



**2022 FIRE APPARATUS
SPECIFICATIONS
FOR
TOWN OF MONCKS CORNER
FIRE DEPARTMENT**



**1500 GPM SIDE MOUNT PUMPER
1000 gallon water tank**

MONCKS CORNER FIRE DEPARTMENT

Town of Moncks Corner
118 Carolina Avenue
Moncks Corner, SC 29461

Town Hall: 1-843-719-7900

Town Administrator: Jeffrey Lord, 1-843-719-7910

Clerk Treasurer: Marilyn Baker, 1-843-719-7906

Fire Chief: Robert Gass, 1-843-719-7991

MONCKS CORNER FIRE DEPARTMENT

INVITATION TO BID

The Town of Moncks Corner, South Carolina is accepting sealed bids for the purchase of 1500 GPM Side Mount Pumper for the Moncks Corner Fire Department. Interested bidders are required to meet or exceed the attached specifications for all listed products.

INSTRUCTIONS TO BIDDERS

Bids must be securely sealed and shall be identified on the envelope as a “**SEALED BID FOR 1500 GPM Side Mount Pumper**” and must be received by **4:30 p.m. on October 21, 2022**. All sealed Bids will be opened publicly at **4:30 p.m. Friday, October 21, 2022**, at the Moncks Corner Municipal Complex located at 118 Carolina Avenue, Moncks Corner. A tabulation of all proposals will be available for public inspection.

Pursuant to Section 28-3 (c) of the purchasing policy of the Town of Moncks Corner, the purchasing agent shall have the authority to reject all or parts of bids for any one or more supplies. The Town reserves the right to split any purchases deemed in the best interest of the Town.

Please submit your proposals to the Town of Moncks Corner, ATTN: Marilyn M. Baker, Post Office Box 700, Moncks Corner, S.C. 29461.

Inquiries pertaining to equipment specifications can be made to Fire Chief Robert Gass via email at Robert.Gass@monckscornersc.gov.

All specifications herein contained are considered as minimum. No exceptions to these minimum standards will be allowed relating to gauge, alloy, and type of metal, size of compartments and overall design. Bidders must state the brand of any item provided which is a substitute for the brand or model specified for evaluation by the bidder. The buyer reserves the right to require a bidder to provide proof in each case that a substituted item is equal to that specified. The Town of Moncks Corner will be the sole judge in determination of acceptable substitutes.

This apparatus will conform to the current edition of the National Fire Protection Association standards.

All bids must be signed. Failure to do so will cause the bid to be non-responsive and rejected.

The competency and responsibility of Bidders will be considered in making the award. The Town of Moncks Corner reserves the right to reject any or all bids, or to reject the bid of the bidder who, in the judgment of the buying authority is not in a position to perform the contract. These specifications, together with any other documents required herein, will be included in the final contract. Each bidder will submit a copy of his proposed contract form. The Town of Moncks Corner reserves the right to reject a bid based on unacceptable provisions of a bidder's contract and does not obligate itself to accept the lowest or any bid.

It will be the responsibility of the bidder to assure that their proposal arrives at the proper location by the time indicated. Late proposals, telegrams, facsimile, or telephone bids will not be considered.

Any erasures, strike over's and/or changes to prices written in numerals should be initialed by the bidder. Failure to initial may be cause to reject the bid as irregular and disqualified from consideration.

A written review of the company, in chronological order, detailing the background of the manufacturer shall be provided as part of the Bid proposal.

If a vendor represents more than one Fire Apparatus Company, they will only bid the top-of-the-line product that meets specifications.

The body is to be completely built, painted, and installed by the prime body manufacturer, which minimizes

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third party involvement on engineering, design, service, and warranty issues. Apparatus using a subcontracted body will not be acceptable.

THE TOWN OF MONCKS CORNER WILL NOT ACCEPT BIDS, WHICH DO NOT MEET THE MINIMUM SPECIFICATIONS.

INFORMATION REQUIRED WITH BID

The fire apparatus and equipment to be furnished in meeting these specifications must be the product of an established reputable fire apparatus manufacturer of ten (10) years or more. Each bidder will furnish satisfactory evidence of the manufacturer's ability to construct, supply service, parts and technical assistance for the apparatus specified. The bidder must state the location of the factory and full-service center.

The general construction of the apparatus will give due consideration to the nature and distribution of the load to be sustained and the general character of the service to which the apparatus is to be subjected when placed in service. The general design and construction will be of the latest modern type, modular for transfer of body to another chassis without cutting or welding.

Each bidder must submit a detailed proposal, which accurately specifies the construction method to be used in the apparatus. To facilitate comparison all bid proposal specifications will be submitted in the same sequence as the advertised specification. Any bidder who fails to submit a set of construction specifications, or who photocopies and submits these specifications as their own construction details will be considered non-responsive and ineligible for award.

PAYMENT TERMS

All bidders will be required to detail in exact terms the payment for said apparatus in their fire apparatus proposal.

PURCHASER'S RIGHTS

The Purchaser reserves the right to accept or reject any or all bids as it deems to be of their best interest to do so.

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Bid Package Checklist

Complete and sign this list to confirm you have enclosed the required information.

- _____ 1. A list of any exceptions on a separate schedule marked "EXCEPTIONS"
- _____ 2. A set of "contractor's specifications"
- _____ 3. A copy of the manufacturer's "Annual Report" or certified financial statement
- _____ 4. A users list comprised of at least eight (8) South Carolina Fire Departments that have unit(s) currently in service for more than five (5) years
- _____ 5. A users list of at least five (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: _____

Title: _____

Date: _____

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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 Town of Moncks Corner. The primary objective of these specifications is to obtain the best value and most acceptable apparatus for use by the Moncks Corner 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). Failure to submit a written set of the contractor's specifications as required will result in automatic rejection of the bid.

Exceptions

To the right side of each paragraph of the fire department specifications, the bidder will state "YES" or "NO" indicating compliance with the specifications. 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). 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. Wherever exceptions are not taken by the successful bidder, he will be held responsible for strict compliance with these specifications.

"BRAND NAME" CLAUSE

It is the intent of the Purchaser to purchase components that have a proven record of Fire Department use and satisfaction. All bidders should be aware that where brand names are listed in these specifications, comparable products from different manufacturers may be acceptable. The bidder shall simply provide the Department with a listing of brands that they intend to provide in lieu of the originally requested brand.

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The Fire Department will evaluate the proposed brand name to determine if the brand is equal to or superior to the originally requested brand.

RIGHT TO NEGOTIATE

All bidders shall be aware that this request for bid shall allow the Fire Department to negotiate with any bidder on items such as price, content, and general apparatus design after opening of bids. This will allow the Department to adjust the apparatus design and content as deemed necessary to remain within budget restraints that may be present or for any other reason or purpose.

All bidders shall be aware the Department is not required to purchase "low bid" and reserves the right to purchase an apparatus that the Department chooses to purchase with no other recourse afforded to other bidders.

24/7 FACTORY SUPPORT

The manufacturer (not dealer) of the apparatus shall maintain a 24 hours per day, 7 days per week, 365 days per year factory support contact system to allow the purchaser to contact the manufacturer in case of emergency. The system shall be activated by a telephone call to the manufacturing facility.

Mobile Service

The bidder must state the capability, type, quantity, and average response time of its field service units (mobile service centers). These units shall have the capability to perform most minor warranty repairs in the field. Sales Representatives' cars do not satisfy this requirement.

DELIVERY OF COMPLETED APPARATUS

When the apparatus is completed at the manufacturer's facility, a factory trained delivery technician shall deliver the apparatus to the Purchaser. The technician shall familiarize all individuals designated by the purchaser on the operation and maintenance of the apparatus at this time. The technician shall remain at the purchaser's location for a sufficient period of time to allow all individuals to gain a thorough knowledge of the operation of the apparatus.

Solvency of the Manufacturer

The solvency of the manufacturer is a primary concern of the Town of Moncks Corner. 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. Failure to submit such a statement will result in automatic rejection of the bid.

Made in the United States

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.

User Reference List

A user's list comprised of South Carolina Fire Departments that have units currently in service for more than five (5) years shall be supplied with the apparatus bid.

Additionally, a user's list comprised of South Carolina Fire Departments that have units in service that are less than one (1) year old shall be supplied with the apparatus bid.

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Full Time Service

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 bidder shall show that they are in a position to render prompt service within three business days and to furnish replacement parts for said apparatus.

Liability and Facility Insurance

Each bidder shall submit with his bid proof of product liability and facility insurance in an amount of at least twenty-five million dollars (\$25,000,000.00).

Garage Liability Insurance

Each bidder shall submit with this bid sufficient proof of dealer garage liability insurance in an amount of at least five million dollars (\$5,000,000.00).

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

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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. _____
8. Do you have a full-time service center? Yes or No. _____
9. Do you have a mobile service unit with generator, air, parts, etc. capability? _____
10. Do you agree to supply apparatus training? Yes or No. _____
11. Did you supply a complete set of contractor's specifications? Yes or No. _____
12. Please list the manufacturer and sources for warranty responsibility on the following:

Chassis Manufacturer: _____ Responsibility: _____

Body Manufacturer: _____ Responsibility: _____

Pump Manufacturer: _____ Responsibility: _____

Pump Model #: _____ GPM: _____

13. Did you supply an Annual Report or Certified Financial Statement on the apparatus manufacturer? Yes or No.
14. State the maximum number of days after receipt of order you will deliver this unit? _____

All 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. _____

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Final Question: Did you completely and accurately complete this questionnaire, and did an officer of your company sign it? Yes or No. _____

Signature of Officer

Company Name

Printed Name of Officer

Date

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SERVICE CAPABILITIES FORM

VEHICLE STABILITY

- A. The height of the fully loaded vehicle center of gravity will not exceed the chassis manufacturer maximum.
- B. The front to rear weight distribution of the fully loaded vehicle will be within the limits set by the chassis manufacturer. The front axle loads will not be less than the minimum axle loads specified by the chassis manufacturer, under full load and all other loading conditions.
- C. The difference in weight on the end of each axle, from side to side, when the vehicle is fully loaded and equipped shall not exceed 7%.

PERFORMANCE TEST AND REQUIREMENTS

- A. The apparatus will meet the performance requirements at elevations of 2000 feet above sea level.
- B. The apparatus will meet the performance requirements while stationary on any grade of up to and including 6% in any direction.
- C. From a standing start, the vehicle will attain a true speed of 35 mph, within 25 seconds on a level road.
- D. The apparatus will obtain a minimum top speed of 50 mph on a level road.
- E. The apparatus will be able to maintain a speed of at least 20 mph, on any grade up to and including 6%.
- F. The apparatus will be tested and approved by Underwriters Laboratories Incorporated in accordance with the standard practices for pumping engines.

ROAD TEST

Each manufacturer will conduct road testing to verify the complete apparatus is capable of compliance:

- A. The test will be conducted on a dry, level, paved road that is in good condition. The engine will not operate in excess of the maximum no load governed speed.
- B. Acceleration test will consist of two runs in opposite direction over the same route.
- C. The vehicle will attain a true speed of 35 mph from a standing start within 25 seconds.
- D. The vehicle will attain a minimum top speed of not less than 50 mph.
- E. If the apparatus is equipped with an auxiliary braking system, the apparatus manufacturers will road test the system to confirm that the system is functioning as intended by the auxiliary braking system manufacturer.
- F. The service brakes will bring the fully laden apparatus to a complete stop from an initial speed of 20 mph in a distance not exceeding 35 feet (10.7M) by actual measurement, on a substantially hard, level surface road that is free of loose material, oil, or grease.

FAILURE TO MEET TEST

In the event the apparatus fails to meet the test requirements of these specifications on the first trials, second trials may be made at the option of the manufacturer within thirty-(30) days from the date of the first trials. Such trials will be final and conclusive and failure to comply with changes, as the purchaser may consider necessary to conform to any clause of the specifications within thirty (30) days after notice is given to the manufacturer of such changes will also be cause of rejection of the apparatus. Permission to keep or store the apparatus in any building owned or occupied by the purchaser or its use with the permission of the

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manufacturer will not constitute acceptance.

PRODUCT LIABILITY

Each bidder will supply proof of product liability and facility insurance equal to or exceeding \$25,000,000.00.

WARRANTIES

TO ENSURE SINGLE POINT SERVICE SUPPORT, THE MANUFACTURER WILL CERTIFY THAT IT IS THE SINGLE SOURCE CONTACT FOR WARRANTY ON THE ENTIRE FIRE APPARATUS.

The following warranties will be provided:

- A. Chassis
- B. Chassis Frame Rails
- C. Engine
- D. Transmission
- E. Fire Pump
- F. Hydraulic generator
- G. Water Tank
- H. Apparatus Body
- I. Rust
- J. Paint

The warranty times will be defined later in the specification.

APPARATUS DELIVERY TIME

All bidders will provide delivery of the fire apparatus within 460 calendar days.

INFORMATION/CERTIFICATIONS

The following information and original certifications will be required at time of delivery. The apparatus manufacturer will supply this information:

1. The manufacturer's record of apparatus construction details, including the following information:
 - a. Owner's name and address
 - b. Apparatus manufacturer, model, and serial number
 - c. Chassis make, model, and serial number
 - d. GVWR of front and rear axles
 - e. Front tire size and total rated capacity in pounds
 - f. Rear tire size and total rated capacity in pounds
 - g. Chassis weight distribution in pounds with water and manufacturer mounted equipment (front and rear)
 - h. Engine make, model, serial number, rated horsepower, and rated speed, and governed speed
 - i. Type of fuel and fuel tank capacity
 - j. Electrical system voltage and alternator output in amps
 - k. Battery make, model, and capacity in cold cranking amps (CCA)
 - l. Chassis transmission make, model, and serial number; and if so equipped, chassis transmission PTO(s) make, model, and gear ratio
 - m. Fire Pump make, model, and rated capacity in gallons per minute and serial number
 - n. Pump transmission make, model, serial number, and gear ratio
 - o. Water tank certified capacity in gallons
 - p. Paint manufacturer and paint number(s)
 - q. Company name and signature of responsible company representative

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2. Certification of slip resistance of all stepping, standing, and walking surfaces.
3. A copy of the fire pump manufacturer's certification of the fire pumps suction capability.
4. A copy of the apparatus manufacturer's approval for stationary pumping applications.
5. A copy of the engine manufacturer's certified brake horsepower curve for the engine furnished, showing the maximum governed speed.
6. A copy of the pump manufacturer's certification of the hydrostatic test.
7. A copy of the certification of inspection and test for the fire pump.
8. If the apparatus has a fixed line voltage power source, the certification of the test for the fixed power source.
9. Weight documents from a certified scale showing actual loading on the front axle, rear axle(s), and overall fire apparatus (with the water tank full but without personnel, equipment, and hose)
10. Written load analysis and results of the electrical system performance tests are required.
11. Certification of water tank capacity.

The Fire Apparatus Manufacture will also provide documentation of the following items for the entire apparatus and each major operating system or major component of the apparatus:

1. Manufacturer's name and address
2. Country of manufacture
3. Source for service and technical information
4. Parts replacement information
5. Descriptions, specifications, and ratings of the chassis, pump (if applicable), and aerial device (if applicable)
6. Wiring diagrams for low voltage and line voltage systems to include the following information:
 - (a) Pictorial representations of circuit logic for all electrical components and wiring
 - (b) Circuit identification
 - (c) Connector pin identification
 - (d) Zone location of electrical components
 - (e) Safety interlocks
 - (f) Alternator-battery power distribution circuits
 - (g) Input/output assignment sheets or equivalent circuit logic implemented in multiplexing systems
7. Lubrication charts
8. Operating instructions for the chassis, any major components such as a pump and any auxiliary systems
9. Instructions regarding the frequency and procedure for recommended maintenance
10. Overall apparatus operating instructions
11. Safety considerations
12. Limitations of use

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13. Inspection procedures
14. Recommended service procedures
15. Troubleshooting guide
16. Apparatus body, chassis, and other component manufacturer's warranties
17. Special data required by this standard
18. Copies of required manufacturer test data or reports, manufacturer certifications, and independent third-party certifications of test results
19. A safety data sheet (SDS) for any fluid that is specified for use on the apparatus

The Fire Apparatus Manufacturer will deliver with the apparatus all manufacturers' operations and service documents supplied with components and equipment that are installed or supplied.

LETTER OF AUTHORIZATION

If a dealer/agent in the name of a particular manufacturer submits the bid, the bidder will include in the bid proposal, a copy of the appropriate Letter of Authorization, authorizing the dealer/agent to sign on behalf of the manufacturer.

LICENSES

The proposals must have all current licenses required by State law to do business in the State of South Carolina. This is to include BOTH the automotive manufacturer and automotive dealer licenses if required by State law. If the proposed bidder; is a manufacturer bidding direct, not through a dealer or distributor, then the proposal will include copies of their manufacturer and automotive dealer licenses. If the proposed is a dealer or distributor, then they will submit a copy of the appropriate dealer license. Proposals failing to meet this legal requirement cannot be considered.

LIABILITY

The bidder, if his bid is accepted will defend against all suits, assume all liability for the use of any patented process, advice, or article forming a part of the apparatus of any appliance furnished under contract.

TILT TABLE

The manufacturer shall have Tilt Table Testing performed to the SAE J2180 standard (A Tilt Table Procedure for Measuring the Static Roll-over Threshold for Heavy Trucks) in compliance with the latest edition of NFPA 1901, Section 4.13.1.1. Said testing shall be certified by an independent third-party testing company with documentation provided to the buyer.

SERVICE VEHICLES

The manufacturer shall have full time, company owned, service vehicles. The vehicles shall be available 24 hours a day, seven days a week to respond to customer needs. Full time employees of the manufacturer shall drive them.

MANUFACTURER SERVICE CONTACTS

The manufacturer must have a 24 hour/ 7 day a week, toll-free emergency hot line. The manufacturer must be capable of providing both in-house and on-site service for the apparatus. The service technicians shall be EVT certified in compliance with NFPA 1071 classifications F2 through F6. On-site service and maintenance shall be the primary function, to eliminate the vehicle having to leave the fire department jurisdiction. Copies of the certifications shall be made available through the Human Resources office.

REPLACEMENT PARTS

Replacement parts shall be available directly from the manufacturer, and not through a dealer or a third party.

CERTIFIED WELDERS

The manufacturer shall employ individuals that are certified aluminum and stainless steel welders. The

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welders shall be certified by an outside testing laboratory. The certifications shall be available for viewing through the Human Resources office upon request.

BODY WEIGHT DOCUMENTATION

The manufacturer shall weigh each body prior to mounting on the chassis. The information shall be included in the documentation of the finished vehicle. Each body produced by the manufacturer shall be weighed, not just one body per model.

BID BOND

A bid bond for (ten) 10% of the total bid amount shall be furnished with your bid. The manufacturer of the apparatus shall provide all bonds. The appropriate Surety agent shall countersign the bond.

PRINCIPAL DIMENSIONS

Each bidder is required to list below the dimensions of the apparatus being submitted.

1. Overall Length:	
2. Overall Height:	
3. Wheelbase:	
4. Cab to Axle:	

APPROVAL DRAWING

Prior to construction, the successful bidder shall provide three (3) approval drawings of the apparatus for the fire department's review. The drawings shall show such items as the chassis being utilized, lights, horns, sirens, pump panels, and all compartment locations and dimensions. The blueprint shall be a visual interpretation of the unit as it is to be constructed. The buying authority shall sign all drawings. One print shall be retained by the Fire Department, the dealer shall retain one print, and one print, shall be returned to the manufacturer.

