped vertically hinged over-lapping "beveled-edge" door constructed of wheel well matching material, equipped with: full height polished stainless steel piano hinge, chain door-stop, .and polished stainless steel D-ring finger pull pawl-latch.

Y__N__

PASSENGER SIDE 3-BOTTLE STORAGE COMPARTMENT(S)

One (1) triangular shaped compartment(s) shall be furnished, located in upper corner(s) of passenger's side wheel well to accommodate three (3) SCBA bottles.

Three (3) individual air bottle sleeve segments shall be provided, inboard of and flange bolted to the body wheel well panel. Sleeve segments shall be spray coated with a black textured vinyl material for bottle protection. For additional protection the interior of specified access door is to be lined with insulated rubber mating.

Air bottle compartment shall be equipped with a single weather stripped vertically hinged over-lapping "beveled-edge" door constructed of stainless steel, equipped with: full height polished stainless steel piano hinge, chain door-stop, and a single chrome plated push-button trigger-latch.

Bottle storage compartment door shall be equipped with proximity switch to activate DO NOT MOVE VEHICLE LIGHT, and notify driver of an open door condition.

Y__N__

PASSENGER SIDE 2-EXTINGUISHER STORAGE COMPARTMENT

One (1) compartment shall be furnished, located in upper corner of passenger's side wheel well to accommodate two (2) 2.5-gallon pressurized water fire extinguishers.

Two (2) individual extinguisher sleeve segments and one (1) miscellaneous tool segment are to be provided, inboard of and flange bolted to the body wheel well panel. Sleeve segments shall be spray coated with a black textured vinyl material for extinguisher protection. For additional protection the interior of specified access door is to be lined with insulated rubber mating.

Compartment is to be equipped with a single weather stripped vertically hinged over-lapping "beveled-edge" door constructed of stainless steel, equipped with: full height polished stainless steel piano hinge, chain door-stop, and a single chrome plated push-button trigger-latch.

Compartment door shall be equipped with proximity switch to activate DO NOT MOVE VEHICLE LIGHT, and notify driver of an open door condition.

Y__N__

HORIZONTAL SLIDE-IN FOLDING TANK MOUNTING

One (1), portable folding water tank "sleeve" storage area shall be furnished, located horizontally full length of water tank (see specified thru-tank storage tunnel), accessible through a rear body panel access door. Storage area shall be a minimum of 10" tall x 34" wide designed for the size of collapsible folding water tank to be carried. A transition chute, fabricated of stainless steel, shall extend from the rear door opening to the tank tunnel. Transition chute to consist of sides and bottom, designed so that the folding tank liner cannot "snag" on hinges, fasteners, or latches.

Y__N__

HORIZONTAL SLIDE-IN FOLDING TANK ACCESS

Access to the folding tank storage area shall be through a satin finished rollup style door installed on the rear of the apparatus.

Y__N__

THROUGH-THE-TANK TUNNEL SLEEVE FOR: FOLDING TANK

The above water tank shall have a horizontal sleeve storage tunnel, front-to-rear through the tank interior, open at rear for slide-in storage of a collapsible portable folding water tank. The tunnel shall be an integral part of the specified non-metallic water tank, and shall be covered by the tanks specified "lifetime" warranty.

The tunnel sleeve shall be at least: 36" wide x 9" high x the collapsed length of the folding water tank to be carried, sleeve to be inline with the specified rear body panel access door and transition chute.

Y__N__

PORTABLE TANK, 2500 GALLON

One (1) each, Fol-Da-Tank brand portable collapsible folding water tank shall be furnished, 2500-gallon capacity, folded dimensions of 12'3" x 30" x 7". Folding tank to include: tubular aluminum collapsible frame, 10" drain sleeve, solid brass lacing grommets, and yellow 22 oz. Hypalon liner. Handles are to be provided in the liner to allow complete drainage.

Y__N__

SIX (6): REAR CORNER FABRICATED STAINLESS STEEL STEPS - NON-SLIP-GRIP

Six (6), individual fabricated 12-gauge brushed stainless steel rear body step housings are to be provided, three (3) per side, evenly spaced (no more than 18" apart) up the vertical rear body corners. Fabricated

steps are to be bolted in position and easily removable, and of adequate width to allow for underside mounting of the specified tail turn and back-up lights.

Each step housing is to include an integral forward toe-stop riser, to protect painted or reflective vinyl wrapped rear body corners. Top step surface is to be provided with a "third party tested & certified" NFPA-approved non-slip puncture grip pattern. The puncture grip pattern is to be integral with the stainless steel material, machined and fabricated into the step surface, designed to be self-draining. To avoid inconsistencies common to welded assemblies, all step fabrications are to be single piece fabricated structures. NOTE: Grip-Strut welded to flanged side plates does not meet the intent of this requirement.

The three (3) pairs steps are to be of varying depths, upper steps 8" deep/middle step 9" deep/bottom step 10" deep. Step housing widths to be 4" narrower than the rear compartment corner width (a minimum of 10" wide), so as to allow for 2" of clearance per side for optionally specified hand railing.

