Bamberg County
Fire Service

Commercial Pumper

Bamberg County Fire Service

Bidder Complies	
Yes	No

GENERAL INFORMATION

It is the intent of these specifications to secure apparatus constructed to withstand the severe and continuous use encountered during emergency fire fighting services. The apparatus must be of the latest type, carefully designed and constructed with due consideration to the nature and distribution of the load to be sustained.

These specifications detail the requirements for general design criteria of cab and chassis components, aerial device, fire pump and related components, water tank, fire body, electrical components, painting, and equipment. In evaluating the bid proposals to determine which proposal is the most advantageous, these major items shall be considered.

Apparatus and equipment must meet the specific requirements and intent of the requirements as specified herein. All items of these specifications shall conform to the character of the proposed apparatus and the purpose for which it is intended. Criteria as specified by the National Fire Protection Association Pamphlet No. 1901, latest edition, entitled "Suggested Specifications for Motor Fire Apparatus", as approved by the American Insurance Association and International Association of Fire Chiefs, are hereby adopted and made a part of these specifications the same as if they were written out in full, insofar as they apply and are not specifically modified in the following detailed specifications. Each bidder shall provide only that equipment as required in the following specifications.

The fire apparatus and equipment to be furnished in meeting these specifications must be the products of an established, reputable fire apparatus and/or equipment manufacturer. Each bidder shall furnish satisfactory evidence of the manufacturer's ability to construct, supply service parts and technical assistance for the apparatus specified. Each bidder must state the location of the factory and location for post delivery service.

BID COMPLIANCE INSTRUCTIONS

Each bidder must indicate his compliance with these specifications by marking "YES" or "NO" in the appropriate column for each individual paragraph of this specification. Indicating "YES" to a paragraph shall mean full compliance; indicating "NO" shall mean an exception is being taken. Any deviation from the specification, no matter how small, must be so annotated. All exceptions must be fully explained on a separate page, titled "Exceptions", giving reference to the page and paragraph where the exception is being taken. Failure to comply with this requirement shall result in the bid proposal being rejected.

The Bamberg County Fire Service shall be the sole arbiter as to what exceptions may be allowed or disallowed. In the event a bidder fails to make any indication of compliance for any or all provisions it will be assumed that the bidder is taking total exception to the specification and the bid shall be disallowed.

Bidder Complies	
Yes	No

FIRE APPARATUS COMPLETION DOCUMENTATION

The contractor shall supply, at the time of delivery, at least one (1) copy of the following documents:

The apparatus manufacturer's record of apparatus construction (build) details, including the information listed below:

- Apparatus Owner's name and address
- Apparatus manufacturer, model and serial number
- Apparatus Chassis make, model and serial number
- Front tire size, and total rated capacity (in pounds)
- Rear tire size, and total rated capacity (in pounds)
- Apparatus Chassis weight distribution in pounds, with water and equipment mounted, front and rear
- Apparatus Engine make, model, serial number, rated horse power, rated speed and governed speed.
- Type of fuel(s) used by apparatus and fuel tank(s) capacity
- Apparatus electrical system - Voltage and Alternator output (in amps)
- Battery make, model and total capacity (in cold crank amps)
- Transmission make, model and serial number: If equipped, chassis transmission PTO(s) make, model and gear ratio
- Pump make, model, rated capacity in gallons per minute (GPM) and serial number
- Apparatus water tank certified capacity in gallons
- Paint manufacturer and paint number(s)

The apparatus manufacturer will include certification of "slip resistance" for all stepping, standing and walking surfaces.

If the apparatus has a fire pump, the following additional documents will be provided:

- The pump manufacturer's certification of suction capability
- Copy of the apparatus manufacturer's approval for stationary pumping applications
- Engine manufacturer's certified brake horsepower curve for the engine provided, showing the maximum governed speed.
- Pump manufacturer's certification of hydrostatic test (if it applies)
- The independent third party certification of inspection and test for the apparatus fire pump

If the apparatus has a "fixed line" voltage power source, there will be documentation of the fixed power source test certification.

If the apparatus features an air system, there will be test results of the air quality, SCBA fill station and the installation of the air system.

The apparatus manufacturer will provide documentation from a certified weight scale. This documentation will show actual loading on the front axle, rear axle(s) and overall vehicle weight. This weight will include the weight of the "full" apparatus water tank. This documentation will be provided with the completed apparatus build to determine compliance with NFPA 1901 latest addition.

Electrical performance testing documentation and a written load analysis report will be provided with the completed apparatus.

If the apparatus features a water tank, the water tank capacity certification will be supplied by the tank manufacturer.

APPARATUS FMVSS CERTIFICATION

The chassis shall be certified by the apparatus manufacturer as conforming to all applicable Federal Motor Vehicle Safety Standards in effect at the date of contract. This shall be attested to by the attachment of a FMVSS certification label on the vehicle by the contractor who shall be recognized as the responsible final manufacturer.

APPARATUS RECORDS RETENTION

The successful bidder shall be responsible for preparing and maintaining a record file of parts and assemblies used to manufacture the apparatus. These records shall be maintained in the factory of the bidder for a minimum of twenty (20) years. File shall contain copies of any and all reported deficiencies, all replacement parts required to maintain the apparatus, and original purchase documents including specifications, contract, invoices, incomplete chassis certificates, quality control reports and final delivery acceptance documents. The Bamberg County Fire Service shall have access to any and all documents contained in this file upon official written request.

BIDDER INSTRUCTIONS

Bids shall be addressed and submitted in accordance with the advertised "Bid Notice". The words "Fire Apparatus Bid", the date, and the bid opening time must be stated on the face of the bid envelope. It is the bidder's responsibility to see that their proposals arrive on time. Late proposals, telegram, facsimile or telephones bids shall not be considered.

Each bid shall be accompanied by a detailed description of the apparatus and equipment it proposes to furnish. It is the intent of these specifications to cover the furnishing and delivery of a complete and soundly engineered apparatus equipped as specified. Minor details of construction and materials, where not otherwise specified, are left to the discretion of the contractor, who shall be solely responsible for the design and construction of all features.

Brand names or model numbers have been specified for some items. These have been carefully selected because of their reliability and availability for replacement locally. In order to be most responsive, items named, or an item "equal to" the particular item specified by brand name or model, should be contained in the bid proposal. It is the bidder's responsibility to prove to the Bamberg County Fire Service that an item bid as "equal to" a particular specified item, is truly of equal quality, design, and function. The Bamberg County Fire Service maintains the right to make a final decision as to the acceptability of an item bid as "equal to" a particular specified item.

No exception shall be allowed for any of the aforementioned instructions. Bids not submitted in accordance with these instructions shall be rejected.

TIMELY PROPOSALS

It is the bidder's responsibility to see that their proposals arrive on time. Late proposals, facsimiles, telegrams, or telephone bids shall not be considered.

GENERAL CONSTRUCTION

The complete apparatus, assemblies, subassemblies, component parts, etc., shall be designed and constructed with the due consideration to the nature and distribution of the load to be sustained and to the general character of the service to which the apparatus is to be subject. All parts of the apparatus shall be designed with a factor of safety, which is equal to or greater than that which is considered standard and acceptable for this class of equipment in fire fighting service. All parts of the apparatus shall be strong enough to withstand general service under full load. The apparatus shall be so designed that the various parts and readily accessible for lubrication, inspection, adjustment and repair. Bidder's specifications must meet minimum requirements of N.F.P.A. Pamphlet #1901; Underwriters Laboratories, Inc.; and all State and Federal Department of Transportation vehicle regulations at time of sale of unit.

The apparatus shall be designed and constructed, and the equipment so mounted, with due consideration to distribution of the load between front and rear axles that all specified equipment, including a full complement of specified ground ladders, full water tank, loose equipment, and firefighters shall be carried without overloading or injuring the apparatus.

CERTIFICATE OF LIABILITY INSURANCE

The Manufacturer must maintain the following insurance limits:

- Total Garage Keepers Insurance: $2,500,000.00
- Total Umbrella Liability per Occurrence Insurance: $4,000,000.00
- Total Automobile Liability Insurance: $5,000,000.00
- Total General Liability Insurance: $6,000,000
- Workers Compensation and Employers Liability Insurance: $6,000,000.00

Documents are required to be submitted with the bid proposals.

Garage insurance is not acceptable.

ADDENDA AND INTERPRETATIONS

No interpretation of the meaning of the specifications or other contract documents shall be made to any Bidder verbally. Every request for such interpretation shall be in writing and addressed to the Purchaser, and must be received at least ten days prior to the date fixed for the opening of the bids to be given consideration. Any and all such interpretations and any supplemental instructions shall be in the form of written addenda to the specifications which, if issued, shall be mailed by certified mail to all prospective Bidders not later than five days prior to the date fixed for the opening of bids. Failure of any Bidder to receive any such addendum or interpretation shall not relieve any Bidder from any obligation under his bid as submitted. All addenda so issued become a part of the contract documents.

PAINT PERFORMANCE CERTIFICATION

The finish paint shall be certified by the apparatus manufacturer as conforming to all applicable Commercial Vehicle Paint Standards in effect at the date of contract.

SERVICE CENTER AND CAPABILITIES

The bid requires the successful bidder to have both mobile service capability and an authorized fixed service facility within Seventy Five (75) miles of Bamberg County Fire Service, 1234 North Street, Bamberg, SC 29033. This service facility shall be available within 24 hours of request at either the fixed location or with mobile service. The successful bidder shall have a 24 hour call line in order to request emergency service.

Once a service request is made, a scheduled service call shall be arranged with a factory authorized representative of the manufacturer of the OEM. Any service technician representing either the manufacturer or the successful bidder shall be certified as an Emergency Vehicle Technician (EVT).

SERVICE CENTER INFORMATION

The center must provide a full time staff of experienced technicians with all of the required equipment to provide modern, accurate and efficient service. Bidders shall state the size of their shop and officer area in square feet. They shall state the location of the facility and provide photos of both the exterior and interior of the center. Accuracy of the description of the service center is of great importance.

PRICES AND PAYMENTS

The bid price shall be F.O.B. Destination, on a delivered and accepted basis at the Fire Department.

Total price on bidder's proposal sheet must include all items listed in these specifications. Listing any items contained in the specification as an extra cost item, unless specifically requested to do so in these specifications, shall automatically be cause for rejection.

Bidder shall compute pricing less federal and state taxes. It is understood that any applicable taxes shall be added to the proposed prices, unless the purchaser furnishes appropriate tax-exempt forms.

BID EVALUATION

Purchaser, Fire Chief and Purchasing Agent shall evaluate bids received. This evaluation shall be based as a minimum on the following criteria:

- Commitment for expedient delivery.
- Commitment to the general conditions contained herein, including warranty.
- Completeness of the proposal, i.e. the degree that it responds to all requirements and requests for information contained herein.
- Manufacturing and delivery schedule.
- Contractor's demonstrated capabilities and qualifications.
- Equipment suppliers and/or local representative's demonstrated capabilities and qualifications.

EXCEPTIONS TO SPECIFICATIONS

Exceptions shall be referenced to the paragraph and page of these specifications where the item appears.

Drawings, photographs, and technical information about the exception shall be included as necessary. Any exceptions may be considered during the evaluation process, and the decision shall be final.

Proposals taking total exceptions to specifications shall not be accepted.

Bidder Complies	
Yes	No

"OR APPROVED EQUAL" CLAUSE

The mention in the specifications of apparatus, equipment or material by brand name or by such specified description of same as is hereby made, is intended to convey to the bidder's understanding, the degree of excellence required. Any article, equipment, or material ,which shall conform to the standards and excellence so established, and is of equal merit, strength, durability and appearance to perform the desired function, is deemed eligible for offer as a substitute. The qualifications of the offering shall be judged as to their conformance with these specifications. Any equipment offered other than herein specified shall be subject to a competitive demonstration and evaluation shall be subject to a competitive demonstration and evaluation by the using department. Such demonstration to be provided on request within ten working days after the receipt of bids.

The result of that demonstration and evaluation shall be of prime importance in the recommendation to the governing body for the final contract award.

TECHNICAL INFORMATION

Bidder shall furnish free of charge, upon request, technical information, graphs, charts, photographs, engineering diagrams, steering geometry, drive train certifications, instruction guides, or other documentation as requested to show that the equipment offered fully complies with these specifications.

PROPRIETARY PARTS

It is the intention of the Purchaser for all bidder's to furnish the apparatus with major parts commonly used by the heavy-duty truck manufacturers and open market vendors where as replacement parts are more readily available and at reduced cost. The use of proprietary parts such as but not limited to axles, suspensions, engines, transmissions, frontal air bags, electronic controls, multiplexing systems, seats, pumps, gauges, foam systems, etc., may not be acceptable by the purchaser. **NO EXCEPTIONS.**

APPARATUS DELIVERY TIME

Each bidder shall state the completed apparatus delivery time based on the number of wokring days, starting from the date the sales contract is signed and accepted by the apparatus manufacturer.

Delivery Time: _____ working days

FAIR, ETHICAL AND LEGAL COMPETITION

In order to provide fair, ethical and legal competition, the original equipment manufacturer (OEM) or the parent company of the OEM will not have ever been fined or convicted of the following in any domestic or international fire apparatus market:

- **Price Fixing**
- **Bid Rigging**
- **Collusion**

NON-COLLUSIVE BIDDING CERTIFICATION

By submission of this bid, each bidder and each person signing on behalf of any bidder, certifies, and in the case of a joint bid, each party thereof certifies as to its own organization, under penalty of perjury, that to the best of their knowledge and belief:

- The prices in this bid have been arrived at independently without collusion, consultation, communication, or agreement, for purpose of restricting competition, as to any matter relating to sale price with any other bidder or any competitor.
- Unless otherwise required by law, the prices that have been quoted in this bid have not been knowingly disclosed by the bidder and shall not knowingly be disclosed by the bidder prior to opening, directly or indirectly, to any other bidder or to any competitor.
- No attempt has been made by the bidder to induce any other person, partnership, or corporation to submit or not to submit a bid for the purpose of restricting competition.
- That all requirements of the law including amendatory provisions as to non-collusive bidding have been complied with.

USER'S LIST

Each bidder shall include a current "User's List" with a minimum of fifteen (15) units that are within 150 miles of the purchaser. This list shall include customer name, person to contact, address and telephone number. Failure to include this list shall result in rejection of the bid. **NO EXCEPTIONS.**

MATERIAL AND WORKMANSHIP

All equipment furnished shall be guaranteed to be new and of current manufacture, to meet all requirements of these specifications.

All workmanship shall be of high quality and accomplished in a professional manner so as to insure a functional apparatus with a pleasing, aesthetic appearance.

CONTRACT AWARD

The Purchaser reserves the right to reject any or all bids deemed to be unresponsive. The Purchaser also reserves the right to waive any informalities, irregularities and technicalities in procedure.

The Purchaser reserves the right, before awarding the contract, to require a bidder to submit evidence of his qualifications as may be deemed necessary. Documentation, which may be required, is financial soundness, technical competency, and other pertinent qualifications of a bidder, including past performance (experience) with the Purchaser.

Upon award of contract, the sales contract shall be between the Purchaser and the manufacturer of the apparatus. Contracts between the Purchaser and a sales representative, dealer, distributor, or agent of the apparatus manufacturer shall not be acceptable. (No Exceptions.)

SALES ENGINEER

The successful bidder shall designate a representative to perform the manufacturer's sales engineer functions. The sales engineer shall provide a single point interface between the purchaser and the manufacturer on all matters concerning the apparatus contract.

APPROVAL DRAWING

A detailed apparatus drawing shall be provided for approval before the construction process begins. A copy of this drawing shall also be provided to the manufacturer's representative. Upon approval, the finalized apparatus drawing shall become a part of the total contract. The drawing shall show, but is not limited to, such items as the apparatus chassis make and model, major components, location of lighting, sirens, all compartment locations and dimensions, special suctions, discharges, etc. The apparatus drawing shall be a visual interpretation of the apparatus as it is to be supplied.

Three dimensional CAD drawings of subframe and manufactured componentry are available.

INSPECTION VISITS

The successful bidder shall provide three (3) factory inspection trip to the apparatus manufacturer's facility. Transportation, meals, lodging, and other requisite expenses shall be the bidder's responsibility.

Accommodations will be for four (4) Fire Department representatives per trip.

The factory visits will occur at the following stages of production of the apparatus:

- Pre-construction
- Midpoint Completion of Entire Apparatus
- Final Inspection Upon Completion

Travel arrangements less than 300 miles from the manufacturing facility shall be via ground transportation.

The Bamberg County Fire Service maintains the right to inspect the apparatus, within normal business hours, at any other point during construction. Expenses incurred during non-specified inspection visits shall be the responsibility of the Bamberg County Fire Service.

During inspection visits, the Bamberg County Fire Service reserves the right to conduct actual performance tests to evaluate completed portions of the unit. Testing shall be accomplished with the assistance and resources of the contractor.

APPARATUS DELIVERY

Delivery of the apparatus to the Bamberg County Fire Service shall remain the bidder's responsibility.

On initial delivery of the fire apparatus, a qualified and responsible representative of the contractor shall demonstrate the apparatus and provide initial instruction to representatives of the customer regarding the operation, care, and maintenance of the apparatus and equipment supplied.

INSTRUCTION MANUALS / DRAWINGS

The contractor shall supply at time of delivery, two (2) copies of operation and service manual(s) for the completed apparatus as delivered and accepted by the customer.

These manuals will contain the items below:

- Specifications, descriptions and ratings of chassis, and pump (if provided).
- Lubrication (fluids) charts
- Operational instructions for the apparatus chassis and any major components such as a pump or auxiliary system.
- Instructions regarding the frequency and maintenance procedures recommended for the apparatus.
- Replacement parts information.

VEHICLE FLUIDS PLATE

As required by NFPA-1901, the contractor will affix a permanent plate in the driver's compartment specifying the quantity and type of the following fluids used in the vehicle:

A permanent plate in the driving compartment will specify the quantity and type of the following fluids used in the vehicle:

- Engine oil
- Engine coolant
- Chassis transmission fluid
- Pump transmission lubrication fluid
- Pump primer fluid
- Drive axle(s) lubrication fluid
- Air-conditioning refrigerant
- Air-conditioning lubrication oil
- Power steering fluid
- Transfer case fluid
- Equipment rack fluid
- Air compressor system lubricant
- Generator system lubricant

PRE-DELIVERY SERVICE

After transportation from the factory and immediately prior to delivery to the fire department, the apparatus shall receive a pre-delivery service consisting of: engine oil & filter change, chassis lubrication, fuel filter(s) changed, adjustment of engine to manufacturers specifications, complete inspection including all electrical and mechanical devices, for proper operation and correction of leaks or obvious problems.

REQUIRED PROPOSAL BLUEPRINT

A scale drawing of the specific apparatus being proposed shall be submitted with the bid. Drawings of similar units or demo units shall not be permitted. Bidders should be clear that this provision is requiring a scale drawing of the truck which is actually being bid. The drawing shall be done at the manufacturer's facility by the manufacturer's engineering department in order to guarantee the accuracy of the drawing. Failure to comply with this requirement shall be grounds for rejection of the bid!

FAMA COMPLIANCE

The apparatus manufacturer must be a current member of the Fire Apparatus Manufacturer's Association (FAMA).

MANDATORY SOUTH CAROLINA DEALER'S LICENSE

In order to protect the customer from possible fraudulent bids or inability to enforce warranty requirements, the bidder must be a fully licensed South Carolina Motor Vehicle Dealer. A copy of a valid, current license must be included with proposal.

Failure to include this license with bid will result in immediate rejection of bid.

If the bidder unable to provide the dealer's license and the surety bond that is required of all motor vehicle dealers, this is indication that the bidder is not financially solvent and secure and therefore, their proposal will be considered non-responsive and not considered.

U.S.A. MANUFACTURER

The entire apparatus will be assembled within the borders of the Continental United States to insure more readily available parts (without added costs and delays caused by tariffs and customs) and service.

COOPERATIVE PURCHASING

The Manufacturer shall be pleased to allow other public agencies to use the purchase agreement resulting from this invitation to bid unless the bidder expressly notes on the proposal form that prices are not available for tag-on. The condition of such use by other agencies shall be that any such agency must make and pursue contact, purchase order/contract, and all contractual remedies with the successful bidder. Such tag-on's shall be done so that the original purchasing agency has no responsibility for performance by either the manufacturer or the agency using the contract.

EXAMINATION & TEST PROPOSAL COMPLETED BY UL CERTIFIED THIRD PARTY

If required by the specific chapters of NFPA-1901, the proposed unit shall be tested by a company certified by Underwriters Laboratories Inc. (UL). Underwriters Laboratories Inc. (UL) is recognized worldwide as a leading third party product safety certification organization for over 100 years. UL has served on National Fire Protection Association (NFPA) technical committees for over thirty years.

A complete written examination and test report shall be provided for each inspection performed at the manufacturer's facility. This report specifies the points of inspection and results of such examinations and tests.

The company providing the test work on the units shall be certified to Level II in the required NDT methods, under the requirements outlined in ASNT document CP-189.

The actual person(s) performing the inspection shall present for review proof of Level II Certification in the required NDT methods.

The manufacturer shall designate, in writing, who is qualified to witness and certify these test results.

Prior to submittal to the automotive fire apparatus manufacturer, the final Report shall be reviewed by an authorized representative of the manufacturer and a Registered Professional Engineer.

When the unit successfully meets all the requirements outlined in NFPA 1901, 2016 Edition, the company completing these tests shall issue a Certificate of Automotive Fire Apparatus Examination and Test stating the unit's compliance with NFPA- 1901.

Bidder Complies	
Yes	No

SERVICE ABILITY FORM

Service Center Location:

Distance in miles (one way) from Local Service Center Location to the Purchaser's Location is: _____ miles.

Please answer the following questions:

Is this shop an authorized warranty center for the apparatus builder? Yes ____ No ____

Is the Service Center enclosed and heated? Yes ____ No ____

Number of full time Service Center Employees: _____

Number of Fire Pump Manufacturers Certified Employees: _____

Number of fully equipped service vans: _____

Is your shop equipped to handle the following repair work:

Cab & Chassis Repairs: Yes ____ No ____
Body Repairs: Yes ____ No ____
Paint Work: Yes ____ No ____
Water Tank Repairs: Yes ____ No ____
Major Pump Repairs: Yes ____ No ____
General Welding: Yes ____ No ____
Frame & Spring Repairs: Yes ____ No ____
Aerial Device Repairs: Yes ____ No ____
Aerial Weldment Repairs: Yes ____ No ____
Aerial Hydraulic System Repairs: Yes ____ No ____
Aerial Electrical System Repairs: Yes ____ No ____
Power Train Repairs: Yes ____ No ____

This form was completed and submitted by:

_____
(Please print or type full name)

Title of Individual:_____

Signature of individual:_____

SUBSCRIBED AND SWORN before me Notary's Stamp

This ____ day of _____

20__

Notary Public:_____

Commission Expires:_____

FULL TIME SERVICE AND WARRANTY STAFF

The bidder must have four (4) full time employees on staff dedicated to their service center's apparatus parts and warranty division. The bidder must also employee one (1) dedicated full time employee to warranty. **NO EXCEPTIONS.**

GENERAL APPARATUS DESCRIPTION "PUMPER"

The unit will be designed to conform fully to the "Pumper Fire Apparatus" requirements as stated in the NFPA 1901 Standard (2016 Revision), which will include the following required chapters as stated in this revision:

- Chapter 1 Administration
- Chapter 2 Referenced Publications
- Chapter 3 Definitions
- Chapter 4 General Requirements
- Chapter 5 Pumper Fire Apparatus
- Chapter 12 Chassis and Vehicle Components
- Chapter 13 Low Voltage Electrical Systems and Warning Devices
- Chapter 14 Driving and Crew Areas
- Chapter 15 Body, Compartments and Equipment Mounting
- Chapter 16 Fire Pumps and Associated Equipment
- Chapter 18 Water Tanks

CAB SAFETY SIGNS

The following safety signs will be provided in the cab:

- A label displaying the maximum number of personnel the vehicle is designed to carry will be visible to the driver.
- "Occupants will be seated and belted when apparatus is in motion" signs will be visible from each seat.
- "Do Not Move Apparatus When Light Is On" sign adjacent to the warning light indicating a hazard if the apparatus is moved (as described in subsequent section).
- A label displaying the height, length, and GVWR of the vehicle will be visible to driver.
- This label will indicate that the fire department will revise the dimension if vehicle height changes while vehicle is in service.