CURRENT NFPA 1901

The National Fire Protection Association "Standard for Automotive Fire Apparatus" (NFPA 1901), 2016 Edition, is hereby adopted and made a part of these specifications for the component supplied in the incomplete chassis.

TRANSPORTATION

To ensure proper break-in of all components while still under warranty, the apparatus shall be delivered over the road under its own power. (Rail and/or truck freight shall not be acceptable).

CUSTOM FIRE TRUCK CHASSIS

Meets specification? Yes ___ No ___

The custom cab and chassis shall be designed and manufactured by a custom chassis manufacturer. The chassis shall be designed and manufactured for heavy duty continuous use in extreme environments and rigorous adverse conditions with adequate strength and capacity for all components as detailed in these specifications. The manufacturer shall demonstrate evidence of manufacturing similar custom vehicles for at least ten (10) years.

CHASSIS FRAME

Meets specification? Yes ___ No ___

The frame shall be designed to current industry standards. The manufacturer shall provide a lifetime frame side rail warranty to the original purchaser of the chassis. The frame rails shall be heat treated steel.

The frame rails shall be coated/finished in such a way as to reduce the effect of harsh road chemicals.

SIDE ROPE RESCUE ANCHOR POINTS

Meets specification? Yes ___ No ___

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There shall be (2) rescue rope anchor points located below compartments L1 and R1, they shall be a 2" receiver design with interchangeable "D" ring style tie off points. The maximum rated pull capacity shall equal 10,000 pounds of straight pull. There shall be a label placed on or near rope anchor point stating the maximum load rating of each anchor point. A weatherproof winch power connection shall also be provided at all anchor points.

FRONT BUMPER

Meets specification? Yes ___ No ___

There shall be a 12" high, two rib highly polished stainless steel front bumper. The bumper shall be a full wrap around type extending across the entire width of the cab. The return portion of the wrap around shall make up the majority of the bumper extension.

FRONT BUMPER EXTENSION

Meets specification? Yes ___ No ___

There shall be a twenty-inch (20") frame extension provided. The extension shall be made from heavy-duty steel in either C-channel or tubular shapes.

The extension shall be bolted to the chassis frame rails through reinforcement plates in such a way as to meet or exceed current industry safety standards. Fasteners utilized shall be Grade 8 bolts.

There shall be a tread-plate filler between the bumper and the cab.

BUMPER MOUNTED HOSE TRAY

One hose storage tray shall be mounted through the top of the gravel shield. The hose storage tray shall be constructed of 1/8" aluminum plate with a hinged 1/8" aluminum tread plate lid. The hose tray shall be capable of storing 150' x 1 3/4" hose with a combination nozzle attached. The lid shall be held in the open position with an officer side mounted moon spring and in the closed position with a center-mounted quarter turn latch. The hose storage trays shall include a removable four (4) aluminum slat floor and shall include drain holes in the bottom corners to allow excess moisture to escape. The slat floor shall allow ventilation of wet hose stored in the tray.

TOW HOOKS, FRONT

Meets specification? Yes ___ No ___

Two-(2) painted tow hooks shall be mounted to the bottom of the front bumper frame extension rails. The tow hooks shall be attached with Grade 8 bolts.

REAR TOW EYES

Meets specification? Yes ___ No ___

There shall be two-(2) 3/4" thick rear tow eyes constructed of A-36 steel mounted below the frame at the rear of the vehicle. The tow eyes shall be attached to steel weldments that are mounted to the apparatus. The eyes shall have a minimum dimension of three-(3) inches.

MECHANICAL SIREN

Meets specification? Yes ___ No ___

The front bumper shall include an electromechanical Federal Q2B™ siren, which shall be streamlined, chrome-plated and shall produce 123 decibels of sound at 10.00 feet. The Q2B™ siren produces a distinctive warning sound that is recognizable at long distances. A unique clutch design provides a longer coast down sound while reducing the amp draw to 100 amps. The siren shall measure 10.50 inches wide X 10.00 inches high X 14.00 inches deep. The siren shall include a pedestal mount to surface mount on a horizontal surface.

MECHANICAL SIREN LOCATION

Meets specification? Yes ___ No ___

The siren shall be pedestal mounted on the bumper apron on the furthest outboard section of the bumper on the driver side.

ELECTRONIC SIREN SPEAKER

Meets specification? Yes ___ No ___

There shall be two (2) siren speaker installed thru the front face of the bumper.

The speakers shall be 100-watt Cast Products SA2401 or equivalent, wired to the electronic siren.

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AIR HORNS

Meets specification? Yes ___ No ___

There shall be two-(2) 24" long Grover air horns or equivalent installed in compliance with NFPA thru the front bumper, outboard of the frame rails. The air horns shall be plumbed to the chassis, air supply system thru an air protection valve, and manufactured from spun brass material with an easily separated die cast sounding unit for serviceability.

AIR HORN RESERVOIR

Meets specification? Yes ___ No ___

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

AIR HORN FOOT SWITCHES

Meets specification? Yes ___ No ___

Two-(2) foot operated switches shall be installed, one (1) on each side on the driver and officer's side wired to the air horn(s).

AIR HORN WIRING

Meets specification? Yes ___ No ___

The air horns shall be active in both the "Scene" and "Response Mode".

FRONT SUSPENSION

Meets specification? Yes ___ No ___

The entire front suspension including the axle assembly shall be designed for heavy duty custom fire apparatus with a minimum rated capacity of 20,000 pounds.

Double acting hydraulic shock absorbers are to be installed.

CRAMP ANGLE

Meets specification? Yes ___ No ___

The chassis should have a turning cramp angle of 45-degrees. Both left and right turns have a full 45° cramp angle with tires and wheels mounted on the axle and installed in the chassis. The 45° cramp angle is achieved irrespective of options such as front suctions and disc brakes.

STEERING SYSTEM

Meets specification? Yes ___ No ___

The steering system shall be a package certified by the manufacturer of the system for this application.

The steering system shall use a TAS-65 steering gear with an RCS-55 slave gear, or an equivalent system, which has the capacity to static steer the chassis loaded to 21,500 pounds with 425-size tires. The use of two-(2) equal size gears or a single gear with an assist cylinder shall not be acceptable.

A remote steel reservoir shall be provided with the ability to check the fluid level when the cab is in the lowered position.

FRONT TIRES

Meets specification? Yes ___ No ___

The front tires shall be properly sized and rated for speed and load capacity for this application.

Front axle GAWR using these tires shall be a minimum of 20,000 lbs. @ 120 psi.

WHEELS, FRONT

Meets specification? Yes ___ No ___

The front wheels shall be Accuride 22-1/2" x 12-1/4" ten studs, hub piloted steel disc type or equivalent.

WHEEL FINISH, FRONT

Meets specification? Yes ___ No ___

The wheels shall be painted to match the job color with silver outside trim.

MUD FLAPS, FRONT

Meets specification? Yes ___ No ___

The front axle mud flaps shall be constructed from hard black rubber and installed behind the front axle.

AIR BRAKE SYSTEM

Meets specification? Yes ___ No ___

The entire air brake system shall be designed for use on heavy duty custom fire apparatus with a minimum rated capacity which exceeds the GVWR of this apparatus. The rear axle shall be equipped with automatic

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slack adjusters (ASA) to provide optimum brake performance.

REAR SUSPENSION

Meets specification? Yes ___ No ___

The entire rear suspension including the axle assembly shall be designed for heavy duty custom fire apparatus with a minimum rated capacity of 27,000 pounds.

The rear axle shall be equipped with automatic slack adjusters (ASA) to provide optimum brake performance.

REAR TIRES

Meets specification? Yes ___ No ___

The dual rear tires shall be properly sized and rated for speed and load capacity for this application.

Single rear axle GAWR using these tires shall be a minimum of 27,000 lbs. @ 120 psi.

WHEELS, REAR

Meets specification? Yes ___ No ___

The rear wheels shall be Accuride 22-1/2" x 8-1/4" ten stud hub piloted steel disc type or equivalent.

WHEEL FINISH, REAR

Meets specification? Yes ___ No ___

The wheels shall be painted to match the job color with silver outside trim.

MUD FLAPS, REAR

Meets specification? Yes ___ No ___

The rear axle mud flaps shall be constructed from hard black rubber and installed behind the rear axle.

TIRE SPEED RATING

Meets specification? Yes ___ No ___

The maximum tire speed rating is 75 MPH.

TIRE PRESSURE MONITORING SYSTEM

Meets specification? Yes ___ No ___

Each tire installed on the apparatus shall be equipped with a tire pressure monitoring device.

CHASSIS ALIGNMENT

Meets specification? Yes ___ No ___

The chassis frame rails shall be measured to ensure the length is correct and cross checked to make sure they run parallel and are square to each other. The front and rear axles shall be laser aligned. The front tires and wheels shall be aligned and toe-in set on the front tires by the chassis manufacturer. Cramp angle is set to achieve the greatest turning radius possible with the selected components of the vehicle. Each front wheel is set to zero degrees. The wheel is then turned until it reaches the steering stops. This measurement is the cramp angle.

VEHICLE TOP SPEED

Meets specification? Yes ___ No ___

The rear axle shall be geared for a top speed of 65 to 68 mph at engine governed RPM.

AIR SYSTEM

Meets specification? Yes ___ No ___

An air brake system meeting the requirements of the FMVSS-121 shall be provided. The system shall consist of three (3) reservoirs with an adequate volume to operate the system during extreme use. The air system shall consist of the following components:

- Dual air system with dual gauges and a warning light and buzzer. A spring actuated parking brake built into the rear axle brakes with a manual control and warning light the in cab. These shall automatically apply in case of air system failure. A mechanical means of releasing the spring brake in the event of total loss of air pressure.
- The brake system shall be a split system. One (1) system serving the rear brakes and one (1) system serving the front brakes. The two (2) systems shall be connected with a double check valve that shall automatically shuttle air from the front system to the rear system should loss of air pressure occur. This system shall also modulate the amount of air so the spring brakes shall apply in direct relationship to the amount of pressure applied to the treadle valve.
- The brake system shall be equipped with a Bendix SR-1 valve or equivalent to provide modulated spring brakes in the event there is low air pressure in the rear axle air supply reservoir.

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- The spring brakes shall be piped in such a manner that if the treadle valve is depressed while the spring brakes are applied, the spring brakes shall release and remain released as long as the treadle valve is depressed. They shall reapply immediately when the treadle valve is released.
- The piping in the air system shall be 2-ply nylon reinforced color-coded tubing for all stationary lines.

COMPRESSOR

Meets specification? Yes ___ No ___

The air compressor shall have a minimum capacity of 18.7 cubic feet per minute. The air brake system shall be the quick build up type. The air compressor discharge line shall be stainless steel braid reinforced Teflon hose.

A pressure protection valve shall be installed to prevent the use of air horns or other air operated devices should the air system pressure drop below 80 psi (552 kPa).

The chassis air system shall meet NFPA 1901, latest edition for rapid air pressure build-up within Sixty-(60) seconds from a completely discharged air system. This system shall provide sufficient air pressure so that the apparatus has no brake drag and is able to stop under the intended operating conditions following the sixty-(60) second build-up time.

AIR DRYER

Meets specification? Yes ___ No ___

The air system shall include a MERITOR/WABCO System Saver 1200 air dryer or equivalent. The dryer shall have a minimum capacity of 30 CFM of air flow.

The air dryer shall have a spin on desiccant cartridge for ease in servicing the dryer desiccant.

The air dryer shall incorporate an integral turbo cut-off valve. The turbo cut-off valve shall close the path between the air compressor and the air dryer purge valve during the compressor "unload" cycle. This shall allow the air dryer to purge the water and contaminants without any loss of turbo boost or engine horsepower.

A 12-volt, 100-watt heated moisture ejector shall be an integral part of the air dryer. This heater shall be thermostatically controlled. The electrical connection for the heater shall use a sealed electrical connector to protect against moisture and corrosion.

MANUAL AIR TANK DRAINS

Meets specification? Yes ___ No ___

All air reservoirs shall have manual 1/4 turn drain valves. The drain valves shall be supplied with rubber seats to reduce air system leaks. The reservoir drain valves shall allow the accumulation of contaminants that are collected in the reservoirs to be drained off to the atmosphere.

HOSE AND HARNESS ROUTING

Meets specification? Yes ___ No ___

Battery cables, hydraulic hoses and air lines shall be routed through the vertical face of the chassis frame rails using bulkhead connectors. The use of grommets through frame rails, as well as running hoses or cables under, over or ahead of the chassis frame rails to achieve positive connections shall not be acceptable.

For ease of maintenance, the wiring harnesses, hydraulic hoses, and air hoses shall be divided down each frame rail. The hydraulic and air hoses shall be run, primarily, down the inside of the right-side frame rail, while the electrical harnesses shall be run, primarily, down the left side frame rail. Harnesses and hoses shall be mounted using rubber coated, stainless steel holders and, where necessary, heat resistant zip loom.

ANTI-LOCK BRAKES, AUTOMATIC TRACTION CONTROL & ELECTRONIC STABILITY CONTROL

Meets specification? Yes ___ No ___

The apparatus shall be equipped with an Anti-Lock Brake System (ABS), an Automatic Traction Control system (ATC) and an Electronic Stability Control system (ESC). These systems shall be designed for continuous heavy duty truck service and compliant with all applicable standards.

An ABS warning light shall be installed on the driver's dash.

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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.

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.

DIESEL ENGINE

Meets specification? Yes ___ No ___

The vehicle shall be equipped with a Cummins L9 450 horsepower or larger turbocharged diesel engine.

The engine exhaust system shall be a minimum of 4" diameter welded stainless steel tubing; 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.

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 to protect hands when checking or adding oil in the engine compartment.

ENGINE WARRANTY

Meets specification? Yes ___ No ___

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

TRANSMISSION

Meets specification? Yes ___ No ___

The chassis shall be equipped with an Allison EVS3000P or better 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.

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.

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.

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 sensor display shall provide the following checks, correct fluid level, low fluid level and high fluid level.

TRANSMISSION WARRANTY

Meets specification? Yes ___ No ___

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

TRANSMISSION SHIFTER, LEVER

Meets specification? Yes ___ No ___

The transmission shall be controlled by an Allison lever 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.

A push button transmission shifter shall not be acceptable.

EMISSION CERTIFICATION COMPLIANCE

Meets specification? Yes ___ No ___

The engine shall be certified to the current EPA standards for emergency vehicles.

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EMISSIONS SYSTEMS WARRANTY

Meets specification? Yes ___ No ___

Purchaser shall receive a Regulated Emissions Systems Five (5) Years or 100,000 Miles limited warranty in accordance with, and subject to, warranty certificate RFW0140. The warranty certificate is incorporated by reference into this proposal and included with this proposal or available upon request.

ENGINE COOLANT RADIATOR

Meets specification? Yes ___ No ___

The engine coolant radiator shall have ample capacity to perform under the engine manufacturer installation requirements. The chassis manufacturer shall demonstrate the ability to meet this requirement with the submittal of an approved EPQ to the fire department for the apparatus.

The radiator shall have a transmission cooler with a plate-type design incorporated. The plates shall have internal turbulators to break up laminar oil flow across the surface. It shall be designed to withstand 165 psi working pressure and an intermittent pressure of 250 psi. The cooler shall be of sufficient size to maintain the operating temperature within the recommended limits of the transmission manufacturer.

A high efficiency engine fan shall be encompassed with a radiator shroud to provide the proper air flow from the fan blade to the radiator. The radiator shall have recirculation baffles to eliminate the possibility of recirculation of "hot" air to the face of the radiator core.

RADIATOR COOLANT RECOVERY SYSTEM

Meets specification? Yes ___ No ___

A coolant recovery system shall be installed on the chassis.

CHARGE AIR COOLER RADIATOR

Meets specification? Yes ___ No ___

The engine charge-air cooler shall have ample capacity to perform under the engine manufacturers installation requirements. The chassis manufacturer shall demonstrate the ability to meet this requirement with the submittal of an approved EPQ to the fire department for the apparatus. The system shall utilize four (4) ply silicone rubber woven Nomex hoses with stainless steel pressure bands. All clamps used on the charge air piping are to be stainless steel constant torque and shall be installed at each joint.

COOLANT

Meets specification? Yes ___ No ___

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

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

COOLANT HOSES

Meets specification? Yes ___ No ___

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

RADIATOR SKID PLATE

Meets specification? Yes ___ No ___

To protect the radiator a 1/4-inch-thick steel skid plate shall be installed under the radiator.

ENGINE BRAKE

Meets specification? Yes ___ No ___

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 with anti-lock brake controller to prevent engine brake operation during adverse braking conditions.

The brake lights shall illuminate when the Jacobs Brake is in operation.

The Jacobs engine brake shall be inoperative when the chassis is in pump mode.

The Jacobs engine brake shall be covered under the standard five-year Cummins engine warranty.

ENGINE FAST (HIGH) IDLE

Meets specification? Yes ___ No ___

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The chassis shall be equipped with an Electronic Idle Control (EIC) for the electronic engine. Preset speed is factory adjustable.

The fast idle provision shall only function when the parking brake is set, and the transmission is in neutral. Manual selection of the fast idle shall be controlled by a driver's momentary switch.

Automatic activation of the fast idle shall occur when a low voltage condition exists, the truck is in neutral, and the parking brakes are applied.

Cancellation of the fast idle shall be achieved by resetting the manual switch or by depressing the service brake pedal.

ENGINE COOLANT FILTER

Meets specification? Yes ___ No ___

A pre-charged spin-on corrosion inhibitor/water filter shall be installed in the cooling system. Shut off valves shall be supplied on both sides of the filter to facilitate element changing without loss of cooling system fluid

ENGINE PUMP HEAT EXCHANGER

Meets specification? Yes ___ No ___

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

ENGINE AIR INTAKE

Meets specification? Yes ___ No ___

The engine air intake system shall include an ember separator. This ember separator shall be designed to protect the downstream air filter from embers using a combination of unique flat and crimped metal screens packaged in a heavy-duty galvanized steel frame. This multilayered screen shall trap embers and allow them to burn out before passing through the pack.

The engine air intake system shall also include an air cleaner mounted above the radiator. This air cleaner shall utilize a replaceable dry type filter element designed to prevent dust and debris from being ingested into the engine. A service cover shall be provided on the housing, reducing the chance of contaminating the air intake system during air filter service.

The air intake system shall include a restriction indicator light in the warning light cluster on the instrument panel, which shall activate when the air cleaner element requires replacement.

ENGINE FAN DRIVE

Meets specification? Yes ___ No ___

The engine cooling system fan shall incorporate a thermostatically controlled, Horton fully variable type fan drive with SmartClutch J-1939 CAN controller.

The variable speed fan clutch only engages at the amount needed for proper cooling to facilitate improved vehicle performance, cab heating in cold climates, and fuel economy. The fan clutch design shall be fail-safe so that if the clutch drive fails the fan shall engage to prevent engine overheating due to the fan clutch failure. The fan speed shall include a J-1939 CAN clutch controller to receive signal from the engine control module to activate at variable rates of speed. Variable speeds shall be set through thermostatic and engine speed signals to run as efficiently and quietly as required to maintain temperature.

EXHAUST SYSTEM

Meets specification? Yes ___ No ___

A single exhaust pipe shall be provided for the engine. The exhaust pipe shall be supplied with a heat wrap. The wrap shall extend from the engine turbo charger to just below the frame rail. The exhaust tubing from the turbocharger to the exhaust after treatment device shall be stainless steel.

