PUBLIC NOTICE

INVITATION TO BID

Sealed bids will be received by the City of Orange Beach for a Fire Apparatus per the attached specifications. The per unit bid for these items shall be compensation in full to supply and deliver to the City of Orange Beach the equipment meeting all specifications. Bids will be received, opened and publicly read aloud at the City Hall Municipal Complex, located at 4099 Orange Beach Blvd., Highway 161, Orange Beach, Alabama at 2:00 p.m. on September 27, 2012.

Bid specifications may be obtained from the Orange Beach City Hall, 4099 Orange Beach Blvd., Orange Beach, Alabama, Monday thru Friday from 8:00 a.m. til 5:00 p.m or in digital format from Dotty Mott at dmott@cityoforangebeach.com or downloaded from the website cityoforangebeach.com. Contact Dotty Mott at 251-981-6979 for additional details.

A certified check or Bid Bond payable to the City of Orange Beach in an amount not less than five percent (5%) of the amount of the Bid, but in no event more than $10,000 must accompany the Bidder’s Proposal.

The Bidder shall submit one original bid and one copy in a sealed and marked envelope addressed as follows, and delivered to the City of Orange Beach, Attention: City Clerk, 4099 Orange Beach Blvd, P.O. Box 458, Orange Beach, Alabama 36561:

Bids for Fire Apparatus

Be advised that overnight delivery by express or courier to Orange Beach is not guaranteed. All license requirements for the city and state apply and must be met prior to bid opening.

FAXED BIDS WILL NOT BE ACCEPTED.
The right is reserved, as the interest of the City may require, to reject any and all bids and waive any informality in bids received.

For the City of Orange Beach,

Cathy Constantino

Cathy Constantino, MMC
City Clerk

P.O. Box 458 * Orange Beach * Alabama * 36561     251-981-6979 * 251-981-2551 Fax
INVITATION TO BID DATE: September 6, 2012
FOR: Fire Apparatus
PLACE OF BID OPENING: City of Orange Beach, City Hall, 4099 Orange Beach Blvd
BIDS MUST BE RECEIVED BEFORE: September 27, 2012 @ 2:00 p.m. Central Time
BIDS WILL BE PUBLICLY OPENED: September 27, 2012 @ 2:00 p.m. Central Time

Sealed bids will be received by the City of Orange Beach at the Office of the City Clerk in Orange Beach until the above time and date at which time they will be opened as soon thereafter as practicable. All Bidders must use a Bid Form and show on the envelope SEALED BID*, the Name of the Bid (Listed as FOR:), and Opening Date & Time. EACH BID MUST BE IN A SEPARATE ENVELOPE.

- Cathy Constantino, MMC
  CITY CLERK or ADMINISTRATOR

NOTE: For this bid to be considered responsive, all information in this section should be supplied, as appropriate, or the entire bid may be disqualified. Bid response must be in ink or typed with original signature. If you are unable to furnish an item as specified and desire to offer a substitute, give full description of the item. No errors will be corrected after bids are opened. No prices shall include State or Federal Excise Taxes. The City of Orange Beach reserves the right to accept or reject all bids or any portion thereof.

1. DELIVERY: Can be made ______ days or_________ weeks after receipt of order.
2. TERMS: - __________________(Discounts will be considered in the bid evaluation and will be taken without regard to date of payment.)
3. Prices valid for acceptance within __________ days.
4. Vendor's quotation number if any: ______________________________ (This number will appear on the purchase order.)
5. For the purchase or lease of personal property only, a resident person, firm or corporation, whose bid is no more than three (3%) greater than the lowest bid, may be the successful bidder and the contract may be awarded to such resident responsible bidder.
   A resident Bidder is defined by the City Council of Orange Beach as any business located within Baldwin County.
6. Federal Employer ID NO. (if no FEIN, Enter SSN:) __________________________________
7. The number of pages comprising this bid is _______.

8. Contact Chief Shane Phillips at 251-981-6166 on questions concerning the technical specifications.
   Contact Dotty Stallworth at 251-981-6979 on questions concerning general bid procedures.

RETURN BID TO:
US Postal Service
CITY OF ORANGE BEACH
Att: Sealed Bid for Initial Attack Fire Apparatus
P.O. BOX 458
ORANGE BEACH, AL 36561

Courier (UPS, FEDEX, etc.)
CITY OF ORANGE BEACH
Att: Sealed Bid for Initial Attack Fire Apparatus
4099 Orange Beach Blvd.
ORANGE BEACH, AL 36561

FAXED BID WILL NOT BE ACCEPTED OR CONSIDERED FOR AWARDMENT!

I/we agree to furnish at the prices shown and guarantee that each offered will meet or exceed all specifications, terms and conditions, and requirements listed. This is the total price and includes all delivery or freight charges to the City of Orange Beach. Any attachment hereto is made and becomes a part of this inquiry and must be signed by bidder. I herein affirm I have not been in any agreement or collusion among bidders in restraint of freedom of competition by agreement to bid at a fixed price or to refrain from bidding or otherwise.

SWORN TO AND SUBSCRIBED

BEFORE ME THIS ________________________________
DAY OF ________________________________

Notary Public

Commission Expires

Company Name
Mail Address

Authorized Signature (INK)
Typed/Printed Authorized Name

City, State, Zip
             Phone Including Area Code

Fax Number
**BID FORM**

<table>
<thead>
<tr>
<th>Description</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire Apparatus meeting all bid specifications</td>
<td>$______________ea</td>
</tr>
</tbody>
</table>

**Optional Equipment**

<table>
<thead>
<tr>
<th>Description</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 Inch Elkhart 9786 Piston Intake Valve</td>
<td>$______________ea</td>
</tr>
<tr>
<td>Gasoline 20 inch PPV Fan</td>
<td>$______________ea</td>
</tr>
<tr>
<td>Elkhart 4000-14 75 PSI x 175 –</td>
<td>$______________ea</td>
</tr>
<tr>
<td>Elkhart B-375 GAT 1.5 inch x 15/16 pistol grip shutoff</td>
<td>$______________ea</td>
</tr>
</tbody>
</table>

Make & Model of Apparatus _________________________________________________

- All pricing is per unit.
- The City of Orange Beach reserves the right to order more than one unit.

______________________________  ________________________________
COMPANY NAME                   COMPANY REPRESENTATIVE

______________________________  ________________________________
ADDRESS                        PHONE & FAX

______________________________  ________________________________
DAYS TO DELIVER                 EMAIL ADDRESS
BIDDER’S RESPONSIBILITY OF SUBMISSION

This Fire Department Specification will be the driving document throughout the entire manufacturing process.

Under no circumstances will bidder’s proposal trump or override this specification. If “YES” is chosen as meeting specification 100% then that is exactly what will be recognized.

It is the financial responsibility of the bidder to include items marked with a “YES” on this truck and this specification will be used at final inspection to confirm everything marked “YES” is present.

In such cases where items are left off of unit, yet marked “YES”, the apparatus will not be accepted, nor will payment be made.

Every item marked “NO” must have a descriptive exception written regardless of how minor differences are.

Signature of Company Officer / Bidder:

__________________________________________________________________________ Date: __________________________
**INTENT OF SPECIFICATIONS**

It is the intent of these specifications to cover the furnishing and delivery to the purchaser a complete apparatus equipped as hereinafter specified. With a view of obtaining the best results and the most acceptable apparatus for service in the fire department, these specifications cover only the general requirements as to the type of construction and tests to which the apparatus must conform, together with certain details as to finish, equipment and appliances with which the successful bidder must conform. Minor details of construction and materials where not otherwise specified are left to the discretion of the contractor, who will be solely responsible for the design and construction of all features. The apparatus will conform to the requirements of the current (at the time of bid) National Fire Protection Association Pamphlet #1901 for Motor Fire Apparatus unless otherwise specified in these specifications.

Bids will only be considered from companies which have an established reputation in the field of fire apparatus construction and have been in business for a minimum of ten (10) years.

Each bid will be accompanied by a set of "Contractor's Specifications" consisting of a detailed description of the apparatus and equipment proposed and to which the apparatus furnished under contract must conform. Computer run-off sheets are not acceptable as descriptive literature.

The specifications will indicate size, type, model and make of all component parts and equipment. Each bidder will submit two copies of their bid proposal.

**STATEMENT OF EXCEPTIONS TO NFPA 1901**

If, at the time of delivery, the apparatus manufacturer is not in compliance, a statement of exceptions must be provided as follows:

- The specific standard affected.
- A statement describing why the manufacturer is not in compliance.
- A description of the remedy, and who the responsible party is.

The document must be signed by an officer of the company, and an authorized agent of the purchaser. **NO EXCEPTIONS**

**QUALITY AND WORKMANSHIP**

The design of the apparatus must embody the latest approved automotive engineering practices.

The workmanship must be the highest quality in its respective field. Special consideration will be given to the following points: Accessibility to various areas requiring periodic maintenance, ease of operation (including both pumping and driving) and symmetrical proportions.

Construction must be rugged and ample safety factors must be provided to carry loads as specified and to meet both on and off road requirements and speed as set forth under "Performance Test and Requirements."

**PERFORMANCE TESTS AND REQUIREMENTS**

A road test will be documented with the apparatus fully loaded and a continuous run of ten (10) miles or more will be made under all driving conditions, during which time the apparatus will show no loss of power or overheating. The transmission drive shaft or shafts, and rear axles will run quietly and free from abnormal vibration or noise throughout the operating range of the apparatus. The apparatus, when loaded, will be approximately 66% on the rear axle. The successful bidder will furnish a weight...
certification showing weight on the front and rear axle, and the total weight of the completed apparatus at the time of delivery.

a. The apparatus must be capable of accelerating to 30 MPH from a standing start within 25 seconds on a level concrete highway without exceeding the maximum governed engine RPM.

b. The service brakes will be capable of stopping the fully loaded vehicle within 35 feet from a speed of 25 MPH on a level concrete highway.

c. The apparatus, fully loaded, will be capable of obtaining a speed of 50 MPH on a level highway with the engine not exceeding 95% of its governed RPM (full load).

d. The apparatus will be tested and approved by a qualified testing agency in accordance with their standard practices for pumping engines.

e. The contractor will furnish copies of the Pump Manufacturer's Certification of Hydrostatic Test (if applicable), the Engine Manufacturer's current Certified Brake Horsepower Curve and the Manufacturer's Record of Construction Details.

**FAILURE TO MEET TESTS**

In the event the apparatus fails to meet the test requirements of these specifications on the first trial, a second trial may be made at the option of the bidder within thirty (30) days of the date of the first trials. Such trials will be final and conclusive and failure to comply with these requirements will be cause for rejection. Permission to keep and/or store the apparatus in any building owned or occupied by the purchaser will not constitute acceptance of same.

Bidder Meets Spec 100%  YES_____________NO__________

**EXCEPTIONS TO SPECIFICATIONS**

The following specifications will be strictly adhered to. Exceptions will be considered if they are deemed equal to or superior to the specifications, provided they are fully explained on a separate page entitled "EXCEPTIONS TO SPECIFICATIONS." Exceptions will be listed by page and paragraph.

Failure to denote exceptions in the above manner will result in immediate rejection of the proposal. In addition a general statement taking "TOTAL EXCEPTION" to the specifications will result in immediate rejection of bid.

Bidder Meets Spec 100%  YES_____________NO__________

**GENERAL CONSTRUCTION**

The apparatus will be designed and the equipment mounted with due consideration to distribution of load between the front and rear axles so that all specified equipment, including filled water tank, a full complement of personnel and fire hose will be carried without injury to the apparatus. Weight balance and distribution will be in accordance with the recommendations of the International Association of Fire Chiefs and National Fire Association (or American Insurance Association). Certified Laboratories certificate will be submitted by the manufacturer. Weight of apparatus will meet all federal axle load laws.

Bidder Meets Spec 100%  YES_____________NO__________
**DELIVERY REQUIREMENTS**

The apparatus will be completely equipped as per these specifications upon arrival and on completion of the required tests will be ready for immediate service in the fire department of the purchaser. Any and all alterations required at the scene of delivery to comply with these specifications must be done at the contractor's expense. Apparatus will be completed and delivered within 210 days of issuing purchase order to winning bidder. There will be a one-hundred dollar per day penalty assessed and subtracted from total bid price for every day exceeding the 210 day delivery time.

Bidder Meets Spec 100%       YES_________NO_________

**PURCHASER RIGHTS**

The Purchaser reserves the right to accept or reject any bid. The purchaser also reserves the right to award in their best interest and reserves the right to waive any formalities.

**U.S.A. MANUFACTURER**

The entire apparatus will be assembled within the borders of the Continental United States to insure more readily available parts (without added costs and delays caused by tariffs and customs) and service, as well as protecting the purchaser should legal action ever be required.

Bidder Meets Spec 100%       YES_________NO_________

**MANUFACTURER'S EXPERIENCE**

Each manufacturer will have been in business making similar apparatus for a minimum of 40 years and must have had single ownership for that same period.

Bidder Meets Spec 100%       YES_________NO_________

**ELIMINATION OF DIVIDED RESPONSIBILITY**

It is required that each bidder produce the chassis and warrant the complete apparatus. To eliminate divided responsibility and service, the chassis and the complete apparatus, must be warranted by the same Company. The manufacturer will state the number of years the Company has been producing their own chassis and body. Manufacturer will state compliance with the paragraph. NO EXCEPTIONS.

Bidder Meets Spec 100%       YES_________NO_________

**FAMA COMPLIANCE**

Manufacturer must be a current member of the Fire Apparatus Manufacturer's Association.

Bidder Meets Spec 100%       YES_________NO_________

**PRICING OF FUTURE PURCHASES AND “TAG ON” ORDERS**

Apparatus purchased in future years beyond the bid award date are subject to cost increases for material and labor. The successful bidder will extend the proposed price for future years through the use of the U.S. Bureau of Labor Statistics, Producer Price Index (PPI) to calculate the selling price increase.

Series ID - PCU3361203361203
Indstry - Heavy Duty Truck Manufacturing
Product - Buses, Including military and firefighting vehicles

The price adjustment will not exceed the percentage adjustment of the PPI at the time of the bid opening date to the most current month for which the statistic is available. The original quoted price will be the base price.

Note: 2010 model year engine and cooling package changes will be an exception to the above statement. Any new apparatus purchased requiring the newer engines will be subject to the cost associated with engine and cooling package and all other related chassis components. www.bls.gov

Bidder Meets Spec 100% YES_________NO__________

FUTURE PURCHASES AND “TAG ON” ORDERS
The successful bidder will accept “tag on” orders to this bid proposal for a period not to exceed three (3) years from the bid opening date. The successful bidder will honor the “tag on” order from any municipality within the United States or Canada.

Bidder Meets Spec 100% YES_________NO__________

CONFIGURATION OF TAG ON ORDERS
In many cases the entity wishing to “tag on” to an existing order may require their apparatus to be configured differently from the original proposed apparatus. The successful bidder will allow changes to the configuration within good engineering guidelines. The changes will be subject to current pricing in effect at the time of order. For example, a different engine may be required. This will be considered a “change order” and the purchase price will be adjusted up or down depending on the current option price.

Bidder Meets Spec 100% YES_________NO__________

BID SEQUENCE
For ease of evaluation, all bid proposals will be submitted in the same order as the fire department’s specification. NO EXCEPTIONS.

Bidder Meets Spec 100% YES_________NO__________

PROPOSAL DRAWING
A general layout drawing depicting the apparatus layout and appearance will be provided with the bid. The drawing will consist of left side, right side, frontal and rear elevation views. Apparatus equipped with a fire pump, will have a general layout view of the pump operators panel scaled the same as the elevation views. The drawing will be a depiction of the actual apparatus proposed and not of a generic similar product.

