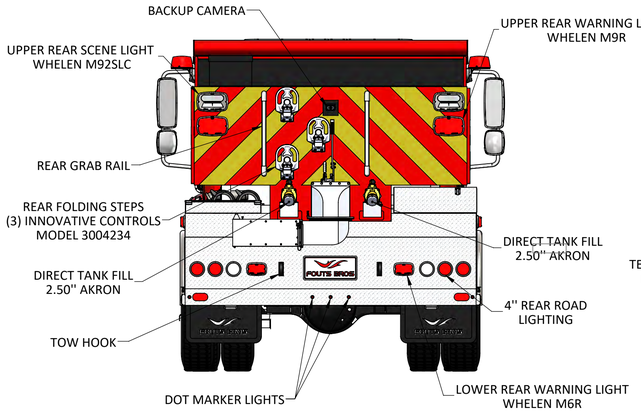

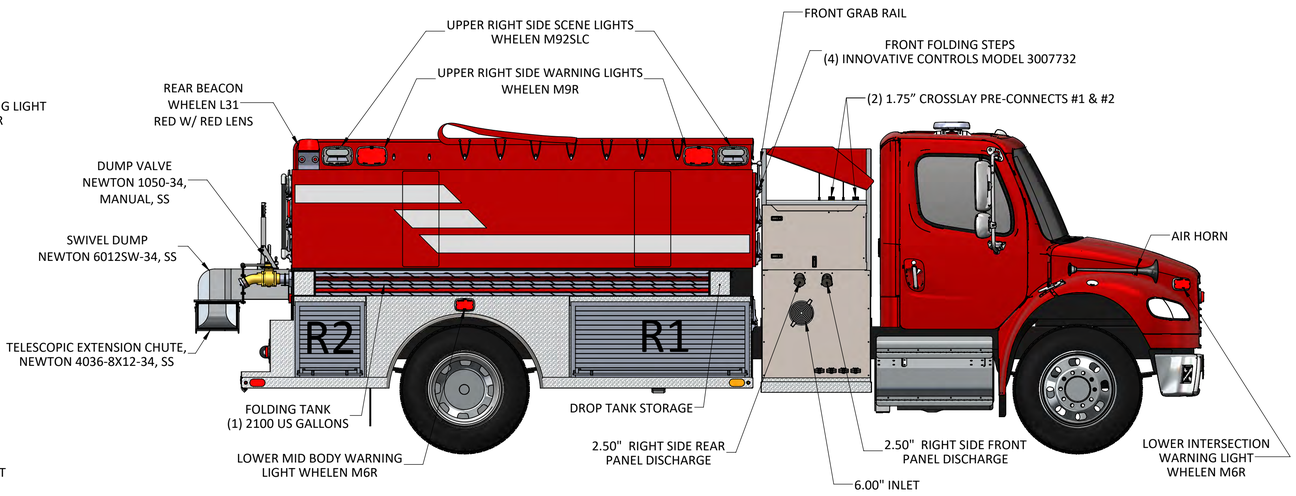

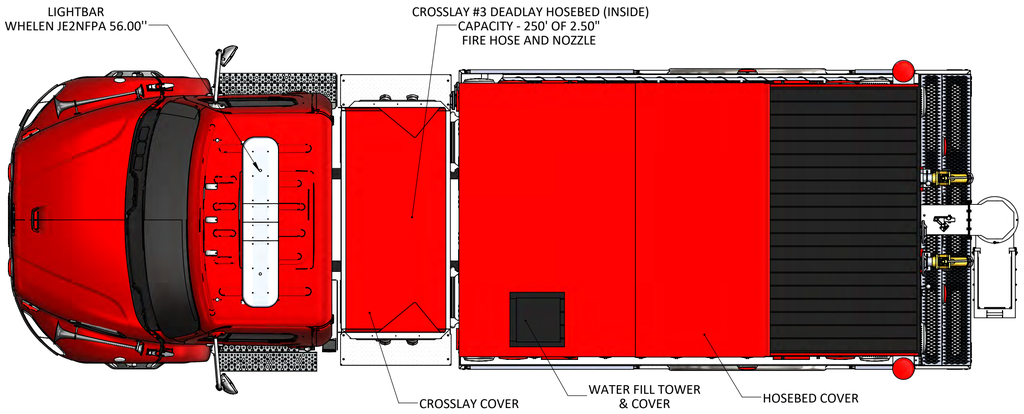

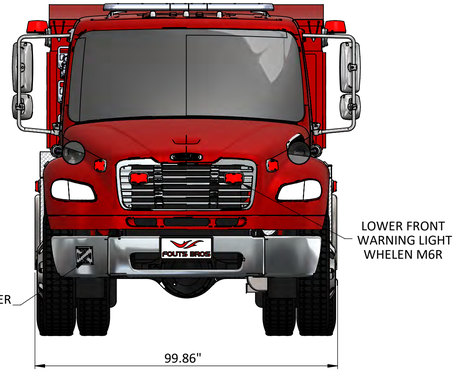

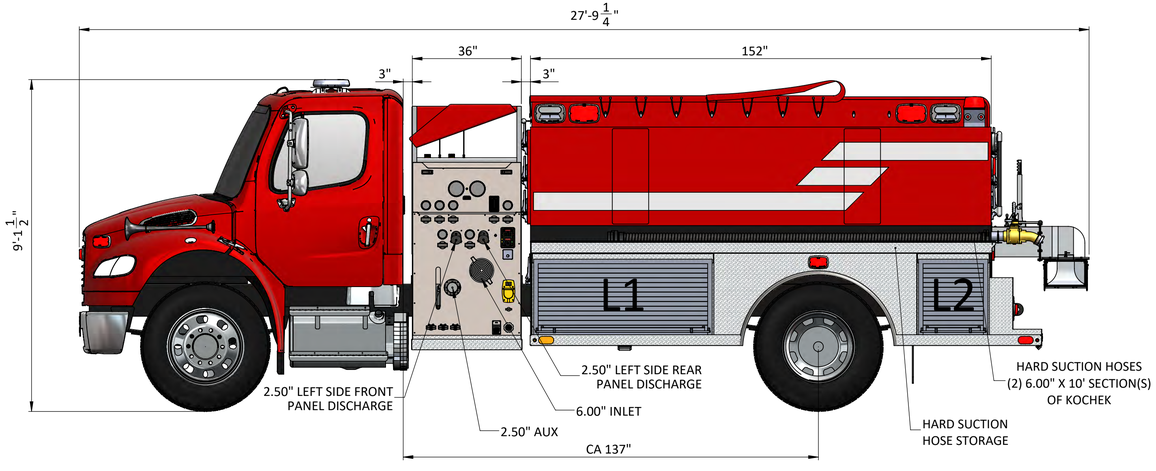

CHASSIS INFO	
CHASSIS	: FREIGHTLINER M2 106
CAB	: 2 DOOR
AXLE	: SINGLE
ENGINE	: CUM L9 360EV HP
TRANSMISSION	: ALLISON, 3000 EVS, AUTOMATIC
FRONT AXLE	: 14,600 LBS.
REAR AXLE	: 26,000 LBS.
PAINT COLOR	: RED ELITE

PUMP INFO	
PUMP	: HALE MBP, 1000GPM, SIDE MOUNT
INTAKES	
DRIVER SIDE	: ONE (1) 6.00" & ONE (1) 2.50" AUX
OFFICER SIDE	: ONE (1) 6.00"
DISCHARGES	
DRIVER SIDE	: TWO (2) 2.50"
OFFICER SIDE	: TWO (2) 2.50"
PRECONNECTS	: TWO (2) 1.75"
PUMP MISC	
PUMP SHIFT SPECIFICATION	: STATIONARY PUMPING
PRESSURE GOVERNOR	: FRC PUMPBOSS PBA501
PRIMING SYSTEM	: TRIDENT #31.003.7 AIR OPERATED
TANK TO PUMP	: ONE (1) 3.00"
TANK FILL	: ONE (1) 2.00"
CROSSLAY COVER	: 18 OZ. VINYL, RED
WATER LEVEL GAUGE	: ONE (1) IC SOFT-GLO #3050869-03-W-37(PUMP PANEL) ONE (1) IC SOFT-GLO #3050853-W-37 (CAB)
PUMP PANEL MATERIAL	: 14 GAUGE 304L SS, BRUSHED FINISH

TANK INFO	
TANK MAKE	: UPF
TANK WATER CAPACITY	: 2000 US GALLONS
DIRECT TANK FILLS	: TWO (2) 2.50", AKRON
REAR DUMP SYSTEM	: ELECTRIC WITH SWIVEL & EXTENSION
HOSEBED COVER	: 18 OZ. VINYL, RED

BODY INFO	
BODY TYPE	: ATP-4-COMPARTMENTS
DOOR TYPE	: AMDOR ROLL-UP DOOR (SATIN FINISH)
DROP TANK STORAGE	: RH
HARD SUCTION HOSE STORAGE	: LH
LH SIDE COMPARTMENTS	
L1	: 60.00" W X 26.00" D X 27.00" H = 24.375 CU.FT.
L2	: 24.00" W X 26.00" D X 27.00" H = 9.750 CU.FT.
RH SIDE COMPARTMENTS	
R1	: 60.00" W X 26.00" D X 27.00" H = 24.375 CU.FT.
R2	: 24.00" W X 26.00" D X 27.00" H = 9.750 CU.FT.
TOTAL VOLUME	: 68.250 CU.FT.
LOOSE EQUIPMENT	
FOLDING TANK	: ONE (1) 2100 US GALLONS
HARD SUCTION HOSE(S)	: TWO (2) 6" X 10' KOCHEK

FOUTS BROS

FOUTS BROS. INC.
138 ROBERSON MILL ROAD, MILLEDGEVILLE, GA 31061

DIMENSIONS SHOWN ARE APPROXIMATE AND SUBJECT TO CHANGE AS MAY BE FOUND NECESSARY DURING CONSTRUCTION. MINOR DETAILS MAY NOT BE SHOWN TO RETAIN CLARITY WITHIN THE DRAWING. THE DRAWING IS FOR REFERENCE PURPOSES ONLY. SPECIFICATIONS SHALL BE THE FINAL AUTHORITY OF WHAT IS SUPPLIED ON THE APPARATUS.
OVERALL HEIGHT IS IN LOADED CONDITION. UNLOADED HEIGHTS MAY BE 4" ABOVE HEIGHTS SHOWN.
THE EFFECTIVE DOOR OPENINGS WILL BE APPROX 2" LESS THAN THE NOTED COMPARTMENT OPENING FOR ROLL UP DOORS AND UP TO APPROX. 4" LESS FOR HINGED DOORS
INCLUSION OF AN ITEM ON THE DRAWING DOES NOT CONSTITUTE INCLUSION OF THAT ITEM WITH THE FINAL DELIVERED UNIT

DECIMAL : ±0.062 FRACTIONAL : ±1/16	ENG KKS	REV R00	SCALE 1:30	DWG SIZE D	DATE 30 MAR 2023
FOR :					
TITLE :	STOCK - 2000 GALLON SUPER TANKER				
PRODUCTION:					

Metro Fire Apparatus Specialists, Inc.
17350 State Hwy 249, Suite 250
Houston, Texas 77064-1142
713.692.0911 Office
www.mfas.com

Stock Fouts 2,000 Gallon Tanker

SCOPE AND GENERAL REQUIREMENTS

It is the intent of the manufacturer to provide a new fire apparatus that will withstand the continuous use encountered in the emergency fire fighting service. The apparatus shall be of the latest type, symmetrically proportioned and constructed with due consideration of the load to be sustained.

