



INVITATION FOR BIDS

TOWN OF CHILMARK

PROJECT: 2012-16

Fire Service

3,000 gallon Wet-Side TANKER

On a 2-Door Cab & Chasis

DUE DATE: November 26, 2012

4:30 PM

KEY DATES

- October 22: Published in Goods & Services
- October 18: Published in MV Times
- October 23: Bid packages available at Chilmark Town Hall.
- November 16 @ 1:00 pm: Pre-bid meeting at the North Road Fire Station.
- November 20 @ 5:00 pm: Deadline for receiving questions in writing at Selectmen’s Office.
- November 26 @ 4:30 pm: Deadline for receiving sealed bids at Chilmark Town Hall.
Bids will be publically opened and read aloud.
- December 4: Selectmen meet to Award job.
- December 14 or earlier: Sign contract within 10 days of award.
- September 10, 2013:* ***270 Days Delivery of Tanker***
or earlier.

The Town of Chilmark is seeking sealed bids for the construction and delivery of 3,000 gallon wet-side fire service TANKER for use in a rural fire department on the island of Martha's Vineyard in the Commonwealth of Massachusetts.

MEETING

Attending a pre-bid meeting is strongly encouraged. This meeting will take place on Friday, November 16, 2012 @ 1:00 pm at the North Road Fire Station. All bidders are encouraged to visit the site before submitting a bid. Submission of a bid constitutes an acknowledgment that the bidder has examined the site and is familiar with all existing conditions that impact the design of the Fire Tanker.

RULE FOR AWARD

The contract will be awarded to the responsive and responsible bidder offering the lowest price for the services specified in this Invitation for Bids (IFB).

The Town will consider only responsive bids from responsible bidders for a contract award. A responsive bid is one which complies fully with all submission requirements stated in this IFB. Any bid which does not comply with all submission requirements may be rejected as non-responsive. A responsible bidder is one who demonstrably possesses the skill, ability, and integrity necessary to faithfully perform the work called for in this procurement and meets the requirements of Massachusetts law.

All bidders will:

1. Identify the proposed project manager, along with their qualifications to work on this project.
2. List the bidder's prior experience on projects similar to this.
3. State the financial ability of the firm to perform the work in this IFB.
4. Submit their bid on the attached Bid Pricing Sheet.
5. Bidders must submit a non-collusion form.
6. Bidders must submit a tax compliance certification.
7. Each bidder must submit with its bid a bid deposit equal to five percent (5%) of the amount of the bid. The bid deposit may be in the form of a certified, treasurer's, or cashier's check payable to the awarding authority from a responsible bank or trust company; cash; or a bid bond from a surety licensed by the Massachusetts Division of Insurance.

The town may request any information from the bidder needed to determine if the bidder is responsible.

The contractor must furnish a payment bond in the amount of (50%) fifty percent of the contract price. The contractor has 10 days from the date of notification of contract award to obtain the payment bond.

A bidder may correct, modify, or withdraw a sealed bid by written notice received in the office designated herein for bid submission prior to the time set for the opening of bids. After the opening, a bidder may not change any provision of the bid in a manner prejudicial to the interest of the Town, or to fair competition. The Town shall waive minor informalities or allow the bidder to correct them. If a mistake and the intended offer are clearly evident on the face of the document, the Town shall correct the mistake to reflect the intended correct offer and so notify the bidder in writing, and the bidder may not withdraw the offer. The Town may permit a bidder to withdraw an offer if a mistake is clearly evident on the face of the document but the intended correct offer is not similarly evident.

The Town shall award a contract by written notice to the selected bidder by no later than January 25, 2013. This deadline may be extended an additional 30 days with the mutual consent of the Town and the Bidder.

All bid prices submitted in response to this IFB must remain firm for sixty (60) days following the bid opening.

The award of a contract will be conditioned on the selected bidder signing the Town's contract and providing the 50% payment bond within ten (10) days from the date of notification of award.

Notwithstanding any provision contained herein to the contrary, the Town reserves the right to cancel this procurement at any time before a contract is executed by the Town, in which event the Town will reject all bids received in response to this IFB. The Town reserves the right to reject any or all bids when it is in the public interest to do so.

QUESTIONS: Deadline is November 20, 2012 at 5:00 PM to submit written questions to the Executive Secretary, Chilmark Town Hall; 401 Middle Road; P.O. Box 119; Chilmark, MA. 02535. PH: 508-645-2101; FAX: 508-645-2110 or email at tcarroll@chilmarkma.gov

REFERENCES: Bidders must submit a complete list of all current customers for which the bidder is supplying Fire Service TANKER(s) and previous customers for the past five (5) years, with contact names and telephone numbers. A bid may be rejected on the basis of one or more references reporting poor past performance by the bidder. Bidders must have competed at least five (5) wet-side Fire Service Tankers for prior customers of similar scope.

SEALED BIDS DUE: Sealed-Bids will be accepted until Monday November 26, 2012 @ 4:30 PM at the Selectmen's Office; Chilmark Town Hall; 401 Middle Road; P.O. Box 119; Chilmark, MA. 02535-0119. Bids must be marked on their face with "**3,000 gallon Wet-Side Fire TANKER**". All bids will be opened at that time and read aloud. The bids must remain firm for sixty (60) days. **LATE BIDS WILL NOT BE ACCEPTED.**

PROJECT

This project replaces a wet-side fire tanker in service for the past twenty years. The town of Chilmark is a rural community on the west end of Martha's Vineyard. There are no fire hydrants or municipal water supplies. The community is made up of approximately 2,000 parcels on 12 square miles. It is a summer vacation resort and has many large seasonal homes. Access to private homes is off of long privately owned dirt/gravel driveways. The tanker will be used for all fire suppression activities in Chilmark and will be sent mutual aid to most fires in the two neighboring towns.

This Wet-Side Fire Tanker will be primarily used off of paved roads for most structure fires and will also be used off-road in support of brush breakers fighting fires in the urban interface. It should not be considered a street-pumper type vehicle. The tanker is a front-line piece of equipment for this department and must be built as such.

The Wet-Side Fire TANKER must meet all specifications as outlined in the referenced or attached documents and be suitable for its intended purpose.

- a. Bid Pricing Sheet.
- b. Specifications for a Tanker (76 pages)

The TANKER shall be delivered no later than September 10, 2013.

BID PRICING SHEET

(submit to awarding authority)

Company NAME

Gentlemen:

We the undersigned propose to furnish the Town of Chilmark 3,000 gallon Wet-Side Fire Service TANKER and associated equipment (all labor and materials required for this project) per the attached specifications for the price stated below:

TOTAL PRICE OF THE CONTRACT

Per Chilmark Specifications \$ _____

In Written Words _____

Delivery: _____ calendar days after receipt notice to proceed.

Did you deviate from the specifications in any way? (If yes, you must submit a detailed description of all deviations.) YES _____ NO _____

This bid includes addenda numbered: _____

The Project Manager will be: _____

Location of Tanker during construction: _____

The qualifications of the Project Manager are attached hereto.

Attach statement of financial ability to perform the work in this IFB.

I acknowledge that I have examined the North Road Fire Station and I am familiar with the existing conditions.

BY: _____
AUTHORIZED SIGNATURE PRINT NAME

COMPANY NAME TELEPHONE & Cell # NUMBER

ADDRESS EMAIL ADDRESS AND FAX #

CITY, STATE, ZIP CODE DATE

Builder and Service Center Information

Factory or Initial Construction Location:

Name of Builder

Address (Physical location of truck during construction)

City	State	Zip Code
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Phone Number

Service and Repair Location:

Name of Company

Address (Physical location of truck during repair)

City	State	Zip Code
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Contact Person

Phone Number

REFERENCE FORM

Bidder: _____

Bidder must provide references for: all contracts performed within the past three (3) years of similar scope, and provide a list with contact information for ALL current contracts.

Reference: _____

Address: _____

Contact: _____

Phone: _____

Fax: _____

Description and date(s) of services provided:

Reference: _____

Address: _____

Contact: _____

Phone: _____

Fax: _____

Description and date(s) of services provided:

Reference: _____

Address: _____

Contact: _____

Phone: _____

Fax: _____

Description and date(s) of services provided:

(Attach additional reference sheets if necessary)

CERTIFICATE OF NON-COLLUSION

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

Signature of individual submitting bid or proposal

Name of business

TAX COMPLIANCE CERTIFICATION

Pursuant to M.G.L. c. 62C, §49A, I certify under the penalties of perjury that, to the best of my knowledge and belief, I am in compliance with all laws of the Commonwealth relating to taxes, reporting of employees and contractors, and withholding and remitting child support.

Signature of person submitting bid or proposal

Name of business

SUBMIT in SEALED ENVELOPE Marked on its face: “3,000 gallon Wet-Side Fire TANKER”



CHILMARK FIRE DEPARTMENT

Specifications for a Tanker

**Bidder
Complies**

Yes No

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**Bidder
Complies**

Yes	No
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**Bidder
Complies**

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**Bidder
Complies**

Yes	No
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**Bidder
Complies**

Yes No

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**Bidder
Complies**

Yes	No
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Bidder
Complies

Yes No

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**Bidder
Complies**

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Specifications for a Tanker

**Bidder
Complies**

Yes No

INSTRUCTIONS TO BIDDERS

Bidders are requested to read the complete bid invitation carefully and submit their proposals in strict accordance with the requirements set forth.

Any questions regarding this specification must be submitted in writing and be received by the Town No-Later-Than 5:00 PM on November 20th 2012. Clarifications, corrections, and/or changes shall be sent out in writing via fax or email to all prospective bidders.

The Town of Chilmark reserves the right to reject any or all bids which the Town may deem as in the best interest of the town.

The complete apparatus shall be manufactured within the continental United States. Vehicles manufactured outside of the continental USA shall not be considered. No exceptions will be permitted to this section of the document.

ESTABLISHED BUILDER

Bids shall only be considered from companies that have an established reputation in the field of fire apparatus construction for a period of at least five (5) years.

There shall be no exception to this requirement.

SINGLE SOURCE MANUFACTURER

The bidder/manufacture must maintain an integrated approach to all aspects of manufacturing including, but not limited to, engineered assemblies, apparatus body, pump module, fabricated components, and all related appurtenants.

The bidder/manufacture and their subsidiaries must take sole responsibility of each apparatus that is manufactured, guaranteeing parts and service availability within your specified time frames. No exceptions will be permitted to this section of the document.

Final assembly of our proposed apparatus must take place on the manufacture's facility.

DEALERSHIP SERVICE FACILITY

Bidder's shall currently own and operates a service facility, which is staffed with factory trained service technicians, with-in 200 miles from the Steamship Wharf in Woods Hole, MA.

In order to keep the vehicle down time to a minimum, a fully stocked service vehicle is available for all repairs that can be completed at the Chilmark Fire Station.



CHILMARK FIRE DEPARTMENT

Specifications for a Tanker

**Bidder
Complies**

Yes No

If for any reason that a service repair cannot be completed at the Chilmark Fire Station, the bidder shall provided a driver to pick-up and deliver the vehicle to and from the Chilmark Fire Department to the bidder's service facility at **no cost** to the department for as long as Chilmark Fire Department owns the vehicle. No exceptions.

INTENT OF SPECIFICATIONS

It is the intent of these specifications to cover the furnishing and delivery to the Fire Department of a completed fire apparatus equipped as hereafter specified. With a view to obtaining the best results and the most acceptable fire apparatus these specifications cover only the general requirements as to the type of construction and test to which the vehicle must conform, together with certain details as to finish, equipment, and appliances with which the successful bidder must conform. Details of construction and materials where not otherwise specified are left to the discretion of the contractor, who shall be solely responsible for the design and construction of all non-specified features.

The completed vehicle shall conform to the requirements of the National Fire Protection Association Pamphlet No. 1901, latest edition, for Motor Fire Apparatus, and shall exceed 1901.

When evaluating bids, the importance of reduced life cycle costs, public safety associated with fire fighting apparatus shall be a major consideration, and all evaluations shall exclude vehicles of a type that deviate from these specifications.

Bids shall only be considered from companies that have an established reputation in the field of fire apparatus manufacturing.

Each bidder shall furnish satisfactory evidence of the ability to construct the completed apparatus specified, and shall state the location of the factory where the chassis and body shall be built. They shall also show that they are in a position to render prompt service and to furnish replacement parts for said completed apparatus. Prompt being within forty-eight hours.

The workmanship must be of the highest quality in its respective field. Special consideration shall be given to the following points:

- Accessibility of the various components that require periodic maintenance or lube checks.
- Ease of vehicle operation.
- Visibility of the driver.
- Features supplied that are beneficial to the intended operation of the completed apparatus.