SLIP RESISTANT SABER-SHAPE TABS ON PERIMETER STEP FLANGES

The top outboard corners of each step's rear and side facing fabricated flanges are to be provided with multiple evenly spaced saber shape tabs. The tabs are to extend slightly above the top step surface, so as to limit foot slippage when climbing aboard the step housing. As with the puncture grip pattern, the saber-shape tabs must be self draining

Y__N__

STEP SURFACE LIGHTING, LED

The steps which are located above the tailboard, and located above the intermediate steps, are to be provided with multiple element LED 12-volt light fixtures. Six (6) light fixtures are to be provided, positioned to illuminate the step surface below.

Y__N__

DRIVER SIDE FRONT CORNER FOLDING STEPS - TWO (2) EACH

Two (2), each chrome plated cast metal folding drop-down body steps shall be furnished, bolted to front surface of driver's side front compartment corner, one step 18" and second step 36" above runningboard/rubrail level. Steps to be NFPA approved size, non-slip step surface, and capacity.

Y__N__

HARD SUCTION HOSE

Two (2), 10 ft. length(s) of 6" i.d. Maxi-Flex or equivalent flexible suction hose shall be furnished, complete with 6" NST lightweight couplings, long handle swivel female one end, rigid male rocker lug opposite end.

Y__N__

SUCTION HOSE STRAINER

One (1), 6" Kochek low level strainer(s) shall be furnished, for use with specified hard suction hose, equipped with 6" NST long handled swivel female coupling.

A Jet-Siphon shall be provided on the low level strainer(s), consisting of a 1-1/2" NST swivel female rocker lug coupling, and plug cap, mounted so as to allow for coupling of a discharge line.

Y__N__

NFPA REQUIRED FIRE HOSE AND NOZZLES - END USER RESPONSIBILITY

NOTE In order to meet the current requirements of NFPA 1901 it is acknowledged that the end user will furnish and appropriately mount any and all Fire Hose and Nozzles not listed herein but as required by the most recent standards prior to placing this vehicle in service.

Y__N__

BASE MOUNT HARD SUCTION HOSE TROUGHS

Two (2), each hard suction hose trough(s)/tray(s) shall be furnished, located as designated below, equipped with forward coupling clip style stop/retainer and nylon rear hose retainer. Trough(s) to be fabricated U-shape for particular specified size of hard suction hose. Where hose coupling may contact body, a scuff protection overlay shall be furnished.

Troughs shall be constructed of polished 4-way treadplate aluminum.

Y__N__

PIKE POLE, 6 FT

One (1) each, Duo-Safety FP 6 ft. fiberglass handled pike pole(s) shall be furnished.

Y__N__

PIKE POLE MOUNTING, WITH THE FOLDING TANK MOUNTINGS

The above specified two (2) pike pole(s) shall be mounted, in appropriate aluminum or PVC tubes, located inside the specified FOLDING TANK storage area(s). End of tube(s) shall be "notched" for Pike Head, to prevent rotation.

Y__N__

PICK HEAD AXE(S)

One (1) fiberglass handled 6 lb. pickhead style axe(s) to be furnished

NOTE: Where the "pick" is exposed, a tethered rubber or vinyl shield shall be furnished.

Y__N__

AXE BRACKET(S) AND INSTALLATION

One (1), each Axe bracket set(s) shall be furnished and installed. Brackets shall be chrome-plated, blade pocket and handle clip styles, bolted in position per Fire Department approval.

Y__N__

ABC FIRE EXTINGUISHER

One (1) 20 lb. ABC dry chemical fire extinguisher(s) shall be furnished, each complete with clamp type base mount runningboard bracket(s).

Y__N__

PRESSURIZED WATER FIRE EXTINGUISHER

One (1) 2 1/2 gallon pressurized water fire extinguisher(s) shall be furnished, each complete with clamp type base mount runningboard bracket(s).

Y__N__

SPANNER WRENCH SET

Two (2) Akron model 448 wrench holder(s), each with two (2) #10 style spanner wrenches to be furnished.

Y__N__

STORZ WRENCH (ES)

One (1) Kocheck model KS34, 4 storz wrenches with holder(s) to be furnished.

Y__N__

ADAPTERS - NFPA REQUIRED

One (1) double female 2-1/2" adapter with National Hose (NH) threads shall be furnished, mounted in a bracket fastened to the apparatus.

One (1) double male 2-1/2" adapter with National Hose (NH) threads shall be furnished, mounted in a bracket fastened to the apparatus.

Y__N__

RUBBER MALLETT

One (1) rubber mallet to be furnished suitable for use on suction hose connections, mounted in a bracket fastened to the apparatus.

Y__N__

WHEEL CHOCKS

Two (2), each Ziamatic model SAC-44, NFPA compliant folding wheel chocks shall be furnished, complete with Ziamatic model SQCH-44H horizontal under body chock holders. Folding chock holders shall be under body mounted, driver's side, ahead of and behind rear wheelwell housing.

Y__N__

HAND LANTERN - WITH CHARGER

Two (2) Streamlight model "Fire Vulcan" rechargeable hand lanterns with LED "bulb" and rear facing blue LED's be furnished, complete with 12-volt "clip-in" chargers.

Lantern/charger to be mounted and wired. Located in chassis cab

Y__N__

FOLLOWING ADDITIONAL EQUIPMENT/ACCESSORIES SHALL BE FURNISHED:

Y__N__

FIRST AID KIT - END USER PROVIDED

NOTE In order to meet the current requirements of NFPA 1901 it is acknowledged that the end user will furnish, a First Aid Kit as specified prior to putting this vehicle in service.

