

SPECIFICATIONS FOR ONE (1) PUMPER FIRE APPARATUS



DEMONSTRATION

An authorized representative of the manufacturer shall provide demonstration of the completed vehicle. One (1) day of orientation shall be provided and performed by a qualified representative of the manufacturer.

SUB STRUCTURE WARRANTY - 5 YEAR

The substructure shall be warranted for a period of five (5) years on the apparatus sub structure for corrosion perforation.

ENGINEERING DRAWINGS

Engineering drawings shall be submitted to the purchaser prior to commencement of the manufacturing process.

This drawing shall show at a minimum the front, left, right and rear views of the vehicle, as it will look at the time of completion.

A copy of this drawing shall be signed and returned to the apparatus manufacturer and become part of the vehicle contract.

BODY MANUAL - ELECTRONIC

One (1) digitized manual(s) shall be provided on operation of the complete apparatus. The manual(s) shall include a troubleshooting guide complete with recommended daily, weekly and annual maintenance procedures.

The apparatus manufacturer shall supply a complete wiring diagram for the color coded wiring harness.

WEIGHT AND BALANCE CALCULATION

The apparatus, prior to acceptance will be required to meet the vehicle stability of the applicable NFPA or ULC automotive fire apparatus standard.

A calculated center of gravity shall be performed to ensure the apparatus meets these requirements. The calculated center of gravity shall be no higher than 80 percent of the rear track axle width.

TESTING AND CERTIFICATION

The completed vehicle shall be tested and labeled to N.F.P.A. 1901 standards, 2016 edition by an independent third party certification organization.

The third party organization shall be accredited for testing systems on fire apparatus in accordance with ISO/IEC 17020 or ISO/IEC Guide 65.

The certification organization shall not be owned or controlled by manufacturers or vendors of the apparatus being tested.

The certification organization shall be primarily engaged in certification work and shall not have a monetary interest in the product's ultimate profitability.

The certification organization shall witness all test and shall refuse to certify any test result for a system if the components do not pass the testing required by this system.

There shall be no conditional, temporary, or partial certification of test results. Appropriate forms of data sheets shall be provided and used during testing.

Manufacturer's certification **is not** acceptable. **(Mandatory Requirement)**

The manufacturer shall be certified to ISO 9001

The completed vehicle shall undergo, prior to delivery, a two (2) hour road test with all applicable emergency equipment activated. A certification shall be provided to the purchaser outlining the results of this road test.

CARRYING CAPACITY PLATE

A warning label shall be provided in the cab within sight of the driver stating the seating capacity of the cab/crew cab.

Another warning label shall be provided in the cab within sight of the driver that the occupants must be seated and belted.

VEHICLE DIMENSION PLATE

A warning label shall be provided in the cab within sight of the driver stating the following apparatus dimensions:

Height and length in standard and metric measurements.

Gross vehicle weight rating in pounds and kilograms.

DIELECTRIC VOLTAGE TESTING

The wiring and permanently connected devices and equipment shall be subject to a dielectric voltage withstand test of 900 volts for one minute. The testing shall be performed after all body work has been completed. The electric polarity of all permanently wired equipment, cord reels, and receptacles shall be tested to verify that wiring connections have been properly made.

FLUID CAPACITY AND TYPE LABEL

A permanent label shall be provided and shall state the type and quantity of the following fluids used in the vehicle:

Engine Oil
Engine Coolant
Chassis Transmission Fluid
Drive Axle Fluid
Pump Gear Case
Primer Lubricant (If Applicable)

HELMET HOLDERS

There shall be five (5) Zico helmet holders supplied with the apparatus. The helmet holder shall comply with the 2009 edition of NFPA 1901 for use inside of crew cabs. It holds both traditional and contemporary style helmets without any adjustment needed.

CHASSIS SPECIFICATIONS

A Freightliner four door chassis shall be supplied as per the attached specifications below;

Price Level	
PRL-16M	M2 PRL-16M (EFF:04/25/17)
Data Version	
DRL-026	SPECPRO21 DATA RELEASE VER 026
Interior Convenience/Driver Retention Package	
055-998	NO INTERIOR CONVENIENCE PACKAGE
Vehicle Configuration	
001-175	M2 112 CONVENTIONAL CHASSIS
004-219	2019 MODEL YEAR SPECIFIED
002-004	SET BACK AXLE - TRUCK
019-002	STRAIGHT TRUCK PROVISION
003-001	LH PRIMARY STEERING LOCATION
General Service	
AA1-002	TRUCK CONFIGURATION
AA6-010	DOMICILED, EL SALVADOR
A85-020	FIRE SERVICE
A84-1EV	EMERGENCY VEHICLES BUSINESS SEGMENT
AA4-002	LIQUID BULK COMMODITY
AA5-002	TERRAIN/DUTY: 100% (ALL) OF THE TIME, IN TRANSIT, IS SPENT ON PAVED ROADS
AB1-008	MAXIMUM 8% EXPECTED GRADE

AB5-001	SMOOTH CONCRETE OR ASPHALT PAVEMENT - MOST SEVERE IN-TRANSIT (BETWEEN SITES) ROAD SURFACE
995-077	EXPORT (NON-U.S./CANADIAN) WARRANTY
A66-99D	EXPECTED FRONT AXLE(S) LOAD : 14600.0 lbs
A68-99D	EXPECTED REAR DRIVE AXLE(S) LOAD : 25000.0 lbs
A63-99D	EXPECTED GROSS VEHICLE WEIGHT CAPACITY : 39600.0 lbs

Truck Service

AA3-027	FIRE TANK/PUMPER - MAIN DRIVELINE DRIVEN SPLIT-SHAFT PTO/PUMP
AF3-998	NO MFR'S/BODY TYPE IDENTIFICATION
AF7-99D	EXPECTED BODY/PAYLOAD CG HEIGHT ABOVE FRAME "XX" INCHES : 32.0 in

Engine

101-13W	MBE4000-410 12.8L 410 HP @ 1900 RPM, 2000 GOV RPM, 1450 LB/FT @ 1100 RPM
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Electronic Parameters

EE1-002	DDC/MBE IDLE TIMER SHUTDOWN ENABLE - N
EE2-002	DDC/MBE PTO SHUTDOWN DISABLE
EF1-009	PTO FUNCTION - ENABLE
EJ1-002	ENABLE ENGINE BRAKE ON CRUISE - N
EJ8-007	AUTO FAN ACTIVATION ON ENG BRAKE-DISABLE
EFG-003	AUTO FAN ACTIVATION ON PTO - DISABLE
EFO-003	PTO THROTTLE OVERRIDE - DISABLE
EFP-005	MBE - PTO DISABLE W/SRV BRK-V.13 & UP
EFT-001	ONE (1) REMOTE PTO SET SPEED
EJA-002	SERVICE BRAKE ACTIVATES RETARDER - OFF

Engine Equipment

99C-098	1998 EPA/CARB EMISSION CERTIFICATION
13E-001	STANDARD OIL PAN
105-001	ENGINE MOUNTED OIL CHECK AND FILL
133-003	SIX PIECE VALVE COVER
014-1BX	SIDE OF HOOD AIR INTAKE WITH NFPA COMPLIANT EMBER SCREEN AND FIRE RETARDANT DONALDSON AIR CLEANER
124-1E7	DR 12V 275 AMP 40-SI BRUSHLESS PAD ALTERNATOR WITH REMOTE BATTERY VOLTAGE SENSE
292-071	(3) ALLIANCE MODEL 1231, GROUP 31, 12 VOLT MAINTENANCE FREE 3375 CCA THREADED STUD BATTERIES
290-017	BATTERY BOX FRAME MOUNTED
281-001	STANDARD BATTERY JUMPERS
282-003	SINGLE BATTERY BOX FRAME MOUNTED LH SIDE BACK OF CAB
291-001	FRAME GROUND RETURN FOR BATTERY CABLES

289-001	NON-POLISHED BATTERY BOX COVER
293-002	BATTERY SHUTOFF SWITCH(ES) IN CAB MOUNTED OUTBOARD OF DRIVER SEAT
107-005	WABCO 15.5 CFM AIR COMPRESSOR
108-002	STANDARD MECHANICAL AIR COMPRESSOR GOVERNOR
131-002	TEFLON COMPRESSOR DISCHARGE LINE
152-039	GVG, FIRE AND EMERGENCY SERVICE VEHICLES ENGINE WARNING
128-087	MERCEDES BENZ OFF/LOW/HIGH COMPRESSION AND EXHAUST BRAKE
016-013	SINGLE HORIZONTAL MUFFLER WITH HORIZONTAL TAILPIPE EXHAUST, RH MOUNTED
239-001	STANDARD EXHAUST SYSTEM LENGTH
237-052	RH STANDARD HORIZONTAL TAILPIPE
23U-998	NO DIESEL EXHAUST FLUID TANK
273-018	HORTON DRIVEMASTER ADVANTAGE ON/OFF FAN DRIVE
276-002	AUTOMATIC FAN CONTROL WITH DASH SWITCH AND INDICATOR LIGHT, NON ENGINE MOUNTED
110-040	MBE FUEL FILTER
118-001	FULL FLOW OIL FILTER
266-028	1200 SQUARE INCH ALUMINUM RADIATOR
103-037	ANTIFREEZE TO -60F, ETHYLENE GLYCOL PRE- CHARGED SCA HEAVY DUTY COOLANT
171-007	GATES BLUE STRIPE COOLANT HOSES OR EQUIVALENT
172-001	CONSTANT TENSION HOSE CLAMPS FOR COOLANT HOSES
270-010	RADIATOR DRAINCOCK
134-001	ALUMINUM FLYWHEEL HOUSING
155-054	DELCO 12V 39MT HD/OCP STARTER WITH THERMAL PROTECTION

Transmission

342-1KH	ALLISON 4000 EVS AUTOMATIC TRANSMISSION WITH PTO PROVISION
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Transmission Equipment

343-331	ALLISON VOCATIONAL PACKAGE 198 - AVAILABLE ON 3000/4000 PRODUCT FAMILIES WITH VOCATIONAL MODEL EVS
84B-003	ALLISON VOCATIONAL RATING FOR FIRE TRUCK/EMERGENCY VEHICLE APPLICATIONS AVAILABLE WITH ALL PRODUCT FAMILIES
84C-023	PRIMARY MODE GEARS, LOWEST GEAR 1, START GEAR 1, HIGHEST GEAR 6, AVAILABLE FOR 3000/4000 PRODUCT FAMILIES ONLY
84D-023	SECONDARY MODE GEARS, LOWEST GEAR 1, START GEAR 1, HIGHEST GEAR 6, AVAILABLE FOR 3000/4000 PRODUCT FAMILIES ONLY
84N-000	NEUTRAL AT STOP - DISABLED, FUELSENSE - DISABLED

84U-000	DRIVER SWITCH INPUT - DEFAULT - NO SWITCHES
84V-998	TCU-DIRECTION CHNG,NOT CONFIGURED
84M-998	TCU-PUMP MODE OPTION NOT CONFIGURED
85B-998	TCU-RANGE INDICATION NOT CONFIGURED
353-022	VEHICLE INTERFACE WIRING CONNECTOR WITHOUT BLUNT CUTS, AT BACK OF CAB
34C-001	ELECTRONIC TRANSMISSION CUSTOMER ACCESS CONNECTOR FIREWALL MOUNTED
362-035	NO CUSTOMER INSTALLED PTO
363-001	PTO MOUNTING, LH SIDE OF MAIN TRANSMISSION
341-018	MAGNETIC PLUGS, ENGINE DRAIN, TRANSMISSION DRAIN, AXLE(S) FILL AND DRAIN
345-003	PUSH BUTTON ELECTRONIC SHIFT CONTROL, DASH MOUNTED
97G-004	TRANSMISSION PROGNOSTICS - ENABLED 2013
* 370-011	WATER TO OIL TRANSMISSION COOLER, FRAME MOUNTED
346-003	TRANSMISSION OIL CHECK AND FILL WITH ELECTRONIC OIL LEVEL CHECK
35T-001	SYNTHETIC TRANSMISSION FLUID (TES-295 COMPLIANT)