CHILMARK FIRE DEPARTMENT

Specifications for a Tanker

**Bidder
Complies**

Yes No

Construction must be rugged and design must be certified to carry the loads as specified and to meet the road requirements and speed conditions as set forth under "Performance Test and Requirements."

Welding shall not be employed in the assembly of the completed vehicle in a manner that shall prevent the removal of a major component part for service and/or repair.

These specifications have not been established to preclude any bidders. However, the Town does not intend to make a decision solely based upon lowest price but intends to purchase an apparatus that meets the intentions, service, and needs of the Chilmark Fire Department.

MODELS TO BE BID

The model requested in the purchase description that follows is intended to be the "Top of the Line" model for the manufacturer. Sub-standard models that delete trim, functionality, service, and safety items shall not be acceptable. A statement from the bidder shall be provided in the bid proposal that states the chassis offered is the "Top of the Line" model from the manufacturer.

PRE-CONSTRUCTION CONFERENCE

A pre-construction conference shall be conducted at the Fire Department Headquarters, at which time all final designs and equipment mounting locations will be approved, prior to any sheet metal being cut. A factory-trained dealer shall be present during the pre-construction conference to answer any design questions relating to the layout of the apparatus. All expenses for travel, meals, and lodging shall be included. Bidder shall indicate intention to provide the required pre-construction conference in the proposal packet.

BID DEPOSIT/BOND REQUIREMENTS

The Bidder shall supply a bid bond or deposit for 5% of the proposed price.

PAYMENT BOND

A 50% Payment Bond is required under state law, and must be supplied by the successful bidder within 10 days of award of the contract.



CHILMARK FIRE DEPARTMENT

Specifications for a Tanker

**Bidder
Complies**

Yes No

ROAD TEST CERTIFICATION

A road test shall be conducted with the finished apparatus fully loaded. During this time, the apparatus shall not show loss of power and/or overheating. The transmission driveshaft or shafts and rear axle shall run free from abnormal vibration or noise throughout the operating range of the apparatus. The apparatus, when loaded, shall have not less than 25% or more than 45% of the weight on the front axle and not less than 55% or more than 75% on the rear axle.

- A. The apparatus must be capable of accelerating to 35 mph from a standing start within 25 seconds on a level concrete highway without exceeding the maximum governed RPM of the engine.
- B. The apparatus must be capable of accelerating from a steady speed of 15 mph to a true speed of 35 mph within 30 seconds. This shall be accomplished without moving the gear selector.
- C. The fully loaded apparatus shall be capable of obtaining a speed of 50 to 55 mph on a level concrete highway.
- D. The manufacturer shall furnish copies of the engine installation approvals signed by the appropriate engine company upon delivery of the chassis to the Fire Department. No exceptions will be permitted to this section of the document.
- E. The manufacturer shall furnish copies of the transmission approval signed by the transmission manufacturer upon delivery of the chassis to the Fire Department. No exceptions will be permitted to this section of the document.
- F. The manufacturer shall furnish copies of the front and rear axle approvals upon delivery of the apparatus to the Fire Department. No exceptions will be permitted to this section of the document.

ROAD TEST FAILURE

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 of the first trials. Such trials shall be final and conclusive and failure to comply with changes, as the Town 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, shall be cause for rejection of the apparatus. Permission to keep or store the apparatus in any building owned or occupied by the Fire Department, or its use by the Fire Department during the above-specified period with permission of the manufacturer, shall not constitute acceptance.



CHILMARK FIRE DEPARTMENT

Specifications for a Tanker

**Bidder
Complies**

Yes No

LIABILITY

The bidder, if his bid is accepted, shall defend any and all suits and assume all liability for use of any patented process, device, or article forming a part of the completed vehicle or any appliance under the contract.

APPARATUS FAMILIARIZATION

Fire Department personnel shall be instructed as to the use of the entire apparatus including, but not limited to, chassis, fire pump system, the apparatus, and supplied equipment. The familiarization specialist shall remain at the Fire Department for two (2) days (not less than eight (8) hours), to provide instruction to all department personnel, or as directed by Chief Norton. The training shall include a classroom and field session. A minimum of a four hour classroom session (with a powerpoint presentation on the specific apparatus and handouts for firefighters use during class and in the field) shall be held. This familiarization shall be broken into two parts, 1. Operation and use & 2. Regular maintenance.

All meals, motel, and travel costs shall be the responsibility of the successful bidder.

DELIVERY REQUIREMENTS

Delivery of the completed vehicle shall be no more than 270 calendar days after acceptance of the formal contract by the successful bidder.

The manufacturer shall specify in his bid the number of calendar days after acceptance of the formal contract by the manufacturer that the completed vehicle shall be delivered to Chilmark Fire Department.

TREATMENT OF BID EXCEPTIONS

It shall be mandatory for any prospective bidder that deviates from the proposed specifications to give a full description of all deviations, and explain why the deviation is equal to or better than the specification.



CHILMARK FIRE DEPARTMENT

Specifications for a Tanker

**Bidder
Complies**

Yes No

When the bidder checks the "yes" column in the bid the bidder is making testimony that the bidder is in full compliance with the entire paragraph.

Where bidder's specifications and/or construction differ in any way from the bid specification, a full and complete description in specification shall be required. Drawings shall also be required to show alternative construction methods. Partial descriptions, or general clarifications covering groups of sections of the specification, shall be unacceptable and shall be cause for complete rejection of the bid.

Proposals taking total exception to the purchase specifications contained herein shall not be accepted and the bidder's proposal shall be deemed non-responsive and rejected by the town.

BID CLARIFICATIONS

Each bidder's clarification shall refer to the bid specification page number and paragraph. Any such clarification that appears vague or misleading shall be considered an exception. Complete clarifications are required describing the reason for the deviation. The completed vehicle shall be inspected upon delivery for compliance with specifications. Deviations shall not be tolerated and shall be cause for rejection of apparatus unless they were originally listed in the bidder's proposal, and acknowledged by the Town at award.

BID DOCUMENTS REQUIRED

The bidder shall utilize **this document** in its bid submission. The bidder shall indicate opposite each item if they comply with that paragraph by checking "yes" or "no"

The bidder shall provide detailed information on the materials to be used to construct all parts of the apparatus. A bidder's use of terms such as "intent" are considered vague and unacceptable responses will disqualify the bid.

Copies of this bid document (electronically or otherwise) that are modified and used as a bid response specification are grounds for immediate disqualification of the bidder's submission.

No exceptions will be permitted to this section of the document.

DETAILED DRAWINGS REQUIRED

The bidder shall submit four (4) copies of an engineered construction drawing (minimum of 11" x 17") with its bid. No bids will be considered without complete engineered construction drawings submitted with the bid. Submitted drawings must be specifically for the proposed apparatus and depict all major specified components.



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Specifications for a Tanker

**Bidder
Complies**

Yes No

These drawings shall show the following minimum views: front view; street side with proposed chassis; curbside with proposed chassis; rear view; top view with proposed chassis; hose bed height, and approach and departure angles.

The drawings shall contain the dimensions for the overall length (in feet and inches), overall height (in feet and inches), wheelbase, Submission of "similar to" or "standard" drawings, or statements referencing submission of drawings after award of contract, will disqualify the bid.

No exceptions will be permitted to this section of the document.



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Specifications for a Tanker

**Bidder
Complies**

Yes No

CONTRACT AWARD

The contract shall be awarded to the lowest priced responsive and responsible bidder meeting these specifications.

Since the complete vehicle materials specified are commercially available, these specifications shall not be considered proprietary. Each bidder shall submit on his proposal page a single line item price for all items listed in the specifications. Price shall be based on payment upon receipt of the accepted complete vehicle by the Fire Department.

No discounts, options, or prepayment schedules shall be listed on the proposal page. All such items shall be listed on a separate page entitled OPTIONS and may or may not be considered at the discretion of the fire department.

SUBMISSION OF BID REQUIREMENTS

Bids shall be submitted in accordance with the following instructions:

1. The bid form provided shall be completed and returned with the appropriate "yes" or "no" marked by each paragraph in the "Bidder Complies" column. A paragraph indicated with both the "yes" and "no" column marked shall be considered non-responsive and treated accordingly.
2. Each bidder shall submit their own proposal specifications, detailing their construction. This is necessary to evaluate each bidder's actual intent of building the equipment as specified herein. The bidder's proposal format shall be the same order as these specifications to allow the Fire Department to compare all bids easily and prevent confusion. Failure to comply shall be cause for rejection of the bid.
3. Failure to submit detailed information or drawings where specified herein shall result in rejection of the bid.
4. Verbal bids and changes in the bid price after the bid opening prior to award shall not be allowed. Any such attempt shall not be accepted and cause immediate rejection of the entire bid.

FINANCIAL STABILITY

Ensuring the financial stability of the proposed body builder is a paramount consideration to this department. Financial strength directly relates to the body builders ability to successfully produce an apparatus without jeopardizing fire department funds. In addition, financial



CHILMARK FIRE DEPARTMENT

Specifications for a Tanker

**Bidder
Complies**

Yes No

strength is vital to this department to insure a body builder will be able to provide warranty service along with replacement parts and service for the life of the apparatus. Failure to be able to provide these lifelong services may cause future increases in maintenance expenses and create undue burden on the department's budget and tax base. This is a situation that this department is unwilling to risk. The body builder, therefore, shall meet certain minimum financial ratios in order to qualify for a bid award. The financial ratios presented shall be that of the consolidated entity; not the consolidated entity's parent company; for the body builder.

The financial ratios required to be met shall be derived from the most recent audited financial statements of the body builder proposed.

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

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

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

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

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

All financial indicators required by this section must be verified by Dun and Bradstreet, the nationally-recognized, independent financial analysis company. Bids furnished without the



CHILMARK FIRE DEPARTMENT

Specifications for a Tanker

**Bidder
Complies**

Yes No

required financial information shall render the bid non-responsive and the bidder dismissed from further consideration.

No exceptions will be permitted to this section of the document.

NFPA 2009 STANDARDS

This unit shall comply with the NFPA standards effective January 1, 2009.

Certification of slip resistance of all stepping, standing and walking surfaces shall be supplied with delivery of the apparatus.

A plate that is highly visible to the driver while seated shall be provided which states the overall height, length, and gross vehicle weight rating.

The manufacturer shall have programs in place for training, proficiency testing and performance for any staff involved with certifications.

An official of the company shall designate, in writing, which is qualified to witness and certify test results.

BUMPER TO BUMPER WARRANTY

The manufacturer shall provide a one (1) year bumper-to-bumper warranty from date of delivery and acceptance of the apparatus. The manufacturer shall supply details of their warranty information with their bid submission.

ALUMINUM BODY WARRANTY

The manufacturer shall provide a ten (10) year structural and corrosion perforation warranty for the fabricated aluminum body. The manufacturer shall supply details of their warranty information with their bid submission.

BODY SUBFRAME WARRANTY

The manufacturer shall provide a lifetime warranty for the subframe of the apparatus body. The manufacturer shall supply details of their warranty information with their bid submission.



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**Bidder
Complies**

Yes No

PAINT WARRANTY

The manufacturer shall provide a ten (10) year paint warranty for all portions of the apparatus that they have painted. The manufacturer shall supply details of their warranty information with their bid submission.

FIRE PUMP WARRANTY

A five (5) year warranty on the Hale fire pump shall be provided. The warranty shall be parts and labor for the first 2 years and parts only for years 3 through 5. The manufacturer shall supply details of their warranty information with their bid submission.

STAINLESS STEEL PLUMBING WARRANTY

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

COMPLETE PRINTED MANUAL

The manufacturer shall provide with the vehicle upon delivery, one (1) complete delivery manual. This manual shall be in a notebook type binder, with reference tabs for each section of the vehicle. A companion compact disk (CD) with all of the printed material in an electronic format (Adobe Acrobat PDF) shall be provided.

Within each section shall be:

- Individual component manufacturer instruction and parts manuals
- Warranty forms for the body
- Warranty forms for all major components
- Warranty instructions and format to be used in compliance with warranty obligations
- Wiring diagrams
- Installation instruction and drawings for major parts
- Visual graphics and electronic photos for the installation of major parts
- Necessary normal routine service forms, publications and components of the body portion of the apparatus
- Technical publications for training and instruction on major body components
- Warning and safety related notices for personnel protection
- Cab and chassis manuals on parts, service and maintenance shall be provided



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Specifications for a Tanker

**Bidder
Complies**

Yes No

The manufacturer shall supply details of their manual information with their bid submission.

