

Vehicle Specifications

1750 GPM Rescue Pumper SPECIFICATIONS



Surfside Beach Fire Department
Final Bid Copy

CALL FOR BID

Sealed bids proposals will be received by the Town of Surfside Beach office of the Purchasing Agent until 1:00 p.m. on **January 30, 2019** at which time they will be publicly opened and read. Opening will be held in the conference room located at Surfside Beach Town Hall, 115 Highway 17 North Surfside Beach SC. 29575.

Bids will be for the purpose of furnishing the Town of Surfside Beach Fire with one (1) new 1750 GPM Rescue Engine Package. A copy of the instructions to bidders and specifications are included in this package.

The Town of Surfside Beach reserves the right to reject any and all bids, to waive any informality and to award the contract, as it appears to be in the best interest of the Town of Surfside Beach. The right is also reserved to hold any and all bids for a period not exceeding sixty days (60) days from the opening thereof. The Town also reserves the right to negotiate with the responsive bidder of choice and to add or deduct any items deemed necessary in its best interest.

Questions concerning the equipment specifications may be directed to:

*Kevin Otte Chief, Surfside Beach Fire Department
(843) 913-6343

*Ted Sacra, Battalion Captain, Surfside Beach Fire
(843)424-2164

All bids must be submitted to:

The Town of Surfside Beach
115 Highway 17 North
Surfside Beach, SC 29575

With the package marked as” **1750 GPM Rescue Engine Specifications**”

\$ _____

TERMS AND CONDITIONS**Intent of Specifications**

It is the intent of these specifications to cover the construction of a complete vehicle equipped as hereafter specified including delivery to the Surfside Beach Fire Department. The primary objective of these specifications is to obtain the best value and most acceptable apparatus for use by the Surfside Beach Fire Department.

These specifications cover specific requirements as to the type of construction and tests as to which the apparatus must conform, together with certain details as to finish, material preferences, equipment and appliances with which the successful bidder must conform. Minor details of construction and materials, where not otherwise specified, are left to the discretion of the contractor, who shall be solely responsible for the design and construction. The apparatus shall conform to the current (at the time of bid) NFPA Standard for Fire Apparatus to the extent as herein specified.

Bidders are advised this section of the specifications will be evaluated before the apparatus technical specifications. Bids that do not comply with our bonding, insurance, delivery, bidder qualifications, service, and warranty requirements will be deemed non-responsive and shall be immediately rejected without further review of the technical specifications.

Bid Bond Requirement

A bid bond in the amount of ten (10%) percent of the total amount of the bid will be furnished with the bid. An officer of the company representing the company manufacturing the apparatus proposed must sign the bid bond. Failure of an officer of the representing company manufacturing the apparatus to sign the bid bond will result in automatic rejection of the bid. We desire the maximum financial protection possible and will not accept a bid bond signed by a Sales Representative under any circumstances. The bonding company must be licensed to bond in this state.

Bid Format

Each bidder shall supply a detailed description (“contractor's specifications”) of the apparatus and equipment they propose to furnish, and to which the apparatus furnished under the contract must conform.

Each bid shall include all construction details of the apparatus they propose to furnish, submitted in the same sequence for ease of evaluation (no exceptions).

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>Failure to submit a written set of the contractor's specifications as required will result in automatic rejection of the bid.</p> <p><u>Exceptions</u></p> <p>If any exceptions are taken to these specifications, they must be stated in writing and described in detail in the order that they appear, referencing page number and paragraph. Bidder must explain in detail what he has proposed to furnish in lieu of the specified requirement(s).</p> <p>Any and all exceptions must be listed on a separate sheet labeled "EXCEPTIONS" and signed by the Selling Apparatus Dealer. The exceptions page must be located at the beginning of the bidder's "contractor's specifications". Total exception or failure to list exceptions as required will result in automatic rejection of the bid.</p> <p>Wherever the successful bidder does not take exceptions, he will be held responsible for strict compliance with these specifications.</p> <p><u>Solvency of the Manufacturer</u></p> <p>The solvency of the manufacturer is a primary concern of the Town of Surfside Beach, SC. Each bid must include a certified year-end "Annual Report". In the event the manufacturer does not provide an "Annual Report", a certified financial statement from a nationally recognized accounting firm will suffice.</p> <p>Failure to submit such a statement will result in automatic rejection of the bid.</p> <p><u>Factory Trips</u></p> <p>At the expense of the apparatus dealer or manufacturer, an engineering pre-construction conference and a final inspection trip to the manufacturing facility (including transportation, accommodations, meals, etc.) shall be furnished for a minimum of four (4) representatives of the Town.</p> <p><u>Made in the United States</u></p> <p>The proposed apparatus shall be totally manufactured in the United States. The manufacturer must have proof they have produced similar apparatus within the United States for not less than Ten (10) years.</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p><u>User Reference List</u></p> <p>A user’s list comprised of at least fifteen (15) South Carolina Fire Departments that have units currently in service for more than five (5) years shall be supplied with the apparatus bid.</p> <p>Additionally, a user’s list comprised of at least ten (10) South Carolina Fire Departments that have units in service that are less than one (1) year old shall be supplied with the apparatus bid.</p> <p><u>Full Time Service Facility</u></p> <p>The bidder must state the number of full-time service personnel, employed by the apparatus selling dealer, that are available upon request to provide the necessary service for the unit purchased. The full-time fire apparatus service center shall provide a Toll Free number for service.</p> <p>The location of the full-time service center shall be within 150 miles of the Town of Surfside Beach. A form is provided for this information.</p> <p>If the apparatus needs to be serviced at a facility that is more than 150 miles from the station it will be transported on a flatbed.</p> <p><u>Mobile Service</u></p> <p>The bidder must state the capability, type, quantity, and average response time of its field service units (mobile service centers). These units should have the capability to perform most minor warranty repairs in the field. <u>“Sales Representative vehicles”</u> do not satisfy this requirement.</p> <p><u>Delivery & Training</u></p> <p>A factory-trained delivery technician who will instruct the Fire Department personnel in the use of the apparatus shall make delivery.</p> <p><u>Liability and Facility Insurance</u></p> <p>Each bidder shall submit with the bid sufficient proof of product liability and facility insurance in an amount of at least twenty-five million dollars (\$25,000,000.00).</p> <p><u>Garage Liability Insurance</u></p> <p>Each bidder shall submit with his bid sufficient proof of dealer garage liability insurance in an amount of at least five million dollars (\$5,000,000.00).</p>		

State Approved Dealer License

Each bidder shall submit a copy of its current dealer or distributor license valid in the State of South Carolina.

I have read and understand the above listed terms and conditions.

Signature of Officer

Company Name

Printed Name of Officer

Date

Questionnaire

No bid will be considered if the below listed information is not 100% complete and submitted with the bid.

General Information

1. State where the apparatus will be built. _____
2. State the name and model number of proposed apparatus. _____
3. Did you supply a 10% bid bond signed by an officer of the company manufacturing the apparatus? Yes or No. _____
4. Is the Bid Bond Company licensed to bond in this state? Yes or No. _____
5. Do you agree to supply a 100% performance bond signed by an officer of the company manufacturing the apparatus if requested? Yes or No. _____
6. Did you supply sufficient proof (Certificate of Insurance) for at least \$25,000,000.00 product liability insurance for the company manufacturing the apparatus? Yes or No. _____
7. Did you supply sufficient proof (Certificate of Insurance) for at least \$5,000,000.00 of garage liability insurance for your dealership? Yes or No. _____

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
8. Do you have a full time service center? Yes or No. _____		
9. Do you have a mobile service unit with generator, air, parts, and etc. capability? _____		
10. Do you agree to supply apparatus training for one day? Yes or No. _____		
11. Did you supply a complete set of contractor's specifications? Yes or No. _____		
12. Did you supply an Annual Report or Certified Financial Statement on the apparatus manufacturer? Yes or No. _____		
13. State the maximum number of days after receipt of order you will deliver this unit? _____		
Please list the manufacturer and sources for warranty responsibility on the following:		
Chassis Manufacturer: _____ Responsibility: _____		
Body Manufacturer: _____ Responsibility: _____		
Chassis Information		
1. State the size of the front brakes. _____		
2. State the size of the front tires. _____		
3. State the make and model of the engine. _____		
4. State the gross horsepower of the engine. _____		
5. State the make and model of the transmission bid. _____		
6. State the make and model of the front axle bid. _____		
7. State the make and model of the rear axle bid. _____		
Body Information		
1. Are extruded aluminum and aluminum plate used to construct the body?		
2. Is 3/16" material used to construct the doors?		
3. Is the sub-structure (materials used behind & under the compartments, walls and sides) extruded aluminum?		
4. Is the lip of each body compartment an integral extrusion?		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>5. Are Pull- Down Straps for each roll up door compartment door?</p> <p>6. Are the floors in the compartments tread plate? And a cleanable surface?</p> <p>7. Is the rub rail bolted on and spaced from the body?</p> <p>8. Are fender covers provided over each wheel well?</p> <p>9. Is all wiring non-exposed (is it behind the compartment and body walls)?</p> <p>10. Is wiring coded by color and function?</p> <p>11. State the type of material that separates the body from the chassis frame rails. _____</p> <p>Final Question: Did you completely and accurately complete this questionnaire, and did an officer of your company sign it? Yes or No. _____</p> <p>_____</p> <p style="text-align: center;">Signature of Officer</p> <p style="text-align: center;">Company Name</p> <p>_____</p> <p style="text-align: center;">Printed Name of Officer</p> <p style="text-align: center;">Date</p> <p><u>Service Capabilities Form</u></p> <p>Section One: Service Facility</p> <p>Facility Size (Number of bays): _____</p> <p>Service Manager Name: _____</p> <p>Number of Service Technicians: _____</p> <p>List Names of Service Technicians (if more, use rear of sheet):</p> <p>1. _____</p> <p>2. _____</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>3. _____</p> <p>4. _____</p> <p>5. _____</p> <p>Toll Free Number: _____</p> <p>On-Site Pump Testing Availability: _____</p> <p>Section Two: Mobile Service</p> <p>Type of Service Unit(s): _____</p> <p>Is unit(s) owned by you or subcontracted through 3rd party:</p> <p>_____</p> <p>Name(s) of Mobile Service Technician(s):</p> <p>_____</p> <p>Number of mobile units: _____</p> <p>_____</p> <p style="text-align: center;">Bidder Name</p> <p><u>Bid Package Checklist</u></p> <p>Complete and sign this list to confirm you have enclosed the required information.</p> <p>_____ 1. A list of <u>any</u> exceptions on a separate schedule marked “EXCEPTIONS”</p> <p>_____ 2. A set of “contractor’s specifications”</p> <p>_____ 3. A copy of the manufacturer’s “Annual Report” or certified financial statement</p> <p>_____ 4. A users list comprised of at least ten (10) South Carolina Fire Departments That has unit(s) currently in service for more than five (5) years</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
_____ 5. A users list of at least ten (5) South Carolina Fire Departments that have Unit(s) currently in service that are less than one (1) year old		
_____ 6. A completed copy of the Service Capability Form		
_____ 7. Proof of Liability and Facility Insurance in the amount of at least twenty-five Million dollars (\$25,000,000.00)		
_____ 8. Proof of Garage Liability Insurance in the amount of at least five million Dollars (\$5,000,000.00)		
_____ 9. A copy of the dealer's current South Carolina State Dealer's License		
_____ 10. A signed copy of the "Terms and Conditions" agreement		
_____ 11. A completed and signed copy of the "Questionnaire"		
_____ 12. A certified bid bond signed by an officer of the company		
Company: _____		
Signature: _____		
Printed Name: _____		
Title: _____		
Date: _____		
<p>The Town of Surfside Beach reserves the right to reject any and all bids, to waive any informality and to award the contract, as it appears to be in the best interest of the Town of Surfside Beach. The right is also reserved to hold any and all bids for a period not exceeding sixty days (60) days from the opening thereof.</p>		

**SURFSIDE BEACH FIRE DEPARTMENT
1750-GPM RESCUE ENGINE SPECIFICATIONS**

Intent of Specifications

It is the intent of these specifications to clearly describe the furnishing and delivery to the Town of Surfside Beach, a complete apparatus equipped as specified. The primary objective of these specifications is to obtain the most acceptable apparatus for service in the Fire Department. These specifications cover specific requirements as to the type of construction and tests the apparatus must conform, together with certain details as to finish, material preferences, equipment and appliances with which the successful bidder must conform.

These specifications are not intended to eliminate any specific apparatus manufacturer and are intended to be used as a guideline. It is understood that minor variations shall be present as a result of the manufacturer's specific process, material, and construction methods. When present, any variations shall be described in detail using the manner described below.

The design of the apparatus must have the latest approved automotive design practices. The workmanship must be of the highest quality in its respective field. Special consideration shall be given to service access to areas needing periodic maintenance, ease of operation, and symmetrical proportions. Construction must be heavy-duty and ample safety factors must be provided to carry loads as specified. The construction method employed will be in such a manner as to allow ready removal of any component for service or repair.

The apparatus shall conform to the National Fire Protection Association Standard for Automotive Fire Apparatus, number 1901, in its most recent edition, unless otherwise specified in this document. Only the specified firefighting support equipment listed in these specifications shall be provided.

The apparatus shall further conform to all Federal Motor Vehicle Safety Standards. No exception.

Each bidder shall furnish satisfactory evidence of their ability to design, engineer, and construct the apparatus specified and shall state the location of the factory producing the apparatus. They shall also substantiate they are in a position to render prompt and proper service and to furnish replacement parts for the apparatus.

Each bid must be accompanied by a set of detailed contractor's specifications consisting of a detailed description of the apparatus and equipment proposed. All bid proposal specifications must be in the same sequence as the advertised specification for ease of comparison. These specifications shall include size, location, type, and model of all component parts being furnished. Detailed information shall be provided on the materials used to construct all facets of the apparatus body. Any bidder who