Y__N__

TRAFFIC VESTS - END USER RESPONSIBILITY

NOTE In order to meet the current requirements of NFPA 1901 it is acknowledged that the end user will furnish, appropriate traffic vests, one for each seating position. Vests should comply with ANSI/ISEA 207 and have a five-point breakaway feature that includes two at the shoulders, two at the sides, and one at the front.

Y__N__

TRAFFIC FLARES - END USER RESPONSIBILITY

NOTE In order to meet the current requirements of NFPA 1901 it is acknowledged that the end user will furnish, a minimum of five (5) appropriate traffic warning devices such as highway flares.

Y__N__

TRAFFIC FLARES - END USER RESPONSIBILITY

NOTE In order to meet the current requirements of NFPA 1901 it is acknowledged that the end user will furnish, a minimum of five (5) appropriate traffic fluorescent traffic cones.

Y__N__

DEFIBRILLATOR - END USER RESPONSIBILITY

NOTE In order to meet the current requirements of NFPA 1901 it is acknowledged that the end user will furnish, the automatic external defibrillator (AED) specified prior to putting this vehicle in service.

Y__N__

SCBA - END USER RESPONSIBILITY

NOTE In order to meet the current requirements of NFPA 1901 it is acknowledged that the end user will furnish, the required SCBA (Self-Contained Breathing Apparatus) specified for each seated position, but not fewer than four (4), prior to putting this vehicle in service.

Y__N__

SCBA SPARE CYLINDERS- END USER RESPONSIBILITY

NOTE In order to meet the current requirements of NFPA 1901 it is acknowledged that the end user will furnish and mount in a bracket fastened to the apparatus or stored in a specially designed storage space, the required SCBA spare cylinders required prior to putting this vehicle in service. Each cylinder

Y__N__

ELECTRICAL - 12 VOLT

Y__N__

NFPA RELATED NON-EMERGENCY 12-VOLT ELECTRICAL STANDARDS:

ELECTRICAL WIRING INSTALLATION - 12 VDC

All electrical circuit wiring installed by the apparatus body builder is to be stranded copper alloy conductors of a gauge rated to carry 125% of the maximum current for which the current is protected. Wiring is to be colored and/or printed with circuit function code over each conductor's entire length.

Original non-protected chassis wiring, extending to rear, including: left turn circuit, right turn circuit, brake circuit, and back-up light circuit is to be re-routed to the interior chassis cab. New replacement color coded legend imprinted SXL insulated multi-stranded copper chassis wiring is to extend from chassis cab to rear body electrical chassis functions. Wiring is to be enclosed inside specified apparatus body in heat resistant vinyl loom.

AMBER TURN LIGHT ACTIVATION

Dedicated wiring shall be provided from chassis turn signal control, to the rear of the apparatus, for signaling of the specified apparatus body left and right side rear amber turn lights. Rear amber turn lights are not to be activated by brake lights.

ELECTRICAL WIRING INSTALLATION PERFORMANCE - 12 VDC

All wires are to be of sufficient size so that voltage drop in any electrical device shall not exceed 15%.

BATTERY CABLE INSTALLATION STANDARDS

Chassis battery cables are to be routed from batteries' common positive to engine starter, return from engine starter to battery switch, and from battery switch to the chassis power distribution terminal post and to post located on a frame rail, and then to the apparatus body power distribution center (PDC). All

battery cables are to be appropriately sized welding cable, heavily insulated super fine multi-stranded copper enclosed within high temperature vinyl loom and equipped with plated copper soldered terminals/lugs. Edge protector or rubber grommet is to be furnished where ever battery cables pass through sheet metal panels.

AUDIBLE DEVICE INSTALLATION STANDARDS

When furnished, air horns, electric siren, electronic siren speakers, and other audible emergency equipment are to be mounted as low and as far forward on the apparatus as practical. Audible warning equipment is not to be mounted on the roof of the chassis cab.

NON-REMOVABLE IGNITION DEVICE

The chassis ignition actuation is to be by a rotary/toggle style switch, or by a key switch with key permanently chained to the dashboard.

Y__N__

WIRING HARNESES

All apparatus body wiring for specified lights and electrical equipment is to be suitably protected inside heat resistant vinyl, forming multiple harnesses. Multiple harnesses are to run from chassis cab and apparatus body to a PDC (power distribution center). Harnesses are to consist of individual legend imprinted multi-stranded copper color coded SAE-J 1128 compliant automotive wires inside vinyl loom. Spare wires are to run throughout the apparatus compartmented body so as to allow for future installations of electrical accessories, while using original harnesses. All wiring is to be identified, "imprinted" with number and/or function. Auto-reset circuit breakers are to be furnished, of various amperage capacities, sized for intended load.

All 12-volt switches, relays, terminals, connectors, and wiring are to have a direct current rating of 125% of maximum current for which the current is protected. All wiring terminals are to be machine crimped, pull-tested during assembly.

APPARATUS BODY POWER DISTRIBUTION CENTER

An enclosed 12 volt electrical cavity is to be provided in the driver's side lower front compartment. This cavity is to be recessed inboard a front compartment removable bulkhead, of adequate size. to house all of the body wiring junction points, terminal strips, relays, etc. The design of this cavity must not decrease the storage capacity area of the compartment in which it is located. A flush mounted removable panel is to be provided for access to this cavity, panel to be equipped with a minimum of four (4) flush mounted latches.