"ON-LINE" SERVICE MANUAL SUPPORT

As part of the standard delivery manual, the manufacturer shall give a password-protected link to the end user, allowing access to the manufacturers' database on service parts. The internet-based system shall allow the end user to access the major component supplier's service parts listing such as Hale, Waterous, Akron, etc. This shall be accomplished with simplistic point and click features on the manufacturer line item within the "stripper" or "line sheet". This will include, automatic updates, printable schematics, and manufacturer's web links and is available in a commercially available format of Adobe Acrobat Reader to access these documents. The manufacturer shall submit with the bid proposal, a sample set of on line Adobe formatted material that has been printed from the manufacturer's website. Failure to do so will result in rejection of the proposal. Reference to "on delivery" or "at prebuild" submission is not an acceptable response for the bid document.

Parts Listings within Manuals

The manuals will include cross-reference part numbers from the apparatus manufacturers' part number to the vendor parts. Example: Brand X Fire Apparatus, Hydraulic Ladder Rack, Part #WW-MN-0302 cross-referenced to Ziamatic Corporation Part 098-MN2345. This will allow for reference between individual parts and complete installation assemblies as completed by the body builder. The manuals will list all components of the vehicle that includes a vendor part utilized in a complete installation via the manufacturers "line item sheet" or "stripper" utilized to manufacture the completed vehicle. These are "As Built" and proposals with "typical" or "generic" manuals will be rejected.

Illustrative Schematics within Manuals

The manufacturer shall include installation diagrams and drawings of all major sub assemblies. This will include components such as hydraulic ladder rack assemblies, pump panels, tanks, fire pumps, etc. The drawings shall be linked via an Internet based service program, in an electronic format from the manufacturers "stripper" (line item listing) of the manufacturing document. The manufacturer shall submit, with the bid proposal, a sample schematic. Failure to do so will result in rejection of the proposal. Reference to "on delivery" or "at prebuild" submission is not an acceptable response for the bid document.

Digital Images within Manuals

In addition to two and three-dimensional installation drawings, the manufacturer shall make accessible, via an internet based link, the actual photos of the installed components listed within the "stripper" or line sheet. This will include, but not limited to Wiring terminals, main



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**Bidder
Complies**

Yes No

body distribution strips, fire pump shifting, auxiliary components, etc. The manufacturer shall submit a sample of these with the bid submission. Failure to submit the digital images with the bid will result in rejection of the proposal. Reference to "on delivery" or "at prebuild" submission is not an acceptable response for the bid document.

Installation Instructions within Manuals

The manufacturers "work instructions" or "installation instructions" shall be included with the service manuals. These documents shall be accessible via a web-based link to the individual vehicle manufactured. The work instructions shall give systematic instructions of the installation process. The manufacturer shall submit, with the bid proposal, a sample set of instructions. Failure to do so will result in rejection of the proposal. Reference to "on delivery" or "at prebuild" submission is not an acceptable response for the bid document.

Automatic Updates of Manuals and Parts Listings

The online manuals will include automatic updates that are accessible via the web link. When clicking on the part within the manufacturers stripper or line sheet, it will allow the end user to access the component manufacturer website for updated information. This will allow for latest parts and service components from the individual part manufacturer or vendor.

Electrical Schematics

To maintain the vehicles electrical systems, the manufacturer shall provide to the purchaser the instructional manuals, complete electrical information and schematics on the vehicle. The electrical information shall be provided as follows:

Wiring Systems 12 and 120 Volt:

- Graphic symbols for electrical diagrams.
- Wire labeling, imprinting codes and index.
- Computer generated electrical schematics indicating the circuit number, wire size, switches, circuit breaker and terminals on the vehicle.

The manufacturer shall submit, with the bid proposal, a sample set of diagrams. Failure to do so will result in rejection of the proposal. Reference to "on delivery" or "at prebuild" submission is not an acceptable response for the bid document.

APPARATUS DIMENSIONS

The maximum height of the completed apparatus is 9' 6" (nine feet and six inches) tall. The maximum overall length of the completed apparatus is 30' (thirty feet) long.

CHASSIS



CHILMARK FIRE DEPARTMENT

Specifications for a Tanker

**Bidder
Complies**

Yes No

A 2013 Kenworth T300 series 2-Door conventional cab and chassis shall be supplied as specified below:

T370 Class 7: medium-duty Conventional. Electric Door locks LH/RH; Ignition & doors keyed alike; Single electric horn; Single-piece windshield; Electric windshield wipers, 2-speed plus intermittent; Electric windshield washers; Steering wheel 18in. 4-spoke; Glovebox door with locking latch; Dash-mounted cruise control with switches; Turn signal switch with column-mounted dimmer; Standard dash panels include gray w/ burl wood accents; Slate Gray interior primary color; Dark Slate Gray seat color; Floor mat; Inside sunvisor, LH/RH; Door courtesy lights; Under-dash center console with 1 cup holder, 1 ashtray & 1 lighter.

PACCAR PX-8 380 2010 380@2000 352@2200 1050@1400. Emergency Vehicle includes turbo exhaust brake, no code is used. Diagnostic plug for data link, Oil Cooler, Aluminum Flywheel Housing.

- N09020 P02 Yes...Cruise Control Auto Resume
- N09040 P04 No....Auto Engine Brake in Cruise
- N09060 P06 No....Gear Down Protection
- N09100 P11 No....Engine Protection Shtdwn
- N09120 P14 66....Max Vehicle Speed in Top Gear
- N09140 P19 66....Max Cruise Control Speed
- N09160 P26 1400..Max PTO Speed
- N09180 P10 No....Idle Shtdwn
- N09200 P32 5.....Idle Shtdwn Time
- N09220 P33 No....Idle Shtdwn Override

Prospector version 29.0. Supersedes previous version 28.X

Air compressor: Cummins 18.7 CFM, ISC, ISL, ISM & ISX, PX-6, PX-8 & Westport GX.

Air Cleaner: Dry-type firewall mounted w/filter restriction indicator.

Pre-filter hood mounted for air cleaner & HVAC

Cooling module: 1000 square inches T170/T270/T370/T470. Includes metal surge tank on T170/T270/T370.

RH under cab SCR for PX-8 w/ single horizontal tailpipe.

Fleetguard filter/Water separator: FS1003 w/WIF (water in fuel) sensor. For PACCAR PX-8 or Cummins ISL engines.

Retarder Jacobs for PX-8/ISL w/2-way switch. Replaces the standard turbo brake for PX-8



CHILMARK FIRE DEPARTMENT

Specifications for a Tanker

**Bidder
Complies**

Yes No

engines.

270 amp Leece-Neville alternator w/cab cut off switch & warning light for PX-8 only.

Batteries: 3 PACCAR GP31 threaded post (700) 2100 CCA dual purpose. 12-volt light system w/circuit protection.

Starter: PACCAR 12 volt electrical system w/centralized power distribution incorporating plug-in style relays. Circuit protection for serviceability, 12-volt light system w/circuit protection circuits number & color coded.

Multi-function engine connector for body builder interface for Cummins.

Body builder harness to EOF for customer installed remote throttle control. This does not include J1939 harness for communicating with 2010 engines. Requires either code 1900082 or 1900084.

Transmission: Allison World 3000EVS 6-speed w/PTO drive gear. 4th Gen controls. Includes heat exchanger & oil level sensor. Emergency Vehicle Series for vocational applications. Transynd transmission fluid is standard on all Allison 1000, 2000, 3000 & 4000 series transmissions.

Driveline: 2 standard-duty; 1 centerbearing. One heavy-duty centerbearing crossmember. This option upgrades an existing crossmember. The cost does not include the centerbearing and bracket. Crossmember location will be in accordance with Kenworth engineering standards, using the major components specified on the DTPO.

Torque converter included w/Allison Transmission.

Auto neutral for Allison - single input.

Dana Spicer E-1462I Front Axle rated 14.6K 3-1/2in. drop.

Front brakes included w/ front hub package. Air Brake: 14,600 lb. package includes 16-1/2 x5 brakes, cast drums, aluminum 10-bolt hub pilot LMS hubs, hubcaps, oil seals & automatic slack adjusters. For use w/ 22-1/2in. wheels.

Front Springs: Taperleaf 14.6K w/ shock absorbers for use on 2010+ chassis only.

Single power steering gear: 14.6K TRW TAS85 Use only w/ 2010+ chassis.

Dual Dana Spicer DSP41 rear axle rated at 40K. (DSP40 w/ heavy-wall housing). w/ 11mm housing and 1.88in. shaft diameter. Tandem rear axles.



CHILMARK FIRE DEPARTMENT

Specifications for a Tanker

**Bidder
Complies**

Yes No

Rear Axle Ratio - 6.17.

Dual rear brakes included w/rear hub package. Dual 46K Air Brake package includes 16-1/2x7 in. brakes, cast drums, aluminum 10-bolt hub pilot hubs, slack adjusters and oil seals for use w/ 22.5 in. wheels.

Spring Brake: 3036 dual 30 square inches; 36 square inches spring chamber.

Dustshields for drum brakes: all rear axles.

Bendix 6S/6M anti-lock brake system w/ ESP prewire

Tanker height less than 75" from top of frame

Rear suspension: Tandem Hendrickson RT403 40K 52 in. axle spacing. 6 in. saddle height w/ barpin bushing. Unladen Height: 8.6 in. Laden Height: 7.6 in.

Heavy-duty rear suspension crossmembers for RT403 or HAS402 replacing T3 standard.

Front tires: Bridgestone M843 12R22.5 16PR. 43.4 in. diameter, all position. On/off highway. 25/32 tread depth. 20.2 in. SLR.

Rear tires: Bridgestone M711 11R22.5 14PR. 41.9 in. diameter. 26/32 tread depth. Open shoulder drive tire. 19.6 in. SLR. Code is priced per pair of tires.

Rear Tire Quantity: 8

Front wheel: Alcoa 88367 22.5x8.25 aluminum with Lvl One [TM] finish, hub pilot mount. 7400lb. maximum rating.

Rear wheel: Alcoa 88367 22.5x8.25 aluminum with Lvl One [TM] finish, hub pilot mount. 7400 lb. maximum rating. Code is priced per pair of wheels.

Single front axle: 2 wheels Dura-Bright Buffed. Dura-Bright outboard surface of aluminum wheels.

Dual rear axle wheels: 4 wheels Dura-Bright Buffed. Dura-Bright outboard surface of outer dual or single aluminum wheels.

Rear Wheel/Rim Quantity: 8

Frame Rails: 10-5/8 x 3-1/2 x 5/16 in. Steel to 309 in. to 380 in. Truck frame weight is 2.91 lb.-in. per pair of rails. Section modulus is 14.80 cu.in., RBM is 1,776,000 in-lbs per rail.



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Specifications for a Tanker

**Bidder
Complies**

Yes No

120,000 PSI yield. Heat treated. Frame rail availability may be restricted based upon application, axle/suspension capacity, fifth wheel setting, or component/dimensional specifications. The results of the engineering review may result in a change to the requested frame rail. If a change is required Kenworth Application Engineering will advise the dealer of the appropriate material specification for a substitute rail.

Locate Partial Frame Inserts under cab to end-of-frame.

Partial Steel Insert: 10-5/8 in. or 10-3/4 in. steel over 10 ft to 25 ft or partial 2nd insert for 11-5/8 in. steel rail. Adds 1,149,000 in-lb to main rail RBM. Truck insert weight is 2.05 lb.-in. per pair of rails.

Bumper: Aerodynamic Chrome

Removable Front Tow Hooks: 2.

Front mudflaps.

Temporary Batt Box Across The Rails. Battery box location: BOC across the rails.

T270/370 Non-polished 2010 DPF/SCR cover: w/cab access step assembly, RH under.

One bolted aluminum crossmember for center frame: Replacing T3 standard.

One bolted aluminum crossmember for rear frame: Replacing T3 standard.

One bolted rear cab crossmember: Replacing T3 standard.

Square end-of-frame w/ bolted crossmember non-towing.

Fuel Tank: 56 US gallon 24.5in. aluminum under replace.

Small round DEF tank. 9 gallons of useable volume. The tank will be located just rearward of the under cab component on the side you specified, but will not be displayed in the Prospector graphic. Required capacity is calculated by fuel capacity of the vehicle and is a minimum of 6% by volume. This capacity will accommodate two diesel re-fillings for every DEF re-filling.

DEF tank location is on the LH.

Location: 56 gal fuel tank LH under cab

Cab: Curved Glass Conventional. Cab Includes aluminum & fiberglass fully hucked cab w/ all aluminum bulkhead doors & continuous stainless steel piano-style door hinges. Single



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Specifications for a Tanker

**Bidder
Complies**

Yes No

electric horn standard. Incandescent exterior lights include diagnosable bulb detection and warning. Trailer cable on tractors includes integrity detection. Standard features include multiplex wiring for interior lights, automated pre-trip inspection, short and open check diagnostics, and programmable daytime running lights. Warning alarm will sound when lights are left on.

