

Pittsburg County, Oklahoma  
**COUNTY PURCHASING OFFICE**  
 Pittsburg County Court House  
 McAlester, Oklahoma  
 Phone: (918) 423-4934

**INVITATION TO BID**

PLEASE REVIEW TERMS AND CONDITIONS ON REVERSE SIDE RELATING TO SUBMISSION OF THIS BID.

Notarized Affidavit completions and signature required on reverse side.

DATE ISSUED	<b>6-Feb-12</b>
PAGE 1 OF	

BID NUMBER <b>Bid # 15</b>	BID CLOSING DATE AND HOUR <b>February 21, 2012 @ 10:00AM</b>	REQUIRED DELIVERY DATE Days after award of Purchase Order
TERMS:		DATE OF DELIVERY:

Item	Quantity	Unit of issue	DESCRIPTION	Unit Price	Total
			<p><b>Pittsburg County wishes to advertise for the following:</b></p> <p><b>One (1) New Pumper/Tanker Lease Purchase with Financing Included</b>  <b>Pittsburg County Prefers and Oklahoma Financial Institution</b></p> <p><b>See Specifications Attached</b></p>		

## TERMS AND CONDITIONS

1. Sealed bids will be opened in the Commissioner's Conference Room, Pittsburg County Courthouse, McAlester, Oklahoma, at the time and date shown on the invitation to bid form.
2. Late bids will not be considered. Bids must be received in sealed envelopes (one to an envelope) with bid number and closing date written on the outside of the envelope.
3. Unit prices will be guaranteed correct by the bidder.
4. Firm prices will be F.O.B. destination.
5. Purchases by Pittsburg County, Oklahoma, are not subject to state or federal taxes.
6. This bid is submitted as a legal offer and any bid when accepted by the County constitutes a firm contract.
7. Oklahoma laws require each bidder submitting a bid to a county for goods or services to furnish a notarized sworn statement of non-collusion. A form is supplied below.
8. Bids will be firm until delivered.

(DATE)

AFFIDAVIT: I, the undersigned, of lawful age, being first duly sworn on oath say that he (she) is the agent authorized by the bidder to submit the above bid. Affiant further states that the bidder has not been a party to any collusion among bidders in restraint of freedom of competition by agreement to bid at a fixed price or to refrain from bidding; or with any state official or employee as to quantity; quality or price in the prospective contract or any other terms of said prospective contract; or in any discussions between bidders and any state official concerning exchange of money or other thing of value for special consideration in the letting of a contract; that the bidder/contractor has not paid, given or donated or agreed to pay, give or donate to any officer or employee of the State of Oklahoma (or other entity) any money or other thing of value, either directly or indirectly in the procuring of the award of a contract pursuant to this bid.

Subscribed and sworn before this \_\_\_\_\_ day  
of \_\_\_\_\_ 2011 \_\_\_\_\_ (seal)

Firm: \_\_\_\_\_

My commission expires \_\_\_\_\_ Signed by: \_\_\_\_\_ Title: \_\_\_\_\_  
(MANUAL SIGNATURE OF UNDERSIGNED)

\_\_\_\_\_  
NOTARY PUBLIC (CLERK OR JUDGE) Address: \_\_\_\_\_ Phone: \_\_\_\_\_

City: \_\_\_\_\_ State \_\_\_\_\_

Zip \_\_\_\_\_

NOTE: Other terms and conditions can be added at the discretion of the county officers.

RESOLUTION

To  
Advertise

The Board of County Commissioners, Pittsburg County, met in regular session on Monday, February 6, 2012.

WHEREAS, the Board of County Commissioners, Pittsburg County, wishes to advertise for the following:

One (1) New Pumper/Tanker  
Lease Purchase with Financing Included  
Pittsburg County prefers an Oklahoma financial institution

A bid package containing complete specifications and in "Invitation to Bid" are available at the Pittsburg County Clerk's Office, Pittsburg County Courthouse, 115 E. Carl Albert Parkway, Room 103, McAlester, Oklahoma 74501 or online at [pittsburg.okcounties.org](http://pittsburg.okcounties.org).

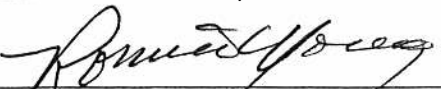
WHEREAS, Each competitive bid submitted to the County must be accompanied with an affidavit for filing with the competitive bid form as required by 61 O.S. § 138.

THEREFORE, sealed bids will be received and filed with the County Clerk and opened by the Board of County Commissioners on Tuesday, February 21, 2012 at 10:00 a.m., in the conference room of the Board of County Commissioners, Pittsburg County Courthouse, 115 E. Carl Albert Parkway, McAlester, Oklahoma. Contract will be awarded to the lowest or best bidder. The Board of County Commissioners, Pittsburg County, reserves the right to reject all bids and re-advertise.

BOARD OF COUNTY COMMISSIONERS  
PITTSBURG COUNTY, OKLAHOMA

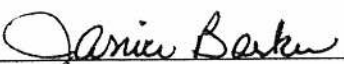
  
\_\_\_\_\_  
GENE ROGERS, Chairman

  
\_\_\_\_\_  
KEVIN SMITH, Member

  
\_\_\_\_\_  
RONNIE YOUNG, Vice-Chairman



ATTEST:

  
\_\_\_\_\_  
JANICE BARKER, County Clerk

# QUINTON, OKLAHOMA

## COMMERCIAL PUMPER / TANKER SPECIFICATIONS

### INSTRUCTIONS TO BIDDERS

Sealed bids will be received by Pittsburg County until 10:00 A.M. / P.M.,  
at Pittsburg County Clerk's Office for the furnishing of all necessary labor, equipment  
and material for the Fire Apparatus, and other equipment as outlined in the following specifications.

Bids will be addressed and submitted in accordance with the instructions provided above. The type of bid, bid opening date and time will be stated on the front of the bid envelope.

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

This apparatus will conform to the current edition of the National Fire Protection Association Pamphlet No. 1901.

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

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

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

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

# **QUINTON, OKLAHOMA**

## **COMMERCIAL PUMPER / TANKER SPECIFICATIONS**

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

The body is to be completely built, painted, and installed by the prime body manufacturer, which minimizes third party involvement on engineering, design, service, and warranty issues. Apparatus using a subcontracted body will not be acceptable.

THE PURCHASER WILL NOT ACCEPT ANY BIDS, WHICH DO NOT MEET THESE SPECIFICATIONS AND IS THE SOLE DECIDER TO DEEM WHICH BID IS IN THE BEST INTEREST OF THE PURCHASER.

### **INFORMATION REQUIRED WITH BID**

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

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

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

For the purpose of evaluation of the construction methods, components, and materials from various vendors the make up the apparatus body, the Fire Department may request each bidder to supply a cross section of a side body compartment no smaller the 1/4" in scale using full size components including the compartment door and hardware.

Sample will remain with the fire department for a minimum of fourteen-(14) days after the bid opening.

# **QUINTON, OKLAHOMA**

## **COMMERCIAL PUMPER / TANKER SPECIFICATIONS**

### **PAYMENT TERMS**

All bidders will be required to detail in exact terms the payment for said apparatus in their fire apparatus proposal for a term of 10 years in form a lease purchase.

### **EXCEPTIONS**

These specifications are based upon design and performance criteria, which have been developed by the fire department because of extensive research and careful analysis. Subsequently these specifications reflect the only type of fire apparatus that is acceptable at this time. Therefore, major exceptions to specifications will not be accepted.

The bidder will make accurate statements as to the apparatus weight and dimensions. All bids will include a complete set of detailed manufacturer's specifications. The Purchaser's standards for bidding Automotive Fire Apparatus must be strictly adhered to, and all bid forms and questions must be complete and submitted with the bid. Omissions and variations will result in immediate rejection of the bid.

Certified engineering performance information and thickness of materials used will be furnished in the bidder specifications.

To the right side of each paragraph of the fire department specifications, the bidder will state "YES" or "NO" indicating compliance with the specifications. All deviations, no matter how slight, will be clearly explained on a separate cover sheet entitled "EXCEPTIONS TO SPECIFICATIONS". Any exceptions or variations to these specifications must be set forth on separate sheets, indicating page number (s) of the specifications, and must be submitted with the bid. Any bids deemed as taking total exception to these published specifications will result in immediate rejection of the bid.

Proposals that are found to have deviations without listing them will be rejected. No Exceptions

No prototype apparatus will be considered and all design, operational and material features must fully comply with the State and Federal Motor Vehicle Safety Standards.

### **VEHICLE STABILITY**

A.

The height of the fully loaded is vehicle center of gravity will not exceed the chassis manufacturer maximum.

B.

The front to rear weight distribution of the fully loaded vehicle will be within the limits set by the chassis manufacturer. The front axle loads will not be less than the minimum axle loads specified by the chassis manufacturer, under full load and all other loading conditions.

# ***QUINTON, OKLAHOMA***

## ***COMMERCIAL PUMPER / TANKER SPECIFICATIONS***

C.

The difference in weight on the end of each axle, from side to side, when the vehicle is fully loaded and equipped shall not exceed 7%.

### **PERFORMANCE TEST AND REQUIREMENTS**

A.

The apparatus will meet the performance requirements at elevations of 2000 feet (610m) above sea level.

B.

The apparatus will meet the performance requirements while stationary on any grade of up to and including 6% in any direction.

C.

From a standing start, the vehicle will attain a true speed of 35 mph (56 kph), within 25 seconds on a level road.

D.

The apparatus will obtain a minimum top speed of 50 mph (80 kmph) on a level road.

E.

The apparatus will be able to maintain a speed of at least 20 mph (32 kmph), on any grade up to and including 6%.

F.

The apparatus will be tested and approved by Underwriters Laboratories Incorporated in accordance with the standard practices for pumping engines.

### **ROAD TEST**

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

A.

The test will be conducted on a dry, level, paved road that is in good condition. The engine will not operate in excess of the maximum no load governed speed.

B.

Acceleration test will consist of two runs in opposite direction over the same route.

C.

The vehicle will attain a true speed of 35 mph (56 kmph) from a standing start within 25 seconds.

# ***QUINTON, OKLAHOMA***

## ***COMMERCIAL PUMPER / TANKER SPECIFICATIONS***

D.  
The vehicle will attain a minimum top speed of not less than 50 mph (80 kmph).

E.  
If the apparatus is equipped with an auxiliary braking system, the apparatus manufacturers will road test the system to confirm that the system is functioning as intended by the auxiliary braking system manufacturer.

F.  
The service brakes will bring the fully laden apparatus to a complete stop from an initial speed of 20 mph (32 kmph) in a distance not exceeding 35 feet (10.7M) by actual measurement, on a substantially hard, level surface road that is free of loose material, oil, or grease.

### **FAILURE TO MEET TEST**

In the event the apparatus fails to meet the test requirements of these specifications on the first trials, second trials may be made at the option of the manufacturer within thirty-(30) days from the date of the first trials. Such trials will be final and conclusive and failure to comply with changes, as the purchaser may consider necessary to conform to any clause of the specifications within thirty-(30) days after notice is given to the manufacturer of such changes will also be cause of rejection of the apparatus. Permission to keep or store the apparatus in any building owned or occupied by the purchaser or its use with the permission of the manufacturer will not constitute acceptance.

### **PRODUCT LIABILITY**

Each bidder will supply proof of product liability and facility insurance equal to or exceeding \$26,000,000.00.

### **WARRANTIES**

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

### **APPARATUS DELIVERY TIME**

All bidders will provide delivery of the pumper apparatus within 180 calendar days after pre-build conference.

### **INFORMATION/CERTIFICATIONS**

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



# ***QUINTON, OKLAHOMA COMMERCIAL PUMPER / TANKER SPECIFICATIONS***

- (1) The manufacturer's record of apparatus construction details, including the following information:
- a) Owner's name and address
  - b) Apparatus manufacturer, model, and serial number
  - c) Chassis make, model, and serial number
  - d) GVWR of front and rear axles
  - e) Front tire size and total rated capacity in pounds (kilograms)
  - f) Rear tire size and total rated capacity in pounds (kilograms)
  - g) Chassis weight distribution in pounds (kilograms) with water and manufacturer mounted equipment (front and rear)
  - h) Engine make, model, and serial number, rated horsepower, related speed, and governed speed
  - i) Type of fuel and fuel tank capacity
  - j) Electrical system voltage and alternator output in amps
  - k) Battery make, model, and capacity in cold cranking amps (CCA)
  - l) Chassis transmission make, model, and serial number; and if so equipped, chassis transmission PTO(s) make, model, and gear ratio
  - m) Pump make, model, rated capacity in gallons per minute (liters per minute where applicable), and serial number
  - n) Pump transmission make, model, serial number, and gear ratio
  - o) Auxiliary pump make, model, rated capacity in gallons per minute (liters per minute where applicable), and serial number
  - p) Water tank certified capacity in gallons or liters
  - q) Aerial device type, rated vertical height in feet (meters), rated horizontal reach in feet (meters), and rated capacity in pounds (kilograms)

# ***QUINTON, OKLAHOMA COMMERCIAL PUMPER / TANKER SPECIFICATIONS***

- r) Paint manufacturer and paint number(s)
- s) Company name and signature of responsible company representative
- (2) Certification of slip resistance of all stepping, standing, and walking surfaces
- (3) If the apparatus has a fire pump or an industrial supply pump, the pump manufacturer's certification of suction capability
- (4) If the apparatus has a fire pump or an industrial supply pump, a copy of the apparatus manufacturer's approval for stationary pumping applications
- (5) If the apparatus has a fire pump or an industrial supply pump, the engine manufacturer's certified brake horsepower curve for the engine furnished, showing the maximum governed speed
- (6) If the apparatus has a fire pump or an industrial supply pump, the pump manufacturer's certification of the hydrostatic test
- (7) If the apparatus has a fire pump or an industrial supply pump, the certification of inspection and test for the fire pump or the industrial supply pump
- (8) If the apparatus has an aerial device, the certification of inspection and test for the aerial device
- (9) If the apparatus has an aerial device, all the technical information, required inspections to comply with NFPA 1914, Standard for Testing Fire Department Aerial Devices
- (10) If the apparatus has a fixed line voltage power source, the certification of the test for the fixed power source
- (11) If the apparatus is equipped with an air system, test results of due air quality, the SCBA fill station, and the air system installation
- (12) Weight documents from a certified scale showing actual loading on the front axle, rear axle(s), and overall fire apparatus (with the water tank full but without personnel, equipment, and hose)
- (13) Written load analysis and results of the electrical system performance tests required in Chapter 13
- (14) When the apparatus is equipped with a water tank, the certification of water tank capacity

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

# *QUINTON, OKLAHOMA*

## *COMMERCIAL PUMPER / TANKER SPECIFICATIONS*

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

# ***QUINTON, OKLAHOMA COMMERCIAL PUMPER / TANKER SPECIFICATIONS***

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

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

## **LETTER OF AUTHORIZATION**

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

## **LICENSES**

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

## **LIABILITY**

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

# ***QUINTON, OKLAHOMA COMMERCIAL PUMPER / TANKER SPECIFICATIONS***

## **VIRTUAL MANUFACTURING**

The manufacturer shall have a web site available for the customers to 'watch' their unit being produced. The "Trucks in Production" shall be updated a minimum of three-(3) times per week.

The web site shall also include documentation of cab and body crash tests, take a virtual tour of the production facility, videos of both current and new innovative products, updates on trade shows, photos of new deliveries and the opportunity to include customer 'Action Photo's'.

Customer shall be able to access the web site without the requirement of a password.

## **CERTIFIED WELDERS**

The manufacturer shall employ individuals that are certified aluminum and stainless steel welders. The welders shall be certified by an outside testing laboratory. The certifications shall be available for viewing through the Human Resources office upon request.

## **BODY WEIGHT DOCUMENTATION**

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

## **PROPOSAL DRAWING**

There shall be a proposal drawing submitted to the Fire Department. This drawing shall be a visual interpretation of the apparatus proposed.

## **APPROVAL DRAWING**

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

## **PRE-CONSTRUCTION CONFERENCE- FACTORY**

# ***QUINTON, OKLAHOMA***

## ***COMMERCIAL PUMPER / TANKER SPECIFICATIONS***

A pre-construction conference shall be held at the factory prior to the actual construction of the vehicle(s). The conference shall be held in the successful bidders manufacturing facility with representatives of the Fire Department and appropriate representatives of the successful bidder.

At the pre-construction conference, the successful bidder shall review, in detail with the Fire Department, the specifications of the unit as it is to be built. Specific component locations shall be determined and all pertinent information shall be noted for future reference. Details gathered at the pre-construction conference shall be utilized in formulating the approval drawings and final build specification.

### **FINAL INSPECTION - FACTORY**

A final inspection shall be held at the factory prior to delivery of the vehicle(s). The inspection shall be held at the successful bidders manufacturing facility with representatives of the Fire Department and appropriate representatives of the manufacturer.

At the final inspection, the manufacturer shall review, in detail with the Fire Department, the specifications of the unit and as it is built. Specific component locations shall be determined and all pertinent information shall be complete at this time.

### **MANUFACTURER SERVICE CONTACTS**

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

### **SERVICE VEHICLES**

The manufacturer shall have a minimum of 10 full time, company owned, service vehicles. The vehicles shall be available 24 hours a day, seven days a week to respond to customer needs. The Service Vehicles shall be operated by full time EVT Certified Technicians.

### **REPLACEMENT PARTS**

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

# ***QUINTON, OKLAHOMA***

## ***COMMERCIAL PUMPER / TANKER SPECIFICATIONS***

### **HEIGHT RESTRICTION**

THE OVERALL HEIGHT OF THE APPARATUS SHALL NOT EXCEED 116". NO EXCEPTION

### **WHEELBASE**

THE WHEELBASE SHALL BE 301".

### **TOW HOOKS**

Two painted tow hooks shall be mounted to the bottom of the front bumper frame, extension rails with grade 8 bolts.

### **FRONT BUMPER EXTENSION**

There shall be an eighteen-(18) inch front frame extension provided bolted to the chassis framersails through formed "C" channel constructed from 1/4" (.25) steel plates utilizing grade 8 hardware.

A gravelshield constructed of 1/8" (.125") aluminum treadplate shall be installed above the frame extension between the bumper and the front face of the cab, boxed in at each end.

There shall be one-(1) tool compartment provided in the front bumper gravelshield, centered between the framersails fabricated of 1/8" (.125) smooth aluminum plate with drain holes and rubber decking to promote airflow.