All parts not specifically mentioned herein, but which are necessary in order to furnish a complete fire apparatus, shall be furnished and shall conform to the best practices known to the fire apparatus industry.

The unit is to be of current year manufacture, and is to be new and unused. The bid price shall not include any local, State, or Federal taxes. The Bidder shall not be liable for any State or Federally mandated tax or program after the sale of this apparatus.

These specifications shall be construed as minimum. Should the manufacturer's current published data or specifications exceed these, they shall be considered minimum and be furnished.

PRIME BIDDER, MANUFACTURER

The manufacturer shall be prime bidder and shall identify the location of their facility.

BIDDERS BACKGROUND

Bids are requested from responsible manufacturers who are engaged in the manufacture of fire apparatus. To insure reliable and complete acceptance of the apparatus, bidder shall have been in operation for a minimum of thirty (30) years in the manufacturing of fire apparatus.

The manufacturer of the apparatus must be fully owned and managed by a Parent Company, Corporation, or Individual(s) that is 100% held by United States of America based Company, Corporation, or United States citizen(s).

Proposals from any manufacturer that is fully or partially owned and/or operated by a foreign company, Corporation or Individual(s) under any type of ownership, partnership, or any similar type of agreement will be immediately rejected.

If the manufacturer of the apparatus, or if any owner, shareholder, or immediate relative of an owner or shareholder that has previously been involved in or held ownership in any company that has filed bankruptcy or any other type of reorganization plan, it must be clearly stated in the bid proposal. The statement must include details and dates of all occurrences.

FAMA COMPLIANCE

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

FAIR, ETHICAL AND LEGAL COMPETITION

In order to ensure fair, ethical, and legal competition the apparatus manufacturer shall have ever been fined or convicted of price fixing, bid rigging, or collusion in any domestic or international fire apparatus market.

PROPRIETARY PARTS

It is the intention of the purchaser for all bidders to furnish the apparatus with major parts commonly used by the heavy-duty truck manufacturers and open market vendors whereas replacement parts are more readily available and at reduced cost. The use of proprietary parts may not be acceptable to the purchaser.

MANUFACTURER'S DISCRETION

Materials, parts, or procedures used are subject to change at manufacturer's discretion at any time to provide equal or better products.

PRODUCT QUALITY AND WORKMANSHIP

The components provided and workmanship performed shall be of the highest quality available for this application. Special consideration shall be given to the following areas:

A). Accessibility to various components that require periodic maintenance or lubrication checks.

B). Ease of vehicle and pump operation.

C). Features beneficial to the intended operation of the apparatus.

Construction of the complete apparatus shall be designed to carry the loads intended to meet the road and terrain conditions and speed requirements desired when specified by the purchaser.

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

INSURANCE REQUIREMENTS

Each bidder must submit with their bid proposal a Certificate of Insurance listing the proposed manufacturer's product liability insurance coverage. Liability insurance shall be a minimum amount of ten (10) million dollars. Submitted certificate shall name the apparatus manufacturer, insurance company, policy number, and effective dates of the insurance policy. Bids submitted without the required certificate will be considered nonresponsive and automatically rejected. No exceptions are allowed to the minimum insurance coverage requirement.

The manufacturer shall maintain full insurance coverage on the purchaser's cab and chassis from time of first possession by the manufacturer until the apparatus is delivered and accepted by the purchaser (No Exceptions). Purchaser reserves the right to require proof of insurance from the manufacturer's insurance carrier prior to entering into a contract for the apparatus.

PAYMENT TERMS

Full payment for the apparatus shall be made at time of delivery of the completed vehicle. Due to insurance liability, the apparatus will not be left at the purchaser's location without full acceptance and payment or prior agreement between the Purchaser and Bidder.

Final delivery price shall not include any Local, State or Federal taxes. The manufacturer shall not be liable for any State or Federal mandated tax or program after sale or delivery of the apparatus.

VEHICLE ACCEPTANCE AND DELIVERY

The customer shall pickup the vehicle at the manufacturing facility and shall supply evidence of sufficient insurance coverage to transport the vehicle.

FUEL TANK FILLED AT DELIVERY

The fuel tank and DEF tank (if applicable) shall be filled upon final delivery at the factory.

== DIMENSIONS - SUPER TANKER, SINGLE AXLE - 7.000 02/14/22 ==

OVERALL HEIGHT

An overall height restriction has not been specified for this apparatus.

OVERALL LENGTH

No overall length restriction has been specified for this apparatus.

OVERALL WIDTH

No overall width restriction has been specified for this apparatus.

OVERALL WHEELBASE

No overall wheelbase restriction has been specified for this apparatus.

PUMP MODULE WIDTH

No pump module width restriction has been specified for this apparatus.

ANGLE OF APPROACH

No angle of approach restriction has been specified for this apparatus.

ANGLE OF DEPARTURE

No angle of departure restriction has been specified for this apparatus.

== NFPA 1901 REQUIREMENTS - TANKER - 7.000 02/14/22 ==

NFPA COMPLIANCE

The National Fire Protection Association standard #1901 (most recent edition) is hereby adopted and made a part of these specifications, the same as if they were written out in full detail, insofar as they apply with the exception of any sections dealing with “Equipment Recommended for Various Types of Apparatus”. Bidders are to provide only the equipment requested herein and the Department will supply the rest before the apparatus is put into service. The unit shall comply with all federal, state, ICC, and DOT motor vehicle regulations, standards, and laws relating to commercial vehicles as well as to fire apparatus on the date of the bid.

ROAD TEST CERTIFICATION

A road test shall be conducted with the finished apparatus fully loaded. During this time, the apparatus shall not show loss of power and/or overheating. The transmission driveshaft or shafts and rear axle shall run free from abnormal vibration or noise throughout the operating range of the apparatus. The apparatus, when

loaded, shall have not less than 25% or more than 45% of the weight on the front axle and not less than 55% or more than 75% on the rear axle.

A). The apparatus must be capable of accelerating to 35 mph from a standing start within 25 seconds on a level concrete highway without exceeding the maximum governed RPM of the engine.

B). The apparatus must be capable of accelerating from a steady speed of 15 mph to a true speed of 35 mph within 30 seconds. This shall be accomplished without moving the gear selector.

C). The fully loaded apparatus shall be capable of obtaining a speed of 50 to 55 mph on a level concrete highway.

D). The manufacturer shall furnish copies of the engine installation approvals signed by the appropriate engine company upon delivery of the chassis to the Fire Department.

E). The manufacturer shall furnish copies of the transmission approval signed by the transmission manufacturer upon delivery of the chassis to the Fire Department.

F). The manufacturer shall furnish copies of the front and rear axle approvals upon delivery of the apparatus to the Fire Department.

ROAD TEST FAILURE

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

VEHICLE TOP SPEED

The rear axle shall be geared for a top speed of 60 mph at engine governed RPM.

NFPA TOP SPEED STATEMENT

NFPA-1901, 2009 Edition - 4.15.2. The maximum top speed of fire apparatus with a GVWR over 26,000 lbs. shall not exceed either 68 MPH or the manufacturer's maximum fire service speed rating for the tires installed on the apparatus, whichever is lower.

NFPA-1901, 2009 Edition - 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 lbs., 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.

SAFETY SIGNS

The following safety signs shall be provided:

SEATED AND BELTED WARNING LABEL - FAMA# 07

A permanent label shall be provided that is visible to all occupants that states that they should be seated and belted while the apparatus is in motion. The label shall also state potential injuries or death that could be caused if the safety belts are not used properly.

CAB INTERIOR EQUIPMENT MOUNTING DANGER LABEL - FAMA# 10

A permanent label shall be provided inside of the cab warning of the dangers of unsecured equipment inside the cab. The label shall state that all equipment shall be properly secured and also warn of potential injury or death that could be caused by failing to do so.

DO NOT WEAR HELMET LABEL - FAMA# 15

A permanent label shall be provided inside of the cab in view of all seated positions stating that helmets should not be worn in cab. The label shall also warn of potential injury or death that could be caused by wearing helmet in cab.

VEHICLE BACKING LABEL - FAMA17

A permanent label shall be provided inside of the cab in view of the driver advising of proper procedures to following when the apparatus is in reverse motion. The label shall also warn of potential injury or death that be caused by failing to follow proper procedures.

- "Do Not Move Apparatus When Light Is On" sign adjacent to the warning light indicating a hazard if the apparatus is moved (as described in subsequent section).

CHASSIS DATA LABELS

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

Fluid Data:

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

Chassis Data:

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

Location shall be in the driver's compartment of the chassis cab.

OVERALL HEIGHT, LENGTH, GVW DATA PLAQUE

A "high visibility" plate shall be permanently mounted in the cab, visible to driver when seated.

The plate shall show the overall height of the completed apparatus in feet and inches, the overall length of the completed apparatus in feet and inches.

The plate shall also show the gross vehicle weight rating (GVWR) in tons.

Text shall also be supplied on the plate, indicating that the information shown is current upon completion of the apparatus. If the overall height of the apparatus changes after the apparatus is put into service, then the purchaser must revise the dimensions on the plate.

"NO RIDE" LABEL

A label shall be located on the vehicle at the rear step areas, and at any cross walkways, if they exist. The label(s) shall warn personnel that riding in or on these areas while the vehicle is in motion is prohibited.

== COMMERCIAL CHASSIS, SINGLE AXLE - 7.000 02/14/22 ==

COMMERCIAL CHASSIS

COMMERCIAL CHASSIS SPECIFICATION

CHASSIS PROVIDER

The chassis, as detailed in these specifications, shall be ordered and supplied by the apparatus manufacturer.

FREIGHTLINER CHASSIS

A Freightliner 2-door chassis per the attached specifications shall be furnished:

CHASSIS PAINT COLOR

The cab shall be painted a Single color.

CAB PAINT SECONDARY/LOWER COLOR

The secondary/lower paint color shall be:

== CHASSIS MODS - TANKER, SINGLE AXLE - 7.000 02/14/22 ==

TIRE PRESSURE MANAGEMENT

There will be a RealWheels LED AirSecure tire alert pressure management system provided, that will monitor each tire's pressure. A sensor will be provided on the valve stem of each tire for a total of six (6) tires.

The sensor will calibrate to the tire pressure when installed on the valve stem for pressures between 10 and 200 psi. The sensor will activate an integral battery operated LED when the pressure of that tire drops 5 to 8 psi.

Removing the cap from the sensor will indicate the functionality of the sensor and battery. If the sensor and battery are in working condition, the LED will immediately start to flash.

HUB COVERS (front)

Stainless steel hub covers shall be provided on the front axle.

HUB COVERS (rear)

A pair of stainless steel high hat hub covers shall be provided on rear axle hubs.

COVERS, LUG NUT, CHROME

Chrome lug nut covers shall be supplied on front and rear wheels.

EXHAUST SYSTEM

The chassis exhaust system shall be provided as detailed in the chassis specifications. NO modifications shall be made by the apparatus manufacturer.

HOT EXHAUST DANGERS LABEL - FAMA# 04

A permanent label shall be provided near any hot exhaust surface that warns of potential injury or death that could be caused by contact with the surface. The label shall also state precautions that should be taken while working on or around the surface.