FUEL TANK

Meets specification? Yes ___ No ___

The fuel tank shall have a capacity of 50 gallons (US) and be D.O.T. certified. It shall be mounted with straps bolted to the bottom frame flange to allow for easy removal. The tank construction shall be of 12-gauge steel with single fuel pickup and return tubes. The baffled tank shall be vented to prevent low vacuum and facilitate rapid filling. The tank shall have a 2" NPT fill to the driver's side of the chassis. The fuel tank sending unit is to be mounted to the side of the fuel tank for easy replacement without removing body panels.

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FUEL SHUT-OFF VALVE

Meets specification? Yes ___ No ___

A ball type fuel line shut off valve shall be installed in the suction side fuel line. The shut off valve shall be located near the inlet to the primary fuel filter.

FUEL/WATER SEPARATOR

Meets specification? Yes ___ No ___

The engine shall be equipped with an integrated fuel / water separator with a self-venting bottom drain valve. This filter shall be able to remove up to 95% of dissolved water and up to 99% of free-standing water.

ALTERNATOR

Meets specification? Yes ___ No ___

A LEECE-NEVILLE model 4890JB, 320-amp alternator or equivalent shall be installed on the engine.

FIRE TRUCK CAB

Meets specification? Yes ___ No ___

The apparatus shall be designed to operate in emergency conditions. These conditions require the apparatus to maneuver into areas at a high rate of speed. To facilitate in these operations a cab-over-engine design is required in order to increase the maneuverability. The cab design must be such to provide safe and efficient transport of emergency personnel. The cabin shall be designed with four (4) side doors of the largest size possible and with a grab handle and step arrangement to provide ease of entry and egress. There shall be four (4) positions available for occupant transport with a minimum of two (2) forward and two (2) rear facing seating positions in the cab. The apparatus cab shall be of the latest in automotive design, styling and appearance.

CAB STRUCTURAL WARRANTY

Meets specification? Yes ___ No ___

Purchaser shall receive a Cab Structure (Aluminum) Ten (10) Years or 100,000 Miles limited warranty. The warranty certificate is incorporated by reference into this proposal and included with this proposal or available upon request.

WARRANTY

Meets specification? Yes ___ No ___

Purchaser shall receive a Custom Chassis Two (2) Years or 36,000 Miles limited warranty in accordance with, and subject to, warranty certificate RFW0102. The warranty certificate is incorporated by reference into this proposal and included with this proposal or available upon request.

CAB UNDERCOAT

Meets specification? Yes ___ No ___

There shall be a rubberized undercoating applied to the underside of the cab that provides abrasion protection, sound deadening and corrosion protection.

ELECTROLYSIS CORROSION CONTROL

Meets specification? Yes ___ No ___

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

UNDER CAB INSULATION

Meets specification? Yes ___ No ___

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

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

The insulation shall be cut precisely to fit each section and sealed for additional heat and sound deflection. The insulation shall be held in place by acrylic pressure sensitive adhesive.

CAB DOORS

Meets specification? Yes ___ No ___

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The cab entry and egress shall be designed for a firefighter in full turnout gear. Each door shall open a minimum of ninety degrees to afford the firefighter maximum space. The doors shall be of a flush design each having stainless steel hinges. The hinge shall be made of 12-gauge material with a minimum hinge pin diameter of 1/4 inch. The door windows shall have interior and exterior glass weather seals to prevent the influx of exterior air. The doors shall have exterior and interior paddle type latches for ease of opening with a gloved hand. The paddle latches are to have a rubber gasket, on the outside, separating the handle from the finished painted surface.

REFLECTIVE STOP SIGNS

Meets specification? Yes ___ No ___

There shall be four-(4) "STOP" signs installed in the cab, one-(1) on the lower door panel of each cab door.

INTERIOR DOOR LOCKS

Meets specification? Yes ___ No ___

All doors shall have door locks with interior controls and exterior keyed door locks. The installation shall be in conformance with FMVSS 206, with specific adherence to 49 CFR 571.206 Section 4.1.3. All doors shall be keyed alike. The doors shall be equipped with appropriate safety interlocks to prevent accidental locking of the doors when closed.

DASH TRIM

Meets specification? Yes ___ No ___

The drivers cab dash console shall be made of black or grey ABS. Accompanying the dash console in the forward section of the cab shall be an officer's side flat dash for the mounting of a mobile data terminal.

CAB GLASS

Meets specification? Yes ___ No ___

AS-1 safety laminate glass shall be used in a two piece, wrap around design with a minimum 3760 square inches of windshield area for maximum visibility. The windshield shall have the style of a one-piece assembly with the practical installation of two pieces for lower replacement cost. The windshield shall be readily available from a nationally recognized automotive glass manufacturer that maintains local distribution outlets. The glass utilized for the windshield shall include standard automotive tint. All fixed glass shall be installed with a one-piece triple locked rubber lacing material.

GLASS TINT, SIDE GLASS

Meets specification? Yes ___ No ___

The windows located in the left and right sides of the apparatus shall include a dark gray automotive tint which shall allow forty-five percent (45%) light transmittance. The dark tint shall aid in cab cooling and help protect passengers from radiant solar energy.

SUN VISORS

Meets specification? Yes ___ No ___

The driver and officer side of the cab shall be equipped with a sun visor. The vinyl covered visors shall be a minimum of 17-1/2" by 9".

DRIVER SIDE ELECTRICAL CABINET

Meets specification? Yes ___ No ___

Beneath the driver's seat there shall be an electrical cabinet designed to house the main battery electrical disconnect and facilitate the installation of an onboard battery charger or battery conditioner. A bolt on limited access hatch shall be installed on the front side of the seat box. The access hatch shall have a louvered section to provide air circulation to the cabinet. This cabinet shall not be used for casual storage.

110 VOLT SHORELINE CONNECTION IN CAB

Meets specification? Yes ___ No ___

There shall be one (1) duplex 110-volt 20-amp shoreline connection(s) provided in the cab for charging accessory items.

WINDSHIELD WIPERS

Meets specification? Yes ___ No ___

Two speed electric pantograph wipers shall be installed. These wipers shall have minimum 24" blades and have 28 1/2" wet arm electric pump washers. A minimum 70 oz. windshield washer reservoir shall be furnished.

STEERING WHEEL AND COLUMN

Meets specification? Yes ___ No ___

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The steering column shall be a tilt / telescopic type with an integral high beam / turn signal control switch. The column shall have self-canceling design for the turn signal switch. A 4-way warning "Hazard" light switch shall be mounted on the column. A rubber boot shall be installed to cover the steering shaft from the dash to the floor. The steering wheel shall be a minimum of 18-inch diameter, covered with a padded finish.

FASTENERS

Meets specification? Yes ___ No ___

All cab exterior fasteners shall be stainless steel type fastened to the cab with nutserts.

CAB CORROSION TREATMENT

Meets specification? Yes ___ No ___

The cab shall have a corrosion preventative material conforming to Mil Spec C-16173-C, Grade 1, applied during and after construction. A 10-year warranty against perforation due to rust or corrosion shall be furnished for the cab.

EMI/RFI PROTECTION

Meets specification? Yes ___ No ___

The apparatus shall incorporate the latest designs in the electrical system with state-of-the-art components to insure that radiated and conducted electromagnetic interference (EMI) and radio frequency interference (RFI) emissions are suppressed at the source. The apparatus proposed shall have the ability to operate in the environment typically found in fire ground operations with no adverse effects from EMI/RFI.

BATTERY TRAY

Meets specification? Yes ___ No ___

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

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

BATTERY BANK

Meets specification? Yes ___ No ___

A single battery system shall be provided, utilizing at least four (4) high cycle type Group 31 batteries. This system shall be capable of engine start after sustaining a continuous 150-amp load for 10 minutes with the engine off (NFPA-1901).

A battery disconnect switch (Rated at not less than 450 amps continuous) shall be used to activate the system and provide power to the power panel. A green pilot light shall illuminate to indicate that the battery bank is activated.

BATTERY CABLES

Meets specification? Yes ___ No ___

All battery wiring shall be "GXL" 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.

STARTING CIRCUIT

Meets specification? Yes ___ No ___

One (1) engine start button is to be located on the dash panel. It shall be wired to heavy duty solenoid rated at not less than 1100 amps. The battery indicator light is to be located directly above the start button to indicate that the battery bank is on.

ON-BOARD ELECTRICAL AIR COMPRESSOR PUMP PLUS CHARGER

Meets specification? Yes ___ No ___

A KUSSMAUL AUTO AIR model 091-9-1200 air compressor with a 40-amp automatic battery charger or equivalent shall be supplied on the chassis.

KUSSMAUL AUTO DRAIN AC

Meets specification? Yes ___ No ___

A KUSSMAUL, AUTO DRAIN 091-9-86 moisture trap or equivalent shall be installed in the output pressure

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line of the auto pump. The Auto Drain shall drain the moisture from the trap each time the compressor shuts down.

SHORELINE AUTO-EJECT

Meets specification? Yes ___ No ___

A KUSSMAUL Super Auto Eject, model 091-55-20-120 or equivalent, with weatherproof cover shall be provided. The electrical connection shall be provided as a 120-volt AC - 20-amp type using a NEMA 5-20P connector.

The Auto Eject assembly shall be mounted on the exterior of the cab behind the driver's door.

BATTERY JUMPER STUDS

Meets specification? Yes ___ No ___

Battery jumper studs shall be provided on the chassis. The jumper studs shall be mounted so that they are readily accessible. The studs shall be connected to the chassis batteries with 1/0 color coded cables, red for the positive cable and black for the negative cable. The studs shall be protected with color coded plastic covers.

ACCESS FOR FLUID SERVICING

Meets specification? Yes ___ No ___

The engine enclosure shall have a hinged and latched panel(s) to provide access to the engine lubricating oil dipstick, power steering fluid reservoir dipstick and engine coolant recovery reservoir. This access shall allow that these fluid levels can be checked and topped off, if required, without raising the cab.

CAB DOORS - INTERIOR TRIM

Meets specification? Yes ___ No ___

To provided durability the interior of the cab doors shall be finished with full length aluminum panel that is finished with durable high abuse paint.

INTERIOR CEILING PADDING AND TRIM

Meets specification? Yes ___ No ___

The cab front interior ceiling shall have a removable durable headliner to cover all wiring and tubing used for lights and antenna leads.

REAR WALL COVERING

Meets specification? Yes ___ No ___

The rear interior wall of the cab shall have a durable removable wall covering to finish the interior trim, cover all wiring and tubing used for lights and antenna leads.

FLOOR COVERING

Meets specification? Yes ___ No ___

The front and rear floor areas of the cab shall be covered with sound barrier floor mats. This floor mat shall be a material designed to stand up to the abuse of the fire service in high use departments.

INTERIOR CAB STEP TRIM

Meets specification? Yes ___ No ___

The cab steps shall be completely enclosed behind each door. The top surface of the steps shall be covered with non-skid tread plate trim.

COMPARTMENT BENEATH OFFICER'S SEAT

Meets specification? Yes ___ No ___

Beneath the officer's seat there shall be a storage compartment with approximate interior dimensions of 19-1/2" wide x 17" long x 7" high.

CAB STEPS

Meets specification? Yes ___ No ___

The front cab steps shall have a durable anti-slip surface and be designed for safe easy access for a firefighter in full turnout gear.

INTERIOR CAB STEP TRIM

Meets specification? Yes ___ No ___

The cab steps shall be completely enclosed behind each door. No portion of the cab entrance step shall be exposed when the door is in the closed position. The lower step shall be sealed from the underside of the cab to eliminate road splash from entering the step area while the vehicle is driving. The horizontal step surfaces shall be covered with bright aluminum tread plate meeting the requirements of NFPA-1901.

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The vertical toe kick surface area of the cab step wells shall be covered with aluminum tread plate.

LIGHTS, STEP WELLS

Meets specification? Yes ___ No ___

Six-(6) LED lights shall be provided, two-(2) in each front cab step well and one-(1) in each rear cab step well. Each light shall activate when the cab door is opened.

COMPARTMENT OPEN LIGHT

Meets specification? Yes ___ No ___

A Red LED Open Compartment Flashing Light shall be mounted on the driver's side face of the overhead panel. This light is wired with a flasher to the power panel for completion to circuit on the body. The light circuit shall be wired so that the light circuit is deactivated when the parking brakes of the apparatus are applied. A label shall be applied adjacent to the light 'DOOR OPEN'.

LED RED DOME LIGHTS

Meets specification? Yes ___ No ___

Four (4) Weldon model 8047 LED, 7" diameter red LED interior dome lights or equivalent shall be provided. Each light shall be surface mounted and draw 0.85 amps at 12 volts. The lamp shall have field serviceable and upgradeable LED's and lenses and carry a 5-year warranty from the manufacturer.

Two (2) lights shall be installed in the front of the cab, one each adjacent to the driver and officer. Two (2) lights shall be installed one each side of the rear crew area and all red lights shall be operated by a single switch in the driver's switch panel.

INTERIOR CAB LIGHTING

Meets specification? Yes ___ No ___

Four (4) LED dome lights shall be supplied. One light shall be installed immediately above each door position. These lights shall be illuminated when any door is open or individually operated with a switch mounted on the light and the battery switch is in the on position.

HEATER / DEFROSTER

Meets specification? Yes ___ No ___

An adequately sized heater with a three-speed fan shall be mounted in the front of the cab. This heater shall have adjustable vents to assure proper windshield defogging.

AIR CONDITIONING

Meets specification? Yes ___ No ___

A climate control system shall be furnished in the cab. The system shall be sized to adequately cool the cab of the truck to industry standards. Any condensing units mounted to the cab roof shall have an aerodynamic shroud that is painted to match the color of the cab roof. There shall be an extended life filter receiver/dryer with a pressure relief valve installed to protect the system from contaminants, moisture, and high pressure. The evaporator shall have an externally equalized expansion valve and be thermostatically protected to prevent freeze up. Dual high performance 3-speed blowers shall provide a minimum of 700 CFM air flow. Each blower is to be controlled separately. The air conditioning on/off switch, thermostat control, and blower switches shall be located within easy reach of seat belted occupants. The air conditioning system shall use R134A Freon.

CAB INSULATION

Meets specification? Yes ___ No ___

HushMat insulation shall be installed on the rear wall, floor, engine tunnel, and the cab ceiling. The insulation shall act as a noise barrier, absorbing noise thus keeping the decibel level in the cab well within NFPA recommendations. As an additional benefit, the insulation shall assist in sustaining the desired temperature within the cab interior.

DRIVER INSTRUMENTATION AND CONTROLS

Meets specification? Yes ___ No ___

The cab dash panel shall have a textured anti-glare surface. The gauges shall have red back lighting for enhanced visibility. Upon an initial ignition sequence a lamp check function shall illuminate the warning light tell tales, the self-diagnostic message center shall sequence the warning light telltales if data link communications are lost. The instrument panel shall include the following gauges and indicators.

Electronic speedometer with LCD odometer
Electronic tachometer

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Engine coolant temperature gauge, with warning light and buzzer
Engine oil pressure gauge, with warning light and buzzer
Transmission fluid temperature gauge, with warning light and buzzer
Two air pressure gauges, with warning light and buzzer
Voltmeter, with low voltage warning light and buzzer
Fuel level gauge
DEF fluid gauge
Air cleaner restriction light
High beam indicator light
Parking brake set light
Turn signal indicator lights

The lighting control panel shall have an anti-glare surface and shall include the following:

Headlight control switch
Dash rheostat for instrumentation lighting control
Wiper and washer control switches

The engine control panel shall have an anti-glare surface and shall include the following:

Keyless ignition switch with a green pilot light
The apparatus control panel shall have an anti-glare surface.
The apparatus control panel is designed for the location of pump shift controls.

AUDIBLE TURN SIGNAL REMINDER Meets specification? Yes ___ No ___

There shall be an audible alarm that shall sound when the turn signal remains flashing for a distance greater than one mile. The reminder shall not sound when the hazard lights are operating.

AUDIBLE PARKING BRAKE REMINDER Meets specification? Yes ___ No ___

There shall be an audible alarm that shall sound when the parking brakes are NOT set, and the ignition is turned off. This alarm shall self-cancel after 2 minutes. The Parking Brake reminder shall sound an audible alarm when the parking brakes are set and an indicated speed of over two miles per hour occurs.

TRIP ODOMETER Meets specification? Yes ___ No ___

There shall be a trip odometer in the driver's information center.

SPEEDOMETER ACTIVATED IN PUMP MODE Meets specification? Yes ___ No ___

The speedometer and odometer shall be activated while in pumping mode.

PUMP HOUR METER Meets specification? Yes ___ No ___

There shall be an hour meter installed which is activated while in pumping mode.

LOW FUEL LIGHT Meets specification? Yes ___ No ___

A "Low Fuel" warning light and alarm shall be installed in the dash message center. This light shall illuminate when the apparatus fuel level reaches 25% of the fuel remaining.

TRANSMISSION OVERHEAT WARNING LIGHT Meets specification? Yes ___ No ___

A transmission oil temperature light with alarm shall be provided on the dash message center.

LOW VOLTAGE WARNING Meets specification? Yes ___ No ___

A low voltage indicator light shall be installed on the dash message center. An alarm and the dash indicator light shall activate when the system voltage drops below 11.8 volts.

LOW COOLANT WARNING Meets specification? Yes ___ No ___

Low coolant warning shall be accomplished through the engine electronics to provide driver warning via the engine stop warning light.

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INTERMITTENT WIPER CONTROL

Meets specification? Yes ___ No ___

A rotary combination intermittent electric wiper / washer switch shall be installed.

DRIVERS SIDE SWITCH PANEL

Meets specification? Yes ___ No ___

The apparatus warning light panel shall be mounted within easy reach of the driver from the seated position. The panel shall have an anti-glare surface and be angled for easy viewing of the driver. The panel shall include the following switches:

One (1) lighted master control switch to allow for pre-selection of the other switches.

Lighted individual lighting control and chassis option switches.

Each switch shall have back-lit legends with a 100,000-hour lamp for illumination.

PARKING BRAKE CONTROL VALVE

Meets specification? Yes ___ No ___

The parking brake control valve shall be located within the driver's reach when seated.

ACCESSORY POWER

Meets specification? Yes ___ No ___

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. One (1) power stud shall be capable of carrying up to a 15-amp ignition switched load. The two (2) power studs shall share one (1) #10 ground stud. A 200-amp master switched, and fused power and ground stud shall be provided and installed on the chassis near the left-hand battery box for OEM body connections.

AUXILIARY ACCESSORY POWER

Meets specification? Yes ___ No ___

An auxiliary set of power and ground studs shall be provided and installed behind the electrical center cover with a 60-amp breaker. The studs shall be 0.38-inch diameter and capable of carrying up to a 60-amp load switched with the master power switch.

ADDITIONAL ACCESSORY POWER

Meets specification? Yes ___ No ___

An additional six (6) position Blue Sea Systems 5025 blade type fuse panel shall be installed on the side wall of the engine tunnel behind the officer's seat. The fuse panel shall be protected by a 40-amp fuse. The panel shall be capable of carrying up to a maximum 40-amp battery direct load.

EDS MODULE

Meets specification? Yes ___ No ___

The EDS system shall be designed with locally available plug-in circuit breakers and plug-in relays. Each component position shall be labeled to indicate its function. All electrical connections shall be insulated and secured behind the panel face to eliminate the chance of accidental electrical shorts while performing electrical system service. The EDS shall control a minimum of thirteen (13) low voltage, analog switched, high amperage electrical loads. Provision for a minimum of thirty-one (31) automatic reset circuit breakers is required to protect the vital circuits of the apparatus. The EDS system shall be removable with only four (4) fasteners for major electrical service or modifications. The EDS panel shall have one (1) lamp for illumination of the panel during service.

