

TOWN OF SOUTHAMPTON
Invitation For Bids (IFB)
Fire Apparatus

NOTICE IS HEREBY GIVEN that sealed bids for the purchase of a **Custom Built Combination Pumper/Tanker** will be received by the **Town of Southampton** until November 17, 2009 at 2 pm, at which time they will be publicly opened and read aloud.

Each bid shall be on the form of proposal to be provided by the **Town of Southampton** and shall be enclosed in a sealed envelope mailed or delivered to the **Town of Southampton, 8 East Street, Southampton, MA 01073** and marked "**Fire Apparatus Bid Proposal**".

Invitation For Bid (IFB) packages containing detailed minimum specifications can be picked up at the Southampton Fire Station, 204 College Highway, Southampton, MA 01073, between the hours of 9 am and 4 pm, Monday thru Thursday. Packages are also available by mail or electronically by calling Chief Hyde at (413) 527-1700 or by emailing chiefhyde@charterinternet.com. Hard copies are \$10.00 plus mailing costs.

Bids for the purchase of said fire apparatus shall be accompanied by a cashiers check made payable to the ***Town of Southampton*** or a duly executed bid bond with a recognized surety company for at least the sum of **10%** of the amount of the bid, which it is agreed by the contractor will be forfeited in the event this proposal is accepted and the contract, through no fault of the Town, is not executed. The full amount of such deposit shall be returned within ten (10) days following the award of the contract covered by such specifications or the rejection of the bid of such person or corporation.

An award will be made within thirty (30) days of the opening and is subject to the approval of the Board of Selectmen. The determination whether specifications have been met or exceeded will be made by the Southampton Fire Chief. The Town of Southampton reserves the right to reject any or all bids in total or in part as may be deemed to serve the best interest of the Town.

A non-conclusive bidding certificate in the form attached to the specifications must be submitted with each bid.

No bid may be withdrawn for a period of thirty (30) days from the date of the bid opening.

Signed: Diana M. Schindler
Chief Procurement Officer

Southampton Fire Department

chiefhyde@charterinternet.com

413 527-1700



Stephen J. Hyde Sr.

Fire Chief

Southampton Fire Department Custom Built 1250 GPM Triple Combination Pumper

GENERAL REQUIREMENTS

It is the intent of these specifications to cover the furnishing and delivery to the purchaser, complete apparatus equipped as specified. All specifications herein contained are considered as minimum. Some items have been specified by brand name or model number. These have been carefully selected because of their reliability, compatibility with present equipment, and local availability of parts.

Each bid must be accompanied by bidder's accurate written specifications covering the apparatus and equipment, which it is proposing to furnish and to which the apparatus furnished under the Contract must conform.

No exceptions will be allowed relating to the make and model of fire pump, valves and plumbing, gauge and types of materials, size of compartments, methods of construction, and overall design features of the apparatus.

Such details and other construction features not specifically covered herein shall conform with all State and Federal requirements, and the NFPA Pamphlet No. 1901 "Standard for Automotive Fire Apparatus" in effect at the time the contract is signed.

Any test equipment required or expense incurred for the ULI pump test shall be borne by the contractor supplying this equipment.

PO Box 428, 204 College Highway Southampton Massachusetts 01073

Service Requirements

Each bidder shall supply, with their proposal, detailed information on the bidder's ability to perform routine and emergency service on the apparatus after delivery. Detailed information shall be provided on service facilities, personnel, service vehicles, and the type and nature of repair work the bidder is able to provide. Bidder shall state the number of miles, no more than 50 miles, from the Purchaser's facility to the nearest fully staffed repair facility operated by the bidder. Bidder will be responsible to pick up and deliver vehicle if there is a problem while under warranty within twenty – four (24) hours of notification of a problem. If vehicle is going to be out of service for more than five business days , the bidder will supply a vehicle equal or better than this vehicle (bidder shall supply a bond for this while this vehicle is under warranty) . It is the intent of the Purchaser to assure that parts and service are readily available for the equipment specified. Service capabilities will be one of the criteria for award of this contract.

MANUFACTURER'S RESPONSIBILITY

The manufacturer shall maintain full insurance coverage on the apparatus, including but not limited to the chassis, until the completed unit is delivered to, accepted by, and paid for by the purchaser. The bidder receiving the award, shall defend any and all suits and assume all liability for any and all claims against purchaser or any of its officials for the use of any presented process, device or article forming a part of the Pumper.

LIABILITY

The bidder, if its bid is accepted, shall defend any and all suits and assume liability for use and all claims against the purchaser or any of its officials or agents for the use of any patents, process, device or article forming a part of the apparatus furnished under contract.

INSTRUCTIONS TO BIDDERS

The following instructions are to be observed and complied with by all bidders in preparing a bid proposal. To be considered, all proposals must be made in accordance with these "Instructions to Bidders". **NON-COMPLIANCE WITH THESE INSTRUCTIONS WILL BE CAUSE FOR IMMEDIATE REJECTION OF THE BID PROPOSAL.**

Any contract into which the purchaser shall enter will include the advertised specifications, in addition to the bidder's proposal specifications. Where the advertised specifications require brand names, model numbers, dimensions or capabilities of components, same shall be supplied when possible as all have been carefully selected for their reliability, performance and ease of replacement on a local basis.

Should any bidder find, during examination of the advertised specifications, any discrepancies, omissions, ambiguities or conflicts, or be in doubt as to their meaning, he/she shall request from the purchaser, in writing, an interpretation or correction thereof not later than five (5) working days prior to the date of bid opening.

The purchaser will review the question, and where information sought is not clearly indicated or specified, the purchaser will issue a clarifying or correcting addendum bulletin. Proper interpretation or the making of any necessary inquiry will be sole responsibility of the bidder. Oral answers shall not be binding on the purchaser.

Each bid must give the full business name and address of the bidder. Bids by a partnership must furnish the full name of all partners and must be signed by the partners. Bids by a corporation must be followed by the name of the state of incorporation and by the signature and designation of the President, Vice-President or Secretary. The name of each person signing shall also be typed or printed below the signature.

All bids must remain in effect for a minimum of thirty (30) days.

Bids may be withdrawn by certified mail or telegraphic request from the bidder prior to the time fixed for the opening of the bids. Negligence on the part of the bidder in preparing the bid confers no right for withdrawal of the bid after it has been opened. No bidder may withdraw its bid after the time set for the opening thereof.

Each bidder is required to follow, in the bid proposal specifications, the same sequence as the advertised specifications to allow the purchaser to easily compare the proposed specifications to the advertised specifications on an item by item basis.

Additionally, all bidders are required to submit the advertised specifications in their proposal. When any substitution, exception, variation or clarification is made, the bidder must identify in the "yes" column by inserting the word "sub, except, vary or clarify" and underlining each and every item where the bidder's proposal differs and to consecutively number each differing item. The number shall correspond with the bidder's "SUBSTITUTION, EXCEPTION, VARIATION OR CLARIFICATION" page which must be attached to his/her proposal. A complete, detailed and accurate description of how the item differs from the specified item must be included.

The purchaser assumes that the lack of a substitution, exception, variation or clarification to an item indicates that the item will comply with the advertised specifications regardless of cost to the bidder. Should the item not comply upon completion of the apparatus, and an exception is not indicated and accepted, the item shall be rejected when completed and the bidder shall be required to bring the item into compliance regardless of cost to the bidder. Failure to make such changes as the purchaser may consider necessary to conform to any clause of these specifications within thirty (30) days after notice is given to the bidder to make such changes shall be cause for rejection of the completed apparatus.

FINANCIAL STABILITY SPECIFICATIONS

Ensuring the financial stability of the proposed body builder is a paramount consideration to this department. Financial strength directly relates to the body builders ability to successfully produce an apparatus without jeopardizing fire department funds. In addition, financial strength is vital to this department to insure a body builder will be able to provide warranty service along with replacement parts and service for the life of the apparatus. Failure to be able to provide these lifelong services may cause future increases in maintenance expenses and create undue burden on the department's budget and tax base. This is a situation that this department is unwilling to risk. The body builder, therefore, shall meet certain minimum financial ratios in order to qualify for a bid award. The financial ratios presented shall be that of the consolidated entity; not the consolidated entities parent company; for the body builder.

The financial ratios required to be met shall be derived from the most recent audited financial statements of the body builder proposed. No exceptions.

ANY EXCEPTION taken to this requirement shall immediately render the bid non-responsive and the bidder dismissed from further consideration. Under no circumstance shall a bid be considered where the bidder submits a letter of explanation taking exception to this requirement in lieu of providing the required documentation, nor shall consideration be given to bidders that refuse to submit the required information on the basis that the body builder proposed is a private company. No exceptions.

The three (3) critical financial indicators to be met are as follows:

Debt-to-Equity Ratio: The debt-to-equity ratio of the entity must not exceed a 2.0 rating. A debt-to-equity ratio is defined as that of total liabilities divided by total owners equity. In layman's terms, a low debt-to-equity ratio means the company itself owns a greater share of its assets, as opposed to banks, creditors and other financial institutions. Conversely, companies with high debt-to-equity ratios are those that are generally financing their growth by carrying additional debt. The cost of this debt-financing may outweigh the return that the company generates on the debt through business activities and become too much for the company to manage. This can lead to bankruptcy, which is of grave concern to this purchaser.

Debt Coverage Ratio: The debt coverage ratio of the entity must exceed a 100.0 rating. A debt coverage ratio is defined as annual net income divided by the current portion of long-term debt. A high debt coverage ratio means the company can easily meet its payment obligations with its banks and other creditors. A low debt coverage ratio clearly infers the company may struggle to meet these obligations, which could ultimately delay or cancel production of apparatus.

Equity Ratio: The equity ratio of the body builder must exceed a .30 rating. An equity ratio is defined as total owners equity divided by total assets. The equity ratio is another good indicator of the level of leverage (or financing) used by a company. The equity ratio measures the proportion of the total assets that are financed by owners and not creditors. A high equity ratio provides the company with flexibility in financing growth and other needs.

All financial indicators required by this section must be verified by Dun and Bradstreet, the nationally-recognized, independent financial analysis company. Bids furnished without the required financial information shall render the bid non-responsive and the bidder dismissed from further consideration. No exceptions.

Reliability of Contractor

Contractor shall furnish satisfactory evidence that he has the ability to construct the apparatus specified, and shall state in the bid proposal the location of the factory where the apparatus is to be built, and also where future service work will be performed.

Proposals will only be considered which are submitted by full time fire apparatus manufacturers who are current members of the Fire Apparatus Manufacturers Association (FAMA). FAMA is a nonprofit organization designed to keep fire truck manufacturers abreast with latest technologies and governing standards, and to act as a liaison to the IAFC and NFPA. Bidder must have the ability to show evidence of their affiliation to the FAMA in the bid proposal.

All bidders shall provide with their proposal, pictures of similar apparatus as that being specified, and the names of ten cities where similar apparatus have been furnished. Bidders shall provide the name and telephone number of a contact person for each City listed. Failure to provide a users list with the bid proposal shall be cause for rejection of that proposal.

PROPOSAL & PERFORMANCE GUARANTEE

Each proposal must be accompanied by a Bidder's Bond or Cashier's Check in the amount of 10% of the bid submitted a proposal guarantee, which it is agreed by the contractor will be forfeited in the event this proposal is accepted and the contract, through no fault of the Town, is not executed.

Bid bond shall be signed by an Officer of the manufacturing company being bid. Personal or Company checks are not acceptable as a Bonding medium.

A **Performance Bond** must be supplied by the successful bidder within twenty-one (21) days of acceptance of the signed sales contract for the apparatus. The performance bond will be for an amount equal to the full contract price (100% bond). Proof of ability to obtain performance bond shall be submitted with bid (ex. letter from surety, etc.).

All bidders must have the ability to provide the requested Bidder's Bond and Performance Bonds when called for in these specifications. Companies who are only able to provide Supply Bonds in lieu of Performance Bonds will not be considered.

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 twelve (12) million dollars with coverage attained with a minimum of \$2,000,000.00 general 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 two (2) million dollars of general 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 insurance 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.

PROPOSAL DELIVERY AND OPENING

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 "FIRE APPARATUS BID PROPOSAL"

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.

DRAWINGS

A CAD produced line drawing of the exact apparatus being proposed must be furnished with the bid. Since the blueprint drawing is required of all bidders, any bid submitted without a drawing as specified will be considered non-responsive and automatically rejected. Drawing must include the left side with chassis cab, right, and rear views of the vehicle. Drawing must be a large size "D", and shall be a drawing of the exact apparatus as proposed, not a drawing of another similar unit. All submitted drawings will become a part of the bid proposal. These must be approved and signed off by the Chief of the Southampton Fire Department before the vehicle goes into production.

CONTRACT AWARD

The Southampton Fire Department will analyze the bid proposals to ensure specifications have been met and make recommendations to the Board. Contract will be awarded by the Southampton Board of Selectmen, as the Purchaser, to the most responsive and responsible bidder offering the lowest price.

Purchaser reserves the right to waive any informality in the bids received. Further, the Purchaser reserves the right to reject all bids if deemed to be in the best interest of the Town.

COMPLETION DATE AND DELIVERY OF APPARATUS

Bidders shall indicate in their proposals the number of working days (not more than 217 calendar days) for delivery of the completed apparatus (critical to bid award), from the date of the notice to proceed by the Town. If vehicle is not completed and accepted for delivery on time there will be a one hundred dollar (\$100.00) per day penalty until delivered and accepted.

A factory representative will deliver the apparatus and remain in Southampton for an adequate period of time to instruct the Southampton Fire Personnel on the operation, care, and maintenance of the new vehicle.

Before final acceptance of the apparatus, it will be tested in the presence of authorized representatives of the Purchaser.

In the event the apparatus fails to meet the test requirements on the first trial, second trial may be made within thirty (30) days of the date of the first trial. Housing of the apparatus will not constitute acceptance until testing is successfully completed.

Upon delivery all vehicle fluids, including fuel, shall be at their fullest recommended level.

All proposals will provide principle dimensions and weight distribution of the fully loaded, completed vehicle. This will include a filled water tank, specified hose load, 2,000 lbs. of miscellaneous equipment, and an equivalent personnel load of 1,200 lbs. The vehicle must be weighed at a certified weigh station and certificate of TOTAL WEIGHT shall be presented at time of delivery. The completed vehicle will fit in the Southampton Fire Station (Center Station) **NO EXCEPTIONS**.

The manufacturer will supply, at time of delivery copies of the Pump Manufacturer's Certification of Hydrostatic Testing, the Engine Manufacturer's current Certification of Hydrostatic Testing, the Engine

Manufacturer's current Certified Brake horsepower Curve, the Manufacturer's Record of Pump Construction Details, and Underwriter's Laboratory Certification.

A Bill of Sale and the manufacturer's Statement of Origin shall be provided to the purchaser on receipt of payment in full.

PAYMENT TERMS

The Purchaser may elect to pay for the chassis portion of the proposal upon receipt of the chassis by the successful bidder. Bidders shall include the discount available to Purchaser should Purchaser exercise this option.

Upon delivery of the apparatus to the Purchaser's fire station, Purchaser shall be allowed a reasonable time period to inspect completed apparatus and to accept or reject same. Payment for the apparatus shall only be made upon delivery and acceptance of the apparatus at Purchaser's fire station. Purchaser may conditionally accept the apparatus if there are items, in Purchaser's sole discretion, which can be corrected following acceptance. In such case, Purchaser reserves the right to retain a reasonable amount of the purchase price, up to \$10,000, to insure that Bidder will correct said unacceptable items following delivery and conditional acceptance.

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

CERTIFICATE OF NON - COLLUSION:

All bidders must submit a completed Certificate of Non-Collusion (on next page).

CERTIFICATE OF NON-COLLUSION

The undersigned certifies under penalties of perjury that this bid or proposal has been made and submitted in good faith and without collusion or fraud with any other person. As used in this certification, the word "person" shall mean any natural person, business, partnership, corporation, union, committee, club, or other organization, entity, or group of individuals.

(Signature of individual submitting bid or proposal)

(Name of Business)

SOUTHAMPTON FIRE DEPARTMENT

Bid Specifications

Custom Built 1250 GPM Triple Combination Pumper On a 4-Door Cab & Chassis

October 14, 2009

204 College Highway, Southampton Massachusetts, 01073



Southampton Fire Department Apparatus Specifications

BIDDER
COMPLIES

YES NO

MODEL

The chassis shall be a Metro Star model or equal. The cab and chassis shall include design considerations for multiple emergency vehicle applications, rapid transit and maneuverability. The chassis shall be manufactured for heavy duty service with the strength and capacity to support a fully laden apparatus, one hundred (100) percent of the time.

MODEL YEAR

The chassis shall have a vehicle identification number that reflects a 2009 model year or newer.

COUNTRY OF SERVICE

The chassis shall be put in service in the country of United States of America (USA).

OVERALL LENGTH

The vehicle shall not exceed 30' in overall length.

OVERALL HEIGHT

The vehicle shall not exceed 10' in overall height.

WHEELBASE

The vehicle wheelbase shall not exceed 174".

APPARATUS TYPE

The apparatus shall be a pumper vehicle designed for emergency service use which shall be equipped with a permanently mounted fire pump which has a minimum rated capacity of 1250 gallons per minute. The apparatus shall include a water tank and hose body whose primary purpose is to combat structural and associated fires.

VEHICLE TYPE

The chassis shall be manufactured for use as a straight truck type vehicle and designed for the installation of a permanently mounted apparatus behind the cab. The apparatus of the vehicle shall be supplied and installed by the apparatus manufacturer.



Southampton Fire Department Apparatus Specifications

BIDDER
COMPLIES

YES NO

AXLE CONFIGURATION

The chassis shall feature a 4 X 2 axle configuration consisting of a single rear drive axle with a single front steer axle.

GROSS AXLE WEIGHT RATINGS FRONT

The front gross axle weight rating (GAWR) of the chassis shall be 18,000 pounds.

This front gross axle weight rating shall be adequate to carry the weight of the completed apparatus including all equipment and personnel.

GROSS AXLE WEIGHT RATINGS REAR

The rear gross axle weight rating (GAWR) of the chassis shall be 27,000 pounds.

This rear gross axle weight rating shall be adequate to carry the weight of the completed apparatus including all equipment and personnel.

PUMP PROVISION

The chassis shall include provisions to mount a drive line pump in the middle of the chassis, behind the cab, more commonly known as the midship location.

CAB STYLE

The cab shall be a custom, enclosed model, built specifically for the fire service by a company specializing in cab and chassis design for all fire service applications.

The cab shall be manufactured for heavy-duty service utilizing adequate strength and capacity for the application of protecting firefighters. The cab shall be of a modular design offering improved strength, durability and reduced weight. The modular design shall allow for faster, less costly replacement of components. Per pound, sheet panel aluminum extrusions offer a higher tensile strength, 45,000 PSI, and yield strength, 40,000 PSI, than that of lower grade sheet such as 3003-H13. For this reason, the cab shall be of aluminum extrusion construction, which shall offer superior strength and the truest, flattest surface ensuring less expensive paint repairs if needed.

The method of cab construction shall use a process incorporating techniques outlined in accordance with the American Welding Society D1.1-96 requirements for structural steel welding. All aluminum welding shall be completed to the American Welding Society and ANSI D1.2-96 requirements for structural welding of aluminum.



Southampton Fire Department Apparatus Specifications

BIDDER
COMPLIES

YES NO

To provide a superior finish by reducing welds that fatigue cab metal; the roof, the rear wall and side panels shall be assembled using proven industrial adhesives, designed specifically for aluminum fabrication, which exceed the strength of a weld, for construction.

All interior and exterior seams shall be sealed for optimum noise reduction in addition to the most favorable efficiency for heating and cooling retention.

The cab shall be constructed of 5052-H32 Marine Grade, one hundred percent primary aluminum plate. A single formed, one (1) piece extrusion, manufactured from 6061-T6 100 percent primary one- quarter inch thick aluminum shall be used for the "A" pillar adding strength and rigidity to the cab as well as additional roll-over protection. The cab side wall skins and shall be 0.125 inch thick, the rear wall and roof skin shall be 0.19 inch thick, the front skin shall be 0.125 inch thick.

The cab shall incorporate tongue and groove fitted 6061-T6 0.25 inch thick aluminum extrusions for extreme duty situations. The cab shall include multi-layer composite insulation for improved cab heating and cooling in addition to noise reduction.

Proposals offering products built with anything less than the alloy-temper mentioned or from any other material, other than aluminum, shall not be considered. Additionally, any cabs utilizing recycled or recovered aluminum plate or extrusion products shall not be considered due impurities in the composition leading to a lack of strength.