Front Axle and Equipment

400-1A8	DETROIT DA-F-14.7-3 14,700# FF1 71.5 KPI/3.74 DROP SINGLE FRONT AXLE
402-049	MERITOR 16.5X5 Q+ CAST SPIDER CAM FRONT BRAKES, DOUBLE ANCHOR, FABRICATED SHOES
403-026	FIRE AND EMERGENCY SEVERE SERVICE, NON-ASBESTOS FRONT LINING
419-023	CONMET CAST IRON FRONT BRAKE DRUMS
427-001	FRONT BRAKE DUST SHIELDS
409-006	FRONT OIL SEALS
408-001	VENTED FRONT HUB CAPS WITH WINDOW, CENTER AND SIDE PLUGS - OIL
416-022	STANDARD SPINDLE NUTS FOR ALL AXLES
405-003	HALDEX AUTOMATIC FRONT SLACK ADJUSTERS
536-012	TRW TAS-85 POWER STEERING
539-003	POWER STEERING PUMP
534-015	2 QUART SEE THROUGH POWER STEERING RESERVOIR
40T-001	ORGANIC SAE 80/90 FRONT AXLE LUBE

Front Suspension

620-010	14,600# TAPERLEAF FRONT SUSPENSION
619-005	MAINTENANCE FREE RUBBER BUSHINGS - FRONT SUSPENSION
62H-998	NO FRONT SUSPENSION SPRING BRACKET OPTIONS

410-001 FRONT SHOCK ABSORBERS

Rear Axle and Equipment

420-190 RS-25-160 25,000# R-SERIES SINGLE REAR AXLE
421-538 5.38 REAR AXLE RATIO
424-001 IRON REAR AXLE CARRIER WITH STANDARD
AXLE HOUSING
* 385-004 CUSTOM MAIN DRIVELINE HARDWARE
386-076 MXL 17N MERITOR EXTENDED LUBE MAIN
DRIVELINE WITH FULL ROUND YOKES
393-998 NO DRIVELINE GUARD
452-001 DRIVER CONTROLLED TRACTION
DIFFERENTIAL - SINGLE REAR AXLE
878-018 (1) DRIVER CONTROLLED DIFFERENTIAL LOCK
REAR VALVE FOR SINGLE DRIVE AXLE
87B-004 BLINKING LAMP WITH EACH MODE SWITCH,
DIFFERENTIAL UNLOCK WITH IGNITION OFF,
ACTIVE <5 MPH
423-010 MERITOR 16.5X7 P CAM REAR BRAKES,
DOUBLE ANCHOR, CAST SHOES
433-025 FIRE AND EMERGENCY SEVERE SERVICE NON-
ASBESTOS REAR BRAKE LINING
434-011 BRAKE CAMS AND CHAMBERS ON FORWARD
SIDE OF DRIVE AXLE(S)
451-030 WEBB HEAVY WEIGHT CAST IRON REAR BRAKE
DRUMS
425-002 REAR BRAKE DUST SHIELDS
440-006 REAR OIL SEALS
426-1B2 BENDIX EVERSURE LONGSTROKE 1-DRIVE
AXLE SPRING PARKING CHAMBERS
428-003 HALDEX AUTOMATIC REAR SLACK ADJUSTERS
41T-001 ORGANIC SAE 80/90 REAR AXLE LUBE

Rear Suspension

622-1DC 26,000# FLAT LEAF SPRING REAR SUSPENSION
WITH HELPER AND RADIUS ROD
621-001 SPRING SUSPENSION - NO AXLE SPACERS
431-001 STANDARD AXLE SEATS IN AXLE CLAMP
GROUP
623-005 FORE/AFT CONTROL RODS

Brake System

018-002 AIR BRAKE PACKAGE
490-101 WABCO 4S/4M ABS WITH TRACTION CONTROL
871-001 REINFORCED NYLON, FABRIC BRAID AND WIRE
BRAID CHASSIS AIR LINES
904-001 FIBER BRAID PARKING BRAKE HOSE
412-001 STANDARD BRAKE SYSTEM VALVES
46D-002 STANDARD AIR SYSTEM PRESSURE
PROTECTION SYSTEM
413-002 STD U.S. FRONT BRAKE VALVE
432-003 RELAY VALVE WITH 5-8 PSI CRACK PRESSURE,
NO REAR PROPORTIONING VALVE

480-086	BW AD-9SI BRAKE LINE AIR DRYER WITH HEATER
479-003	AIR DRYER MOUNTED INBOARD ON LH RAIL
460-014	STEEL AIR TANKS MOUNTED BELOW FRAME RAILS
477-004	PULL CABLES ON ALL AIR RESERVOIR(S)

Trailer Connections

335-004	UPGRADED CHASSIS MULTIPLEXING UNIT
32A-002	UPGRADED BULKHEAD MULTIPLEXING UNIT
30L-998	NO HIGH CURRENT TRAILER/BODY CABLE

Wheelbase & Frame

545-590	5900MM (232 INCH) WHEELBASE
546-102	7/16X3-9/16X11-1/8 INCH STEEL FRAME (11.11MMX282.6MM/0.437X11.13 INCH) 120KSI
552-022	1300MM (51 INCH) REAR FRAME OVERHANG
55W-005	FRAME OVERHANG RANGE: 51 INCH TO 60 INCH
AC8-99D	CALC'D BACK OF CAB TO REAR SUSP C/L (CA) : 119.2 in
AE8-99D	CALCULATED EFFECTIVE BACK OF CAB TO REAR SUSPENSION C/L (CA) : 116.2 in
AE4-99D	CALC'D FRAME LENGTH - OVERALL : 326.31
AM6-99D	CALC'D SPACE AVAILABLE FOR DECKPLATE : 119.2 in
FSS-0LH	CALCULATED FRAME SPACE LH SIDE : 142.88 in
FSS-0RH	CALCULATED FRAME SPACE RH SIDE : 184.85 in
553-001	SQUARE END OF FRAME
550-001	FRONT CLOSING CROSSMEMBER
559-001	STANDARD WEIGHT ENGINE CROSSMEMBER
562-001	STANDARD MIDSHIP #1 CROSSMEMBER(S)
572-001	STANDARD REAR MOST CROSSMEMBER
565-001	STANDARD SUSPENSION CROSSMEMBER

Chassis Equipment

556-1CW	THREE-PIECE 14 INCH CHROME STEEL BUMPER WITH COLLAPSIBLE ENDS AND LH WING CUTOUT FOR FEDERAL MS100/ES100/ES100C SPEAKER
558-001	FRONT TOW HOOKS - FRAME MOUNTED
574-001	BUMPER MOUNTING FOR SINGLE LICENSE PLATE
586-024	FENDER AND FRONT OF HOOD MOUNTED FRONT MUDFLAPS
551-007	GRADE 8 THREADED HEX HEADED FRAME FASTENERS
489-032	FACTORY INSTALLED BENDIX SMARTIRE TPMS WITH WHEEL RIM MOUNTED SENSORS & STANDARD GAUGE MOUNTED IN DASH ON J1939 500K.
970-038	TANK BODY 0 TO 1500 GALLONS

Fuel Tanks

204-192	50 GALLON/189 LITER RECTANGULAR ALUMINUM FUEL TANK - LH
218-005	RECTANGULAR FUEL TANK(S)
215-005	PLAIN ALUMINUM/PAINTED STEEL FUEL/HYDRAULIC TANK(S) WITH PAINTED BANDS
212-007	FUEL TANK(S) FORWARD
664-001	PLAIN STEP FINISH
205-001	FUEL TANK CAP(S)
122-075	ALLIANCE FUEL FILTER/WATER SEPARATOR
216-020	EQUIFLO INBOARD FUEL SYSTEM
202-016	HIGH TEMPERATURE REINFORCED NYLON FUEL LINE
221-001	FUEL COOLER

Tires

093-994	MICHELIN XZE 12R22.5 16 PLY RADIAL FRONT TIRES
094-0GR	MICHELIN XDN2 12R22.5 16 PLY RADIAL REAR TIRES
* 510-1AX	MICHELIN XZE2 12R22.5 16 PLY RADIAL SPARE TIRE & MICHELIN XDN2 12R22.5 16 PLY RADIAL SPARE TIRE

Hubs

418-060	CONMET PRESET PLUS PREMIUM IRON FRONT HUBS
450-060	CONMET PRESET PLUS PREMIUM IRON REAR HUBS

Wheels

502-523	MAXION WHEELS 90262 22.5X8.25 10-HUB PILOT 6.19 INSET 5-HAND STEEL DISC FRONT WHEELS
505-524	MAXION WHEELS 90541 22.5X8.25 10-HUB PILOT 2-HAND STEEL DISC REAR WHEELS
* 511-524	MAXION WHEELS 90541 & 90262 22.5X8.25 10-HUB PILOT 2-HAND STEEL DISC SPARE WHEELS
50W-001	BENDIX SMARTIRE TIRE PRESSURE MONITORING SYSTEM WHEEL/RIM MOUNTED SENSORS, TIRE MOUNTER INSTALLED
496-011	FRONT WHEEL MOUNTING NUTS
497-011	REAR WHEEL MOUNTING NUTS

Cab Exterior

829-080	160 INCH BBC HIGH-ROOF ALUMINUM CONVENTIONAL CREW CAB
650-008	AIR CAB MOUNTING

678-018	LH AND RH EXTERIOR GRAB HANDLES WITH SINGLE RUBBER INSERT
646-023	HOOD MOUNTED CHROMED PLASTIC GRILLE
65X-003	CHROME HOOD MOUNTED AIR INTAKE GRILLE
644-004	FIBERGLASS HOOD
690-017	HOOD LINER, ADDED FIREWALL AND FLOOR HEAT INSULATION
727-802	FACTORY PREP DUAL 25 INCH ROUND STUTTER TONE HOOD MOUNTED AIR HORNS WITH DUAL LANYARDS HORNS SHIP LOOSE FOR PDI INSTALL
726-001	SINGLE ELECTRIC HORN
728-002	DUAL HORN SHIELDS
657-001	DOOR LOCKS AND IGNITION SWITCH KEYED THE SAME
575-001	REAR LICENSE PLATE MOUNT END OF FRAME
312-038	INTEGRAL HEADLIGHT/MARKER ASSEMBLY WITH CHROME BEZEL
302-047	LED AERODYNAMIC MARKER LIGHTS
315-062	RECTANGULAR CLEAR FOG LIGHTS MOUNTED UNDER BUMPER
311-001	DAYTIME RUNNING LIGHTS
294-001	INTEGRAL STOP/TAIL/BACKUP LIGHTS
300-015	STANDARD FRONT TURN SIGNAL LAMPS
744-103	DUAL WEST COAST BRIGHT FINISH HEATED MIRRORS WITH LED LIGHTS AND LH AND RH REMOTE
797-001	DOOR MOUNTED MIRRORS
796-001	102 INCH EQUIPMENT WIDTH
743-204	LH AND RH 8 INCH BRIGHT FINISH CONVEX MIRRORS MOUNTED UNDER PRIMARY MIRRORS
74A-001	RH DOWN VIEW MIRROR
729-001	STANDARD SIDE/REAR REFLECTORS
677-998	NO CAB MOUNTED STEPS
768-043	63X14 INCH TINTED REAR WINDOW
661-003	TINTED DOOR GLASS LH AND RH WITH TINTED NON-OPERATING WING WINDOWS
654-011	RH AND LH ELECTRIC POWERED WINDOWS
663-013	TINTED WINDSHIELD
659-007	8 LITER WINDSHIELD WASHER RESERVOIR, CAB MOUNTED, WITHOUT FLUID LEVEL INDICATOR