The power distribution center is to be located interior of 12 volt electrical cavity, and is to contain engineered electrical components and waterproof pin/socket bulkhead connectors. Multiple circuit breaker sockets are to be furnished for future use.

BATTERY CABLE UPGRADE

A 600 amp fuse protected 2-0 multi-stranded copper insulated battery cable is to be run inside protective loom, extending from specified battery disconnect to a chassis frame mounted threaded copper stud, providing power to high amperage items such as: primer motor, electrical discharge valves, reel rewind motors, generator starter motor, etc.

"Vehicle Specific" wiring information is to be provided for this particular apparatus "as built" upon completed delivery of the same. Information to be in spreadsheet format, describing PDC connections and functions.

Y__N__

APPARATUS LIGHTING INSTALLATION STANDARDS:

All specified 12-volt to be in accordance with D.O.T. regulations at time of purchase.

WALKWAY, STANDING PLATFORM, AND WORK AREA LIGHTING

Specified standing, stepping, and walking surface lighting shall be located to minimize accidental breakage.

LIGHTING INSTALLATION REQUIREMENTS

All specified light fixtures to be located/fitted prior to and re-installed after finish painting. Where fixture wiring passes through metal body panel, the pass-thru hole to be equipped with a rubber grommet. All specified light fixtures shall be installed, using stainless steel screws with non-metallic "replaceable" threaded inserts, to allow removal of light fixture, from exterior of body. Where light fixtures are to be installed on a painted panel, all light fixture mounting holes, grommet holes, and fastener holes shall be machined/cut-out prior to prime and finish painting, so that all metal edge surfaces receive the same protective coating. Where holes are cut or drilled, after finish painting, same holes shall receive paint finishes prior to insertion of fasteners and threaded inserts.

FMVSS LIGHTING CONFIGURATION

The following specified rear body tail/stop, turn and back up lights to be positioned: Red (tail/stop) TOP, Amber (turn) MIDDLE, and Clear (back up) BOTTOM, driver's and passenger's side rear of body.

Y__N__

VEHICLE DATA RECORDER AND SEAT BELT WARNING DEVICE:

A Weldon Vehicle Data Recorder with seat belt warning device to be furnished and installed in the chassis cab. Software shall be delivered with the apparatus capable of producing the minimal reports as required by NFPA 1901 2009 Edition.

Y__N__

ELECTRICAL CONSOLE BETWEEN FRONT SEATS

A custom-built fabricated aluminum electrical console to be furnished, inside chassis cab, between driver's and officers seats. Console to be of maximum width, with top surface same height at driver's and officer's seat bottom cushions. Top surface of electrical console to accommodate specified switch panel, pump shift assembly, battery switch, and other following specified accessories. Console to be "DA" natural aluminum finish.

Y__N__

2-MAP STORAGE MODULE ATTACHED TO FLOOR MOUNTED CONSOLE

A custom fabricated smooth aluminum two (2) pocket MAP storage module is to be provided, attached to the back side of the specified pedestal style electrical console. Pockets are each to be full width of the console, at least 8-inches deep by 2-inches front-to-rear.

Y__N__

ROCKER SWITCH PANEL - WITH MASTER ROCKER - ON CONSOLE

Specified emergency lighting fixtures, non-emergency lighting fixtures, and electrical components are to be individually activated by fully illuminated rocker style switches. Emergency lighting switches to be illuminated RED, non-emergency switches to be illuminated a contrasting color. An illuminated red switch shall be furnished to left of emergency lighting rocker switches, identified as "MASTER WARN SWITCH". Master Warn Switch to provide power for individual emergency lighting switches. Back-lit nametags, describing function of each individual switch, to be located above toggle and rocker switches. Switches are to be mounted in such a way so as to prevent windshield glare.

Controls and switches, which are expected to be operated by the driver while the apparatus is in motion, are to be within convenient reach of the driver. The controls to operate the siren to be within convenient reach of both driver and front passenger (officer).

Y__N__

MASTER BATTERY SWITCH

The original vehicle's Master Switch will be retained, all newly installed 12-volt electrical devices shall be controlled by this original Master Switch.

Y__N__

LED REAR STEP LIGHTS

Two (2), 12-volt Grote model 60571 LED courtesy step lights are to be furnished, located to illuminate step surfaces at the rear of the body. Light fixture to have polished stainless bezel and shielded clear polycarbonate lens. Lights to be activated by parking brake set.

Y__N__

DOT LIGHTING

REAR LED ID/MARKER LIGHTING

Five (5), rectangular surface mount 12-volt dual LED bulb marker lights with red reflective lenses to be furnished, located: two (2) recessed into outboard rear tailboard corner flanges, and three (3) recessed behind center rear tailboard flange. Diamond shape cut outs are to expose light fixtures. Marker lights to be activated by headlamp switch.

The three (3) LED marker lights located at the rear to be:

As close as practical to the vertical Centerline.

Centers spaced not less than six (6) inches or more than twelve (12) inches apart.

Red in color.

All at the same height.

The two (2) LED outboard marker lights located at the rear shall be installed:

To indicate the overall width of the vehicle.

At the same height.

To be visible from the rear and the side.