The cab shall incorporate a fully enclosed design, allowing for a spacious cab area with no partition between the front and rear sections of the cab. The walls of the vehicle shall include roof supports allowing for an open design. The outside dimension of the cab shall be 94.00 inches wide with a minimum interior width of 88.00 inches.

The cab overall length shall be 128.00 inches in length with 54.00 inches from the centerline of the front of the axle to the back of the cab. The cab shall offer a height of 58.00 inches from the front floor to the headliner and a rear floor to headliner height of 65.00 inches, at a minimum. All interior measurements shall include the area within the interior trimmed surfaces and not to any unfinished surface.

In order to offer the optimum amount of cab space to occupants, there shall be no consideration given for any cab unable to comply with the minimum measurements for interior cab space as listed.

The cab shall include a driver and officer area with two (2) cab door openings. The front door opening shall offer a clear door opening of 43.00 inches wide X 56.00 inches high. The rear door opening shall offer a clear door opening of 34.00 inches wide X 63.00 inches high. This style of cab shall also include a crew area offering up to eight (8) seating positions.

The cab shall incorporate a two (2) step configuration from the ground to the cab floor for each door opening. The lower step shall be constructed of heavy duty safety grating which meets or



Southampton Fire Department Apparatus Specifications

BIDDER
COMPLIES

YES NO

exceeds Federal Specification RRG-1602-latest revision and performs under dry, greasy, muddy, soapy and icy conditions and offers open drainage.

The first step for the driver and officer area shall measure 11.44 inches deep X 31.13 inches wide. The intermediate step shall measure 8.75 inches deep X 33.00 inches wide. The height from the first step to the intermediate step and the intermediate step to the cab floor shall not exceed 11.00 inches.

The first step for the crew area shall measure 12.13 inches deep X 20.44 inches wide. The intermediate step shall measure 10.50 inches deep X 23.00 inches wide. The height from the first step to the intermediate step and the intermediate step to the cab floor shall not exceed 12.50 inches.

The cab front shall be constructed of 5052-H32 Marine Grade, .090 of an inch thick, one hundred percent primary aluminum plate which shall include a classic front appearance. The front of the cab shall include a cast molded module accommodating up to four (4) Hi/Low beam headlights and two (2) turn signal lights or up to four (4) warning lights.

CAB FRONT FASCIA

The front cab fascia shall be constructed of 5052-H32 Marine Grade, 0.090 of an inch thick, one hundred percent primary aluminum plate which shall be an integral part of the cab.

The cab fascia will encompass the entire front of the aluminum cab structure from the bottom of the windshield to the bottom of the cab and shall be the "Classic" design.

The front cab fascia shall include two (2) molded plastic modules on each side accommodating a total of up to four (4) Hi/Low beam headlights and two (2) turn signal lights or up to four (4) warning lights. Two (2) chrome plated molded plastic bezels shall be provided on each side around each set of two lamps.

FRONT GRILLE

The front fascia shall include a flat, stainless steel front grille s hall be provided on the front of the cab. The grille shall measure 39.00 inches wide X 33.50 inches high X 1.50 inches deep. The grille shall include a minimum free air intake of 632.90 square inches shall be installed on the front of the cab with the upper portion of the grille hinged. The grille shall include two (2) flush push button latches which shall allow access to the front fluid fills of the cab. The front grille shall offer easy access in examination of and adding engine oil or wiper washer fluid as well as access to the windshield wiper motor and linkage.

CAB PAINT EXTERIOR

The cab shall be painted prior to the installation of glass accessories and all other cab trim to ensure complete paint coverage and the maximum in corrosion protection of all metal surfaces.



Southampton Fire Department Apparatus Specifications

BIDDER
COMPLIES

YES NO

All metal surfaces on the entire cab shall be ground by disc to remove any surface oxidation or surface debris which may hinder the paint adhesion. Once the surface is machine ground a high quality acid etching of base primer shall be applied. Upon the application of body fillers and their preparation, the cab shall be primed with a coating designed for corrosion resistance and surface paint adhesion. The maximum thickness of the primer coat shall be 2.00 mils.

The entire cab shall then be coated with an intermediate solid or epoxy surfacing agent that is designed to fill any minor surface defects, provide an adhesive bond between the primer and the paint and improve the color and gloss retention of the color. The finish to this procedure shall be a sanding of the cab with 360 grit paper, the seams shall be sealed with SEM brand seam sealer and painted with two (2) to four (4) coats of an acrylic urethane type system designed to retain color and resist acid rain and most atmospheric chemicals found on the fire ground or emergency scene.

The cab shall then be painted with the upper and lower colors specifically designated by the customer with a minimum thickness of two 2.00 mils of paint, followed by a clear top coat not to exceed 2.00 mils.

CAB PAINT MANUFACTURER

The cab shall be painted with PPG Industries paint.

CAB PAINT PRIMARY/LOWER COLOR

The lower paint color shall be PPG FBCH 71663 Red.

CAB PAINT SECONDARY/UPPER CAB COLOR

The upper paint color shall be PPG FBCH 2185 White.

CAB PAINT EXTERIOR BREAK LINE

The upper and lower paint shall meet at a break line on the cab which shall fall approximately 1.00 inch under the door windows and above the door handles. The break line shall extend in a straight line and fall approximately 1.00 inch under the windshield and above the windshield wipers on the front of the cab.

CAB PAINT PINSTRIPE

Where the upper and lower paint colors meet a temporary 0.50 inch black pinstripe shall be applied over this break line to offer a more finished look prior to the final pinstripe being installed by the OEM.



Southampton Fire Department Apparatus Specifications

BIDDER
COMPLIES

YES NO

CAB PAINT WARRANTY

The cab and chassis shall be covered by a limited manufacturer paint warranty which shall be in effect for ten (10) years from the first owner's date of purchase or in service or the first 100,000 actual miles, whichever occurs first.

CAB ENGINE TUNNEL

The cab interior shall include a fixed type engine tunnel cover sized to accommodate an engine with a smaller block. The engine tunnel shall be an integral part of the cab constructed of 5052-H32 Marine Grade, .190 of an inch thick, one hundred percent primary aluminum plate. The tunnel shall be a maximum of 41.50 inches wide X 23.00 inches high.

The engine tunnel shall be insulated with multi-layer insulating material, consisting of foam, a sound barrier of 1.00 pounds per square foot with a facing which resists heat transfer. This insulation shall be held in place by adhesive, aluminum stick pins and retention caps. Any exposed insulation seams and edges shall be sealed reducing moisture and debris.

CAB ENTRY DOORS

The cab shall include a driver and officer area with two cab door openings which offer a clear door opening of 40.75 inches wide.

The doors shall be constructed of extruded aluminum with a nominal thickness of .125 inch. The exterior skins shall be constructed of .125 inch aluminum plate. The cab shall include four (4) entry doors as high as possible for ease of entering and egress when outfitted with an SCBA.

All cab and crew doors shall be of substantial weight for the optimum strength and rigidity for the best performance in all cab crash testing. Any cab with front and crew doors manufactured of less than the material thickness of .125 inch in both the extrusion and exterior skin shall not be considered.

The doors shall include a double rolled style automotive rubber seal around the perimeter of each door frame and door edge which ensures a weather tight fit.

All door hinges shall be hidden within flush mounted cab doors for a pleasing smooth appearance and perfect fit along each side of the cab. Each hinge shall be .375 inch piano style and be constructed of stainless steel.

The piano style hinge and hidden flush mounted door is the most favorable construction keeping dirt and debris out of the hinge allowing for optimum operation throughout the lifetime of the door.

Proposals offering door hinge thickness any less than stated shall not be considered.



Southampton Fire Department Apparatus Specifications

BIDDER
COMPLIES

YES NO

Proposals including doors that do not comply with the flush mounting as described or those including exposed hinges shall not be considered.

CAB ENTRY DOOR TYPE

All cab entry doors shall be full length in design to fully enclose the lower cab steps.

CAB STRUCTURAL WARRANTY

The cab structure shall be warranted for a period of ten (10) years or one hundred thousand (100,000) miles which ever may occur first. Warranty conditions may apply and shall be listed in the detailed warranty document that shall be provided upon request.

CAB TEST INFORMATION

The cab shall have successfully achieved survival of the International crash test ECE-29, Addendum 28, Revision 1 as indicated below.

As part of the ECE regulation 29 test, the frontal area of the cab is struck by a 3,700 pound pendulum weight. The weight is brought back to a sixty degree angle and then the weight is released and allowed to swing forward, imparting some 32,600 pounds foot of force to the cab front face. The cab shall be so constructed that after the test, there will be minimal intrusion of the cab structure into the passenger area. The doors shall remain usable for both entry and exit. Also, as part of the test the cab roof must withstand a static load bearing test. The cab shall withstand a weight of over 60,000 pounds without permanent damage or collapse. The above tests shall be witnessed by and attested to by an independent third party. The test results shall be recorded on/by cameras, high speed imagers, accelerometers and strain gauges, with notarized copies of the letters verifying the test results and videos of said test shall be available upon request.

ELECTRICAL SYSTEM

The chassis shall include a single starting electrical system which shall include a 12 volt direct current system, suppressed per SAE J551. The wiring shall be appropriate gauge cross link with 311 degree Fahrenheit insulation. All SAE wires in the chassis shall be color coded and shall include the circuit number and function where possible. The wiring shall be protected by 275 degree Fahrenheit minimum high temperature flame retardant loom.

OEM WIRING

The wiring system shall include a custom interface harness provided by the body manufacturer which shall include switches on the dash in the case of a Pumper vehicle and no switches on the dash for a Rescue style vehicle.



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BIDDER
COMPLIES

YES NO

APPARATUS WIRING PROVISION

An apparatus wiring panel shall be installed on the officer side bulkhead below the dash which shall include eight (8) open circuits consisting of three (3) 20 amp, one (1) 30 amp, three (3) 10 amp, and one (1) 15 amp circuit, with relays and breakers with trigger wires which shall be routed to the rocker switch panel. There shall be (5) 12 V outlets (for connecting flashlights chargers , etc.) in the cab area (designated by the customer) installed in the cab.

VEHICLE DATA RECORDER

The chassis shall have a Class One Vehicle Data Recorder system installed. The system shall be designed to meet NFPA 1901. The following information shall be recorded:

- Vehicle Speed
- Acceleration
- Deceleration
- Engine Speed
- Engine Throttle Position
- ABS Event
- Seat Occupied Status
- Seat Belt Status
- Master Optical Warning Device Switch Position
- Time
- Date

Each portion of the data shall be recorded at the specified intervals and stored for the specified length of time to meet NFPA 1901 guidelines and shall be retrievable by connecting a laptop computer to the VDR system.

POWER & GROUND STUD

A 40 amp battery direct power and ground stud shall be provided and installed in the electrical distribution panel. The stud shall be size #10 and protected with a 40 amp circuit breaker.

EXTERIOR ELECTRICAL TERMINAL COATING

All terminals exposed to the elements will be sprayed with a yellow protective rubberized coating to prevent corrosion.

ENGINE

The power plant for the vehicle shall offer a high pressure performance, turbo charged engine which shall feature a high pressure common rail fuel system. This system shall be coupled with a proven Holset turbo which delivers outstanding performance at ratings up to 360 HP. The Cummins ISC engine shall include replaceable mid-stop cylinder liners plus heavy duty roller



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BIDDER
COMPLIES

YES NO

followers, targeted piston cooling and 30% more efficient oil cooling for improved durability and reliability. The heavy duty design shall also feature stronger braking capacity.

The engine shall be EPA certified to meet the very latest emissions standards without compromising performance, reliability or durability. The Cummins ISC 360 engine shall feature an air charge cooled engine which consists of an in line six (6) cylinder, four cycle diesel powered engine. The engine shall offer a rating of 360 horse power at 2000 RPM which shall be governed at 2200 RPM. The torque rating shall feature 1050 foot pounds of torque at 1400 RPM with 506 cubic inches of displacement. The Cummins ISC 360 engine shall feature an electronic governor.

A wiring harness shall be supplied ending at the back of the cab. The harness shall include a connector which shall allow an optional harness for the pump panel. The included circuits shall be provided for a tachometer, oil pressure, engine temperature, hand throttle, high idle and a PSG system. A circuit for J1939 data link shall also be provided at the back of the cab.

The engine shall include an engine mounted combination full flow/by-pass oil filter with replaceable spin on cartridge for use with the engine lubrication system. The engine shall include Citgo brand Citgard 500, or equivalent SAE 15W40 CJ4 low ash engine oil which shall be utilized for proper engine lubrication.

DIESEL PARTICULATE FILTER CONTROLS

There shall be two (2) controls for the diesel particulate filter. One (1) control shall be for regeneration and one (1) control shall be for regeneration inhibit.

ENGINE PROGRAMMING HIGH IDLE SPEED

The engine high idle control shall maintain the engine idle at approximately 1250 RPM when engaged.

ENGINE HIGH IDLE CONTROL

The vehicle shall be equipped with a high-idle speed control which shall be pre-set to maintain the engine idle at a pre-determined rate when activated manually. This device shall operate when the master switch is activated and safely interlocked only to function when the transmission is in neutral with the parking brake set.

ENGINE PROGRAMMING ROAD SPEED GOVERNOR

The engine shall include programming which will govern the top speed of the vehicle.



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BIDDER
COMPLIES

YES NO

AUXILIARY ENGINE BRAKE

The engine shall utilize a variable geometry turbo (VGT). The VGT auxiliary engine brake shall be an integral part of the turbo and shall offer a variable rate of exhaust flow, which when activated shall slow the engine and in turn slow the vehicle.

The VGT shall actuate the vehicle's brake lights when engaged as an auxiliary brake. A cutout relay shall be installed to disable the VGT when in pump mode or when an ABS event occurs. The VGT engine brake shall activate at a 0% accelerator throttle position when in operation mode.

AUXILIARY ENGINE BRAKE CONTROL

An engine variable geometry turbo brake control device shall be included. The electronic control device shall monitor various conditions and shall activate the engine brake only if all of the following conditions are simultaneously detected:

- A valid gear ratio is detected.
- The driver has requested or enabled engine compression brake operation.
- The throttle is at a minimum engine speed position.
- The electronic controller is not presently attempting to execute an electronically controlled final drive gear shift.

The variable geometry turbo brake control shall be controlled through an on/off rocker switch.

FLUID FILLS

The front of the chassis shall accommodate fluid fills for the engine oil, and the power steering fluid through the grille. This area shall also accommodate checks for the engine oil, and power steering fluid.

ELECTRONIC ENGINE OIL LEVEL INDICATOR

The engine oil shall be monitored electronically and shall send a signal to activate a warning in the instrument panel when levels fall below normal. The warning shall activate in a low oil situation upon turning on the master battery and ignition switches without the engine running.

ENGINE WARRANTY

The Cummins engine shall be warranted for a period of five (5) years or 100,000 miles, whichever occurs first.



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BIDDER
COMPLIES

YES NO

ENGINE PROGRAMMING REMOTE THROTTLE

The engine ECM discreet wire remote throttle circuit will be turned on for use with a discreet wire based pump controller.

ENGINE PROGRAMMING IDLE SPEED

The engine low idle speed will be programmed at 700 rpm.

ENGINE FAN DRIVE

The engine cooling system fan shall be direct drive belt driven on the engine.

ENGINE COOLING SYSTEM

There shall be a heavy-duty aluminum cooling system designed to meet the demands of the fire industry. The cooling system shall have the capacity to keep the engine properly cooled under all conditions of road and pumping operations. The cooling system shall be designed and tested to meet or exceed the requirements specified by the engine and transmission manufacturer and all EPA requirements. The complete cooling system shall utilize heavy-duty welds and be mounted to isolate the entire system from vibration or stress. The individual cores of the cooling system shall be mounted in a manner to allow expansion and contraction at various rates without inducing stress into the adjoining cores.

The cooling system shall be comprised of a stacked, single depth package that provides the maximum cooling capacity for the specified engine as well as offers excellent serviceability. The main components shall include a surge tank, a charge air cooler, a recirculation shield, and a radiator.

Proposals unable to offer a stacked single depth cooling package shall not be considered.

There shall be a single depth core that allows greater efficiency, enhanced serviceability, and lighter weight with a higher ambient capability.

The cooling package core shall not protrude below the frame of the vehicle by more than 1.1 inch. This feature shall improve the angle of approach thereby reducing possible damage.

The radiator shall be a cross-flow design constructed completely of aluminum with welded side tanks. The radiator shall include a minimum of a 627 square inch core and shall be bolted to the bottom of the charge air cooler to allow a single depth core, thus allowing a more efficient and serviceable cooling system. The radiator shall be equipped with a drain cock to drain the coolant for serviceability.

The cooling system shall include a one piece injected molded Polymer fan blade designed to provide long life in harsh environments. Polymer fans provide a significant weight reduction over metal fans providing longer life for fan clutch linings and bearings along with increased fan belt life.



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BIDDER
COMPLIES

YES NO

The cooling system shall be equipped with a surge tank that is capable of removing entrained air from the system. The surge tank shall be equipped with a low coolant probe and sight glass to monitor the level of the coolant. The surge tank shall have a cap that meets the engine manufactures pressure requirements as well as the system design requirements.

All radiator tubes shall be formed from aluminized steel tubing. Recirculation shields shall be installed where required to prevent heated air from reentering the cooling package and affecting performance.

The charge air cooler shall be a cross-flow design constructed completely of aluminum with welded side tanks. The charge air cooler shall have a minimum of a 390 square inch core and be bolted to the top of the radiator to allow a single depth core, thus allowing a more efficient and serviceable cooling system.

All charge air cooler tubes shall be formed from aluminized steel tubing and installed with silicone hump hoses and stainless steel "constant torque" style clamps meeting the engine manufactures requirements.

ENGINE COOLANT

The cooling package shall include Extended Life Coolant (ELC). The use of ELC provides longer intervals between coolant changes over standard coolants providing improved performance. The coolant shall contain a 50/50 mix of ethylene glycol and de-ionized water to keep the coolant from freezing to a temperature of -34 degrees F.

Proposals offering supplemental coolant additives (SCA) shall not be considered, as this is part of the extended life coolant makeup.

ELECTRONIC COOLANT LEVEL INDICATOR

The instrument panel shall feature a low engine coolant indicator light which shall be located in the center of the instrument panel. An audible tone alarm shall also be provided to warn of a low coolant incident.

ENGINE PUMP HEAT EXCHANGER

A single bundle type coolant to water heat exchanger shall be installed between the engine and the radiator. The heat exchanger shall be designed to prohibit water from the pump from coming in contact with the engine coolant. This shall allow the use of water from the discharge side of the pump to assist in cooling the engine.



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BIDDER
COMPLIES

YES NO

COOLANT HOSES

The cooling systems hose shall be formed silicone hose and formed aluminized steel tubing and include stainless steel constant torque band clamps.

ENGINE COOLANT OVERFLOW BOTTLE

A remote overflow bottle shall be provided in the case of over filling the coolant system; this is usually done to locate the expansion fluid in the overflow bottle rather than on the ground. The overflow bottle that is used on the system will only be a catch bottle and will not return coolant back to the surge tank. The system is designed with a single seal cap and does not allow the coolant to return to the surge tank.

ENGINE AIR INTAKE

The engine air intake system shall include an ember separator air intake filter which shall be located in the front of the cab behind the officer side fascia. This filter shall protect the downstream air filter from embers using a combination of unique flat and crimped metal screens constructed into a galvanized steel frame. This multilayered screen shall be designed to trap embers or allow them to burn out before passing through the pack, while creating only minimal air flow restriction through the system. Periodic cleaning or replacement of the screen shall be all that is required after installation.

The engine shall also include an air intake filter which shall be bolted to the frame and located under the front of the cab on the officer side. The dry type filter shall ensure dust and debris safely contained inside the disposable housing, eliminating the chance of contaminating the air intake system during air filter service via a leak-tight seal.

The air flow distribution and dust loading shall be uniform throughout the high-performance filter cone pack, which shall result in pressure differential for improved horsepower and fuel economy. The air intake shall be mounted within easy access via a hinged panel behind the headlight module. The air intake system shall include a restriction indicator light in the warning light cluster on the instrument panel, which shall activate when the air cleaner element requires replacement.

ENGINE EXHAUST SYSTEM

The exhaust system shall include a diesel particulate filter and a diesel oxidation catalyst to meet current EPA standards.

The system shall utilize 0.065 inch thick stainless steel exhaust tubing between the engine turbo and the diesel particulate filter. This section of the exhaust system shall be wrapped with a thermal cover in order to retain the necessary heat for system regeneration. Zero leak clamps seal all system joints between the turbo and diesel particulate filter.



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BIDDER
COMPLIES

YES NO

From the diesel particulate filter to the end of the tailpipe the system shall be plumbed with 0.065 inch thick aluminized steel tubing connected with overlapping band style clamps. The discharge shall terminate horizontally on the officer side of the vehicle ahead of the rear tires.