BUMPER

The front bumper shall be provided as detailed in the chassis specifications.

CHASSIS PREPARATION

Prior to installation of the fire pump, apparatus body, or cab steps, all components which extend out beyond the chassis frame rails shall be removed and relocated to the area within the frame rails

CHASSIS TOW HOOKS

The front tow hooks shall be provided as detailed in the chassis specifications.

REAR TOW PLATES

Two (2) rear tow plates with 1.50" I.D. holes, constructed with 1.00" steel plate shall be provided at the rear of the apparatus body.

FRONT MUD FLAPS

A pair of black rubber mud flaps shall be provided as detailed in the chassis specifications.

REAR MUD FLAPS

A pair of black rubber mud flaps, with the Manufacturer's logo, shall be provided and installed behind the rear wheels.

VEHICLE DATA RECORDER

The apparatus shall be equipped with a Class1 “Vehicle Data Recorder and Seat Belt Warning System” (VDR/SBW) that is connected to the power train CAN (Controller Area Network) bus consisting of transmission (TCM), engine control (ECM) and antilock brake (ABS) modules mounted on the apparatus. The VDR/SBW will function per NFPA 1901-2009 sections 4.11 (Vehicle Data Recorder) utilizing the power train’s J1939 data and 14.1.3.10 (Seat Belt Warning) using the Class1 “Seat Belt Input Module” for seat occupied and belt status information.

The VDR data shall be downloadable by USB cable to a computer using either Microsoft™ or Apple™ Operating Systems using Class 1/ O.E.M. supplied reporting software.

SEAT BELT WARNING SYSTEM

There shall be a seat belt indicator system supplied in the cab. The indicator system shall indicate seat belt use for each individual seating position when the seat is occupied, the seat belt remains unfastened and the parking brake is released.

A Class1 model 118620 display panel shall be supplied in the dash area. The panel shall have an audible indicator and a red light display to indicate that a seat belt has not been fastened.

VEHICLE DATA RECORDER DOWNLOAD HARNESS

A Class1 model #629-00025 USB VDR download harness shall be supplied with the system to allow the data to be downloaded to a computer.

CENTER CONSOLE

A center console shall be furnished and shall be located between the driver and officer's seats. The top face of the console shall be designed as the switch panel for all emergency light switches.

BATTERY SYSTEM

The battery system shall be supplied with the chassis.

BATTERY JUMPER STUDS

External battery jumper studs shall be provided as detailed in the chassis specifications.

KEYLESS IGNITION SWITCH

One (1) non-removable, keyless style ignition switch shall be provided with the chassis.

MASTER BATTERY SWITCH

A master battery switch shall be provided as detailed in the chassis specifications.

BATTERY CONDITIONER

A Kussmaul Chief 6012 Series battery conditioner shall be supplied. The battery conditioner shall provide a 60 amp output for the chassis batteries and a 20 amp output circuit for accessory loads.

BATTERY CHARGER LOCATION

The battery charger shall be located in a pre-determined location by the manufacturer.

120 VOLT SHORELINE CONNECTION - "SUPER" AUTO EJECT

One (1) Kussmaul "Super" Auto Eject model 091-55-20-120, automatic, 120 volt, 20 amp shoreline disconnect shall be provided for the on board, 120 volt battery charging systems.

AUTO-EJECT MATING PLUG

A Kussmaul model # 5-20P-H, 20 amp mating female cord end shall be shipped loose with the apparatus to allow the Fire Department to connect cord end to a Fire Department provided charging cord.

BATTERY CHARGER DISPLAY/ COVER

One (1) Kussmaul model 091-55-266-YW batter charger status center/ auto eject cover shall be supplied with the charger.

The cover shall be yellow in color.

SHORELINE RECEPTACLE LOCATION

The shoreline receptacle shall be located on the left hand side of the apparatus in a pre-determined location by the manufacturer.

AUXILIARY AIR COMPRESSOR

A Kussmaul 12V air compressor shall be supplied. The compressor system shall be designed to maintain the air pressure in the air system while not in use. A pressure switch shall sense air pressure drop and engage the compressor which shall run until the pressure is restored.

AUXILIARY AIR COMPRESSOR LOCATION

The auxiliary air compressor shall be located in a pre-determined location by the manufacturer.

BACK-UP ALARM

One (1) 97 DB back up alarm shall be provided and installed at the rear of the unit. It shall be wired to activate when the transmission is placed in reverse.

== PUMP & PLUMBING - TANKER - 7.000 02/14/22 ==

PUMP, MODULE, AND RELATED ITEMS

NFPA 1901 COMPLIANT PUMP

The fire pump and related plumbing on the specified apparatus shall be installed in accordance with applicable NFPA 1901 guidelines at the time the contract was placed.

HALE MBP POWER TAKE-OFF (PTO) PUMP

PUMP ASSEMBLY

1. The pump shall be of a size and design to mount on the chassis rails of commercial and custom truck chassis.
2. The entire pump shall be manufactured, and dynamometer tested at the pump manufacturer's factory. The pump manufacturer must have ISO 9001 quality control certification.
3. The pump shall be driven by the truck chassis engine through a transmission mounted or split drive line power take-off (PTO). The engine and PTO shall provide sufficient horsepower and RPM to enable the pump to meet and exceed the specified performance within the torque rating of the PTO, truck transmission gears and drive line components.
4. The entire pump, both suction and discharge passages, shall be hydrostatically tested to a pressure of 600 PSI. The pump shall be fully tested at the pump manufacturer's factory to the performance spots as outlined by the latest NFPA 1901 Standard. Pump shall be free from objectionable pulsation and vibration.
5. The pump body and related parts shall be ductile iron alloy, with a minimum tensile strength of 60,000 PSI. All moving parts in contact with water shall be of high quality bronze or stainless steel. Pumps utilizing castings made of lower tensile strength cast iron not acceptable.
6. Pump body shall be vertically split, on a single plane, for easy removal of impeller, clearance rings and mechanical seal assembly, from the pump without disturbing the mounting of the pump in the chassis. As an alternative, it must be possible to remove all these items without disturbing the pump body, manifolds and associated pipe work.
7. The pump discharge shall be rotatable to achieve different positions – 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 and 12 o’clock (by rotating the volute).

8. Pump impeller shall be hard, fine grain bronze of the mixed flow design, accurately machined and individually balanced. The vanes of the impeller intake eye shall be hand-ground and polished to a sharp edge. The impeller to be of sufficient size and design to provide ample reserve capacity. The impeller shall be keyed to the pump shaft.

9. Impeller clearance rings shall be bearing bronze, easily renewable without replacing impeller or pump body.

10. The inboard rear clearance ring shall be of a single labyrinth, intermeshing type design to provide extended life and better pump performance due to reduced recirculation.

11. The pump shaft shall be precipitation hardening stainless steel with a positive impeller lock. Pump shaft must be sealed with double lip oil seal to keep road dirt and water out of gearbox.

12. Pump shaft to be rigidly supported by rolling element bearings for minimum deflection and end float. Shaft end float shall be controlled by the bearings and shall not be adjustable.

GEARBOX

1. The gearbox as well as the pump shall be constructed and tested at the pump manufacturer's factory.

2. The aluminum alloy gearbox is designed to function without lubrication change for up to three years assuming manufacturer’s specified gear oil is used.

3. The bearings and shaft shall be oil splash lubricated, by the gear rotation, to ensure that the pump can be operated at any angle up to 15˚ in any direction.

4. Gearbox shall be of sufficient size to withstand the torque of the engine in pump operating conditions. The gearbox shall be designed of ample capacity for lubrication reserve and to maintain the proper operating temperature.

5. Input shaft to be rigidly supported by rolling element bearings for minimum deflection and end float. Shaft end float shall be controlled by the bearings and shall not be adjustable.

6. The input shaft shall be of heat-treated nickel chromium molybdenum steel and shall withstand the torque of the engine in pump operating conditions. Input shaft must be sealed with oil seal to keep road dirt and water out of gearbox.

7. All gears both drive and pump, shall be of highest quality electric furnace chrome nickel steel. Bores shall be ground to size and teeth integrated and hardened, to give an extremely accurate gear for long life, smooth, quiet running, and higher load carrying capability. An accurately cut helical high contact design shall be provided. (No exceptions.)

8. The pump ratio shall be selected by the apparatus manufacturer to give maximum performance with the engine, transmission and power take-off selected.

9. The gearbox housing will be fitted with a cooling water system as standard.

10. The gearbox will be rotatable to achieve six different positions – horizontal left, horizontal left - 22.5° down, horizontal right, horizontal right – 22.5° down, inverted (input over pump) and vertical (pump over input).

MECHANICAL SEAL

The pump shaft shall have only one mechanical seal. The mechanical seal shall be a self-adjusting mechanical type, incorporating a rotating spring-loaded hard carbon ring running against a stationary silicon

carbide seat with a PTFE backup ring that provides best in class reliability. The seal shall be pre-loaded during pump assembly and shall require no maintenance or adjustments during its life. (No exceptions.)

ELECTRONIC PUMP MANUALS

Two (2) sets of electronic fire pump service and operation manuals shall be provided with the completed apparatus.

PUMP WARRANTY

The pump shall be covered by the Hale Pro-Tech 5-year pump warranty against workmanship and materials. Both parts and labor shall be covered for the first 2 years and years 3-5 shall have parts only coverage.

MIDSHIP FIRE PUMP DRIVESHAFTS AND INSTALLATION

The midship PTO fire pump shall be installed and shall include installation of the fire pump, modification and/or fabrication of new drivelines and all pump-mounting brackets.

1000 GPM FIRE PUMP SPECIFICATIONS

The centrifugal type fire pump shall be a Hale model MBP with a rated capacity of 1000 GPM. The pump shall meet NFPA 1901 requirements.

The pump shall be certified to meet the following deliveries:

1000 gpm (3785 L/M) @ 150 psi (10.3 bar)
700 gpm (2646 L/M) @ 200 psi (13.8 bar)
500 gpm (1893L/M) @ 250 psi (17.2 bar)

POWER TAKE OFF

A ten (10) bolt Chelsea model 870-XDFJP-B5XV heavy duty transmission driven PTO shall be installed to drive the pump.

LEFT SIDE INLET - 6.00"

One (1) 6.00" steamer inlet with male NST threads shall be provided on the left side of the pump module. The inlet shall have a removable screen.

INLET CAP

One (1) 6.00" chrome plated cap with long handles and NST threads shall be supplied. The cap shall be capable of withstanding 500 PSI and be trimmed with the apparatus manufacturer's logo in the center of the cap.

RIGHT SIDE INLET - 6.00"

One (1) 6.00" steamer inlet with male NST threads shall be provided on the right side of the pump module. The inlet shall have a removable screen.

INLET CAP

One (1) 6.00" chrome plated cap with long handles and NST threads shall be supplied. The cap shall be capable of withstanding 500 PSI and be trimmed with the apparatus manufacturer's logo in the center of the cap.

PUMP SHIFT - PTO - STATIONARY PUMPING

One (1) PTO shall be installed to drive the fire pump. An electrically activated switch shall be installed in the cab to engage the fire pump. Safety interlocks shall be provided to ensure the pump drive system components are properly engaged to safely operate the pump.

The following indicators shall be provided and installed:

A green "**PUMP ENGAGED**" indicator shall be located in the cab and shall energize when the pump shift has successfully been completed.