MID-TURN/MARKERS

Two (2), surface mount mid-ship Weldon model 9186-8580-29 LED dual element, combination marker & turn lights, are to be furnished, located: one (1) driver's side mid-ship vehicle and one (1) passenger's side mid-ship vehicle. Light fixtures are to have Amber lens. Marker Light is to be steady on with headlights, Turn Lights are to have flashing element, activated by vehicle turn signals.

Per FMVSS 108 and CMVSS 108 requirements.

Y__N__

STOP/TAIL LIGHTS

Two (2), Whelen model 60BTDD, Red element 5" x 8" rectangular surface mount LED combination stop/tail lights to be furnished, mounted each side at rear of body. Lights to be wired for activation by service brake and headlamp switch.

REAR TURN SIGNALS

Two (2), Whelen model 60A00TAD, Amber element 5" x 8" rectangular surface mount LED turn signal lights with populated arrow shape and multiple flash patterns to be furnished, mounted one each side at rear of body. Lights to be wired for activation by left or right turn signal (not by brake lights).

BACK-UP LIGHTS

Two (2), Whelen 60C00VCD, Clear element rectangular surface mount LED back up lights to be furnished, mounted one each side at rear of body. Lights to be wired for activation by reverse gear of truck transmission.

Above specified lights to include appropriate "chrome plated" 6EFLANGE(s) and be bolted in position, evenly spaced, driver's side and passenger's side rear body corners.

Y__N__

BACK-UP ALARM

One (1), 12-volt Ecco model 520 electronic back-up alarm to be furnished, mounted at rear below body, activated by reverse gear of truck transmission.

Y__N__

DO NOT MOVE APPARATUS "HAZARD" INDICATOR LIGHT

An LED style flashing indicator light shall be furnished, installed on cab dashboard, visible to driver, and as per current NFPA requirements, the light shall be illuminated automatically, as listed below:

The light shall be labeled "**DO NOT MOVE APPARATUS IF LIGHT IS ON**".

Y__N__

DEVICES WHICH ACTIVATE THE "DO NOT MOVE APPARATUS" INDICATORS

Opened chassis cab doors, crew cab doors, and/or open apparatus body exterior compartment doors, are to activate/illuminate the above specified "DO NOT MOVE APPARATUS" hazard warning indicator light.

Y__N__

COMPARTMENT INTERIOR LIGHTING

See APPARATUS BODY segment of specifications, for description, and location of provided body compartments interior lighting.

ENGINE COMPARTMENT LIGHT, LED

Y__N__

One (1), Truck-Lite, Weldon, or equal surface mount 12-volt LED engine compartment interior light to be furnished, located engine compartment underside engine hood. Light to be activated by an individual light fixture mounted switch.

PERIMETER UNDERCAB LIGHTS

Y__N__

Two (2) each, 4" LED grommet mount under chassis cab 12-volt ground lights to be furnished, located one (1) driver's side and one (1) passenger's side, beneath cab doors. Lenses to be 4" diameter, Clear. Lights to be completely sealed for weather resistance. Lights to be activated by setting of the parking brake.

PERIMETER UNDERBODY LIGHTS

Y__N__

Five (5) each, 4" LED grommet mount under body 12-volt ground lights to be furnished, located: two (2) each driver's side ahead of and behind rear wheels, two (2) each passenger's side ahead of and behind rear wheels, one (1) each center rear underside tailboard. Lights to be completely sealed for weather resistance, lenses 4" diameter. Lights to be wired for activation by setting of the parking brake.

BOW/PARKING LIGHTS, STAINLESS STEEL HOUSING

Y__N__

Two (2), Zico model ZQL-SS-H7614, 7-3/4" x 8-5/8" oval recessed flange mount "parking" lights are to be furnished. Light housings to be polished stainless steel, lenses to be 5" Clear.

12V PARKING LIGHT LOCATIONS

Y__N__

The above specified 12V parking (bow) lights shall be located driver and passenger side rear body wheel wells rearward facing.

APPARATUS BODY 12-VOLT SCENE LIGHTING

Y__N__

TELESCOPIC 15,000 LUMEN SCENELIGHT

Y__N__

One (1) Fire Research Spectra model SPA530-Q15 side mount push up telescopic light(s) shall be installed. The light pole(s) shall be anodized aluminum and have a knurled twist lock mechanism to secure the extension pole in position. The extension pole shall rotate 360 degrees. The outer pole shall be a grooved aluminum extrusion and qualify as an NFPA compliant handrail. The pole mounting brackets shall have a 3 1/2" offset. Wiring shall extend from the pole bottom with a 4' retractile cord.

The lamphead is to be LED Scenelight style DC 15,000lm.

Location of Scene Light shall be on front body corner(s).

Lights to be switched per Customer instruction.

SIDES OF BODY, 12-VOLT SCENE LIGHTS

Y__N__

Four (4), Whelen model 60C0ELZR, 4" x 6" rectangular recess mount LED scene lights, with 6EFLANGE chrome bezels shall be furnished, located at rear of body. Lights to have 8-32 degree internal optics, drivers side lens Clear, passenger side lens Clear. Scene lights to be activated by a two (2) illuminated rocker switches, identified as: "**DRIVER SCENE LIGHTS**".& "**PASSENGER SCENE LIGHTS**"

Y__N__

12 VOLT SCENE LIGHTS: UPPER BODY REAR FACING, 2-EACH

Two (2), Whelen model 6SC0ENZR, rectangular chrome plated flange, recess mounted LED scene lights to be furnished and installed, located one (1) each side at the upper rear outboard corners of body, rear facing.