The center compartment shall have a restraining strap with quick release buckle.

### **AIR HORNS**

There shall be two-(2) 24" Grover air horns or equivalent and made in the USA installed in compliance with NFPA on the front fenders one-(1) each driver and passenger's side, plumbed to the chassis air supply system thru an air protection valve, manufactured from spun brass material with an easily separated die cast sounding unit for serviceability.

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

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

# **QUINTON, OKLAHOMA COMMERCIAL PUMPER / TANKER SPECIFICATIONS**

## **SPEAKERS**

There shall be two-(2) speakers installed thru the front face of the bumper, one (1) each side, outboard.

The speaker shall be a Cast Products, Model SAD-4318 or equivalent and made in the USA, 100-watts wired to the electronic siren.

The speaker shall be a Cast Products, Model SAP-4318 or equivalent and made in the USA, 100 watts wired to the electronic siren.

## **SIREN**

There shall be one (1) Whelen model WS-295 or equivalent and made in the USA hands free siren provided. The siren amplifier and control panel shall be assembled as a single unit. The siren shall incorporate a rotary selector for six siren functions. There shall be an on/off power switch; a push button switch for manual siren or air horn tones, a noise-canceling microphone with volume control, and a horn ring override control. The unit shall be mounted in the cab.

## **CAB & CHASSIS SPECIFICATIONS**

BASE CHASSIS, MODEL 7400 SBA 6X4 OR EQUIVALENT AND MADE IN THE USA

APPLICATION: FIRE/PUMPER (EMERGENCY)

MISSION: REQUESTED GVWR: 62000. CALC. GVWR: 62000  
CALC. START / GRADE ABILITY: 17.4% / 1.77% @ 55 MPH.  
CALC. GEARED SPEED: 63 MPH.

ENGINE, DIESEL: {INTERNATIONAL MAXXFORCE 9} 50 STATE, 330 HP, 950 LB-FT TORQUE @ 1200 RPM, 2200 RPM GOVERNED SPEED OR EQUIVALENT AND MADE IN THE USA AND SHALL NOT REQUIRE THE USE OF DEF IN ORDER TO PASS FEDERAL EMISSIONS STANDARD

TRANSMISSION, AUTOMATIC: {ALLISON 3000EVS\_P} OR EQUIVALENT AND MADE IN THE USA 4TH GENERATION CONTROLS; CLOSE RATIO, 5-SPEED; WITH OVERDRIVE, INCLUDES OIL LEVEL SENSOR, WITH PROVISION FOR PTO, LESS RETARDER

AXLE, FRONT NON-DRIVING: {MERITOR MFS-16-143A} OR EQUIVALENT AND MADE IN THE USA WIDE TRACK, I-BEAM TYPE, 16,000-LB CAPACITY

AXLE, REAR, TANDEM: {MERITOR RT-46-160} OR EQUIVALENT AND MADE IN THE USA SINGLE REDUCTION 46,000-LB CAPACITY WITH LUBE PUMP AND 200 WHEEL ENDS GEAR RATIO: 5.63



# **QUINTON, OKLAHOMA**

## **COMMERCIAL PUMPER / TANKER SPECIFICATIONS**

CAB: CONVENTIONAL 6 MAN CREW CAB

TIRE, FRONT: (2) 315/80R22.5 UNISTEEL G291 (GOODYEAR) OR EQUIVALENT AND MADE IN THE USA 491 rev/mile, load range J, 18 ply

TIRE, REAR: (8) 11R22.5 G182 RSD (GOODYEAR) OR EQUIVALENT AND MADE IN THE USA 496 REV/MILE, LOAD RANGE G, 14 PLY

SUSPENSION, REAR, TANDEM: {HENDRICKSON RT-463} OR EQUIVALENT AND MADE IN THE USA WALKING BEAM TYPE 54" AXLE SPACING; 46,000-LB CAPACITY WITH BRONZE CENTER BUSHINGS

FRAME REINFORCEMENT: OUTER "C" CHANNEL, HEAT TREATED ALLOY STEEL (120,000 PSI YIELD); 10.813" X 3.892" X 0.312"; (274.6MM X 98.9MM X 8.0MM)

TOW HOOK, FRONT (2) INSIDE RAIL, FRAME MOUNTED

FRAME RAILS HEAT TREATED ALLOY STEEL (120,000 PSI YIELD); 10.125" X 3.580" X 0.312" (257.2MM X 90.9MM X 8.0MM)

FRAME REINFORCEMENT OUTER "C" CHANNEL, HEAT TREATED ALLOY STEEL (120,000 PSI YIELD); 10.813" X 3.892" X 0.312"; (274.6MM X 98.9MM X 8.0MM)

BUMPER, FRONT FULL WIDTH, AERODYNAMIC, CHROME PLATED STEEL; 0.189" MATERIAL THICKNESS

AXLE, FRONT NON-DRIVING {MERITOR MFS-16-143A} OR EQUIVALENT AND MADE IN THE USA WIDE TRACK, I-BEAM TYPE, 16,000-LB CAPACITY

SUSPENSION, FRONT, SPRING PARABOLIC, TAPER LEAF; 16,000-LB CAPACITY; WITH SHOCK ABSORBERS

INCLUDES:

- SPRING PINS RUBBER BUSHINGS, MAINTENANCE-FREE

BRAKE SYSTEM, AIR DUAL SYSTEM FOR STRAIGHT TRUCK APPLICATIONS

INCLUDES:

- BRAKE LINES COLOR AND SIZE CODED NYLON
- DRAIN VALVE TWIST-TYPE
- DUST SHIELDS, FRONT BRAKE
- DUST SHIELDS, REAR BRAKE

# *QUINTON, OKLAHOMA*

## *COMMERCIAL PUMPER / TANKER SPECIFICATIONS*

- GAUGE, AIR PRESSURE (2) AIR 1 AND AIR 2 GAUGES; LOCATED IN INSTRUMENT CLUSTER
- PARKING BRAKE CONTROL YELLOW KNOB, LOCATED ON INSTRUMENT PANEL
- PARKING BRAKE VALVE FOR TRUCK
- QUICKRELEASE VALVE BENDIX ON REAR AXLE FOR SPRING BRAKE RELEASE: 1 FOR 4X2, 2 FOR 6X4 :SLACK ADJUSTERS, FRONT AUTOMATIC
- SLACK ADJUSTERS, REAR AUTOMATIC
- SPRING BRAKE MODULATOR VALVE R-7 FOR 4X2, SR-7 WITH RELAY VALVE FOR 6X4

AIR BRAKE ABS BENDIX ANTILOCK BRAKE SYSTEM} WITH ELECTRONIC STABILITY PROGRAM (4-CHANNEL) WITH AUTOMATIC TRACTION CONTROL

BRAKES, FRONT, AIR CAM 16.5" X 6", INCLUDES 24 SQIN LONG STROKE CHAMBERS

BRAKE CHAMBERS, FRONT AXLE (HALDEX) OR EQUIVALENT AND MADE IN THE USA 24 SQIN

BRAKES, REAR, AIR CAM 16.5" X 7.0"; INCLUDES MGM TR3030 LONG STROKE BRAKE CHAMBER AND HEAVY DUTY SPRING ACTUATED PARKING BRAKE  
INCLUDES:

- BRAKE CHAMBERS, SPRING (4) REAR PARKING

AIR COMPRESSOR {BENDIX TU-FLO 550} OR EQUIVALENT AND MADE IN THE USA 13.2 CFM CAPACITY

AIR DRYER {BENDIX AD-9} OR EQUIVALENT AND MADE IN THE USA WITH HEATER

DRAIN VALVE, AUTOMATIC {BENDIX DV-2 OR EQUIVALENT AND MADE IN THE USA } WITH HEATER FOR AIR TANK

STEERING GEAR (2) {SHEPPARD M-100/M-80} OR EQUIVALENT AND MADE IN THE USA DUAL POWER

STEERING COLUMN TILTING AND TELESCOPING

STEERING WHEEL 2-SPOKE, 18" DIAM., BLACK

EXHAUST SYSTEM SINGLE HORIZONTAL, AFTERTREATMENT DEVICE, FRAME MOUNTED RIGHT SIDE, UNDER CAB, INCLUDES HORIZONTAL TAILPIPE, PROVIDES CLEAN CA ABOVE & BELOW RAIL

INCLUDES: THE HORIZONTAL TAILPIPE INCLUDES A TEMPERATURE CONTROL DEVICE

# **QUINTON, OKLAHOMA**

## **COMMERCIAL PUMPER / TANKER SPECIFICATIONS**

SWITCH, FOR EXHAUST 3 POSITION, MOMENTARY, LIGHTED MOMENTARY, ON/CANCEL, CENTER STABLE, INHIBIT REGEN, MOUNTED IN IP INHIBITS DIESEL PARTICULATE FILTER REGENERATION WHEN SWITCH IS MOVED TO ON WHILE ENGINE IS RUNNING, RESETS WHEN IGNITION IS TURNED OFF

ENGINE EXHAUST BRAKE FOR MAXXFORCE I-6 ENGINES, ELECTRONICALLY ACTIVATED

ELECTRICAL SYSTEM 12-VOLT, STANDARD EQUIPMENT INCLUDES:

- BATTERYBOX STEEL WITH PLASTIC LID
- DATA LINK CONNECTOR FOR VEHICLE PROGRAMMING AND DIAGNOSTICS IN CAB
- FUSES, ELECTRICAL SAE BLADE-TYPE
- HAZARD SWITCH PUSH ON/PUSH OFF, LOCATED ON TOP OF STEERING COLUMN COVER
- HEADLIGHT DIMMER SWITCH INTEGRAL WITH TURN SIGNAL LEVER
- HEADLIGHTS (2) SEALED BEAM, ROUND, WITH CHROME PLATED BEZELS
- HORN, ELECTRIC SINGLE
- JUMP START STUD LOCATED ON POSITIVE TERMINAL OF OUTERMOST BATTERY
- PARKING LIGHT INTEGRAL WITH FRONT TURN SIGNAL AND REAR TAIL LIGHT
- RUNNING LIGHT (2) DAYTIME, INCLUDED WITH HEADLIGHTS
- STARTER SWITCH ELECTRIC, KEY OPERATED
- STOP, TURN, TAIL & B/U LIGHTS DUAL, REAR, COMBINATION WITH REFLECTOR
- TURN SIGNAL SWITCH SELF-CANCELLING FOR TRUCKS, MANUAL CANCELLING FOR TRACTORS, WITH LANE CHANGE FEATURE
- TURN SIGNALS, FRONT INCLUDES REFLECTORS AND AUXILIARY SIDE TURN SIGNALS, SOLID STATE FLASHERS; FLUSH MOUNTED
- WINDSHIELD WIPER SWITCH 2-SPEED WITH WASH AND INTERMITTENT FEATURE (5 PRE-SET DELAYS), INTEGRAL WITH TURN SIGNAL LEVER
- WINDSHIELD WIPERS SINGLE MOTOR, ELECTRIC, COWL MOUNTED
- WIRING, CHASSIS COLOR CODED AND CONTINUOUSLY NUMBERED

ALTERNATOR {LEECE-NEVILLE 14931PAH} OR EQUIVALENT AND MADE IN THE USA BRUSH TYPE; 12 VOLT 320 AMP. CAPACITY, PAD MOUNTED

STARTING MOTOR {LEECE-NEVILLE M105R} OR EQUIVALENT AND MADE IN THE USA 12 VOLT; LESS THERMAL OVER-CRANK PROTECTION

BATTERY SYSTEM {INTERNATIONAL} OR EQUIVALENT AND MADE IN THE USA MAINTENANCE-FREE (3) 12-VOLT 1950CCA TOTAL

# **QUINTON, OKLAHOMA COMMERCIAL PUMPER / TANKER SPECIFICATIONS**

CIRCUIT BREAKERS MANUAL-RESET (MAIN PANEL) SAE TYPE III WITH TRIP INDICATORS, REPLACES ALL FUSES EXCEPT FOR 5-AMP FUSES

BODY BUILDER WIRING BACK OF STANDARD CAB AT LEFT FRAME OR UNDER EXTENDED OR CREW CAB AT LEFT FRAME; INCLUDES SEALED CONNECTORS FOR TAIL/AMBER TURN/MARKER/ BACKUP/ACCESSORY POWER/GROUND AND SEALED CONNECTOR FOR STOP/TURN

BODY INTG, REMOTE POWER MODULE MOUNTED UNDER CAB OR ON BATTERY BOX; UP TO 6 OUTPUTS & 6 INPUTS, MAX. 20 AMP. PER CHANNEL, MAX. 80 AMP. TOTAL (INCLUDES 1 SWITCH PACK WITH LATCHED SWITCHES)

BDY INTG, I/O EXPANSION HARNES {FOR DIAMOND LOGIC BUILDER} IN-CAB WIRE HARNESS (DLB) PROGRAM ONLY, INCLUDES A HARNESS WITH FIVE BLUNT CUT WIRES ROUTED ON LOWER LEFT OF INSTRUMENT PANEL. TWO GROUND ACTIVE INPUTS AND TWO (.5AMP) RELAY DRIVERS OUTPUTS ARE PROVIDED

CIGAR LIGHTER

RADIO {INTERNATIONAL} OR EQUIVALENT AND MADE IN THE USA AM/FM STEREO WITH CD PLAYER, WEATHERBAND, CLOCK, AUXILIARY INPUT, INCLUDES MULTIPLE SPEAKERS  
INCLUDES

- SPEAKERS IN CAB (2) COAXIAL WITH DELUXE INTERIOR

HORN, AIR BLACK, SINGLE TRUMPET, AIR SOLENOID OPERATED

WINDSHIELD WIPER SPD CONTROLFORCE WIPERS TO SLOWEST INTERMITTENT SPEED WHEN PARK BRAKE SET AND WIPERS LEFT ON FOR A PREDETERMINED TIME

HEADLIGHTS LONG LIFE HALOGEN; FOR TWO LIGHT SYSTEM

HEADLIGHTS ON W/WIPERS HEADLIGHTS WILL AUTOMATICALLY TURN ON IF WINDSHIELD WIPERS ARE TURNED ON

GRILLE STATIONARY, CHROME

FRONT END TILTING, FIBERGLASS, WITH THREE PIECE CONSTRUCTION; FOR 2010 EMISSIONS

INSULATION, UNDER HOOD FOR SOUND ABATEMENT

INSULATION, SPLASH PANELS FOR SOUND ABATEMENT

# **QUINTON, OKLAHOMA**

## **COMMERCIAL PUMPER / TANKER SPECIFICATIONS**

PAINT SCHEMATIC, SINGLE COLOR RED

ENGINE, DIESEL {INTERNATIONAL MAXXFORCE 9} OR EQUIVALENT AND MADE IN THE USA 50 STATE, 330 HP, 950 LB-FT TORQUE @ 1200 RPM, 2200 RPM GOVERNED SPEED, # 2 BELL HOUSING

INCLUDES:

- AIR COMPRESSOR AIR SUPPLYLINE NATURALLY-ASPIRATED (AIR BRAKE CHASSIS ONLY)
- ANTI-FREEZE RED SHELL ROTELLA OR EQUIVALENT AND MADE IN THE USA EXTENDED LIFE COOLANT; -40 DEGREES F/ -40 DEGREES C; FOR MAXXFORCE ENGINES
- COLD STARTING EQUIPMENT INTAKE MANIFOLD ELECTRIC GRID HEATER WITH ENGINE ECM CONTROL
- CRUISE CONTROL ELECTRONIC; CONTROLS INTEGRAL TO STEERING WHEEL
- ENGINE OIL DRAIN PLUG MAGNETIC
- ENGINE SHUTDOWN ELECTRIC, KEY OPERATED
- FUEL FILTER INCLUDED WITH FUEL/WATER SEPARATOR
- FUEL/WATER SEPARATOR FUEL/WATER SEPARATOR AND FUEL FILTER IN A SINGLE ASSEMBLY; WITH WATER-IN-FUEL SENSOR; ENGINE MOUNTED
- GOVERNOR ELECTRONIC
- OIL FILTER, ENGINE SPIN-ON TYPE
- WET TYPE CYLINDER SLEEVES

FEDERAL EMISSIONS FOR 2010; MAXXFORCE 9 & 10 ENGINES OR EQUIVALENT AND MADE IN THE USA

EMISSION COMPLIANCE ENGINE SHUTDOWN SYSTEM EXEMPT VEHICLES, COMPLIES WITH CALIFORNIA CLEAN AIR REGULATIONS

OIL FILTER, ENGINE {HUDGINS MODEL 960 SPINNER} OR EQUIVALENT AND MADE IN THE USA

ENGINE WATER COOLER {SEN-DURE} OR EQUIVALENT AND MADE IN THE USA AUXILIARY, FOR USE WITH FIRE TRUCKS

FAN DRIVE {HORTONDRIVEMASTERPOLAREXTREME} DIRECT DRIVE TYPE, TWO SPEED, WITH RESIDUAL TORQUE DEVICE FOR DISENGAGED FAN SPEED

INCLUDES

- :FAN NYLON

# **QUINTON, OKLAHOMA**

## **COMMERCIAL PUMPER / TANKER SPECIFICATIONS**

RADIATOR ALUMINUM, FRONT TO BACK CROSS FLOW, SERIES SYSTEM; 1588 SQIN CORE AND 885 SQIN CHARGE AIR COOLER AND 470 SQIN LOW TEMPERATURE RADIATOR DOWN FLOW, INCLUDES TRANSMISSION OIL COOLER

INCLUDES

- DEAERATION SYSTEM WITH SURGE TANK
- HOSE CLAMPS, RADIATOR HOSES GATES SHRINK BAND TYPE; THERMOPLASTIC COOLANT HOSE CLAMPS
- RADIATOR HOSES PREMIUM, RUBBER

AIR CLEANER SINGLE ELEMENT

GRILLE EMBER SCREEN MOUNTED TO GRILLE TO KEEP HOT EMBERS OUT OF ENGINE AIR INTAKE SYSTEM

THROTTLE, HAND CONTROL ENGINE SPEED CONTROL FOR PTO; ELECTRONIC, STATIONARY PRE-SET, TWO SPEED SETTINGS; MOUNTED ON STEERING WHEEL

ENGINE CONTROL, REMOTE MOUNTED PROVISION FOR; INCLUDES MODULE AND CONNECTOR FOR BODY BUILDER INSTALLATION OF REMOTE ENGINE SPEED CONTROL, WITH SAE J1939 COMMUNICATION