A green"**OK TO PUMP**" indicator shall be located in the cab, and shall energize when the pump is engaged, the chassis transmission is in neutral, and the parking brake is engaged.

PTO ENGAGEMENT SWITCHING

One (1) rocker switch with indicator shall be installed on the switch panel in the cab to control the PTO engagement switch. The switch shall be labeled "PTO Engage".

PIPING AND MANIFOLDS

All the plumbing and/or piping in the pump module shall be of 304 stainless steel or flexible piping for long life. All stainless-steel castings shall be a minimum of schedule 40. All NPT pipe thread connections larger than 0.75” connections shall be avoided in the construction of the plumbing system. The following valves shall have groove connection: rear discharge, tank fill, all 2.00” and 2.50” pre-connect valves.

The flexible piping shall be black SBR synthetic rubber hose with 300 working pounds and 1,200 pounds burst pressure for sizes 1.50” through 4.00”. Sizes 0.75”, 1.00” and 5.00” are rated at 250 lb. working and 1,000 lb. burst pressure. All sizes are rated at 30 HG vacuum. Reinforcement consists of two (2) plies of high tensile strength tire cord for all sizes sand helix wire installed in sizes 1.00” through 5.00” for maximum performance in tight bend applications. The material has a temperature rating of –40 degrees F to 210 degrees F. Full flow couplings are precision machined from high tensile strength stainless steel. All female couplings are brass. 0.75” and 1.00” male and Victaulic couplings are brass

INDIVIDUAL DRAINS

All 2.00” or larger discharge outlets shall be equipped with a 0.75” ball valve drain valve or larger.

HOSE THREADS- NST

All hose threads shall be National Standard Thread (NST) on all base threads on the apparatus intake and discharges, unless otherwise specified.

MASTER PUMP DRAIN

The pump shall be equipped with a Class 1 Master Pump drain to allow draining of the lower pump cavities, volute and selected water carrying lines and accessories. The drain shall have an all brass body with a stainless steel return spring.

U.L. TEST POINTS

Two (2) U.L. test points shall be mounted on the pump panel for testing of the vacuum and pressures. The test points shall be a single piece with individual ports for suction and discharge.

VALVES

The valves shall be Akron Brass with stainless balls. The valves shall be bi-directional with full flow capability. The valves shall be of fixed pivot ball design with a flow pressure rating to meet NFPA-1901 standards. All 3.00" discharge valves shall be supplied with a true slow close mechanism per NFPA specifications.

INDIVIDUAL DRAINS

One (1) individual Class1 quarter-turn up drain valve shall be furnished for each 1.50" or larger discharge port and each 2.50" gated auxiliary suction.

DISCHARGE GAUGES

Individual Class 1 2.50" line gauges for each 2.00" or larger discharge shall be provided and mounted adjacent to the discharge valve control handle. The gauges shall indicate pressure from 0 to 400 PSI. The pressure gauge shall be fully filled with pulse and vibration dampening Interlube to lubricate the internal mechanisms to prevent lens condensation and to ensure proper operation to minus 40 degrees F. To prevent internal freezing and to keep contaminants from entering the gauge, the stem and Bourdon tube shall be filled with low temperature material and be sealed from the water system using an isolating Sub Z diaphragm located in the stem.

PUMP CERTIFICATION

The fire pump shall be tested to meet the flow requirements of the pump. A written certification shall be provided with the completed vehicle.

FIRE PUMP PRIMING SYSTEM

A Trident model# 31.003.7 air operated priming system shall be installed. The unit shall be of all brass and stainless steel construction and designed for fire pumps of 1,000 GPM or less. The primer shall be two-barrel design with 0.75" 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.

The primer shall require a minimum of 13.2 cubic foot per minute air compressor and shall be capable of meeting drafting requirements at high idle engine speed. The air supply shall be from a chassis supplied 'protected' air storage tank with a pressure protection valve. The air supply line shall have a pressure protection valve set between 70 to 80 PSIG.

The primer control shall have a manually operated, panel mounted "push to prime" air valve; which will direct air pressure from the air brake storage tank to the primer body. To prevent freezing, no water shall flow to and from the panel control.

CLASS ONE STAINLESS INTAKE RELIEF VALVE

The apparatus shall be equipped with a Class1 inlet relief valve that is of all stainless-steel construction. It shall have an adjustable pressure relief setting from 75 psi to 350 psi and is factory preset at 125 psi. The valve shall have a 2.50" male NST threaded discharge outlet. The valve shall meet NFPA 1901 requirements for pump inlet relief valve.

PUMP COOLING/BYPASS LINE

A 0.25" pump cooling/bypass line shall be provided from the pump discharge manifold directly into the tank. The valve shall be a 0.25" multi-turn valve installed thru the instrument panel and labeled.

PRESSURE GOVERNOR and ENGINE MONITORING DISPLAY

Fire Research PumpBoss Max series PBA501-D00 pressure governor and control module kit shall be installed. The kit shall include a control module, intake pressure sensor, discharge pressure sensor, and cables. The control knob shall be 2" in diameter with no mechanical stops, have a serrated grip, and a red idle push button in the center. It shall not extend more than 2" from the front of the control module. The control LCD shall be 3.5” in size with a minimum brightness of 1000 nits and optically bonded to 3mm Borofloat Glass. Inputs for monitored engine information shall be from a J1939 data bus or independent sensors. Outputs for engine control shall be on the J1939 data bus. Inputs from the pump discharge and intake pressure sensors shall be electrical.

The following continuous displays shall be provided:
Engine RPM; shown on LCD screen
Check engine and stop engine warning; shown on LCD screen
Engine oil pressure; shown on LCD screen
Engine coolant temperature; shown on LCD screen
Transmission Temperature; shown on LCD screen
Battery voltage; shown on LCD screen
Pressure and RPM operating mode LEDs
Pressure / RPM setting; shown on LCD screen
Throttle ready / Ok to Pump LEDs.

On screen (LCD) message display shall show diagnostic and warning messages as they occur. It shall show monitored apparatus information, stored data, and program options when selected by the operator. LCD Screen and LED’s intensity shall be automatically adjusted for day and nighttime operation.

The program shall store the accumulated operating hours for the pump and engine to be displayed with the push of a button. It shall monitor inputs and support audible and visual warning alarms for the following conditions:

High Battery Voltage
Low Battery Voltage (Engine Off)
Low Battery Voltage (Engine Running)
High Transmission Temperature
Low Engine Oil Pressure
High Engine Coolant Temperature
Out of Water (visual alarm only)
No Engine Response (visual alarm only).

The program features shall be accessed via push buttons located on the front of the control module. There shall be a USB port located at the rear of the control module to upload future firmware enhancements.
The pressure governor shall operate in two control modes, pressure and RPM. No discharge pressure or engine RPM variation shall occur when switching between modes. A throttle ready and Ok to Pump LED shall light when the interlock signal is recognized. The pressure governor shall start in pressure mode and set the engine RPM to idle. In pressure mode the pressure governor shall automatically regulate the discharge pressure at the level set by the operator. In RPM mode the governor shall maintain the engine RPM at the level set by the operator except in the event of a discharge pressure increase. The pressure governor shall limit a discharge pressure increase in RPM mode to a maximum of 30 psi. Other safety features shall include

recognition of low water and no water conditions with an automatic programmed response and a push button to return the engine to idle.

The pressure governor control module shall be programmed at installation for a specific engine.

LEFT SIDE AUXILIARY SUCTION

One (1) 2.50" intake with an Akron Brass valve shall be located on the left side panel. The valve shall be a quarter turn ball type and fixed pivot design to allow easy operation at all pump pressures.

The valve shall come equipped with an inlet strainer and a 2.50" NST chrome inlet swivel.
The side auxiliary inlet will incorporate a quarter-turn ball valve with a swing-type manual control located adjacent the intake.
One (1) 2.50" chrome plated plug shall be provided. The plug shall be equipped with MNST threads, rocker lugs, and chain.

TANK TO PUMP LINE

One (1) 3.00" tank to pump line shall be provided for connection between the water tank and the fire pump.
The valve shall be a 3.00" Akron Brass quarter turn ball type.
The valve shall be actuated with an air cylinder. The valve shall be controlled with a switch at the pump panel.

TANK FILL/ RECIRULATION LINE

One (1) 2.00" discharge with an Akron Brass valve shall be plumbed to the tank. The valve shall be a quarter turn ball type and fixed pivot design to allow easy operation at all pump pressures.
The quarter turn valve shall be manually operated with a Class 1 locking push pull control rod. It shall have a chrome plated zinc handle with a recessed area for 1.00” x 3.00” identification tag. The controls shall be locked in any position.

LEFT SIDE FRONT PANEL DISCHARGE

One (1) 2.50" discharge with an Akron Brass valve shall be located on the left side panel. The valve shall be a quarter turn ball type and fixed pivot design to allow easy operation at all pump pressures.
The quarter turn valve shall be manually operated with a Class 1 locking push pull control rod. It shall have a chrome plated zinc handle with a recessed area for 1.00” x 3.00” identification tag. The controls shall be locked in any position.
The discharge shall also come equipped with a quarter-turn 0.75" drain valve and a matching color coded bezel.
The discharge shall be equipped with an integral, stainless steel, 30-degree elbow terminating with 2.50" MNST threads.
One (1) 2.50" chrome plated cap with self-venting lungs shall be provided. The cap shall be equipped with FNST threads, rocker lugs, and chain.

LEFT SIDE REAR PANEL DISCHARGE

One (1) 2.50" discharge with an Akron Brass valve shall be located on the left side panel. The valve shall be a quarter turn ball type and fixed pivot design to allow easy operation at all pump pressures.
The quarter turn valve shall be manually operated with a Class 1 locking push pull control rod. It shall have a chrome plated zinc handle with a recessed area for 1.00” x 3.00” identification tag. The controls shall be locked in any position.
The discharge shall also come equipped with a quarter-turn 0.75" drain valve and a matching color coded bezel.

The discharge shall be equipped with an integral, stainless steel, 30-degree elbow terminating with 2.50" MNST threads.
One (1) 2.50" chrome plated cap with self-venting lungs shall be provided. The cap shall be equipped with FNST threads, rocker lugs, and chain.

RIGHT SIDE FRONT PANEL DISCHARGE

One (1) 2.50" discharge with an Akron Brass valve shall be located on the right side panel. The valve shall be a quarter turn ball type and fixed pivot design to allow easy operation at all pump pressures.
The quarter turn valve shall be manually operated with a Class 1 locking push pull control rod. It shall have a chrome plated zinc handle with a recessed area for 1.00” x 3.00” identification tag. The controls shall be locked in any position.
The discharge shall also come equipped with a quarter-turn 0.75" drain valve and a matching color coded bezel.
The discharge shall be equipped with an integral, stainless steel, 30-degree elbow terminating with 2.50" MNST threads.
One (1) 2.50" chrome plated cap with self-venting lungs shall be provided. The cap shall be equipped with FNST threads, rocker lugs, and chain.

