



**The Following Is A Build Spec For A 4 Guys Fire Trucks Mini Pumper.  
Built On A Ford F-550 Chassis**

One (1) Instructions To Bidders Initial Attack Apparatus Y\_\_N\_\_  
00-A0-1100

**INSTRUCTIONS TO BIDDERS**

One (1) == Mini Pumper - 10.000 12/04/06 == Y\_\_N\_\_

The purpose of these instructions and specifications are to describe the requirements, construction, and delivery of a Fire Fighting Apparatus as outlined herein for the \_\_\_\_\_ here after referred to as the "Purchaser".

Bid envelopes shall be plainly labeled \_\_\_\_\_.

Bids will only be considered from companies which have an established reputation in the field of fire apparatus construction and have been in business for a minimum of twenty-five (25) years.

Each bidder shall furnish satisfactory evidence of his ability to construct the apparatus specified, and shall state the location of the factory where the apparatus is to be built. The bidder shall also show that they are in a position to render prompt service and furnish replacement parts for said apparatus.

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

The purchaser reserves the right to accept or reject any or all bids on such basis as the purchaser deems to be in its best interest.

All bid prices shall remain effective for 45 calendar days from the bid opening date.

The apparatus is to be of current year of manufacture and is to be new.

The bid price shall not include any local, state, or federal taxes.

**DELIVERY**



Each bidder shall clearly state the delivery date of the vehicle in calendar days. This shall be after receipt of the signed contract.

## **INTENT OF SPECIFICATIONS**

It is the intent of these specifications to cover the furnishing and delivery to the purchaser a complete unit equipped as herein specified, with a view of obtaining the best results and the most acceptable apparatus for the purchaser.

These specifications cover only the general requirements as to the type of construction and test to which the apparatus must conform. Minor details of construction and materials where not otherwise specified are left to the discretion of the contractor, who shall be solely responsible for the design and construction of all features.

All equipment and components shall comply with the National Fire Protection Association Pamphlet 1901 (2016 Edition), Standard for Automotive Fire Apparatus, for Pumper Fire Apparatus Equipped with a Fire Pump. In addition, the apparatus shall also comply with all federal, state, ICC, and DOT regulations, standards, and laws relating to commercial vehicles as well as to the fire apparatus.

Loose equipment shall be provided only as stated in the following pages.

## **LIABILITY**

The bidder, if his/her bid is accepted, shall defend any and all suits and assume liability for the use of any patented process, device or article forming a part of the apparatus or any appliance furnished under the contract to the extent allowable under the law.

## **COMMERCIAL GENERAL LIABILITY INSURANCE**

Each bidder shall supply proof of product liability and facility insurance equal to or exceeding \$5,000,000. This shall be provided as part of the proposal.

## **GENERAL REQUIREMENTS**

This specification package, along with any herein listed exceptions, shall be submitted as a part of the bidder's entire bid proposal. Do not detach or omit these sheets.



Proposal specifications must be on the manufacturer's own standard forms. In no case shall a bidder photocopy these specifications as his proposal specifications. **"NO EXCEPTIONS"**

Each bidder is required to provide in his bid to the purchaser a complete and accurate description of his own apparatus in the exact sequence of these specifications.

### **EXCEPTIONS, VARIATIONS, OR CLARIFICATIONS**

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

**All bidders shall place a "Y" for yes or a "N": for no next to each and every paragraph in the column provided on the right-hand edge of the paper, indicating compliance or noncompliance with that paragraph of the specifications.**

A number shall be inserted next to the paragraph which relates to an explanation on page(s) entitled "Exceptions" that the bidder shall include with their proposal specifications.

Any exception shall be clearly defined with details as to the proposed alternative, referencing manufacturer and model where appropriate. Descriptive literature shall be provided to help evaluate the exception. A general exception cannot be taken for any paragraph. A full word for word Written Comparison shall be included within the bid for any exception listed. Each exception shall be considered by the degree of impact and total effect on the bid. Proposals taking total exception to the specifications shall not be considered by the purchaser. **"NO EXCEPTIONS"**

The purchaser shall determine which (if any) exceptions are acceptable and this determination shall be final.

The purchaser shall assume that failure to cite an exception indicates full compliance with the specifications. Should the equipment not comply with all requirements of this document, the equipment shall be rejected at the final inspection. All equipment shall be inspected for material, workmanship, and compliance with the specifications prior to acceptance. All equipment found to be in noncompliance shall be identified and the purchaser reserves the right to accept or reject the specific items. The noncompliant rejected equipment shall be replaced or reworked to meet the requirements of this document at no additional cost to the purchaser.



The bidder shall have thirty (30) days after delivery to fulfill that part(s) of the specifications which does not comply to the original outlined specifications. Bidder shall incur all expenses of pickup and redelivery of the apparatus.

**CONSTRUCTION**

The materials specified are considered absolute minimum. Exceptions will not be accepted or permitted since all raw materials of the specified type are available to all manufacturers. Since all manufacturers have the ability to shear, break, and weld as these specifications require, all basic design requirements shall be complied with.

The apparatus shall be constructed with due consideration to the nature and distribution of the load to be sustained and to the general character of service to which the apparatus is to be subjected when placed in service. All parts of the apparatus shall be of adequate strength to withstand the general service under full load. The apparatus shall be so designed that the various parts are readily accessible for lubrication, inspection, adjustment, and service.

One (1)  
00-BP-0200

Bid Bond

Y\_\_N\_\_

**BID BOND**

A bid bond will be submitted with the bidder's proposal. The bond will be for an amount equal to 10% of the proposed bid price. Failure to provide an acceptable, valid bid bond with the proposal will result in the immediate rejection of the bidder's proposal.

One (1)  
00-E1-0200

Apparatus Documentation NFPA 4.20

Y\_\_N\_\_

**DATA REQUIRED OF THE CONTRACTOR - NFPA 4.20**

**NFPA 4.20.1 Fire Apparatus Documentation**

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

- (1) The manufacturer's record of apparatus construction details, including the following information:
  - a. Owner's name and address
  - b. Apparatus manufacturer, model and serial number
  - c. Chassis make, model, and serial number
  - d. GAWR of front and rear axles and GVWR
  - e. Front tire size and total rated capacity in pounds
  - f. Rear tire size and total rated capacity in pounds



- g. Chassis weight distribution in pounds with water and manufacturer-mounted equipment front and rear
  - h. Engine make, model, serial number, rated horsepower, and related speed and governed speed; and if so equipped, engine transmission PTO(s) make, model, and gear ratio
  - i. Type of fuel and fuel tank capacity
  - j. Electrical system voltage and alternator output in amps
  - k. Battery make, model, and capacity in cold crank amps (CCA)
  - l. Transmission make, model, and serial number; and if so equipped, chassis transmission PTO(s) make, model, and gear ratio.
  - m. Ratios of all driving axles.
  - n. Maximum governed road speed
  - o. Pump make, model, rated capacity in gallons per minute (liters per minute where applicable) and serial number
  - p. Pump transmission make, model, serial number, and gear ratio
  - q. Auxiliary pump make, model, rated capacity in gallons per minute, (liters per minute where applicable) and serial number
  - r. Water tank certified capacity in gallons or liters
  - s. Aerial device type, rated vertical height in feet (meters), rated horizontal reach in feet (meters), and rated capacity in pounds (kilograms)
  - t. Paint manufacturer and paint number(s)
  - u. Company name and signature of responsible company representative
  - v. Weight documents from a certified scale showing actual loading on the front axle, rear axles(s), and over all fire apparatus (with the water tank full but without personnel, equipment, and hose)
- (2) If the apparatus is a mobile foam fire apparatus, the certification of foam tank capacity
- (3) Certification of compliance of the optical warning system
- (4) Siren manufacturer's certification of the siren
- (5) Written load analysis and results of the electrical system performance tests
- (6) Certification of slip resistance of all stepping, standing and walking surfaces
- (7) If the apparatus has a fire pump, the pump manufacturer's certification of suction capability
- (8) If the apparatus has a fire pump, and special conditions are specified by the purchaser, the pump manufacturer's certification of suction capacity under the special conditions
- (9) If the apparatus has a fire pump, a copy of the apparatus manufacturer's approval for stationary pumping applications
- (10) If the apparatus has a fire pump, the engine manufacturer's certified brake horsepower curve for the engine furnished, showing the maximum governed speed



- (11) If the apparatus has a fire pump, the pump manufacturer's certification of the hydrostatic test
  - (12) If the apparatus has a fire pump, the certification of inspection and test for fire pump.
  - (13) If the apparatus is equipped with an auxiliary pump, the apparatus manufacturer's certification of the hydrostatic test
  - (14) When the apparatus is equipped with a water tank, the certification of water tank capacity
  - (15) If the apparatus has an aerial device, the certification of inspection and test for the aerial device
  - (16) If the apparatus has an aerial device, all the technical information required for inspection to comply with NFPA 1911
  - (17) If the apparatus has a foam proportioning system, the foam proportioning system manufacturer's certification of accuracy and the final installer's certification the foam proportioning system meets this standard
  - (18) If the apparatus has a CAFS, the documentation of the manufacturer's pre-delivery tests
  - (19) If the apparatus has a line voltage power source, the certification of the test for the power source
  - (20) If the apparatus is equipped with an air system, air tank certificates, the SCBA fill station certification, and the results of the testing of the air system installation
  - (21) Any other required manufacturer test data or reports
- Operation & Service Documentation - NFPA 2016

One (1)  
00-E1-0300

Y\_\_N\_\_

**OPERATION AND SERVICE DOCUMENTS - NFPA 4.20.2**

NFPA 4.20.2.1 - The contractor shall deliver with the fire apparatus complete operation and service documentation covering the completed apparatus as delivered and accepted.

The documentation shall address at least the inspection, service and operations of the fire apparatus and all major components thereof.

The contractor shall also deliver with the fire apparatus the following documentation for the entire apparatus and each major operating system or major component of the apparatus:

- (1) Manufacturer's name and address
- (2) Country of manufacture
- (3) Source for service and technical information
- (4) Parts replacement information
- (5) Descriptions, specifications, and ratings of the chassis, pump (if applicable) and the aerial device (if applicable)



(6) Wiring diagrams for low-voltage and line voltage systems to include the following information:

- (a) Pictorial representations of circuit logic for all electrical components and wiring
- (b) Circuit identification
- (c) Connector pin identification
- (d) Zone location of electrical components
- (e) Safety interlocks
- (f) Alternator-battery power distribution circuits
- (g) Input/output assignment sheets or equivalent circuit logic implemented in multiplexing systems
- (7) Lubrication charts
- (8) Operating instructions for chassis, any major components such as pump or aerial device, and any auxiliary systems
- (9) Precautions related to multiple configurations of aerial devices, if applicable
- (10) Instructions regarding the frequency and procedure for recommended maintenance
- (11) Overall apparatus operating instructions
- (12) Safety considerations
- (13) Limitations of use
- (14) Inspection procedures
- (15) Recommend service procedures
- (16) Troubleshooting guide
- (17) Apparatus body, chassis, and other component manufacturers' warranties
- (18) Special data required by this standard
- (19) A material safety data sheet (MSDS) for any fluid that is specified for use on the apparatus
- (20) One (1) copy of the latest addition of FAMA's Fire Apparatus Safety Guide

NFPA 4.20.2.4 - The contractor will deliver with the apparatus all manufacturers' operations and service documents supplied with components and equipment that are installed or supplied by the contractor.

Highway Performance NFPA 2016

Y\_\_N\_\_

One (1)  
00-E1-0400

**HIGHWAY PERFORMANCE NFPA 4.15**

**NFPA 4.15.1** - The apparatus, when loaded to its estimated in-service weight, shall be capable of the following performance while on dry, paved roads that are in good condition:

- 1: Accelerating from 0 to 35 mph (55 km/hr) within 25 seconds on a 0 percent grade;
- 2: Attaining a speed of 50 mph (80 km/hr) on a 0 percent grade;



3: Maintaining a speed of at least 20 mph (32 km/hr) on any grade up to and including 6 percent.