Bidder Meets Spec 100% YES_________NO__________

APPROVAL DRAWING
After the award of bid and pre-construction conference, a detailed layout drawing depicting the apparatus layout and appearance including any changes agreed upon will be provided for customer review and signature. The drawing will become part of the contract documents. The drawing will consist of left side, right side, frontal and rear elevation views. Apparatus equipped with a fire pump, will have a general layout view of the pump operators panel scaled the same as the elevation views.

Bidder Meets Spec 100% YES_________NO__________
PRE-CONSTRUCTION CONFERENCE
After award of the contract, and prior to construction of the apparatus, a pre-construction conference will be held at the facility of the manufacturer. A provision will be provided in the bid price for all travel, food and lodging to accommodate three (3) Fire Department personnel.

Bidder Meets Spec 100% YES_________NO_________

INSPECTION TRIPS
An inspection trip at the manufacturers facility prior to delivery of the completed apparatus will be provided. Accommodations for three (3) Fire Department personnel to include all transportation, food and lodging will be included in the bid price.

Bidder Meets Spec 100% YES_________NO_________

PROPOSAL GUARANTEE
A certified check or bid bond in the sum of ten percent (10%) of the total bid price will be submitted with the “Bid Proposal” at the time of the bid. The full amount of the bid surety will be returned to the unsuccessful bidders following the award of the contract to the successful bidder.

Bidder Meets Spec 100% YES_________NO_________

CHASSIS
The chassis will be manufactured in the factory of the bidder. The chassis will be designed and manufactured for heavy duty service with adequate strength and capacity of all components for the intended load to be sustained and the type of service required. There will be no divided responsibility in the production of the apparatus.

Bidder Meets Spec 100% YES_________NO_________

ALUMINUM CAB
The cab will be a full tilt 6-person cab with a 10” rear raised roof designed specifically for the fire service and manufactured by the chassis builder.

Bidder Meets Spec 100% YES_________NO_________

Cab will be built entirely by the apparatus manufacturer within the same facilities. NO EXCEPTIONS.

Bidder Meets Spec 100% YES_________NO_________

CAB DESIGN
The cab will be designed specifically for the fire service and manufactured by the chassis builder.

The apparatus chassis will be of an engine forward, fully enclosed tilt cab design. There will be four (4) side entry doors.

The cab will be of a fully open design with no divider wall or window separating the front and rear cab sections.

Construction of the cab will consist of high strength 5052H32 aluminum welded to extruded aluminum
framing of 6061-T6 material.

The cab roof will utilize extruded, radiused outer corner rails with integral drip channel and box tubing type cross brace supports.

The cab sides will be constructed from extruded door pillars and posts that provide a finished door opening, extruded and formed wheel well openings supports, formed aluminum wheel well liners and box tubing type support braces.

The cab floor and rear cab wall will utilize box tubing type framing and support bracing.

The framework will be of a welded construction that fully unitizes the structural frame of the cab.

The structural extrusion framework will be overlaid with interlocked aluminum alloy sheet metal panels to form the exterior skin of the cab.

The structural extrusion framework will support and distribute the forces and stresses imposed by the chassis and cab loads and will not rely on the sheet metal skin for any structural integrity.

Bidder Meets Spec 100%  

YES________ NO________

**CAB SUB-FRAME**

The cab will be mounted to a steel box tube sub-frame, and will be isolated from the chassis, through the use of no less than six (6) elastomeric bushings. The sub frame will be painted to match the primary chassis color.

Bidder Meets Spec 100%  

YES________ NO________

The sub-frame will be mounted to the chassis through the use of lubricated Kaiser bushing for the front pivot point, and two (2) hydraulically activated cab latches, to secure the rear.

Bidder Meets Spec 100%  

YES________ NO________

**CAB TILT SYSTEM**

An electrically powered hydraulic cab tilt system will be provided, and will lift the cab to an angle of 45 degrees, exposing the engine and accessories for service. The system will be interlocked to only operate when the parking brake is set.

Bidder Meets Spec 100%  

YES________ NO________

The lift system will be comprised of two (2) hydraulic lift cylinders, an electrically driven hydraulic pump, and a control switch. A mechanical locking system will be provided to ensure the cab remains in the raised position in the event of a hydraulic failure. The cab tilt controls will be interlocked to the parking brake to ensure the cab will not move, unless the parking brake is set.

The hydraulic lift cylinders will be connected to a steel cab sub-frame, and not directly to the cab. **NO EXCEPTIONS**

Bidder Meets Spec 100%  

YES________ NO________

**CAB DIMENSIONS**

It is understood that every bidder will have slightly different cab dimensions. The following are
minimuns to meet the needs of Orange Beach.

The cab will be designed to satisfy the following minimum width and length dimensions:

<table>
<thead>
<tr>
<th>Description</th>
<th>Minimum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cab Width (excluding mirrors)</td>
<td>98&quot;</td>
</tr>
<tr>
<td>Cab Length (from C/L of front axle)</td>
<td>68&quot;</td>
</tr>
<tr>
<td>To front of cab (excluding bumper)</td>
<td>62&quot;</td>
</tr>
<tr>
<td>Total Cab Length (excluding bumper)</td>
<td>130&quot;</td>
</tr>
</tbody>
</table>

Bidder Meets Spec 100%  
YES________ NO________

**INTERIOR**
The cab interior will have Zolatone gray/black rubberized, mar resistant, textured finish.

Bidder Meets Spec 100%  
YES________ NO________

**FENDER CROWNS**
Polished **stainless steel** front axle fenderettes with full depth radiused wheel well liners will be provided. NO EXCEPTIONS

Bidder Meets Spec 100%  
YES________ NO________

**GRILLE**
The front of the cab will be equipped with a **stainless steel** grille with sufficient area to allow proper airflow into the cooling system and engine compartment. NO EXCEPTIONS

Bidder Meets Spec 100%  
YES________ NO________

**CAB INSULATION**
The exterior walls, doors, and ceiling of the cab will be insulated from the heat and cold, and to further reduce noise levels inside the cab. The cab interior sound levels will not exceed 90 decibels at 45 mph in all cab seat positions. NO EXCEPTIONS

Bidder Meets Spec 100%  
YES________ NO________

**ROOF DESIGN**
The cab will be of a one-half 10" raised roof design with side drip rails and will satisfy the following minimum height dimensions:

- **Cab Dimensions Interior**
  - Front: 59"
  - Rear: 65"

- **Cab Dimensions Exterior**
  - Front: 65"
  - Rear: 75"

Bidder Meets Spec 100%  
YES________ NO________

**EXTERIOR GLASS**
The cab windshield will be of a two piece curved design utilizing tinted, laminated, automotive
approved safety glass. The window will be held in place by an extruded rubber molding. The cab will be finished painted prior to the window installation.

The cab door and canopy windows will utilize tinted, automotive approved safety glass.

Bidder Meets Spec 100%  YES_______NO_________

**SUN VISORS**
The sun visors will be made of dark smoke colored transparent polycarbonate. There will be a visor located at both the driver and officer positions, recessed in a molded form for a flush finish.

Sun visors will have a sliding locking device to hold sun visors up. NO EXCEPTIONS

Bidder Meets Spec 100%  YES_______NO_________

**CAB STEPS**
The lower cab steps will be no more than 22” from the ground. An intermediate step will be provided, midway between the lower cab step, and the cab floor.

The intermediate step will be slightly inset to provide for safer ingress and egress. All steps will be covered with material that meets or exceeds the NFPA requirements for stepping surfaces.

Bidder Meets Spec 100%  YES_______NO_________

**STEP LIGHTS**
A white LED strip light will illuminate each interior cab step. These lights will illuminate whenever the battery switch is on and the cab door is opened.

Bidder Meets Spec 100%  YES_______NO_________

**CAB DOORS**
The cab doorframes will be constructed from aluminum extrusions fitted with an aluminum sheet metal skin and will be equipped with dual weather seals. The outside cab door window opening will be framed by a black anodized aluminum trim, to provide a clean appearance. The cab doors will be equipped with heavy-duty door latching hardware, which complies with FMVSS 206. The door latch mechanism will utilize control cable linkage for positive operation. A rubber coated nylon web doorstop will be provided.

The doors will be lap type with a full-length stainless steel 3/8" diameter hinge and will be fully adjustable.

All openings in the cab will be grommeted or equipped with rubber boots to seal the cab from extraneous noise and moisture.

The cab doors will be designed to satisfy the following minimum opening and step area dimensions:

<table>
<thead>
<tr>
<th>Door Opening</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Front</td>
<td>36.5&quot; x 73.00&quot;</td>
</tr>
<tr>
<td>Rear</td>
<td>36.5&quot; x 82.25&quot;</td>
</tr>
</tbody>
</table>

The interior of the cab doors will have a Zolatone finish to match the interior of the cab.

Bidder Meets Spec 100%  YES_______NO_________
INTERIOR DOOR PANELS
The interior of the cab entry doors will have a 304 brushed stainless steel scuff plate, contoured to the door, from the door sill down. NO EXCEPTIONS

The lower portion of the doors will feature a stainless steel plate and include the NFPA requirement of 96 square inches of white reflective material on the lower portion of the interior cab doors. The striping will be laid over 3M reflective materials. The reflective decal will be plainly visible to oncoming traffic when the doors are in the open position.

Bidder Meets Spec 100%    YES_________NO__________

MANUAL CAB LIFT
There will be a manually operated hydraulic pump for tilting the cab in case the main pump should fail. Access to the pump will be located under the left front corner of the front bumper.

Bidder Meets Spec 100%    YES_________NO__________

CAB STRUCTURAL INTEGRITY
The cab of the apparatus will be designed and so attached to the vehicle as to eliminate, to the greatest possible extent, the risk of injury to the occupants in the event of an accident.

The apparatus cab will be tested to specific load and impact tests with regard to the protection of occupants of a commercial vehicle.

A test will be conducted to evaluate the frontal impact strength of the apparatus cab to conform to the test J2420 and the “United Nations Regulation 29, Annex 3, paragraph 4, (Test A). A second test will be conducted to evaluate the roof strength of the apparatus cab to conform to the Society Of Automotive Engineers (SAE) SAE J2422/SAE J2420 and “United Nations Regulation 29, Annex 3, paragraph 5, (Test B) and SAE J2420. The evaluation will consist of the requirements imposed by ECE Regulation 29, Paragraph 5.

The test will be conducted by a certified independent third party testing institution.

A letter stating successful completion of the above test on the brand of cab being supplied will be included in the bid. There will be “no exception” to this requirement.

Bidder Meets Spec 100%    YES_________NO__________

SEAT BELT TESTING
The seat belt anchorage system will be tested to meet FMVSS 207 Section 4.2a and FMVSS 210 section 4.2. Testing will be conducted by an independent third party product evaluation company.

A copy of the certification letter will be supplied with the bid documents.

Bidder Meets Spec 100%    YES_________NO__________
WORK SURFACE
There will be a flat work surface in front of the officer’s seat.

Bidder Meets Spec 100%  YES_________NO__________

MAP BOX
A map box compartment will be provided between driver and officer. The map box will have the
capacity to hold two (2) 3” and two (2) 2” 3-ring binders. The construction will be of .125” aluminum plate and finished to match the interior of the cab. The map holder will be equipped with a Velcro strap to hold the binder in place.

Bidder Meets Spec 100%  YES_________NO__________

MOUNTING PLATES
There will be an aluminum plate affixed to the top of the air conditioning unit for use of tool mounting.

Bidder Meets Spec 100%  YES_________NO__________

CAB EQUIPMENT MOUNTED
The customer will provide a Thermal Imaging Camera and Two (2) radios to be mounted and wired inside of cab in a customer supplied location. This location will be determined at precon.

Bidder Meets Spec 100%  YES_________NO__________

WINDOWS
All four cab entry doors will have manual roll-down windows, which will all roll down completely.

Bidder Meets Spec 100%  YES_________NO__________

AIR HORNS
Two (2) Grover 2040 Stuttertone rectangular, chrome plated, mounted behind grill opening in the bumper. The horns shall be activated by a split “Y” lanyard in cab ceiling and the steering wheel button.

Bidder Meets Spec 100%  YES_________NO__________

ALTERNATOR
A 320 ampere Prestolite/Leece Neville Model 4962PA, alternator with serpentine belt will be provided. The alternator will generate 260 amperes at idle.

A low voltage alarm, audible and visual, will be provided.

Bidder Meets Spec 100%  YES_________NO__________

FRONT AXLE
A Meritor™ MFS-18-133A non-driving, front steer axle with a capacity 18,000 pounds will be provided. The axle will have a 3.74” dropped I-beam, 10 bolt, hub piloted, furnished with oil seals.

Bidder Meets Spec 100%  YES_________NO__________
REAR AXLE
The rear axle will be a Meritor® RS-24-160 with a capacity will be 24,000 lbs. hub piloted, furnished with oil seals.

Bidder Meets Spec 100%  YES_________NO__________

TOP SPEED
Rear axle speed approximately 65 MPH.

Bidder Meets Spec 100%  YES_________NO__________

BATTERY JUMPER TERMINAL
There will be one set (two studs) of battery jumper terminals located by the battery box under the cab. The terminals will have plastic color-coded covers. Each terminal will be tagged to indicate positive/negative.

Bidder Meets Spec 100%  YES_________NO__________

BATTERIES
The battery system will be a single system consisting of four negative ground, 12 volt Interstate Group 31 MHD batteries, cranking performance of 950 CCA each with total of 3800 amps, 185 minute reserve capacity with 25 ampere draw at 80 degrees Fahrenheit. Each battery will have 114 plates. Warranty will be accepted nationwide.

Bidder Meets Spec 100%  YES_________NO__________

The batteries will be installed in a vented **304 stainless steel battery box** with a removable aluminum cover to protect the batteries from road dirt and moisture.

Bidder Meets Spec 100%  YES_________NO__________

The batteries are to be placed on dri-deck and secured with a fiberglass hold down. The batteries will be wired directly to starter motor and alternator.

Bidder Meets Spec 100%  YES_________NO__________

The battery cables will be 3/0 gauge. Battery cable terminals will be soldering dipped, color-coded and labeled on heat shrink tubing with a color-coded rubber boot protecting the terminals from corrosion.

Bidder Meets Spec 100%  YES_________NO__________

There will be a 350-ampere fuse protecting the pump primer and a 250-ampere fuse protecting the electric cab tilt pump and other options as required.

Bidder Meets Spec 100%  YES_________NO__________

BATTERY CHARGING
A Kussmaul Auto Charge 1200 battery system charger will be provided. The Auto Charge 1200 is a fully automatic battery charger with a very high output for vehicles with a single battery system. A remote single bar graph display is provided to indicate the state of charge of the battery system. The
rated output will be 40 amps for the battery system.

A Kussmaul Model 091-55-20-120 super electric auto-eject with weatherproof cover and power interrupt will be provided.

An 120 volt Auto Pump air compressor will also be provided to maintain air within the air brake system.

A miniature air filter, that mounts in the output pressure line of the air pump to trap moisture, will be provided. The micron filter element removes contaminants from the air line. A transparent bowl permits easy monitoring of water collected and a manual purge valve allows the operator to conveniently drain the bowl. A Bendix DV2 heated automatic drain valve will be provided.

Bidder Meets Spec 100% YES_________NO__________

BRAKES (Front)
The front brakes will be Meritor S-cam style. They will be 16.5" x 6" with heavy-duty return springs, and a double anchor pin design. They will also have quick-change shoes for fast easy brake relining.

Bidder Meets Spec 100% YES_________NO__________

BRAKES (Rear)
The rear brakes will be Meritor S-cam style. They will be 16.5" x 7" with heavy-duty return springs, and a double anchor pin design. They will also have quick-change shoes for fast easy brake relining.