Cab Interior

707-1AM	OPAL GRAY CLOTH INTERIOR
706-013	MOLDED PLASTIC DOOR PANEL
708-013	MOLDED PLASTIC DOOR PANEL
772-006	BLACK MATS WITH SINGLE INSULATION
785-004	DASH MOUNTED ASH TRAY(S) WITHOUT LIGHTER
694-010	IN DASH STORAGE BIN

742-007	(2) CUP HOLDERS LH AND RH DASH
680-006	GRAY/CHARCOAL FLAT DASH
700-002	HEATER, DEFROSTER AND AIR CONDITIONER
701-001	STANDARD HVAC DUCTING
703-005	MAIN HVAC CONTROLS WITH RECIRCULATION SWITCH
170-015	STANDARD HEATER PLUMBING
130-031	SANDEN HEAVY DUTY AIR CONDITIONER COMPRESSOR
702-002	BINARY CONTROL, R-134A
739-034	PREMIUM INSULATION
285-013	SOLID-STATE CIRCUIT PROTECTION AND FUSES
280-007	12V NEGATIVE GROUND ELECTRICAL SYSTEM
324-047	DOOR ACTIVATED DOME/RED MAP LIGHTS, FORWARD LH AND RH AND REAR LH, RH AND CENTER
655-005	LH AND RH ELECTRIC DOOR LOCKS
284-045	(2) 12 VOLT POWER RECEPTACLES MOUNTED IN DASH
756-1E7	SEATS INC 911 UNIVERSAL SERIES HIGH BACK AIR SUSPENSION DRIVER SEAT WITH NFPA 1901-2009 COMPLIANT SEAT SENSOR
760-1E7	SEATS INC 911 UNIVERSAL SERIES HIGH BACK SCBA PASSENGER SEAT WITH NFPA 1901-2009 COMPLIANT SEAT SENSOR
762-1E9	SEATS INC 911 UNIVERSAL SERIES SCBA NON SUSPENSION LH, RH AND CENTER REAR PASSENGER SEATS WITH UNDER SEAT STORAGE AND NFPA 1901-2009 COMPLIANT SEAT SENSOR
711-004	LH AND RH INTEGRAL DOOR PANEL ARMRESTS
758-023	GRAY VINYL DRIVER SEAT COVER WITH GRAY CORDURA CLOTH BOLSTER AND HEADREST
761-022	GRAY VINYL FRONT PASSENGER SEAT COVER WITH GRAY CORDURA CLOTH BOLSTER AND HEADREST
755-022	GRAY VINYL REAR PASSENGER SEAT COVER WITH GRAY CORDURA CLOTH BOLSTER AND HEADREST
763-105	NFPA 1901-2009 HIGH VISIBILITY ORANGE SEAT BELTS
532-001	FIXED STEERING COLUMN
540-015	4-SPOKE 18 INCH (450MM) STEERING WHEEL
765-002	DRIVER AND PASSENGER INTERIOR SUN VISORS

Instruments & Controls

732-004	GRAY DRIVER INSTRUMENT PANEL
734-004	GRAY CENTER INSTRUMENT PANEL
870-001	BLACK GAUGE BEZELS

486-001 LOW AIR PRESSURE INDICATOR LIGHT AND
 AUDIBLE ALARM
 840-006 METRIC PRIMARY AND SECONDARY AIR
 PRESSURE GAUGES
 198-003 DASH MOUNTED AIR RESTRICTION INDICATOR
 WITH GRADUATIONS
 721-001 97 DB BACKUP ALARM
 149-013 ELECTRONIC CRUISE CONTROL WITH
 SWITCHES IN LH SWITCH PANEL
 156-007 KEY OPERATED IGNITION SWITCH AND
 INTEGRAL START POSITION; 4 POSITION
 OFF/RUN/START/ACCESSORY
 811-042 ICU3S, 132X48 DISPLAY WITH DIAGNOSTICS, 28
 LED WARNING LAMPS AND DATA LINKED
 160-012 DIAGNOSTIC INTERFACE CONNECTOR, 9 PIN,
 SAE J1587/1708/1939, LOCATED BELOW DASH
 844-001 2 INCH ELECTRIC FUEL GAUGE
 148-003 PROGRAMMABLE RPM CONTROL -
 ELECTRONIC ENGINE
 856-004 METRIC ELECTRICAL ENGINE COOLANT
 TEMPERATURE GAUGE
 864-006 TRANSMISSION OIL TEMPERATURE GAUGE -
 METRIC
 830-017 ENGINE AND TRIP HOUR METERS INTEGRAL
 WITHIN DRIVER DISPLAY
 372-051 CUSTOMER FURNISHED AND INSTALLED PTO
 CONTROLS
 49B-004 ENHANCED STABILITY CONTROL
 73B-998 NO LANE DEPARTURE WARNING SYSTEM
 852-006 METRIC ELECTRIC ENGINE OIL PRESSURE
 GAUGE
 679-001 OVERHEAD INSTRUMENT PANEL
 35M-008 SMARTPLEX HUB MODULE WITH OVERHEAD
 SWITCH MOUNTING, DRIVER AND PASSENGER
 SIDES AND CENTER CONSOLE (18 SWITCH
 SLOTS)
 786-119 NFPA VEHICLE DATA RECORDER AND
 SEATBELT DISPLAY
 748-006 POWER AND GROUND WIRING PROVISION
 OVERHEAD
 749-001 ROOF/OVERHEAD CONSOLE CB RADIO
 PROVISION
 810-029 ELECTRONIC KPH SPEEDOMETER WITHOUT
 SECONDARY SCALE, WITHOUT ODOMETER
 817-001 STANDARD VEHICLE SPEED SENSOR
 812-001 ELECTRONIC 3000 RPM TACHOMETER
 813-998 NO VEHICLE PERFORMANCE MONITOR
 8D1-998 NO DETROIT CONNECT SERVICES SELECTED
 8Z1-998 NO ZONAR SERVICES SELECTED
 162-002 IGNITION SWITCH CONTROLLED ENGINE STOP
 81Y-001 PRE-TRIP LAMP INSPECTION, ALL OUTPUTS
 FLASH, WITH SMART SWITCH

44R-010	10 ON/OFF LATCHING SMARTPLEX SWITCHES
44V-004	BATTERY ON SMARTPLEX INDICATOR LAMP
44W-100	1-RED, 0-AMBER, 0-GREEN SMARTPLEX INDICATOR LAMPS
836-015	DIGITAL VOLTAGE DISPLAY INTEGRAL WITH DRIVER DISPLAY
660-008	SINGLE ELECTRIC WINDSHIELD WIPER MOTOR WITH DELAY
304-001	MARKER LIGHT SWITCH INTEGRAL WITH HEADLIGHT SWITCH
882-009	ONE VALVE PARKING BRAKE SYSTEM WITH WARNING INDICATOR
299-013	SELF CANCELING TURN SIGNAL SWITCH WITH DIMMER, WASHER/WIPER AND HAZARD IN HANDLE
298-039	INTEGRAL ELECTRONIC TURN SIGNAL FLASHER WITH HAZARD LAMPS OVERRIDING STOP LAMPS
869-998	NO MISCELLANEOUS GAUGES

Design

065-000	PAINT: ONE SOLID COLOR
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Color

980-5D8	CAB COLOR A: L0753EB RED ELITE BC
986-020	BLACK, HIGH SOLIDS POLYURETHANE CHASSIS PAINT
98K-998	NO FUEL TANK CABINET PAINT
962-3D8	FRONT WHEEL PAINT: POWDER BLACK
966-976	POWDER BLACK (N0001EA) REAR WHEELS/RIMS (PKBLK21, BK, PB1)
96F-972	POWDER WHITE (N0006EA) SPARE WHEEL/RIM (PKWHT21, TKWHT21, W, TW)
963-003	STANDARD E COAT/UNDERCOATING

Certification / Compliance

996-012	EXPORT, NON COMPLIANT FMVSS BASED
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Secondary Factory Options

998-033	CORPORATE PDI CENTER IN-SERVICE AND OPTION INSTALLATION/MODIFICATION
82N-001	PDI APPLIED RUST INHIBITOR

AIR OUTLET CONNECTION

There shall be an air outlet connection installed at the left cab door area and connected into the chassis air tank reservoir. The air fitting for this outlet shall be female and include an air hose for filling of chassis tires.

ENGINE BLOCK HEATER TIE IN

The 120 volt engine block heater unit shall be connected into the 120 volt shoreline receptacle.

CHASSIS WHEELS

The chassis wheels shall be painted by the chassis supplier and the color shall be specified in the chassis specifications.

CHASSIS PREPARATION

The chassis shall be carefully inspected for compliance to the required specifications and to assure that it is ready for apparatus construction.

Any components that require relocation or modification shall be done at this time.

EXHAUST SYSTEM

The chassis exhaust system shall be modified and routed to the right hand side of the apparatus ahead of the rear wheels. The end of the exhaust shall have a straight cut end which is suitable for a fire hall exhaust extraction system.

EXHAUST SYSTEM HEAT SHIELD

Where the chassis exhaust piping passes under or near a body compartment, the exhaust piping shall be shielded to prevent compartment exposure to radiant heat.

FRONT AND REAR MUD FLAPS

Four (4) heavy duty rubber rear mud flaps shall be provided and installed on the apparatus. The mud flaps shall be installed behind the front and rear wheels.

SCBA AIR BOTTLE BRACKET(S) - CHASSIS CAB

Four (4) Zico Load and Lock Walk Away SCBA air bottle holder bracket(s) shall be provided and installed in the chassis cab seating area.

Four (4) air bottle/air pack retaining strap(s) shall be installed in the center of the air pack bracket(s).

CHAINED IGNITION KEY

The key utilized for the ignition shall be securely chained to either the steering column or the cab dash to prevent loss or removal of the ignition key.

KUSSMAUL PUMP PLUS 1000

A Kussmaul Pump Plus 1000 combination battery charger, 12V air compressor, auto eject 20WP 20 - amp automatic power line disconnect and remote bar graph indicator shall be provided.

The output side of the battery charger shall be connected to the chassis batteries, and the input side connected to the auto eject receptacle. The output side of the air pump shall be connected into the chassis air system, and the input side connected to the auto eject receptacle.

A 110 volt Kussmaul Super Auto-Eject, 3-prong, straight blade receptacle shall be provided at the left cab door area. The Auto Eject receptacle shall be rated at 20 amps. This receptacle shall have a hinged weatherproof cover.

CAB STEP LIGHTING

Each cab step shall be illuminated by Tecniq P/N E03 LED lights to meet the requirements of NFPA 1901.

TRANSPORTATION ROAD SAFETY KIT

The following Transportation Road Safety Kit shall be supplied.

One (1) 2.5 lb. ABC vehicle type fire extinguisher with mounting bracket.

One (1) standard First Aid Kit shall be provided.

One (1) set of three (3) dual faced triangular warning flares to meet the Department of Transportation's Motor Vehicle Safety Standards.

There shall be a one inch wide reflective stripe applied to the front of the apparatus. The reflective stripe shall be a 3M Scotchlite product.

There shall be reflective striping applied to the interior chassis cab doors of the apparatus. The reflective stripe shall be a 3M Scotchlite product.

PUMP HOUSE

The pump house shall be a full frame module constructed from 2" x 2" x .188" and 3" x 3" x .25" (6061-T6 / 6063-T6) heavy-duty structural aluminum extrusions which shall provide maximum strength and durability.

The pump house shall be manufactured separately to allow for movement and flexibility.