CHASSIS DATA LABELS

The following information will be on labels affixed to the vehicle:

Fluid Data:

- Engine Oil
- Engine Coolant
- Chassis Transmission Fluid
- Pump Transmission Lubrication Fluid
- Pump Primer Fluid (if applicable)
- Drive Axle(s) Lubrication Fluid
- Air Conditioning Refrigerant
- Air Conditioning Lubrication Oil
- Power Steering Fluid
- Cab Tilt Mechanism Fluid
- Transfer Case Fluid (if applicable)
- Equipment Rack Fluid (if applicable)
- Air Compressor System Lubricant
- Generator System Lubricant (if applicable)
- Front Tire Cold Pressure
- Rear Tire Cold Pressure
- Aerial Hydraulic Fluid (if applicable)
- Maximum Tire Speed Rating

Chassis Data:

- Chassis Manufacturer
- Production Number
- Year Built
- Month Manufactured
- Vehicle Identification Number

Manufacturers weight certification:

- Gross Vehicle (or Combination) Weight Rating (GVWR or GCWR)
- Gross Axle Weight Rating, Front
- Gross Axle Weight Rating, Rear

ROLLOVER STABILITY

The apparatus will meet the criteria defined in 4.13.1 for rollover stability as defined in the 2016 NFPA Standard for Automotive Fire Apparatus.

Bidder Complies	
Yes	No

PRINCIPAL APPARATUS DIMENSIONS & G.V.W.R.

The bidder shall include the principal dimensions, front G.A.W.R., rear G.A.W.R., and total G.V.W.R. of the proposed apparatus. Additionally, the bidder shall provide a weight distribution of the fully loaded, completed vehicle; this shall include a filled water tank, specified hose load, miscellaneous equipment allowance in accordance with NFPA-1901 requirements, and an equivalent personnel load of 250 lbs. per seating position.

BIDDER TO SUPPLY AND FILL- IN PROPOSED DIMENSIONS:

- Overall Length: TBD"
- Overall Width: 100"
- Overall Height: TBD"
- Wheelbase: TBD"

The completed apparatus shall have an Overall Height not to exceed 10'. **NO EXCEPTIONS.**

The completed apparatus shall have an Overall Length not to exceed 32'. **NO EXCEPTIONS.**

The axle and total weight ratings of the completed apparatus will not be less than the following minimum acceptable weight ratings:

- Minimum Front G.A.W.R.: 12,000 lbs.
- Minimum Rear G.A.W.R.: 27,000 lbs.
- Minimum Total G.V.W.R.: 39,000 lbs.

FREIGHTLINER M2 106 TWO (2) DOOR CHASSIS SPECIFICATIONS

Data Code	Description	Weight Front	Weight Rear
Price Level			
PRL-23M	M2 PRL-23M (EFF:01/21/20)		
Data Version			
DRL-008	SPECPRO21 DATA RELEASE VER 008		
Interior Convenience/Driver Retention Package			
055-004	INTERIOR CONVENIENCE PACKAGE WITH CB PROVISION		
Vehicle Configuration			
001-172	M2 106 CONVENTIONAL CHASSIS	5,709	3,503
004-222	2022 MODEL YEAR SPECIFIED		
002-004	SET BACK AXLE - TRUCK		
019-002	STRAIGHT TRUCK PROVISION		
003-001	LH PRIMARY STEERING LOCATION		
General Service			
AA1-002	TRUCK CONFIGURATION		
AA6-001	DOMICILED, USA 50 STATES (INCLUDING CALIFORNIA AND CARB OPT-IN STATES)		
A85-020	FIRE SERVICE		
A84-1EV	EMERGENCY VEHICLES BUSINESS SEGMENT		
AA4-002	LIQUID BULK COMMODITY		
AA5-002	TERRAIN/DUTY: 100% (ALL) OF THE TIME, IN TRANSIT, IS SPENT ON PAVED ROADS		
AB1-008	MAXIMUM 8% EXPECTED GRADE		
AB5-001	SMOOTH CONCRETE OR ASPHALT PAVEMENT - MOST SEVERE IN-TRANSIT (BETWEEN SITES) ROAD SURFACE		
995-091	MEDIUM TRUCK WARRANTY		
A66-99D	EXPECTED FRONT AXLE(S) LOAD : 12000.0 lbs		
A68-99D	EXPECTED REAR DRIVE AXLE(S) LOAD : 27000.0 lbs		
A63-99D	EXPECTED GROSS VEHICLE WEIGHT CAPACITY : 39000.0 lbs		
Truck Service			
AA3-027	FIRE TANK/PUMPER - MAIN DRIVELINE DRIVEN SPLIT-SHAFT PTO/PUMP		
AF7-99D	EXPECTED BODY/PAYLOAD CG HEIGHT ABOVE FRAME "XX" INCHES : 32.0 in		
Engine			
101-3BY	CUM L9 330EV HP @ 2200 RPM, 2200 GOV RPM, 1000 LB-FT @ 1200 RPM, R/F/E	640	30
Electronic Parameters			
79A-060	60 MPH ROAD SPEED LIMIT		
79B-000	CRUISE CONTROL SPEED LIMIT SAME AS ROAD SPEED LIMIT		
79K-007	PTO MODE ENGINE RPM LIMIT - 1100 RPM		
79M-001	PTO MODE BRAKE OVERRIDE - SERVICE BRAKE APPLIED		

Data Code	Description	Weight Front	Weight Rear
79P-002	PTO RPM WITH CRUISE SET SWITCH - 700 RPM		
79Q-003	PTO RPM WITH CRUISE RESUME SWITCH - 800 RPM		
79S-001	PTO MODE CANCEL VEHICLE SPEED - 5 MPH		
79U-007	PTO GOVERNOR RAMP RATE - 250 RPM PER SECOND		
79V-001	FUEL DOSING OF AFTERTREATMENT ENABLED IN PTO MODE-CLEANS HYDROCARBONS AT HIGH TEMPERATURES ONLY		
80G-002	PTO MINIMUM RPM - 700		
80J-002	REGEN INHIBIT SPEED THRESHOLD - 5 MPH		
Engine Equipment			
99C-021	2016 ONBOARD DIAGNOSTICS/2010 EPA/CARB/GHG21 CONFIGURATION		
99D-012	2008 CARB EMISSION CERTIFICATION - EXEMPTED VEHICLE; NO CLEAN IDLE LABEL REQUIRED		
13E-001	STANDARD OIL PAN		
105-001	ENGINE MOUNTED OIL CHECK AND FILL		
014-1BX	SIDE OF HOOD AIR INTAKE WITH NFPA COMPLIANT EMBER SCREEN AND FIRE RETARDANT DONALDSON AIR CLEANER		
124-1CE	LN 12V 320 AMP 4962PA PAD MOUNT ALTERNATOR	10	
292-235	(2) DTNA GENUINE, FLOODED STARTING, MIN 2000CCA, 370RC, THREADED STUD BATTERIES	10	
290-017	BATTERY BOX FRAME MOUNTED		
281-001	STANDARD BATTERY JUMPERS		
282-001	SINGLE BATTERY BOX FRAME MOUNTED LH SIDE UNDER CAB		
291-017	WIRE GROUND RETURN FOR BATTERY CABLES WITH ADDITIONAL FRAME GROUND RETURN		
289-001	NON-POLISHED BATTERY BOX COVER		
293-058	POSITIVE LOAD DISCONNECT WITH CAB MOUNTED CONTROL SWITCH MOUNTED OUTBOARD DRIVER SEAT	8	
107-032	CUMMINS TURBOCHARGED 18.7 CFM AIR COMPRESSOR WITH INTERNAL SAFETY VALVE		
108-002	STANDARD MECHANICAL AIR COMPRESSOR GOVERNOR		
131-013	AIR COMPRESSOR DISCHARGE LINE		
152-039	GVG, FIRE AND EMERGENCY SERVICE VEHICLES ENGINE WARNING		
128-1AR	CUMMINS ENGINE INTEGRAL BRAKE WITH VARIABLE GEOMETRY TURBO ON/OFF WITH BRAKE LAMPS	20	
016-1DC	RH OUTBOARD UNDER STEP MOUNTED HORIZONTAL AFTERTREATMENT SYSTEM ASSEMBLY WITH RH HORIZONTAL TAILPIPE EXITING FORWARD OF REAR TIRES	10	5
28F-007	ENGINE AFTERTREATMENT DEVICE, AUTOMATIC OVER THE ROAD ACTIVE REGENERATION AND DASH MOUNTED SINGLE REGENERATION REQUEST/INHIBIT SWITCH		
239-001	STANDARD EXHAUST SYSTEM LENGTH		

Data Code	Description	Weight Front	Weight Rear
237-022	RH HORIZONTAL TAILPIPE, EXIT FORWARD OF REAR TIRES	20	20
23U-001	6 GALLON DIESEL EXHAUST FLUID TANK		
30N-003	100 PERCENT DIESEL EXHAUST FLUID FILL		
43X-002	LH MEDIUM DUTY STANDARD DIESEL EXHAUST FLUID TANK LOCATION		
23Y-001	STANDARD DIESEL EXHAUST FLUID PUMP MOUNTING		
43Y-001	STANDARD DIESEL EXHAUST FLUID TANK CAP		
273-018	HORTON DRIVEMASTER ADVANTAGE ON/OFF FAN DRIVE		
276-001	AUTOMATIC FAN CONTROL WITHOUT DASH SWITCH, NON ENGINE MOUNTED		
110-003	CUMMINS SPIN ON FUEL FILTER		
118-008	COMBINATION FULL FLOW/BYPASS OIL FILTER		
266-101	900 SQUARE INCH ALUMINUM RADIATOR	15	
103-036	ANTIFREEZE TO -34F, ETHYLENE GLYCOL PRE-CHARGED SCA HEAVY DUTY COOLANT		
171-007	GATES BLUE STRIPE COOLANT HOSES OR EQUIVALENT		
172-001	CONSTANT TENSION HOSE CLAMPS FOR COOLANT HOSES		
270-016	RADIATOR DRAIN VALVE		
168-002	LOWER RADIATOR GUARD		
134-001	ALUMINUM FLYWHEEL HOUSING		
132-004	ELECTRIC GRID AIR INTAKE WARMER		
155-058	DELCO 12V 38MT HD STARTER WITH INTEGRATED MAGNETIC SWITCH		
Transmission			
342-1KD	ALLISON 3000 EVS AUTOMATIC TRANSMISSION WITH PTO PROVISION	200	60
Transmission Equipment			
343-331	ALLISON VOCATIONAL PACKAGE 198 - AVAILABLE ON 3000/4000 PRODUCT FAMILIES WITH VOCATIONAL MODEL EVS		
84B-003	ALLISON VOCATIONAL RATING FOR FIRE TRUCK/EMERGENCY VEHICLE APPLICATIONS AVAILABLE WITH ALL PRODUCT FAMILIES		
84C-022	PRIMARY MODE GEARS, LOWEST GEAR 1, START GEAR 1, HIGHEST GEAR 5, AVAILABLE FOR 3000/4000 PRODUCT FAMILIES ONLY		
84D-022	SECONDARY MODE GEARS, LOWEST GEAR 1, START GEAR 1, HIGHEST GEAR 5, AVAILABLE FOR 3000/4000 PRODUCT FAMILIES ONLY		
84E-000	PRIMARY SHIFT SCHEDULE RECOMMENDED BY DTNA AND ALLISON, THIS DEFINED BY ENGINE AND VOCATIONAL USAGE		
84F-000	SECONDARY SHIFT SCHEDULE RECOMMENDED BY DTNA AND ALLISON, THIS DEFINED BY ENGINE AND VOCATIONAL USAGE		
84G-000	PRIMARY SHIFT SPEED RECOMMENDED BY DTNA AND ALLISON, THIS DEFINED BY ENGINE AND VOCATIONAL USAGE		

Data Code	Description	Weight Front	Weight Rear
84H-000	SECONDARY SHIFT SPEED RECOMMENDED BY DTNA AND ALLISON, THIS DEFINED BY ENGINE AND VOCATIONAL USAGE		
84J-000	ENGINE BRAKE RANGE PRESELECT RECOMMENDED BY DTNA AND ALLISON, THIS DEFINED BY ENGINE AND VOCATIONAL USAGE		
84K-000	ENGINE BRAKE RANGE ALTERNATE PRESELECT RECOMMENDED BY DTNA AND ALLISON, THIS DEFINED BY ENGINE AND VOCATIONAL USAGE		
84N-200	FUEL SENSE 2.0 DISABLED - PERFORMANCE - TABLE BASED		
84U-000	DRIVER SWITCH INPUT - DEFAULT - NO SWITCHES		
353-022	VEHICLE INTERFACE WIRING CONNECTOR WITHOUT BLUNT CUTS, AT BACK OF CAB		
34C-001	ELECTRONIC TRANSMISSION CUSTOMER ACCESS CONNECTOR FIREWALL MOUNTED		
362-824	(2) CUSTOMER INSTALLED CHELSEA 280 SERIES PTO'S		
363-011	PTO MOUNTING, LH AND RH SIDES OF MAIN TRANSMISSION		
341-018	MAGNETIC PLUGS, ENGINE DRAIN, TRANSMISSION DRAIN, AXLE(S) FILL AND DRAIN		
345-003	PUSH BUTTON ELECTRONIC SHIFT CONTROL, DASH MOUNTED		
97G-004	TRANSMISSION PROGNOSTICS - ENABLED 2013		
370-015	WATER TO OIL TRANSMISSION COOLER, IN RADIATOR END TANK		
346-003	TRANSMISSION OIL CHECK AND FILL WITH ELECTRONIC OIL LEVEL CHECK		
35T-001	SYNTHETIC TRANSMISSION FLUID (TES-295 COMPLIANT)		
Front Axle and Equipment			
400-1A6	DETROIT DA-F-12.0-3 12,000# FF1 71.5 KPI/3.74 DROP SINGLE FRONT AXLE		
402-050	MERITOR 16.5X5 Q+ CAST SPIDER HEAVY DUTY CAM FRONT BRAKES, DOUBLE ANCHOR, FABRICATED SHOES		
403-026	FIRE AND EMERGENCY SEVERE SERVICE, NON-ASBESTOS FRONT LINING		
419-023	CONMET CAST IRON FRONT BRAKE DRUMS		
409-006	FRONT OIL SEALS		
408-001	VENTED FRONT HUB CAPS WITH WINDOW, CENTER AND SIDE PLUGS - OIL		
416-022	STANDARD SPINDLE NUTS FOR ALL AXLES		
405-031	HALDEX AUTOMATIC FRONT SLACK ADJUSTERS WITH STAINLESS STEEL CLEVIS PINS		
536-050	TRW THP-60 POWER STEERING		
539-003	POWER STEERING PUMP		
534-015	2 QUART SEE THROUGH POWER STEERING RESERVOIR		
40T-001	MINERAL SAE 80/90 FRONT AXLE LUBE		

Data Code	Description	Weight Front	Weight Rear
Front Suspension			
620-1F0	12,000# DUAL TAPERLEAF FRONT SUSPENSION	42	
619-005	MAINTENANCE FREE RUBBER BUSHINGS - FRONT SUSPENSION		
410-001	FRONT SHOCK ABSORBERS		
Rear Axle and Equipment			
420-062	RS-26-185 27,000# T-SERIES FIRE/EMERGENCY SERVICE SINGLE REAR AXLE		255
421-489	4.89 REAR AXLE RATIO		
424-001	IRON REAR AXLE CARRIER WITH STANDARD AXLE HOUSING		
386-073	MXL 17T MERITOR EXTENDED LUBE MAIN DRIVELINE WITH HALF ROUND YOKES	20	20
423-010	MERITOR 16.5X7 P CAST SPIDER CAM REAR BRAKES, DOUBLE ANCHOR, CAST SHOES		20
433-025	FIRE AND EMERGENCY SEVERE SERVICE NON-ASBESTOS REAR BRAKE LINING		
434-011	BRAKE CAMS AND CHAMBERS ON FORWARD SIDE OF DRIVE AXLE(S)		
451-030	WEBB HEAVY WEIGHT CAST IRON REAR BRAKE DRUMS		80
440-006	REAR OIL SEALS		
426-1B5	BENDIX EVERSURE LONGSTROKE HEAVY DUTY 30/36 1-DRIVE AXLE SPRING PARKING CHAMBERS		
428-031	HALDEX AUTOMATIC REAR SLACK ADJUSTERS WITH STAINLESS STEEL CLEVIS PINS		
41T-001	MINERAL SAE 80/90 REAR AXLE LUBE		
Rear Suspension			
622-1DD	27,000# FLAT LEAF SPRING REAR SUSPENSION WITH RADIUS ROD FOR FIRE/EMERGENCY SERVICE		120
621-001	SPRING SUSPENSION - NO AXLE SPACERS		
431-001	STANDARD AXLE SEATS IN AXLE CLAMP GROUP		
623-005	FORE/AFT CONTROL RODS		
Brake System			
018-002	AIR BRAKE PACKAGE		
490-100	WABCO 4S/4M ABS		
871-001	REINFORCED NYLON, FABRIC BRAID AND WIRE BRAID CHASSIS AIR LINES		
904-001	FIBER BRAID PARKING BRAKE HOSE		
412-001	STANDARD BRAKE SYSTEM VALVES		
46D-001	STANDARD AIR SYSTEM PRESSURE PROTECTION AND 85 PSI PRESSURE PROTECTION FOR AIR HORN(S)		
413-002	STD U.S. FRONT BRAKE VALVE		
432-003	RELAY VALVE WITH 5-8 PSI CRACK PRESSURE, NO REAR PROPORTIONING VALVE		
480-088	WABCO SYSTEM SAVER HP WITH INTEGRAL AIR GOVERNOR AND HEATER		
479-015	AIR DRYER FRAME MOUNTED		

	Data Code	Description	Weight Front	Weight Rear
	460-058	STEEL AIR TANKS MOUNTED AFT INSIDE AND/OR BELOW FRAME JUST FORWARD OF REAR SUSPENSION		
	46A-002	(1) 1350 CUBIC INCH AUXILIARY AIR TANK, INLET CHECK VALVE	20	20
	607-001	CLEAR FRAME RAILS FROM BACK OF CAB TO FRONT REAR SUSPENSION BRACKET, BOTH RAILS OUTBOARD		
	477-001	PULL CABLE ON WET TANK, PETCOCK DRAIN VALVES ON ALL OTHER AIR TANKS		
Trailer Connections				
	335-004	UPGRADED CHASSIS MULTIPLEXING UNIT		
	32A-002	UPGRADED BULKHEAD MULTIPLEXING UNIT		
Wheelbase & Frame				
	545-565	5650MM (222 INCH) WHEELBASE		
	546-102	7/16X3-9/16X11-1/8 INCH STEEL FRAME (11.11MMX282.6MM/0.437X11.13 INCH) 120KSI	370	290
	552-144	1200MM (47 INCH) REAR FRAME OVERHANG		
	55W-004	FRAME OVERHANG RANGE: 41 INCH TO 50 INCH	20	-100
	AC8-99D	CALC'D BACK OF CAB TO REAR SUSP C/L (CA) : 156.89 in		
	AE8-99D	CALCULATED EFFECTIVE BACK OF CAB TO REAR SUSPENSION C/L (CA) : 153.89 in		
	AE4-99D	CALC'D FRAME LENGTH - OVERALL : 308.62		
	FSS-0LH	CALCULATED FRAME SPACE LH SIDE : 122.17 in		
	FSS-0RH	CALCULATED FRAME SPACE RH SIDE : 142.04 in		
	AM6-99D	CALC'D SPACE AVAILABLE FOR DECKPLATE : 150.45 in		
	553-001	SQUARE END OF FRAME		
	550-001	FRONT CLOSING CROSSMEMBER		
	559-001	STANDARD WEIGHT ENGINE CROSSMEMBER		
	561-001	STANDARD CROSSMEMBER BACK OF TRANSMISSION		
	562-001	STANDARD MIDSHIP #1 CROSSMEMBER(S)		
	572-001	STANDARD REARMOST CROSSMEMBER		
	565-001	STANDARD SUSPENSION CROSSMEMBER		
Chassis Equipment				
	556-997	OMIT FRONT BUMPER, CUSTOMER INSTALLED SPECIAL BUMPER, DOES NOT COMPLY WITH FMCSR 393.203	-60	
	586-024	FENDER AND FRONT OF HOOD MOUNTED FRONT MUDFLAPS		
	551-007	GRADE 8 THREADED HEX HEADED FRAME FASTENERS		
	605-017	LEVEL FRAME RAILS (+1%, -0%) WHEN CHASSIS IS LOADED TO FRONT AND REAR SUSPENSION RATINGS		
N	601-012	CUSTOMER REQUESTED "DRIVELINE AND CROSSMEMBER ONLY" LAYOUT 2D DXF/PDF FORMAT ELECTRONICALLY TRANSMITTED		

	Data Code	Description	Weight Front	Weight Rear
	970-038	TANK BODY 0 TO 1500 GALLONS		
Fuel Tanks				
	204-215	50 GALLON/189 LITER SHORT RECTANGULAR ALUMINUM FUEL TANK - LH	20	
	218-005	RECTANGULAR FUEL TANK(S)		
	215-005	PLAIN ALUMINUM/PAINTED STEEL FUEL/HYDRAULIC TANK(S) WITH PAINTED BANDS		
	212-007	FUEL TANK(S) FORWARD		
	664-004	POLISHED STAINLESS STEEL STEP FINISH		
	205-001	FUEL TANK CAP(S)		
	122-1H3	DETROIT FUEL/WATER SEPARATOR WITH WATER IN FUEL SENSOR	-5	
	216-020	EQUIFLO INBOARD FUEL SYSTEM		
	202-016	HIGH TEMPERATURE REINFORCED NYLON FUEL LINE		
*	221-999	FUEL COOLER MOUNTED LEFT HAND SIDE, OUT BOARD AT 2900		
		FUEL COOLER MOUNTED LEFT HAD, OUT BOARD AT 2900		
Tires				
	093-994	MICHELIN XZE 12R22.5 16 PLY RADIAL FRONT TIRES	50	
	094-1RM	MICHELIN X WORKS Z 12R22.5 16 PLY RADIAL REAR TIRES		152
Hubs				
	418-060	CONMET PRESET PLUS PREMIUM IRON FRONT HUBS		
	450-060	CONMET PRESET PLUS PREMIUM IRON REAR HUBS		
Wheels				
	502-693	ALCOA LVL ONE 88267X 22.5X8.25 10-HUB PILOT 5.80 INSET ALUMINUM DISC FRONT WHEELS	-56	
	505-693	ALCOA LVL ONE 88267X 22.5X8.25 10-HUB PILOT ALUMINUM DISC REAR WHEELS		-112
	524-001	POLISHED FRONT WHEELS; OUTSIDE ONLY		
	525-001	POLISHED REAR WHEELS; OUTSIDE OF OUTER WHEELS ONLY		
	496-011	FRONT WHEEL MOUNTING NUTS		
	497-011	REAR WHEEL MOUNTING NUTS		
Cab Exterior				
	829-071	106 INCH BBC FLAT ROOF ALUMINUM CONVENTIONAL CAB		
	650-008	AIR CAB MOUNTING		
	705-012	CAB ROOF REINFORCEMENTS FOR ROOF MOUNTED COMPONENTS	2	
	678-018	LH AND RH EXTERIOR GRAB HANDLES WITH SINGLE RUBBER INSERT		
	646-023	HOOD MOUNTED CHROMED PLASTIC GRILLE		
	65X-003	CHROME HOOD MOUNTED AIR INTAKE GRILLE		
	644-004	FIBERGLASS HOOD		