Bidder Meets Spec 100% YES_________NO__________

AIR BRAKE SYSTEM
The vehicle will be equipped with air-operated brakes. The system will meet or exceed the design and performance requirements of current FMVSS-121 and test requirements of current NFPA 1901 standards.

Each wheel will have a separate brake chamber. A dual treadle valve will split the braking power between the front and rear systems.

All main brake lines will be color-coded nylon type protected in high temperature rated split plastic loom. The brake hoses from frame to axle will have spring guards on both ends to prevent wear and crimping as they move with the suspension. All fittings for brake system plumbing will be brass.

A Meritor Wabco System Saver 1200 air dryer will be provided.

The air system will be provided with a rapid build-up feature, designed to meet current NFPA 1901 requirements. The system will be designed so the vehicle can be moved within 60 seconds of startup. The quick build up system will provide sufficient air pressure so that the apparatus has no brake drag and is able to stop under the intended operating conditions following the 60-second buildup time. The vehicle will not be required to have a separate on-board electrical air compressor or shoreline hookup to meet this requirement.

Four (4) supply tanks will be provided. One air reservoir will serve as a wet tank and a minimum of one tank will be supplied for each the front and rear axles. A Schrader fill valve will be mounted in the front of the driver’s step well.
A spring actuated air release emergency/parking brake will be provided on the rear axle. One (1) parking brake control will be provided and located on the engine hood next to the transmission shifter within easy reach of the driver. The parking brake will automatically apply at 35 ±10 PSI reservoir pressure. A Meritor WABCO IR-2 Inversion Relay Valve, supplied by both the Primary and Secondary air systems, will be used to activate the parking brake and to provide parking brake modulation in the event of a primary air system failure.

Accessories plumbed from the air system will go through a pressure protection valve and to a manifold so that if accessories fail they will not interfere with the air brake system.

Bidder Meets Spec 100% YES_________NO__________

AIR BRAKING ABS SYSTEM
A Wabco ABS system will be provided to improve vehicle stability and control by reducing wheel lock-up during braking. This braking system will be fitted to axles and all electrical connections will be environmentally sealed from water and weather and be vibration resistant.

The system will constantly monitor wheel behavior during braking. Sensors on each wheel transmit wheel speed data to an electronic processor, which will sense approaching wheel lock and instantly modulate brake pressure up to 5 times per second to prevent wheel lock-up. Each wheel will be individually controlled. To improve field performance, the system will be equipped with a dual circuit design. The system circuits will be configured in a diagonal pattern. Should a malfunction occur, that circuit will revert to normal braking action. A warning light at the driver's instrument panel will indicate malfunction to the operator.

The system will consist of a sensor clip, sensor, electronic control unit and solenoid control valve. The sensor clip will hold the sensor in close proximity to the tooth wheel. An inductive sensor consisting of a permanent magnet with a round pole pin and coil will produce an alternating current with a frequency proportional to wheel speed. The unit will be sealed, corrosion-resistant and protected from electro-magnetic interference. The electronic control unit will monitor the speed of each wheel sensor and a microcomputer will evaluate wheel slip in milliseconds.

Bidder Meets Spec 100% YES_________NO__________

BUMPER
There will be a 12" high double rib polished stainless steel wrap-around bumper provided at the front of the apparatus. Laser cut perforated grilles will be incorporated into the bumper and located at the outboard of the frame rails for the air horns and at the center for the siren speaker.

Bidder Meets Spec 100% YES_________NO__________

The bumper will be mounted to a reinforcement plate constructed of 1/4" x 10" x 70" carbon steel. A gravel shield will be provided, constructed of .188" aluminum diamond plate. The bumper extension will be approximately 24".

Bidder Meets Spec 100% YES_________NO__________

STORAGE WELL COMPARTMENT
There will be a hose well compartment located in the front bumper. The compartment will run the full width of the bumper and measure approximately 75" wide x 16" long x 4" deep at the ends and 12"
deep in the center. The compartment will be constructed of .125" smooth aluminum plate.

Bidder Meets Spec 100% YES________ NO__________

**DIAMOND PLATE BUMPER LID**
There will be a 1/8" diamond plate cover with latches provided for the front bumper trough. The cover will have a 2" rise to accommodate the storage well requirements.

Bidder Meets Spec 100% YES________ NO__________

**WINCH REVIEWERS**
Each bidder must provide price for a Class 3 receiver hitch on front and rear. These receiver areas must have a 12 volt power plug to receive a winch or other 12 volt tools. Hitches must protrude through front and rear bumpers. Price Each $__________________

Fire department may choose to purchase if desired.

Bidder Meets Spec 100% YES________ NO__________

**COOLING SYSTEM**
The cooling system will be designed to keep the engine properly cooled under all conditions of road and pumping operations. The cooling system will be designed and tested to meet or exceed the engine and transmission manufacturer’s requirements, and EPA regulations.

The complete cooling system will be mounted in a manner to isolate the system from vibration and stress. The individual cores will be mounted in a manner to allow expansion and contraction at various rates without inducing stress to the adjoining core(s).

The cooling system will be comprised of a charge air cooler to radiator serial flow package that provides the maximum cooling capacity for the specified engine as well as serviceability. The main components will include a surge tank, a charge air cooler, bolted to the top of the radiator to maximize cooling, recirculation shields, a shroud, a fan, and required tubing. All components will consist of an individually sealed system.

Bidder Meets Spec 100% YES________ NO__________

**RADIATOR**
The radiator will be a cross-flow design constructed completely of aluminum with welded side tanks. The radiator will be bolted to the bottom of the charge air cooler to allow a single depth core, thus allowing a more efficient and serviceable cooling system.

Bidder Meets Spec 100% YES________ NO__________

The radiator will be equipped with a drain cock to drain the coolant for serviceability. The drain cock will be located at the lowest point of the aluminum cooling system to maximize draining of the system.

Bidder Meets Spec 100% YES________ NO__________

Please state the quart capacity of the radiator: _________________________qts

**CHARGE AIR COOLER**
The charge air cooler will be of a cross-flow design and constructed completely of aluminum with extruded tanks. The charge air cooler will be bolted to the top of the radiator to allow a single depth core.

Bidder Meets Spec 100%  

**COOLANT**
The cooling system will be filled with a 50/50 mix. The coolant makeup will contain ethylene glycol and de-ionized water to prevent the coolant from freezing to a temperature of –34 degrees F.

Bidder Meets Spec 100%  

**HOSES & CLAMPS**
Silicone hoses will be provided for all engine coolant lines.

Bidder Meets Spec 100%  

All radiator hose clamps will be spring loaded stainless steel constant torque hose clamps for all main hose connections to prevent leaks. Recirculation shields will be installed where required to prevent heated air from reentering the cooling package and affecting performance.

Bidder Meets Spec 100%  

**FAN**
The engine cooling system will incorporate a heavy-duty composite 8 blade 30" fan. It will provide the highest cooling efficiently while producing the lowest amount of noise. This robust yet light-weight fan results in less wear and stress on motors and bearings.

A shroud and recirculation shield system will be used to ensure air that has passed through the radiator is not drawn through again.

The fan tip to radiator core clearance will be kept at a minimal distance to increase the efficiency of the fan and reduce fan blast noise.

Bidder Meets Spec 100%  

**SURGE TANK**
The cooling system will be equipped with an aluminum surge tank mounted to the officer’s side of the cooling system core. The surge tank will house a low coolant probe and sight glass to monitor the coolant level. Low coolant will be alarmed with the check engine light. The surge tank will be equipped with a dual seal cap that meets the engine manufacturer’s pressure requirements, and system design requirements.

The tank will allow for expansion and to remove entrained air from the system. There will also be an extended fill neck to prevent system overfill and encroachment of expansion air space. Baffling will be installed in the tank to prevent agitated coolant from being drawn into the engine cooling system.

Bidder Meets Spec 100%  

**DRIVELINE**
The driveline will consist of Spicer 1710 series dual grease fitting universal joints with "Half-Round"
end yokes. The drive shaft will be built with a heavy-duty steel tube 4.095” outside diameter x .180 wall thickness. The shafts will be dynamically balanced prior to installation into the chassis. A splined slip joint will be provided in each shaft assembly. Universal joints will be extended life. There will be two (2) Zerk fittings in each universal joint assembly so the joint can be greased without turning the shaft.

Bidder Meets Spec 100% YES_________NO________

**ENGINE ENCLOSURE**
An integral, formed aluminum and composite engine enclosure will be provided. The engine enclosure will be contoured and blended in an aesthetically pleasing manner with the interior dash and flooring of the cab. The enclosure will be kept as low as possible, to maximize space and increase crew comfort.

Bidder Meets Spec 100% YES_________NO________

The enclosure will be constructed from 5052 H2 aluminum plate and GRP composite materials, providing high strength, low weight, and superior heat and sound deadening qualities. The exterior sides and the top will be sprayed with mar resistant, gray zolatone.

The underside of the engine enclosure will be covered with a sound deadening, heat reflective insulation system, and will further minimize noise (DB levels), and eliminate engine heat from the front and rear of the cab. The insulation material will be bonded with adhesive and mechanically fastened to the underside of the cab. All seems will be sealed to prevent water absorption. NO EXCEPTIONS.

A work light will be installed in the engine enclosure with an individual switch located on the base of the light.

Bidder Meets Spec 100% YES_________NO________

**AIR CLEANER/INTAKE**
The engine air intake and filter will be designed in accordance with the engine manufacturer’s recommendations. It will be 99.9% effective in removing airborne contaminants when tested per the industry standard SAE J726 procedure and offer a dirt holding capacity of at least 3.0 gm/cfm of fine dust (tested per SAE J726) offering superior engine protection.

Bidder Meets Spec 100% YES_________NO________

The air filter will be located at the front of the apparatus and will be at least 66” above the ground, to allow fording deep water in an emergency situation. NO EXCEPTIONS

Bidder Meets Spec 100% YES_________NO________

An ember separator will be provided in the engine air intake meeting, the requirements of NFPA 1901.

An Air Restriction warning light will be provided and located on the cab dash.

Bidder Meets Spec 100% YES_________NO________
ENGINE
Cummins Diesel ISL 450 HP Engine is required.

Bidder Meets Spec 100% YES_________NO__________

The engine will have a five year or 100,000 mile warranty and approval by Cummins Diesel for installation in the chassis.

The engine will be equipped with the following:

- Air cleaner
- Air compressor - 18.7 CFM
- Exhaust - single with discharge right side, ahead of rear wheels
- Primary and secondary fuel filters
- Lube oil cooler
- Lube oil filter - full flow
- Starting motor - 12 volt

EXHAUST SYSTEM
The engine exhaust system will include the following components:

- Diesel Particulate Filter (DPF)
- Diesel Oxidation Catalyst (DOC)
- Diesel Exhaust Fluid (DEF)
- Selective Catalytic Reduction Filter (SCR)

The SCR catalyst utilizes the DEF fluid, which consists of urea and purified water, to convert NOx into nitrogen and water. This will meet or exceed 2010 EPA emissions requirements.

The engine exhaust system will be horizontal design constructed from heavy-duty truck components. The exhaust tubing will be stainless steel to the DPF through to the SCR aluminized steel from the SCR to the exhaust tip. A heavy duty stainless steel bellows tube will be used to isolate the exhaust system from the engine. The system will be equipped with single canister consisting of a Diesel Oxidation Catalyst (DOC) and a Diesel Particulate Filter (DPF), and will be mounted under the right side frame rail, meeting the specific engine manufacturer's specifications and current emission level requirements. The outlet will be directed to the forward side of the rear wheels, exiting the right side with a heavy duty heat diffuser. The heat diffuser will prevent the exhaust temperature from exceeding 851 deg. F during a regeneration cycle. A heat-absorbing sleeve will be provided on the exhaust pipe in the engine compartment area to reduce the heat, protect the alternator, and also to protect personnel while servicing the engine compartment.

Bidder Meets Spec 100% YES_______NO__________

AFTER TREATMENT SYSTEM
To meet EPA requirements of Particulate output, a DPF (Diesel Particulate Filter) is used. To meet EPA requirements of Nitrous Oxide output an SCR (Selective Catalytic Reduction) system utilizing
DEF (Diesel Exhaust Fluid) is used.

Bidder Meets Spec 100%  YES_________NO__________

**ENGINE BRAKE**

The engine will be equipped with a Jacobs compression engine brake. An “On/Off” switch will be provided on the instrument panel within easy reach of the driver.

The engine brake will interface with the Wabco ABS brake controller to prevent engine brake operations during adverse braking conditions.

A pump shift interlock circuit will be provided to prevent the engine brake from activating during pumping operations.

The brake light will activate when the engine brake is engaged.

Bidder Meets Spec 100%  YES_________NO__________

**DIESEL EXHAUST FLUID TANK**

The exhaust system will include a molded cross linked polyethylene tank. The tank will have a capacity of 5 usable gallons and will be mounted on the left side of the chassis frame.

The DEF tank fill neck will accept only a 19mm dispensing nozzle versus the standard 22mm diesel fuel dispensing nozzle to prevent cross contamination. The DEF tank cap will be blue in color to further prevent cross contamination.

A placard will accompany fill location noting DEF specifications.

Bidder Meets Spec 100%  YES_________NO__________

**SINGLE FRAME RAILS**

The chassis frame will be of a ladder type design utilizing industry accepted engineering best practices. The frame will be specifically designed for fire apparatus use.

Each frame rail will be constructed of 3/8" thick-formed channels. The outer channel will be 10.188" x 3.50" x .375". Inner reinforcements of 9.31" x 3.13" x .375" will span the front and rear suspension attachment locations. These inner reinforcements will spread the load between the suspension mounts.

Main load bearing rail section modulus will be 29.00 in.³ with a Resistance to Bending Moment (RBM) of 1,763,130 in/lbs.

Each rail is media blasted to remove scale, oil, and contaminants. This blasting also ensures paint adhesion.

Each rail will be primed with Cathacoat 302HB, a high performance, two component, reinforced inorganic zinc-rich primer with proven cathodic protection of steel structures, prior to assembly.

The cross-members will be constructed of minimum 3/8" formed channels and have formed gusseted ends at the frame rail attachment.
.625 inch, grade 8 flange, permanent fasteners will be used on all permanently attached brackets to the frame to eliminate the need for bolt re-tightening. Additional hardware will be Grade 8 Zinc coated flange head locking fasteners. NO EXCEPTIONS

A lifetime warranty will be provided, per manufacturer's written statement, on both chassis rails and crossmembers. NO EXCEPTIONS

**FUEL TANK**
The chassis will be equipped with a 65-gallon rear mounted, behind the rear axle, rectangular fuel tank that will be constructed of steel with stamped heads. The fuel tank will be certified to meet FMVSS 393.67 tests. It will also maintain engine manufacturer's recommended expansion room of 5%.

The tank will be removable by means of six (6) bolted connections and dropped. One (1) tank baffle will be used.

Dual pick-up and return ports with a single 3/4" tank drawtube will be provided for diesel generators if required.

The fuel tank will be equipped with a 2 1/4" filler neck assembly with a 3/4" vent located on the left hand side of the tank. A fuel fill cap attached with a lanyard will be provided. The bottom of the fuel tank will contain a 1/2" drain plug.

The fuel lines will be nylon braid reinforced fuel hose with brass fittings. The lines will be carefully routed along the inside of the frame rails. All fuel lines are covered in high temperature rated split plastic loom. Single suction and return fuel lines will be provided.

The fuel tank will be mounted in a saddle with 1/4" rubber, contact cemented to the saddle.