CHASSIS COLOR CODED WIRING

Meets specification? Yes ___ No ___

All chassis wiring shall be type "GXL" in accordance with S.A.E. J1128 and NFPA-1901. ALL wiring shall be COLOR CODED and continuously marked with the circuit number and function. All wiring to be covered in nylon heat resistant "HTZL" loom rated at a minimum of 300 degrees F exceeding the heat requirements of NFPA-1901.

A battery "loop back" ground circuit shall be supplied for the EDS system to reduce the possible effects of Electromagnetic and Radio Frequency Interference. The chassis cab, engine and transmission shall be

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electrically bonded to the chassis frame rails with braided ground straps.

ELECTRICAL SYSTEM CONNECTORS

Meets specification? Yes ___ No ___

All multiple conductor electrical connections shall be water-tight and locking. All single wire terminations requiring special connectors with a ring or spade terminal shall be crimped and wrapped with heat shrink tubing.

12 VDC POWER POINT

Meets specification? Yes ___ No ___

Two (2) - 12 volt, sockets (cigarette lighter type), receptacle shall be provided with a protective hinged cover.

The power points shall be wired directly to battery power with the appropriate wire size and fuse.

The power point sockets shall be provided within reach of the officer.

CHARGING PORT(S), 12-VOLT DUAL USB

Meets specification? Yes ___ No ___

There shall be one (1) Kussmaul model 019-219-4, 12-volt USB dual charging port(s) provided in the cab. The charging port(s) shall be equipped with two-(2) 2.1-amp connections with built in LED indicator that indicates when the device(s) are powered.

The charging port(s) shall be wired to direct battery power with the appropriate wire size and fuse.

The charging port(s) shall be located in the emergency switch panel or another location to be determined by the Fire Department.

ELECTRONIC SIREN

Meets specification? Yes ___ No ___

A Whelen 295HFSA7 electronic siren control head with remote dual amplifier shall be provided and flush mounted in the switch panel with a location specific to the customer's needs. The siren shall feature 200-watt output, radio broadcast, public address, wail, yelp, or piercer tones and hands-free operation which shall allow the operator to turn the siren on and off from the horn ring. The siren control shall be mounted on top of the engine doghouse within reach of the driver and officer.

STEERING WHEEL HORN SELECTOR SWITCH

Meets specification? Yes ___ No ___

A switch shall be provided to allow control of either the electric horn or the air horn from the steering wheel horn button. The electric horn shall sound by default when the selector switch is in either position to meet FMCSA requirements.

MECHANICAL SIREN BRAKE

Meets specification? Yes ___ No ___

A red momentary siren brake rocker switch shall be provided in the switch panel on the dash.

MECHANICAL SIREN INTERLOCK

Meets specification? Yes ___ No ___

The siren shall only be active when master warning switch is on to prevent accidental engagement.

RADIO ANTENNA MOUNT AND WIRING

Meets specification? Yes ___ No ___

There shall be one (1) standard antenna-mounting base, model MNO, with 17 feet of coax cable and weatherproof cap provided for a two (2)-way radio installation. The mount(s) shall be located on the cab roof, just to the rear of the light bar.

The un-terminated coax is to be routed in the cab to the radio power circuit termination location.

RADIO POWER CIRCUIT

Meets specification? Yes ___ No ___

A 50-amp switched battery power circuit with manual reset shall be installed centered in the dash to activate the radio.

MOBILE RADIO

Meets specification? Yes ___ No ___

Customer-supplied mobile radio system shall be installed.

INTERCOM SYSTEM

Meets specification? Yes ___ No ___

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A Firecom wireless intercom system with radio interface shall be installed. Integrated headsets shall be provided for each seated position. An external antenna shall be installed to extend coverage range.

CAMERA SYSTEM

Meets specification? Yes ___ No ___

Customer supplied Getac Camera System with DVR, external antenna, and Cradle Point shall be installed. Cameras (4) shall be forward facing interior, rearward facing, and side facing.

CAB CRASHWORTHINESS TEST

Meets specification? Yes ___ No ___

Dynamic tests shall be performed to evaluate the crashworthiness of the proposed vehicle cab configuration to the requirements of NFPA 1901-09 section 14.3.2. Cab roof strength shall be tested utilizing the dynamic preload criteria from SAE J24221 paragraph 5 specifications and procedures. Front impact strength integrity shall be tested utilizing SAE J24202 with ECE R293 Annex 3 paragraph 4 equivalent energy. Quasi-static roof strength shall be based on SAE J2422 paragraph 6 and ECE R293, paragraph 5 specifications and procedures.

A letter of certification shall be provided.

EXTERIOR GRAB HANDLES

Meets specification? Yes ___ No ___

The cab shall have a bright anodized extruded aluminum 24" grab handles at each door position. The aluminum shall be bright anodized for long service. Molded rubber gaskets shall be installed under the grab handles to protect the painted surface of the cab.

FRONT GRILLE

Meets specification? Yes ___ No ___

A bright polished stainless steel front grille shall be installed on the front cab face. The front grille shall have a radiator rock guard to assist in preventing damage to the radiator core.

CAB GROUND LIGHTING

Meets specification? Yes ___ No ___

One (1) light shall be mounted beneath each door. These lights shall be designed to provide illumination on areas under the driver and crew riding area exits. All cab ground lights shall automatically activate when any cab exit door is opened.

MIRRORS, HEATED REMOTE

Meets specification? Yes ___ No ___

The mirrors shall be mounted one (1) on each the driver and officer doors of the cab.

The mirrors shall feature an upper heated remote controlled flat glass and a lower heated remote controlled convex glass. The mirror control switches shall be located within easy reach of the driver. The mirrors shall be manufactured using the finest quality non-glare glass and shall feature a rigid mounting thereby reducing vibration. The mirrors shall be corrosion free under all weather conditions.

UNDER CAB ENGINE MAINTENANCE LIGHTS

Meets specification? Yes ___ No ___

Two (2) engine maintenance lights shall be supplied beneath the cab. These lights shall be LED lamps and illuminate automatically when the cab is tilted to the full tilt position.

WHEEL WELL LINERS

Meets specification? Yes ___ No ___

To reduce road splash and allow for easy cleaning, bolt in front wheel well liners are to be installed. Stainless steel material is to be used for the liner for ease of cleaning and eliminate corrosive action created by road debris. The wheel well liners are to be a minimum of 22 inches in width.

STAINLESS CAB FENDERETTES

Meets specification? Yes ___ No ___

To reduce road splash on the cab sides, polished stainless steel fenderettes shall be installed around each the wheel opening.

EXTERIOR REAR WALL DIAMOND PLATE OVERLAY

Meets specification? Yes ___ No ___

The cab exterior rear wall shall be covered with a single sheet of bright aluminum tread plate to protect the

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back of the cab from scratches.

CAB TILT SYSTEM

Meets specification? Yes ___ No ___

The cab shall tilt a minimum of 45 degrees for ease of serving. Tilting shall be accomplished by means of a tilt pump connected to two (2) heavy duty lift cylinders. The cylinders shall have a mechanism to prevent the cab from falling in the event of a hydraulic hose failure. It shall be equipped with a positive locking mechanism (service lock) to hold the cab in the full tilt position. The cab shall be capable of tilting 90 degrees for major engine service, if necessary. The 90-degree cab tilt shall be accomplished by removing the cab cylinder pins, removing one bolt in the steering shaft, and removing the front bumper and tread plate.

The cab shall have a three (3) point cab locking system. To prevent undue stresses in the cab, the cab mounting shall incorporate a five (5) point load mounting system.

The rear cab lock shall be center point mounted to prevent normal twist of the chassis from affecting the cab mounting, cab structure and windshield areas of the cab. This rear cab lock shall be mounted on a chassis cross member to provide a stable platform for the locking system. The cab lock shall be mounted to a base plate that is fastened to rubber isolators to reduce road noise and provide additional movement of the cab lock. This locking system shall automatically open prior to the cab tilting and automatically re-latch when the cab is lowered completely into the travel position.

Two (2) outboard frame mounted urethane "V" blocks shall be provided at the rear of the cab. These dual-purpose mounts shall align the cab upon lowering as well as provide non-latching support for the cab in the down position. An electric-over-hydraulic cab tilt pump shall be supplied. This pump shall have a remote control for cab tilting operation. The control shall be "safety-yellow" in color. A manual backup shall be provided for use in the event of electrical failure.

CAB TILT INTERLOCK

Meets specification? Yes ___ No ___

The cab lift system shall have a cab tilt interlock. The cab tilt shall not be able to be activated unless the master battery switch is in the on position with the parking brake set.

CAB TILT AUXILIARY PUMP

Meets specification? Yes ___ No ___

A manual cab tilt pump module shall be attached to the cab tilt pump housing.

CAB TILT LIMIT SWITCH

Meets specification? Yes ___ No ___

A cab tilt limit switch shall be installed. The switch will effectively limit the travel of the cab when being tilted. The limit adjustment of the switch shall be preset by the chassis manufacturer to prevent damage to the cab, or any bumper mounted option mounted in the cab tilt arc. Further adjustment to the limit by the apparatus manufacturer shall be available to accommodate additional equipment.

CAB TILT LOCK DOWN INDICATOR

Meets specification? Yes ___ No ___

The cab dash shall include a message which shall alert the driver when the cab is unlocked and ajar. The alert message shall cease to be displayed when the cab is in the fully lowered position and the hold down hooks are secured and locked to the cab mounts.

In addition to the alert message an audible alarm shall sound when the cab is unlocked and ajar with the parking brake released.

CHASSIS PAINT

Meets specification? Yes ___ No ___

The frame and running gear shall be painted gloss black enamel. The running gear shall consist of the axles, drivelines, air tanks, steering gear, frame mounted brackets, draglink(s), and fuel tank.

The air system piping and electrical harnesses shall not be installed in the frame at the time of the frame painting. This shall insure complete coverage of paint behind those areas, as well as to ensure that the air piping and wiring harnesses do not have paint applied to them, hindering troubleshooting.

INTERIOR FINISH

Meets specification? Yes ___ No ___

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The high wear interior portions of the cab shall be painted with spatter paint, gray in color.

INTERIOR REAR WALL COMPARTMENT

Meets specification? Yes ___ No ___

The cab shall include a compartment located in the center of the rear wall of the cab. This compartment shall measure 65.00 inches high X 37.00 inches wide X 20.00 inches deep. The compartment shall be accessible from the interior of the cab through an ROM Series IV roll up style door.

The compartment shall include three (3) aluminum shelves which shall be secured using Unistrut® channel on two (2) sides of the interior walls of the compartment. The shelves shall feature a 1.00-inch-tall lip around the edges.

INTERIOR REAR WALL COMPARTMENT INTERIOR FINISH

Meets specification? Yes ___ No ___

The interior of the interior rear wall compartment shall have a DA sanded finish.

INTERIOR REAR WALL COMPARTMENT LIGHTING

Meets specification? Yes ___ No ___

There shall be two (2) LED strip lights installed to illuminate the interior compartment at the rear wall inside the crew area of the cab.

UPPER CAB PAINT FINISH

Meets specification? Yes ___ No ___

The upper cab exterior shall have no mounted components prior to painting to assure full coverage of metal treatments.

The apparatus cab shall be painted with a durable high quality automotive paint. 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.

UPPER CAB PAINT COLOR/CODE

Meets specification? Yes ___ No ___

The upper cab paint code shall be white FLNA 41477.

PRIMARY/LOWER CAB PAINT FINISH

Meets specification? Yes ___ No ___

The primary/lower cab exterior shall have no mounted components prior to painting to assure full coverage of metal treatments.

The apparatus cab shall be painted with a durable high quality automotive paint. 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.

PRIMARY/LOWER CAB PAINT COLOR/CODE

Meets specification? Yes ___ No ___

The primary/lower cab paint code shall be red FLNA 31979.

CAB PAINT BREAK LINE STRIPE

Meets specification? Yes ___ No ___

A 1/4" wide black paint pin stripe shall be added to the cab, two tone paint scheme. This stripe shall be applied at the break line.

10 YEAR CAB PAINT LIMITED WARRANTY

Meets specification? Yes ___ No ___

The bidder, shall warrant only to the original purchaser and the first purchaser who places the motor vehicle in service that the painted cab (the "cab"), shall under normal use and with normal maintenance remain free from paint defects for a period of ten (10) years from the date that the motor vehicle was first placed in service. A painted cab shall be considered to have "paint defects" if it is found by the manufacturer to have

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any loss of gloss, color retention, cracking, blistering, bubbling, or flaking under normal use and with normal maintenance. The warranty shall provide for repair or replacement, at the manufacturer's option. The warranty covers repair or replacement, at the manufacturer's option. Repairs shall be made at the manufacturer's factory or an approved service facility, at the manufacturer's option. In the case of warranty claim, repair of all non-warranty blemishes shall be negotiated prior to the warranty refinish or repair.

Warranty Period - The warranty period shall begin upon delivery of the apparatus to the original user-purchaser.

SIMULATED GOLD STRIPE

Meets specification? Yes ___ No ___

A 1/2" wide simulated gold stripe in small engine turn with black shading shall be added to the cab, two tone paint scheme. This stripe shall be applied at the break line.

DRIVER'S SEATING POSITION

Meets specification? Yes ___ No ___

The driver's seat shall be a high-back seat with air ride suspension. The seat shall have 4-way adjustability by the driver in accordance with SAE J1517. The seat shall be equipped with an integrated 3-point seat belt with an automatic retractor. The belt shall be red in color to meet current NFPA requirements.

OFFICER'S SEATING POSITION

Meets specification? Yes ___ No ___

The officer's seat shall be a Bostrom Tanker 450 or equivalent SCBA non-suspension. Seat back shall include a spring-loaded flip-up headrest. The seat shall be equipped with 3-point shoulder harness with lap belt and an automatic retractor built into the seat assembly. The belt shall be red in color to meet current NFPA requirements.

There shall be a SecureAll auto lock SCBA holder provided with the seat. The SCBA holder shall have an integrated one-touch release handle located centered in the seat cushion. The SecureAll system meets NFPA 1901 standards and requirements of EN 1846-2.

CREW SEATS, INBOARD REAR-FACING

Meets specification? Yes ___ No ___

Two-(2) inboard, rear facing seats shall be installed in the crew area. The seats shall be Bostrom Tanker 450 or equivalent SCBA non-suspension seats. Seat backs shall include spring-loaded flip-up headrest.

The seat shall be equipped with a 3-point seat belt. The belts shall be red in color to meet current NFPA requirements.

There shall be a SecureAll auto lock SCBA holder provided with each seat. The SCBA holders shall have an integrated one-touch release handle located centered in the seat cushion. The SecureAll system meets NFPA 1901 standards and requirements of EN 1846-2.

SEAT FABRIC

Meets specification? Yes ___ No ___

The chassis seats shall have hard-wearing woven tweed cloth suitable for the demands of the fire service. The seats shall have this material in the following applicable areas.

- Seat Base Top
- Seat Base Sides
- Seat Back Support Face
- Seat Back Support Sides
- Seat Headrests

SEAT BELT WARNING LABELS

Meets specification? Yes ___ No ___

The cab shall be equipped with two (2) seat belt warning labels. These labels are to be in full view of the occupants in the seated position.

LOAD MANAGEMENT SYSTEM

Meets specification? Yes ___ No ___

The apparatus load management shall be performed by the included multiplex system. The multiplex system shall also feature the priority of sequences and shall shed electrical loads based on the priority list specifically programmed.

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MULTIPLEX WARRANTY

The multiplexed electrical system shall be warranted, under normal use and service, for a period of four years. One-year parts and labor and the remaining three years parts only.

DATA RECORDING SYSTEM

Meets specification? Yes ___ No ___

The chassis shall have a Weldon Vehicle Data Recorder (VDR) system installed. The system shall be designed to meet NFPA 1901 and shall be integrated with the Weldon Multiplex electrical system. The following information shall be recorded:

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

Each portion of the data shall be recorded at the specified intervals and stored for the specified length of time to meet NFPA 1901 guidelines and shall be retrievable by connecting a laptop computer to the VDR system. The laptop connection shall be a panel mounted female USB connection point, remotely mounted in the left side foot well.

ACCESSORY POWER

Meets specification? Yes ___ No ___

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. One (1) power stud shall be capable of carrying up to a 15-amp ignition switched load. The two (2) power studs shall share one (1) #10 ground stud. A 200-amp master switched, and fused power and ground stud shall be provided and installed on the chassis near the left-hand battery box for OEM body connections.

AUXILIARY ACCESSORY POWER

Meets specification? Yes ___ No ___

An auxiliary set of power and ground studs shall be provided and installed behind the electrical center cover with a 60-amp breaker. The studs shall be 0.38-inch diameter and capable of carrying up to a 60 amp load switched with the master power switch.

ADDITIONAL ACCESSORY POWER

Meets specification? Yes ___ No ___

An additional six (6) position blade-type fuse panel shall be installed on the side wall of the engine tunnel behind the officer's seat. The fuse panel shall be protected by a 40-amp fuse. The panel shall be capable of carrying up to a maximum 40-amp battery direct load.

EXTERIOR ELECTRICAL TERMINAL COATING

Meets specification? Yes ___ No ___

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

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ELECTRICAL SYSTEM WARRANTY

Meets specification? Yes ___ No ___

Purchaser shall receive an Electrical System Two (2) Years or 36,000 Miles limited warranty in accordance with, and subject to, warranty certificate RFW0202. The warranty certificate is incorporated by reference into this proposal and included with this proposal or available upon request.

SEAT BELT WARNING SYSTEM

Meets specification? Yes ___ No ___

A Weldon seat belt warning system, integrated with the Vehicle Data Recorder system, shall be installed for each seat within the cab. The system shall provide a visual warning indicator and audible alarm.

The warning system shall activate when any seat is occupied with a minimum of 60 pounds, the corresponding seat belt remains unfastened, and the park brake is released. The warning system shall also activate when any seat is occupied, the corresponding seat belt was fastened in an incorrect sequence, and the park brake is released. Once activated, the visual indicators and applicable audible alarm shall remain active until all occupied seats have the seat belts fastened.

CAB ICC MARKER LIGHTING

Meets specification? Yes ___ No ___

In accordance with FMVSS, there shall be five (5) marker lamps on the front of the vehicle designating identification and clearance. There shall be five (5) face mounted lights integrated into the scene light.

HEADLIGHTS

Meets specification? Yes ___ No ___

Four (4) rectangular FireTech LED headlights shall be supplied.

TURN SIGNALS

Meets specification? Yes ___ No ___

Two (2) rectangular Federal Signal, model QL64Z-TURN, or equivalent LED turn signal lamps shall be mounted in the upper headlight housing, in a chrome plated bezel. These lights shall be amber in color.

LOW LEVEL WARNING LIGHTS

Meets specification? Yes ___ No ___

Two (2) Whelen warning lights, C6 Series, red LED light heads or equivalent shall be mounted on the front of the chassis above the headlights, in a second headlight style module, located in the inner position on each side. The light heads shall include an internal flasher with programmable flash patterns, steady-burn, and Hi/Low power. The warning lights shall be programmed for Hi-power with the same flash pattern for both the right and left light heads.