The lights shall be switched in the chassis cab, identified as: "**DRIVER AND PASSENGER REAR SCENE LIGHTS**".

Y__N__

12V REAR SCENE LIGHT SWITCHING, CAB SWITCH AND REVERSE GEAR

Specified 12V scene light(s) are to be activated by two (2) sources. one (1) cab dashboard switch is to be provided, in addition to cab switching, lights are to be activated by reverse gear of vehicle transmission. Switch is to be labeled to identify location and type of lights to be switched.

Y__N__

DUAL (2) GROVER 1512 "STUTTER-TONE" AIR HORNS

Two (2), Grover model 1512, 21-inch long single base chrome plated stuttertone air horns are to be furnished, with surface mount bolt-on pedestals, mounted as following specified. Air horns are to be individually piped to the specified air delivery device using parallel 1/4" i.d. nylon tubings, of identical lengths (for matching air flow), and threaded brass fittings.

Y__N__

SIDE ENGINE HOOD AIR HORN MOUNTINGS

The above specified Air horns are to be mounted on the sides of the chassis tilting fiberglass engine hood, above the fender; one (1) driver side and one (1) passenger side.

Y__N__

SELECTOR SWITCH: ACTIVATE AIR/ELECTRIC HORNS, STEERING WHEEL BUTTON

Air horns are to be activated by the steering wheel horn button. A switch console mounted two-position horn selector rocker style switch is to be provided, top position to select air horns, and bottom position selects chassis electric horns.

Y__N__

ELECTRONIC CODE III SIREN

One (1), Code 3 model 3692, electronic siren amplifier to be furnished. A built-in microphone to be furnished with coil cord and mounting clip. Siren amplifier to be wired to the specified electronic siren speaker(s).

Y__N__

Siren control head shall be located Surface mounted to center console.

Y__N__

100 WATT SPEAKER

One (1), Whelen model SA315P, 100-watt rectangular concealed speaker to be furnished, located recessed behind front bumper. Vertical surface of front bumper to be "cut-out", back side (between bumper and speaker) furnished with polished stainless steel speaker grille.

Y__N__

CAB ROOF LIGHTBAR: WHELEN FREEDOM-V, 55" RED & CLEAR LED

One (1ea), Whelen "Freedom" model F4N2QLED, 55" long Linear-LED lightbar shall be furnished and installed, permanently mounted to forward roof top of chassis cab.

Lightbar shall be provided with:

Six (6) red LED's, located: 2-forward facing, 2-front corner facing, and 2-side facing.

Two (2) clear LED's, located: 2-forward facing.

Lightbar shall be switched in the chassis cab, identified as: "CAB ROOF LIGHTBAR"

NOTE: Activation of vehicle's Parking Brake shall disengage any forward facing clear lights.

Y__N__

TRAFFIC DIRECTING LIGHT BAR - REAR OF BODY

One (1), Whelen model TAM85 Traffic Directing 46" wide light bar with eight (8) Amber TIR6 Super LED lamps, and one (1) TACTRL1 control head is to be furnished. The light bar is to be surface mounted at center rear of apparatus, as high as possible. Control head is to be installed inside driver's compartment, location as designated by Customer.

Y__N__

RECESSED MOUNTING OF REAR TRAFFIC DIRECTING LIGHT BAR

The optionally specified rear body mounted traffic directing light bar is to be "recess" mounted into the rear body panel, so as to be flush with surrounding metal surfaces thereby protecting the light bar and lenses. A fabricated recess housing (material matching to rear body panel) is to be furnished, slightly larger than the width, height, and depth of the specified light bar. Recessed housing is to be perimeter flanged, seal caulked, bolted to and easily removable from the vertical rear body panel.

Y__N__

GRILLE WARNING LIGHTS - LED

Two (2), Whelen 500 series, TIR Super LED, 5" x 1-5/8" rectangular surface mount LED light heads and two (2) 5TSMAC chrome plated surrounds to be furnished, surface mounted located on front grille. Light elements to be RED light lens to be RED. Lights to be activated by a separate illuminated rocker switch, identified by function.

Y__N__

FRONT LOWER LEVEL LED WARNING LIGHTS

Two (2), Whelen model 500 series TIR6 Super LED rectangular lighthoods and two (2) 5TSMAC chrome plated surrounds to be furnished, surface mounted located driver and passenger front bumper sides or hood/cab sides. Light lenses to be driver's Red, passenger's side Red. Lights to be activated by a separate illuminated rocker switch, identified by function.

Y__N__

B & D LOWER ZONE MID-SECTION SIDE, LED WARNING LIGHTS

Two (2), surface mount Whelen 500 series TIR6 Super Red flashing LED lights with Red lens and chrome trim flanges are to be furnished,, one (1) on each side of the apparatus in the front or the rear portion of the rear wheel wells. Lights are to meet the NFPA Zone B & D lower level lighting requirement.

Y__N__

B & D LOWER ZONE REAR SIDE, LED WARNING LIGHTS

Two (2), surface mount Whelen 500 series TIR6 Red flashing LED lights with Red lens and chrome trim flanges are to be furnished, two (2) on each side of the apparatus body, rearward of rear body wheel wells. Lights are to meet the NFPA Zone B & D lower level lighting requirement.

