PAYMENT TERMS

Full payment shall be made upon delivery and acceptance of the apparatus. The vehicle(s) shall not be released to the BUYER until payment is made. If the selling price is subject to any taxes, the taxes added will be that which are prevailing at the time of delivery.

Payment shall be made directly to Contractor. Payment shall be made in United States Currency. No checks or any other form of payment shall be made to any sales representatives, dealer, agents, etc.

If these payment terms are not strictly adhered to, Contractor shall assess a daily interest charge based on an annual percentage rate of 18% on the unpaid balance. If more than one vehicle is covered by this contract and the vehicles are shipped on different dates, the terms stated above shall apply to each vehicle.

SINGLE SOURCE MANUFACTURER

To provide the customer with a single point of contact for service, warranty, and parts, proposals shall only be accepted from manufacturers who assemble the complete apparatus in their own facility.

PRINCIPAL DIMENSIONS

The apparatus shall have the following dimensions:

Overall Length: ~28' 5-7/8"
Overall Height: ~9' 4"
Wheelbase: ~208"
Cab to Axle: ~142"

CERTIFIED WELDERS

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

BODY WEIGHT DOCUMENTATION

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

DRAWING, APPROVAL

Prior to construction, the contractor shall provide three-(3) approval drawings of the apparatus for the fire department's review. The drawings shall show such items as the chassis being utilized, lights, horns, sirens, pump panels, and all compartment locations and dimensions. The blueprint shall be a visual interpretation of the unit as it is to be constructed, In the event of discrepancies on the print the specifications shall prevail. The buying authority shall sign all drawings. One-(1) print shall be retained by the Fire Department, the dealer/sales representative shall retain one-(1) print, and one-(1) print shall be returned to the manufacturer.

TRANSPORTATION

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

The Fire Department shall be responsible for driving the completed apparatus back to the station.

DELIVERY TIME

The apparatus shall be delivered within One Hundred Twenty (120) calendar days after receipt of the approved, signed off, pre-construction changes.

The manufacturer shall not be held liable for changes arising from its failure to make or delay in making delivery because of fire, flood, strike, riot, chassis shortage, accidents, acts of God, or any circumstances beyond our control.

VEHICLE FAMILIARIZATION & DEMONSTRATION

Familiarization and demonstration of the vehicle shall be by a competent and qualified person as defined in the current standard of NFPA 1901 standard.

Familiarization of the vehicle shall include the following:

How to locate gauges or indicators and check all fluid levels and operational issues of the vehicle

How to tilt the chassis cab or hood assembly for access to the engine, fire pump, or aerial control, or any other device to allow access to fluids or for required maintenance

Interior cab controls, instruments, mirrors, safety devices or alarms, brake operations, transmission control, pump controls, exhaust regeneration (if provided), seat adjustments, warning light engagement, and other operational equipment

If the apparatus is provided with a fire pump system, the following minimum instructions:

(1) Setting of parking brake, proper transmission gear, and fire pump engagement operations
(2) Throttle control
(3) Primer and tank-to-pump operation
(4) Use of pressure control devices
(5) Tank refilling operations
(6) Proper operation of discharge controls
(7) Proper shutdown and draining of system

If the apparatus is provided with a generator, the following minimum instructions

a) Proper engagement if driven by the chassis
b) Startup, operation, and shutdown of generator
c) Monitoring of controls and instruments

If the apparatus is provided with a foam system, the following minimum instructions:

a) Startup, operation, and shutdown of foam system
b) Setting of foam percentages and other operational settings
c) Proper flushing and draining of the system

If the apparatus is provided with a water tower or aerial device, the following minimum instructions:

a) Positioning and locating the vehicle for safe operations
b) Chassis parking brakes and engagement of hydraulic system
c) Deployment of stabilization devices and use of ground pads
d) Operation of elevation, extension, and rotation of the aerial device
e) Operation of waterway, nozzle, and other firefighting devices of aerial device
f) Operation and use of breathing air system (if provided)
g) Specific aerial device maintenance and service areas for operators
h) Shutdown and return to service operations
i) Operation of tip controls and platform controls
j) General familiarization and demonstration of aerial device
k) Review of all safety devices, interlocks, and operational Hazards
l)

MANUFACTURER SERVICE CONTACTS

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

SERVICE VEHICLES

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

REPLACEMENT PARTS

Replacement parts shall be available directly from the manufacturer, as well as the dealer and or service centers.