Data Code	Description	Weight Front	Weight Rear
727-1B0	DUAL 25 INCH ROUND STUTTER TONE HOOD MOUNTED AIR HORNS	8	
726-002	DUAL ELECTRIC HORNS		
728-002	DUAL HORN SHIELDS		
657-001	DOOR LOCKS AND IGNITION SWITCH KEYED THE SAME		
78G-002	KEY QUANTITY OF 2		
575-001	REAR LICENSE PLATE MOUNT END OF FRAME		
312-038	INTEGRAL HEADLIGHT/MARKER ASSEMBLY WITH CHROME BEZEL		
302-001	(5) AMBER MARKER LIGHTS		
311-001	DAYTIME RUNNING LIGHTS		
294-046	OMIT STOP/TAIL/BACKUP LIGHTS AND PROVIDE WIRING WITH SEPARATE STOP/TURN WIRES TO 4 FEET BEYOND END OF FRAME		-5
300-015	STANDARD FRONT TURN SIGNAL LAMPS		
744-1BC	DUAL WEST COAST BRIGHT FINISH HEATED MIRRORS WITH LH AND RH REMOTE		
797-001	DOOR MOUNTED MIRRORS		
796-001	102 INCH EQUIPMENT WIDTH		
743-204	LH AND RH 8 INCH BRIGHT FINISH CONVEX MIRRORS MOUNTED UNDER PRIMARY MIRRORS		
74A-001	RH DOWN VIEW MIRROR		
729-001	STANDARD SIDE/REAR REFLECTORS		
677-055	RH AFTERTREATMENT SYSTEM CAB ACCESS WITH POLISHED DIAMOND PLATE COVER		
768-043	63X14 INCH TINTED REAR WINDOW		
661-003	TINTED DOOR GLASS LH AND RH WITH TINTED NON-OPERATING WING WINDOWS		
654-003	MANUAL DOOR WINDOW REGULATORS		
663-013	1-PIECE SOLAR GREEN GLASS WINDSHELD		
659-019	2 GALLON WINDSHIELD WASHER RESERVOIR WITHOUT FLUID LEVEL INDICATOR, FRAME MOUNTED		
Cab Interior			
707-1AK	OPAL GRAY VINYL INTERIOR		
706-016	MOLDED DOOR PANEL WITH UPPER VINYL INSERTS		
708-016	MOLDED DOOR PANEL WITH UPPER VINYL INSERTS		
772-006	BLACK MATS WITH SINGLE INSULATION		
691-008	FORWARD ROOF MOUNTED CONSOLE WITH UPPER STORAGE COMPARTMENTS WITHOUT NETTING		
694-010	IN DASH STORAGE BIN		
742-007	(2) CUP HOLDERS LH AND RH DASH		
680-006	GRAY/CHARCOAL FLAT DASH		
860-004	SMART SWITCH EXPANSION MODULE		
700-002	HEATER, DEFROSTER AND AIR CONDITIONER		
701-001	STANDARD HVAC DUCTING		
703-005	MAIN HVAC CONTROLS WITH RECIRCULATION SWITCH		

Data Code	Description	Weight Front	Weight Rear
170-015	STANDARD HEATER PLUMBING		
130-041	VALEO HEAVY DUTY A/C REFRIGERANT COMPRESSOR		
702-002	BINARY CONTROL, R-134A		
739-034	PREMIUM INSULATION		
285-013	SOLID-STATE CIRCUIT PROTECTION AND FUSES		
280-007	12V NEGATIVE GROUND ELECTRICAL SYSTEM		
324-011	DOME DOOR ACTIVATED LH AND RH, DUAL READING LIGHTS, FORWARD CAB ROOF		
655-001	CAB DOOR LATCHES WITH MANUAL DOOR LOCKS		
756-1E7	SEATS INC 911 UNIVERSAL SERIES HIGH BACK AIR SUSPENSION DRIVER SEAT WITH NFPA 1901-2009/2016 COMPLIANT SEAT SENSOR	50	
760-1E7	SEATS INC 911 UNIVERSAL SERIES HIGH BACK AIR SUSPENSION PASSENGER SEAT WITH NFPA 1901-2009/2016 COMPLIANT SEAT SENSOR	40	15
711-004	LH AND RH INTEGRAL DOOR PANEL ARMRESTS		
758-014	BLACK CORDURA PLUS CLOTH DRIVER SEAT COVER		
761-014	BLACK CORDURA PLUS CLOTH PASSENGER SEAT COVER		
763-105	NFPA 1901-2009 HIGH VISIBILITY ORANGE SEAT BELTS		
532-002	ADJUSTABLE TILT AND TELESCOPING STEERING COLUMN	10	
540-015	4-SPOKE 18 INCH (450MM) STEERING WHEEL		
765-002	DRIVER AND PASSENGER INTERIOR SUN VISORS		
Instruments & Controls			
732-003	WOODGRAIN DRIVER INSTRUMENT PANEL		
734-003	WOODGRAIN CENTER INSTRUMENT PANEL		
87L-001	ENGINE REMOTE INTERFACE WITH PARK BRAKE INTERLOCK		
870-001	BLACK GAUGE BEZELS		
486-001	LOW AIR PRESSURE INDICATOR LIGHT AND AUDIBLE ALARM		
840-002	2 INCH PRIMARY AND SECONDARY AIR PRESSURE GAUGES		
198-006	ENGINE COMPARTMENT MOUNTED AIR RESTRICTION INDICATOR WITH GRADUATIONS, WITH WARNING LIGHT IN DASH		
149-013	ELECTRONIC CRUISE CONTROL WITH SWITCHES IN LH SWITCH PANEL		
156-020	IGNITION SWITCH WITH NON REMOVABLE KEY		
811-042	ICU3S, 132X48 DISPLAY WITH DIAGNOSTICS, 28 LED WARNING LAMPS AND DATA LINKED		
160-038	HEAVY DUTY ONBOARD DIAGNOSTICS INTERFACE CONNECTOR LOCATED BELOW LH DASH		
844-001	2 INCH ELECTRIC FUEL GAUGE		
148-073	ENGINE REMOTE INTERFACE FOR REMOTE THROTTLE		

Data Code	Description	Weight Front	Weight Rear
163-004	ENGINE REMOTE INTERFACE CONNECTOR IN ENGINE COMPARTMENT		
856-001	ELECTRICAL ENGINE COOLANT TEMPERATURE GAUGE		
864-001	2 INCH TRANSMISSION OIL TEMPERATURE GAUGE		
830-017	ENGINE AND TRIP HOUR METERS INTEGRAL WITHIN DRIVER DISPLAY		
372-043	(1) DASH MOUNTED PTO SWITCH WITH INDICATOR LAMP - PARK BRAKE AND NEUTRAL INTERLOCK	10	
852-002	ELECTRIC ENGINE OIL PRESSURE GAUGE		
679-001	OVERHEAD INSTRUMENT PANEL		
746-116	AM/FM/WB WORLD TUNER RADIO WITH SIRIUS XM, CD PLAYER, BLUETOOTH, IPOD INTERFACE AND USB AND AUXILIARY INPUTS, J1939	10	
747-001	DASH MOUNTED RADIO		
750-002	(2) RADIO SPEAKERS IN CAB		
753-001	AM/FM ANTENNA MOUNTED ON FORWARD LH ROOF		
748-006	POWER AND GROUND WIRING PROVISION OVERHEAD		
749-016	CB WIRING ONLY TO ROOF/OVERHEAD CONSOLE; NO MOUNTING PROVISION		
78C-003	INTEROPERABLE SDAR ANTENNA		
810-027	ELECTRONIC MPH SPEEDOMETER WITH SECONDARY KPH SCALE, WITHOUT ODOMETER		
817-001	STANDARD VEHICLE SPEED SENSOR		
812-001	ELECTRONIC 3000 RPM TACHOMETER		
162-002	IGNITION SWITCH CONTROLLED ENGINE STOP		
264-028	(2) LH AND RH FOOT SWITCHES WITH DASH SWITCH FOR HORN BUTTON TO CONTROL AIR HORN, DEFAULT TO ELECTRIC <85 PSI		
836-015	DIGITAL VOLTAGE DISPLAY INTEGRAL WITH DRIVER DISPLAY		
660-008	SINGLE ELECTRIC WINDSHIELD WIPER MOTOR WITH DELAY		
304-001	MARKER LIGHT SWITCH INTEGRAL WITH HEADLIGHT SWITCH		
882-018	ONE VALVE PARKING BRAKE SYSTEM WITH DASH VALVE CONTROL AUTONEUTRAL AND WARNING INDICATOR		
299-013	SELF CANCELING TURN SIGNAL SWITCH WITH DIMMER, WASHER/WIPER AND HAZARD IN HANDLE		
298-039	INTEGRAL ELECTRONIC TURN SIGNAL FLASHER WITH HAZARD LAMPS OVERRIDING STOP LAMPS		

Design

N	065-000	PAINT: ONE SOLID COLOR

Color

*	980-999	980-NZC CAB COOLOR A 00895592EY RED ELITE EY REFERENCE SERIAL KX7162
		980-NZC REFERENCE SERIAL KX7162
	986-020	BLACK, HIGH SOLIDS POLYURETHANE CHASSIS PAINT
	963-003	STANDARD E COAT/UNDERCOATING

Certification / Compliance

	996-001	U.S. FMVSS CERTIFICATION, EXCEPT SALES CABS AND GLIDER KITS

Raw Performance Data

	AE8-99D	CALCULATED EFFECTIVE BACK OF CAB TO REAR SUSPENSION C/L (CA) : 153.89 in
	AM6-99D	CALC'D SPACE AVAILABLE FOR DECKPLATE : 150.45 in

Sales Programs

NO SALES PROGRAMS HAVE BEEN SELECTED

TOTAL VEHICLE SUMMARY

Weight Summary

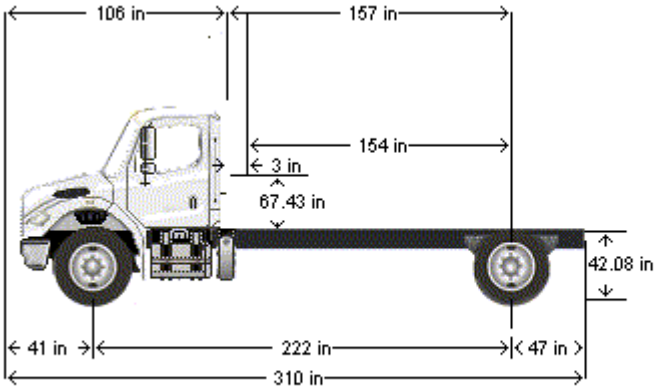
	Weight Front	Weight Rear	Total Weight
Factory Weight+	7193 lbs	4373 lbs	11566 lbs
Total Weight+	7193 lbs	4373 lbs	11566 lbs

(+) Weights shown are estimates only.

If weight is critical, contact Customer Application Engineering.

(***) All cost increases for major components (Engines, Transmissions, Axles, Front and Rear Tires) and government mandated requirements, tariffs, and raw material surcharges will be passed through and added to factory invoices.

DIMENSIONS



VEHICLE SPECIFICATIONS SUMMARY - DIMENSIONS

Model	M2106
Wheelbase (545)	5650MM (222 INCH) WHEELBASE
Rear Frame Overhang (552)	1200MM (47 INCH) REAR FRAME OVERHANG
Fifth Wheel (578)	NO FIFTH WHEEL
Mounting Location (577)	NO FIFTH WHEEL LOCATION
Maximum Forward Position (in)	0
Maximum Rearward Position (in)	0
Amount of Slide Travel (in)	0
Slide Increment (in)	0
Desired Slide Position (in)	0.0
Cab Size (829)	106 INCH BBC FLAT ROOF ALUMINUM CONVENTIONAL CAB
Sleeper (682)	NO SLEEPER BOX/SLEEPERCAB

Exhaust System (016) RH OUTBOARD UNDER STEP MOUNTED HORIZONTAL AFTERTREATMENT SYSTEM ASSEMBLY WITH

RH HORIZONTAL TAILPIPE EXITING FORWARD OF REAR TIRES

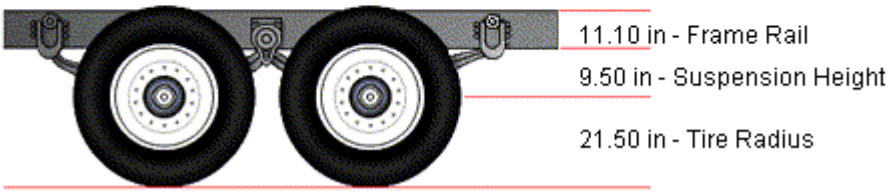
TABLE SUMMARY - DIMENSIONS

Dimensions	Inches
Bumper to Back of Cab (BBC)	106.3
Bumper to Centerline of Front Axle (BA)	40.7
Min. Cab to Body Clearance (CB)	3.0
Back of Cab to Centerline of Rear Axle(s) (CA)	156.9
Effective Back of Cab to Centerline of Rear Axle(s) (Effective CA)	153.9
Back of Cab Protrusions (Exhaust/Intake) (CP)	2.0
Back of Cab Protrusions (Side Extenders/Trim Tab) (CP)	0.0
Back of Cab Protrusions (CNG Tank)	0.0
Back of Cab Clearance (CL)	3.0
Back of Cab to End of Frame	204.1
Cab Height (CH)	67.4
Wheelbase (WB)	222.4
Frame Overhang (OH)	47.2
Overall Frame Length	308.6
Overall Length (OAL)	310.4
Rear Axle Spacing	0.0
Unladen Frame Height at Centerline of Rear Axle	42.1

Performance calculations are estimates only. If performance calculations are critical, please contact Customer Application Engineering.

UNLADEN FRAME HEIGHT

Unladen Height	Requested	Calculated
Frame (in)	N/A	42.10



VEHICLE SPECIFICATIONS SUMMARY - UNLADEN FRAME HEIGHT

Model	M2106
Cab Size (829)	106 INCH BBC FLAT ROOF ALUMINUM CONVENTIONAL CAB
Frame Rails (546)	7/16X3-9/16X11-1/8 INCH STEEL FRAME (11.11MMX282.6MM/0.437X11.13 INCH) 120KSI(546)
Web Height (in)	11.125
Flange Thickness (in)	0.4375
Rear Suspension (622)	27,000# FLAT LEAF SPRING REAR SUSPENSION WITH RADIUS ROD FOR FIRE/EMERGENCY SERVICE
Rear Suspension Ride Height (621)	SPRING SUSPENSION - NO AXLE SPACERS
Axle C/L to Bottom of Frame (in)	9.453
Rear Tires (094)	MICHELIN X WORKS Z 12R22.5 16 PLY RADIAL REAR TIRES
Unladen Radius (in)	21.5
Fifth Wheel (578)	NO FIFTH WHEEL
Requested Min Height (in)	0.0
Requested Max Height (in)	1
Fifth Wheel Leg Height (582)	NO FIFTH WHEEL LEG HEIGHT
Rear Tow Device (587)	NO REAR TOWING DEVICE
Requested Min Height (in)	0.0
Requested Max Height (in)	0.0

Performance calculations are estimates only. If performance calculations are critical, please contact Customer Application Engineering.

SEAT BELT CLARIFICATION

Red seat belts will be provided if available from the chassis manufacturer.

AUXILIARY AIR INLET

A quick disconnect male auxiliary air inlet will be provided at the driver's side door area at a location to be determined at a pre-construction conference. A mating quick disconnect female connector will be shipped loose with the apparatus. This will allow a Purchaser furnished external air supply to be connected to the chassis air system.

FUEL TANK TREAD PLATE

The step type fuel tank will be overlaid with polished aluminum tread plate. This will include the top, front and both ends. Step areas will be provided for access to the cab. Step areas will be fabricated from Alcoa "No-Slip" tread plate.

BATTERY BOX TREAD PLATE

The battery box will be overlaid with polished aluminum tread plate. The cover of this box will be easily removable for inspection of the batteries.

RIGHT SIDE CAB STEP AREA TREAD PLATE

The right side cab step area will be overlaid with polished aluminum tread plate. A single cab entry step, level with the right side running board will be furnished. Step areas will be fabricated from Alcoa "No-Slip" tread plate.

LEFT SIDE CAB STEP AREA TREAD PLATE

The left side cab step area will be overlaid with polished aluminum tread plate. A single cab entry step, level with the left side running board will be furnished. Step areas will be fabricated from Alcoa "No-Slip" tread plate.

CENTER CONSOLE

A center console fabricated from 1/8" aluminum will be furnished and will be located between the driver and officer's seats.

The forward area of the console will have a mounting surface for emergency lighting switch panels and/or electronic siren control boxes within reach of the driver or officer. In addition, the console will be equipped with two (2) map/notebook storage pockets at the rear of the console.

The console will have a Zolatone black finish.

ANTENNA INSTALLATION

One (1) antenna mounting base(s) model #MATM with 17' of coaxial cable will be provided and installed on the cab roof. The attached antenna wire(s) will be run to the center console.

The Fire Department is responsible to have the correct antenna whip installed once the apparatus is delivered.

RADIO INSTALLATION

One (1) radio will be installed in the chassis cab as directed by the Fire Department.

Radio components to be listed as loose equipment.

CAB STEP LIGHTS

TecNiq E-03 step lights will be provided, one (1) near each cab door to illuminate the cab stepping surfaces. The step lights will be mounted in a convenient location so as to provide appropriate illumination to the cab stepping surfaces. The step lights will automatically activate when the exit doors are opened, parking brake is applied, and marker lights are active.

AUXILIARY AIR MANIFOLD

All auxiliary air devices on the commercial chassis will be fed from a common manifold. The common manifold will be installed at an accessible location near the chassis air tanks. The manifold will be fed by a 3/8" synflex airline plumbed from the primary air tank using a pressure protection valve. Unused ports will be closed off using an appropriately sized plug.

3M REFLECTIVE CAB DOOR MATERIAL - RED/WHITE

There will be 3M Brand reflective alternating Red/White striping material with the manufacturer's logo installed on the inside of the driver and officer side cab doors.

10" STAINLESS STEEL FRONT BUMPER EXTENSION

A 12" high, 10" bright finish stainless steel front bumper extension will be provided. The bumper will be a wrapped design to match the contour of the front cab sheet.

ALUMINUM TREADPLATE GRAVEL SHIELD

A polished aluminum tread plate (3/16") gravel shield with end caps will be installed on the front bumper extension.

The polished aluminum tread plate gravel shield will terminate under the top bumper flange.

STORAGE WELL - CENTER

One (1) storage well constructed of 1/8" aluminum will be installed in the gravel shield. This storage well will be center mounted between the chassis frame rails. The bottom of the storage well will have a minimum of four (4) drain holes.

One (1) hinged, aluminum tread plate cover with a D-Ring handle will be installed on the storage well located in the center of the bumper extension. The cover will be lift up with gas shocks.

CENTER WELL - GENERAL STORAGE

The center storage well will be utilized for general storage of tools or equipment, the well will be a large as space allows.

FRONT TOW HOOKS

Two (2) front painted tow hooks will be fastened directly to the frame, below the front bumper. The tow hooks will be fastened with grade 8 bolts and nuts.

PUMP SHIFT CONTROL

The pump shift control and pump engaged indicator light will be mounted in the driver's lower left panel.

******* CHASSIS/BODY ELECTRICAL & ACCESSORIES *******

COMMERCIAL CHASSIS ELECTRICAL SYSTEM

The commercial chassis electrical system will be provided as furnished by the original manufacturer. A customized interface will be provided and designed, so as not to disturb any of the required chassis functions. The necessary interfaces will only be provided in areas where load management is allowed or with accessory components provided on the chassis.

12 VOLT ELECTRICAL SYSTEM TESTING

The apparatus low voltage electrical system will be tested and certified by the manufacturer. The certification will be provided with the apparatus. All tests will be performed with air temperature between 0°F and 100°F.

The following three (3) tests will be performed in order. Before each test, the batteries will be fully charged.

TEST #1-RESERVE CAPACITY TEST

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

TEST #2-ALTERNATOR PERFORMANCE TEST AT IDLE

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

TEST #3-ALTERNATOR PERFORMANCE TEST AT FULL LOAD

The total continuous electrical load will be activated with the engine running up to the engine manufacturers governed speed. The test duration will be a minimum of 2 hours. Activation of the load management system will be permitted during this test. However, an alarm sounded due to excessive battery discharge, as detected by the system, or a system voltage of less than 11.7 volts DC for a 12 volt system, for more than 120 seconds, will be considered a test failure.

LOW VOLTAGE ALARM TEST

Following completion of the preceding tests, the engine will be shut off. The total continuous electrical load will be activated and will continue to be applied until the excessive battery discharge alarm is activated.

The battery voltage will be measured at the battery terminals. With the load still applied, a reading of less than 11.7 volts will be considered a test failure. The battery system will then be able to restart the engine.

At time of delivery, documentation will be provided with the following information:

- Documentation of the electrical system performance test
- A written load analysis of the following;
- Nameplate rating of the alternator
- Alternator rating at idle while meeting the minimum continuous electrical load
- Each component load comprising the minimum continuous electrical load.
- Additional loads that, when added to the minimum continuous load, determine the total connected load.
- Each individual intermittent load.

AKRON BRASS V-MUX MULTI-PLEX ELECTRICAL MANAGEMENT SYSTEM

An Akron Brass Electrical Management System will be utilized on the chassis for all functions applicable. **NO EXCEPTIONS.**

The V-MUX SystemDesigner software allows OEM's to configure the vehicle using a Windows based user friendly software. V-MUX's free download software provides a solution for the dealer or end user to re-flash or update the vehicle.

The Hercules HC 6060 Series Node, #6060-0000-00, will be provided and installed giving users flexibility and control to use any input or output needed. The Hercules Node will have the following features:

- Two (2) built in CAN gateway connections
- PODS buttons serial port connection
- VFD port connection
- USB programmable
- Sealed enclosure designed o meet IP67
- Aluminum heat sink designed for 120 amps of current
- Operating temperature of -40 degrees Celsius to +85 degrees Celsius
- 12V and 24V capable
- 32 outputs
- 20 inputs

A free V-MUX Diagnostic Software will be provided that aids in troubleshooting your apparatus. The software will run on all Windows based systems using a USB interface between the PC and V-MUX.