**NFPA 4.15.2** - The maximum top speed of fire apparatus with a GVWR over 26,000 lb (11,800 kg) shall not exceed either 68 mph (109 km/hr) or the manufacturer's maximum fire service speed rating for the tires installed on the apparatus, whichever is lower.

**NFPA 4.15.3** - If the combined water tank and foam agent tank capacities on the fire apparatus exceed 1250 gallons, or the GVWR of the vehicle is over 50,000 lb, the maximum top speed of the apparatus shall not exceed either 60 mph or the manufacturer's maximum fire service speed rating for the tires installed on the apparatus, whichever is lower.

One (1)  
00-E1-0800

NFPA Tag Requirements

Y\_\_N\_\_

**NFPA TAG REQUIREMENTS**

A label that states the number of personnel the vehicle is designed to carry shall be located in an area visible to the driver.

A sign that reads "**OCCUPANTS MUST BE SEATED AND BELTED WHEN APPARATUS IS IN MOTION**" shall be provided and located in the chassis cab in an area that is visible from each seating position.

An accident prevention sign that states "**OVERALL HEIGHT OF APPARATUS \_\_\_ INCHES**"

One "Final Stage Label" shall be attached to the drivers side door jamb. The label shall certify that the complete vehicle conforms to the federal motor vehicle safety standards, which have been previously fully certified by the incomplete vehicle manufacture or by the intermediate vehicle manufacture and have not been affected by the final stage manufacture.

An accident prevention sign that states "**DANGER: DO NOT RIDE ON REAR STEP WHILE VEHICLE IS IN MOTION - DEATH OR SERIOUS INJURY MAY RESULT**" shall be provided and installed at the rear of the apparatus.

A label stating "**DO NOT WEAR HELMET WHILE SEATED**" shall be visible from each seating location.

One (1)  
00-E4-9900

Warranty (1) Year

Y\_\_N\_\_

**WARRANTY**



Each bidder shall include a copy of their warranty with the bid proposal. The following minimum warranties shall be provided, **NO EXCEPTION.**

The finest materials and utmost care go into the fabrication of each new apparatus. By using normal care, without abuse, this equipment will give you lasting service.

Each new motorized Fire and Rescue Apparatus is to be free from defects in material and workmanship, under normal use and service, for a period of one year. Our obligation under this warranty is limited to replacing or repairing, as the manufacturer may elect, any part or parts thereof, which, upon examination, would be determined to be defective. Such defective part or parts will be replaced free of charge, and without charge for installation, to the original purchaser.

All warranty work related to the apparatus (not including vehicle chassis) is to be performed at the manufacturer's factory or at an authorized service center.

This does not obligate the manufacturer to bear the costs of transportation charges and related expenses incurred in the replacement of parts.

### **BODY WARRANTY**

The manufacturer shall warrant the entire stainless steel body against rust and/or full corrosion perforation and metal fatigue for a period of thirty (30) years from the date of delivery to the original purchaser, provided the apparatus is used in a normal and reasonable manner.

The term "body" shall be inclusive of the following:

- Hose bed side walls
- Compartments and compartment supports
- Compartment doors *except roll-up doors, when specified*
- Complete subframe including pump house framing

### **WATER TANK WARRANTY**

The contracted tank manufacturer shall warrant that the tank provided shall be of first-class workmanship and that, under normal conditions, shall show no defects due to faulty design, workmanship, or material for the Lifetime of the vehicle to the original owner.

### **PUMP WARRANTY**



The contracted pump manufacturer shall warrant that the pump provided shall be of first-class workmanship and that, under normal conditions, shall show no defects due to faulty design, workmanship, or materials for a period of five (5) years.

### **PUMP PLUMBING WARRANTY**

The galvanized or stainless steel plumbing components, as specified, and ancillary brass fittings used in the construction of the water/foam plumbing system shall be warranted for a period of ten (10) years or 100,000 miles. This covers structural failures caused by defective design or workmanship, or perforation caused by corrosion, provided the apparatus is used in a normal and reasonable manner. This warranty is extended only to the original purchaser for a period of ten years from the date of delivery.

### **12 VOLT ELECTRICAL WARRANTY**

The 12 volt electrical system and ancillary components used in the construction of the apparatus shall be warranted for a period of five (5) years. This covers failures caused by defective design or workmanship, provided the apparatus is used in a normal and reasonable manner. This warranty is extended only to the original purchaser, for a period of five (5) years from the date of delivery.

Items specifically covered are:

- Electrical harnesses and harness installation
- Switches, circuit breakers, and relays
- LED Lighting: FMVSS required and warning lights
- Electrical connectors and connections, against corrosion or deterioration

Items excluded, as they are covered by specific warranties supplied by the manufacturer of the components:

- Chassis electrical systems and components installed by the chassis manufacturer.
- Batteries, battery chargers, two-way radio equipment, and similar equipment.
- Periodic cleaning and tightening of battery terminal connections.
- Accident, negligence, or unauthorized alteration of original equipment.

### **PAINT WARRANTY**

The paint on the unit will be provided with a ten (10) year paint finish guarantee which will cover the finish for the following items:



- Peeling or delamination of the top coat and/or other layers of paint.
- Cracking or checking.
- Loss of gloss caused by defective finishes which are covered by this guarantee.

**CHASSIS WARRANTY**

Chassis shall be warranted by the chassis manufacturer as per the chassis manufacturer's issued warranty.

**100% WARRANTY ON ALL OTHER ITEMS FOR ONE YEAR.**

**THIS WILL NOT APPLY**

1. To normal maintenance services or adjustments.
2. To damage caused by negligence of normal maintenance.
3. To any vehicle which shall have been repaired or altered outside our factory in any way, so as, in our judgement, to affect its stability, nor which has been subjected to negligence, or accident, nor to any vehicle made by us which shall have been operated at a speed exceeding the factory-rated speed, or loaded beyond the factory-rated load capacity.
4. To major components such as purchased chassis and associated equipment furnished with chassis, signaling devices, generators, batteries, or other trade accessories, inasmuch as they are usually warranted separately by their respective manufacturers or to ancillary equipment used in rescue or firefighting.
5. To loss of time or use of vehicle, inconvenience or other incidental expenses.

**THIS WARRANTY IS MADE EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, WITH RESPECT TO QUALITY, MERCHANTABILITY, OR FITNESS FOR A PARTICULAR APPLICATION.**

One (1)  
00-E5-8000

Dimension Cover Sheet

Y\_\_N\_\_

**OVERALL APPARATUS DIMENSIONS AND REQUIREMENTS**

6. Wheelbase of chassis:
7. Cab-to-axle dimension of chassis:



- 8. Overall length of apparatus:
- 9. Overall width of apparatus body:
- 10. Overall height of apparatus:
- 11. Overall length of body including rear step:
- 12. Front overhang from center of front axle:
- 13. Rear overhang from center of rear axle:
- 14. Pump panel width:

One (1)  
01-10-0000

Y\_\_\_N\_\_\_

Ford Chassis Specifications  
2023 F-550 Chassis 4x4 SD Super Cab 192" WB DRW XL (X5H)

As Configured Vehicle

Code Description MSRP

Base Vehicle

X5H Base Vehicle Price (X5H)

Packages

660A Order Code 660A

Includes: - Transmission: TorqShift 10-Speed Automatic Includes selectable drive modes: normal, tow/haul, eco and deep sand/snow.

- Wheels: 19.5" Hub covers/center ornaments not included.

**- Includes manual locking hubs**

- HD Vinyl 40/20/40 Split Bench Seat Includes center armrest, cupholder, storage and driver's side manual lumbar.

- Radio: AM/FM Stereo w/MP3 Player Includes 6 speakers.

- SYNC Communications & Entertainment System Includes enhanced voice recognition, 911 Assist, 4.2" LCD center stack screen, AppLink, 1 smart-charging USB-C port and steering wheel audio controls.

Powertrain

99T Engine: 6.7L 4V OHV Power Stroke V8 Turbo Diesel B20



Includes Diesel Exhaust Fluid (DEF) tank, intelligent oil-life monitor and manual push-button engine-exhaust braking. Includes:

- Dual 78-AH 750 CCA Batteries

- 240 Amp Alternator

44G Transmission: TorqShift 10-Speed Automatic

Includes selectable drive modes: normal, tow/haul, eco and deep sand/snow.

8L Limited Slip w/4.88 Axle Ratio

68M GVWR: 19,500 lb Payload Plus Upgrade Package

Includes upgraded frame, rear-axle and low deflection/high capacity springs. Increases max RGAWR to 14, 706. Note: See Order Guide Supplemental Reference for further details on GVWR.

Wheels & Tires

**TGK Tires: 225/70Rx19.5G BSW Traction (TGK)**

Includes 4 traction tires on the rear and 2 traction tires on the front. Not recommended for over the road applications; could incur irregular front tire wear and/or NVH. Optional spare is 225/70Rx19.5G BSW traction. **64Z Wheels: 19.5" Argent Painted Steel Included**

Hub covers/center ornaments not included.

Seats & Seat Trim

HD Vinyl 40/20/40 Split Bench Seat Included

Includes center armrest, cupholder, storage and driver's side manual lumbar.

Other Options

PAINT Monotone Paint Application STD

192WB 192" Wheelbase STD

STDRD Radio: AM/FM Stereo w/MP3 Player Included

Includes 6 speakers. Includes: - SYNC Communications & Entertainment System  
Includes enhanced voice recognition, 911 Assist, 4.2" LCD center stack screen, AppLink, 1 smartcharging USB-C port and steering wheel audio controls. 90L Power Equipment Group



Deletes passenger side lock cylinder. Includes upgraded door-trim panel. Includes: - Accessory Delay - Advanced Security Pack Includes SecuriLock Passive Anti-Theft System (PATS) and inclination/intrusion sensors.

- Trailer Tow Mirrors w/Power Heated Glass Includes manual telescoping, heated convex spotter mirror and integrated clearance lamps/turn signals. - MyKey Includes owner controls feature.

- Power Front & Rear Side Windows Includes 1-touch up/down driver/passenger window. - Power Locks - Remote Keyless Entry

67P Extra Heavy-Duty Front End Suspension - 7,500 GAWR

Includes upgraded front axle and max 7,500 lbs. Front springs/GAWR rating for configuration selected. Incomplete vehicle package - requires further manufacture and certification by a final stage manufacturer. 86S Low Deflection Package

Includes 2-inch spacer blocks. Recommended for rear-biased loading, such as wrecker/retriever applications. 41P Transfer Case Skid Plates

62R Transmission Power Take-Off Provision

N/C

Includes transmission mounted live drive and stationary mode PTO.

98R Operator Commanded Regeneration (OCR)

As Configured Vehicle (cont'd)

Code Description MSRP

942 Daytime Running Lamps (DRL) (LPO)

Requires valid FIN code.

The non-controllable 942 Daytime Running Lamps (DRL) replace the standard Daytime Running Lamps (DRL) on/off cluster controllable. 17F XL Decor Group (LPO)

Includes: - Chrome Front Bumper D9E Built: Kentucky Truck Plant N/C

31M Ship-Thru: Manning Light Truck Equipment

Emissions

425 50-State Emissions System STD

Interior Colors



AS\_01 Medium Earth Gray

Primary Colors

PQ\_01 Race Red

Upfit Options

CHROMED CREW TUBE CHROMED ALUMINUM TUBE STEPS INSTALLED

VDR system

manual from HUBS

One (1)  
01-10-0100

Ford Super Duty NFPA Compliancy

Y\_\_N\_\_

**NFPA COMPLIANCY**

Apparatus proposed by the bidder shall meet the applicable requirements of NFPA, as stated in the current edition at time of contract execution. Fire Department's specifications that differ from NFPA specifications shall be indicated in the proposals as "non-NFPA."

The following items to meet NFPA compliance are not available with the make and model chassis specified and therefore will not be provided with the completed delivered apparatus.