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>fails to submit detailed construction specifications, or who photo copies and submits these specifications as their own construction details will be considered non-responsive and shall render their proposal ineligible for award.</p> <p>All bidders are required to detail the payment terms for apparatus on the bidder's proposal page. Any required prepayments or progress payments must be explained in detail.</p> <p>The following apparatus specifications are considered minimum design and construction standards against which the apparatus will be inspected. It is the intent to receive proposals on equipment/apparatus meeting the attached minimum specifications. Any variation from these specifications shall be stated on the bid proposal page, followed by a detailed "Letter of Exceptions" listing the areas of non-compliance. The reference must include page number, paragraph, and the exact nature of the exception.</p> <p>The Purchaser may add the statement "No Exception" to a component or design feature in these specifications. In the interest of fleet conformity or specific performance requirements, the Purchaser will not permit exceptions taken to these item(s). The Purchaser reserves the right to reject any or all bid proposals and purchase the equipment it deems most suitable to its needs. The Purchaser does not, in any way, obligate itself to accept the lowest or any bid. Any bidder taking total exception to the complete specification or a major element will result in immediate rejection of the proposal.</p> <p>For ease in evaluating proposals, the bidder must return this supplied specification indicating in the "Bidder Complies" column to the right side of the page whether or not their proposal complies with the minimums set forth. The contractor's detailed proposal specification shall be submitted in the same sequence as these supplied specifications. Failure to comply with this requirement shall result in the bidder's being non-compliant and be grounds for the proposal's rejection. NO EXCEPTION.</p> <p>The Town of Surfside Beach reserves the right to reject any and all bids, to waive any informality and to award the contract, as it appears to be in the best interest of the Town of Surfside Beach. The right is also reserved to hold any and all bids for a period not exceeding sixty days (60) days from the opening thereof. The Town also reserves the right to negotiate with the responsive bidder of choice and to add or deduct any items deemed necessary in its best interest.</p>		
<p>ISO Compliance</p> <p>The manufacturer shall operate a Quality Management System meeting the requirements of the current ISO 9001.</p>		
<p>The International Organization for Standardization (ISO) is a recognized world leader in establishing and maintaining stringent manufacturing standards and values. The</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>manufacturer's certificate of compliance affirms that these principles form the basis for a quality system that unswervingly controls design, manufacture, installation, and service.</p> <p>The manufacturer's quality systems shall consist of, but not be limited to, all written quality procedures (aka QOP) and other procedures referenced within the pages of the manufacturer's Quality Manual, as well as all Work Instructions, Workmanship Standards, and Calibration Administration that directly or indirectly impacts products or processes. In addition, all apparatus assembly processes shall be documented for traceability and reference. The manufacturer shall also engage the services of a certified third party for testing purposes where required.</p> <p>If the manufacturer operates more than one manufacturing facility each facility must be ISO certified.</p> <p>By virtue of its ISO compliance the manufacturer shall provide an apparatus that is built to exacting standards, meets the customer's expectations, and satisfies the customer's requirements.</p> <p>A copy of the manufacturer's certificate of ISO compliance for each manufacturing facility shall be provided with the bid.</p> <p>Exceptions</p> <p>The following apparatus specifications are considered minimum design and construction standards against which the apparatus will be inspected. It is the intent to receive proposals on equipment/apparatus meeting the attached detailed specifications in their entirety. Any proposals being submitted, without "Full Compliance" with these specifications shall so state on the bid proposal page, followed by a detailed "Letter of Exceptions" listing the areas of non-compliance. The reference must include page number, paragraph, and the exact nature of the exception.</p> <p>Failure to follow this format, provided for the convenience of the Purchaser, will render the vendor's proposal non-responsive and ineligible for award of contract. The Purchaser may add the statement "No Exception" to a component or design feature in these specifications. In the interest of fleet conformity or specific performance requirements, the Purchaser will not permit exceptions taken to these item(s). The Purchaser reserves the right to reject any or all bid proposals and purchase the equipment it deems most suitable to its needs. The Purchaser does not, in any way, obligate itself to accept the lowest or any bid. Any bidder taking total exception to the complete specification or a major element will result in immediate rejection of the proposal. The Town reserves the right to select any bid that is in the best interest of the town.</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>Bid Bond</p> <p>A bid security in the form of a Bid Bond, cashier's check, or certified check made payable to the Purchaser in the amount of ten percent (10%) of the total bid shall be required. This shall serve as a guarantee which may be forfeited and retained by the Purchaser in lieu of its other legal remedies if a successful bidder's proposal is accepted by the Purchaser and the bidder shall fail to execute and return to the Purchaser the required contract and bonds within ten (10) days after delivery. If a Bid Bond is provided, it shall be issued by a bonding company licensed to bond in this State.</p>		
<p>Certificate of Insurance</p> <p>Each bidder shall furnish, with their proposal, a Certificate of Product Liability Insurance for a minimum of twenty-five (25) million dollars. Failure to provide this documentation shall render the proposal non-responsive and the bid shall be rejected. This certificate shall be from the prime builder only. Certificates submitted from various sub-contractors in order to total the ten million dollar minimum will not be acceptable as meeting the requirements of this section.</p> <p>If one of the major portions of the apparatus (i.e. chassis, aerial, or body) is not designed, fabricated, and assembled by the prime builder, a separate Certificate of Liability Insurance for a minimum of twenty-five million dollars (\$25,000,000.00) must be provided by each additional contractor.</p> <p>The Certificate must be made out to the Purchaser and must be original. Submission of a non-original Certificate or a Certificate provided that is not made out to the Purchaser will not meet the requirements of this section.</p>		
<p>Single Source Manufacturer</p> <p>In order to protect the Town of Surfside Beach from divided responsibility between chassis and body manufacturers, proposals will only be accepted from apparatus builders who engineer, design, and manufacturer the complete apparatus. <u>Purchasing a cab, chassis, or body produced by another manufacturer and labeling as one's own shall not meet the requirement of this section.</u></p>		
<p>NFPA Compliance</p> <p>The apparatus shall be compliant with the current NFPA 1901 edition.</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>Specifications:</p>		
<p>Front Bumper</p>		
<p>The chassis shall have a severe duty front bumper constructed from structural steel channel. The bumper material shall be 0.38" thick ASTM A36 steel which shall measure 12" high with a 3.05" flange with angled front corners.</p>		
<p>The bumper shall be sprayed with a black textured bed liner material. The front shall have red and yellow chevron</p>		
<p>Recessed Bumper Pockets</p>		
<p>The front bumper ends shall have recessed pockets to allow for mounting of warning lights.</p>		
<p>The driver side pocket shall be large enough to accommodate the warning light and the auto-eject receptacle.</p>		
<p>Front Bumper Extension</p>		
<p>The bumper shall be extended approximately 24" from the face of the cab as required. The extension shall be made from heavy-duty steel in both C-channel and tubular shapes. The frame rail extension material shall measure 7" high x 3-1/2" wide x .375" wall thickness.</p>		
<p>The extension rails shall be bolted to the chassis frame rails through reinforcement plates, backed by the engine mounting cross member. Fasteners utilized shall be Grade 8 bolts.</p>		
<p>Bumper Modifications</p>		
<p>The following bumper modifications shall be done:</p>		
<p>1. The front of the bumper shall have a compartment in the center to hold 150' 1 3/4 attack line with a nozzle (accordion load). This compartment shall be full width of the center compartment opening and maximum height. This compartment shall have a hinged aluminum door with quarter turn D-ring latch. The aluminum door shall be painted to match the bumper.</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>2. The officer side face of the bumper shall have a half-moon cut out for the front suction</p>		
<p>Bumper Gravel Shield</p>		
<p>The extended front bumper gravel shield shall be made of 1/8" aluminum tread plate material.</p>		
<p>Bumper Compartment, Driver's Side</p>		
<p>There shall be a compartment provided in the front bumper gravel shield, driver's side fabricated of 1/8" (.125) smooth aluminum plate with drain holes to allow drainage.</p>		
<p>The driver side compartment shall house a Hannay electric rewind cord reel, either ECR1618-17-18 or ELFCR1622-14-16, to carry 200' x 10/3 wire.</p>		
<p>A safety sign, which warns of the need to secure hose, shall be visible to personnel at the hose storage area.</p>		
<p>Bumper Compartment, Center</p>		
<p>There shall be a compartment provided in the front bumper gravel shield, centered between the frame rails fabricated of 1/8" (.125) smooth aluminum plate with drain holes to allow drainage.</p>		
<p>A safety sign, which warns of the need to secure hose, shall be visible to personnel at the hose storage area.</p>		
<p>Siren Speakers</p>		
<p>There shall be two (2) speakers installed thru the front face of the bumper, driver's side outboard of the air horn.</p>		
<p>The speakers shall be Whelen model SA314A wired to the EQ2B electronic siren.</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>Cover, Front Bumper Compartment</p> <p>One-(1) 3/4 length, hinged, aluminum tread plate cover shall be installed over front bumper compartments. The cover shall be secured in the closed position with two-(2) stainless steel latches held open with a pneumatic shock. . The cover shall be raised for additional storage.</p> <p>The 3/4 length raised front bumper lid shall extend over the driver side cord reel and the center mounted hose tray.</p> <p>A 2-1/2" liquid filled pressure gauge shall be mounted on the chassis cab. The gauge shall read the pressure at the front bumper discharge. This shall be the same make/model gauge as used on the pump panel. The body of the gauge shall be constructed of Zytel nylon with black bezels. The face of the gauge shall be Spun Metal with black background and white markings reading from zero to 400 PSI.</p> <p>This gauge shall be installed on the front bumper, plumbed to the front bumper discharge. The exact location on the bumper shall be determined at the pre-build conference.</p> <p>Front Bumper Compartment Modification</p> <p>The center front bumper compartment shall be notched down to the bumper frame extensions. The center compartment shall extend down to the bottom of the bumper.</p> <p>Strap, Officer's Front Bumper Compartment</p> <p>The passenger's side bumper compartment shall have one (1) restraining strap with quick release buckle to secure the contents.</p> <p>A safety sign, which warns of the need to secure hose, shall be visible to personnel at the hose storage area.</p> <p>Receiver Hitch, Below the Front Bumper</p> <p>One-(1) Class 4 receiver hitch shall be installed below the front bumper centered between the frame rails utilizing grade eight bolts.</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>There shall be one-(1) 12v quick connect battery powered lead wired to the chassis electrical system to supply a portable winch. The connector shall be located at the receiver location.</p> <p>A safety sign shall be located on or near the receiver or anchor stating the maximum straight line pull rating.</p> <p>A warning label permanently affixed in close proximity of the receiver shall be installed stating manufacturers suggested maximum load rating.</p>		
<p>Receiver Hitch's, Left/Right Side of Body</p> <p>Two-(2) Class 4 receiver hitches shall be installed, one-(1) each side below the left and right side rear body compartments utilizing grade eight bolts.</p> <p>A safety sign, shall be located on or near each receiver or anchor stating the maximum straight line pull rating.</p> <p>A warning label permanently affixed in close proximity of the receiver shall be installed stating manufacturers suggested maximum load rating.</p>		
<p>12 Volt Winch Quick Connects</p> <p>There shall be two-(2) 12v quick connect battery powered leads wired to the chassis electrical system to supply a portable winch. The connectors shall be located, one-(1) at each receiver location.</p>		
<p>Frame Assembly</p> <p>The frame shall consist of two (2) C-channel frame rails with heavy-duty fabricated cross members. The frame shall be bolted together using high-strength Grade 8 threaded fasteners for durability and ease of repair.</p> <p>Each frame rail shall have the following minimum specifications in order to minimize frame deflection under load and thereby improve vehicle ride and extend the life of the frame:</p> <p>Dimensions: Frame rail - 10-1/4" x 3-1/2" x 3/8" minimum.</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>Material: Frame rail - 110,000-psi minimum yield strength, high strength, low alloy steel</p>		
<p>Minimum Section Modulus: 16.61 cu. in.</p>		
<p>Minimum (RBM): 1,827,045-in. lbs.</p>		
<p>There shall be a minimum of eight (8) cross members joining the two (2) frame rails/frame liners in order to make the frame rigid and hold the rails/liners in alignment. Six (6) of the cross members shall be a steel C-channel design bolted back-to-back in pairs to form three (3) heavy-duty cross members located at points of critical stress -- one (1) near the back of cab supports, one (1) at the forward bracket of the rear suspension, and one (1) at the rear bracket of the rear suspension. The three (3) heavy-duty cross members shall be attached to the frame rail with not less than six (6) bolts.</p>		
<p>All frame fasteners shall be a minimum high-strength, Grade 8, flanged-head threaded bolts and nuts for frame strength, durability, and ease of repair. The nuts shall be Stover or equivalent locknuts to help prevent loosening. The frame fasteners shall be tightened to the proper torque at the time of assembly.</p>		
<p>The frame rails shall be finished with a corrosion-inhibiting coat. The frame cross members and frame-mounted components (suspensions, axles, air tanks, battery boxes, fuel tank, etc.) shall be painted black.</p>		
<p>The apparatus manufacturer shall supply a full lifetime frame warranty including cross members against defects in materials or workmanship. Warranties that provide a lifetime warranty for only the frame rails, but not the cross members, are not acceptable. NO EXCEPTIONS.</p>		
<p>The custom chassis frame shall have a WHEEL ALIGNMENT in order to achieve maximum vehicle road performance and to promote long tire life. The alignment shall conform to the manufacturer`s internal specifications. All wheel lug nuts and axle U-bolt retainer nuts shall be tightened to the proper torque at the time of alignment. The wheel alignment documentation shall be made available at delivery upon request.</p>		
<p>Rear Underbody Support Frame</p>		
<p>The body shall be supported at the rear by a steel frame extension bolted to the chassis frame rails. The frame rails and frame extension shall be isolated from the aluminum body extrusions by 5/16” x 2” fiber reinforced rubber or equivalent.</p>		
<p>The frame extension shall not interfere with N.F.P.A. minimum requirements for angle of departure.</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>Front Axle</p> <p>The vehicle shall utilize a Meritor or front axle or equivalent with a minimum rated capacity of 20,000 lbs. It shall have an “easy steer” knuckle pin bushings and the axle shall be of I-beam construction and utilize grease-lubricated wheel bearings. An independent front suspension is acceptable to achieve the cramp angle required. The vehicle shall have a nominal cramp angle of 46 degrees, plus two (+ 2) degrees to minus three (- 3) degrees including front suction applications. The cramp angle must be met right and left turns.</p> <p>The front axle hubs shall be made from ductile iron and shall be designed for use with 10 hole hub-piloted wheels in order to improve wheel centering and extend tire life.</p> <p>The front springs shall be parabolic tapered leaf spring a minimum capacity of 20,000 lbs. at the ground. if an independent suspension is not used</p> <p>The vehicle shall be equipped with a Sheppard model M-110 integral or equivalent power steering gear used in conjunction with a slave gear or a power assist cylinder depending on application. The steering assembly shall be rated to statically steer a maximum front axle load of 20,000 lbs. Relief stops shall be provided to reduce system pressure upon full wheel cut. The system shall operate mechanically should the hydraulic system fail.</p> <p>A 2-year/unlimited miles parts and 2-year labor axle warranty shall be provided as standard by ArvinMeritor Automotive.</p>		
<p>Front Shock Absorbers</p> <p>The front suspension shall be furnished with two (2) heavy duty, double acting shock absorbers, one (1) on each side.</p>		
<p>Rear Axle</p> <p>The vehicle shall be equipped with an ArvinMeritor RS-24-160 equivalent single rear axle with single-reduction hypoid gearing and a minimum manufacturer`s rated capacity of 24,000 lbs. The axle shall be equipped with oil-lubricated wheel bearings with ArvinMeritor oil seals. The rear axle hubs shall be made from ductile iron and shall be designed for use with 10 hole hub-piloted wheels to improve wheel centering and extend tire life.</p> <p>A 2-year/unlimited miles parts and 2-year labor rear axle warranty shall be provided as standard by ArvinMeritor Automotive.</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>Rear Suspension</p> <p>The rear suspension shall be a pair of linear-rate leaf springs with auxiliary “helper” leaf springs and bronze bushings. The variable-rate springs with auxiliary springs ensure that the vehicle rides and handles smoothly under both loaded and unloaded conditions. The suspension shall be minimum rated for the maximum axle capacity.</p>		
<p>Front Wheel Trim Package</p> <p>The front wheels shall have stainless steel lug nut covers and hub caps (chrome plated steel lug nut covers not acceptable).</p>		
<p>Rear Wheel Trim Package, Single Axle</p> <p>The rear wheels shall have stainless steel lug nut covers (chrome plated steel lug nut covers not acceptable). The rear axle wheels shall be trimmed with stainless steel "Lincoln Hat" hub covers.</p>		
<p>Front Wheels</p> <p>The front wheels shall be Alcoa Aluminum with Dura Bright finish. The wheels shall be 22-1/2" x 13" ten stud, hub piloted polished aluminum disc type.</p> <p>Each wheel shall have a maximum load of 12,800-pounds.</p>		
<p>Rear Wheels</p> <p>The rear wheels shall be Alcoa Aluminum model 89U642DB. The wheels shall be 22-1/2" x 9" ten stud, hub piloted polished aluminum disc type with Dura Bright finish.</p> <p>Each wheel shall have a maximum load of 10,000-pounds.</p>		
<p>Front Tires</p> <p>The front tires shall be Goodyear 425/65-80R22.5 Load Range "L" G-296 MSA all-weather treads.</p> <p>The Intermittent Fire Service load capacity shall be 24,000 pound with a speed rating of 68 miles per hour when properly inflated to 120 pounds per square inch.</p> <p>The tires and wheels shall conform to the Tire and Rim Association requirements.</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>Rear Tires</p> <p>The rear tires shall be Goodyear Endurance TSD, 315/80R22.5 Load Range "L".</p> <p>The load capacity shall be 33,000 pound with a speed rating of 75 miles per hour when properly inflated to 130 pounds per square inch with steel or aluminum wheels.</p> <p>The tires and wheels shall conform to the Tire and Rim Association requirements.</p> <p>Valve Stem Extensions</p> <p>A set of four-(4) valve stem extensions shall be provided to allow visual inspection of the LED tire pressure caps.</p> <p>Tire Pressure Monitor</p> <p>Each tire installed on the apparatus shall be equipped with a tire pressure monitoring device. The device shall consist of a valve stem cap to with an LED tire alert to indicate tire pressure conditions. The LED shall flash when the tire drops 8 psi below the factory setting.</p> <p>Front Brakes</p> <p>The front axle shall be equipped with Meritor DiscPlus EX225H 17 inch disc brakes.</p> <p>The brakes shall be covered by the manufacturer`s standard warranty which is three years, unlimited mileage and parts only.</p> <p>Rear Brakes</p> <p>The rear axle shall be equipped with Meritor DiscPlus EX225H 17 inch disc brakes with a maximum rated capacity of 27,000 lbs.</p> <p>The brakes shall be covered by the manufacturer`s standard warranty which is three years, unlimited mileage and parts only.</p> <p>Brake System</p> <p>The vehicle shall be equipped with air-operated brakes and an anti-lock braking system (ABS). The brake system shall meet or exceed the design and performance requirements of the current Federal Motor Vehicle Safety Standard (FMVSS)-121, and the test requirements of the current NFPA 1901 Standard.</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>A dual-treadle brake valve shall correctly proportion the braking power between the front and rear systems. The air system shall be provided with a rapid pressure build-up feature, designed to meet current NFPA 1901 requirements, to allow the vehicle to begin its emergency response as quickly as possible.</p> <p>A pressure-protection valve shall be installed to prevent use of the air horns or other air-operated devices should the air system pressure drop below 85 psi. This feature is designed to prevent inadvertent actuation of the emergency/parking brakes while the vehicle is in motion.</p> <p>Two (2) air pressure needle gauges, one (1) each for front and rear air pressure, with a warning light and buzzer shall be installed at the driver`s instrument panel.</p> <p>The braking system shall be provided with a minimum of three (3) air tank reservoirs for a minimum air system capacity of 5,200 cu. in. One (1) reservoir shall serve as the wet tank and a minimum of one (1) tank shall be supplied for each of the front and rear axles. The total system shall carry a sufficient volume of air to comply with FMVSS-121.</p> <p>Spring-actuated emergency/parking brakes shall be installed on the rear axle.</p> <p>A Bendix-Westinghouse or equivalent SR-1 valve, in conjunction with a double check valve system, shall provide automatic emergency brake application when the air brake system pressure falls below 40 psi in order to safely bring the vehicle to a stop in case of an accidental loss of braking system air pressure.</p> <p>A four-channel Wabco ABS or equivalent shall be provided to improve vehicle stability and control by reducing wheel lock-up during braking. This braking system shall be fitted to both front and rear axles. All electrical connections shall be environmentally-sealed for protection against water, weather, and vibration.</p> <p>The system shall constantly monitor wheel behavior during braking. Sensors on each wheel transmit wheel speed data to an electronic processor, which shall detect approaching wheel lock-up and instantly modulate (or pump) the brake pressure up to five (5) times per second to prevent wheel lock-up. Each wheel shall be individually controlled. To improve field performance, the system shall be equipped with a dual-circuit design configured in a diagonal pattern. Should a malfunction occur in one circuit, that circuit shall revert to normal braking action. A warning light at the driver`s instrument panel shall signal a malfunction.</p> <p>Automatic Traction Control (ATC) shall be installed to sense wheel slip, apply air pressure to brakes, and reduce engine torque to provide improved traction. An ATC indicator light shall illuminate when the system is active.</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>A mud and snow switch shall be provided. When the switch is in the "ON" position, it shall allow momentary wheel slip to obtain traction under extreme mud and snow conditions.</p> <p>The system shall also be configured to work in conjunction with all auxiliary engine, exhaust, or driveline brakes to prevent wheel lock-up.</p> <p>To improve maintenance troubleshooting, provisions in the system for an optional diagnostic tester shall be provided. The system shall test itself each time the vehicle is started, and a dash-mounted light shall go out once the vehicle is moving above 4 MPH.</p> <p>A 3 year/300,000 mile parts and labor Anti-Locking Braking System (ABS) warranty shall be provided as standard by Meritor Automotive.</p>		
<p>Park Brake Release</p> <p>One (1) Bendix-Westinghouse or equivalent PP-5 parking brake control valve shall be supplied on the lower dash panel within easy reach of the driver. One (1) Bendix-Westinghouse or equivalent PP-5 parking brake control valve shall be supplied on the officer side in arm's reach with a cover to prevent accidental breaking.</p> <p>Air Dryer</p> <p>The chassis air system shall be equipped with a Bendix-Westinghouse AD-9 air dryer or equivalent to remove moisture from the air in order to help prevent the air lines from freezing in cold weather and prolong the life of the braking system components.</p> <p>Air Inlet</p> <p>A 1/4" brass quick-release air inlet with a male connection. The inlet shall allow a shoreline air hose to be connected to the vehicle, discharging air directly into the wet tank of the air brake system. It shall be located driver door jamb.</p> <p>Air Lines</p> <p>Air brake lines shall be constructed of color coded nylon tubing routed in a manner to protect them from damage. Brass fittings shall be provided.</p> <p>Air Horns</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>Dual air horns shall be provided, connected to the chassis air system. The horns shall be mounted through the front bumper. The front bumper shall have two (2) holes punched to accommodate the air horns. A pressure protection valve shall be installed to prevent the air brake system from being depleted of air pressure. Air horns shall be installed in compliance with NFPA.</p>		
<p>Engine/Transmission Package</p>		
<p>Engine</p>		
<p>The vehicle shall be equipped with an EPA17 Cummins L9 450 turbocharged diesel engine.</p>		
<p>Model: L9 Number of Cylinders: Six Bore and Stroke: 4.49 x 5.69 Displacement Liter: (Cu. In.) 8.9 (543) Rated BHP: 450 @ 2100 RPM Torque: 1250 ft.lb. @ 1400 RPM Governed RPM: 2200 Oil Capacity / Type 7.3 gallons / SAE CJ-4 Fuel Requirement Ultra low sulfur diesel (15 ppm max.)</p>		
<p>Standard equipment on the engine shall include the following: Selective Catalytic Reduction (SCR) after treatment Cooled Exhaust Gas Recirculation system Charge air cooling High Pressure, Common Rail Fuel System Fuel Filter with Check Valve and Water Separator Fuel Strainer Governor – Electronic, interact system Injectors – Electronically controlled full authority injection Lube Oil Cooler – Integral Lube Oil Filter – Full Flow Turbocharger – Variable geometry type Air Compressor – Wabco 18.7 CFM</p>		
<p>The engine exhaust system shall be a horizontal design constructed from heavy-duty truck components. Flexible couplings shall be utilized to absorb the torque and vibration of the engine. The outlet shall be directed to the forward side of the rear wheels, exiting the right side, with a straight tip.</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>A heat-absorbing sleeve shall be used on the exhaust pipe in the engine compartment area to reduce stored heat, providing protection for the alternator, and also to protect hands when checking or adding oil in the engine compartment.</p> <p>A 5-year/100,000-miles parts and labor warranty shall be provided as standard by Cummins.</p> <p>A copy of the Engine Installation Review stating the engine installation meets Cummins recommendations shall be provided once available. The engine installation shall not require the operation of any type of “power-down” feature to meet engine installation tests.</p>		
<p>Transmission:</p> <p>The chassis shall be equipped with an Allison 3000 EVS automatic transmission. It shall have 4th gear operating controls and programmed for Fire Apparatus vocation. An electronic oil level indicator shall be provided as well as a diagnostic reader port connection. The transmission shall be geared to provide one-to-one ratio in fourth gear for fire pump applications. This dedicated "lockup" circuit is provided for pump operation. The transmission fifth gear shall be an overdrive ratio, permitting the vehicle to reach its top speed at the governed engine speed.</p> <p>The transmission shall be equipped with an automatic neutral feature. Applying the parking brake shall command the transmission to neutral, regardless of drive range requested on the shift selector which shall require re-selecting the drive range to shift out of neutral.</p> <p>The transmission shall be equipped with dual PTO ports with engine speed capabilities. The transmission shall be cooled by the radiator-mounted heat exchanger. The transmission fluid shall meet Allison specification TES-295.</p>		
<p>A transmission oil temperature gauge with warning light and buzzer shall be installed on the cab instrument panel to warn the driver of high oil temperatures that may damage the transmission.</p> <p>State gear ratios of Transmission as follows:</p> <p>1 - _____</p> <p>2 - _____</p> <p>3 - _____</p> <p>4 - _____</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>5 - _____ R - _____</p> <p>The transmission shall have a minimum oil capacity of 23 quarts and shall be equipped with a fluid level sensor (FLS) system, providing direct feedback of transmission oil level information to the driver.</p> <p>A water-to-oil transmission oil cooler shall be provided to ensure proper cooling of the transmission when the vehicle is stationary (no air flow). Air-to-oil transmission oil coolers, which require constant air flow, are not acceptable.</p> <p>The automatic transmission shall be equipped with a power lock-up device. The transmission lock-up shall prevent down shifting of the transmission when the engine speed is decreased during pump operations, thereby maintaining a constant gear ratio for safe operation of the pump. The transmission lock-up shall be automatically activated when the pump is engaged in gear. The transmission lock-up shall be automatically deactivated when the pump is disengaged for normal road operation.</p> <p>A 5-year/unlimited miles parts and labor warranty shall be provided as standard by Allison Transmission.</p> <p>Transmission Selector</p> <p>The transmission shall be controlled by an Allison push button shifter internally illuminated for night operation. The shifter shall be mounted on the dash to the right of the steering column. The transmission shall be capable of five-(5) speed operation.</p> <p>The transmission shall be equipped with the oil level sensor (OLS); this sensor shall allow the operator to obtain an indication of the fluid level the shift selector. The sensor display shall provide the following checks, correct fluid level, low fluid level and high fluid level.</p> <p>Transmission Fluid</p> <p>The transmission fluid shall meet Allison specifications.</p> <p>Vehicle Speed</p> <p>The maximum speed shall be electronically limited to 68 MPH as required by NFPA 1901.</p> <p>Jacobs Engine Brake</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>The engine shall come equipped with a Jacobs “C-Brake” compression brake controlled by two (2) switches located in the cab, an on/off and low/medium/high. The compression brake shall interface with the anti-lock brake controller to prevent engine brake operation during adverse braking conditions.</p> <p>A pump shift, interlock circuit shall be provided to prevent the engine brake from activating during pumping operation.</p>		
<p>Engine Cooling Package:</p>		
<p>Radiator</p>		
<p>The cooling system shall include an aluminum tube-and-fin radiator with a minimum of 1,400 total square inches of frontal area to ensure adequate cooling under all hot weather operating conditions. There shall be a drain valve in the bottom tank to allow the radiator to be serviced. A sight glass shall be included for quick fluid level assessment.</p> <p>The radiator installation shall include a heavy-duty radiator skid plate to protect the radiator from debris or obstructions under the chassis. The skid plate shall be designed so the angle of approach is not affected.</p> <p>The skid plate shall be integral with the chassis frame and constructed from 3/8" thick steel plate.</p>		
<p>Silicone Hoses</p>		
<p>All radiator and heater hoses shall be silicone. Pressure compensating band clamps shall be used to eliminate hose pinching on all hoses 3/4" diameter and larger. All radiator hoses shall be routed, loomed, and secured so as to provide maximum protection from chafing, crushing, or contact with other moving parts.</p> <p>Coolant</p> <p>The cooling system shall be filled with a 50/50 mixture of water and antifreeze/coolant conditioner to provide freezing protection to minus 40 (- 40) degrees F for operation in severe winter temperatures.</p> <p>Coolant Recovery</p> <p>There shall be a coolant overflow recovery system provided.</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>Charge Air Cooler System</p> <p>The system shall include a charge air cooler to ensure adequate cooling of the turbocharged air for proper engine operation and maximum performance.</p> <p>Charge Air Cooler Hoses</p> <p>Charge air cooler hoses shall be made from high-temperature, wire-reinforced silicone to withstand the extremely high temperatures and pressures of the turbocharged air. The hoses shall incorporate a flexible hump section to allow motion and misalignment of the engine relative to the charge air cooler. Charge air cooler hose clamps shall be heavy-duty, constant-torque, T-bolt clamps to ensure proper sealing under all temperatures in order to keep dust and other contaminants out of the engine intake air stream and protect the engine.</p> <p>Fan/Shroud</p> <p>The fan shall be rated for maximum airflow and dynamic balance. It shall be made of nylon or equivalent for strength and corrosion resistance. The fan shall be installed with grade 8 hardware which has been treated with thread locker for additional security. A fan shroud attached to the radiator shall be provided to prevent recirculation of engine compartment air around the fan in order to maximize the cooling airflow through the radiator. The fan shroud shall be constructed of fiber-reinforced high temperature plastic or metal. The shroud shall be specifically formed with curved surfaces which improves air flow and cooling.</p> <p>Transmission Cooler</p> <p>The cooling system shall include a liquid-to-liquid transmission cooler capable of cooling the heat generated from the transmission. When a transmission retarder is selected, the cooler shall have an increased capacity to handle the additional heat load.</p> <p>Fuel System</p> <p>One (1) 50 gallon fuel tank shall be provided. The tank shall be of an all-welded, aluminized-steel construction with anti-surge baffles and shall conform to all applicable Administration (FHWA) 393.65 and 393.67 standards. The tank shall be mounted below the frame rails at the rear of the chassis for maximum protection. The tank shall be secured with two (2) wrap-around T-bolt type stainless steel straps. Each strap shall be fitted with protective rubber insulation and shall be secured with Grade 8 hardware. This design allows for tank removal from below the chassis.</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>The fuel tank shall be equipped with a 2” diameter filler neck. The filler neck shall extend to the rear of the vehicle behind the rear tires and away from the heat of the exhaust system as required by NFPA 1901 Standard for Automotive Fire Apparatus. The open end of the filler neck shall be equipped with a twist-off filler cap with a retaining chain.</p> <p>The tank shall be plumbed with top-draw and top-return fuel lines in order to protect the lines from road debris. Bottom-draw and/or bottom-return fuel lines are not acceptable. A vent shall be provided at the top of the tank. The vent shall be connected to the filler neck to prevent splash-back during fueling operations. A 1/2” NPT drain plug shall be provided at the bottom of the tank.</p> <p>The tank shall have a minimum useable capacity of 50 gallons of fuel with a sufficient additional volume to allow for thermal expansion of the fuel without overflowing the vent.</p> <p>A mechanical fuel pump shall be provided and sized by the engine manufacturer as part of the engine.</p>		
<p>Fuel Line</p>		
<p>The fuel lines shall be wire braid reinforced fuel grade hose. They shall have reusable fittings and be routed along the inside of the frame rails. Fuel lines shall be protected against chaffing by non-conductive, frame mounted standoff fasteners and, where necessary, with heavy-duty plastic zip loom.</p>		
<p>Fuel Shut Off Valves</p>		
<p>Two (2) fuel shutoff valves shall be installed in the suction side of the fuel lines near the fuel filters to prevent the loss of prime during fuel filter maintenance.</p>		
<p>Secondary Fuel Filter</p>		
<p>The Cummins engine shall be supplied with a secondary fuel filter mounted to the engine.</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>Primary Fuel and Water Separator</p> <p>The Cummins ISL engine shall be supplied with a primary fuel water separator with a bottom drain valve mounted in the chassis frame. The LMC will display "WATER IN FUEL" and an alarm will sound when the water needs to be drained from the fuel water separator.</p> <p>430 Amp Alternator</p> <p>The alternator shall be a Delco Remy model 55SI 430 amp or equivalent. The alternator shall be engine driven via a poly-groove power belt with an automatic tensioner. The alternator shall be a brushless design. The alternator shall meet all current applicable NFPA 1901 Edition requirements for performance.</p> <p>Battery System</p> <p>The battery system shall be a single system consisting of six-(6) Exide Group 31, 12-volt DC, heavy-duty, high cycle automotive batteries. The battery bank shall have a group rating of 4500 cold cranking amperes (CCA) and a reserve of 1080 minutes at zero degrees Fahrenheit.</p> <p>All battery wiring shall be welded battery cable capable of handling 125% of the actual load. It shall be run through a heat resistant flexible nylon "HTZL" loom rated at a minimum of 300 degrees Fahrenheit. All cable connections shall be machine crimped and soldered.</p> <p>Batteries shall be placed on non-corrosive rubber matting and secured. The chassis batteries shall be mounted in welded and bolted stainless steel battery box. The battery hold-downs shall be made of structural, stainless steel angle. Painted carbon steel battery boxes shall not be acceptable.</p> <p>One (1) positive and one (1) negative jumper stud shall be provide below the front driver side of body/pump module.</p> <p>Batteries shall have a warranty of twelve (12) months that shall commence upon the date of delivery of the apparatus.</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>Drivelines</p> <p>Drivelines shall have a heavy duty metal tube and shall be equipped with Spicer 1710HD universal joints or equivalent to allow full-transmitted torque to the axle(s). Drive shafts shall be axially straight, concentric with axis and dynamically balanced.</p> <p>Rear Tow Eyes</p> <p>Two (2) heavy duty tow eyes made of 3/4” thick steel having 2-1/2” diameter holes shall be mounted below the body at the rear of the vehicle to allow towing (not lifting) of the apparatus without damage. The tow eyes shall be painted chassis black.</p> <p>Front Tow Hooks</p> <p>Two (2) heavy-duty painted (Black) front tow hooks shall be securely bolted to the front chassis frame rail extensions to allow towing (not lifting) of the apparatus without damage. They shall be mounted in the downward position.</p> <p>DEF Tank</p> <p>A diesel exhaust fluid (DEF) tank with a minimum five (5) gallon capacity shall be provided.</p> <p>The DEF tank shall include a heater fed by hot water directly from the engine block to prevent the DEF from becoming too cool to operate correctly per EPA requirements. The tank shall include a temperature sensor to control the heater control valve that controls the feed of hot water from the engine to the DEF tank heater.</p> <p>A sender shall be provided in the DEF tank connected to a level gauge on the cab dash.</p> <p>Cab</p> <p>The vehicle shall be distinguished by an all-welded aluminum and fully enclosed tilt cab. The cab shall be designed exclusively for fire/rescue service and shall be pre-engineered to ensure long life. It shall incorporate an integral welded substructure of high-strength aluminum alloy extrusions that creates an occupant compartment that is essentially a protective perimeter. The end result is a distinctive structure that is aesthetically appealing, functionally durable, and characterized by increased personnel safety.</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>The cab shall be constructed from 3/16” 3003 H14 aluminum alloy plate or equivalent, ... roof, floor, and outer skins shall be welded to a minimum high-strength 6063-T6 aluminum alloy extruded sub-frame. Wall supports and roof bows shall be minimum of 6061 T6 aluminum alloy.</p>		
<p>The inner structure shall be designed to create an interlocking internal “roll-cage” effect. All joints shall be electrically seam welded internally using aluminum alloy welding wire.</p>		
<p>The sub-frame structure shall be constructed from a minimum high-strength 6061-T6 aluminum extrusions welded together to provide a structural base for the cab.</p>		
<p>The cab floor shall be constructed from 3/16” 3003 H14 smooth aluminum plate or equivalent welded to the sub-frame structure to give the cab additional strength and to help protect the occupants from penetration by road debris and under-ride collision impacts.</p>		
<p>The cab roof shall be constructed from 3/16” 3003 H14 aluminum tread-plate or equivalent supported by a grid of fore-aft and side-to-side aluminum extrusions to help protect the occupants from penetration by falling debris and downward-projecting objects. Molded fiberglass or other molded fiber-reinforced plastic roof materials are not acceptable.</p>		
<p>The cab roof perimeter shall be constructed from 6063-T5 aluminum extrusions or equivalent with integral drip rails. Cast aluminum corner joints shall be welded to the aluminum roof perimeter extrusions to ensure structural integrity. The roof perimeter shall be continuously welded to the cab roof plate to ensure a leak-free roof structure.</p>		
<p>The cab rear skin shall be constructed from 3/16” 3003 H14 aluminum plate or equivalent. Structural extrusions shall be used to reinforce the rear wall.</p>		
<p>The left-hand and right-hand cab side skins shall be constructed from 3/16” 3003 H14 smooth aluminum plate or equivalent. The skins shall be welded to structural aluminum extrusions at the top, bottom, and sides for additional reinforcement.</p>		
<p>The cab front skins shall be constructed from 3/16” 3003 H14 smooth aluminum plate or equivalent. The upper portion shall form the windshield mask, and the lower portion shall form the cab front. Each front corner shall have a full outer radius for strength and appearance. The left-hand and right-hand sides of the windshield mask shall be welded to the left-hand and right-hand front door frames, and the upper edge of the windshield mask shall be welded to the cab roof perimeter extrusion for reinforcement. The cab</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>front shall be welded to the sub-frame C-channel extrusion below the line of the headlights to provide protection against frontal impact.</p>		
<p>Cab Exterior</p>		
<p>The exterior of the cab shall allow sufficient room in the occupant compartment for up to six (6) fire fighters. The cab roof shall be approximately 101” above the ground with the flat roof option. The back-of-cab to front axle length shall be a minimum of 56” an extended cab is acceptable.</p>		
<p>Front axle fenderette trim shall be black rubber for appearance and corrosion resistance. Bolt-in front wheel well liners shall be constructed of 3/16” composite material or equivalent to provide a maintenance-free, damage-resistant surface that helps protect the underside of the cab structure and components from stones and road debris.</p>		
<p>The cab windshield shall be of a two-piece or one-piece replaceable design for lowered cost of repair. The windshield shall be made from 1/4” thick curved, laminated safety glass with a 75% light transmittance automotive tint. A combined minimum viewing area shall be 2,200-sq. in. Both windshields shall interchangeable.</p>		
<p>Cab Mounts and Cab Tilt System</p>		
<p>The cab shall be independently mounted from the body and chassis to isolate the cab structure from stresses caused by chassis twisting and body movements. Mounting points shall consist of two (2) forward-pivoting points, one (1) on each side; two (2) intermediate rubber load-bearing cushions located midway along the length of the cab, one on each side; and two (2) combination rubber shock mounts and cab latches located at the rear of the cab, one (1) on each side.</p>		
<p>An electric-over-hydraulic cab tilt system shall be provided to provide easy access to the engine. It shall consist of two (2) large-diameter, telescoping, hydraulic lift cylinders, one (1) on each side of the cab, with a frame-mounted electric-over-hydraulic pump for cylinder actuation.</p>		
<p>Safety flow fuses (velocity fuses) shall be provided in the hydraulic lift cylinders to prevent the raised cab from suddenly dropping in case of a burst hydraulic hose or other hydraulic failure. The safety flow fuses shall operate when the cab is in any position, not just the fully raised position.</p>		
<p>The hydraulic pump shall have a manual override system as a backup in the event of an electrical failure. Lift controls shall be located in a compartment to the rear of the cab on the right side of the apparatus. A parking brake interlock shall be provided as a safety feature to prevent the cab from being tilted unless the parking brake is set.</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>The entire cab shall tilt to allow for easy maintenance of the engine, transmission and engine components. A positive-engagement safety latch shall be provided to lock the cab in the full tilt position to provide additional safety for personnel working under the raised cab.</p>		
<p>In the lowered position, the cab shall be locked down by two (2) automatic, spring-loaded cab latches at the rear of the cab. A “cab ajar” indicator light shall be provided on the instrument panel to warn the driver when the cab is not completely locked into the lowered position.</p>		
<p>Cab Interior</p>		
<p>The interior of the cab shall be of the open design with an ergonomically-designed driver area that provides ready access to all controls as well as a clear view of critical instrumentation.</p>		
<p>The engine cover between the driver and the officer shall be a low-rise contoured design to provide sufficient seating and elbow room for the driver and the officer. The engine cover shall blend in smoothly with the interior dash and flooring of the cab. An all-aluminum sub-frame shall be provided for the engine cover for strength.</p>		
<p>The rear portion of the engine cover shall be provided with a lift-up section to provide easy access for checking transmission fluid, power steering fluid, and engine oil without raising the cab. The engine cover insulation shall consist of 3/4” dual density fiberglass composite panels or equivalent with foil backing manufactured to specifically fit the engine cover without modification to eliminate “sagging” as found with foam insulation. The insulation shall meet or exceed DOT standard MVSS 302-1 and V-0 (UI subject 94 Test).</p>		
<p>All cab floors shall be covered with a black rubber floor mat that provides an aggressive slip-resistant surface in accordance with current NFPA 1901.</p>		
<p>Battery jumper studs shall be provided to allow jump-starting of the apparatus without having to tilt the cab.</p>		
<p>All exposed interior metal surfaces shall be pretreated using a corrosion prevention system. Color picked at preconstruction meeting</p>		
<p>The interior of the cab shall be insulated to ensure the sound (dbA) level for the cab interior is within the limits stated in the current edition of NFPA 1901. Interior cab</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>padding shall consist of a rear cab headliner, a rear wall panel, and side panels between the front and rear cab doors.</p> <p>The overhead console and heater cover shall be covered with a thermoformed, non-metallic, non-fiber trim pieces to provide excellent scuff and abrasion resistance, as well as chemical stain resistance. The thermoformed material shall comply with Federal Motor Vehicle Safety Standard (FMVSS) 302 for flammability of interior materials.</p> <p>The vehicle shall use a seven-position tilt and telescopic steering column to accommodate various size operators. An 18” padded steering wheel with a center horn button shall be provided.</p> <p>A full-width overhead console shall be mounted to the cab ceiling and strong enough to hold the weight placement of siren, radio heads and warning light switches and also shall have easily removable mounting plates.</p> <p>Storage areas, with hinged access doors, shall be provided below the driver and officer seats.</p> <p>The front cab steps shall be a minimum of 8” deep x 24” wide. The first step shall be no more than 24.0” above the ground with standard tires in the unloaded condition per NFPA 1901 standards. The rear cab steps shall be a minimum 12” deep x 21” wide. The first step shall be no more than 24.0” above the ground with standard tires in the unloaded condition per NFPA 1901 standards. The rear steps shall incorporate intermediate steps for easy access to the cab. The steps are to be located inside the doorsill, where they are protected against mud, snow, ice, and weather. The step surfaces shall be aluminum diamond plate with a multi-directional, aggressive gripping surface incorporated into the aluminum diamond plate in accordance with current NFPA 1901.</p> <p>A black rubber grip handle shall be provided on the interior of each front door below the door window to ensure proper hand holds while entering and exiting the cab. An additional black rubber grip handle shall be provided on the left and right side windshield post for additional handholds.</p> <p>Cab Doors</p> <p>There shall be reflective signs on each cab door in compliance with all NFPA requirements.</p> <p>Four (4) side-opening cab doors shall be provided. Doors shall be constructed of a 3/16” aluminum plate or equivalent outer material with an aluminum extruded inner framework to provide a structure that is as strong as the side skins.</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>Front cab door openings shall be approximately 36” wide x 71.5” high, and the rear cab door openings shall be approximately 33.75” wide x 73” high. The front doors shall open approximately 75 degrees, and the rear doors shall open approximately 80 degrees.</p> <p>The doors shall be securely fastened to the doorframes with full-length, stainless steel piano hinges, with 3/8” (0.375”) diameter pins for proper door alignment, long life, and corrosion resistance. Mounting hardware shall be treated with corrosion-resistant material prior to installation. For effective sealing, an extruded rubber gasket shall be provided around the entire perimeter of all doors.</p> <p>Stainless steel paddle-style door latches shall be provided on the interiors of the doors. The latches shall be designed and installed to protect against accidental or inadvertent opening as required by NFPA 1901.</p> <p>The front door windows shall provide a minimum viewing area of 530 sq. in. each. The rear door windows shall provide a minimum viewing area of 500 sq. in. each. All windows shall have 75% light transmittance automotive safety tint.</p> <p>Full roll-down windows shall be provided for the front cab doors.</p>		
<p>Cab Instruments and Controls</p> <p>Two (2) pantograph-style windshield wipers with two (2) separate electric motors shall be provided for positive operation. Air-operated windshield wipers are not acceptable. The wipers shall be a wet-arm type with a one (1) gallon washer fluid reservoir, an intermittent-wipe function, and an integral wash circuit. Each arm shall have a maximum degree sweep for full coverage of the windshield.</p> <p>A compartment mounted heater and defroster with a minimum capacity of 60,000 Btu/hr. and all necessary controls shall be mounted in the cab. The airflow system shall consist of two (2) levels, defrost and cab, and shall have fresh air and defogging capabilities.</p> <p>Cab controls shall be located on the cab instrument panel in the dashboard on the driver`s side where they are clearly visible and easily reachable. Emergency warning light switches shall be installed in removable panels for ease of service. The following gauges and/or controls shall be provided:</p> <ul style="list-style-type: none"> • Master battery switch/ignition switch (rocker with integral indicator - Located left side of steering wheel). • Starter switch/engine stop switch • Heater and defroster controls with illumination • Marker light/headlight control switch with dimmer switch 		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<ul style="list-style-type: none"> • Self-canceling turn signal control with indicators • Windshield wiper switch with intermittent control and washer control • Master warning light switch • Transmission oil temperature gauge • Air filter restriction indicator • Pump shift control with green "pump in gear" and "o.k. to pump" indicator lights • Parking brake controls with red indicator light on dash • Automatic transmission shift console • Electric horn button at center of steering wheel • Cab ajar warning light on the message center enunciator <p>Controls and switches shall be identified as to their function by backlit wording adjacent to each switch, or indirect panel lighting adjacent to the controls.</p> <p>Master Battery Disconnect</p> <p>The chassis batteries shall be wired in parallel to a single 12-volt electrical system, controlled through a heavy-duty, Guest brand rotary type, master disconnect switch. The master disconnect switch shall be located within easy access of the driver upon entering or exiting the cab. All electrical circuits shall be disconnected when the switch is in the "OFF" position.</p> <p>Fast Idle System</p> <p>A fast idle system shall be provided and controlled by the cab-mounted switch. The system shall increase engine idle speed to a preset RPM for increased alternator output.</p> <p>Electrical System</p> <p>The cab and chassis system shall have a centrally located electrical distribution area. All electrical components shall be located such that standard operations shall not interfere with or disrupt vehicle operation. An automatic thermal-reset master circuit breaker compatible with the alternator size shall be provided. Automatic-reset circuit breakers shall be used for directional lights, cab heater, battery power, ignition, and other circuits. An access cover shall be provided for maintenance access to the electrical distribution area.</p> <p>A 6 place, constantly hot, and 6 place ignition switched fuse panel and ground for customer-installed radios and chargers shall be provided at the electrical distribution area. Radio suppression shall be sufficient to allow radio equipment operation without interference.</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>All wiring shall be mounted in the chassis frame and protected from impact, abrasion, water, ice, and heat sources. The wiring shall be color-coded and functionally-labeled every 3” on the outer surface of the insulation for ease of identification and maintenance. The wiring harness shall conform to SAE 1127 with GXL temperature properties. Any wiring connections exposed to the outside environment shall be weather-resistant. All harnesses shall be covered in a loom that is rated at 280 degrees F to protect the wiring against heat and abrasion.</p>		
<p>A Vehicle Data Computer (VDC) shall be supplied within the electrical system to process and distribute engine and transmission Electronic Control Module (ECM) information to chassis system gauges, the message center, and related pump panel gauges. Communication between the VDC and chassis system gauges shall be through a multiplexed communication system to ensure accurate engine and transmission data is provided at the cab dash and pump. The VDC shall be protected against corrosion, excessive heat, vibration, and physical damage.</p>		
<p>Headlights</p>		
<p>Four-(4) LED rectangular headlights model SM6053S-2 or equivalent shall be installed in the warning light modules, two-(2) each side. The headlights shall be mounted in the upper positions of the module. Two (2) on each side and mounted in a flat black finish bezel. The low beam headlights shall activate with the release of the parking brake to provide daytime running lights (DRL) for additional vehicle conspicuity and safety. The headlight switch shall automatically override the DRL for normal low beam/high beam operation.</p>		
<p>Cab Crashworthiness Requirement</p>		
<p>The apparatus cab shall meet and/or exceed relevant NFPA 1901 load and impact tests required for compliance certification with the following:</p>		
<p><u>Side Impact Dynamic Pre-Load per SAE J2422 (Section 5).</u></p>		
<p>Testing shall meet and/or exceed defined test using minimum of 13,000 ft. /lbs of force as a requirement. The cab shall be subject to a side impact representing the force seen in a roll-over. The cab shall exhibit minimal to no intrusion into the cab’s occupant survival space, doors shall remain closed and cab shall remain attached to frame.</p>		
<p>Cab testing shall be completed using over 13,500 ft. /lbs of force exceeding testing requirements.</p>		
<p><u>Quasi-static Roof Strength (proof loads) per SAE J2422 (Section 6) / ECE R29, Annex 3, paragraph 5.</u></p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>Testing shall meet and/or exceed defined test using over 22,000 ft. /lbs of mass as a requirement. Testing shall be completed using platen(s) distributed uniformly over all bearing members of the cab roof structure.</p> <p>Cab testing shall be completed using over 23,000 lbs of mass exceeding testing requirements. The cab shall exhibit minimal to no intrusion into the cab’s occupant survival space and doors shall remain closed.</p> <p>Additional cab test shall be conducted using over 117,000 lbs of mass exceeding testing requirements by multiple times. The cab shall exhibit minimal to no intrusion into the cab’s occupant survival space and the doors shall remain closed.</p>		
<p><u>Frontal Impact per SAE J2420.</u></p> <p>Testing shall meet and/or exceed defined test using over 32,000 ft. /lbs of force as a requirement. The cab shall be subject to a frontal impact as defined by the standard. The cab shall exhibit minimal to no intrusion into the cab’s occupant survival space, doors shall remain closed and cab shall remain attached to frame.</p> <p>Cab testing shall be completed using over 34,000 ft.-lbs of force exceeding testing requirements.</p> <p>The cab shall meet all requirements to the above cab crash worthiness.</p> <p>A copy of a certificate or letter verifying compliance to the above performance by an independent, licensed, professional engineer shall be provided upon request.</p> <p>For any or all of the above tests, the cab manufacturer shall provide either photographs or video footage of the procedure upon request.</p>		
<p>ISO Compliance</p> <p>The manufacturer shall ensure that the construction of the apparatus cab shall be in conformance with the established ISO-compliant quality system. All written quality procedures and other procedures referenced within the pages of the manufacturer’s Quality Manual, as well as all Work Instructions, Workmanship Standards, and Calibration Administration that directly or indirectly impacts this process shall be strictly adhered to. By virtue of its ISO compliance the manufacturer shall provide an apparatus cab that is built to exacting standards, meets the customer’s expectations, and satisfies the customer’s requirements.</p>		
<p>Raised Roof</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>The rear portion of the cab roof shall be raised 8". This will provide at least 5` 5" standing room. The front of the vista hood shall be sloped at 45 degrees from the vertical. The slope shall begin slightly in front of the centerline of the front axle to leave room for warning lights and air conditioning in front of the vista. The main roof extrusion shall extend up into the vista to strengthen the roof perimeter. Windows shall be provided on front, side, and rear unless otherwise specified.</p>		
<p>The rear door shall have an approximat 85" vertical dimension for improved ingress/egress characteristics. The door shall be equipped with a dual striker bolt system.</p>		
<p>Logo Package</p>		
<p>The apparatus shall have manufacturer logos provided on the cab and body as applicable.</p>		
<p>Grille</p>		
<p>The front cooling air intake grille shall be constructed of a stainless steel mesh with a durable black coating and supported by an impact-resistant black coating frame providing a minimum 80% open area for excellent cooling performance. (American Flag graphic)</p>		
<p>Rear Cab Door Position</p>		
<p>The cab rear doors shall be moved to the rear of the wheel opening. This door placement facilitates easier entry and egress by reducing the rear facing seat protrusion into the door opening.</p>		
<p>Cab Front Door Windows</p>		
<p>Driver and officer door windows shall have the support pillar located toward the front of the window. State if there shall be a vent that can be opened and closed within the window itself, located towards the front.</p>		
<p>Cab Crew Windows</p>		
<p>The crew area windows shall have a dark tint.</p>		
<p>Cab Door Windows, Electric</p>		
<p>All cab door windows shall be electrically operated. The driver's door shall contain four-(4) switches to control the operation at each door. All remaining doors shall contain one-(1) heavy-duty switch to control the window operation located on top of the door panel.</p>		