AKRON BRASS V-MUX MULTI-PLEX TOUCH SCREEN VISTA IV DISPLAY

An Akron Brass Vista IV Touch Screen Display, panel mounted, will be provided, 610-00060-080.

KUSSMAUL "SUPER" AUTO EJECT

A Kussmaul Super Auto Eject Model #091-55-20-120, 20 amp 120 volt shore power assembly, cover, solenoid input wire, power cord, and plug will be installed. The 12 volt solenoid will eject the shore power cord away from vehicle path upon sensing engine start. After ejection, the weatherproof cover snaps into position over inlet. The unit will sequence energizing of an Auto Eject, eliminating terminal arching when connecting and disconnecting power cord.

The unit will have a waterproof back enclosure with watertight cable fittings, which protect mechanism from road contamination.

KUSSMAUL AUTO EJECT COVER

The Kussmaul auto-eject connection will be equipped with a Yellow weatherproof cover.

SHORELINE POWER INLET PLATE

A shoreline power receptacle information plate will be permanently affixed at or near the power inlet. The plate will indicate the following:

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

The shoreline receptacle will be located in the driver's cab step well in a pre-determined location by the manufacturer.

BATTERY CHARGER SYSTEM

A Kussmaul model # 091-170-12, "Auto Charge 12 HO" high output, fully automatic battery charger will be provided for maintaining the vehicle battery system. Remote voltage sensing will be provided to compensate the charger output for the voltage drop in the charging wires. Output current will be 20 amperes @ 12 volt DC. A built-in ammeter will be provided.

"LED" CAB INTERIOR LIGHTING

Two (2) Whelen # 60CREGCS, 6" round, interior LED combination red/white dome lights will be furnished in the cab. Each dome light will have individual switches to control the red or white LEDs. Each dome light will also activate when the respective, adjacent cab door is opened.

Each side front door jamb switch will activate all of the cab dome lights.

"DO NOT MOVE APPARATUS" WARNING LIGHT WITH AUDIBLE ALARM

A Truck-Lite 2.5" round, red flashing warning light with an audible alarm, will be functionally located in the cab and will be activated automatically whenever the apparatus parking brake is not fully engaged and of the following conditions exist:

- Any driver, passenger or equipment compartment door is not closed
- Any ladder or equipment rack is not in the stowed position
- Stabilizer system is not in its stowed position
- Powered light tower is not stowed
- Any other device permanently attached to the apparatus is open, extended or deployed in a manner that is likely to cause damage to the apparatus if the apparatus is moved

This light will be labeled "Do Not Move Apparatus When Light Is On."

****** BODY ELECTRICAL SYSTEM ******

12 VOLT BODY ELECTRICAL SYSTEM

All electrical lines in the body will be protected by automatic circuit breakers, conveniently located to permit ease of service. Flashers, heavy solenoids and other major electrical controls will be located in a central area near the circuit breakers.

All lines will be color and function coded every 3", easy to identify, oversized for the intended loads and installed in accordance with a detailed diagram. A complete wiring diagram will be supplied with the apparatus.

Wiring will be carefully protected from weather elements and snagging. Heavy duty loom will be used for the entire length. Grommets will be utilized where wiring passes through panels.

In order to minimize the risk of heat damage, wires run in the engine compartment area will be carefully installed and suitably protected by the installation of heat resistant shielded loom.

All electrical equipment will be installed to conform to the latest federal standards as outlined in NFPA 1901.

DOT MARKER LIGHTS AND REFLECTORS

Cab marker lights and signaling devices will be as provided on the commercial chassis cab from the original chassis manufacturer. FMVSS reflectors will be provided as required.

Two (2) TecNiq model SL15-AC00-1 amber LED with clear lens clearance side marker lights will be provided on the apparatus front upper body corner, one (1) each side.

Two (2) TecNiq .75" oval yellow LED side turn signal/marker light will be recessed mounted in a black grommet on the apparatus lower side, forward of rear axle, one (1) each side if the apparatus is 30' long or longer.

Two (2) TecNiq .75" low profile, flush mount rectangular red LED marker lights with reflex lens will be provided at the lower side rear, one (1) each side.

Two (2) TecNiq model SL15-RC00-1 red LED with clear lens clearance side marker lights will be provided on the apparatus rear upper, one (1) each side at the outermost practical location.

Three (3) TecNiq .75" low profile, flush mount rectangular red LED marker lights with reflex lens will be provided on the apparatus rear center.

LED LICENSE PLATE LIGHT - REAR

One (1) TecNiq model L10 LED license plate light will be provided above the mounting position of the license plate. The light will be clear in color and will have a chrome finish.

WHELEN BRAKE/TAIL/TURN AND BACK UP LIGHTS

Two (2) Whelen C6 Series SurfaceMax™ model # C6BTT will be provided. The brake, tail, and turn lights will incorporate 12 red Super-LEDs® and a red optic hard coated polycarbonate lens. The self-contained flashing light will have two Scan-Lock™ flash patterns including steady burn.

Two (2) Whelen C6 Series SurfaceMax™ model # C6T will be provided. The arrow turn light will incorporate 92 Chevron arrow configuration amber Super-LEDs® and a clear optic hard coated polycarbonate lens. The self-contained flashing light will have six Scan-Lock™ flash patterns including steady burn.

Two (2) Whelen C6 Series SurfaceMax™ Back Up Lights model # C6BU will be provided.

The hard coated lens will provide extended life/luster protection against UV and chemical stresses. The conformal coated PC board and sealed lens/reflector assembly will provide additional protection against environmental elements. The solid state warning light will be vibration resistant. The C6BTT is rated IP67 for dust and water resistance.

The C6BTT will meet SAE J595 and J845 requirements.

The lights will be mounted in a vertical chrome plated flange for three lights model #PLASC3V.

TECNIQ EON-3 LED BODY STEP LIGHTS

Polished stainless steel, TecNiq Eon 3-LED horizontal surface mounted body step lights will be provided. The lights will automatically activate when the exit doors are opened and marker lights are activated. Step lights will be located to properly illuminate all body access steps and walkway areas and will include a mounting gasket to provide a watertight seal.

TECNIQ EON-3 LED DUNNAGE AREA LIGHTING

Two (2) stainless steel, TecNiq Eon 3-LED horizontal surface mounted lights will be provided in the dunnage area to provide adequate illumination of this area. These lights will be activated with the engagement parking brake.

OPTRONICS TLL44 LED WORK LIGHTS

Two (2) Optronics TLL44 Opti-Brite LED work lights will be mounted one (1) each side corner rear of the body. Each light will have a raw lumen output of 1,440 lumens.

The manufacturer will offer this product with a Limited Lifetime Warranty.

WORK LIGHT SWITCH

The work light will have a switch in the cab to turn the work lights on and off.

OPTRONICS TLL44 LED HOSE BED LIGHTS

One (1) Optronics TLL44 LED lights will be mounted in the hose bed on the front wall to illuminate the hose bed area.

HOSE BED WORK LIGHT - SWITCH

The hose bed work light will have a protected 12-volt switch at the rear body panel. The switch will be labeled "HOSE BED WORK LIGHTS".

TECNIQ E18 LED PUMP ENCLOSURE WORK LIGHTS

Two (2) TecNiq model #E18 lights will be provided inside the pump enclosure providing 800 lumens each. Each light will have their own independent switch incorporated into the light head.

OPTRONICS LED GROUND LIGHTS - BELOW CAB DOORS

One (1) Optronics T44 4" round LED ground light will be provided under each side cab door entrance step, two (2) total. The ground lights will be activated when the parking brake is engaged.

Each light will illuminate an area at a minimum 30" outward from the edge of the vehicle. The rear crew door ground lights will be positioned at an angle rearward to provide illumination at the pump panel and the front of the body work areas.

OPTRONICS LED GROUND LIGHTS - BELOW FRONT BUMPER

One (1) Optronics T44 LED ground light will be provided under each side of the front bumper facing forward, two (2) total. The ground lights will be activated when the parking brake is engaged.

OPTRONICS LED GROUND LIGHTS - BELOW REAR BODY CORNERS

One (1) Optronics T44 LED ground light will be provided under each rear body corner, two (2) total. The ground lights will be activated when the parking brake is engaged.

COMPARTMENT LIGHT ACTIVATION

Compartment lighting will be switched from an integral switch as provided by the roll up door manufacturer.

HANSEN COMPARTMENT LIGHTS - LED

The Seven (7) storage compartments will be equipped with Hansen LED track lighting, 10MM style, mounted on the forward (or rearward) vertical door frame.

The lights will come with a three (3) year warranty.

AKRON SCENESTAR 150W TELESCOPING LED FLOODLIGHT - REAR OF DUNNAGE

Two (2) Akron SceneStar, ELSS-SLDC-PU-TM-SW, 150 watt, 12 volt LED flood lights will be installed, one (1) on each side, in the apparatus pump house dunnage area each using an Extenda-Lite, pull up, telescoping pole.

Each lamp head will draw 12 amps and generate 14,000 lumens. Each light will be switched at the light head.

REAR OF DUNNAGE SCENE LIGHT SWITCHING - PUMP PANEL

Two (2) switches will be provided on the pump panel to turn the rear of dunnage scene lights on and off. One (1) switch will control the driver side light and one (1) switch will control the officer side light.

NFPA AUDIBLE AND LIGHTING WARNING PACKAGE

The following warning light package will include all of the minimum warning light and actuation requirements for the current revision of NPFA 1901 Fire Apparatus Standard. The lighting as specified will meet the requirements for both "Clearing Right of Way" and "Blocking Right of Way" which includes disabling all white warning lights when the apparatus is in "Blocking Right of Way" mode.

LIGHT PACKAGE ACTUATION CONTROLS

The entire warning light package will be actuated with a single warning light switch located on the cab switch panel. The wiring for the warning light package will engage all of the lights required for "Clearing Right of Way" mode when the vehicle parking brake is not engaged. An automatic control system will be provided to switch the warning lights to the "Blocking Right of Way" mode when the vehicle parking brake is engaged.

WARNING LIGHT FLASH PATTERN

All of the perimeter warning lights will be set to an NFPA compliant flash pattern by the apparatus manufacturer.

UPPER LEVEL LIGHTING - WHELEN

NFPA ZONE A, UPPER

Whelen # JE2NFPA "Justice", 56" LED cab roof warning light bar will be furnished and rigidly mounted on top of the cab roof.

The light bar will be equipped with the following:

- Clear Lenses
- Four Corner Red Linear 6 LEDs
- Four Red Forward Facing CON 3 LEDs
- Two White Forward Facing CON 3 LEDs.

If equipped, the forward facing white lights will be automatically disabled for the "Blocking Right of Way" mode.

NFPA ZONE C, UPPER

Two (2) Whelen #L31HRFN super LED beacon lights will be mounted one (1) each side at the rear of the body.

Each light will have red LEDs and a colored lens. The lights will be surface mounted with a chrome plated flange.

The high profile beacon will meet NFPA zone C upper requirements and is covered by a five year factory warranty.

NFPA ZONES B & D, UPPER REAR

NFPA Zones B & D Upper Rear lights are covered by the Zone C Upper lights.

NFPA ZONES B & D, UPPER FRONT

NFPA Zones B & D Upper Front lights are covered by the Lightbar and are not required.

LOWER LEVEL LIGHTING - WHELEN

NFPA ZONE A, LOWER

Two (2) Whelen Series SurfaceMax™ model # C6LR LED warning lights will be furnished and installed one (1) each side.

Each light head will be equipped with red LED lights and red colored lenses.

The lights will be installed with a chrome plated mounting flange, C6FC.

The lower zone A warning lights will be mounted in the commercial chassis grille no higher than 62" from ground level.

NFPA ZONE C, LOWER

Two (2) Whelen Series SurfaceMax™ model # C6LR LED warning lights will be furnished and installed one (1) each side directly below the DOT stop, tail, turn and backup lights.

Each light head will be equipped with red LED lights and red colored lenses.

The lights will be installed with a chrome plated mounting flange, C6FC.

NFPA ZONES B & D, LOWER FRONT

Two (2) Whelen Series SurfaceMax™ model # C6LR LED warning lights will be furnished and installed one (1) each side.

Each light head will be equipped with red LED lights and red colored lenses.

The lights will be installed with a chrome plated mounting flange, C6FC.

The lower zone B & D warning lights will be mounted on the sides of the front bumper extension. The light will be mounted no higher than 62" from ground level.

NFPA ZONES B & D REAR, LOWER

Two (2) Whelen Series SurfaceMax™ model # C6LR LED warning lights will be furnished and installed one (1) each side.

Each light head will be equipped with red LED lights and red colored lenses.

The lights will be installed with a chrome plated mounting flange, C6FC.

WARNING LIGHT SYSTEM CERTIFICATION

The warning light system(s) specified above will not exceed a combined total amperage draw of 45 AMPS with all lights activated in either the "Clearing Right of Way" or the "Blocking Right of Way" mode.

The warning light system(s) will be certified by the light system manufacturer(s), to meet all of the requirements in the current revision of the NFPA 1901 Fire Apparatus Standard as noted in the General Requirements section of these specifications. The NFPA required "Certificate of Compliance" will be provided with the completed apparatus.

Any large truck as defined by NFPA will have the lower zone warning lights mounted no higher than 62" to the optical center of the warning light from ground level.

***** OPTIONAL WARNING LIGHTS *****

ADDITIONAL WARNING LIGHTS

Two (2) surface mounted Whelen TLIR red LED flashing lights will be furnished and mounted as directed by the fire department.

Each light head will be equipped with red LED lights and clear lenses.

The lights will be installed with a chrome plated mounting flange.

***** AUDIBLE WARNING EQUIPMENT *****

ELECTRONIC SIREN

One (1) Federal Model # PA300-MSC 100 watt electronic siren will be provided featuring: wail, yelp and hi-lo siren tones along with public address, radio rebroadcast, TAP II and air horn with siren override. A hardwired microphone will provided for the public address feature.

The electronic siren and speaker will meet the NFPA required SAE certification to ensure compatibility between the siren and speaker.

2-WAY ROCKER SWITCH CONTROL

A rocker switch will be installed in the dash panel to allow control of either the air horn or the siren from the steering wheel horn button for the driver.

ELECTRONIC SIREN SPEAKER - DRIVER'S SIDE OF FRONT BUMPER

One (1) Federal Signal, model # ES100C 100 watt siren speaker will be provided, recessed on the driver's side of the front bumper and covered with a stainless steel electronic "F" grille, ESFMT-EF, and wired to the electronic siren.

****** PUMP AND PLUMBING ******

PUMP

- **HALE QFLO PLUS-125**
- **1250 G.P.M.**
- **Single Stage**

The pump must deliver the percentage of rated capacity at the pressure listed below:

- 100% of rated capacity at 150 P.S.I. net pump pressure
- 100% of rated capacity at 165 P.S.I. net pump pressure
- 70% of rated capacity at 200 P.S.I. net pump pressure
- 50% of rated capacity at 250 P.S.I. net pump pressure.

PUMP ASSEMBLY

The pump will be of a size and design to mount on the chassis rails of commercial and custom truck chassis and have the capacity of 1250 gallons per minute, NFPA-1901 rated performance.

PUMP CONSTRUCTION

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

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

The entire pump, both suction and discharge passages, will be hydrostatically tested to a pressure of 600 PSI. The pump will be fully tested at the pump manufacturer's factory to performance specs as outlined by the latest NFPA-1901. Pump will be free from objectionable pulsation and vibration.

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

pump body will be vertically 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.

PUMP SHAFT

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

The pump shaft will be heat-treated, electric furnace, corrosion resistant stainless steel. Pump shaft must be sealed with double-lip oil seal to keep road dirt and water out of gearbox.

PUMP IMPELLER

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

Removable, non-corrosive material clearance rings will be provided.

MECHANICAL SHAFT SEAL

The mid ship pump will be equipped with a high quality, spring loaded, 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 will be 2 inches in diameter and consists 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 (1) mechanical seal will 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 will be directed through the seal chamber when the pump is in operation.

PUMP DRIVE UNIT

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

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

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

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

PUMP RATIO

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

The manufacturer will supply at time of delivery copies of the pump manufacturer's certification of hydrostatic testing, the engine manufacturer's current certified brake horsepower curve.

PUMP SHIFT CONTROL

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

EMERGENCY PUMP SHIFT

An emergency manual pump shift control will be furnished on the left side pump panel which may be utilized if the air shift control does not operate.

A transmission, manual lock-up switch will be furnished in the cab to ensure positive lock-up of the transmission.

MAIN PUMP - PUMP SHIFT INDICATOR LIGHTS

For automatic transmissions, three (3) green warning lights will be provided to indicate to the operator(s) when the pump has completed the shift for Road to Pump position. Two (2) green lights to be located in the truck driving compartment and one (1) green light on pump operator's panel adjacent to the throttle control. For manual transmissions, one (1) green warning light will be provided for the driving compartment. All lights to have appropriate identification/instruction plates.

TRANSMISSION LOCK

The automatic transmission furnished in the chassis will have a lock-up assembly which brings the transmission to direct drive and prevents the transmission from shifting gears while in the pumping mode.

BRAKING SYSTEM

A positive braking system will be provided to prevent vehicle movement during pumping operations. The air brakes furnished must satisfy this requirement.

MAIN PUMP MOUNTS

Extra heavy duty pump mounting brackets will be furnished. These will be bolted to the frame rails in such a position to perfectly align the pump so that the angular velocity of the drive line joints will be the same on each end of the drive shaft. This will assure full capacity performance with a minimum of vibration. Mounting hardware will utilize Grade 8 bolts.

******* PRESSURE CONTROL & ACCESSORIES *******

CLASS ONE "TPG" PRESSURE GOVERNOR

Apparatus will be equipped with a Class 1 “Total Pressure Governor” (TPG) that is connected to the Electronic Control Module (ECM) mounted on the engine. The “TPG” will operate as a pressure sensor (regulating) governor (PSG) utilizing the engines J1939 data for optimal resolution and response.

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

The “TPG” will also include indication of engine RPM, system voltage, engine oil pressure and engine temperature with audible alarm output for all. The “TPG” uses the J1939 data bus for engine information, requiring no additional sensors to be installed.

INTAKE RELIEF VALVE

A Task Force Tips relief valve will be provided. The valve will be adjustable from 50 to 300 psi (3 to 14 bar) with easy to see 25 psi (2 bar) increments. The aluminum casting will be hard coat anodized, and powder coat finished inside and out for maximum corrosion protection.

PUMP CERTIFICATION

The pump will be third party performance tested to meet the requirements of NFPA-1901. To ensure top quality and integrity, the test company will be Underwriters Laboratories (UL).

TRIDENT MANUAL PUMP PRIMER

The priming pump will be a Trident Manual 3 Barrel push button air primer system, #31.001.2. A push in primer handle will open the priming valve and prime the pump.

MASTER DRAIN VALVE

A Class One, rotary type, 12 port multiple master drain valve will be provided and controlled at the lower portion of the side pump panel. The valve will be located in pump compartment lower than the main body and connected in such a manner as to allow complete water drainage of the pump body and all required accessories. Water will be drained below the apparatus body and away from the pump operator.

INDIVIDUAL BLEEDERS AND DRAINS

All lines will drain through the master drain valve or will be equipped with individual drain valves, easily accessible and labeled.

One (1) individual "CLASS ONE" quarter turn drain valve will be furnished for each 1-1/2" or larger discharge port and each 2-1/2" gated auxiliary suction.

Drain/bleeder valves will be located at the bottom of the side pump module panels.

All drains and bleeders will discharge below the running boards.

SYNFLEX SUCTION, DISCHARGE, PRESSURE AND CONTROL LINES

Small lines within the pump enclosure will be constructed from Synflex hose. Uses include but are not limited to such lines as priming control, gauge lines, drain lines, air control valves, pump shift, supplemental cooling, foam flush and air bleeder valves.

THREE (3) HALE ALLOY ANODES

Three (3) Hale Alloy Anodes will be provided and located two (2) on the suction side and one (1) on the discharge side of the pump to protect the pump and other critical pump components from corrosion.

THERMAL RELIEF VALVE

A Hale Model TRV120 Thermal Relief Valve will be provided on the pump. If water temperature in the pump exceeds 120 degrees Fahrenheit, the thermal relief valve will automatically open and discharge pump water to the ground, through a 3/8" discharge line, routed below the pump module. The thermal relief valve will automatically close when the water temperature is lowered.

An audible alarm and indicator light will be provided on the operator's panel to illuminate when the thermal relief valve is activated.

TOP MOUNT PUMP MODULE

The pump module will be a self-supported structure mounted independently from the body and chassis cab. The design must allow normal frame deflection without imposing stress on the pump module structure or side running boards. The pump module will be securely mounted to the chassis frame rails.

The pump module will incorporate a formed structure on the top front to support the top mount control panel and required mechanical control handles.

TOP MOUNTED VALVE CONTROLS

The valves will be controlled by vertically operated swing handles. Each handle will be equipped with a twist-lock, easy-grip knob. The valve control handles will be mounted in-line. Each valve control handle will be connected to its respective valve via a control rod and a bell crank mechanism, if needed. Each control rod will consist of a 1/2" pipe welded to a threaded stud to form a rigid linkage. Each pressure gauge will be located directly above its respective discharge control handle and will be clearly marked by color coded name plates.

DUNNAGE AREA

A dunnage area will be provided above the pump enclosure, behind the top mount control panel, for equipment mounting and storage. This area will be furnished with a removable 3/16" aluminum tread plate floor and will be enclosed on the sides.

NOTE: The size of this storage area may vary when top mounted crosslays, booster reel(s), etc., are specified and located in this area.

TRANSVERSE WALKWAY

There will be a transverse walkway located at the rear of the chassis cab, ahead of the pump module. The walkway will be constructed of 3/16" aluminum tread plate and will be clear and unobstructed for through traffic. Folding step(s) will be provided if necessary to maintain NFPA step heights. If steps adjacent to walkway (such as commercial chassis cab access steps) provide NFPA compliant step height, folding steps will not be provided.

A miscellaneous equipment storage compartment will be provided at either side of the walkway, outboard of the chassis frame rails. A vertically hinged, aluminum tread plate door with positive closure latch will be provided on the outboard face of each compartment. Compartments will be ventilated.

The pump house walkway will be approximately 18" wide.

******* PUMP SUCTIONS & AUXILIARY INLETS *******

SUCTION INLETS

Two (2) 6" N.S.T. suction inlets will be provided, one on the driver side and one on the officer side pump panel. A removable strainer will be installed on each inlet.

PUMP SUCTION ENDS

The main pump suction inlets will be furnished with a short suction end, terminating with only the suction threads protruding through the side panel to minimize the distance an exterior appliance protrudes beyond the pump panel.

MAIN SUCTION INLET - 6" NST LONG HANDLE PRESSURE VENTED CAPS

Two (2) 6" NST aluminum plated long handle pressure vented caps will be installed on each main inlet of the pump.

AUXILIARY SIDE SUCTION(S)

DRIVER SIDE AUXILIARY SUCTION

One (1) 2-1/2" auxiliary suction will be provided at the driver side pump panel, to the front of the main inlet. The 2-1/2" auxiliary suction will terminate with a removable strainer, chrome plated 2-1/2" NST female swivel with a chrome plated plug and retaining chain.