**SEAT BELT WEB LENGTH**

NFPA 1901, 2016 edition, Section 14.1.3.1 and 14.1.3.2

**SEAT BELT COLOR**

NFPA 1901, 2016 edition, Section 14.1.3.3 and 14.1.3.2

**VEHICLE DATA RECORDER**

NFPA 1901, 2016 edition, Section 4.11.1

**SEAT BELT MONITORING SYSTEM**

NFPA 1901, 2016 edition, Section 14.1.3.9

**CAB INTEGRITY**

NFPA 1901 14.3.2



One (1) Console Between Seats - With Electrical Panel  
04-05-1500

Y\_\_N\_\_

**CONSOLE BETWEEN THE DRIVER AND OFFICER SEAT**

An aluminum console shall be specially designed to fit between the driver and the officer seats, to house all electrical lighting switches.

The console shall also be designed to hold the customer's specified communication equipment.

Exact layout shall be approved by the customer, prior to construction.

One (1) Mudflaps - Front & Rear  
04-07-0500

Y\_\_N\_\_

**MUDFLAPS**

Heavy-duty black rubber mudflaps shall be provided behind the front tires.

Black, anti-sail mudflaps shall be installed behind the rear wheels.

One (1) Small Rear Stainless Steel Tow Eyes  
04-08-0500

Y\_\_N\_\_

**CHASSIS MODIFICATIONS - REAR STAINLESS STEEL TOW EYES**

Two (2) stainless steel tow eyes shall be attached directly to the chassis frame rails at the rear.

One (1) Winch Receiver - Front & Rear  
04-08-1910

Y\_\_N\_\_

**2" WINCH RECEIVER - FRONT & REAR**

Two (2) 2" receivers shall be mounted, one (1) at the front of the apparatus and one (1) at the rear of the apparatus. 12 volt wiring with a plug will be provided at each receiver for powering the winch.

One (1) Tire Pressure - Visual Indicator - Single Axle  
04-10-1410

Y\_\_N\_\_

**TIRE PRESSURE INDICATOR – NFPA 4.13.4**

Reel Wheels *Tire Watch* stainless steel electronic LED valve caps that shall be installed on all wheels. Caps shall illuminate with a red LED when tire pressure drops 8 psi. The valve caps are self-calibrating, and are set to the pressure of the tire upon installation.

One (1) Ignition On Light  
05-00-0600

Y\_\_N\_\_

**IGNITION ON LIGHT**



A green "MASTER DISCONNECT ON" indicator light, visible from the driver's position, shall be provided.

One (1)  
05-00-0800

Ignition - Key Chain

Y\_\_N\_\_

**IGNITION - KEY CHAIN**

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

One (1)  
05-00-1002

Master Load Disconnect Switch

Y\_\_N\_\_

**MASTER LOAD DISCONNECT SWITCH**

A 200 amp solid state power relay shall be wired from the chassis batteries to disconnect all 12VDC electrical accessories added by the body manufacturer. The power relay will be controlled by a chassis ignition circuit.

One (1)  
05-01-1200

Kussmaul 1000 Battery Charger with Auto Eject

Y\_\_N\_\_

**BATTERY CHARGER, BUILT-IN BATTERY SAVER AND BAR GRAPH DISPLAY**

A Kussmaul Auto Charge #1000 Series Model #091-215-12, 15 amp battery charger and 3 amp Battery Saver shall be provided and installed. The charger shall include a Model #091-199-001 remote digital display.

The Auto Charge 1000 with Parasitic Load Compensation (PLC) is a compact, microprocessor controlled, completely automatic, single channel battery charger designed for vehicles with a single battery system. The PLC charger is designed to withstand the shock and vibration encountered by vehicle mounted equipment.

The Battery Saver component shall eliminate drain on vehicle's battery system when vehicle is not in use. The system shall automatically disconnect auxiliary vehicle loads from battery when the charger is energized.

Parasitic Load Compensation feature is designed especially to meet the heavy duty requirements of emergency vehicles. Parasitic load compensation allows the operator to input the total number of parasitic load amps on the vehicle. The charger will then shift the absorption stage set point so the battery voltage will drop to the float voltage when the desired current is reached. This will lead to a longer battery life and prevent overcharging or overheating.

It is to be powered by a Kussmaul #091-55-120 20 amp 120V auto-eject inlet receptacle, with weather proof cover and box, located on the left-hand pump panel.



One (1)  
07-00-1600

Pump Shift - Dash Mounted - Mini Pumper w/Split Shaft Pump

Y\_\_N\_\_

**SHIFT MECHANISM**

The drive unit will be equipped with an air shift. The air shift shall be activated by a toggle switch. A green indicator light shall be located near the switch and will activate when the pump has been successfully shifted. A separate compressor unit and air reservoir shall be located in the pump house area. This compressor shall be used for pump shifting only.

**PUMP SHIFT INDICATOR LIGHTS**

Three (3) green warning lights will be provided to indicate to the operator when the pump has completed the shift from ROAD to PUMP position. Two (2) green lights to be located in the driver compartment, and one (1) green light on pump operator's panel, adjacent to the throttle control. All lights to have appropriate identification/instruction plates.

One (1)  
07-07-2300

Anode System

Y\_\_N\_\_

**ANODE SYSTEM**

Two (2) anodes shall be installed in the pump to prevent damage caused by galvanic corrosion within the pump.

One (1) installed in the suction side of the pump and one (1) installed in the discharge side of the pump.

The anodes should be inspected every 12 months and replaced when over 75% of the zinc has been consumed. Performance of the anode life will vary with water quality and PH.

One (1)  
07-16-1002

Trident Auto Air Primer with Lift Gauge (Pump Only) 31.011.3

Y\_\_N\_\_

**AUTOMATIC FIRE PUMP PRIMING SYSTEM WITH LIFT GAUGE**

A Trident Model #31.011.3 automatic air-operated priming system shall be installed. The unit shall be of all brass and stainless steel construction, and designed for fire pumps of 1,250 GPM (4,690 LPM) or more. Due to corrosion exposure. no aluminum or vanes shall be used in the primer design. The primer shall be a three-barrel design with 3/4" NPT connection to the fire pump.

The primer shall be mounted above the pump impeller so that the priming line will automatically drain back to the pump. The primer shall also automatically drain when the panel control actuator is not in operation. The inlet side of the



primer shall include a brass ‘wye’ type strainer with removable stainless steel fine-mesh strainer to prevent entry of debris into the primer body.

**AUTOMATIC PRIMER CONTROL WITH VACUUM GAUGE PANEL**

The 12 volt primer control shall be an automatic-type, with a pump panel three-way switch to operate an air solenoid valve. The air valve shall direct air pressure from the air brake system to the primer. To prevent freezing, no water shall enter the primer valve control.

A vacuum gauge, 2” in diameter, with graduations from zero to 30 feet, shall be installed in the primer control panel. The gauge shall be physically connected to the vacuum side of the primer, and read only when the primer is running, so it will never see or be subject to damage from high pump intake pressures.

The automatic priming switch shall have three positions as follows:

- 15. **Prime** - the lower position shall be a momentary “push-to-prime”. The “Prime” position also allows the operator to “ramp” test the primer without the fire pump being engaged.
- **Off** - center position
- **Auto-Prime** - in the upper position, a green LED pilot light shall be illuminated when the switch is the "Auto-Prime" position. The *Auto-Prime* operates automatically when the pump pressure drops below 20 PSIG. The primer shuts off automatically when the pump pressure is re-established, and exceeds 20 PSIG. The *auto* mode only operates when the fire pump is engaged.

**Warranty** - The primer shall be covered by a five (5) year parts warranty.

One (1)  
08-06-0000

Pump System - Darley LDM Single Stage - 1500 GPM

Y\_\_\_N\_\_\_

**PUMP - DARLEY CHAMPION - MODEL LDM - 1500 GPM**

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

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

**Pump Casing:** Vertically-split-type. Fine-grain alloy cast iron, bronze fitted.



**Impeller:** High-strength, bronze alloy, accurately balanced and splined to pump shaft for precision fit and durability.

Double suction design eliminates end thrust.

**Seal Rings:** Renewable, double-labyrinth bronze-type are standard.

**Pump Shaft:** Precision-ground stainless steel with long-wearing ceramic hard coating under packing glands.

Shaft is splined for broached impeller hubs for greater resistance to wear, torsional vibration, and torque imposed by engine.

**Mechanical Seal:** pressures are equalized around shaft.

**Transmission Case:** Alloy cast iron with adequate oil reserve capacity for low operating temperature.

Supplementary cooling is unnecessary.

**Driveshafts:** Precision ground heat treated alloy steel with 2", 10-spline, standard input and output.

**Gears:** 3-1/2" face helical. Precision-cut from heat-treated alloy steel for quiet operation and long life.

**Gear Shift:** A heat-treated alloy steel splined-spur gear engages either pump drive gear or truck drive shaft gear.

**Bearings:** Deep-groove radial-type ball bearings, oversized for long life.

Bearings are protected at all openings from road dirt and water splash with double-lip oil seals.

One (1)  
09-76-0015

Class 1 - Twister Remote Electronic Throttle

Y\_\_N\_\_

**INSTRUMENTATION - REMOTE THROTTLE CONTROL**

The apparatus shall be equipped with a Class1 *Twister* remote throttle control.  
Pump System Piping Stainless Steel & Class 1 Hose

One (1)  
10-01-0100

Y\_\_N\_\_

**PIPING**



All piping shall be heavy-duty, 304 grade, schedule 10 stainless steel or Class 1 high-pressure flexible hose. All stainless steel fittings shall be threaded or welded.

Class 1 flexible hose shall be Black SBR synthetic rubber hose with 300# working and 1200# burst pressure, with stainless steel fittings.

Whenever possible, sweep-type elbows shall be utilized, in order to reduce friction loss. Thread-in 45's and 90's will be used elsewhere.

Victaulic or rubber couplings shall be used, where necessary, to allow flexing of plumbing, which will prevent damage or loosening of the piping, which can occur with rigid plumbing.

All threaded joints shall have non-hardening type sealant for easy removal for repairs.

All piping, including intake and discharge lines, shall be hydrostatically tested. A vacuum test shall be applied to the pump, plumbing, and valves, to test for leaks. The system shall be tested, and shall show minimum loss of no more than 10 inches of vacuum over a 5 minute period, as required by NFPA section 16.13.6.4.

**SYNFLEX SUCTION, DISCHARGE, PRESSURE AND CONTROL LINES**

Small lines within the pump enclosure shall 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.

Intake Manifold

Y\_\_N\_\_

One (1)  
10-01-0202

**STAINLESS STEEL INTAKE MANIFOLD**

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

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

Y\_\_N\_\_

One (1)  
10-01-0205



**STAINLESS STEEL DISCHARGE MANIFOLD**

The discharge manifold assembly shall be fabricated from minimum of schedule 10, type 304 stainless steel. All threaded fittings shall be a minimum of schedule 40 stainless steel. The discharge manifold assembly shall have radius sweep elbows to minimize water turbulence. The manifold shall be welded and pressure tested prior to installation. The stainless steel manifold inlet shall be attached to the pump discharge, and have additional brackets as required to support the discharge manifold, valves, and related components.

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

One (1) Fire Pump & Plumbing System Painting Y\_\_N\_\_  
10-01-0210

**FIRE PUMP & PLUMBING SYSTEM PAINTING**

The fire pump and plumbing system shall be painted job color, or the lower color when a two paint scheme is specified. No exceptions.

One (1) Valves - All Akron HD 8000 Series w/ Stainless Steel Ball Y\_\_N\_\_  
10-02-0000

**AKRON VALVES**

All pump intake and discharge valves shall be *AKRON 8000* heavy-duty swing-out series. The valves shall have an all-brass body with flow-optimizing stainless steel ball, and dual-polymer seats. The valves shall be capable of dual-directional flow, while incorporating a self-locking ball feature, using an automatic friction lock design, and specially designed flow-optimizing stainless steel ball. All stainless steel parts must be 316 grade for increased resistance to corrosion. The valve shall not require the lubrication of seats or any other internal waterway parts, and be capable of swinging out of the waterway for maintenance by the removal of six bolts. The valves shall carry a ten (10) year manufacturers warranty. The valve shall be manufactured and assembled in the United States.