CHASSIS

Vehicle Configuration	
001-172	M2 106 CONVENTIONAL CHASSIS
004-220	2020 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
AA6-002	DOMICILED, USA (EXCLUDING CALIFORNIA AND CARB OPT-IN STATES)
A85-020	FIRE SERVICE
A84-1EV	EMERGENCY VEHICLES BUSINESS SEGMENT
AA4-002	LIQUID BULK COMMODITY
AA5-002	TERRAIN/DUTY: 100% (ALL) OF THE TIME, IN TRANSIT, IS SPENT ON PAVED ROADS
AB1-008	MAXIMUM 8% EXPECTED GRADE
AB5-001	SMOOTH CONCRETE OR ASPHALT PAVEMENT - MOST SEVERE IN-TRANSIT (BETWEEN SITES) ROAD SURFACE
995-091	MEDIUM TRUCK WARRANTY
A66-99D	EXPECTED FRONT AXLE(S) LOAD: 14600.0 lbs.
A68-99D	EXPECTED REAR DRIVE AXLE(S) LOAD: 27000.0 lbs.
A63-99D	EXPECTED GROSS VEHICLE WEIGHT CAPACITY: 41600.0 lbs.
Truck Service	
AA3-027	FIRE TANK/PUMPER - MAIN DRIVELINE DRIVEN SPLIT-SHAFT PTO/PUMP
A88-99D	EXPECTED TRUCK BODY LENGTH: 0.0 ft
AF3-517	FERRARA FIRE APPARATUS
AF7-99D	EXPECTED BODY/PAYLOAD CG HEIGHT ABOVE FRAME "XX" INCHES: 32.0 in
Engine	
101-23B	CUM L9 350EV HP @ 2000 RPM, 2200 GOV RPM, 1000 LB./FT @ 1400 RPM
Electronic Parameters	
79A-065	65 MPH ROAD SPEED LIMIT
79B-000	CRUISE CONTROL SPEED LIMIT SAME AS ROAD SPEED LIMIT
79K-007	PTO MODE ENGINE RPM LIMIT - 1100 RPM
79M-001	PTO MODE BRAKE OVERRIDE - SERVICE BRAKE APPLIED
79P-002	PTO RPM WITH CRUISE SET SWITCH - 700 RPM
79Q-003	PTO RPM WITH CRUISE RESUME SWITCH - 800 RPM
79S-001	PTO MODE CANCEL VEHICLE SPEED - 5 MPH
79U-007	PTO GOVERNOR RAMP RATE - 250 RPM PER SECOND
80G-002	PTO MINIMUM RPM - 700
80J-001	REGEN INHIBIT SPEED THRESHOLD - 0 MPH
Engine Equipment	
99C-017	2016-2019 ONBOARD DIAGNOSTICS/2010 EPA/CARB/FINAL GHG17 CONFIGURATION
99D-010	NO 2008 CARB EMISSION CERTIFICATION