Hood: Sloped aerodynamic hood includes grill & separate bumper.

Cab heater: w/integral defrosters & A/C 45,000 btu cab heater. No sleeper heater/AC. Includes 5 mode rotary control. T660 include filter media.

Adjustable telescoping tilt steering column.

Four position ignition switch, keyless. Available for fire truck service & EMT/emergency service only.

Gauge: Fuel filter restriction gauge.

Gauge: Oil temperature gauge transmission.

KW Driver Information Center: Includes fuel economy, RPM display, trip information, truck information, diagnostics, gear display, alarm clock.

Instrument package: Includes speedometer, tachometer, fuel gauge, engine coolant temperature gauge, engine oil pressure, voltmeter. Class 8 also includes primary & secondary air reservoir gauges & an air application gauge. DEF level gauge and warning lamp are included with 2010+ engines. Engine hour meter and outside air temperature readouts are standard. Primary read out will be MPH.

Cab interior: Pinnacle. Includes vinyl headliner & cab back panel, slate gray interior, dark slate gray seats, floormats, LH/RH inside sunvisor & door courtesy lights.

Driver seat: Kenworth Air cushion Plus HB vinyl. Standard features includes 7 in. fore and aft slide adjustment w/isolator, 6-23 degree recline, air suspension with cover, dual armrests, and single chamber air lumbar support. Seat cushion is 20 inches wide w/ 2-position tilt and 2-position front cushion extension. Seat material has a horizontal stitch pattern and is 2-tone in color. Seat back is carpeted and includes a map pocket. Seat is manufactured by National. Includes inside visor and retractable 3-point matching seat belts. Black seat belts for T700, gray on all other models.

Rider seat: Kenworth Air cushion Plus HB vinyl. Standard features includes 7 in. fore and aft slide adjustment w/isolator, 6-23 degree recline, air suspension with cover, dual armrests, and single chamber air lumbar support. Seat cushion is 20 inches wide w/ 2-position tilt and 2-position front cushion extension. Seat material has a horizontal stitch pattern and is 2-tone in



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Specifications for a Tanker

**Bidder
Complies**

Yes No

color. Seat back is carpeted. Seat is manufactured by National. Includes inside visor and retractable 3-point matching seat belts. Black seat belts for T700, gray on all other models.

Driver air seat height limited: NFPA compliant.

NFPA Compliance Kit: Includes seat occupancy sensors. Seat belt switches, VDR & seat sensor harness, reflective labels, and a second copy of operators manual.

Driver/Rider seat belts: Red, replace standard. Driver & Rider NFPA compliant. Includes rider bench seat.

Kenworth radio: AM/FM/CD/weather band. W/LED lighting.

Under-dash center console: W/2 cup holders, 1 ashtray, 1 lighter, 1 12V outlet & a storage compartment.

Self cancelling turn signal: W/head light dimmer switch.

Cab access contoured grabhandles, LH/RH.

LH & RH NFPA compliant grabhandles.

Daylite doors, includes RH peeper window.

Ignition and doors are keyed alike. Electric locks are standard on both cab doors.

Solenoid, switch & wiring for customer-installed air horn.

Dual convex mirrors 7-1/2 in. w/ offset mounting, and non-heated.

Single convex mirror 8-1/2 in. x 4-7/16 in. located on rider side, and non-heated.

Mirror: Dual Moto heated mirrors 7 in. x 16 in. LH & RH remote controlled. Switch located on door pad.

Mirror brackets 8-1/2 ft load width.

Rear cab stationary window 17 in. x 36 in.

Electric-powered LH & RH door window lifts. Switch located on door.

Exterior stainless steel sunvisor.

Headlamps: Halogen Projector Low Beam, Halogen Complex Reflector High Beam



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Specifications for a Tanker

**Bidder
Complies**

Yes No

Marker Lights: Five, rectangular, LED

Turn Signal Lights: Mounted on fender

Delete Stop, Tail, Turn & Backup Lights: only the lights & small jumper that connects the lights to the aft harness are deleted.

Body Builder Harness: Provides harness to extend tail, turn, stop & marker light circuits from standard body builder connector BOC to the end-of-frame. There is a plug on the chassis end & the opposite end is just wires.

Circuit Breakers: Replacing fuses. Does not apply to any 5-amp fuse box position. Breakers include stop/brake/turn, tail lamp, high & low beams, marker/clearance lamps, horn, fuel heat, gauges, wipers, air dryer, HVAC controls, panel lamps.

Air dryer: Bendix AD-SP heated with 2010 engine installations the dryer is mounted under the hood

Medium-duty Warranty: 1-year/unlimited mi.

Paint color number.

- ~~N97020 A L0235EB CANDY APPLE R~~ **WHITE match existing fleet**
- N97040 B -L0006EBWHITE B/C
- N97200 FRAME N0001EA BLACK

Imron 2 color non-sleeper custom B A Custom Design & Color Layouts order form is required with all custom designs. When transmitting ETO Electronic Paint Order, please submit all custom forms to Kenworth Sales Department, Attn: Paint Coordinator. Custom paint designs will be reviewed on a case-by-case basis. Approval or disapproval is at the discretion of Kenworth Truck Company. Consult with your paint coordinator if the chassis paint sketch includes any of the following items: Items attached to the frame or below the frame are to be painted a color that is different than the frame paint color; Items attached to the cab or sleeper are to be painted a color that is different than the cab or sleeper paint color; The requested paint number cannot be identified as a number or type approved by Kenworth.

Base coat/clear coat. The Kenworth Color Selector contains additional instructions, as well as information on Kenworth paint guidelines and surface finish applications. Kenworth is standard with Dupont Imron Elite paint.

FLUID DATA PLAQUE



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Specifications for a Tanker

**Bidder
Complies**

Yes No

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

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

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

DATA LABEL

HEIGHT LENGTH & WEIGHT

A highly visible label indicating the overall height, length, and weight of the vehicle shall be installed in the cab dash area.

CAB SEATING POSITION LIMITS

The label shall also include the seating positions for firefighters. A weight allowance of 250 pounds for each shall be factored into the gross vehicle weight rating of the chassis.

NO RIDE LABEL

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

HELMET WARNING TAG

One (1) label shall be installed in the cab, visible from each seating position. The label shall read "CAUTION: DO NOT WEAR HELMET WHILE SEATED." Helmets must be properly stowed while the vehicle is in motion according to the current edition of NFPA 1901.

REAR TOWING PROVISIONS

There shall be two tow eyes furnished under the rear of the body and attached directly to each



CHILMARK FIRE DEPARTMENT

Specifications for a Tanker

**Bidder
Complies**

Yes No

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

The tow plates shall be painted black.

HUB AND LUG NUT COVERS

The apparatus shall have chrome or stainless steel hub and lug nut covers on the front and tandem rear axles.

TIRE PRESSURE INDICATOR

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

EXHAUST SYSTEM

The chassis exhaust shall be modified and redirected to the right side of the apparatus and will exit ahead of the rear wheel.

EXHAUST HEAT SHIELD

A heat shield shall be installed under the body in the areas where the exhaust system is routed.

REAR MUD FLAPS

One (1) pair of black mud flaps shall be installed behind the rear wheels.

AIR SHORELINE EJECT

One (1) Kussmaul automatic "Air Eject" shall be provided for connection to an external air source to maintain the pressure in the chassis air brake system. The unit shall automatically activate when the engine is started, disconnecting the airline from the vehicle.

NOTE: The inlet shall be mounted in the diamond plate step area on the driver's side as far rearward as possible.



CHILMARK FIRE DEPARTMENT

Specifications for a Tanker

**Bidder
Complies**

Yes No

FIRE PUMP

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

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

Pump Body

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

Impeller

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

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

Pump Shaft

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

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

Pump Transmission

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

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



CHILMARK FIRE DEPARTMENT

Specifications for a Tanker

**Bidder
Complies**

Yes No

engine.

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

Pump Mounting

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

Drivelines

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

1500 GPM FIRE PUMP SPECIFICATIONS

The centrifugal type fire pump shall be a Hale model DSD midship mounted with a rated capacity of 1500 GPM. The pump shall meet NFPA 1901 requirements.

The pump shall be certified to meet the following deliveries:

- 1500 GPM @ 150 PSI
- 1500 GPM @ 165 PSI
- 1050 GPM @ 200 PSI
- 750 GPM @ 250 PSI

LEFT SIDE -- 6" UNGATED INTAKE

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

Chrome Cap

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

RIGHT SIDE -- 6" UNGATED INTAKE

One (1) 6" un gated suction intake shall be installed on the right side pump panel to supply the



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Specifications for a Tanker

**Bidder
Complies**

Yes No

fire pump from an external water supply. The intake shall be provided with a removable screen.

Chrome Cap

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

FIRE PUMP MECHANICAL WATER SEAL

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

PUMP SHIFT

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

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

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

The secondary braking device shall be automatically disengaged for pumping operations.

PUMP PRIMER

An automatic fire pump priming system shall be provided and installed. The system shall be oil-less type and environmentally safe. Once engaged, the system shall be fully automatic and not require any action from the pump operator/engineer when pump draft is lost. This feature provides an additional safety margin by maintaining pump flow from the available water source automatically during drafting operations. When air is introduced during a drafting operation from conditions such as whirlpools or turbulence from porta-tank refill operations, the priming system shall automatically engage to remove the air and stabilize water flow and



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Specifications for a Tanker

**Bidder
Complies**

Yes No

pump pressure. For additional safety, the entire system shall operate at less than 70dBA of ambient noise.

The priming system shall engage automatically whenever the pump discharge falls below five (5) psi and shall remain engaged until a pump prime has been achieved. The priming system shall automatically disengage when a positive pump discharge pressure has been established. The electrical current draw from the chassis batteries shall not exceed four (4) amps at any given time of operation and allow for unlimited run time without causing an overheat condition for of any of the system components.

A single engagement switch shall be provided on the pump control panel that will allow the operator to engage the automatic pump priming system. There shall be a light provided on the pump control panel to indicate when the system is engaged. The pump shall be capable of taking suction and discharging water with a lift of 10 feet in not more than 30 seconds with the pump dry, through 20 feet of suction hose of appropriate size. The priming system shall comply with applicable sections of NFPA standards.

ENGINE/PUMP GOVERNOR

Apparatus shall be equipped with a Class1 “Total Pressure Governor” (TPG) that is connected to the Electronic Control Module (ECM) mounted on the engine. The “TPG” will operate as a pressure sensor (regulating) governor (PSG) utilizing the engines J1939 data for optimal resolution and response when supported by the engine manufacturer. If J-1939 engine control is not supported, then analog remote throttle control shall be provided by the TPG.

The TPG shall utilize control algorithms that minimize pressure spikes during low or erratic water supply situations. The TPG shall be backwards compatible to any engine that supplies J1939 RPM, Temperature and Oil Pressure information providing the ability to maintain a consistent fleet fire-fighting capability and reduce operator cross training and confusion.

The TPG shall have the ability to use either a 300 PSI or a 600 PSI transducer for best operation. PSG system diagnostics shall be built in and accessible by technicians. Programmable presets for RPM and Pressure settings shall be easily configurable. The straightforward menu structure shall allow the “TPG” configuration to match existing apparatus operation as closely as possible.

The “TPG” shall also include indication of engine RPM, system voltage, engine oil pressure and engine temperature with audible alarm output for all. The “TPG” uses the J1939 data bus for engine information, requiring no additional sensors to be installed. The TPG shall use J1939 broadcast warnings for the alarm as a standard and allow the “user” to select warning values if “SOPs” dictate.



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Specifications for a Tanker

**Bidder
Complies**

Yes No

PUMP ANODES

There shall be sacrificial, zinc anodes in the pump steamer ports which shall protect the pump and piping from electrolysis. These anodes shall also act as screens.

PUMP PLUMBING SYSTEM

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

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

FIRE PUMP MASTER DRAIN

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

ADDITIONAL LOW POINT DRAINS

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

STAINLESS STEEL INTAKE MANIFOLD

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

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

STAINLESS STEEL DISCHARGE MANIFOLD

The discharge manifold assembly shall be fabricated with minimum of Schedule #10 Type 304 stainless steel. All threaded fittings shall be a minimum of Schedule #40 stainless steel.