The exhaust system shall be mounted below the frame in the outboard position providing maximum space for frame mounted components such as midship pumps.

ENGINE EXHAUST ACCESSORIES

An exhaust temperature mitigation device shall be shipped loose for installation by the body manufacturer on the vehicle. The temperature mitigation device shall lower the temperature of the exhaust by combining ambient air with the exhaust gasses at the exhaust outlet.

TRANSMISSION

The drive train shall include an Allison Gen IV-E model EVS 3000 torque converting, automatic transmission which shall include electronic controls. The transmission shall feature two (2) 10-bolt PTO pads located on the converter housing.

The transmission shall include two (2) internal oil filters and Castrol TranSynd™ synthetic TES 295 transmission fluid which shall be utilized in the lubrication of the EVS transmission. An electronic oil level sensor shall be included with the readout located in the shift selector.

The Gen IV-E transmission shall include prognostic diagnostic capabilities. These capabilities shall include the monitoring of the fluid life, filter change indication, and transmission clutch maintenance.

The transmission gear ratios shall be:

- 1st- 3.49:1
- 2nd- 1.86 to 1
- 3rd- 1.41 to1
- 4th- 1.00 to 1
- 5th- 0.75 to 1
- Rev- 5.03 to 1.

TRANSMISSION MODE PROGRAMMING

The transmission, upon start-up, will automatically select a four (4) speed operation. The fifth speed over drive shall be available with the activation of the mode button on the shifting pad.

TRANSMISSION FEATURE PROGRAMMING

The EVS group package number 127 shall contain the 198 vocational package in consideration of the duty of this apparatus as a Pumper. This package shall incorporate an automatic neutral



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BIDDER
COMPLIES

YES NO

with selector override. This feature commands the transmission to neutral when the park brake is applied, regardless of drive range requested on the shift selector. This requires re-selecting drive range to shift out of neutral for the override.

This package shall be coupled with the use of a split shaft PTO and incorporate pumping circuits. These circuits shall be used allowing the vehicle to operate in the fourth range lockup while operating the pump mode due to the 1 to 1 ratio through the transmission, therefore the output speed of the engine is the input speed to the pump. The pump output can be easily calculated by using this input speed and the drive ratio of the pump itself to rate the gallons of water the pump can provide.

An eight (8) pin Delphi connector will be provided next to the steering column connector. This will contain the following input/output circuits to the transmission tcm.

Function ID	Description	Wire assignment
C	PTO Request	142
J	Fire Truck Pump Mode (4th Lockup)	122 / 123
C	Range Indicator	145 (4th)
G	PTO Enable Output	130
	Signal Return	103

ELECTRONIC TRANSMISSION OIL LEVEL INDICATOR

The transmission fluid shall be monitored electronically and shall send a signal to activate a warning in the instrument panel when levels fall below normal.

TRANSMISSION SHIFT SELECTOR

An Allison pressure sensitive range selector touch pad shall be provided and located to the right of the driver within clear view and easy reach. The shift selector shall provide a prognostic indicator (wrench symbol) on the digital display between the selected and attained indicators. The prognostics monitor various operating parameters to determine and shall alert you when a specific maintenance function is required.

TRANSMISSION PRE-SELECT WITH AUXILIARY BRAKE

When the auxiliary brake is engaged, the transmission shall automatically shift to second gear to decrease the rate of speed assisting the secondary braking system and slowing the vehicle.

TRANSMISSION COOLING SYSTEM

The transmission shall include an air to oil cooler integrated into the lower portion of cooling package. The transmission cooling system shall meet all transmission manufacturer requirements. The cooling system shall feature a circuit provision located within the hydraulic



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BIDDER
COMPLIES

YES NO

transmission oil which shall provide for rapid warm up to the optimum transmission operating temperature.

Proposals offering water to oil style transmission cooling systems shall not be accepted.

TRANSMISSION WARRANTY

The Allison EVS series transmission shall be warranted for a period of five (5) years with unlimited mileage. Parts and labor shall be included in the warranty.

DRIVELINE

All drivelines shall be heavy duty metal tube and equipped with Spicer 1710 series universal joints. The shafts shall be dynamically balanced prior to installation to alleviate future vibration. A splined slip joint shall be provided in each driveshaft and shall be coated with Glide coat®.

FUEL FILTER/WATER SEPARATOR

The fuel system shall have a Fleetguard FS1003 fuel filter/water separator as a primary filter. The fuel filter shall have a drain valve.

A water-in-fuel sensor shall be provided and wired to an instrument panel lamp and audible alarm to indicate when water is present in the fuel/water separator.

A secondary fuel filter shall be included as approved by the engine manufacturer.

FUEL LINES

The fuel system lines shall be brown reinforced nylon tubing rated for diesel fuel with brass fittings installed from the tank to engine including the return.

FUEL TANK

The fuel tank shall have a minimum capacity of fifty (50) gallons and measure 35.00 inches wide X 15.00 inches high X 24.00 inches long. The baffled tank shall be made of 14 gauge aluminized steel. The tank exterior is painted with a PRP Corsol™ black anti-corrosive exterior metal treatment finish. This results in a tank which offers the internal and external corrosion resistance.

The fuel tank shall be mounted 2.00 inches below the frame, behind the rear axle. The tank can be easily lowered and removed for service purposes.



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BIDDER
COMPLIES

YES NO

The tank shall have a vent port to facilitate venting to the top of the fill neck for rapid filling without "blow-back" and a roll over ball check vent for temperature related fuel expansion and draw.

The tank is designed with dual draw tubes and sender flanges. The tank shall have 2.00 inch NPT fill ports for right or left hand fill. A 0.5 inch NPT drain plug shall be centered in the bottom of the tank.

FUEL TANK FILL PORT

The fuel tank fill ports shall be offset with the right fill port located in the middle position and the left fill port located in the rearward position on the fuel tank.

FRONT AXLE

The front axle shall be a Meritor Easy Steer Non drive front axle, model number MFS-18. The axle shall include a 3.74 inch drop and a 71.00 inch king pin intersection (KPI). The axle shall include a conventional style hub with a standard knuckle. The weight capacity for the axle shall be rated to 18,000 pounds.

FRONT AXLE WARRANTY

The front axle shall be warranted by Meritor for two (2) years with unlimited miles under the heavy service application. Details of the Meritor warranty are provided on the PDF document attached to this option.

FRONT WHEEL BEARING LUBRICATION

The front axle wheel bearings shall be lubricated with clear oil. The oil level can be visually checked via clear inspection windows in the front axle hubs.

FRONT SHOCK ABSORBERS

Two (2) Bilstein inert, nitrogen gas filled shock absorbers shall be provided and installed as part of the suspension system. The shocks shall be a monotubular design and fabricated using a special extrusion method, utilizing a single blank of steel without a welded seam, achieving an extremely tight peak-to-valley tolerance and maintains consistent wall thickness. The monotubular design shall provide superior strength while maximizing heat dissipation and shock life.

The ride afforded through the use of a gas shock is more consistent and shall not deteriorate with heat, the same way a conventional oil filled hydraulic shock would.

The Bilstein front shocks shall include a digressive working piston assembly allowing independent tuning of the compression and rebound damping forces to provide optimum ride



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BIDDER
COMPLIES

YES NO

and comfort without compromise. The working piston design shall feature fewer parts than most conventional twin tube and “road sensing” shock designs and shall contribute to the durability and long life of the Bilstein shock absorbers.

Proposals offering the use of conventional twin tube or “road sensing” designed shocks shall not be considered.

FRONT SUSPENSION

The front suspension shall include four (4), 54.00 inch long and 4.00 inch wide taper leaf springs with a military double wrapped front eye. Both spring eyes shall have a case hardened threaded bushing installed with lubrication counter bore and lubrication land off cross bore with grease fitting. The spring capacity shall be rated at 18,000 pounds.

STEERING COLUMN/ WHEEL

The cab shall include a Douglas Autotech steering column shall be a seven (7) position tilt and 2.25 inch telescopic type with an 18.00 inch steering wheel located on the left side of the cab designating the driver’s position. The steering wheel shall be covered with black absorbite padding.

The steering column shall contain a horn button, self-canceling turn signal switch, four-way hazard switch and headlamp dimmer switch.

POWER STEERING PUMP

The hydraulic power steering pump shall be a TRW PS and shall be gear driven from the engine. The pump shall be a balanced, positive displacement, sliding vane type.

ELECTRONIC POWER STEERING FLUID LEVEL INDICATOR

The power steering fluid shall be monitored electronically and shall send a signal to activate an audible alarm and visual warning in the instrument panel when fluid level falls below normal.

FRONT AXLE CRAMP ANGLE

The chassis shall have a front axle cramp angle of 50 degrees to the left and right.

POWER STEERING GEAR

The power steering gear shall be a TRW model TAS 85.



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BIDDER
COMPLIES

YES NO

CHASSIS ALIGNMENT

The chassis frame rails shall be measured to insure the length is correct and cross checked to make sure they run parallel and are square to each other. The front and rear axles shall be laser aligned. The front tires and wheels shall be aligned and toe-in set on the front tires by the chassis manufacturer.

The completed apparatus shall be rechecked for proper alignment once the chassis has been fully loaded and before being placed in service.

REAR AXLE

The rear axle shall be a Meritor model number RS-24-160. The axle shall be built of superior construction and quality components to provide the rugged dependability needed to stand up to the fire industry's demands. The axle shall include rectangular shaped, hot-formed housings for extra strength and rigidity. The axles shall also include torsion flow axle shafts that feature a surface hardness which resists fatigue and a resilient core which absorbs shock. There shall be unitized pinion seals within the axle helping to prevent leakage and harmful road contaminants from entering the axle components. The axle shall include a rigid differential case for high axle strength and reduced maintenance.

The axle shall include single reduction gearing and shall have a rated capacity of 24,000 pounds.

REAR AXLE WARRANTY

The rear axle shall be warranted by Meritor for (2) years with unlimited miles under the heavy service application. Details of the Meritor warranty are provided on the PDF document attached to this option.

REAR WHEEL BEARING LUBRICATION

The rear axle wheel bearings shall be lubricated with oil.

REAR AXLE DIFFERENTIAL LUBRICATION

The rear axle differential shall be lubricated with oil.

VEHICLE TOP SPEED

The top speed of the vehicle shall be approximately 68 MPH +/-2 MPH at governed engine RPM.



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BIDDER
COMPLIES

YES NO

REAR SUSPENSION

The single rear axle shall feature a Reyco 79KB vari-rate, self-leveling captive slipper type conventional spring suspension, with 57.50 inch X 3.00 inch springs. One (1) adjustable and one (1) fixed torque rod shall be provided.

The rear suspension capacity shall be rated from 21,000 to 31,500 pounds.

FRONT TIRE

The front tires shall be Michelin 315/80R-22.5 20PR "L" tubeless radial XZA1 highway tread.

The front tire stamped load capacity shall be 18,180 pounds per axle with a speed capacity of 75 miles per hour when properly inflated to 130 pounds per square inch.

The front tire US Fire Service Intermittent Usage load capacity shall be 20,000 pounds per axle with a speed capacity of 75 miles per hour when properly inflated to 130 pounds per square inch.

REAR TIRE

The rear tires shall be Michelin 11R-22.5 16PR "H" tubeless radial XDN2 all weather tread designed for exceptional traction and mileage.

The rear tire stamped load capacity shall be 24,020 pounds per axle with a speed capacity of 75 miles per hour when properly inflated to 120 pounds per square inch.

The rear tire US Fire Service Intermittent Usage load capacity shall be 24,820 pounds per axle with a speed capacity of 75 miles per hour when properly inflated to 120 pounds per square inch.

TIRE PRESSURE INDICATOR

There shall be a voucher provided with the chassis for a dial style tire pressure indicator at the front tire valve stem and a pop up style tire pressure indicator at the rear tire valve stem. The indicator shall provide visual indication of pressure in the specific tire.

The tire pressure indicators shall be redeemed upon the vehicle manufacturer's receipt of the voucher for installation by the customer.

FRONT WHEEL

The front wheels shall be Accuride hub piloted, 22.50 inch X 9.00 inch steel type wheels. The hub piloted mounting system shall be designed to deliver performance and shall include two-piece flange nuts.



Southampton Fire Department Apparatus Specifications

BIDDER
COMPLIES

YES NO

REAR WHEEL

The rear wheels shall be Accuride hub piloted, 22.50 inch X 8.25 inch steel wheels. The hub piloted mounting system shall be designed to deliver performance and shall include two-piece flange nuts.

WHEEL PAINT

Each of the steel wheels shall be pretreated in a zinc phosphate bath, coated with an acrylic cathode electro deposited white primer base coat (E-Coat). The E-Coat shall exceed 336 hours under industry standard ASTM salt spray testing.

The wheels shall then be finish painted the same as the primary/lower color of the cab by the chassis manufacturer.

ANTI - LOCK BRAKE SYSTEM WARRANTY

The Wabaco ABS system shall come with a three (3) year or 300,000 mile parts and labor warranty provided by Meritor Wabco Vehicle Control Systems

BRAKE SYSTEM

A rapid build-up air brake system shall be provided. The air brakes shall include a two (2) air tank, three (3) reservoir system with a total of 4152 cubic inch of air capacity. A floor mounted treadle valve shall be mounted inside the cab for graduated control of applying and releasing the brakes. An inversion valve shall be installed to provide a controlled service brake application during an unlikely event including primary air supply loss.

The rear axle spring brakes shall automatically apply in any situation when the air pressure falls below 25 PSI and shall include a mechanical means for releasing the spring brakes when necessary. An audible alarm shall designate when the system air pressure is below 60 PSI. A four (4) sensor, four (4) modulator anti-lock braking system (ABS) shall be installed on the front and rear axles in order to prevent the brakes from locking or skidding while braking during hard stops or on icy or wet surfaces. This in turn shall allow the driver to maintain steering control under heavy braking and in most instances, shorten the braking distance. The electronic monitoring system shall incorporate diagonal circuitry which shall monitor wheel speed during braking through a sensor and tone ring on each wheel. A dash mounted ABS lamp shall be provided to notify the driver of a system malfunction. The ABS system shall automatically disengage the auxiliary braking system device when required. The speedometer screen shall be capable of reporting all active defaults using PID/SID and FMI standards.

FRONT BRAKES

The front brakes shall be ADB 1560 disc type (equal).



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BIDDER
COMPLIES

YES NO

REAR BRAKES

The rear brakes shall be Meritor 16.50 inch X 7.00 inch S-cam drum type.

PARK BRAKE

Upon application of the push-pull valve in the cab, the rear brakes will engage via mechanical spring force. This is accomplished by dual chamber rear brakes, satisfying the FMVSS parking brake requirements.

PARK BRAKE CONTROL

A Meritor-Wabco manual hand control push-pull style valve shall operate the parking brake system. The control shall be yellow in color.

The parking brake actuation valve shall be mounted on the left hand dash to the right of the steering column within easy reach of the driver.

FRONT BRAKE SLACK ADJUSTERS

The front brakes shall include Meritor automatic slack adjusters shall be installed on the chassis which features a simple, durable design offering reduced weight. The automatic slack adjusters shall feature a manual adjusting nut which cannot inadvertently be backed off and threaded grease fittings for easy serviceability.

REAR BRAKE SLACK ADJUSTERS

The rear brakes shall include Meritor automatic slack adjusters shall be installed on the chassis which features a simple, durable design offering reduced weight. The automatic slack adjusters shall feature a manual adjusting nut which cannot inadvertently be backed off and threaded grease fittings for easy serviceability.

FRONT BRAKE DUST SHIELDS

The front axle shall be equipped with brake dust shields.

REAR BRAKE DUST SHIELDS

The rear brakes shall be equipped with brake dust shields.

AIR DRYER

The brake system shall include a Wabco System Saver 1200 air dryer with an integral heater with a Metri-Pack sealed connector. The air dryer incorporates an internal turbo cutoff valve that closes the path between the air compressor and air dryer purge valve during the compressor



Southampton Fire Department Apparatus Specifications

BIDDER
COMPLIES

YES NO

"unload" cycle. The turbo cutoff valve allows purging of moisture and contaminants without the loss of turbo boost pressure. The air dryer shall be located on the right frame rail behind the officer step.

FRONT BRAKE CHAMBERS

The front brakes shall be provided with MGM type 30 brake chambers.

REAR BRAKE CHAMBERS

The rear axle shall include TSE 30/36 brake chambers shall convert the energy of compressed air into mechanical force and motion. This shall actuate the brake camshaft, which in turn shall operate the foundational brake mechanism forcing the brake shoes against the brake drum. The TSE Type 36 brake chamber has a 36.00 square inch effective area.

AIR COMPRESSOR

The air compressor provided for the engine shall be a Wabco® SS318 single cylinder pass-through drive type compressor which shall be capable of producing 18.7 CFM at 1200 engine RPMs. The air compressor shall feature a higher delivery efficiency translating to more air delivery per horsepower absorbed. The compressor shall include an aluminum cylinder head which shall improve cooling, reduce weight and decrease carbon formation. Superior piston and bore finishing technology shall reduce oil consumption and significantly increasing the system component life.

AIR GOVERNOR

An air governor shall be provided to control the cut-in and cut-out pressures of the engine mounted air compressor. The governor shall be calibrated to meet FMVSS requirements. The air governor shall be located on the air cleaner bracket on the right frame rail behind the officer step.

MOISTURE EJECTORS

Manual drain valves shall be installed on all reservoirs of the air supply system.

AIR SUPPLY LINES

A dual air system plumbed with color coded reinforced nylon tubing air lines shall be installed on the chassis. The primary (rear) brake line shall be green, the secondary (front) brake line red, the parking brake line orange and the auxiliary (outlet) will be blue.

Brass compression type fittings shall be used on the nylon tubing. All drop hoses shall include fiber reinforced neoprene covered hoses.



Southampton Fire Department Apparatus Specifications

BIDDER
COMPLIES

YES NO

FRAME

The frame shall consist of Double rails running parallel to each other with cross members forming a ladder style frame. The frame rails shall be formed in the shape of a "C" channel, 10.25 inch web X 3.50 inches deep upper and lower flanges X 0.38 inches thick. The high strength low alloy steel shall have a Tensile Elastic Limit of 110,000 psi. Each single rail shall be rated by a Resistance Bending Moment (RBM) minimum of 1,830,400 inch pounds and have a minimum section modulus of 16.64 cubic inches calculated by the radius method. The outside dimension frame shall measure 34.25 inches in width.

Proposals calculating the frame strength using the "box method" shall not be considered.

Proposals including heat treated rails shall not be considered. Heat treating frame rails produces rails that are not uniform in their mechanical properties throughout the length of the rail. Rails made of high strength, low alloy steel are already at the required yield strength prior to forming the rail.

A minimum of seven (7) fully gusseted 0.25 inch thick cross members shall be installed. The inclusion of the body mounting, or bumper mounting shall not be considered as a cross member. The cross members shall be attached using zinc coated grade 8 fasteners. The head bolts shall be flanged type with distorted threads, held in place by flanged lock nuts. Each cross member shall be mounted to the frame rails utilizing a minimum of 0.25 inch thick gusset reinforcement plates at all corners balancing the area of force throughout the entire frame.

Any proposals not including additional reinforcement for each cross member shall not be considered.

Frame rails will be manufactured such that bolt attachment holes are specific for each component and shall not include any unnecessary holes.

All relief areas shall be cut in with a minimum 2.00 inch radius at intersection points with the edges ground to a smooth finish to prevent a stress concentration point.

The frame and cross members shall carry a lifetime warranty to the original purchaser. A copy of the frame warranty shall be made available upon request.

Proposals offering warranties for frames not including cross members shall not be considered..

Frame rails will be manufactured such that bolt attachment holes are specific for each component and shall not include any unnecessary holes.

All relief areas shall be cut in with a minimum 2.00 inch radius at intersection points with the edges ground to a smooth finish to prevent a stress concentration point.

The frame and cross members shall carry a lifetime warranty to the original purchaser. A copy of the frame warranty shall be made available upon request.



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BIDDER
COMPLIES

YES NO

Proposals offering warranties for frames not including cross members shall not be considered.

FRAME WARRANTY

The frame and cross members shall carry a limited lifetime warranty to the original purchaser. The warranty shall include conditional items listed in the detailed warranty document which shall be provided upon request.

REAR TOW DEVICE

Two (2) heavy duty painted tow eyes shall be installed extending rearward from the frame at the rear of the chassis. The tow eyes shall be fabricated from 0.75 inch thick #1020 ASTM-36 hot rolled steel. The inside diameter of the tow eye shall be 2.00 inches and shall have a chamfered edge. The tow eyes shall be bolted one (1) on each side to the outside of the chassis frame with grade 8 bolts.