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	YES	NO
<p>Cab Door Locks</p> <p>Each cab door shall have a manually operated door lock actuated from the interior of each respective door. Exterior of each cab door shall be provided with a barrel style keyed lock below the cab door handle. Must be keyed alike.</p> <p>Cab Door Panels</p> <p>The inner cab door panels shall be a thermoformed, non-metallic, non-fiber ABS material for increased durability and sound deadening. The cab door panels shall incorporate an easily removable panel for access to the latching mechanism for maintenance or service.</p> <p>Cab Door Exterior Latches</p> <p>The cab entry doors shall be equipped with exterior pull handles, suitable for use while wearing firefighter gloves. The handles shall be made of aluminum with a chrome plated finish. The interior latch shall be cast aluminum, oversized for easy access with a gloved hand.</p> <p>Cab Door Kick Plate</p> <p>All cab doors shall have aluminum kick plates installed on the interior lower portion of the doors. There shall be four-(4) "STOP" signs installed in the cab, one-(1) on the lower door panel of each cab door.</p> <p>Cab Step Area Lighting</p> <p>Six-(8) TecNiq D04 Linear Dragon LED lights shall be provided, two-(2) in each front cab step well and one-(2) in each rear cab step well. Each light shall activate when the cab door in opened.</p> <p>Cab Door Reflective Material</p> <p>Reflective Yellow/Red material striping shall be supplied on each of the lower cab doors. The stripes shall run from the lower outer corner to the top upper corner of the panel, forming an "A" shape when viewed from the rear. The reflective material shall meet NFPA 1901 requirements. (Add flashing light and STOP Sign)</p>		