TRANSMISSION, AUTOMATIC {ALLISON 3000EVS\_P} OR EQUIVALENT AND MADE IN THE USA 4TH GENERATION CONTROLS; CLOSE RATIO, 5-SPEED; WITH OVERDRIVE, INCLUDES OIL LEVEL SENSOR, WITH PROVISION FOR PTO, LESS RETARDER, MAX. GVW

INCLUDES:

- TRANSMISSION OIL PAN MAGNET IN OIL PAN
- ALLISON SPARE INPUT/OUTPUT FOR EMERGENCY VEHICLE SERIES (EVS) OR EQUIVALENT AND MADE IN THE USA; FIRE/PUMPER, TANK, AERIAL/LADDER
- SYNTHETIC TRANSMISSION OIL

TRANSMISSION SHIFT CONTROL {ALLISON} OR EQUIVALENT AND MADE IN THE USA PUSH-BUTTON TYPE; FOR ALLISON 3000 & 4000 SERIES TRANSMISSION

AXLE, REAR, TANDEM {MERITOR RT-46-160P} OR EQUIVALENT AND MADE IN THE USA SINGLE REDUCTION 46,000-LB CAPACITY WITH LUBE PUMP AND 200 WHEEL ENDS GEAR RATIO: 5.63

INCLUDES:

- POWER DIVIDER LOCKELECTRIC OVER AIR OPERATED, CAB CONTROL WITH INDICATOR LIGHT
- REAR AXLE DRAIN PLUG (2) MAGNETIC

# **QUINTON, OKLAHOMA**

## **COMMERCIAL PUMPER / TANKER SPECIFICATIONS**

SUSPENSION, REAR, TANDEM {HENDRICKSON RT-463} OR EQUIVALENT AND MADE IN THE USA WALKING BEAM TYPE 54" AXLE SPACING; 46,000-LB CAPACITY WITH BRONZE CENTER BUSHINGS

### INCLUDES:

- CROSSMEMBER, SUSPENSION STAMPED STEEL DOUBLE DOGBONE
- SUSPENSION/REAR-AXLE IDENTITY FOR MERITOR TANDEM REAR AXLES WITH BAR-PIN BEAM ATTACHMENT TYPE SUSPENSIONS

FUEL TANK TOP DRAW; D STYLE, NON POLISHED ALUMINUM, 50 U.S. GAL., 189 L CAPACITY, 16" DEEP, WITH QUICK CONNECT OUTLET, MOUNTED RIGHT SIDE, UNDER CAB

FUEL/WATER SEPARATOR WITH FILTER RESTRICTION/CHANGE INDICATOR, INCLUDES STANDARD EQUIPMENT WATER-IN-FUEL SENSOR

CAB CONVENTIONAL 6-MAN CREW CAB

### INCLUDES

- ARMREST (2) MOLDED PLASTIC; ONE EACH DOOR
- CLEARANCE/MARKER LIGHTS (5) FLUSH MOUNTED
- COAT HOOK, CAB LOCATED ON REAR WALL, CENTERED ABOVE REAR WINDOW
- CUP HOLDERS TWO CUP HOLDERS, LOCATED IN LOWER CENTER OF INSTRUMENT PANEL
- DOME LIGHT, CAB RECTANGULAR, DOOR ACTIVATED AND PUSH ON-OFF AT LIGHT LENS, TIMED THEATER DIMMING, INTEGRAL TO CONSOLE, CENTER MOUNTED
- GLASS, ALL WINDOWS TINTED
- GRAB HANDLE, CAB INTERIOR (1) "A" PILLAR MOUNTED, PASSENGER SIDE
- GRAB HANDLE, CAB INTERIOR (2) FRONT OF "B" PILLAR MOUNTED, ONE EACH SIDE
- GRAB HANDLE, CAB INTERIOR (4) TWO EACH SIDE, REAR DOOR MOUNTED AT HINGE SIDE AND "C" PILLAR MOUNTED
- INTERIOR SHEET METAL UPPER DOOR (ABOVE WINDOW LEDGE) PAINTED EXTERIOR COLOR
- STEP (8) TWO STEPS PER DOOR

CAB REAR SUSPENSION AIR BAG TYPE

CAB INTERIOR TRIM DELUXE; FOR CREW CAB

### INCLUDES

- "A" PILLAR COVER MOLDED PLASTIC
- CAB INTERIOR TRIM PANELS CLOTH COVERED MOLDED PLASTIC, FULL HEIGHT; ALL EXPOSED INTERIOR SHEET METAL IS COVERED EXCEPT FOR THE FOLLOWING: WITH A

# **QUINTON, OKLAHOMA**

## **COMMERCIAL PUMPER / TANKER SPECIFICATIONS**

TWO-MAN PASSENGER SEAT OR WITH A FULL BENCH SEAT THE BACK PANEL IS COMPLETELY VOID OF COVERING

- CONSOLE, OVERHEAD MOLDED PLASTIC; WITH DUAL STORAGE POCKETS WITH RETAINER NETS AND CB RADIO POCKET
- DOOR TRIM PANELS MOLDED PLASTIC; DRIVER AND PASSENGER DOORS
- FLOOR COVERING RUBBER, BLACK
- HEADLINER SOFT PADDED CLOTH
- INSTRUMENT PANEL TRIM MOLDED PLASTIC WITH BLACK CENTER SECTION
- STORAGE POCKET, DOOR (1) MOLDED PLASTIC, FULL-LENGTH; DRIVER DOOR
- SUN VISOR (2) PADDED VINYL WITH DRIVER SIDE TOLL TICKET STRAP, INTEGRAL TO CONSOLE

STORAGE POCKET, DOOR MOLDED PLASTIC, FULL WIDTH; MOUNTED ON PASSENGER DOOR

COURTESY LIGHT (4) MOUNTED IN FRONT & REAR MAP POCKET LEFT AND RIGHT SIDE

GRAB HANDLE, CAB INTERIOR (4) SAFETY YELLOW, CREW CAB

SEAT, DRIVER {SEATS, INC. UNIVERSAL SERIES} 911 OR EQUIVALENT AND MADE IN THE USA, NFPA COMPLIANT, AIR SUSPENSION, HIGH BACK VINYL WITH COVERED BACK AND MANUFACTURES LOGO ON HEAD REST

INCLUDES

- SEAT BELT 3-POINT, LAP AND SHOULDER BELT TYPE

SEAT, PASSENGER {SEATS, INC. UNIVERSAL SERIES} 911 OR EQUIVALENT AND MADE IN THE USA, NFPA COMPLIANT, NON-SUSPENSION, HIGH BACK FOR SCBA, VINYL COVERED BACK, ADJUSTERS, 5 DEGREE BACK ANGLE, MANUFACTURES LOGO ON HEADREST

INCLUDES

- SEAT BELT 3-POINT, LAP AND SHOULDER BELT TYPE

SEAT, REAR {SEATS, INC. UNIVERSAL SERIES} 911 OR EQUIVALENT AND MADE IN THE USA, NFPA COMPLIANT, THREE INDIVIDUAL SEATS ON ONE RISER, NON-SUSPENSION, HIGH BACK FOR SCBA, VINYL WITH COVERED BACK, MANUFACTURES LOGO ON HEADREST

INCLUDES

- SEAT BELT (3) TWO 3-POINT SHOULDER BELTS FOR DRIVER AND OUTER PASSENGER AND ONE 2-POINT LAP BELT FOR CENTER PASSENGER

SEAT BELT ALL RED

SEATBELT WARNING PREWIRE INCLUDES SEAT BELT SWITCHES AND SEAT SENSORS FOR ALL BELTED POSITIONS IN THE CAB AND A HARNESS ROUTED TO THE CENTER OF THE



# *QUINTON, OKLAHOMA*

## *COMMERCIAL PUMPER / TANKER SPECIFICATIONS*

DASH FOR THE AFTERMARKET INSTALLATION OF THE DATA RECORDER AND SEATBELT INDICATOR SYSTEMS

INSTRUMENT PANEL CENTER SECTION, FLAT PANEL

GAUGE CLUSTER ENGLISH WITH ENGLISH ELECTRONIC SPEEDOMETER

INCLUDES:

- ODOMETER DISPLAY, MILES, TRIP MILES, ENGINE HOURS, TRIP HOURS, FAULT CODE READOUT
- WARNING SYSTEM LOW FUEL, LOW OIL PRESSURE, HIGH ENGINE COOLANT TEMP, AND LOW BATTERY VOLTAGE (VISUAL AND AUDIBLE)

GAUGE CLUSTER ENGLISH WITH ENGLISH ELECTRONIC SPEEDOMETER

INCLUDES

- GAUGE CLUSTER (6) ENGINE OIL PRESSURE (ELECTRONIC), WATER TEMPERATURE (ELECTRONIC), FUEL (ELECTRONIC), TACHOMETER (ELECTRONIC), VOLTMETER, WASHER FLUID LEVEL
- ODOMETER DISPLAY, MILES, TRIP MILES, ENGINE HOURS, TRIP HOURS, FAULT CODE READOUT
- WARNING SYSTEM LOW FUEL, LOW OIL PRESSURE, HIGH ENGINE COOLANT TEMP, AND LOW BATTERY VOLTAGE (VISUAL AND AUDIBLE)

IP CLUSTER DISPLAY ON BOARD DIAGNOSTICS DISPLAY OF FAULT CODES IN GAUGE CLUSTER

GAUGE, OIL TEMP, ALLISON TRAN

GAUGE, AIR CLEANER RESTRICTION {FILTER-MINDER} WITH BLACK BEZEL MOUNTED IN INSTRUMENT PANEL

INDICATOR, LOW COOLANT LEVEL WITH AUDIBLE ALARM

AIR CONDITIONER {BLEND-AIR} WITH INTEGRAL HEATER & DEFROSTER

INCLUDES

- HEATER HOSES PREMIUM
- HOSE CLAMPS, HEATER HOSE MUBEA CONSTANT TENSION CLAMPS
- REFRIGERANT HYDROFLUOROCARBON HFC-134A

HVAC FRESH AIR FILTER

# **QUINTON, OKLAHOMA**

## **COMMERCIAL PUMPER / TANKER SPECIFICATIONS**

MIRRORS (2) {LANG MEKRA} OR EQUIVALENT AND MADE IN THE USA STYLED;  
RECTANGULAR, 7.09" X 15.75" & INTEGRAL CONVEX BOTH SIDES, 102" INSIDE SPACING,  
BREAKAWAY TYPE, HEATED HEADS  
THERMOSTATICALLY CONTROLLED, POWER BOTH SIDES, CLEARANCE LIGHTS LED,  
BRIGHT FINISH HEADS & BRACKETS

MIRROR, CONVEX, LOOK DOWN {LANG MEKRA} OR EQUIVALENT AND MADE IN THE USA  
RIGHT SIDE; 6" X 10 1/4", WITH BRIGHT FINISH

GRAB HANDLE (2) CHROME TOWEL BAR TYPE WITH ANTI-SLIP RUBBER INSERTS; FOR CAB  
ENTRY, MOUNTED LEFT AND RIGHT, EACH SIDE AT "B" PILLAR

GRAB HANDLE, ADDITIONALEXT (2) CHROME; TOWELBAR TYPE WITH ANTI-SLIP RUBBER  
INSERTS; MOUNTED LEFT AND RIGHT SIDE ON EXTERIOR, REAR OF REAR DOORS, WITH  
CREW CAB

WHEELS, FRONT DISC; 22.5" POLISHED ALUMINUM, 10-STUD (285.75MM BC) HUB PILOTED,  
FLANGED NUT, METRIC MOUNT, 9.00 DC RIMS; WITH STEEL HUBS

WHEELS, REAR DUALDISC; 22.5" POLISHED ALUMINUM, 10-STUD (285.75MM BC) HUB  
PILOTED, FLANGED NUT, METRIC MOUNT, 8.25 DC RIMS; WITH STEEL HUBS

POLISHED SURFACE OUTSIDE DUAL ONLY

(2) TIRE, FRONT 315/80R22.5 UNISTEEL G291 (GOODYEAR) OR EQUAL 491 REV/MILE, LOAD  
RANGE J, 18 PLY

(8) TIRE, REAR 11R22.5 G182 RSD (GOODYEAR) OR EQUAL 496 REV/MILE, LOAD RANGE G,  
14 PLY

### **CARRYING CAPACITY PLATE**

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

The tag shall include the following:

- Overall height
- Overall length
- GVWR
- Seating capacity

# ***QUINTON, OKLAHOMA***

## ***COMMERCIAL PUMPER / TANKER SPECIFICATIONS***

### **SEATING CAPACITY PLATE**

There shall be a permanently attached plate mounted in plain view in the cab. The plate shall read "Seating Capacity - 5 People".

Each seating position that is not, intended to be used during transit shall be individually labeled as follows: Warning: This seat is not to be occupied while vehicle is in motion.

### **OCCUPANCY/SEAT BELT PLATE**

Occupancy / Seat Belt plate(s) shall be provided and installed which read "Occupants must be seated and belted when the apparatus is in motion". The plate(s) shall be visible from each seated position.

### **LABEL "DO NOT WEAR HELMET"**

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

### **OVERALL HEIGHT/LENGTH/WEIGHT PLATE**

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

If changes of the vehicle occur while in service, the fire department must revise the overall height-length-weight plate.

### **FLUID CAPACITY PLATE**

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

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

# QUINTON, OKLAHOMA

## COMMERCIAL PUMPER / TANKER SPECIFICATIONS

H.	Air Conditioning Lubrication Oil
I.	Power Steering Fluid
J.	Cab Tilt Mechanism Fluid
K.	Transfer Case Fluid
L.	Equipment Rack Fluid
M.	Air Compressor System Lubricant
N.	Generator System Lubricant
O.	Front Tire Pressure - Cold
P.	Rear Tire Pressure - Cold

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

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

### APPARATUS MOVEMENT WARNING PLATE

A permanently affixed warning plate shall be installed near the door ajar light. The plate shall read:

"DO NOT MOVE APPARATUS WHEN LIGHT IS ON".

### DO NOT RIDE PLATE

A permanently affixed warning plate shall be installed stating "DO NOT RIDE". The plate shall be located on the apparatus at the rear step area, and at any cross walks if they exist. The plate is to warn personnel that riding on or in these areas while the vehicle in motion is prohibited.

### CONSOLE - ALUMINUM

There shall be a console installed in the apparatus. This console shall be fabricated from smooth aluminum. The top forward panel shall be hinged rearward and the rear panel shall be stationary with self-tapping screws for customer (installed) equipment to include but not limited to 2 way communications radio, siren control box, emergency light switches, scene and work light switches and shall include a clip board holder large enough for a large style clip board.

# ***QUINTON, OKLAHOMA***

## ***COMMERCIAL PUMPER / TANKER SPECIFICATIONS***

### **REFLECTIVE MATERIAL - 4 DOORS**

There shall be 96 square inches of reflective material installed on the inside of the driver, officer, and crew doors.

### **BATTERY ON LIGHT**

A 1/2" green battery on pilot light shall be located on the cab dash visible from the driver's position. This light shall be wired to the master battery switch.

### **IGNITION ON LIGHT**

A 1/2" green ignition on light shall be located on the cab dash and wired to indicate power to the ignition.

### **IGNITION - KEY CHAIN**

The key to the chassis ignition shall be permanently chained to the dash to prevent accidental removal of the key from the cab.

### **MASTER LOAD DISCONNECT**

A master load disconnect shall be provided between the starter solenoid and the remainder of the electrical loads on the apparatus. The batteries shall be connected directly to the starter solenoid.

### **MASTER LIGHT SWITCH PANEL**

All warning lights shall be switched from a master light switch panel mounted in the cab. This panel shall have a master light cutoff switch.

### **EVENT DATA RECORDER (EDR)**

The apparatus shall be equipped with an on-board event data recorder (EDR) intended to monitor critical driving habits and the status of safety belt use. The EDR shall be capable of recording and storing the following apparatus and drivetrain data via the SAE J1939 network and hardwired inputs in accordance with NFPA 1901:

1. MAXIMUM VEHICLE SPEED IN MILES PER HOUR (MPH)
2. MAXIMUM ENGINE SPEED IN REVOLUTIONS PER MINUTE (RPM)
3. MAXIMUM ENGINE THROTTLE POSITION AS PERCENT FULL THROTTLE
4. SEAT BELT STATUS, BUCKLED OR NOT BY POSITION
5. SEAT STATUS, OCCUPIED OR NOT BY POSITION

# ***QUINTON, OKLAHOMA COMMERCIAL PUMPER / TANKER SPECIFICATIONS***

## **6. EMERGENCY MASTER SWITCH STATE, ON OR OFF**

The event data recorder (EDR) shall also calculate the following items by from the vehicles speed sensor signal.

- 1. MAXIMUM ACCELERATION SHOWN IN MILES PER HOUR PER SECOND (MPH/SEC)**
- 2. MAXIMUM DECELERATION SHOWN IN MILES PER HOUR PER SECOND (MPH/SEC)**

The event data recorder (EDR) shall have the following features:

- Green power on indicator LED
- Green CAN communication status indicator LED
- 28 data input circuits
- 25 output circuits
- 24 hour format time stamping of recorded data
- Month / Date / Year format date stamping of recorded data.
- Data sampling rate of once per second
- 48 hour data sampling storage
- 100 engine hours worth of recorded summary data held in memory
- Data reports via USB 2.0 connection meeting USB.org specifications Rev 1.1, 2.0 & 1.0a
- Data reports importable into Microsoft Excel spreadsheet
- User configurable password protection and access authority
- Report producing software compatible with Windows or Apple computer systems
  - Daily log by date with minute by minute output of all values
  - Weekly summary with maximum values for each hour of each day
  - Monthly summary with maximum values for each day of the month

As an integral part of the event data recorder (EDR) a seat belt / position indicator panel shall be provided with the following conditions indicated as listed;

- 1. Green illumination for seating positions that are occupied and the seatbelt is buckled**
- 2. Red illumination for seating positions that are not occupied and the seatbelt is buckled**
- 3. Red illumination for seating positions that are occupied and the seatbelt is unbuckled**
- 4. No illumination for seating positions that are not occupied and the seatbelt is unbuckled**

The event data recorder (EDR) shall comply with the following Society of Automotive Engineers (SAE) standards;

SAE J771, SAE J1113/1, 2, 3, 11, 12, 13, 21, 25, 41, SAE J1455, SAE J1812 and SAE J1939-21

# ***QUINTON, OKLAHOMA COMMERCIAL PUMPER / TANKER SPECIFICATIONS***

## **RADIO INSTALLATION**

The radio supplied by the Fire Department shall be installed as directed by the apparatus body builder.