**FUEL COOLER**
Installed on the apparatus fuel system will be an Air-To-Liquid aluminum fuel cooler. The fuel cooler will be located in the lowest module of the cooling system.

**CAB HANDRAILS**
There will be a 24" long, handrail provided and installed, at each cab entrance. The handrails will be constructed of type 304 stainless steel 1.25 inch diameter tubing with bright finish and knurled gripping surface. Mounting flanges will be constructed from 7 gauge, .180 thick, stainless sheet. Each grab rail will have 90 degree returns to flanges. The ends of grab rail will pass through the flanges and be welded to form one structural unit. The handrails will be mounted using 1.25" SS Hex
bolts, with a barrier rubber gasket at each flange.

Bidder Meets Spec 100%  
YES________ NO________

Sufficient space will allow for a gloved hand to firmly grip the rail. There will be two (2) rubber coated grab handles provided and mounted on the interior of the cab, one each side, on the windshield post for ingress assistance. The handrail on the driver’s side will be approximately 11" long and the handrail on the officer’s side will be approximately 18" long.

Bidder Meets Spec 100%  
YES________ NO________

**CAB DOOR HANDRAILS**

Two (2) 1.25” diameter knurled **stainless steel** handrails will be provided on the inside of the rear crew doors just above the windowsill.

Bidder Meets Spec 100%  
YES________ NO________

**FLOORBOARD HEATING DUCT**

There will be ductwork to the floor of the cab, facing forward to provide heat for the front of cab floor area.

Bidder Meets Spec 100%  
YES________ NO________

**HEATER/DEFROSTER/AIR CONDITIONER**

There will be a **minimum 65,000 cool BTU and 65,000 heat BTU single unit**, heater/air conditioner mounted over the engine cover. The unit will be mounted in center of the cab on the engine hood/enclosure. Unit will have a shutoff valve at the right side of the frame, next to the engine. Airflow of the heater/air conditioner will be a minimum 1200 CFM. To achieve maximum cooling, a TM-21 Compressor (10 cu. in.) will be used.

Bidder Meets Spec 100%  
YES________ NO________

The defroster/heater will be a minimum of 35,000 BTU and will be a separate unit mounted over the windshield. There will be eight (8) louvers/diffusers to direct to windshield and door glass. Airflow of the defroster/heater will be a minimum 350 CFM. The unit will be painted Zolatone greystone to match the cab ceiling.

Bidder Meets Spec 100%  
YES________ NO________

The condenser will be roof mounted and have 65,000 BTU rating. The unit will include three fan motors. Airflow of the condenser will be a minimum 2250 CFM. (This roof-mounted condenser will work at full rated capacity at an idle with no engine heat problems.)

Bidder Meets Spec 100%  
YES________ NO________

**HEATER/DEFROSTER/AIR CONDITIONING CONTROLS**

The heater/defroster/air conditioning will be located in the overhead console in the center of the apparatus cab within reach of the driver and officer. The controls will be illuminated for easy locating in dark conditions. The controls will be located in such a way that the driver will not be forced to turn away from the road to make climate control adjustments. Control of all heater/defroster/air conditioning functions for the entire apparatus cab will be achieved through these controls.

Bidder Meets Spec 100%  
YES________ NO________
LOAD MANAGER
Load manager will have the ability to sequence loads on and off. It will also be able to shed 8 loads when the vehicle is stationary, starting at 12.7 volts lowest priority load to be shed, then respectively at 12.6, 12.4, 12.2, 12.0, 11.8, 11.4 and 11.0 volts DC. Any load that has been shed will be off for a minimum of five minutes, and then if voltage has rebounded above shed voltage, the shed load will automatically come on. There will also be an indicator panel along side the rocker switches, which indicate power is on, battery warning and fast idle. Battery warning indicator will flash at a rate proportional to the voltage discharge rate.

Bidder Meets Spec 100% YES_________NO_________

AUTOMATIC HIGH IDLE ACTIVATION
The load management system will be capable of activating the apparatus high idle system when the system voltage drops below 12.3 volts DC. The system will raise engine speed for a minimum of five minutes until voltage exceeds 13.0 volt DC. The load management system will activate the high idle feature before any devices are automatically shed OFF. The high idle function request from the load management device will function only if the appropriate interlocks are present; that is, control of the high idle system is monitored and will be superseded by the state of the interlock control module. The automatic high idle system will be deactivated whenever the brake pedal is pressed, and will remain inactive for two minutes thereafter to allow an operator to override the high idle function and return the engine to idle before PTO engagement.

Bidder Meets Spec 100% YES_________NO_________

PUMP SHIFT MODULE
A pump shift module with indicating lights will be located within easy reach of the driver. A gear lockup will be provided to hold the transmission in direct drive for pump operation.

Bidder Meets Spec 100% YES_________NO_________

INSTRUMENT PANEL
The main dash shroud, which covers the area directly in front of the driver from the doorpost to the engine hood, will be custom molded and covered with a non-glare black vinyl. The dash will be a one-piece hinged panel that tilts outward for easy access to service the internal components. The gauge panel will be constructed of durable aesthetically pleasing light gray polymer material, placed over a heavy duty steel backing plate, for added strength and durability.

The gauges will be Beede Instruments, NexSys Link gauges with built-in self-diagnostics and red warning lights to alert the driver of any problems. All gauges and controls will be backlit for night vision and identified for function. All main gauges and warning lights will be visible to the driver through the steering wheel.

Bidder Meets Spec 100% YES_________NO_________

MASTER BATTERY & IGNITION SWITCH
The vehicle will be equipped with a keyless ignition, with a two (2)-position Master Battery rocker switch, "Ignition Off/On" and a two (2)-position Engine Start rocker switch, "Off/Start".

Bidder Meets Spec 100% YES_________NO_________
DIESEL PARTICULATE FILTER CONTROLS
There will be two (2) controls for the diesel particulate filter. One (1) control will be for regeneration and one (1) control will be to inhibit engine regeneration.

Bidder Meets Spec 100% YES_________NO__________

INSTRUMENTATION & CONTROLS
Instrumentation on dash panel:
- Tachometer/hourmeter with built in high exhaust system regeneration temperature, and instrument malfunction indicators
- Speedometer/odometer with built in turn signal, high beam, and re-settable trip odometer
- Voltmeter
- Diesel Fuel gauge
- DEF (Diesel Exhaust Fluid) Fluid gauge
- Engine oil pressure
- Transmission temperature
- Engine temperature
- Primary air pressure
- Secondary air pressure

Indicators and warning lights visible to driver:
- Battery on
- Parking brake engaged
- Low air with buzzer
- Turn signals
- Hi-beam
- Transmission temperature
- Do not shift transmission
- Check transmission
- Stop engine with buzzer
- Check engine
- Regeneration
- High exhaust temperature
- Air filter restriction light
- Back pressure
- Cab door open (flashing)
- Compartment door open (flashing)
- Antilock brake warning
- Low voltage

Other indicator and warning lights
- Differential locked
- PTO (s) engaged
- Auto-slip response
- Retarder engaged
- Retarder temperature
Controls located on main dash panel:
- Master power disconnect with ignition switch
- Engine start switch
- Headlight switch
- Windshield wiper/washer switch
- Differential lock switch (if applicable)
- Dimmer switch for backlighting

Controls included in steering column:
- Horn button
- Turn signal switch
- Hi-beam low-beam switch
- 4-way flasher switch
- Tilt-telescopic steering wheel controls

Controls, gauges and indicator lights located to the right of driver's position:
- Transmission shifter
- Pump shift control with OK TO PUMP and PUMP ENGAGED lights
- Heater/defroster controls
- Eighteen (18) illuminated rocker switches
- Parking brake control

Driving compartment warning labels will include:
- HEIGHT OF VEHICLE
- OCCUPANTS MUST BE SEATED AND BELTED WHEN APPARATUS IS IN MOTION
- DO NOT USE AUXILIARY BRAKING SYSTEMS ON WET OR SLIPPERY ROADS
- EXIT WARNINGS

Additional labels included:
- COMPUTER CODE SWITCH
- ABS CODE SWITCH
- FLUID DATA TAG
- CHASSIS DATA TAG

Bidder Meets Spec 100% YES_________NO_________

**ENGINE WARNING SYSTEM**
An engine warning system will be provided to monitor engine conditions such as low oil pressure, high engine temperature and low coolant level. Warning indication will include a STOP ENGINE (red) light with audible buzzer activation and a CHECK ENGINE (amber) light

Note: (Some engine configurations may also include a fluid warning light.)

There will be a master information light bar with 24 lights located across the center of the dash panel that covers up to 24 functions. These are defined under Indicators and Warning Lights above.

Bidder Meets Spec 100% YES_________NO_________
WIRING
All wiring will have XL high temperature crosslink insulation and will be 10 gauge, 12 gauge, 14 gauge and 18 gauge depending on load. All wiring will be color-coded, and the function and number stamped at 3" intervals on each wire. All wiring will be covered with high temperature rated split loom for easy access to wires when trouble shooting. All electrical connectors and main connectors throughout the chassis will be treated to prevent corrosion.

Bidder Meets Spec 100% YES_________NO__________

DOOR AJAR INDICATION
Four (4) red LED lights are provided in the forward cab overhead console area, visible to both driver and officer. Upon releasing the apparatus parking brake one or more of these lights will automatically illuminate (flash) if any cab door is open, compartment door is open, any ladder or equipment rack is not in stowed position, stabilizer system deployed or any other device has not been properly stowed that may cause damage if the apparatus is moved.

Bidder Meets Spec 100% YES_________NO__________

MASTER ELECTRICAL PANEL
The chassis main breaker panel will be wired through the master disconnect solenoid and controlled with a three-position ignition rocker switch. Circuit breakers and flashers will be located at officer’s right side lower interior firewall with removable cover and schematic provided with notebook holder on outside cover.

A deluxe breaker panel with up to 22 ground switched relays with circuit breaker protection will be provided.

An integrated electrical sub-panel will be provided and interfaced to the body and chassis through an engineered wire harness system.

Twelve (12) 20-ampere and one (1) 70-ampere relay for cab lightbar and assemblies will be provided. If the option for a mechanical siren has been selected two (2) additional relays will be provided.

Additional four relay boards with circuit breaker protection for additional loads. Maximum two boards (8 relays) per breaker panel. All relay boards set up to trip with input from switch of positive-negative or load manager by moving connector on board (no tools needed to do this).

All relay boards will be equipped with a power-on indicator light (red), input indicator light (green) and power output indicator light (red).

Up to 23 additional automatic reset circuit breakers for non-switched loads that are remotely switched (ie: heater fans, hood lights, etc.).

All relays and circuit breakers on the relay boards will be pull-out/push-in replaceable.

All circuit breakers on the relay boards will be 20 ampere automatic reset which can be doubled or tripled for 40 or 60-ampere capacity.

The system will utilize Deutch DRC weather resistant connectors at the breaker panel, toe board and main dash connections.
All internal wire end terminals, including locking connectors, will be mechanically affixed to the wire ends by matching terminal crimping presses to assure the highest quality terminations.

All internal splices will be ultrasonically welded connections and all internal wiring will be high temperature GXL type wire that is protected by wiring duct wherever possible.

All switches will be ground controlled; no power going through any rocker switch.

Any switch controlling a relay in the breaker panel will be capable of being set to function only when the parking brake is set. All relays will be tagged with the function that the relay is controlling.

Bidder Meets Spec 100% YES_________NO__________

**HIGH IDLE**
The engine will have a "high idle" switch on the dash that will maintain an engine RPM of 1,000. The switch will be installed at the cab instrument panel for activation/deactivation. The "high idle" mode will become operational only when the parking brake is on and the truck transmission is in neutral.

Bidder Meets Spec 100% YES_________NO__________

**AUXILIARY POWER POINT**
Two (2) additional 12-volt 20-ampere auxiliary lighter socket type plug-ins, will be provided in the cab. Locations will be determined at precon.

Bidder Meets Spec 100% YES_________NO__________

**VEHICLE DATA RECORDER**
An Akron / Weldon vehicle data recorder as required by the 2009 edition of NFPA 1901 will be installed. Vehicle data will be sampled at the rate of 1 second per 48 hours, and 1 minute per 100 engine hours.

Software will be provided to allow the fire department to collect the data as needed.

Bidder Meets Spec 100% YES_________NO__________

**INTERIOR**
The cab interior will be finished in gray Durawear on the full front and rear headliners and rear firewall.

Bidder Meets Spec 100% YES_________NO__________

**LIGHTING CAB EXTERIOR**
Exterior lighting and reflectors will meet or exceed Federal Motor Vehicle Safety Standards and National Fire Protection Association requirements in effect at the time the apparatus is manufactured.

There will be dual high/low sealed beam halogen rectangular headlights in contoured flat bezels, one
each side of the front of the cab.

Bidder Meets Spec 100% YES________ NO_________

**ALTERNATING HEAD LAMP**
The headlights will have an alternating flash feature for emergency response use.

Bidder Meets Spec 100% YES________ NO_________

**HAND HELD SPOTLIGHT**
One Optronics Blue Eye Model KB-4003, 400,000-candle power hand-held spotlight will be provided, installed at officer’s side of cab.

Bidder Meets Spec 100% YES________ NO_________

**LIGHTING CAB INTERIOR**
Interior lighting will be provided inside the cab for passenger safety. Two (2) ceiling mounted combination red/clear LED dome lights with a push button on/off switch in the light lens. One light will be located over each the officer and driver’s position. The lights will also activate from the open door switch located in each cab doorjamb.

Bidder Meets Spec 100% YES________ NO_________

**LIGHTING CREW CAB INTERIOR**
Interior lighting will be provided inside the crew cab for passenger safety. Two (2) ceiling mounted combination red/clear LED dome lights with a push button on/off switch in the light lens will be provided. The lights will also activate from the open door switch located in each cab doorjamb.

Bidder Meets Spec 100% YES________ NO_________

**MIRRORS**
Two (2) Lang Mekra 300 Series smooth chrome plated Aero style main and convex mirrors will be installed on each side of the vehicle. The main mirror will be 4-way remote adjustable 7" x 16" 2nd surface chromed flat glass. The convex will be 6" x 8" 2nd surface chromed 400 mm radius glass. Each mirror housing assembly will be constructed of lightweight textured chrome ABS with on truck glass and housing back cover replacement. In the event the mirror breaks the glass will be replaceable in (3) minutes or less. The glass will include a safety adhesive backing to keep broken glass in place. The mirror assembly will be supported by a "C" loop bracket constructed of polished stainless steel tube utilizing two point mounting reducing vibration of mirror glass during normal vehicle operation. The lower section of the holder will include a spring loaded single detent position 20 degrees forward with easy return to operating position without refocusing.

Bidder Meets Spec 100% YES________ NO_________

**HELMET STORAGE**
A universal style helmet bracket will be provided for each riding position. A placard will be provided for each riding position warning that injury may occur if helmets are worn while seated.

Bidder Meets Spec 100% YES________ NO_________
SEAT BELT WARNING SYSTEM
An Akron / Weldon seat belt warning system will be provided, and will monitor each seating position. Each seat will be supplied with a sensor that, in conjunction with the display module located on the dash, will determine when the seat belt was fastened and if the seat is occupied. An icon will represent that the seat is properly occupied. An audible and visual alarm will be activated if the seat is occupied and/or the belt is not fastened in the proper sequence.

Bidder Meets Spec 100% YES________NO__________

DRIVER’S SEAT
The driver’s seat will be a Bostrom FX ABTS air ride high back seat. The seat will have the following features:

- Integrated 3-point seat belts
- Built in lumbar support
- Durawear seat material
- Adjustable fore/aft

Bidder Meets Spec 100% YES________NO__________

OFFICER’S SEAT
The officer’s seat will be a Bostrom Firefighter™ Tanker 350 ABTS SCBA seat. The seat will have the following features:

- Integrated 3-point seat belt
- “Auto-Pivot & Return” head rest
- Built in lumbar support
- Durawear seat material

Bidder Meets Spec 100% YES________NO__________

UNDER SEAT STORAGE
There will be a storage compartment under the officer’s seat approximately 15" wide x 10.5" tall x 15.5" deep.