The pump house shall be attached to the chassis frame with .25" thick heavy-duty mounting plates and .5" grade 8 cadmium plated bolts with self-locking nuts. A transition bracket with rubber mounts shall be installed to the chassis frame. The pump house shall then be mounted to the rubber mounts.

There shall be no exceptions to this section.

The front and rear of the pump house shall have 1/8" 3003 H14 Hi Shine checker plate trim.

PUMP INSPECTION DOOR

The pump house interior shall be accessible by an inspection door on the right side. The inspection door shall be constructed from .125" aluminum high shine checker plate. The door shall be fastened to the upper portion of the pump house with stainless steel piano hinges. The locking mechanisms for the door shall be a set of two (2) lift and turn twist lock latches.

PUMP HOUSE FINISH

The pump house shall come with a natural aluminum finish that has been sanded.

CONTROL PANEL - SIDE

The pump operator's panel and the right side pump panel shall be constructed from #4 finish 14 gauge stainless steel. Both the right side and left side pump panels shall be bolted to the pump house for ease of removal.

The pump operator's panel shall be manufactured in a two-tier design.

The bottom/lower tier (portion) shall be screwed into place and can be removable for servicing. The lower level contains all the valve controls, discharges, suction, drains, etc. All suction and discharge ports exiting through the panels shall be laser cut to provide a smooth exact fit. No cover overlay plates shall be used.

The top tier (portion) of the panel shall be bottom hinged with a stainless steel piano hinge and shall have two (2) lift and turn twist lock latches located at the top of the panel for pump and gauge servicing. This panel shall contain all gauges and monitoring instruments.

All gauges and controls shall be symmetrically and logically laid out to easily enable the pump operator to monitor all aspects of pump operation.

All valve controls shall be made by use of heavy-duty steel rods, pivots, and Class I operators.

Auxiliary suction valve controls shall be lever controlled adjacent to the suction swivel. The auxiliary suction valve shall be installed behind the pump panel. **(Mandatory Requirement)**

PUMP INSPECTION DOOR

The pump house interior shall be accessible by an inspection door on the right side. The inspection door shall be constructed from .125" aluminum high shine checker plate. The door shall be fastened to the upper portion of

the pump house with stainless steel piano hinges. The locking mechanisms for the door shall be a set of two (2) lift and turn twist lock latches.

MASTER GAUGE TEST PORTS

The pump operator panel shall come with Class 1 P/N 121384 vacuum and pressure testing ports.

PUMP BYPASS CONTROL

A Class 1 P/N 105120 brass assembly with chrome plated zinc handle petcock control valve shall be mounted at the pump operator panel to allow tank water to re circulate thru the pump. The port size and plumbing shall be 1/4"

AUXILIARY HEAT EXCHANGER

There shall be an auxiliary heat exchanger mounted on the chassis. The heat exchanger will allow tank water to cool the chassis engine.

The heat exchanger shall be operated by a Class 1 P/N 105120 brass assemble with chrome plated zinc handle petcock control valve. This valve shall be mounted at the pump operator panel. The plumbing to the auxiliary heat exchanger control valve shall be 1/4".

CROSS LAY HOSEBED

Two (2) cross lay hose beds shall be provided and installed transversely above the pump house and shall have vinyl hose matting flooring to allow for water drainage and air movement under the hose. A 3/16" aluminum divider shall separate the hose beds. Each hose bed shall be sized to hold 200' of 1 3/4" hose.

CROSS LAY PLUMBING - 1.5" DISCHARGE

The plumbing on the 1.5" discharge(s) shall be heavy duty piping with Victaulic and Class 1 SBR synthetic rubber hose with stainless steel couplings.

Each discharge shall be equipped with a 90 degree swivel to allow them to be used from either side of the apparatus.

THREAD TYPE - DISCHARGE 1.5"

All 1.5" thread types shall be NST.

Akron Style 8820 Swing - Out™ Valve

The valve shall be Akron Brass Style 8820 Swing-Out™ Valves. The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats. The valve shall be capable of dual directional flow

while incorporating a self-locking ball feature using an automatic friction lock design and specially designed flow optimizing stainless steel ball. All stainless steel parts must be 316 grade for increased resistance to corrosion. The valve shall not require lubrication of seats or any other internal waterway parts, and must be capable of swinging out of the waterway for maintenance by the removal of six bolts. Product must carry a 10 year manufacturer's warranty.

Valve Actuator

The valves shall have chrome T handle actuators. For chemical and wear resistance a Lamacoid label specifying the discharge shall be inset into the T handle actuator. The label shall be color coded as per NFPA 1901 requirements.

Drain Valves

A drain shall be installed at the pump panel. The drain shall have 3/4" Synflex drain lines tied to a 1/4 turn drain valve with high pressure brass fittings.

CROSS LAY TARP

A heavy duty vinyl tarp cover shall be provided over the cross lay compartments and held in position with a combination of shock cord fastener and 1/4 turn fasteners. The vinyl tarp shall be red in color.

PUMP PANEL LIGHTS - SIDE PANEL

There shall be a total of four (4) 2.5" x 6" clear dome lights, (two (2) each side) to adequately illuminate the side pump panels. The lights shall be mounted under a protective hood of the same material as the side pump panels. The lights shall be activated by a switch at the pump operator panel.

TOTAL PRESSURE GOVERNOR (TPG)

Apparatus shall be equipped with a Class 1 "Total Pressure Governor" (TPG) that is connected to the Electronic Control Module (ECM) mounted on the engine. The "TPG" will operate as a pressure sensor (regulating) governor (PSG) utilizing the engine's J1939 data link for optimal resolution and response provided that J1939 is supported by the engine manufacturer. If J-1939 engine control is not supported, then analog remote throttle control shall be provided by the TPG, subject to J1939 RPM data availability.

The TPG shall utilize control algorithms that minimize pressure spikes during low or erratic water supply situations and display operational status messages to the operator under certain circumstances. The TPG shall be backwards compatible to any engine that supplies J1939 RPM, Temperature and Oil Pressure information providing the ability to maintain consistent fleet fire-fighting capability.

TPG shall incorporate the ability to use either a 300 PSI or a 600 PSI transducer for best operation. PSG system diagnostics shall be built in and accessible by service technicians.

Programmable presets for RPM and Pressure settings shall be easily configurable. The TPG shall incorporate configurable parameters in the menu structure accessed through a diagnostic password.

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

The TPG shall use J1939 broadcast warnings for the alarm points as a standard.

MASTER PRESSURE AND INTAKE GAUGES - DUAL SCALE

Two (2) 4.5" master pump gauges shall be supplied and mounted in close proximity to the throttle, primer, and engine instrumentation. The intake gauge shall be to the left of the discharge gauge. Bright metal trim rings shall be supplied with each gauge.

They shall be fully filled with pulse and vibration dampening Inter lube to lubricate the internal mechanisms to prevent lens condensation and to ensure proper operation. The Zytel nylon cases shall be temperature compensated with an internal breathing diaphragm to permit fully filled cases and to allow a rigid lens with a distortion free viewing area.

To prevent internal freezing and to keep contaminants from entering the gauge, the stem and Bourdon tube shall be filled with low temperature oil and be sealed from the water system using an isolating diaphragm located in the stem

The gauges shall be in dual scale and measure in increments of 0-400 psi and 0-2800 kPa.

DISCHARGE GAUGES - DUAL SCALE

The discharge gauges shall be 2 1/2" line gauges for each 1-1/2" or larger discharges. A removable color coded trim ring shall be supplied for each discharge gauge.

They shall be fully filled with pulse and vibration dampening Interlube to lubricate the internal mechanisms to prevent lens condensation and to ensure proper operation. The Zytel nylon cases shall be temperature compensated with an internal breathing diaphragm to permit fully filled cases and to allow a rigid lens with a distortion free viewing area.

To prevent internal freezing and to keep contaminants from entering the gauge, the stem and Bourdon tube shall be filled with low temperature oil and be sealed from the water system using an isolating diaphragm located in the stem

The gauges shall be in dual scale and measure in increments of 0-400 psi and 0-2800 kPa.

WATER LEVEL GAUGE - CLASS1 ITL - OPERATOR PANEL

The Intelli-Tank™ displays feature wide angle viewing and ultra-bright LED's for high visibility even in direct sunlight. The affordable design utilizes Class 1's proven pressure transducer approach to provide nine (9) accurate levels of indication.

FEATURES

Low Tank Level visual and audible indication

Calibrates to any size/shape tank

Uses industrial pressure transducer instead of probes

Built-in self diagnostics

One wire link allows for unlimited displays

Programmable night dimming feature

Ultra-bright LED's provide nine (9) levels of indication

PUMP – HALE DSD

The pump shall be a Hale Pump, Model DSD 1250.

The pump shall be rated at : 5000 Liters per minute at 150 P.S.I.
1050 Imperial Gallons per minute at 150 P.S.I.
1250 U.S. Gallons per minute at 150 P.S.I.

The pump shall be the class "A" type and shall deliver the percentage of rated discharge at pressures indicated below.

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

The pump when dry shall be capable of taking suction and discharging water with a lift of 10 feet in not more than 30 seconds through 20 feet of suction hose of the appropriate size. An additional 15 seconds shall be allowed when the system includes an auxiliary 4" or larger front or rear intake pipe.

Pump Assembly

1. The pump shall be of a size and design to mount on the chassis rails of commercial and custom truck chassis, and have the capacity of 1250 gallons per minute (U.S. GPM), NFPA-1901 rated performance.
2. The entire pump shall be assembled and tested at the pump manufacturer's factory.
3. The pump shall be driven by a drive line from the truck transmission. The engine shall provide sufficient horsepower and RPM to enable pump to meet and exceed its rated performance.
4. The entire pump 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 Pamphlet No. 1901. Pump shall be free from objectionable pulsation and vibration.

5. The pump body and related parts shall be of fine grain alloy cast iron, with a minimum tensile strength of 30,000 PSI (2069 bar). All metal moving parts in contact with water shall be of high quality bronze or stainless steel. Pump utilizing castings made of lower tensile strength cast iron not acceptable.
6. Pump body shall be vertically split, on a single plane for easy removal of entire impeller assembly including clearance rings.
7. Pump shaft to be rigidly supported by two bearings for minimum deflection. The bearings shall be heavy-duty, deep groove ball bearings in the gearbox and they shall be splash lubricated.
8. The pump impeller shall be hard, fine grain bronze of the mixed flow design; accurately machines, hand-ground and individually balanced. The vanes of the impeller intake eye shall be hand ground and polished to a sharp edge, and be of sufficient size and design to provide ample reserve capacity utilizing minimum horsepower.
9. Pump impeller shall be hard, fine grain bronze of the mixed flow design; accurately machined hand ground and individually balanced. The vanes of the impeller intake eyes shall be hand ground and polished to a sharp edge and be of sufficient size and design to provide ample reserve capacity utilizing minimum horsepower.
10. Impeller clearance rings shall be bronze, easily renewable without replacing impeller or pump volute body.
11. The pump shaft shall be heat-treated, electric furnace, corrosion resistant stainless steel. Pump shaft must be sealed with double-lip oil seal to keep road dirt and water out of gearbox.

Gearbox

1. Pump gearbox shall be of sufficient size to withstand up to 16,000 lbs. ft. of torque of the engine. The drive unit shall be designed of ample capacity for lubrication reserve and to maintain the proper operating temperature..
2. The gearbox drive shafts shall be of heat-treated chrome nickel steel and at least 2-3/4 inches in diameter, on both the input and output drive shafts. They shall withstand the full torque of the engine.
3. 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 spur design shall be provided to eliminate all possible end thrust. (No exceptions.)
4. The pump ratio shall be selected by the apparatus manufacturer to give maximum performance with the engine and transmission selected.
5. If the gearbox is equipped with a power shift, the shifting mechanism shall be a heat treated, hard anodized aluminum power cylinder, with stainless steel shaft. An in-cab control for rapid shift shall be provided that locks in road or pump.
6. For automatic transmissions, three green warning lights shall be provided to indicate to the operator(s) when the pump has completed the shift from Road to Pump position. Two green lights to be located in the truck driving compartment and one green light on pump operators panel adjacent to the throttle control. For manual transmissions, one green warning light will be provided for the driving compartment. All lights to have appropriate identification/instruction plates.