The items must be sent to the manufacturer in advance, and marked with name and shop order number for identification.

## **RADIO INSERT**

A cut-out shall be provided in the custom console located in the cab.

## **ANTENNA INSTALLATION**

There shall be an antenna supplied by the customer and installed by the apparatus body builder.

The items must be sent to the manufacturer in advance, and marked with name and shop order number for identification.

## **UNDER CAB LIGHTS**

Four-(4) round halogen Trucklite or equivalent and made in the USA ground lights shall be installed one-(1) below each cab door illuminating the area below providing a safe entrance and exit for cab occupants.

## **ENGINE MAINTENANCE LIGHTS**

Two-(2) white 4" incandescent round lights shall be mounted under the cab. The lights shall automatically activate when the cab is tilted.

## **BACK-UP CAMERA - FEDERAL**

There shall be one Federal Signal or equivalent and made in the USA back-up camera system model CAMLCD-INT-70 or equal installed on the vehicle consisting of the following components wired to the chassis electrical system.

- One 7" LCD color monitor installed in the cab in a location provided by the customer
- One color camera model CAMCCD-REARNTSC with night vision and audio installed high at the rear of the vehicle

# **QUINTON, OKLAHOMA**

## **COMMERCIAL PUMPER / TANKER SPECIFICATIONS**

### **SIDE CAMERA - FEDERAL**

Two-(2) Federal Signal model CAMCCD-SIDETSC or equivalent and made in the USA side view cameras or equal shall be installed one-(1) each side of the vehicle wired to the monitor. The camera shall be equipped with night vision and audio.

### **FRONT MUD FLAPS**

Mud flaps shall be made from black hard rubber and installed at the rear of the front cab fenders.

### **REAR MUD FLAPS**

Mud flaps shall be made from black hard rubber and installed at the rear of the rear body fenders.

### **TIRE PRESSURE MONITORING SYSTEM**

A tire pressure monitoring device shall be provided at each individual valve stem, with red and green color bands monitoring the inflated condition of the tire, Green indicating proper inflation, half Green half Red indicating an under inflated condition, and Red indicating 20% or more under inflated.

### **BATTERY AND AIR CHARGER - KUSSMAUL PUMP PLUS 1000**

#### **AIR COMPRESSOR**

A Kussmaul Pump Plus 1000 system model 091-9-1000 or equal if available shall be mounted to maintain the chassis air and electrical system. This system shall be operated from a 120-volt AC shoreline plug and {will/shall} automatically eject from the vehicle upon starting the engine.

The air compressor shall be mounted on the vehicle and designed to maintain the chassis air pressure in the air brake system while the vehicle is not in use. A pressure switch shall sense the system pressure and operate the compressor whenever the pressure drops below a predetermined level.

A selector switch shall be provided on the charger to operate the compressor either as a DC compressor or as an AC compressor. In either switch position, the compressor shall operate from the vehicle battery system. When the DC position is selected, the compressor shall operate when the vehicle is away from the 120-volt AC source. When the AC position is selected, the compressor shall operate only when the vehicle is connected to the 120-volt power source.

<b>SPECIFICATIONS</b>	
<b>INPUT:</b>	<b>12 VOLTS DC @ 12 AMPS</b>
<b>OUTPUT:</b>	<b>0.03 SCFM @ 80 PSI</b>



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	0.35 SCFM @ 60 PSI
MOTOR TYPE:	PERMANENT MAGNET .10HP
BATTERY SAVER:	12 VOLTS DC @ 3 AMPS
DIMENSIONS:	6.5" X 6.5" X 10"

### **BATTERY CHARGER**

A Kussmaul Pump Plus 1000 or equivalent and made in the USA shall be mounted in the vehicle to maintain the chassis electrical system.

The on-board automatic battery charger shall sense battery voltage drop and recharge the batteries to full capacity. The state of charge shall be indicated on a remotely located bar graph display whenever power is applied to the vehicle.

The system shall contain a three-(3) amp power supply (battery saver) with relay to remove the accessory loads from the batteries connecting them to the power supply when the charger is energized with AC power. This shall permit the charger to recharge the batteries without supplying the accessory load.

SPECIFICATIONS	
INPUT:	120 VOLTS, 50/60 HZ, 3.5 AMPS
OUTPUT:	12V DC, @ 15 AMPS
BATTERY CHARGER:	12 VOLTS DC @ 35 AMPS
BATTERY SAVER:	12 VOLTS DC @ 3 AMPS
VOLTAGE SENSE:	REMOTE ELECTRONIC
INDICATORS:	
POWER - INDICATES INPUT POWER APPLIED	
BATTERY SAVER - INDICATES BATTERY SAVER LOAD EXCEED 3 AMPS	
BAR GRAPH - REMOTELY LOCATED INDICATES STATE OF CHARGE OF BATTERIES	

### **AUTO-EJECT MALE RECEPTACLE**

There shall be provided one-(1) auto-eject type receptacle. A solenoid wired to the vehicle starter is energized when the engine is started. This instantaneously drives the plug from the receptacle. The receptacle shall be provided with a weatherproof cover. The cover shall be spring loaded to close, preventing water from entering

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when the shoreline is not connected. The auto eject receptacle shall be mounted in a location specified by the department and is designed to accept a 120V AC from a shoreline plug. The UL maximum allowable amperage draw on receptacles is generally 80% of their listed rating, for example, the 20-amp receptacle should not carry more than 16-amp continuous load. When adding the different amperage draws of the components being installed on the chassis, be sure to figure in whether the components shall draw a continuous load or intermittent load.

Amp Draw Reference List	
Kusmaul 1000 Charger	3.5 Amps
Kusmaul 1200 Charger	10 Amps
Kusmaul 35/10 Charger	10 Amps
1000W Engine Heater	8.33 Amps
1500 Engine Heater	12.5 Amps
120 V Air Compressor	4.2 Amps

### **SHORE POWER INLET PLATE**

A shore-power "Inlet Plate" shall be permanently affixed at or near the power inlet.

The plate shall indicate the following:

5. Type of Line Voltage
6. Current Rating in Amps
7. Power Inlet Type (DC or AC)

### **LOCKUP - EVS3000 OR EQUAL**

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

### **EXTENDED EXHAUST**

The chassis exhaust pipe and muffler shall be extended to the front of the right rear wheel. Any required heat shields to protect body and/or compartments shall be installed.

### **PUMP ENCLOSURE - TOP MOUNT - EXTRUDED**

The pump enclosure superstructure shall be constructed of aluminum tubing, channel, angle, and break-formed components. All break formed components shall be constructed from 3/16" (.1875) aluminum. The crossmembers support the substructure and the exterior panels independently from the cab and body. The front of the pump module shall be covered with aluminum treadplate to keep road debris from the front of the pump.

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The crossmembers shall be isolated from the frame rails using torsion mounts.

The pump enclosure shall be supported at the top of the frame rails, in a minimum of four-(4) places. The module shall be secured with angle brackets bolted to both the pump enclosure support cross rails and the side of the chassis frame rails. This design is required to eliminate shifting and stress on the pump enclosure, pump panels, and running boards.

The pump enclosure shall provide an area for the installation of crosslays or a dunnage area.

Any pump enclosure constructed using any material other than aluminum or utilizing any other mounting method is not acceptable.

The pump module shall be a self-supported structure mounted independently from the body and cab chassis.

### **PUMP PANELS**

The operator's controls and gauges shall be mounted on pump panels constructed of 1/8" (.125) black anodized, non-glare aluminum. No vinyl coverings shall be acceptable as these surfaces are subjected to rough service and vinyl is susceptible to tearing.

The pump controls shall be located at the top of the enclosure. This panel shall be removable for access to gauges and auxiliary controls. The top mount Master gauge panel shall be hinged with quarter-turn latches at each end.

All gauges and controls shall be properly identified with color-coded metal tags. The tags shall be affixed with 3M brand industrial adhesive. The gauges shall be functionally grouped above each control.

Two-(2) access doors shall be provided below the operator's panel for inspection or service of the pump. The doors shall be constructed of 3/16" (.1875") aluminum treadplate with D-ring handles on each panel.

The upper portion of the right side pump panel shall have hinged double doors for access to the pump compartment and primer reservoir. The doors shall be constructed of .125" aluminum treadplate.

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

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1. Master intake pressure-indicating device
2. Master discharge pressure-indicating device
3. Tachometer
4. Engine (coolant) temperature indicator
5. Engine oil pressure indicator
6. Voltmeter
7. Pump pressure controls
8. Engine throttle control
9. Primer control
10. Tank to pump control
11. Tank Fill control
12. Water level indicator

## **LIGHT SHIELD - TOP CONSOLE**

A polished aluminum extruded light shield shall be provided above the pump operators control panel.

## **LIGHT SHIELD - LEFT SIDE**

A polished aluminum extruded light shield shall be provided above the left side pump panel.

## **LIGHT SHIELD - RIGHT SIDE**

A polished aluminum light shield extrusion shall be provided above the right side pump panel.

## **PUMP PANEL LIGHTS - TOP CONSOLE**

One (1) individual 63" Night Stik Model 70035 LED or equivalent and made in the USA pump panel light shall be mounted with on/off switch under the light shield above the operator's control panel. For optimum visibility during nighttime operations, the light shall be mounted as high as possible.

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### **PUMP PANEL LIGHTS - LEFT SIDE**

One (1) individual 36" Night Stik Model 70010 LED or equivalent and made in the USA pump panel light with on/off switch shall be mounted under the light shield left side. For optimum visibility during nighttime operations, the light shall be mounted as high as possible.

### **PUMP PANEL LIGHTS LED - RIGHT SIDE**

One (1) individual 36" Night Stik Model 70010 LED or equivalent and made in the USA pump panel light with on/off switch shall be mounted under the light shield right side. For optimum visibility during nighttime operations, the light shall be mounted as high as possible.

### **PUMP COMPARTMENT LIGHT**

One-(1) compartment light shall be installed in the pump compartment for inspection or routine maintenance wired to the pump panel light switch.

### **TOP MOUNT WALKWAY**

A 20" wide walkway shall be provided for the pump operator accessible from either side of the apparatus utilizing running board steps. The walkway shall be constructed from structural tubing, angle with a walking surface overlay manufactured from 3/16" non-skid aluminum treadplate.

Step height requirements set forth by the current NFPA standards between the running boards and the walkways working surface shall not be exceeded. A walkway warning sign shall be installed in plain view of the operator as directed by the current edition of NFPA.

### **STEPS BETWEEN WALKWAY AND RUNNING BOARD**

Individual diamond plate steps shall be mounted one (1) each side between the top mount walkway and the running boards.

These steps shall meet all NFPA 1901 requirements.

### **RUNNING BOARD - LEFT SIDE**

A running board shall be provided on the left side of pump module constructed of "Embossed" 3/16" (.1875) aluminum treadplate flanged down and in 2.50" x 1.00" for maximize rigidity then bolted to the modules substructure to facilitate removal.

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A hose tray shall be installed in the running board constructed from 1/8" smooth aluminum plate approximately 9" wide x 32" long and 10" deep with 1/4" drain holes and rubber matting promoting drainage and providing adequate ventilation. Restraining straps shall be provided securing the contents of the hosewell.

The running board stepping surface shall comply with the latest version of NFPA 1901.

### **RUNNING BOARD - RIGHT SIDE**

A running board shall be provided on the right side of pump module constructed of "Embossed" 3/16" (.1875) aluminum treadplate flanged down and in 2.50" x 1.00" for maximize rigidity then bolted to the modules substructure to facilitate removal.

A hose tray shall be installed in the running board constructed from 1/8" smooth aluminum plate approximately 9" wide x 32" long and 10" deep with 1/4" drain holes and rubber matting promoting drainage and providing adequate ventilation. Restraining straps shall be provided securing the contents of the hosewell.

The running board stepping surface shall comply with the latest version of NFPA 1901.

### **TOP MOUNT WALKWAY HANDRAILS**

One (1) pair of handrails shall be installed at the front of the pump module. The handrails shall be mounted vertically one-(1) each side near the top mount walkway. The handrails shall be constructed from 1-1/4" extrusion with chrome-plated stanchions. The handrails shall be approximately 30" inches in length.

The handrails shall meet or exceed NFPA 1901 requirements.

### **PUMP PANEL AIR OUTLET**

An air outlet complete with shutoff valve, shall be mounted on the pump panel. This shall be plumbed to the chassis air system.

### **MASTER GAUGES 4-1/2" STANDARD**

Two compound 4-1/2" master gauges shall be provided and installed on the pump operator's panel. The intake and discharge gauges are liquid filled with a silicone solution to assure visual readings and reduce inner lens condensation. The body of the gauges shall be constructed of Zytel nylon or equivalent and made in the USA with chrome-plated bezels. The face of the gauges shall be white with black markings and accurate within 1%.

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### **PRESSURE GAUGES - 2-1/2" STANDARD**

The discharges shall be provided with 2-1/2" pressure gauges. The gauges shall be installed above each discharge control on the pump operator's panel. The discharge gauges shall be liquid filled with a silicone solution to assure visual readings and reduce inner lens condensation. The body of the gauges shall be constructed of Zytel nylon with chrome-plated bezels. The face of the gauges shall be white with black markings reading from zero to 600 PSI.

### **STANDARD COLOR BEZELS**

Pressure gauge bezels shall be FFA standard colors discharge specific.

COLOR BEZELS STANDARD		
Location	Description	Color
#1	Discharge	Blue
#2	Discharge	Purple
#3	Discharge	Green
#4	Discharge	White
#5	Discharge	Pink
#1	Crosslay / Speedlay	Red
#2	Crosslay / Speedlay	Yellow
#3	Crosslay / Speedlay	Grey
2.5	Crosslay / Speedlay	Green
PS Large	Discharge	Brown
Right Rear	Discharge	Brown
Left Rear	Discharge	Orange
1.5	Front Jump Line	Orange
2.5	Front Jump Line	Purple
N/A	Deck Gun	Burgundy
N/A	Pre-Connects	Black

### **PRESSURE GOVERNOR**

A Fire Research Pump Boss pressure governor or equivalent and made in the USA and monitoring display shall be installed on the apparatus pump operators panel and provide the following displays:

- CHECK ENGINE and STOP ENGINE warning LED's
- Engine RPM; shown with four daylight bright LED digits more than 1/2" high
- Engine OIL PRESSURE; shown on an LED bar graph display in 10 psi increments
- Engine TEMPERATURE; shown on an LED bar graph display in 10 degree increments

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- BATTERY VOLTAGE; shown on an LED bar graph display in 0.5 volt increments
- PSI / RPM setting; shown on a dot matrix message display
- PSI and RPM mode LED's
- THROTTLE READY LED.

A dot-matrix message display shall show diagnostic and warning messages as they occur by monitoring apparatus information, stored data, and program options when selected by the operator. The brightness of the displays shall be automatically adjusted for day or night viewing.

The program shall store the accumulated operating hours for the pump and engine, previous incident hours, and current incident hours in a non-volatile memory. Stored elapsed hours shall be displayed at the push of a button. It shall monitor inputs and support audible and visual warning alarms for the following conditions:

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

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

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

### **PUMP PANEL TAGS**

All discharges, gauges, and controls will be properly identified by color-coded metal tags. The metal tags will be affixed with 3m industrial adhesive.



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### **PUMP MOUNTING**

Extra heavy-duty mounting brackets shall be bolted to the chassis frame rails for the installation of the fire pump. The mounting brackets shall be positioned aligning the pump insuring the angular velocity of the driveline joints are the same at each end allowing for full capacity performance with minimal vibration.

### **PUMP SYSTEM - HALE QMAX SINGLE STAGE OR EQUIVALENT AND MADE IN THE USA**

#### **PUMP ASSEMBLY**

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

The pump shall be driven by a driveline from the truck transmission. The engine shall provide sufficient horsepower and RPM to enable pump to meet and exceed its rated performance.

The entire pump, both suction and discharge passages, shall be hydrostatically tested to a pressure of 600 PSI. The pump shall be fully tested at the pump manufacturer's factory to the performance specs as outlined by the latest NFPA Pamphlet No. 1901. The pump shall be free from objectionable pulsation and vibration.

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

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

The pump shall have one double suction impeller. The pump body shall have two opposed discharge volute cutwaters to eliminate radial unbalance.

Pump shaft to be rigidly supported by three bearings for minimum deflection. One high lead bronze sleeve bearing shall be located immediately adjacent to the impeller (on side opposite the drive unit). The sleeve bearing is to be lubricated by a force-fed, automatic oil lubricated design, pressure balanced to exclude foreign material. The remaining bearings shall be heavy-duty, deep groove ball bearings in the gearbox and they shall be splash lubricated.

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

The impeller clearance rings shall be bronze, easily renewable without replacing impeller or pump volute body,

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and of wraparound double labyrinth design for maximum efficiency.

The pump shaft shall be heat-treated, electric furnace, corrosion resistant, stainless steel, to be super-finished under packing with galvanic corrosion (zinc separators in packing) protection for longer shaft life. Pump shaft must be sealed with double lip oil seal to keep dirt and water out of drive unit.

### **DRIVE UNIT**

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

Pump drive unit shall be of sufficient size to withstand up to 16,000 ft. Lbs. Torque of the engine in both road and pump operating conditions. The drive unit is designed with ample capacity for lubrication reserve to maintain proper operating temperature.

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

All gears both drive and pump, shall be of highest quality electric furnace, chrome nickel steel. Bores shall be ground to size and teeth integrated, crown-shaved and hardened, to give an extremely accurate gear for long life, smooth, quiet running, and higher load carrying capability. An accurately cut spur design shall be provided to eliminate all possible end thrusts.

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

If drive unit is equipped with a power shift, the shifting mechanism shall be a heat-treated, hard-anodized aluminum power cylinder, with stainless steel shaft. An in-cab control for rapid shift shall be provided that locks in road or pump.

Three warning lights with plates shall be provided to alert the operator when the drive unit has fully shifted from road to pump position. Two lights shall be located on the cabs instrument panel and the other on the pump panel adjacent to the throttle.

A 3" clapper check valve shall be installed between the suction side of the pump and the tank-to-pump valve. This 3" clapper valve shall remove the possibility of a water surge expanding the booster tank.

Pump system shall have an integral discharge manifold system that allows a direct flow of water to all discharge valves.