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Specifications for a Tanker

**Bidder
Complies**

Yes No

The discharge manifold assembly shall have radiused sweep elbows to minimize water turbulence. The manifold shall be welded and pressure tested prior to installation. The stainless steel manifold inlet shall be attached to the pump discharge and have additional brackets as required to support the discharge manifold, valves and related components.

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

FIRE PUMP & PLUMBING SYSTEM PAINTING

The fire pump and plumbing system shall be painted by the fire apparatus manufacturer. The fire pump and the plumbing shall be painted metallic silver.

HOSE THREADS

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

VALVES

The valves shall be an Akron 8000 Series ball valve with stainless balls. The valves shall be covered by a 10 year warranty.

VALVE CONTROL

The Akron valves shall be equipped with Innovative Control (IC) side mount valve controls. The ergonomically designed 1/4 turn push-pull T-handle shall be chrome plated zinc with recessed labels for color coding and signage. The gear-control rod, double laminated locking clips, and rod housing shall be stainless steel and provide true positive lock that will eliminate valve drift. Bronze and Teflon impregnated stainless steel bushings in both ends of rod housing shall eliminate rod deflection, never need lubrication and ensure consistent long-term operation.

The control assembly shall include a decorative chrome-plated zinc panel mounted bezel with recessed color-coded label.

DRAIN VALVES

An Innovative Controls 3/4" cast bronze quarter-turn drain and bleeder valve shall be installed on each discharge.



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Specifications for a Tanker

**Bidder
Complies**

Yes No

The valve shall be complete with a chrome plated bronze ball, reinforced teflon seals, and blow-out proof stem rated to 600 PSI.

A chrome plated zinc handle shall be provided on each drain valve complete with a recessed ID label provision.

The handle shall lift to open and push down to close. The valve shall be mounted with an insulating gasket between the valve and the panel to reduce freezing potential.

DISCHARGE GAUGES

A Noshok discharge pressure gauges (30"-0-400 PSI) shall be provided for each discharge. The face of the gauge shall be a white dial with black letters.

The gauges will be located on the pump instrument panel directly above the corresponding valve control.

TANK TO PUMP LINE

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

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

TANK FILL LINE

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

FIRE PUMP SPLIT SHAFT DRIVESHAFTS AND INSTALLATION

The mid-ship split shaft fire pump shall be installed and shall include installation of the fire pump, modification and/or fabrication of new drivelines and all pump-mounting brackets.

The drive shafts shall be spin balanced prior to final installation.



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Specifications for a Tanker

**Bidder
Complies**

Yes No

INTAKE RELIEF/DUMP VALVE

One (1) TFT A18 series, 2-1/2" intake relief/dump valve preset at 125 psi shall be permanently installed on the suction side of the fire pump. The valve shall have an adjustment range of 75 psi to 250 psi, and shall be designed to automatically self-restore to a non-relieving position when excessive pressure is no longer present.

Discharge side of the intake relief valve shall be plumbed away from the pump operator.

FIRE PUMP COOLING

The fire pump shall be equipped with 3/8" cooling line from the pump to the water tank. This re-circulation line shall be controlled by a pump panel control valve with nameplate label noting it as the "fire pump bypass cooler". There shall be a check valve installed in the pump cooler line to prevent tank water from back flowing into the pump when it is not in use.

CHASSIS ENGINE HEAT EXCHANGER COOLING SYSTEM

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

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

UNDERWRITERS LABORATORIES FIRE PUMP TEST

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

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

FIRE PUMP TEST LABEL

A fire pump performance and rating label shall be installed on the fire apparatus pump panel. The label shall denote levels of pump performance and testing completed at factory. These shall include GPM at net pump pressure, RPM at such level, and other pertinent data as



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Specifications for a Tanker

**Bidder
Complies**

Yes No

required by applicable NFPA standards. In addition, the pressure control device, tank to pump flow tests, and other required testing shall be completed.

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

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

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

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

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

The intake shall be equipped with a 3/4" drain and bleeder valve. A nameplate label and removable screen shall be installed.

One (1) 2-1/2" chrome plated plug shall be provided. The threads shall be NST and the plug shall be equipped rocker lugs and chain or cable securement.

The specified valve shall be an Akron 8000 Series two and one half-inch (2-1/2") valve with a stainless ball.

The specified intake valve shall be equipped with one (1) manually operated swing type manual control located adjacent the intake. The valve shall be equipped with a color coded engraved type name plate.

DEADLAY HOSE BED

One (1) dead hosebed crosslay shall be installed over pump enclosure (no piping or valve provided to the hosebed). The hosebed decking shall be constructed with slots integrated into the hosebed floor.

The hose bed shall provide for a minimum capacity of **200 feet** of 2-1/2" diameter double jacket hose with hose and nozzle provided by fire department.



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Specifications for a Tanker

**Bidder
Complies**

Yes No

TWO (2) 1-1/2" CROSSLAY DISCHARGES

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

The crosslay hosebeds shall have smooth aluminum sides. The hosebed decking shall be constructed with slots integrated into the hosebed floor.

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

The specified valve shall be an Akron 8000 Series two-inch (2") valve with a stainless ball.

CROSSLAY HINGED COVER WITH END FLAPS

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

ROLLERS FOR CROSSLAY HOSE BED

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

CROSSLAY HOSEBEDS

Crosslay hosebed(s) shall be mounted over the upper pump panel or gauge panel in the upper portion of the pump enclosure. The crosslay hosebed shall be approximately 12" from the top of the pump enclosure.

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

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



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Specifications for a Tanker

**Bidder
Complies**

Yes No

The specified valve shall be an Akron 8000 Series two and one half-inch (2-1/2") valve with a stainless ball.

Chrome Elbow

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

Chrome Cap

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

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

One (1) 2-1/2" discharge shall be installed on the right side pump panel area and shall be controlled by a quarter turn ball valve. The discharge shall have 2-1/2" NST male hose threads. A color coded nameplate label shall be provided adjacent the control handle.

The specified valve shall be an Akron 8000 Series two and one half-inch (2-1/2") valve with a stainless ball.

Chrome Elbow

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

Chrome Cap

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

RIGHT SIDE PUMP PANEL -- 3" DISCHARGE

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

The specified valve shall be an Akron 8000 Series three-inch (3") valve with a stainless ball with a slow close feature.



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Specifications for a Tanker

**Bidder
Complies**

Yes No

Storz Elbow

One (1) lightweight aluminum elbow with 30 degree slant shall be provided. Threads shall be 4" Storz with lugs and manual locks x 3" female swivel NST with rocker lugs.

Storz Cap

One (1) 4" lightweight aluminum Storz cap with cable or chain securement shall be provided.

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

One (1) 2-1/2" discharge shall be installed on the left side rear panel of the apparatus body and shall be controlled by a quarter turn ball valve on the pump panel. The discharge shall have 2-1/2" NPT x 2-1/2" NST male hose threads.

The specified valve shall be an Akron 8000 Series two and one half-inch (2-1/2") valve with a stainless ball.

Storz Adapter

One (1) lightweight aluminum adapter with bright finish shall be provided. Threads shall be: 4" Storz with lugs with manual locks x 2-1/2" female swivel NST with rocker lugs.

Chrome Elbow

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

Storz Cap

One (1) 4" lightweight aluminum Storz cap with cable or chain securement shall be provided.

SIDE MOUNT PUMP ENCLOSURE

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

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



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Specifications for a Tanker

**Bidder
Complies**

Yes No

of NFPA standards.

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

The following controls and equipment as specified in the specifications, shall be provided on the pump panel or within the pump enclosure:

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

CROSSLAY INSTALLATION

The area atop the pump enclosure shall be notched for the installation of a crosslay hose bed. The hose bed shall have smooth sides and a perforated floor to allow for drainage. Provisions shall be provided to secure hose and equipment per requirements of applicable NFPA standards.

LEFT SIDE RUNNING BOARD

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

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



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**Bidder
Complies**

Yes No

RIGHT SIDE RUNNING BOARD

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

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

PUMP ENCLOSURE ACCESS DOOR

A pump panel access door shall be provided on the upper right side of the side mount pump enclosure. The access door shall be approximately 18" high and as wide as possible. The door shall be constructed of black thermoplastic covered aluminum with push button type latches.

PUMP PANEL -- SIDE MOUNT

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

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

LEFT SIDE PUMP PANEL

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

RIGHT SIDE HINGED PUMP PANEL

The pump panel installed on the on the right hand side of the pump enclosure shall be **hinged** with push-button latches.

PUMP PANEL COLOR TRIM PANELS

Innovative Controls intake and discharge trim rings shall be installed to the apparatus with mounting bolts. These bezel assemblies will be used to identify intake and discharge ports



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**Bidder
Complies**

Yes No

with color and verbiage. These trim rings are designed and manufactured to withstand the specified apparatus service environment and shall be backed by a warranty equal to that of the exterior paint and finish. The specified assemblies feature a chrome-plated panel-mount bezel with durable UV resistant polycarbonate inserts. These UV resistant polycarbonate graphic inserts shall be sub-surface screen printed to eliminate the possibility of wear and protect the inks from fading. All insert labels shall be backed with 3M permanent adhesive (200MP), which meets UL969 and NFPA standards.

BODY AND PUMP HOUSE FLEX JOINT RUBBER GASKET

A flexible rubber gasket shall be installed between the pump compartment and the apparatus body. This gasket will be designed to seal the pump compartment to the apparatus body as tightly as practical. This gasket is necessary for winter operation in extremely cold climates.

LABELS

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

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

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

COLOR CODED PUMP PANEL LABELING AND NAMEPLATES

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

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

MIDSHIP PUMP PANEL LIGHTS -- LEFT SIDE

Three (3) Whelen model #PSC0CDCR clear LED lights with clear lenses shall be installed under an instrument panel light hood on the left side pump panel. The lights shall be controlled by a switch located on the operator's instrument panel.



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**Bidder
Complies**

Yes No

MIDSHIP PUMP PANEL LIGHTS -- RIGHT SIDE

Three (3) Whelen model #PSC0CDCR clear LED lights with clear lenses shall be installed under an instrument panel light hood on the right side pump panel. The lights shall be controlled by a switch located on the operator's instrument panel.

PUMP PANEL LIGHTS

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

MASTER DISCHARGE AND INTAKE GAUGES

Two (2) 4" diameter Noshok discharge pressure and intake gauges (30"-0-600 PSI) shall be provided. The face of the gauge shall be a white dial with black letters. The gauges will be located on the pump instrument panel.

The master gauges shall have clear scratch resistant molded crystals with captive O-ring seals shall be used to ensure distortion free viewing and to seal the gauge. The gauges shall be filled with a synthetic mixture to dampen shock and vibration, lubricate the internal mechanisms, prevent lens condensation and ensure proper operation from -40°F to +160°F. Each gauge shall exceed ANSI B40.1 Grade A requirements with an accuracy of +/- 1.5% full scale and include a size appropriate phosphorous bronze bourdon tube with a reinforced lap joint and large tube base to increase the tube life and gauge accuracy. A polished chrome-plated brass bezel shall be provided to prevent corrosion and protect the lens and gauge case.

TEST TAPS

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

WATER TANK GAUGE

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



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**Bidder
Complies**

Yes No

angle of 180 degrees. The indicator case shall be waterproof, manufactured of aluminum, and have a distinctive blue label.

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

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

AIR HORN PUSH-BUTTON

One (1) push button with a label shall be installed on the pump instrument panel to operate the air horns.

WETSID WATER TANK - 3000 GALLON

The apparatus shall be equipped with a three-thousand (3000) gallon polypropylene water tank. The tank shall be equipped with a six-inch (6") overflow pipe.

WATER TANK FILL TOWER

A fill tower measuring approximately 10" x 10" square shall be provided on the water tank up to and including 3500 gallons total capacity.

WATER TANK SPECIFICATIONS

The "wetside" water tank shall be designed for installation in a fire apparatus chassis with integral body and compartments. The tank and body shall be mounted on a sub-structure assembly as designed and approved by the tank manufacturer. The water tank shall be constructed in full compliance to applicable sections of NFPA and Federal DOT standards.

The overflow pipe shall be a minimum of 6" in size. The tank design shall permit rapid evacuation of the liquid while the vehicle is parked on a 20% ascending slope, 20% descending slope, or a 15% side slope.

The capacity shall be recorded on the manufacturer's record of construction and the



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Specifications for a Tanker

**Bidder
Complies**

Yes No

certification shall be provided to the purchaser when the apparatus is delivered.