DRIVER'S SIDE FRONT AUXILIARY SUCTION - 2 1/2" AKRON BRASS SWING OUT VALVE

An Akron Brass 2 1/2" Generation II Swing-Out™ Valve will be provided for the driver's side front auxiliary suction. The valve will have an all brass body with flow optimizing stainless steel ball and dual polymer seats.

DRIVER SIDE FRONT AUXILIARY SUCTION - INNOVATIVE CONTROLS 1/4 TURN TWIST LOCK HANDLE

The driver side front auxiliary suction valve will be actuated with an Innovative Controls Top Mount Valve Control on the pump panel.

The ergonomically designed 1/4 turn twist lock will be chrome-plated zinc with recessed labels for color-coding and verbiage.The patented geared control rod, double-laminated locking clips, and rod housing will be stainless steel and provide a true positive lock that will eliminate valve drift. Bronze and Teflon impregnated stainless steel bushings in both ends of rod housing will minimize rod deflection, never need lubrication, and ensure consistent long-term operation.

All side gated inlet valves will be recess mounted behind the side pump panels or body panels.

TANK TO PUMP

One (1) 3" tank to pump line will be, piped through the front bulkhead of the tank with a 90 degree elbow down into the tank sump. This line will be plumbed directly into the rear of the pump suction manifold for maximum efficiency.

A check valve will be provided to prevent accidental pressurization of the water tank through the pump connection. Connection from the valve to the tank will be made by using a non-collapsible flexible rubber hose.

TANK TO PUMP - 3" AKRON BRASS SWING OUT VALVE

An Akron Brass 3" Generation II Swing-Out™ Valve will be provided between the pump suction manifold and the water tank. The valve will have an all brass body with flow optimizing stainless steel ball and dual polymer seats.

TANK TO PUMP - INNOVATIVE CONTROLS 1/4 TURN TWIST LOCK CONTROL

The tank to pump will be actuated with Innovative Controls Top Mount Valve Control on the operator's pump panel.

The ergonomically designed 1/4 turn twist lock will be chrome-plated zinc with recessed labels for color-coding and verbiage. The patented geared control rod, double-laminated locking clips, and rod housing will be stainless steel and provide a true positive lock that will eliminate valve drift. Bronze and Teflon impregnated stainless steel bushings in both ends of rod housing will minimize rod deflection, never need lubrication, and ensure consistent long-term operation.

TANK FILL

One (1) 2" gated full flow pump to tank refill line controlled at the pump panel will be provided. A deflector shield inside the tank will be furnished. Tank fill plumbing will utilize 2" high pressure hose for tank connection to accommodate flexing between components.

TANK FILL - 2" AKRON BRASS SWING OUT VALVE

An Akron Brass 2" Generation II Swing-Out™ Valve will be provided between the pump discharge manifold and the water tank. The valve will have an all brass body with flow optimizing stainless steel ball and dual polymer seats.

TANK FILL - INNOVATIVE CONTROLS LOCKING PUSH-PULL SWING CONTROL HANDLE

A locking push/pull swing control handle will be located on the operator's panel with function plate.

******* DISCHARGES & ACCESSORIES TOP MOUNT *******

DRIVER'S SIDE MAIN DISCHARGE #1

A discharge will be provided and located at the driver's side pump panel. The driver's side discharges # 1 will terminate with NST threads, through the left panel above the main pump intake.

The main pump discharge will be plumbed directly from the pump discharge manifold utilizing direct connect discharge valve flanges.

DRIVER'S SIDE DISCHARGE #1 - 2 1/2" AKRON BRASS SWING OUT VALVE

An Akron Brass 2 1/2" Generation II Swing-Out™ Valve will be provided for the driver's side #1 discharge. The valve will have an all brass body with stainless steel ball valve utilizing HydroMax Technology.

The discharge valve will be equipped with a straight 2 1/2" NST adapter that will be equipped with a 2 1/2" NST, 30-degree, chrome plated elbow.

DRIVER'S SIDE DISCHARGE #1 - 2 1/2" NST PRESSURE VENTED CAP

A 2 1/2 " NST chrome plated pressure vented cap will be installed on driver's side #1 discharge.

DRIVER'S SIDE DISCHARGE #1 - INNOVATIVE CONTROLS 1/4 TURN TWIST LOCK CONTROL

The driver's side # 1 discharge valve will be equipped with an Innovative Controls Valve Control on the top mount operator's panel.

The ergonomically designed 1/4 turn twist lock will be chrome-plated zinc with recessed labels for color-coding and verbiage. The patented geared control rod, double-laminated locking clips, and rod housing will be stainless steel and provide a true positive lock that will eliminate valve drift. Bronze and Teflon impregnated stainless steel bushings in both ends of rod housing will minimize rod deflection, never need lubrication, and ensure consistent long-term operation.

INNOVATIVE CONTROLS PRESSURE GAUGE DRIVER SIDE DISCHARGE #1

The driver's side # 1 will be equipped with a 2 ½” diameter Innovative Controls pressure gauge. The gauge will have a rugged corrosion free stainless steel case and clear scratch resistant molded crystals with captive O-ring seals to ensure distortion free viewing and seal the gauge. The gauge will be filled with glycerin to dampen shock and vibration, lubricate the internal mechanisms, prevent lens condensation and ensure proper operation from –40°F to +160°F.

The gauge will exceed ANSI B40.1 Grade A requirements with an accuracy of +/- 1.5% full scale and include a size appropriate phosphorous bronze bourdon tube with a reinforced lap joint and large tube base to increase the tube life and gauge accuracy.

A polished chrome-plated stainless steel bezel will be provided to prevent corrosion and protect the lens and gauge case. The gauge will have black graphics on a white background.

DRIVER'S SIDE MAIN DISCHARGE #2

A discharge will be provided and located at the driver's side pump panel. The driver's side discharges # 2 will terminate with NST threads, through the left panel above the main pump intake.

The main pump discharge will be plumbed directly from the pump discharge manifold utilizing direct connect discharge valve flanges.

DRIVER'S SIDE DISCHARGE #2 - 2 1/2" AKRON BRASS SWING OUT VALVE

An Akron Brass 2 1/2" Generation II Swing-Out™ Valve will be provided for the driver's side #2 discharge. The valve will have an all brass body with flow optimizing stainless steel ball and dual polymer seats.

The discharge valve will be equipped with a straight 2 1/2" NST adapter that will be equipped with a 2 1/2" NST, 30-degree, chrome plated elbow.

DRIVER'S SIDE DISCHARGE #2 - 2 1/2" NST PRESSURE VENTED CAP

A 2 1/2 " NST chrome plated pressure vented cap will be installed on driver's side #2 discharge.

DRIVER'S SIDE DISCHARGE #2 - INNOVATIVE CONTROLS 1/4 TURN TWIST LOCK CONTROL

The driver's side # 2 discharge valve will be equipped with an Innovative Controls Top Mount Valve Control on the top mount operator's panel.

The ergonomically designed 1/4 turn twist lock will be chrome-plated zinc with recessed labels for color-coding and verbiage. The patented geared control rod, double-laminated locking clips, and rod housing will be stainless steel and provide a true positive lock that will eliminate valve drift. Bronze and Teflon impregnated stainless steel bushings in both ends of rod housing will minimize rod deflection, never need lubrication, and ensure consistent long-term operation.

INNOVATIVE CONTROLS PRESSURE GAUGE DRIVER SIDE DISCHARGE #2

The driver's side discharge #2 will be equipped with a 2 ½" diameter Innovative Controls pressure gauge. The gauge will have a rugged corrosion free stainless steel case and clear scratch resistant molded crystals with captive O-ring seals to ensure distortion free viewing and seal the gauge. The gauge will be filled with glycerin to dampen shock and vibration, lubricate the internal mechanisms, prevent lens condensation and ensure proper operation from –40°F to +160°F.

The gauge will exceed ANSI B40.1 Grade A requirements with an accuracy of +/- 1.5% full scale and include a size appropriate phosphorous bronze bourdon tube with a reinforced lap joint and large tube base to increase the tube life and gauge accuracy.

A polished chrome-plated stainless steel bezel will be provided to prevent corrosion and protect the lens and gauge case. The gauge will have black graphics on a white background.

OFFICER'S SIDE MAIN DISCHARGE #1

A discharge will be provided and located at the officer's side pump panel. The officer's side discharges #1 will terminate with NST threads, through the officer's side panel above the main pump intake.

The main pump discharge will be plumbed directly from the pump discharge manifold utilizing direct connect discharge valve flanges.

OFFICER'S SIDE DISCHARGE #1 - 2 1/2" AKRON BRASS SWING OUT VALVE

An Akron Brass 2 1/2" Generation II Swing-Out™ Valve will be provided for the officer's side #1 discharge. The valve will have an all brass body with flow optimizing stainless steel ball and dual polymer seats.

The discharge valve will be equipped with a straight 2 1/2" NST adapter that will be equipped with a 2 1/2" NST, 30-degree, chrome plated elbow.

OFFICER'S SIDE DISCHARGE #1 - 2 1/2" NST PRESSURE VENTED CAP

A 2 1/2 " NST chrome plated pressure vented cap will be installed on officer's side #1 discharge.

OFFICER'S SIDE DISCHARGE #1 - INNOVATIVE CONTROLS 1/4 TURN TWIST LOCK CONTROL

The officer's side # 1 discharge valve will be equipped with an Innovative Controls Top Mount Valve Control on the top mount operator's panel.

The ergonomically designed 1/4 turn twist lock will be chrome-plated zinc with recessed labels for color-coding and verbiage. The patented geared control rod, double-laminated locking clips, and rod housing will be stainless steel and provide a true positive lock that will eliminate valve drift. Bronze and Teflon impregnated stainless steel bushings in both ends of rod housing will minimize rod deflection, never need lubrication, and ensure consistent long-term operation.

INNOVATIVE CONTROLS PRESSURE GAUGE OFFICER SIDE DISCHARGE #1

The officer's side discharge #1 will be equipped with a 2 ½” diameter Innovative Controls pressure gauge. The gauge will have a rugged corrosion free stainless steel case and clear scratch resistant molded crystals with captive O-ring seals to ensure distortion free viewing and seal the gauge. The gauge will be filled with glycerin to dampen shock and vibration, lubricate the internal mechanisms, prevent lens condensation and ensure proper operation from –40°F to +160°F.

The gauge will exceed ANSI B40.1 Grade A requirements with an accuracy of +/- 1.5% full scale and include a size appropriate phosphorous bronze bourdon tube with a reinforced lap joint and large tube base to increase the tube life and gauge accuracy.

A polished chrome-plated stainless steel bezel will be provided to prevent corrosion and protect the lens and gauge case. The gauge will have black graphics on a white background.

DRIVER SIDE REAR DISCHARGE

A 2 1/2" NST rear discharge will be provided at the rear of the vehicle, plumbed from the pump.

The rear discharge will terminate on the rear body panel, on the driver side of the body.

The driver side rear discharge pipe will be equipped with a chrome 2 1/2" NSTM thread adapter.

The driver side rear discharge will be plumbed utilizing 2 1/2" schedule 10 stainless steel piping, 45 degree elbows and a limited number of 90 degree sweep elbows in an assembly from the pump to the rear of the vehicle.

A minimum of one (1) grooved pipe coupling will be furnished in this assembly to allow for flex and serviceability.

DRIVER'S SIDE REAR DISCHARGE - 2 1/2" AKRON BRASS SWING OUT VALVE

An Akron Brass 2 1/2" Generation II Swing-Out™ Valve will be provided for the driver's side rear discharge. The valve will have an all brass body with flow optimizing stainless steel ball and dual polymer seats.

DRIVER SIDE REAR DISCHARGE #1 - INNOVATIVE CONTROLS 1/4 TURN TWIST LOCK CONTROL

The driver's side rear discharge valve will be actuated with Innovative Controls Top Mount Valve Control on the operator's pump panel.

The ergonomically designed 1/4 turn twist lock will be chrome-plated zinc with recessed labels for color-coding and verbiage. The patented geared control rod, double-laminated locking clips, and rod housing will be stainless steel and provide a true positive lock that will eliminate valve drift. Bronze and Teflon impregnated stainless steel bushings in both ends of rod housing will minimize rod deflection, never need lubrication, and ensure consistent long-term operation.

DRIVER'S SIDE REAR DISCHARGE - 2 1/2" NST PRESSURE VENTED CAP

A 2 1/2 " NST chrome plated pressure vented cap will be installed on driver's side rear discharge.

INNOVATIVE CONTROLS DISCHARGE GAUGE DRIVER SIDE REAR DISCHARGE

The driver's side rear discharge will be equipped with a 2 ½" diameter Innovative Controls pressure gauge. The gauge will have a rugged corrosion free stainless steel case and clear scratch resistant molded crystals with captive O-ring seals to ensure distortion free viewing and seal the gauge. The gauge will be filled with glycerin to dampen shock and vibration, lubricate the internal mechanisms, prevent lens condensation and ensure proper operation from –40°F to +160°F.

The gauge will exceed ANSI B40.1 Grade A requirements with an accuracy of +/- 1.5% full scale and include a size appropriate phosphorous bronze bourdon tube with a reinforced lap joint and large tube base to increase the tube life and gauge accuracy.

A polished chrome-plated stainless steel bezel will be provided to prevent corrosion and protect the lens and gauge case. The gauge will have black graphics on a white background.

DECK GUN DISCHARGE

A deck gun discharge will be plumbed from the pump to an area on top of the vehicle. The deck gun piping will be firmly supported and braced.

The deck gun discharge will be located in the center of the dunnage area above the pump module, centered on the pump operator's panel. The piping will be positioned so the deck gun appliance is accessible from the pump operator's position.

A pedestal type, 1/4" steel plate support assembly or "U" clamp will be provided to stabilize deck gun plumbing below deck gun mount flange.

The deck gun discharge pipe will terminate with 3" NPT threads.

DECK GUN DISCHARGE NOT TO EXCEED TALLEST POINT

The deck gun piping will be designed so the overall height of the deck gun in the mounted/stowed position does not exceed the tallest point on the cab/body. **NO EXCEPTIONS.**

DECK GUN DISCHARGE PLUMBING

The deck gun discharge will be plumbed utilizing 3" schedule 10 stainless steel piping, 45 degree elbows and a limited number of 90 degree sweep elbows in an assembly from the pump to the deck gun location.

A minimum of one (1) grooved pipe coupling will be furnished in this assembly to allow for flex and serviceability.

DECK GUN DISCHARGE - 3" AKRON BRASS SWING OUT VALVE

An Akron Brass 3" Generation II Swing-Out™ Valve will be provided for the deck gun discharge. The valve will have an all brass body with flow optimizing stainless steel ball and dual polymer seats.

DECK GUN DISCHARGE #1 - INNOVATIVE CONTROLS 1/4 TURN TWIST LOCK CONTROL

The deck gun discharge valve will be actuated with Innovative Controls Top Mount Valve Control on the operator's pump panel.

The ergonomically designed 1/4 turn twist lock will be chrome-plated zinc with recessed labels for color-coding and verbiage. The patented geared control rod, double-laminated locking clips, and rod housing will be stainless steel and provide a true positive lock that will eliminate valve drift. Bronze and Teflon impregnated stainless steel bushings in both ends of rod housing will minimize rod deflection, never need lubrication, and ensure consistent long-term operation.

INNOVATIVE CONTROLS PRESSURE GAUGE DECK GUN DISCHARGE

The deck gun discharge will be equipped with a 2 ½" diameter Innovative Controls pressure gauge. The gauge will have a rugged corrosion free stainless steel case and clear scratch resistant molded crystals with captive O-ring seals to ensure distortion free viewing and seal the gauge. The gauge will be filled with glycerin to dampen shock and vibration, lubricate the internal mechanisms, prevent lens condensation and ensure proper operation from –40°F to +160°F.

The gauge will exceed ANSI B40.1 Grade A requirements with an accuracy of +/- 1.5% full scale and include a size appropriate phosphorous bronze bourdon tube with a reinforced lap joint and large tube base to increase the tube life and gauge accuracy.

A polished chrome-plated stainless steel bezel will be provided to prevent corrosion and protect the lens and gauge case. The gauge will have black graphics on a white background.

AKRON APOLLO HI-RISER DUAL INLET PORTABLE AND DECK GUN MONITOR

An Akron Apollo Hi-Riser Dual Inlet Portable and Deck Gun Monitor will be supplied and mounted. The dual 2.5" inlet monitor shall be equipped with a portable ground base, a 3" direct mount truck mount flange, pipe and quad stacked tips. The monitor will also include the following: Pressure gauge on the monitor, carry handle for portable usage, grease fittings for maintenance, safety chains, hardened steel ground spikes and Pyrolite construction.

1-1/2" FRONT DISCHARGE #1

A 1 1/2" front #1 discharge will be plumbed to the front bumper of the vehicle.

The front #1 discharge will terminate with a brass 1 1/2" NST chicksan swivel adapter in the hose well on the front bumper.

The front #1 discharge will be plumbed utilizing 2" schedule 10 stainless steel piping and/or flexible hose, 45 degree elbows and a limited number of 90 degree sweep elbows in an assembly from the pump to the front of the vehicle.

A minimum of one (1) grooved pipe coupling will be furnished in this assembly to allow for flex and serviceability. Automatic discharge drains will be provided at all low points in the plumbing.

FRONT DISCHARGE #1 - 2" AKRON BRASS SWING OUT VALVE

An Akron Brass 2" Generation II Swing-Out™ Valve will be provided for the front #1 discharge. The valve will have an all brass body with flow optimizing stainless steel ball and dual polymer seats.

FRONT DISCHARGE #1 - INNOVATIVE CONTROLS 1/4 TURN TWIST LOCK CONTROL

The front discharge #1 valve will be actuated with Innovative Controls Top Mount Valve Control on the operator's pump panel.

The ergonomically designed 1/4 turn twist lock will be chrome-plated zinc with recessed labels for color-coding and verbiage. The patented geared control rod, double-laminated locking clips, and rod housing will be stainless steel and provide a true positive lock that will eliminate valve drift. Bronze and Teflon impregnated stainless steel bushings in both ends of rod housing will minimize rod deflection, never need lubrication, and ensure consistent long-term operation.

FRONT DISCHARGE #1 - 1 1/2" NST PRESSURE VENTED CAP

A 1 1/2" NST chrome plated pressure vented cap will be installed the front #1 discharge.

INNOVATIVE CONTROLS PRESSURE GAUGE FRONT DISCHARGE #1

The front discharge #1 will be equipped with a 2 ½" diameter Innovative Controls pressure gauge. The gauge will have a rugged corrosion free stainless steel case and clear scratch resistant molded crystals with captive O-ring seals to ensure distortion free viewing and seal the gauge. The gauge will be filled with glycerin to dampen shock and vibration, lubricate the internal mechanisms, prevent lens condensation and ensure proper operation from –40°F to +160°F.

The gauge will exceed ANSI B40.1 Grade A requirements with an accuracy of +/- 1.5% full scale and include a size appropriate phosphorous bronze bourdon tube with a reinforced lap joint and large tube base to increase the tube life and gauge accuracy.

A polished chrome-plated stainless steel bezel will be provided to prevent corrosion and protect the lens and gauge case. The gauge will have black graphics on a white background.

SPEEDLAY DISCHARGE #1

The hose will be capable of being reloaded from either side of the vehicle and from access slots provided on the front of the pump module when standing in the pump module walkway. The speedlays shall have vinyl flaps on the front and sides.

The outer edge of the speedlay #1 hose bed will be trimmed stainless steel scuff plates.

The speedlay #1 discharge will terminate through the rear wall of the hose bed with a 1 1/2" NSTM chicksan swivel adapter. The hose bed rear wall will be slotted to allow the swivel to through the wall, allowing the pre-connected hose to be pulled off either side of the apparatus without kinking the hose at the coupling connection.

Speedlay #1 will be designed to have a minimum total capacity of 3.5 cubic feet as required by NFPA - 1901 to accommodate a minimum of 200 feet of 1-3/4" fire hose. The hose will be loaded in a double stack configuration.

The speedlay #1 discharge will be plumbed utilizing 2" schedule 10 stainless steel piping and/or flexible hose, 45 degree elbows and a limited number of 90 degree sweep elbows in an assembly from the pump to speedlay hose bed.

A minimum of one (1) grooved pipe coupling will be furnished in this assembly to allow for flex and serviceability.

SPEEDLAY DISCHARGE #1 - 2" AKRON BRASS SWING OUT VALVE

An Akron Brass 2" Generation II Swing-Out™ Valve will be provided for the speedlay #1 discharge. The valve will have an all brass body with flow optimizing stainless steel ball and dual polymer seats.

SPEEDLAY DISCHARGE #1 - INNOVATIVE CONTROLS 1/4 TURN TWIST LOCK CONTROL

The speedlay discharge #1 valve will be actuated with Innovative Controls Top Mount Valve Control on the operator's pump panel.

The ergonomically designed 1/4 turn twist lock will be chrome-plated zinc with recessed labels for color-coding and verbiage. The patented geared control rod, double-laminated locking clips, and rod housing will be stainless steel and provide a true positive lock that will eliminate valve drift. Bronze and Teflon impregnated stainless steel bushings in both ends of rod housing will minimize rod deflection, never need lubrication, and ensure consistent long-term operation.

INNOVATIVE CONTROLS PRESSURE GAUGE SPEEDLAY #1

The speedlay discharge #1 will be equipped with a 2 ½" diameter Innovative Controls pressure gauge. The gauge will have a rugged corrosion free stainless steel case and clear scratch resistant molded crystals with captive O-ring seals to ensure distortion free viewing and seal the gauge. The gauge will be filled with glycerin to dampen shock and vibration, lubricate the internal mechanisms, prevent lens condensation and ensure proper operation from –40°F to +160°F.

The gauge will exceed ANSI B40.1 Grade A requirements with an accuracy of +/- 1.5% full scale and include a size appropriate phosphorous bronze bourdon tube with a reinforced lap joint and large tube base to increase the tube life and gauge accuracy.

A polished chrome-plated stainless steel bezel will be provided to prevent corrosion and protect the lens and gauge case. The gauge will have black graphics on a white background.

SPEEDLAY DISCHARGE #2

The hose will be capable of being reloaded from either side of the vehicle and from access slots provided on the front of the pump module when standing in the pump module walkway. The speedlays shall have vinyl flaps on the front and sides.

The outer edge of the speedlay #2 hose bed will be trimmed stainless steel scuff plates.

The speedlay #2 discharge will terminate through the rear wall of the hose bed with a 1 1/2" NSTM chicksan swivel adapter. The hose bed rear wall will be slotted to allow the swivel to through the wall, allowing the pre-connected hose to be pulled off either side of the apparatus without kinking the hose at the coupling connection.

Speedlay #2 will be designed to have a minimum total capacity of 3.5 cubic feet as required by NFPA - 1901 to accommodate a minimum of 200 feet of 1-3/4" fire hose. The hose will be loaded in a double stack configuration.

The speedlay #2 discharge will be plumbed utilizing 2" schedule 10 stainless steel piping and/or flexible hose, 45 degree elbows and a limited number of 90 degree sweep elbows in an assembly from the pump to speedlay hose bed.

A minimum of one (1) grooved pipe coupling will be furnished in this assembly to allow for flex and serviceability.