The pump system and piping shall be engineered for side panel operations. The relief valve control and other

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control devices shall be located on side-mounted operator's pump panel.

**HALE MECHANICAL SEAL** or equivalent and made in the USA

The midship pump shall be equipped with a high quality, spring loaded, and self-adjusting mechanical seal capable of providing a positive seal to atmosphere under all pumping conditions. This positive seal to atmosphere must be achievable under vacuum conditions up to 26 Hg (draft) or positive suction pressures up to 250 PSI.

The mechanical seal assembly shall be 2 inches in diameter and consist of a carbon sealing ring, stainless steel coil spring, Viton rubber boot, and a tungsten carbide seat, with a Teflon backup seal provided.

Only one mechanical seal shall be required, located on the first stage suction (inboard) side of the pump and be designed to be compatible with a one-piece pump shaft. A continuous cooling flow of water from the pump shall be directed through the seal chamber when the pump is in operation.

### **PUMP SHIFT**

An air operated pump shift shall be installed in the chassis cab to engage the fire pump. Provisions shall be made for placing the pump drive system in operation using controls and switches that are clearly identified and within convenient reach of the operator while in the cab.

A green indicator light shall be installed on the cab dash and labeled "Pump Engaged".

Where an automatic chassis transmission is provided, a green indicator light in the driving compartment and a green indicator light located at the pump operator's position shall be provided and shall be energized when both the pump shift has been completed and the chassis transmission is engaged in pump gear.

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

### **PRIMER**

A Hale model ESP or equivalent and made in the USA 12 volt positive displacement vane primer shall be installed. The primer shall be electrically driven and conform to the standards outlined in the current NFPA Pamphlet. The system is an oil-less system and environmentally safe. It contains an electric rotary vane type positive displacement primer that operates off 12V or 24V power. The primer motor is totally enclosed to prevent dust, dirt and water from penetrating. The unit is constructed of heat-treated anodized aluminum, specially coated for wear and corrosion resistance. The control shall be pump panel mounted to operate the

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priming valve and start the priming motor.

### **MASTER DRAIN**

There shall be a master drain valve recessed mounted below the pump module under the side running board, connecting all drain lines, with the capacity to discharge water simultaneously from all locations to below the chassis frame rails.

### **U.L. TEST POINTS**

An Underwriters Laboratories approved 1/2-speed engine counter shall be located on the pump panel to provide a means to certify the tachometer. In addition, two (2) U.L. test plugs shall be pump panel mounted for testing of vacuum and pressures.

### **U.L. CERTIFICATION (1500 GPM)**

The vehicle shall be third party tested and certified by Underwriters Laboratories, Inc. UL testing is recognized as a leading, third party, product safety certification organization for over 100 years. UL has served on the NFPA (National Fire Protection Association) technical committee for over thirty-(30) years.

The testing organization must meet the following minimum requirements:

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

The pump shall meet and perform the following test to receive a U.L. Certification.

- 100% of rated capacity at 150 PSI net pump pressure
- 100% of rated capacity at 165 PSI net pump pressure
- 70% of rated capacity at 200 PSI net pump pressure
- 50% of rated capacity at 250 PSI net pump pressure

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### **PUMP CERTIFICATION TEST PLATE**

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

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

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

### **WARRANTY – HALE OR EQUAL**

#### **EXPRESS WARRANTY:**

Hale Products, Incorporated ("Hale") hereby warrants to the original buyer that products manufactured by Hale are free of defects in material and workmanship for a period of five (5) years from the date the product is first placed into service or five and one-half (5-1/2) years from date of shipment by Hale, whichever period shall be first to expire. Within this warranty period Hale will cover parts and labor for the first two (2) years and parts only for years three (3) through five (5).

#### **LIMITATIONS:**

HALE'S obligation is expressly conditioned on the Product being:

- Subjected to normal use and service
- Properly installed and maintained in accordance with HALE'S Instruction Manual and Industry Standards as to recommended service and procedures
- Not damaged due to abuse, misuse, negligence, or accidental causes
- Not altered, modified, serviced (non-routine), or repaired other than by an Authorized Service facility
- Manufactured per design and specifications submitted by the original buyer
- Used with an appropriate engine as determined by the engine manufacturers published data
- Excluded are normal wear items identified as but not limited to packing, strainers, anodes, filters, light bulbs, intake screens, wear rings, mechanical seals, etc.

### **MANUALS**

There shall be two printed copies of pump manuals provided to the department.

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### **6" SUCTION HEADERS**

A 6" NST non-gated suction header with removable screen, and long handled cap shall be provided on the left side of the pump.

A 6" NST non-gated suction header with removable screen, and long handled cap shall be provided on the right side of the pump.

### **RELIEF VALVE - AKRON 59 OR EQUIVALENT AND MADE IN THE USA**

There shall be an Akron model 59 suction side relief valve or equal provided in the pump system. The relief valve is adjustable from 50-175 psi and set at the factory at 125 psi.

### **TANK TO PUMP - 3"**

One (1) 3" ball valve shall be installed between the pump and the water tank. The tank to pump valve shall be a quarter turn fixed pivot design constructed from bronze. The valve shall be a (twist lock) lever controlled from the pump operator's control panel.

### **TANK FILL - 2-1/2"**

There shall be a 2-1/2" pump to tank fill line installed, with a 2-1/2" inline bronze valve, high-pressure flexible hose tested to 1200 PSI. The valve shall be (twist lock) lever controlled from the pump operator's panel.

### **RIGHT REAR DIRECT TANK FILL - 3"**

There shall be one-(1) 3" rear direct tank fill provided at the right rear of the apparatus. A 3" brass ball valve shall be vertically mounted and swing controlled at the valve.

### **LEFT REAR DIRECT TANK FILL - 3"**

There shall be one-(1) 3" rear direct tank fill provided at the left rear of the apparatus. A 3" brass ball valve shall be vertically mounted and swing controlled at the valve.

### **ENGINE COOLER**

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

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## ***COMMERCIAL PUMPER / TANKER SPECIFICATIONS***

### **PUMP COOLER**

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

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

### **PLUMBING - SUCTION INLETS & DISCHARGE OUTLETS**

All suction and discharge lines of 2" or larger shall be constructed of a minimum of Schedule 40 galvanized steel pipe, where vibration or chassis flexing may damage or loosen threaded pipes, Victaulic or Roustabout couplings shall be used. All suction and discharge outlets shall have National Standard Threads (NST) and designed for 500 PSIG including, valves, drain cocks, lines, intake, and outlet closures, excluding the tank fill and tank to pump lines (tank side of the valves).

### **STAINLESS STEEL MANIFOLD**

The auxiliary pump manifold shall be constructed of stainless steel.

### **PUMP & PLUMBING PAINTING**

The pump shall be painted black. This includes all intakes, discharges, manifolds, and associated valves.

### **AKRON LEVER CONTROL VALVE PACKAGE OR EQUIVALENT AND MADE IN THE USA**

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

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

- 10-year warranty against manufacturer's defects
- Available in 1" to 3 1/2" sizes
- 90° handle travel 316 stainless steel ball for longer valve life
- Improved sealing & increased gating ability
- Flow optimization reduces turbulence while in the gated position and requires lower operating forces
- No lubrication or regular maintenance required
- Simple two seated design (no O-Rings to cut or lose during assembly or maintenance)
- Wide range of available adapters

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- Designed and tested to exceed NFPA requirements
- Cast, machined and assembled at our facilities in Wooster, Ohio

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

### **2-1/2" SUCTION - LEFT PANEL FRONT**

One-(1) 2-1/2" lever operated ball valve shall be installed at the pump panel, left front plumbed to the suction side of the pump with 2-1/2" piping, 2-1/2" FNST chrome inlet swivel, brass inlet strainer, chrome plug with chain, and 3/4" drain valve.

A warning plate permanently affixed in close proximity of the suction inlet shall be installed stating:

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

### **2-1/2" SUCTION - RIGHT PANEL FRONT**

One-(1) 2-1/2" lever operated ball valve shall be installed at the pump panel, right front plumbed to the suction side of the pump with 2-1/2" piping, 2-1/2" FNST chrome inlet swivel, brass inlet strainer, chrome plug with chain, and 3/4" drain valve.

A warning plate permanently affixed in close proximity of the suction inlet shall be installed stating:

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

### **INTEGRAL DROOP ELBOWS**

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

### **FRONT BUMPER DISCHARGE**

There will be one-(1) front discharge installed in the front bumper, center hosewell.

The front bumper discharge shall terminate 2" NPT x 1-1/2" NST with a 90-degree swivel and treadplate stop preventing the swivel from incidental contact with the cab.

One-(1) 2" brass valve with 3/4" drain shall be installed on the discharge side of the pump plumbed to the front



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swivel with flexible high-pressure hose and victaulic stainless steel couplings tested to 1200 PSI, the front discharge shall be lever controlled at the pumps operator's panel.

### **NO. 1 SPEEDLAY 1-3/4" DOUBLE LAY**

One-(1) pre-connected speedlay compartment shall be provided under the walkway accommodating 200' of 1-3/4" double jacket hose, with stainless steel nylon guided rollers installed at each end, and stainless steel scuff plates around the perimeter of the speedlay protecting the painted surfaces.

One-(1) 2" ball valve with 3/4" drain and Chicksan swivel shall be provided plumbed to the speedlay with 2" high-pressure flexible hose stainless steel couplings tested to 1200 PSI, the valve shall be lever controlled at the pump operator's panel.

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

### **NO. 2 SPEEDLAY 1-3/4" DOUBLE LAY**

One-(1) pre-connected speedlay compartment shall be provided under the walkway accommodating 200' of 1-3/4" double jacket hose, with stainless steel nylon guided rollers installed at each end, and stainless steel scuff plates around the perimeter of the speedlay protecting the painted surfaces.

One-(1) 2" ball valve with 3/4" drain and Chicksan swivel shall be provided plumbed to the speedlay with 2" high-pressure flexible hose stainless steel couplings tested to 1200 PSI, the valve shall be lever controlled at the pump operator's panel.

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

### **ALUMINUM/HYPALON SPEEDLAY COVER**

There shall be one-(1) double speedlay cover provided, constructed of 1/8" (.125") aluminum treadplate, with stainless steel piano hinge, chrome lifts handles, and two-(2) hook latches.

### **SPEEDLAY COVERS**

Two-(2) Cargo net covers shall be provided on each side of the apparatus preventing hose from inadvertently deploying during normal operations meeting the current NFPA requirements.

The end flaps shall be black in color.

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### **2-1/2" DISCHARGE LEFT PANEL FRONT**

One-(1) Akron 2-1/2" Heavy-Duty ball valve or equivalent and made in the USA with 3/4" drain shall be installed at the pump panel left front plumbed to the discharge side of the pump lever controlled from the pump operator's panel.

### **2 1/2" DISCHARGE LEFT PANEL REAR**

One-(1) Akron 2 1/2" Heavy-Duty ball valve with 3/4" drain or equivalent and made in the USA shall be installed at the pump panel, left rear, plumbed to the discharge side of the pump lever controlled from the pump operator's panel.

### **2 1/2" DISCHARGE RIGHT PANEL FRONT**

One-(1) Akron 2 1/2" Heavy-Duty ball valve with 3/4" drain or equivalent and made in the USA shall be installed at the pump panel, right front, plumbed to the discharge side of the pump equipped with 2 1/2" NST threads chrome cap and chain lever controlled at the pump operator's panel.

### **2-1/2" DISCHARGE RIGHT PANEL REAR**

One-(1) Akron 2-1/2" Heavy-Duty ball valve with 3/4" drain or equivalent and made in the USA shall be installed at the pump panel, right rear, plumbed to the discharge side of the pump lever controlled from the pump operator's panel.

### **3" DECK GUN PLUMBING**

One-(1) Akron 3" Heavy-Duty inline valve with 3/4" drain or equivalent and made in the USA shall be plumbed to the Deck Gun discharge outlet with 3" pipe terminating 3" FNPT x four-(4) bolt flange lever controlled at the pump operator's panel.

### **TFT EXTEND A GUN SYSTEM**

There shall be one (1) Task Force Tips model XG-18 Extend-A-Gun or equivalent and made in the USA electrically operated system installed on the apparatus. A warning light indicator system shall be provided through the door-ajar system to indicate if the Extend a Gun is in the extended position. The 3" waterway shall be capable of being extended to a height of 18".

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### **1250 GPM ELECTRIC MONITOR**

One (1) Task Force Tips Hurricane RC, model #XFIH-E11A or equivalent and made in the USA remote controlled monitor shall be provided. The monitor shall be controlled by a monitor mounted switch panel with functions that control rotation, elevation and nozzle patterns.

The monitor shall have the following travel capabilities:

- Full horizontal rotation with travel 225 degrees left and right of center
- A full 180 degrees of vertical travel with stops at straight up and straight down
- Field changeable rotation stops shall be provided at 45, 90 and 135 degrees left and right of center
- Flow capability of 1250 GPM
- Maximum operating pressure of 200 PSI

The electrical controls for the monitor shall be waterproof and utilize current limiting and position encoders to protect the drive train at the ends of travel. Thirty feet of ultra flex robotic power cable shall be pre-wired to the monitor and include a unique cable guide for the motors. An electrical connection for a TFT remote control nozzle shall be provided. The monitor shall be equipped with large manual override handles for use in the event of power failure.

For resistance to corrosion the monitor shall be constructed from hardcoat anodized aluminum with a silver powder coat interior and exterior finish. A built in automatic drain designed to protect the monitor from freezing and a threaded port for an optional pressure gauge shall be provided.

The monitor shall be configured with a 3" ANSI 150 companion flange inlet and 2-1/2" male NH outlet.

### **MASTER STREAM NOZZLE**

One (1) Task Force Tips Master Stream 1250, Model# M-ERP1250SNJ or equivalent and made in the USA electronic remote master stream nozzle shall be provided. The nozzle shall be designed for use on monitors, ladder pipes, deluge guns and aerial platforms. For corrosion resistance the nozzle shall be constructed for lightweight hardcoat anodized aluminum.

The nozzle shall have a flow capability of 300 to 1250 GPM at a constant pressure rating of 100 PSI. A UV resistant rubber bumper with integral teeth designed to produce a finger free fog pattern shall be included. A halo ring shall be included to assist with stream shape control. The nozzle shall be suitable for foam solution application and designed to accept the Task Force Tips FJ-LX-M low expansion air aspirating attachment. The nozzle shall be configured with a 2-1/2" female NH swivel rocker lug coupling.

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### **REMOTE MONITOR CONTROL STATION**

Task Force Tips Y4E-RP panel mount control station or equivalent and made in the USA for Hurricane series remote control monitor shall be provided on pump operator's panel.

### **2-1/2" PRECONNECT - LEFT FRONT HOSEBED**

One-(1) 2-1/2" preconnect shall be installed in the hosebed, left front, plumbed with an Akron 2-1/2" Heavy-Duty ball valve with 3/4" drain terminating 2-1/2" FNPT x 2-1/2" MNST chrome cap and chain lever controlled at the pump operator's panel.

### **FOAM PRO 2001 SYSTEM OR EQUIVALENT AND MADE IN THE USA**

There shall be a fully automatic electronic direct injection foam proportioning system furnished and installed on the apparatus. The system shall be capable of Class A foam concentrates and most Class B foam concentrates. The proportioning operation shall be based on an accurate direct measurement of water flows with no water flow restriction. System must be capable of delivering accuracy to within 3% of calibrated settings over the advertised operating range. The system shall be equipped with a digital electronic control display suitable for installation the pump panel. This proportioning system shall meet NFPA standards for foam proportioning systems and the design shall have passed testing against SAE automotive reliability standards appropriate for the application. The foam system shall be installed in accordance with the manufacturer recommendations. Paddlewheel-type flowmeters shall be installed in the discharges specified to be "foam capable". When the use of more than one flowmeter is required, an interface electronics module shall be provided to total these flows and send the flow total to the microprocessor in the computer control display.

The system shall be equipped with a digital electronic control display. It shall be installed on the pump operators panel and enable the pump operator to perform the following control and operation functions:

- Activate the foam system  
Provide push- button control of foam concentrate proportioning rate from .1% to 9.9% in .1% increments
- Show current flow- per- minute of water
- Show total amount of water discharged during and after foam, operations are completed
- Show total amount of foam concentrate consumed
- Provide simulated flow for manual operation
- Perform setup and diagnostic functions for the computer control microprocessor
- Flash a "Low Concentrate" warning for two minutes when the foam concentrate tank(s) run low of concentrate

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- Flash "No Concentrate" warning if foam concentrate was not changed or foam concentrate was not added to the low tank and shut down foam concentrate pump

The display shall have the capabilities when using a manual or electronic dual tank switching system of the following additional functions:

- Displays foam tank selection
- Separate default setting for foam concentrate injection rate
- Total amount of foam concentrate used from selected tank
- Dual foam concentrate foam pumps calibration

The foam system shall have a 12-volt electric motor designed for wet and high humidity environments, directly coupled to the (positive displacement) foam concentrate pump with a rated capacity of up to 2.5 gpm at 150 psi with operation pressures up to 400 psi. The system shall draw a maximum of 40 amps at 12V. A pump motor electronic driver (mounted at the base of the pump) shall receive signals from the computer control display and power the 1/2 hp electric motor directly coupled to the concentrate pump in a variable speed duty cycle to ensure that the correct proportion of concentrate preset by the pump operator is injected into the water stream.

When two types of foam concentrates are to be used, two foam concentrate tanks shall be installed and piped to the foam concentrate pump via the electric dual tank valve or the manual dual tank valve.

Full flow check valve shall be provided to prevent foam contamination of fire pump and water tank or water contamination of foam tank.

Components of the complete proportioning system shall include:

- Operator control and display
- Paddlewheel flowmeters
- Pump and electric motor/motor driver
- Wiring harnesses
- Low Level tank switch
- Multi-Flo electronic module (if more than one flowmeter is used)
- Foam tanks
- Electronic dual tank valve or manual dual tank valve (if more than one tank)

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- Check valve: Foam injection
- Check valve: Main waterway

An installation and operation manual shall be provided for the unit, along with one (1) year limited warranty by the manufacturer. The system shall have passed environmental testing which simulates heavy use on off-road mobile apparatus. Testing shall have been conducted in accordance to SAE standards.

NOTE: Please specify the discharges to be supplied with foam solution.