Bidder Meets Spec 100% YES________NO__________

CREW SEATS
The crew cab area will have two (2) forward facing Bostrom 300CT ABTS SCBA flip up seats and two (2) rear facing fixed seats. The seats will have the following features:

- Integrated 3-point seat belts
- “Auto-Pivot & Return” head rest
- Built in lumbar support
- Durawear seat material

Bidder Meets Spec 100% YES________NO__________

SCBA BOTTLE BRACKET
The officer and crew seats will come equipped with an H.O. Bostrom SecureAll™ SCBA Locking System capable securing all U.S. and international SCBA brands and sizes while in transit or for storage on fire trucks.

Locking will be achieved by pushing the SCBA unit (bottle) against the pivot arm to engage the automatic lock system. A top clamp will surround the top of the SCBA tank for a secure fit in all
directions. The bracket will be equipped with a center guide fork to keep the tank in-place for a safe and comfortable fit in seat cavity.

All adjustment points will utilize one tool and be easily adjustable.

The bracket system will be free of straps and clamps that may interfere with auxiliary equipment on SCBA units.

The release handle will be integrated into the seat cushion for quick and easy release and will eliminate the need for straps or pull cords to interfere with other SCBA equipment.

The bracket system will meet NFPA 1901 standards and requirements of EN 1846-2.

Bidder Meets Spec 100%  

YES_________NO__________

CREW SEAT COMPARTMENT
A compartment will be provided under the forward facing crew seats on the back wall of the cab. The compartment will be full through, with an access door on each side of the crew cab doors.

Bidder Meets Spec 100%  

YES_________NO__________

STEERING
Ross heavy duty Model TAS-85 power steering will be provided. The steering gear will be bolted to the frame at the cross-member for steering linkage rigidity. Four (4) turns from lock to lock with an 18” diameter slip resistant rubber covered steering wheel. Steering column will have six-position tilt and 2” telescopic adjustment. The cramp angle will be 45 degrees with 315mm tires or 43 degrees with 425mm tires providing very tight turning ability. NO EXCEPTIONS

Bidder Meets Spec 100%  

YES_________NO__________

SUSPENSION (FRONT)
The front suspension will be a variable rate taper-leaf design, 54” long and 4” wide. Long life, maintenance free, urethane bushed spring shackles will be utilized. All spring and suspension mounting will be attached directly to frame with high strength Huck bolts and self-locking round collars. Spring shackles and pins that require grease will not be acceptable. NO EXCEPTIONS.

Bidder Meets Spec 100%  

YES_________NO__________

ENHANCED FRONT SUSPENSION SYSTEM
The front suspension will have the handling, stability, and ride quality enhanced by the use of a Ride Tech auxiliary spring system and Koni high performance shock absorbers.

This system will utilize three stage, urethane auxiliary springs, and high performance gas filled shock absorbers to control the deflection of the leaf springs, and dampen vibration normally transmitted to the chassis. This maintenance free system will be custom tuned to the apparatus gross weight rating for maximum performance, while maintaining a soft compliant ride. NO EXCEPTIONS.

A (3) three year 36,000 mile warranty will be provided by the manufacturer.

Bidder Meets Spec 100%  

YES_________NO__________
SUSPENSION (Rear)
The rear semi-elliptic springs will be 37-1/4” x 3 x 8 leaf with trailing arms. The trailing arms allow free movement of the axle from bump loads and deflections while holding the axle in chassis alignment. This suspension will control axle wrap-up torque caused by accelerating or braking. The trailing arms will be mounted in maintenance free rubber bushings at both ends. The left arm will be adjustable in length for maximum accuracy of chassis alignment.

Bidder Meets Spec 100% YES_________NO_________

TIRE PRESSURE MONITOR
A Real Wheels LED tire pressure sensor will be provided for each wheel. The pressure sensor will indicate if a particular is not properly inflated. A total of six (6) indicators will be provided.

Bidder Meets Spec 100% YES_________NO_________

LUG NUT CAPS
Chrome plated lug nut caps will be provided for the front and rear wheels.

Bidder Meets Spec 100% YES_________NO_________

FRONT TIRES
Front tires will be Goodyear 315/80R22.5, load range L, G291 highway tread, single tubeless type.

Bidder Meets Spec 100% YES_________NO_________

WHEEL COVERS
Deluxe polished full stainless steel wheel covers will be provided.

Bidder Meets Spec 100% YES_________NO_________

REAR MUD FLAPS
Hard rubber mud flaps will be provided for rear tires.

Bidder Meets Spec 100% YES_________NO_________

WHEELS
The front wheels will be steel, disc type, hub piloted, 22.5 x 9.00 10 stud 11.25 bolt circle.

The rear will be steel, disc type, hub piloted, 22.5 x 8.25 10 stud with 11.25" bolt circle.

The wheels will be painted truck color.

Bidder Meets Spec 100% YES_________NO_________

HUB COVERS
The front and rear axles will be equipped with polished stainless steel hub covers.

Bidder Meets Spec 100% YES_________NO_________

REAR TIRES
Rear tires will be Goodyear 12R22.5, load range H, G661 highway tread, dual tubeless type with a
GAWR of 24,000 pounds.
Bidder Meets Spec 100%  YES________ NO________

**TOW EYES** (Front)
There will be two front tow eyes with 3” diameter holes attached directly to the chassis frame.

Bidder Meets Spec 100%  YES________ NO________

**TOW EYES** (Rear)
There will be two tow eyes attached directly to the chassis frame rail under the rear compartment and will be chromate acid etched for superior corrosion resistance.

Bidder Meets Spec 100%  YES________ NO________

**TRANSMISSION**
The chassis will be equipped with a Generation IV Allison EVS3000 six (6) speed automatic transmission. It will be programmed five (5) speed, sixth gear locked out, for fire apparatus vocation, in concert with the specified engine.

An electronic oil level indicator will be provided as well as a diagnostic reader port connection. The fifth gear will be an overdrive ratio, permitting the vehicle to reach its top speed at the engine's governed speed. The dipstick is dipped in a rubber coating for ease in checking oil level when hot.

The chassis to transmission wiring harness will utilize Metri-Pack 280 connectors with triple lip silicone seals and clip-type positive seal connections to protect electrical connections from contamination without the use of coatings.

| Ratings: | Max Input (HP) | 450 |
| Max Input (Torque) | 1255 (lb ft) |
| Max Turbine (Torque) | 1700 (lb ft) |

| Mechanical Ratios: | 1st - | 3.49:1 |
| 2nd - | 1.86:1 |
| 3rd - | 1.41:1 |
| 4th - | 1.00:1 |
| 5th - | 0.75:1 |
| Reverse | -5.03:1 |

Bidder Meets Spec 100%  YES________ NO________

**TRANSMISSION COOLER**
The apparatus transmission will be equipped with a Liquid-To-Liquid remote mounted cooler with aluminum internal components. The cooler will be encased in an aluminum housing and mounted to the outside of the officer’s side frame rail for accessibility and ease of service.

Bidder Meets Spec 100%  YES________ NO________

**TRANSMISSION FLUID**
The transmission will come filled with Castrol TranSynd™ Synthetic Transmission Fluid or approved
equal meeting the Allison TES-295 specification. **NO EXCEPTION.**

Bidder Meets Spec 100%  
YES_________NO_________

**TRANSMISSION SHIFTER**
An Allison "Touch Pad" shift selector will be mounted to the right of the driver on the engine cover accessible to the driver. The shift position indicator will be indirectly lit for nighttime operation.

Bidder Meets Spec 100%  
YES_________NO_________

**FRONT TURN SIGNALS**
There will be two Whelen guide arrow turn signal lights mounted one each side above the headlights.

Bidder Meets Spec 100%  
YES_________NO_________

**WHEELBASE**
The approximate wheelbase will be approximately 212".

Bidder Meets Spec 100%  
YES_________NO_________

**WINDSHIELD WIPERS**
Two (2) black anodized finish two speed synchronized electric windshield wiper system. Dual motors with positive parking. System includes large dual arm wipers with built in washer system. One (1) master control works the wiper, washer and intermittent wipe features. Washer bottle is a remote fill with a 4 quart capacity. Washer fill is located just inside of officer cab door.

Bidder Meets Spec 100%  
YES_________NO_________

**MISCELLANEOUS CHASSIS EQUIPMENT**
Fluid capacity plate affixed below driver's seat.

Chassis filter part number plate affixed below driver's seat.

Tire pressure label near each wheel location.

Maximum rated tire speed plaque near driver.

Cab occupancy capacity label affixed next to transmission shifter.

Do not wear helmet while riding plaque for each seating position.

NFPA compliant seat belt and standing warning plates provided.

Bidder Meets Spec 100%  
YES_________NO_________

**FIRE PUMP HALE QMAX-150**
Fire pump will be midship mounted. The fire pump will be of the double suction single stage centrifugal type, carefully designed in accordance with good modern practice.

The pump will be of fine grain alloy cast iron, with a minimum tensile strength of 30,000 PSI.
The pump body will be horizontally split, on a single plane, casing type with removable lower casing for easy removal of the entire impeller assembly including wear rings and bearings from beneath the pump without disturbing piping or the mounting of the pump in the chassis.

All moving parts in contact with water will be of high quality bronze or stainless steel. Easily replaceable bronze labyrinth wear rings will be provided. Discharge passage will be designed to accomplish uniform pressure readings as the actual pump pressure. The rated capacity of the fire pump will be 1500 gallons per minute in accordance with NFPA# 1901.

The pump shaft will be rigidly supported by three bearings for a minimum deflection. One high lead bronze sleeve bearing will be located immediately adjacent to the impeller (on side opposite the drive unit). The sleeve bearing will be lubricated by a force fed, automatic lubrication system, pressure balanced to exclude foreign material. The remaining bearings will be heavy-duty type, deep groove ball bearings and will be splash lubricated.

The pump shaft will have only one packing gland located on the inlet side of the pump. It will be of split design for ease of repacking. The packing gland must be a full circle threaded design to exert uniform pressure on the packing to prevent "cocking" and uneven packing load when it is tightened. It will be easily adjustable by hand with a rod or screwdriver and requiring no special tools or wrenches. The packing rings will be of a unique combination of braided graphite filament and braided synthetic packing and have sacrificial zinc foil separators to protect the pump shaft from galvanic corrosion.

Bidder Meets Spec 100% YES_________NO__________

PUMP TRANSFER CASE

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

The gearbox drive shafts will be heat treated chrome nickel steel. Input and output shafts will be at least 2-3/4" in diameter. They will withstand the full torque of the engine in both road and pump operating conditions.

The engagement of the pump transmission will be of such design so as to permit transfer of power from road to pump operation only after vehicle is completely stopped. The pump shift will be air actuated from the cab and have both a green "Pump Engaged" light, and a green "O.K.-To-Pump" light. A third green light will be provided on the pump operator's panel for "Throttle Ready".

The pump drive unit will be cast and completely manufactured and tested at the pump manufacturer's factory.

Bidder Meets Spec 100% YES_________NO__________

PUMP ANODE

A Hale pump anode kit assembly # 529-0050-00-0 will be provided and installed in the pump body. A minimum of two (2) anodes will be installed one (1) in the suction side and one (1) in the discharge side of the pump.

Bidder Meets Spec 100% YES_________NO__________
**PUMP CERTIFICATION**
The pump, when dry, will be capable of taking suction and discharging water in compliance with NFPA #1901 chapter 14. The pump will be tested by National Testing and will deliver the percentages of rated capacities at pressures indicated below:

- 100% of rated capacity @ 150 PSI net pump pressure.
- 70% of rated capacity @ 200 PSI net pump pressure.
- 50% of rated capacity @ 250 PSI net pump pressure.

Bidder Meets Spec 100%  

**THREAD TERMINATION**
National Standard Thread will terminate the inlets and outlets of the apparatus.

Bidder Meets Spec 100%  

**PRIMING SYSTEM**
The pump will be capable of priming the pump within 30 seconds using 20 ft. of suction hose on a 10 ft. lift. The pump will be electric positive displacement type. Both pump and priming valve will be actuated by a single T-handle pull control on the operator's panel.

Bidder Meets Spec 100%  

**THERMAL RELIEF VALVE**
There will be a Hale TRV120 Thermal Relief Valve (TRV) supplied. The valve will automatically dump a controlled amount of water to atmosphere when the pump water exceeds 120 degrees Fahrenheit. The valve will re-set automatically. A light will be provided at the pump panel, which will illuminate when the pump reaches 120 degrees Fahrenheit to warn the operator that the pump is automatically dumping.

Bidder Meets Spec 100%  

**PRESSURE GOVERNOR**
Apparatus will be equipped with a Class1 Pressure Governor that is connected to the Electronic Control Module (ECM) mounted on the engine. The Governor will operate as a pressure sensor (regulating) governor (PSG) utilizing the engine’s data for optimal resolution and response.

Programmable presets for RPM and Pressure settings will be easily configurable using the menu structure.

Bidder Meets Spec 100%  

**INTAKE RELIEF**
There will be an intake relief valve installed on the intake side of the pump. The surplus water will be discharged away from the pump operator and terminate with Male NST hose thread. System is field adjustable.

Bidder Meets Spec 100%  

**AUXILIARY COOLER**
An auxiliary cooler will be furnished to provide additional cooling to the engine under extreme pumping conditions. Water from the pump is to be piped to the coils of the heat exchanger allowing
the engine fluid to be cooled as required.
Bidder Meets Spec 100% YES________ NO__________

**VALVES**
All valves will be Akron Heavy-Duty swing out 8800/8600 series unless otherwise noted. The valve will have an all cast brass body with flow optimizing stainless steel ball, and dual polymer seats. The valve will be capable of dual directional flow while incorporating a self-locking ball feature using an automatic friction lock design and specially designed flow optimizing stainless steel ball. The valve will not require the lubrication of seats or any other internal waterway parts, and be capable of swinging out of the waterway for maintenance by the removal of six bolts. The valve will be compatible with a slow close device. This valve will be actuated using manual handles, a Rack & Sector, manual gear, or electric actuator. The manual handles will be quickly adjustable to one of eight handle positions, and require only 90 degrees travel.

Bidder Meets Spec 100% YES________ NO__________

**VALVE WARRANTY**
The valves will carry a 10-year warranty.

Bidder Meets Spec 100% YES________ NO__________

**PUMP CONNECTIONS**
All suction and discharge lines (except pump manifolds) 1” and larger will be heavy-duty stainless steel pipe. Where vibration or chassis flexing may damage or loosen piping or where a coupling is necessary for servicing, a flexible connection will be furnished. All lines will be drained by a master drain valve or a separate drain provided at the connection. All individual drain lines for discharges will be extended with a rubber hose in order to drain below the chassis frame. All water carrying gauge lines will utilize nylon tubing.

Bidder Meets Spec 100% YES________ NO__________

**6” PUMP INLETS**
Two 6” diameter suction ports with 6” NST male threads will be provided, one on each side of vehicle. The inlets will extend through the side pump panels and come complete with removable strainer and long handle chrome-plated cap.

Bidder Meets Spec 100% YES________ NO__________

**2.5” RIGHT SIDE INLET**
One 2.5” gated inlet valve will be provided on the right side pump panel. The valve will be supplied with chrome plate female swivel, plug, chain, and removable strainer.