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	YES	NO
<p>Cab Mirrors</p> <p>Two (2) heated, remote controlled, black mirrors shall be installed. The west coast style mirrors shall consist of a large 7” x 16” flat and 4” x 6” wide angle convex with stainless steel break-away mounts. The adjustment of the main sections of the mirror and the heater control shall be through dash mounted switches.</p> <p>Cab Side Window</p> <p>This window will be deleted and made into a compartment for the driver with hinged box pan door. This compartment must be able to store Bunker Pants, Running Coat, Helmet and a complete SCBA between the front and rear doors on the driver’s side of the cab. No access from the inside of the cab. (Clean cab concept)</p> <p>Cab Side Window</p> <p>This window will be deleted and made into a compartment for the officer with a hinged box pan door. This compartment must be able to store Bunker Pants, Running Coat, Helmet and a complete SCBA between the front and rear doors on the officer’s side of the cab. No access from the inside of the cab. (Clean cab concept)</p> <p>Front Mud Flaps</p> <p>The front axle mud flaps shall be constructed from hard black rubber and installed behind the tires.</p> <p>Handrails Exterior</p> <p>Stainless steel Black in color handrails with a knurled, slip-resistant finish shall be positioned behind each cab door. Grab rails shall be minimum 24” in length. Molded rubber gasket shall be mounted between the grab handles and the cab in order to prevent corrosion due to dissimilar metals being in contact.</p> <p>Handrails Interior</p> <p>Two-(2) interior grab handles installed in the cab on the "A" posts, one-(1) each side. The grab handles shall be constructed of rubberized steel.</p> <p>Four-(4) interior grab handles installed in the cab, one-(1) each side on top of the front door panels adjacent to fixed window and one-(1) each side on the rear door panels</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>mounted diagonally. The grab handles shall be constructed of 1-1/4" knurled stainless steel. The gab rails shall be mounted with chrome plated end stanchions.</p> <p>There shall be one-(1) interior grab handle installed on the inside of each rear cab door. The handles shall extend horizontally with width of the window just above the window sill. The grab handles shall be constructed of bright stainless steel.</p>		
<p>Air Conditioning</p> <p>Air-conditioner / Heater system / Defog System. A system shall be installed. Differ from manufacture.</p>		
<p>The system shall be capable of cooling the interior of the cab from 100 degrees ambient to 75 degrees or less with 50% relative humidity in 30 minutes or less.</p>		
<p>Seating All seats shall meet industry standards.</p>		
<p>Seat, Driver Air suspension seat shall be supplied for the driver`s position.</p>		
<p>Features shall include:</p> <ul style="list-style-type: none"> • Universal styling • High back seat back • Low profile air suspension assembly with rubber accordion cover • Weight, height and ride adjustment • Built-in back and lumbar adjustment • 4” fore and aft adjustment 		
<p>All seat positions shall have a bright red retractable 3-point lap and shoulder harness, providing additional safety and security for personnel. Extensions shall be provided with the seat belts so the male end can be easily grasped and the female end easily located while sitting in a normal position.</p>		
<p>*All seats must have an easy cleanable surface and replacement cushions for CLEAN CAB CONCEPT*</p>		
<p>.</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>Seat, Officer</p> <p>One (1) Universal fixed seat shall be supplied for the officer`s position in front of the cab to the right of the driver`s position.</p> <p>Features shall include:</p> <ul style="list-style-type: none"> • Universal styling. • High back seat back. • Built-in back and lumbar adjustment. <p>All seat positions shall have a bright red retractable 3-point lap and shoulder harness, providing additional safety and security for personnel. Extensions shall be provided with the seat belts so the male end can be easily grasped and the female end easily located while sitting in a normal position.</p> <p>*All seats must have an easy cleanable surface and replacement cushions for CLEAN CAB CONCEPT*</p>		
<p>Crew Seat, Inboard Forward Facing</p> <p>Two (2) Universal seats shall be provided in the inboard forward facing rear seats.</p> <p>Features shall include:</p> <ul style="list-style-type: none"> • Universal styling. • High back seat back. • Built-in back and lumbar adjustment. <p>All seat positions shall have a bright red retractable 3-point lap and shoulder harness, providing additional safety and security for personnel. Extensions shall be provided with the seat belts so the male end can be easily grasped and the female end easily located while sitting in a normal position.</p> <p>*All seats must have an easy cleanable surface and replacement cushions for CLEAN CAB CONCEPT*</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>Rear Seat, Outboard Forward Facing</p> <p>Two (2) Universal flip-up seats shall be provided in the outboard forward facing rear seats.</p> <p>Features shall include:</p> <ul style="list-style-type: none"> • Universal styling. • High back seat back. <p>All seat positions shall have a bright red retractable 3-point lap and shoulder harness, providing additional safety and security for personnel. Extensions shall be provided with the seat belts so the male end can be easily grasped and the female end easily located while sitting in a normal position.</p> <p>*All seats must have an easy cleanable surface and replacement cushions for CLEAN CAB CONCEPT*</p>		
<p>Seat Cover Material</p> <p>All seats surfaces shall be easy to clean and/or replace cushion's to easily for clean.</p>		
<p>Seat Fabric Color</p> <p>State color of seats _____.</p>		
<p>Seating Capacity Tag</p> <p>A tag that is in view of the driver stating seating capacity of four (6) personnel shall be provided.</p>		
<p>Cab Interior Color</p> <p>State color of cab instrument panel, overhead console, trim panels, headliner, and door panels shall be black.</p>		
<p>Sun Visors</p> <p>Lexan sun visors shall be provided for the driver and officer matching the interior trim of the cab and shall be flush mounted into the underside of the overhead console.</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>Cab Dash</p> <p>All surfaces subject to repeated contact and wear -- the center and officer side dash, windshield "A" post covers and lower front kick panels -- shall be covered with thermoformed or equivalent, non-metallic, non-fiber trim pieces to provide excellent scuff and abrasion resistance, as well as chemical stain resistance. The material shall comply with Federal Motor Vehicle Safety Standard (FMVSS) 302 for flammability of interior materials.</p> <p>Engine Cover</p> <p>The engine cover shall blend in smoothly with the interior dash and flooring of the cab. The cover shall provide excellent noise reduction, scuff and abrasion resistance, as well as chemical stain resistance. The material shall comply with Federal Motor Vehicle Safety Standard (FMVSS) 302 for flammability of interior materials.</p> <p>The top front center of the engine cover shall be a molded thermoformed or equivalent ABS trim top with integral padded arm rests for both the driver and the officer. The trim shall include large cup holders ahead of each arm rest.</p> <p>The engine service access door shall be covered with a thermoformed or equivalent ABS panel with a shallow recess in the top surface for check fluids levels.</p> <p>Engine Tunnel Reinforcement</p> <p>The engine tunnel insulation shall be covered and reinforced with expanded aluminum. The expanded aluminum overlay shall assist in retaining the insulation tight against the cab.</p> <p>Cab Dome Lights</p> <p>Four-(4) Whelen 6" Round Super-LED model 60CREGCS shall be provided in the cabs headliner. The steady burn 12v interior light shall incorporate six red and six clear Super-LEDs and a clear non-optic translucent hard coated polycarbonate lens for maximum output. The hard coated lens shall provide extended life/luster protection against UV and chemical stresses. The conformal coated PC board and foam in place gasket shall provide additional protection against environmental elements. The 60CREGCS includes Hi/Low intensity mode standards and On/Off dual switch function. The solid state interior light shall be vibration resistant. The interior light is covered by a five year factory warranty</p> <p>The white LED lights shall be activated when any cab door is in the open position automatically switching off all red lights currently on and reactivated when the door is closed.</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>Auto-Eject Battery Charger Receptacle</p> <p>The battery charger receptacle shall be a Kussmaul 20 Amp NEMA 5-20 Super Auto-Eject #091-55-20-120 with a cover or equivalent. The super auto-eject receptacle shall be completely sealed and have an automatic power line disconnect.</p> <p>The receptacle shall be located outside driver's door next to handrail or on the driver's side of the bumper.</p> <p>DPF Regeneration Override</p> <p>An override switch shall be provided for the Diesel Particulate Filter (DPF) regeneration. The switch will inhibit the regeneration process until the switch is reset or the engine is shut down and restarted. The switch shall be located within reach of the driver.</p> <p>English Dominant Gauge Cluster</p> <p>The cab operational instruments shall be located in the dashboard on the driver side of the cab and shall be clearly visible. The gauges in this panel shall be English dominant and shall be the following:</p> <ul style="list-style-type: none"> • Speedometer/Odometer • Tachometer with integral hour meter • Engine oil pressure gauge with warning light and buzzer • Engine water temperature gauge with warning light and buzzer • Two (2) air pressure gauges with a warning light and buzzer (front air and rear air) • Fuel gauge • Voltmeter • Transmission oil temperature gauge <p>This panel shall be backlit for increased visibility during day and night time operations.</p> <p><i>* A 2" weatherproof fuel gauge displaying the chassis fuel level shall be located in a body compartment on the driver's side near the fuel fill.*</i></p> <p>Overall Height/Length/Weight Plate</p> <p>An Overall Height/Length/Weight information plate shall be installed that can be clearly identified and visible to the driver while in the seated position showing the apparatus completed overall height, length, (in feet and inches) and gross vehicle weight (in tons) current to the apparatus manufactured date.</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>If changes to the vehicle occur while in service, the department must revise the overall height-length-weight plate.</p> <p>Plate, Fluid Capacity</p> <p>Two (2) permanently affixed fluid date plates shall be provided. One shall be installed in the driving compartment and one shall be located inside the pump operator's compartment. The plates shall indicate the type and quantities of the following fluids used in the vehicle.</p> <ul style="list-style-type: none"> • Engine Oil • Engine Coolant • Chassis Transmission Fluid • Pump Transmission Lubrication Fluid (if applicable) • Pump Primer Fluid (if applicable) • Drive Axle Lubrication Fluid • Air Conditioning Refrigerant • Air Conditioning Lubrication Oil • Power Steering Fluid • Cab Tilt Mechanism Fluid • Transfer Case Fluid • Equipment Rack Fluid • Generator System Lubricant • Front Tire Pressure - Cold • Rear Tire Pressure - Cold <p>The following information shall also be supplied on the Fluid Data Plate:</p> <ul style="list-style-type: none"> • Chassis Manufacturer • Production Number • Paint Number • Year Built • Date Shipped • Vehicle Identification Number <p>The exact location of the second fluid data plate inside the pump operator's compartment shall be determined at the pre-build conference.</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>Officer' Side Instrument Cluster</p>		
<p>This cluster needs to be in view of the officer and next to the emergency park brake. This cluster shall include minimum of the following. A Fire Research TachP3 model TPA600-A00 engine monitoring display kit or equivalent can be used.</p>		
<ul style="list-style-type: none"> • Speedometer/Odometer • Fuel gauge • Remote switch for generator • Scene light switches • Maxi Brake covered 		
<p>Cab Turn Signals</p>		
<p>There shall be a pair of ARROW LED (Light Emitting Diode) turn signal light heads with populated arrow pattern and amber lens mounted upper corner of the headlight bezel and wired with weatherproof connectors.</p>		
<p>Battery Charger</p>		
<p>A Supersmart or equivalent microprocessor controlled charging system shall be installed. The system shall have a 110 volt, 60 hertz, 5.25 amp input with output of 20 amps 12 volts DC.</p>		
<p>The battery charging system shall be installed and connected directly to the shoreline to ensure the batteries remain fully charged while the vehicle is in the fire station. This system also needs to supply power to the 110 volt outlets and flash lights mounted on the apparatus.</p>		
<p>The system shall provide a visual signal if battery voltage drops below 11.5 volts. The microprocessor shall be continuously powered from the battery to provide the charge status.</p>		
<p>Equalization charge shall only occur when necessary, not with every cycle. The system shall fully charge the batteries while allowing up to 8 amps of additional load for onboard systems.</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>Battery Charger Location</p> <p>The battery charger shall be located in a safe and secure area that has easy access to repair.</p> <p>Drip Rails</p> <p>A drip rail shall be located over each compartment door. This drip rail shall form a lip over the exterior door pans to prevent water from running into a compartment.</p> <p>The vertical rear face of the body shall be covered with smooth aluminum plate.</p> <p>Driver Side Compartments</p> <p>The four (4) driver side compartments shall be constructed from a premium grade 1/8" (.125") smooth aluminum plate. The compartments shall be modular in design and shall not be a part of the body support structure.</p> <p>There shall be one-(1) compartment installed at the front of the body, containing the left side pump panel. The compartment shall be approximately 38" wide x 72" high the pump panel in the lower section and as deep as possible in the upper section or make back board storage. The compartment shall have a useable door opening of approximately 35" wide x 64" high.</p> <p>There shall be one (1) compartment located ahead of the rear wheels. This compartment shall be approximately 47" wide x 70" high and deep as possible and the compartment shall contain maximum cu. ft. of combined storage space. The door opening shall be a minimum 45" wide x 65" high.</p> <p>There shall be one (1) compartment located over the rear wheel. The compartment shall be approximately 57" wide x 37" high and as deep as possible and contain maximum cu. ft. of storage space. The door opening shall be approximately 54" wide x 27" high.</p> <p>There shall be one (1) compartment located behind the rear wheel. The compartment shall be approximately 50" wide x 70" high and as deep as possible and contain the maximum cu. ft. The lower area of this compartment if possible shall be transverse through to the rear compartment(s). The door opening shall be approximately 48" wide x 65" high.</p> <p>Each compartment seam shall be sealed using a permanent pliable silicone caulk. The walls of each compartment shall be machine-louvered for adequate ventilation.</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>Officer Side Compartments</p>		
<p>The four (4) officer's side compartments shall be constructed from a premium grade 1/8" (.125") smooth aluminum plate. The compartments shall be modular in design and shall not be a part of the body support structure.</p>		
<p>There shall be one-(1) compartment installed at the front of the body, containing the right side pump panel. The compartment shall be approximately 38" wide x 72" high the pump panel in the lower section and as deep as possible in the upper section or make back board storage. The compartment shall have a useable door opening of approximately 35" wide x 64" high.</p>		
<p>There shall be one (1) compartment located ahead of the rear wheels. This compartment shall be approximately 47" wide x 70" high and deep as possible and the compartment shall contain maximum cu. ft. of combined storage space. The door opening shall be a minimum 45" wide x 65" high.</p>		
<p>There shall be one-(1) compartment installed above the wheel well, aft of the hydraulic ladder rack. The compartment shall be approximately 37" wide x 36" high and as deep as possible. The compartment shall have a useable door opening of approximately 34" wide x 27" high. The compartment must be maximized W x H if ladder rack system is different for the Ziamatic system.</p>		
<p>There shall be one (1) compartment located behind the rear wheel. The compartment shall be approximately 50" wide x 70" high and as deep as possible and contain the maximum cu. ft. The lower area of this compartment if possible shall be transverse through to the rear compartment(s). The door opening shall be approximately 48" wide x 65" high.</p>		
<p>Each compartment seam shall be sealed using a permanent pliable silicone caulk. The walls of each compartment shall be machine-louvered for adequate ventilation.</p>		
<p>Drop-Down Ladder Rack</p>		
<p>A Ziamatic or equivalent Ladder Access System (LAS) ladder rack shall be provided over the officer side compartment top. The rack shall lower ladders approximately 31" from the stored position to provide a safe and convenient height for unloading and loading. State Manufacturer _____</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>The rack shall be electrically operated by two (2) durable high cycle 12 volt actuators and controlled by a 30 amp two-pole double-throw momentary switch located on the officer side pump panel. The control switch location shall allow the operator to monitor operations and ground personnel while lowering and raising the rack. The ladder rack shall be self-locking in any position during operation. The ladder rack system shall store the ladder in the enclosed roof top compartment. On the bottom of the ladder rack shall be constructed from same material as the body to make the top of the body look complete when stowed.</p> <p>There shall be a red flashing light at each end of the ladder rack to signal when the safety mechanisms are deactivated. The lights shall provide a signal when the ladder rack is in motion and down. The rack shall be wired to the door ajar indicator light in the cab shall be interlocked with the parking brake per NFPA.</p> <p>The ladder rack system shall hold the provided ladders.</p> <p>Ladder, 10' Folding</p> <p>There shall be one (1) Alco-Lite Model FL-10, 10' folding ladder provided with the apparatus. The ladder shall be aluminum, single-section with rubber feet. The ladder shall meet or exceed the latest NFPA standards.</p> <p>Ladder, 14' Roof</p> <p>There shall be one (1) Alco-Lite model PRL-14, 14' roof ladder supplied with the apparatus. The ladder shall be aluminum, single-section with folding steel roof hooks on one end and steel spikes at the other. The ladder shall meet or exceed the latest NFPA standards.</p> <p>Ladder, 24' 2-Section Extension</p> <p>There shall be one (1) Alco-Lite model PEL-24, 24' two-section ladder supplied with the apparatus. The extension ladder shall be aluminum with steel spurs on one end. The ladder shall meet or exceed the latest NFPA standards.</p> <p>Rear Body Compartment</p> <p>The full height center rear compartment shall be constructed from a premium grade 1/8" smooth aluminum plate. The compartment shall be modular in design and shall not be a part of the body support structure.</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>The compartment shall be approximately 38” wide and shall vary in height and depth dependent upon water tank capacity. The lower area of this compartment shall be transverse through to the side rear compartments.</p>		
<p>The compartment seams shall be sealed using a permanent pliable silicone caulk. Machined louvers shall be provided for adequate ventilation.</p>		
<p>Roof Top Compartments</p>		
<p>Two (2) roof top compartments shall be installed on the driver side upper body. The compartments shall be constructed from same material as the body and shall be integral with the body. Each compartment shall have a door constructed from aluminum tread plate. The doors shall have a stainless steel piano type hinge and chest style latch. Compartments shall have a 1/2" flange around the opening to prevent water from entering the compartment when the door is closed. The doors shall be held open with gas shocks.</p>		
<p>These compartments shall be cut short to create a landing pad for the upper body access ladder.</p>		
<p>Each compartment shall measure approximately 70" wide x 23" across x 18" deep.</p>		
<p>Each compartment shall have a grommet mount LED light installed to the compartment inner door pan that activates when the door is open. The doors shall be wired to the compartment door ajar system.</p>		
<p>Compartment, Speedy Dry Storage</p>		
<p>One-(1) dry chute dispenser labeled “Speedy Dry” shall be installed from the roof top compartment to below the side rear compartment fabricated from aluminum tubing and formed aluminum plate. A sliding push-pull handle labeled “Pull to open” shall be installed between the upper and lower tubing accessed from inside the lower compartment allowing the material to be dispensed below the vehicle while in the "Open" position. An angled bucket constructed from formed aluminum plate shall be installed in the roof top compartment housing to hold a minimum of 80lbs. of opened material.</p>		
<p>This hopper can be placed in any unused roof top compartment area. The oil dry chute shall extend through the forward portion of compartment.</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>Tailboard</p>		
<p>Tailboard Step</p>		
<p>A tailboard step shall be provided at the rear of the body. The tailboard shall approximately 10" in depth and in accordance with NFPA in both step height and stepping surface. The maximum rear step height to the tailboard shall not exceed 20". The 10" rear step shall be constructed with an anodized aluminum extrusion. This extrusion shall be slotted punched and raised to provide superior traction during wet and cold weather operations. The rear step shall have a space of approximately 1/4" from the rear of the body to allow water runoff.</p>		
<p>The tailboard shall be in accordance with current NFPA requirements .The tailboard step shall be bolted on to the body from the underside assuring a clear surface and shall be easily removable for replacement in the case of damage.</p>		
<p>Hosebed Access Ladder</p>		
<p>There shall be one-(1) Zico Quic-Ladder or equivalent with a two-rung fold-down section and six-rung main ladder section. The ladder shall be cast aluminum with a flat, non-skid surface for traction. Each step shall be 3" deep x 15-1/2" wide. The handrails shall be 1-1/4" heavy-walled aluminum tubing with lighting, covered between the rungs with ribbed black neoprene.</p>		
<p>Rear Access Handrails</p>		
<p>Handrails shall be provided at the rear of the body to assist ground personnel accessing the tailboard step and hosebed area. Each handrail shall be constructed 1.25" OD anodized aluminum tube, with a grip surface to assure a good grip for personnel safety, and shall be mounted between chrome stanchions.</p>		
<p>One (1) handrail shall be provided (as applicable) on the driver side on top of the body and at the top of the rear ladder. This handrail shall be for use with the driver side hosebed access steps.</p>		
<p>Handrails - two (2) handrails, one (1) on each side, appropriately sized handrail mounted vertically on the trailing edge of the body and appropriately sized handrail(s) mounted horizontally below the rear hosebed opening.</p>		

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	YES	NO
<p>Roll Up Compartment Door</p> <p>R•O•M Series IV roll-up shutter doors shall be installed on all compartments over 32”wide.</p> <p>Shutter slats will feature a double wall extrusion 0.315” thick with a concave interior surface to minimize loose equipment jamming the shutter door closed. Shutter slats will feature an interlocking end shoe to prevent side to side binding of the shutter door during operation. Slats must have interlocking joints with an inverted locking flange. Slat inner seal shall be a one piece PVC extrusion; seal design will be such to prevent metal to metal contact while minimizing dirt and water from entering the compartment.</p> <p>Shutter door track shall be one piece design with integral overlapping flange to provide a clean finished look without the need of caulk. Door track shall feature an extruded Santoprene rubber double lip low profile side seal with a silicone co-extruded back to reduce friction during shutter operation.</p> <p>Shutter bottom rail shall be a one piece double wall extrusion with integrated finger pull. Finger pull shall be curved upward with a linear striated surface to improve operator grip while operating the shutter door. Bottom rail shall have a smooth contoured interior surface to prevent loose equipment from jamming the shutter door. Bottom rail seal shall be made from Santoprene; it will be a double “V” seal to prevent water and debris from entering compartment. Bottom rail lift bar shall be a one piece “D” shaped aluminum extrusion with linear striations to improve operator grip during operation. Lift bar shall have a wall thickness of 0.125”. Lift bar shall be supported by no less than two pivot blocks; pivot blocks shall be constructed from Type 66 Glass filled reinforced nylon for superior strength. Bottom rail end blocks shall have incorporated drain holes which will allow any moisture that collects inside the extrusion to drain out.</p> <p>Shutter door shall have an enclosed counter balance system. Counter balance system shall be 4” in diameter and held in place by 2 heavy duty 18 gauge zinc plated plates. Counter balance system shall have 2 over-molded rubber guide wheels to provide a smooth transition from vertical track to counter balance system; no foam material of any kind shall be permitted or used in this area.</p> <p>The shutter door assembly shall be manufactured and assembled in the United States.</p> <p>There shall be an aluminum drip rail above each compartment door with a built in replaceable wiper seal.</p> <p>There shall be an anodized aluminum sill plate installed at the bottom of the compartment door.</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>The outside door shall be painted to match cab.</p>		
<p>A magnetic type switch integral to the door shall be supplied for door ajar indication and compartment light activation.</p>		
<p>Cab Compartment Doors, Hinged</p>		
<p>The two (2) compartment doors on the cab between the drive/officer and crew area shall be constructed entirely from 5052-H32 smooth aluminum plate using a box pan configuration. The outer panel shall be constructed from 3/16" (.1875") smooth aluminum plate and the inner pan stitch welded in place from 1/8" (.125") smooth aluminum plate.</p>		
<p>There shall be a 1/4" (.250") hole installed in the lower corners of the inside door pans for drainage. The doors shall have a closed cell neoprene rubber gasket installed around the perimeter of the door to remove water.</p>		
<p>Exterior door latches shall incorporate a polished D-paddle handle with rotary style latch. For ease of operation, the D-handle opening shall be large enough to accommodate a gloved hand. The D-paddle latching design shall be subjected to corrosion, water infiltration, and cycle testing to 35,000 cycles. Double doors shall utilize concealed rotary latches on the secondary door, actuated by a recessed stainless steel paddle handle. The door design shall not impede into the compartment opening when in the open position. The watertight door seal shall exceed the current KKK-1822 water infiltration standards. The doors shall be securely fastened to the apparatus body with full-length stainless steel piano hinges using 1/4-20 stainless bolts and locking nuts. The hinges shall be slotted to allow for adjustments.</p>		
<p>Absolutely no self-tapping screws or pop rivets shall be acceptable to mount the door mechanisms or slam latch assemblies.</p>		
<p>This compartment must be able to store Bunker Pants, Running Coat, Helmet and a complete SCBA between the front and rear doors on the driver's side of the cab.</p>		
<p>Compartment Accessory Fund</p>		
<p>In addition to other body accessories already listed in these specifications, there shall be \$25,000.00 in the quoted amount used toward shelving, trays, tool boards, equipment mounting, specialty paint, etc. Any unused funds shall be deducted from the final invoice.</p>		

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	YES	NO
<p>Storage Module, Chain saw</p> <p>There shall be one (1) saw storage module located in the specified compartment to hold two-(2) chain saws. The module shall be fabricated from 1/8" smooth aluminum.</p> <p>The module shall be angled to allow for additional storage. The front of the module shall have two-(2) lift up door to access the additional storage area. The outside of each door shall be equipped with a fabricated saw mount and two-(2) chrome dog bone handles.</p> <p>Location TBD at the pre-construction meeting.</p>		
<p>Wheel Well Compartment, Left and Right Side (3 Total)</p> <p>There shall be an air bottle compartment located in the left front body wheel well, right front and rear wheel well to house one-(1) complete SCBA and one (1) spare cylinder. The floor and sides of the compartment shall be lined with a polypropylene sheet and the back wall shall be lined with rubber matting to provide scuff protection. The bottom of the compartment shall be supported to eliminate breakage. The compartment shall be vented to facilitate moisture drainage.</p> <p>The wheel well compartment doors shall be painted to match with a push button trigger latch.</p>		
<p>Wheel Well Air Cylinder Compartment, Left Rear</p> <p>There shall be an air bottle compartment located in the left rear body wheel well to house two-(2) spare SCBA cylinders. The floor and sides of the compartment shall be lined with a polypropylene sheet and the back wall shall be lined with rubber matting to provide scuff protection. The bottom of the compartment shall be supported to eliminate breakage. The compartment shall be vented to facilitate moisture drainage.</p> <p>* There shall be a recessed fuel fill assembly with a non-locking door mounted on the left side of the apparatus body. The fuel fill assembly shall be equipped with a fuel fill cap, retention ring and hinged door. The assembly shall be properly labeled "DIESEL FUEL ONLY".</p>		

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	YES	NO
<p>Storage Module, Backboard</p> <p>There shall be a backboard storage module located within the upper section pump panel compartments. This backboard module shall be constructed from welded 3/16" thick smooth aluminum plate, complete with welded partitions. The module shall be designed to carry three-(3) backboards. This shall be completely removable for improved pump service access.</p> <p>Equipment Rack, Air Bag Storage</p> <p>There shall be one-(1) equipment storage rack fabricated from aluminum for store air bags. The location of the storage rack shall be determined by the Fire Department.</p> <p>Trays, 250 Pound Roll Out Trays</p> <p>There shall be three (3) roll-out trays supplied, constructed from smooth aluminum plate. The trays shall have a 3" lip on all sides for additional strength. The trays shall be mounted on Grant slides with a combined capacity of 250 pounds. C-Tech 4 Draw Box 13", 7", 5" and 4" drawer's is acceptable.</p> <p>These roll out trays or C-TECH Box shall be provided in compartment next to the pump compartment, one floor mounted and two on adjustable track. These trays will be used to hold fittings/adapters/tools for the pump operator.</p> <p>The shelf shall be sized, width and depth, to match the size and location in the compartment.</p> <p>*All shelving must be adjustable*</p> <p>Hose Bed Cover</p> <p>A 1/8" (.125") aluminum tread plate hose bed cover shall be provided. The cover shall be two-(2) doors with continuous stainless steel hinge along each side. The hose bed cover shall have aluminum assist handles and door hold open springs. An open door indicator switch shall be provided and wired to the open door indicator system in the cab.</p> <p>Two-(2) Hypalon end flaps shall be provided at the rear of the apparatus. The flaps shall be constructed of 16 oz. heavy-duty, fire retardant Hypalon.</p>		

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	YES	NO
<p>A safety sign, which warns of the need to secure hose, shall be visible to personnel at the hose storage area.</p> <p>The covers shall be wired the door ajar system.</p> <p>The Hypalon end flap shall be secured at the bottom using pushpins. The cover prevents hose from inadvertently deploying during normal operations meeting the current NFPA requirements.</p> <p>The cover shall meet the NFPA 1901 15.10.5 requirement.</p> <p>The cover and/or end flaps shall be red in color.</p>		
<p>Hypalon Crosslay Cover</p> <p>A red cover shall be installed on each end of the speedlay's</p> <p>The side flaps shall be secured in place to comply with the latest edition of NFPA 1901.</p>		
<p>Side Mount Pump Panels</p> <p>The operator's controls and gauges shall be mounted on pump panels constructed of 1/8" (.125) black anodized, non-glare aluminum. No vinyl coverings shall be acceptable as these surfaces are subjected to rough service and vinyl is susceptible to tearing. Each panel shall have the ability to be removed from the module for easier access and for maintenance in the pump area.</p>		
<p>Pump Access Door</p> <p>The officer side pump panel shall be hinged for easier access and maintenance.</p> <p>The pump panels shall be securely attached with a vertical stainless steel piano type hinge with 1/4" pins along the forward edge of the pump module. The hinge shall be "staked" on every other knuckle to prevent the pin from sliding. The panels shall have push button style latches to secure the panels in the closed position and one (1) pneumatic shock to hold the upper panel in the open position if needed.</p>		
<p>Pump Panel Tags</p> <p>Color coded pump panel labels shall be supplied to be in accordance with NFPA 1901 compliance.</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>All discharges, gauges, and controls will be properly identified by color-coded metal tags. The metal tags will be affixed with 3M industrial adhesive.</p>		
<p>Cab Jack Access</p> <p>A cab jack access door shall be provided on the officer side. The door shall include a lift and turn latch and instructional information on how the system operates.</p> <p>Accessibility to the cab jacking system shall not require the removal of any exterior pump panels and/or external attachments on the intakes and/or discharges (No exceptions).</p>		
<p>Flex Joint</p> <p>The area between the pump modules and body shall include a rubber flex joint.</p>		
<p>Water Tank</p> <p>A 750 gallon (U.S.)"L" booster tank shall be supplied. The booster tank shall be completely removable without disturbing or dismounting the apparatus body structure.</p> <p>The tank shall have a capacity of 750 U.S. gallons and shall be constructed of PT3™ polypropylene material. This material shall be a non-corrosive stress relieved thermoplastic and UV stabilized for maximum protection. Tank shell thickness may vary depending on the application and may range from ½ to 1" as required. Internal baffles are required.</p> <p>The booster tank shall have a fill tower with a rearward hinged lid. The fill tower shall be located in the forward area of the tank and shall assist with tank ventilation. The fill tower shall include a minimum removable 1/4" thick polypropylene screen.</p> <p>The booster tank shall have two (2) tank plumbing openings. One (1) for a tank-to-pump suction line with an anti-swirl plate, and one (1) for a tank fill line. A 3" cleanout plug shall be provided at the bottom of the tank sump.</p> <p>The booster tank shall include longitudinal and latitudinal baffles. The baffles shall be interlocking and attached to the shell of the tank to minimize water surge during travel and provide enhanced road handling stability. The baffle design shall allow water flow in accordance with NFPA during tank filling or pump operations.</p> <p>A 2.5`ft minimum length of flex hose shall be installed to the bottom of the tank. This shall direct the draining of overflow water past the rear axle and fuel tank. This drain</p>		