One (1) Elkhart Intake Relief Valve Y\_\_N\_\_  
10-05-0000

**INTAKE RELIEF VALVE**

An Elkhart Brass intake relief valve shall be installed on the suction side of the pump. The valve shall be the preset type at 125 PSI and is adjustable from 75 to 250 PSI, and shall be designed to prevent vibration from altering the setting. The relief outlet shall be directed below the pump with the discharge terminating in a 2-1/2" male NST connection. The discharge shall be away from the pump operator and labeled "Do Not Cap".

One (1) Factory Pump Certification Test Y\_\_N\_\_



10-15-0500

**FACTORY CERTIFICATION**

The apparatus shall be completely tested and approved in accordance with NFPA standard practices for pumping engines. Test results shall be forwarded to the customer upon delivery.

Copies of the *Pump Manufacturer's Certification of Hydrostatic Test*, and *Manufacturer's Record of Pumper Construction Details* shall be supplied upon delivery.

One (1) No Driveline Modifications Required - PTO Pump Y\_\_N\_\_  
10-15-0551

One (1) Vented Lug Caps & Plugs Y\_\_N\_\_  
10-15-0600

**VENTED LUG CAPS AND PLUGS**

All intake and discharge plugs and caps shall be vented-lug type, designed to relieve trapped pressure and help reduce possible operator injuries.

One (1) Suction - 6" With Storz 30 Degree Adapters Y\_\_N\_\_  
12-01-1200

**STEAMER INLETS**

Two (2) 6" steamer inlets shall be provided on the pump panels, one (1) on the left side and one (1) on the right side.

Each inlet shall be equipped with a *Red Head* style SE-LH, 6" F NST swivel x 5" Storz 30 degree adapter with blind cap and retainer chain.

One (1) Suction - (1) 2-1/2" - Side Mount Panel - Left Side Y\_\_N\_\_  
12-07-0500

**SUCTION - LEFT SIDE**

One (1) 2-1/2" suction valve shall be installed on the left side of the unit. The valve body shall be mounted behind the pump panel, with a 2-1/2" NST chrome inlet swivel, chrome plug and chain, and removable inlet strainer.

One (1) Suction - (1) 2-1/2" - Side Mount Panel - Right Side Y\_\_N\_\_  
12-07-1000

**SUCTION - RIGHT SIDE**

One (1) 2-1/2" suction valve shall be installed on the right side of the unit. The valve body shall be mounted behind the pump panel, with a 2-1/2" NST chrome inlet swivel, chrome plug and chain, and removable inlet strainer.

One (1) Tank To Pump - 3" - Midship Mini Pumper Y\_\_N\_\_  
13-01-1502

**TANK TO PUMP**

10025-0004

05/23/22



There shall be one (1) 3" gated tank to pump line, piped to the tank sump.

Piping from the sump to the valve shall be 3" diameter.

The line shall be plumbed directly into the back of the pump for maximum efficiency.

A full-flow, inline ball valve, with check valve, shall be provided to prevent accidental pressurization of the water tank through the pump connection.

A control with a function plate will be located on the operator's panel.  
Tank Fill - 1-1/2"

Y\_\_N\_\_

One (1)  
13-02-0500

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

There shall be a 1-1/2" tank refill line installed with a 1-1/2" inline valve.

Valve shall be controlled at the pump operator's panel, and will be clearly marked "TANK REFILL/PUMP COOLER".

Crosslay - (2) 1.75" w/2" Plumbing - Double-Stack

Y\_\_N\_\_

One (1)  
14-02-0500

**CROSSLAY HOSEBEDS W/ 2" PLUMBING**

Two (2) crosslays shall be installed over the pump compartment.

Each section of the crosslay shall be capable of holding 200' of 1.75" double-jacketed hose, in a double-stack load.

A 2" mechanical swivel with 1.5" NST hose connector shall be used in each crosslay, to allow deployment of hose in either direction.

Stainless steel rollers with nylon guides shall be mounted on both ends, and below the crosslays.

A 1/4" aluminum divider shall separate the crosslays, and poly-plas matting shall be used on the stainless steel crosslay floor.

Each crosslay shall be plumbed with 2" piping and a 2" valve, and shall be controlled at the operator's panel.

Crosslay - Hinged Lid

Y\_\_N\_\_

One (1)  
14-02-4600

**CROSSLAY LID**

10025-0004

05/23/22



A polished aluminum diamond plate lid shall be provided over the crosslay(s).

The lid shall have full length stainless steel hinge with velcro straps to hold lid firmly in place.

One (1)  
14-02-4610

Crosslay - Vinyl End Covers

Y\_\_N\_\_

**CROSSLAY VINYL FLAPS**

Black vinyl flaps shall be installed on each end of the crosslay to retain the hose load. The flaps shall be secured with 2" wide straps with Velcro fasteners.

Meets NFPA 15.10.5 - Any hose storage area shall be equipped with a positive means to prevent unintentional deployment of the hose from the top, side, front, and rear of the hose storage area while the apparatus is underway in normal operations.

One (1)  
15-01-0500

Discharge - (1) 2-1/2" Left Side

Y\_\_N\_\_

**DISCHARGE LEFT SIDE**

One (1) 2-1/2" discharge shall be located on the left side pump panel and be controlled from the operator's panel.

Discharge shall terminate with a 2-1/2" NST 30 degree turn down with chrome cap and retainer chain.

One (1)  
15-02-0500

Discharge - (1) 2-1/2" Right Side

Y\_\_N\_\_

**DISCHARGE RIGHT SIDE**

One (1) 2-1/2" discharge shall be located on the right side pump panel and be controlled from the operator's panel.

Discharge shall terminate with a 2-1/2" NST 30 degree turn down with chrome cap and retainer chain.

One (1)  
15-02-1502

Discharge - (1) 3" Right Side 3" NST x 5" 30 degree Storz adapter

Y\_\_N\_\_

**DISCHARGE RIGHT SIDE**

One (1) 3" discharge shall be located on the right side pump panel and be controlled from the operator's panel.

Discharge shall terminate with a 3" NST x 5" 30 degree Storz adapter with blind cap and retainer chain.

One (1)  
15-03-1500

Discharge - 2-1/2" Left Rear Hosebed

Y\_\_N\_\_

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

10025-0004

05/23/22



One (1) 2-1/2" discharge shall be piped to the left rear of the hosebed and be controlled from the operator's panel.

Discharge shall terminate with a 2-1/2" NST 30 degree turn down, with chrome cap and retainer chain.

One (1)  
15-04-1500

Discharge - 2-1/2" Right Rear Hosebed

Y\_\_N\_\_

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

One (1) 2-1/2" discharge shall be piped to the right rear of the hosebed and be controlled from the operator's panel.

Discharge shall terminate with a 2-1/2" NST 30 degree turn down, with chrome cap and retainer chain.

One (1)  
15-10-0500

Drain - Pump Master Valve

Y\_\_N\_\_

**PUMP MASTER DRAIN**

A master drain that will have the capacity to drain all lines and main pump at the same time. The master drain will be mounted on the left side panel and will be readily accessible.

One (1)  
15-10-0610

Trident - 3/4" 1/4 Turn Bleeder Valves

Y\_\_N\_\_

**BALL VALVE DRAINS**

The apparatus shall be equipped with drains to allow draining for the pump and all water carrying lines and accessories. All 2" or larger discharge valves shall be equipped with a 3/4" drain valves.

The drains shall have an all brass body. The drains shall have NPT female inlets on both ends. The panel mounted handles shall be chrome plated zinc with a recessed area for ID tags.

One (1)  
19-02-0000

Pump Panel - Side Control - Midship Pump - Class A

Y\_\_N\_\_

**SIDE MOUNTED OPERATOR'S PANEL**

**CONSTRUCTION**

The pump house shall be a properly supported structure mounted between the body and chassis cab and shall be bolted to the chassis frame rails. The panel shall be supported by 1-1/2" stainless steel tubing.



The pump and all of the pump mounted valves shall be completely enclosed by the pump house design.

Left and right side pump house panels shall consist of upper and lower stainless steel removable panels.

Stainless panels to be brushed satin finish 12 gauge 304 material to ensure longevity.

The left side of the pump house shall consist of an upper hinged panel containing all required gauges.

The lower panel shall contain left side specified discharges, inlets, drains, and pump controls.

The right side of the pump house shall consist of a double vertically hinged access door. The door will be swing open style with quick opening latch.

A separate lower panel shall contain the specified right side mounted discharges and inlets and their respective drains.

The bottom panel shall be fastened to the pump house with stainless steel bolts and shall be completely removable.

### **INNOVATIVE CONTROLS PUSH/PULL VALVE CONTROL HANDLES**

For valve actuation, the apparatus pump panel shall be equipped with Innovative Controls side mount valve controls.

The ergonomically designed push-pull T-handle shall be chrome plated zinc with recessed labels for color coding and verbiage. The control rod, double laminated locking clips and rod housing shall 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 shall minimize rod deflection, never need lubrication, and ensure consistent long term operation. Where required locking 1/4 turn push-pull T-handle controls will be provided.

The control assembly shall include a decorative chrome plated zinc panel mounting bezel and 4 mounting bolts.

### **IDENTIFICATION LABELS FOR PUMP PANEL**



Innovative Controls verbiage label bezels shall be installed. The bezel assemblies will be used to identify apparatus components. These labels shall be designed and manufactured to withstand the specified apparatus service environment.

The verbiage label bezel assemblies shall include a chrome plated panel mount bezel with durable easy to read UV resistant polycarbonate inserts featuring the specified verbiage and color coding. The UV resistant polycarbonate verbiage and color inserts shall be sub-surface screen printed to eliminate the possibility of wear and protect the inks from fading. Both the insert labels and bezel shall be backed with 3M permanent adhesive (200MP), which meets UL969 and NFPA standards.

### **SIDE MOUNTED OPERATOR'S PANEL**

The following items shall be located on the left side pump panel:

- \*Individual 0-400# compound discharge gauges shall be provided for each 1.5" or larger discharge
- \*One (1) -30 to 400 psi master pressure gauge
- \*One (1) -30 to 400 psi master vacuum gauge
- \*One (1) engine oil pressure gauge with audible & visual alarm
- \*One (1) engine water temperature gauge with audible & visual alarm
- \*One (1) engine voltmeter
- \*One (1) waterproof engine tachometer
- \*Two (2) UL test connections
- \*One (1) master pump house lighting switch
- \*One (1) engine throttle control
- \*One (1) relief valve control and open indicator light
- \*One (1) primer control
- \*All discharge controls



- \*One (1) tank fill/pump bypass control
- \*One (1) tank to pump valve control
- \*One (1) pump ENGAGED indicator light
- \*One pump certification plate

One (1)  
19-04-0020

\*One liquid level meter with sensor in the water tank  
Running Board - Aluminum Diamond Plate

Y\_\_N\_\_

**RUNNING BOARDS**

Running boards shall be provided on each side of the pump module and extend from the front of the side compartments forward to the back of the cab. Running boards shall be constructed of 1/8" aluminum diamond plate. The rear edge shall be formed upward 1-1/2" to provide a kick strip along the bottom of the pump panel. The outer edge shall be bent downward to provide a safety rail.

Running boards are supported by 1.50" structural stainless steel tubing welded to the panel framing and shall be able to support a minimum of 500 pounds. The running board stepping surface will comply with the latest version of NFPA 1901. Gauges - 4.0" No-Shok Master Gauges

One (1)  
20-01-1500

Y\_\_N\_\_

**4.0" NOSHOK MASTER GAUGES**

The master intake and master discharge gauges shall be 4" diameter No-Shok pressure gauges. Each gauge shall have a one-piece die-cast brass case that integrates the valve stem connection, movement support, and bourdon tube support into a single unit that eliminates distortion and leakage. Clear scratch resistant molded crystals with captive O-ring seals shall be used to ensure distortion free viewing and to seal the gauge. The gauges shall be filled with a synthetic mixture to dampen shock and vibration, lubricate the internal mechanisms, prevent lens condensation and ensure proper operation from -40°F to +160°F. Each gauge shall meet ANSI B40.1 Grade 1A requirements with an accuracy of +/- 1% full scale and include a size appropriate phosphorous bronze bourdon tube with a reinforced lap joint and large tube base to increase the tube life and gauge accuracy.