Tank Construction

The entire tank, baffling, sump, and other components of tank shall be constructed of high impact co-polymer (HIC) polypropylene. The material shall be a non-corrosive stress relieved thermo-plastic, natural or black in color and UV stabilized. The joints and seams shall be nitrogen-welded for maximum strength and integrity. The outside shell of the tank shall be constructed of a minimum 1/2" thick material with reinforcements installed in critical areas of fabrication. There shall be a provisions for the mounting of accessories on the tank side or rear walls. This shall be accomplished through the use of 1" thick HIC polypropylene blocks. These shall be welded to the tank. These blocks shall provide area which will allow for insert type fasteners to be installed, which will mate with necessary brackets and allow components and equipment to be attached to the tank.

The water tank shall be "full-floor" designed which places the walls of the tank shell vertically on the floor, for maximum strength and integrity. The construction process shall use only HIC polypropylene welding rod and shall be nitrogen-welded with all joints and seams double welded. For extra strength, the tank floor shall be "double welded" and shall not be of "bent" construction (no exceptions).

Tank Cover and Removal Provisions

The top of the water tank shall be fitted with removable lifting eyes to facilitate easy removal; these lifting eyes shall be designed with a 2 to 1 safety factor. The tank cover shall be recessed 3/8" from the top of the tank and shall be welded to both sides and longitudinal partitions for maximum integrity.

The tank cover shall incorporate a multiple cover locking design, which allows for individual removal and inspection if necessary. Each one of the covers shall have hold downs consisting of 2" polypropylene dowels spaced a maximum of 30" apart. These dowels shall extend through the covers and will assist in keeping the covers rigid under fast filling conditions. A minimum of two (2) lifting dowels shall be drilled and tapped 1/2" x 13" to accommodate the lifting eyes.

Tank Baffling

The interior of the foam tank shall be designed with baffling partitions, installed right to left and front to rear of the tank. The baffles shall have vent holes to permit air and liquid movement between foam tank compartments. The baffling partitions shall be interlocked and welded to each other, as well, as to the walls of the tank.

All baffling partitions shall be constructed of 3/8" polypropylene and the front to rear baffles shall extend from 4" off the floor of the tank to just under the cover. The baffling shall be in



CHILMARK FIRE DEPARTMENT

Specifications for a Tanker

**Bidder
Complies**

Yes No

full compliance to applicable NFPA standards.

Fill Tower

The water tank shall have a combination vent and manual fill tower and constructed of HIC polypropylene. The tower shall have a 1/4" thick removable polypropylene screen and a polypropylene hinged-type cover, with "water tank" label and maintenance instruction label.

Inside the fill tower there shall be fastened a combination vent overflow pipe approximately 4" down from the top. The vent and water overflow piping shall be with a Schedule 40 polypropylene pipe designed to run through the tank and discharge aft of the rear wheels or axle area.

Tank Sump

The water tank sump shall be constructed of HIC polypropylene and shall be used as a combination clean-out and drain. The sump shall have a minimum 3" NPT threaded outlet on the bottom for a drain plug. The anti-swirl device shall be a horizontal plate located approximately 2" above the sump. Plate installation shall avoid cavitation over the sump during rapid water removal from tank.

Tank-To-Pump Suction Connection

Piping shall be installed from the tank sump to the outside of the water tank for connection of the tank-to-pump suction line (piping, valve, and controls installed by apparatus manufacturer.) This piping shall be sized to provide full flow as required by applicable NFPA standards.

Pump-To-Tank-Fill Connection

The water tank shall have provisions for connection of flexible piping from the pump to the tank (piping, valve, and controls installed by apparatus manufacturer). All tank-fill connections shall be provided with internal flow deflectors to break up the stream of water entering the tank, and be capable of withstanding sustained fill rates of up to 1000 gallons per minute.

Tank Mounting and Sub-frame Construction

A sub-frame weldment shall be provided to adequately support the tank, compartments and fender modules in their fully loaded and equipped condition. The design shall allow for proper interface between body and wheel well panels, as well as ample clearances for the tank. The design shall incorporate proper cross member spacing as it relates to unsupported area under the tank.



CHILMARK FIRE DEPARTMENT

Specifications for a Tanker

**Bidder
Complies**

Yes No

The tank shall be isolated from the cross members with a minimum of 1/4" thick 60 durometer rubber strips. The tank shall be designed on the "free floating" and the sub-frame shall also incorporate provisions for capturing the tank front and rear as well as side to side to prevent shifting during vehicle operation. This shall be accomplished through the use of pre-formed retainer brackets, one on each end of the tank bottom. These brackets shall encapsulate a cross member support as part of the sub-frame.

The completed sub-frame shall be attached to the truck frame rails using a hard non-metallic isolator between the frame rail and the sub-frame. Final clamping shall be accomplished through the use of heat treated U-bolts.

The tank construction shall include PolyProSeal™ technology wherein a sealant shall be installed between the plastic components prior to being fusion welded. This sealing method shall provide a liquid barrier, offering leak protection in the event of a weld compromise.

The tank shall be equipped with Polychromatic fill towers. The water fill tower shall be blue in color.

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

The tank shall be manufactured by United Plastic Fabricating (UPF).

WATER TANK WARRANTY

UNITED PLASTIC FABRICATION INC. Warrants each UPF POLY-TANK IIE Booster/Foam tank to be free from manufacturing defects in material and workmanship for the service life of the vehicle (vehicle must be actively used in fire suppression). The UPF POLY-TANK IIE must be installed in accordance with the United Plastic Fabricating installation manual. Every UPF POLY-TANK IIE is thoroughly inspected and tested for leaks before leaving our facility. Should any problems develop with your UPF POLY-TANK IIE booster/foam tank and will not meet performance criteria during the service life of the vehicle, notify UPF in writing or call our TOLL FREE SERVICE HOT LINE 1-800-USA-POLY. Provide UPF with the serial number and a description of the problem. If the tank problem would render the truck out of service, UPF will dispatch a service technician WITHIN 48 HOURS (2 DAYS) to repair the tank. (This time period is for North America only). If the vehicle can remain in service, UPF will dispatch a service technician within a mutually agreed upon time period.

DIRECT TANK FILL – REAR LEFT SIDE



CHILMARK FIRE DEPARTMENT

Specifications for a Tanker

**Bidder
Complies**

Yes No

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

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

The specified valve shall be an Akron 8000 Series two and one half-inch (2-1/2") valve with a stainless ball.

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

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

Chrome plug

One (1) 2-1/2" chrome plated plug shall be provided. The threads shall be NST and the plug shall be equipped rocker lugs and chain or cable securement.

TANK FILL ELBOW – REAR LEFT SIDE

The rear left side direct tank fill shall be equipped with a 30-degree elbow and a 3/4" drain.

DIRECT TANK FILL – REAR RIGHT SIDE

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

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

The specified valve shall be an Akron 8000 Series two and one half-inch (2-1/2") valve with a stainless ball.

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

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

Chrome plug

One (1) 2-1/2" chrome plated plug shall be provided. The threads shall be NST and the plug shall be equipped rocker lugs and chain or cable securement.



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Specifications for a Tanker

**Bidder
Complies**

Yes No

TANK FILL ELBOW – REAR RIGHT SIDE

The rear right side direct tank fill shall be equipped with a 30-degree elbow and a 3/4" drain.

DIRECT TANK FILL – REAR RIGHT SIDE UPPER

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

The valve shall be located and controlled on the right side rear of body on the upper half of the tank. This fill will be used to fill the tank from the water drop in the fire house station.

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

One (1) 2-1/2" chrome plated plug shall be provided. The threads shall be NST and the plug shall be equipped rocker lugs and chain or cable securement.

The specified valve shall be an Akron 8000 Series two and one half-inch (2-1/2") valve with a stainless ball.

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

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

TANK FILL ELBOW – REAR RIGHT SIDE UPPER

The rear left side direct tank fill shall be equipped with a 30-degree elbow and a 3/4" drain.

QUICK DUMP - REAR

One (1) Newton 10" quick dump valve shall be provided and externally mounted. The location shall be at the center rear of the apparatus.

One (1) manual operated lever control shall be used to open and close the rear dump valve.

The Newton dump valve installed on the water tank shall be constructed of **stainless steel**.

One (1) swivel dump shall be fabricated with .125" aluminum and attached to the Newton Quick Dump.



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Specifications for a Tanker

**Bidder
Complies**

Yes No

The swivel dump shall have the ability to dump water from the driver's side or the officer's side and any point in between. The swivel dump is 70 inches long when fully extended. The swivel dump shall have an extension that is hinged and can be folded up when the dump is not in use. The dump shall have the ability to be stowed on either the driver's side or the officer's side of the truck. The latch that holds the extension in the stowed position shall also help support the swivel dump extension.

When the extension is in the down and extended position, there shall be no less than a 34 inch clearance from level ground to the bottom of the dump to ensure that there is enough clearance for the swivel dump to offload into all portable drop tanks.

The dump shall meet NFPA requirements for water delivery on three sides of the vehicle.

Cast Handle

A cast handle shall be installed vertically at the end of the lower dump chute. This shall provide a firm gripping position to dislodge the chute from the friction lock. The handle will prevent the tendency to grab the top chute and add undue stress to the hinge in trying to pivot the chute.

HOSEBED

There shall be a hosebed area constructed of polypropylene on the top of the tank consisting of two side walls and one front panel. The hosebed shall be welded to the outside perimeter of the tank cover.

HOSE BED STORAGE CAPACITY

The hose bed shall be designed to have a storage capacity of fire department supplied fire hose.

- The hose bed shall be designed to have storage capacity for eight (8) 100-ft lengths of 4" LDH Single Jacket rubber fire hose.

VINYL HOSEBED COVER

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

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

The cover shall be red.



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Specifications for a Tanker

**Bidder
Complies**

Yes No

3/16" ALUMINUM BODY

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

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

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

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

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

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

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

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

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



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Specifications for a Tanker

**Bidder
Complies**

Yes No

FASTENERS

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

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

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

ELECTROLYSIS CORROSION CONTROL

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

All 1/4" diameter and smaller screws and bolts shall be stainless steel with a powdered aluminum coating. This coating shall be bonded metallurgically to the stainless screws to prevent peeling and flaking. This coating is designed to reduce the potential for electrolysis and corrosion to occur where items are assembled and attached.

Due to the expected life of the vehicle, proposals will only be acceptable from manufacturers that include these corrosion features.

COMPARTMENT FLOORS

The compartment floors shall be constructed of aluminum treadplate material.

BODY SUB-FRAME

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

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

Two full frame length 1/2" x 3" flat steel frame pads shall be attached to the body subframe



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Specifications for a Tanker

**Bidder
Complies**

Yes No

and rest on top of the chassis frame rails for proper frame weight distribution.

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

The rear subframe and lower body platform support members shall be of the "two piece" design, fabricated of 3.4 lb. Per foot heavy channel and welded to the full length subframe channel liners at the rear.

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

After fabrication the entire subframe assembly shall be hot dip galvanized to prevent corrosion. The hot dip galvanized subframe shall have a lifetime warranty against failure due to corrosion.

This steel subframe shall carry the weight of the apparatus body, tank, water and equipment. This method of apparatus construction gives an excellent strength/weight ratio.

TANDEM AXLE REAR WHEEL WELL AREA

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

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

REAR WHEEL WELL FENDERETTES

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

BODY WIDTH

The overall width of the pumper body shall not exceed 102".



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Specifications for a Tanker

**Bidder
Complies**

Yes No

COMPARTMENT DEPTH

The left and right side compartments shall be a minimum of 26" deep.

COMPARTMENT HEIGHT

The left and right side body compartments shall be a minimum of 36" high.

COMPARTMENT DOORS

The apparatus body shall be equipped with ROM brand roll up doors.

ROLL UP DOOR CONSTRUCTION

The roll up doors shall be fabricated from aluminum extrusions and be manufactured and assembled in the United States.

The door slats shall be double-wall extrusions with dimensions of 1.366" high x .315" thick. The exterior surface shall be flat and the interior surface concave to deflect loose equipment to prevent the door from jamming. Each slat shall have interlocking end shoes to prevent the slat from moving side to side resulting in binding of the door. Each slat shall be separated by a co-extruded PVC and rubber inner seal to prevent metal to metal contact and minimize dirt and moisture from entering the compartment. The inner seal shall not be visible from the exterior to maintain a clean appearance of door. The slats shall have interlocking joints with a folding locking flange to provide security and prevent penetration by sharp objects.

The track shall be a one (1) piece aluminum assembly that has an attaching flange and finishing flange incorporated into the design that facilitates installation and provides a finished look to the door without additional trim or caulking. A low profile side seal shall be utilized to maximize usable compartment space.

A drip rail designed to prevent water from dripping into the compartment shall be provided. The drip rail shall have a built in replaceable non-contacting seal to eliminate scratching of the surface of the door.