The valve will attach directly to the suction side of the pump with the valve body behind the pump panel.

Bidder Meets Spec 100% YES________ NO__________

**2.5” LEFT SIDE INLET**
One 2.5” gated inlet valve will be provided on the left side pump panel. The valve will be supplied with chrome plate female swivel, plug, chain, and removable strainer.

The valve will attach directly to the suction side of the pump with the valve body behind the pump panel.
TANK TO PUMP
The booster tank will be connected to the intake side of the pump with a 1/4 turn 3" full flow valve with check valve, with the remote control located at the operator's panel. The 3" tank to pump line will run from a bottom sump into the 3" valve. To prevent damage due to chassis flexing or vibration, a short 3" flexible rubber hose coupling will be used to connect the tank to the intake valve.

OUTLETS
The discharge valves will be stainless steel construction and will be of the quarter turn type and of fixed pivot design to allow for ease of operation at all pressures. The valves will be controlled from the operator's panel. Each valve will be supplied with 2-1/2" National Standard Threads and come with chrome plated female caps and chains. 2-1/2" or larger discharge outlet will be supplied with a 3/4" quarter turn drain valve located at the outlet. All 2-1/2" and larger discharges will be supplied with a 30-degree angle down elbow.

2-1/2" LEFT SIDE DISCHARGE
Two (2) 2-1/2" gated discharge will be located on the left side pump panel. The valve will be of the quarter turn tork-lok ball type of fixed pivot design to allow for ease of operation at all pressures. The valve will be connected to the discharge side of the pump with the valve bodies behind the pump panel. A chrome swing type handle located on the pump operator’s panel will control the side discharge.

2-1/2" RIGHT SIDE DISCHARGE
One (1) 2-1/2" gated discharge will be located on the right side pump panel. The valve will be of the quarter turn tork-lok ball type of fixed pivot design to allow for ease of operation at all pressures. The valve will be connected to the discharge side of the pump with the valve bodies behind the pump panel. A chrome swing type handle located on the pump operator's panel will control the right side discharges.

3” RIGHT SIDE DISCHARGE
An additional 3” gated discharge will be located on the right side pump panel. The valves will be of the quarter turn tork-lok ball type of fixed pivot design to allow for ease of operation at all pressures. The valve will be connected to the discharge side of the pump with the valve bodies behind the pump panel. A chrome swing type handle located on the pump operator’s panel will control the right side discharge. This discharge will terminate with a 5 inch storz with a 45 degree turndown.

2.5” LEFT REAR OUTLET
There will be a 2.5” rear hose bed discharge, located on the left side of the hose bed. The outlet will be installed with proper clearance for spanner wrenches or adapters. Plumbing will be 2.5” piping and a full flow 2.5” ball valve with the control at the pump operator’s panel.
FRONT BUMPER DISCHARGE
A 1.5” discharge with 2” plumbing will be provided at the front bumper. The valve will be remote controlled at the pump panel.

Bidder Meets Spec 100%  YES_________NO__________

DELUGE RISER
A 3” deluge riser will be installed above the pump in such a manner that a monitor can be mounted and used effectively. Piping will be rigidly braced. The riser will be gated and controlled from the pump operators panel.

Bidder Meets Spec 100%  YES_________NO__________

EXTEND-A-GUN
A Task Force Tips Extend-A-Gun model XG18 will be provided and installed. The unit will allow the deck gun monitor to extend 18”.

Bidder Meets Spec 100%  YES_________NO__________

MONITOR
There will be an Akron monitor mounted above the pump. This monitor will be hard mounted to extend-a-gun. It will have an automatic fog nozzle and straight tips mounted separate beside monitor. It must also have a stream shaper included.

Bidder Meets Spec 100%  YES_________NO__________

SPEEDLAYS
Two (2) speedlay hose beds will be supplied. The piping and valves will be 2”. The swivel will be 1.5”. The valves will be push/pull controlled from the pump panel.

Each compartment will hold a minimum of 200 ft. of 1.75” double jacket hose.

Each bidder must price the following separate in the line provided below.

A lift out tray for each speedlay to hold 200 ft of 1.75” hose. These trays will be removable from both sides. There will also be rollers on each side of both speedlays for rolling tray in and out. The bottom roller will be mounted slightly higher than speedlay floor to serve as a holder so trays stay in stowed position. $Price for trays and rollers mounted

Bidder Meets Spec 100%  YES_________NO__________

TANK FILL
A 2” tank fill line will be provided, using a quarter turn full flow ball valve controlled from the pump operator’s panel.

Bidder Meets Spec 100%  YES_________NO__________
FOAM SYSTEM – EXTERNAL EDUCTOR
There will be an external foam connection provided on the side pump operator’s panel. It will be connected to the on board foam cell by a 1” plastic line and plumbed to an Elkhart foam supply kit with a quick disconnect on the pump panel. There will be an air operated valve connected near the foam cell, with a switch located on the pump panel to turn off the flow of foam to the concentrate outlet. A check valve will be installed directly after the valve, to prevent unintentional pressurizing of the foam cell. A ¾” quarter turn valve will be provided on the pump panel, plumbed from the discharge side of the pump to the foam line just behind the check valve. This will serve as a foam flush from the air operated valve to the foam concentrate outlet connection at the pump panel.

Provided with the system will be a male quick connect provided on the supply line that will mate to the pump panel disconnect.

Bidder Meets Spec 100%  
YES_________NO__________

FOAM TANK
A 30-gallon foam tank will be provided. The tank will be part of the main booster tank. There will be a fill tower, cap and a tank vent. A 1-1/2” outlet and drain valve will be provided at the lowest point in the tank.

Bidder Meets Spec 100%  
YES_________NO__________

PUMP AND GAUGE PANELS
The panels will be constructed of brushed stainless steel for maximum protection against abrasion caused during normal use. The pump and gauge panels will be flush mounted on the aluminum extruded pump module framework.

Pump panels on both sides will be easily removable. The top mount gauge and control panels will be two separate panels for ease of maintenance. The upper gauge panel will be hinged with a full-length stainless steel hinge held closed with a 1/4-turn latch. This door will have a stainless steel hinge and latching mechanisms.

Both side pump panels will be vertically hinged to allow the panel to move away providing complete access to the pump compartment.

Bidder Meets Spec 100%  
YES_________NO__________

VALVE CONTROLS – TOP MOUNT
The pump controls and gauges will be located top mount with a walk way between cab and pump panel.

The control panel will be laid out in a user-friendly manner.

All valve controls will have the corresponding discharge gauge located immediately adjacent to control handle to allow operator to view the discharge pressure without searching the panel.

Bidder Meets Spec 100%  
YES_________NO__________

COLOR CODING
Each discharge valve control, outlet, and corresponding line gauge will be color-coded.
PUMP PANEL LIGHTS
Pump panel lights will be LED.

Bidder Meets Spec 100%  YES_________NO__________

PUMP PANEL GAUGES AND CONTROLS
The following will be provided at the pump operator’s panel:

Two (2) certified laboratory test gauge outlets.
Push/pull pump primer control.
Master drain control and additional drains as needed.
Tank fill and pump cooler valve controls.
Tank to pump valve control.
Pump capacity rating plate.
All discharge controls.
Two (2) master 4-1/2” pump gauges.
2-1/2” Gauges for all 1-1/2" and larger discharge lines.

Bidder Meets Spec 100%  YES_________NO__________

4.5” MASTER GAUGES
Two (2) 4-1/2” Class 1 master gauges will be provided. Each gauge will be fully filled with pulse and vibration dampening Interlube to lubricate the internal mechanisms to prevent lens condensation and to ensure proper operation to minus 40-degrees Fahrenheit. The cases will be temperature compensated with an internal breathing diaphragm to permit fully filled cases and to allow a rigid lens with a distortion free viewing area. To prevent internal freezing, and to keep contaminants from entering the gauge, the stem and Bourdon tube will be filled with low temperature oil and be sealed from the water system using an isolating diaphragm located in the stem. A bright metal bezel will be supplied for resistance to corrosion and to protect the lens and case from damage. The gauges will be mounted next to each other adjacent to crosslay area at the right upper section of the pump operator’s panel. The intake gauge will be to the left of the discharge gauge.

Bidder Meets Spec 100%  YES_________NO__________

2.5” PRESSURE GAUGES
All discharge will be equipped with 2.5” Class 1 gauges. Each gauge will be fully filled with pulse and vibration dampening Interlube to lubricate the internal mechanisms to prevent lens condensation and to ensure proper operation to minus 40 degrees F. The cases will be temperature compensated with an internal breathing diaphragm to permit fully filled cases and to allow a rigid lens with a distortion free viewing area. To prevent internal freezing, and to keep contaminants from entering the gauge, the stem and Bourdon tube will be filled with low temperature oil and be sealed from the water system using an isolating diaphragm located in the stem. A bright metal bezel will be supplied for resistance to corrosion and to protect the lens and case from damage. The gauges will be mounted adjacent to the corresponding water outlet

Bidder Meets Spec 100%  YES_________NO__________

WATER TANK GAUGE
A Class1 Intelli-Tank water level gauge will be provided. The gauge will feature wide-angle viewing
and four (4) ultra-bright LED's for high visibility even in direct sunlight. Water level sensing will be through a pressure transducer, and capable of indicating nine (9) accurate levels.

Bidder Meets Spec 100%  

**AIR HORN BUTTON**
The there shall be an air horn on the pump panel.

Bidder Meets Spec 100%  

**BODY SUB-FRAME**
The chassis will be fitted with a steel sub-frame system.

Bidder Meets Spec 100%  

This system will provide additional structural support to the running boards and side compartments. A heavy-duty rear platform will be constructed of the same material to support the rear compartments and rear step. The entire assembly will be attached to the chassis frame by a series of heavy-duty U-bolts.

Bidder Meets Spec 100%  

**APPARATUS BODY**
The body will be constructed of 3/16" #5052 aluminum sheet and #3003 bright aluminum diamond plate and structural aluminum extrusions. NO EXCEPTIONS

Bidder Meets Spec 100%  

The entire body will be of the modular aluminum design to allow for proper flexing of the truck chassis. A special insulator material will be used where aluminum and steel are in contact. The body will be custom built and engineered for proper load distribution on the chassis.

Bidder Meets Spec 100%  

The body compartments will be designed as separate units using 3003H14 3/16” aluminum plate for the floors. Compartment panels will be sealed by stitch welding.

Bidder Meets Spec 100%  

The exterior compartment corners will be formed by an extruded aluminum alloy (6061-T6) frame with a nominal thickness of .188”. These extruded sections will incorporate 1” recessed continuous bottom door seal to allow unobstructed, sweep-out floors in all compartments.

Bidder Meets Spec 100%  

The front, top, and rear surfaces of the body will be covered with aluminum .125” Treadplate. The compartment tops will extend downward over the extrusions and form a continuous full-length drip molding.

The apparatus body and pump enclosure will be separate modules that are not fastened together in any manner. This will help prevent any cracking of body or pump enclosure.
Each compartment will be properly vented with louvers.

Bidder Meets Spec 100% YES_________NO__________

It is understood that each manufacturer has slightly different body dimensions. The compartment dimensions mentioned below are FD minimum requirements. Larger, deeper, wider, taller bodies are acceptable.

REAR STEP COMPARTMENTATION
A1 - There will be a compartment provided at the rear step. The compartment will be approximately 40" wide x 42.5" high x 27.5" deep inside. The compartment will be provided with a roll-up door.

Bidder Meets Spec 100% YES_________NO__________

COMPARTMENTATION LEFT SIDE
L1- There will be a compartment ahead of the rear wheels approximately 40.5" wide x 66" high x 26" deep.

Bidder Meets Spec 100% YES_________NO__________

L2- There will be a compartment above the rear wheels, approximately 59" wide x 36.5" high x 26" deep.

Bidder Meets Spec 100% YES_________NO__________

L3- There will be a compartment behind the rear wheels approximately 54" wide x 66" high x 26" deep.

Bidder Meets Spec 100% YES_________NO__________

COMPARTMENTATION RIGHT SIDE
R1- There will be a compartment ahead of the rear wheels approximately 40.5" wide x 66" high x 26" deep. The upper portion of the compartment will be 11" deep to accommodate ladder storage.

Bidder Meets Spec 100% YES_________NO__________

R2- There will be a compartment above the rear wheels approximately 59" wide x 36.5" high x 11" deep.

Bidder Meets Spec 100% YES_________NO__________

R3- There will be a compartment behind the rear wheels approximately 54" wide x 66" high x 26" deep. The upper portion of the compartment will be 11" deep to accommodate ladder storage.

Bidder Meets Spec 100% YES_________NO__________

AIR BOTTLE COMPARTMENTS
There will be four (4) SCBA bottle compartments located in the fender wells of the apparatus body, two (2) each side.

Bidder Meets Spec 100% YES_________NO__________
ROLL-UP COMPARTMENT DOORS
The apparatus body will be equipped with **R.O.M Robinson Shutter** doors. The door slats will be double wall box frame, manufactured from anodized aluminum. The doors will have the following features:

- Manufactured wholly in the United States.
- Concave individual slat design to prevent loose equipment from hindering door operation
- Co-Extruded stretch resistant inner seal between slats to prevent metal-to-metal contact and inhibit moisture and dust penetration.
- Interlocking swaged/dimpled end shoes will be utilized to provide a tight fitting assembly and allow for easy removal in the event of damage.
- Effective counter balancing for ease of lifting and lowering the doors.
- One-piece side rail and track to provide an unobstructed slide area and reduce the risk of binding.
- Non-abrasive replaceable water and dust barrier to keep compartment equipment clean and dry.
- A magnetic type switch integral to the door will be supplied for door ajar indication and compartment light activation.
- A full width positive latch bar will be operable with one hand, even with heavy gloves.

A door open indicator light will be provided in the cab.

**Bidder Meets Spec 100%**  
**YES_______ NO________**

COMPARTMENT MATTING  
Turtle Tile interlock matting material will be provided in each compartment.

**Bidder Meets Spec 100%**  
**YES_______ NO________**

ADJUSTABLE SHELF  
There will be seven (7) adjustable shelves provided and installed in the compartments. The shelf will be fabricated of .188" aluminum plate.

**Bidder Meets Spec 100%**  
**YES_______ NO________**

600# SLIDE-MASTER TRAY  
There will be a Slide-Master pullout drawer provided and installed. The drawer will have a distributed load capacity of 600 lbs. and be capable of extending 70% of its depth. The tray will be fabricated of .188" aluminum plate and have a formed lip that measures 2".

**Bidder Meets Spec 100%**  
**YES_______ NO________**

ADJUSTABLE VERTICAL SLIDE-OUT PANEL  
There will be an adjustable vertical slide-out tool board with a 250 lb. capacity supplied and mounted on unistrut tracks. Extra compartment lights will be provided and located as needed to properly illuminate the compartment.

**Bidder Meets Spec 100%**  
**YES_______ NO________**

COMPARTMENT DIVIDER  
There will be a vertical divider/partition provided in a compartment as specified. The divider will be
constructed of .188" thick smooth aluminum plate. The top and bottom of the divider will have a formed flange bolted to the interior of the compartment.

Bidder Meets Spec 100%  

YES_______NO________

**HOSE BED**

The hose bed will be provided with aluminum slatted flooring radiused at the edges to prevent hose damage from sharp edges. Each hose bed floor section will be removable for easy access to the water tank. The hose will be capable of holding the following minimum loads and maximum distance from the ground:

- 500-gallon tank - 2000 feet of 5" LDH
- 750-gallon tank - 1500 feet of 5" LDH
- 1000-gallon tank - 1000 feet of 5" LDH

Bidder Meets Spec 100%  

YES_______NO________

**HOSE BED DIVIDER**

The hose bed will be divided by two (2) 3/16" aluminum partition that is fully adjustable by sliding in tracks located at the front and rear of the hose bed. The divider will be located as needed.