MASTER DRAIN VALVE

A Hale #DV-5 master drain valve shall be provided and plumbed at the lowest point of the plumbing.

PUMP OPERATION WARNING LABEL

There shall be a warning label mounted on the pump operator's panel that states the following:

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

HALE AIR PUMP SHIFT

The drive unit shall be provided with a Hale #VPS air power shift system. The shifting mechanism shall be a heat treated, hard anodized aluminum power cylinder, with a stainless steel shaft. An in-cab guarded electric control switch for rapid shift shall be provided that locks in to either the "road" or "pump" mode with a slight twist.

To the left of the air operated pump shift control in the cab, there shall be two indicator lights to positively show the position of the pump when the control lever is moved to the pump position. A GREEN light shall be energized when both the pump shift has been completed and the chassis transmission is engaged in pump gear and shall be labeled "OK TO PUMP". Another GREEN indicator light shall be installed adjacent to the hand throttle on the pump operator's panel. This light shall be labeled "WARNING: DO NOT OPEN THROTTLE UNLESS LIGHT IS ON".

Hale ESP Oilless Primer

The priming pump shall be a positive displacement, vane type and electrically driven. This primer shall be a Hale #ESP electric oil-less priming system. One (1) priming control shall both open the priming valve and start the priming motor.

The primer valve shall be connected to the top of both pump volutes making it possible to prime the pump no matter if the pump is in pressure or volume modes. If a front suction is supplied and additional line shall be connected to the highest point or points between the pump and the inlet thus insuring a complete prime.

PRIMING SYSTEM LABEL

The priming system shall be marked with a label to indicate proper operation.

6" MAIN SUCTION MANIFOLD - STAINLESS STEEL

There shall be a total of two (2) 6" main inlets on each side of the pump house.

The plumbing for the two (2) main suction inlets shall be single piece design manufactured from schedule 10 stainless steel with schedule 40 threaded fittings.

The suction manifold shall be bolted to the pump utilizing heavy duty grade 8 bolts for firm vibration free installation. A victaulic coupler is not acceptable. **(Mandatory Requirement)**

AUXILIARY SUCTION - ROAD SIDE

One (1) 2-1/2" gated inlet(s) shall be provided at the left side pump panel. The inlet(s) shall come complete with a chrome female swivel threaded adaptor. There shall be a chrome cap with the inlet(s) and the cap shall come with a chain that is attached to the pump operator panel.

The plumbing shall be schedule 10 stainless steel.

A rubber grommet shall enclose the plumbing coming out of the pump panel for maximum heat retention in the pump house. **(Mandatory Requirement)**

Akron Style 8825 Swing - Out™ Valve

The valves shall be Akron Brass Style 8825 Swing-Out™ Valves. The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats. The valve shall be capable of dual directional flow while incorporating a self-locking ball feature using an automatic friction lock design and specially designed flow optimizing stainless steel ball. All stainless steel parts must be 316 grade for increased resistance to corrosion. The valve shall not require lubrication of seats or any other internal waterway parts, and must be capable of swinging out of the waterway for maintenance by the removal of six bolts. Product must carry a 10 year manufacturer's warranty.

Valve Actuator

The valve control shall be by a chrome swing handle located near the discharge.

Drain Valves

A drain shall be installed at the pump panel. The drain shall have 3/4" Synflex drain lines tied to a 1/4 turn drain valve with high pressure brass fittings.

AUXILIARY SUCTION - Curb Side

One (1) 2-1/2" gated inlet(s) shall be provided at the right side pump panel. The inlet(s) shall come complete with a chrome female swivel threaded adaptor. There shall be a chrome cap with the inlet(s) and the cap shall come with a chain that is attached to the pump operator panel.

The plumbing shall be schedule 10 stainless steel.

A rubber grommet shall enclose the plumbing coming out of the pump panel for maximum heat retention in the pump house. **(Mandatory Requirement)**

Akron Style 8825 Swing - Out™ Valve

The valves shall be Akron Brass Style 8825 Swing-Out™ Valves. The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats. The valve shall be capable of dual directional flow while incorporating a self-locking ball feature using an automatic friction lock design and specially designed flow optimizing stainless steel ball. All stainless steel parts must be 316 grade for increased resistance to corrosion. The valve shall not require lubrication of seats or any other internal waterway parts, and must be capable of swinging out of the waterway for maintenance by the removal of six bolts. Product must carry a 10 year manufacturer's warranty.

Valve Actuator

The valve control shall be by a chrome swing handle located near the discharge.

Drain Valves

A drain shall be installed at the pump panel. The drain shall have 3/4" Synflex drain lines tied to a 1/4 turn drain valve with high pressure brass fittings.

SUCTION RELIEF VALVE

A 2-1/2" Elkhart model 40-20 flange mounted adjustable suction relief valve shall be provided and installed in the suction side of the pump. The discharge side of the valve shall be plumbed to the area below the running board, away from the pump operator, and shall terminate with a 2-1/2" NST male threaded adapter, marked **"INTAKE PRESSURE RELIEF OUTLET-DO NOT CAP"**. The relief valve shall have an adjustable working range of 75 PSIG to 250 PSIG and be pre-set at 125 PSI.

TANK FILL LINE - PUMP TO TANK

There shall be a 2" discharge provided at the pump operator panel for a pump to tank line.

Akron Style 8820 Swing - Out™ Valve

The valve shall be Akron Brass Style 8820 Swing-Out™ Valves. The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats. The valve shall be capable of dual directional flow while incorporating a self-locking ball feature using an automatic friction lock design and specially designed flow optimizing stainless steel ball. All stainless steel parts must be 316 grade for increased resistance to corrosion. The valve shall not require lubrication of seats or any other internal waterway parts, and must be capable of swinging out of the waterway for maintenance by the removal of six bolts. Product must carry a 10 year manufacturer's warranty.

Valve Actuator

The valves shall have chrome T handle actuators. For chemical and wear resistance a Lamacoid label specifying the discharge shall be inset into the T handle actuator. The label shall be color coded as per NFPA 1901 requirements.

DISCHARGE MANIFOLD - STAINLESS STEEL

All plumbing for the discharge manifold and discharge plumbing shall be schedule 10 stainless steel with schedule 40 threaded fittings. In some cases, heavy duty, high pressure, wire reinforced flexible hose with stainless steel couplings shall be utilized for plumbing connections.

Victaulic couplings shall be used on the plumbing lines to take tension off piping and to permit flexing and movement without damage to the pump and its components.

Heavy duty U-bolt clamps and bracing shall be used on all plumbing lines and connections were required for firm vibration free installation.

TANK SUPPLY LINE

A 4" tank supply line shall be installed from the tank to the pump. A 3" check valve shall be installed in the pump to eliminate the possibility of pressure expanding and damaging the tank.

Butterfly Valve

The valve shall be a 3" manually operated butterfly valve.

Valve Actuator

The valves shall have chrome T handle actuators. For chemical and wear resistance a Lamacoid label specifying the discharge shall be inset into the T handle actuator. The label shall be color coded as per NFPA 1901 requirements.

2.5" DISCHARGE - LEFT SIDE

Two (2) 2.5" gated discharge(s) shall be provided at the right side pump panel.

This discharge(s) shall be equipped with a chrome 30 degree adapter, chrome plated rocker lug cap, and retaining chain that is attached to the pump panel.

A rubber grommet shall enclose the plumbing coming out of the pump panel for maximum heat retention in the pump house. **(Mandatory Requirement)**

Akron Style 8825 Swing - Out™ Valve

The valves shall be Akron Brass Style 8825 Swing-Out™ Valves. The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats. The valve shall be capable of dual directional flow while incorporating a self-locking ball feature using an automatic friction lock design and specially designed flow optimizing stainless steel ball. All stainless steel parts must be 316 grade for increased resistance to

corrosion. The valve shall not require lubrication of seats or any other internal waterway parts, and must be capable of swinging out of the waterway for maintenance by the removal of six bolts. Product must carry a 10 year manufacturer's warranty.

Valve Actuator

The valve control shall be by a chrome swing handle located near the discharge.

Drain Valves

A drain shall be installed at the pump panel. The drain shall have 3/4" Synflex drain lines tied to a 1/4 turn drain valve with high pressure brass fittings.

2.5" DISCHARGE - CURBSIDE

Two (2) 2.5" gated discharge(s) shall be provided at the curbside pump panel.

This discharge(s) shall be equipped with a chrome 30 degree adapter, chrome plated rocker lug cap, and retaining chain that is attached to the pump panel.

A rubber grommet shall enclose the plumbing coming out of the pump panel for maximum heat retention in the pump house. **(Mandatory Requirement)**

Akron Style 8825 Swing - Out™ Valve

The valves shall be Akron Brass Style 8825 Swing-Out™ Valves. The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats. The valve shall be capable of dual directional flow while incorporating a self-locking ball feature using an automatic friction lock design and specially designed flow optimizing stainless steel ball. All stainless steel parts must be 316 grade for increased resistance to corrosion. The valve shall not require lubrication of seats or any other internal waterway parts, and must be capable of swinging out of the waterway for maintenance by the removal of six bolts. Product must carry a 10 year manufacturer's warranty.

Valve Actuator

The valves shall have chrome T handle actuators. For chemical and wear resistance a Lamacoid label specifying the discharge shall be inset into the T handle actuator. The label shall be color coded as per NFPA 1901 requirements.

Drain Valves

A drain shall be installed at the pump panel. The drain shall have 3/4" Synflex drain lines tied to a 1/4 turn drain valve with high pressure brass fittings.

3" DELUGE GUN DISCHARGE WITH SLO-CLOZ

A 3" deluge gun discharge shall be provided and installed above the pump house. The plumbing leading to the monitor standpipe shall be schedule 40 stainless steel plumbing. A threaded cap shall come with the monitor standpipe if no monitor is ordered.

Discharge Gauge - Dual Scale

A 2.5" discharge gauges shall be mounted adjacent to the discharge valve control handle. A removable bright metal or color coded trim ring meeting NFPA's requirements for color coding shall be supplied.

The 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 prevent internal freezing and to keep contaminants from entering the gauge, the stem and Bourdon tube shall be filled with low temperature oil and be sealed from the water system using an isolating diaphragm located in the stem (no exceptions).

The gauges shall be in dual scale and measure in increments of 0-400 psi and 0-2800 kPa.

Akron Style 8830 Swing - Out™ Valve

The valves shall be Akron Brass Style 8830 Swing-Out™ Valves. The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats. The valve shall be capable of dual directional flow while incorporating a self-locking ball feature using an automatic friction lock design and specially designed flow optimizing stainless steel ball. All stainless steel parts must be 316 grade for increased resistance to corrosion. The valve shall not require lubrication of seats or any other internal waterway parts, and must be capable of swinging out of the waterway for maintenance by the removal of six bolts. Product must carry a 10 year manufacturer's warranty.

The valve shall come with an Akron Slo Cloz assembly.

Valve Actuator

The valves shall have chrome T handle actuators. For chemical and wear resistance a Lamacoid label specifying the discharge shall be inset into the T handle actuator. The label shall be color coded as per NFPA 1901 requirements.

Drain Valves

A drain shall be installed at the pump panel. The drain shall have 3/4" Synflex drain lines tied to a 1/4 turn drain valve with high pressure brass fittings.