BACK-UP ALARM

Meets specification? Yes ___ No ___

There shall be one-(1) electronic back-up alarm installed at the rear of the apparatus. The alarm shall be wired to automatically activate when the transmission is shifted into reverse.

CHASSIS OPERATOR'S MANUAL

Meets specification? Yes ___ No ___

Two Sets of Operator's Manuals w/Parts List - shall be provided with the chassis.

An electronic Electrical System Manual shall be provided. This manual shall provide complete wiring schematics for the vehicle. The manual shall be provided with diagrams of the vehicle showing the wiring harness routing within the vehicle. Each of these diagrams shall include the connectors between the harnesses that provide a hyperlink to a drawing of the actual connector where pin functions can be examined.

Schematics for each system of the vehicle shall be provided with hyperlinks to the connectors for pin designations and to the vehicle drawings for harness location within the vehicle.

An electronic Air System Manual shall be provided. This manual shall provide complete air system schematics for the vehicle. The manual shall be provided with diagrams of the vehicle showing the air tubing routing within the vehicle.

Schematics for each system of the vehicle shall be provided with hyperlinks to the tanks and valves and to the vehicle drawings for exact location within the vehicle.

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MANUALS AND DOCUMENTATION ON CD/USB Meets specification? Yes ___ No ___

The following manual guides and parts information CD or USB shall be required with the delivery of the apparatus.

Two-(2) sets of the following shall be supplied:

- Operator Manual
- Parts List
- Electrical Wiring Diagrams
- Electrical Troubleshooting Guide
- Air System Diagram
- Hydraulic System Diagram

CARRYING CAPACITY PLATE Meets specification? Yes ___ No ___

There shall be a permanently attached plate mounted in plain view of the driver in accordance with NFPA 1901 Standards. The tag shall include the following:

- Overall height
- Overall length
- GVWR
- Seating capacity

SEATING CAPACITY PLATE Meets specification? Yes ___ No ___

There shall be a permanently attached plate mounted in plain view in the cab. The plate shall read "Seating Capacity - 4 People".

OCCUPANCY/SEAT BELT PLATE Meets specification? Yes ___ No ___

There shall be provided and installed plate(s), which read, "Occupants must be seated and belted when the apparatus is in motion". This plate(s) shall be visible from each seated position.

LABEL "DO NOT WEAR HELMET" Meets specification? Yes ___ No ___

A label stating "DO NOT WEAR HELMET WHILE SEATED" shall be installed in the visible from each seating position.

OVERALL HEIGHT/LENGTH/WEIGHT PLATE Meets specification? Yes ___ No ___

An overall height, length and weight plate shall be mounted in the driving compartment and clearly identified and visible to the driver while in the seated position. The plate shall show the completed apparatus overall height, length, (in feet and inches) and gross vehicle weight (in tons) current to the apparatus manufactured date.

FLUID CAPACITY PLATE

A permanently affixed fluid date plate shall be installed in the driving compartment to indicate the type and quantities of the following fluid used in the vehicle.

A.	Engine Oil
B.	Engine Coolant
C.	Chassis Transmission Fluid
D.	Pump Transmission Lubrication Fluid (if applicable)
E.	Pump Primer Fluid (if applicable)
F.	Drive Axle(s) Lubrication Fluid
G.	Air Conditioning Refrigerant
H.	Air Conditioning Lubrication Oil
I.	Power Steering Fluid

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J.	Cab Tilt Mechanism Fluid
K.	Transfer Case Fluid
L.	Equipment Rack Fluid
M.	Air Compressor System Lubricant
N.	Generator System Lubricant
O.	Front Tire Pressure - Cold
P.	Rear Tire Pressure - Cold

The following information shall also be supplied on the Fluid Data Plate:

A.	Chassis Manufacturer
B.	Production Number
C.	Paint Number
D.	Year Built
E.	Date Shipped
F.	Vehicle Identification Number

APPARATUS MOVEMENT WARNING PLATE **Meets specification? Yes ___ No ___**

A permanently affixed warning plate shall be installed near the door ajar light. The plate shall read:
"DO NOT MOVE APPARATUS WHEN LIGHT IS ON".

DO NOT RIDE PLATE **Meets specification? Yes ___ No ___**

A permanently affixed warning plate shall be installed stating "DO NOT RIDE". The plate shall be located on the apparatus at the rear step area, and at any cross walks if they exist.

PUMP SYSTEM – 1500 GPM SINGLE STAGE (HALE OMAX PREFERRED)

PUMP ASSEMBLY **Meets specification? Yes ___ No ___**

The fire pump shall be a Hale Fire Pump Company Q-MAX-XS that complies with all applicable requirements of the latest edition of the "Standard for Automotive Fire Apparatus" published by the National Fire Protection Association and printed in Pamphlet 1901.

PUMP WARRANTY **Meets specification? Yes ___ No ___**

The pump shall be covered by the Hale Pro-Tech 5-year pump warranty against workmanship and materials. Both parts and labor shall be covered for the first 2 years and years 3-5 shall have parts only coverage.

UNDERWRITER'S LABORATORY CERTIFICATION **Meets specification? Yes ___ No ___**

The completed apparatus shall be tested and approved by the independent testing company Underwriter's Laboratories, Inc. The manufacturer of the apparatus shall be responsible for all costs involved in this test. The certification of inspection and approval shall be presented to the Fire Chief of the Department upon delivery of the completed apparatus.

PUMP PERFORMANCE - 1,500 U.S. GPM **Meets specification? Yes ___ No ___**

The pump shall be a single stage centrifugal with a class "A" rated capacity of 1,500 United States gallons per minute. The pump shall deliver the percentage of rated discharge pressures as indicated below:

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

PUMP CONSTRUCTION

Meets specification? Yes ___ No ___

The entire pump shall be manufactured and tested at the pump manufacturer's factory.

The pump shall be driven by a drive line from the truck transmission. The pump shall be free from objectionable pulsation and vibration under all normal operating conditions. The engine shall provide sufficient horsepower and revolutions per minute to allow the pump to meet or exceed its rated performance.

The entire pump including both suction and discharge passages, shall be hydrostatically tested to a pressure of 500 psi. The pump shall be fully tested at the pump manufacturer's factory to the performance spots as outlined by NFPA 1901.

The pump body and related parts shall be of fine grain alloy cast iron with a minimum tensile strength of 30,000 PSI. All moving parts in contact with water shall be of high-quality bronze or stainless steel. Pumps utilizing castings made of lower tensile strength cast iron are not acceptable.

The pump body shall be horizontally split on a single plane, in two (2) sections, for easy removal of entire impeller assembly including wear rings and bearings from beneath the pump without disturbing piping or the mounting of the pump on the chassis.

The pump shaft shall be rigidly supported by three (3) bearings for minimum deflection. The bearings shall be heavy-duty, deep groove style bearings in the gearbox, and they shall be splash lubricated.

The pump impeller shall be of hard, fine grain bronze with a mixed flow design; accurately machined, hand ground, and individually balanced. The vanes of the impeller intake eyes shall be hand ground and polished to a sharp edge and shall be of sufficient size and design to provide ample reserve capacity utilizing minimum horsepower.

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

GEAR BOX

Meets specification? Yes ___ No ___

The gear box shall be completely manufactured and tested at the pump manufacturer's factory.

The pump gearbox shall be of sufficient size to withstand up to 16,000 lbs. ft. of torque of the engine in both road and pump operating conditions. The gearbox shall be designed of ample capacity for lubrication reserve and to maintain the proper operating temperature.

The gearbox drive shafts shall be of heat-treated chrome nickel steel and shall be a minimum of 2.75 inches in diameter, on both the input and the output drives shafts. The gearbox shall withstand the full torque of the engine in both road and pump operating conditions.

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All gears, both drive and pump, shall be of highest quality electric furnace chrome nickel steel. Bores shall be ground to size and the gear teeth shall be crown shaven, and hardened for smooth, quiet running, and a higher load carrying capability. An accurately cut spur design shall be provided to eliminate all possible end thrust.

The pump gear ratio shall be selected by the apparatus manufacturer to give the maximum performance with the engine and transmission selected.

NFPA 2016 INTERLOCK MODULE

Meets specification? Yes ___ No ___

An interlock module shall be provided on the pump shift to comply with NFPA shift safety requirements.

GEARCASE COOLING LINE

Meets specification? Yes ___ No ___

A cooling line shall be provided in the pump gear case. A line shall be routed from the discharge side of the pump to the gear case, through the gear case then back into the intake side of the pump.

MECHANICAL SEAL

Meets specification? Yes ___ No ___

The pump shaft shall be equipped with a single mechanical-type seal on the suction (inboard) side of the pump. The mechanical seal shall be a minimum of two inches in diameter and shall be spring loaded, maintenance free and self-adjusting. The mechanical seal shall be constructed of a carbon sealing ring, stainless steel coil spring, Viton rubber cup, and a tungsten carbide seat with Teflon backup seal.

SACRIFICIAL PUMP ANODES - (3)

Meets specification? Yes ___ No ___

To aid in protecting the pump from internal corrosion, three sacrificial anodes shall be provided and located one in the lower section of each side inlet and one on the discharge side of the pump.

FRC PUMP BOSS PRESSURE GOVERNOR SYSTEM

Meets specification? Yes ___ No ___

Fire Research Pump Boss pressure governor and monitoring display kit shall be installed. The kit shall include a control module, pressure sensor, and cables.

The following continuous displays shall be provided:

- Check engine/stop engine warning lights
- Engine rpm shown with four daylight bright LED digits more than 1/2" high
- Engine oil pressure; shown on an LED bar graph display in 10 psi increments
- Engine temperature shown on an LED bar graph display in 10-degree increments
- Battery voltage shown on an LED bar graph display in 0.5-volt increments
- PSI / RPM setting; shown on a dot matrix message display
- PSI and RPM mode LEDs
- Throttle ready LED.

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

The program shall store the accumulated operating hours for the pump and engine, previous incident hours,

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and current incident hours in a non-volatile memory. Stored elapsed hours shall be displayed at the push of a button. It shall monitor inputs and support audible and visual warning alarms for the following conditions:

- High Engine RPM
- Pump Overheat
- High Transmission Temperature
- Low Battery Voltage (Engine Off)
- Low Battery Voltage (Engine Running)
- High Battery Voltage
- Low Engine Oil Pressure
- High Engine Coolant Temperature

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

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

TFT A-18 INTAKE RELIEF VALVE

Meets specification? Yes ___ No ___

A TFT model A-18 intake relief/dump valve shall be provided on the intake side of the pump to relieve excess incoming pressure. The system shall be designed to automatically restore to a non-relieving position when excessive pressure is no longer present. The pressure adjustment range shall be from 50 psi to 200 psi. The relief system shall be adjustable with a common type of box end wrench.

The intake relief valve shall be pre-set to 125 psi.

PUMP SHIFT MECHANISM -AIR/ELECTRIC

Meets specification? Yes ___ No ___

The pump shall be shifted from road to pump by means of a cab mounted air over electric pump shift switch. The switch shall have a built-in positive locking mechanism to prevent accidental movement of the switch. The locking mechanism shall require the operator to manually lift up on the switch lever to disengage the lock.

The switch shall have three positions:

- Position 1 = road position
- Position 2 = neutral position
- Position 3 = pump position

A green indicator light shall be provided in the driving compartment and shall be energized when the pump shift has been completed. This light shall be labeled "PUMP ENGAGED".

When the apparatus is equipped with an automatic transmission, a green indicator light shall be provided in the driver's compartment. It shall be energized when both the pump shift has been completed and the chassis transmission is in pump gear. This light shall be labeled "OK TO PUMP".

MANUAL PUMP SHIFT OVERRIDE- REMOTE CABLE ACTUATION

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Meets specification? Yes ___ No ___

A manual pump shift override shall be provided on the apparatus. The shift shall be remote cable actuated. The remote cable shall have a "T" handle control which shall be positioned just inside the pump compartment on the driver's side. The control shall be easily accessed through the side panel hinged access door. The control shall be clearly labeled "MANUAL PUMP SHIFT".

TRIDENT PRIMING SYSTEM

Meets specification? Yes ___ No ___

A Trident air priming system shall be provided.

PUMP MOUNTING

Meets specification? Yes ___ No ___

There shall be extra heavy-duty pump mounting brackets furnished. These shall be bolted to the frame rails in such a position to align the pump so that the angular velocity of the driveline joints shall be the same on each end of the driveshaft. This shall assure full capacity performance with a minimum of vibration.

PAINT PLUMBING JOB COLOR

Meets specification? Yes ___ No ___

The pump and non stainless steel plumbing shall be painted red. To ensure complete coverage all air lines, high pressure hoses, and electrical harnesses shall not be installed until after the paint has cured.

FIRE PUMP MANUALS

Meets specification? Yes ___ No ___

There shall be two (2) copies of pump manuals provided to the department.

PUMP PANELS

Meets specification? Yes ___ No ___

The operator's controls and gauges shall be mounted on pump panels constructed of 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.

The operator's master gauge panel shall be vertically hinged with push style latch for access to gauges and auxiliary controls.

The operator's control panel shall be located below the master gauge panel. The following controls and instruments shall be installed as a group at the pump panel. The central midpoint or centerline of any valve control shall be no more than 72" vertically above the platform that is designed to serve as the operator's standing position. These instruments shall be placed to keep the pump operator as far as practical from all discharge and intake connections and in a location where they are readily visible and operationally functional while the operator remains stationary.

1. Master pump intake pressure-indicating device
2. Master pump discharge pressure-indicating device
3. Weatherproof tachometer
4. Pumping engine, coolant temperature indicator
5. Pumping engine, oil pressure indicator
6. Voltmeter
7. Pump pressure controls
8. Pumping engine throttle
9. Primer control
10. Water tank top pump valve control
11. Water tank fill valve control
12. Water-tank level indicator

All gauges and controls shall be properly identified with color-coded metal tags. The tags shall be permanently affixed. The gauges shall be functionally grouped above each control.

The right-side upper panel shall be vertically hinged with double doors and push style latches for pump compartment access.

The right-side lower panel shall be removable for serviceability.

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A safety sign FAMA25, which warns of the need for training prior to operating the apparatus, shall be located on the pump operator's panel.

FULLY HINGED PUMP PANEL, RIGHT SIDE Meets specification? Yes ___ No ___

One-(1) vertically hinged pump panel with push style latch(s) shall be installed for ease of access to the pump compartment during routine maintenance.

PUMP PANEL LIGHTING Meets specification? Yes ___ No ___

The left and right pump panels shall be illuminated by LED lights that are operated by an on/off switch mounted on the left side pump panel. For optimum visibility during nighttime operations, the lights shall be mounted as high as possible.

U.L. TEST POINTS Meets specification? Yes ___ No ___

An Underwriters Laboratories approved engine counter shall be located on the pump panel to provide a means to certify the tachometer. In addition, two-(2) U.L. test plugs shall be pump panel mounted for testing of vacuum and pressures.

U.L. CERTIFICATION (1500 GPM) Meets specification? Yes ___ No ___

The vehicle shall be third party tested and certified by Underwriters Laboratories, Inc.

The testing organization must meet the following minimum requirements:

- Must be nationally recognized testing laboratory recognized by OSHA
- Must comply with the ASTM (American Society for Testing Materials) standard E543 "Determining the qualifications for nondestructive testing agencies".
- Must have more than forty (40) years of Automotive Fire Apparatus safety testing experience and more than fifteen (15) years of factory fire pump testing and certification experience.
- Must not represent, be associated with, or in the manufacture or repair of automotive fire apparatus.
- Must provide proof of ten (10) million dollars in excess liability insurance for bodily injury and property damage combined.
- The pump shall meet and perform the following test to receive a U.L. 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

PUMP CERTIFICATION TEST PLATE Meets specification? Yes ___ No ___

A permanently affixed plate shall be installed at the pump operator's panel. It shall provide the rated discharge and pressures together with the speed of the engine as determined by the certification test for each unit. It shall also provide the no load governed speed of the engine as stated by the engine manufacturer on a certified brake horsepower curve.

A label shall be provided on the pump operator's panel that states the following:

Warning: Death or serious injury might occur if proper operating procedures are not followed. The pump operator as well as individuals connecting supply or discharge hoses to the apparatus must be familiar with water hydraulics hazards and component limitations.

6" STEAMER INLET Meets specification? Yes ___ No ___

One-(1) 6" steamer inlet shall be provided on the left side of the pump. The inlet shall be complete with long handle chrome cap and 6" screen.

SHORTEN SUCTION TUBES – LEFT AND RIGHT SIDES

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Meets specification? Yes ___ No ___

The left and right-side master suction tubes shall be shortened for use with externally installed hose appliances keeping the overall apparatus width to a minimum.

6" STEAMER INLET

Meets specification? Yes ___ No ___

One-(1) 6" steamer inlet shall be provided on the right side of the pump. The inlet shall be complete with long handle chrome cap and 6" screen.

FRONT BUMPER SUCTION PROVISION

Meets specification? Yes ___ No ___

The bumper apron shall include a 5.00-inch stainless steel pipe intended for use as a suction intake for the pump. The suction pipe shall be routed from the right-hand front bumper area to the area rear of the front axle near the back of the cab.

The front of the suction pipe shall be designed to extend vertically 2.00 inches above the top surface of the bumper in the right-hand outboard position.

The forward end of the suction pipe shall be finished with a 5.00-inch National Pipe Thread (NPT). The rear of the suction shall include a Victaulic groove for connecting to the pump plumbing. The suction pipe shall also include a 0.50-inch NPT port intended as a primer assist connection.

The apparatus manufacturer shall plumb the suction pipe to the pump and shall provide all valves as required.

FRONT INTAKE SWIVEL CONNECTION

Meets specification? Yes ___ No ___

A chrome plated front suction swivel elbow with 6" MNST thread shall be provided. The elbow shall have a vertical lock to prevent vacuum leaks due to side loads and shall have dual O-rings for a positive seal. The elbow, as well as the swivel bearings, shall be brass for increased durability. A built-in strainer shall also be included with the elbow.

FRONT MASTER INTAKE CAP

Meets specification? Yes ___ No ___

A 6" female NST long handle chrome cap shall be provided on the front master intake.

2-1/2" LEFT SIDE SUCTION

Meets specification? Yes ___ No ___

One (1) 2-1/2" Akron 8800HD brass valve with a 316 stainless steel ball and dual polymer seats shall be installed on the left side of the pump panel. The valve shall be of the fixed pivot design plumbed to the suction side of pump with 2-1/2" piping. The control handle shall be twist lock type, with the control located on the pump operator's panel. The valve shall come equipped with a chrome plug, chain, brass inlet strainer, a 2-1/2" NST chrome inlet swivel and a 3/4" bleeder/drain valve.

A warning plate shall be permanently affixed in a location in proximity to the suction inlet. The plate shall state:

"WARNING - SERIOUS INJURY OR DEATH COULD OCCUR IF INLET IS SUPPLIED BY A PRESSURIZED SOURCE WHEN THE VALVE IS CLOSED".

2-1/2" RIGHT SIDE SUCTION

Meets specification? Yes ___ No ___

One (1) 2-1/2" Akron 8800HD brass valve with a 316 stainless steel ball and dual polymer seats shall be installed on the left side of the pump panel. The valve shall be of the fixed pivot design plumbed to the suction side of pump with 2-1/2" piping. The control handle shall be twist lock type, with the control located on the pump operator's panel. The valve shall come equipped with a chrome plug, chain, brass inlet strainer, a 2-1/2" NST chrome inlet swivel and a 3/4" bleeder/drain valve.