13E-001	STANDARD OIL PAN
105-001	ENGINE MOUNTED OIL CHECK AND FILL
133-004	ONE PIECE VALVE COVER
014-1BX	SIDE OF HOOD AIR INTAKE WITH NFPA COMPLIANT EMBER SCREEN AND FIRE RETARDANT DONALDSON AIR CLEANER
124-1CE	LN 12V 320 AMP 4962PA PAD MOUNT ALTERNATOR
292-203	(3) DTNA GENUINE, FLOODED STARTING, MIN 2250CCA, 510RC, 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
291-017	WIRE GROUND RETURN FOR BATTERY CABLES WITH ADDITIONAL FRAME GROUND RETURN
289-001	NON-POLISHED BATTERY BOX COVER
87P-001	CAB AUXILIARY POWER CABLE
293-058	POSITIVE LOAD DISCONNECT WITH CAB MOUNTED CONTROL SWITCH MOUNTED OUTBOARD DRIVER SEAT
107-032	CUMMINS TURBOCHARGED 18.7 CFM AIR COMPRESSOR WITH INTERNAL SAFETY VALVE
108-002	STANDARD MECHANICAL AIR COMPRESSOR GOVERNOR
131-013	AIR COMPRESSOR DISCHARGE LINE
152-039	GVG, FIRE AND EMERGENCY SERVICE VEHICLES ENGINE WARNING
128-076	CUMMINS EXHAUST BRAKE INTEGRAL WITH VARIABLE GEOMETRY TURBO WITH ON/OFF DASH SWITCH
016-1DC	RH OUTBOARD UNDER STEP MOUNTED HORIZONTAL AFTERTREATMENT SYSTEM ASSEMBLY WITH RH HORIZONTAL TAILPIPE EXITING FORWARD OF REAR TIRES
28F-007	ENGINE AFTERTREATMENT DEVICE, AUTOMATIC OVER THE ROAD ACTIVE REGENERATION AND DASH MOUNTED SINGLE REGENERATION REQUEST/INHIBIT SWITCH
239-001	STANDARD EXHAUST SYSTEM LENGTH
237-022	RH HORIZONTAL TAILPIPE, EXIT FORWARD OF REAR TIRES AT 90 DEGREES
23U-001	6 GALLON DIESEL EXHAUST FLUID TANK
30N-003	100 PERCENT DIESEL EXHAUST FLUID FILL
43X-002	LH MEDIUM DUTY STANDARD DIESEL EXHAUST FLUID TANK LOCATION
23Y-001	STANDARD DIESEL EXHAUST FLUID PUMP MOUNTING
43Y-001	STANDARD DIESEL EXHAUST FLUID TANK CAP
273-018	HORTON DRIVEMASTER ADVANTAGE ON/OFF FAN DRIVE

276-002	AUTOMATIC FAN CONTROL WITH DASH SWITCH AND INDICATOR LIGHT, NON ENGINE MOUNTED
110-003	CUMMINS SPIN ON FUEL FILTER
118-008	COMBINATION FULL FLOW/BYPASS OIL FILTER
266-013	1100 SQUARE INCH ALUMINUM RADIATOR
103-039	ANTIFREEZE TO -34F, OAT (NITRITE AND SILICATE FREE) EXTENDED LIFE COOLANT
171-007	GATES BLUE STRIPE COOLANT HOSES OR EQUIVALENT
172-001	CONSTANT TENSION HOSE CLAMPS FOR COOLANT HOSES
270-008	AUXILIARY ENGINE COOLING USING WATER FROM FIRE PUMP
168-002	LOWER RADIATOR GUARD
134-001	ALUMINUM FLYWHEEL HOUSING
132-004	ELECTRIC GRID AIR INTAKE WARMER
155-058	DELCO 12V 38MT HD STARTER WITH INTEGRATED MAGNETIC SWITCH
Transmission	
342-1KD	ALLISON 3000 EVS AUTOMATIC TRANSMISSION WITH PTO PROVISION
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
84E-000	PRIMARY SHIFT SCHEDULE RECOMMENDED BY DTNA AND ALLISON, THIS DEFINED BY ENGINE AND VOCATIONAL USAGE
84F-000	SECONDARY SHIFT SCHEDULE RECOMMENDED BY DTNA AND ALLISON, THIS DEFINED BY ENGINE AND VOCATIONAL USAGE
84G-000	PRIMARY SHIFT SPEED RECOMMENDED BY DTNA AND ALLISON, THIS DEFINED BY ENGINE AND VOCATIONAL USAGE
84H-000	SECONDARY SHIFT SPEED RECOMMENDED BY DTNA AND ALLISON, THIS DEFINED BY ENGINE AND VOCATIONAL USAGE
84J-000	ENGINE BRAKE RANGE PRESELECT RECOMMENDED BY DTNA AND ALLISON, THIS DEFINED BY ENGINE AND VOCATIONAL USAGE
84K-000	ENGINE BRAKE RANGE ALTERNATE PRESELECT RECOMMENDED BY DTNA AND ALLISON, THIS DEFINED BY ENGINE AND VOCATIONAL USAGE
84N-200	FUEL SENSE 2.0 DISABLED - PERFORMANCE - TABLE BASED
84U-000	DRIVER SWITCH INPUT - DEFAULT - NO SWITCHES