RIGHT SIDE REAR PANEL DISCHARGE

One (1) 2.50" discharge with an Akron Brass valve shall be located on the right side panel. The valve shall be a quarter turn ball type and fixed pivot design to allow easy operation at all pump pressures.
The quarter turn valve shall be manually operated with a Class 1 locking push pull control rod. It shall have a chrome plated zinc handle with a recessed area for 1.00” x 3.00” identification tag. The controls shall be locked in any position.
The discharge shall also come equipped with a quarter-turn 0.75" drain valve and a matching color coded bezel.
The discharge shall be equipped with an integral, stainless steel, 30-degree elbow terminating with 2.50" MNST threads.
One (1) 2.50" chrome plated cap with self-venting lungs shall be provided. The cap shall be equipped with FNST threads, rocker lugs, and chain.

CROSSLAY PRE-CONNECT DISCHARGE #1

One (1) 1.75" crosslay pre-connect with a 2.00" Akron Brass valve shall be installed in the pump module above the pump. The crosslay shall be plumbed using 2.00" stainless steel pipe, and/or flexible piping.

The crosslay discharge shall terminate below the hose bed floor with a 1.50" NSTM chicksan swivel adapter. The crosslay hose bed floor shall be slotted to allow the swivel to extend up through the floor, allowing the pre-connected hose to be pulled off either side of the apparatus without kinking the hose at the coupling connection.

Crosslay discharge #1 shall be designed to have a <u>minimum total capacity of 3.5 cubic feet as required by NFPA -1901</u> to accommodate a minimum of 200 feet of 1.75" fire hose.
The quarter turn valve shall be manually operated with a Class 1 locking push pull control rod. It shall have a chrome plated zinc handle with a recessed area for 1.00” x 3.00” identification tag. The controls shall be locked in any position.
The discharge shall also come equipped with a quarter-turn 0.75" drain valve and a matching color coded bezel.

CROSSLAY PRE-CONNECT DISCHARGE #2

One (1) 1.75" crosslay pre-connect with a 2.00" Akron Brass valve shall be installed in the pump module above the pump. The crosslay shall be plumbed using 2.00" stainless steel pipe, and/or flexible piping.

The crosslay discharge shall terminate below the hose bed floor with a 1.50" NSTM chicksan swivel adapter. The crosslay hose bed floor shall be slotted to allow the swivel to extend up through the floor, allowing the pre-connected hose to be pulled off either side of the apparatus without kinking the hose at the coupling connection.

Crosslay discharge #2 shall be designed to have a minimum total capacity of 3.5 cubic feet as required by NFPA -1901 to accommodate a minimum of 200 feet of 1.75" fire hose.
The quarter turn valve shall be manually operated with a Class 1 locking push pull control rod. It shall have a chrome plated zinc handle with a recessed area for 1.00” x 3.00” identification tag. The controls shall be locked in any position.
The discharge shall also come equipped with a quarter-turn 0.75" drain valve and a matching color coded bezel.

CROSSLAY #3, HOSEBED ("DEADLAY")

One (1) crosslay style "deadlay" hosebed shall be installed above the pump. The deadlay shall have the capacity to hold 250' of 2.50" fire hose and nozzle.

CROSSLAY DIVIDER(S)

Two (2) crosslay dividers shall be provided, one (1) between the #1 and #2 crosslay, and one (1) between the #2 and #3 crosslay.

Each divider shall be constructed from 0.188" thick abraded aluminum plate and shall be mounted on a base T-extrusion that provides lower support the length of the divider. There shall be a hand hole on each side of the dividers to assist the firefighter.

VINYL CROSSLAY COVER

The crosslays shall be equipped with a heavy duty 18 oz. vinyl cover with side flaps. The top portion will be fastened to the pump house with Velcro and the side flaps will be held in place with a hook and bungee system. The vinyl cover shall be red in color.

4.50" MASTER PRESSURE GAUGE

One (1) Class1, 4.50" liquid filled master pressure gauge with stainless steel bezel shall be provided, reading from 0 Hg. to 400 psi. It shall be accurate to within 1%. The gauge shall have a white face and black markings. The gauge shall be located on the pump operator's panel.

4.50" MASTER INTAKE GAUGE

One (1) Class 1, 4.50" liquid filled master intake gauge(s) with stainless steel bezel shall be provided, reading from -30" Hg. to 400 psi. It shall be accurate to within 1%. The gauge shall have a white face and black markings. The gauge shall be located on the pump operator's panel.

LED WATER LEVEL GAUGE (PUMP PANEL)

One (1) Hale model # “ITL-40R” Tank Level Gauge for indicating water level shall be installed on the pump operator's panel. The tank level gauge shall indicate the liquid level or volume on an easy to read LED display with a visual indicator at nine (9) precise levels, using one (1) color. The system shall include the ability to display “text messages” and have built-in diagnostic capabilities. Additional secondary displays (if requested) are to be easily integrated and will receive data from the same source as the Master Display.

The LED display shall be red in color.

CLASS1 MINI WATER LEVEL GAUGE

One (1) Hale Intelli-Tank model # 610-00049 remote mini tank level gauge for indicating the water level of the tank shall be provided in the cab. The tank level gauge shall indicate the liquid level on an easy 4 light display and show increments of 1/4 of a tank.

PUMP, MODULE, AND RELATED ITEMS

PUMP MODULE BODY

The pump module body shall be a self-supported structure mounted independently from the body and chassis cab. The pump module shall be constructed entirely of extrusions and aluminum plate. The framework shall be formed from beveled aluminum alloy extrusions and shall be electrically seam welded at each joint using 5356 aluminum alloy welding wire. The main framework to be 3.00 x 3.00 x 0.18, or 3.00 x 1.5 webbed 0.25, 6063-T5 aluminum extrusion. The pump module design must allow normal frame deflection through isolation mounts without imposing stress on the pump module structure or side running boards. The pump module shall consist of a welded framework, properly braced to withstand chassis frame flexing. The pump module support shall be bolted to the frame rails of the chassis.

PUMP MODULE WIDTH

Pump Module to be 36.00" (side to side).

PUMP PANEL MATERIAL

The left side operator's panel, gauge panel, right side pump panel and right side access door shall be fabricated from 14-gauge 304L stainless steel with a #4, (150/180 grit), standard brushed finish.

GAUGE PANEL

The pump operator's upper gauge panel shall be located on the left hand side of the pump module above the main control panel. It shall be horizontally hinged and shall have two (2) latches.

PUMP ENCLOSURE ACCESS DOOR -- RIGHT SIDE UPPER

A vertically hinged pump panel access door shall be provided on the upper right side of the side mount pump enclosure. The access door shall be approximately 22.00" high and as wide as possible. The door shall have three (3) push button type latches. The drains located on the officer's side panel shall be fastened to the lower panel, which shall be stationary.

PUMP PANEL LIGHT SHIELD, LH SIDE PANEL

One (1) LED strip light shall be installed under an instrument panel light hood on the left side pump panel.

PUMP PANEL LIGHT SHIELD, RH SIDE PANEL

One (1) LED strip light shall be installed under an instrument panel light hood on the right side pump panel. A weather resistant switch, located on the pump operator's panel shall be provided to activate the lights.

PUMP COMPARTMENT LIGHTS (LED)

Two (2) clear LED lights shall be provided inside the pump compartment area. Each shall be switched.

LEFT SIDE RUNNING BOARD

The left pump panel shall be equipped with a side running board. The running board shall be constructed of 0.125" embossed fire apparatus bright aluminum treadplate. It shall be a minimum of approximately 11.00"

deep x the width of the module. The running board shall have an upward bend on the inside edge to act as a kick plate. The running board shall be attached to a frame mounted outrigger support structure. The running board shall have a 3.00" downward bend on the front and side faces with a 1.00" underside return for superior strength.

RIGHT SIDE RUNNING BOARD

The right pump panel shall be equipped with a side running board. The running board shall be constructed of 0.125" embossed fire apparatus bright aluminum treadplate. It shall be a minimum of approximately 11.00" deep x the width of the module. The running board shall have an upward bend on the inside edge to act as a kick plate. The running board shall be attached to a frame mounted outrigger support structure. The running board shall have a 3.00" downward bend on the front and side faces with a 1.00" underside return for superior strength.

FRONT PUMP HOUSE COVER

The front of the pump enclosure shall be covered with .125" aluminum treadplate.

REAR PUMP HOUSE COVER

The rear of the pump enclosure shall be covered with .125" aluminum treadplate.

HOSE RESTRAINT LABEL - FAMA# 22

A permanent label shall be provided near any hose storage area. The label shall instruct the operator to insure that all hose is properly secured prior to placing the apparatus in motion and to provide warning of potential dangers, including injury or death, in failing to do so.

INTAKE/DISCHARGE CAP PRESSURE LABEL - FAMA# 18

A permanent label shall be provided in all areas that intakes and discharges are capped. The label shall give instruction on how to properly remove the cap. The label shall also warn of potential dangers, injury or death that be caused by failing to follow proper cap removal procedures.

TRAINED OPERATOR ONLY LABEL - FAMA# 25]

A permanent label shall be provided on the pump panel that states that only properly trained personnel should operate the apparatus and shall indicate that injury or death could occur as a result.

PUMP PANEL ID PLATE

An identification plate shall be installed on the pump operator control panel to identify the fire pump serial number, model number, and performance.

COLOR CODED PUMP PANEL LABELING AND NAMEPLATES

Discharge and intake valve controls shall be color coded in compliance to guidelines of applicable sections of NFPA standards. Innovative Controls permanent type nameplates and instruction panels shall be installed on the pump panel for safe operation of the pumping equipment and controls.

== SUPER TANKER BODY - SINGLE AXLE, WETSIDE, STANDARD - 7.000 02/14/22 ==

WATER TANK AND RELATED COMPONENTS

2000 GALLON POLY TANK

Tank capacity shall be 2000 US gallons / 1665 Imperial gallons / 7571 Liters.

The tank shall be constructed of PT3 polypropylene material.

TANK MATERIAL

This material shall be a non-corrosive stress relieved thermoplastic and UV stabilized for maximum protection. Tank shell thickness may vary depending on the application and may range from 0.50" to 1.00” as required. Internal baffles are generally 0.375” in thickness.

ISO CERTIFICATION

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

CONSTRUCTION

The booster and/or foam tank shall be of a specific configuration and is so designed to be completely independent of the body and compartments. Joints and seams shall be fused using nitrogen gas as required and tested for maximum strength and integrity. The tank construction shall include PolyProSeal™ technology wherein a sealant shall be installed between the plastic components prior to being fusion welded. This sealing method will provide a liquid barrier offering leak protection in the event of a weld compromise. The top of the booster tank is fitted with removable lifting assembly designed to facilitate tank removal. The transverse and longitudinal swash partitions shall be manufactured of a minimum of 0.375" PT3™ polypropylene.

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 completely fused to each other as well as to the walls of the tank. All partitions and spacing shall comply with NFPA 1901. The walls shall be welded to the floor of the tank providing maximum strength as part of the tank’s unique Full Floor Design™. Tolerances in design allow for a maximum variation of 0.125” on all dimensions.

The tank cover shall be constructed of 0.50" thick PT3 polypropylene and UV stabilized, to incorporate a multi-piece locking design, which allows for individual removal and inspection if necessary. The tank cover(s) shall be flush or recessed 0.375" from the top of the tank and shall be fused to the tank walls and longitudinal partitions for maximum integrity. Each one of the covers shall have hold downs consisting of 2.00" minimum polypropylene dowels spaced a maximum of 40.00” apart. These dowels shall extend through the covers and will assist in keeping the covers rigid under fast filling conditions. A minimum of two (2) lifting dowels shall accommodate the necessary lifting hardware.