A warning plate shall be permanently affixed in a location in proximity to the suction inlet. The plate shall state:

"WARNING - SERIOUS INJURY OR DEATH COULD OCCUR IF INLET IS SUPPLIED BY A PRESSURIZED SOURCE WHEN THE VALVE IS CLOSED".

DISCHARGE AND SUCTION VALVES

Meets specification? Yes ___ No ___

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There shall be Akron 8800HD series valves used on all discharges and suction inlets. A polished aluminum trim ring shall be provided around all inlets and discharges.

ICI MASTER PUMP DISCHARGE PRESSURE GAUGE

Meets specification? Yes ___ No ___

An ICI 4" diameter master pressure gauge shall be provided to indicate the main pump discharge pressure. The gauge shall read from 30" hg vacuum to 400 psi and shall be accurate within +/- 1%. The gauge shall be glycerin filled (-40F to +150F) and have a high impact resistant clear acrylic lens.

ICI MASTER PUMP INTAKE PRESSURE GAUGE

Meets specification? Yes ___ No ___

An ICI 4" diameter master pressure gauge shall be provided to indicate the pump intake pressure. The gauge shall read from 30" hg vacuum to 400 psi and shall be accurate within +/- 1%. The gauge shall be glycerin filled (-40F to +150F), read up to 400 psi, be accurate within +/- 1% and have a high impact resistant clear acrylic lens.

The master intake and discharge gauges shall have bright finish bezels.

The master gauge dials shall be white with black markings. The needle shall match the color of the markings.

The master intake gauge shall be clearly labeled "PUMP INTAKE" and shall be located to the left of the master discharge pressure gauge. The label shall be burgundy color.

The master discharge gauge shall be clearly labeled "PUMP DISCHARGE" and shall be located to the right of the intake pressure gauge. The label shall be black color.

The master intake/discharge pressure gauges shall have a lifetime non-yellowing and freeze warranty. The gauges shall also be warranted for 4 years for defects in materials and workmanship, including fluid leakage. The warranty will not cover labor costs and/or transportation costs.

STANDARD GAUGES

Meets specification? Yes ___ No ___

The discharges shall have a 2-1/2" white-faced, silicone filled pressure gauge installed on the operator's panel to indicate pressures from 0 to 600 Psi. All Suction and Pressure gauge bezels shall be standard finish.

PUMP PANEL AIR HORN BUTTON

Meets specification? Yes ___ No ___

A momentary push button shall be provided on the pump panel to activate air horns.

SUCTION & DISCHARGE PLUMBING

Meets specification? Yes ___ No ___

All suction and discharge lines shall be constructed of a minimum of Schedule 10 stainless steel. Where vibration or chassis flexing may damage or loosen piping, the pipe shall be equipped with Victaulic or roustabout couplings. The entire discharge and intake piping system, valves, drain cocks and lines, intake and outlet closures excluding the tank fill and tank to pump lines on the tank side of the valves shall be designed for 500 PSIG. All suction inlets and discharge outlets shall be equipped with National Standard Threads (NST) unless otherwise stated.

WARRANTY- TEN (10) YEAR STAINLESS STEEL PLUMBING

Meets specification? Yes ___ No ___

The apparatus manufacturer shall provide a full ten-(10) year stainless steel plumbing components warranty. The warranty covers all stainless steel manufactured plumbing components used in construction of the fire apparatus water/foam plumbing system against defects and workmanship, provided the apparatus is used in a normal and reasonable manner. The warranty is extended only to the original user-purchaser for a period of 10 years from the date of delivery. The warranty document shall be included in your bid package.

3" REAR TANK FILL INLET

Meets specification? Yes ___ No ___

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There shall be one-(1) 3" inlet run to the right rear of the tank. The pipe shall be 3" galvanized steel pipe. There shall be a 3" Akron Model 8830 Electric valve installed on the rear tank fill inlet. The valve shall come with a wiring harness, two (2) open/close switches and position indicator lights. The valve shall have the ability to be operated from the pump panel or from the rear of the apparatus near the intake.

TANK TO PUMP

Meets specification? Yes ___ No ___

The tank to pump valve shall be 3" inline, installed between the water tank and the pump. The valve shall be an Akron 8800HD brass valve with a 316 stainless steel ball and dual polymer seats and shall be a quarter turn ball type, fixed pivot design. The control shall be a lock type and installed on the pump operator's panel.

MASTER DRAIN

Meets specification? Yes ___ No ___

The master drain shall have the capacity to drain the pump. The drain shall be recessed below the side pump panel, with the control located under the side running boards that are properly labeled. The water discharged from the drain shall be routed to drain below the chassis frame rails.

RELIEF VALVE

Meets specification? Yes ___ No ___

There shall be an Elkhart model 40 or equivalent suction side relief valve provided on the pump system. The relief valve shall be plumbed with high-pressure rubber hose, stainless steel connections and terminate within view of the operator's panel.

ENGINE COOLER

Meets specification? Yes ___ No ___

The engine cooler shall be installed in-line from the discharge side of the pump and installed in the engine cooling system. There shall be a 1/2", quarter turn valve installed thru the pump panel and shall be clearly labeled.

PUMP COOLER

Meets specification? Yes ___ No ___

The pump shall have a 3/8" line installed from the pump discharge to the water tank to cool the pump during long periods of pumping when water is not being discharged. The pump cooler shall be controlled from the pump operators panel by a 3/8" valve consisting of a cast bronze body with 1/4 turn chrome plated bronze ball, reinforced Teflon seals, and blow-out-proof stem rated to 600 PSI.

The valve shall be installed thru the pump panel and clearly labeled.

PUMP SHIFT W/MANUAL OVERRIDE

Meets specification? Yes ___ No ___

An air operated pump shift shall be installed in the chassis cab to engage the fire pump. Provisions shall be made for placing the pump drive system in operation using controls and switches that are clearly identified and within convenient reach of the operator while in the cab. A green indicator light shall be installed on the cab dash and labeled "Pump Engaged." Where an automatic chassis transmission is provided, a green indicator light in the driving compartment and a green indicator light located at the pump operator's position shall be provided and shall be energized when both the pump shift has been completed and the chassis transmission is engaged in pump gear.

The light in the driving compartment shall be labeled "OK to pump". The light on the pump operator shall be positioned adjacent to and preferably above the throttle control and shall be labeled "Warning": DO NOT OPEN THROTTLE UNLESS LIGHT IS ON." The green light on the pump operator panel shall be energized when the pump is engaged, the transmission is in the drive position, and the parking brake is set.

A pump shift manual override installed on the lower left pump panel providing a method of engaging the pump in the event of a failure of the powered pump shift.

LOCK UP - EVS3000

Meets specification? Yes ___ No ___

An electronic lockup relay system shall be installed between the engine and transmission and the fire pump. The lockup shall place the transmission into the 1:1 gear automatically for pump operations.

TANK FILL

Meets specification? Yes ___ No ___

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There shall be a 2" pump to tank fill line installed, with a 2" inline bronze valve, a 2" high-pressure flexible hose tested to 1200 PSI. The valve shall be controlled from the top mount panel with a twist lock handle.

PUSH-PULL CONTROL VALVE PACKAGE

Meets specification? Yes ___ No ___

All discharge valves shall be Heavy-Duty Swing-Out push/pull controlled from the pump operator's panel unless otherwise specified.

The Swing-Out Heavy-Duty valves are designed for operating pressures to 250 psi (17 bars)

- 10-year warranty against manufacturer's defects
- Available in 1" to 4" sizes
- 90° handle travel 316 stainless steel ball with Hydromax technology
- Improved sealing & increased gating ability
- Flow optimization reduces turbulence while in the gated position and requires lower operating forces
- No lubrication or regular maintenance required
- Simple two seated design (no O-Rings to cut or lose during assembly or maintenance)
- Wide range of available adapters
- Designed and tested to exceed NFPA requirements

All valve packages shall meet current NFPA 1901 Standards for valve operating speeds when controlled by gear, electric actuator, or slow close device.

DISCHARGE ELBOWS

Meets specification? Yes ___ No ___

All 2-1/2" side discharge outlets shall terminate with chrome-plated 30-Degree elbows with 2-1/2" MNST threads, chrome vented cap and chain.

Caps shall automatically release pressure in the discharge outlet before the threads are completely disengaged unless the outlet and the cap are equipped with drains or bleeder valves.

FRONT BUMPER DISCHARGE

Meets specification? Yes ___ No ___

There shall be one-(1) front discharge installed up thru the treadplate apron behind the bumper on the passenger's side outboard of the frame rail.

The front bumper discharge shall terminate 2" NPT x 1-1/2" NST with a 90-degree swivel. 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.

A tread plate stop shall be provided preventing the front bumper discharge swivel from incidental contact with the cab.

(2) 2" CROSSLAY PRECONNECTS

Meets specification? Yes ___ No ___

Two-(2) pre-connected crosslay compartments shall be provided above the side mount operator's panel accommodating 250' of 2" double jacket hose. Stainless steel nylon guided rollers shall be installed at each end with stainless steel scuff plates around the perimeter to protect the painted surface. The 2" crosslay hose beds shall be designed to accommodate the fire hose in a double-stack configuration.

One-(1) 2" Akron 8800HD brass valve with a 316 stainless steel ball and dual polymer seats shall be installed on each crosslay. The valves shall be plumbed to the crosslay with 2" high-pressure flexible hose and stainless steel couplings. The high-pressure hose shall be tested to 1200 PSI. The crosslay valves shall be push-pull controlled at the pump operator's panel.

Each discharge is equipped with a 1/4 quarter-turn drain valve.

A safety sign FAMA22, which warns of the need to secure hose, shall be visible to personnel at the hose storage area.

CLASS B FOAM SYSTEM

Meets specification? Yes ___ No ___

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A Class B foam system shall be provided and properly installed on the apparatus.

The system shall be an electronic, fully automatic, variable speed direct injection discharge side foam proportioning system. The foam proportioning operation shall be based in direct measurement of water flows and pressures.

The system shall be equipped with a control module, suitable for installation on the pump panel. Incorporated within the motor driver shall be a microprocessor that receives input from the system flowmeter, while also monitoring foam concentrate pump output, comparing values to ensure that the operators preset proportional amount of foam concentrate is injected into the discharge side of the pump.

The control module shall enable the pump operator to:

- 1) activate the foam proportioning system and
- 2) select the foam proportioning rates from 1.0% to 6.0%.

A full flow check valve shall be provided in the discharge piping to prevent foam contamination in the fire pump and water tank. A 5-psi opening pressure check valve shall be provided in the concentrate line.

An installation and operation manual shall be provided for the system.

CLASS B "LOW FOAM IN TANK" INDICATOR Meets specification? Yes ___ No ___

There shall be a low tank level indicator provided and vertically mounted in the wall of the foam tank. The indicator shall provide "low foam concentrate" indication to the pump operator.

FOAM SYSTEM SCHEMATIC PLACARD Meets specification? Yes ___ No ___

There shall be a single tank foam system layout placard provided and located in close proximity to the pump operator's position as required by NFPA 1901.

FOAM SYSTEM RATING PLACARD Meets specification? Yes ___ No ___

There shall be a foam system rating placard provided in close proximity to the pump operator's position as required by NFPA 1901.

25 GALLON CLASS B FOAM TANK Meets specification? Yes ___ No ___

A 25-gallon Class B foam tank shall be provided. The tank shall have all connections necessary to connect to the foam system and shall also have a 1/4 turn drain valve with hose attached to allow the tank to be drained.

The tank shall have an 8" x 8" fill tower with hinged type lid with latch. A vent shall be provided in the lid.

A label shall be provided on the lid that reads "CLASS B FOAM TANK FILL" and "WARNING: DO NOT MIX BRANDS OR TYPES OF FOAM".

CLASS B FOAM TANK/BOOSTER TANK INTEGRATION Meets specification? Yes ___ No ___

The class B foam tank shall be integrated into the apparatus booster tank. The foam tank shall not be separate from the booster tank.

FOAM CAPABILITY Meets specification? Yes ___ No ___

The front bumper discharge shall be foam capable.

The #1 crosslay shall be foam capable.

The #2 crosslay shall be foam capable.

2 1/2" CROSSLAY PRECONNECT Meets specification? Yes ___ No ___

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One-(1) pre-connected crosslay compartment shall be provided above the side mount operator's panel accommodating 200' of 2 1/2" double jacket hose. Stainless steel nylon guided rollers shall be installed at each end with stainless steel scuff plates around the perimeter to protect the painted surface.

One-(1) 2" Akron 8800HD brass valve with a 316 stainless steel ball and dual polymer seats shall be installed. The valve shall be plumbed to the crosslay with 2 1/2" piping or high-pressure flexible hose and stainless steel couplings. The high-pressure hose shall be tested to 1200 PSI. The crosslay valve shall be push-pull controlled at the pump operator's panel.

Each discharge is equipped with a 1/4 quarter-turn drain valve.

A safety sign FAMA22, which warns of the need to secure hose, shall be visible to personnel at the hose storage area.

CROSSLAY DIVIDERS

Meets specification? Yes ___ No ___

Two (2) crosslay dividers shall be provided manufactured from 1/4" (.250") smooth aluminum plate, extruded aluminum base mounted in an extruded track for horizontal adjustment, with radius corners, and DA sanded to prevent damage to the hose.

CROSSLAY COVER

Meets specification? Yes ___ No ___

There shall be a Hypalon crosslay cover or heavy-duty webbing provided with the apparatus secured by twist-lock connectors along the top, and Velcro closures or snaps on each end protecting the crosslay hose. The cover prevents hose from inadvertently deploying during normal operations meeting the current NFPA requirements.

A safety sign FAMA22, which warns of the need to secure hose, shall be visible to personnel at the hose storage area.

PUMP COMPARTMENT STEP HOSE WELLS (2) - "FREE-FLOATING"

Meets specification? Yes ___ No ___

Hose wells shall be provided in the right and left-side pump compartment steps. The hose wells shall be of the "sunken" type below the running boards.

The hose wells shall be "free-floating" type with the front lower corners angled. A restraint device shall be provided that will prohibit the hose wells from complete separation with the apparatus.

The hose wells shall be constructed of 1/8" aluminum and have drainage on the corners.

SIDE SUCTION HOSE WELL CAPACITY

Meets specification? Yes ___ No ___

The right and left-side hose wells shall hold up to 25' of 5" hose each.

HOSE WELL RETENTION STRAPS (2)

Meets specification? Yes ___ No ___

Two heavy duty straps shall be provided to secure the hose in the right and left-side hose wells.

HOSE WELL FLOORING – BLACK

Meets specification? Yes ___ No ___

The floor of the hose wells shall be covered with black Turtle Tile.

DISCHARGE, 2 1/2" FRONT BUMPER

Meets specification? Yes ___ No ___

There shall be one (1) 2 1/2" discharge provided on the driver's side of the apparatus bumper. The valve shall be manually controlled on the pump panel. The front bumper 2 1/2" discharge shall be foam capable. The front bumper discharge shall have a 2 1/2" MNST thread connection.

FRONT DISCHARGE HOSE CONNECTION - CHROME SWIVEL

Meets specification? Yes ___ No ___

The hose connection for the discharge shall be located immediately adjacent to the hosewell. A chrome plated or polished stainless steel 90-degree elbow swivel shall be provided.

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FRONT BUMPER DISCHARGE HOSE CONNECTION - DRIVER'S SIDE

Meets specification? Yes ___ No ___

The hose connection for the front bumper discharge shall be on the driver's side.

DISCHARGE, 2-1/2" LEFT FRONT PANEL

Meets specification? Yes ___ No ___

One-(1) 2-1/2" Akron 8800HD brass valve with a 316 stainless steel ball and dual polymer seats with 3/4" drain shall be installed at the pump panel left front plumbed to the discharge side of the pump push/pull controlled from the pump operator's panel.

DISCHARGE, 2-1/2" LEFT REAR PANEL

Meets specification? Yes ___ No ___

One-(1) 2-1/2" Akron 8800HD brass valve with a 316 stainless steel ball and dual polymer seats with 3/4" drain shall be installed at the pump panel, left rear, plumbed to the discharge side of the pump push/pull controlled from the pump operator's panel.

DISCHARGE, 3" RIGHT FRONT PANEL

Meets specification? Yes ___ No ___

One-(1) 3" One-(1) 2-1/2" Akron 8800HD brass valve with a 316 stainless steel ball and dual polymer seats with 3/4" drain shall be installed at the pump panel, right front, plumbed to the discharge side of the pump equipped with 3" NST threads chrome cap and chain, slow close hand wheel controlled at the pump operator's panel.

DISCHARGE, 2-1/2" RIGHT REAR PANEL

Meets specification? Yes ___ No ___

One-(1) 2-1/2" Akron 8800HD brass valve with a 316 stainless steel ball and dual polymer seats with 3/4" drain shall be installed at the pump panel, right rear, plumbed to the discharge side of the pump push/pull controlled from the pump operator's panel.

DISCHARGE, 2-1/2" LEFT REAR APPARATUS

Meets specification? Yes ___ No ___

One-(1) 2-1/2" Akron 8800HD brass valve with a 316 stainless steel ball and dual polymer seats with 3/4" drain shall be plumbed to the left rear of the apparatus terminating with a 2-1/2" FNPT x 2-1/2" MNST chrome plated or polished stainless steel 30-degree turn-down elbow with chrome cap and chain push-pull controlled at the pump operator's panel.

WATER TANK

Meets specification? Yes ___ No ___

The tank shall have a capacity of 1000 U.S. gallons and shall be constructed of 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 1/2" to 1" as required. Internal baffles are generally 3/8" in thickness. All partitions and spacing shall comply with NFPA 1901.

ISO CERTIFICATION

Meets specification? Yes ___ No ___

The tank must be fabricated by a tank manufacturer that is ISO 9001:2008 certified in each of its locations. The ISO certification must be to the current standard in effect at the time of the design and fabrication of the tank.

DESIGN

Meets specification? Yes ___ No ___

Each tank is designed to the customer's specification and/or drawing submittal. An approval drawing is sent to the customer prior to commencing manufacturing. Upon receipt of the signed approval drawing, the tank is scheduled for production.

WATER FILL TOWER AND COVER

Meets specification? Yes ___ No ___

The tank shall have a combination vent and manual fill tower. The fill tower shall be constructed of 1/2" polypropylene and shall be a minimum dimension of 8" x 8" outer perimeter. The fill tower shall be blue in color indicating that it is a water-only fill tower. The tower shall be located in the left front corner of the tank unless otherwise specified by the tank manufacturer to the purchaser. The tower shall have a 1/4" thick

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removable polypropylene screen and a polypropylene hinged cover. The capacity of the tank shall be engraved on the top of the fill tower lid. Inside the fill tower there shall be a combination vent/overflow pipe.

The vent overflow shall be a minimum of schedule 40 polypropylene pipe with a minimum I.D. of 4" that is designed to run through the tank and shall be piped to discharge water behind the rear wheels as required in NFPA 1901 so as to not interfere with rear tire traction.

The tank cover shall be constructed of 1/2" thick polypropylene and UV stabilized, to incorporate a multi-piece locking design, which allows for individual removal and inspection if necessary.

SUMP

Meets specification? Yes ___ No ___

There shall be one (1) sump standard per tank. The sump shall be constructed of a minimum of 1/2" polypropylene and be located in the left front quarter of the tank, unless specified otherwise. On all tanks that require a front suction, a 3" schedule 40 polypropylene pipe shall be installed that shall incorporate a dip tube from the front of the tank to the sump location. The sump shall have a minimum 3" NPT threaded outlet on the bottom for a drain plug per NFPA. This shall be used as a combination clean-out and drain. All tanks shall have an anti-swirl plate located approximately 3" above the inside floor.