SPEEDLAY DISCHARGE #2 - 2" AKRON BRASS SWING OUT VALVE

An Akron Brass 2" Generation II Swing-Out™ Valve will be provided for the speedlay #2 discharge. The valve will have an all brass body with flow optimizing stainless steel ball and dual polymer seats.

SPEEDLAY DISCHARGE #2 - INNOVATIVE CONTROLS 1/4 TURN TWIST LOCK CONTROL

The speedlay discharge #2 valve will be actuated with Innovative Controls Top Mount Valve Control on the operator's pump panel.

The ergonomically designed 1/4 turn twist lock will be chrome-plated zinc with recessed labels for color-coding and verbiage. The patented geared control rod, double-laminated locking clips, and rod housing will be stainless steel and provide a true positive lock that will eliminate valve drift. Bronze and Teflon impregnated stainless steel bushings in both ends of rod housing will minimize rod deflection, never need lubrication, and ensure consistent long-term operation.

INNOVATIVE CONTROLS PRESSURE GAUGE SPEEDLAY #2

The speedlay discharge #2 will be equipped with a 2 ½" diameter Innovative Controls pressure gauge. The gauge will have a rugged corrosion free stainless steel case and clear scratch resistant molded crystals with captive O-ring seals to ensure distortion free viewing and seal the gauge. The gauge will be filled with glycerin to dampen shock and vibration, lubricate the internal mechanisms, prevent lens condensation and ensure proper operation from –40°F to +160°F.

The gauge will exceed ANSI B40.1 Grade A requirements with an accuracy of +/- 1.5% full scale and include a size appropriate phosphorous bronze bourdon tube with a reinforced lap joint and large tube base to increase the tube life and gauge accuracy.

A polished chrome-plated stainless steel bezel will be provided to prevent corrosion and protect the lens and gauge case. The gauge will have black graphics on a white background.

Bidder Complies	
Yes	No

TWO (2) SPEEDLAY TRAYS

Two (2) speedlay trays will be provided for the two (2) discharges in the speedlay module. The trays will be easily removable to allow the fire department to load hose.

BOOSTER REEL #1 DISCHARGE

A 1 1/2" booster reel discharge will be plumbed from the pump to the booster reel.

The booster reel discharge will be plumbed from the valve to the hose reel utilizing 1" high pressure hose. The end of the hose connected to the hose reel will be equipped with a swivel end for ease in hose replacement.

BOOSTER REEL DISCHARGE #1 - 1 1/2" AKRON BRASS SWING OUT VALVE

A 1 1/2" Akron, #8800 series, full flow, stainless steel ball valve will be provided for the booster reel #1 discharge.

BOOSTER REEL DISCHARGE #1 - INNOVATIVE CONTROLS 1/4 TURN TWIST LOCK CONTROL

The booster reel discharge #1 valve will be actuated with Innovative Controls Top Mount Valve Control on the operator's pump panel.

The ergonomically designed 1/4 turn twist lock will be chrome-plated zinc with recessed labels for color-coding and verbiage. The patented geared control rod, double-laminated locking clips, and rod housing will be stainless steel and provide a true positive lock that will eliminate valve drift. Bronze and Teflon impregnated stainless steel bushings in both ends of rod housing will minimize rod deflection, never need lubrication, and ensure consistent long-term operation.

INNOVATIVE CONTROLS PRESSURE GAUGE BOOSTER REEL #1

The booster reel discharge #1 will be equipped with a 2 ½" diameter Innovative Controls pressure gauge. The gauge will have a rugged corrosion free stainless steel case and clear scratch resistant molded crystals with captive O-ring seals to ensure distortion free viewing and seal the gauge. The gauge will be filled with glycerin to dampen shock and vibration, lubricate the internal mechanisms, prevent lens condensation and ensure proper operation from –40°F to +160°F.

The gauge will exceed ANSI B40.1 Grade A requirements with an accuracy of +/- 1.5% full scale and include a size appropriate phosphorous bronze bourdon tube with a reinforced lap joint and large tube base to increase the tube life and gauge accuracy.

A polished chrome-plated stainless steel bezel will be provided to prevent corrosion and protect the lens and gauge case. The gauge will have black graphics on a white background.

BOOSTER REEL #1

One(1) Hannay polished aluminum electric rewind booster reel with 1/2HP motor will be furnished, SBEPF30-23-24. The reel will hold 200' of 1" booster hose will be equipped with a one (1) inch 90° full flow swivel joint and an adjustable brake for freewheeling, drag or full lock operation.

BOOSTER REEL #1 - BELLY PAN MOUNTED

The booster reel #1 will be mounted at the apparatus rear, in a framework mounted to the chassis frame rails.

BOOSTER REEL REWIND

Booster reel rewind will be controlled by a push button on the rear body panel near the rear step compartment. The booster reel circuit will be equipped with a shielded toggle switch to act as a booster reel disconnect to avoid accidental actuation of the booster reel rewind button.

BOOSTER HOSE

Each booster reel will be equipped with 200' of 1" All American Reel Lite Red Booster Hose in 100' sections, RL10RD. Each length will be fitted with 1" NH aluminum couplings.

CAPTIVE HOSE ROLLERS

A captive roller arrangement will be provided around the perimeter of the rear opening of the hose reel storage area allowing hose to be pulled out in any direction.

BOOSTER REEL BLOWOUT VALVE

One (1) booster reel air blowout utilizing a quarter turn shuttle valve to redirect chassis air to the booster reel will be provided at the pump operator's panel for cold weather operations.

PUMP PANEL - TOP MOUNT

The pump operator's control panel will be located above the pump towards the rear of the transverse walkway area with the operator facing the rear of the apparatus to operate the pump controls.

The top and side panels will be completely removable and designed for easy access and servicing.

TOP MOUNT GAUGE PANEL

The top operator's panel will be fabricated from 14-gauge 304L stainless steel with a #4, (150/180 grit), standard polished finish.

SIDE PUMP PANEL MATERIAL

The left and right side pump panel will be fabricated from 14-gauge 304L stainless steel with a #4, (150/180 grit), standard polished finish.

HINGED GAUGE PANEL

An angled full width, horizontally hinged gauge access panel will be provided at the top mount operator's position. Chrome plated positive locks will be provided along with chain holders to secure the panel in the opened position.

VERTICALLY HINGED, SPLIT PUMP PANEL DRIVER SIDE

The driver side pump panel will be split, vertically hinged, to provide complete access to the pump and plumbing on the driver side of the pump enclosure. The panels will be equipped with stainless steel hinges and secured with push type locks to hold the panels closed. The drains located on the driver side panel will be fastened to the lower panel, which will be stationary.

VERTICALLY HINGED, SPLIT PUMP PANEL OFFICER SIDE

The officer's side pump panel will be split, vertically hinged, to provide complete access to the pump and plumbing on the officer side of the pump enclosure. The panels will be equipped with stainless steel hinges and secured with push type locks to hold the panels closed. The drains located on the officer's side panel will be fastened to the lower panel, which will be stationary.

CAPS AND ADAPTERS SAFETY TETHER

All applicable discharge and suction caps, plugs and adapters will be equipped with chrome plated ball chain and secured to the vehicle.

DISCHARGE GAUGE TRIM BEZELS

Each individual discharge gauge will be installed into a decorative chrome-plated mounting bezel that incorporates valve-identifying verbiage and color labels.

COLOR CODED IDENTIFICATION TAGS

Color coded identification tags will be provided for all gauges, controls, connections, switches, inlets and outlets.

The labels for the discharges shall be specified by the department at preconstruction.

PUMP OPERATOR'S PANEL LIGHT SHIELD

The pump operator’s panel will be equipped with a light shield that will be full width of the control panel and will be positioned to cover the lights and prevent glare.

The light shield will be equipped with the following lights:

- Six (6) Optronics T44 LED lights.

One (1) light under the operator's panel light shield will be actuated when fire pump is engaged in addition to the pump engaged light.

TOP MOUNT WALKWAY LIGHTING

The top mount walkway will be illuminated by the following lights:

- Four (4) Optronics T44-LED lights

The lights will be controlled with the marker lights.

OFFICER SIDE PUMP PANEL LIGHTING

The officer side pump panel and running board will be illuminated by the following lights:

- Four (4) Optronics T44 LED lights

The lights will be switched with the top mount panel lights.

PUMP OPERATOR'S PANEL

Particular attention is to be given to functional arrangement of all controls. The pump operator's panel will accommodate the following:

- Hinged gauge panel
- Water tank fill valve
- Auxiliary suction valve control
- All discharge valve controls
- Auxiliary engine cooler controls
- Water tank suction control valve
- Pump primer valve
- Engine throttle control
- Master compound vacuum gauge
- Master pressure gauge
- Individual discharge gauges
- Pump shift engaged indicator light
- Water tank water level indicator
- Engine tachometer
- Engine oil pressure gauge with audible alarm
- Engine water temperature gauge with audible alarm
- Low voltage light and audible alarm
- Pump panel light switch
- Speed counter (Underwriters)
- Pump performance plate (Underwriters)
- Pump serial No. plate
- Master pump drain valve
- Individual drains
- Voltmeter
- Air inlet/outlet at lower driver side panel
- Pump panel air horn actuation button labeled "EVACUATION" in white letters with a red background
- Class One "TPG" pressure governor control

PUMP TEST PORTS

The pump panel will be equipped with Vacuum & Pressure test plugs to allow for test equipment to monitor pump pressure and vacuum levels. Chrome plugs and labels will be provided for the test ports.

ENGINE COOLER

An auxiliary cooler or heat exchanger will be installed in the engine compartment between the engine and the chassis radiator. The cooler will permit the use of water from the pump for cooling the engine. The cooling will be done without mixing engine and pump water.

MASTER GAUGES

One (1) 4" diameter pressure gauge (labeled: "PRESSURE") and one (1) 4" diameter compound vacuum gauge (labeled: "INTAKE") will be provided. The master gauges will be Innovative Controls glycerin filled. The gauge faces will be white with black numerals.

PRESSURE & COMPOUND GAUGE RANGES

All applicable pressure gauges will have a range of 0 - 400 P.S.I., and the compound gauge will have a range of -30" - 0 - 400 P.S.I.

INNOVATIVE CONTROLS ULTRA-BRIGHT LED WATER LEVEL GAUGE

An Innovative Controls model #3030358, Ultra-Bright LED water level monitor will be provided on the pump operator's panel. The level gauge will contain ten (10) high intensity LEDs on the display in a vertical pattern allowing the full, 3/4, 1/2, 1/4 and refill levels to be easily distinguished at a glance. The display will use a two-dimensional, two-element lens to refract the light from the LEDs to provide full 180° visibility for the level indications.

INNOVATIVE CONTROLS ULTRA-BRIGHT LED WATER LEVEL GAUGE, REAR OF BODY

An additional Innovative Controls model #3030358, Ultra-Bright LED water level monitor will be provided on the rear of the vehicle. The level gauge will contain ten (10) high intensity LEDs on the display in a vertical pattern allowing the full, 3/4, 1/2, 1/4 and refill levels to be easily distinguished at a glance. The display will use a two-dimensional, two-element lens to refract the light from the LEDs to provide full 180° visibility for the level indications.

To be centered on the officer's side rear of the body above the or adjacent to the direct tank fill.

The gauge will use a pressure transducer #3030376-01 installed near the bottom of the water tank to determine the correct volume in the tank.

1250 GALLON WATER T-TANK

The water tank will have a capacity of 1250 U.S. gallons and will be constructed of PT3™ polypropylene material. This material will be a non-corrosive stress relieved thermoplastic and UV stabilized for maximum protection. Tank shell thickness may vary depending on the application and may range from ½ to 1" as required. Internal baffles are generally 3/8" in thickness.

WATER TANK ISO CERTIFICATION

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

WATER TANK CONSTRUCTION

The tank will be of a specific configuration and is so designed to be completely independent of the body and compartments. Joints and seams will be fused using nitrogen gas as required and tested for maximum strength and integrity. The tank construction will include PolyProSeal™ technology wherein a sealant will be installed between the plastic components prior to being fusion welded. This sealing method will provide a liquid barrier offering leak protection in the event of a weld compromise. The top of the booster tank is fitted with removable lifting assembly designed to facilitate tank removal. The transverse and longitudinal swash partitions will be manufactured of a minimum of 3/8" PT3™ polypropylene. All partitions will be equipped with vent and air holes to permit movement of air and water between compartments. The partitions will be designed to provide maximum water flow. All swash partitions interlock with one another and are completely fused to each other as well as to the walls of the tank. All partitions and spacing will comply with NFPA 1901. The walls will be welded to the floor of the tank providing maximum strength as part of the tank's unique Full Floor Design™. Tolerances in design allow for a maximum variation of 1/8" on all dimensions.

WATER TANK CAPACITY CERTIFICATION

All water and foam tanks will be tested and certified as to capacity on a calibrated and certified tilting scale. Each tank will be weighed empty and full to provide precise fluid capacity. Each Poly-Tank® III is delivered with a Certificate of Capacity delineating the weight empty and full and the resultant capacity based on weight. Engineering estimates for capacity calculations will not be permitted for capacity certification.

WATER TANK CENTER OF GRAVITY

A center of gravity calculation will be determined for each tank and provided as requested in order to provide the apparatus manufacturer with the necessary data to design and certify the apparatus with respect to the NFPA requirements regarding rollover stability. This information may be used by the apparatus manufacturer to assist in the calculation of the apparatus's ability to meet the tilt table static rollover threshold or calculated Center of Gravity requirements per NFPA. A center of gravity and weight calculation for both empty and full conditions will be required with each tank.

WATER TANK TANKNOLOGY™ TAG

A tag will be installed on the apparatus in a convenient location and contain pertinent information including a QR code readable by commercially available smart phones. The information contained on the tag will include the capacity of the water and foam (s), the maximum fill and pressure rates, the serial number of the tank, the date of manufacture, the tank manufacturer, and contact information. The QR code will allow the user to connect with the tank manufacturer for additional information and assistance.

WATER TANK LID

The tank cover will be constructed of 1/2" thick PT3 polypropylene and UV stabilized, to incorporate a multi-piece locking design, which allows for individual removal and inspection if necessary. The tank cover(s) will be flush or recessed 3/8" from the top of the tank and will be fused to the tank walls and longitudinal partitions for maximum integrity. Each one of the covers will have hold downs consisting of 2" minimum polypropylene dowels spaced a maximum of 40" apart. These dowels will extend through the covers and will assist in keeping the covers rigid under fast filling conditions. A minimum of two lifting dowers will accommodate the necessary lifting hardware.

WATER FILL TOWER AND COVER

The tank will have a combination vent and manual fill tower. The fill tower will be constructed of 1/2" PT3™ polypropylene and will be a minimum dimension of 12" x 12" outer perimeter. The fill tower will be blue in color indicating that it is a water-only fill tower. The tower will be located in the left front corner of the tank unless otherwise specified by the tank manufacturer to the purchaser. The tower will have a 1/4" thick removable polypropylene screen and a PT3™ polypropylene hinged cover. The capacity of the tank will be engraved on the top of the fill tower lid. Inside the fill tower there will be a combination vent/overflow pipe. The vent overflow will be a minimum of schedule 40 polypropylene pipe with a minimum I.D. of 4" that is designed to run through the tank and will be piped to discharge water behind the rear wheels as required in NFPA 1901 so as to not interfere with rear tire traction.

The tank cover will be constructed of 1/2" thick PT3™ polypropylene and UV stabilized, to incorporate a multi-piece locking design, which allows for individual removal and inspection if necessary. The tank cover(s) will be flush or recessed 3/8" from the top of the tank and will be fused to the tank walls and longitudinal partitions for maximum integrity. Each one of the covers will have hold downs consisting of 2" minimum polypropylene dowels spaced a maximum of 40” apart. These dowels will extend through the covers and will assist in keeping the covers rigid under fast filling conditions. A minimum of two lifting dowels will accommodate the necessary lifting hardware.

OVERFLOW AND VENT PIPE

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

WATER TANK SUMP

There will be one (1) sump standard per tank. The sump will be constructed of a minimum of 1/2" PT3™ polypropylene and will be located in the left front quarter of the tank, unless specified otherwise.

WATER TANK 3" SUMP DRAIN

On all tanks that require a front suction, a 3" schedule 40 polypropylene pipe will be installed that will incorporate a dip tube from the front of the tank to the sump location. The sump will have a minimum 3" N.P.T. threaded outlet on the bottom for a drain plug per NFPA. This will be used as a combination clean-out and drain. All tanks will have an anti-swirl plate located approximately 3” above the inside floor.

WATER TANK OUTLETS

There will be two (2) standard tank outlets; one for tank-to-pump suction line which will be a minimum of 4" coupling and one for a tank fill line which will be a minimum of a 2" NPT coupling.

All tank fill couplings will be backed with flow deflectors to break up the stream of water entering the tank, and be capable of withstanding sustained fill rates of up to 1000 G.P.M. The addition of rear suction fittings, nurse valve fittings, dump valve fittings, and through-the-tank sleeves to accommodate rear discharge piping must be specified. All auxiliary outlets and inlets must meet all NFPA guidelines in effect at the time of manufacture.

WATER TANK MOUNTING

The UPF Poly-Tank® III will rest on the body cross members in conjunction with such additional cross members, spaced at a distance that would not allow for more than 530 square inches of unsupported area under the tank floor. 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 1/4” x 1” and a Shore A Hardness of approximately 60 durometer. The rubber must be installed so it will not become dislodged during normal operation of the vehicle. Additionally, the tank must be supported around the entire bottom outside perimeter and captured both in the front and rear as well as side to side to prevent tank from shifting during vehicle operation.

A picture frame type cradle mount with a minimum of 2" x 2" x 1/4” mild steel, stainless steel, or aluminum angle shall be provided or the use of corner angles having a minimum dimension of 4" x 4" x 1/4” by 6” high are permitted for the purpose of capturing the tank.

Although the tank is designed on a free floating suspension principle, it is required that the tank have adequate vertical hold down restraints to minimize movement during vehicle operation. If proper retention has not been incorporated into the apparatus hose floor structure, an optional mounting restraint system shall be located on top of the tank, half way between the front and the rear on each side of the tank. These stops can be constructed of steel, stainless steel or aluminum angle having minimum dimensions of 3" x 3" x 1/4” and shall be approximately 6” to 12” long. These brackets must incorporate rubber isolating pads with a minimum thickness of 1/4” inch and a hardness of 60 durometer affixed on the underside of the angle. The angle should then be bolted to the body side walls of the vehicle while extending down to rest on the top outside edge of the upper side wall of the tank. Hose beds floors must be so designed that the floor slat supports extend full width from side wall to side wall and are not permitted to drop off the edge of the tank or in any way come in contact with the individual covers where a puncture could occur. Tank top must be capable of supporting loads up to 200 lbs. per sq. foot when evenly distributed. Other equipment such as generators, portable pumps, etc. must not be mounted directly to the tank top unless provisions have been designed into the Poly-Tank® III for that purpose. The tank shall be completely removable without disturbing or dismantling the apparatus structure.

WATER TANK SUMP FOR REAR DUMP

The water tank will be fitted with one (1) additional sump for the rear dump constructed of a minimum of 1/2" PT3™ polypropylene in the rear of the tank.

10" NEWTON STAINLESS STEEL DUMP WITH ELECTRIC ACTUATOR - REAR

The rear of the water tank will be equipped with a 10" Newton Stainless Steel Dump Valve, model #1080-34. The dump valve will be electronically actuated. The dump valve setup will be capable of discharging the water tank contents at a rate of at least 1800 G.P.M.

NEWTON STAINLESS STEEL 36" MANUAL TELESCOPING CHUTE

The rear Newton Dump will be equipped with a Newton Model #4036-8X12-34, 36" manual telescoping, stainless steel dump chute.

REAR DUMP SWITCHING - DRIVER SIDE

The rear dump switching will be installed on the driver side of the rear body panel. The switch will be a toggle style switch installed in a protective cast enclosure with a hinged door. A light will be installed inside the enclosure to illuminate the switching area. This light will be activated whenever the vehicle marker lights are turned on.

REAR DUMP SWITCHING - IN CAB

The rear dump will be switched by a momentary style switch from inside the cab. The switch will be located in an area near the driver and will be a guarded style switch.

2.5" DIRECT TANK FILL - OFFICER SIDE

One (1) 2-1/2" NST direct tank fill will be provided at the rear of the body, on the officer side, as low as possible. The direct tank fill will be gated with a 2-1/2" Fireman's Friend (TTMA 6-bolt attachment pattern) check-type fill valve. The fill valve will be capable of flowing at a rate in excess of 1,000 gallons per minute and will be of a self deflecting design, requiring no additional diffusion device. The fill valve will be constructed of stainless steel, with a spring actuated piston-type sealing mechanism to minimize seal wear and provide positive sealing of the valve. The fill will be equipped with a 30 degree elbow terminating with a 2-1/2" NST female swivel connection. A Trident rocker lug chrome plated brass plug with beaded chain will be provided for the direct tank fill, 01.007.0.

WATER TANK SLEEVE FOR REAR DISCHARGE

One (1) 6" inside diameter, water tank sleeve will be provided to accommodate plumbing to the rear of the unit for the rear discharge. The tank sleeve will be provided as part of the tank assembly by the tank manufacturer to allow installation of piping.

APPARATUS BODY DESIGN CONSTRUCTION

The body side and compartment assemblies will be designed and assembled to provide maximum strength and durability under all operating conditions.

Special attention will be taken to minimize corrosion on all fabricated parts and structural members of the body. All bolt-on components will be provided with a dissimilar metals isolation barrier to prevent electric corrosion. The body design will also incorporate removable panels to access spring hangers, rear body mounts and fuel tank sending units.

The body assembly will be an all-welded configuration. The body will be completely isolated from the cab and pump module structure.

BODY AND COMPARTMENT FABRICATION - 3/16" ALUMINUM

All compartment panels and body side sheets will be entirely 3/16" aluminum (5052-H32). Each compartment panel and/or body side sheet will be both plug welded and stitch welded to ensure proper weld penetration on all panels while avoiding the possible warping caused by a full seam weld. A full seam weld will not be used due to the applied heat which could distort sheet metal and remove the protective coating from the perimeter of the welded area. All seams will be caulked prior to finish paint to ensure proper compartment seal. **NO EXCEPTIONS.**

100" WIDE FIRE BODY

The fire body will be 100" wide to provide the maximum amount of usable hose bed space, approximately 76" wide, and to extend the body fenderettes outward for better tire tread coverage. **NO EXCEPTIONS.**

BODY SUBFRAME - ALUMINUM

The body subframe will be an all welded configuration utilizing a combination of 3” x 1-1/2" 6061-T6 thick walled structural tubing and 6061 structural channel. **NO EXCEPTIONS.**

This body subframe will be designed to totally support the full length, height and width of the body.

The body subframe will be bolted to the sides of the chassis frame rails a minimum of four (4) points using spring cushioned with U-bolts.

STEPPING, STANDING, & WALKING SURFACES

All stepping, standing, and walking surfaces on the body will meet NFPA #1901 anti-slip standards. Aluminum tread plate utilized for stepping, standing, and walking surfaces will be No Slip type. Upon request by the Purchaser, the manufacturer will supply proof of compliance with this requirement.

DRIVER'S SIDE COMPARTMENTS

The driver's side body compartments will be 26" deep in the lower full depth section and 12" deep in the upper section.

OFFICER'S SIDE COMPARTMENTS

The officer's side body compartments will be 26" deep in the lower full depth section and 12" deep in the upper section.