### **GAUGE - FOAM TANK LEVEL - CLASS A**

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

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

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

### **LOW TANK LEVEL SWITCH**

A low tank level switch shall be installed in each foam concentrate tank that supplies the foam proportioning system. The low tank level sensor shall be connected to the foam proportioning system to provide protection against dry running of the foam pump. The low tank level sensor can be mounted on the side, bottom, or top of the foam concentrate tank. The low tank level sensor and electrical connections shall be sealed to prevent infusion of foam concentrate into the wiring and possible short circuit of the tank level sensor.

### **FLOWMETER 3" TEE MOUNT W/ COUPLING KIT**

There shall be paddle wheel style flowmeter mounted in a 3" NPT pipe tee for mounting in a 3" discharge line. A groove less Victaulic coupling shall be provided for installation of the flowmeter. A water check valve shall be provided before the flowmeter and between the water pump and the foam injection point.

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### **OPERATING SYSTEMS INSTRUCTION PLACARD - SINGLE TANK**

There shall be a placard installed on the pump panel, a schematic of the Foam Pro (single tank) operating system, which has been installed.

### **FOAM PROPORTIONING SYSTEMS - NFPA TEST**

#### **NFPA 1901 PERFORMANCE REQUIREMENTS**

The proportioning system shall be capable of proportioning foam concentrate in accordance with the foam concentrate manufacturer's recommendation for the type of foam concentrate used in the system over the system's design range of flow and pressure. The foam proportioning systems water flow characteristics and the range of proportioning ratios shall be specified.

The foam system shall comply with NFPA 1901 Chapter 17.0 as it relates to the specified system.

#### **FOAM TANK PIPING**

The foam supply line shall be non-collapsible. There shall be a means provided to prevent water backflow in to the foam proportioning system and storage tank(s).

Either a filter or strainer provided on the foam concentrate supply side of the foam proportioning to prevent any debris that may affect the operation of the foam proportioning system from entering the system. The strainer assembly shall consist of a removable straining element, housing, and retainer. The strainer assembly shall allow full flow capacity of the foam supply line.

#### **FLUSHING**

Foam concentrate system flush line(s) shall be provided as required by the foam system manufacturer. The design shall incorporate a means to prevent water backflow into the concentrate tank or water tank during the flushing operation. Where the foam proportioning system is connected to more than one (1) foam storage tank, provisions shall be made to flush all common lines to avoid contamination of dissimilar foam concentrates.

#### **CONTROLS FOR FOAM SYSTEM**

The foam proportioning system operation controls shall be located at or near the pump operator's position and shall be clearly labeled.

All foam-proportioning systems that require flushing shall provide controls, which enable the operator to flush the system in accordance with the foam manufacturer's instructions.

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Foam proportioning systems that incorporate foam concentrate metering valves shall have each metering valve calibrated to indicate the rate(s) of flow of the foam concentrate proportioning available as determined by the design of the system.

Foam proportioning systems that incorporate automatic proportioning features shall be equipped with controls, which enable the operator to isolate the automatic feature and operate the system in a manual mode.

## **NAMEPLATE, LABELS, INSTRUCTION SPECIFICATIONS**

There shall be a nameplate provided that is clearly marked with the identification and function of each control gauge and indicator related to the foam proportioning system.

There shall be a label provided on the operator's panel that identifies the type(s) of foam concentrate(s) the system is designed to use. This label shall state the minimum/maximum foam-proportioning rate at the minimum/maximum foam proportioning rated system flow and pressure.

Foam proportioning system instruction plate shall be provided. This includes a minimum piping schematic of the system and basic operating instructions.

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

## **FOAM PROPORTIONING SYSTEM TESTING**

The apparatus manufacturer shall test the accuracy of the foam proportioning system prior to delivery of the apparatus.

If the manufacturer's rated proportioning ratio is below 3%, the foam system shall proportion foam concentrate within 0% /+40% of the manufacturer's rated proportioning ratio across the manufacturer stated range of water flow and pressure.

If the manufacturer's rated proportioning ratio is above 3%, the foam system shall proportion foam concentrate within 0% /+40% of the manufacturer's rated proportioning ratio or 1 percentage point, whichever is less across the manufacturer's stated range of water flow and pressure.

## **FOAM TANK - ONE**

The foam tank shall have a capacity of 30 gallons designed as an integral part of the water tank and shall have a manual fill tower. The fill tower shall be constructed of 1/2" PT3™ polypropylene and shall be a minimum



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dimension of 8" x 8" outer perimeter. Each foam fill tower shall be constructed of a colored material (yellow, green and black) indicating which tower is to receive each type of foam utilized. The capacity of the tank shall be engraved on the top of the fill tower lid. The tower shall be located in the right front corner of the tank unless otherwise specified. The tower shall have a 1/4" thick removable polypropylene screen and a stainless steel hinged-type cover. Inside the fill tower, approximately 1.5" down from the top, there shall be an anti-foam fill tube that extends down to the bottom of the tank. A pressure vacuum vent shall be provided in the lid of the fill tower.

### **FOAM OUTLETS**

Foam shall be plumbed to the following outlets:

- Front Bumper Discharge
- No. 1 Speedlay
- No. 2 Speedlay

### **2.5" CHROME PLUG**

There shall be one (1) Kochek model K Chrome RL or equivalent and made in the USA, 2.5" chrome plug with a chain supplied with the apparatus.

### **2.5" CHROME PLUG**

There shall be one (1) Kochek model K Chrome RL or equivalent and made in the USA, 2.5" chrome plug with a chain supplied with the apparatus.

### **10" SQUARE DUMP - LEFT FRONT**

There shall be one-(1) Newton model 1030A or equivalent and made in the USA electrically actuated dump valve installed in the filler panel at the left front side of the body. The dump valve shall be a 10" square plunger style constructed of stainless steel controlled by a switch located in the cab.

### **DUMP SWITCH GUARD**

A GUARD SHALL BE PROVIDED OVER THE SWITCH PREVENTING INADVERTENT ACTIVATION OF THE DUMP.

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### **10" SQUARE DUMP - RIGHT FRONT**

There shall be one-(1) Newton model 1030A or equivalent and made in the USA electrically actuated dump valve installed in the filler panel at the right front side of the body. The dump valve shall be a 10" square plunger style constructed of stainless steel controlled by a switch located in the cab.

### **DUMP SWITCH GUARD**

A GUARD SHALL BE PROVIDED OVER THE SWITCH PREVENTING INADVERTENT ACTIVATION OF THE DUMP.

### **FRONT DUMP FILLER PANELS**

Two 17" front filler panels shall be provided one-(1) each side of the body ahead of the front compartments and behind the pump module to accommodate the side dumps applications. The filler panels shall be constructed of the same material as the body.

### **WATER TANK DUMP VALVE**

A Newton 10" square or equivalent and made in the USA electrically operated stainless steel dump valve shall be installed at the rear of the apparatus.

### **NEWTON DUMP CHUTE**

There shall be a Newton, 36" or equivalent and made in the USA telescoping (electrically operated) dump chute supplied with the apparatus.

### **TANK VISION GAUGE OR EQUIVALENT AND MADE IN THE USA**

The water level gauge shall be a Tank Vision Model WLA200-A00, with nine super bright LED's to show the tank volume. The display shall use a two-dimensional, two-element lens to refract the light from the LED's and to provide full 180-degree visibility for the level indications. The gauge shall use a pressure transducer installed near the bottom of the water tank to determine the correct volume in the tank.

### **WHELEN PS TANK STRIPLIGHT OR EQUIVALENT AND MADE IN THE USA**

There shall be three-(3) PS TANK Status Lights, with 96 LED's steady burn green, blue, amber, and red. The light provides bright, easy to identify indication of water status. The unit is surface mounted, has low current consumption, fully encapsulated, and carries a five (5) year warranty from Whelen. The lights shall be mounted per customer requirements, typically one each side on or near the cab. The unit shall work in conjunction with the Master on the pump panel.

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### **BOOSTER TANK - POLYPROPYLENE OR EQUIVALENT AND MADE IN THE USA**

The booster tank shall be manufactured by UPF constructed of PT2E resin and copolymer shall be provided with the capacity to hold 2500 U.S. Gallons complete with a Lifetime Warranty. The tank manufacturer shall mark the tank and furnish notice that indicates proof of warranty. The purpose of the markings and notice is to inform department personnel who store, stock, or use the tank that the unit is under warranty. The markings indicate the substance and duration of the warranty. It also includes whom to notify if the tank is found to be defective.

### **CONSTRUCTION**

The tank shall be "T" shaped and constructed of 1/2" thick polypropylene sheet stock. This material shall be a non-corrosive stress relieved thermoplastic, natural in color and UV stabilized for maximum protection.

The booster tank shall be of a specified configuration and is designed to be completely independent of the body and compartments. All joints and seams are nitrogen welded and tested for maximum strength. The top of the tank is fitted with removable lifting eyes designed with a 3 to 1 safety factor to facilitate easy removal. The transverse swash partitions shall be manufactured of 3/8" polypropylene and extend from approximately 4" off the floor to just under the cover. The longitudinal swash partitions shall 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 shall be equipped with vent and air holes to permit movement of air and water between compartments. The partitions shall 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.

### **FILL TOWER AND COVER**

The tank shall have a combination vent and manual fill tower. The fill tower shall be constructed of 1/2" polypropylene located in the left front corner of the tank unless otherwise specified by the purchaser. The tower shall have a 1/4" thick removable polypropylene screen and a polypropylene hinged-type cover. Inside the fill tower, approximately 4" down from the top shall be fastened a combination vent / overflow pipe. The vent / overflow shall be a minimum of schedule 40 polypropylene pipe with a minimum ID of 4" that is designed to run through the tank, and shall be piped behind the rear wheels to maximize traction.

The tank cover shall be constructed of 1/2" thick polypropylene, and UV stabilized, to incorporate a multi three-piece locking design, which allows for individual removal and inspection if necessary. The tank cover shall be recessed 3/8" from the top of the tank and shall be welded to both sides and longitudinal partitions for maximum rigidity. Each one of the covers shall have hold downs consisting of 2" polypropylene dowels spaced a maximum of 30" apart. These dowels shall extend through the covers and shall assist in keeping the covers rigid under fast filling conditions. A minimum of two (2) lifting dowels shall be drilled and tapped 1/2" x 13" to accommodate the lifting eyes.

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### SUMP

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

### OUTLETS

There shall be two (2) standard tank outlets: one for the tank-to-pump suction line, which shall be a minimum of 3" NPT coupling; and, one for a tank fill line, which shall be a minimum of 1" NPT coupling. All tank fill couplings shall be backed with flow deflectors to break up the stream of water entering the tank, and be capable of withstanding sustained fill rates of up to 1,000 Gpm. The addition of rear suction fittings, nurse valve fittings, dump valve fittings, and through tank sleeves to accommodate rear discharge piping must be specified. All auxiliary outlets and inlets must meet all NFPA 1900 guidelines in effect at the time of manufacture.

### MOUNTING

The tank shall 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. In cases where overall height of the tank exceeds 40 inches, cross member spacing must be decreased to allow for not more than 400 square inches of unsupported area. The tank must be isolated from the cross members through the use of hard rubber strips with a minimum thickness and width dimension of .250" x 2" and a minimum Rockwell Hardness of 60 durometer. The tank shall be captured front and rear as well as side-to-side to prevent the tank from shifting during vehicle operation. The tank shall sit cradle mounted using four (4) corner angles of 4" x 4" x .250" thickness x 6" high welded directly to the body cross members. The entire perimeter of the bottom of the tank shall be supported. Although the tank is designed on the free-floating suspension principle, it shall be required that the tank have hold down restraints to minimize movement during vehicle operation. These restraints shall be mounted to the side walls of the hose bed and extend down so that they rest approximately 1/2" above the top of the tank. The foot of the restraint does not directly contact the top of the tank. Hosebed floors shall be designed so that the floor slat supports extend the full width of the hose body. The floor is not permitted to drop off the edge of the tank or in any way come in contact with the individual covers where punctures may occur. The flooring shall be capable of supporting up to 200 lbs per square foot and shall be evenly distributed whenever possible. The tank shall be completely removable without disturbing or dismantling the apparatus structure.

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### **WATER TANK SIZE-NFPA CERTIFICATION**

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

### **POLY TANK WARRANTY - LIFETIME**

The poly tank manufacturer warrants each tank to be free from manufacturing defects in material and workmanship for the service life of the original vehicle (vehicle must be actively used in fire suppression). The warrant is transferable, with written approval of the manufacturer. Each tank is inspected and tested for leaks prior to leaving the manufacturing facility. The tank shall be installed in the vehicle in accordance to the manufacture's guidelines.

There are no warranties, expressed or implied, which extend beyond the description of the face hereof. There is no expressed or implied warranty of merchantability or a warranty of fitness for a particular purpose. Additional, this warranty is in lieu of all other obligations or liabilities on the part of the Manufacturer.

### **TANK VENT - 6" - BOOSTER TANK**

A 6" tank vent shall be installed on the water tank to assist the venting of the tank during quick fill and dumping operations.

### **APPARATUS BODY**

The apparatus body and subframe shall be constructed entirely of marine grade aluminum plate and extrusions.

#### **SUBFRAME**

The main body support crossmember extrusions shall be 3" x 4" 6061T6 aluminum alloy, double "I" beam with a wall thickness of 7/16" (.438"). These crossmembers shall extend the full width of the body to support the compartment framing. The crossmembers shall be welded to a 3/4" (.750") x 3" solid aluminum, 6061T6 aluminum (alloy frame rail) extrusion. The frame rail extrusion shall be shaped in contour with the chassis frame rails. The frame rail extrusion shall be mounted over a 1/2" (.5") thickness, reinforced rubber cushion to isolate the aluminum subframe from the chassis steel frame rails. The apparatus body structure shall be securely fastened to the chassis frame rails with a minimum of six (6) 5/8" (.625") crossmember OD, steel U-bolts. The main body support crossmember shall have a gusset above and below each crossmember. The gussets shall be constructed of 2.0" x 4.0" 6063T6 aluminum alloy extrusion with a .190" wall thickness. The gussets shall be continuously welded with 5356 aluminum alloy welding wire to add support to the body sidewalls. The main body supports and the longitudinal double "I" beam supports shall have a "C" shaped rubber tank cushion installed on the top of each member. This rubber extrusion shall conform to the shape of the double "I" beam

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extrusion to keep the tank cushion in place. This method is used to prevent damage to the tank.

Absolutely no pop-rivets, screws or any other hardware shall be used to hold the rubber tank cushion in place.

### **BODY CONSTRUCTION (NO EXCEPTIONS)**

The complete apparatus body structure shall be an all welded construction and be free from nuts, bolts and other fasteners. Upon completion of the weldments, the body shall be completely sanded and deburred for removal of all sharp edges.

The body framework shall be formed from beveled aluminum alloy extrusions and electrically seam welded at each joint using 5356 aluminum alloy welding wire. Body sides shall be formed from 5052 H-32 (marine grade) smooth aluminum plates. The horizontal surfaces above the compartment tops shall be constructed from aluminum treadplate.

The horizontal and vertical frame member extrusions shall be 2.0" x 4.0" with a .190" wall thickness. The extrusion shall be made from 6063T6 aluminum alloy. This extrusion shall have .190" outside radius corners. The longitudinal frame member, below the lower compartments shall be a 2.0" x 4.0" 6063T6 aluminum alloy extrusion with .190" radius corners. Each body corner shall be a 3.5" x 9.75" 6063T6 extruded aluminum section with .210" wall thickness, and shall be welded as an integral part of the body. This extrusion shall have a 1" corner radius.

The wheel well shall be constructed from 2" x 4" x .190" wall thickness. The extrusion shall be made from 6063T6 aluminum alloy and have .190" outside radius corners. The extrusion shall be slotted the full length to permit an internal fit of 1/8" (.125") aluminum treadplate panels. The wheel well liners shall be constructed of 3003 H-14 smooth aluminum plates. They shall be bolted in place for ease of maintenance. The wheel well fenderettes shall be constructed of #304 Stainless steel with a #7 polished finish.

A deflection shield shall be mounted to the body subframe to keep road debris from entering the water tank area.

The hosebed sides shall be constructed of 3/16" (.1875") 5052 H-32 (marine grade) smooth aluminum plate welded to the extruded framework. There shall be a 3" x 3.5" 6063T6 aluminum extrusion with .190" wall thickness running the entire length of the hosebed at the top for structural rigidity. The hosebed decking shall be constructed from anodized aluminum extrusions. The extrusions shall be 3/4" (.750") x 8.125" and have 3/4" (.750") x 3.00" hat channel attached to the underside to form a one-piece grid. The entire deck shall be removable, in one piece, to allow ease of serviceability to the tank. The hosebed shall include an extrusion across the front and rear of the compartment for the installation of adjustable hosebed dividers.

The fire apparatus hose body shall be 73.5" wide and shall contain a minimum of 79 cubic feet of storage.

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### COMPARTMENT CONSTRUCTION (NO EXCEPTIONS)

The compartment sidewalls shall be of one-piece construction. The walls shall be formed from 3/16"(.1875") 5052 H-32 (marine grade) smooth aluminum plate. All compartment floors shall be formed from 3/16"(.1875") aluminum treadplate. The floors shall be welded in place with a continuous weld all around the perimeter to insure maximum strength.

The external compartment tops shall be constructed of 1/8" (.125") aluminum treadplate. The tops shall have a formed edge, which serves as a drip rail for the compartments below. The compartment tops shall be secured with stainless steel screws to allow for ease of removal for access to the bodies wiring harnesses.

The compartment seams shall be sealed with permanent pliable silicone caulking.

Each compartment shall be vented through a 3"W x 15"H louver that is machined stamped in a panel located in each body corner extrusion. The panel shall be removable to provide access to service wiring and other mounted components.

### COMPARTMENTATION

#### LEFT SIDE:

There shall be one (1) left front compartment installed ahead of the rear axle. This compartment shall have a single roll-up door. The interior compartment dimensions shall be approximately 38"W x 74"H x 28"D in the lower section and 15"D in the upper section. The compartment shall have a useable door opening of approximately 35"W x 61"H.

The apparatus body shall have a high side compartment on the left side, above the tandem axle. The compartment shall have two (2) door openings. Each door shall have a useable opening of approximately 51" wide x 12" high. The interior dimensions of the compartment shall be approximately 106" wide x 16" high x 15" deep.

One (1) horizontally hinged drop down door shall be installed for each opening.

There shall be one (1) left rear compartment installed behind the rear axle. This compartment shall have two (2) vertically hinged doors. The interior compartment dimensions shall be approximately 48"W x 48"H x 28"D in the lower section and 15"D in the upper section. The compartment shall have a useable door opening of approximately 48"W x 44"H.