FRAME PAINT

The frame shall be powder coated black prior to any attachment of components.

All powder coatings, primers and paint shall be compatible with all metals, pretreatments and primers used. The cross hatch adhesion test per ASTM D3359 shall not have a fail of more than ten (10) squares. The pencil hardness test per ASTM D3363 shall have a final post-curved pencil hardness of H-2H. The direct impact resistance, per ASTM D2794, shall have a direct impact resistance of 120.00 inches per pound at 2 mils. The salt spray resistance per ASTM B-117-97 shall pass 500 hours of salt spray test. The applied process shall allow the application of other products over it and still maintain or exceed the 500 hours salt spray test.

Any proposals offering painted frame with variations from the above process shall not be accepted. The film thickness of vendor supplied parts shall also be sufficient to meet the performance standards as stated above.

FRONT BUMPER

A one piece, two (2) rib wrap-around style, polished stainless steel front bumper shall be provided. The material shall be 10 gauge 304 stainless steel, 12" high and 99" wide.

FRONT BUMPER EXTENSION LENGTH

The front bumper shall be extended 7.00 inches ahead of the cab.



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BIDDER
COMPLIES

YES NO

FRONT BUMPER EXTENSION WIDTH

The front bumper extension shall include an overall width of 34.25 inches.

FRONT BUMPER APRON

The 7.00 inch extended front bumper shall include an apron constructed of 0.19 inch thick embossed aluminum tread plate.

The apron shall be installed between the bumper and the front face of the cab affixed using stainless steel bolts attaching the apron to the top bumper flange.

AIR HORN

The front bumper shall include two (2) Hadley brand E-Tone air horns which shall measure 21.00 inches long with a 6.00 inch round flare. The air horn shall be a trumpet style and shall include a chrome finish on the inside and a black painted finish on the outside of the trumpet.

AIR HORN LOCATION

The air horns shall be recess mounted in the front bumper face on the driver side of the bumper in the inboard and outboard positions relative to the left hand frame rail.

AIR HORN RESERVOIR

One (1) air tank, with a 1200 cubic inch reservoir, shall be installed on the chassis to act as a supply tank for operating air horns. The reservoir shall be isolated with a 90 PSI pressure protection valve on the reservoir supply side to prevent depletion of the air to the air brake system.

FRONT BUMPER TOW HOOKS

Two (2) heavy duty tow hooks, painted black shall be installed below the front bumper, forward position and bolted directly to the outside of each chassis frame rail with grade 8.00 bolts.

CAB TILT SYSTEM

The entire cab shall be capable of tilting 45 degrees to allow for easy maintenance of the engine and transmission.

The electric-over-hydraulic lift system shall include an ignition interlock and red cab lock down indicator lamp on the tilt control which shall illuminate when holding the "Down" button to indicate safe road operation.



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BIDDER
COMPLIES

YES NO

It shall be necessary to activate the master battery switch and set the parking brake in order to tilt the cab. As a third precaution the ignition switch must be turned off to complete the cab tilt interlock safety circuit.

Two (2) spring-loaded hydraulic hold down hooks located outboard of the frame shall be installed to hold the cab securely to the frame. Once the hold-down hooks are set in place, it shall take the application of pressure from the hydraulic cab tilt lift pump to release the hooks.

Two (2) cab tilt cylinders shall be provided with velocity fuses in each cylinder port. The cab tilt pivots shall be 1.90" ball and be anchored to frame brackets with 1.25" diameter studs.

A steel safety channel assembly shall be installed on the right side cab lift cylinder to prevent accidental cab lowering. The safety channel assembly shall fall over the lift cylinder when the cab is in the fully tilted position. A cable release system shall also be provided to retract the safety channel assembly from the lift cylinder to allow the lowering of the cab.

CAB TILT CONTROL RECEPTACLE

A 6-pin Deutsch connector that includes a cap shall be installed in the front bumper tail on the right hand side to provide a place to plug in the cab tilt remote control pendant. The remote control pendant shall also include 20.00 feet of cable and shall include a mating connector.

CAB WINDSHIELD

The cab windshield shall have a surface area of 2908.00 square inches and be of a two (2) piece wraparound design for maximum visibility.

The distance from the driver and officer to the windshield shall be a minimum of 42.00 inches at the furthest seated position. This distance shall ensure the safety of the driver and officer from intruding objects in the unlikely event of a head on collision.

The glass utilized for the windshield a standard automotive tint. The left and right windshield shall be fully interchangeable thereby minimizing stocking and maintenance costs. All proposals offering windshields not in compliance with the minimum measurement of surface area stated above and are not fully interchangeable shall not be considered.

CAB FRONT DOOR WINDOWS

The front cab doors shall include a window which is 27.00 inches in width X 26.00 inches in height. These windows shall have the capability to roll down completely into the door housing. This shall be accomplished manually utilizing a crank style handle on the inside of the door. A reinforced window regulator assembly shall be provided for severe duty use.



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BIDDER
COMPLIES

YES NO

There shall be an irregular shaped fixed window which shall measure 2.50 inches wide at the top, 8.00 inches wide at the bottom X 26.00 inches in height, more commonly known as “cozy glass” ahead of the front door roll down windows.

The windows shall be mounted within the frame of the front doors trimmed with a black anodized ring on the exterior.

CAB FRONT DOOR WINDOW TINT

The windows located in the left and right front doors shall have a standard green automotive tint which shall allow seventy-five percent (75%) light transmittance.

CAB RIGHT SIDE REAR DOOR WINDOW

The rear right hand side door shall include a window which is 27.00 inches in width X 26.00 inches in height. This window shall roll up and down manually utilizing a crank style handle on the inside of the door. A reinforced window regulator assembly shall be provided for severe duty use.

CAB RIGHT SIDE REAR DOOR WINDOW TINT

The window located in the right hand side rear door shall include a standard green automotive tint which shall allow seventy-five percent (75%) light transmittance.

CAB LEFT SIDE REAR DOOR WINDOW

The rear left hand side door shall include a window which is 27.00 inches in width X 26.00 inches in height. This window shall roll up and down manually utilizing a crank style handle on the inside of the door. A reinforced window regulator assembly shall be provided for severe duty use.

CAB LEFT SIDE REAR DOOR WINDOW TINT

The window located in the left hand side rear door shall include a standard green automotive tint which shall allow seventy-five percent (75%) light transmittance.

CAB RIGHT SIDE CANOPY WINDOW

The cab shall include a window on the officer’s side behind the front and ahead of the crew doors which shall measure 16.00 inches wide X 26.00 inches high. This window shall be fixed within this space and shall be rectangular in shape. The window shall be mounted using self locking window rubber. The glass utilized for this window shall include a green automotive tint unless otherwise noted.



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BIDDER
COMPLIES

YES NO

CAB RIGHT SIDE CANOPY WINDOW TINT

The window located on the right hand side of the cab between the front and rear doors shall include a standard green automotive tint which shall allow seventy-five percent (75%) light transmittance.

CAB LEFT SIDE CANOPY WINDOW

The cab shall include a window on the driver's side behind the front door and ahead of the crew door and above the wheel well which shall measure 16.00 inches wide X 26.00 inches high. This window shall be fixed within this space and shall be rectangular in shape. The window shall be mounted using self locking window rubber. The glass utilized for this window shall include a green automotive tint unless otherwise noted.

CAB LEFT SIDE CANOPY WINDOW TINT

The window located on the left hand side of the cab between the front and rear doors shall include a standard green automotive tint which shall allow seventy-five percent (75%) light transmittance.

CLIMATE CONTROL

The cab shall include a 57,600 BTU @ 425 CFM front overhead heater/defroster which shall be provided and installed above the windshield between the sun visors. The temperature and blower controls shall be located on the heater/defroster unit.

The cab shall also include a combination heater air-conditioning unit mounted on the engine tunnel. This unit shall offer eight (8) adjustable louvers, (4 forward facing , four rearward facing) a temperature control valve and two (2) blowers offering three (3) speeds which shall be capable of circulating 550 cubic feet of air per minute. The unit shall be rated for 36,000 BTU of cooling and 45,000 BTU of heating. The temperature and blower controls shall be located on the heater/air conditioning unit.

All defrost/heating systems shall be plumbed with one (1) seasonal shut-off valve at the front corner on the right side of the cab.

The air conditioning system shall be capable of lowering the cab interior temperature from 100 degrees to 70 degrees within thirty minutes, with a relative humidity of sixty percent.

The air conditioner lines shall be a mixture of custom bent zinc coated steel fittings and Aero-quip GH 134 flexible hose with Aero-Quip EZ-Clip fittings.

CLIMATE CONTROL ACTIVATION

The heating controls, and air conditioning if included, shall be located on the climate control unit.



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BIDDER
COMPLIES

YES NO

A/C CONDENSER LOCATION

A roof mounted A/C condenser shall be installed centered on cab forward of raised roof against the slope rise.

A/C COMPRESSOR

The air-conditioning compressor shall be a belt driven, engine mounted, open type compressor that shall be capable of producing a minimum of 13000 BTU at 1500 engine RPMs. The compressor shall utilize R-134A refrigerant and PAG oil.

CAB INSULATION

The cab ceiling and walls shall include 1.00 inch thick foam insulation. The insulation shall include a foil facing which includes grid reinforcement. The insulation shall act as a barrier absorbing noise as well as assisting in sustaining the desired climate within the cab interior.

UNDER CAB INSULATION

The underside of the cab tunnel surrounding the engine shall be lined with foam insulation, engineered for application inside diesel engine compartments.

The foam insulation shall measure .56 inch thick including a 1.0#/sf PVC barrier and a moisture and heat reflective foil backing, reinforced with fiberglass strands. The foil surface acts as protection against moisture and other contaminants.

The insulation shall act as a noise barrier, absorbing noise thus keeping the decibel level in the cab well within NFPA recommendations. And as an additional benefit, the insulation shall assist in sustaining the desired temperature within the cab interior.

The insulation shall be held in place by 3 mils of acrylic pressure sensitive adhesive and aluminum pins with hard hat, hold in place fastening heads.

The foam shall meet or exceed MVSS 302 flammability test.

The foam shall be cut precisely to fit each section and sealed for additional heat and sound deflection.

INTERIOR TRIM FLOOR

The floor of the cab shall be covered with a multi-layer mat consisting of 0.25 inch sound absorbing closed cell foam and a 0.06 inch non-slip vinyl surface with a pebble grain finish. The covering shall be held in place by a pressure sensitive adhesive with aluminum corner trim. All exposed seams shall be sealed with a silicone caulk matching the color of the floor mat to reduce the chance of moisture and debris retention.



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BIDDER
COMPLIES

YES NO

INTERIOR FLOOR MAT COLOR

The cab interior floor mat shall be gray in color.

INTERIOR TRIM VINYL

The cab interior shall include trim on the front and rear crew ceiling, the cab walls and the rear wall of the cab. The trim shall be constructed of insulated vinyl over a hard board backing. The trim shall be securely fastened to the interior of the cab utilizing snap style fasteners with a decorative cover for a more appealing appearance.

INTERIOR TRIM VINYL COLOR

The cab interior vinyl trim surfaces shall be gray in color.

INTERIOR ABS TRIM COLOR

The cab interior vacuum formed ABS composite trim surfaces shall be gray in color.

HEADER TRIM

The cab interior shall include the header above the driver and officer positions which shall be constructed of vacuum formed ABS panel. The positions shall include robust styling grooves which shall offer durability and additional structure to the panel.

INTERIOR TRIM SUNVISOR

The header shall include two (2) sun visors, one each side forward of the driver and officer seating positions above the windshield. Each sun visor shall be constructed of Masonite and covered with padded vinyl trim.

LEFT SIDE CAB DASH

The left hand dash shall be a one (1) piece durable vacuum formed ABS composite housing which shall be custom molded for a perfect fit around the instrument panel and the lower control panels to the left and right of the steering column.

CENTER CAB DASH

The main center dash area shall be constructed of durable vacuum formed ABS composite.

RIGHT SIDE CAB DASH

The right hand dash trim shall consist of a vacuum formed ABS composite module, which contains a glove compartment with a hinged locking door and a Mobile Data Terminal (MDT)



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BIDDER
COMPLIES

YES NO

provision. The glove compartment size shall be 13.50 inches wide X 6.25 inches high X 5.50 inches deep. The MDT provision shall be provided above the glove compartment, recessed approximately 2.25 inches below the surface of the dash and measure 15.70 inches wide X 9.70 inches deep.

CAB PAINT INTERIOR

The interior metal surfaces shall be painted with a Zolatone #20-72 silver gray texture finish.

ENGINE TUNNEL TRIM

The cab engine tunnel shall be covered with .44 of an inch thick multi-layer mat consisting of .25 inch closed cell foam, .13 of an inch thick PVC acoustical barrier and .06 inch thick non-slip pebble grain. The engine tunnel mat shall be trimmed with anodized aluminum stair nosing trim for an aesthetically pleasing appearance.

STEP TRIM

Each cab entry door shall include a three step entry. The first step closest to the ground shall be constructed of polished 5032 H32 aluminum Grip Strut® grating with angled outer corners. The grating shall allow water and other debris to flow through rather than becoming trapped within the stepping surface. The lower step shall be mounted to a frame which is integral with the construction of the cab for rigidity and strength. The middle step shall be integral with the cab construction and shall be trimmed with a Flex-Tred® adhesive grit surface material.

INTERIOR DOOR TRIM

The doors of the cab shall include an aluminum plate the same weight and grade as the cab on the interior of the door. The aluminum shall be then painted.

CAB PAINT INTERIOR DOOR TRIM

The inner door panel surfaces shall be painted with a Zolatone #20-72 silver gray texture finish.

DOOR TRIM CUSTOMER NAMEPLATE

The interior door trim on the front doors shall include a customer nameplate which states the vehicle was custom built for their Department.

CAB DOOR TRIM REFLECTIVE

The interior of each door shall include high visibility reflective tape. A white reflective tape that measures 1.00 inch in width shall be provided vertically along the rear outer edge of the door.



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BIDDER
COMPLIES

YES NO

The lowest portion of each door skin shall include a reflective tape chevron with red and white stripes and a Spartan logo. The chevron tape shall measure 6.00 inches in height.

INTERIOR GRAB HANDLE "A" PILLAR

A rubber covered 11.00 inch grab handle shall be provided on the inside of the cab on the hinge post at the driver and officer doors. The handle shall assist personnel in exiting and entering the cab.

INTERIOR GRAB HANDLE FRONT DOOR

Each front door shall include one (1) ergonomically contoured 9.00 inch cast aluminum handle mounted horizontally on the interior door panels. The handles shall feature a textured black powder coat finish and provide ease of access and exiting the cab.

INTERIOR GRAB HANDLE REAR DOOR

A black powder coated cast aluminum assist handle shall be provided on the inside of each rear crew door the full width of the door below the window glass and shall measure 30 inches in length. The handle shall assist personnel in exiting and entering the cab.

DASH PANEL GROUP

The main center dash area shall include three (3) removable panels located one (1) to the right of the driver position, one (1) in the center of the dash and one (1) to the left of the officer position. The center panel shall be within comfortable reach of both the driver and officer.

SWITCHES CENTER PANEL

The center dash panel shall include six (6) switch positions in the upper left portion of the panel.

A rocker switch with a blank legend installed directly above shall be provided for any position without a switch and legend designated by a specific option. The non-specified switches shall be two-position, black switches with a green indicator light. Each blank switch legend can be custom engraved by the body manufacturer. All switch legends shall have red backlighting provided.

SWITCHES LEFT PANEL

The left dash panel shall include eight (8) switches. There shall be six (6) switches across the top of the panel and two (2) staggered on the left hand portion of the panel. Five (5) of the top row of switches shall be rocker type and the left one (1) shall be the headlight switch. The remaining switches shall consist of one (1) windshield wiper/washer control switch and one (1) instrument lamp dimmer switch.



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BIDDER
COMPLIES

YES NO

A rocker switch with a blank legend installed directly above shall be provided for any position not designated by a specific option. The non-designated switches shall be two-position, black switches with a green indicator light. Each blank switch legend can be custom engraved by the body manufacturer. All switch legends shall have red backlighting provided.

SWITCHES RIGHT PANEL

The right dash panel shall include no rocker switches or legends.

SWITCH PANEL IGNITION

The vehicle shall be equipped with a keyless ignition and master, with an “Off/ On” and a two switch for “Off/ Start”.

SEAT BELT WARNING

A Class One seat belt warning system, integrated with the Vehicle Data Recorder system, shall be installed for each seat within the cab. The system shall provide visual and audible warning when any seat is occupied (sixty pounds minimum), the corresponding seat belt remains unfastened, and the park brake is released.

Once activated, the visual and audible indicators shall remain active until all occupied seats have the seat belts fastened. The instrument panel shall include an indicator display showing the occupancy of each seat.

SEAT MATERIAL

The seats shall include a covering of high strength, wear resistant fabric made of durable ballistic polyester. A PVC coating shall be bonded to the back side of the material to help protect the seats from UV rays and from being saturated or contaminated by fluids. Common trade names for this material are Imperial 1200 and Durawear.

SEAT COLOR

All seats supplied with the chassis shall be gray in color.

SEAT BACK LOGO

The seat back shall include a manufacturer’s logo. The logo shall be centered on the standard headrest of the seat back and on the left side of a split headrest.



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BIDDER
COMPLIES

YES NO

DRIVER'S SEAT

The driver's seat shall be an H.O. Bostrom Sierra model seat with air suspension. The four-way seat shall feature 3.00 inch vertical travel air suspension and manual fore and aft adjustment with 5.00 inches of travel. The suspension control shall be located on the seat below the left front corner of the bottom cushion. The seat shall also feature integral springs to isolate shock.

The seat position shall include a red, three-point shoulder harness with lap belt and an automatic retractor attached to the cab. The buckle portion of the seat belt shall be mounted on a semi-rigid stalk extending from the seat base within easy reach of the occupant.

The minimum vertical dimension from the seat H-point to the ceiling for this belted seating position shall be 37.00 inches measured with the seat suspension height adjusted to the upper limit of its travel.

This model of seat shall have successfully completed the static load tests set forth by FMVSS 207, 209, and 210 in effect at the time of manufacture. This testing shall include a simultaneous forward load of 3000 pounds each on the lap and shoulder belts and twenty (20) times the weight through the center of gravity.

The materials used in construction of the seat shall also have successfully completed testing with regard to the flammability of materials used in the occupant compartments of motor vehicles as outlined in FMVSS 302, of which dictates the allowable burning rate of materials in the occupant compartments of motor vehicles.

DRIVER'S SEAT BACK

The driver's seat shall feature a two (2) way adjustable lumbar support and offer an infinite fully reclining adjustable titling seat back. The seat back shall also feature a contoured head rest.

OFFICER'S SEAT

The officer's seat shall be a H.O. Bostrom Firefighter series. The seat shall feature a tapered and padded seat, and cushion. The seat shall be mounted in a fixed position.

The seat shall feature an all belts to seat (ABTS) style of safety restraint. The ABTS feature shall include a red, three-point shoulder harness with the lap belt and automatic retractor as an integral part of the seat assembly. The buckle portion of the seat belt shall extend from the seat base towards the driver position within easy reach of the occupant.

The minimum vertical dimension from the seat H-point to the ceiling for this belted seating position shall be 35.00 inches.

This model of seat shall have successfully completed the static load tests by FMVSS 207/210. This testing shall include a simultaneous forward load of 3000 pounds each on the lap and shoulder belts and twenty (20) times the weight through the center of gravity. This model of



Southampton Fire Department Apparatus Specifications

BIDDER
COMPLIES

YES NO

seat installed in the cab model, as specified, shall have successfully completed the dynamic sled testing using FMVSS 208 as a guide with the following accommodations. In order to reflect the larger size outfitted firefighters, the test dummy used shall be a 95th percentile hybrid III male weighing 225 pounds rather than the 50th percentile male dummy weighing 165 pounds as referenced in FMVSS 208. The model of seats shall also have successfully completed the flammability of materials used in the occupant compartments of motor vehicles as outlined in FMVSS 302, of which decides the burning rate of materials in the occupant compartments of motor vehicles.

OFFICER’S SEAT BACK

The officer’s seat shall feature a SecureAll™ SCBA locking system which shall be one bracket model and store all U.S. and International SCBA brands and sizes while in transit or for storage within the seat back. The bracket shall be easily adjustable with all adjustment points using similar hardware and adjustments with one tool.

The bracket system shall be free of straps and clamps that may interfere with auxiliary equipment on SCBA units. The center guide fork shall keep the taken in place for a safe and comfortable fit in the seat back cavity. The SCBA unit simply needs to be pushed against the pivot arm to engage the patented auto- locking system. Once the lock is engaged, the top clamp shall surround the top of the SCBA tank for a secure fit in all directions.