DRIVER'S SIDE COMPARTMENTATION

L1 - One (1) full height/split depth compartment, with a roll up door, will be provided forward of the rear wheels. Compartment dimensions 60" high x 42" wide x 26" deep in the lower 30" high area, 12" deep in the upper 30" high area.

L2 - One (1) high side compartment, with a roll up door, will be provided above the rear wheels. Compartment dimensions 26" high x 56" wide by 12" deep.

L3 - One (1) full height/split depth compartment, with a roll up door, will be provided behind the rear wheels. Compartment dimensions 60" high x 56" wide x 26" deep in the lower 30" high area, 12" deep in the upper 30" high area.

OFFICER'S SIDE COMPARTMENTATION

R1 - One (1) low side compartment, with a vertically hinged double door, will be provided forward of the rear wheels. Compartment dimensions 30" high x 42" wide x 26" deep.

R2 -One (1) low side compartment, with a vertically hinged double door, will be provided rerward of the rear wheels. Compartment dimensions 30" high x 56" wide by 26" deep.

COMPARTMENT DOORS

The compartment doors will be flush type with the outer skin fabricated from 3/16" (5052 H32) aluminum. The door skin will have a formed flange on one (1) side used as a hinge mounting flange. The door skin will have reinforcing channels welded internally which accommodate the inner door pan mounting.

The 2" thick compartment doors will reduce the overall specified compartment depth by 2.00".

All horizontally hinged doors will be 2.00" thick to provide additional compartment storage area. The 2.00" thick horizontally hinged doors will reduce the overall specified compartment depth by approximately 2.00".

COMPARTMENT DRIP MOLDING

Compartment tops over all side compartments will have a flange formed to provide protection against water runoff. For bodies with wide hose beds or coffin compartments a secondary extruded drop molding will be provided above the compartments.

COMPARTMENT DOOR FINISH

The hinged doors will be painted to match the apparatus body.

ROLL-UP DOORS

Roll-up doors will be provided on all compartments. The roll-up doors will be constructed from aluminum extruded slats which will have a flexible seal between each slat for proper sealing of the door.

A synthetic rubber seal will be provided at each side, top and bottom edge of the door to prevent entry of dirt into the compartment.

The door will be equipped with a lift bar style latch mechanism which will latch at the bottom of the door mounting extrusion.

The roll-up door assembly will be furnished with a spring-loaded, counter balance assembly to assist in door actuation.

All running board and high side compartments will be equipped with roll-up doors.

ROM SERIES IV ROLL-UP SHUTTER DOORS - BRUSHED FINISH

There shall be Four (4) R•O•M Series IV roll-up shutter doors installed. Each shutter slat, track, bottom rail, and drip rail shall be constructed from anodized 6063 T6 aluminum.

The Shutter slats will feature a double wall extrusion 0.315” thick with a concave interior surface to minimize loose equipment jamming the shutter door closed. The Shutter slats will feature an interlocking end shoe to prevent side to side binding of the shutter door during operation. The Slats must have interlocking joints with an inverted locking flange. The Slat inner seal will be a one piece PVC extrusion; seal design will be such to prevent metal to metal contact while minimizing dirt and water from entering the compartment.

The Shutter door track will be one piece design with integral overlapping flange to provide a clean finished look without the need of caulk. The Door track will feature an extruded Santoprene rubber double lip low profile side seal with a silicone co-extruded back to reduce friction during shutter operation.

The Shutter bottom rail will be a one piece double wall extrusion with integrated finger pull. The Finger pull will be curved upward with a linear striated surface to improve operator grip while operating the shutter door. The Bottom rail will have a smooth contoured interior surface to prevent loose equipment from jamming the shutter door. The Bottom rail seal will be made from Santoprene; it will be a double “V” seal to prevent water and debris from entering compartment. The Bottom rail lift bar will be a one piece “D” shaped aluminum extrusion with linear striations to improve operator grip during operation. The Lift bar will have a wall thickness of 0.125”. The Lift bar will be supported by no less than two pivot blocks; pivot blocks will be constructed from Type 66 Glass filled reinforced nylon for superior strength. The Bottom rail end blocks will have incorporated drain holes which will allow any moisture that collects inside the extrusion to drain out.

The Shutter door will have an enclosed counter balance system. The Counter balance system will be 4” in diameter and held in place by 2 heavy duty 18 gauge zinc plated plates. The Counter balance system will have 2 over-molded rubber guide wheels to provide a smooth transition from vertical track to counter balance system; no foam material of any kind shall be permitted or used in this area.

Shutter door assembly will be manufactured and assembled in the United States, no exceptions.

The roll-up doors will be Robinson (ROM) brand roll-up doors, equipped with a brushed aluminum finish, with a PVC inner seal to prevent metal to metal contact and to repel moisture. The slats will be double-wall extrusion 1.366” high by .315” thick with interlocking end shoes to prevent the slats from moving side-to-side and binding the door. All slats are to have interlocking joints to prevent penetration by sharp objects.

UNPAINTED TOP GUTTER AND SIDE FRAMES

The top gutter and side frames will remain unpainted.

Each inner pan will be constructed from 1/8" aluminum material, which will be provided with a brushed finish. The brushed finish will allow the fire department to remove scratches from the inner door pan with sand paper or scuff pad. Each inner door pan will be fastened to the door frame channels to provide a smooth, snag-free inner door surface. The inner door pan on the running board compartments will enclose the latch and reinforcements completely. The pan will be easily removable to access the enclosed latch mechanism.

COMPARTMENT DOOR HINGES

Hinges will be full length polished stainless steel. The hinges will be mounted with stainless steel hardware.

COMPARTMENT DOOR SEALS

Enclosed body compartment doors will be equipped with a closed cell gasket. The gasket material will be EPDM to provide a gasket resistant to weather, temperature extremes, and aging.

COMPARTMENT DOOR LATCHES – ROTARY WITH D-RINGS

Two (2) externally latched body doors will be equipped with stainless steel D-ring handles.

Rotary door latches will be provided for all full height body doors, which will incorporate rotary latches at the top and bottom of all externally latched single or double doors. Linkages will be provided between the actuation handle and the latch mechanisms.

The blank door of a double door configuration will have rotary latches at the top and bottom of each door with the latch release lever accessible thru the door frame, which eliminates the need to reach inside the compartment to release the door. Linkages will be provided between the actuation handle and the latch mechanisms.

Horizontally hinged doors will be equipped with a single rotary door latch.

COMPARTMENT DOOR STAY ARMS

Two (2) 90 pound gas shock type door hold open devices will be provided for each vertically and horizontally hinged door.

SWEEP-OUT COMPARTMENT FLOORS

Compartment floors will be welded to the compartment walls and have a sweep out design for easy cleaning.

Compartments with hinged doors will have the door opening flanges bend down to produce the sweep-out design.

Compartments with roll-up style doors will have the external floor flange stepped down, 1/2" high x 2" deep, to produce a sealing surface for the roll-up doors below the compartment floor. The sweep out design will also permit easy cleaning.

COMPARTMENT TOPS

Compartment tops will be covered with polished aluminum tread plate on both sides.

COMPARTMENT DRIP MOLDING

Compartment tops over all side compartments will have a 45 degree flange formed out to provide protection against water runoff. A secondary extruded drip molding will be provided between low compartments and auxiliary high side compartments, when auxiliary compartments are provided.

COATED FASTENERS

All exterior fasteners will be coated stainless steel screws. Screw threads will be coated with reusable, self-locking, sealing material to provide vibration resistance. Screw heads will be coated with a sealing element to prevent galvanic corrosion between dissimilar metals. Non-coated screws will only be provided as part of vendor supplied component installations.

COMPARTMENT LOUVERS

Ventilation between compartments to atmosphere will be provided and located to avoid water entry into compartments.

ACCESS PANELS

Removable access panels will be provided in all lower compartments (if applicable) to access spring pins, fuel tank sender, electrical junction compartment and rear body mounts.

Protective panels will be located in the rear compartments providing access to the lights and associated wiring. The covers will also serve as protective covers to prevent inadvertent damage to lights or wiring from tools or equipment located in the compartment.

BODY PROTECTION PANELS

The front face of the side compartments, next to the driver and officer side pump panels will be overlaid with aluminum tread plate full height protection. The protection panel will cover the entire front face of the compartment and will wrap around the corner to the door opening.

REAR BODY PANEL

The rear body panel will extend the full width of the body. This panel will be full height from the rear step compartment to the hose bed floor. The panel will be bolted on and removable, with no part of the rear panel attached to the booster tank. The rear body panel material will be aluminum tread plate as standard. If Chevron striping is specified for the rear of the body then smooth aluminum will be utilized.

BODY RUB RAILS

Sacrificial aluminum tread plate rub rails will be mounted at the base of the body, extend outward a minimum 3/4", downward 2" and flange inward 1". The rub rails will extend the full length of the main body and extend to the rear step or wrap around the rear body corners. The rub rails will be designed to provide for ease of replacement.

RUNNING BOARD STEPS

The driver and officer running board steps will be fabricated of 3/16" polished aluminum tread plate. The outside edge on each step will be fabricated with a double break, return flange. The steps will be rigidly reinforced with a heavy duty support structure. The running boards will not form any part of the compartment design and will be bolted into place with a minimum 1/2" clearance gap between any panel to facilitate water runoff.

REAR STEP

The rear step will be fabricated from 3/16" polished aluminum tread plate, and will be rigidly reinforced. The rear step will extend 18" past the rear edge of the body, and will be 100" wide with square corners.

The rear edge of the step will be designed to accommodate the rear clearance lights, recessed for protection in the step reinforcement channel. The step tread plate overlay will be bolted to the step frame for ease of replacement.

ISOLATED REAR STEP COMPARTMENT

An isolated rear step compartment measuring 40" high x 46" wide x 30" deep with a door opening of 38" high x 43-3/4" wide will be provided at the rear of the apparatus.

The rear step compartment door will be a roll-up door. The roll-up door will be equipped with a brushed aluminum finish.

GRAB RAILS

All hand rails will be 1-1/4" outer diameter, knurled bright anodized aluminum extrusion, designed to meet NFPA 1901 requirements.

Molded gaskets will be installed between the handrail stanchion castings and body surfaces to prevent electrolytic reaction between dissimilar metals and to protect paint.

GRAB RAIL LOCATIONS:

Grab rails will be provided at the following specified locations. Additional grab rails will be provided adjacent to any additional steps specified to comply with NFPA 1901.

Two (2) vertical rails will be mounted on the rear edge of the body, one (1) each side.

One (1) horizontal, full width handrail will be installed on the rear, below the level of the hose bed.

Two (2) 18" horizontal handrails will be provided and installed one (1) on each side at rear top of body.

Two (2) vertical handrails will be mounted on each side of the forward pump house.

FOLDING STEP(S) - BODY FRONT DRIVER SIDE

Four (4) Innovative Controls large lighted folding step(s) (IC-3004234-33-1-1-1-1-0 LED), with a textured chrome plate finish, will be provided on driver side body front to provide NFPA compliant access (maximum 18” height between steps) to an upper horizontal walking surface (compartment cap, dunnage area, fabricated step, or upper body compartments).

FOLDING STEP(S) - BODY FRONT OFFICER SIDE

One (1) Innovative Controls large lighted folding step(s) (IC-3004234-33-1-1-1-1-0 LED), with a textured chrome plate finish, will be provided on officer side body front to provide NFPA compliant access (maximum 18” height between steps) to an upper horizontal walking surface (compartment cap, dunnage area, fabricated step, or upper body compartments).

FOLDING STEP(S)- BODY REAR DRIVER SIDE

Two (2) Innovative Controls large lighted folding step(s) (IC-3004234-33-1-1-1-1-0 LED), with a textured chrome plate finish, will be provided on driver side body rear to provide NFPA compliant access (maximum 18” height between steps) to an upper horizontal walking surface (compartment cap, dunnage area, fabricated step, or upper body compartments).

FOLDING STEP(S)- BODY REAR OFFICER SIDE

One (1) Innovative Controls large lighted folding step(s) (IC-3004234-33-1-1-1-1-0 LED), with a textured chrome plate finish, will be provided on officer side body rear to provide NFPA compliant access (maximum 18” height between steps) to an upper horizontal walking surface (compartment cap, dunnage area, fabricated step, or upper body compartments).

SAFETY SIGN(S) AT REAR STEP AND CROSS WALKWAY(S)

Safety sign(s) will be located on the vehicle at the rear step, and at any cross walkway(s), to warn personnel that riding in or on these areas while the vehicle is in motion is prohibited.

WELDED ALUMINUM REAR WHEEL WELL LINERS

Fully removable, 1/8" aluminum fender liners will be provided. The wheel well liners will be welded to the body and extend from the outer wheel well body panel, into the truck frame. Removable vertical splash shields, inward of the wheels, will be provided to give access to the hydraulic components. The completely washable fender liners will be designed to protect the front and rear compartments and main body supports from road salts, dirt accumulation and corrosion.

REAR FENDERETTES

The single rear fenders will be equipped with easily replaceable, polished stainless steel fenderettes. The fenderettes will be equipped with a rubber gasket molding between the body panel and the fender. Integral welded crown type liners will not be acceptable.

***** BODY FENDER STORAGE COMPARTMENTS *****

TWO (2) BOTTLE STORAGE DRIVER FRONT FENDER

A storage compartment will be inserted into the front driver side body fender. The compartment will be sized large enough to store two (2) SCBA cylinders or fire extinguishers, with a maximum length of 26". The compartment will have a non-abrasive floor area for the two (2) devices. The compartment will be enclosed by a hinged door with a thumb latch. The back side of the door will have a section of Nylatron installed to protect the door surface from the items stored in the compartment.

TWO (2) BOTTLE STORAGE OFFICER FRONT FENDER

A storage compartment will be inserted into the front officer side body fender. The compartment will be sized large enough to store two (2) SCBA cylinders or fire extinguishers, with a maximum length of 26". The compartment will have a non-abrasive floor area for the two (2) devices. The compartment will be enclosed by a hinged door with a thumb latch. The back side of the door will have a section of Nylatron installed to protect the door surface from the items stored in the compartment.

TWO (2) BOTTLE STORAGE DRIVER REAR FENDER

A storage compartment will be inserted into the rear driver side body fender. The compartment will be sized large enough to store two (2) SCBA cylinders or fire extinguishers, with a maximum length of 26". The compartment will have a non-abrasive floor area for the two (2) devices. The compartment will be enclosed by a hinged door with a thumb latch. The back side of the door will have a section of Nylatron installed to protect the door surface from the items stored in the compartment.

TWO (2) BOTTLE STORAGE OFFICER REAR FENDER

A storage compartment will be inserted into the rear officer side body fender. The compartment will be sized large enough to store two (2) SCBA cylinders or fire extinguishers, with a maximum length of 26". The compartment will have a non-abrasive floor area for the two (2) devices. The compartment will be enclosed by a hinged door with a thumb latch. The back side of the door will have a section of Nylatron installed to protect the door surface from the items stored in the compartment.

NYLON STRAP FOR SCBA CYLINDER(S)

Eight (8) nylon strap will be provided, one (1) for each SCBA bottle body fender storage compartment to provide a secondary means to hold each SCBA bottle in place. The strap will be a 1" nylon webbing formed in a loop. The strap will be secured to the SCBA bottle tray and will loop around the SCBA cylinder to hold in place.

FENDER STORAGE DOOR - TREADPLATE

The fender storage area will be enclosed by a hinged door fabricated from polished aluminum diamond plate.

REAR MUD FLAPS

Heavy duty mud flaps will be provided behind the rear wheels.

PAINTED REAR TOW EYES

Two (2) painted tow eyes will be furnished on the rear of the vehicle. The tow eyes will be made from plate steel and will be bolted directly to the chassis frame rails with grade 8 bolts and will extend below the body. The tow eyes will be smooth and free from sharp edges and have a minimum eyelet hole of 2-1/2". The tow eyes will be painted.

76" WIDE HOSE BED

The hose bed will be located directly above the booster tank and will be free from all sharp objects such as bolts, nuts, etc., to avoid damage to fire hose.

For added strength, the hose bed side walls will be 2" thick, this will provide a mounting surface for devices like warning lights and scene lights. The inner hose bed side walls will be brushed aluminum panels, which will prevent damage to painted surfaces when deploying hose. The front and side walls on the hose bed will be constructed of a combination of two inch rounded structural thick wall square tubing and two inch square aluminum extrusion depending on body design requirements. **NO EXCEPTIONS.**

HOSE BED CAPACITY

The hose bed will provide a minimum 30 cubic feet hose storage area for 2 ½" or larger fire hose to meet NFPA 1901 minimum pumper hose storage requirement.

The apparatus weight analysis will be based on 800' of 2 ½" hose unless otherwise specified. If the hose load to be carried exceeds this minimum, the purchaser will advise the manufacturer prior to contract so adequate chassis carrying capacity can be provided.

HOSE BED FLOORING

Flooring to be constructed from extruded aluminum and be properly spaced for ventilation. The flooring will be smooth and free from sharp edges to avoid hose damage. The hose bed floor will be removable to provide access to inner body framework.

TWO (2) HOSE BED PARTITIONS

Two (2) fully adjustable 3/16", brushed finish, aluminum hose bed partitions will be provided. The partitions will be easily adjustable by means of Unistrut channels located at the front and rear of the hose bed.

HOSE PARTITION CUTOUTS

The hose bed partitions will have a vertical handhold cutout at upper rear edge of the partition.

The cutout shall be on the rear of the divider.

HOSE BED COVER, VINYL WITH VELCRO

A hose bed cover will be provided and installed. The cover will be made from 22 ounce; heavy-duty vinyl coated polyester fabric (TXN 226). The cover will be sewn with ultraviolet resistant thread and will have 2" wide nylon webbing sewn around the perimeter to provide additional strength.

The cover will be secured to the top front body flange with Velcro and quarter turn fasteners and will be secured to the top side body flanges with Velcro. A weighted flap will be furnished on the rear of the cover with two (2) bungee cords.

The Hypalon material will be black in color.

LADDER MOUNTING BRACKETS

Ladder mounting brackets will be a Cast Products #FA0030-5 to accommodate different ladder banked widths. The brackets will be mounted on tracking on the officer side body side panel with spring actuated holders.

GROUND LADDERS

The following Alco-Lite ground ladder complement will be provided:

- One (1) Alco-Lite model PEL-24; 24', aluminum, two (2) section extension ladder will be provided.
- One (1) Alco-Lite model PRL-14; 14', aluminum, straight roof ladder with folding hooks will be provided.
- One (1) Alco-Lite model FL-10; 10', folding, aluminum, attic ladder will be provided.

PIKE POLE STORAGE

Two (2) pike pole tube(s) will be provided. Each holder will be accessible from the rear of the apparatus. Each pike pole holder will be labeled to indicate the pike pole length.

The pike pole tube(s) will be mounted on top of the officer's side compartment cap.

One (1) 10' and one (1) 6' pike pole

SUCTION HOSE STORAGE - DRIVER AND OFFICER SIDE BODY PANELS

The suction hoses will be located on the body side panels in aluminum trays, one (1) on the officer side and one (1) on the driver side of the apparatus.

SUCTION HOSE TROUGHS

Two (2) polished, extruded aluminum adjustable hose trough(s) will be provided to accommodate the suction hoses. Two (2) Velcro hose holders will be furnished on each trough.

One (1) suction hose tray shall be mounted above the compartments on the driver's side of the body and one (1) suction hose tray shall be mounted above the ladders on the officer's side of the body.

SUCTION HOSE

Two (2) 10' sections of six (6) inch Kochek (PVC) suction hose with lightweight hard coat couplings will be furnished, 2P601-10-A52. Couplings will include a long handle, female swivel on one end and a rocker lug male on the other end. All threads will be six (6) inch N.S.T.

NOTE: All PVC suction hoses are strictly drafting hoses and must not be used on hydrants or in pressure applications, as serious personal injury or death may occur.

EQUIPMENT CLARIFICATION

The NFPA-1901 required suction strainer will "NOT" be provided by the apparatus manufacturer.

EQUIPMENT CLARIFICATION

The NFPA-1901 recommended double female hydrant adapter will not be provided by the apparatus manufacturer.

ADDITIONAL ITEMS SUPPLIED WITH THE VEHICLE

- 1 - Pint of touch up paint for each color
- 1 -Bag of assorted stainless steel nuts and bolts

WHEEL CHOCKS

Two (2) ZICO #SAC-44-E folding wheel chocks will be mounted forward of the rear wheels on the driver side below the side running board compartments.

ADDITIONAL LOOSE EQUIPMENT TO BE PROVIDED BY THE DEALER

Please enter in the per unit price and extended price for the loose equipment listed below:

Quantity	Item Number	Item Description	Unit Price	Ext Price
1	Radio Package	• 1 - UNITY GAIN ANTENNA QUARTER WAVE VHF 150.8 CF • 1 - INSTALLATION OF RADIO • 1 - INSTALLATION OF WIRELESS MIC • 1 - TRAVEL MILES • 1 - XPR 2500 136-174 45W 128CH VHF (AAM02JQH9JA1AN) • 1 - CLASSIC SPK MIC & PONDER PACKAGE (X10DR-PU2) • 1 - CABLE ADAPTER MOTOROLA 16PIN (XCA-M16 • 1 - MSC FACE PLATE (JOT-425-6068		
2	1723	Akron - Mid Range Turbo Jet Nozzle w/ Pistol Grip, 1,5“ NH, 95-200GPM		
10	8D17X50C15N	All American Hose 1.75” X 50‘ 8D - DJ Coated White		
10	8D30X50Y25N	All American Hose 8D 3“ x 50‘ Yellow		
1	8D30X25Y25N	All American Hose 8D 3“ X 25‘ Yellow		
2	36R2525	Kochek - Adapter: 2.5“ NH x 2.5” NH Double RLM, KBR FINISH		
2	35R2525-KBR	Kochek - Adapter: 2.5“ NH x 2.5” NH, Double F Swivel Rocker Lug (35R), KBrite		
1	09KT25225M	Kochek - Gate Valve: 2.5“ NH SW RLF x 2.5” NH M, w/ T Handle		
4	QL48Z25C	South Park Quic-Loc 2.5“ Mounting Plate		
2	K45-3	Kochek - Wrench Set: (1) K05 Hydrant Wrench & (2) K01 Spanners Wrench		
1	CBWP-51	Fire Hooks - Crow Bar, Wedge Point		
1	PB-30	Fire Hooks - Pro Bar: 30”, Aircraft Steel, Nickel Plated		
2	45855	Streamlight - E-Spot LiteBox: Vehicle Mount System, 12V DC Direct Wire Rack, Orange		
1	BC-36	Fire Hooks - Bolt Cutters, 36“		

- ****** COMPARTMENT ACCESSORIES ******

ADJUSTABLE SHELVING

Compartment shelving will be constructed of 3/16” brush finish aluminum with a 2” upward bend at front and rear, and side supports. Shelving will be vertically adjustable with spring nuts in aluminum strut channel.

Adjustable shelves will be located as follows:

- One (1) in the driver side front compartment
- One (1) in the officer side front compartment
- One (1) in the officer side rear compartment

600 POUND FLOOR MOUNTED ROLL OUT TRAYS

Floor mounted roll-out trays will consist of heavy duty, roller bearing slide tracks with a load rating of 600 pounds, securely fastened to the compartment floor. The tray will be fabricated from 3/16" brushed aluminum with a minimum 2" high flange on each of the four sides to assist in retaining the equipment stored on each tray. The slide tracks will have a 100% extension, allowing the tray to extend out of the compartment completely.