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### RIGHT SIDE:

There shall be one (1) right front compartment installed ahead of the rear axle. This compartment shall have a single roll-up door. The interior compartment dimensions shall be approximately 38"W x 74"H x 28"D in the lower section and 15"D in the upper section. The compartment shall have a useable door opening of approximately 35"W x 61"H.

There shall be one (1) right rear compartment installed behind the rear axle. This compartment shall have two (2) vertically hinged doors. The interior dimensions shall be approximately 48"W x 28"H x 28"D. The compartment shall have a useable door opening of approximately 48"W x 28"H.

### HINGED DOOR CONSTRUCTION

Six-(6) hinged compartment doors shall be installed on this apparatus.

All side compartment doors shall be constructed entirely from 5052-H32 smooth aluminum plate using a box pan configuration. The outer panel shall be constructed from 3/16" (.1875") smooth aluminum plate and the inner pan stitch welded in place from 1/8" (.125") smooth aluminum plate.

The rear compartment doors shall be constructed of 3/16" (.1875") aluminum treadplate with the inner pan stitch welded in place from 1/8" (.125") 5052-H32 smooth aluminum plate.

There shall be a 1/4" (.250") hole provided in the lower corners of the inside door pans for drainage. The doors shall have a closed cell neoprene rubber gasket installed around the perimeter to remove water.

Exterior door latches shall incorporate a polished D-paddle handle with rotary style latch. For ease of operation, the D-handle opening shall be large enough to accommodate a gloved hand. The D-paddle latching design shall be subjected to corrosion, water infiltration, and cycle testing to 35,000 cycles. Double doors shall utilize concealed rotary latches on the secondary door, actuated by a recessed stainless steel paddle handle. The door design shall not impede into the compartment opening when in the open position. The watertight door seal shall exceed the current KKK-1822 water infiltration standards. The doors shall be securely fastened to the apparatus body with full-length stainless steel piano hinges using 1/4-20 stainless bolts and locking nuts. The hinges shall be slotted to allow for adjustments.

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

### ROLL-UP DOOR CONSTRUCTION

Two-(2) roll-up doors shall be installed on the side compartments of this apparatus.

Slats are to double-wall (box frame) aluminum extrusion. Exterior surfaces are to be flat. Interior surfaces are to



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be concave to prevent loose equipment from jamming doors. The slats must be anodized to eliminate oxidation. The slats are to have inner-locking end shoes on every slat secured by a Punch-Dimple process. The slats are to have interlocking joints with a folding locking flange. Between each slat shall be a PVC/vinyl inner seal to prevent any metal-to-metal contact.

The track shall be one-piece aluminum, which has an attaching flange and finishing flange incorporated into its design, which provides a finish look to installation without additional trim or caulking. The track is to have a replaceable side seal. The side seal shall prevent water and dust intrusion into the compartment.

There shall be an aluminum drip rail above each compartment door with a built in replaceable wiper seal.

Each roll up door shall have a counter balance to assist in lifting and eliminate the risk of accidental closing.

A full width lift bar, operable by one hand, shall be used as a positive latch device for securing each individual compartment door in the closed position.

The outside door shall have a natural finish.

There shall be an anodized aluminum sill plate installed over the compartment door.

### **PULL DOWN STRAP**

THERE SHALL BE TWO (2) COMPARTMENT DOOR PULL-DOWN STRAP(S) PROVIDED.

USE FOR L1/R1 ONLY

### **VERTICAL LOAD TEST- BODY**

The fire body shall exceed a vertical load testing. The vertical load test to the fire body shall follow the same strict and detailed requirements of the Economic Commission for Europe Structural Standard, ECE-29R as applied to the cab.

The fire body shall be placed under a vertical load test to show structural integrity. There shall be 65,979 lbs (29.53 metric tons) applied to the fire body. There shall be no structure failures to the body and body compartments.

A complete photographic, video, data, and dimensional record of these tests shall be available and placed on record for customer evaluations.

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### **WHEEL WELL AIR BOTTLE COMPARTMENT - SINGLE**

There shall be a single air bottle compartment located in the rear wheel well left front. The bottom of the tube is also to be supported to eliminate breakage. The tube is vented to facilitate moisture drainage. The compartment door shall be stainless steel with a positive mechanical latch.

### **WHEEL WELL AIR BOTTLE COMPARTMENT - DOUBLE**

There shall be one (1) double air bottle compartment located in the rear wheel well left center to house two-(2) spare SCBA cylinders. The bottom of the tubes shall be supported to eliminate breakage. The tubes are vented to facilitate moisture drainage. The compartment door shall be a stainless steel with a positive mechanical latch.

### **WHEEL WELL AIR BOTTLE COMPARTMENT - SINGLE**

There shall be a single air bottle compartment located in the rear wheel well left rear. The bottom of the tube is also to be supported to eliminate breakage. The tube is vented to facilitate moisture drainage. The compartment door shall be stainless steel with a positive mechanical latch.

### **WHEEL WELL AIR BOTTLE COMPARTMENT - SINGLE**

There shall be a single air bottle compartment located in the rear wheel well right front. The bottom of the tube is also to be supported to eliminate breakage. The tube is vented to facilitate moisture drainage. The compartment door shall be stainless steel with a positive mechanical latch.

### **WHEEL WELL AIR BOTTLE COMPARTMENT - DOUBLE**

There shall be one (1) double air bottle compartment located in the rear wheel well right side center to house two-(2) spare SCBA cylinders. The bottom of the tubes shall be supported to eliminate breakage. The tubes are vented to facilitate moisture drainage. The compartment door shall be a stainless steel with a positive mechanical latch.

### **WHEEL WELL AIR BOTTLE COMPARTMENT - SINGLE**

There shall be a single air bottle compartment located in the rear wheel well right rear. The bottom of the tube is also to be supported to eliminate breakage. The tube is vented to facilitate moisture drainage. The compartment door shall be stainless steel with a positive mechanical latch.

### **BODY TRIM**

The standard body trim shall include the following:

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- There shall be 1/8" (.125") aluminum treadplate installed over all side compartment tops to provide a drip rail over the compartment door openings.
- A drip rail shall be located over each compartment door. This drip rail shall form a lip over the exterior door pans to prevent water from running into a compartment.
- The vertical rear face of the body shall be covered with smooth aluminum plate.
- Two (2) handrails shall be located on the rear; one handrail per side. Each handrail shall be constructed of 1-1/4" ribbed aluminum tubing, with chrome end stanchions. Each handrail shall be sufficient in length to meet all standard requirements.
- Two (2) stanchions shall be mounted at the rear of the apparatus hosebed, one (1) each side. The stanchions shall be 11"L x 3.75"W and manufactured out of polished cast aluminum. Stainless steel scuff plates shall be installed in the hosebed area to prevent deploying hose from damaged on stanchion supports. The stanchions shall provide mounting positions for the Zone C warning lights and additional hosebed lighting. All wiring for the upper rear lighting shall be concealed inside the stanchions.

### **ALUMINUM RUBRAIL**

There shall be an aluminum rubrail installed on both sides of the lower body compartments. The rubrail shall be constructed from "C" channel extrusion. The aluminum rubrail shall be bolted in place with stainless steel bolts, and spaced from the fire body to provide body protection. The solid rubrail shall serve as protection to the side doors when encountering close objects. Treadplate rubrails or welded on shall not be acceptable.

### **ALUMINUM TREADPLATE REAR STEP**

The rear step shall be constructed of 3/16" (.1875") aluminum treadplate. The rear step shall be flanged down 2.50" and in 1.00" to maximize strength and rigidity. The rear step shall be bolted on for removal or replacement.

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

### **INTERMEDIATE REAR STEP**

The intermediate rear step shall be constructed of 3/16" (.1875") aluminum treadplate.

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

### **REAR TOW EYES**

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

### **INTERMEDIATE HANDRAIL**

There shall be an intermediate handrail supplied and installed on the apparatus. The handrail shall be made out of 1-1/4" ribbed aluminum. The handrail shall be mounted below the hose bed and above the center rear compartment. The handrail shall be mounted with chrome plated end stanchions.

### **HOSE BED COVER**

A hose bed cover constructed of 16 oz. heavy-duty crisscrossed reinforced nylon shall be provided. Cover shall be fire retardant vinyl and installed over hose bed. The cover shall have chrome twist-locks installed around the perimeter of the hose bed. The end of the hose bed cover shall be secured and cover the hose bed opening. The cover shall completely protect the hose in the hosebed and prevent hose from inadvertently deploying during normal operation.

The end flaps shall be secured using footman loops. The cover(s) shall completely protect the hose and prevent the hose from inadvertently deploying during normal operation.

The cover shall meet the TIA 03-1 NFPA requirement.

The end flaps shall be black in color.

### **HOSE BED DIVIDER**

Two (2) hose bed divider shall be manufactured from 1/4" (.250") smooth aluminum plate with an extruded aluminum base welded to the bottom. The dividers shall have an extruded track to slide in to allow the hose bed to adjust for different hose capacities. One end of the dividers shall have a 3" radius corner. The dividers shall be sanded to prevent damage to hose.

### **HOSE BED CAPACITY**

The hosebed shall have the capacity to hold the following:

Quantity	Size of Hose	Brand Name of Hose
900 feet	5 inch	Key or equal
400 feet	2.5 inch	Key or equal
200 feet	2.5 inch	Key of equal

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Customer must specify hose to have the correct hoseload to meet the current NFPA.

### **PERMANENT SHELF**

There shall be three (3) permanent shelf(ves) made from aluminum mounted in the specified location of the compartment. Each shelf shall have a 2" lip at the front and rear for added strength.

### **CHROME-FOLDING STEPS**

There shall be four (4) large chrome-folding steps with a minimum surface area of thirty-five (35) square inches. The step shall be mounted one-(1) on the front face of the forward compartment, or as directed by the customer.

### **REAR STEPS/ STEPS LIGHTED - (6)**

There shall be six (6) rear lighted steps installed on the apparatus. The steps shall be a cast products step and have a minimum of thirty-five (35) square inches of surface area to conform to the NFPA 1901 standards. The step(s) shall include a 12-volt incandescent light to illuminate the area below.

### **ELECTRICAL SYSTEM**

#### **BODY ELECTRICAL**

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

#### **DISTRIBUTION PANELS**

The electrical distribution panels and circuits must be housed in each rear corner compartment or extrusion. The distribution panel shall incorporate a power and ground stud for connection to the internal circuits.

All internal wire end terminals, including locking bulkhead connectors, shall be mechanically affixed to the wire ends by machine terminal crimping presses. No hand-crimped terminals shall be acceptable.

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

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Each side electrical distribution panel shall consist of fifteen - (15) power distribution relays. The power distribution relays shall be replaceable, SPDT automotive style or equivalent and made in the USA, rated at a minimum of 30 amperes.

The power distribution relays shall incorporate separate inputs, which are able to accept outputs from a load management system. The load management inputs must allow for the addition of a load management system before, during, or after the time of delivery without requiring a rewiring of the existing distribution panel circuits.

Connections to the distribution panel shall utilize Deutsch style bulkhead or equivalent and made in the USA connectors. Screw clamp type connections are not acceptable.

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

The complete body electrical system shall be 100% documented and contain independent circuit diagrams with point to point wiring information, as shall as a general component diagram included in the apparatus manual.

The body electrical panel shall be capable of being completely disconnected and fully tested by a computerized circuit analyzer.

All electrical equipment switches shall be mounted on a switch panel mounted in the cab convenient to the driver. Light switches shall be of the marine grade rocker type with integral indicator light to show when lights are energized. All switches shall be appropriately identified.

### **12-VOLT TESTING**

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

- RESERVE CAPACITY TEST
- The unit shall be run until all engines, engine compartment temperatures are stabilized, and the battery system is fully charged. The engine shall be shut off and the minimum continuous electrical load be activated for ten-(10) minutes. All electrical loads shall be shutoff after ten-(10) minutes and the battery system shall then be capable of restarting the engine.
- ALTERNATOR PERFORMANCE TEST AT IDLE
- Minimum continuous electrical loads shall be activated while the unit is at idle speed.

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- ALTERNATOR PERFORMANCE TEST AT FULL LOAD
- The total continuous electrical load shall be activated with the engine running up to the manufacturer's governed speed. The test duration shall be a minimum of two-(2) hours. Activation of the load management system shall be permitted during the test. If however, an alarm is sounded by excessive battery discharge as detected by the system or a system voltage of less than 11.8 volts DC for a 12-volt nominal system for more than 120 seconds, shall be considered a test failure.
- LOW VOLTAGE ALARM TEST
- The engine shall be shut off and the total continuous electrical load shall be activated and continue to be applied until the excessive battery discharge alarm activates. The test shall be considered a failure if the alarm has not sounded within 140 seconds after the voltage drops to 11.8 volts.

### **LOAD MANAGER**

The apparatus shall be equipped with a Load Manager System for performing electrical load management. The Load Manager shall have two-(2) modes of operation, a "Calling Right of Way" mode, and a "Blocking Right of Way" mode. The "Blocking Right of Way" mode is activated only when the park brake is set. Load shedding may occur "only" in the "Blocking Right of Way" mode and when the battery voltage level reaches your programmed shed level.

This system shall be designed to activate a fast idle system with low voltage alarm that activates at the NFPA required 11.8 volts.

### **EMI/RFI PROTECTION**

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

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

The apparatus shall utilize components that are fully protected and wiring that utilizes shielding and loop backgrounds where required to control EMI/RFI susceptibility. The apparatus shall be bonded through ground straps. Relays and solenoids that are suspect to generating spurious electromagnetic radiation are diode and/or resistor protected to prevent transient voltage spikes.

In order to prevent the radio frequency interference completely the purchaser shall be requested to provide a listing of the type, power output, and frequencies of all radio and bio medical equipment that is proposed to be

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used on the apparatus.

### **WHELEN PUMPER PACKAGE 4 OR EQUIVALENT AND MADE IN THE USA**

The fully compliant NFPA lighting package is a combination of Super LED and halogen rotating lights. This package meets all zone requirements of NFPA 1901 standards.

### **LIGHTBAR - WHELEN - MODEL SLN2VLED OR EQUIVALENT AND MADE IN THE USA**

A Whelen model SLN2VLED LED lightbar shall be mounted on the cab roof. The lightbar shall measure 54" in length and positioned as far forward as possible. The lightbar shall have four-(4) corner Red Linear 12's and four-(4) front Linear 8's (2 Red / 2 Blue).

The lightbar shall be controlled in the following manner:

Calling for Right of Way - All Positions

Blocking Right of Way - Clear shall not be Active

The lights shall be activated by a single emergency light switch located on the master light switch panel in the cab.

The lightbar shall meet NFPA 1901 edition as configured.

### **LIGHTS - WHELEN M6R/M6B LED - HEADLIGHT MT - ZONE A - FRONT LOWER OR EQUIVALENT AND MADE IN THE USA**

A pair of Whelen Model M6R/M6B LED lights with mounting kits shall be provided. The lights shall be mounted on the front face of the chassis one-(1) each side in the headlight cluster. The lens color shall be one red and one blue.

MOUNT M6R ON DRIVERS SIDE

MOUNT M6B ON OFFICERS SIDE

### **LIGHTS - WHELEN M9J LED - ZONE B & D - FRONT UPPER OR EQUIVALENT AND MADE IN THE USA**

A pair of Whelen model M9J LED lights shall provided, one-(1) each side of the upper pump house area. The lens color shall be clear with red and blue lights.

MOUNT ONE (1) EACH SIDE OF PUMP HOUSE AS HIGH AS POSSIBLE



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### **LIGHTS - WHELEN M6RC LED - ZONE B & D - LOWER OR EQUIVALENT AND MADE IN THE USA**

Two-(2) pair of Whelen Model M6RC LED lights with mounting flanges shall be provided. The midship optical warning devices shall be mounted on both the left and right lower sides of the apparatus with the optical center of the device at a distance of 18" to 62" above grade not to exceed 25' between optical warning devices. The lens color shall be clear with red lights.

MOUNT ONE (1) EACH SIDE OF FRONT BUMPER AND ONE (1) EACH SIDE OF BODY CENTERED IN WHEEL WELL PANELS

### **LIGHTS - WHELEN M6R/M6B - ZONE C - REAR LOWER OR EQUIVALENT AND MADE IN THE USA**

A pair of Whelen Model M6R/M6B LED lights shall be provided with chrome plated bezels. The lights shall be installed one-(1) each side on the rear face of the body directly above the taillight assembly. The lens color shall be one red and one blue.

MOUNT M6B ON DRIVERS SIDE

MOUNT M6R ON OFFICERS SIDE

### **LIGHTS - WHELEN LINZ6 SUPER LED - ZONE B & D - LOWER OR EQUIVALENT AND MADE IN THE USA**

There shall be two (2) pairs of Whelen LIN6 Super LED lights provided and located on both the left and right lower sides of the apparatus with the optical center of the device at a distance of 18" to 62" above grade not to exceed 25' between optical warning devices as recommended by NFPA. The color shall be red.

MOUNT ONE (1) EACH SIDE OF BODY IN RUB RAIL UNDER L1/R1 AND ONE (1) EACH SIDE OF BODY IN RUB RAIL UNDER L4/R2

### **BEACON - WHELEN RB6TRP HALOGEN - ZONE C - REAR UPPER OR EQUIVALENT AND MADE IN THE USA**

There {will/shall} be one (1) pair Whelen model RB6TRP rotating incandescent beam lights provided. The unit {will/shall} incorporate a dual parabolic reflector rotating halogen beacon and polycarbonate lens. The unit {will/shall} be driven by a heavy-duty motor assembly, double roller ball bearings. The motor assembly {will/shall} come with a three

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(3) warranty. The unit {will/shall} be capable of producing 150 flashes per minute. The dimensions of the unit {will/shall} be approximately 6.18" in diameter x 6.75" high. The beacons {will/shall} be mounted as specified by the department. The lens colors {will/shall} be red.

POSITION BEACONS FLUSH WITH TOP OF BODY

### **DIRECTIONAL LIGHT - WHELEN TAM85 TRAFFIC ADVISOR OR EQUIVALENT AND MADE IN THE USA**

There shall be one (1) Whelen model TAM85 directional indicator provided. The unit shall include eight (8) LED modules mounted in the extruded housing. There shall be dual parabolic reflectors with Lexan spreader lens to insure optimum wide angle warning signal projection from each light head assemble. Each LED module shall be individually replaceable. The lights shall be controlled from a control module located in the cab. The module shall be all solid state electronics and microprocessor controlled. The control unit shall have four (4) selectable operating modes: Left arrow, Right arrow, Center out, Flash (In/Out, 2-step alternate pattern). The control module shall have an on/off switch, fused power lead, four function rotary switches, and an LED display to "echo" the flash pattern of the lights. The lights shall have a one second repetition rate for faster recognition time.