Bidder Meets Spec 100%  

YES_______NO________

**HOSE BED COVER**

There will be a black nylon/vinyl hose bed cover for the main hose bed. The cover will be capable of being securely fastened at the front, sides and rear.

Bidder Meets Spec 100%  

YES_______NO________

**BODY HANDRAILS**

Handrails will be constructed of type **304 stainless steel** 1.25 inch diameter tubing with bright finish and knurled gripping surface. Mounting flanges will be constructed from 7 gauge, .180 thick, stainless sheet. Each grab rail will have 90 degree returns to flanges. The ends of grab rail will pass through the flanges and be welded to form one structural unit. The handrails, will be mounted using 1 ¼" SS Hex bolts, with a barrier rubber gasket at each flange. Sufficient space will allow for a gloved hand to firmly grip the rail. The rails will be located in the following areas:

(Note: These are in addition to those previously mentioned in the cab section):

There will be one (1) vertical handrail at rear of the body one each side of the rear compartment.

There will be two (2) handrails mounted horizontally, above the pump panel, one (1) on each side as large as possible.

Bidder Meets Spec 100%  

YES_______NO________

**FRONT BODY STEPS**

There will five (5) fold-down steps mounted three (3) left and two (2) on the front face of body to provide access to the top of the pump module and dunnage area. The steps will have a footing area of 42 square inches.

Bidder Meets Spec 100%  

YES_______NO________
REAR STEPS
The rear of the body will be equipped with fixed steps. The steps will have a surface area sufficient to provide safe footing for a booted firefighter. Thinly fabricated aluminum steps will not be utilized.

The quantity and location of steps and handrails will meet the Current NFPA 1901 pamphlet in effect at the time the apparatus is ordered.

Bidder Meets Spec 100% YES_______NO________

RUB RAILS
The body will be equipped with anodized aluminum channel style rub rails at the sides. Rub rails will be spaced away from the body by 1/2" polymer spacers. The rub rails will be polished to a bright finish.

Bidder Meets Spec 100% YES_______NO________

ALUMINUM TREADPLATE
All load bearing aluminum treadplate running boards will be 3/16" thick bright-annealed finish. Running boards and rear step edges will be flanged down for added strength. Running boards will also be flanged up to form kick plates. All non-load bearing aluminum will be 1/8" thick bright annealed finish.

Treadplate locations:
1. Skirting around front bumper.
2. The step at the cab entrance.
3. The jump seat steps.
4. The body header.
5. The running boards.
6. The rear step.
7. The top of the compartments.
8. The rear of the apparatus.
9. The rear fenders.
10. The hosebed side metal

Bidder Meets Spec 100% YES_______NO________

BOOSTER TANK
The tank will have a capacity of 750 U.S. gallons.

Bidder Meets Spec 100% YES_______NO________

The tank will be constructed of 1/2" thick polypropylene sheet stock. This material will be a non-corrosive stress relieved thermo-plastic, natural in color, and U.V. stabilized for maximum protection. The booster tank will be of a specific configuration and is so designed to be completely independent of the body and compartments. All joints and seams will be nitrogen welded and tested for maximum strength and integrity. The top of the booster tank is fitted with removable lifting eyes designed with a 3 to 1 safety factor to facilitate easy removability. The transverse swash partitions will be manufactured of 3/8" polypropylene and extend from approximately 4" off the floor to just under the
cover. The longitudinal swash partitions will be constructed of 3/8" polypropylene and extend from the floor of the tank through the cover to allow for positive welding and maximum integrity. All partitions will be equipped with vent and air holes to permit movement of air and water between compartments. The partitions will be designed to provide maximum water flow. All swash partitions interlock with one another and are welded to each other as well as to the walls of the tank.

The tank will have a combination vent and manual fill tower. The fill tower will be constructed of 1/2" polypropylene and will be a minimum dimension of 8" x 8" outer perimeter. The tower will be located in the left front corner of the tank. The tower will have 1/4" thick removable polypropylene screen and a polypropylene hinged-type cover. The tank cover will be constructed of 1/2" thick polypropylene, U.V. stabilized material to incorporate a multi three-piece locking design, which allows for individual removal and inspection if necessary.

The sump will be constructed of 1/2" polypropylene and be located in the left front quarter of the tank. The sump will have a minimum of 3" national pipe threaded outlet on the bottom for a drain plug. This will be used as a combination clean out and drain. All tanks will have an anti-swirl plate located approximately 2" above the sump.

All tank fill couplings will be backed with flow deflectors to break up the stream of water entering the tank.

The tank will rest on the body cross members in conjunction with such additional cross members, spaced at a distance that would not allow for more than 530 square inches of unsupported area under the tank floor.

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

Bidder Meets Spec 100% YES________ NO________

**BOOSTER REEL**

One (1) aluminum electric rewind booster reel will be provided and mounted above the pump box in dunnage area. The reel will be equipped with sealed joints, leak proof ball bearings, and an adjustable friction brake. The reel will have a heavy frame to keep the drum, bearings, and rewind mechanism in alignment at all times. The reel will have roller guides to prevent hose damage while it is being taken on and off of the reel. The electric rewind will be located for convenience and safety of operation. Positive rewind power will be assured by the use of sprocket and chain in conjunction with a geared manual crank.

Hose reel needs a heavy enough motor and wiring so to not overheat.

The reel will be equipped with 200 ft. 1" best grade booster hose with Bar-Way couplings and a 30 GPM nozzle.

There shall be rollers and rewind switches on both sides of pump module to accommodate usage of hose reel on both sides of unit.

Bidder Meets Spec 100% YES________ NO________

**ELECTRIC SYSTEM**

All electrical wiring in the chassis will be XLP cross link-insulated type. Wiring is to be color-coded and include function codes every three (3) inches. Wiring harnesses will be routed in protective, heat
resistant loom, securely and neatly installed. Two power distribution centers will be provided in central locations for greater accessibility. The power distribution centers contain automatic thermal self-resetting breakers, power control relays, flashers, diode modules, daytime driving light module, and engine and transmission data links. All breakers and relays are utilized in circuits which amp loads are substantially lower than the respective component rating thus ensuring long component life. Power distribution centers will be composed of a system of interlocking plastic modules for ease in custom construction. The power distribution centers are function oriented. The first is to control major truck function and the second controls overhead switching and interior operations. Each module is single function coded and labeled to aid in troubleshooting. The centers also have accessory breakers and relays for future installations. All harnesses and power distribution centers will be electrically tested prior to installation to ensure the highest system reliability.

All external harness interfaces will be of a triple seal type connection to ensure a proper connection. The cab/chassis and the chassis/body connection points will be mounted in accessible locations. Complete chassis wiring schematics will be supplied with the apparatus.

The wiring harness contained on the chassis will be designed to utilize wires of stranded copper or copper alloy of a gauge rated to carry 125% of maximum current for which the circuit is protected without exceeding 10% voltage drop across the circuit. The wiring will be uniquely identified by color code or circuit function code, labeled at a minimum of every three (3) inches. The identification of the wiring will be referenced on a wiring diagram. All wires conform to SAEJ1127 (Battery Cable), SAEJ1128 (Low Tension Primary Cable), SAEJ1560 (Low Tension Thin Wall Primary Cable).

All harnesses will be covered with moisture resistant loom with a minimum rating of 300 Degrees Fahrenheit and a flammability rating of VW-1 as defined in UL62. The covering of jacketed cable has a minimum rating of 289 degree Fahrenheit.

All harnesses are securely installed in areas protected against heat, liquid contaminants and damage. The harness connections and terminations use a method that provides a positive mechanical and electrical connection and are in accordance to the device manufacturers instructions. No connections within the harness utilize wire nut, insulation displacement, or insulation piercing.

All circuits conform to SAE1292. All circuits are provided with low voltage over current protective devices. These devices are readily accessible and protected against heat in excess of component rating, mechanical damage, and water spray. Star washers are not used for ground connections.

ICC lights will be provided to meet D.O.T. requirements.

Bidder Meets Spec 100% YES_________NO_________

BACK-UP ALARM
An Ecco model SA917 automatic self-adjusting electronic back-up alarm producing 87-112 db will be installed at the rear between the frame rails. It will operate whenever the transmission’s reverse gear is selected.

Bidder Meets Spec 100% YES_________NO_________

LICENSE PLATE BRACKET
A license plate bracket will be provided at the rear of the apparatus. A Weldon Technologies light part # 9186-23882-30 will be mounted directly above the license plate area for proper illumination.
COMPARTMENT LIGHTING
Each compartment will be equipped with two (2) LED light strips which will provide a consistent pattern to illuminate the entire compartment.

TAIL/STOP/TURN LIGHTS
The taillights are to be Whelen 600 LED style. The brake/tail lights to be red and exceed SAE requirements. The turn signal will be populated in an arrow pattern, amber in color. The backup lights are to be halogen. One opening will be open to accept a 600 series warning light.

LED ICC/MARKER LIGHTS
LED type ICC/marker lights will be provided to meet D.O.T. requirements.

STEP LIGHTS
The pump module running board area will be illuminated by Whelen 2G 4” diameter LED lights mounted one each side on the front of the body in chrome flanges.

One Weldon 2631 LED will be mounted under each step on the rear of the body to illuminate the tailboard and the steps.

GROUND LIGHTING
The apparatus will be equipped with lighting capable of illumination to meet NFPA requirements. Lighting will be provided at areas under the driver and crew riding area exits and will be automatically activated when the exit doors are opened. The ground lights will be Truck-lite® LED model #44042C. Lighting required in other areas such as work areas, steps and walkways will be activated when the parking brake is applied, provided the ICC lights are on.

WORK LIGHTS
There will be two (2) Unity brand AG 6” chrome plated sealed beam flood lights provided. The lights will be securely mounted at the upper rear of the apparatus body. Each light will be supplied with individual switches.

OPTICAL WARNING SYSTEM
The optical warning system will be capable of two separate signaling modes during emergency operations. One mode will signal to drivers and pedestrians that the apparatus is responding to an emergency and is calling for the right-of-way and the other mode will signal that the apparatus is stopped and is blocking the right-of-way. Switching will be provided that senses the position of the parking brake.
A master optical warning device switch will be provided to energize all of the optical warning devices provided. All lights will operate at not less than the minimum flash rate per minute as specified by NFPA.

Bidder Meets Spec 100% YES_________NO__________

**UPPER LEVEL LED WARNING DEVICES**
The upper level is divided into zones A, B, C and D and the approved lighting package to be provided will be as follows:

Zone A (front) will have one (1) Whelen Justice 62” Model JE0 NFPA 1901 compliant light bar, with ten (10) LED modules. The light bar will have four (4) corner red LED modules, and four (4) red LED and two (2) clear LED modules, facing forward. The light bar will be mounted on the cab roof.

Bidder Meets Spec 100% YES_________NO__________

Zone B (right side) will be covered by the module from the light bar and the right rear stanchion beacon.

Bidder Meets Spec 100% YES_________NO__________

Zone C (rear) will have two (2) Whelen Model B6 LED super series lights on rear, color is Amber and clear with beacons having red domes.

Bidder Meets Spec 100% YES_________NO__________

Zone D (left side) will be covered by the module from the light bar and the left rear stanchion beacon.

Bidder Meets Spec 100% YES_________NO__________

**LOWER LEVEL LED WARNING DEVICES**
The lower level is divided into zones A, B, C and D and the approved lighting package to be provided will be as follows:

Zone A (front) will have two (2) Whelen 600 series red Super LED lights mounted one each side, at the front of the apparatus.

Bidder Meets Spec 100% YES_________NO__________

Zone B (right side) will have three (3) Whelen LINZ6 Series LED red lights mounted, one (1) on the side of the front bumper, and one (1) in the front fender well area, and one (1) in the rear fender well area.

Bidder Meets Spec 100% YES_________NO__________

Zone C (rear) will have two (2) Whelen 600 series red Super LED lights mounted one (1) each side of the rear of the apparatus.

Bidder Meets Spec 100% YES_________NO__________

Zone D (left side) will have three (3) Whelen LINZ6 Series LED red lights mounted, one (1) on side of front bumper, one (1) in the front fender well area, and one (1) in the rear fender well area.

Bidder Meets Spec 100% YES_________NO__________
ROTOM \nThere shall be an LED Roto-Ray mounted on front of the apparatus below windshield and above the grill. Colors shall be Red/White/Green.

Bidder Meets Spec 100% YES_______ NO_________

FEDERAL Q2B SIREN
There will be a Federal Q2B-NN siren installed in the center of the cab grille. If bidder cannot mount Q2B in grille, please state again the radiator capacity here __________qts.

Bidder Meets Spec 100% YES_______ NO_________

The siren will be securely mounted and activated by means of a solenoid and will include a brake. A siren foot switch will be provided for both the driver and officer, one on each side of the cab floor.

Bidder Meets Spec 100% YES_______ NO_________

SIREN
One (1) Whelen Model 295 HFSA1 siren will be installed at the cab instrument panel complete with noise canceling microphone.

Bidder Meets Spec 100% YES_______ NO_________

SIREN SPEAKER
One Cast Products SA4201-5-A weatherproof siren speaker will be provided, mounted behind the bumper.

Bidder Meets Spec 100% YES_______ NO_________

LED TELESCOPIC FLOODLIGHT
There shall be two (2) Fire Research Evolution LED model FCA530-V15 side mount push up telescopic lights shall be installed, one (1) each side. The light pole shall be anodized aluminum and have a knurled twist lock mechanism to secure the extension pole in position. The extension pole shall rotate 360 degrees. The outer pole shall be a grooved aluminum extrusion and qualify as an NFPA compliant handrail. The pole mounting brackets shall have a 3 1/2" offset. Wiring shall extend from the pole bottom with a 4’ retractile cord.

The lamphead shall have eight (8) ultra-bright white LEDs. It shall operate at 12/24 volts DC, draw 13/6.5 amps, and generate 15,000 lumens. The lamphead shall direct 50 percent of the light onto the action area while providing 50 percent to illuminate the working area. The lamphead angle of elevation shall be adjustable at a pivot in the mounting arm and the position locked with a round knurled locking knob. The lamphead shall incorporate heat-dissipating fins and be no more than 5 3/16" deep by 3 5/16" high by 11 1/2" wide. The lamphead and mounting arm shall be powder coated white. The floodlight shall be for fire service use.

The lights will be switched in the cab each.

Location of floodlight shall be: selected at Precon

Bidder Meets Spec 100% YES_______ NO_________

GROUND LADDERS
The apparatus will be equipped with heavy duty, box type "I" beam rail, ground ladders. The ladders will meet the requirements of NFPA 1931 to ensure proper design and that sufficient strength is
available for the service intended. The ground ladders will be constructed of aluminum with non-welded, field replaceable rung to rail connections to simplify field repairs and removable plated steel butt spurs for added strength. A full 1/2", non-rotting, poly rope will be provided for easy ladder operation.

One (1) Alco-Lite PEL-24 24 ft. two-section aluminum extension ladder.

One (1) Alco-Lite PRL-14 14 ft. aluminum roof ladder.

One (1) Alco-Lite FL-10’ 10 ft. folding ladder.

The ladders will have lifetime Warranty against manufacturing defects.

Bidder Meets Spec 100% YES_________NO_________

LADDER CHUTE
The ground ladders will be mounted behind the right upper compartments in an area accessible from the rear of the apparatus. The ladders will be individually located in holders lined with anti-wear strips. There will also be storage for a 3” backboard and two (2) pike poles in the ladder chute compartment.

An aluminum diamond plate door will enclose the ladders at the rear.