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	YES	NO
<p>configuration shall also assure that rear axle tire traction shall not be affected when moving forward.</p> <p>The booster tank shall undergo extensive testing prior to installation in the truck. The testing shall include an electronic spark and tank fill test after both the internal and external tank shell construction is completed.</p> <p>A lifetime manufacture`s limited warranty shall be included.</p> <p>Tank capacity is 750 plus US gallons.</p>		
<p>Foam Tank</p>		
<p>There shall be a 30 gallon foam tank installed piped to the bottom of the driver`s side pump panel. This will have a quick connect hose adaptor to gravity feed a bucket and a pump to fill the tank from the ground.</p>		
<p>Apparatus Valves, Akron</p>		
<p>The apparatus valves (unless otherwise specified) shall be Akron heavy-duty swing out 8000 series brass body with flow optimizing stainless steel ball, and dual polymer seats. The valve shall be capable of dual directional flow while incorporating a self- locking ball feature using an automatic friction lock design and specially designed flow optimizing stainless steel ball. The valve shall not require the lubrication of seats or any other internal waterway parts, and be capable of swinging out of the waterway for maintenance by the removal of six bolts. The valve shall a 10- year warranty covered by Akron Brass.</p>		
<p>Tank Fill Valve</p>		
<p>One (1) 1 ½ or 2” pump-to-tank fill line having a 1 ½ or 2” manually operated full flow valve. The valve control shall be located at the pump operator`s panel and shall visually indicate the position of the valve at all times. The fill line shall be controlled using a chrome handle with an integral tag.</p>		
<p>All fabricated piping shall be a minimum of Schedule 10 stainless steel for superior corrosion resistance and decreased friction loss.</p>		
<p>Tank to Pump</p>		
<p>One (1) manually operated 3” Akron valve or equivalent shall be installed between the pump suction and the booster tank, 3” piping, with flex hose and stainless steel hose</p>		

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	YES	NO
<p>clamps connected to the tank. The valve control shall be located at the pump operator`s panel and shall visually indicate the position of the valve at all times.</p> <p>All fabricated piping shall be a minimum of Schedule 10 stainless steel for superior corrosion resistance and decreased friction loss.</p> <p>A check valve shall be provided in the tank to pump supply line to prevent the possibility of "back filling" the water tank. The valve control shall be located at the pump operator`s panel and shall visually indicate the position of the valve at all times.</p> <p>Hold Downs</p> <p>The ladder brackets/rack to store one (1) 2-section 24` and one (1) 14` roof ladder.</p> <p>Attic Ladder Storage</p> <p>Brackets shall be provided that are capable for storage of one (1) attic ladder. The brackets shall be constructed of high tensile strength aluminum alloy and shall be located on the top of the electric drop-down ladder rack.</p> <p>Pike Pole</p> <p>The pike poles capable of being stored shall be the following length: one (2) 8' ft. pike pole.</p> <p>Ladders</p> <p>The length of ladders capable of being stored shall be the following: 24' 2-Section and 14' roof ladder.</p> <p>Rear Mud Flaps</p> <p>The rear tires shall have a set of black mud flaps mounted behind the rear chassis wheels.</p> <p>Body Mounting System</p> <p>The main body shall be attached to the chassis frame rails with a minimum of six (6) 5/8" diameter steel U-bolts. The rear of the body shall be spring mounted to allow for chassis flex. This body mounting system shall be used to allow easy removal of the body for major repair or disassembly.</p>		

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	YES	NO
<p>Water Tank Mounting System</p> <p>The body design shall allow the booster tank to be completely removable without disturbing or dismounting the apparatus body structure. The water tank shall rest on top of a minimum 3” x 3” frame assembly covered with rubber shock pads and corner braces formed from a minimum of 3/16” angled plate to support the tank. The booster tank mounting system shall utilize a floating design to reduce stress from road travel and vibration. To maintain low vehicle center of gravity the water tank bottom shall be mounted within 5” of the frame rail top.</p> <p>Hosebed Side Assembly</p> <p>The hose bed side assemblies shall be made of a minimum 3” x 3” slotted aluminum extrusion and 3/16” smooth plate.</p> <p>The exterior hose bed side surface shall be completely sanded and deburred to assure a smooth finish and painted job color. The interior hosebed side surface shall be completely sanded and deburred to assure a smooth sanded finish.</p> <p>Hose Bed Capacity</p> <p>The hose bed shall have the capacity to hold the hoses specified below:</p> <p>Looking at the rear of the truck the hose bed capacity shall be, left to right:</p> <p>400' x 1-3/4" in a single stack, used with the left hose bed 2-1/2" discharge 1000' x 5" in 100' sections 400' x 3" in a single stack, used with rear 2-1/2" discharge 400' x 3" in a single stack, used with the right hose bed 2-1/2" discharge</p> <p>Hosebed</p> <p>In the interest of fire fighter safety, the apparatus shall be provided with a low hose bed design.</p> <p>The hose bed decking shall be constructed from anodized aluminum extrusions. The extrusions shall be 3/4" (.750") x 8.125" and have 3/4" (.750") x 3.00" hat channel attached to the underside to form a one-piece grid. The entire deck shall be removable, in one piece, to allow ease of serviceability to the tank. The hose bed shall include an extrusion across the front and rear of the compartment for the installation of adjustable hose bed dividers.</p>		

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	YES	NO
<p>A safety sign, which warns of the need to secure hose, shall be visible to personnel at the hose storage area.</p>		
<p>Hose Bed Divider</p>		
<p>There shall be three (3) hose bed dividers provided the full fore-aft length of the hose bed.</p> <p>The hose bed divider shall be constructed of approximately 1/4" smooth aluminum plate with an extruded aluminum base welded to the bottom. The rear end of the divider shall have a minimum 3" radius corner to protect personnel. The divider shall be natural finish aluminum for long-lasting appearance and shall be sanded and deburred to prevent damage to the hose.</p> <p>The divider shall be adjustable from side to side in the hose bed to accommodate varying hose loads.</p>		
<p>Hose Bed Divider Hand Hold</p>		
<p>There shall be a hand hole cut-out on the trailing edge of each hose bed divider. The cut-out is specifically sized for use in adjusting of the hose bed divider.</p>		
<p>Overall Height Restriction</p> <p>The apparatus shall not exceed 10'8"</p>		
<p>Overall Length Restriction</p> <p>The apparatus shall not exceed 34'.</p>		
<p>Fuel Fill</p> <p>A recessed fuel fill shall be provided at the driver side rear wheel well area. There shall be an additional fuel gauge in the compartment above the rear wheel. Exact location will be determined at preconstruction meeting.</p>		
<p>Body Wheel Well</p> <p>The wheel well shall be constructed from 2" x 4" x .190" wall thickness. The extrusion shall be made from 6063T6 aluminum alloy and have .190" outside radius corners.</p>		

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	YES	NO
<p>The extrusion shall be slotted the full length to permit an internal fit of 3/16 painted aluminum panels.</p> <p>The wheel well liners shall be constructed of 3003 H-14 smooth aluminum plates. They shall be bolted in place for ease of maintenance.</p> <p>The wheel well fenderettes shall be black rubberized material.</p> <p>A deflection shield shall be mounted to the body sub frame to keep road debris from entering the water tank area.</p> <p>Rubrail</p> <p>The pump area module(s) and body shall have rubrails mounted along the sides and at the rear.</p> <p>The rubrail shall be C-channel in design and constructed of a minimum 3/16" thick anodized aluminum extrusion or equivalent. The rubrail shall be approximately 2.75" high x 1.25" deep and shall extend beyond the body width to protect compartment doors and the body side. The rubrail depth shall allow marker and/or warning lights to be recessed inside for protection. The rubrail shall be black in color.</p> <p>Pump Rating</p> <p>The fire pump shall be rated at 1750 GPM.</p> <p>Pump: Hale Pump System or Equivalent</p> <p>The pump shall be a midship-mounted Hale QMAX 1750 GPM single stage centrifugal pump. The pump shall be mounted on the chassis frame rails and shall be split-shaft driven.</p> <p>The entire pump body and related parts shall be of fine grain alloy cast iron, with a minimum tensile strength of 30,000 PSI. All metal moving parts in contact with water shall be of high quality bronze or stainless steel. Pump body shall be horizontally split in two (2) sections for easy removal of impeller assembly, including wear rings and bearings from beneath the pump without disturbing pump mounting or piping.</p> <p>The pump impeller shall be hard, fine grain bronze of the mixed flow design and shall be individually ground and hand balanced. Impeller clearance rings shall be bronze, easily</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>renewable without replacing impeller or pump volute body, and of wrap-around double labyrinth design for maximum efficiency.</p> <p>The pump shaft shall be heat-treated corrosion-resistant stainless steel and shall be rigidly supported by a minimum of three (3) bearings for minimum deflection. The sleeve bearing is to be lubricated by a force fed, automatic oil lubricated design, pressure-balanced to exclude foreign material. The remaining bearings shall be heavy-duty, deep groove ball bearings in the gearbox and shall be splash-lubricated. Pump shaft must be sealed with double-lip oil seal to keep road dirt and water out of the gearbox.</p> <p>Two (3) 6" diameter suction ports with 6" NST male threads and removable screens shall be provided. The ports shall be mounted one (1) on each side of the midship pump and shall extend through the side pump panels. There shall be one (1) front suction in the front of the cab on the officer's side. Inlets shall come equipped with long handle chrome caps.</p> <p>A five (5) year pump warranty shall be provided as standard by Hale Products.</p>		
<p>Packing Seal</p> <p>The pump shaft shall have only one (1) packing gland located on the inlet side of the pump. It shall be of split design for ease of repacking. The packing gland shall be of a design to exert uniform pressure on packing and to prevent cocking and uneven packing load when tightened. The packing rings shall be permanently lubricated, of graphite composition, and have sacrificial zinc foil separators to protect the pump shaft from galvanic corrosion.</p> <p>The packing shall be easily adjusted by hand with rod or screwdriver with no special tools or wrenches required.</p>		
<p>Priming System</p> <p>The air operated priming pump shall be a positive displacement vane type. The pump primer control shall have a manually operated, panel mounted "push to prime" air valve; which will direct air pressure from the air brake storage tank to the primer body. To prevent freezing, no water shall flow to and from the panel control.</p> <p>One-(1) additional "push to prime" remote primer control shall be installed on the panel for the specified additional intake. The additional control shall operate the air primer to pre-prime and may be used to remove air from the auxiliary intake piping and hose, while the fire pump is operating. To prevent freezing, no water shall enter the primer valve control.</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p><u>2nd Primer Port</u> The additional primer port shall be used for the front suction.</p> <p>Pump Shift</p> <p>The pump shift shall be pneumatically-controlled using a power shifting cylinder.</p> <p>The power shift control valve shall be mounted in the cab and be labeled PUMP SHIFT. The apparatus transmission shift control shall be furnished with a positive lever, preventing accidental shifting of the chassis transmission.</p> <p>A green indicator light shall be located in the cab and be labeled PUMP ENGAGED. The light shall not activate until the pump shift has completed its full travel into pump engagement position.</p> <p>A second green indicator light shall be located in the cab and be labeled OK TO PUMP. This light shall be energized when both the pump shift has been completed and the chassis automatic transmission has obtained converter lock-up (4th gear lock-up).</p> <p>One (1) pump panel mounted GREEN indicator light shall be positioned by the throttle control on the pump operator`s panel. This light shall be labeled "Warning: DO NOT OPERATE THROTTLE UNLESS LIGHT IS ON". The light shall be energized when the pump shift has been completed, chassis automatic transmission has obtained converter lock-up (4th gear lock-up), and the chassis parking brake is set.</p> <p>Gearbox Cooler</p> <p>A gearbox cooler shall be provided to maintain safe operating temperatures during prolonged pumping operations.</p> <p>Test Plugs</p> <p>Two (2) test plugs shall be pump panel mounted for third party testing of vacuum and pressures of the pump.</p> <p>Auxiliary Engine Cooler</p> <p>An engine cooler used to lower engine water temperature during prolonged pumping operations and controlled at the pump operator`s panel shall be provided.</p> <p>The engine cooler shall be installed in the engine coolant system in such a manner as to allow cool pump water to circulate around engine water, thus forming a true heat</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>exchanger action. Cooler inlet and outlet shall be continuous, preventing intermixing of engine coolant and pump water.</p> <p>Pump Certification, 1750 GPM</p> <p>The pump when dry, shall be capable of taking suction and discharging water in accordance with current NFPA 1901. The pump shall be tested at the manufacturer's facility by an independent, third party testing service. The conditions of the pump test shall be as outlined in current NFPA 1901. The tests shall include, at minimum, the pump test, the pumping engine overload test, the pressure control system test, the priming device tests, the vacuum test, and the water tank to pump flow test as outlined in current NFPA 1901.</p> <p>A Piping hydrostatic test shall be performed as outlined in current NFPA 1901.</p> <p>The pump shall meet and perform the following test to receive certification: 100% of rated capacities at 150 PSI net pump pressure 100% of rated capacities at 165 PSI net pump pressure 70% of rated capacities at 200 PSI net pump pressure 50% of rated capacities at 250 PSI net pump pressure</p> <p>A test plate, installed at the pump panel, shall provide the rated discharges and pressures together with the speed of the engine as determined by the certification test, and the no-load governed speed of the engine.</p> <p>A Certificate of Inspection certifying performance of the pump and all related components shall be provided at time of delivery. Additional certification documents shall include, but not limited to, Certificate of Hydrostatic Test, Electrical System Performance Test, Manufacturer's Record of Pumper Construction, and Certificate of Pump Performance from the pump manufacturer.</p> <p>Steamers, Flush+1</p> <p>The pump 6" steamer Intake(s) shall be mounted approximately 1" from the pump panel to back of cap when installed. The "Flush+1" dimension can vary + or - 1-1/4" or as practicable depending on the pump module width and options selected. (Example 72" or 76" modules.)</p> <p>Location: driver's side, officer's side.</p> <p>Suction Inlet, Front</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>A 5" gated front suction inlet shall be installed thru to the front bumper gravel shield terminating with a chrome plated 5" MNST adapter with strainer.</p> <p>The suction inlet shall be controlled at the pump operator's panel by an electric operated valve with built in relief valve mounting pad. A bleeder valve shall also be provided with the valve package.</p> <p>A warning plate permanently affixed in close proximity of the suction inlet shall be installed stating: "WARNING - SERIOUS INJURY OR DEATH COULD OCCUR IF INLET IS SUPPLIED BY A PRESSURIZED SOURCE WHEN THE VALVE IS CLOSED".</p> <p>The front suction shall terminate in the passenger side tray. Hose connection shall be made through the half-round cutout in the face of the bumper.</p> <p>Piping, Front Suction</p> <p>The front suction plumbing shall be constructed from schedule 10 stainless steel piping with Victaulic couplings each end. The plumbing shall be fitted routed along the chassis frame rails.</p> <p>An Akron Model 53 relief valve shall be provided for the front suction adjustable from 50 to 250 PSI and pre-set at the factory at 125 PSI.</p> <p>A 3/4" ball valve shall be provided for the front suction located at the lowest point of the plumbing and properly labeled. The valve shall have a cast bronze body, with a 1/4 turn, chrome plated bronze ball, reinforced Teflon seals, and blow-out-proof stem rated to 600 PSI.</p> <p>Pressure Governor and Engine Monitoring Display</p> <p>Fire Research PumpBoss series PBA400-A00 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 6 3/4" high by 4 5/8". The control knob shall be 2" in diameter with no mechanical stops, have a serrated grip, and a red idle push button in the center. It shall not extend more than 1 3/4" from the front of the control module. Inputs for monitored engine information shall be from a J1939 databus or independent sensors. Outputs for engine control shall be on the J1939 databus or engine specific wiring. Inputs from the pump discharge and intake pressure sensors shall be electrical.</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>The following continuous displays shall be provided:</p> <ul style="list-style-type: none"> Engine RPM; shown with four daylight bright LED digits more than 1/2" high Check engine and stop engine warning LEDs Engine 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 Pressure and RPM operating mode LEDs Pressure / RPM setting; shown on a dot matrix message display Throttle ready LED. <p>A dot-matrix message display shall show diagnostic and warning messages as they occur. It shall show monitored apparatus information, stored data, and program options when selected by the operator. All LED intensity shall be automatically adjusted for day and night time operation.</p> <p>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:</p> <ul style="list-style-type: none"> 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). <p>The program features shall be accessed via push buttons located on the front of the control module. There shall be a USB port located at the rear of the control module to upload future firmware enhancements.</p> <p>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</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>include recognition of no water conditions with an automatic programmed response and a push button to return the engine to idle.</p>		
<p>The pressure governor and monitoring pressure display shall be programmed at installation for a specific engine.</p>		
<p>Pump Cooler</p>		
<p>The pump shall have a minimum 3/8" line installed from the pump discharge to the booster tank to allow a small amount of water to circulate through the pump casing in order to cool the pump during sustained periods of pump operation when water is not being discharged. The pump cooler line shall be controlled from the pump operator's panel by a 3/8" snubber valve or equivalent.</p>		
<p>Left Intake 2.5 Valve</p>		
<p>One (1) 2-1/2" swing operated ball valve shall be installed on the left side pump panel plumbed to the suction side of the pump with 2-1/2" piping. The suction shall equipped with a 2-1/2" FNST chrome inlet swivel, brass inlet strainer, chrome plug with chain and 3/4" drain valve. The control handle shall be located at the valve.</p>		
<p>A warning plate permanently affixed in close proximity of the suction inlet shall be installed stating:</p>		
<p>"WARNING - SERIOUS INJURY OR DEATH COULD OCCUR IF INLET IS SUPPLIED BY A PRESSURIZED SOURCE WHEN THE VALVE IS CLOSED".</p>		
<p>All fabricated piping shall be a minimum of Schedule 10 stainless steel for superior corrosion resistance, and decreased friction loss.</p>		
<p>Intake Relief Valve</p>		
<p>There shall be an Akron model 53 or equivalent suction side relief valve provided in the pump system. The relief valve is adjustable from 50-1250 psi and set at the factory at 125 psi.</p>		
<p>It shall be designed to operate at a maximum inlet pressure of 200 psi. The valve shall be normally closed and shall limit pressures in the pumping system. When excessive intake pressures are received, the water shall be directed below the body to an area visible to the pump operator. The outlet shall terminate with a male 2-1/2" NPT threaded fitting.</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>Front Jump Line Valve</p> <p>There shall be one-(1) front discharge installed in the front bumper, center hose well.</p> <p>The front bumper discharge shall terminate with a 90-degree swivel elbow, 2" FNPT x 1-1/2" MNST. One-(1) 2" brass valve with 3/4" drain shall be installed on the discharge side of the pump plumbed to the front swivel with flexible high-pressure hose and Victaulic stainless steel couplings tested to 1200 PSI. The front discharge shall be push/pull controlled at the pump operator's panel</p> <p>The valve control shall be located at the pump operator panel and shall visually indicate the position of the valve at all times.</p>		
<p>Deck Gun 3" Discharge Valve</p> <p>A 3" deck pipe shall be installed above the pump in such a manner that a monitor can be mounted and used effectively. The piping shall be installed securely so no movement develops when the line is charged. The piping shall terminate with 3" NPT threads and a 4-bolt flange for mounting a monitor. The 3" valve shall be push pull controlled from the operator's panel.</p> <p>The valve shall be equipped with a device that limits the opening and closing speeds to comply with the current edition of NFPA 1901.</p> <p>The valve control shall be located at the pump operator's panel and shall visually indicate the position of the valve at all times.</p> <p>All fabricated piping shall be a minimum of Schedule 10 stainless steel for superior corrosion resistance and decreased friction loss.</p>		
<p>Crosslay/ Speedlay Capacity</p> <p>Crosslay/Speedlay capacity shall be able to hold 200 ft. of 1 3/4" hose.</p> <p>1.5 Single Crosslay/Speedlay Valve</p> <p>Two-(2) pre-connected speedlay compartments, designed as an integral part of the pump module, shall be located forward of the pump, side by side, just above the frame rails.</p> <p>The speedlays shall be designed to accommodate the following: Forward shall carry 200' of 1-3/4" double jacket hose Rearward shall carry 200' x 1-3/4" double jacket hose</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>Stainless steel nylon guide rollers shall be installed at each end with stainless steel scuff plates around the perimeter of the speedlay protecting the painted surfaces.</p> <p>The forward speedlay shall have a 2" ball valve with 3/4" drain and 90-degree swivel. The plumbing to the speedlay shall be 2" high-pressure flexible hose with stainless steel couplings, tested to 1200 PSI.</p> <p>The rearward speedlays shall have a 2" ball valve with 3/4" drain and 90-degree swivel. The plumbing to the speedlay shall be 2" high-pressure flexible hose with stainless steel couplings, tested to 1200 PSI.</p> <p>The speedlays shall be push pull controlled at the pump operator's panel.</p> <p>Each speedlay shall equipped with a quarter-turn drain valve.</p> <p>All fabricated piping shall be a minimum of Schedule 10 stainless steel for superior corrosion resistance and decreased friction loss.</p> <p>The Hypalon end flaps shall be secured at the bottom using pushpins. The cover prevents hose from inadvertently deploying during normal operations meeting the current NFPA requirements.</p> <p>The end flaps shall be red in color.</p>		
<p>Left Side Pump Panel Light</p>		
<p>One-(1) individual OnScene Access LED pump panel light or equivalent with on/off switch shall be mounted under the light shield left side. For optimum visibility during nighttime operations, the light shall be mounted as high as possible.</p>		
<p>Right Side Pump Panel Light</p>		
<p>One-(1) individual OnScene Access LED pump panel light or equivalent with on/off switch shall be mounted under the light shield right side. For optimum visibility during nighttime operations, the light shall be mounted as high as possible.</p>		
<p>Pump Panel Platforms</p>		
<p>Two (2) 500-pound capacity slide-out platforms shall be installed under the operator's panel constructed from 3/16" (.1875) aluminum tread plate. The slide-out platform shall</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>be wired to the open door indicator system activating the light in the cab when the step is in the extended position and the park brake is released.</p>		
<p>The slide out platforms shall be full width under the speedlays and pump panel compartments.</p>		
<p>Pump Panel Air Horn Switch</p>		
<p>A push button momentary switch mounted on the pump panel shall activate the chassis air horns. There shall be a large red placard surrounding the air horn switch. Exact verbiage of the placard shall be determined at the pre-build conference.</p>		
<p>Removable Speedlay Hose Trays</p>		
<p>There shall be two-(2) removable, speedlay hose trays provided with the apparatus constructed of 3/16" smooth aluminum with handles at each end held in place by horizontal bulkheads at each end of the compartments.</p>		
<p>Discharge Panel 2.5" Drop</p>		
<p>Two (2) 2-1/2" discharge outlet with a manually operated valve shall be provided at the left and right side pump panel.</p>		
<p>The valve shall be of the unique Akron Swing-out design or equivalent to allow the valve body to be removed for servicing without disassembling the plumbing.</p>		
<p>The valve control shall be located at the pump operator panel and shall visually indicate the position of the valve at all times.</p>		
<p>The discharge shall extend out beyond the pump panel with a 30 degree downward angle with 2-1/2" NST threads to help prevent kinking of the discharge hose. The 30 degree droop shall be an integral part of the discharge valve and shall be equipped with a chrome-plated rocker-lug cap with a retainer chain.</p>		
<p>The discharge shall be supplied with a 3/4" bleeder valve assembly. The bleeder valve shall be installed to drain water from the gauge pressure line to prevent freezing of the line. The drain shall be controlled with a quarter-turn valve on the pump panel.</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>Discharge Right Panel 4” to 5” Storz</p> <p>There shall be one-(1) discharge outlet with a 4" valve on the right side pump panel. The outlet shall be hand wheel controlled from the operator's panel and terminate with 4" MNST threads.</p> <p>The discharge shall extend out beyond the pump panel with a 30 degree downward angle with chrome plated 4” NST threads to help prevent kinking of the discharge hose. The 30 degree droop shall be an integral part of the discharge valve and shall be equipped with (1) Kocheck model SKE45R, 4" FNST rocker lug x 5" Storz, or equivalent adapter supplied with the apparatus.</p> <p>The 4" x 5" elbow shall be provided on the right side LDH discharge</p> <p>Cap, 5" STORZ</p> <p>There shall be one (1) Kocheck model CC507 or equivalent, 5" Storz cap with chain provided with the apparatus.</p> <p>All fabricated piping shall be a minimum of Schedule 10 stainless steel for superior corrosion resistance and decreased friction loss.</p> <p>Left Rear 2.5" Discharge Valve</p> <p>One (1) 2-1/2” discharge outlet with a manually operated valve shall be supplied to the left rear outboard of the apparatus by a 2-1/2” stainless steel pipe.</p> <p>The valve shall be an Akron 8800HD series or equivalent with a 316 stainless steel ball and dual polymer seats for ease of operation and increased abrasion resistance. The valve shall have a self-locking ball feature using an automatic friction lock design to balance the stainless steel ball when in a throttle position with water flowing through it.</p> <p>The valve shall be of the unique Akron swing-out design or equivalent to allow the valve body to be removed for servicing without disassembling the plumbing.</p> <p>The valve control shall be located at the pump operator panel and shall visually indicate the position of the valve at all times.</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>All fabricated piping shall be a minimum of Schedule 10 stainless steel for superior corrosion resistance and decreased friction loss.</p> <p>Location: left rear discharge.</p> <p>Right Rear 2.5 Discharge Valve</p> <p>Two (2) 2-1/2" discharge outlet with a manually operated valve shall be supplied to the right rear outboard of the apparatus by a 2-1/2" stainless steel pipe.</p> <p>The valve shall be an Akron 8800HD series or equivalent with a 316 stainless steel ball and dual polymer seats for ease of operation and increased abrasion resistance. The valve shall have a self-locking ball feature using an automatic friction lock design to balance the stainless steel ball when in a throttle position with water flowing through it.</p> <p>The valve shall be of the unique Akron Swing-out design or equivalent to allow the valve body to be removed for servicing without disassembling the plumbing.</p> <p>The valve control shall be located at the pump operator panel and shall visually indicate the position of the valve at all times.</p> <p>All fabricated piping shall be a minimum of Schedule 10 stainless steel for superior corrosion resistance and decreased friction loss.</p> <p>Location: right rear discharge</p> <p>30 Degree Elbows - 2-1/2" FNST X 2-1/2" MNST</p> <p>There shall be three (3) Trident model 01.010.0 or equivalent 2-1/2" FNST x 2-1/2" MNST chrome plated elbows supplied with the apparatus. The elbows shall have a 30 degree turn down.</p> <p>Reducers, 2-1/2" FNST X 1-1/2" MNST</p> <p>There shall be three (3) Kocheck model 37R2515 or equivalent, 2-1/2" FNST x 1-1/2" MNST reducers supplied with the apparatus, used with the rear 2-1/2" discharges.</p> <p>Caps, 1-1/2" NST</p> <p>There shall be three (3) Trident model 01.005.0 or equivalent, 1-1/2" caps with chain provided with the apparatus.</p> <p>The three (3) 2-1/2" x 1-1/2" reducers and 1-1/2" caps shall be provided on the rear 2-1/2" discharges.</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>Discharge Right Panel 3” Droop</p>		
<p>One (1) 3” discharge outlet with a manually-operated valve shall be provided at the right side pump panel.</p>		
<p>The valve shall be an Akron 8800HD series or equivalent with a 316 stainless steel ball and dual polymer seats for ease of operation and increased abrasion resistance. The valve shall have a self-locking ball feature using an automatic friction lock design to balance the stainless steel ball when in a throttle position with water flowing through it.</p>		
<p>The valve shall be of the unique Akron Swing-out design or equivalent to allow the valve body to be removed for servicing without disassembling the plumbing.</p>		
<p>The valve control shall be located at the pump operator panel and shall visually indicate the position of the valve at all times.</p>		
<p>The discharge shall extend out beyond the pump panel with a 30 degree downward angle with chrome-plated 3” NST threads to help prevent kinking of the discharge hose.</p>		
<p>The 30 degree droop shall be an integral part of the discharge valve and shall be equipped with a chrome-plated rocker-lug cap with a retainer chain.</p>		
<p>All fabricated piping shall be a minimum of Schedule 10 stainless steel for superior corrosion resistance and decreased friction loss.</p>		
<p>There shall be one (1) Kocheck model 37R2515 or equivalent, 2-1/2" FNST x 1-1/2" MNST reducers supplied with the apparatus, used with the right side 2-1/2” discharge.</p>		
<p>There shall be three (3) Trident model 01.005.0 or equivalent, 1-1/2" caps with chain provided with the apparatus.</p>		
<p>Location: right side discharge 1</p>		
<p>Dunnage Area</p>		
<p>The open area above the pump enclosure shall be provided for additional equipment storage shall be trimmed with 1/8" (.125) aluminum tread plate on all vertical interior walls and shall have slotted aluminum floors.</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>Deck Gun</p> <p>A Task Force Tips model XG18VL-PL manually telescoping waterway or equivalent shall be installed. The waterway shall be capable of being lowered to deck level (or into a monitor well) for storage and transportation and shall be capable of being raised to an extended height of 18" by lifting a quick release latch located at the top of the extension tube. This latching device shall be capable of locking the waterway in the raised position while maintaining the ability to horizontally rotate the monitor device 360 degrees.</p> <p>A sensor shall be located on the waterway that signals a 12 volt indicator light installed in the cab to illuminate to indicate that the monitor is raised when the park brake is released.</p> <p>The aluminum riser shall have a 3" waterway; hard coat anodized finish and be furnished with a 3" Victaulic inlet and a 3" male NPT outlet. The unit shall be covered by a five-year warranty.</p>		
<p>Bleeder Drain Valve</p> <p>The all discharges shall be supplied with a 3/4" bleeder valve assembly. The bleeder valve shall be installed to drain water from the gauge pressure line. The drain shall be controlled with a quarter-turn valve on the pump panel.</p>		
<p>Tank Level Gauge</p> <p>A Fire Research TankVision Pro model WLA300-A00 tank indicator kit or equivalent shall be installed on the pump operator's 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 RGB 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 Polycarbonate/Nylon material, and have a distinctive blue label.</p> <p>The program features shall be accessed from the front of the indicator module. The program shall support self-diagnostics capabilities, self-calibration, six (6) programmable colored light patterns to display tank volume, adjustable brightness control levels and a datalink 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.</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>Gauge, Auxiliary Water level</p>		
<p>There shall be a pair of Fire Research TankVision MAXVISION model WLA280-A00 or equivalent tank remote indicators shall be installed. The indicator shall show the volume of water in the tank on Ninety six (96) easy to see super bright Tri-color LEDs. The indicator case shall be waterproof, manufactured of Polycarbonate material with an integrated lens. The package includes a rubber gasket.</p>		
<p>The remote indicator shall receive input information over a datalink from a Fire Research TankVision primary indicator model WLA200-A00, WLA300-A00 or WLA400-A00. The remote indicator shall indicate the level as a single color in Red for 25% or less, Amber color for up to 50% volume, Blue color for up to 75% volume and Green color for up to 100% volume. When the level reaches 25%, the red LEDs will begin flashing. When the level is empty, the red LEDs will scroll in a down-chasing motion and then flash three times. It shall have the program capability to adjust the brightness level for day time and nighttime viewing.</p>		
<p>The lights shall be mounted one each side on or near the cab. The units shall activate with the application of the park brake.</p>		
<p>Master Gauge's</p>		
<p>Two (2) weatherproof 4-1/2" compound intake and pressure gauges with a range of 30-0-600 shall be installed on the pump panel. The gauge shall be filled with a liquid solution and illuminated.</p>		
<p>State Manufacture of gauge: _____</p>		
<p>Compound Pressure Gauge</p>		
<p>A weatherproof 2-1/2" compound vacuum pressure gauge with a range of 30-0-600 shall be installed on the pump panel. The gauge shall be filled with a liquid solution to assure visual reading to within 1% accuracy.</p>		
<p>Gauge shall be provided for all the discharges</p>		
<p>Generator, Above the Pump</p>		
<p>The generator shall be installed above the pump module in the dunnage area. The generator can be diesel or hydraulic but shall be an 8KW.</p>		
<p>Generator Remote START/STOP Switch</p>		
<p>There shall be two (3) remote start/stop switch's connected to the generator. The switch shall be located as directed by the department.</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>Generator Cover</p> <p>There shall be a cover over the generator, constructed of .125" aluminum tread plate. The cover shall have a hinge and latch to allow easy access to the generator for servicing. The cover shall also have an expanded metal insert ventilation of the generator compartment.</p> <p>Breaker Panel</p> <p>A General Electric breaker box with 240 main breaker and four (4) 120 volt circuit breakers shall be installed. The breaker box shall include a master breaker sized according to the generator output. The breaker box shall be located in a compartment as specified by the engineering department to meet the current NFPA specifications.</p> <p>Wire Protection</p> <p>All 120-volt wiring shall be run in high temperature, rated at a minimum of 275° F, split loom for easy access to wires when trouble shooting.</p> <p>120-Volt Electrical System Requirements and Testing</p> <p>The following guidelines shall apply to the 120/240 VAC system installation:</p> <p>General-</p> <p>Any fixed line voltage power source producing alternating current (ac) line voltage shall produce electric power at 60 cycles plus or minus 5 cycles.</p> <p>Except where superseded by the requirements of NFPA 1901, all components, equipment and installation procedures shall conform to NFPA 70, National Electrical Code (herein referred to as the NEC).</p> <p>Line voltage electrical system equipment and materials included on the apparatus shall be listed and installed in accordance with the manufacturer's instructions. All products shall be used only in the manner for which they have been listed.</p> <p>Grounding-</p> <p>Grounding shall be in accordance with Section 250-6 "Portable and Vehicle Mounted Generators" of the NEC. Ungrounded systems shall not be used. Only stranded or braided copper conductors shall be used for grounding and bonding.</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>An equipment grounding means shall be provided in accordance with Section 250-91 (Grounding Conductor Material) of the NEC.</p> <p>The grounded current carrying conductor (neutral) shall be insulated from the equipment grounding conductors and from the equipment enclosures and other grounded parts. The neutral conductor shall be colored white or gray in accordance with Section 200-6 (Means of Identifying Grounding Conductors) of the NEC.</p> <p>In addition to the bonding required for the low voltage return current, each body and driving or crew compartment enclosure shall be bonded to the vehicle frame by a copper conductor. This conductor shall have a minimum amperage rating of 115 percent of the nameplate current rating of the power source specification label as defined in Section 310-15 (amp capacities) of the NEC. A single conductor properly sized to meet the low voltage and line voltage requirements shall be permitted to be used.</p> <p>All power source system mechanical and electrical components shall be sized to support the continuous duty nameplate rating of the power source.</p> <p>Operation- Instructions that provide 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.</p> <p>Provisions shall be made for quickly and easily placing the power source into operation. The control shall be marked to indicate when it is correctly positioned for power source operation. Any control device used in the drive train shall be equipped with a means to prevent the unintentional movement of the control device from its set position.</p> <p>A power source specification label shall be permanently attached to the apparatus near the operator's control station. The label shall provide the operator with the information detailed in Figure 19-4.10. NEC.</p> <p>Direct drive (PTO) and portable generator installations shall comply with Article 445 (Generators) of the NEC.</p> <p>Overcurrent protection- The conductors 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 (3658 mm) in length.</p> <p>For fixed power supplies, all conductors in the power supply assembly shall be type THHW, THW, or use stranded conductors enclosed in nonmetallic liquid tight flexible conduit rated for a minimum of 194 degree Fahrenheit (90 degrees Celsius).</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>For portable power supplies, conductors located between the power source and the line side of the main over current protection device shall be type SO or type SEO with suffix WA flexible cord rated for 600-volts at 194 degrees Fahrenheit (90 degrees Celsius).</p> <p>Wiring Methods- Fixed wiring systems shall be limited to the following: Metallic or nonmetallic liquid tight flexible conduit rated at not less than 194 degrees Fahrenheit (90 degrees Celsius) or Type SO or Type SEO cord with a WA suffix, rated at 600 volts at not less than 194 degrees Fahrenheit (90 degrees Celsius)</p> <p>Electrical cord or conduit 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. In addition the wiring shall be run as follows.</p> <ul style="list-style-type: none"> -Separated by a minimum of 12 inches (305 mm), or properly shielded, from exhaust piping -Separated from fuel lines by a minimum of six (6) inches (152 mm) distance. <p>Electrical cord or conduit shall be supported within six (6) inches (152 mm) of any junction box and at a minimum of every 24 inches (610 mm) of continuous run. Supports shall be made of nonmetallic materials or corrosion protected metal. All supports shall be of a design that does not cut or abrade the conduit or cable and shall be mechanically fastened to the vehicle.</p> <p>Wiring Identification- All line voltage conductors located in the main panel board shall be individually and permanently identified. The identification shall reference the wiring schematic or indicate the final termination point. When prewiring for future power sources or devices, the unterminated ends shall be labeled showing function and wire size.</p> <p>Wet Locations- All wet location receptacle outlets and inlet devices, including those on hardwired remote power distribution boxes, shall be of the grounding type provided with a wet location cover and installed in accordance with Section 210-7 "Receptacles and Cord Connections" of the NEC.</p> <p>All receptacles located in a wet location shall be not less than 24 inches (610 mm) from the ground. Receptacles on off-road vehicles shall be a minimum of 30 inches (762 mm) from the ground.</p> <p>The face of any wet location receptacle shall be installed in a plane from vertical to not more than 45 degrees off vertical. No receptacle shall be installed in a face up position.</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>Dry Locations-</p> <p>All receptacles located in a dry location shall be of the grounding type. Receptacles shall be not less than 30 inches (762 mm) above the interior floor height.</p> <p>All receptacles shall be marked with the type of line voltage (120-volts or 240-volts) and the current rating in amps. If the receptacles are direct current, or other than single phase, they shall be so marked.</p> <p>Listing-</p> <p>All receptacles and electrical inlet devices shall be listed to UL 498, Standard for Safety Attachment Plugs and Receptacles, or other appropriate performance standards. Receptacles used for direct current voltages shall be rated for the appropriate service.</p> <p>Electrical System Testing-</p> <p>The wiring and associated equipment shall be tested by the apparatus manufacturer or the installer of the line voltage system.</p> <p>The wiring and permanently connected devices and equipment shall be subjected to a dielectric voltage withstand test of 900-volts for one-(1) minute. The test shall be conducted between live parts and the neutral conductor, and between live parts and the vehicle frame with any switches in the circuit closed. This test shall be conducted after all body work has been completed.</p> <p>Electrical polarity verification shall be made of all permanently wired equipment and receptacles to determine that connections have been properly made.</p> <p>Operational Test per Current NFPA 1901 Standard-\</p> <p>The apparatus manufacturer shall perform the following operation test and ensure that the power source and any devices that are attached to the line voltage electrical system are properly connected and in working order. The test shall be witnessed and the results certified by Underwriters Laboratories.</p> <p>The prime mover shall be started from a cold start condition and the line voltage electrical system loaded to 100 percent of the nameplate rating.</p> <p>The power source shall be operated at 100 percent of its nameplate voltage for a minimum of two-(2) hours unless the system meets category certification as defined in the current NFPA 1901 standard.</p> <p>Where the line voltage power is derived from the vehicle's low voltage system, the minimum continuous electrical load as defined in the current NFPA 1901 standard shall be applied to the low voltage electrical system during the operational test.</p>		