A polished chrome-plated brass bezel shall be provided to prevent corrosion and protect the lens and gauge case. The gauges shall be installed into decorative chrome-plated mounting bezels that incorporate valve-identifying verbiage.



The master gauges shall be installed on the pump panel no more than 6 inches apart. The gauge on the left shall be the master pump intake gauge and display a range from -30 to 400 psi with Black graphics on a White background. The gauge on the right shall be the master pump discharge gauge and display a range from -30 to 400 psi with Black graphics on a White background.

One (1)  
20-01-2200

Gauge - 2-1/2" No-Shok Discharge Gauges

Y\_\_\_N\_\_\_

**2-1/2" NOSHOK GAUGES**

The valve discharge gauges shall be 2 ½ ” diameter No-Shok pressure gauges. Each gauge shall have a one-piece die-cast brass case that integrates the valve stem connection, movement support, and bourdon tube support into a single unit that eliminates distortion and leakage. Clear scratch resistant molded crystals with captive O-ring seals shall be used to ensure distortion free viewing and to seal the gauge. The gauges shall be filled with a synthetic mixture to dampen shock and vibration, lubricate the internal mechanisms, prevent lens condensation and ensure proper operation from -40°F to +160°F.

Each gauge shall exceed ANSI B40.1 Grade B requirements with an accuracy of +/- 1.5% full scale and include a size appropriate phosphorous bronze bourdon tube with a reinforced lap joint and large tube base to increase the tube life and gauge accuracy. A polished chrome-plated brass bezel shall be provided to prevent corrosion and protect the lens and gauge case. The gauges shall be installed into decorative chrome-plated mounting bezels that incorporate valve-identifying verbiage and color labels. The gauges shall display a range from 0 to 400 psi with Black graphics on a White background.

One (1)  
20-03-0500

ICI SL-10 LED Water Level - Pump Panel

Y\_\_\_N\_\_\_

**ICI WATER LEVEL MONITOR**

An Innovative Controls SL-10 Series Tank Level Monitor System shall be installed. The system shall include an electronic display module, a pressure transducer-based sender unit, and a 10' connection cable. The display module shall show the volume of water in the tank using 10 superbright easy-to-see LEDs. Tank level indication is enhanced by the use of green LEDs at the full and near-full levels, amber LEDs between ¾ and ¼ tank levels, and red LEDs at the near-empty and empty levels. A wide-angle diffusion lens in front of the LEDs creates a 180° viewing angle. The electronic display module shall be waterproof and shock resistant being encapsulated in a urethane-based potting compound. The potted display module shall be mounted to a chrome plated panel-mount bezel with a durable easy-to-read polycarbonate insert featuring blue graphics and a water icon.



All programming functions shall be accessed and performed from the front of the display module. The programming includes self-diagnostics, manual or self-calibration, and networking capabilities to connect remote slave displays. Low tank level warnings shall include flashing red LEDs starting below the ¼ level, down-chasing LEDs when the tank is almost empty, and an output for an audible alarm.

The display module shall receive an input signal from a pressure transducer. This stainless steel sender unit shall be installed on the outside of the water tank near the bottom. All wiring, cables and connectors shall be waterproof without the need for sealing grease.

**Location of water tank level monitor shall be on the pump operators panel.**

One (1)  
20-03-1600

ICI SL-10 LED Additional Read Out - Rear

Y\_\_N\_\_

**ICI REMOTE SLAVE TANK LEVEL MONITOR**

An Innovative Controls SL Series Tank Level Monitor remote slave display shall be installed. The system shall include an electronic display module and a 10' connection cable. The display module shall show the volume of water in the tank using 10 superbright easy-to-see LEDs. Tank level indication is enhanced by the use of green LEDs at the full level and near-full levels, amber LEDs between the ¾ and ¼ tank levels, and red LEDs at the near-empty and empty levels. A wide-angle diffusion lens in front of the LEDs creates a 180° viewing angle. The electronic display module shall be waterproof and shock resistant being encapsulated in a urethane-based potting compound. The potted display module shall be mounted to a chrome plated panel-mount bezel with a durable easy-to-read polycarbonate insert featuring blue graphics and a water icon.

The remote slave display shall receive input data from an Innovative Controls SL Series master display unit and mirror its function. Low tank level warnings shall include flashing red LEDs starting below the ¼ level, down-chasing LEDs when the tank is almost empty, and an output for an audible alarm.

All wiring, cables and connectors shall be waterproof without the need for sealing grease.

**Location of remote water tank level monitor shall be on the rear of the unit.**

One (1)  
20-03-1602

ICI Model SL-10 LED Additional Read Out - Right Panel

Y\_\_N\_\_

**ICI REMOTE SLAVE TANK LEVEL MONITOR**

An Innovative Controls SL Series Tank Level Monitor remote slave display shall



be installed. The system shall include an electronic display module and a 10' connection cable. The display module shall show the volume of water in the tank using 10 superbright easy-to-see LEDs. Tank level indication is enhanced by the use of green LEDs at the full level and near-full levels, amber LEDs between the ¾ and ¼ tank levels, and red LEDs at the near-empty and empty levels. A wide-angle diffusion lens in front of the LEDs creates a 180° viewing angle. The electronic display module shall be waterproof and shock resistant being encapsulated in a urethane-based potting compound. The potted display module shall be mounted to a chrome plated panel-mount bezel with a durable easy-to-read polycarbonate insert featuring blue graphics and a water icon.

The remote slave display shall receive input data from an Innovative Controls SL Series master display unit and mirror its function. Low tank level warnings shall include flashing red LEDs starting below the ¼ level, down-chasing LEDs when the tank is almost empty, and an output for an audible alarm.

All wiring, cables and connectors shall be waterproof without the need for sealing grease.

**Location of remote water tank level monitor shall be on the right side pump panel.**

One (1)  
20-05-0500

Microphone Compartment 6-1/4 x 7- 3/4 x 5 deep- Pump Panel

Y\_\_N\_\_

**MICROPHONE COMPARTMENT**

A Cast Products microphone compartment with interior dimensions of 6 1/4" wide x 7 3/4" high x 5" deep shall be installed in the pump operator's panel area.

One (1)  
45-04-1500

Water tank - 300 Gal. UPF Poly-tank IIE rect.

Y\_\_N\_\_

**UPF POLY-TANK IIE**

**SPECIFICATIONS**

The tank shall have a capacity of 300 U.S. Gallons

**CONSTRUCTION**

The UPF POLY-TANK IIE shall be constructed of 1/2" thick PT2E polypropylene sheet stock. This material shall be a non-corrosive stress relieved thermo-plastic, natural in color, and U.V. stabilized for maximum protection. The booster tank shall be of a specific configuration and is so designed to be completely independent of the body and compartments. All joints and seams shall be nitrogen welded and tested for maximum strength and integrity. the top of the booster tank is fitted with removable lifting eyes designed with a 3 to 1 safety factor to facilitate easy removability. The transverse swash partitions shall



be manufactured of 3/8" PT2E polypropylene (natural in color) and extend from approximately 4" off the floor to just under the cover. The longitudinal swash partitions shall be constructed of 3/8" PT2E polypropylene (natural in color) and extend from the floor of the tank through the cover to allow for positive welding and maximum integrity. All partitions shall be equipped with vent and air holes to permit movement of air and water between compartments. The partitions shall be designed to provide maximum water flow. All Swash partitions interlock with one another and are welded to each other as well as to the walls of the tank.

### **FILL TOWER AND COVER**

The tank shall have a combination vent and manual fill tower. The fill tower shall be constructed of 1/2" PT2E polypropylene and shall be a minimum dimension of 8" x 8" outer perimeter. The tower shall be located in the left front corner of the tank unless otherwise specified by the purchaser in Special Provisions. The tower shall have a 1/4" thick removable polypropylene screen and a PT2E polypropylene hinged-type cover. Inside the fill tower, approximately 4" down from the top, shall be fastened a combination vent overflow pipe. The vent overflow shall be a minimum of schedule 40 polypropylene pipe with a minimum I.D. of 4" that is designed to run through the tank, and shall be piped behind the rear wheels where specified to provide maximum traction for wheels.

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

### **SUMP**

There shall be one (1) sump constructed of 1/2" PT2E polypropylene and be located in the left front quarter of the tank. On all tanks that require a front suction a 3" schedule no 40 polypropylene pipe shall be installed that will incorporate a dip tube from the front to the tank to the sump location. The sump shall have a minimum 3" NPT threaded outlet on the bottom for a drain plug. This shall be used as a combination clean-out and drain. All tanks shall have an anti-swirl plate located approximately 2" above the sump.

### **OUTLETS**



There will be two (2) standard tank outlets: one for tank-to -pump suction line which shall be a minimum of 3" NPT coupling; and, one for a tank fill line which shall be a minimum of 1" NPT coupling. All tank couplings shall be backed with flow deflectors to break up the stream of water entering the tank.

**MOUNTING**

The UPF POLY-TANK IIE shall rest on the body crossmembers with an unsupported area not to exceed 760 sq. in. on tanks up to 40" in height. On tanks over 40" in height, an unsupported area of not more than 530 square inches must be maintained. All tanks shall be insulated from the crossmembers with a minimum of 1/4" hard rubber strips on tanks under 2,000 gallons and 1/2" hard rubber strips on 2,000 gallon tanks and over, 2" to 3" wide with a minimum of 60D hardness. The tank shall sit cradle-mounted either using four (4) corner angles of 4" x 4" x 4" x 0.250" welded directly to the body cross members or the use of 2" x 2" x 0.250" angle iron which will extend around the entire perimeter of the tank and welded to the body cross members.

In each case, the entire perimeter of the bottom of the tank wall be supported. Support under the upper side walls is not required. The support frame or angles will keep the tank from shifting front to rear or side to side. Although the tank is designed on the free floating suspension principle, it shall be required that the tank have restraints halfway between the front and the rear of the tank. These restraints shall be made of 3" x 3" 1/4" angle approximately 6" long. the restraint does not directly contact the top of the tank.

One (1)  
46-00-0200

Apparatus Body Mini-Pumper

Y\_\_\_N\_\_\_

**STAINLESS STEEL BODY & COMPARTMENT CONSTRUCTION**

The complete apparatus body and sub frame shall be fabricated of 12 gauge type 304 grade stainless steel sheeting with a tensile strength of 87,000 psi and a yield strength of 39,000 psi.

All body and compartment components shall be break form design. Compartments are constructed of 12 gauge type 304 stainless steel. This shall include compartment floors, side walls and ceiling. No Exception. Compartments shall be formed from a single sheet of metal when possible. The exterior of the compartments shall be solid seam welded. The corner seams shall be caulked with Gray silicone caulking. All burrs shall be removed to eliminate sharp edges.

Interior of compartments are to be left natural stainless steel with a swirl finish applied to give a lasting and pleasing appearance.



## **COMPARTMENT SUPPORTS**

Compartment floor supports shall be provided fabricated of 12 gauge stainless steel 2.00" x 4.00" support members and shall be installed under the compartment floors. The supports shall be formed "U" sections that will extend the full width beneath the compartment floors. The upper body walkway floor will be supported in a similar fashion.

## **STAINLESS STEEL SUBFRAME**

A 1.50" x 3.00" stainless steel tubular sub frame shall be fabricated to support the body and tank. Structural stainless steel rails shall run the full length of the body across the top of the chassis frame rails. Appropriate 3.00" stainless steel cross members shall be utilized to ensure rigidity with cross members being space no more than 24" apart.

The sub frame and cross members shall be Mig welded. All compartments and all stainless steel sheeting is TIG welded with 308 stainless steel filler wire.

The complete body structure shall be secured to the chassis frame rails with high grade 5/8" diameter U-bolts.