Bidder Meets Spec 100% YES_________NO_________

CORROSION REDUCTION POLICY
Orange Beach has terrible coastal salt and corrosion issues. The manufacturer will have in place a formal corrosion reduction program and assembly procedures designed for reducing and eliminating the possibility of corrosion. It is understood that fire apparatus will operate in harsh environments. At the time of the bid the apparatus manufacturer will show proof of a corrosion policy. Failure to submit this information could be grounds for rejection. If a formal policy is not in place explain in your bid how your firm will take the necessary steps for corrosion reduction. There will be no exception to this requirement.

Bidder Meets Spec 100% YES_________NO_________

In addition to a formal program the manufacture will show proof of testing corrosion reduction processes to ASTMB117. A copy of recent test will be included in the bid.

Bidder Meets Spec 100% YES_________NO_________

Frame Rails
The chassis frame rails will be coated with a high performance, two component, reinforced inorganic zinc rich primer with a proven cathodic protection makeup preferably Cathacoat 302HB. The surface will be clean and free of all salts, chalk and oils prior to application. Were the primer has been broken during the frame assembly process the area will be touch up to reestablish the seal. Prior to finish paint a second primer Devran 201 will be applied. Once the assembly of the frame is complete and the second primer is applied the entire assembly will be covered with high quality top coat paint preferably Imron 5000 or equal. The manufacturer will submit with the bid a copy of the product brochure and or description of the primer to be used.

Bidder Meets Spec 100% YES_________NO_________
Electro Plating
Steel and Iron brackets such as the pump module bracket will be Zinc plated to protect against corrosion. Plating will be in accordance with ASTM B663. The apparatus manufacturer will list all components with plating.

Bidder Meets Spec 100% YES_________NO__________

Fasteners
In any area that a stainless steel screw or bolt head is to come in contact with aluminum or steel, painted or non-painted, the fastener will have the underside if the head pre-coated with nylon. The nylon coating will act as a barrier between the fastener head and the metal or painted surface.

Screw or bolt taped into the metal will be pre-coated with a Threadlocker type material pre-applied on the threads.

When bolting together stainless steel the manufacturer will use a pan-head bolt with nylon coating under the head, a stainless washer with a rubber backing, and a Stover flange nut to secure the bolt.

When mounting aluminum components such as a step to the apparatus body. The manufacturer will use stainless washers with rubber backing. All mounted components will a barrier material between the two surfaces.

All rivet type fasteners will be of the same material being secured.

Whenever possible, pre-drill and tap all holes for mounting components such as lights, steps and hand rails prior to the paint process to reduce the corrosion opportunity. If a hole must be drilled into a previously painted surface, re-establish the paint barrier around the hole and use a flange-type nutsert with a gasket under the flange.

Where possible, minimize the number of stainless trim screws in aluminum. Structural tape and or adhesive will be used were possible for mounting trim to the body or cab.

If a pre-treated screw or bolt is not available, hand apply Dynatex Boltlocker or Theadlocker on the threads of the screw, bolt or nutsert. This will help seal threads from moisture and help prevent the fasteners from loosening.

If lubricant is used when tapping the hole, clean out the lubricant and the shavings before applying blue Threadlocker into the hole.

Bidder Meets Spec 100% YES_________NO__________

Barrier Tape
Barrier tape will be used on the backsides of all lights, trim pieces, or other components when bolting them to the apparatus; also when attaching stainless steel over an aluminum surface or when attaching aluminum treadplate to the stainless steel. All instances of dis-similar metals contacting each other require the addition of barrier tape between the metals where contact is made.

Before applying the tape, be sure the metal surface is clean from oil or dirt by cleaning the surface with a 50/50 mix of alcohol and water pr similar solvent.

Bidder Meets Spec 100% YES_________NO__________
Gaskets
Gaskets will be used under all snaps, loops and fasteners for such items as for hose bed covers. Reestablish paint seal around the mounting hole edges after drilling.

Mounting with Threadlocker coating will be used.

Flat washers with rubber backing will be used behind all lights that have stainless screws.

Bidder Meets Spec 100%  YES_________NO__________

Rollup Doors
1 3/4” X 1/16” barrier tape will be used on the frame opening to act as barrier between the aluminum door rail and the painted door opening surface.

Use a paint stick around the holes after drilling and tapping. In mounting the rails, use screws with the nylon under the head and Threadlocker on the threads for mounting the doorframes.

Install barrier tape to the painted surface where the trim is located on top of the door opening.

Bidder Meets Spec 100%  YES_________NO__________

Hinged Doors
Barrier tape will be applied to the painted surface of the body and on the painted hinge side of the door.

On the hinge side, mount tape out toward the edge to space over the barrel of the hinge, being sure to not touch the door.

Make sure the hinge fits into the extrusion frame with no corner weld beads interfering with the door fit. Do not put the hinge in a bind or cause the stainless steel hinge to touch the aluminum. Install the doors using a truss head bolt with the nylon coating under the head and Threadlocker on the threads.

Bidder Meets Spec 100%  YES_________NO__________

Painting Steel
The manufacturer will wipe any oil residue dry, remove any rust and remove weld slag or smoke. Clean the surface with solvent before painting. Prime with one even coat of black Color primer, and then spray a topcoat over the primer for the finish coat. After bolts are tightened to the proper torque, touch up the bolt area and ends of the bolts with primer or cold galvanizing coating.

Bidder Meets Spec 100%  YES_________NO__________

Mounting Emergency Lights and Options
All emergency lights, accessory mountings, Kussmaul covers, and 110 outlet boxes mounted to the body should be mounted with pre-coated Threadlocker and nylon under the head screws or bolts to minimize corrosion between dissimilar metals.

Bidder Meets Spec 100%  YES_________NO__________
**Electrical Grounding**

Grounding straps will be installed consisting of a minimum 2-gauge strap bolted to the chassis frame.

A ground cable from the cab to the right side frame rail  
From the alternator to the right side frame rail  
From the pump module frame to the right side truck frame.  
Aerials:  from the hydraulic and pump module framework.  
From the pump mount to the truck frame rail.  
From the body module to the right side truck frame.

Proper grounding will help eliminate ground loop problems throughout the truck, reducing the possibility for electrolysis and corrosion to occur. Provide clean connection points on all ground connections, (remove paint where applicable), and spray or brush on electrical sealer as necessary.

When installing foam system pump wiring the power must come from a dedicated breaker to a power solenoid, and then to the power terminal provided by FoamLogix or FoamPro. Pay particular attention to the grounding detail for wire size and good grounding practice, including removing the paint at the point of ground attachment to the chassis. Keep the length of ground wire as short as practically possible.

Bidder Meets Spec 100%  
YES_________NO__________

**SALT SPRAY TESTING**

Salt spray test will be used to confirm the relative resistance to corrosion of coated and uncoated metallic specimens, when exposed to a salt spray climate at an elevated temperature. Test specimens will be placed in an enclosed chamber and exposed to a continuous indirect spray of neutral (pH 6.5 to 7.2) salt water solution, which falls-out on to the specimens at a rate of 1.0 to 2.0 ml/80cm²/hour, in a chamber temperature of +35C. This climate will be maintained under constant steady state conditions.

Bidder Meets Spec 100%  
YES_________NO__________

**Method**

Salt fog testing will be performed by placing samples in a test cabinet that has been designed in accordance with Paragraph 4 (Apparatus) of ASTM B117 and operated in accordance with Paragraph 10 (Conditions) of ASTM B117.

A 5% salt solution, prepared by dissolving sodium chloride into water that meets the requirements of ASTM D1193 Specification for Reagent Water, Type IV is supplied to the chamber. At the time the samples are placed into test, the cabinet should be pre-conditioned to the operating temperature of 35ºC and fogging a 5% salt solution at the specified rate. The fog collection rate is determined by placing a minimum of two 80 sq. cm. funnels inserted into measuring cylinders graduated in ml. inside the chamber. One collection device will be located nearest the nozzle and one in the farthest corner.

Bidder Meets Spec 100%  
YES_________NO__________

**Orientation**

Unless otherwise agreed upon, the samples are placed at a 15-30 degree angle from vertical or tested in the “installed” position. This orientation allows the condensation to run down the specimens and minimizes condensation pooling. Overcrowding of samples within the cabinet should be avoided.
An important aspect of the test is the utilization of a free-falling mist, which uniformly settles on the test samples. Samples should be placed in the chamber so that condensation does not drip from one to another.

**Test durations**

Test durations will be 500 hours except for sample rotation and daily monitoring of collection rates, the cabinet should remain closed for the duration of the test.

Bidder Meets Spec 100%  YES________ NO________

**PAINTING**

All exposed metal surfaces not chrome plated, polished stainless steel or bright aluminum tread plate will be thoroughly cleaned and prepared for painting. All irregularities in painted surfaces will be rubbed down and all seams will be caulked before the application of the finish coat.

All removable items such as brackets, compartment doors, door hinges, trim, etc. will be removed and painted separately to insure finish paint behind all mounted items. Body assemblies that cannot be finish painted after assembly will be finish painted before assembly. Both aluminum and steel surfaces to be painted will be primed with a two (2)-component primer which is compatible with the finish coat. The apparatus will be finish painted with a polyurethane base/clear system. “No Exception”

A barrier gasket/washer of ”High Density Closed Cell Urethane Foam” will be used behind all lights, handrails, door hardware and any miscellaneous items such as stainless steel snaps, hooks, washers and acorn nuts. The gaskets/washers will be coated with pressure sensitive acrylic adhesive. All screws used to penetrate painted surfaces will be pre-treated/coated under the head with nylon and the threads will have pre-coat #80. This procedure will be strictly adhered to for corrosion prevention and damage to the finish painted surfaces.

The following paint process will be utilized:

**Surface Preparation:**

1. Wash surface thoroughly with mild detergent.
2. Clean and de-grease with Prep-Sol 3812S.
3. Sand and feather edge using 400 grit or finer on a dual action sander.
4. Remove sanding dust with a cleaner compatible with polyurethane base coat/clear coat final finish.

**Substrate treatment:**

1. Use a Metal Conditioner followed with a Conversion Coating product.

**Priming:**

1. Use a priming 615S pretreatment.
2. Use a self etching primer applied to achieve a 1.5 mil dft minimum.
3. Use Prime N Seal sealer compatible with polyurethane base coat.

**Color Coat:**

1. Apply polyurethane base coat 1-2 mil dft minimum.

**Clear coat:**
1. Apply polyurethane clear coat 2 mil dft minimum.

Bidder Meets Spec 100%  YES________ NO________

**PAINT-TWO TONE CAB**
The cab exterior surfaces will be two (2) colors. The paint break line will be at the bottom of the windshield. Paint will be white over red.

Bidder Meets Spec 100%  YES________ NO________

**PAINTED FRAME**
The frame rails and body sub frame will be painted glossy black.

Bidder Meets Spec 100%  YES________ NO________

**GRAPHICS**
All lettering and graphics will match Orange Beach Fire Department’s current graphics. NO EXCEPTIONS. Pictures are in this package to portray what is desired.

Bidder Meets Spec 100%  YES________ NO________

**LETTERING**
Up to Eighty (80) 3” 22KT Gold laminate gold leaf letters OR forty (40) 3” Scotchlite letters will be provided. These letters will be arranged in a manner determined by the fire department upon the placement of an order. Any lettering desired on the apparatus not specified in the specification will be subject to additional charges.

Bidder Meets Spec 100%  YES________ NO________

**STRIPING**
A 6” Scotchlite stripe will be provided across the front of the cab and along each side of the apparatus.

Bidder Meets Spec 100%  YES________ NO________

**ACCENT STRIPE**
There will be a 1” accent stripe above and below the primary stripe.

Bidder Meets Spec 100%  YES________ NO________

**“Z” STRIPE**
The Scotchlite stripe will be a one-piece "Z" type with the angles placed per the fire department’s request

Bidder Meets Spec 100%  YES________ NO________

**STRIPING, CHEVRON STYLE, REAR**
The apparatus will have 6” red and yellow reflective Chevron style striping affixed to the inboard and outboard right and left portions of the rear body. The striping will be set in a manner to have the effect of an inverted “V” shape. The stripe will travel low to high from the outside to the inside.

Bidder Meets Spec 100%  YES________ NO________
MISCELLANEOUS EQUIPMENT FURNISHED

1 pt. touch-up paint

Bidder Meets Spec 100%     YES_________NO__________

FIRE COM COMMUNICATION SYSTEM

There shall be a 6 position Fire Com Communication System included on the cab for each seat position.

Bidder Meets Spec 100%     YES_________NO__________

WHEEL CHOCKS

Two (2) Ziamatic #SAC-44 folding wheel chocks with SQCH-44H holders will be provided. The wheel chocks will be located in a area close to the rear axles easily accessible from the side of the apparatus.

Bidder Meets Spec 100%     YES_________NO__________

BACKBOARD STORAGE

There shall be a backboard compartment in the hose bed to accommodate 4 inch backboard. Exact dimensions and placement will be determined at Precon.

Bidder Meets Spec 100%     YES_________NO__________

NUMBER PLATES

There shall be three (3) number plate frames added to apparatus in FD selected locations. These locations will be determined at precon. The frames will be chrome and mounted to unit. The removable number plates will be 1/8 flat aluminum.

Bidder Meets Spec 100%     YES_________NO__________

LOOSE EQUIPMENT AND MOUNTING

The following list of loose equipment shall be supplied and mounted

One (1) 6 ft pike pole
One (1) 8 ft pike pole
Three (3) sets of Hydrant/Spanner sets Mounted
One (1) pick head axe
One (1) flat head axe
Four (4) Vulcan Model 44451 Box lights LED supplied and mounted and wired in cab.

OPERATION AND SERVICE MANUALS

Complete "Operation and Service" manuals will be supplied with the completed apparatus, one (1) printed copy and one (1) CD. Service manual instructions will include service, maintenance and troubleshooting for major and minor components of the truck. The apparatus manufacturer will supply part numbers for major components (i.e. Engine, Axles, Transmission, Pump, etc.). A table of contents, hydraulic, air brake and overall apparatus wiring schematics will be included.

A video demonstration DVD on the operation of the truck will be supplied with the manuals.

Bidder Meets Spec 100%     YES_________NO__________

WARRANTIES

The following warranties will be supplied:
1. The apparatus will be warranted to be free from mechanical defects in workmanship for a period of one (1) year. The apparatus will be covered for parts and labor costs associated with repairs for a period one (1) year.

Bidder Meets Spec 100%  

YES_________NO__________

2. Life-time warranty on the frame and cross members.

Bidder Meets Spec 100%  

YES_________NO__________

3. Seven (7) year warranty on paint.

Bidder Meets Spec 100%  

YES_________NO__________

4. Ten (10) body structural warranty

Bidder Meets Spec 100%  

YES_________NO__________

5. Ten (10) year cab structural warranty

Bidder Meets Spec 100%  

YES_________NO__________

6. Manufacturers Warranties for all major components.

Bidder Meets Spec 100%  

YES_________NO__________

**LIFE CYCLE COST**

Orange Beach Fire Department will consider life cycle cost in the evaluation process. Low bid price will not be the deciding factor in the purchase decision since the city has seen significant cost to keep up the vehicles. Life Cycle Cost Savings may be considered to determine lowest bidder.

**OPTIONAL EQUIPMENT**

This list of equipment must be priced separately by item on the lines provided below. Orange Beach may choose to purchase or not purchase. It will be the sole discretion of the FD what is purchased from this list.

- 6 Inch Elkhart 9786 Piston Intake Valve
- Gasoline 20 inch PPV Fan
- Elkhart 4000-14 75 PSI x 175
- Elkhart B-375 GAT 1.5 inch x 15/16 pistol grip shutoff