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	YES	NO
<p>Power Source Specification Plat</p> <p>A permanently affixed plate shall be installed near operator's position. The plate shall provide the operator with the following information:</p> <ul style="list-style-type: none"> • Rated voltage and type (AC or DC) • Phase • Rated frequency (at rated voltage) • Rated Amperage • Continuous rated watts • Power source engine speed <p>120V Household Receptacles</p> <p>There shall be ten (10) 120 volt, 15 amp household receptacles installed on the apparatus. The receptacles shall be wired to the breaker box. The receptacles shall have a weatherproof cover and be a duplex outlet.</p> <p>There shall be one (1) receptacle in all compartments including the two (2) exterior compartments on the cab and one (1) located in the cab center:</p> <p>These receptacles shall be wired to the shoreline.</p> <p>4 Way Junction Box</p> <p>One (1) Akron Brass, electrical junction box model EJBX shall be provided. The Electrical Junction Box shall be constructed of heavy-duty, cast aluminum with a quarter of an inch (1/4") thick walls and the four corner edges shall be at least one half of an inch (1/2") thick to withstand the roughest of handling. A carrying handle shall be an integral part of the Junction Box's casting and be large enough to fit a fully gloved hand. The junction box must be internally lite. Each side of the electrical junction box shall be fitted with polypropylene faceplates. The faceplates shall be backlit so that plug orientation to the receptacle is quick and easy to align. Each electrical junction box shall be equipped with four-(4) L5-20 receptacles (two on each side) as specified by the user. Each receptacle shall be equipped with a spring-loaded snap cover and marked in white lettering with that receptacles voltage and ampere rating. All electrical receptacles, plugs and snap type weatherproof covers shall be UL Listed components.</p> <p>The junction box shall plug into the cord reel - do not hard wire.</p>		

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	YES	NO
<p>Junction Box Bracket</p> <p>One (1) junction box mounting bracket shall be installed on the apparatus as directed by the Fire Department. The bracket shall be constructed of diamond plate that is cut, bent, and welded to meet the dimensions of the junction box. The box shall be lined with PVC material to protect the junction box.</p> <p>Electric Cord Reel</p> <p>There shall be one (1) Hannay Model ECR1618-17-18, electric rewind electric cord reel provided. The cord reel shall have 200' of 10-3 wire cord. The reel shall be mounted as directed and shall be controlled by a 12-volt switch. The cord reel shall be wired to the breaker panel.</p> <p>The electrical cord provided on the reel shall be yellow in color.</p> <p>The electric cord reel shall be installed in the front bumper compartment, driver's side.</p> <p>Cord Rollers</p> <p>There shall be one (1) 4-way roller assembly installed to guide the cord on and off the spool to prevent chafing of the apparatus paint.</p> <p>Cord Stop</p> <p>There shall be one (1) Hannay cord stop model HS-3 attached at the end of each hose/cord.</p> <p>Plate for Cord Reel</p> <p>A permanently affixed plate shall be installed in a readily visible location adjacent to any permanently connected reel that indicates the following:</p> <ul style="list-style-type: none"> • Current Rating • Current Type • Phase • Voltage • Total Cable Length 		

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	YES	NO
<p>12-Volt Electrical System</p> <p>The apparatus 12 volt electrical system shall be designed as an integrated electrical package specifically engineered for fire apparatus application. The integrated electrical system shall be comprised of power distribution panels, which interface to the body and chassis through an engineered harnessing system.</p> <p>All chassis wiring shall be type "GXL" in accordance with S.A.E. J1128 and NFPA-1901. Wiring shall be color coded and include function codes every three-(3) inches on both sides.</p> <p>The electrical wiring harness shall be covered by a black split convoluted loom, rated at a minimum of 275° F.</p> <p>The electrical distribution panels and circuits must be housed in each rear corner compartment or extrusion. The distribution panel shall incorporate a power and ground stud for connection to the internal circuits.</p> <p>All internal wire end terminals, including locking bulkhead connectors, shall be mechanically affixed to the wire ends by machine terminal crimping presses. No hand-crimped terminals shall be acceptable.</p> <p>All internal splices shall be ultrasonically welded connections - no butt style connections shall be acceptable. All internal wiring shall be of the high temperature GXL type wire and shall be protected by wiring duct wherever possible.</p> <p>Each side electrical distribution panel shall consist of fifteen-(15) power distribution relays. The power distribution relays shall be replaceable, SPDT automotive style, rated at a minimum of 30 amperes.</p> <p>The power distribution relays shall incorporate separate inputs, which are able to accept outputs from a load management system. The load management inputs must allow for the addition of a load management system before, during or after the time of delivery without requiring a rewiring of the existing distribution panel circuits.</p> <p>Connections to the distribution panel shall utilize Deutsch style bulkhead connectors. Screw clamp type connections are not acceptable.</p> <p>The distribution panel shall also contain circuit's ancillary to the required DOT signals and other body functions.</p>		

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	YES	NO
<p>The complete body electrical system shall be 100% documented and contain independent circuit diagrams with point to point wiring information, as shall as a general component diagram included in the apparatus manual.</p> <p>All electrical equipment switches shall be mounted on a switch panel mounted in the cab convenient to the driver. Light switches shall be of the marine grade rocker type with integral indicator light to show when lights are energized. All switches shall be appropriately identified.</p>		
<p>Total System Load Manager with High Idle</p> <p>The apparatus shall be equipped with a Class 1 Total System Manager (TSM) for performing electrical load management. The TSM shall have two-(2) modes of operation, a "Calling Right of Way" and a "Blocking Right of Way". The "Blocking Right of Way" mode is activated only when the park brake is set. Load shedding shall "only" occur when the apparatus is in the "Blocking Right of Way" mode or when the battery voltage level reaches your programmed shed level.</p> <p>Outputs 1-12 shall be independently programmable to sequence on with the ignition or master warning switch. Outputs 1-12 shall also be programmable to be activated during the "Calling Right of Way" mode and or the "Blocking Right of Way" mode. Output 13 is user configurable output and is programmable for activating between 10.5 and 15 volts. Output 14 shall provide a low voltage warning for an isolated battery. Output 15 shall be designated to activate a fast idle system. Output 16 shall provide a low voltage alarm that activates at the NFPA required 11.8 volts.</p> <p>The Total System Manager shall have an internal digital display to indicate systems voltage is in normal operation mode and indicates the output configuration during programmable mode.</p> <p>The Total System Manager shall be protected against reverse polarity and shorted outputs, and be enclosed in a metal enclosure to enhance EMR/RFI protection.</p>		
<p>Wiring Protection</p> <p>All 12-volt wiring shall be run in high temperature, rated at a minimum of 275° F, split loom for easy access to wires when trouble shooting.</p>		

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	YES	NO
<p>12- Volt Testing</p> <p>The apparatus low voltage system shall be tested and certified. A copy of certification shall be provided to the purchaser with the apparatus.</p> <p>Reserve Capacity Test The unit shall be run until all engines, engine compartment temperatures are stabilized and the battery system is fully charged. The engine shall be shut off and the minimum continuous electrical load be activated for ten-(10) minutes. All electrical loads shall be shutoff after ten-(10) minutes and the battery system shall then be capable of restarting the engine.</p> <p>Alternator Performance Test at Idle Minimum continuous electrical loads shall be activated while the unit is at idle speed.</p> <p>Alternator Performance Test at Full Load The total continuous electrical load shall be activated with the engine running up to the manufacturer's governed speed. The test duration shall be a minimum of two-(2) hours. Activation of the load management system shall be permitted during the test. If however, an alarm is sounded by excessive battery discharge as detected by the system or a system voltage of less than 11.8 volts DC for a 12-volt nominal system for more than 120 seconds, shall be considered a test failure.</p> <p>Low Voltage Alarm Test The engine shall be shut off and the total continuous electrical load shall be activated and continue to be applied until the excessive battery discharge alarm activates. The test shall be considered a failure if the alarm has not sounded within 140 seconds after the voltage drops to 11.8 volts.</p> <p>EMI/RFI Protection</p> <p>The apparatus shall be manufactured to incorporate the latest designs in the electrical system with components that are state of the art to insure electromagnetic interference (EMI) and radio frequency interference (RFI) emissions are suppressed at the source.</p> <p>The apparatus shall have the ability to operate in typical fire and rescue situations with no adverse effects from EMI and/or RFI.</p> <p>The apparatus shall utilize components that are fully protected and wiring that utilizes shielding and loop backgrounds where required to control EMI/RFI susceptibility. The</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>apparatus shall be bonded through ground straps. Relays and solenoids that are suspect to generating spurious electromagnetic radiation are diode and/or resistor protected to prevent transient voltage spikes.</p> <p>In order to prevent the radio frequency interference completely the purchaser shall be requested to provide a listing of the type, power output, and frequencies of all radio and bio medical equipment that is proposed to be used on the apparatus.</p> <p>The electrical system shall include the following:</p> <ul style="list-style-type: none"> a) 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. b) The electrical wiring shall be harnessed or be placed in a protective loom. c) Heat shrink material and sealed connectors shall be used to protect exposed connections. d) 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. e) 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. f) 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. g) All lights that have their sockets in a weather exposed area shall have corrosion preventative compound added to the socket terminal area. <p>The warning lights shall be switched in the chassis cab with labeled switching 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. 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.</p> <p>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 activated, a “blocking right of way” system shall be automatically</p>		

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	YES	NO
<p>activated per requirements of NFPA #1901. All “clear” warning lights shall be automatically shed on actuation of parking brake.</p> <p>NFPA Required Documentation</p> <p>The following documentation shall be provided on delivery of the apparatus:</p> <p>a. Documentation of the electrical system performance tests required above.</p> <p>b. A written load analysis, including:</p> <ol style="list-style-type: none"> 1. The nameplate rating of the alternator. 2. The alternator rating under the conditions. 3. Each specified component load. 4. Individual intermittent loads. <p>Vehicle Data Recorder</p> <p>A vehicle data recorder system shall be provided to comply with NFPA 1901, 2009 edition. The following data shall be monitored:</p> <ul style="list-style-type: none"> • Vehicle speed MPH • Acceleration (from speedometer) MPH/Sec. • Deceleration (from speedometer) MPH/Sec. • Engine speed RPM • Engine throttle position % of full throttle • ABS Event On/Off • Seat occupied status Occupied Yes/No by position • Seat belt status Buckled Yes/No by position <p>Master Optical Warning Device Switch On/Off</p> <ul style="list-style-type: none"> • Time: 24 hour time • Date: Year/Month/Day <p>The VDR data shall be downloadable by USB cable to a computer using either Microsoft™ or Apple™ Operating Systems using Class 1/ O.E.M. supplied reporting software.</p> <p>Occupant Detection System</p> <p>There shall be a visual and audible warning system installed in the cab that indicates the occupant buckle status of all cab seating positions that are designed to be occupied during vehicle movement.</p>		