84M-001	PUMP MODE INPUT ENABLED 3RD/4TH LOCKUP WIRED ON TCM INPUT AJ/BQ - ALLISON 5TH GEN TRANSMISSIONS
85B-004	4TH RANGE INDICATION ON TCM OUTPUT C - ALLISON 5TH GEN TRANSMISSIONS
353-027	VEHICLE INTERFACE WIRING CONNECTOR WITH PDM AND NO BLUNT CUTS, AT END OF FRAME
34C-001	ELECTRONIC TRANSMISSION CUSTOMER ACCESS CONNECTOR FIREWALL MOUNTED
362-824	(2) CUSTOMER INSTALLED CHELSEA 280 SERIES PTO'S
363-010	PTO MOUNTING, LH SIDE AND TOP RH 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
370-015	WATER TO OIL TRANSMISSION COOLER, IN RADIATOR END TANK
346-003	TRANSMISSION OIL CHECK AND FILL WITH ELECTRONIC OIL LEVEL CHECK
35T-001	SYNTHETIC TRANSMISSION FLUID (TES-295 COMPLIANT)
Front Axle and Equipment	
400-1A8	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
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
405-002	MERITOR 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-002	SYNTHETIC 75W-90 FRONT AXLE LUBE
Front Suspension	
620-010	14,600# TAPERLEAF FRONT SUSPENSION
619-005	MAINTENANCE FREE RUBBER BUSHINGS - FRONT SUSPENSION
410-001	FRONT SHOCK ABSORBERS
Rear Axle and Equipment	
420-1DR	RS-25-160 27,000# R-SERIES FIRE/EMERGENCY SERVICE SINGLE REAR AXLE
421-538	5.38 REAR AXLE RATIO

424-001	IRON REAR AXLE CARRIER WITH STANDARD AXLE HOUSING
386-073	MXL 17T MERITOR EXTENDED LUBE MAIN DRIVELINE WITH HALF ROUND YOKES
423-010	MERITOR 16.5X7 P CAST SPIDER 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
440-006	REAR OIL SEALS
426-074	HALDEX GOLDSEAL LONGSTROKE 1-DRIVE AXLE SPRING PARKING CHAMBERS
428-003	HALDEX AUTOMATIC REAR SLACK ADJUSTERS
41T-002	SYNTHETIC 75W-90 REAR AXLE LUBE
Rear Suspension	
622-1DE	27,000# FLAT LEAF SPRING REAR SUSPENSION WITH HELPER AND RADIUS ROD FOR FIRE/EMERGENCY SERVICE
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, WITH ATC OFF-ROAD SWITCH
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
480-009	BW AD-9 BRAKE LINE AIR DRYER WITH HEATER
479-015	AIR DRYER FRAME MOUNTED
460-058	STEEL AIR TANKS MOUNTED AFT INSIDE AND/OR BELOW FRAME JUST FORWARD OF REAR SUSPENSION
607-001	CLEAR FRAME RAILS FROM BACK OF CAB TO FRONT REAR SUSPENSION BRACKET, BOTH RAILS OUTBOARD
477-003	BW DV-2 AUTO DRAIN VALVE WITHOUT HEATER - WET TANK