MONITOR - AKRON APOLLO™

An Akron Apollo™ monitor shall be provided and installed on the deck gun piping with an Akron direct mount flange. The monitor shall have 360° horizontal rotation and a vertical travel from 80° above to 15° below

horizon with a built-in 35° safety stop. The monitor shall be capable of flowing 1250gpm (4800lpm) in the deck position.

There shall be an Akron Pyrolite 2½" x 2½" discharge pipe (#3488) and a set of Akron 2½" Pyrolite quad stacked deluge tips (#2499) supplied and installed on the monitor.

An Akron Turbo Master 1250 Master Stream Pyrolite monitor nozzle (#1755 shall be supplied with the monitor. The monitor nozzle shall come with a built in stream shaper and be capable of flowing 500-1250gpm.

MONITOR GROUND BASE

An Akron 2.5" dual clapper inlet portable base shall be supplied with the Akron monitor. The base shall have folding legs with no locking mechanism required to keep the legs in place.

BRACKET FOR MONITOR GROUND BASE - COMPARTMENT

An Akron model 3505 mounting bracket shall be provided for the mounting of the Akron monitor ground base. The bracket shall be installed in a body compartment as directed by the Fire Department.

THREAD TYPE - DISCHARGE 2.5"

The threads that shall be provided for the 2.5" Discharges and 2.5" Suction Inlets shall be NST style.

2.5" DISCHARGE - REAR

One (1) 2.5" gated discharge shall be provided at the rear of the apparatus.

The plumbing leading to the rear discharge shall be high pressure Class 1 hose and schedule 10 stainless steel with schedule 40 threaded fittings.

This discharge(s) shall be equipped with a chrome 30 degree adapter, chrome plated rocker lug cap, and retaining chain that is attached to the apparatus body.

Akron Style 8825 Swing - Out™ Valve

The valves shall be Akron Brass Style 8825 Swing-Out™ Valves. The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats. The valve shall be capable of dual directional flow while incorporating a self-locking ball feature using an automatic friction lock design and specially designed flow optimizing stainless steel ball. All stainless steel parts must be 316 grade for increased resistance to corrosion. The valve shall not require lubrication of seats or any other internal waterway parts, and must be capable of swinging out of the waterway for maintenance by the removal of six bolts. Product must carry a 10 year manufacturer's warranty.

Valve Actuator

The valves shall have chrome T handle actuators. For chemical and wear resistance a Lamacoid label specifying the discharge shall be inset into the T handle actuator. The label shall be color coded as per NFPA 1901 requirements.

Drain Valves

A drain shall be installed at the pump panel. The drain shall have 3/4" Synflex drain lines tied to a 1/4 turn drain valve with high pressure brass fittings.

BOOSTER TANK

The booster tank shall have the following capacities:

1000 US Gallons

3780 Liter

The tank shall be provided with a lifetime tank manufacturer warranty.

The transverse and longitudinal swash partitions shall be manufactured of Polypropylene Copolymer material. 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 and meet NFPA rules. All swash partitions interlock with one another and are welded to each other as well as to the walls and floor of the tank.

The tank shall have a combination vent and fill tower. The fill tower shall be constructed of .5" thick Polypropylene Copolymer and shall be a minimum dimension of 8"x 8" outer perimeter. The tower shall be located in the left front corner of the tank unless otherwise specified by the purchaser. The tower shall have a .25" thick removable Polypropylene Copolymer screen and a Polypropylene Copolymer hinged-type cover. Inside the fill tower, there shall be a combination vent overflow pipe. The vent overflow shall be a minimum of schedule 40 pipe with a minimum I.D. of 4", unless a dump chute is included in the design in which case the I.D. shall be 6". Both shall be of a design to run through the tank. The tank overflow shall be piped behind the rear wheels.

The tank cover shall be constructed of recessed .5" thick Polypropylene Copolymer, stress relieved, U.V. stabilized material. A minimum of two lifting dowels shall be drilled and tapped .5" x 2" to accommodate the lifting eyes.

There shall be one (1) sump standard per tank. The sump shall be constructed of .5" Polypropylene Copolymer and be located in the left front corner of the tank and shall meet the requirements of NFPA.

There will be two (2) standard tank outlets: one for tank to sump suction line and one for a tank fill line. All tank fill couplings shall be backed with flow deflectors to break up the stream of water entering the tank, and be capable of withstanding sustained fill rates of up to 1,000 G.P.M.

The tank shall rest on the body cross members in conjunction with such additional cross members, spaced at a distance that would not allow for more than 530 square inches of unsupported area under the tank floor. In cases where overall height of the tank exceeds 40 inches, cross member spacing must be decreased to allow for not more than 400 square inches of unsupported area.

The tank must be isolated from the cross members through the use of hard rubber strips with a minimum thickness and width dimension of .25" x 2" and a minimum Rockwell hardness of 60 durometer. Additionally, the tank must be supported around the entire bottom outside perimeter and capture both front and rear as well as side to side to prevent tank from shifting during vehicle operation.

The tank shall be mounted in the apparatus body in a manner that the total outside bottom perimeter of the tank shall be supported. The bottom of the tank shall be completely isolated from the frame by heavy-duty .25" thick rubber strips. There shall be a picture frame type cradle mount system utilized for the purpose of capturing the tank. There shall be a support system across the top of the tank to prevent excessive bouncing when the tank is empty.

Although the tank is designed as a free-floating suspension unit, it is required that the tank has adequate hold down restraints to minimize movement during vehicle operation. If proper retention has not been incorporated into the apparatus hose floor structure, an optional mounting restraint system shall be located on the top of the tank, halfway between the front and rear on each side of the tank.

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

LIMITED LIFETIME POLY TANK WARRANTY

The water tank shall carry a tank manufacturer lifetime warranty against defects and workmanship. The apparatus manufacturer must be authorized for installation and alterations on poly tanks to not void any written warranties. **(Mandatory Requirement)**

TANK DRAIN

The tank shall have a 1.5" tank drain installed in the bottom of the tank and accessible from the ground.

COMPARTMENT SHELVING - ADJUSTABLE

Six (6) adjustable 3/16" aluminum compartment shelves with upturned edges shall be provided. Each shelf shall be provided with plastic matting.

SCBA AIR BOTTLE STORAGE COMPARTMENT(S)

There shall be four (4) air bottle storage compartment(s) installed in the rear fenders.

The air bottle storage compartment(s) shall have a sealed weatherproof stainless steel access door with a positive door latch.

The storage tube shall be manufactured from PVC.

APPARATUS BODY

The body shall be fabricated with the highest quality components available, and acceptable to the fire service industry. Only new components shall be in the manufacturing process.

The body shall be engineered and designed to provide a low center of gravity and carry a correct load distribution.

The entire body sub frame shall be constructed of heavy-duty tubular aluminum and channels to provide a rigid body design.

The use of tubular aluminum and channels shall provide for extreme strength, maximum durability, and maximum resistance to buckling and failure.

All compartments shall be fabricated with 3/16" aluminum panels, grade 5052. The 3/16 panels will provide reinforcement to the compartment, for installation of heavy equipment. The 3/16" aluminum panels, grade 5052 panels shall provide extreme strength, rust corrosion resistance, and maximum durability.

Skilled craftsmen shall perform all welding operations on the body. All welding shall be electronically with the highest quality components.

Certified welders shall perform all welding. Proof of welder certification shall be provided with the completed vehicle.

BODY SUBFRAME

The body framework shall be assembled on a jig, and shall be clamped together and squared. The framework shall be electronically welded with digital pulse welders forming the integral superstructure.

The body frame rails shall be constructed of 6061T6/6063-T6, 3" x 3" aluminum extrusions, with a wall thickness of 1/4".

The front cross member shall be a heavy duty 3" x 2" x 1/4" aluminum extrusions providing maximum strength and durability.

The two middle cross members shall be heavy duty 3" x 3" x 1/4" aluminum extrusions providing maximum strength and durability at the main section of the body.

The rear cross members shall be heavy duty 3" x 2" x 1/4" aluminum extrusions providing maximum strength and durability at the rear section of the body.

The two middle cross members shall extend the full width of the body. The cross members shall provide support for the body side compartments section.

The body sub frame and the chassis frame shall be insulated and separated by a rubberized belt.

There shall be rear drop sub frame bolted to chassis frame made from formed heavy steel rails.

The body shall be mounted to the chassis frame rails with two double flex mounts at the front, two steel channels in the middle, bolted to the chassis frame at the rear end of chassis frame and four single flex mounts at the drop frame. This shall provide for maximum mounting strength and flexibility.

CORROSION PROTECTION

All body components or attachments made from dissimilar metals shall be fastened to the body utilizing an UHMW/Polyethylene material to prevent metal-to-metal contact preventing dielectric corrosion.

All fasteners used in attaching or fastening or aluminum panels shall be installed with stainless steel hardware. Rivets shall not be acceptable. **(Mandatory Requirement)**

All fasteners shall be installed in a manner, which shall involve drilling, tapping, and application of non-corrosive grease before the stainless steel bolts are installed. Self-tapping screws or screws without threads shall not be acceptable. **(Mandatory Requirement)**

HOSE BED

The main hose bed shall be located above the booster tank and be sized to meet the requirements for a Pumper Fire Apparatus as specified in NFPA 1901 (Latest Edition) and ULC S515-13

The inner sides of the hose bed shall be natural finish aluminum smooth plate free of protrusions and obstructions.

There shall be three (3) Aluminum unistrut tracks for the optional hose bed divider(s), two (2) at the forward section of the hose bed, and one (1) at the rear.

The rear track shall have come with 10' of snap cover to prevent the hose couplings from catching the track. The snap cover shall be shipped loose for customer installation after the hose bed dividers have been set up.

HOSE BED PARTITION

There shall be a hose bed dunnage area at the front of the hose bed. The partition shall be manufactured from 5083-H321 1/8" salt water grade aluminum. Attached to the partition there shall be two full length horizontally mounted aluminum struts for optional adjustable hose bed dividers.

HOSE BED MATTING

The hose bed flooring shall be fitted with vinyl type matting to allow for air movement under the hose.

HOSE BED DIVIDERS - ADJUSTABLE

There shall be three (3) adjustable hose bed dividers provided.

Each partition shall be easily adjustable in the hose bed slide tracks.

Each divider shall be constructed from 3/16" 5083-H321 salt water marine grade aluminum which shall be welded into a custom aluminum extrusion base frame.

Each hose bed divider shall have an oval handhold provided at the rear portion of the divider.

HOSE BED TARP

One (1) vinyl hose bed tarp shall be provided with shock cord fasteners or depending on hose bed obstructions, a combination of shock cord fasteners and nickel plated quarter turn fasteners for the main hose bed. The hose bed tarp shall have an end flap with Velcro fasteners provided to cover the rear of the hose bed. The tarp shall be red in color.

REAR FENDERS

The rear fender outer skin shall be fabricated from 3/16" 5052 aluminum and have a painted finish. The rear fender skin shall be permanently attached to the body.

LEFT SIDE BODY COMPARTMENTS - HIGH

The following compartments shall be provided on the Road side of the apparatus body.

One (1) compartment forward of the rear wheel measuring 36"W x 65"H x 26"D frame opening.

One (1) compartment over the rear wheel measuring 60"W x 35"H x 26"D frame opening.

One (1) compartment behind the rear wheel measuring 48.25"W x 65"H x 26"D frame opening.

The body compartments shall be fabricated with 3/16" 5052 marine grade aluminum panels. These panels shall be non-corrosive, durable, and add strength and integrity to the body construction.

The interior compartment seams shall be sealed and caulked with a permanent, pliable automotive type sealer.

All compartments shall have a 1" drop on the lower edge of the door opening to accommodate the door seal, and to stop moisture from entering the compartment. (**Mandatory Requirement**)

All compartments shall have sweep out floors.