One inch x three inch heavy duty rubber sill will be installed between the body sub frame and chassis frame rails to prevent stress on the body and tank components. The rubber sill shall be retained by a full length stainless steel channel.

## **STEPPING, STANDING, & WALKING SURFACES**

All stepping, standing, and walking surfaces on the body shall meet NFPA #1901 anti-slip standards.

## **WHEEL WELLS**

12 gauge stainless steel wheel wells shall be an integral part of the body construction.

Wheel wells and cabinetry are to be designed so road debris will not be trapped on top of the cabinets.

Full one piece circular, 24" deep stainless steel wheel well liners shall be installed. The fender flares shall be bright polished stainless steel and are attached to the wheel well using stainless steel bolts.



**WIRING ACCESS PANELS**

Wiring access panels shall be provided in the body interior corner compartments. The panels shall be bolted in place to allow easy removal for service.

**FUEL TANK ACCESS**

If the apparatus is equipped with a rear frame mounted fuel tank a removable bolted on access panel will be provided in the rear compartment wall.

**REMOVAL OF BODY**

The completed body with all related parts will be able to be removed in its entirety and accompany the water tank when removed.

**FASTENERS**

All fasteners used in securing components to the body shall be type 304 stainless steel.

**COMPARTMENT VENTS**

Compartments shall have a minimum of two (2) 4" louvered stainless steel vents per compartment. They shall be installed in the rear wall of each compartment in a fashion to prevent foreign matter and water from entering.

**COMPARTMENT DRAINS**

Duckbill type rubber floor drains will be installed in the corners of the lower compartment floors.

One (1)  
46-00-0305

Square Back Body

Y\_\_N\_\_

**SQUARE BACK BODY DESIGN**

The rear side body compartments and the body side walls shall extend all the way to the rear of the apparatus and shall be squared off design.

One (1)  
46-55-0015

Drawing 2: Mini Pumper with Hinged Doors (Independent Pump Panel)

Y\_\_N\_\_

**DWG 2: Mini Pumper with Independent Pump Panel & Hinged Doors**

L1 - 49.50" high x 24.00" deep x 21.00" wide  
Door opening: 46.50" high x 17.50" wide



Compartment will have a single vertically hinged door

**L2** - 27.00" high x 24.00" deep x 50.00" wide

Door opening: 24.00" high x 45.00" wide

Compartment will have double vertically hinged doors

**L3** - 49.50" high x 24.00" deep x 38.00" wide

Door opening: 46.50" high x 35.25" wide

Compartment will have double vertically hinged doors

**RR** - 30.50" high x 36.00" deep x 46.00" wide

Door opening: 21.50" high x 43.50" wide

This compartment will have a Rollup door.

**R1** - 49.50" high x 24.00" deep x 21.00" wide

Door opening: 46.50" high x 17.50" wide

Compartment will have a single vertically hinged door

**R2** - 27.00" high x 24.00" deep x 50.00" wide

Door opening: 24.00" high x 45.00" wide

Compartment will have double vertically hinged doors

**R3** - 49.50" high x 24.00" deep x 38.00" wide

Door opening: 46.50" high x 35.25" wide

Compartment will have double vertically hinged doors

Rear Bumper 12"

One (1)  
56-20-0004

Y\_\_N\_\_

**REAR BUMPER**

The rear bumper shall be fabricated of 1.50" x 1.50" and 1.50" x 3.00" structural stainless steel tubing. The bumper shall be fully welded design and shall be welded to the rear side body compartments.

The rear bumper shall be 12" deep and run full width of the vehicle.

Aluminum Diamond Plate Step

One (1)  
56-30-0001

Y\_\_N\_\_

**BUMPER STEP SURFACE**

The bumper step shall be covered with aluminum diamond plate with welded end caps. The bumper stepping surface will comply with the latest version of NFPA 1901.

Top Side Body Aluminum Trim

One (1)  
57-00-0501

Y\_\_N\_\_

**TOP SIDE BODY TRIM**

10025-0004

05/23/22



The top of all side body compartments shall be covered with Aluminum diamond plate.

One (1)  
57-00-0601

Top overlay edges shall be angled downward and extended over the outer body panel approximately 1.00"  
Rear Body Aluminum Finish

Y\_\_N\_\_

**REAR BODY TRIM**

Any areas on the rear not covered with Chevron reflective stripping, shall be covered with Aluminum diamond plate.  
Compartment Trim Aluminum Finish

One (1)  
57-00-0701

Y\_\_N\_\_

**FRONT COMPARTMENT TRIM**

Front exterior wall of the front compartments shall be covered with Aluminum diamond plate.  
Post Trim Aluminum Finish

One (1)  
57-00-0801

Y\_\_N\_\_

**SIDE BODY POST TRIM**

Side body support posts shall be covered with Aluminum diamond plate.  
Pump House Trim Aluminum Finish

One (1)  
57-00-0901

Y\_\_N\_\_

**PUMP HOUSE TRIM**

The front of the pump house shall be covered with Aluminum diamond plate.  
Rub Rails 1.00 x 1.50 S/S

One (1)  
57-20-0310

Y\_\_N\_\_

**STAINLESS STEEL RUB RAILS**

Rub rails shall be provided and installed below each side compartment. The rub rail assembly shall be constructed of 1.00" x 1.50" heavy-duty 14-gauge 304 grade stainless steel tubing with black end caps and will be DA finished. Rub rails shall be bolted to the lower exterior edge of the apparatus body, with 0.50" nylon spacers installed between the body and the rub rail.

One (1)  
58-08-0100

Y\_\_N\_\_

**HOSE BED**

A stainless steel hose bed with swirl finish shall be located above the water tank. The hose bed front and side walls shall be free of all sharp objects to prevent hose damage. There shall be two removable floor sections constructed of fiberglass



One (1)  
58-08-1100

grating, model T-3500, 1" "T" bars with 35% open area. This will allow for proper ventilation and drainage of hose.

Hose Bed Dividers (2)

Y\_\_N\_\_

**HOSE BED DIVIDERS**

Two (2) full length adjustable hose bed dividers shall be located in the hose bed area and shall be fully adjustable by means of stainless steel uni-strut tracking located at the front and rear of the hose bed.

The dividers shall be of "one piece" 1/4" extruded aluminum construction with integral extruded bottom "T" bar which runs full length of the hose bed. A top 1/2" diameter smooth edge is provided to prevent damage to hose.

The dividers shall be bolted in place with stainless steel fasteners and be easily adjusted from side to side with simple hand tools.

One (1)  
58-08-2200

Hose Bed Capacity

Y\_\_N\_\_

**HOSE BED CAPACITY**

The hose bed shall be capable of holding the following hose:

- \_\_\_ Feet of 5.00" LDH hose
- \_\_\_ Feet of 4.00" LDH hose
- \_\_\_ Feet of 3.00" DJ hose
- \_\_\_ Feet of 2.50" DJ hose
- \_\_\_ Feet of 1.75" DJ hose

One (1)  
58-08-5400

Hosebed Tarp - Vinyl (Mini Pumper)

Y\_\_N\_\_

**HOSEBED TARP**

A Black vinyl hosebed cover shall be provided with Velcro and twist lock fasteners on the front, shock cords fasteners on the sides with stainless steel hooks, and rear weighted flap with straps.

One (1)  
58-09-0100

Hand Rails - Extruded aluminum tubing with ribbed rubber inserts

Y\_\_N\_\_

**HAND RAILS**

Access hand rails shall be 1-1/4" in diameter extruded aluminum tubing with ribbed rubber inserts. Access rail escutcheons and brackets shall be chrome plated and attached with stainless steel bolts. Anchoring of posts and framing members for handrails of all types shall capable of withstanding a load of at least 225 pounds applied in any direction at any point along the rail.



Hand rails and handholds shall be constructed so that three points of contact (two hands and one foot, or one hand and two feet) can be maintained at all times while ascending and descending.

One (1)  
58-09-0200

Vertical Rear Hand Rails Standard

Y\_\_N\_\_

**VERTICAL HAND RAILS**

Two (2) 48" long hand rails shall be mounted vertically at the rear of the apparatus, one on each side of the rear compartment.

One (1)  
58-09-0700

Horizontal Rear Hand Rails Standard

Y\_\_N\_\_

**HORIZONTAL HAND RAILS**

One (1) 72" long hand rail shall be mounted horizontally just below the hosebed. Steps - (4) Innovative Controls Folding Steps

One (1)  
58-10-0005

Y\_\_N\_\_

**FOLDING ACCESS STEPS**

There shall be four (4) Innovative Controls folding steps provided and installed. Each step shall be designed to exceed the strength, load and traction requirements of NFPA. Each step shall be chrome plated and include a molded gasket to help prevent water ingress and keep the step mount from damaging painted surfaces. The step shall include a drain at the bottom to allow any water to escape the assembly.

The folding step shall be spring loaded to hold the step in the upright stowed position while in transit and when not in use.

The step shall include a white LED step light.

Location: Rear of unit to allow easy access to the hose bed. Suction Hose compartment - In hosebed (per)

One (1)  
60-00-2400

Y\_\_N\_\_

**SUCTION HOSE COMPARTMENT IN HOSEBED**

A suction hose compartment will be located in the right side of the hosebed capable of holding (1) 6" x 10' suction hose.

The compartment will be made of 3/16" aluminum and will have a rear access aluminum door with a lift and turn latch.

One (1)  
60-00-4200

Bracket - Ladder Mounted In Hose Bed

Y\_\_N\_\_

**LADDER BRACKET IN HOSEBED**

The extension ladder and roof ladder shall be mounted in the right side portion of



the hose bed.

A front nose box and rear latching mechanism is provided to secure the ladders.

The roof ladder will be mounted on top of the extension ladder.

One (1)  
60-00-5655

No Driver's Side Front Wheel Well Compt.

Y\_\_N\_\_

One (1)  
60-00-5660

Air Bottle Compartment SS - Single bottle

Y\_\_N\_\_

**AIR BOTTLE STORAGE COMPARTMENT (SINGLE COMPARTMENT)**

One (1) spare air bottle compartment shall be provided and located, in the front portion of the driver's side rear wheel well area. The compartment shall be fabricated of stainless steel and lined to prevent vibration. The compartment shall have a drain hole in the floor.

One (1)  
60-00-5705

No Driver's Side Rear Wheel Well Compt.

Y\_\_N\_\_

One (1)  
60-00-5710

Air Bottle Compartment SS - Single Bottle

Y\_\_N\_\_

**AIR BOTTLE STORAGE COMPARTMENT (SINGLE COMPARTMENT)**

One (1) spare air bottle compartment shall be provided and located, in the rear portion of the driver's side rear wheel well area. The compartment shall be fabricated of stainless steel and lined to prevent vibration. The compartment shall have a drain hole in the floor.

One (1)  
60-00-5805

No Officer's Side Front Wheel Well Compt.

Y\_\_N\_\_

One (1)  
60-00-5810

Air Bottle Compartment SS - Single Bottle

Y\_\_N\_\_

**AIR BOTTLE STORAGE COMPARTMENT (SINGLE COMPARTMENT)**

One (1) spare air bottle compartment shall be provided and located, in the front portion of the officer's side rear wheel well area. The compartment shall be fabricated of stainless steel and lined to prevent vibration. The compartment shall have a drain hole in the floor.

One (1)  
60-00-5905

No Officer's Side Rear Wheel Well Compt.

Y\_\_N\_\_

One (1)  
60-00-5910

Air Bottle Compartment SS - Single Bottle

Y\_\_N\_\_

**AIR BOTTLE STORAGE COMPARTMENT (SINGLE COMPARTMENT)**

One (1) spare air bottle compartment shall be provided and located, in the rear portion of the officer's side rear wheel well area. The compartment shall be



fabricated of stainless steel and lined to prevent vibration. The compartment shall have a drain hole in the floor.

One (1)  
60-00-6101

Wheel Well Door - Painted

Y\_\_N\_\_

**COMPARTMENT DOOR(S)**

The wheel well compartment(s) where specified will have a vertically hinged painted stainless steel door(s) with Southco #E3-17-22 all stainless steel door latch. The door(s) shall be labeled: "SPARE SCBA CYLINDER". Door(s) shall be wired to the door ajar circuit.