OUTLETS

There will be two (2) standard tank outlets: one (1) for the tank-to-pump suction line, which shall be sized to provide adequate water flow to the pump; and, one (1) for tank fill line, which shall be sized according to the NFPA minimum size chart for booster tanks. All tank fill couplings shall be backed with flow deflectors to break up the stream of water entering the tank, and be capable of withstanding sustained fill rates of up to 1000 G.P.M. The addition of rear suction fittings, nurse valve fittings, dump valve fittings, and through-the-tank sleeves to accommodate rear discharge piping must be specified. All auxiliary outlets and inlets must meet all NFPA guidelines in effect at the time of manufacture.

CAPACITY CERTIFICATION

All water and foam tanks shall be tested and certified as to capacity on a calibrated and certified tilting scale. Each tank shall be weighed empty and full to provide precise fluid capacity. Each Poly-Tank® III is delivered

with a Certificate of Capacity delineating the weight empty and full and the resultant capacity based on weight. Engineering estimates for capacity calculations shall not be permitted for capacity certification.

CENTER OF GRAVITY

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

TANKNOLOGY™ TAG

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

WATER FILL TOWER AND COVER

The tank shall have a combination vent and manual anti-surge fill tower. The fill tower shall be constructed of 0.50" PT3 polypropylene and shall be a minimum dimension of 14.00" x 14.00" outer perimeter. The fill tower shall be blue in color indicating that it is a water-only fill tower. The tower shall have a 0.25" thick removable polypropylene screen and a PT3 polypropylene hinged cover. The capacity of the tank shall be engraved on the top of the fill tower lid.

The fill tower shall have an anti-surge provision. It shall designed to prevent water splashing up through the top of the fill tower when the water tank is full, and the apparatus comes to an immediate stop. (NO EXCEPTION)

FILL TOWER LOCATION

The fill tower shall be located in the left front area of the tank.
Inside the fill tower there shall be a combination vent/overflow pipe. The vent overflow shall be a minimum of schedule 40 polypropylene pipe with a minimum I.D. of 6.00" that is designed to run through the tank, and shall be piped to discharge water behind the rear wheels as required in NFPA 1901 so as to not interfere with rear tire traction.

SUMP

There shall be one (1) sump standard per tank. The sump shall be constructed of a minimum of 0.50" PT3 polypropylene and be located in the left front quarter of the tank, unless specified otherwise. On all tanks that require a front suction, a 3.00" schedule 40 polypropylene pipe shall be installed that will incorporate a dip tube from the front of the tank to the sump location. All tanks shall have an anti-swirl plate located approximately 3.00" above the inside floor.

WATER TANK CLEAN-OUT PLUG

The tank shall have a 4.00" N.P.T. threaded outlet on the bottom for a cleanout/ drain plug per NFPA. The cleanout/ drain plug shall be installed in the bottom of the water tank using an 8-Bolt flange with a 4.00" N.P.T. threaded outlet to create easy access to the plug. (NO EXCPETION)

MOUNTING

Stock 2,000 Gallon Tanker

The UPF Poly-Tank III shall rest on the body cross members in conjunction with such additional cross members, spaced at a distance that would not allow for more than 530 square inches of unsupported area under the tank floor. In cases where overall height of the tank exceeds 40 inches, cross member spacing shall be decreased to allow for not more than 400 square inches of unsupported area.
The tank shall be isolated from the cross members through the use of hard rubber strips with a minimum thickness and width dimension of 1/4” x 1” and a Shore A Hardness of approximately 60 durometer. The rubber shall be installed so it will not become dislodged during normal operation of the vehicle. Additionally, the tank shall be supported around the entire bottom outside perimeter and captured both in the front and rear as well as side to side to prevent tank from shifting during vehicle operation.

A picture frame type cradle mount shall be provided for the purpose of capturing the tank.

Although the tank is designed on a free floating suspension principle, it is required that the tank have adequate vertical hold down restraints to minimize movement during vehicle operation.

MOUNTING BLOCKS, TANK SIDES

There will be four (4) mounting blocks, two (2) on each side for mounting equipment such as ladder brackets. Each shall be approx. 12.00" wide x 29.50" tall x 1.00" deep.

MOUNTING BLOCK, REAR TANK FACE

A 1.00" mounting block shall cover the whole rear of tank for mounting work lights, folding steps, grab rails, accessories and emergency lighting.
A 1.00" mounting block shall on the front left hand side of the tank for mounting folding steps, grab rails, and accessories.
A 1.00" mounting block shall on the front right hand side of the tank for mounting folding steps, grab rails, and accessories.

REAR CAMERA NOTCH

A recessed mounting area for a backup camera shall be built into the rear of the tank. As high and as close to the center line as possible.

HOSE BED

There shall be a hose bed area constructed of polypropylene on the top of the tank consisting of two side walls and one front panel. The hose bed shall be welded to the outside perimeter of the tank cover, and shall be approximately 9.00" tall by the length and width of the water tank.

The hose bed shall be free from all projections, which may interfere with the unloading of hose.

HOSEBED FLOOR

The floor of the hose bed shall be grooved by the tank manufacturer to provide an integral planking designed to allow the loaded hose to drain and allow airflow for ventilation.

VINYL HOSEBED COVER

The apparatus shall be equipped with a 18 oz. vinyl Hosebed cover with a rear flap and a hook and bungee fastening system at front and sides. The rear flap shall be fastened with three (3) 2.00" side release plastic buckle assemblies. The vinyl material shall be treated for protection against UV rays and mildew.
The vinyl cover shall be red in color.

REAR DUMP VALVE

One (1) NEWTON 10.00” Model 1050-34 Stainless Steel dump valve shall be installed. It shall be located at the rear center of the apparatus.

One (1) manual operated lever control shall be used to open and close the dump valve, the lever shall be located on the top of the valve.

SWIVEL DUMP SYSTEM

A Newton Model 6012SW-34 stainless steel swivel dump chute extension shall be mounted on the rear dump valve. The unit shall be able to rotate 180 degrees and lock in place while the apparatus is in motion. With the swivel attached, the chute shall be capable of flowing 2,777 gpm.

TELESCOPIC EXTENSION CHUTE

One (1) Newton, model 4036-8X12-34, manual stainless steel telescoping extension chute shall be installed on the swivel. The extension chute shall be capable of extending 36.00” past the dump valve.

DIRECT TANK FILL - LEFT HAND SIDE

There shall be a one (1) 2.50" direct tank fill located on the left-rear of the apparatus. The valve shall be an Akron 8800 Series swing out valve. This valve shall be operated using a direct manual actuator handle. Valve inlet shall be a 2.50" female hose thread adapter and feature a 30 degree droop with a wire screen inlet strainer and a swivel.

PLUG

One (1) 2.50" chrome plated plug shall be provided. The threads shall be NST and the plug shall be equipped rocker lugs and chain.

DIRECT TANK FILL - RIGHT HAND SIDE

There shall be a one (1) 2.50" direct tank fill located on the right-rear of the apparatus. The valve shall be an Akron 8800 Series swing out valve. This valve shall be operated using a direct manual actuator handle. Valve inlet shall be a 2.50" female hose thread adapter and feature a 30 degree droop with a wire screen inlet strainer and a swivel.

PLUG

One (1) 2.50" chrome plated plug shall be provided. The threads shall be NST and the plug shall be equipped rocker lugs and chain.

SUBFRAME

The sub frame shall be constructed from structural steel channel and plate, welded together and bolted to the chassis frame. The main support shall be a 0.3125” thick steel plate under the tank floor with a 2.50” angle steel around the perimeter of the tank. Two (2) sub frame long sills constructed of 3.00” X 7.00” steel tubing with 0.1875” walls shall run the full length of the subframe and be mounted to truck frame using 0.1875” angle clips and a minimum of ten (10) grade 8 bolts. The tank sub frame and attachments shall be in strict compliance with UPF poly-tanks engineering specifications.

MOUNTING

The tank shall rest on the subframe as to not allow for more than 530 square inches of unsupported area under the tank floor. In cases where overall height of the tank exceeds 40 inches the subframe shall be designed to allow for not more than 400 square inches of unsupported area.

The tank shall be supported to prevent itself from shifting during vehicle operation.

A non-corrosive protective liner shall be installed in between the tank and the subframe.

The tank shall be mounted to sub frame with three (3) stainless steel gussets per UPF specifications.

The tank and sub frame must be installed by a UPF Authorized installer (NO EXCEPTIONS).

BODY CONSTRUCTION

The body shall be fabricated of steel tubing, angle, smooth aluminum sheet and aluminum treadplate.

The tubing shall be designed as structural-framing members with the smooth aluminum and treadplate fabricated to form compartments, floors and fender panels

The side compartments shall be modular in design and shall be capable of being replaced if damaged. Each shall be supported by the steel frame and attached to the sub frame with grade 8 bolts.

All body compartments will have a method of ventilation provided either by louvers stamped into a wall or another method to allow the compartments to aerate. The ventilation design will provide the proper airflow inside the compartments and prevent water from dripping into the compartment.

The side compartments shall be constructed of formed 0.125" aluminum.

Compartment flooring will be of the sweep out design.

FENDER PANELS - ATP

The rear fender panels shall be constructed of 0.125" bright aluminum tread plate and be an integral part of the tanker body.

BODY FINISH - ATP

The compartments and fenders, together forming the body, shall remain unpainted.

WHEEL WELL DESIGN

The rear wheel wells shall be radius cut for a streamlined appearance.

FENDERETTES

Two (2) polished stainless steel fenderettes shall be provided over the rear wheel well openings, one (1) each side. Each fenderette shall be made of 14 gauge 304 stainless steel. The stainless steel fenderette shall be secured into place with stainless steel fasteners and shall be easily removable for replacement.

The fenderette must be bolted into place and removable for replacement.

ROLL-UP DOORS - AMDOR

All lower compartment doors shall be equipped with AMDOR brand roll-up doors. The slats shall be 1.00” double wall aluminum with continuous ball and socket hinge joints designed to prevent water ingression and

weather tight recessed dual durometer seals. The interior door curtains shall be smooth to prevent equipment hang-ups. The door tracks and side frames shall each be one-piece aluminum. Each side seal shall be recessed, and non-marring with UV stabilizers to prevent warping. The bottom panel flange shall have cut-outs for ease of access with gloved hands. The door strikers shall provide support beneath the lift bar to prevent door curtain bounce and potential false door ajar indications.

LEFT SIDE COMPARTMENT IN FRONT OF REAR WHEELS, L-1

One (1) compartment shall be supplied on the left hand side of the truck in front of the rear wheels. Compartment dimensions shall be approx. 60.00” wide by 26.00” deep by 27.00” high.
The compartment shall have a roll up door. The door shall have a satin finish.

COMPARTMENT LIGHT(S)

One (1) 12.00" Luma Bar LED strip light shall be installed inside the compartment.
The compartment light(s) shall be controlled by a magnetic "On-Off" switch located on each compartment door.

LEFT SIDE COMPARTMENT BEHIND REAR WHEELS, L-2

One (1) compartment shall be supplied on the left hand side of the truck behind of the rear wheels. Compartment dimensions shall be approx. 24.00” wide by 26.00” deep by 27.00” high.
The compartment shall have a roll up door. The door shall have a satin finish.