The SecureAll™ shall include a release handle which shall be integrated into the seat cushion for quick and easy release. This shall eliminate the need for straps or pull cords to interfere with other SCBA equipment.

CREW SEAT REAR FACING OUTER LOCATION

The crew area shall include two (2) rear facing crew seats, which include one (1) located directly behind the driver seat and one (1) located directly behind the officer seat.

CREW SEAT REAR FACING OUTER

The crew area shall include a seat in the rear facing outboard position which shall be a H.O. Bostrom Firefighter series. The seat shall feature a tapered and padded seat, and cushion. The seat shall be mounted in a fixed position.

The seat shall feature an all belts to seat (ABTS) style of safety restraint. The ABTS feature shall include a red, three-point shoulder harness with the lap belt and automatic retractor as an integral part of the seat assembly. The buckle portion of the seat belt shall extend from the seat base towards the driver position within easy reach of the occupant.

The minimum vertical dimension from the seat H-point to the ceiling for each belted seating position shall be 35.00 inches.



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BIDDER
COMPLIES

YES NO

This model of seat shall have successfully completed the static load tests by FMVSS 207/210. This testing shall include a simultaneous forward load of 3000 pounds each on the lap and shoulder belts and twenty (20) times the weight through the center of gravity. This model of seat installed in the cab model, as specified, shall have successfully completed the dynamic sled testing using FMVSS 208 as a guide with the following accommodations. In order to reflect the larger size outfitted firefighters, the test dummy used shall be a 95th percentile hybrid III male weighing 225 pounds rather than the 50th percentile male dummy weighing 165 pounds as referenced in FMVSS 208. The model of seats shall also have successfully completed the flammability of materials used in the occupant compartments of motor vehicles as outlined in FMVSS 302, of which decides the burning rate of materials in the occupant compartments of motor vehicles.

CREW SEAT BACK REAR FACING OUTER

The rear facing outboard seat shall feature a Bostrom SecureAll™ SCBA locking system which shall store all U.S. and International SCBA brands and bottle sizes while in transit or for storage within the seat back. The bracket shall be easily adjustable at all adjustment points with one tool.

The bracket system shall be free of straps, that may interfere with auxiliary equipment on SCBA units. The center guide fork shall keep the SCBA bottle in place for a safe and comfortable fit in the seat back cavity. The SCBA unit simply needs to be pushed against the pivot arm to engage the patented auto-locking system. Once the lock is engaged, the top clamp shall surround the top of the SCBA tank for a secure fit in all directions.

The SecureAll™ shall include a release handle which shall be integrated into the center of the bottom seat cushion for easy access and to eliminate hooking the release handle with clothing or other equipment.

CREW SEAT MOUNTING REAR FACING OUTER

The rear facing outer seat shall be mounted facing the rear of the cab.

CREW SEAT BELT ORIENTATION REAR FACING CREW

The crew position seat belts shall follow the standard orientation which extends from the outboard shoulder extending to the inboard hip.

CREW SEAT FORWARD FACING CENTER LOCATION

The crew area shall include two (2) forward facing center crew seats with both located at the center of the rear wall.



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BIDDER
COMPLIES

YES NO

CREW SEAT CREW FORWARD FACING CENTER

The crew area shall include a seat in the forward facing center position which shall be a H.O. Bostrom Firefighter series. The seat shall feature a tapered and padded seat, and cushion. The seat and cushion shall be hinged and compact in design for additional room and shall remain in the stored position until occupied.

The seat shall feature an all belts to seat (ABTS) style of safety restraint. The ABTS feature shall include a red, three-point shoulder harness with the lap belt and automatic retractor as an integral part of the seat assembly. The buckle portion of the seat belt shall extend from the seat base towards the driver position within easy reach of the occupant.

The minimum vertical dimension from the seat H-point to the ceiling for each belted seating position shall be 35.00 inches.

This model of seat shall have successfully completed the static load tests by FMVSS 207/210. This testing shall include a simultaneous forward load of 3000 pounds each on the lap and shoulder belts and twenty (20) times the weight through the center of gravity. This model of seat installed in the cab model, as specified, shall have successfully completed the dynamic sled testing using FMVSS 208 as a guide with the following accommodations. In order to reflect the larger size outfitted firefighters, the test dummy used shall be a 95th percentile hybrid III male weighing 225 pounds rather than the 50th percentile male dummy weighing 165 pounds as referenced in FMVSS 208. The model of seats shall also have successfully completed the flammability of materials used in the occupant compartments of motor vehicles as outlined in FMVSS 302, of which decides the burning rate of materials in the occupant compartments of motor vehicles.

CREW SEAT BACK FORWARD FACING CENTER

The forward facing center seat shall feature a SecureAll™ SCBA locking system which shall be one bracket model and store all U.S. and International SCBA brands and sizes while in transit or for storage within the seat back. The bracket shall be easily adjustable with all adjustment points using similar hardware and adjustments with one tool.

The bracket system shall be free of straps and clamps that may interfere with auxiliary equipment on SCBA units. The center guide fork shall keep the taken in place for a safe and comfortable fit in the seat back cavity. The SCBA unit simply needs to be pushed against the pivot arm to engage the patented auto- locking system. Once the lock is engaged, the top clamp shall surround the top of the SCBA tank for a secure fit in all directions.

The SecureAll™ shall include a release handle which shall be integrated into the seat cushion for quick and easy release. This shall eliminate the need for straps or pull cords to interfere with other SCBA equipment.



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BIDDER
COMPLIES

YES NO

CREW SEAT MOUNTING FORWARD FACING CENTER

The forward facing center seats shall be installed facing the front of the cab.

CREW SEAT FRAME FORWARD FACING

The forward facing center seating positions shall include an enclosed seat frame which is located and installed on the rear wall. The seat frame shall measure 42.38 inches wide X 12.38 inches high X 22.00 inches deep. The seat frame shall be constructed of 5052-H32 Marine Grade, .190 inch thick, 100 percent primary smooth aluminum plate. The seat box shall be painted with the same color as the remaining interior.

CREW SEAT FRAME FORWARD FACING STORAGE ACCESS

There shall be two (2) access points to the seat frame storage area, one (1) on each side of the seat frame. Each access point shall be covered by a hinged door which measures 15.00 inches in width X 10.63 inches in height.

CAB FRONT UNDERSEAT STORAGE ACCESS

The left and right under seat storage areas shall have a solid aluminum hinged door with non-locking latch.

SEAT COMPARTMENT DOOR FINISH

All underseat storage compartment doors shall be painted interior cab color.

WINDSHIELD WIPER SYSTEM

The cab shall include a parallel arm wiper system which shall clear the windshield of water, ice and debris. There shall be two (2) windshield wipers, one (1) for the driver and one (1) for the officer, which shall be affixed to a rod style arm. The system shall include dual motors which shall initiate the arms in which both the driver and officer windshield wipers are attached, initiating a back and forth motion for each wiper. The wiper motors shall be activated by an intermittent wiper control located within easy reach of the driver's position.

ELECTRONIC WINDSHIELD FLUID LEVEL INDICATOR

The windshield washer fluid level shall be monitored electronically. When the washer fluid level becomes low the yellow "Check Message Center" indicator light on the instrument panel shall illuminate and the message center in the speedometer shall display a "Check Washer Fluid Level" message.



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BIDDER
COMPLIES

YES NO

CAB DOOR HARDWARE

The cab entry doors shall be equipped with exterior pull handles, suitable for use while wearing firefighter gloves. The handles shall be FRP composite with a black matt finish. All doors shall include keyed alike locks that are designed to prevent accidental lockout.

The interior latches shall be black flush paddle type, which are incorporated into an upper door panel.

DOOR LOCKS

Each cab entry door shall include a manually operated door lock. The each door lock may be actuated from the inside of the cab by means of a red knob located on the paddle handle of the respective door or by using a TriMark key from the exterior. The door locks are designed to prevent accidental lock out.

GRAB HANDLES

The cab shall include one (1) 18.00 inch knurled, anti-slip, one-piece exterior assist handle behind each cab door. The grab handle shall be made of 14 gauge 304- stainless steel and be 1.25 inch diameter to enable non-slip assistance with a gloved hand.

REARVIEW MIRRORS

Retrac West Coast style single vision mirror heads model 1171HL shall be provided and installed on each of the front cab doors. The mirrors shall be mounted to the cab doors with tubular stainless steel swing away arms and the mirror heads shall be center mounted on the arms to provide rigid mounting to reduce vibration.

The flat mirrors shall measure 7.00 inches wide x 16.00 inches high. A separate lower 8.00 inch round manually adjustable convex mirror model 980-4 shall be provided below the flat mirror for a wider field of vision. The mirror glass shall be held in a plastic housing with a stainless steel back. In addition an amber marker light shall be provided on each of the mirror backs. The mirrors shall be manufactured with the finest quality non-glare glass.

The flat mirrors shall be remotely adjustable vertically and horizontally via four way actuation switches. The control switches shall be mounted in the cab with in easy reach of the driver. The flat mirrors shall be heated for defrosting in cold weather conditions.

REARVIEW MIRROR HEAT SWITCH

The heated rearview mirrors shall be controlled through a rocker switch in the mirror control panel on the driver's side dash.



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BIDDER
COMPLIES

YES NO

CAB FENDER

Full width wheel well liners shall be installed on the extruded cab to limit road splash and enable easier cleaning. The two-piece liners shall consist of an inner liner 16" wide made of vacuum formed ABS composite and an outer fenderette 3.50" wide made of 12 gauge polished aluminum.

CAB EXTERIOR MODEL NAMEPLATE

The cab shall not include any custom model nameplates relative to any specific model.

IGNITION

The master starting system, ignition system shall include chrome thumb turn switch which shall be mounted on the driver side of the cab to the left of the steering wheel on the dash. Each switch will be accompanied by (1) green LED indication light which shall light when the ignition is in the "ON" position and (1) for the master battery switch when in the "ON" position. The thumb turn switches shall also be accompanied by a chrome push button which shall only operate when both the master battery and ignition thumb switches are in the "ON" position.

BATTERY

The single start electrical system shall include (6) Harris BCI 31 950 CCA batteries with a 210 minute reserve capacity and 4/0 welding type dual path starter cables per SAE J541. The cables shall have encapsulated ends with heat shrink and sealant.

BATTERY TRAY

The batteries shall be installed within two (2) steel battery trays located on the left side and right side of the chassis, securely bolted to the frame rails. The battery trays shall be coated with the same material as the frame.

The battery trays shall include drain holes in the bottom for sufficient drainage of water. A durable, non-conducting, interlocking mat made by Dri-Dek shall be installed in the bottom of the trays to allow for air flow and help prevent moisture build up. The batteries shall be held in place by non-conducting phenolic resin hold down boards.

BATTERY CABLE

The starting system shall include cables which shall be protected by 275 degree F. minimum high temperature flame retardant loom, sealed and encapsulated at the ends with heat shrink and sealant.



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COMPLIES

YES NO

BATTERY JUMPER STUD

The starting system shall include battery jumper studs. These studs shall be located in the forward most portion of the driver's side lower step. The studs shall allow the vehicle to be jump started, charged, or the cab to be raised in an emergency in the event of battery failure.

ALTERNATOR

The starting system shall include a 340 Amp C.E. Niehoff model 615 or equal 12 volt alternator. The alternator shall include a self-excited integral regulator. The alternator shall be connected to the power and ground distribution system with heavy duty cables sized to carry the full rated alternator output.

HEADLIGHTS

The cab front shall include (4) rectangular halogen headlamps with separate high and low beams mounted in bright chrome bezels. The headlamps shall be equipped with the "Daytime Running" light feature, which shall illuminate the headlights to 80% brilliance when the ignition switch is in the "On" position and the parking brake is released.

The headlights shall be controlled through a rocker switch on the driver's dash.

FRONT TURN SIGNALS

The front fascia shall include two (2) Whelen model 600 4.00 inch X 6.00 inch halogen amber arrow shaped turn signals which shall be installed outboard of the warning lights. The turn signal light heads shall be mounted in chrome plastic bezels and shall be located above the headlamps.

HEADLIGHT LOCATION

The headlights shall be located on the front fascia of the cab directly below the front warning lights.

SIDE TURN/MARKER LIGHTS

The sides of the cab shall include (2) incandescent round side marker lights which shall be provided just behind the front cab radius corners.

MARKER AND ICC LIGHTS

In accordance with FMVSS, there shall be five (5) cab LED marker lamps designating identification, center and clearance provided. These lights shall be installed on the face of the cab within full view of other vehicles from ground level.



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BIDDER
COMPLIES

YES NO

AUXILIARY MARKER/TURN LIGHTS

The cab shall include two (2) round Weldon series 9186-8560 incandescent lamps which include a stainless steel housing and an 1157 bulb with an amber cover. The lights shall operate as a side clearance marker and turn signal. The lights shall be mounted to the side of the cabs just above the wheel well.

GROUND LIGHTS

Each door shall include an incandescent NFPA compliant ground lights mounted to the under side of the cab. The lights shall include a polycarbonate lens, a housing which is vibration welded and a bulb which shall be shock mounted for extended life. The ground lighting shall be activated by the opening of the respective door as well as being activated when the parking brake is set.

STEP LIGHTS

The middle step located at each door shall include a NFPA compliant 4.00" round incandescent light which shall activate with the opening of the respective door.

The lights shall have 21 candle power of illumination and draw 1.5 amps.

ENGINE COMPARTMENT LIGHT

There shall be an incandescent NFPA compliant light mounted under the engine tunnel for area work lighting on the engine. The light shall include a polycarbonate lens, a housing which is vibration welded and a bulb which shall be shock mounted for extended life.

INTERIOR OVERHEAD LIGHTING

The cab shall include a two-section incandescent dome lamp with a red and white lens located over each door. The dome lamps shall be rectangular in shape and shall measure approximately 9.50 inches in length X 5.00 inches in width with a black colored bezel. The white portion of each lamp shall be activated by opening the respective door and both the red and white portions can be activated by individual switches on each lamp.

An additional incandescent three (3) light module with dual map lights shall be located over the engine tunnel which can be activated by individual switches on the lamp.

DO NOT MOVE APPARATUS LIGHT

The front headliner of the cab shall include a red flashing light, located in the center for greatest visibility. The light shall be 6.00 inches long X 2.50 inches wide X 1.75 inches high and shall be clearly labeled "Do Not Move Apparatus". In addition to the flashing red light, an audible



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BIDDER
COMPLIES

YES NO

alarm shall be included which shall sound when a door is open and the parking brake is released.

The light and alarm shall be interlocked for activation when a cab door is not firmly closed, an apparatus cabinet door is not closed and the parking brake is released.

MASTER WARNING SWITCH

The optical warning system shall be controlled by a master switch which shall include all “ON” and all “OFF” capability via a red rocker switch on the main panel. Any warning light switches left in the “ON” position shall activate when the master switch is activated. This switch shall be clearly labeled for identification.

LIGHTBAR PROVISION

There shall be a junction box located on the driver’s side of the roof with electrical connections for the light bar.

LIGHTBAR SWITCH

The light bar shall be controlled through a rocker switch located on the main switch panel. This switch shall be clearly labeled for identification.

HORN RING SELECTOR SWITCH

A rocker switch shall be installed in the switch panel between the driver and officer to allow control to either the air horn or the electric horn from the steering wheel horn button. The electric horn shall sound by default when the selector switch is in either position which is in accordance with FMVSS requirement.

AIR HORN ACTIVATION

The air horn actuation shall be accomplished by the steering wheel horn button and a right side officer's mounted Linemaster model SP491-S81 foot switch. An air horn activation circuit shall be provided to the chassis harness pump panel harness connector.

BACK-UP ALARM

An ECCO model 575 backup alarm shall be installed at the rear of the chassis with an output level of not less than 107 dB. The alarm shall automatically activate when the transmission is placed in reverse.



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BIDDER
COMPLIES

YES NO

INSTRUMENTATION

An ergonomically designed instrument panel shall be provided. The gauges shall be backlit with red LED lamps. All gauges shall be driven by stepper motor movements. The instrumentation system shall be multiplexed and shall receive engine and transmission information over the J1939 data bus to reduce redundant sensors.

The instrument panel shall contain the following gauges:

One (1) electronic tachometer shall be included. The scale on the tachometer shall read from 0 to 3000 RPM.

One (1) electronic speedometer with an integral LCD odometer/ trip odometer and hour meter shall be included. The speedometer shall have a dual scale with miles per hour (MPH) as the dominant scale and kilometers per hour (KPH) on the minor scale. The speedometer scale shall read from 0 to 90 MPH (0 to 140 KPH). The odometer shall display up to 9,999,999.9 miles. The trip odometer shall display up to 9,999.9 miles. The LCD screen shall also be capable of displaying certain diagnostic functions. The hour meter shall display engine hours of operation.

One (1) three function gauge with primary system, secondary system and fuel level shall be included. The scale on the air pressure gauges shall read from 0 to 140 pounds per square inch (PSI). The air pressure scales shall be non-linear to expand the scales in the region of normal operation. A red indicator light in the gauge shall indicate a low air pressure. The scale on the fuel level gauge shall read from empty to full. A yellow indicator light shall indicate low fuel at the quarter tank level.

One (1) four function gauge with engine oil pressure, coolant temperature, transmission oil temperature and a voltmeter shall be included. The scale on the engine oil pressure gauge shall read from 0 to 140 pounds per square inch (PSI). The engine oil pressure scale shall be non-linear to expand the scale in the region of normal operation. A red indicator light in the gauge shall indicate low engine oil pressure. The scale on the coolant temperature gauge shall read from 160 to 250 degrees Fahrenheit (F). A red indicator light in the gauge shall indicate high coolant temperature. The scale on the transmission oil temperature gauge shall read from 100 to 300 degrees Fahrenheit (F). A red indicator light in the gauge shall indicate high transmission oil temperature. The scale on the voltmeter shall read from 8 to 16 volts. A red indicator light shall indicate high or low system voltage.

The instrument panel shall contain an Annunciator Module that contains the following indicator lights. All indicator lights shall contain LED lamps.

Red Lamps

- Stop Engine - indicates critical engine fault. (5)
- Park Brake - indicates park brake is set.
- Volts - indicates high or low system voltage. (4)
- Low Oil Press - indicates low engine oil pressure. (4)
- High Coolant Temp - indicates excessive engine coolant temperature. (4)



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BIDDER
COMPLIES

YES NO

- High Trans Temp - indicates excessive transmission oil temperature. (4)
- Low Air - indicates low air pressure in either system one or system two. (4)
- Low Coolant Level - indicates low engine coolant level. (1) (5)
- Air Filter - indicates excessive engine air intake restriction. (5)
- Brake System Fault – indicates a failure in the brake system (hydraulic brake systems only). (5)
- Seat Belt Indicator – indicates when a seat is occupied and corresponding seat belt remains unfastened.

Yellow Lamps

- Check Engine - indicates engine fault. (5)
- Check Trans - indicates transmission fault. (5)
- Wait to Start - indicates active engine air preheat cycle. (2) (5)
- ABS - indicates anti-lock brake system fault. (5)
- Water in Fuel - indicates presence of water in fuel filter. (1) (5)
- Check Message Center – indicates there is a fault message present in the LCD digital display.
- SRS – indicates a problem in the RollTek supplemental restraint system. (1) (5)
- DPF – indicates a restriction of the diesel particulate filter. (3) (5)
- HEST – indicates a high exhaust system temperature. (3) (5)
- MIL – indicates an engine emission control system fault. (3) (5)
- Low Fuel – indicates low fuel. (4)

Green Lamps

- Left and Right turn signal indicators.
- Aux Brake Active - indicates secondary braking device is active. (1)
- High Idle - indicates engine high idle is active. (1)
- ATC – indicates low wheel traction for automatic tractions control equipped vehicles, also indicates mud/snow mode is active for ATC system. (1) (5)
- OK to Pump – indicates the pump engage conditions have been met. (1)
- Pump Engaged – indicates the pump is currently in use. (1)

Blue Lamps

- High beam indicator.

The instrumentation system shall provide a constant audible alarm for the following situations:

- Low air pressure.
- Low engine oil pressure.
- High engine coolant temperature.
- High transmission oil temperature.
- Low coolant level. (1)
- High or low system voltage
- Critical engine fault (Stop Engine).