One (1)  
60-00-6101

Wheel Well Door - Painted

Y\_\_N\_\_

**COMPARTMENT DOOR(S)**

The wheel well compartment(s) where specified will have a vertically hinged painted stainless steel door(s) with Southco #E3-17-22 all stainless steel door latch. The door(s) shall be labeled: "SPARE SCBA CYLINDER". Door(s) shall be wired to the door ajar circuit.

One (1)  
60-00-6101

Wheel Well Door - Painted

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One (1)  
60-00-6101

Wheel Well Door - Painted

Y\_\_N\_\_

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One (1)  
60-00-6101

Wheel Well Door - Painted

Y\_\_N\_\_

**COMPARTMENT DOOR(S)**

The wheel well compartment(s) where specified will have a vertically hinged painted stainless steel door(s) with Southco #E3-17-22 all stainless steel door latch. The door(s) shall be labeled: "SPARE SCBA CYLINDER". Door(s) shall be wired to the door ajar circuit.

One (1)  
60-02-1003

Shelf Tracking S/S with (1) Adjustable Shelf for 4 compartments

Y\_\_N\_\_

**SHELVING - ADJUSTABLE**

10025-0004

05/23/22



A total of four (4) adjustable shelves shall be provided and installed in customer specified location.

Shelf construction where specified shall be rigid with 2" lip on the front and rear, and fabricated of 3/16" aluminum.

The shelving shall be adjustable by means of a threaded tightener that slides in a track to allow precise adjusting height. All tracking will be stainless steel uni-strut.

One (1)  
60-03-0502

Pull Out Trays (2) Accuride 300#

Y\_\_N\_\_

**TRAYS - PULL OUT**

Two (2) Accuride slide out trays shall be provided and installed in customer specified location.

Sliding tray where specified shall be mounted in a manner that provides for maximum clearance overhead.

The tray shall have a capacity of 300 pounds in the fully extended position.

The side mounted slides are to be equipped with ball bearings for ease of operation.

Tray will lock automatically in the open and closed positions. Manual type locks will not be acceptable.

**LOCATION:**

One (1)  
60-03-3010

Mateflex Interlocking Tiles

Y\_\_N\_\_

**FLOOR MATTING**

All compartment floors shall be lined with Black Mateflex 13" X 13" x 9/16" interlocking tiles with tapered edging at the front compartment opening.

One (1)  
62-00-0500

Compartment Doors S\S 18 Gauge Standard

Y\_\_N\_\_

**COMPARTMENT DOORS**

Doors to be fabricated of 304 grade stainless steel with 18 gauge inner and outer panels.

The doors shall be 3/4" thick and reduce the compartment depth by approximately 5/8" with the door closed.



The double panel design provides strength and a tight fit with 5/8" insulation installed between the panels for sound dampening.

Doors shall be of a rigid design. Door outer panel edges will be folded and welded to the inner panel.

Welding of the inner panel directly to the outer panel face shall not be permitted due to distortion caused by welding.

The use of body filler prior to painting of the outer door panels shall not be permitted. **No Exception**

Each door is to have closed cell rubber seal to provide a weather proof seal between the door and compartment.

The compartment doors shall pivot on full length stainless steel piano hinges with a 3/16" pin diameter.

Hinges shall be welded to compartment wall and bolted to doors with 10-24 stainless steel bolts.

Compartment doors will have stainless steel flush bent "D" ring handles. Latching mechanism shall be non-locking safety slam positive latch. Gasket material is placed between the door handles and outer door panels to prevent electrolytic reaction between dissimilar metals to protect paint finish.

Mechanism is enclosed in stainless steel not exposed to equipment stored in compartment.

An inner two point latch shall be provided on the second door of all double doors with a rubber covered pull cable when applicable.

Interior of doors shall be left natural stainless with swirl finish applied to give a lasting and pleasing appearance.

One (1)  
62-00-0800

Drip Rails For Hinged Compartment Doors

Y\_\_N\_\_

**DRIP RAILS**

Bright aluminum "J" channel shall be provided over each lower side body compartment and at the front and rear of the compartments.

One (1)  
62-01-0500

Door Closures Power Hydraulic Vertically Hinged

Y\_\_N\_\_

**DOOR CLOSURES**



All vertically hinged doors shall have power lift gas filled cylinders installed.

One (1)  
62-01-1500

Closure shall assist in the closing of door once it has past the halfway point.  
Door Closures Power Hydraulic Horizontally Hinged

Y\_\_N\_\_

**DOOR CLOSURES**

All horizontally hinged doors shall have power lift gas filled cylinders installed.  
Doors shall be held open at a 90 degree angle to the body.

One (1)  
70-02-0000

Closure shall assist in the closing of door once it has past the halfway point.  
Electrical - Commercial Pumper

Y\_\_N\_\_

**12 VOLT ELECTRICAL SYSTEM**

All wiring and electrical equipment shall meet N.F.P.A. 1901 (2016 edition) and SAE standards.

A master optical warning device switch that energizes all of the optical warning devices shall be provided.

The optical warning system shall be capable of two separate signaling modes during emergency operations. One mode shall signal to drivers and pedestrians that the apparatus is responding to an emergency and is calling for the right of way. The other mode shall signal that the apparatus is stopped and is blocking the right of way. Switching of modes shall be controlled by the parking brake.

All wiring to be GXL ultra high temperature cross link type.  
Wiring installed by the builder to be run in protective split loom where exposed to the outside.

Where wires pass through body compartments or panels grommets, snap bushings, or compression fittings shall be utilized.

All wiring harnesses and associated wiring shall be secured with nylon "ultra violet resistant" cable ties or bolted to the body with cable clamps.

Polyolefin "heat shrink" tubing with adhesive or Deutsch water tight connectors shall be used on all exterior wiring connections.

Flexible non-conductive polyurethane film shall be sprayed on all terminal studs, relays, starter, batteries, etc. to prevent corrosion.



All wiring shall be protected by automatic reset circuit breakers which conform to SAE standards. Any required exterior fuses shall be protected by an environmentally sealed fuse holder.

The breakers shall be selected to prevent wire damage when subjected to extreme current overload. Wiring to be color, function, and/or number coded.

A Class I power distribution relay board shall be utilized. Distribution board contains independently switching relays with selectable input polarity. Relays can be connected in either their normally open or normally closed positions.

Relay board features heavy duty components, visual diagnostics, and load management inputs. System is user friendly for trouble shooting.

A wiring diagram for the body electrical system shall be included with the apparatus.

### **JUNCTION BOX**

The electrical junction box for all 12 volt wiring shall be located in a convenient location. It will be recessed into the compartment wall not to protrude into the storage area. It shall have a removable access panel.

The compartment shall be sealed and weather proof. All components in compartment shall have identification tags.

### **CLEARANCE LIGHTS**

All required Clearance lights shall be provided at the rear and on each side of the unit to meet Federal regulations. All lights will be (LED) Light Emitting Diode type with a five (5) year warranty.

On apparatus 30 feet in length or longer, a Trucklite model 60072Y Amber LED turn signal light with stainless steel flange shall be mounted one (1) each side in rear wheel well area at approximately running board height.

### **LED STEP AREA LIGHTING**

Four (4) step area lights shall be provided. One mounted each side on the front compartment face to illuminate the panel running board steps and two mounted at the rear of the unit to illuminate the rear tailboard step. These lights shall be activated when the parking brake is applied.



Whelen 3SCOCDCR series 3.00” round LED lights shall be utilized. Depending on body application the lights will either be mounted in a rubber grommet or surface mounted with a chrome flange.

**HAZARD LIGHT**

A red flashing light shall be located in the driving compartment, and shall be illuminated automatically whenever the apparatus parking brake is not fully engaged and any passenger or equipment compartment door is open, any ladder or equipment rack is not in the stowed position, a stabilizer system is deployed, a powered light tower is extended, or any other device is opened, extended, or deployed that creates a hazard or is likely to cause damage to the apparatus if the apparatus is moved. The lights shall be marked "DO NOT MOVE APPARATUS WHEN LIGHT IS ON".

One (1)  
70-02-1570

License Plate Light - LED

Y\_\_N\_\_

**LICENSE PLATE LIGHT**

One (1) Trucklite model 15055 LED license plate light and bracket shall be provided on the rear of the unit.

One (1)  
70-02-1700

Emergency Warning Light Switches Commercial Cab

Y\_\_N\_\_

**EMERGENCY WARNING LIGHT SWITCH CONTROLS**

All warning light switches shall be mounted in the cab in a readily accessible location.

A master switch and individual switches to be provided to allow preselection of lights. The light switches are to be "rocker" type with an internal indicator light to show when the switch is energized. All switches to be properly identified and mounted in a removable panel for ease in servicing. Identification of the switches shall be done by either printing or etching on the switch panel.

One (1)  
70-02-2800

Whelen M6 Quad Cluster LED Rear Stop, LED Turn, LED Backup

Y\_\_N\_\_

**WHELEN M6FCV4 QUAD CLUSTER REAR DOT LIGHTING**

**BACKUP LIGHTS**

Two (2) Whelen model M6BUW Super LED backup lights

**STOP/TAIL LIGHTS**

Two (2) Whelen model M6BTT series Super LED Brake/Tail lights



**DIRECTIONAL LIGHTS**

Two (2) Whelen model M6T series Super LED arrow directional turn signal lights

The backup lights, stop/tail lights, and directional lights along with rear lower level warning lights shall be installed on the lower rear face of the unit and shall be recessed in chrome plated flange.

One (1)  
70-02-3100

Compartment Lights Soundoff Signal (1) 10"

Y\_\_N\_\_

**COMPARTMENT LIGHTS**

One (1) SoundOff Signal model ECVCLLED10, 10” strip LED compartment light shall be provided in each compartment. The lighting shall be mounted in the ceiling of the compartment.

All compartment lighting shall be automatic by the opening and closing of the door.

One (1)  
71-00-0100

All main apparatus body compartments shall have door ajar switches.  
Back Up Alarm

Y\_\_N\_\_

**BACK-UP ALARM**

There shall be electronic beeper that sounds when the truck is placed in reverse. The beeper shall be heard over all engine noise, by persons near or on the truck.  
Ground LED Lighting Commercial 2 Door SQ Or Ellip

One (1)  
71-03-0100

Y\_\_N\_\_

**LED GROUND LIGHTING**

The apparatus shall be equipped with lighting capable of providing illumination at a minimum level of two (2) foot candle on ground areas within 30.00" of the edge of the apparatus in areas designed for personnel to climb onto the apparatus or descend from the apparatus to the ground level. Lighting designed to provide illumination on areas under the driver and crew riding area exits, which shall be activated automatically when the parking brake is set. Lights shall be installed in a manner that illuminates all walkways and steps for safe operation of the apparatus.

TecNiq E10-WSOO-1 6.00" LED lights mounted in a stainless steel bracket shall be utilized.

One (1) light located each side under the panel running boards.  
Two (2) lights mounted under the rear step.



One (1) One (1) light located each side under the cab steps. Y\_\_N\_\_  
 71-04-0099 (1) SoundOff LED Pump Compartment Light

**PUMP COMPARTMENT LIGHT**

One (1) SoundOff model ECVCSLLED10-10” LED pump compartment light shall be provided within the pump enclosure. The control switch shall be located on the pump operators panel.

One (1) Light - Engine Compartment - TecNiq E18 Y\_\_N\_\_  
 71-05-0000

**ENGINE COMPARTMENT LIGHT**

There shall be a TecNiq E18 high output utility light with switch, mounted inside engine compartment, to provide sufficient lighting for vehicle maintenance. TecNiq LED Front Hose Bed Lights

One (1) Y\_\_N\_\_  
 71-31-3000

**HOSE BED LIGHTS**

There shall be two (2) TecNiq (model E10-W000-1) 6.00" LED lights with clear lens lights mounted at the front of the hose bed. The lights will be activated by a swtich located on the pump panel.