COMPARTMENT LIGHT(S)

One (1) 12.00" Luma Bar LED strip light shall be installed inside the compartment.
The compartment light(s) shall be controlled by a magnetic "On-Off" switch located on each compartment door.

RIGHT SIDE COMPARTMENT IN FRONT OF REAR WHEELS, R-1

One (1) compartment shall be supplied on the right hand side of the truck in front of the rear wheels. Compartment dimensions shall be approx. 60.00” wide by 26.00” deep by 27.00” high.
The compartment shall have a roll up door. The door shall have a satin finish.

COMPARTMENT LIGHT(S)

One (1) 12.00" Luma Bar LED strip light shall be installed inside the compartment.
The compartment light(s) shall be controlled by a magnetic "On-Off" switch located on each compartment door.

RIGHT SIDE COMPARTMENT BEHIND REAR WHEELS, R-2

One (1) compartment shall be supplied on the right hand side of the truck behind of the rear wheels. Compartment dimensions shall be approx. 24.00” wide by 26.00” deep by 27.00” high.
The compartment shall have a roll up door. The door shall have a satin finish.

COMPARTMENT LIGHT(S)

One (1) 12.00" Luma Bar LED strip light shall be installed inside the compartment.
The compartment light(s) shall be controlled by a magnetic "On-Off" switch located on each compartment door.

DROP TANK STORAGE- RH SIDE

There shall be room to store an appropriate size dump tank under the right hand side “T” portion of the tank. The area shall have a mechanical means to lock the dump tank in place while the apparatus is in motion.

The tank shall slide in horizontally into the hold from the right side of the body.
The storage shall have the capacity for one (1) 2100 US Gallon Portable Tank with an aluminum frame.

HARD SUCTION STORAGE- LH SIDE

There shall be a hard suction storage tray located under the left hand side of the “T” portion of the tank. The hard suction hose storage shall be accessed from the ground at the rear of the unit.

In order to provide a comfortable and safe level of access to the hoses, there shall be no exception allowed to this feature.
The suction storage shall have capacity for two (2) 10.00' sections of hard suction hose.

REAR TAILBOARD

A rear beavertail tailboard shall be provided and installed at the rear of the apparatus. The tailboard shall consist of two (2) separate stepping/ standing surfaces made of aluminum grip-strut material.

The top step shall be 7.00" deep and the bottom shall be 9.50" deep.

The outside edges of the rear tailboard shall be trimmed with bright diamond plate aluminum.

The tailboard shall meet recommended requirements for non-slip surfaces. This area is to be used as a step but is not designed to carry personnel and should never be used to transport firemen.

STEPS

All steps shall have a surface area of at least 35 square inches and shall be able to withstand a load of at least 500 pounds.

REAR FOLDING STEPS

Innovative Controls model 3004234 folding steps shall be furnished and located, at the rear of the apparatus. The exact number of steps provided may vary depending upon body configuration and options.

FOLDING STEPS- RH SIDE FRONT OF BODY

Innovative Controls model 3007732 folding steps shall be furnished and located, at the right hand front of the body. The exact number of steps provided may vary depending upon body configuration and options.

EXTERIOR GRAB RAILS

Each grab rail shall be non-slip, 1.25” diameter extruded polished aluminum grab rails with rubber inserts designed to provide maximum gripping ability, strength, and durability. The rails shall comply with NFPA 1901.

GRAB RAILS, REAR STEP, VERTICAL

Two (2) extruded aluminum non-slip grab rails shall be provided and vertically mounted on the rear of the apparatus, one (1) on each side of the body.

GRAB RAIL, LH FRONT

One (1) extruded aluminum non-slip grab rail shall be provided and mounted on the front, upper, left hand side of the body.

GRAB RAIL, RH FRONT

One (1) extruded aluminum non-slip grab rail shall be provided and mounted on the front, upper, right hand side of the body.

== 12V ELECTRICAL SYSTEM - TANKER - 7.000 02/14/22 ==

12 VOLT ELECTRICAL SECTION

NFPA 1901 CERTIFIED 12 VOLT ELECTRICAL SYSTEM

The 12-volt apparatus body electrical system shall be provided and shall be in compliance with NFPA 1901 testing and certification procedures as follows:

NFPA MINIMUM ELECTRICAL LOAD DEFINITION

The NFPA 1901 defined minimum electrical load shall consist of the total amperage required to simultaneously operate the following in a stationary mode:

1. Propulsion engine and transmission.

2. The clearance and marker lights.

3. Communication equipment. 5 amp default.

4. Illumination of all walking surfaces, the ground at all egress points, control and instrumentation panels and 50% of total compartment lighting.

5. Minimum warning lights required for "blocking right of way" mode.

6. The current to simultaneously operate and fire pump and all specified electrical devices.

7. Anything defined by the purchaser, in the advertised specifications, to be critical to the mission of the apparatus.

RESERVE CAPACITY TEST

The first electrical test to be performed will be the Reserve Capacity Test. All items listed in NFPA Minimum Load Definition shall be activated with the engine shut off. After 10 minutes of operation, the items 1-7 shall be deactivated. After deactivation, the battery system shall have ample reserve to start the engine.

ALTERNATOR PERFORMANCE TEST AT IDLE

The second electrical test to be performed shall be Alternator Performance Test at Full Load. All electrical loads shall be activated with the engine running up to the governed rpm for two hours. During the test, the system voltage shall not drop below 11.7 volts or have excessive battery discharge for more than 120 seconds. Any loads not defined in the NFPA Minimum Electrical Load may be load managed to pass test.

TEST CONDITIONS

All electrical testing shall be performed with the engine compartment at approximately 200 degrees.

12 VOLT ELECTRICAL SYSTEM

The truck shall have a 12-Volt electrical system.

All wiring will be run in convoluted high temperature plastic loom. Wiring shall be color and function coded and will be of adequate size to handle the assigned load. All solenoids, relays, and terminal blocks will be located in an easily accessible area.

All circuits provided shall have properly rated low voltage over current protective devices.

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

All under side terminal junctions shall be fully enclosed in sealed plastic weatherproof boxes.

Electromagnetic interference suppression shall be provided as required to satisfy the radiation limits specified in SAE J551/1.

CLASS1 ES-KEY SYSTEM

The electrical system shall utilize Class1 Inc. **ES-Key** technology where applicable.

The apparatus shall be equipped with a Class 1 ES-Key Management System for controlling electrical system devices. This management system shall be capable of performing load management functions, system switching, monitoring and reporting, and be fully programmable for a standardized electrical system utilizing the ES-Key Professional software program.

SUPERNODE II

The apparatus shall be equipped with a Class1 ES-Key system with a Supernode II high density input output node. The Supernode II shall have (24) inputs, (24) outputs, a Universal System Manager, a data logger, and programmable special utilities.

The Supernode II shall have an integrated USB port to allow for direct connection to the ES-Key system without additional interface devices.

LOAD MANAGER

The Supernode II shall have an integrated Load Manager. The Load Manager Sequencer shall assure that loads are applied and removed gradually, thus eliminating the possibility of inducing failures in the vehicle's equipment.

LOW VOLTAGE MONITOR

A voltage monitor shall be built into the ES-Key electrical system. It shall activate a warning when the alternator output voltage falls below any desired voltage (usually 11.5 volts).

LOW VOLTAGE ALARM

One (1) Cole Hersee model # 4112-RC light/buzzer shall be located in the cab and wired to the low voltage monitor on the ES-Key System.

ROCKER SWITCH PANEL - EIGHT (8) POSITION

A lighted eight (8) position rocker type switch panel shall be installed to provide the ability to de-activate individual lighting units. The switches shall be Carling Contura V series rocker switches.

A rocker switch with a blank legend installed directly below shall be provided for any position without a switch and legend designated by a specific option. The non-specified switches shall be two-position, black switches with a LED indicator light. Each blank switch legend can be custom ordered by the department once the apparatus is in service. All switch legends shall have backlighting provided.

MASTER WARNING SWITCH

A master switch shall be included in the main rocker switch panel. The switch shall have a red light indicator and be labeled “Master Warning” for identification. The switch shall feature control over all devices wired through it. Any warning device switch left in the “ON” position shall automatically power up when the master switch is activated.

CHASSIS GROUND LIGHTS

LED ground lights with outward facing angle brackets shall be installed, one (1) under each chassis door.

FRONT OF BODY GROUND LIGHTS

Two (2) LED ground lights with outward facing angle brackets shall be installed under the front of the body. One (1) light shall be located on the driver side and one (1) light shall be located on the officer side of the apparatus.

REAR STEP GROUND LIGHTS

Two (2) LED ground lights with outward facing angle brackets shall be installed under the rear step of the apparatus, one (1) each side.

GROUND LIGHT SWITCHING

The cab and body ground lights shall activate by engaging the parking brake.

HAZARD LIGHT

One (1) flashing red LED light, located in the driving compartment, the light shall be illuminated automatically whenever any compartment door is ajar.

The hazard light shall be marked with a sign that reads “Do Not Move Apparatus When Light is On”.

The warning light shall be interlocked to the parking brake and shall only alert the driver when the parking brake is released. The light shall also be used to signal that other ancillary equipment such as racks light towers etc. are not in their “ready for transport” position.

REAR ROAD LIGHTING

Two (2) sets of 4.00” LED stop, turn and back-up lights shall be provided, one (1) set on each side of the rear of the truck.

DOT MARKER LIGHTS AND REFLECTORS

LED marker lights shall be installed on the vehicle in conformance to the Department of Transportation requirements. All marker lights shall be incorporated into the headlight circuit of the cab/chassis.

Two (2) amber LED side marker and turn lights shall be provided on the apparatus lower side, forward of rear axle, one (1) each side if the apparatus is 30 feet long or longer.
The side body panels shall be furnished with marker lights installed as follows:

- Two (2) 0.75" amber LED marker lights, one (1) on each side at the lower front corner of the body.
- Four (4) 0.75" red LED marker lights, one (1) on each side at the lower rear corner of the body.

The rear body panel, centered above the bumper, shall be furnished with marker lights installed as follows:

- Three (3) 0.75" red LED marker lights, as close as practical to the vertical centerline. Centers spaced not less than 6.00" or more than 12.00" apart.

Two (2) amber reflectors shall be provided on the apparatus body lower side, as far forward and low as practical, one (1) each side if the apparatus is 30 feet long or longer.
Four (4) red reflectors shall be provided on the apparatus rear, one (1) each side and two (2) on the rear.

LICENSE PLATE LIGHT

A license plate bracket with LED light shall be provided and installed on the rear of the body. It shall be wired to come on with the headlights.

REAR VISION SYSTEM

One (1) complete backup camera system shall be provided to allow the driver to visually see the rear of the apparatus while in the cab. The system shall include a high resolution 7.00" touch screen with LED Backlight and anti-glare system with an auto dimmer. The system shall include audio transmission from the camera.

The rear vision camera shall be wired to automatically activate when the chassis transmission is placed in reverse.

CAMERA LOCATION

The camera shall be recessed mounted in the rear of the tank, as close to the center line as possible.
The monitor for the rear vision system shall be mounted on the dash of the cab in easy view of the driver.

NFPA AUDIBLE AND LIGHTING WARNING PACKAGE

The following warning light package shall include all of the minimum warning light and actuation requirements for the current revision of the NFPA 1901-2009. The lighting as specified shall meet the requirements for both "Clearing Right of Way" and "Blocking Right of Way" which includes disabling all white warning lights when the apparatus is in "Blocking Right of Way" mode.