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BIDDER
COMPLIES

YES NO

The Check Message Center icon will illuminate and a message will be displayed in the LCD screen for the following situations:

- Cab Ajar
- Low Oil Level
- Door Ajar
- Engine Communication Error
- Transmission Communication Error
- ABS Communication Error
- High Coolant Temp
- Turn Signal Reminder (turn signal left on for more than one (1) mile)
- Low Fuel
- Low Oil Pressure
- Low Coolant Level
- Low Battery Voltage
- High Battery Voltage
- Low Primary Air Pressure
- Low Secondary Air Pressure
- High Trans Temp

The instrumentation system will provide a continuous alarm for the following situations:

- Stop Engine
- Low Coolant Level (*I*)
- Brake System Fault
- Check Trans
- Check Engine
- ABS
- Engine Communications Error
- Transmission Communications Error
- ABS Communications Error
- Low Fuel
- Low Primary Air Pressure
- Low Secondary Air Pressure
- Low or High Battery Voltage
- High Trans Temp
- Low Oil Pressure
- High Coolant Temp

The instrumentation system will provide a 160 millisecond second alarm every 880 milliseconds for the following situations:



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BIDDER
COMPLIES

YES NO

- Seat Belt
- Air Filter
- Water in Fuel (1)
- Cab Ajar
- Low Oil Level
- Door Ajar

The instrumentation system will provide a 160 millisecond second alarm every 5 seconds for the following situation:

Turn Signal Reminder (turn signal left on for more than one (1) mile)

- (1) Feature only available when optionally equipped.
- (2) Feature only available on engines with pre-heat capability.
- (3) Feature only on vehicles with diesel particulate filter (DPF).
- (4) Warning light is present in gauge.
- (5) A message in the LCD screen will also be displayed.

CAB EXTERIOR PROTECTION

The cab face shall have a removable plastic film installed over the painted surfaces to protect the paint finish during transport to the body manufacturer.

FIRE EXTINGUISHER

A 5.0 pound D.O.T approved fire extinguisher with BC rating shall be shipped loose with the cab.

DOOR KEYS

The cab and chassis shall include a total of four (4) door keys for the manual door locks.

AS BUILT WIRING DIAGRAMS

The cab and chassis shall include two (2) complete set of wiring schematics and option wiring diagrams. Two (2) DVDs

WARRANTY - CAB AND CHASSIS

The chassis manufacturer shall provide a limited parts and labor warranty to the original purchaser of the custom built cab and chassis for a period of twelve (12) months, or the first 24,000 miles, whichever occurs first. The warranty period shall commence on the date the vehicle is delivered to the end user. The warranty shall include conditional items listed in the detailed warranty document which shall be provided upon request.



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BIDDER
COMPLIES

YES NO

OPERATORS AND PARTS LIST MANUAL

There shall be two (2) chassis operator's manual which includes a parts list. Also, wiring and air plumbing diagrams shall be provided as well as a list of any parts or equipment that is shipped loose with the vehicle. All standard wiring and plumbing diagrams shall be created specifically to the chassis model. Two DVDs

CAST ALUMINUM FUEL FILL ASSEMBLY

There shall be a cast aluminum fuel fill assembly furnished in the driver's side behind rear axle for the rear mount fuel tank. The fuel fill assembly shall consist of a polished cast aluminum housing with fuel fill neck and cap.

HORIZONTAL CHASSIS EXHAUST

The chassis exhaust system shall be extended to the front of the right rear wheel.

WHEEL TRIM PACKAGE

There shall be heavy-duty, rubber mud flaps shall be furnished and installed behind the front and rear wheels of the vehicle. The mud flaps shall extend the full width of the tires and are to be attached with stainless steel fasteners.

There shall also be stainless steel wheel liners and chrome lug nut covers shall be installed on all four outside chassis wheels of the apparatus.

FLUID DATA PLAQUE

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

- Engine oil
- Engine coolant
- Chassis transmission fluid
- Drive axle lubricant
- Power steering fluid
- Pump transmission lubrication fluid
- Paint manufacturer and color numbers
- Other NFPA applicable fluid levels or data as required

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



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BIDDER
COMPLIES

YES NO

APPARATUS DIMENSION DATA

One (1) highly visible label indicating the overall height, length, width and weight of the vehicle shall be installed in the cab dash area.

NO RIDE LABEL

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

CAB SEATING POSITION LIMITS

One (1) label shall be installed in the cab to indicate seating positions for firefighters. A weight allowance of 250 pounds for each shall be factored into the gross vehicle weight rating of the chassis.

HELMET WARNING TAG

One (1) label shall be installed in the cab, visible from each seating position. The label shall read "DO NOT STORE HELMETS IN CAB WHILE VEHICLE IS IN MOTION." Helmets must be stored in a body compartment.

REAR TOWING PROVISIONS

There shall be two tow eyes furnished under the rear of the body and attached directly to each chassis frame rail. There shall be a reinforcement spreader bar connecting the two tow eyes. Tow eyes are to be constructed of 3/8" plate steel with a 4" I.D. hole, large enough for passing through a tow chain end hook.

TOW PLATE PAINTING

The tow plates shall be painted black.

TIRE PRESSURE INDICATOR

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

SINGLE STAGE PUMP

A Hale model DSD, single stage pump shall be designed to mount in a pump module and shall be split-drive shaft driven. The pump shall be driven by a driveline from the truck transmission. The engine shall provide sufficient horsepower and RPM to enable the pump to meet and exceed its rated performance.



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BIDDER
COMPLIES

YES NO

The entire pump, suction and discharge passages shall be hydrostatically tested to a pressure of 600 PSI. The pump shall be tested at the pump manufacturer's factory to the performance specs as outlined by the applicable sections of the NFPA 1901 standard. The pump shall be free from objectionable pulsation and vibration.

PUMP BODY

The pump, the pump body and related parts shall be cast iron. All metal moving parts in contact with water shall be of high quality bronze or stainless steel.

PUMP IMPELLER

The pump shall have one impeller. The pump body shall have two opposed discharge outlet volute cutwaters to eliminate radial unbalance. Pump impeller shall be hard, fine grain bronze of the mixed flow design; accurately machined and individually balanced.

The vanes of the impeller intake eyes shall be of sufficient size and design to provide ample reserve capacity utilizing minimum horsepower. Impeller clearance rings shall be bronze, easily renewable without replacing impeller or pump volute body, and shall be of wrap-around double labyrinth design for maximum efficiency.

PUMP SHAFT

Pump shaft shall be rigidly supported by bearings for minimum deflection. The bearings shall be heavy-duty, deep groove ball bearings in the gearbox and they shall be splash lubricated.

The pump shaft shall be heat-treated, electric furnace, corrosion resistant stainless steel to be super-finished with galvanic corrosion protection for longer shaft life. Pump shaft must be sealed with double-lip oil seal to keep road dirt and water out of the gearbox.

PUMP TRANSMISSION

The pump transmission shall be of sufficient size to withstand 16,000 foot pounds of torque from the engine. The drive unit shall be designed of ample capacity for lubrication reserve and to maintain the proper operating temperature.

The gearbox drive shafts shall be of heat-treated chrome nickel steel and be at least 2-3/4" in diameter, on both the input and output drive shafts. They shall withstand the full torque of the engine.

All gears both drive and pump, shall be of highest quality electric furnace chrome nickel steel. Bores shall be ground to size and teeth integrated and hardened, to give an extremely accurate gear for long life. An accurately cut spur design shall be provided to eliminate all possible end thrust.

PUMP MOUNTING

The pump shall be bolted to steel angles in the pump module, using grade 8 bolts.



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BIDDER
COMPLIES

YES NO

DRIVELINES

Hollow-tube drivelines and universals shall be properly matched to the engine and transmission output torque ratings.

FIRE PUMP WARRANTY

The fire pump shall be supplied with the standard Hale Products free of defects in material and workmanship for a period of five (5) years from the date the product is first placed into service or five and one-half (5-1/2) years from date of shipment by Hale, whichever period shall be first to expire. Within this warranty period Hale will cover parts and labor for the first two (2) years and parts only for years three (3) through five (5).

1250 GPM FIRE PUMP SPECIFICATIONS

The centrifugal type fire pump shall be a Hale model DSD midship mounted with a rated capacity of 1250 GPM. The pump shall meet NFPA 1901 requirements.

The pump shall be certified to meet the following deliveries:

- 1250 GPM @ 150 PSI
- 1250 GPM @ 165 PSI
- 875 GPM @ 200 PSI
- 625 GPM @ 250 PSI

LEFT SIDE -- 6" UNGATED INTAKE

One (1) 6" un gated suction intake shall be installed on the left side pump panel to supply the fire pump from an external water supply. The threads shall be 6" NST.

The intake shall be provided with a removable screen.

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

RIGHT SIDE -- 6" UNGATED INTAKE

One (1) 6" un gated suction intake shall be installed on the right side pump panel to supply the fire pump from an external water supply.

The intake shall be provided with a removable screen.

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



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BIDDER
COMPLIES

YES NO

PRESSURE GOVERNOR AND ENGINE-PUMP MONITORING

One (1) Fire Research InControl series TGA300 pressure governor and monitoring display kit shall be installed. The kit shall include a control module, intake pressure sensor, discharge pressure sensor, and cables. The control module case shall be waterproof and have dimensions not to exceed 5 1/2" high by 10 1/2" wide by 2" deep. Inputs for monitored information shall be from a J1939 databus or independent sensors. Outputs for engine control shall be on the J1939 databus or engine specific wiring.

The following continuous displays shall be provided:

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

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

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

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

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

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



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BIDDER
COMPLIES

YES NO

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

FIRE PUMP MECHANICAL WATER SEAL

The Hale fire pump shall have a high quality, self-adjusting, maintenance free mechanical seal.

FIRE PUMP SHIFT

The pump shift shall be an air operated and shall incorporate an air cylinder with an electric actuating switch to shift from road to pump and back. The power shift control valve shall be mounted in the cab. The fire pump-shift system shall be equipped with a means to prevent unintentional movement of the control device from its set position.

The system shall include a nameplate indicating the chassis transmission shift selector position to be used for pumping and located so that it can be easily read from the driver's position.

The system shall include applicable the NFPA interlocks, pump shift and OK TO PUMP indicator lights in the cab and pump panel. The fire pump system shall be equipped with an interlock system shall be provided to ensure that the pump drive system components are properly engaged in the pumping mode of operation so that the pumping system can be safely operated from the pump operator's position.

If applicable, the secondary braking device shall be automatically disengaged for pumping operations.

FIRE PUMP PRIMER

The fire pump shall be equipped with a Hale model #ESP oil-less electrically driven priming pump. The unit shall be a positive displacement vane type. A Hale PV priming control shall be located at the pump operator's panel and when pulled it shall open the priming valve and start the priming motor.



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BIDDER
COMPLIES

YES NO

The pump shall be capable of taking suction and discharging water with a lift of 10 feet in not more than 30 seconds with the pump dry, through 20 feet of suction hose of appropriate size. The priming system shall comply to applicable sections of NFPA standards.

UNDERWRITERS LABORATORIES FIRE PUMP TEST

The pump shall undergo an Underwriters Laboratories Incorporated test per applicable sections of NFPA standards, prior to delivery of the completed apparatus.

The UL acceptance certificate shall be furnished with the apparatus on delivery.

FIRE PUMP TEST LABEL

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

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

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

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

FIRE PUMP COOLING

The fire pump shall be equipped with 3/8" cooling line from the pump to the water tank. This re-circulation line shall be controlled by a pump panel control valve with nameplate label noting it as the "fire pump bypass cooler".

CHASSIS ENGINE HEAT EXCHANGER COOLING SYSTEM

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



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BIDDER
COMPLIES

YES NO

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

STAINLESS STEEL PLUMBING WARRANTY

The manufacturer shall provide a ten (10) year warranty on the stainless steel plumbing components and installation. The manufacturer shall supply details of their warranty information with their bid submission.

PUMP PLUMBING SYSTEM

The fire pump plumbing system shall be of rigid or flexible piping with stainless steel fittings. Victaulic couplings shall be installed to permit flexing of the plumbing system and allow for quick removal of piping or valves for service. Flexible hose couplings shall be threaded stainless steel or Victaulic connections.

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

STAINLESS STEEL INTAKE MANIFOLD

The suction manifold assembly shall be fabricated with Schedule #10 type 304 stainless steel. All threaded fittings shall be a minimum of Schedule 10 stainless steel. The suction manifold assembly shall have radiused sweep elbows to minimize water turbulence into the suction volute. The suction manifold shall be welded and pressure tested prior to installation. The stainless steel manifold assembly shall be attached to the pump intake volute with a heavy-duty, flexible Victaulic coupling.

The stainless steel manifold assembly shall have a ten (10) year warranty.

STAINLESS STEEL DISCHARGE MANIFOLD

The discharge manifold assembly shall be fabricated with Schedule #10 type 304 stainless steel. All threaded fittings shall be a minimum of Schedule 10 stainless steel. The discharge manifold assembly shall have radiused sweep elbows to minimize water turbulence into the discharge header. The manifold shall be welded and pressure tested prior to installation. The stainless steel manifold assembly shall be attached to the pump intake volute with a heavy-duty, flexible Victaulic coupling.

The stainless steel manifold assembly shall have a ten (10) year warranty.



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BIDDER
COMPLIES

YES NO

FIRE PUMP MASTER DRAIN

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

ADDITIONAL LOW POINT DRAINS

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

PLUMBING SYSTEM

The plumbing system shall be unpainted.

HOSE THREADS

The hose threads shall be National Standard Thread (NST) on all base threads on the apparatus intakes and discharges.

FOAM PROPORTIONER

A foam proportioning system shall be provided that is an on demand, automatic proportioning, single point, direct injection system suitable for Class "A" foam concentrates. Operation shall be based on direct measurement of water flow, and remain consistent within the specified flows and pressures. The system shall automatically balance and proportion foam solution at rates from 0.1% to 9.9% regardless of variations in water pressure and flow, up to the maximum rated capacity of the foam concentrate pump.

The design of the system shall allow operation from draft, hydrant, or relay operation. This shall provide a versatile system to meet the demands at a fire scene.

SYSTEM CAPACITY

The system shall have the ability to deliver the following minimum foam solution flow rates at accuracy that meet or exceed NFPA requirements at a pump rating of 250 PSI

- 160 GPM @ 6%
- 333 GPM @ 3%
- 1000 GPM @ 1%

FOAM CONTROL SYSTEM

The system shall be equipped with a digital electronic control display located on the pump operators' panel. Push button controls shall be integrated into the panel to turn the system



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COMPLIES

YES NO

on/off, control the foam percentage, and to set the operation modes (automatic, manual, draft, calibration, or flush).

The percent of injection shall have presets for Class A foam. These presets can be changed at the fire department as desired. The percent of injection shall be able to be easily changed at the scene to adjust to changing demands.

In order to minimize the use of abbreviations and interpretations, system information shall be displayed on the panel by way of .50 tall LEDs that total fourteen characters (two lines of 7 each). System on and foam pump on indicator lights shall be included. Information displayed shall include mode of operation (automatic, manual, draft, calibration, or flush), foam supply selected, water total, foam percentage, remaining gallons, and time remaining.

The control display shall direct a microprocessor, which receives input from the systems water flow meter while also monitoring the position of the foam concentrate pump. The microprocessor shall compare the values of the water flow versus the position/rate of the foam pump to insure the proportion rate is accurate. One (1) check valve shall be installed in the plumbing to prevent foam from contaminating the water pump.

Low Level Indicator, Foam Tank

The control head shall display a warning message when the foam tank is below a quarter of a tank.

Foam Concentrate Pump

The foam concentrate pump shall be of positive displacement, self priming, linear actuated design, driven by hydraulic motor. The pump shall be constructed of brass body, chrome plated stainless steel shaft with a stainless steel piston. In order to increase the longevity of the pump, no aluminum shall be present in the construction.

A relief system shall be provided which is designed to protect the drive system components and prevent over pressuring the foam concentrate pump.

The foam concentrate pump shall have minimum capacity for 10 gpm with all types of foam concentrates with a viscosity at or below 6000 cps including protein, fluroprotein, ATFFF, FFFP, or AR-AFFF. The system shall deliver only the amount of foam concentrate flow required, without recirculating foam back to the storage tank. Recirculating foam concentrate back to the storage tank can cause agitation and premature foaming of the concentrate, which can result in system failure. The foam concentrate pump shall be self priming and have the ability to draw foam concentrate from external supplies such as drums or pails.

External Foam Concentrate Connection

An external foam pick – up shall be provided to enable use of a foam agent that is not stored on the vehicle. The external foam pick up shall be designed to allow continued operation after the



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BIDDER
COMPLIES

YES NO

on board foam tank is empty. The external foam pick-up shall be designed to allow use with training foam or colored water for training purposes.

The external foam pick up shall be one (1) – 1.00” female swivel connection with chrome plated plug and chain shall be located on the driver’s side pump panel. A check valve shall be installed in the external connection. A 1.00” male MST thread shall be provided and shipped loose.

Strainer

A strainer with stainless steel screen shall be installed ahead of the foam concentrate pump inlet port. The strainer shall be easily accessible for cleaning.

Discharges

The foam system shall be plumbed to three crosslays and the rear 2 ½” discharge (drivers side)

System Electrical Load

The foam proportioning shall not impose an electrical load on the vehicle electrical system any greater than five (5) amps at 12 vdc

Tank Selector

An electric valve shall be used for the foam supply valve. The foam supply valve shall be controlled at the foam system control head for ease of operation. The supply valve shall be electric, remote controlled, to eliminate air pockets in the foam supply hose.

Maintenace Message

A message shall be displayed on the control head to advise when system maintenance needs to be performed. The message shall display interval for cleaning the foam strainer, cleaning for the water strainers.

Flush System

The system shall be designed such that a flush mode shall be provided to allow the system to flush all foam concentrate with clear water. The flush circuit control logic shall ensure the foam tank supply valve is closed prior to opening the flush valve. The flush valve shall be operated at the foam system control head for ease of operation. The valve shall be electrically controlled and located as close to the foam tank supply valve as possible. A manual flush drain valve shall be located under the driver’s side running board.

Foam Tank



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BIDDER
COMPLIES

YES NO

The foam tank shall be an integral portion of the polypropylene water tank. The cell shall have a capacity of 20 gallons of foam with the intended use of Class "A:" foam. The brand of the foam stored in this tank shall be Ansul Silvex. The foam cell shall not reduce the capacity of the water tank. The foam cell shall have a screen in the fill dome and a breather in the lid.

Foam Tank Drain

The foam tank drain shall be a 1.00" drain valve located inside the pump compartment accessible through a door on the passenger's side pump panel.

FOAM SYSTEM FLUSHING

A foam concentrate system flush line shall be provided as required by the foam system manufacturer. A means shall be provided in the flush line to prevent water backflow into the foam concentrate tank or water tank during the flushing operation.

FOAM SYSTEM CONTROLS

The foam proportioning system operating controls shall be located at or near the pump operator's position and shall be clearly identified. Foam proportioning system shall be provided with accessible controls to completely flush the system with water according to the manufacturer's instructions.

LABELS AND INSTRUCTIONS

An instruction plate shall be provided for the foam proportioning system that include, at a minimum, piping schematic of the system and basic operating instructions. Labels that are marked clearly with the identification and function shall be provided for each control, gauge, and indicator related to the foam proportioning system.

A label shall be provided on the pump operator's panel that identifies the type of foam concentrate that the foam proportioning system is designed to use. It shall also state the minimum/maximum foam proportioning rate at the minimum/maximum foam proportioning rated system flow and pressure.

Two (2) copies of an operations and maintenance manual shall be provided. They shall include a complete diagram of the system together with operating instructions and details outlining all recommended maintenance procedures.



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BIDDER
COMPLIES

YES NO

FOAM SYSTEM TESTING

The accuracy of the foam proportioning system shall be certified by the foam equipment manufacturer and also tested by the installer prior to delivery of the apparatus in compliance to NFPA standards. The test results shall be submitted as part of delivery manual.

1" FOAM TANK CONTROL -- CLASS A

One (1) Class A foam tank shall be plumbed with 1" valve and corrosion resistant hose from the foam tank to the foam inlet of the foam system. The manually opened valve shall be provided behind the pump panel with a label.

INTEGRAL CLASS A FOAM TANK

One (1) twenty (20) gallon Class A foam tank shall be installed within the water tank. The non-corrosive foam tank shall meet applicable sections of NFPA standards. The foam concentrate tank shall be provided with sufficient wash partitions so that the maximum dimension perpendicular to the plane of any partition shall not exceed 36 inches. The swash partition(s) shall extend from wall to wall and cover at least 75 percent of the area of the plane of the partition.

The foam concentrate tank shall be provided with a fill tower or expansion compartment having a minimum area of 12 square inches and having a volume of not less than 2 percent of the total tank volume. The fill tower opening shall be protected by a completely sealed air-tight cover. The cover shall be attached to the fill tower by mechanical means. The fill opening shall be designed to incorporate a 1/4 inch removable screen and shall be located so that foam concentrate from a five (5) gallon container can be dumped directly to the bottom of the tank to minimize aeration without the use of funnels or other special devices.