One (1) Innovative Controls Electrical Load Manager Y\_\_N\_\_  
 72-35-4000

**ELECTRICAL LOAD MANAGER**

The apparatus shall be equipped with an Innovative Control Electrical Load Manager (ELM) for performing electrical load management. The ELM shall have 16 programmable outputs to supply warning and load switching requirements. Outputs 1-12 shall be independently programmable to activate during the scene mode, the response mode, or both.

These outputs can also be programmed to activate with the ignition or master warning switch, or to sequence and shed along with the priority. Output 13 shall be designated to activate a fast idle system. Output 14 shall provide a low voltage warning for an isolated battery. Output 15 is a user configurable output and shall be programmable for activating between 10.5 and 15 volts. Output 16 shall provide a low voltage alarm that activates at the NFPA required 11.8 volts.

The ELM shall have a digital display to indicate system voltage in normal operation mode and also indicate the output configuration during programming mode. The ELM shall be protected against reverse polarity and shorted outputs and be enclosed in a metal enclosure to enhance EMI/RFI protection. The ELM shall have an operating temperature range of -40C to +105C (-40F to +220F).

One (1) Whelen F4N2VLED 55" Freedom IV Light Bar Y\_\_N\_\_



75-12-0100

**WHELEN NFPA APPROVED UPPER LEVEL LIGHT PACKAGE**

**ZONE A - FRONT UPPER**

A Whelen Freedom IV model F4N2VLED 55" lightbar shall be mounted centered on the front of the cab roof. The lightbar shall be 55.00 inches in length. The lightbar shall feature four (4) corner Red Linear-LEDs and four (4) front Linear LEDs (2) Red & (2) Clear lights. The clear lights shall be disabled when the parking brake is engaged.

One (1)  
75-30-0004

L31H - Super Red LED Zone C

Y\_\_N\_\_

**ZONE C - UPPER**

Two (2) model L31HRFN Super Red LED 360 beacon lights mounted on the upper rear light stanchions.

One (1)  
75-30-1011

Whelen M7 Zone B&D (4) Zone C (4)

Y\_\_N\_\_

**ZONE B & D - SIDE UPPER**

Two (2) Whelen M7 Super LED lights with chrome bezels will be mounted one each side on the upper front side corners of the body.

Two (2) Whelen M7 Super LED lights with chrome bezels will be mounted one each side on the upper rear side corners of the body.

**ZONE C - REAR UPPER**

Four (4) Whelen M7 Super LED lights with chrome bezels will be mounted on the upper rear of the body.

One (1)  
75-30-1050

Whelen Upper Level Light Lens Color - Red

Y\_\_N\_\_

**UPPER LEVEL LIGHT LENS COLOR**

The upper level lights shall have red lenses.

One (1)  
75-40-0602

Whelen M Series LED Lower Level Lighting Commercial Cab (4)

Y\_\_N\_\_

**WHELEN LOWER LEVEL LIGHTING**

**ZONE A - LOWER**

Two (2) M7 series Super LED lights with chrome bezels mounted on the lower portion of the front grille.

10025-0004



**ZONE B & D- SIDE LOWER**

Two (2) M4 series Super LED lights with chrome bezels mounted one (1) each side on the front lower corner of the cab fenders.

Two (2) M6 series Super LED lights with chrome bezels mounted one (1) each side in the rear body fender area.

**ZONE C - LOWER**

Two (2) M6 Super LED lights mounted on the lower rear of the apparatus in M6FCV4 chrome housing.

One (1)  
75-40-0800

Whelen Lower Level Light Lens Color - Red

Y\_\_N\_\_

**LOWER LEVEL LIGHT LENS COLOR**

The lower level lights shall have red lenses.  
Siren - Whelen - Model #295SLSA1 - Power Call Tones

One (1)  
85-01-1710

Y\_\_N\_\_

**WHELEN 295SLSA1 ELECTRONIC SIREN AMPLIFIER**

A Whelen Model 295SLSA1 electronic siren amplifier shall be provided and installed in the cab within reach of the officer and driver.

**Features:**

**21 Scan-Lock Siren Tones**

- Tone Off • Wail • Yelp • Piercer • Yelp 249
- Airhorn Command Code • Airhorn Low Command Code • Hi/Low • Simulated Mechanical • Pulsed Airhorn • Airhorn Hi/Low • Alternate Wail • Alternate Yelp
- **Whoop • Warble** • Airhorn • Low Frequency Airhorn • Manual Simulated Mechanical Coast to Stop • Manual Simulated Mechanical Stop • Manual Wail Coast to Stop • Manual Wail Stop

One (1)  
85-02-0500

Speaker - 100 watt

Y\_\_N\_\_

**SIREN SPEAKER**

One (1), 100 watt siren speaker shall be recess mounted in the front bumper.  
Two (2) Tech Guardian Jr.

Two (2)

Y\_\_N\_\_

10025-0004

05/23/22



88-01-0504

**SCENE LIGHTS**

Two (2) FireTech HI-Viz model GEJR Gaurdian Jr 3,000 lumens LED, (5.40" high x 7.40" wide) white scene lights will be installed on the body.

Light to be mounted on the rear of the body.

Lights will be controlled by a switch located in the cab. Light will also be activated when unit is put into reverse.

One (1)  
88-04-1001

FireTech 46" Brow Light 12 Volt

Y\_\_N\_\_

**BROW LIGHT**

One (1) FireTech model FT-B-46-W brow light shall be provided and installed between the windshield and light bar. The light will have 36 LEDs and be capable of producing 19,008 lumens. The light features three (3) different patterns; spot, flood and scene. The light will be controlled by a switch in the cab.

One (1)  
98-00-0100

Paint And Preparation - Body Only

Y\_\_N\_\_

**PAINT AND PREPARATION**

All metal surfaces will be properly sanded, prepared and finished ready for our Axalta Coating Systems pretreatment. This is done to insure optimum adhesion, corrosion resistance, and durability.

After pretreatment, 1220S Axalta Coating Systems 5000 URO primer filler is applied designed to fill any minor surface defects and provide an adhesion layer between the pretreatment and the Imron Base Coat/Clear Coat. This is also applied to improve color gloss, retention, and durability of the paint.

Next the URO primer will be sanded to a smooth prepainting surface. The surface will be decontaminated and prepared for application of High Solids Axalta Coating Systems Productive Base Coat/Clear Coat finish to complete the finished paint process.

A full inspection is performed of Defects, Depth Imagery, Gloss, Film Build, Color Match and Texture, all to meet or exceed Axalta Coating Systems OEM fleet finish specifications.



Body assemblies that cannot be finish painted upon assembly shall be painted prior to finish assembly. All doors are removed and painted separate from the body.

Prior to reassembly and reinstallation of lights, handrails, door hardware, and any miscellaneous items; a gasket material or silicone sealant shall be applied to prevent damage to the finish painted surfaces and to protect against electrolysis between dissimilar metals.

Touch up paint shall be provided for each color paint used.

The complete apparatus body will be painted a single color to match the color of the cab. The cab shall remain as painted from the chassis supplier.

Paint Color \_\_\_\_\_ - Paint # \_\_\_\_\_

Paint Stripe Wheels Single Axle

One (1)  
98-01-0100

Y\_\_N\_\_

**PAINTED WHEELS**

Vehicle wheels shall be painted to match the exterior paint.

3.00" Lettering - Gold Vinyl

One (1)  
99-00-0500

Y\_\_N\_\_

**LETTERING**

Lettering shall be provided. It shall be computer generated, non-reflective, Gold Metallic Acrylic Vinyl Applique with a black border.

Computer generated lettering provides a proportional layout design and durable finish.

Included will be a maximum of sixty five (65) three (3) inch letters.

Reflective Striping - 4"

One (1)  
99-01-0500

Y\_\_N\_\_

**REFLECTIVE STRIPING**

A 4" wide white reflective stripe shall be applied to the unit in a straight line.

Per NFPA 15.9.3.1 this shall include 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.

Door Warning - Chevron 2-Door Cab

One (1)  
99-03-2000

Y\_\_N\_\_

**REFLECTIVE MATERIAL - INTERIOR CAB DOOR**

The cab doors shall have a minimum of 96 square inches of reflective material



One (1) affixed to the inside of each door per NFPA 1901 14.1.6 Y\_\_N\_\_  
 99-03-2200 Chevron Rear reflective

**REFLECTIVE CHEVRON - NFPA 15.9.3.2**

50 percent of the rear-facing vertical surfaces, visible from the rear of the apparatus, shall be equipped with retroreflective striping in a chevron pattern sloping downward and away from the centerline of the vehicle at an angle of 45 degrees. Each stripe shall be 6" in width.

One (1) Stripe Colors will be Red & Yellow. Y\_\_N\_\_  
 A0-00-0000 Equipment

**EQUIPMENT**

The following equipment shall be provided along with any necessary mounting brackets.

**NFPA EQUIPMENT CLARIFICATION**

Any equipment specified in the "Minor Equipment" section (e.g. hose, nozzles, adapters, AED, traffic cones, traffic safety vests, etc.) of NFPA 1901 for each apparatus classification which is not specified in this proposal will be considered to be customer supplied.

One (1) Two (2) Suction Hose - 4.5" x 10' Flex Y\_\_N\_\_  
 B1-10-4400

**SUCTION HOSE**

Two (2) Firequip Maxi-Flex 4.5" x 10' light weight PVC Suction hose with male and 4.5" long handled female couplers.

One (1) Strainer - 4.5" Barrel Y\_\_N\_\_  
 B2-01-4500

**SUCTION HOSE STRAINER**

One (1) South Park #BS4514AC, 4.50" barrel strainer will be provided and mounted in customer specified location.

One (1) Duo-Safety 10' Folding Attic - Model 585-A-10 Y\_\_N\_\_  
 E5-02-3000

**10' FOLDING LADDER**

A Duo-Safety model 585-A-10, 10' folding ladder shall consist of 1-section aluminum ladder with rubber feet shall be provided and installed in customer specified location. Ladder shall meet or exceed the latest NFPA standards.

One (1) Duo-Safety 14' Extension - Model 1000-A-14 Y\_\_N\_\_  
 E5-02-6400

10025-0004

05/23/22



**14' EXTENSION LADDER**

A Duo-Safety model 1000-A-14, 14' extension ladder shall consist of 2 aluminum sections. Ladder will meet or exceed latest NFPA standards.

One (1)  
E5-02-7500

Duo-Safety 24' Extension - Model 900-A-24

Y\_\_N\_\_

**24' EXTENSION LADDER**

A Duo-Safety model 900-A-24, 24' extension ladder shall consist of 2 aluminum sections. Ladder shall meet or exceed NFPA standards.

One (1)  
O2-01-0000

Kochek Spanner wrench - with hydrant wrench

Y\_\_N\_\_

**SPANNER WRENCH SET W/HYDRANT WRENCH**

One (1) set of Kochek style K45-3Y spanner wrenches shall be provided and mounted in customer specified location. Includes (1) Hydrant wrench and (2) spanner wrenches with mounting bracket.

Location:

One (1)  
O2-01-0500

Kochek Spanner wrench - (2-1/2")

Y\_\_N\_\_

**SPANNER WRENCH SET**

One (1) set of Kochek style K46-2Y spanner wrenches shall be provided and mounted in customer specified location. Includes (2) spanner wrenches with mounting bracket.

Location:

One (1)  
O4-00-6100

Traffic Vest NFPA Customer Supplied

Y\_\_N\_\_

**SAFETY FIRE VEST**

The NFPA required Safety Vest will be supplied and installed by the purchaser before the truck is placed into service.

One (1)  
O4-00-6110

Traffic Cones Customer Supplied

Y\_\_N\_\_

**TRAFFIC CONES**

The NFPA required traffic cones will be supplied and installed by the purchaser before the truck is placed into service.

One (1)  
O4-00-6120

Automatic External Defibrillator (AED) Customer Supplied

Y\_\_N\_\_

**AUTOMATIC EXTERNAL DEFIBRILLATOR (AED)**

The NFPA required AED will be supplied and installed by the purchaser before



the truck is placed into service.