Bottom rail extrusion must have smooth back to prevent loose equipment from jamming the door and have "V" shaped double seal to prevent water and debris from entering the compartment. The door latch system shall be a full width one (1) piece lift bar that enables the user to operate with one hand.



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Specifications for a Tanker

**Bidder
Complies**

Yes No

The roll mechanism shall have a clip system that connects the curtain slats to the operator drum to allow for easy tension adjustment without tools. A four (4) inch diameter counterbalanced operator drum to shall be incorporated to assist in lifting the door.

ROM Tall Bottom Rail adds an additional 1-1/2" clearance between the liftbar and the threshold. The same clean ROM bottom rail look is preserved while providing adequate hand clearance while wearing gloves.

COMPARTMENT VENTS

One (1) louver, with filter, shall be installed in each of the compartments.

ADJUSTABLE SHELVING TRACKS

The following specified compartments shall be equipped with two (2) aluminum adjustable tracks, vertically mounted, that are bolted in place for adjustable shelving and equipment mounting.

- Compartment L1, left side forward compartment
- Compartment L2, left side rearward compartment
- Compartment R1, right side forward compartment
- Compartment R3, right side rear ward compartment

COMPARTMENT LIGHTS

One (1) 27" long Whelen Fluorent™ Plus Model F27PC LED light shall be installed on one side of each of the compartment door opening. Each light shall contain two (2) LEDs per inch producing approximately 270 lumens. The lights shall have a 5/8" clear polycarbonate tube enclosure for severe duty applications and silicone rubber end caps for a superior sealed fit around light tube and wires. The lights shall be provided with a 5 year HDP® Heavy Duty Professional warranty.

The lights shall be waterproof and be connectible via a jumper wire to add additional lights in series if required.

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

LEFT SIDE FRONT COMPARTMENT



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Specifications for a Tanker

**Bidder
Complies**

Yes No

L1: There shall be one (1) low compartment located ahead of the rear wheels. The compartment shall be equipped with a low single natural finish roll up door.

LEFT side REAR COMPARTMENT

L2: There shall be one (1) low compartment located behind the rear wheels. The compartment shall be equipped with a low single natural finish roll up door.

RIGHT SIDE FRONT COMPARTMENT

R1: There shall be one (1) low compartment located ahead of the rear wheels. The compartment shall be equipped with a low single natural finish roll up door.

RIGHT SIDE REAR COMPARTMENT

R2: There shall be one (1) low compartment located behind the rear wheels. The compartment shall be equipped with a low single natural finish roll up door.

REAR STEP

The rear step shall be specially designed and engineered for the rear of the apparatus body. The step shall be bolted in place and be easily removable for replacement or repair. The tailboard shall be constructed of .188" aluminum diamond plate or equal non-slip surface in compliance with NFPA #1901 standards.

The step shall extend approximately 1"-2" past the rear swivel dump.

The maximum height of the step assembly shall be no more than 24" from the ground when the apparatus is in the loaded condition. A label shall be provided warning personnel that riding on the rear step while the apparatus is in motion is prohibited.

HARD SUCTION MOUNTING – DRIVER'S SIDE

A hard suction hose compartment shall be provided below the upper "T" of the booster tank, on the left side. The design shall allow three (3) 10' lengths x 6" hard suction hoses to be individually removed from the rear of the apparatus.

The hard suction hose compartment shall have an hinged door with push to latch door catches at the rear of the body.



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Specifications for a Tanker

**Bidder
Complies**

Yes No

The hinged door shall be constructed of aluminum treadplate.

PORTABLE TANK HOLDER

A portable water tank holder shall be mounted beneath the officer's side "T" of the tank. The holder will include a stop on each end as well as a locking device to hold the tank in place.

The tank shall slide in horizontally into the hold from the right side of the body.

FRONT BODY PROTECTION PANELS

Aluminum tread plate overlays and panels shall be installed on the front of the body from the lower edge to the top of the compartment doors.

REAR BODY PROTECTION PANELS

The rear body panels of the body shall be a smooth material, to allow for the proper application and installation of a "Chevron" stripe on the rear.

FOLDING STEPS LEFT SIDE REAR

Four (4) folding steps of die cast high-strength zinc/aluminum alloy, plated with a superior automotive grade chrome finish shall be provided. The greater than 42 sq. in. serrated non-skid step traction area also offers an oversized non-slip grasp hand-hold. A heavy duty stainless steel spring design firmly holds the step in the open or closed positions. A rubber stop prevents any transit noise and rattles in the closed position. Step lighting shall be from a LED light mounted above the step.

The step has been third part tested to assure conformation of NFPA 1901 and FHA, 49CFR specifications for stepping surfaces and handhold.

The steps shall be installed on the rear left side of the body.

REAR PULL-OUT STEP

A Ziamatic model PS-8-5 pull-out step shall be provided at the rear of the body. They shall be mounted to the underside of the rear tailboard under the left side of the tailboard.



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Specifications for a Tanker

**Bidder
Complies**

Yes No

It shall be made of corrosion resistant steel and a cast aluminum stepping surface, the PS-8-5 model is made to handle the wear and tear of the fire service while reducing the wear and tear on you.

When in the stored position the unit takes up a mere 12" x 16-1/4" area, and when extended drops 8" to create an optimal stepping distance.

HANDRAIL REAR STEP

Two (2) extruded aluminum non-slip handrails, approximately 30" in length, shall be provided and vertically mounted on the rear of the apparatus, one (1) on each side of the body.

HANDRAIL BELOW HOSEBED

One (1) extruded aluminum non-slip handrail, approximately 48" in length, shall be provided and horizontally mounted below the hosebed on the rear of the apparatus.

LOW VOLTAGE ELECTRICAL SYSTEM SPECIFICATIONS

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

All wiring shall be stranded copper or copper alloy conductors of a gauge rated to carry 125 percent of the maximum current for the protected circuit. Voltage drops in all wiring from the power source to the using device shall not exceed 10 percent. The wiring and wiring harness and insulation shall be in conformance to applicable SAE and NFPA standards. The wiring harness shall conform to SAE J-1128 with GXL temperature properties. All exposed wiring shall be protected in a loom with a minimum 289 degree Fahrenheit rating. All wiring looms shall be properly supported and attached to body members. The electrical conductors shall be constructed in accordance with applicable SAE standards, except when good engineering practice requires special construction.

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

The wiring between the cab and body shall be joined using Deutsche type connectors or an enclosed in a terminal junction panel area. This system will permit body removal with



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Specifications for a Tanker

**Bidder
Complies**

Yes No

minimal impact on the apparatus electrical system. All connections shall be crimp-type with insulated shanks to resist moisture and foreign debris such as grease and road grime. Weather-resistant connectors shall be provided throughout to ensure the integrity of the electrical system.

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

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

The electrical system shall include the following:

- Electrical terminals in weather exposed areas shall have a non-conductive grease or spray applied. A corrosion preventative compound shall be applicable to all terminal plugs located outside of the cab or body.
- The electrical wiring shall be harnessed or be placed in a protective loom.
- Holes made in the roof shall be caulked with silicone. Large fender washers shall be used when fastening equipment to the underside of the cab roof.
- Any electrical component that is installed in an exposed area shall be mounted in a manner that will not allow moisture to accumulate in it.
- A coil of wire must be provided behind an electrical appliance to allow them to be pulled away from mounting area for inspection and service work.
- All lights that have their sockets in a weather exposed area shall have corrosion preventative compound added to the socket terminal area.

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



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Specifications for a Tanker

**Bidder
Complies**

Yes No

switches shall be appropriately identified as to their function.

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

NFPA REQUIRED TESTING OF ELECTRICAL SYSTEM

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

1. Reserve capacity test:

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

2. Alternator performance test at idle:

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

3. Alternator performance test at full load:

The total continuous electrical load shall be activated with the engine running up to the engine manufacturer's governed speed. The test duration shall be a minimum of two (2) hours. Activation of the load management system is permitted during this test. However, if an alarm sounds due to excessive battery discharge, as detected by the system requirements in the NFPA standards, or a system voltage of less than 11.7 volts dc for more than 120 seconds is present, the test has failed.

4. Low voltage alarm test:

Following the completion of the above tests, the engine shall be shut off. The total continuous



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Specifications for a Tanker

**Bidder
Complies**

Yes No

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

NFPA REQUIRED DOCUMENTATION

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

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

WEATHER PROOF ELECTRICAL JUNCTION BOX

The main electrical junction box shall be a **sealed weather proof box** and located away from water spray conditions. The main body junction panel shall house the automatic reset breakers and relays where required. The main body junction panel shall be located in the pump compartment.

LOAD MANAGER

The apparatus shall be equipped with a Kussmaul model 091-79 Automatic Load Shedding System for performing continuous electrical load management. The Load Manager shall have the following features:

- Monitor 12-volt system and detect low voltage.
- Capability to control two (2) loads.
- Automatic reset when voltage rises.
- Adjustable voltage setpoint.

The load manager shall be protected against reverse polarity and shorted outputs, and be



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**Bidder
Complies**

Yes No

enclosed in an enclosure to enhance EMI/RFI protection. The manufacture shall provide for all electrical loads in excess of the NFPA minimum electrical requirements that exceed the alternator output.

CAB CONSOLE

An electrical console shall be constructed of .125" black thermoplastic coated smooth aluminum material, and mounted in the cab of the truck chassis. On the rear of the console shall be a 6" storage pocket to hold maps, clip boards and a 2" 3-ring binder. Console shall be designed and installed between the driver and passenger seats. The top face of the console shall be designed as the switch panel for all emergency light switches. The switch panel shall be hinged for easy access to the switch connections.

All emergency light switches shall be lighted, rocker style. Switches shall be internally lit when the switch circuit is in the on position. A plug-in identification label is to be provided and installed adjacent to each rocker switch with backlighting provided behind the label.

Switches

A rocker style internally lighted switch shall be provided and wired through a heavy-duty relay to activate power to the emergency lights. The emergency lights shall be activated by a single "MASTER SWITCH" on the electrical console.

NOTE: On the rear of the console shall be a 6" storage pocket to hold maps, clip boards and a 2" 3-ring binder.

BATTERY CHARGER

One (1) Kussmaul Autocharge 4000 model #091-89-12, 45 amp fully automatic high output battery charger shall be wired to the 12 volt battery system. The charger unit shall be mounted in a clean dry area and will be accessible for service and/or maintenance.

BATTERY CHARGER DISPLAY

One (1) Kussmaul model 091-76 universal dual battery bank voltage display shall be supplied with the charger.

AUTO-EJECT

A Kussmaul "Super Auto-Eject" 20-amp automatic disconnect device shall be provided and



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**Bidder
Complies**

Yes No

installed on the 110 volt shoreline connection complete with weatherproof cover and matching plug. The Auto-Eject shall be activated by the chassis starter switch to disconnect the plug. The Super Auto-Eject shall be completely sealed to prevent contamination of the mechanism by inclement weather and road conditions. The Super Auto-Eject shall have an internal switch to open and close the AC circuit after the mating connector is inserted and before the connector is removed.

The inlet shall be mounted in the diamond plate step area on the driver's side next to the air inlet.

AIR HORNS

Two (2) Stuttertone chrome plated air horns shall be mounted on the side of the hood of the commercial chassis. An air protection valve shall be provided in the air horn piping that will not allow the chassis air brake system to drop below 90 PSI.

ELECTRIC TRAFFIC HORN AND AIR HORN SELECTOR SWITCH

One (1) selector switch shall be provided on the cab's dash that will allow the chassis steering wheel horn button to activate either the electric traffic horn or air horn system.

AIR HORN SWITCH – OFFICER’S SIDE

One (1) switch shall be installed to activate the air horn system on the officer's side of the cab dash.

12 VOLT POWER SOURCE

One (1) 12 volt power and ground connection rated at 30 amps shall be provided on the apparatus for the installation of a mobile two-way radio.

NOTE: Mounted in the cab console.

The power source shall be "constant hot" and remain active regardless of the position of the master battery switch.

ENGINE COMPARTMENT LIGHT

One (1) 12 volt incandescent light with switch shall be mounted in the engine enclosure.



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**Bidder
Complies**

Yes No

PUMP ENCLOSURE LIGHTS

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

BACK-UP ALARM

One (1) automatic electric back-up alarm shall be wired to the back-up light circuit, and mounted under the rear of the apparatus body.

BACKUP CAMERA SYSTEM

One (1) Federal Signal model CAMSET70-NTSC-4 rear view safety system shall be furnished utilizing a color high resolution camera for improved picture quality. A cast aluminum sealed camera enclosure shall be utilized along with military type electronic connections. The monitor shall be a CAMLCD-70 7" and include a cable connection assembly.