The foam tank fill tower shall be equipped with a pressure/vacuum vent that enables the tank to compensate for changes in pressure or vacuum when filling or withdrawing foam concentrate from the tank. The pressure/vacuum vent shall not allow atmospheric air to enter the foam tank except during operation or to compensate for thermal fluctuations. The vent shall be protected to prevent foam concentrate from escaping or directly contacting the vent at any time. The vent shall be of sufficient size to prevent tank damage during filling or foam withdrawal.

A color coded label or visible permanent marking that reads "FOAM TANK FILL" shall be placed at or near any foam concentrate tank fills opening. A label shall be placed at or near any foam concentrate tank fill opening that specifies the type of foam concentrate the system is designed to use. Any restrictions on the types of foam concentrate that can be used with the system shall also be stated, and a warning message that reads "WARNING: DO NOT MIX BRANDS AND TYPES OF FOAM."



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BIDDER
COMPLIES

YES NO

The foam concentrate tank outlet connection shall be designed and located to prevent aeration of the foam concentrate and shall allow withdrawal of 80 percent of the foam concentrate tank storage capacity under all operating conditions with the vehicle level.
The foam tank(s) shall be fabricated by United Plastic Fabricating.

FOAM TANK DRAIN -- UNDER TANK

The foam tank shall have one (1) 1" gate valve drain provision installed.

CLASS A FOAM TANK GAUGE

One (1) Fire Research Tank Vision model WLA260-A00 foam tank indicator kit shall be installed at the operator's panel. The kit shall include an electronic indicator module, a pressure sensor, a 10-ft sensor cable and a tank vent. The indicator shall show the volume of Class A foam concentrate in the tank on nine (9) easy to see super bright LEDs. A wide view lens over the LEDs shall provide for a viewing angle of 180 degrees. The indicator case shall be waterproof, manufactured of aluminum, and have a distinctive green label.

The program features shall be accessed from the front of the indicator module. The program shall support self-diagnostics capabilities, self-calibration, and a data link to connect remote indicators. Low foam warnings shall include flashing LEDs at 1/4 tank, down chasing LEDs when the tank is almost empty, and an output for an audio alarm.

The indicator shall receive an input signal from an electronic pressure sensor. The sensor shall be mounted from the outside of the foam tank near the bottom. No probe shall be placed on the interior of the tank. The foam tank vent shall be installed on the foam fill tower. Wiring shall be weather resistant and have automotive type plug-in connectors.

WATER TANK TO PUMP LINE

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

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

The specified intake valve shall be equipped with one (1) manually operated pull rod, with quarter turn locking feature.

The handle shall be equipped with color coded engraved type name plate.

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



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BIDDER
COMPLIES

YES NO

WATER TANK FILL LINE

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

One (1) manually operated pull rod, with quarter turn valve, with locking feature shall be provided on the specified discharge.

The handle shall be equipped with color coded engraved type name plate.

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

LEFT SIDE -- 2-1/2" GATED INTAKE

One (1) 2-1/2" gated suction intake shall be installed on left side pump panel to supply the fire pump from an external water supply. The control valve shall be a quarter turn ball valve and shall have 2-1/2" NST female thread of chrome plated brass.

The intake shall be equipped with a 3/4" drain and bleeder valve, controlled at the base of the pump panel.

A nameplate label and removable screen shall be installed.

One (1) 2-1/2" chrome plated plug shall be provided.

The threads shall be NST and the plug shall be equipped rocker lugs and chain or cable securement.

The intake valve shall be equipped with one (1) manually operated swing type manual control located adjacent the intake.

The valve shall be equipped color coded engraved type name plate.

THREE (3) 1-3/4" CROSSLAY DISCHARGES

Three (3) pre-connect 1-3/4" hose crosslays shall be installed over pump enclosure, with quarter turn 2" diameter ball valves. The outlets shall be a 2" NPT female swivel x 1-1/2" male NST hose threads.

The crosslay hosebeds shall have smooth aluminum sides.

The hosebed decking shall be constructed with slots integrated into the hosebed floor.

Each hosebed shall provide for a minimum capacity of 200 feet of 1-3/4" diameter double jacket hose with nozzle, for hose provided by the fire department.



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BIDDER
COMPLIES

YES NO

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

Three (3) manually operated pull rod, with quarter turn valve, with locking feature shall be provided on the discharges

The handle shall be equipped with color coded engraved type name plate.

Each valve shall be a two-inch (2") Akron valve with a stainless ball.

Three (3) 2-1/2" pressure gauge rated at 0-400 Psi shall be provided.

The gauge shall include a color coded label and be installed on the pump instrument panel.

The face of the gauge shall have a white dial with black letters.

CROSSLAY HINGED COVER

The crosslay hosebed shall be equipped with a single aluminum diamond plate hinged cover. The cover shall have rubber bumpers, latching devices, and lift up handle on each end of the cover.

ROLLERS FOR CROSSLAY HOSE BED

The crosslay hosebed shall be equipped stainless steel "U" shaped roller system, one on each end of the hosebed.

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

One (1) 2-1/2" discharge shall be installed on the left side pump panel area and shall be controlled by a quarter turn ball valve.

The discharge shall have 2-1/2" NST male hose threads and a chrome plated elbow with rocker lugs with 2-1/2" NST swivel female x 2-1/2" NST male hose threads.

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

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

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

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



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BIDDER
COMPLIES

YES NO

One (1) manually operated pull rod, with quarter turn valve, with locking feature shall be provided on the discharge.

The handle shall be equipped with color coded engraved type name plate.

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

One (1) 2-1/2" pressure gauge rated at 0-400 Psi shall be provided.

The gauge shall include a color coded label and be installed on the pump instrument panel.

The face of the gauge shall have a white dial with black letters.

RIGHT SIDE PUMP PANEL -- 2-1/2" DISCHARGE

One (1) 2-1/2" discharge shall be installed on the right side pump panel area and shall be controlled by a quarter turn ball valve. The outlet shall have 2-1/2" NH male hose threads.

A chrome plated elbow with rocker lugs shall be provided with 2-1/2" NST swivel female x 2-1/2" NH male hose threads.

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

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

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

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

One (1) manually operated pull rod, with quarter turn valve, with locking feature shall be provided on the discharge.

The handle shall be equipped with color coded engraved type name plate.

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

One (1) 2-1/2" pressure gauge rated at 0-400 Psi shall be provided.

The gauge shall include a color coded label and be installed on the pump instrument panel.

The face of the gauge shall have a white dial with black letters.



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BIDDER
COMPLIES

YES NO

RIGHT SIDE PUMP PANEL -- 3" DISCHARGE

One (1) 3" discharge shall be installed on the right side pump panel area and shall be controlled by a quarter turn ball valve. The discharge shall have 3" NST male hose threads.

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

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

One (1) chrome plated elbow with rocker lugs shall be provided with 3" NST swivel female x 3" NST male hose threads.

One (1) 3" NST rocker lug chrome plated vented cap and cable or chain securement shall be provided.

One (1) Akron valve equipped with a manually operated pull rod, with quarter turn locking feature and a manual slow close device shall be provided on the discharge.

The handle shall be equipped with color coded engraved type name plate.

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

One (1) 2-1/2" pressure gauge rated at 0-400 Psi shall be provided.

The gauge shall include a color coded label and be installed on the pump instrument panel.

The face of the gauge shall have a white dial with black letters.

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

One (1) 2-1/2" discharge shall be installed on the right side rear panel of the apparatus body and shall be controlled by a quarter turn ball valve on the pump panel.

The discharge shall have 2-1/2" NPT x 2-1/2" NST male hose threads adapter with 30 degree slant.

The outlet shall be equipped with an engraved nameplate label shall be installed adjacent the valve control handle.

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

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

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



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BIDDER
COMPLIES

YES NO

One (1) manually operated pull rod, with quarter turn valve, with locking feature shall be provided on the discharge.

The handle shall be equipped with color coded engraved type name plate.

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

One (1) 2-1/2" pressure gauge rated at 0-400 Psi shall be provided

The gauge shall include a color coded label and be installed on the pump instrument panel.

The face of the gauge shall have a white dial with black letters.

3" MONITOR DISCHARGE

One (1) 3" discharge shall be piped to the area over the pump enclosure with 3" NPT male threads provided. The pipe shall be equipped with Victaulic couplings (if necessary) and shall be properly secured to prevent movement when a monitor or deck gun is attached.

The quarter turn ball valve shall be controlled on pump panel.

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

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

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

The handle shall be equipped with color coded engraved type name plate.

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

One (1) 2-1/2" pressure gauge rated at 0-400 Psi shall be provided.

The gauge shall include a color coded label and be installed on the pump instrument panel.

The face of the gauge shall have a white dial with black letters.

WATER TANK SIZE

The apparatus shall be equipped with a one-thousand two hundred fifty (1250) gallon polypropylene water tank. The tank shall be equipped with a four-inch (4") overflow pipe.



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BIDDER
COMPLIES

YES NO

WATER TANK FILL TOWER

A fill tower measuring approximately 10" x 10" square shall be provided on the water tank up to and including 1500 gallons total capacity.

DIRECT TANK FILL

One (1) 2-1/2" diameter direct tank fill inlet shall be provided, including a 2-1/2" female NH swivel, plug and screen.

The valve shall be located and controlled on the rear of body.

SIDE MOUNT PUMP ENCLOSURE

The side mount pump enclosure shall be removable and supported from the chassis frame rails. This enclosure will allow independent flexing of the pump enclosure from the body and allow for quick removal. The support structure shall be constructed of extruded aluminum tubing and angle.

All pump suction and discharge controls are to be mounted on the driver side pump operator's panel so as to permit operation of the pump from a central location. The fire pump, valves and controls shall be accessible for service and maintenance as required by applicable sections of NFPA standards.

All gauges shall be suitably enclosed and mounted on a full pump compartment width "hinged" gauge panel constructed of the same material as the pump operators control panel, allowing access to the backside of all gauges and gauge lines. Panel is to include a stainless steel piano hinge, flush mounted chrome plated trigger latch, and stainless steel cable end stops. Electrical wiring and all gauge lines shall be properly tie wrapped to prevent kinking or cutting of the lines when the panel is opened.

The following controls and equipment shall be provided on the pump panel or within the pump enclosure:

- Electric primer.
- Pump and plumbing area service lights.
- Pressure control device and throttle control.
- Fire pump and engine instruments.
- Pump intakes and discharge controls.
- Master intake and discharge gauges.
- Tank fill control.
- Tank suction control.
- Water tank level gauge.
- Pump panel lights



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BIDDER
COMPLIES

YES NO

LEFT SIDE RUNNING BOARD

The left pump panels shall be equipped with a side running board. The running board will extend along the width of the pump enclosure from the forward end of the body module to behind the chassis cab.

The running board shall be constructed of aluminum tread plate, bolted in place with stainless steel fasteners. The step surfaces shall be in compliance to applicable sections of NFPA requirements.

RIGHT SIDE RUNNING BOARD

The right pump panel shall be equipped with a side running board. The running board will extend along the width of the pump enclosure from the forward end of the body module to behind the chassis cab.

The running board shall be constructed of aluminum tread plate, bolted in place with stainless steel fasteners. The step surfaces shall be in compliance to applicable sections of NFPA requirements.

LEFT SIDE PUMP PANEL

The pump panel installed on the left hand side of the pump enclosure shall be fastened to the pump enclosure with 1/4" stainless steel bolts and nutserts.

RIGHT SIDE PUMP PANEL

The pump panel installed on the right hand side of the pump enclosure shall be fastened to the pump enclosure with 1/4" stainless steel bolts and nutserts.

PUMP PANEL -- SIDE MOUNT

The left hand and right hand pump panels shall be constructed of black thermoplastic coating aluminum material and be fastened to the pump enclosure with 1/4" stainless steel bolts.

The instrument area shall have a stainless steel continuous hinge that shall swing for easy access to gauges.

LABELS

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



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BIDDER
COMPLIES

YES NO

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

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

COLOR CODED PUMP PANEL LABELING AND NAMEPLATES

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

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

MIDSHIP PUMP PANEL LIGHTS -- LEFT SIDE

Three (3) Weldon #2025 or equal lights with clear lenses shall be installed under an instrument panel light hood on the left side pump panel. The lights shall be controlled by a switch located on the operator's instrument panel.

MIDSHIP PUMP PANEL LIGHTS -- RIGHT SIDE

Two (2) Weldon #2025 or equal lights with clear lenses shall be installed under an instrument panel light hood on the right side pump panel. The lights shall be controlled by a switch located on the operator's instrument panel.

PUMP PANEL LIGHTS

One (1) of the pump panel lights shall be illuminated at the time the fire pump is engaged into operation. The remaining lights shall be controlled by a switch located on the operator's instrument panel.

TEST TAPS

Test taps for pump intake and pump pressure shall be provided on the pump instrument panel and be properly labeled.

WATER TANK GAUGE

One (1) Fire Research TankVision model WLA200-A00 tank indicator kit shall be installed on the pump panel. The kit shall include an electronic indicator module, a pressure sensor, and a 10' sensor cable. The indicator shall show the volume of water in the tank on nine (9) easy to see super bright LEDs. A wide view lens over the LEDs shall provide for a viewing angle of 180



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BIDDER
COMPLIES

YES NO

degrees. The indicator case shall be waterproof, manufactured of aluminum, and have a distinctive blue label.

The program features shall be accessed from the front of the indicator module. The program shall support self-diagnostics capabilities, self-calibration, and a data link to connect remote indicators. Low water warnings shall include flashing LEDs at 1/4 tank, down chasing LEDs when the tank is almost empty, and an output for an audio alarm.

The indicator shall receive an input signal from an electronic pressure sensor. The sensor shall be mounted from the outside of the water tank near the bottom. No probe shall place on the interior of the tank. Wiring shall be weather resistant and have automotive type plug-in connectors.

HOSEBED WIDTH

The width of the hosebed shall be 70".

ALUMINUM HOSEBED GRATING

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

ALUMINUM HOSEBED DIVIDER

Two (2) adjustable hosebed dividers, constructed of .250" aluminum, shall be installed on the apparatus.

VINYL HOSEBED COVER

The apparatus shall be equipped with a vinyl hosebed cover with a weighted rear flap.

The cover, approximately 74" wide, shall be secured utilizing a Velcro fastening system at the front and sides of the hosebed body.

The color shall be: Red

HARD SUCTION MOUNTING

There shall be two (2) horizontally mounted aluminum hard suction hose trays with velcro straps shall be provided above the body compartments.



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BIDDER
COMPLIES

YES NO

ALUMINUM BODY

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

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

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

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

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

Compartments to be sweepout design and to be water and dust proof. All compartments shall be made to the maximum practical dimensions to provide maximum storage capacity. To ensure maximum storage space, the apparatus shall be constructed without any void spaces between the body and the compartment walls. Double wall construction does not meet this requirement.

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

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

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

Fasteners

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

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



Southampton Fire Department Apparatus Specifications

BIDDER
COMPLIES

YES NO

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

BODY SUB-FRAME

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

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

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

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

A minimum of two rear platform support channels shall be provided and constructed of 3.4 lb. per foot heavy steel material. Each support channel shall have welded in gusset where the support meets the rear subframe rails.

REAR WHEEL WELL AREA

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

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

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

COMPARTMENT LOUVER

A louver with filter shall be installed on the back wall of the compartments.



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BIDDER
COMPLIES

YES NO

LADDER RACK, LADDERS AND PIKE POLES

An electric ladder rack shall be installed on the right side of the apparatus body, to carry the ladders in a horizontal position above the side compartments. Each electric cylinder shall be 12-volt operated and installed in an area that provides proper protection of the electric components.

Ladder rack shall be of the dual pivot arm design with stabilizing arms at the front and rear. Ladder rack assembly shall be located on the right side of the body, above the compartment area. There shall be an air operated safety lock provided with control switch on the right side pump operator's panel. The ladder rack actuator control switch shall be weatherproof type and located on the right side pump panel in full view of the rack. A safety interlock will be supplied to prevent operation of the rack when the upper compartment doors are open.

Flashing lights facing front and rear shall be installed on the rack and shall be illuminated whenever the rack is in the lowered position. The outward side of the equipment rack that protrudes beyond the body of the apparatus shall be striped or painted with reflective material.

Cast aluminum ladder brackets with chrome plated quick release type mounting clamps shall be provided which hold the ladders to the pivot arm assembly.

A red warning light shall be provided and mounted in the cab to warn the driver when ladder rack is not in the stowed position.

ROLLUP DOORS

The rollup doors shall be ROM manufacturing roll up doors.

LEFT SIDE FRONT COMPARTMENT

There shall be one (1) full height compartment located ahead of the rear wheels. The compartment shall be equipped with a full height single natural finish roll up door.

LEFT SIDE FRONT COMPARTMENT LIGHT

One (1) incandescent light fixture shall be installed in each exterior compartment of the apparatus. The light shall have a clear lens.

LEFT SIDE FRONT COMPARTMENT LIGHT SWITCH

The compartment light will be controlled by an automatic "On-Off" switch located on each compartment door. There shall be a 12 v outlet in this compartment for connecting charging equipment.



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BIDDER
COMPLIES

YES NO

LEFT SIDE HIGH SIDE COMPARTMENT

There shall be one (1) compartment above the rear wheels. The compartment shall be equipped with a single natural finish roll up door.

LEFT SIDE HIGH SIDE COMPARTMENT LIGHT

One (1) incandescent light fixture shall be installed in each exterior compartment of the apparatus. The light shall have a clear lens.

LEFT SIDE HIGH SIDE COMPARTMENT LIGHT SWITCH

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

LEFT SIDE REAR COMPARTMENT

There shall be one (1) full height compartment located behind the rear wheels. The compartment shall be equipped with a full height single natural finish roll up door.

LEFT SIDE REAR COMPARTMENT LIGHT

One (1) incandescent light fixture shall be installed in each exterior compartment of the apparatus. The light shall have a clear lens.

LEFT SIDE REAR COMPARTMENT LIGHT SWITCH

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

RIGHT SIDE FRONT COMPARTMENT

There shall be one (1) full height compartment located ahead of the rear wheels. The compartment shall be equipped with a full height single natural finish roll up door.

RIGHT SIDE FRONT COMPARTMENT LIGHT

One (1) incandescent light fixture shall be installed in each exterior compartment of the apparatus. The light shall have a clear lens. There shall be 12 v outlet in this compartment for charging equipment.



Southampton Fire Department Apparatus Specifications

BIDDER
COMPLIES

YES NO

RIGHT SIDE FRONT COMPARTMENT LIGHT SWITCH

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

RIGHT SIDE HIGH SIDE COMPARTMENT

There shall be one (1) compartment above the rear wheels. The compartment shall be equipped with a single natural finish roll up door.

RIGHT SIDE HIGH SIDE COMPARTMENT LIGHTS

One (1) incandescent light fixture shall be installed in each exterior compartment of the apparatus. The light shall have a clear lens.

RIGHT SIDE HIGH SIDE COMPARTMENT LIGHT SWITCH

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

RIGHT SIDE REAR COMPARTMENT

There shall be one (1) full height compartment located behind the rear wheels. The compartment shall be equipped with a full height single natural finish roll up door. There shall be a 12 v outlet in this compartment for charging equipment.

RIGHT SIDE REAR COMPARTMENT LIGHT

One (1) incandescent light fixture shall be installed in each exterior compartment of the apparatus. The light shall have a clear lens.

RIGHT SIDE REAR COMPARTMENT LIGHT SWITCH

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

REAR CENTER COMPARTMENT

There shall be one (1) full height compartment located at the rear of the apparatus. The compartment shall be equipped with a full height natural finish roll up door. The compartment shall be open to the rear side compartments, providing a transverse compartment at the rear of the truck.



Southampton Fire Department Apparatus Specifications

BIDDER
COMPLIES

YES NO

REAR COMPARTMENT LIGHT

One (1) incandescent light fixture shall be installed in each exterior compartment of the apparatus. The light shall have a clear lens.

REAR COMPARTMENT LIGHT SWITCH

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

ADJUSTABLE SHELF

Four (4) adjustable shelves, each constructed of .125" thick smooth aluminum plate, shall be mounted in the specified compartments, as directed by the department, with bolt on aluminum shelf brackets.

ROLLOUT TRAY

One (1) rollout equipment tray shall be installed in the specified compartment as directed by the department.

The 500# rated tracks shall have roller bearings. The tray shall be constructed of .188" smooth aluminum plate, fabricated with four 3" sides.

The unit shall roll fully out of the compartment, with a gas operator to hold tray in both the "in and out" positions.