Y__N__

LOWER REAR OF BODY LED WARNING LIGHTS

Two (2), Whelen 500 series TIR6 Super LED rectangular surface mounted light heads to be furnished, located one (1) driver's side lower rear body corner, one (1) passenger's side lower rear body corner. Lights shall be red in color elements and lenses, and equipped with chrome bezels. Lights shall be activated by a single illuminated rocker switch, labeled "LOWER WARNING LIGHTS".

Y__N__

REAR ZONE B-C-D, UPPER LEVEL LED LIGHTS: 1-"B", 4-"C", AND 1-"D"

Six (6), Whelen 500 series TIR6 Super LED rectangular surface mounted light heads, with six (6) each 5TSMAC chrome plated surrounds, to be furnished and mounted: two (2) rear upper sides (1-each side) two (2) driver's side rear and two (2) passenger's side rear "stacked" one above. All light elements and light lenses to be RED. Lights to be activated by specified switch, identified by function.

Y__N__

PAINT PROCESS

Body surfaces which are to be painted, are to be cleaned using DX436 wax & grease remover. Next, the entire to be painted surface is to be sprayed with F3963 Etching Primer which exhibits very good adhesion and corrosion resistance. A high build primer surfacer, F3975, is to then be applied directly over the etch primer. After allowing the primer surfacer to air dry, the entire unit is to be sanded using dual action sanders leaving a very smooth surface to be painted.

The paint applied to the apparatus shall be PPG Industries Delfleet® Evolution brand, applied throughout a multistep process including at least two coats of each color and clearcoat finish.

Special attention will be given to proper application of coatings according to the specified film build (wet and dry) recommendations of PPG. Product or technical data bulletins should be consulted for any needed information above that which has been outlined herein. All paint materials shall be prepared and applied in accordance with this specification and the paint manufacturer's latest written recommendation prior to paint application.

The coating shall be baked or air dried. The coatings shall provide full gloss when finished curing and must be suitable for application by conventional pressure air atomizing spray.

Body panels and sub-frame area which cannot be painted after assembly shall be pre-primed and painted prior to main painting process.

The coatings shall not contain lead, cadmium or arsenic. The polyisocyanate component shall consist of only aliphatic isocyanates, with no portion being aromatic isocyanate in character. The solvents used in

all components and products shall not contain ethylene glycol, mono-ethyl ethers, or their acetates (commercially recognized as cello solves), nor shall they contain any chlorinated hydrocarbons. The products shall have no adverse health effects or present any unusual hazard to personnel when used according to manufacturer's recommendations for handling and proper protective safety equipment, and for its intended use.

The coating system, as supplied and recommended for application, shall meet all applicable federal, state and local laws and regulations now in force or at any time during the courses of the bid.

The specified apparatus body painted surfaces shall receive the primer coats and the finish coats. These painted surfaces shall have a finish with no runs, sags, craters, pinholes or other defects.

HIGH LUSTER BUFFING

The specified color painted components (except roll-up door slats) shall be "wet" color sanded with ultra-fine media, machine buffed with rubbing compound and wool pad, machine buffed with glaze and foam pad, and hand wiped to remove residue.

PAINT COLOR

Finish color of the apparatus body exterior and painted accessories shall be of a single color to match major chassis cab exterior color.

Unless otherwise specified, the chassis frame, axles, and suspension shall remain the OEM color of Black.

COMPARTMENT INTERIORS

The enclosed compartment interiors, side and rear, are to be unpainted natural smooth metal finish. Where body material is aluminum, the metal is to have a machine "swirl" finish (marbled), consisting of 80-grit 4-inch diameter circular patterns overlapping each other. Where metal specified to be stainless steel, the finish is to be mill polished #4-brushed.

COMPARTMENT FABRICATED ACCESSORIES

The optionally specified fabricated compartment accessories (shelves and boards, etc), are to be unpainted natural smooth metal finish. Where material is aluminum, the metal is to have a machine "swirl-pattern" finish, where metal is stainless steel, the finish is to be #4-brushed.

BODY RE-ASSEMBLY

During reassembly of all individually painted fabricated components, special care shall be taken to prevent deterioration of top paint coats of mating flanged areas. Fabricated accessory components, which have been removed prior to painting, shall be seal coated where mated to dissimilar metal painted components. Accessory fabrications to be installed using stainless steel button socket head cap screw fasteners. Edges of accessories, where meeting exterior body painted fabrications, shall be properly caulked with G.E. or equal silver metallic body sealant to prevent moisture accumulation between metal layers.

TOUCH-UP PAINT

One (1), full quart of original finish color top coat paint material shall be provided for use as future touch-up paint.

MACHINE "SWIRLED" FINISH ON BULKHEAD WIRE COVERS

Y__N__

The optionally specified interior compartment front and rear bulkhead wire covers are to be abrasive machined, where exposed inside compartment, with a "swirl" pattern, providing a scuff resistant aluminum finish.

Y__N__

MACHINE "SWIRLED" FINISH ON ROLL-OUT TRAY(S)

The optionally specified one (1) each Roll-Out Tray(s) to be abrasive machined, fully on interior floor and perimeter flanges, with a "swirl" pattern, providing a scuff resistant marbled natural aluminum finish. Swirl machining of the metal surface is to be performed after profile cutting of tray and prior to its fabrication.