Trailer Connections	
335-004	UPGRADED CHASSIS MULTIPLEXING UNIT
32A-002	UPGRADED BULKHEAD MULTIPLEXING UNIT
Wheelbase & Frame	
545-527	5275MM (208 INCH) WHEELBASE
546-101	11/32X3-1/2X10-15/16 INCH STEEL FRAME (8.73MMX277.8MM/0.344X10.94 INCH) 120KSI
547-001	1/4 INCH (6.35MM) C-CHANNEL INNER FRAME REINFORCEMENT
552-048	2100MM (83 INCH) REAR FRAME OVERHANG
55W-008	FRAME OVERHANG RANGE: 81 INCH TO 90 INCH
AC8-99D	CALC'D BACK OF CAB TO REAR SUSP C/L (CA): 142.15 in
AE8-99D	CALCULATED EFFECTIVE BACK OF CAB TO REAR SUSPENSION C/L (CA): 139.15 in
AE4-99D	CALC'D FRAME LENGTH - OVERALL: 319.79
FSS-0LH	CALCULATED FRAME SPACE LH SIDE: 91.06 in
FSS-0RH	CALCULATED FRAME SPACE RH SIDE: 212.48 in
AM6-99D	CALC'D SPACE AVAILABLE FOR DECKPLATE: 142.45 in
553-001	SQUARE END OF FRAME
550-001	FRONT CLOSING CROSSMEMBER
559-001	STANDARD WEIGHT ENGINE CROSSMEMBER
561-001	STANDARD CROSSMEMBER BACK OF TRANSMISSION
562-001	STANDARD MIDSHIP #1 CROSSMEMBER(S)
572-001	STANDARD REARMOST CROSSMEMBER
565-001	STANDARD SUSPENSION CROSSMEMBER
Chassis Equipment	
556-1AR	THREE-PIECE 14 INCH CHROMED STEEL BUMPER WITH COLLAPSIBLE ENDS
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
970-038	TANK BODY 0 TO 1500 GALLONS
Fuel Tanks	
204-215	50 GALLON/189 LITER SHORT 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)
122-1H3	DETROIT FUEL/WATER SEPARATOR WITH WATER IN FUEL SENSOR
216-020	EQUIFLO INBOARD FUEL SYSTEM
11F-998	NO NATURAL GAS VEHICLE FUEL TANK VENT LINE/STACK
20E-004	AUXILIARY FUEL SUPPLY AND RETURN PORTS LOCATED ON LH FUEL TANK
202-016	HIGH TEMPERATURE REINFORCED NYLON FUEL LINE
Tires	
093-994	MICHELIN XZE 12R22.5 16 PLY RADIAL FRONT TIRES
094-1RM	MICHELIN X WORKS Z 12R22.5 16 PLY RADIAL REAR TIRES
Hubs	
418-060	CONMET PRESET PLUS PREMIUM IRON FRONT HUBS
450-060	CONMET PRESET PLUS PREMIUM IRON REAR HUBS
Wheels	
502-1EF	ALCOA LVL ONE 88367X 22.5X8.25 10-HUB PILOT 5.79 INSET ALUMINUM DISC FRONT WHEELS
505-1EF	ALCOA LVL ONE 88367X 22.5X8.25 10-HUB PILOT ALUMINUM DISC REAR WHEELS
524-001	POLISHED FRONT WHEELS; OUTSIDE ONLY
525-001	POLISHED REAR WHEELS; OUTSIDE OF OUTER WHEELS ONLY
496-011	FRONT WHEEL MOUNTING NUTS
497-011	REAR WHEEL MOUNTING NUTS
Cab Exterior	
829-071	106 INCH BBC FLAT ROOF ALUMINUM CONVENTIONAL CAB
650-008	AIR CAB MOUNTING
648-002	NONREMOVABLE BUGSCREEN MOUNTED BEHIND GRILLE
678-067	SAFETY YELLOW LH AND RH INTERIOR GRAB HANDLES AND LH AND RH EXTERIOR NON-SLIP GRAB HANDLES
646-023	HOOD MOUNTED CHROMED PLASTIC GRILLE
65X-003	CHROME HOOD MOUNTED AIR INTAKE GRILLE
644-004	FIBERGLASS HOOD
690-002	TUNNEL/FIREWALL LINER
727-036	VALVE AND PLUMBING FOR CUSTOMER FURNISHED AIR HORN, PIPING CAPPED AT FIREWALL
726-002	DUAL ELECTRIC HORNS
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

302-001	(5) AMBER MARKER LIGHTS
311-022	HEADLIGHTS OFF WITH IGNITION OFF, WITH DAYTIME RUNNING LIGHTS
294-046	OMIT STOP/TAIL/BACKUP LIGHTS AND PROVIDE WIRING WITH SEPARATE STOP/TURN WIRES TO 4 FEET BEYOND END OF FRAME
300-015	STANDARD FRONT TURN SIGNAL LAMPS
469-014	AUTOMATIC ON/OFF, ENGINE COMPARTMENT, HOOD ACTIVATED WORK LIGHT WITH MANUAL OVERRIDE
744-1BC	DUAL WEST COAST BRIGHT FINISH HEATED MIRRORS WITH LH AND RH REMOTE
797-001	DOOR MOUNTED MIRRORS
796-001	102 INCH EQUIPMENT WIDTH
743-204	LH AND RH 8 INCH BRIGHT FINISH CONVEX MIRRORS MOUNTED UNDER PRIMARY MIRRORS
729-001	STANDARD SIDE/REAR REFLECTORS
275-061	ELECTRIC HORN WARNING SYSTEM FOR PARK BRAKE NOT SET WITH DOOR OPEN AND ALL IGNITION KEY POSITIONS
768-043	63X14 INCH TINTED REAR WINDOW
661-003	TINTED DOOR GLASS LH AND RH WITH TINTED NON-OPERATING WING WINDOWS
654-027	RH AND LH ELECTRIC POWERED WINDOWS, PASSENGER SWITCHES ON DOOR(S)
663-013	TINTED WINDSHIELD
659-019	2 GALLON WINDSHIELD WASHER RESERVOIR WITHOUT FLUID LEVEL INDICATOR, FRAME MOUNTED