WARNING LIGHT FLASH PATTERN

All of the perimeter warning lights shall be set to the default NFPA flash pattern as provided by the warning light manufacturer.

LIGHTBAR

One (1) WHELEN model JE2NFPA 56.00” LED lightbar shall be supplied and mounted. The lightbar shall have clear lenses and contain the following modules:

Four (4) RED LIN6 LED modules, two (2) on each corner.
Four (4) RED CON3 LED modules, across the front
Two (2) WHITE CON3 LED modules, on the front

The forward facing white lights shall be automatically disabled for the "Blocking Right of Way" mode.

LIGHT BAR SWITCHING

One (1) momenatry rocker switch with indicator shall be installed on the switch panel in the cab to control the light bar. The switch shall be labeled "LIGHT BAR". The switch shall only be active when the master warning switch is engaged.

SIDE FACING UPPER FRONT BODY WARNING/ SCENE LIGHTS

One (1) pair of Whelen V-Series model M9V2 combination LED warning and scene lights shall be installed, one (1) each side of the upper front portion of the apparatus body.
The driver side warning/ scene light shall be a Whelen Model M9V2R red LED with red lens.
The officer side warning/ scene light shall be a Whelen Model M9V2R red LED with red lens.
Each light shall be supplied and installed with a chrome bezel.

SIDE FACING UPPER REAR BODY WARNING/ SCENE LIGHTS

One (1) pair of Whelen V-Series model M9V2 combination LED warning and scene lights shall be installed, one (1) each side of the upper rear portion of the apparatus body.
The driver side warning/ scene light shall be a Whelen Model M9V2R red LED with red lens.
The officer side warning/ scene light shall be a Whelen Model M9V2R red LED with red lens.
Each light shall be supplied and installed with a chrome bezel.

UPPER REAR WARNING/ SCENE LIGHTS

One (1) pair of Whelen V-Series model M9V2 combination LED warning and scene lights shall be installed, one (1) each side of the upper rear of the apparatus body.
The driver side warning/ scene light shall be a Whelen Model M9V2R red LED with red lens.
The officer side warning/ scene light shall be a Whelen Model M9V2R red LED with red lens.
Each light shall be supplied and installed with a chrome bezel.

UPPER WARNING LIGHT SWITCHING

One (1) rocker switch with indicator shall be installed on the switch panel in the cab to control the upper warning lights. The switch shall be labeled "UPPER WARNING". The switch shall only be active when the master warning switch is engaged.

SCENE LIGHT SWITCHING

One (1) rocker switch with indicator shall be installed on the switch panel in the cab to control the left side scene light(s). The switch shall be labeled "LEFT SCENE".

SCENE LIGHT SWITCHING

One (1) rocker switch with indicator shall be installed on the switch panel in the cab to control the rear scene light(s). The switch shall be labeled "REAR SCENE".

SCENE LIGHT SWITCHING

One (1) rocker switch with indicator shall be installed on the switch panel in the cab to control the right side scene light(s). The switch shall be labeled "RIGHT SCENE".

DUAL FUNCTION SCENE LIGHT(S)

The rear scene lights shall activate automatically upon placing the transmission into reverse.

LOWER FRONT WARNING LIGHTS

One (1) pair of Whelen model M6 Series LED warning lights shall be installed, one (1) each side one the front of the chassis cab.
The driver side warning light shall be a Whelen Model M6R red Super-LED with red lens.
The officer side warning light shall be a Whelen Model M6R red Super-LED with red lens.
Each light shall be mounted with a Whelen Model M6FC chrome flange.

LOWER INTERSECTION WARNING LIGHTS

{Quantity} pair of Whelen model M6 LED warning lights shall be installed, one (1) each side of the chassis cab.
The driver side warning light shall be a Whelen Model M6R red Super-LED with red lens.
The officer side warning light shall be a Whelen Model M6R red Super-LED with red lens.
Each light shall be mounted with a Whelen Model M6FC chrome flange.

LOWER MID-BODY WARNING LIGHTS

One (1) pair of Whelen model M6 Series LED warning lights shall be installed, one (1) each side of the apparatus, mid-body.
The driver side warning light shall be a Whelen Model M6R red Super-LED with red lens.
The officer side warning light shall be a Whelen Model M6R red Super-LED with red lens.
Each light shall be mounted with a Whelen Model M6FC chrome flange.

LOWER REAR WARNING LIGHTS

One (1) pair of Whelen model M6 Series LED warning lights shall be installed, one (1) each side of the lower rear of the apparatus body.
The driver side warning light shall be a Whelen Model M6R red Super-LED with red lens.
The officer side warning light shall be a Whelen Model M6R red Super-LED with red lens.
Each light shall be mounted with a Whelen Model M6FC chrome flange.

LOWER WARNING LIGHT SWITCHING

One (1) momentary rocker switch with indicator shall be installed on the switch panel in the cab to control the lower warning lights. The switch shall be labeled "LOWER WARNING". The switch shall only be active when the master warning switch is engaged.

REAR BEACONS

Two (2) Whelen model L31 LED beacons shall be provided and installed at the upper rear corners of the apparatus.
The beacon on the driver side shall be a Whelen Model L31HRF, it shall be red in color with a red lens.
The beacon on the officer side shall be a Whelen Model L31HRF, it shall be red in color with a red lens.

BEACON LIGHT SWITCHING

The beacon lights shall be controlled along with the upper level warning lights.

BEACON LIGHT MOUNTING

The rear beacons shall be mounted on a stainless steel bracket and attached to the apparatus body, one (1) on each side.

ELECTRIC SIREN AND CONTROL

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

ELECTRONIC SIREN SPEAKER

One (1) Federal Signal model ES100 Dynamax 100 watt speaker shall be flush mounted as far forward and as low as possible on the front of the vehicle. A polished model ESFMT with ”Electric F” grille shall be provided on the outside of the speaker to prevent road debris from entering the speaker.

The speaker shall produce a minimum sound output of 120 dB at 10 feet to meet current NFPA 1901 requirements.

The speaker shall be located on the right hand side of the bumper.

SIREN NOISE WARNING LABEL - FAMA# 42

A permanent label shall be provided inside the driver's door warning of potential injury that could be received from the noise of the siren. The label shall also state safety precautions that should be taken when the siren is in use.

== PAINT/ PREP/ STRIPE/ WETSIDE TANKER, SINGLE AXLE - 7.000 02/14/22 ==

PAINT, STRIPING, AND LETTERING SECTION

PAINT PROCESS

The wetside tank shall be painted with a PPG Delfleet Evolution Paint System.

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

The wetside tank shall be totally removed from the chassis during the painting process to ensure the entire unit is covered.

All seams shall be caulked both inside and along the exterior edges with a urethane automotive sealant to prevent moisture from entering.

The water tank and all parts shall be thoroughly washed with a grease cutting solvent prior to any sanding. After the wetside tank has been sanded, the wetside tank shall be washed again with a grease cutting solvent to remove any contaminants on the surface.

PAINT

The tank shall be painted to match the chassis. The tank’s paint color shall be "cross referenced" from the chassis paint, and shall be painted to match the main chassis color as close as possible.

PRIMING

Two (2) medium wet coats of adhesion promoter for plastics shall be applied to all surfaces to be painted.

Two (2) applications of primer shall be applied. The first application shall be four (4) coats and the second application shall be three (3) coats.

COMPARTMENT INTERIORS

The side compartment interiors shall be unpainted and in their natural finish.

WHEEL RIMS

The chassis wheels shall be as furnished by the chassis OEM. No additional finishes shall be provided by apparatus manufacturer.

REFLECTIVE LETTERING/ STRIPING

Reflective lettering and stripingshall be installed at the direction of the department.

CHEVRON STRIPING

At least 50% of the rear of the unit shall be covered with Red and Fluorescent Yellow-Green alternating 6.00" stripe in an inverted Chevron pattern.

FOUTS BROS. LOGO PLATE(S)

Three (3) Fouts Bros. logo plate(s) will be affixed to the finished apparatus.

== LOOSE EQUIPMENT - TANKER, SINGLE AXLE - 7.000 02/14/22 ==

LOOSE EQUIPMENT

The following items shall be provided and shipped loose with the completed apparatus at the time of delivery:

FOLDING TANK

One (1) 2100 gallon Aluminum collapsible frame folding portable tank shall be supplied. The tank liner shall have 22 oz vinyl sides and a 28 oz vinyl floor that shall be Red in color. Grab handles shall be placed on the floor of the liner to help the firefighter pick up the liner when folding.

SUCTION HOSE

Two (2) 6.00" X 10’ section(s) of KOCHEK, PVC type hard, suction hose shall be provided on the apparatus. The hose(s) shall be light weight type with pyrolite, long handle female x rocker lug male, NST threads. The hose shall be black in color.

== WARRANTY- TANKER, COMMERCIAL - 7.000 02/14/22 ==

ONE YEAR APPARATUS WARRANTY

The complete apparatus detailed herein shall be warranted against defects in materials and workmanship for a period of twelve (12) months, effective upon pick up or delivery of the completed apparatus to the purchaser, as detailed in the respective warranty documents. Any unauthorized alterations or modifications to the apparatus shall void this warranty.

Other warrantees, as provided by individual component manufacturers may extend beyond this warranty.

STRUCTURAL WARRANTY, TEN YEAR

A structural warranty shall be provided by the apparatus manufacturer for products of its manufacture to be free from defects in material and workmanship, under normal use and service, for a period of ten (10) years, effective upon final payment in full by the Purchaser, and pick up or delivery of the completed apparatus to the Purchaser. Any unauthorized alterations or modifications to the apparatus shall void this warranty.

PLUMBING WARRANTY, TEN YEAR

A Stainless Steel Plumbing/Piping warranty shall be provided by the apparatus manufacturer for products of its manufacture to be free from defects in material and workmanship, under normal use and service, for a period of ten (10) years effective upon final payment in full by the Purchaser, and pick up or delivery of the completed apparatus to the Purchaser. Any unauthorized alterations or modifications to the plumbing shall void this warranty.

PAINT WARRANTY, FIVE YEAR

The finish paint as used on the proposed apparatus shall be warranted against defects in materials and workmanship for a prorated period of five (5) years, effective upon final payment in full by the Purchaser, and pick up or delivery of the completed apparatus to the Purchaser. Any unauthorized alterations or modifications to the apparatus shall void this warranty.

TANK WARRANTY, LIFETIME

Stock 2,000 Gallon Tanker

United Plastic Fabricating, Inc. (hereinafter called “UPF”) warrants each POLY-TANK®, Booster/Foam Tank POLYSIDE® Wetside Tank, Integrator Tank/Body, ELLIPSE™ Elliptical Tank, Ellip-T-Tank Tank and DEFENDER™ Skid Tank to be free from defects in material and workmanship for the service life of the original vehicle (vehicle must be actively used in an emergency response for fire suppression). All UPF Tanks must be installed and operated in accordance with the UPF Installation and Operating Guidelines.

APPARATUS ELECTRICAL WARRANTY, TWO YEAR

The apparatus electrical system as detailed herein shall have an electrical warranty against defects in materials and workmanship for a period of two (2) years, effective upon final payment in full by the Purchaser, and pick up or delivery of the completed apparatus to the Purchaser. Any unauthorized alterations or modifications to the electrical system shall void this warranty.