Y__N__

CHASSIS FRAME AND DRIVE TRAIN FINISH, TO REMAIN ORIGINAL OEM FINISH

The chassis frame assembly is to remain the color and paint quality as received from the chassis manufacturer (OEM). The frame and drive train components are not be repainted.

Components that are considered part of the "frame assembly" are frame rails, cross members, axles, suspension, steering gear and the fuel tank.

Y__N__

DISSIMILAR METALS CORROSION PREVENTION

In an effort to prevent "dissimilar metals corrosion" all apparatus ferrous and non-ferrous metals shall be isolated from one another, using barrier tapes, vinyl or rubberized coatings, and other methods to isolate the mating surfaces. Where aluminum and steel or stainless steel are "mated", the entire mating surface must be lined or coated, even where surfaces are already prime and/or color coat painted.

Since all fasteners must be stainless steel, it is imperative to provide fasteners with the smallest possible head profile, such as button-socket-head cap screws, in lieu of pan head or truss head screws. Additionally, all screw and nut fasteners shall be coated with "Harpen Wax" to prevent fastener discoloration when exposed to dissimilar aluminum. Rubber and/or vinyl washers shall NOT be used, as they collapse as allow fasteners to loosen.

Where stainless steel piano hinges are bolted to aluminum, the hinge leaf shall first be lined with a brush on undercoating.

Y__N__

ADDITIONAL CORROSION PREVENTION

In addition to the above specified corrosion prevention, the apparatus shall be assembled using ECK or electrolysis corrosion control, on all high corrosion potential areas, such as door latches, door hinges, trim plates, fenderettes, etc. This coating is a high zinc compound that shall act as a sacrificial barrier to prevent electrolysis and corrosion between dissimilar metals.

All 3/8" diameter and smaller screws and bolts shall be stainless steel with a wax coating, designed to reduce the potential for electrolysis and corrosion to occur where items are assembled and attached.

Y__N__

REFLECTIVE STRIPING, 4" WIDE, SCOTCHLITE

A 4" wide horizontal RED ScotchLite reflective stripe is to be affixed to the full length of driver side and passenger side of the vehicle, in conformance with NFPA 1901 reflectivity requirement.

Y__N__

REFLECTIVE MEDIA (STRIPING), CAB INTERIOR DOORS

A White ScotchLite or equivalent reflective stripe is to be affixed to the interior of each chassis cab door. The stripes are each to be a minimum of 96 sq. in. so as to meet the NFPA 1901 requirement.

Y__N__

BLACK TRIMMED GOLD STRIPING BORDERING REFLECTIVE STRIPES

The apparatus body reflective striping shall be provided with a contrasting top and bottom border, consisting of 1/2" wide 3M Gold ScotchCal with 1/8" top. Border striping to extend full length of vehicle driver's and passenger's sides, positioned approximately 1" above the specified reflective stripe.

Y__N__

GOLD LETTERING, BLACK SHADED

Driver's side and passenger's side chassis cab front doors shall be furnished with CAD generated machine cut simulated Gold Leaf lettering, suitably shaded with Black vinyl.

Forty-one (41) to sixty (60) CAD generated machine cut simulated gold leaf letters, 3.00" tall, highlighted with black vinyl shading shall be provided.

Lettering to be encapsulated between two (2) layers of Mylar, for protection and longevity.

Y__N__

LETTERING DESIGN

The driver's side and the passenger's side (2-each) chassis cab front doors shall be lettered as follows:

The Department name (top row) shall be in an "ARCH", to read: **WASCOTT**

The words: **FIRE DEPT.** shall be in a "straight-line" immediately below Fire Department name.

Y__N__

VEHICLE NUMBER

The vehicle's assigned number shall be displayed in the following form:

TENDER 2

Lettering shall match the above specified Department name, in style, material, and size; and be located Per Customer.

Y__N__

8" SCOTCHLITE, BLACK SHADED

Five (5) CAD generated machine cut ScotchLite letters, 8" tall, highlighted with black vinyl shading are to be provided. Located on chassis roof to read WAS T2

Y__N__

FLAG EMBLEMS WITH EAGLE HEAD

Two (2) color imaged emblems, R. J. Marx or approved equal, not to exceed 14" high x 21.4" wide featuring a "Flying American Flag" with Eagle Head to be furnished and installed per Fire Dept approval.

Y__N__

CHEVRON STRIPING, REAR APPARATUS, RUBY RED & SUN FLOWER YELLOW

Up to 48 square feet of 6" multiple diagonal 3M Scotchlite or an equivalent brand reflective stripes are to be provided, full width at rear of apparatus body. Stripes are to form "Chevrons", using alternating Ruby Red/Sun Flower Yellow reflective stripes, only interrupted by the rear apparatus lighting, handrails, steps, and door hardware. Chevron patterned material is to be applied on to the flat metal "painted" surface, prior to the final installation of the specified bolt-on (removable) fixtures and accessories. Stripes shall be oriented at 45-degree angle, sloping downward and away from centerline of vehicle.

Y__N__

REFLECTIVE STRIPING, ON FRONT BUMPER SURFACE

A single reflective stripe is to be provided, full width of the front bumper. Stripe is to be a single piece of material, only interrupted by the bumper accessories,. The stripe width, color, and reflectivity type are to match the body striping.

Y__N__

LINE VOLTAGE SHOREPOWER ACCESSORIES