OUTLETS

Meets specification? Yes ___ No ___

There shall be two (2) standard tank outlets: one for the tank-to-pump suction line, which shall be sized to provide adequate water flow to the pump; and one for tank fill line, which shall be sized according to the NFPA minimum size chart for booster tanks. All tank fill couplings shall be backed with flow deflectors to break up the stream of water entering the tank and be capable of withstanding sustained fill rates of up to 1000 GPM. The addition of rear suction fittings, nurse valve fittings, dump valve fittings, and through-the-tank sleeves to accommodate rear discharge piping must be specified. All auxiliary outlets and inlets must meet all NFPA guidelines in effect at the time of manufacture.

MOUNTING

Meets specification? Yes ___ No ___

The polypropylene tank shall rest on the body cross members as specified by the tank manufacturer.

The tank shall be completely removable without disturbing or dismantling the apparatus structure.

CAPACITY CERTIFICATION

Meets specification? Yes ___ No ___

All water and foam tanks shall be tested and certified as to capacity on a calibrated and certified tilting scale. Each tank shall be weighed empty and full to provide precise fluid capacity. Engineering estimates for capacity calculations shall not be permitted for capacity certification.

WATER TANK SIZE CERTIFICATION

Meets specification? Yes ___ No ___

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

20 YEAR SUB-STRUCTURE WARRANTY

Meets specification? Yes ___ No ___

The tank cradle and body substructure shall have a 20-warranty covering failure due to corrosion perforation or structural design error.

This warranty shall be in effect for 20 years after delivery of the apparatus to the customer. **NO EXCEPTION.**

GAUGE, WATER LEVEL

Meets specification? Yes ___ No ___

A Fire Research TankVision Pro model WLA300-A00 or equivalent tank indicator kit shall be installed on the pump operator's panel. The kit shall include a waterproof electronic indicator module which shall show

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the volume of water in the tank with LEDs. A wide view lens over the LEDs shall provide for a viewing angle of 180 degrees.

The program features shall be accessed from the front of the indicator module. The program shall support self-diagnostic capabilities, self-calibration, 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 audio alarm.

GAUGE, AUXILIARY WATER LEVEL

Meets specification? Yes ___ No ___

There shall be a pair of Fire Research TankVision MAXVISION model WLA280-A00 or equivalent tank remote indicators shall be installed. The remote indicator shall receive input information from the primary indicator. 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.

The lights shall be mounted per customer requirements, typically one each side on or near the cab. The units shall activate with the application of the park brake.

TELESCOPING WATERWAY SYSTEM

Meets specification? Yes ___ No ___

A Task Force Tips model # XG18PL-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 use of a quick release latch. This latching device shall be capable of locking the waterway in either the raised or lowered position while maintaining the ability to horizontally rotate the monitor device 360 degrees.

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.

The aluminum riser shall have a 3" waterway; hardcoat anodized finish and be furnished with a 3" male NPT inlet and a 3" male NPT outlet. The unit shall be covered by a five-year warranty.

A 3" FNPT x four (4)-bolt flange shall be provided for the mounting of an Elkhart Stinger 2 Monitor. A 3" inline valve shall control the discharge. The valve shall be of the Slow-close design so as not to allow the valve to open or close in less than 3 seconds. The discharge control shall be a hand-wheel type located on the operator's panel. The discharge shall be equipped with a quarter-turn, 3/4" drain valve.

APPARATUS BODY

Meets specification? Yes ___ No ___

The apparatus body and sub frame shall be constructed entirely of marine grade aluminum plate and extrusions. A detailed description of the body, sub frame and compartment construction shall be provided.

COMPARTMENTS, LEFT SIDE

Meets specification? Yes ___ No ___

L1

There shall be one-(1) left front compartment installed ahead of the rear axle. This compartment shall have one-(1) side-hinged door. The compartment shall be approximately 44" wide x 68" high x 28" deep in the lower section and 15" deep in the upper section. The compartment shall have a useable door opening of approximately 41" wide x 68" high. A 4-drawer tool cabinet, custom constructed for the compartment, shall be installed with latching drawers to keep the drawers shut during transport.

L2

There shall be one-(1) compartment installed above the wheel well. This compartment shall have one-(1) top-hinged door. The compartment shall be approximately 58" wide x 36" high x 15" deep. The compartment shall have a useable door opening of approximately 55" wide x 36" high.

L3

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There shall be one-(1) left rear compartment installed behind the rear axle. This compartment shall have one-(1) side-hinged door. The compartment shall be approximately 49" wide x 68" high, transverse in the lower section, and 15" deep in the upper section. The compartment shall have a useable door opening of approximately 46" wide x 68" high.

CENTER REAR:

Meets specification? Yes ___ No ___

B1

There shall be one (1) compartment installed at the center rear of the apparatus. This compartment shall have two (2) vertically hinged doors. The compartment shall have a useable door opening of approximately 46"W x 28"H.

COMPARTMENTS, RIGHT SIDE

Meets specification? Yes ___ No ___

R1

There shall be one-(1) right front compartment installed ahead of the rear axle. This compartment shall have one-(1) side-hinged door. The compartment shall be approximately 44" wide x 68" high x 28" deep in the lower section and 15" deep in the upper section. The compartment shall have a useable door opening of approximately 41" wide x 68" high.

R2

There shall be one-(1) compartment installed above the wheel well. This compartment shall have one-(1) top-hinged door. The compartment shall be approximately 58" wide x 36" high x 15" deep. The compartment shall have a useable door opening of approximately 55" wide x 36" high.

R3

There shall be one-(1) right rear compartment installed behind the rear axle. This compartment shall have one-(1) side-hinged door. The compartment shall be approximately 49" wide x 68" high, transverse in the lower section, and 15" deep in the upper section. The compartment shall have a useable door opening of approximately 46" wide x 68" high.

SIDE COMPARTMENT DOORS CONSTRUCTION

Meets specification? Yes ___ No ___

The compartment doors shall be constructed of 3/16" smooth aluminum plate with the inner pans stitch welded in place from 1/8" smooth aluminum plate.

Exterior door latches shall incorporate a polished D-paddle handle with rotary style latch. The D-handle opening shall be large enough to accommodate a gloved hand. 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.

Absolutely no self-tapping screws or pop rivets shall be acceptable to mount the door mechanisms or slam latch assemblies.

CENTER REAR COMPARTMENT DOOR(S)

Meets specification? Yes ___ No ___

The rear compartment door(s) shall be constructed of 3/16" smooth aluminum plate with the inner pans stitch welded in place from 1/8" smooth aluminum plate.

Exterior door latches shall incorporate a polished D-paddle handle with rotary style latch. The D-handle opening shall be large enough to accommodate a gloved hand. 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

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bolts and locking nuts. The hinges shall be slotted to allow for adjustments.

Absolutely no self-tapping screws or pop rivets shall be acceptable to mount the door mechanisms or slam latch assemblies.

A single roll-up door shall be acceptable.

GROUND LADDER/PIKE POLE

Meets specification? Yes ___ No ___

The apparatus shall be equipped with a rear ladder access storage compartment. This storage area shall be completely enclosed and designed to protect the contents of the ladder compartment.

The rectangular ladder tunnel shall be constructed entirely from a high impact polypropylene material. The top and sidewalls shall be constructed from 3/4" material while the floor is constructed from 1" thick material. All four sides shall be internally seam welded to the water tank's structure.

The equipment storage compartment shall be constructed of 3/16" marine grade aluminum and designed to accommodate the NFPA required equipment. The compartment shall house one (1) 24' extension ladder, one (1) 14' roof ladder, one (1) 10' folding ladder and four (4) pike poles. The compartment shall be supported externally both fore and aft and shall not touch the water tank sleeve at any point. The complete assembly shall be easily removable in the event that service to the water tank becomes necessary.

Individual storage compartments constructed from the same high-grade material as the outer structure shall be supplied. All partitioned floor areas shall be overlaid with 1/4" PVC flat stock to facilitate the removal of each component.

Individual pike pole tubes shall be designed with a slot securing each pike pole in place.

A horizontally hinged, lift-up door, located at the rear of the apparatus shall be used to access the storage compartment. The outer skin shall be constructed of 3/16" smooth aluminum plate with the inner pan stitch welded in place from 1/8" smooth aluminum plate. There shall be 1/4" holes located in the lower corners of the inside door pans for moisture drainage. The door shall have a closed cell, neoprene rubber gasket installed around the perimeter of the door for the removal of excess water. The watertight door seal shall exceed the current KKK-1822 water infiltration standards.

The door shall have one (1) D-paddle handle with rotary latch mechanism, and pneumatic door stay device. The door striker shall be offset to improve the storing and removal of equipment. The door shall have a continuous stainless steel piano hinge bolted to the body and door with stainless steel hardware.

To ensure reliability and the ability to construct this type of storage system, the body manufacturer and the manufacturer of the water tank shall submit a rear-view line drawing and a list of fire apparatus with the ladder storage configuration in service.

SHELVES, ADJUSTABLE, Compartment R1

Meets specification? Yes ___ No ___

There shall be two (2) adjustable shelves constructed from 3/16" smooth aluminum. The adjustable track shall be made from aluminum extrusions. Each shelf shall have a 2" lip on all sides for additional strength.

SHELF, ADJUSTABLE, Compartments R2, R3

Meets specification? Yes ___ No ___

There shall be one (1) adjustable shelf constructed from 3/16" smooth aluminum. The adjustable track shall be made from aluminum extrusions. Each shelf shall have a 2" lip on all sides for additional strength.

SHELF, ADJUSTABLE, Compartments L1, L3

Meets specification? Yes ___ No ___

There shall be one (1) adjustable shelf constructed from 3/16" smooth aluminum. The adjustable track shall be made from aluminum extrusions. Each shelf shall have a 2" lip on all sides for additional strength.

ROLL OUT TRAYS, Compartments L3, R3, B1

Meets specification? Yes ___ No ___

There shall be one (1) roll out tray provided and installed in compartments L3, R3, and B1. The trays shall be constructed of aluminum. The trays shall have an upward bent lip on all four sides of the tray.

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Slidemaster or ROM 600 lb. total capacity heavy duty ball bearing type telescoping slides shall be provided. The trays shall be capable of 100% extension and sized to fit the width of the compartment doors to maximize useable space.

A positive latching mechanism shall be provided to hold the trays in either the fully open or fully closed position.

VERTICAL HINGED TOOL BOARD, Compartment L2

Meets specification? Yes ___ No ___

There shall be one (1) vertically hinged tool board(s) provided and installed in compartment L2. The tool board shall be 55" wide x 23 1/2" tall and be constructed of 3/16" smooth aluminum with a capacity of 75 lbs.

The tool board shall be mounted on adjustable mounts to allow the board to be adjusted in/out on the forward compartment wall. It shall hinge on a heavy-duty pivot point to minimize deflection when opened. A single point latch shall be used to minimize board space used by the latch.

A grab handle shall be provided.

TURTLE TILE

Meets specification? Yes ___ No ___

There shall be Turtle Tile or similar product installed on compartment floors. The Turtle Tile shall be completely removable for cleaning. The color of the tile shall be black.

ALUMINUM RUB RAIL

Meets specification? Yes ___ No ___

There shall be an aluminum rub rail installed on both sides of the lower body compartments. The rub rail shall be constructed from "C" channel extrusion. The aluminum rub rail shall be bolted in place with stainless steel bolts and spaced from the fire body to provide body protection. The solid rub rail shall serve as protection to the side doors when encountering close objects.

RUNNING BOARDS AND STEPS

Meets specification? Yes ___ No ___

All running board and step surfaces shall be in compliant with the current version of NFPA 1901.

SLOTTED RUNNING BOARDS

Meets specification? Yes ___ No ___

The running boards shall be constructed from an anodized aluminum extrusion. This extrusion shall be slotted punched and raised to provide superior traction during wet and cold weather operations.

Each running board shall bolt on with stainless steel nuts and bolts for removal and replacement. The running boards shall have a 1/4" space from the side of the body to allow runoff of water and debris.

SLOTTED REAR STEP

Meets specification? Yes ___ No ___

The 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 be a two-piece design. Each section of the rear step shall bolt on with stainless steel nuts and bolts for replacement. The rear step shall have a space of approximately 1/4" from the rear of the body to allow water runoff.

All running board and step surfaces shall comply with NFPA 1901.

WHEEL WELL SCBA AIR CYLINDER COMPARTMENTS - (8)

Meets specification? Yes ___ No ___

There shall be four (8) SCBA air cylinder compartments located in the rear wheel well areas. Four SCBA cylinder storage compartments in the left rear wheel well and four in the right rear wheel well. The compartments shall be fabricated from 1/8" smooth aluminum. The aluminum is rolled to form the air cylinder tubes and shall be supported at the opening by seam welding the tube to the wheel well. The bottom of the tube is also to be supported to eliminate breakage from vibration. The tubes are vented to facilitate moisture drainage. The compartment door shall be a cast aluminum door with a positive mechanical latch.

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The bottom of the compartment shall be lined with a material to protect the SCBA air cylinder finish.

FUEL FILL- RECESSED WITHOUT DOOR

Meets specification? Yes ___ No ___

There shall be a cast aluminum recessed fuel fill assembly mounted on the left side of the apparatus body. The fuel fill assembly shall be equipped with a fuel fill cap and retention ring. The assembly shall be properly labeled "DIESEL FUEL ONLY".

BODY TRIM

Meets specification? Yes ___ No ___

The standard body trim shall include the following:

- There shall be 1/8" aluminum tread plate installed over all side compartment tops to provide a drip rail over the compartment door openings.
- 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.
- The vertical rear face of the body shall be covered with smooth aluminum plate.
- Two (2) handrails shall be located on the rear of the apparatus, one-(1) handrail per side. Each handrail shall be constructed of 1-1/4" knurled aluminum. The handrails shall be mounted with chrome plated end stanchions. Each handrail shall be sufficient in length to meet all standard requirements.

HOSE BED COVER

Meets specification? Yes ___ No ___

A hose bed cover constructed of 16 oz. heavy-duty crisscrossed reinforced nylon shall be provided. The cover shall be fire retardant vinyl and installed over hose bed. The cover shall have chrome twist-locks installed around the perimeter of the hose bed. The end of the hose bed cover shall be secured and cover the hose bed opening. The cover shall completely protect the hose in the hose bed and prevent hose from inadvertently deploying during normal operation. The hypalon end flaps shall be secured at the bottom using Velcro and snaps. The covers shall completely protect the hose and prevent the hose from inadvertently deploying during normal operation. The cover shall meet the TIA 03-1 NFPA requirement. The hose bed cover shall be red in color.

HOSE BED DIVIDERS

Meets specification? Yes ___ No ___

Two (2) hose bed dividers shall be manufactured from 1/4" smooth aluminum plate with an extruded aluminum base welded to the bottom. The dividers shall have an extruded track to slide in to allow the hose bed to adjust for different hose capacities. One end of the divider shall have a 3" radius corner. The dividers shall be sanded to prevent damage to hose.

HOSE BED CAPACITY

Meets specification? Yes ___ No ___

The hose bed shall have the capacity to hold the following:

Quantity	Size of Hose	Brand Name of Hose	Location
1200'	5"	Angus	Center
400'	2.5"	MaTex	Left
600'	3"	MaTex	Right

HOSE BED BULKHEAD

Meets specification? Yes ___ No ___

A bulkhead divider shall be provided in the front area of the hose bed separating the hose bed from the tank fill tower(s).

LED HOSE BED LIGHT

Meets specification? Yes ___ No ___

One LED light shall be provided and mounted in the front of the hose bed.

The light shall be controlled by the pump panel light switch.

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REAR STEPS/ STEPS LIGHTED - (6)

Meets specification? Yes ___ No ___

There shall be six (6) rear lighted steps installed on the apparatus. The steps shall conform to the NFPA 1901 standards. The step(s) shall include a 12-volt LED light to illuminate the area below.

WHEEL CHOCKS W/BRACKETS

Meets specification? Yes ___ No ___

One set of wheel chocks with mounting brackets shall be installed on the underside of the apparatus body on the driver's side of the apparatus.

BODY ELECTRICAL SYSTEM

Meets specification? Yes ___ No ___

The body electrical system shall be designed as an integrated electrical package specifically engineered for fire apparatus application. The integrated electrical system shall be comprised of central power distribution panels, which interface with the body and chassis through an engineered harness system.

DISTRIBUTION PANELS

Meets specification? Yes ___ No ___

The electrical distribution panel and circuits must be housed in a sealed enclosure. All circuit entry points to the distribution panel must be made through locking bulkhead style connectors, which are sealed at the panel wall by formed gasket. The distribution panel shall incorporate a sealed bulkhead style stud for the main power source connection to the internal circuits. A grounding stud shall be incorporated onto the panel enclosure.

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.

All internal splices shall be ultrasonically welded connections - no butt style connections shall be acceptable in the main body harness. All internal wiring shall be of the high temperature GXL type wire and shall be protected by wiring duct wherever possible.

The electrical distribution panel shall consist of an adequate number of power distribution relays to reliably operate applicable lighting and accessories. The power distribution relays shall be replaceable, SPDT automotive style, rated at a minimum of 30 amperes.

The polarity of the (power distribution) relay circuit is selectable and can be set for either positive or ground input. Each relay shall be protected by an appropriately rated circuit breaker.

Diagnostic LEDs shall be present to indicate when the switch input is activated, the polarity of the switch activation signal, power to the relay buss, and power through the relay when activated.

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. The input switch diagnostic LEDs shall be configured so that the indicator is controlled by the load management inputs.

Connections to the distribution panel shall utilize spring loaded "cage clamp" style connectors (Wago or equivalent) wherever possible. Screw clamp type connections are not acceptable.

The electrical distribution panel shall incorporate a pump interlock module. The module shall control the interlock circuit to meet the current NFPA pump engagement requirements. Diagnostic LEDs shall be present to indicate the interlock signals of Park-Brake, Neutral, Pump-In-Gear and O.K.-To-Pump circuits.

The Pump interlock module shall be programmable to accept the specific input polarity of the interlock signals to minimize the use of redundant inverting circuits.

The distribution panel shall also contain circuit's ancillary to the required DOT signals and other body functions.

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 attached to the inside cover of the distribution panel enclosure.

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The body electrical panel shall be capable of being completely disconnected and fully tested by a computerized circuit analyzer. A computer printout of the tested enclosure shall be provided upon request.

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 rocker type with integral indicator light to show when lights are energized. All switches shall be appropriately identified.

VOLT TESTING

Meets specification? Yes ___ No ___

The apparatus low voltage system shall be tested and certified. A copy of certification shall be provided to the purchaser with the apparatus.

BATTERY RESERVE CAPACITY

Meets specification? Yes ___ No ___

With the engine off, the battery system shall be able to provide the minimum continuous electrical load for 10 minutes without discharging more than 50 percent of the reserve capacity and then to restart the engine.

ALTERNATOR PERFORMANCE TEST AT IDLE

Meets specification? Yes ___ No ___

Minimum continuous electrical loads shall be activated while the unit is at idle speed.

ALTERNATOR PERFORMANCE TEST AT FULL LOAD

Meets specification? Yes ___ No ___

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.

LOW VOLTAGE ALARM TEST

Meets specification? Yes ___ No ___

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.