Cab Interior

707-1AK	OPAL GRAY VINYL INTERIOR
706-013	MOLDED PLASTIC DOOR PANEL
708-013	MOLDED PLASTIC DOOR PANEL
772-006	BLACK MATS WITH SINGLE INSULATION
691-008	FORWARD ROOF MOUNTED CONSOLE WITH UPPER STORAGE COMPARTMENTS WITHOUT NETTING
694-010	IN DASH STORAGE BIN
742-007	(2) CUP HOLDERS LH AND RH DASH
680-006	GRAY/CHARCOAL FLAT DASH
860-004	SMART SWITCH EXPANSION MODULE
700-002	HEATER, DEFROSTER AND AIR CONDITIONER
701-001	STANDARD HVAC DUCTING
703-005	MAIN HVAC CONTROLS WITH RECIRCULATION SWITCH
170-015	STANDARD HEATER PLUMBING

130-041	VALEO HEAVY DUTY A/C REFRIGERANT COMPRESSOR
702-002	BINARY CONTROL, R-134A
739-034	PREMIUM INSULATION
285-013	SOLID-STATE CIRCUIT PROTECTION AND FUSES
280-007	12V NEGATIVE GROUND ELECTRICAL SYSTEM
324-014	DOME LIGHT WITH 3-WAY SWITCH ACTIVATED BY LH AND RH DOORS
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 1901-2009/2016 COMPLIANT SEAT SENSOR
760-1F0	SEATS INC 911 2 MAN MID BACK NON SUSPENSION PASSENGER SEAT WITH NFPA 2009 COMPLIANT SEAT SENSORS
711-004	LH AND RH INTEGRAL DOOR PANEL ARMRESTS
758-023	GRAY VINYL DRIVER SEAT COVER WITH GRAY CORDURA CLOTH BOLSTER AND HEADREST
761-017	GRAY CORDURA PLUS CLOTH PASSENGER SEAT COVER
763-105	NFPA 1901-2009 HIGH VISIBILITY ORANGE SEAT BELTS
532-002	ADJUSTABLE TILT AND TELESCOPING STEERING COLUMN
540-015	4-SPOKE 18 INCH (450MM) STEERING WHEEL
765-002	DRIVER AND PASSENGER INTERIOR SUN VISORS
67E-998	NO ENTRY/ACCESS/STEP WIRING
Instruments & Controls	
732-004	GRAY DRIVER INSTRUMENT PANEL
734-004	GRAY CENTER INSTRUMENT PANEL
87L-001	ENGINE REMOTE INTERFACE WITH PARK BRAKE INTERLOCK
870-001	BLACK GAUGE BEZELS
486-001	LOW AIR PRESSURE INDICATOR LIGHT AND AUDIBLE ALARM
840-002	2 INCH PRIMARY AND SECONDARY AIR PRESSURE GAUGES
198-006	ENGINE COMPARTMENT MOUNTED AIR RESTRICTION INDICATOR WITH GRADUATIONS, WITH WARNING LIGHT IN DASH
149-013	ELECTRONIC CRUISE CONTROL WITH SWITCHES IN LH SWITCH PANEL
156-020	IGNITION SWITCH WITH NON REMOVABLE KEY
811-042	ICU3S, 132X48 DISPLAY WITH DIAGNOSTICS, 28 LED WARNING LAMPS AND DATA LINKED
160-038	HEAVY DUTY ONBOARD DIAGNOSTICS INTERFACE CONNECTOR LOCATED BELOW LH DASH
844-001	2 INCH ELECTRIC FUEL GAUGE
148-073	ENGINE REMOTE INTERFACE FOR REMOTE THROTTLE