EXTRUDED ALUMINUM RUB RAILS

Full body length polished aluminum rub rails shall be bolted in place on the right and left body sides and in the pump panel area. The rub rails shall extend outward beyond the body sides for protection of the compartments and doors. There shall be a bolt on aluminum corner casting on each rear corner to blend the rear tailboard assembly with the side rub rails.

The side rub rails shall be a heavy extruded aluminum "C" channel.

SIDE AND REAR OVERLAYS

Overlay panels shall be constructed of 3003 polished aluminum treadplate.

Polished aluminum overlay shall be provided and installed in all required areas of the apparatus body.

Overlay shall be installed with "Aluminized" stainless steel bolts to prevent corrosion. No exceptions.



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BIDDER
COMPLIES

YES NO

The rear of the apparatus shall be smooth finish, for the installation of chevron striping.

REAR STEP/TAILBOARD

A single piece .188 rear step/tailboard shall be furnished that is a minimum of 12.00" deep and full width of the apparatus body, from rub rail to rubrail. The tailboard shall be provided with a removable casting on each corner for a pleasing appearance.

AIR CYLINDER COMPARTMENT IN WHEELWELL

Four (4) breathing air cylinder storage compartments shall be provided and located in the rear wheel well area of the apparatus body.

The cylinder storage compartments shall be constructed entirely of aluminum.

The door assemblies shall be provided with a gasket between door and body side, bolted in-place and removable for repair or replacement.

Compartment shall be provided with SCBA cylinder scuff protection.

A brushed aluminum door with push button trigger latch shall be provided.

HANDRAIL REAR STEP

Two (2) extruded aluminum non-slip handrails, approximately 48" in length, shall be provided and mounted on the rear of the apparatus, one (1) on each side of the body.

FOLDING STEP REAR

Three (3) 8" square folding steps, of chrome plated die cast aluminum, shall be provided. The step shall comply to NFPA #1901 non-slip standards and shall be installed on the rear left side of the body.

LOW VOLTAGE ELECTRICAL SYSTEM

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

All wiring shall be stranded copper or copper alloy conductors of a gauge rated to carry 125 percent of the maximum current for the protected circuit. Voltage drops in all wiring from the power source to the using device shall not exceed 10 percent. The wiring and wiring harness and insulation shall be in conformance to applicable SAE and NFPA standards. The wiring harness



Southampton Fire Department Apparatus Specifications

BIDDER
COMPLIES

YES NO

shall conform to SAE J-1128 with GXL temperature properties. All exposed wiring shall be protected in a loom with a minimum 289 degree Fahrenheit rating. All wiring looms shall be properly supported and attached to body members. The electrical conductors shall be constructed in accordance with applicable SAE standards, except when good engineering practice requires special construction.

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

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

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

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

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

The electrical system shall include the following:

Electrical terminals in weather exposed areas shall have a non-conductive grease or spray applied. A corrosion preventative compound shall be applicable to all terminal plugs located outside of the cab or body.

The electrical wiring shall be harnessed or be placed in a protective loom.

Holes made in the roof shall be caulked with silicone. Large fender washers shall be used when fastening equipment to the underside of the cab roof.



Southampton Fire Department Apparatus Specifications

BIDDER
COMPLIES

YES NO

Any electrical component that is installed in an exposed area shall be mounted in a manner that will not allow moisture to accumulate in it.

A coil of wire must be provided behind an electrical appliance to allow them to be pulled away from mounting area for inspection and service work.

All lights that have their sockets in a weather exposed area shall have corrosion preventative compound added to the socket terminal area.

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

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

NFPA REQUIRED TESTING OF ELECTRICAL SYSTEM

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

1. Reserve capacity test:

The engine shall be started and kept running until the engine and engine compartment temperatures are stabilized at normal operating temperatures and the battery system is fully charged. The engine shall be shut off and the minimum continuous electrical load shall be activated for ten (10) minutes. All electrical loads shall be turned off prior to attempting to restart the engine. The battery system shall then be capable of restarting the engine. Failure to restart the engine shall be considered a failed test.

2. Alternator performance test at idle:

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

3. Alternator performance test at full load:



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BIDDER
COMPLIES

YES NO

The total continuous electrical load shall be activated with the engine running up to the engine manufacturer's governed speed. The test duration shall be a minimum of two (2) hours.

Activation of the load management system is permitted during this test. However, if an alarm sounds due to excessive battery discharge, as detected by the system requirements in the NFPA standards, or a system voltage of less than 11.7 volts dc for more than 120 seconds is present, the test has failed.

4. Low voltage alarm test:

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

NFPA REQUIRED DOCUMENTATION

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

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

BATTERY CHARGER

A Kussmaul Auto Charge 1200 model #091-53-12 40Amp battery charger shall be supplied and installed behind the driver's seat.

A bar graph display / indicator shall be supplied and installed next to the shoreline auto eject receptacle.



Southampton Fire Department Apparatus Specifications

BIDDER
COMPLIES

YES NO

SHORE POWER RECEPTACLE

A Kussmaul "Auto-Eject" automatic disconnect device shall be provided and installed on the 110-volt shoreline connection complete with weatherproof cover and matching plug. The Auto-Eject shall be activated by the chassis starter switch to disconnect the plug.

RADIO ANTENNA BASE

Two (2) radio antenna base shall be supplied and installed on the apparatus, the antenna coax terminating in the cab. The location shall be determined by the customer.

PUMP ENCLOSURE LIGHTS

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

MARKER LIGHTS

Incandescent marker lights shall be installed on the vehicle in conformance to the Department of Transportation requirements.

LICENSE PLATE BRACKET

One (1) license plate bracket shall be provided at the rear bumper. The bracket shall have a light and shall be chrome plated.

REAR TAIL LIGHTS

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

REAR TURN SIGNALS

Two (2) Whelen turn signals shall be provided. The rectangular LED light shall be 4"x 6" in dimension.

REAR BACKUP LIGHTS

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



Southampton Fire Department Apparatus Specifications

BIDDER
COMPLIES

YES NO

PUMP PANEL GROUND LIGHTS

Two (2) incandescent ground lights shall be installed under the pump panel running boards. One (1) light shall be located on the driver's side and one (1) light located on the officer's side of the apparatus.

REAR STEP GROUND LIGHTS

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

GROUND LIGHT SWITCH

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

STEP LIGHT

One (1) incandescent step light with clear lens shall be installed on the rear step of the apparatus body.

STEP / WALKWAY LIGHT SWITCH

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

DECK LIGHTS

One (1) Unity Model #AG spotlight and one (1) Unity Model #AG floodlight, with 50 watt halogen bulbs shall be installed. The lights shall have an "on-off" switch.

DECK LIGHT MOUNTING

The deck lights shall be installed at the rear of the hose bed.

ELECTRIC SIREN

One (1) Code 3 Model #3672 V-Con electronic siren shall be mounted in the cab. The unit shall feature an electronic air horn, wail, yelp, hi-lo siren and shall have a hard wired microphone.

SIREN SPEAKER

One (1) Federal Signal DynaMax Model #MS100 speaker shall be installed.



Southampton Fire Department Apparatus Specifications

BIDDER
COMPLIES

YES NO

LIGHTBAR

One (1) Code 3 Model #2158NFPA2 lightbar shall be installed on the apparatus cab roof. The LED X2100 Series lightbar shall be 58" in length. The lens colors shall be red and clear.

LOWER FRONT WARNING LIGHTS

One (1) pair of Code 3 model #45 red LED lights shall be installed, one each side one the front of the chassis cab. The dimensions of the lights shall be 3" x 7".

INTERSECTION WARNING LIGHTS

One (1) pair of Code 3 model #45 red LED lights shall be installed one each side of the chassis cab. The dimensions of the lights shall be 3" x 7" and shall have a red lens.

LOWER REAR SIDE WARNING LIGHTS

One (1) pair of Code 3 series 45 red LED warning lights shall be installed, one each side of the apparatus body, towards the rear of the body. The dimensions of the lights shall be 3" x 7".

UPPER REAR WARNING LIGHTS

One (1) pair of Code 3 model 550 rotating beacon halogen warning lights shall be installed, one each side on the upper rear of the apparatus body. The rotary light shall have a 50 watt halogen lamp with the total dimensions of the lights 6" x 6" and shall have one red lens and one amber lens.

REAR WARNING LIGHT MOUNTING

The upper rear lights shall be mounted on cast aluminum stanchions attached to the apparatus body, one on each side.

LOWER REAR WARNING LIGHTS

One (1) pair of Code 3 series 45 red LED warning lights shall be installed, one each side on the lower rear of the apparatus body. The dimensions of the lights shall be 3" x 7".

OPEN DUNNAGE COMPARTMENT -- OVER PUMP ENCLOSURE

One (1) open compartment shall be located on the top of the pump module. The compartment will be constructed as large as space permits with removable slip resistance floor material or decking in the base of the compartment.



Southampton Fire Department Apparatus Specifications

BIDDER
COMPLIES

YES NO

GENERATOR

One (1) Winco model W6010DE, 6000 watt, 120/240 volt generator shall be provided. The unit shall be an air cooled diesel engine equipped with a low oil pressure shutdown feature. The unit shall be three wire, single phase 60 hertz with full rated power available from a single 120 volt outlet, a single 240 volt outlet or a combination of both.

Electric start provisions shall be furnished for the generator from the chassis battery system. Generator pre-heat, start and stop switches shall be provided on the generator control panel.

Data Label

A permanent data label indicating the following information shall be applied:

- Rated voltage
- Phase
- Frequency
- Amperage
- Continuous Watts
- Peak Watts

GENERATOR INSTALLATION

The generator shall be mounted on shock and anti-vibration rubber mountings and be equipped with a removable lifting bracket.

A battery powered starter motor shall provide the generator starting system with the 12-volt power supplied from the chassis battery system. The ignition switch shall be located at the generator circuit breaker panel area. The 12-volt supply line from battery shall be adequate size and a circuit breaker installed at the power source.

The generator shall be installed in a location that will provide for adequate cooling air in accordance with manufacturer's recommendations. When mounted in an enclosed compartment, it shall be designed to operate with doors "open".

The generator muffler and flexible exhaust pipe shall be securely supported and shall be shielded or insulated to prevent heating of the body, electrical components or equipment mounting. The exhaust system shall be installed so fumes, vapors, heat and vibrations do not enter the interior compartments. The exhaust outlet piped to the exterior and located so that the exhaust is directed away from operator's position. The exhaust piping and discharge shall be located or shielded to prevent thermal damage to the apparatus or equipment. Where parts of the exhaust system are exposed, so that they are likely to cause injury to operating personnel, suitable protective guards shall be provided.



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BIDDER
COMPLIES

YES NO

ELECTRICAL SYSTEM INSTALLATION

The line voltage electrical system shall comply with applicable NFPA standards and shall comply also to the applicable sections of the National Electric Code #70 standards. Line voltage carrying equipment downstream of the power source shall be "listed" (where available) and installed in accordance with manufacturer's instructions. The electrical equipment installed shall be suitable for intended use and type of locations (wet, dry, or underbody and chassis).

The grounding and bonding shall comply to applicable sections of NFPA standards. The chassis frame rail, body sheet metal, and cab sheet metal shall be properly bonded per NFPA schematic. The bonding copper conductor shall be rated at 115 % of current rating of power source.

OVER-CURRENT PROTECTION PANEL

Manually re-settable over current devices shall be installed to protect the line voltage electrical system components. A main over current protection device shall be provided that is either incorporated in the power source or is connected to the power source by a power supply assembly. The size of the main over current protection device shall not exceed 100 percent of the nameplate amperage rating on the power source specification label or the rating of the next larger available size over current protection device where so recommended by the power source manufacturer.

The conductor used in the power supply assembly between the output terminals of the power source and the main over current protection device shall not exceed 144 inches in length. If the power supply cable is longer than 144", a separate master disconnect switch shall be located at the generator.

Over current protection devices shall be provided for each individual circuit and shall be sized at not less than 15 amps in accordance with NEC. Each over current protection device shall be marked to identify the function of the circuit it protects. The circuit breaker panel and instruments shall be located so that all circuit breakers are readily visible under normal operating conditions. The panel shall be readily visible and located so that there is unimpeded access to the panel board controls.

LABELING OF EQUIPMENT

All circuit breakers shall be labeled and shall be provided for all interior and exterior outlets indicating output amperage, voltage and phase.

INSTRUCTION LABEL

A label that provides the operator with the essential power source operating instructions, including the power-up and power-down sequence shall be permanently attached to the apparatus at any point where such operations can take place.



Southampton Fire Department Apparatus Specifications

BIDDER
COMPLIES

YES NO

CIRCUIT BREAKER BOX

One (1) circuit breaker box for single phase voltage equipment shall be provided capable of holding twelve (12) breakers.

GENERATOR REMOTE START SWITCH

One (1) remote start/stop switch for the generator shall be located in the cab. A preheat function shall be included for diesel powered generators. An indicator light shall illuminate when the generator is running. The switch shall be centrally located for use by both seating positions.

GENERATOR FUEL SUPPLY

The generator fuel pickup shall be connected to the chassis fuel tank. All necessary piping for connection to the generator shall be included.

GENERATOR MOUNTING LOCATION

The generator shall be installed over the fire pump enclosure.

GENERATOR PROTECTIVE COVER

One (1) cover constructed from aluminum tread plate shall be installed to protect the generator. The cover shall be installed so that it is easily removed to perform fluid checks and service on the unit. Cooling requirements from the manufacturer shall be designed into the cover to avoid overheating conditions.

LINE VOLTAGE WIRING INSTALLATION

Line voltage wiring in the apparatus shall be with Type SO or approved cable suitable for mobile applications. The flexible electrical cable shall have 600-volt insulation rated for at least 194 degrees F. All junction boxes shall conform to the National Electric Code and shall be fully accessible for service and not be hidden in walls or ceiling.

Electrical cable shall be supported within 6 inches of any junction box and at a minimum of every 24 inches of run. Supports shall be made of corrosion protected metal that does not cut or abrade the conduit or cable and shall be mechanically fastened to the vehicle.

Electrical cable shall not be attached to chassis suspension components, water or fuel lines, air or air brake lines, fire pump piping, hydraulic lines, exhaust system components, or low voltage wiring and shall be separated by a minimum of 12 inches from exhaust piping or properly shielded and separated from fuel lines by a minimum of 6 inches distance.



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BIDDER
COMPLIES

YES NO

All wiring connections and terminations shall provide a positive mechanical and electrical connection. Connectors shall be installed in accordance with the manufacturer's instructions. Wire nuts or insulation displacement and insulation piercing connectors shall not be used.

120V ELECTRIC RECEPTACLE

Two (2) 120-volt 20 amp twist lock (NEMA L5-20) receptacle with spring loaded weatherproof cover shall be provided with wiring to the circuit breaker panel.

ELECTRIC RECEPTACLE LOCATION -- LEFT SIDE WHEEL WELL

The electric receptacle shall be located near the left side wheel well.

ELECTRIC RECEPTACLE LOCATION -- RIGHT SIDE WHEEL WELL

The electric receptacle shall be located near the right side wheel well.

FLOODLIGHT LOCATION - REAR OF CAB

The mounting location of the floodlights shall be at the rear of the cab on both sides.

TELESCOPIC 750 WATT FLOODLIGHT

Two (2) Fire Research Optimum model OPA530-S75 side mount push up telescopic light shall be installed. The light pole 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. Wiring shall extend from the pole bottom with a 4' retractile cord.

The lamp head shall have one (1) quartz halogen 750 watt 120 volt bulb. The bulb will draw 6.3 amps and generate 19,600 lumens. The bulb shall be accessible through the front. The lamp head shall incorporate a vacuum deposit polished reflector and two optimizing mirrors to produce a uniform beam that lights up an area 100° vertically by 150° horizontally. The lamp head shall have a heat dissipating curved front lens. The curve of the lens shall have a radius of 5.16 inches to optimize light emission. The lamp head shall be no more than 4 3/4" deep by 5 1/8" high by 8 3/4" wide. Lamp head and brackets shall be powder coated white.

BODY PAINT PROCESS

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

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



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BIDDER
COMPLIES

YES NO

The body and all parts shall be thoroughly washed with grease cutting solvent (PPG DX330) prior to any sanding. After the body has been sanded and the weld marks and minor imperfections are filled and sanded, the body shall be washed again with (PPG DX330) to remove any contaminants on the surface.

The first coating to be applied is a pre-treat self etching primer (PPG DX1787) (.5 to 1.0 dry film build) for maximum adhesion to the body material. The next two to four coats (depending on need) shall be an acrylic urethane primer surfacer (PPG K38). The film build shall be 4-6 mils when dry. The primer surfacer coat, after appropriate dry time, shall be sanded with 320-600 grit sandpaper to ensure maximum gloss of the paint. The last step is the application of at least three coats of PPG Concept acrylic urethane two-component color (single stage). The film build being 2-3 mils dry. The single stage acrylic urethane, when mixed with component (PPG DCX61) catalyst shall provide a UV barrier to prevent fading and chalking.

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

APPARATUS COLOR

The apparatus shall be red in color and shall match the chassis.

INTERIOR COMPARTMENT FINISH

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

Compartment interiors that are wrinkle finished or are topcoat web painted do not meet the intent nor durability of this requirement and are not acceptable.

WHEEL PAINTING

The front and rear wheels shall be finish painted to match the apparatus body. Wheels shall be properly prepared and finished with primer coats and top coats as specified.

UNDERCOATING

The entire underside of the single axle apparatus body is to be cleaned and properly prepared for application of a sprayed on automotive type undercoating for added corrosion resistance. Undercoating is to be a solvent based, rubberized coating, black in color.



Southampton Fire Department Apparatus Specifications

BIDDER
COMPLIES

YES NO

SIMULATED GOLD LEAF LETTERING

The lettering shall be applied in simulated gold leaf material, shaded in black and encapsulated in clear Mylar.

A quantity of seventy-five (75), four (4) inch letters are to be placed on the cab and on the body as directed by fire department. Also included is the Southampton Fire Department Decal as on the front doors of Engine 3 (2005) Pierce with this engine #.

CAB AND BODY STRIPE

A straight Scotchlite reflective stripe, 4" minimum in width, shall be applied horizontally around the cab and body in compliance with applicable NFPA 1901 standards. The purchaser shall specify the color and location of the stripe.

CHEVRON STRIPING

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

36' EXTENSION LADDER

One (1) 36 foot two (3) section aluminum extension ladder shall be provided on the apparatus. The ladder shall meet or exceed all the latest NFPA standards.

14' ROOF LADDER

One (1) 14 foot aluminum roof ladder with folding steel roof hooks on one end and steel spikes on the other end shall be provided on the apparatus. The ladder shall meet or exceed all latest NFPA Standards.

10' FOLDING LADDER

One (1) 10 foot folding aluminum attic ladder shall be provided. The ladder shall meet or exceed all the latest NFPA Standards.

SUCTION HOSE

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

HOSE COUPLINGS

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



Southampton Fire Department Apparatus Specifications

BIDDER
COMPLIES

YES NO

PIKE POLES

Two (2) Mounted Poles

PISTON RELIEF VALVE

Shipped Loose

STRAINER

One (1) barrel strainer shall be provided. The strainer shall be constructed from aluminum with chrome finish and include a tie off loop on the end plate.

The strainer shall be provided with a 6.0" NST female rocker lug coupling.

BUMPER TO BUMPER WARRANTY

The manufacturer shall provide a one (1) year bumper-to-bumper warranty. The manufacturer shall supply details of their warranty information with their bid submission.

ALUMINUM BODY WARRANTY

The manufacturer shall provide a five (5) year structural and corrosion perforation warranty for the fabricated aluminum body. The manufacturer shall supply details of their warranty information with their bid submission.

PAINT WARRANTY

The manufacturer shall provide a five (5) year paint warranty for all portions of the apparatus that they have painted. The manufacturer shall supply details of their warranty information with their bid submission.

STAINLESS STEEL PLUMBING WARRANTY

The manufacturer shall provide a ten (10) year warranty on the stainless steel plumbing components and installation. The manufacturer shall supply details of their warranty information with their bid submission.

REFERENCE HANDBOOKS (MANUALS)

Three (3) sets of reference handbooks (manuals) consisting of 8 ½ in. x 11 in. three – ring ,hard cover , loose-leaf binder with name,address,and phone number of the manufacturer conspicuously displayed on the outside & two DVDs'. To be included with the apparatus at the time of completion.



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BIDDER
COMPLIES

INSPECTION & DELIVERY

Members of the Southampton Fire Department shall inspect the completed unit at the bidder's service facility.

Once a pre-delivery inspection is completed the unit shall be delivered to the Southampton Fire Station for final inspection & acceptance of the unit.

YES

NO