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	YES	NO
<p>The audible warning shall activate when the vehicle’s park brake is released and a seat position is not in a valid state. A valid state is defined as a seat that is unoccupied and the seat belt is unbuckled, or one that has the seat belt buckled after the seat has been occupied.</p> <p>The visual warning shall consist of a graphical display that will continuously indicate the validity of each seat position.</p> <p>The system shall include a display panel with LED back-lit ISO indicators for each seating position, seat sensor and safety belt latch switch for each cab seating position, audible alarm and braided wiring harness.</p> <p>The display panel shall be located Driver side of center dash electrical cover.</p>		
<p>Light Bar</p> <p>There shall be an 81” Whelen Edge Ultra Freedom IV Red/White LED light bar shall be installed with clear domes. The light bar shall be installed in the following location: Centered on the front cab roof.</p> <p>4- Corner Modules 14 – Forward Facing Modules Placement of colors will be determined at pre - construction meeting.</p> <p>Roof lighting shall conform to all NFPA standards.</p>		
<p>Warning Lights, Zone A Lower Front</p> <p>Two-(2) Whelen M6 Series Super-LED model M6R lights shall be installed, inboard of the turn signal in the warning light modules. The warning light shall incorporate red Super-LEDs, a clear non-optic hard coated polycarbonate lens, clear optic collimator and utilize a metalized reflector for maximum output. The hard coated lens shall provide extended life/luster protection against UV and chemical stresses. The encapsulated lens/reflector assembly and conformal coated PC board shall provide additional protection against environmental elements. The solid state warning lights shall be vibration resistant. The self-contained flashing light shall have 164 Scan-Lock flash patterns including synchronize feature and steady burn. The warning light is covered by a five year factory warranty.</p> <p>Additional Warning Lights Zone A Lower Front, Mars 888</p>		

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	YES	NO
<p>Two (2) Mars 888 LED warning lights, model TB8-L1-P/R, shall be provided. The pedestal mounted beacon measures 8-3/4" high x 10-3/4" diameter x 11" long. The lights shall have black stainless steel housing if available. The lens color shall be clear and the LED warning lights shall be white.</p>		
<p>The Mars 888 lights shall be one each side on the cab face in the outboard positions. Additional Warning Lights Zone A Lower Front, Roto Ray</p>		
<p>A Roto Ray LED warning light shall be provided. The light shall have three sealed beam lights and rotate at 200 rpm in a vertical plane.</p>		
<p>Customer to specify the lens color or colors required.</p>		
<p>The Roto Ray light shall be centered under the front windshield.</p>		
<p>The Roto Ray shall turn off when in pump gear and when bumper cover is open.</p>		
<p>Warning Lights, Zone B/D Front Lower</p>		
<p>Two-(2) Whelen M6V2R Series Super-LED model M6V2R lights shall be installed, one-(1) each side forward portion of the apparatus. The warning light shall incorporate red Super-LEDs, a clear non-optic hard coated polycarbonate lens, clear optic collimator and utilize a metalized reflector for maximum output. The hard coated lens shall provide extended life/luster protection against UV and chemical stresses. The encapsulated lens/reflector assembly and conformal coated PC board shall provide additional protection against environmental elements. The solid state warning lights shall be vibration resistant. The self-contained flashing light shall have 164 Scan-Lock flash patterns including synchronize feature and steady burn. The warning light is covered by a five year factory warranty. The surface mount module includes a M6FC black flange and hardware for horizontal mounting.</p>		
<p>These lights shall be located one (1) each side in the bumper recessed pockets.</p>		
<p>These lights shall be programmed to have the white light come on with the ground light switch and turn signal. The white light shall flash during CALLING FOR RIGHT OF WAY mode.</p>		
<p>Additional Warning Lights Zone, B/D Midship Lower</p>		
<p>Two-(2) Whelen LIN3 Series Super-LED model RSR02ZCR lights shall be installed, one-(1) each side midship of the apparatus. The warning light shall incorporate three red Super-LED, a clear horizontal optic hard coated polycarbonate lens, clear optic</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>collimator and utilize a metalized reflector for maximum output. The hard coated lens shall provide extended life/luster protection against UV and chemical stresses. The encapsulated lens/reflector assembly and conformal coated PC board shall provide additional protection against environmental elements. The solid state warning lights shall be vibration resistant. The self-contained flashing light shall have 25 Scan-Lock flash patterns including synchronize feature and steady burn. The warning light is covered by a five year factory warranty. The surface mount module includes a standard single black ABS flange and hardware for vertical or horizontal mounting.</p>		
<p>These lights shall be located one (1) each side over the cab wheels, below the EMS cabinet door.</p>		
<p>Additional Warning Lights, Zone B/D Midship Lower</p>		
<p>Ten-(10) Whelen LINZ6 Series Super-LED model LINZ6R lights shall be installed, five-(5) each side of the rub rail midship of the apparatus. The warning light shall incorporate six red Super-LEDs, a clear non-optic hard coated polycarbonate lens, clear optic collimator and utilize a metalized reflector for maximum output. The hard coated lens shall provide extended life/luster protection against UV and chemical stresses. The encapsulated lens/reflector assembly and conformal coated PC board shall provide additional protection against environmental elements. The solid state warning lights shall be vibration resistant. The self-contained flashing light shall have 69 Scan-Lock flash patterns including synchronize feature and steady burn. The warning light is covered by a five year factory warranty. The surface mount module includes a black flange and hardware for horizontal mounting.</p>		
<p>These lights shall be located as follows:</p>		
<ul style="list-style-type: none"> • One (1) each side in the rub rail under L1 and R1 • One (1) each side in the rub rail under L4/R4, forward • One (1) each side in the rub rail under L4/R4, rearward • One (1) each side in the rub rail under L6/R6, forward • One (1) each side in the rub rail under L6/R6, rearward 		
<p>Warning Lights, Zone B/D Midship Lower</p>		
<p>Two-(2) Whelen M6V2R Series Super-LED model M6V2R lights shall be installed, one-(1) each side midship of the apparatus. The warning light shall incorporate red Super-LEDs, a clear non-optic hard coated polycarbonate lens, clear optic collimator and utilize a metalized reflector for maximum output. The hard coated lens shall provide extended life/luster protection against UV and chemical stresses. The encapsulated lens/reflector assembly and conformal coated PC board shall provide additional</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>protection against environmental elements. The solid state warning lights shall be vibration resistant. The self-contained flashing light shall have 164 Scan-Lock flash patterns including synchronize feature and steady burn. The warning light is covered by a five year factory warranty. The surface mount module includes a M6FC black flange and hardware for horizontal mounting.</p> <p>These lights shall be located one (1) each side over the rear wheels.</p> <p>These lights shall be programmed to have the white light come on with the ground light switch and turn signal. The white light shall flash during CALLING FOR RIGHT OF WAY mode.</p>		
<p>Warning Lights, Zone C Lower</p> <p>Two-(2) Whelen M6 Series Super-LED model M6R shall be installed, one-(1) each side on the lower rear of the apparatus. The warning light shall incorporate red Super-LEDs, a clear non-optic hard coated polycarbonate lens, clear optic collimator and utilize a metalized reflector for maximum output. The hard coated lens shall provide extended life/luster protection against UV and chemical stresses. The encapsulated lens/reflector assembly and conformal coated PC board shall provide additional protection against environmental elements. The solid state warning lights shall be vibration resistant. The self-contained flashing light shall have 164 Scan-Lock flash patterns including synchronize feature and steady burn. The warning light is covered by a five year factory warranty.</p>		
<p>Warning Lights, Zone B/D Upper Front Body</p> <p>Two-(2) Whelen M9 Series Super-LED model M9R shall be installed, one-(1) each side of the upper front corner of the body. The warning light shall incorporate red Super-LEDs, a clear non-optic hard coated polycarbonate lens, clear optic collimator and utilize a metalized reflector for maximum output. The hard coated lens shall provide extended life/luster protection against UV and chemical stresses. The encapsulated lens/reflector assembly and conformal coated PC board shall provide additional protection against environmental elements. The solid state warning lights shall be vibration resistant. The self-contained flashing light shall have 164 Scan-Lock flash patterns including synchronize feature and steady burn. The warning light is covered by a five year factory warranty. The surface mount module includes a M9FC black flange and hardware for horizontal mounting.</p>		
<p>Warning Lights, Zone B/D Upper Rear Body</p> <p>Two-(2) Whelen M9 Series Super-LED model M9R shall be installed, one-(1) each side of the upper rear corner of the body. The warning light shall incorporate red Super-</p>		