163-002	ENGINE REMOTE INTERFACE CONNECTOR AT END OF FRAME
856-001	ELECTRICAL ENGINE COOLANT TEMPERATURE GAUGE
864-001	2 INCH TRANSMISSION OIL TEMPERATURE GAUGE
830-017	ENGINE AND TRIP HOUR METERS INTEGRAL WITHIN DRIVER DISPLAY
372-051	CUSTOMER FURNISHED AND INSTALLED PTO CONTROLS
852-002	ELECTRIC ENGINE OIL PRESSURE GAUGE
786-119	NFPA VEHICLE DATA RECORDER AND SEATBELT DISPLAY
810-027	ELECTRONIC MPH SPEEDOMETER WITH SECONDARY KPH SCALE, WITHOUT ODOMETER
817-001	STANDARD VEHICLE SPEED SENSOR
812-001	ELECTRONIC 3000 RPM TACHOMETER
162-002	IGNITION SWITCH CONTROLLED ENGINE STOP
264-014	(2) FOOT SWITCHES: (1) OFFICER AIR HORN AND (1) DRIVER AIR HORN
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
27D-004	ALTERNATING FLASHING HEADLAMP SYSTEM WITH BODY BUILDER CONTROLLED ENGAGEMENT
882-018	ONE VALVE PARKING BRAKE SYSTEM WITH DASH VALVE CONTROL AUTONEUTRAL AND WARNING INDICATOR
299-013	SELF CANCELING TURN SIGNAL SWITCH WITH DIMMER, WASHER/WIPER AND HAZARD IN HANDLE
298-039	INTEGRAL ELECTRONIC TURN SIGNAL FLASHER WITH HAZARD LAMPS OVERRIDING STOP LAMPS
Design	
065-000	PAINT: ONE SOLID COLOR
Color	
980-UFJ	CAB COLOR A: 00910068EB BLAZE RED ELITE BC
986-020	BLACK, HIGH SOLIDS POLYURETHANE CHASSIS PAINT
963-003	STANDARD E COAT/UNDERCOATING

TILT TABLE TESTING

In compliance with the latest addition of NFPA 1901, Section 4.13.1.1 and SAE J2180, this vehicle exceeds the following “Tilt Table” procedures measuring the Static Rollover Threshold for Heavy Trucks set forth by the current standards. All equipment required for meeting current testing guidelines shall be located at the manufacture's facility and actual testing performed and certified by an independent third party testing company.

The vehicle shall be tilted at a minimum of 27 degrees evaluating the level of lateral acceleration required to roll the vehicle over in a steady turning situation. Transient, vibratory, or dynamic rollover situations are not simulated by this test. The test accuracies are accepted for vehicles that rollover at lateral acceleration levels below 0.5 g corresponding to a tilt table angle of less than approximately 27 degrees.

In addition to receiving a certificate of compliance, the purchaser also requires a wheel-end loading certification listing the weight on each wheel, with the vehicle on the tilt table. In accordance with NFPA 1901, 4.14.13.3, the results of the wheel-end loading shall certify the vehicle, at the time of its manufacture, is in compliance, with side-to-side weight distributions.

AIR HORN, DRIVER'S SIDE

There shall be one-(1) 24" Grover air horn installed in compliance with NFPA on the front fender driver's side, plumbed to the chassis air supply system thru an air protection valve, manufactured from spun brass material with an easily separated die cast sounding unit for serviceability.

AIR HORN WIRING

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

The air horn shall be wired o the Freightliner driver and officer foot switches.

SIREN SPEAKER

The driver's side speaker shall be a Cast Products rated at 100-watts wired to the electronic siren.

MUD FLAPS, FRONT

The front axle mud flaps shall be constructed from hard black rubber and installed behind the tires.

TIRE PRESSURE MONITORING SYSTEM

Each tire installed on the apparatus shall be equipped with a tire pressure monitoring device. The device shall consist of a valve stem cap to with an LED tire alert to indicate tire pressure conditions. The LED shall flash when the tire drops 8 psi below the factory setting.

STAINLESS STEEL WHEEL TRIM

The front and rear axle wheels shall be trimmed with stainless steel hub and lug nut covers. The front axle’s hub cover shall be equipped with holes for oil level viewing.