### **CLEARANCE LIGHTS AND REFLECTORS**

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

### **AMBER MARKER LIGHTS**

Marker lights shall be mounted to meet the requirement of DOT regulations. Lights shall be wired into chassis running/parking light system.

### **LIGHTS - BRITAX END/CORNER LED OR EQUIVALENT AND MADE IN THE USA**

A pair of Britax model 427 (12V) LED rubber mounted angled clearance lights shall be mounted at the rear of the apparatus body. The lights shall be installed outboard, one-(1) each corner.

The lamps shall be wired to the chassis clearance and marker lights. The lens color shall be red/amber.

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### **WHELEN STOP, TURN (LED) AND BACK-UP (HALOGEN) LIGHTS OR EQUIVALENT AND MADE IN THE USA**

Stop, turn, and backup lights shall be Whelen 600 Series, individual fixtures. Fixtures shall be mounted on each rear face of the body recessed in model TH64, highly polished, aluminum trim ring. The red stop (LED) light shall be model 60R00BRR, turn light shall be a model 60A00TAR amber (LED) type with directional arrow, and the backup light shall be model 60J000CU clear halogen light type.

### **LICENSE PLATE LIGHT**

Chrome license plate light shall be installed on the rear of the vehicle.

### **UNDERBODY LIGHTS**

Four (4) underbody "Ground Effect" light(s) shall be installed at a location to be determined during the pre-construction conference. The underbody light(s) shall illuminate the ground beneath the fire apparatus. The light(s) shall have a clear lens.

### **LED RECESSED FLOODLIGHT**

One (1) Fire Research Evolution LED model FCA210-V12 or equivalent and made in the USA recessed light shall be installed. The housing shall incorporate internal heat-dissipating fins and have cutout dimensions not to exceed 2" deep by 4 1/2" high by 12 1/2" wide. The lamphead shall protrude no more than 1 1/2" from the housing flange. Wiring shall extend from the bottom of the housing.

The lamphead shall have six (6) ultra-bright white LEDs. It shall operate at 12/24 volts DC, draw 11/5.5 amps, and generate 12,000 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 and housing shall be powder coated white. The floodlight shall be for fire service use.

Mount centered on rear of body just under arrow stick

Switch light from inside of cab and also when chassis is placed in reverse.

### **DOOR AJAR SYSTEM**

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

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### **COMPARTMENT LIGHTING**

Four (4) OnScene Solutions "Access Series" 8" LED Night-Stik(s) or equivalent and made in the USA shall be provided with 15 HB, surface mount LED's per 10" light section and produce a minimum of 200 lumens per 10" length. Each "Access Series" Night Stik shall be capable of operating at a voltage of 9VDC to 14VDC. Each "Access Series" Night Stik shall be cuttable in 2" increments and feature a high quality, impact resistant Lexan™ enclosure.

The light stick shall be waterproof and rated at 100,000 hours of service. Each light stick shall be provided with a 5 year free replacement warranty.

### **COMPARTMENT LIGHTING**

Two (2) OnScene Solutions "Access Series" 18" LED Nightstik(s) or equivalent and made in the USA shall be provided with 15 HB, surface mount LED's per 10" light section and produce a minimum of 200 lumens per 10" length. Each "Access Series" Night Stik shall be capable of operating at a voltage of 9VDC to 14VDC. Each "Access Series" Night Stik or equivalent and made in the USA shall be cuttable in 2" increments and feature a high quality, impact resistant Lexan™ enclosure.

The light stick shall be waterproof and rated at 100,000 hours of service. Each light stick shall be provided with a 5 year free replacement warranty.

### **COMPARTMENT LIGHTING**

Two (2) OnScene Solutions "Access Series" 36" LED Nightstik(s) or equivalent and made in the USA shall be provided with 15 HB, surface mount LED's per 10" light section and produce a minimum of 200 lumens per 10" length. Each "Access Series" Night Stik or equivalent and made in the USA shall be capable of operating at a voltage of 9VDC to 14VDC. Each "Access Series" Night Stik or equivalent and made in the USA shall be cuttable in 2" increments and feature a high quality, impact resistant Lexan™ enclosure.

The light stick shall be waterproof and rated at 100,000 hours of service. Each light stick shall be provided with a 5 year free replacement warranty.

### **COMPARTMENT LIGHTING**

Four (4) OnScene Solutions "Access Series" 46" LED Nightstik(s) or equivalent and made in the USA shall be provided with 15 HB, surface mount LED's per 10" light section and produce a minimum of 200 lumens per 10" length. Each "Access Series" Night Stik or equivalent and made in the USA shall be capable of operating at a voltage of 9VDC to 14VDC. Each "Access Series" Night Stik or equivalent and made in the USA shall be cuttable in 2" increments and feature a high quality, impact resistant Lexan™ enclosure.

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## ***COMMERCIAL PUMPER / TANKER SPECIFICATIONS***

The light stick shall be waterproof and rated at 100,000 hours of service. Each light stick shall be provided with a 5 year free replacement warranty.

### **BACK-UP ALARM**

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

### **LED TELESCOPIC FLOODLIGHT**

Two (2) Fire Research Evolution LED model FCA530-V15 or equivalent and made in the USA side mount push up telescopic lights shall be installed. The light pole shall be anodized aluminum and have a knurled twist lock mechanism to secure the extension pole in position. The extension pole shall rotate 360 degrees. The outer pole shall be a grooved aluminum extrusion and qualify as an NFPA compliant handrail. 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.

### **HAZARD LIGHT SWITCH**

A Fire Research FC-SW510 or equivalent and made in the USA raised pole hazard light switch shall be installed. The magnetic switch shall be housed within the light pole mounting flange. A magnet shall be mounted in the extension pole. The switch contacts shall close when the pole is raised.

### **LED ROOF MOUNT FLOODLIGHT**

One (1) Fire Research Evolution LED model FCA812-V15-02 or equivalent and made in the USA contour roof mount light shall be installed. The mounting brackets shall attach to the bottom of the lamphead and be machined to conform to the roof radius. Wiring shall extend from a weatherproof strain relief at the rear of the lamphead.

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 shall incorporate heat-dissipating fins and be no more than 4" high by 11 1/2" wide. The lamphead and mounting arm shall be powder coated white. The floodlight shall be for fire service use.

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## ***COMMERCIAL PUMPER / TANKER SPECIFICATIONS***

### **BODY PAINT FINISH**

The body exterior shall have no mounted components prior to painting to assure full coverage of metal treatments. Box pan compartment doors shall be painted separately to assure proper paint coverage on body, doorjamb, and door edges.

All painted surfaces shall follow the following procedure to insure a lasting finish:

- Metal surfaces shall be sanded to remove all burrs and imperfections, before etching and treatment.
- A wax & grease solvent shall be used to clean and prep the aluminum surface. The surface shall then be rinsed with fresh water. This step removes wax, grease and other surface contaminants, thus leaving a bright, clean, and conditioned surface.
- A self-etching, metal primer shall be applied next. The self-etching primer shall fill all of the minor imperfections, scratches, etc. in the metal. This step produces a corrosion resisting conversion coating that prevents off oxidation and other surface contaminants leaving a surface that gives excellent paint adhesion.
- A sandable primer shall be sprayed on the metal that seals the surface for the polyurethane paint. A minimum coating thickness of 2 MIL shall be applied. Primer is then sanded smooth leaving the best surface for topcoat.
- The apparatus body shall then be painted with a minimum of three-(3) coats of color.
- The engine compartment under hood shall be painted to match color of cab so that no other color or primer is visible.

These steps are followed as recommended by the paint manufacturer to provide a lasting and high quality gloss finish. Dupont shall provide all paint products.

### **PAINT COLOR CODE**

The apparatus body paint code shall be Red, B8241 UM Alt 3.

### **SCOTCHLITE STRIPE OR EQUIVALENT AND MADE IN THE USA**

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

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NFPA requirements.

Striping shall be white in color.

### **MYLAR/GOLD LEAF CORNER SCROLLS**

The body compartment doors shall have a 23 Carat Gold leaf corner scroll applied to the outside door corners of the apparatus body. The gold leaf shall have a Mylar overlay to protect the gold.

### **STRIPE - REAR REFLECTIVE**

A minimum of fifty percent of the rear vertical surface of the unit shall be overlaid with a reflective material, installed in an alternating "Chevron" pattern (sloping down and away from the centerline) at a 45-degree angle. Each stripe shall be 6" wide, colors of stripping shall be in compliance, with the current edition of NFPA 1901.

### **LETTERING**

There shall be a maximum of sixty (70) 3" tall Scotchlite letters applied to the apparatus. The lettering shall also have a one color Scotchlite shade applied.

### **6" LOW LEVEL STRAINER - KOCHEK - LL60**

There shall be a Kochek model LL60 or equivalent and made in the USA, 6" low level strainer provided with the apparatus.

### **6" STRAINER BRACKET - KOCHEK**

There shall be a Kochek model MM60C or equivalent and made in the USA bracket provided for the purpose of mounting one 6" strainer to the apparatus. There shall also be one (1) 6" Kochek model BS60C provided.

### **FLAT HEAD AXE**

A GFE model C60F or equivalent and made in the USA, 6lb steel head axe with fiberglass handle shall be provided with the apparatus.

### **PICK HEAD AXE**

A GFE model C60P or equivalent and made in the USA, 6lb steel pick head axe with a fiberglass handle shall be provided with the apparatus.

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## **AXE BRACKET**

There shall be a set of axe brackets installed on the apparatus. The brackets are South Park ZAH5101C and ZSMA5201C or equivalent and made in the USA.

Location to be determined during pre-construction meeting.

## **AXE BRACKET**

There shall be a set of axe brackets installed on the apparatus. The brackets are South Park ZAH5101C and ZSMA5201C or equivalent and made in the USA.

Location to be determined during pre-construction meeting.

## **COVER PICK HEAD AXE**

There shall be a rubber pick head axe cover provided.

## **6' PIKE POLE - NUPLA**

There shall be one (1) Nupla model YPD-6 or equivalent and made in the USA, 6' fiberglass pike pole(s) provided with the apparatus. It shall consist of a 6' hollow fiberglass pole, 1-3/4" OD and a painted steel pike attached to the pole.

## **10' PIKE POLE - NUPLA**

There shall be one (1) Nupla model YPD-10 or equivalent and made in the USA, 10' fiberglass pike pole(s) provided with the apparatus. It shall consist of a 10' hollow fiberglass pole, 1-3/4" OD and a painted steel pike attached to the pole.

## **PIKE POLE TUBE STYLE - (PR.)**

A pair of aluminum tube shall be installed for storing a pike poles. One end shall be notched to allow the pole to be locked in place.

## **SL45 STREAMLIGHT OR EQUIVALENT AND MADE IN THE USA**

There shall be two (2) Streamlight model 45107, SL-45 handle flashlight(s) with 12 volt charging base installed on the apparatus, hardwired to the chassis 12V system. The Streamlight shall be constructed of ABS plastic with adjustable Halogen spotlight head.

Specify color of light.



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### **SPANNER/HYDRANT SET**

There shall be three (3) Kocheck HSS Model K48-3 or equivalent and made in the USA, spanner/hydrant wrench set with mounting bracket mounted on the apparatus. Each set shall have two (2) spanner wrenches and one (1) hydrant wrench.

### **ZIAMATIC AIR PACK BRACKET**

Four (4) Ziamatic Model #ULLH or equivalent and made in the USA air pack bracket(s) with strap (part # 1054-012-000) or equivalent and made in the USA shall be provided with the apparatus. The bracket shall meet NFPA 1901.

Customer to specify location of the bracket.

### **PORTABLE TANK 2500 GALLONS**

A 2500 gallon C & R 22 oz or equivalent and made in the USA Hypalon portable water tank or equal shall be provided. The folding tank shall have an open dimension of 12' long x 7" high x 30" deep. The frame shall be constructed of aluminum tube.

### **ZICO "QUIC LIFT" PORTABLE TANK SYSTEM OR EQUIVALENT AND MADE IN THE USA**

One (1) Zico "Quick Lift" model PTS or equivalent and made in the USA portable tank lowering device shall be provided on the apparatus. The Quic Lift shall be comprised of two (2) high strength aluminum castings with 12 volt linear actuators for raising and lowering the portable tank.

The "Quic Lift" system is designed to mount in an upright position above the apparatus body's low side compartments and shall be braced to the hosebed sides. When the portable tank is stored, it shall be up and against the hosebed body side, and when in a lowered position the portable tank shall have swung down approximately 29" below the bottom mounts of the Quic Lift system.

The portable tank shall be mounted in the rack so that it is equally spaced and balanced. The control shall be a momentary switch, properly labeled, and located on the side pump panel. There shall be a detent pin provided to remove and allow the portable tank to be manually lowered in the event of an electrical failure or breakdown.

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### **WHEEL CHOCKS W/ BRACKETS**

There shall be a pair of Ziamatic model SAC-44-E or equivalent and made in the USA wheel chocks with holder Model SQCH-44-H horizontal chock holder mounted on the apparatus body as directed by the fire department.

### **10' FOLDING LADDER**

There shall be one (1) Alco-Lite Model FL-10 or equivalent and made in the USA, 10' folding ladder consisting of 1-section aluminum, ladder with rubber feet supplied with the vehicle. Ladder shall meet or exceed the latest NFPA standards.

### **14' ROOF LADDER**

There shall be one (1) Alco-Lite model PRL-14 or equivalent and made in the USA, 14' roof ladder of single section aluminum, with folding steel roof hooks on one end and steel spikes on the other end supplied with the vehicle. The ladder shall meet or exceed the latest NFPA standards.

### **24' EXTENSION LADDER**

There shall be one (1) Alco-Lite model PEL-24 or equivalent and made in the USA, 24' two-section, aluminum, extension ladder with steel spikes supplied with the vehicle. The ladder shall meet or exceed the latest NFPA standards.

### **LADDER BRACKETS**

Ladder brackets with a spring operated holding device, mounted vertically on the side of the body shall be provided. Brackets are designed to hold one (1) 24' extension ladder and one (1) 14' roof ladder. Each bracket shall be mounted on a polished aluminum extrusion. The extrusion shall be slotted to allow infinite adjustment of the ladder brackets.

### **ATTIC LADDER BRACKET**

There shall be one (1) Zico Model #FLB-S or equivalent and made in the USA attic ladder holder and an aluminum stirrup mounted as directed by the Fire Department. The bracket shall be designed to hold one (1) Alco-Lite folding attic ladder.

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### **HARD SUCTION FLEXIBLE HOSE**

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

### **HARD SUCTION RACKS**

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

### **ONE-YEAR PARTS & LABOR WARRANTY**

There shall be a one-(1) year mechanical parts and labor warranty provided with the apparatus. The apparatus shall be free of defects in material and workmanship for a warranty period of one-(1) year after the date on which the apparatus is first delivered to the original purchaser.

### **TEN-YEAR BODY WARRANTY**

There shall be a ten-(10) year body warranty on each new fire body/heavy-duty rescue apparatus. The bodies are to be free of structural failures caused by defective design or workmanship for a warranty period of ten-(10) years after the date on which the vehicle is first delivered to the original purchaser or 100,000 miles, whichever occurs first.

### **FOUR-YEAR PAINT/CORROSION WARRANTY**

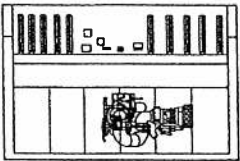
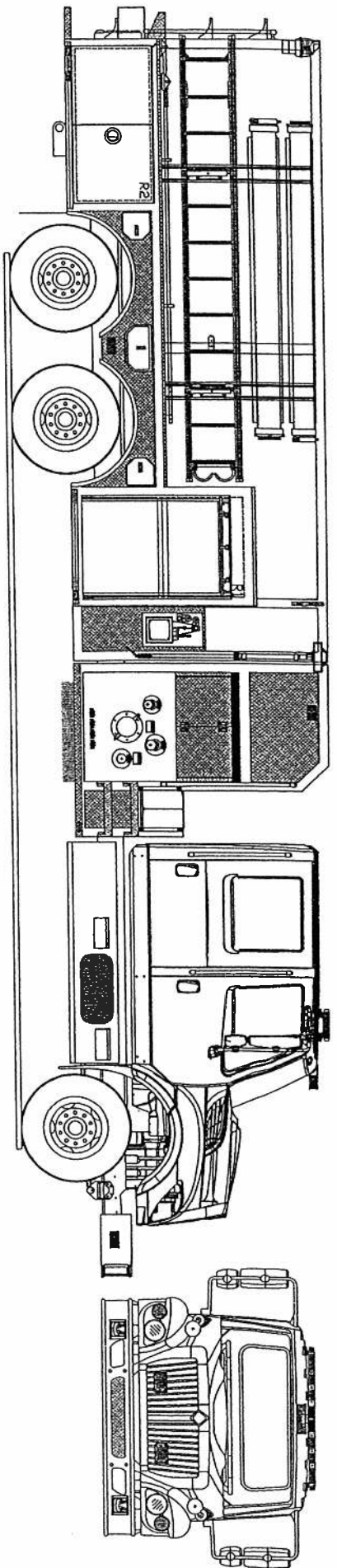
There shall be a four-(4) year paint/corrosion warranty provided. This warranty shall cover perforation, blistering, peeling, or any other adhesion defects caused by defective manufacturing methods, or material selections, for a warranty period of four-(4) years or 100,000 miles which occurs first, after the date of which the vehicle is first delivered to the original purchaser.

### **TRANSPORTATION**

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

### **INSTRUCTION**

There shall be One (1) day(s) of instruction provided by a factory authorized representative. This representative shall



**QUINTON FIRE DEPT.**  
**1500 GPM PUMP**  
**2500 GALLON WATER TANK**  
**30 GALLON FOAM TANK**

DRAWING IS A VISUAL REPRESENTATION OF SPECIFIC APPEARANCE. THE OPERATOR'S SHALL PROVIDE DRAWING IS FOR REFERENCE ONLY. FOR THE MOST ACCURATE INFORMATION, REFER TO THE SPECIFICATIONS.