All compartments shall be weatherproof.

RIGHT SIDE BODY COMPARTMENTS

The following compartments shall be provided on the curbside of the apparatus body.

One (1) compartment forward of the rear wheel measuring 36"W x 40"H x 26"D frame opening.

One (1) compartment behind the rear wheel measuring 48.25"W x 40"H x 26"D frame opening.

The body compartments shall be fabricated with 3/16" 5052 marine grade aluminum panels. These panels shall be non-corrosive, durable, and add strength and integrity to the body construction.

The interior compartment seams shall be sealed and caulked with a permanent, pliable automotive type sealer.

All compartments shall have a 1" drop on the lower edge of the door opening to accommodate the door seal, and to stop moisture from entering the compartment. (**Mandatory Requirement**)

All compartments shall have sweep out floors.

All compartments shall be weatherproof.

DOOR AJAR SYSTEM

A red warning light for the door ajar system shall be provided in the cab. This light shall be activated when a compartment door on the apparatus body is open and the park brake is released. There shall be a magnetic sensor switch located in the compartment that will indicate when a door has been opened.

LADDER RACK - MANUAL FOLD DOWN

A side mounted manually operated fold down ladder rack shall be installed on the right side of the apparatus body above the body compartments. The ladder rack shall accommodate four (4) banks of ladders. There shall be two trim plates mounted to the body wall behind the ladder racks for scuff protection. The trim plates shall be manufactured from 16ga. 304 #4 finish stainless steel.

The folding rack shall be lockable in a closed position. A switch and sensor shall be provided to notify the driver if the rack is in the unlocked position when the parking brake is released as per the requirements of NFPA 1901 latest edition and ULC S515-04

The ladder rack shall be painted grey in color.

EXTENSION LADDER

A Duo-Safety model 900-A, 24 foot, 2-section extension ladder shall be provided.

ROOF LADDER

A Duo-Safety model 775-A, 12 foot roof ladder shall be provided.

REAR BODY COMPARTMENT

The following compartments shall be provided on the rear of the apparatus body.

One (1) compartment measuring 40"W x 62"H x 30"D frame opening.

AMDOR ROLL UP DOORS

The doors shall be Amdor Roll-Up type doors to include: double wall aluminum box section slats with integral hinge joint and recessed slat seal, reusable end shoes with snap-in securement, double wall aluminum reinforced bottom rail with either Stainless Steel Lift Bar door latching system, aluminum track with side frame, sill plate, and top gutter with non-marring top seal, side seals, bottom seal, with all wear component material to be Type 6 Nylon.

The slats shall have a true box section with a flat interior surface to prevent equipment hang-up. The slats shall have a face depth of 1.0 inches and a wall thickness of 0.045 inches. Each slat incorporates a recessed slat seal to weatherproof the compartment and reduce rattle between slats.

For every inch of height an integral continuous hinge joint spans the width of the door to provide superior strength.

The door glides on non-interlocked end shoes. Each end shoe is independent and positively secured by an exclusive snap-in device. Door slats can be easily removed and replaced when required.

The Stainless Steel Lift Bar system shall be provided to keep the door securely closed. This system complements the superior strength of the bottom rail with bottom seal and integral reinforcing flange.

Wear components are constructed of Type 6 Nylon to provide maximum strength and durability. Type 6 Nylon is a naturally lubricating material, which provides exceptional temperature characteristics.

Each door is equipped with slat, top, bottom and side seals to keep moisture and dirt on the outside. The non-marring top seal provides a seal without marking the door surface.

Each door will come with a keyed lock

The compartment door at the L1 location shall be Amdor roll up style.
The compartment door at the L2 location shall be Amdor roll up style.
The compartment door at the L3 location shall be Amdor roll up style.
The compartment door at the R1 location shall be Amdor roll up style.
The compartment door at the R2 location shall be Amdor roll up style.
The compartment door at the B1 location shall be Amdor roll up style.

NO TAIL LIGHT WIRING COVER PLATE

The wiring for the rear tail lights shall be openly accessible from the rear roadside and curbside body compartments.

COMPARTMENT VENTS

There shall be stainless steel louvered vents in each compartment. The vents shall be 5" in diameter. Each vent shall be installed to prevent water from dripping into the compartments. Each vent shall have a rubber diaphragm that minimizes outside contaminants from entering the compartment but still allow for air to evacuate.

RUB RAILS - APPARATUS BODY

Three inch "C" channel aluminum rub rails shall be bolted into place with nylon spacers on the lower framework below the apparatus body compartments. The rub rail will extend to the outside edges of the apparatus body for protection of the body from impact damage.

REAR TOW HOOKS - PAINTED

Two (2) heavy duty steel painted tow hooks shall be bolted directly to the rear frame rails.

The tow hooks shall be easily accessible from the rear of the apparatus body thru a removable panel. The panel shall have lift and turn paddle latches. The door shall be manufactured from 3/16" 5052 - H32 aluminum.

TAILBOARD

A heavy-duty 8" deep tailboard shall be provided

The tailboard shall be covered with slip resistant 3/16" embossed checker plate. The aluminum checker plate shall be bolted to the tailboard sub frame with non-corrosive stainless steel bolts. The bolt on aluminum tread plate shall allow for easy removal for service.

The forward section of the tailboard shall be gapped to allow washing without dirt being trapped and for the drainage of accumulated water.

BODY HAND RAIL

The following handrails shall be installed on the apparatus body.

Two (2) 48" handrails mounted vertically on the rear.

One (1) 42" handrail mounted horizontally on the upper rear for hose bed access.

One (1) 12" mounted on the roadside upper rear hose bed area

The body hand rail shall be 1 1/4" in diameter and shall be knurled aluminum for maximum grip and safety

The hand rail shall be installed and supported with chrome plated polished cast brackets.

The hand rail brackets shall be provided with an isolation gasket and held in place with stainless steel bolts.

CAST STEPS - CURB SIDE REAR

One (1) cast aluminum fixed cast steps shall be installed on the curb side rear of the apparatus. Each steps shall come with a hand hold built into the step.

The steps shall be mounted to a 3/8" plate with stainless steel screws. The plate shall be permanently welded to the apparatus body frame.

CAST STEPS - ROAD SIDE REAR

Three (3) cast aluminum fixed steps shall be installed on the road side rear of the apparatus. Each steps shall come with a hand hold built into the step.

The steps shall be mounted to a 3/8" plate with stainless steel screws. The plate shall be permanently welded to the apparatus body frame.

FOLDING STEPS - ROAD SIDE FRONT

One (1) folding aluminum steps shall be installed on the road side front of the apparatus.

The steps shall be mounted to a 3/8" plate with stainless steel screws. The plate shall be permanently welded to the apparatus body frame.

COMPARTMENT LIGHTS - LED

All body compartments shall have LED lights activated by an automatic door switch. The LED compartment lights shall be flush mount and provide a consistent 120 degree wide beam pattern. There shall be a minimum of two strip lights installed in each compartment.

CHEVRON STRIPPING

There shall be 6" chevron stripping decals applied to the rear face of the apparatus including the rear compartment door. The chevron decals shall be made of high visibility Reflexite™ material that is red / yellow in color and shaped to form an "A" style pattern. A minimum of 50% of the rear body shall be covered with Chevron.

PIKE POLE / ATTIC LADDER STORAGE - INTERNAL

There shall be internal storage for 2 Pike Poles (Pike Poles not included) and 1 folding attic ladder (attic ladder not included) The storage compartment shall come with an aluminum door with paddle latches. The aluminum door shall come with a stainless steel hinge fastened with stainless steel fasteners. Self tapping fasteners shall not be allowed.

FOLDING LADDER

A Duo-Safety model 585-A, 10 foot folding ladder shall be provided.

SUCTION HOSE STORAGE COMPARTMENTS - INTERNAL

There shall be two (2) aluminum rear slide in suction hose compartments offset to the curbside of the body that will open to the rear of the apparatus.

There shall be a hinged aluminum door on the storage compartment with a positive twist type latch.

The compartments shall have the capacity to hold a minimum of two (2) lengths of 6" x 10' suction hose.

HARD SUCTION HOSE - HARRINGTON

Two (2) ten foot section(s) of 6" PVC lightweight, flexible, hard suction hose shall be provided with lightweight Aluminum male and rocker lug female threaded couplings.

BARREL STRAINER

One (1) 6" Kocheck barrel strainer shall be provided and shipped loose with the completed vehicle.

TRAFFIC CONTROL DIRECTIONAL LIGHT - LED

One (1) Whelen model TAL65 LED directional light shall be mounted on the rear of the vehicle as high as possible for best visibility.

TRAFFIC CONTROL DIRECTIONAL LIGHT HOOD

The traffic control directional light shall come with a protective hood to prevent damage to the light when hose is pulled off the back of the unit. The hood shall be manufactured from 3003-H14 Aluminum checker plate.

LED TELESCOPIC FLOODLIGHT

Two (2) Fire Research Evolution II LED model FCA530-V20 side mount push up telescopic light shall be installed. The light pole shall be anodized aluminum and have a knurled twist lock mechanism to secure the extension pole in position. The extension pole shall rotate 360 degrees. The outer pole shall be a grooved aluminum extrusion and qualify as an NFPA compliant handrail. The pole mounting brackets shall have a 3 1/2" offset. Wiring shall extend from the pole bottom with a 4' retractile cord.

The lamphead shall have eight (8) ultra-bright white LEDs. It shall operate at 12/24 volts DC, draw 13/6.5 amps, and generate 20,000 lumens. The lamphead shall direct 50 percent of the light onto the action area while providing 50 percent to illuminate the working area. The lamphead angle of elevation shall be adjustable at a pivot in the mounting arm and the position locked with a round knurled locking knob. The lamphead shall incorporate heat-dissipating fins and be no more than 5 3/16" deep by 3 5/16" high by 11 1/2" wide. The lamphead and mounting arm shall be powder coated white. The floodlight shall be for fire service use.

Location of floodlight shall be: at the front of the body

Electrical wiring shall be provided in between each 12V light and the main 12v electrical distribution box to ensure a proper and safe connection.

Two (2) on/off switches shall be provided in the cab on the overhead switch pack.

ELECTRICAL SYSTEM - MULTIPLEXED

The manufacturer shall design the wiring system for the apparatus in accordance to the SAE, Society of Automobile Engineers.

The manufacturer shall determine the circuit loads and design the system to accommodate these loads with appropriate circuit routings and relays.

All wiring harnesses shall be properly secured and routed. All passages required for routing shall be grommeted and sealed as required.

All wiring shall be easily accessible for servicing.

All wiring shall be SAE J1128 and SAE J1292 GXL type wire, as per fire industry standards.

All exposed wiring shall be crimped and heat shrunk for added protection.

The wiring harnesses shall be pre-engineered for correct circuit loading and shall be custom made. The harnesses shall be function, number, and color coded and shall be fitted inside automotive high temperature loom. All connections to the main panel box must be made with waterproof automotive style guided pin locking connectors

An enclosed main electrical distribution panel that provides protection against dirt, dust, oil, and water shall be installed in the upper section of the pump house.

All electrical connections to the panel shall be made through positive locking environmentally sealed connectors. The panel features a solid state power distribution board(s) with visual diagnostics.

All circuits are protected by automatic resetting circuit breakers. All breakers shall be properly sized to the circuit load and are direct plug in sockets.

All wiring shall have a strain pull test on wiring connections of 40 pounds.

BATTERY MASTER SWITCH

A 300 amp solenoid master battery switch shall be installed in the cab within reach of the driver.

ZONE A UPPER EMERGENCY LIGHTING

The zone A upper emergency lighting zone shall have the following:

A Whelen Justice 56" light bar (**Model: JE2NFPA**) warning system shall be furnished and rigidly mounted.