The 600 pound floor mounted roll out trays will be located as follows:

- One (1) in the driver side front compartment
- One (1) in the officer side front compartment

PAINT, PREPARATION AND FINISH

The apparatus body will be painted Sikkens [#COL]. The paint process will meet or exceed current state regulations concerning paint operations. Pollution control will include measures to protect the atmosphere, water, and soil. Contractor will, upon demand, provide evidence that the manufacturing facility is in compliance with State EPA rules and regulations.

The exterior will have no mounted components prior to painting to assure full coverage of metal treatments and paint to the exterior surfaces of the body. Any vertically or horizontally hinged smooth-plate compartment doors will be painted separately to assure proper paint coverage on body, door jambs and door edges.

Paint process will feature Sikkens high solid LV products and be performed in the following steps:

- Corrosion Prevention - all aluminum surfaces will be pre-treated with the Alodine 5700 conversion coating to provide superior corrosion resistance and excellent adhesion of the base coat.
- Sikkens Sealer/Primer LV - acrylic urethane sealer/primer will be applied to guarantee excellent gloss hold-out, chip resistance and a uniform base color.
- Sikkens High Solid LVBT650 (Base coat) - a lead-free, chromate-free high solid acrylic urethane base coat will be applied, providing excellent coverage and durability. A minimum of two (2) coats will be applied.
- Sikkens High Solid LVBT650 (Clear coat) - high solid LV clear coat will be applied as the final step in order to ensure full gloss and color retention and durability. A minimum of two (2) coats will be applied.

Any location where the material is penetrated after painting, for the purpose of mounting steps, hand rails, doors, lights, or other specified components will be treated at the point of penetration with a corrosion inhibiting pre-treatment (ECK Corrosion Control). The pre-treatment will be applied to the aluminum sheet metal or aluminum extrusions in all locations where the aluminum has been penetrated. All hardware used in mounting steps, hand rails, doors, lights, or other specified components will be individually treated with the corrosion inhibiting pre-treatment.

After the paint process is complete, the gloss rating of the unit will be tested with a 20 degree gloss meter. Coating thickness will be measured with a digital MIL gauge and the orange peel with a digital wave scan device.

BODY PRIMER & PREPARATION

All exposed welds will be ground smooth for final finishing of areas to be painted. The compartments and doors are totally degreased and phosphatized. After final body work is completed, grinding (36 and 80 grit), and finish sanding will be used in preparation for priming.

BODY FINISH PAINT

The body will be finish sanded and prepared for final paint. Upon completion of final preparation, the body will be painted utilizing the highest quality, state of the art, low V.O.C., polyurethane base paint. Finish paint will be applied in multiple coats to ensure proper paint coverage with a high gloss finish.

The entire body will be buffed and detailed.

UNDERBODY BODY PAINT

The inside and underside areas of the complete body assembly will be painted black using a Sikkens paint system, prior to the installation of the body on the chassis.

GRAY ZOLATONE COMPARTMENT PAINT

The interior of the compartments will be finish painted with gray Zolatone scuff resistant paint to provide a protective application over all of the compartment interior surfaces.

FENDER STORAGE COMPARTMENTS DA FINISH

The interior of the fender storage compartments (if fender compartments are specified) will have an unpainted "DA" finish inside. All seams will be caulked with a clear silicone type caulking.

SINGLE COLOR BODY PAINT

The body paint finish will be Sikkens paint system in a single color, to match customer furnished paint codes and requirements.

Paint Code: FLNA3225 Red

SINGLE COLOR CHASSIS CAB PAINT

The commercial cab exterior will be finish painted in a single color by the chassis manufacturer with Purchaser's choice of color as available.

Paint Code: FLNA3225 Red

COMMERCIAL CAB PAINT FINISH GUIDELINES

The chassis will be painted and detailed as provided from the chassis OEM and will meet their quality guidelines.

TOUCH-UP PAINT

One (1) pint of each exterior color paint for touch-up purposes will be supplied when the apparatus is delivered to the end user.

FINALIZATION & DETAILING

Prior to delivery of the vehicle, the interior and exterior be cleaned and detailed. The finalization process detailing will include installation of NFPA required labels, checking fluid levels, sealing and caulking required areas of the cab and body, rust proofing, paint touch-up, etc.

UNDERBODY ANTI-CORROSION PAINT TREATMENT

Upon completion, the underside of the apparatus, from the pump enclosure-back, will have anti-corrosion textured paint applied to help inhibit rust and the corrosion process. The Quick Dry Rubberized undercoat paint will be applied using an air driven spray gun. The paint will be applied as a minimum to the following areas: body substructure, underside of all body compartments, running board supports and rear step supports. No paint will be applied directly to the exhaust system or wheel wells. **NO EXCEPTIONS.**

****** LETTERING AND STRIPING ******

COMPUTER GENERATED LETTERING

The lettering and striping will be custom designed utilizing state of the art computer software and computerized cutting machines. The manufacturer will employ a full time artist / designer to generate all lettering, decals, and striping to meet the requirements of the Fire Department. The artwork for the lettering and striping will be kept on record by the apparatus manufacturer to allow for ease in duplication for the Fire Department.

FRONT CAB DOOR LETTERING

Gold leaf, "Sign Gold", with drop shadow lettering will be provided on the cab driver's and officer's doors per the fire department requirements. The design of the lettering on the cab doors will be designed to fit in the 496 sq. inches available.

Lettering provided on the driver's and officer's cab doors will be 3" high.

LETTERING FONT

The lettering will be designed and cut with a basic block type font:

"BLOCK TYPE FONT"

******NFPA REQUIRED SCOTCH-LITE STRIPING ******

SCOTCH-LITE STRIPE

A six (6) inch high "Scotch-Lite" stripe will be provided. The stripe will be applied on a minimum of 60 percent of each side of the unit, 60 percent on the rear of the unit and 40 percent on the front of the unit. The Scotch-Lite stripe layout will be determined by the Fire Department.

The Scotch-Lite will be white in color.

REAR CHEVRON STRIPING

At least 50% of the rear facing vertical surface will be covered with alternating strips of reflective striping.

The striping will be 6" Scotch-Lite.

The Scotch-Lite will be Ruby Red and Yellow in color.

WARRANTY, STARTING ON IN-SERVICE DATE

Warranty coverage by the manufacturer shall begin when the customer places the unit in service. This date may not exceed 60 days from the date of delivery to the customer.

FREIGHTLINER CHASSIS WARRANTY

A new vehicle warranty will be provided on the chassis by the manufacturer. The warranty will be fully detailed in the owner's manual as supplied by Freightliner. The Commercial Chassis Warranty start date will begin upon departure of the completed apparatus from the manufacturer (unless chassis is customer provided, at which point the chassis warranty start period will be as agreed upon between the customer and the chassis dealership from whom it was purchased).

ONE (1) YEAR - NEW PRODUCT MATERIAL AND WORKMANSHIP WARRANTY

The manufacturer must warrant each new item of fire and rescue apparatus manufactured by it against defects in material and workmanship provided the apparatus is used in a normal and reasonable manner. This warranty is extended only to the original user-purchaser for a period of one year from the date of delivery to the original user-purchaser.

The manufacturer's obligation under this warranty shall be strictly limited to replacing or repairing, as the manufacturer may elect, any part or parts of such apparatus which the Company's examination discloses to be defective in material or workmanship.

The manufacturer shall reserve the right to require any such repairs to be made either at a manufacturer owned service facility or another approved service facility at the Company's option. Transportation cost to and from the servicing location is the responsibility of the user-purchaser.

The manufacturer's warranty shall not apply to:

- Major components or trade accessories such as purchased chassis, engines, transmissions, tires, pumps, signaling devices, or batteries that have a separate warranty by the original manufacturer or to ancillary equipment used in fire fighting.
- Normal adjustments and maintenance services.
- Replacement of consumable parts including, but not limited to; filters, lubricants, belts, light bulbs, wiper blades, brake linings and brake pads.
- Failure resulting from the apparatus being operated in a manner or for a purpose not recommended by the manufacturer .
- Any apparatus, which shall have been repaired, modified or altered in any way so as, in the Company's sole judgment, to have adversely affected the unit's stability or reliability.
- Items subjected to misuse, negligence, accident or improper maintenance.
- Loss of time or use of the vehicle, inconvenience or other incidental expenses.

Nothing contained in this warranty shall make the manufacturer liable beyond the express limitations hereof, for loss, injury or damage of any kind to any person or entity resulting from any defect or failure in this vehicle.

To the extent permitted by law, THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION, ANY IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

To the extent permitted by law, this warranty is also in lieu of all other obligations or liabilities on the part of the manufacturer or the Seller, including liability for incidental and consequential damages.

Bidder Complies	
Yes	No

ONE (1) YEAR - NEW PRODUCT MATERIAL AND WORKMANSHIP WARRANTY, CONT'D.

The manufacturer shall make no representation that the vehicle has the capacity to perform any functions other than as contained in the Company's written literature, catalogs or specifications accompanying delivery of the vehicle.

No person or affiliated manufacturer representative shall be authorized to give any other warranties or to assume any other liability on behalf of the manufacturer in connection with sale, service or repair of any apparatus manufactured.

The manufacturer shall reserve the right to make design changes or improvements in its products without imposing any obligation upon itself to change or improve previously manufactured products.

Whenever a performance bond is required under a contract or purchase order, coverage under the performance bond shall only extend for one year from the delivery date of the equipment. This limitation under the performance bond shall not affect any extended warranties offered by the manufacturer or any OEM's.

TEN (10) YEAR BODY STRUCTURE WARRANTY

The body shall be warranted against structural defects for a period of ten (10) years from the date of acceptance of the unit. Details of warranty coverage, limitations and exclusions are included in the specific warranty document.

TEN (10) YEAR CORROSION WARRANTY

The body shall be warranted against rust-through or perforation, due to corrosion from within, for a period of ten (10) years. Perforation is defined as a condition in which an actual hole occurs in a sheet metal panel due to rust or corrosion from within. Surface rust or corrosion caused by chips or scratches in the paint is not covered by this warranty.

SEVEN (7) YEAR PAINT WARRANTY

The paint finish shall be warranted for a period of seven (7) years from the date of acceptance of the unit. Details of warranty coverage, limitations and exclusions are included in the specific warranty document.

FIVE (5) YEAR LETTERING WARRANTY

The apparatus manufacturer will provide a five (5) year warranty against defects in material and workmanship for all graphic processes. Any valid claims must be made in writing within 15 days of the determination of any defects to the manufacturer's fire apparatus. The manufacturer will at its option make any necessary repairs either at a local authorized service center or at the factory, if required. The manufacturer will make the final decision as to where the
repairs are to be made and any transportation cost are the owner's responsibility. The manufacturer will at its option, repair or replace any verified defects in workmanship or materials at no cost to the owner provided all the requirements of this warranty have been met.

The manufacturer will not be liable to the original purchaser or anyone else for consequential, incidental, special or direct damages, including, but not limited to, any claims for loss of profits, down time, loss of use or inconvenience. THE COMPANY MAKES NO OTHER WARRANTY, EXPRESSED OF IMPLIED, AND SPECIFICALLY, DISCLAIMS ANY IMPLIED WARRANTY INCLUDING THE WARRANTY OF MERCHANTABILITY.

The manufacturer continually strives to improve its products and therefore, reserves the right to make improvements or changes without incurring any obligations to make such changes or additions on equipment previously sold.

ONE (1) YEAR BRIGHTWORK WARRANTY

The manufacturer warrants all bright finish components used in the construction of their apparatus against defects and workmanship provided the apparatus is used in a normal and reasonable manner. This warranty is extended only to the original user-purchaser for a period of one (1) year from the date of delivery / acceptance to the original user-purchaser, whichever occurs first.

The expressed warranty excludes corrosion or degradation of bright finished components caused by damage to the component.

LIFETIME WATER TANK WARRANTY

The water tank shall be warranted by the water tank manufacturer for the "Lifetime" of the unit. A copy of the manufacturer's warranty shall be supplied to define additional details of the warranty provisions.

TEN (10) YEAR WATER TANK WARRANTY

The specified water tank shall be warranted by the water tank manufacturer for a period of Ten (10) years.
A copy of the manufacturer's warranty shall be supplied to define additional details of the warranty provisions.

STANDARD HALE FIRE PUMP WARRANTY

Hale Products, Incorporated ("Hale") hereby warrants to the original buyer that products manufactured by Hale shall be free of defects in material and workmanship for a period of five (5) years from the date 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).

AKRON HEAVY DUTY VALVES WARRANTY

Akron Brass warrants Heavy Duty Swing-Out Valves for a period of ten (10) years after purchase against defects in material or workmanship. Akron Brass will repair or replace any Heavy Duty Swing Out Valve which fails to satisfy this warranty.

NFPA REQUIRED LOOSE EQUIPMENT, PROVIDED BY FIRE DEPARTMENT

The following loose equipment as outlined in NFPA 1901, 2016 edition in accordance with the applicable requirements unless supplied by the manufacturer or sales rep organization, will be provided by the fire department. All loose equipment will be installed on the apparatus before placed in emergency service, unless the fire department waives NFPA section 4.21.

Section 5.7 Equipment.

It is the responsibility of the purchaser to ensure that all required equipment has been supplied and installed on the apparatus in order to achieve compliance with the standard prior to placing it in service.

5.7.1 Ground Ladders.

5.7.1.1 All fire department ground ladders carried on the apparatus shall meet the requirements of NFPA 1931, Standard for Manufacturer's Design of Fire Department Ground Ladders, except as permitted by 5.7.1.3 and 5.7.1.4.

5.7.1.2 At a minimum, the following fire department ground ladders shall be carried on the apparatus:

(1) One straight ladder equipped with roof hooks
(2) One extension ladder
(3) One folding ladder

5.7.1.3 Stepladders and other types of multipurpose ladders meeting ANSI AI4.2, Ladders - Portable Metal- Safety Requirements, or ANSI A14.5, Ladders - Portable Reinforced Plastic Safely Requirements, with duty ratings of Type IA or lAA shall be permitted to be substituted for the folding ladder required in 5.7.1.2(3).

5.7.1.4 Stepladders and other types of multipurpose ladders shall be permitted to be carried in addition to the minimum fire department ground ladders specified in 5.7.1.2 provided they meet either ANSI AI4.2 or ANSI A14.5 with duty ratings of Type 1A or 1AA.

Section 5.7.2 Suction Hose or Supply Hose.

It is the responsibility of the purchaser to ensure that all required equipment has been supplied and installed on the apparatus in order to achieve compliance with the standard prior to placing it in service.

5.7.2.1 A minimum of 20 ft (6 m) of suction hose or 15 ft (4.5 m) of supply hose shall be carried.

5.7.2.1.1 Where suction hose is provided, a suction strainer shall be furnished.

5.7.2.1.2 Where suction hose is provided, the friction and entrance loss of the combination suction hose and strainer shall not exceed the losses listed in Table 16.2.4.1 (b) or Table 16.2.4.1(c).

5.7.2.1.3 Where supply hose is provided. It shall have couplings compatible with the local hydrant outlet connection on one end and the pump intake connection on the other end.

5.7.2.2 Suction hose and supply hose shall meet the requirements of NFPA 1961, Standard on Fire Hose.

Section 5.8 Minor Equipment.

It is the responsibility of the purchaser to ensure that all required equipment has been supplied and installed on the apparatus in order to achieve compliance with the standard prior to placing it in service.

5.8.2 Fire Hose and Nozzles. The following fire hose and nozzles shall be carried on the apparatus:

(1) 800 ft (240 m) of 2 1/2 in. (65 mm) or larger fire hose
(2) 400 ft (120 m) of 1 1/2 in. (38 mm), 1 3/4 in. (45 mm), or 2 in. (52 mm) fire hose
(3) One hand line nozzle. 200 gpm (750 L/min) minimum
(4) Two hand line nozzles. 95 gpm (360 L/min) minimum
(5) One play pipe with shutoff and 1 in. (25 mm), 1 1/8 in. (29 mm), and l 1/4 in. (32 mm) tips

NFPA REQUIRED LOOSE EQUIPMENT, PROVIDED BY FIRE DEPARTMENT, CONT'D.

5.8.3 Miscellaneous Equipment. The following additional equipment shall be carried on the apparatus:

(1) One 6 lb (2.7 kg) flathead axe mounted in a bracket fastened to the apparatus
(2) One 6 lb (2.7 kg) pick head axe mounted in a bracket fastened to the apparatus
(3) One 6 ft (2 m) pike pole or plaster hook mounted in a bracket fastened to the apparatus
(4) One 8 ft (2.4 m) or longer pike pole mounted in a bracket fastened to the apparatus
(5) Two portable hand lights mounted in brackets fastened to the apparatus
(6) One approved dry chemical portable fire extinguisher with a minimum 80-B:C rating mounted in a bracket fastened to the apparatus
(7) One 2 1/2 gal (9.5 L) or larger water extinguisher mounted in a bracket fastened to the apparatus
(8) One self-contained breathing apparatus (SCBA) complying with NFPA 1981, Standard on Open-Circuit Self Contained Breathing Apparatus (SCBA) for Emergency Services, for each assigned sealing position. But not fewer than four, mounted in brackets fastened to the apparatus or stored in containers supplied by the SCBA manufacturer
(9) One spare SCBA cylinder for each SCBA carried, each mounted in a bracket fastened to the apparatus or stored in a specially designed storage space
(10) One first aid kit
(11) Four combination spanner wrenches mounted in brackets fastened to the apparatus
(12) Two hydrant wrenches mounted in brackets fastened to the apparatus
(13) One double female 2 1/2 in. (65 mm) adapter with National Hose (NH) threads, mounted in a bracket fastened to the apparatus
(14) One double male 2 1/2 in. (65 mm) adapter with NH threads, mounted in a bracket fastened to the apparatus
(15) One rubber mallet, suitable for use on suction hose connections, mounted in a bracket fastened to the apparatus
(16) Two salvage covers each a minimum size of 12 ft x 14 ft (3.7 m x 4.3 m)
(17) Two or more wheel chocks. Mounted in readily accessible locations, that together will hold the apparatus. When loaded to its GVWR or GCWR, on a hard surface with a 20 percent grade with the transmission in neutral and the parking brake released
(18) One traffic vest for each seating position, each vest to comply with ANSI/ISEA 207, Standard for High-Visibility Public Safety Vests, and have a five-point breakaway feature that includes two at the shoulders, two at the sides, and one at the front
(19) Five fluorescent. orange traffic cones not less than 28 in. (711 mm) in height, each equipped with a 6 in. (152 mm) retroflective white band no more than 4 in. (102 111m) from the top of the cone, and an additional 4 in. (102 mm) retroflective white band 2 in. (51 mm) below the 6 in. (152 mm) hand
(20) Five illuminated warning devices such as highway flares, unless the live fluorescent orange traffic cones have illuminating capabilities
(21) One automatic external defibrillator (AED)

5.8.3.1 If the supply hose carried does not use sexless couplings, an additional double female adapter and double male adapter, sized to fit the supply hose carried, shall be carried mounted in brackets fastened to the apparatus.

5.8.3.2 If none of the Pump intakes are valved, a hose appliance that is equipped with one or more gated intakes with female swivel connection(s) compatible with the supply hose used on one side and a swivel connection with pump intake threads on the other side shall be carried. Any intake connection larger than 3 in. (75 mm) shall include a pressure relief device that meets the requirements of 16.6.6.

5.8.3.3 If the pumper is equipped with an aerial device with a permanently mounted ladder, four ladder belts meeting the requirements of NFPA 1983, Standard on Life Safety Rope and Equipment for Emergency Services shall be provided.

NFPA REQUIRED LOOSE EQUIPMENT, PROVIDED BY FIRE DEPARTMENT, CONT'D.

5.8.3.4 If the apparatus does not have a 2 1/2 in. intake with NH threads, an adapter from 2 1/2 in. NH female to a pump intake shall be carried, mounted in a bracket fastened to the apparatus if not already mounted directly to the intake.

5.8.3.5 If the supply hose carried has other than 2 1/2 in. NH threads, adapters shall be carried to allow feeding the supply hose from a 2 1/2 in. NH thread male discharge and to allow the hose to connect to a 2 1/2 in. NH female intake, mounted in brackets fastened to the apparatus if not already mounted directly to the discharge or intake.

14.1.8.4 Fire Helmet.

It is the responsibility of the purchaser to ensure that "Fire helmets shall not be worn by persons riding in enclosed driving and crew areas any time the apparatus in placed in service.

14.1.8.4.1 A location for helmet storage shall be provided.

14.1.8.4.2 If helmets are to be stored in the driving or crew compartment, the helmets shall be secured in compliance with 14.1.11.2.

14.1.10 SCBA Mounting.

It is the responsibility of the purchaser to ensure that any SCBA equipment has been supplied and installed on the apparatus in order to achieve compliance with the standard prior to placing it in service.

14.1.10.1 Where SCBA units are mounted within a driving or crew compartment, a positive latching mechanical means of holding the SCBA device in its stowed position shall he provided such that the SCBA unit cannot be retained in the mount unless the positive latch is engaged.

14.1.10.2 The bracket holding device and its mounting shall retain the SCBA unit when subjected to a 9 G force and shall be installed in accordance with the bracket manufacturer's requirements.

14.1.10.3 If the SCBA unit is mounted in a seat back, the release mechanism shall be accessible to the user while seated.

14.1.11 Equipment Mounting.

It is the responsibility of the purchaser to ensure that any equipment installed on the apparatus by them or their subcontractor meets the following requirements prior to placing it in service.

14.1.11.1 All equipment required to be used during an emergency response shall be securely fastened.

14.1.11.2 All equipment not required to be used during an emergency response, with the exception of SCBA units, shall not be mounted in a driving or crew area unless it is contained in a fully enclosed and latched compartment capable of containing the contents when a 9 G force is applied in the longitudinal axis of the vehicle or a 9G force is applied in any other direction, or the equipment is mounted in a bracket(s) that can contain the equipment when the equipment is subjected to those same forces.

Section 15.9.3 Reflective Striping.

It is the responsibility of the purchaser to ensure that Reflective Striping has been supplied and installed on the apparatus in order to achieve compliance with the standard prior to placing it in service.

15.9.3.1'" A retro reflective stripe(s) shall be affixed to at least 50 percent of the cab and body length on each side, excluding the pump panel areas, and at least 25 percent of the width of the front of the apparatus.

15.9.3.1.1 The stripe or combination of stripes shall be a minimum of 4 in. (100 mm) in total width.

NFPA REQUIRED LOOSE EQUIPMENT, PROVIDED BY FIRE DEPARTMENT, CONT'D.

15.9.3.1.2 The 4 in. (100 mm) wide stripe or combination of stripes shall be permitted to be interrupted by objects (i.e., receptacles, cracks between slats in roll up doors) provided the full stripe is seen as conspicuous when approaching the apparatus.

15.10 Hose Storage.

It is the responsibility of the purchaser to ensure that any hose storage area includes a positive means to prevent unintentional deployment in order to achieve compliance with the standard prior to placing it in service.

15.10.7 Any hose storage area shall be equipped with a positive means to prevent unintentional deployment of the hose from the top, sides, front, and rear of the hose storage area while the apparatus is underway in normal operations.