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	YES	NO
<p>LEDs, a clear non-optic hard coated polycarbonate lens, clear optic collimator and utilize a metalized reflector for maximum output. The hard coated lens shall provide extended life/luster protection against UV and chemical stresses. The encapsulated lens/reflector assembly and conformal coated PC board shall provide additional protection against environmental elements. The solid state warning lights shall be vibration resistant. The self-contained flashing light shall have 164 Scan-Lock flash patterns including synchronize feature and steady burn. The warning light is covered by a five year factory warranty. The surface mount module includes a M9FC black flange and hardware for horizontal mounting.</p>		
<p>Warning Lights, Zone C Upper Outboard</p>		
<p>Two-(2) Whelen M9 Series Super-LED model M9R shall be installed, one-(1) each side on the upper rear of the apparatus in the outboard position. The warning light shall incorporate clear Super-LEDs, a red non-optic hard coated polycarbonate lens, clear optic collimator and utilize a metalized reflector for maximum output. The hard coated lens shall provide extended life/luster protection against UV and chemical stresses. The encapsulated lens/reflector assembly and conformal coated PC board shall provide additional protection against environmental elements. The solid state warning lights shall be vibration resistant. The self-contained flashing light shall have 164 Scan-Lock flash patterns including synchronize feature and steady burn. The warning light is covered by a five year factory warranty. The surface mount module includes a M9FC black flange and hardware for horizontal mounting.</p>		
<p>Additional Warning Lights, Zone C Upper Outboard</p>		
<p>There shall be one pair of Whelen PSR01FCR red LED warning lights provided at the upper rear of the body, high above the M9 warning lights. The lights shall be mounted vertically and shall be switched with the rear warning lights, through the emergency master.</p>		
<p>Additional Warning Lights, Zone C Upper Middle</p>		
<p>Two-(2) Whelen M9 Series Super-LED model M9R shall be installed, one-(1) each side on the upper rear of the apparatus in the middle position. The warning light shall incorporate red Super-LEDs, a clear non-optic hard coated polycarbonate lens, clear optic collimator and utilize a metalized reflector for maximum output. The hard coated lens shall provide extended life/luster protection against UV and chemical stresses. The encapsulated lens/reflector assembly and conformal coated PC board shall provide additional protection against environmental elements. The solid state warning lights shall be vibration resistant. The self-contained flashing light shall have 164 Scan-Lock flash patterns including synchronize feature and steady burn. The warning light is covered by</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>a five year factory warranty. The surface mount module includes a M9FC black flange and hardware for horizontal mounting.</p>		
<p>Stop, Turn and Back-Up Lights</p>		
<p>Stop, turn and backup lights shall be Whelen M6 Series, individual fixtures. The red stop (LED) light shall be model M6BTT, the turn light shall be a model M6T amber (LED) type with directional arrow, and the backup light shall be a white (LED) model M6BUW.</p>		
<p>Housing, Rear Tail Light Assembly</p>		
<p>The fixtures shall be mounted on each rear face of the body in a model M6FCV4, four-(4) light head chrome housing.</p>		
<p>Rear Directional Light</p>		
<p>A Whelen Traffic Advisor model TAD8 shall be provided. The traffic advisor shall incorporate a rectangular extruded black powder coated aluminum chassis with eight amber TIR3 LED lights with waterproof connectors. The TIR3 LED lights shall have three amber Super-LED installed with a lens reflector assembly. The sealed lens reflector assembly shall consist of a metalized TIR3 reflector with a clear optic hard coated polycarbonate lens. The hard coated lens shall provide extended life/luster protection against UV and chemical stresses. The conformal coated PC board shall provide additional protection against environmental elements. The CON3 lights are installed with waterproof connectors. The TAD6 will contain an encapsulated traffic advisor flasher to control the light modules.</p>		
<p>The solid state traffic advisor shall be vibration resistant. The TAD6 shall have seven flash patterns for the warning lights and four traffic advisor direction flash patterns for the amber lights. The TAD6 will contain a 6/C 20GA 20' power/control cable. Customized cable lengths are available for the TAD6 for an additional charge. The TAD6 requires an optional TADCTL1 control head or customer supplied switches to operate the traffic advisor. The LED modules are covered by a five year factory warranty.</p>		
<p>Directional Bar Mounting</p>		
<p>The rear directional bar shall be surface mounted to an aluminum extrusion across the top of the hose bed.</p>		
<p>Surface Mounted Scene Lights</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>A total of eight (8) surface mounted scene lights shall be provided. The lights shall be a Whelen brand light having a minimum of 6,500 effective lumens</p> <p>Surface mounts with black Bezel</p> <p><u>Cab Scene Lights</u> Two (2) of the lights shall be located one-(1) each side of the cab in the upper rear cab extension.</p> <p>The cab mounted scene lights shall be controlled by individual scene light switches located in the cab labeled LEFT SCENE and RIGHT SCENE and when the respective side cab door is opened.</p> <p><u>Scene Lights</u> Two of the scene lights shall be located one-(1) each side of the body in the upper front corners.</p> <p>The front side body mounted scene lights shall be controlled by individual scene light switches located in the cab labeled LEFT SCENE and RIGHT SCENE.</p> <p><u>Scene Lights</u> Two of the scene lights shall be located one-(1) each side of the body in the upper rear corners.</p> <p>The rear body side mounted scene lights shall be controlled by individual scene light switches located in the cab labeled LEFT SCENE and RIGHT SCENE.</p> <p><u>Rear Body Scene Lights</u> Two of the scene lights shall be located one-(1) each side on the upper rear outboard corners of the body.</p> <p>The upper rear body mounted scene lights shall be controlled by a scene light switch located in the cab labeled REAR SCENE and when the transmission is placed into reverse.</p> <p>Brow Light</p> <p>There shall be a Fire Tech brow light installed above the windshield and meeting the following requirements:</p> <p>Part #: FT-B-72-ML-W</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>Wattage: 285w Number of LEDs: 59 LEDs Voltage Range: 12v DC Total Amperage @ 12V DC: 23.75A Circuit 1 (Spot) Amperage: 5.0A Circuit 2 (Scene) Amperage: 10.0A Circuit 3 (Flood) Amperage: 5.0A RAW Lumens: 28,512 Lumens Effective Lumens: 21,067 Lumens</p>		
<p>The cab mounted brow light shall be controlled by a light switch located in the cab labeled BROW LIGHT.</p>		
<p>Light Tower</p>		
<p>One (1) Knight 2, manufactured by Command Light, part number KL415D, light tower shall be provided for installation on the apparatus. The location of the light tower and its controls shall be installed according to instructions given by the customer and the requirements of the light tower manufacturer.</p>		
<p>The light tower shall extend 87-1/2" above the mounting surface and shall extend to full upright position in less than 15 seconds. The overall size of nested light tower shall be approximately 34" wide x 47" long x 13" high and weigh approximately 165 pounds.</p>		
<p>Light Tower Construction and Design: The light tower assembly shall be of aluminum construction, with stainless steel shafts and bronze bushings for long life and low maintenance.</p>		
<p>The electrically controlled unit shall not require usage of the vehicle's air supply for operation, thereby eliminating the chance for air leaks in the vehicle braking system. Hydraulic or pneumatic type floodlights are not acceptable alternatives to the specified all electric light tower.</p>		
<p>The light tower shall be tested to in wind conditions of 90 mph minimum. Other type floodlights that have not been tested to these conditions are not acceptable.</p>		
<p>The light tower shall be capable of overhanging the side or back of the vehicle to provide maximum illumination to the vicinity adjacent to the vehicle for the safety of emergency personnel in high traffic conditions. Any tower that is only capable of rotations at the top of a pole is not an acceptable alternative to the specified tower.</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>Light Tower Electrical System: The light tower shall be a two-stage articulating device with a lighting bank on top of the second stage capable of continuous 360 degree rotation. The light shall be elevated by electric linear actuators, one (1) actuator shall elevate the light bank and one (1) actuator shall adjust the light bank angle from 0 to 110 degrees. Power for the light bank shall be supplied through power collecting rings thus allowing continuous 360 degree rotation in either direction.</p>		
<p>The tower base shall have a light that illuminates the envelope of motion during any movement of the light tower mast as required by NFPA1901.</p>		
<p>Light Tower Floodlights: The Command Light shall be equipped with the following bank of floodlights:</p>		
<p>Floodlight manufacturer: Fire Tech or equivalent Number of lamp heads: Four (4) FT-SL-X-15-FT-W Voltage: 12 VDC Watts of each lamp head: 185 watt Total watts of light tower: 740 watts Amperage per lamp head: 15.4 amps Total amperage of light tower: 60.8 amps Total Raw Lumens of light tower: 102,000 lumens Total Effective Lumens of light tower: 61,220 lumens</p>		
<p>Configuration: The light heads shall be mounted in two-(2) on each side of the light tower, giving two- (2) vertical lines of two-(2) when the lights are in the upright position.</p>		
<p>Light Tower Controls</p>		
<p>The light tower shall be controlled with a hand-held 15 foot umbilical line remote control. The storage station for the remote control unit shall be equipped with a button to activate the "Auto-Park" automatic nesting feature. The controls on the remote box shall be:</p>		
<p>Switches, one-(1) for each light bank. Switch for optional light bank rotation. Switch for the optional strobe. Switch for lamp tree rotation. Switch for elevating lower stage. Switch for elevating upper stage. Indicator light to indicate when light bank is out of roof nest position.</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>Indicator light to indicate when light bank is rotated to proper nest position.</p> <p>Light Tower Color</p> <p>The finish of the light tower shall be electrostatically powder coated gray.</p> <p>Light tower Shield</p> <p>The light tower shall be protected by an aluminum shield that is bolted to the cab roof. It shall be constructed of 1/8" painted smooth aluminum.</p> <p>The light tower shall have the same design lines as the raised cab roof and shall be painted red to match the cab.</p> <p>LED Marker Lights</p> <p>LED clearance/marker lights shall be installed as specified.</p> <p>Upper Cab:</p> <ul style="list-style-type: none"> • Five (5) amber LED clearance lights on the cab roof. <p>Lower Cab:</p> <ul style="list-style-type: none"> • One (1) amber LED side turn/marker each side of cab ahead of the front door hinge. <p>Upper Body:</p> <ul style="list-style-type: none"> • One (1) red LED clearance light each side, rear of body to the side. <p>Lower Body:</p> <ul style="list-style-type: none"> • Three (3) red LED clearance lights centered at rear, recessed in the rubrail. • One (1) red LED clearance light each side at the trailing edge of the apparatus body, recessed in the rubrail. • One (1) amber LED clearance/auxiliary turn light each side front of body/module, recessed in the rubrail. <p>Hazard (Door Ajar) Light</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>There shall be a door ajar and safety warning light system with indicator panel located in the cab. The panel is mounted to the ceiling between the driver and the officer. The indicator panel has multiple LED lights that activate under one or all of the following conditions:</p> <ul style="list-style-type: none"> *Cab door is open *Compartment door is open <p>An audible alarm shall be installed in conjunction with the door-ajar warning light system. The panel only operates when the ignition switch is in the “On” position and the parking brake released.</p> <p>Electronic Siren</p> <p>One (1) Federal Signal model EQB2-200 electronic siren shall be provided. The EQB2-200 siren system shall be 200W/12V and shall produce 122 decibels at ten feet. The siren control head shall measure 3.5” high x 3.5” long x 2” deep, and the amplifier shall measure 4” high x 15” long x 9” deep. The EQB2-200 electronic siren shall combine Digital Signal Processor (DSP) technology with a true 200W of speaker output and shall reproduce the distinctive, trademarked sound of the Q-siren at only 30 amps of current draw.</p> <p>The EQB2-200 siren shall provide the traditional Q-siren sound in addition to the functions of an electronic siren with PA. The EQB2-200 siren shall be comprised of a 200W DSP amplifier, and a digital output controller. These components shall work together to generate the recognizable sound of the trademark Q-siren.</p> <p>The EQB2-200 amplifier shall use DSP circuitry and shall be able to reproduce the Q-sound instead of relying on digital recording. The EQB2-200 siren shall function either manually or automatically for hands-free operation.</p> <p>The EQB2-200 shall be provided with a Digital Output Controller with solid state digital coding via RS-485 communication cable. Additional features shall include yelp, Q-brake, digitally recorded air horn, PA, and radio re-broadcast. The siren shall be equipped with a push-to-talk microphone.</p> <p>The EQB2-200 electronic siren shall be provided with three (3) external inputs. These external inputs shall allow for use of externally configured foot switches for activation of manual wail, brake, and air horn functions.</p> <p>The EQB2-200 shall be designed to meet SAE and FCC standards concerning radio frequency interference. The siren shall be protected for the effects of vehicles electronic</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>equipment and shall not interfere with the operation of the emergency vehicle and other nearby operating electronic equipment.</p>		
<p>Siren Foot Switch</p>		
<p>A foot operated switch shall be installed on the driver's side wired to the electronic siren.</p>		
<p>The driver side EQ2B switch shall be vertically mounted, toe kick style, next to the air horn switch.</p>		
<p>Siren Dash Switch, Officers Side</p>		
<p>A dash mounted switch shall be installed on the officer's side wired to the electronic siren.</p>		
<p>The officer side EQ2B switch shall be angle mounted, next to the angle mounted air horn switch.</p>		
<p>Custom Console</p>		
<p>A custom console shall be fabricated and installed on the engine tunnel. The console shall have a map book storage area with a hinged lid. The front of the console shall be equipped with a center storage slot for medical gloves and a cup holder on each side. The console shall be constructed of smooth aluminum painted with textured bed liner material to match the interior of the cab. Final design will be approved at pre construction meeting.</p>		
<p>Radio</p>		
<p>A Jensen radio with weather band, AM/FM stereo receiver, compact disc (CD) player, and rear iPod input pigtail connector, satellite radio capability, a front panel mini stereo input jack, and four-(4) speakers shall be installed in the cab. The CD player shall be compatible with CD-R, CD-RW and MP3 format discs. The radio shall be installed in the left hand overhead position. The speakers shall be installed inside the cab with two-(2) speakers recessed within the headliner of the front of the cab just behind the windshield and two-(2) speakers on the upper rear wall of the cab.</p>		
<p>A small antenna shall be located on the left hand side of the cab roof for AM/FM and weather band reception.</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>Fire Department Radio Installation</p> <p>There shall be one (1) radio supplied by the Fire Department shall be installed in the cab by the apparatus body builder. The radio must be new in the manufactures supplied package.</p> <p>The items must be sent to the manufacturer in advance, and marked with name and shop order number for identification.</p> <p>Antenna Installation</p> <p>There shall be one (1) antenna supplied by the customer and installed by the apparatus body builder.</p> <p>The items must be sent to the manufacturer in advance, and marked with name and shop order number for identification.</p> <p>Radio Power Circuit</p> <p>A 50 amp switched battery power circuit with manual reset shall be installed behind the officer's seat to activate the radio.</p> <p>Power and Ground Studs</p> <p>The electrical distribution panel shall include two (2) power studs. The studs shall be size #10 and each of the power studs shall be circuit protected with a fuse of the specified amperage. One (1) power stud shall be capable of carrying up to a 40 amp battery direct load and one (1) power stud shall be capable of carrying up to a 20 amp ignition switched load. The two (2) power studs shall share one (1) #10 ground stud.</p> <p>Back Up Camera</p> <p>There shall be a backup camera installed with a color monitor. This camera shall operate while the apparatus is in reverse</p> <p>License Plate Light</p> <p>One (1) white LED license plate light shall be mounted in a chrome plated plastic license plate housing shall be mounted at the rear of the body.</p> <p>12-Volt Power Outlets</p> <p>There shall be two (2) 12-volt cigar lighter style power outlets provided in the cab.</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>The 12 volt power outlets shall be located in the front of the cab center.</p> <p>The power outlets shall be wired to direct battery power with the appropriate wire size and fuse.</p>		
<p>Charging Ports, 12-Volt Dual USB</p> <p>There shall be three (3) Kussmaul model 019-219-4, 12-volt USB dual charging ports or equivalent provided in the cab. The charging ports shall be equipped with two-(2) 2.1 amp connections with built in LED indicator that indicates when the devices are powered.</p> <p>The charging ports shall be wired to direct battery power with the appropriate wire size and fuse.</p> <p>The charging ports shall be located in the emergency switch panel or another location to be determined by the Fire Department.</p> <p>The dual port USB outlets shall be located one (1) driver side dash, one (1) officer side dash and one (1) in the area between the forward facing rear crew seats.</p>		
<p>Compartment Light Package</p> <p>All compartment lighting shall be On Scene Solutions "Access Series" or equivalent LED lights shall be provided with 15 HB, surface mount LED's per 10" light section and produce a minimum of 200 lumens per 10" length. Each "Access Series" shall be capable of operating at a voltage of 9VDC to 14VDC. Each "Access Series" shall be cuttable in 2" increments and feature a high quality, impact resistant Lexan™ enclosure.</p> <p>The light stick shall be waterproof and rated at 100,000 hours of service. Each light stick shall be provided with a 5 year free replacement warranty.</p> <p>Compartment lights shall be wired to a master on/off rocker switch on the cab switch panel. Each light shall be in a resilient shock-absorbent mount for improved bulb life.</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>The wiring connection for the compartment lights shall be made with a weather-resistant plug in style connector. A single water and corrosion-resistant switch with a actuator and sealed contacts shall control each compartment light. The switch shall allow the light to illuminate if the compartment door is open.</p>		
<p>Ground Lights</p>		
<p>Twelve (12) Whelen 3" Round Super-LED® model 3SC0CDCR perimeter illumination lights or equivalent shall be provided as specified. The steady burn illumination light shall incorporate six clear Super-LED and a clear non-optic hard coated polycarbonate lens for maximum output. The hard coated sealed lens shall provide extended life/luster protection against UV and chemical stresses. The light shall be wet sealed and vacuum tested to ensure proper sealing. The conformal coated PC board, powder coated die cast housing, and exterior rubber gasket shall provide additional protection against environmental elements. The 3SC0CDCR shall provide 360 usable lumens. The solid state illumination light shall be vibration resistant. The 3SC0CDCR will contain a 6" unterminated pigtail. The illumination light is covered by a five year factory warranty.</p>		
<p>The perimeter lights shall be located as follows:</p>		
<p>Two (2) under the front bumper One (1) under driver's side compartment in front of rear wheel One (1) under driver's side compartment in behind of rear wheel Two (2) under the tailboard One (1) under officer's side compartment in front of rear wheel One (1) under officer's side compartment in behind of rear wheel Four (4) at the front of the hose bed, one in each section, up high</p>		
<p>Cab Ground Lights</p>		
<p>There shall be one-(1) Whelen 2G Series model 20C0CDCD 4" LED light or equivalent mounted under each cab door illuminating the area below providing a safe entrance and exit for cab occupants. All cab ground lights shall automatically activate when any cab door is opened and by a switch located on the dash.</p>		
<p>The 12v steady burn lights shall incorporate 12 clear LED and a clear optic hard coated polycarbonate lens. The hard coated lens shall provide extended life/luster protection against UV and chemical stresses. The encapsulated coated PC board and lens fitted with foam in place gasket assembly shall provide additional protection against environmental elements. The solid state light shall be vibration resistant. The 20C0CDCD will contain 350 usable lumens. An installation kit including mounting hardware and rubber gasket</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>shall be provided. The 20C0CD CD will contain a 12" terminated pigtail with a waterproof Deutsch® connector. The light is covered by a five year factory warranty.</p> <p>Ground area lights shall be switched from the cab dash.</p> <p>Lights in areas under the driver and crew area exits shall be activated automatically when the exit doors are opened.</p> <p>Engine Compartment Light</p> <p>There shall be lighting provided in compliance with NFPA to illuminate the engine compartment area.</p> <p>Pump Compartment Light</p> <p>An LED light shall be provided in the pump compartment area for NFPA compliance. The light shall be wired to operate with the work light switch in the cab.</p> <p>Pump Panel Lighting Package - Side Mount</p> <p>Pump panel lighting shall be provided for a side mount pump module in accordance with NFPA. The light shall be wired to the pump panel light switch.</p> <p>Roof Switch</p> <p>Two (2) heavy duty roof mounted lanyards shall be installed to operate the air horns. It shall be located between driver and passenger seat. One cable for the driver and one cable for the officer shall be installed.</p> <p>Back-Up Alarm</p> <p>An electronic back-up alarm shall be supplied. The 97 dB alarm shall be wired into the chassis back-up lights to signal when the vehicle is in reverse gear.</p> <p>DOT Required Drive Away Kit</p> <p>Three (3) triangular warning reflectors with carrying case shall be supplied to satisfy the DOT requirement.</p> <p>Paint Custom Cab</p> <p>The apparatus cab shall be painted Red. The paint process shall meet or exceed current State regulations concerning paint operations. Pollution control shall include measures to</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>protect the atmosphere, water, and soil. Contractor shall, upon demand, provide evidence that the manufacturing facility is in compliance with State EPA rules and regulations.</p> <p>The aluminum cab exterior shall have no mounted components prior to painting to assure full coverage of metal treatments and paint to the exterior surfaces of the body. Any vertically or horizontally hinged smooth-plate compartment doors shall be painted separately to assure proper paint coverage on body, door jambs and door edges.</p> <p>Paint process shall feature premium solid LV products and be performed in the following steps:</p> <ul style="list-style-type: none"> • Corrosion Prevention - all raw material shall be pre-treated with the Weather Jacket Corrosion Prevention system to provide superior corrosion resistance and excellent adhesion of the top coat. • Sealer/Primer LV - acrylic urethane sealer/primer shall be applied to guarantee excellent gloss hold-out, chip resistance and a uniform base color. • Premium Solid LV (Top coat) - a lead-free, chromate-free high solid acrylic urethane top coat shall be applied, providing excellent coverage and durability. A minimum of two (2) coats shall be applied. • Premium Solid LV (Clear coat) - high solid LV clear coat shall be applied as the final step in order to ensure full gloss and color retention and durability. A minimum of two (2) coats shall be applied. <p>Any location where aluminum is penetrated after painting, for the purpose of mounting steps, hand rails, doors, lights, or other specified components shall be treated at the point of penetration with a corrosion inhibiting pre-treatment. The pre-treatment shall be applied to the aluminum sheet metal or aluminum extrusions in all locations where the aluminum has been penetrated. All hardware used in mounting steps, hand rails, doors, lights, or other specified components shall be individually treated with the corrosion inhibiting pre-treatment.</p> <p>After the paint process is complete, the gloss rating of the unit shall be tested with a 20 degree gloss meter.</p> <p>Paint, Body</p> <p>The apparatus body shall be painted Red. The paint process shall meet or exceed current State regulations concerning paint operations. Pollution control shall include measures to protect the atmosphere, water, and soil. Contractor shall, upon demand, provide evidence that the manufacturing facility is in compliance with State EPA rules and regulations.</p> <p>The aluminum body exterior shall have no mounted components prior to painting to assure full coverage of metal treatments and paint to the exterior surfaces of the body.</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>Any vertically- or horizontally-hinged smooth-plate compartment door shall be painted separately to assure proper paint coverage on body, door jambs and door edges.</p> <p>Paint process shall feature premium solid LV products and be performed in the following steps:</p> <ul style="list-style-type: none"> • Corrosion Prevention - all raw material shall be pre-treated with the Weather Jacket Corrosion Prevention system to provide superior corrosion resistance and excellent adhesion of the top coat. • Sealer/Primer LV - acrylic urethane sealer/primer shall be applied to guarantee excellent gloss hold-out, chip resistance and a uniform base color. • Premium Solid LV (Top coat) - a lead-free, chromate-free high solid acrylic urethane top coat shall be applied, providing excellent coverage and durability. A minimum of two (2) coats shall be applied. • Premium Solid LV (Clear coat) - high solid LV clear coat shall be applied as the final step in order to ensure full gloss and color retention and durability. A minimum of two (2) coats shall be applied. <p>Any location where aluminum is penetrated, after painting, for the purpose of mounting steps, handrails, doors, lights, or other specified components shall be treated at the point of penetration with a corrosion inhibiting pre-treatment. The pre-treatment shall be applied to the aluminum sheet metal or aluminum extrusions in all locations where the aluminum has been penetrated. All hardware used in mounting steps, handrails, doors, lights, or other specified components shall be individually treated with the corrosion inhibiting pre-treatment.</p> <p>After the paint process is complete, the gloss rating of the unit shall be tested with a 20 degree gloss meter.</p> <p>Color code will be supplied by the department at pre construction meeting.</p> <p>Smooth Spray on Bed Liner Material Upper Body</p> <p>The upper body, above the compartments shall be sprayed with a bed liner material to prevent scratching from low hanging objects. The color shall match the rest of the body and cab.</p> <p>Sign Plates</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>There shall be two-(2) sign plates provided on either side of the apparatus. The sign plates shall measure approximately 16" tall x 133" long and shall be constructed from 1/8" smooth aluminum plate.</p> <p>The color of the sign plates shall be painted BLACK.</p> <p>There shall be 12" letters, RED w/SILVER outline, installed on the sign plates above the side compartments, reading SURFSIDE.</p>		
<p>Cab Interior Color</p> <p>The interior of the cab shall be painted and color selected at pre construction meeting.</p>		
<p>Cab and Body Striping</p> <p>There shall be a 6" wide Scotchlite stripe, with an additional 1" wide stripe located above and below. The stripes shall be located no higher than 60" from the ground installed on the apparatus cab and body. The stripes shall cover a minimum of sixty percent (60%) of each side of the apparatus and forty percent (40%) of the front and rear of the apparatus. The stripe shall be installed to meet the current NFPA requirements.</p> <p>The striping shall be black in color.</p> <p>The pin/secondary stripe shall be gold in color.</p> <p>The reflective stripe shall run straight from the headlights to the front body compartments with a hockey stick design and run to the rear of the body on each side of the apparatus.</p>		
<p>NFPA Rear Chevron Striping</p> <p>A minimum of fifty percent of the rear vertical surface of the unit shall be overlaid with a reflective material, installed in an alternating chevron pattern (sloping down and away from the centerline) at a 45-degree angle. Each stripe shall be 6" wide and the colors of striping shall be in compliance, with the current edition of NFPA 1901.</p> <p>The striping shall be included on the rear compartment roll up door.</p> <p>The Chevron striping shall be 3M red and yellow.</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>Rear End Compartment Door Chevron Striping</p> <p>A printed pattern chevron striping shall be provided on the rear compartment door. The printed pattern shall consist of 6" Yellow/Red alternating stripes in an alternating chevron pattern (sloping down and away from the centerline) at a 45-degree angle.</p> <p>The Chevron striping shall be 3M red and yellow.</p>		
<p>Designated Walking Surfaces, Reflective Material</p> <p>1" wide yellow perimeter marking consisting of individual Reflexite diamonds shall be applied to indicate the outside edge of designated standing and walking areas above 48" from the ground in compliance with 2016 NFPA 1901. Steps, ladders and areas with a railing or structure at least 12" high are excluded from this requirement.</p>		
<p>Corner Scrolls</p> <p>There shall be a spun gold graphic at the bottom of each cab door to match the other trucks in Surfside Beach Fire fleet.</p>		
<p>Lettering</p> <p>There shall be a maximum of sixty-(60) 3" tall Spun Gold letters applied to the apparatus. The lettering shall also have a one color shade applied.</p> <p>The spun gold lettering shall be as follows:</p> <ul style="list-style-type: none"> • Front cab doors, arc over Maltese cross: SURFSIDE BEACH • Front cab doors, s/l under Maltese cross: FIRE • Note: A spun gold feature stripe shall be in front of and behind FIRE • Rear cab doors, under window, 2" high: EVERYONE GOES HOME • Rear cab doors, behind large 57: ENGINE 		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>3” Extra lettering</p> <p>There shall be twenty eight (28) additional 3" Scotchlite letters. The letters shall be applied and finished in the same manner as the others.</p> <p>The white Scotchlite letters shall be as follows:</p> <p>Front cab doors, in black stripe: ISO CLASS 1</p> <p>Under cab side windows, with black outline: HOUSE</p> <p>Fire Department Decals</p> <p>There shall be three (3) pair Fire Department decals/Maltese Crosses installed on the apparatus. The decals shall match the Fire Department requirements.</p> <p>There shall be three sets of custom graphics provided.</p> <p>One shall be a traditional Maltese cross on the front cab doors, matching those already in the Surfside Beach Fire fleet.</p> <p>The second shall be located on the left and right rear compartments, matching apparatus in the Surfside Beach Fire fleet, and shall read as follows:</p> <p>EMERGENCY DIAL 911</p> <p>The third set of graphics shall be on the sides of the light tower shield and shall be an American flag graphic.</p> <p>8” Extra lettering</p> <p>There shall be seven (7) 8" tall Scotchlite letters applied to the apparatus. Lettering color and shading to match original letters.</p> <p>There shall be white Scotchlite numerals on the cab side windows, reading 56</p> <p>There shall be red Scotchlite letters with black outline on the rear compartment doors. These shall read E56</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>12” Extra lettering</p> <p>There shall be twenty (20) 12" tall Scotchlite letters applied to the apparatus. Lettering color and shading to match original letters.</p> <p>There shall be 12" numerals, white with black outline, installed on the rear cab doors, behind ENGINE, reading 56.</p> <p>There shall be 12" letters, RED with SILVER outline, installed on the sign plates above the side compartments, reading SURFSIDE.</p>		
<p>36” Extra lettering</p> <p>There shall be two (2) 36" tall Scotchlite letters applied to the apparatus. Lettering color and shading shall be determined at the pre-construction conference.</p> <p>These numerals shall be on the cab roof, reading 56</p>		
<p>Extra Decal’s City Seal</p> <p>There shall be four (4) 12” to 24” color city decals made and placement will be decided at pre- construction meeting.</p>		
<p>25' x 5" Rubber LDH Hose</p> <p>There shall be one (1) length of 25' x 5" Key Pro-Flow LDH hose or equivalent supplied with the apparatus. The hose shall be made from 100 percent high tenacity synthetic polyester yarn, circularly woven and completely protected by a through-the-weave extruded PVC/Nitrile rubber, forming a single homogeneous construction without the use of glues or adhesives of any type. Pro-Flow features a thin rib construction to aid abrasion resistance. Pro-Flow exceeds all requirements of NFPA 1961 for supply hose. Pro-Flow shall carry a 10 year written warranty against defects in materials and workmanship.</p>		
<p>4.5" FNST X 5" STORZ Adapter</p> <p>There shall be one (1) Storz Model S37S, 4.5"FNST x 5" Storz adapter supplied with the apparatus.</p> <p>Hydrant to Storz adapter, used with the 5" x 25" length of hose</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>5" STORZ Cap</p> <p>There shall be one (1) Kochek model CC507, 5" Storz cap with chain provided with the apparatus.</p> <p>Helmet Holders</p> <p>There shall be two (2) On Scene Solutions Talon model 92510 helmet holders provided and installed in the cab in compliance with the latest edition of NFPA 1901.</p> <p>The brackets shall be mountable to either ceiling or wall structure and shall secure the helmet by encapsulating the brim on at least 3 points with constant tension. Brackets shall meet the 9G load requirement and be adjustable for multiple helmet configurations.</p> <p>The mounts shall be manufactured of anodized aluminum and stainless steel components with no elastic or expandable rope retention system.</p> <p>The helmet holders shall be located one each side on the inner door panel of the EMS cabinet.</p> <p>Flash Lights</p> <p>There shall be 6 Survivor Lights installed with chargers in the cab. Locations will be determined in the pre-construction meeting.</p> <p>Wheel Chocks and Mounts</p> <p>There shall be 2 NFPA approved wheel chocks mounted under the body in front of the rear wheel driver's side. They shall be of a high-tensile strength aluminum construction, large rear-opening hand grip, and double row of rugged teeth to grip virtually any firm surface. 2 chock holders also need to be supplied and mounted.</p> <p>5-Year Service and Maintenance</p> <p>A Five (5) year maintenance and service plane shall be included.</p> <p>Extended 5 year Warranty on Parts and Labor</p> <p>There shall be a five-(5) year extended body mechanical parts and labor warranty provided with the apparatus. The apparatus shall be free of defects in material and workmanship for a warranty period of five-(5) years after the date on which the apparatus is first delivered to the original purchaser.</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>Standard 1 Year Warranty Statement of Warranty</p> <p>1-Year Standard</p> <p>The apparatus manufacturer shall provide a full 1-year standard warranty. All components manufactured by the apparatus manufacturer shall be covered against defects in materials or workmanship for a 1-year period. All components covered by separate suppliers such as engines, transmissions, tires, and batteries shall maintain the warranty as provided by the component supplier. A copy of the warranty document shall be provided with the proposal.</p> <p>Lifetime Frame Warranty</p> <p>The apparatus manufacturer shall provide a full lifetime frame warranty. This warranty shall cover all apparatus manufacturer designed frame, frame members, and cross-members against defects in materials or workmanship for the lifetime of the covered apparatus. A copy of the warranty document shall be provided with the proposal. Frame warranties that do not cover cross-members for the life of the vehicle shall not be acceptable.</p> <p>10 Year 100000 Mile Structural Warranty</p> <p>The apparatus manufacturer shall provide a comprehensive 10-year/100,000-mile structural warranty. This warranty shall cover all structural components of the cab and/or body manufactured by the apparatus manufacturer against defects in materials or workmanship for 10 years or 100,000 miles, whichever occurs first. Excluded from this warranty are all hardware, mechanical items, electrical items, or paint finishes. A copy of the warranty document shall be provided with the proposal.</p> <p>10 Year Stainless Steel Plumbing Warranty</p> <p>The apparatus manufacturer shall provide a full 10-year stainless steel plumbing components warranty. This warranty shall cover defects in materials or workmanship of apparatus manufacturer designed foam/water plumbing system stainless steel components for 10 years. A copy of the warranty document shall be provided with the proposal.</p> <p>10 Year Paint and Corrosion Warranty</p> <p>The apparatus manufacturer shall provide a 10-year limited paint and corrosion perforation warranty. This warranty shall cover paint peeling, cracking, blistering, and corrosion provided the vehicle is used in a normal and reasonable manner.</p>		

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	YES	NO
<p>State if paint shall be prorated for 10 years:</p> <p>State prorated percent on conditions below:</p> <p>Coating System, Adhesion & Corrosion: Includes Dissimilar metal corrosion, Flaking, Blistering, Bubbling</p> <p>Topcoat & Appearance: Gloss, Color Retention, Cracking</p> <p>Corrosion perforation shall be covered 100% for 10 years. Corrosion perforation is defined as complete penetration through the exterior metal of the apparatus.</p> <p>The warranty period shall begin upon delivery of the apparatus to the original user-purchaser. A copy of the warranty document shall be provided with the proposal.</p> <p>UV paint fade shall be covered in a separate warranty supplied by Manufacturer and shall be for a minimum of 10 years.</p> <p>Manuals</p> <p>Two (2) copies of all operator, service, and parts manuals MUST be supplied at the time of delivery, Two (2) electronic format and Two (2) paper/binder format (CD-ROMs /FLASH DRIVE/ PAPER) -NO EXCEPTIONS! The electronic and paper manuals shall include the following information and be Vin Specific:</p> <p>Operating Instructions, descriptions, specifications, and ratings of the cab, chassis, body, installed components, and auxiliary systems.</p> <p>“As per” wiring schematics of apparatus.</p> <p>Warnings and cautions pertaining to the operation and maintenance of the fire apparatus and firefighting systems.</p> <p>Charts, tables, checklists, and illustrations relating to lubrication, cleaning, troubleshooting, diagnostics, and inspections.</p> <p>Instructions regarding the frequency and procedure for recommended maintenance.</p> <p>Maintenance instructions for the repair and replacement of installed components.</p> <p>Parts listing with descriptions and illustrations for identification.</p>		

TOSFB/SPEC/SBFD	BIDDER COMPLIES	
	YES	NO
<p>Warranty descriptions and coverage.</p> <p>The CD-ROM/ FLASH DRIVE/PAPER BINDER shall incorporate a navigation page with links to the operator’s manual, service manual, parts manual, and warranty information, as well as instructions on how to use the manual. Each copy shall include a table of contents with links to the specified documents or illustrations.</p> <p>The CD/ FLASH DRIVE must be formatted in such a manner as to allow not only the printing of the entire manual, but to also the cutting, pasting, or copying of individual documents to other electronic media, such as electronic mail, memos, and the like.</p> <p>A find feature shall be included to allow for searches by text or by part number.</p> <p>These electronic manuals shall be accessible from any computer operating system capable of supporting portable document format (PDF). Permanent copies of all pertinent data shall be kept file at both the local dealership and at the manufacturer`s location.</p>		
<p>BID EVALUATION</p> <p>Bids will be evaluated using the following criteria:</p> <ul style="list-style-type: none"> * Cost of bid. * Compliance with our specifications. * Delivery Date. * Operation and maintenance cost of equipment. * Life cycle cost of equal equipment. * Performance of equipment in actual operating conditions. * Availability of parts and service. * Prior experience with vendor and his product. <p>** NOTE:</p> <p>The Bid Evaluations is <u>NOT</u> all inclusive and the Town reserves the right to waive any formalities and award the bid that is in the best interest of the Town</p>		
<p>INFORMATION</p> <p>Any questions concerning the above specifications contact:</p>		

Chief Otte:
 Phone: 843-913-6343
 E-mail: kotte@surfsidebeach.org
 Or
 Battalion Captain Sacra
 Phone: 843-424-2164
 E-mail: tsacra@surfsidebeach.org

Optional Pricing:

State individual pricing on the items listed below:

EQUIPMENT FOR 1750 GAL RESCUE ENGINE

Equipment Description	Equipment Model	Quantity	Brand/Dealer
	#	#	
Pick Head Axe	PHAFR6LB	1	Wally's
Flat Head Axe	FHAFR6LB	1	Wally's
Halongan Bar	FE36	1	Wally's
Pry Bar	PB51	1	Wally's
6' Pike Pole	PP06	1	Wally's
10' Pike Pole	PP10	1	Wally's
Sheet Rock Hook		1	Wally's
Power Fan PPV - Electric		1	Wally's
Power Saw	MS 461 R Rescue	1	STIHL
Generator		1	
Hand Light		6	Stream Light
Water Cooler		1	Town Shop
SCBA	G1-4500 w/cylinders& mask	6	Safe

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BIDDER
COMPLIES

YES NO

SCBA Spare Cylinders	MSA 4500psi 45min	6	Safe
Extrication Tool (Battery)			Genesis or Holmatro
5" Storz to 2 1/2" Male		1	Elkhart/Storz/Wally's
5" Storz to 2 1/2" Female		1	Elkhart/Storz/Wally's
2 1/2" Double Male	M-327A	2	Elkhart
2 1/2" Double Female	F-327A	2	Elkhart
2 1/2" to 1 1/2" Reducer	A-327A	2	Elkhart
Cellar Nozzle	193-9	1	Elkhart
Foam Eductor		1	Elkhart/TFT
24' Extension Ladder		1	Alcolite
14' Roof Ladder		1	Alcolite
10' Folding Ladder		1	Alcolite
Power Saw K12	TS 700 STIHL Cutquik	1	STIHL
Bolt Cutters	24" and 36"	1 Each	Wally's
Tool Box	Craftsman	1 Set	Lowe's
Wrench Set	Craftsman	1 Set	Lowe's
Socket Set Metric & Standard	Craftsman	1 Set	Lowe's
Pliers Set	Craftsman	1 Set	Lowe's
Screw Driver Set	Craftsman	1 Set	Lowe's
Allen Wrenches	Craftsman	1 Set	Lowe's
Star Wrenches	Craftsman	1 Set	Lowe's
Hex Head Wrenches	Craftsman	1 Set	Lowe's
Hose Clamp		1	Wally's
ABC Fire Extinguisher		1	Wally's
Water Can		1	Wally's
Water Cut Off Tool		1	Lowe's
Reciprocating Saw	DeWalt	1	Lowe's
Demo Blades for Rec Saw	DeWalt	1 Set	Lowe's
Blades for K12 Saw		1 Set	Wally's
Extra Chain Saw Chain		1	STIHL
Struts		2 or 4	Holmatro
Turtle Plastic Cribbing	Auto X Kit C	1 Set	Turtle Plastics
45 Degree Discharge	105	5	Elkhart
Gated Wye	B-97A	1	Elkhart
Hydrant Bag		1	Wally's
Portable Master Stream Device		1	Akron
Piercing Nozzle		1	Wally's
Water Thief	BG-104A	1	Elkhart
Streamlight Fire Box	45665	5	Wally's
Streamlight Portable Light	45670	1	Wally's
Streamlight Survivor Light	C4 LED		Streamlight

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BIDDER
COMPLIES

YES NO

Red Medical Bag		1	Stat Packs
AED	Life Pack	1	
Drug Lock Box		1	
1 1/2" Nozzle	Chief	4	Elkhart
2 1/2" Nozzle	Chief	3	Elkhart
Cones 36"	Orange	6	Wally's
50' of 1 1/2" Hose	DJ 800		Wally's/Firequip
50' of 2 1/2" Hose	DJ 800		Wally's/Firequip
100' of 5" Hose		1000'	Wally's/Firequip
50' or 100' of 3"		400'+	Wally's/Firequip
Sledge Hammer	10lb	1	Wally's
Thermal Imager w/ Spare Batt	V320	1	Scott
Door Bar		1	SuperTac
Little Giant Ladder		1	Lowe's
Stokes Basket		1	
Backboard		2	
DeWalt Impact Driver	20 Volt	1	Lowe's
DeWalt Drill	20 Volt	1	Lowe's
DeWalt Skill Saw	20 Volt	1	Lowe's
DeWalt 20 Volt Spare Batt	20 Volt	8 to 12	Lowe's
Traffic Vest		6	Wally's
Traffix 17" LED Baton		5	Wally's
Warn Winch 9500lb	12 Volt 85760	1	Wally's
Warn Synthetic line 125'	For Winch	1	Wally's