ZONE A LOWER EMERGENCY LIGHTING

The zone A lower emergency lighting zone shall have the following lights and shall be mounted to the chassis grill:

There shall be Two (2) Whelen model 600 (4" x 6") LED lights installed. These lights shall have a red lens, red LED's and come with a chrome bezel.

ZONE B UPPER EMERGENCY LIGHTING

The zone B upper emergency lighting zone shall have the following:

There shall be One (1) Whelen model 600 (4" x 6") LED lights installed. These lights shall have a red lens, red LED's and come with a chrome bezel.

ZONE B LOWER EMERGENCY LIGHTING

The zone B lower emergency lighting zone shall have the following:

There shall be Two (2) Whelen model 600 (4" x 6") LED lights installed. These lights shall have red lenses, red LED's and come with a chrome bezel.

ZONE C UPPER EMERGENCY LIGHTING

The zone C upper emergency lighting zone shall have the following:

There shall be Two (2) Whelen model 900 (9" x 7") LED lights installed.. These lights shall have red lenses, red LED's and come with a chrome bezel.

ZONE C LOWER EMERGENCY LIGHTING

The zone C lower emergency lighting zone shall have the following:

There shall be Two (2) Whelen model 600 (4" x 6") LED lights installed. These lights shall have red lenses, red LED's and come with a chrome bezel.

ZONE D UPPER EMERGENCY LIGHTING

The zone D upper emergency lighting zone shall have the following:

There shall be One (1) Whelen model 600 (4" x 6") LED lights installed. These lights shall have red lenses, red LED's and come with a chrome bezel.

ZONE D LOWER ZONE

The zone D lower emergency lighting zone shall have the following:

There shall be Two (2) Whelen model 600 (4" x 6") LED lights installed. These lights shall have red lenses, red LED's and come with a chrome bezel.

HEADLIGHT WIG WAG FLASHER

The chassis high beam headlights shall be equipped with an alternating flashing , wig wag headlight system. An electronic flasher shall be used to control the lights. A control switch panel shall activate the flashing system.

ELECTRONIC SIREN

A Whelen Siren Amplifier model # 295SLSA1 shall be provided. The siren amplifier shall incorporate a 12V/200W siren installed on an aluminum alloy chassis covered by a black polycarbonate powder coated housing for maximum protection. The 295SLSA1 shall have the ability for either 100 or 200 watt output. The front overlay shall be made of velvet Lexan™ with a matte finish. The lettering and artwork on the overlay shall be illuminated with adjustable backlighting of soft LED non-glaring green. The operating controls will consist of a power switch, manual button, PA volume switch, horn button, and rotary switch. The 295SLSA1 PC board shall have input polarity protection, output short circuit protection. The siren amplifier shall include a 20A/32V fuse. The solid state siren speaker amplifier shall be vibration resistant. The microphone shall be hardwired to the 295SLSA1.

The 295SLSA1 shall have 21 Scan-Lock™ siren tones with two manual functions for additional siren tones. The siren amplifier shall have the ability to customize the placement of each siren tone with the rotary switch. The siren amplifier shall have a “Siren in Use” icon driver and adjustable preset repeat radio volume. The 295SLSA1 shall have a “Park Kill” feature that disables the siren when the vehicle is in park. The PTT (push to talk) switch on the microphone shall override all siren functions. The 295SLSA1 shall have a combination On/Off and horn ring transfer switch with Bi-polarity horn/ring activation control. The 295SLSA1 shall have SI Test® capability to perform a complete diagnostic silent test of amplifier and speaker(s). The siren amplifier shall have a quick disconnect plug. The 295SLSA1 shall have the ability to activate siren tones with “Aux Enable” input either with a slide switch, power controls, or relay-to-ground connector. The 295SLSA1 shall meet Class A requirement for SAE, AMECA, KKK1822, and California Title XII. The siren amplifier shall have an adjustable bail bracket with installation hardware. The 295SLSA1 is covered by a two year factory warranty.

ELECTRONIC SIREN SPEAKER

There shall be a Whelen model # SA 315P, 123db / 100 watt electronic siren speaker provided at the front bumper and connected into the electronic siren.

TAIL LIGHTS - LED

There shall be a set of LED tail lights installed the rear face of the apparatus body. These lights shall include brake, turn and clear back up lights installed in chrome trim bezels.

HOSEBED FLOOD LIGHT(S)

There shall be two (2) chrome Unity AG-2 halogen 12V light(s) provided for hose bed and area lighting. The light(s) shall be furnished with halogen flood light bulbs. The lights shall be controlled from the cab and shall come with a shut off switch at the light head.

STEP LIGHTS

All steps on the body shall have adequate light for illumination. All step lights shall be LED style.

GROUND LIGHTS - LED

There shall be six (6) Luma Bar H2O 12" LED ground lights with outward facing angle brackets installed underneath the apparatus. The ground lights shall be activated by a switch installed in the chassis cab. Ground lights that are directly underneath a door opening will turn on automatically when the door is opened.

ENGINE COMPARTMENT LIGHT - LED

One (1) Tecniq EON LED light(s) shall be installed in the engine compartment. The lights shall be activated when the hood is opened.

CLEARANCE AND MARKER LIGHTS - LED

All clearance / marker lights, reflectors shall comply with department of transport motor vehicle safety standards. The clearance / marker lights shall be LED (light emitting diode) type.

A set of LED (light emitting diode) mid body turn signals shall be installed to comply with department of transport motor vehicle safety standards for vehicles over 30 feet in length.

BACK UP ALARM

A 107db back up alarm shall be installed at the rear of the apparatus body. This back up alarm shall be activated when the chassis transmission is placed into reverse.

REARVIEW CAMERA/MONITOR SYSTEM

One (1) Federal Signal model #CAMSET56-NTSC-2 Camera/Monitor System shall be provided.

The system shall consist of (1) 5.6" Color Monitor, (1) Standard Rearview Camera, and (1) 65.5-foot Extension Cable.

Monitor

The monitor shall be a 5.6" TFT-LCD Color Monitor with (2) camera inputs and include independent trigger wire for each input.

The monitor shall incorporate a built-in speaker, and a photo sensor for automatic brightness adjustment for low-light / no-light conditions.

Multi-voltage 12/24 VDC capable

Resolution: 224600 pixels

The monitor dimensions shall measure 5.9” length x 4.8” width x 1.1” depth.

Standard Rearview Camera

The camera shall be a high-resolution Color CCD camera made from an anti-corrosion aluminum alloy housing.

The camera shall feature a photo sensor and (16) infrared LEDs for low-light / no-light conditions, a built-in microphone, and shall have a 110-degree viewing angle.

Pixel resolution of the camera shall be 510(H) x 492(V)

The camera shall be IP68 rated for water and dust protection.

Multi-voltage 12/24 VDC capable

The camera dimensions shall measure 2.9” height x 3.1” width x 2.4” depth.

Extension Cable

The camera-to-monitor Extension Cable shall be 20 meters (65.5 feet) in length with waterproof connector.

PAINT COLOR - CHASSIS

The chassis shall be painted a single color by the chassis manufacturer. This shall be the final paint color and finish for the completed vehicle.

FINISH AND PAINTING - PPG

The painting shall be done in accordance with automotive practices with the PPG painting process.

All painting shall be baked at 160 degrees F. for a minimum 45 minutes to provide an automotive quality finish.

After assembly, the body substructure shall be deburred and hand sanded.

All ledges inside and outside shall be cleaned and sealed.

The painting process consists of the following applications:

- a) Wash entire body with DX 440 wax and grease remover
- b) Etch primer, PPG ESU400
- c) Primer, PPG ESU440
- d) Wash entire body with DX 330 wax and grease remover
- e) Base coat, PPG ESSS

All outside seams that are not 100 percent welded shall be sealed and caulked inside and outside.

Only after the entire painting process is completed shall the body structures be installed on the chassis.

Only after the body is painted shall the components such as doors, aluminum inlay panels, mounting brackets, handrails, pump panels, and other accessories be installed.

COMPARTMENT FINISH

The interior of all compartments of the body shall also be sealed and caulked. A natural finish shall be provided with all compartment interiors.

4" REFLECTIVE BODY PRIMARY STRIPING

There shall be a four inch wide reflective stripe applied to the left and right sides of the apparatus according to the requirements of NFPA 1901 latest edition. The reflective stripe shall be a 3M Scotchlite product.

PIKE POLE(S)

One (1) 6' fiberglass pike pole(s) shall be provided.

PIKE POLE(S)

One (1) 10' fiberglass pike pole(s) shall be provided.

FLAT HEAD AXE(S)

One (1) 6 pound fiberglass handled flat head axe(s) shall be provided.

PICK HEAD AXE(S)

One (1) 6 pound fiberglass handled pick head axe(s) shall be provided.

CHROME AXE POCKET(S) - HORIZONTAL

One (1) horizontal chrome axe holder(s) complete with a chrome hook for the axe handle shall be provided. The axe pocket(s) shall be installed in a location as directed by the fire department.

WRENCH SET(S)

Two (2) Akron #2443 spanner wrench set(s) complete with two (2) spanner wrenches, one (1) hydrant wrench and nylon holder.

FEMALE COUPLING(S) - NORTHLINE

Two (2) Northline 6"x 4.5: double swivel female long handled coupling(s) shall be provided. The couplings are made from extruded 6061-T6 aluminum alloy.

MALE COUPLING(S) - NORTHLINE

Two (2) Northline 6"x 2½" double female long handle coupling(s) shall be provided. The couplings are made from extruded 6061-T6 aluminum alloy.

PIKE POLE HOLDER BRACKET(S)

One (1) set(s) pike pole ring and tool holder brackets shall be provided and installed on the apparatus body.

SOFT SUCTION HOSE - KOCHEK

One (1) ten foot section(s) of Kochek rubber soft suction hose shall be provided with lightweight 6" x 6" long handled double female connections

FLASHLIGHT(S)

There shall be two (2) Streamlight Firebox flashlight(s) supplied with the apparatus.

MULTI C4[®] LED LANTERN :: VEHICLE MOUNT SYSTEM An industrial-duty, rechargeable, portable lantern featuring 2 ultra-bright blue taillight LEDs and C4[®] LED technology for high brightness, long runtime and reliability

- 3 C4[®] LEDs and deep dish parabolic reflectors to produce a large spot pattern
- LEDs are impervious to shock with a 50,000 hour lifetime
- Dual rear LEDs ensure you can be seen whether you are coming or going
- Optimized electronics provide regulated intensity
- 2 levels of lighting:
 - **High** – 55,000 candela peak beam intensity; 540 lumens
 - **Low** – 32,000 candela peak beam intensity; 330 lumens
- Runtime:
 - **High** – 7 hours to the 10% output level
 - **Low** – 15 hours to the 10% output level
- Jumper selectable high or low setting to allow selection of more light output or more runtime
- Zero-maintenance 6V, 12Ah sealed lead acid battery. Rechargeable up to 500 times
- Toggle switch
- Rubberized impact bumper
- IPX4 rated for water-resistance

- High impact ABS thermoplastic housing
- Cushioned grip handle
- Re-enforced D-rings
- Rubberized lens ring
- Fits existing LiteBox mounting racks
- Rack meets requirements of NFPA 1901-14.1.11.2 (2003) mounted in any position
- Two user programmable ultra-bright blue tail-light LEDs
- The Vehicle Mount System includes a vehicle-mountable hard-wire rack and shoulder carrying strap
- Limited lifetime warranty

TFT GATED 6" X DUAL 2.5" STORZ CLAPPER SIAMESE

One (1) AS9NJ-SX JUMBO SIAMESE 6.0"NHX 2.5"NST DBL SWIVEL TO SWIVEL will be supplied.