RADIO ANTENNA BASE

One (1) radio antenna base shall be supplied and installed on the apparatus, the antenna coax terminating in the cab. The location shall be determined by the customer.

NOTE: Cables to terminate in the cab console.

VEHICLE DATA RECORDER

Apparatus shall be equipped with a Class 1 "Vehicle Data Recorder (VDR) that is connected to the power train CAN (Controller Area Network) bus consisting of transmission (TCM), engine control (ECM) and anti-lock brake (ABS) modules mounted on the apparatus. The VDR will function per NFPA 1901-2009 sections 4.11 (Vehicle Data Recorder) utilizing the power train s J1939 data.

The VDR data shall be downloadable by USB cable to a computer using either Microsoft™ or Apple™ Operating Systems using Class 1/ O.E.M. supplied reporting software. (Which software shall be provided to the Chilmark Fire Department.)



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**Bidder
Complies**

Yes No

SEAT BELT WARNING SYSTEM

Apparatus shall be equipped with a Class1 Seat Belt Warning System” (SBW) that is connected to the power train CAN (Controller Area Network) bus consisting of transmission (TCM), engine control (ECM) and anti-lock brake (ABS) modules mounted on the apparatus. The SBW will function per NFPA 1901-2009 14.1.3.10 (Seat Belt Warning) using the Class1 “Seat Belt Input Module” for seat occupied and belt status information.

The SBW system shall have the ability to use either normally open (NO) or normally closed (NC) switches (user selectable by “dip switches” at ground potential) for operation.

SEAT BELT WARNING DISPLAY

A small rocker style display shall be installed in the chassis cab for the seat belt warning system.

MARKER LIGHTS

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

REAR CORNER MARKER LIGHTS

Two (2) United Group Model VS-L31RW flex rubber arm style LED Clearance lights shall be mounted on the rear of the body, one each side. These lights are in addition to the lights required by the DOT.

LICENSE PLATE BRACKET

Two (2) license plate brackets shall be provided. One at the front bumper and one at the rear bumper. The bracket on the rear bumper shall have a light and shall be chrome plated.

REAR TAIL LIGHTS

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

REAR TURN SIGNALS



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**Bidder
Complies**

Yes No

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

REAR BACKUP LIGHTS

Two (2) Whelen Series 600, halogen backup lights shall be installed on the rear of the apparatus body. The dimensions shall be 4" x 6" and the lens color shall be clear.

BACKUP LIGHT SWITCH

One (1) manual backup light switch shall be installed on the rear panel of the apparatus body.

REAR TAILLIGHT BEZEL

Two (2) tail light cluster bezels shall be supplied. Each bezel shall be designed to hold the specified rear lights located at the lower rear corners of the body.

CAB GROUND LIGHTS

LED ground lights shall be installed under the two (2) cab doors.

PUMP PANEL GROUND LIGHTS

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

REAR STEP GROUND LIGHTS

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

GROUND LIGHT ACTIVATION

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

REAR TAILBOARD LIGHTS



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**Bidder
Complies**

Yes No

Two (2) LED step lights with clear lens shall be installed to illuminate the step surfaces at the rear of the apparatus body.

STEP LIGHT ACTIVATION

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

BODY SCENE LIGHT

Six (6) Whelen M9 Series Super-LED 7-1/8" x 9-1/8" gradient scene lights, with chrome plated surface mount flanges, shall be installed.

The lights shall be located as follows:

- Two (2) scene lights shall be located on the left side of the apparatus body.
- Two (2) scene lights shall be located on the right side of the apparatus body.
- Two (2) scene lights shall be located on the rear of the apparatus body.

The lights shall be activated as follows:

- One (1) scene light switch with indicator shall be installed on the cab main switch panel to control the left side scene light(s). The switch shall be labeled "LEFT SCENE".
- One (1) scene light switch with indicator shall be installed on the cab main switch panel to control the right side scene light(s). The switch shall be labeled "RIGHT SCENE".
- One (1) scene light switch with indicator shall be installed on the cab main switch panel to control the rear scene light(s). The switch shall be labeled "REAR SCENE".
- The rear scene lights shall activate automatically upon placing the transmission into reverse.

DOOR OPEN LIGHT

One (1) red flashing, warning light shall be provided and installed in the driver's compartment to indicate an open passenger or apparatus compartment door. The warning light shall also be attached to folding equipment racks and light towers as specified. The light shall be a flashing Whelen OS model LED marker light with a red lens and shall be properly marked and identified.

Per NFPA 13.11.4, the hazard light shall be marked w/ a sign/tag that reads, "DO NOT MOVE APPARATUS WHEN LIGHT IS ON".



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**Bidder
Complies**

Yes No

DOOR OPEN/HAZARD WARNING ALARM

A door open/hazard warning alarm shall be installed. The audible alarm shall activate when an open door is detected upon release of the parking brake. The alarm shall have a distinct noise to avoid conflict with other cab mounted alarms.

ELECTRIC SIREN AND CONTROL

One (1) Whelen model #295SLSA1 electronic siren shall be mounted in the cab. This unit shall feature an electronic air horn, wail, yelp, hi-lo and shall have a hard wired PA microphone.

SPEAKER

One (1) Whelen Model #SA314A, cast aluminum speaker shall be installed. The speaker shall be wired to the electric siren located in the cab.

SPEAKER LOCATION

The siren speaker shall be installed in the center of the apparatus bumper.

LIGHTBAR

One (1) Whelen Ultra Freedom Model #FN60QLED LED light bar shall be installed. The lightbar shall be 60" in length. The configuration and lens color shall be red / clear / red. The light bar shall be installed on the apparatus cab roof.

LIGHTBAR ACTIVATION

The front upper light bar activation shall be wired into the master warning switch.

UPPER REAR WARNING LIGHTS

One (1) pair of Whelen model #900 red Super LED warning lights shall be installed, one each side on the upper rear of the apparatus body. The dimensions of the lights shall be 7" x 9".



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Specifications for a Tanker

**Bidder
Complies**

Yes No

There shall be chrome bezels supplied and installed on the warning lights.

UPPER SIDE FRONT WARNING LIGHTS

One (1) pair of Whelen model #900 red Super LED warning lights shall be installed, on the upper portion of the body side, towards the front. The dimensions of the lights shall be 7" x 9".

There shall be chrome bezels supplied and installed on the warning lights.

UPPER SIDE REAR WARNING LIGHTS

One (1) pair of Whelen model #900 red Super LED warning lights shall be installed, one each side on the upper portion of the body side, towards the rear of the body. The dimensions of the lights shall be 7" x 9".

There shall be chrome bezels supplied and installed on the warning lights.

LOWER FRONT WARNING LIGHTS

One (1) pair of Whelen model #600 red Super LED warning lights shall be installed, one each side on the front of the chassis cab. The dimensions of the lights shall be 4" x 6".

There shall be chrome bezels supplied and installed on the warning lights.

INTERSECTION WARNING LIGHTS

One (1) pair of Whelen model #600 red Super LED warning lights shall be installed one each side of the chassis cab. The dimensions of the lights shall be 4" x 6".

NOTE: Mounted on the sides of the extended front bumper.

There shall be chrome bezels supplied and installed on the warning lights.

LOWER MID-BODY WARNING LIGHTS

One (1) pair of Whelen model #600 red Super LED warning lights shall be installed, one each side of the apparatus, mid-body. The dimensions of the lights shall be 4" x 6".

NOTE: Mounted in the rear wheel well area, in the forward section if possible.



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Specifications for a Tanker

**Bidder
Complies**

Yes No

There shall be chrome bezels supplied and installed on the warning lights.

LOWER REAR SIDE WARNING LIGHTS

One (1) pair of Whelen model #500 surface mounted red Super LED warning lights shall be installed, one each side of the apparatus body, towards the rear of the body. The dimensions of the lights shall be 1-5/8" x 5" x 1".

NOTE: Mounted inside the lower rub rail, as far rearward as possible.

There shall be chrome bezels supplied and installed on the warning lights.

LOWER REAR WARNING LIGHTS

One (1) pair of Whelen model #600 red Super LED warning lights shall be installed, one each side on the lower rear of the apparatus body. The dimensions of the lights shall be 4" x 6".

There shall be chrome bezels supplied and installed on the warning lights.

BODY PAINT PROCESS

All bright metal fittings, if unavailable in stainless steel shall be heavily chrome plated. Iron fittings shall be copper plated prior to chrome plating.

All seam shall be caulked both inside and along the exterior edges with a urethane automotive sealant to prevent moisture from entering between any body panel.

The body and all parts shall be thoroughly washed with a grease cutting solvent (PPG DX330) prior to any sanding. After the body has been sanded and the weld marks and minor imperfections are filled and sanded, the body shall be washed again with (PPG DX330) to remove any contaminants on the surface.

The first coating to be applied is a pre-treat self etching primer (PPG DX1787) (.5 to 1.0 dry film build) for maximum adhesion to the body material. The next two to four coats (depending on need) shall be an acrylic urethane primer surfacer (PPG K38). The film build shall be 4-6 mils when dry. The primer surfacer coat, after appropriate dry time, shall be sanded with 320-600 grit sandpaper to ensure maximum gloss of the paint. The last step is the application of at least three coats of PPG Concept acrylic urethane two-component color (single stage). The film build being 2-3 mils dry. The single stage acrylic urethane, when mixed with component (PPG DCX61) catalyst shall provide a UV barrier to prevent fading



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Complies**

Yes No

and chalking.

All products and technicians are certified by PPG every two (2) years.

NOTE: Tank painted to match the body. No exceptions.

INTERIOR COMPARTMENT FINISH

The apparatus side compartment interiors are to be painted with a spatter finish material. The compartments shall be cleaned with a grease remover, and then the surface sanded and prepared for painting. The compartment shall be provided with two (2) coats of white epoxy. The compartments are then coated with a splatter paint top coat.

TOUCH-UP PAINT

One (1) two (2) ounce bottle of touch-up paint shall be furnished with the completed truck at final delivery.

UNDERCOATING

The entire underside of the tandem axle apparatus body is to be cleaned and properly prepared for application of a sprayed on automotive type undercoating for added corrosion resistance. Undercoating is to be a solvent based, rubberized coating, black in color.

LETTERING

The dealer shall supply and apply the apparatus lettering prior to delivery. The lettering shall match the departments existing fleet.

REFLECTIVE STRIPING

The dealer shall supply reflective striping for the apparatus in compliance to applicable NFPA standards. The striping shall match the department's existing fleet.

CHEVRON STRIPING

The entire rear portion of the body shall have 3M reflective red and white striping installed. The chevron style striping shall be applied at a 45-degree upward angle pointing towards the center upper portion of the rear panel. The chevron striping shall match the department's



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Specifications for a Tanker

**Bidder
Complies**

Yes No

existing fleet.

REFLECTIVE STRIPE – CAB DOORS INTERIOR

Reflective striping shall be installed on the interior edge and interior face of each chassis door.

WHEEL CHOCKS WITH MOUNTS

A pair of Zico Model SAC-44 Quic-Chok folding wheel chocks shall be provided and mounted under the apparatus body with model SQCH-44H horizontal mounting brackets.

WHEEL WELL SCBA BOTTLE STORAGE

There shall be four (4) wheel well mounted SCBA bottle enclosed storage. The storage shall protect the bottles from damage or contamination.

SUCTION HOSE

Three (3) 6.0" x 10 foot length of PVC flexible suction hose shall be supplied. The suction hose shall have light weight couplings provided.

Light weight aluminum couplings shall be provided on the suction hose. A long handle female swivel shall be provided on one end and a rocker lug male shall be provided for the other end.

FOLDING PORTABLE WATER TANK

One (1) 3000 gallon, 22 oz vinyl, portable water tank shall be provided. The tank shall include an aluminum support frame and be approved by Chief Norton.

EMERGENCY ROAD KIT

One (1) DOT emergency kit shall be provided with the completed apparatus and shall include a 2.5 BC fire extinguisher and three reflective triangles.

MISCELLANEOUS HARDWARE

Miscellaneous loose hardware consisting of bolts, nuts, washers, and screws shall be supplied with the apparatus at time of delivery.



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**Bidder
Complies**

Yes No

INSPECTION & DELIVERY

The completed unit shall be inspected at the bidder's service facility. Once the vehicle arrives a pre-delivery inspection shall be completed.

Once a pre-delivery inspection is completed the unit shall be delivered to the Chilmark Fire Station for final inspection, acceptance and payment of the vehicle.

SHIPPING OF COMPLETED APPARATUS

The completed apparatus shall be driven from the factory to the dealer's location by the dealer's staff driver.