EMI/RFI PROTECTION

Meets specification? Yes ___ No ___

The apparatus shall be manufactured to incorporate the latest designs in the electrical system with components that are state of the art to ensure electromagnetic interference (EMI) and radio frequency interference (RFI) emissions are suppressed at the source.

The apparatus shall have the ability to operate in typical fire and rescue situations with no adverse effects from EMI and/or RFI.

LIGHTBAR

Meets specification? Yes ___ No ___

A Whelen Edge Ultra Freedom IV Linear Super-LED LC Series 72" lightbar or equivalent shall be provided. The lightbar shall incorporate two front red corner modules with two red endcap modules, two interior white modules, and ten interior red modules. The front of each corner module shall consist of 12 red LEDs. The short red endcap shall incorporate six red LEDs. The long red interior lights shall incorporate 12 red LEDs. The long white interior lights shall incorporate 12 white LEDs.

The lightbar shall be controlled in the following manner:

- Calling for Right of Way - All Positions
- Blocking Right of Way - Clear shall not be Active
- The lights shall be activated by a single emergency light switch located on the master light switch panel in the cab.

The lightbar shall be configured to meet NFPA 1901 current edition.

MARS 888

Meets specification? Yes ___ No ___

MONCKS CORNER FIRE DEPARTMENT

One TriLite LED pedestal mount Mars "888" Traffic Breaker Warning Beacon shall be provided and installed on the front of the apparatus.

HEADLIGHT FLASHER

Meets specification? Yes ___ No ___

An alternating high beam headlight flashing system shall be installed into the high beam headlight circuit which shall allow the high beams to flash alternately from left to right.

Deliberate operator selection of high beams will override the flashing function until low beams are again selected. Per NFPA, these clear flashing lights will also be disabled "On Scene" when the park brake is applied.

WHELEN TAM65 TRAFFIC ADVISOR

Meets specification? Yes ___ No ___

A Whelen TAM65 36" 6 lamp LED directional traffic advisor shall be provided and mounted on the rear of the apparatus. The advisor shall be subject to load management shedding to comply with NFPA 1901.

A Whelen TACTL5 controller shall be provided for the Traffic Advisor. The control head shall be mounted using the standard bail strap mounting bracket provided.

LIGHTS, ZONE B/D UPPER REAR BODY

Meets specification? Yes ___ No ___

Two (2) Whelen warning lights, C6 Series, LED light heads red in color or equivalent shall be installed, one-(1) each side of the upper rear corner of the body. The self-contained flashing light shall have programmable flash patterns including synchronize feature and steady burn. The warning light is covered by a five-year factory warranty. The surface mount module shall include a chrome flange and hardware for horizontal mounting.

LIGHTS, ZONE C UPPER OUTBOARD

Meets specification? Yes ___ No ___

Two (2) Whelen warning lights, C6 Series, LED light heads red in color or equivalent shall be installed, one-(1) each side on the upper rear of the apparatus in the outboard position. The self-contained flashing light shall have programmable flash patterns including synchronize feature and steady burn. The warning light is covered by a five-year factory warranty. The surface mount module shall include a chrome flange and hardware for horizontal mounting.

LIGHTS, ZONE B/D FRONT LOWER

Meets specification? Yes ___ No ___

Two (2) Whelen warning lights, C6 Series, LED light heads red in color or equivalent shall be installed, one-(1) each side forward portion of the apparatus. The self-contained flashing light shall have programmable flash patterns including synchronize feature and steady burn. The warning light is covered by a five-year factory warranty. The surface mount module shall include a chrome flange and hardware for horizontal mounting.

LIGHTS, ZONE B/D MIDSHIP LOWER

Meets specification? Yes ___ No ___

Two (2) Whelen warning lights, C6 Series, LED light heads red in color or equivalent shall be installed, one-(1) each side midship of the apparatus. The self-contained flashing light shall have programmable flash patterns including synchronize feature and steady burn. The warning light is covered by a five-year factory warranty. The surface mount module shall include a chrome flange and hardware for horizontal mounting.

LIGHTS, ZONE B/D REAR LOWER

Meets specification? Yes ___ No ___

Two (2) Whelen warning lights, C6 Series, LED light heads red in color or equivalent shall be installed, one-(1) each side rearward portion of the apparatus. The surface mount module shall include a chrome flange and hardware for horizontal mounting.

LIGHTS, ZONE C LOWER

Meets specification? Yes ___ No ___

Two (2) Whelen warning lights, C6 Series, LED light heads red in color or equivalent shall be installed, one-(1) each side on the lower rear of the apparatus. The self-contained flashing light shall have programmable flash patterns including synchronize feature and steady burn. The warning light is covered by a five-year factory warranty.

STOP, TURN (LED) AND BACK-UP (LED) LIGHTS

Meets specification? Yes ___ No ___

MONCKS CORNER FIRE DEPARTMENT

Stop, turn, and backup lights shall be Whelen C6 Series, individual fixtures. Fixtures shall be mounted on each rear face of the body recessed in model TH64, highly polished, aluminum trim ring. The red stop (LED) light shall be model 60R00BRR, turn light shall be a model 60A00TAR amber (LED) type with directional arrow, and the backup light shall be model 60R000CU clear (LED) type light.

UNITY DECK LIGHTS

Meets specification? Yes ___ No ___

Two-(2) LED deck lights with swivel mount shall be installed one-(1) each side at the rear of the apparatus. Each light shall be manually operated and switched on and off at the light.

PUMP COMPARTMENT LIGHTS

Meets specification? Yes ___ No ___

Two-(2) clear lens LED lights shall be installed illuminating the pump compartment for servicing.

SIREN FOOT SWITCHES

Meets specification? Yes ___ No ___

There shall be two floor mounted foot switches to operate the siren. The switches shall be mounted one (1) on the driver's side in the cab and one (1) mounted on the officer's side in the cab. The switches shall be mounted as high and as far outboard as possible.

COMPARTMENT LIGHTS

Meets specification? Yes ___ No ___

Each compartment shall have one LED compartment light that shall be activated when the door is opened.

DOOR AJAR SYSTEM

Meets specification? Yes ___ No ___

All apparatus body doors shall be provided with an auto door switch. These switches shall operate the compartment interior lights and activate the door ajar indicator on each side of apparatus body when the door is opened. There shall be a red door ajar light mounted in the cab, in view of the driver to indicate an unsecured door. There shall be a buzzer mounted in the cab that shall alert the driver.

HOSE ROLLERS

Meets specification? Yes ___ No ___

There shall be a set of four-(4) hose rollers installed on the apparatus. The rollers shall be used on reels, on cabinet door openings, and similar locations where sharp edges may cut or damage hose or cables.

CLEARANCE LIGHTS AND REFLECTORS

Meets specification? Yes ___ No ___

Clearance lights and reflectors shall be LED lights, which include (2) red marker lights, (4) red rectangular reflectors, (2) amber rectangular reflectors and (1) red three light cluster recessed in the rear step.

UNDERBODY LIGHTS

Meets specification? Yes ___ No ___

Six underbody "Ground Effect" lights shall be installed at a location to be determined during the pre-construction conference. The underbody lights shall illuminate the ground beneath the fire apparatus. The lights shall have a clear lens.

LIGHTS, 12-VOLT SURFACE MOUNT SCENE

Meets specification? Yes ___ No ___

One (1) pair of Whelen C6 Series Red, 8-32 degree or equivalent scene lights shall be provided and installed on the apparatus. The lights shall have a linear designed Super LED light head with a four-screw mounting assembly and chrome plated trim ring flange.

The scene lights shall be installed, one-(1) each side on the upper rear outboard corners of the body.

The upper rear body mounted scene lights shall be controlled by a scene light switch located in the cab labeled REAR SCENE.

FRONT SCENE LIGHTS

Meets specification? Yes ___ No ___

The front of the cab shall include one (1) HiViz model FireTech FT-B-72-ML-W LED scene light installed on the brow of the cab. The light shall feature (5) five integrated marker lights.

The housing shall be powder coated white.

LIGHTS, TELESCOPING FRONT OF BODY

Meets specification? Yes ___ No ___

MONCKS CORNER FIRE DEPARTMENT

There shall be two-(2) telescoping lights installed, one-(1) each side, on the front of the body.

Two (2) Fire Research Spectra MS LED Scene Light model SPA530-R14 side mount push up telescopic light or equivalent shall be installed. The light pole shall be anodized aluminum and have a twist lock mechanism to secure the extension pole in position. The extension pole shall rotate 360 degrees. The outer pole shall be a grooved aluminum extrusion and qualify as an NFPA compliant handrail. The pole mounting brackets shall have a 2 3/4" offset. Wiring shall extend from the pole bottom with a 4' retractile cord.

The lamp head shall have 36 ultra-bright white LEDs, 30 for flood lighting and 6 to provide a spotlight beam pattern. It shall operate at 12/24 volts DC, draw 10.8/5.4 amps, and generate 14,000 lumens of light. The lamp head shall have a unique lens that directs flood lighting onto the work area and focuses the spotlight beam into the distance. The lamp head angle of elevation shall be adjustable at a pivot in the mounting arm and the position locked with a round knurled locking knob. The lamp head and mounting arm shall be powder coated. The LED scene light shall be for fire service use.

The telescoping lights shall be controlled by a switch located on the light head.

SIDE SCENE LIGHTS

Meets specification? Yes ___ No ___

The side of the cab shall include two (2) Whelen 900 series 9SC0ENZR model scene lights, one (1) each side which shall be surface mounted with a chrome bezel. The Whelen lights shall offer LED lighting at a gradient 32-degree angle.

SIDE SCENE LIGHT LOCATION

Meets specification? Yes ___ No ___

The scene lighting located on the left and right sides of the cab shall be mounted rearward of the cab "B" pillar in the 10.00 inch raised roof portion of the cab between the front and rear crew doors.

SIDE SCENE ACTIVATION

Meets specification? Yes ___ No ___

The scene lights shall be activated by two buttons or switches, one (1) for each light, and by opening the respective side cab doors.

BODY PAINT FINISH

Meets specification? Yes ___ No ___

The apparatus body exterior shall have no mounted components prior to painting to assure full coverage of metal treatments.

The apparatus body shall be painted with a durable high quality automotive paint. 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.

BODY PAINT COLOR/CODE

Meets specification? Yes ___ No ___

The primary/lower cab paint code shall be red FLNA 31979.

SCOTCHLITE STRIPE

Meets specification? Yes ___ No ___

There shall be a straight 4" wide Scotchlite stripe located on the apparatus cab and body. The stripe shall cover a minimum of fifty percent (50%) of the cab, body sides and of the rear of the apparatus. The stripe shall also cover twenty-five percent (25%) of the front of the apparatus. The stripe shall be installed to meet the current NFPA requirements.

Striping shall be gold in color trimmed with a black high light on both edges.

STRIPE - REAR REFLECTIVE

Meets specification? Yes ___ No ___

A minimum of 50 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; colors of the striping shall be in compliance with the current edition of NFPA 1901.

LETTERING

Meets specification? Yes ___ No ___

There shall be 3" tall gold Scotchlite reflective letters applied to the apparatus.

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The words "Town of MONCKS CORNER" in 5-inch-tall gold Scotchlite reflective letters shall be placed on both sides of the body.

The letters "RIT" in 5-inch-tall white Scotchlite reflective letters shall be placed on the center of the compartment door for R1.

FIRE DEPARTMENT DECALS

Meets specification? Yes ___ No ___

Fire Department decals shall be installed on the apparatus. The decals and locations are to be determined by the fire department.

STREAM LIGHT

Meets specification? Yes ___ No ___

There shall be four (4) Streamlight Fire Vulcan C4 LED, 12-volt hand lights with chargers installed on the apparatus. Mounting locations are to be determined by the fire department.

STORZ ADAPTER

Meets specification? Yes ___ No ___

There shall be one (1) Kochek Model S37S, 3" FNST X 5" Storz provided with the apparatus.

CAP - 5" W/ CHAIN

Meets specification? Yes ___ No ___

There shall be one (1) Kochek model 5" CC507 cap with chain provided on the apparatus.

NFPA REQUIRED EQUIPMENT

Meets specification? Yes ___ No ___

The contractor shall supply the equipment listed below and shall provide and install such brackets or compartments as are necessary to mount the equipment.

GROUND LADDERS

Meets specification? Yes ___ No ___

All ground ladders carried shall meet NFPA 1931. At a minimum, the following ladders shall be carried on the apparatus:

1. One straight ladder equipped with roof hooks
2. One extension ladder
3. One attic ladder

HARD SUCTION FLEXIBLE HOSE

Meets specification? Yes ___ No ___

There shall be two (2) Kochek 10' X 6" lengths of hard suction supplied with the vehicle. The hard suction hose shall be the flexible type with lightweight long handle couplings, constructed of PVC compounds with high flexibility. The hoses shall have a smooth bore to reduce friction.

6" STRAINER BRACKET – KOCHEK

Meets specification? Yes ___ No ___

There shall be a Kochek model MM60C bracket provided for the purpose of mounting one 6" strainer to the apparatus. There shall also be one (1) 6" Kochek strainer, model BS60C provided.

HARD SUCTION RACKS

Meets specification? Yes ___ No ___

Two (2) hard suction racks shall be provided and constructed from aluminum. Each rack shall hold one (1) 10' 6" diameter suction hose and have spring latches to hold hoses in position.

5" SUPPLY HOSE

Meets specification? Yes ___ No ___

Twelve (12) - 100' sections of Firequip Hydro Flow 5" supply hose with stortz connections shall be supplied with the apparatus.

3" SUPPLY HOSE

Meets specification? Yes ___ No ___

Six (6) - 100' sections of Key Fire Hose DP30-800 or equivalent 3" supply hose with 2.5" connections shall be supplied with the apparatus.

2.5" FIRE HOSE

Meets specification? Yes ___ No ___

Twelve (12) 50' sections of 2.5" x 50' MaTex Cobra Combat fire hose with 2.5" connections shall be supplied

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with the apparatus.

1.77" FIRE HOSE

Meets specification? Yes ___ No ___

Twelve (12) – 50' sections of MaTex Cobra Combat or equivalent 1.77" fire hose with 1.5" connections shall be supplied with the apparatus.

NOZZLES

Meets specification? Yes ___ No ___

The following NFPA 1964 and UL 401 compliant nozzles shall be supplied with the apparatus.

1. One (1) 2.5" Ultrajet Nozzle with 1" tip and shutoff
2. Four (4) 1.5" Ultrajet nozzles with 7/8" tips and shutoffs
3. One (1) 2.5" Elkhart playpipe, with shutoff and 1", 1 1/8", and 1 1/4" tips
4. One (1) 2.5" Mercury 3443 quick attack monitor with SabreMaster 1545 nozzle and mounting bracket.

TNT HYDRAULIC RESCUE TOOLS

Meets specification? Yes ___ No ___

One set of battery-powered TNT hydraulic rescue tools:

- a. Cutter – (1) ESLC-29D
- b. Spreader – (1) ESL-28D
- c. Ram – (1) ETLS-40

INTAKE VALVES

Meets specification? Yes ___ No ___

Two (2) TFT Jumbo Ball Intake Valves (AX1ST-NX)

MINOR TOOLS AND EQUIPMENT

Meets specification? Yes ___ No ___

The following equipment items shall be available on the pumper fire apparatus before the apparatus is placed in service. Brackets or compartments shall be furnished so as to organize and mount the specified equipment. A detailed list of who is to furnish the items and the method for organizing and mounting these items shall be supplied by the purchasing authority.

1. Two 6# flathead axes
2. One 6# pick head axe
3. One 8# sledgehammer
4. One 6 ft pike pole or plaster hook mounted in a bracket fastened to the apparatus
5. One 8 ft or longer pike pole mounted in a bracket fastened to the apparatus
6. One 30" round point shovel with D-handle
7. One 30" flat point shovel with D-handle
8. One 36" bolt cutter
9. One 30" Pro-bar
10. One K-tool set
11. One A-tool
12. One set of elevator door keys
13. One Rae Systems Multi-Rae Lite 5-gas meter
14. One single-gas CO meter
15. Two thermal imaging cameras
16. Two 5" x 25' LDH with locking Storz
17. One 5" storz x 2.5" NHF SW adapter w/plug and chain

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18. One hydrant bag
19. One hand-held hose roller
20. One 3" hose clamp
21. Two 4.5" NHF SW to 5" Storz adapters
22. One approved dry chemical portable fire extinguisher with a minimum 80B:C rating mounted in a bracket fastened to the apparatus
23. One 2 gal or larger water extinguisher mounted in a bracket fastened to the apparatus
24. One first aid kit
25. Four combination spanner wrenches mounted in brackets fastened to the apparatus
26. Two hydrant wrenches mounted in brackets fastened to the apparatus
27. Three double female 2.5 in. adapter with National Hose threads, mounted in a bracket fastened to the apparatus
28. Three double male 2.5 in. adapter with National Hose threads
29. Two 2.5" NHF x 1.5" NHM adapters
30. One 2.5" NHF SW x 2.5" NHM gate valve with T-handle
31. Two 2.5" NHF SW to two 1.5" NHM gated Y with shut offs
32. One high rise carry strap
33. One water can strap
34. One irons carry strap
35. Two rubber mallets, suitable for use on suction hose connections
36. Two salvage covers each a minimum size of 12 ft x 14 ft
37. Two (2) wheel chocks, mounted in readily accessible locations, each designed to hold the apparatus, when loaded to its maximum in-service weight, on a 20 percent grade with the transmission in neutral and the parking brake released
38. One traffic vest for each seating position, each vest to comply with ANSI/ISEA 207, Standard for High-Visibility Public Safety Vests, and have a five-point breakaway feature that includes two at the shoulders, two at the sides, and one at the front
39. Five fluorescent orange traffic cones not less than 28 in. in height, each equipped with a 6 in. retroreflective white band no more than 4 in. from the top of the cone, and an additional 4 in. retroreflective white band 2 in. below the 6 in. band
40. Five Turbo Flare style illuminated warning devices
41. One Zoll AED 3 BLS automatic external defibrillator (AED)
42. One low-level 6" strainer
43. One Super VAC V16 BD 12 AC SP 16" rechargeable fan with shore power capability
44. One Partner K-12 saw
45. One Stihl Magnum 20" carbide tipped ventilation chainsaw
46. One Auto X cribbing tool kit with bag
47. One Step-Chock and wedge set
48. One Paratech 22-88DREK rapid extrication kit

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49. One 8' NY hook with chisel end
50. One 6' NY hook with chisel end
51. One 4' closet hook with pike end and D-handle
52. One 4' drywall hook with D-handle
53. One shove knife
54. One duckbill lock breaker
55. One hockey puck lock breaker
56. One trash hook with D-handle
57. One push broom
58. One MSA Rescue Aire 2 System with RIT bag
59. One extrication blanket
60. One search line with bag
61. Four MSA G1 SCBA 4500psi 30-minute w/facepiece and ExtendAire2
62. One Milwaukee 18V Reciprocating saw with case
63. Two 100' 12-gauge extension cords
64. One Milwaukee 18V cordless drill
65. Two Milwaukee 18V cordless tripod lights
66. One 12" wonder pry bar
67. One 2-gallon gas can
68. One gas/bar oil can
69. One 2.5-gallon water extinguisher
70. Two LDH wrench sets
71. Two Hydrant/Spanner wrench sets
72. Two hydrant wrenches
73. One 36" pinch point bar with brackets
74. One Stinger 2 deck gun with 1000gpm fog nozzle, stream straightener, stack tip set, and portable monitor base.