BATTERY CHARGING RECEPTACLE

There shall be a Kussmaul VW-8, 12-volt male power inlet receptacle wired to the 12-volt chassis batteries. The receptacle shall be configured to allow a remote 12-volt DC power source to charge the batteries. A matching male plug shall be provided and shipped loose with the apparatus.

The battery charging receptacle cover shall be a Kussmaul 091-3YW, yellow in color.

The receptacle shall be located below the driver's side cab door.

FIRE PUMP MOUNTING

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

REFLECTIVE DOOR STRIPING

There shall be 96 square inches of a single color reflective material installed on the inside lower panel of each cab door.

LIGHT, IGNITION ON

A green ignition on light shall be located in the cab to indicate power to the ignition.

LOAD MANAGER

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

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

MASTER LIGHT SWITCH PANEL

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

ELECTRONIC SIREN

There shall be one-(1) Whelen model 295SLSA1 siren provided in the cab. 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 sire amplifier shall have an adjustable bail bracket with installation hardware. The 295SLSA1 is covered by a two year factory warranty.

LIGHT, DOOR AJAR

A red door ajar LED flashing light shall be mounted in the cab within view of the driver.

The light circuit shall be wired so that the light circuit is deactivated when the parking brakes of the apparatus are applied.

A label shall be applied adjacent to the light 'DOOR OPEN'.

LIGHTS, CAB GROUND

There shall be one-(1) round halogen Trucklite ground light installed below each cab door illuminating the area below providing a safe entrance and exit for cab occupants. All cab ground lights shall automatically activate when any cab door is opened and by a switch on the dash.

SAFETY SIGNS, GENERAL REQUIREMENTS

Safety signs with text shall conform to the general principles of ANSI/NEMA Z535.4, *Product Safety Signs and Labels*. Safety signs without text shall conform to the general principles for two-panel safety signs of ISO 9244, *Earth-Moving Machinery - Machine Safety Labels*.

Apparatus built for sale in the United States shall employ safety signage that complies with ANSI/NEMA Z535.4.

Apparatus built for sale outside the United States shall employ safety signage that complies with ANSI/NEMA Z535.4 or ISO 9244.

Safety signs referenced in this standard beginning with the letters FAMA shall conform to the text and graphics of the referenced safety sign number found in FAMA TC010, *Standard Product Safety Sign Catalog for Automotive Fire Apparatus*.

SAFETY SIGNS, BATTERY EXPLOSION

A safety sign(s) FAMA01, shall be provided near the battery location that warns of potential injury or death that could be caused by the batteries. The label shall also state precautions that should be taken while working on or around the batteries.

SAFETY SIGNS, ROTATING SHAFTS

Safety signs FAMA02, shall be provided on each side of the frame rail and in any other location(s) where rotating shaft hazards are apparent. The label shall warn of potential injury or death that could be caused by the movement of the shaft(s) as well as precautions that should be taken while working on or around them.

SAFETY SIGNS, HOT SURFACES

Safety sign(s) FAMA03, shall be provided near any hot surface that warns of potential injury or death that could be caused by contact with the surface. The label shall also state precautions that should be taken while working on or around the surface.

SAFETY SIGNS, HOT EXHAUST

A safety sign FAMA04, shall be provided near any hot exhaust surface that warns of potential injury or death that could be caused by contact with the surface. The label shall also state precautions that should be taken while working on or around the surface.

SAFETY SIGN, SPINNING FAN

A safety sign FAMA05, shall be provided on both sides of the engine fan. The label shall warn of potential injury or death that could be caused by the movement of the fan as well as precautions that should be taken while working on or around them.

SAFETY SIGNS, SEATED & BELTED

Safety signs FAMA07, which warns of the importance of seat belt use, shall be visible from each seat that is intended to be occupied while the vehicle is in motion.

SAFETY SIGN, AIR CONDITIONING REFRIGERANT

If the apparatus is equipped with any type of air conditioning system, a safety sign FAMA09, shall be provided that is located in an area that would be visible to service personnel. The label shall state that the system contains R134A, the necessary precautions that should be taken and the dangers of working on or around the system.

SAFETY SIGN, CAB EQUIPMENT MOUNTING

A safety sign FAMA10, which warns of the need to secure items in the cab, shall be visible inside the cab.

SAFETY SIGN, FIRE SERVICE TIRE RATING

A safety sign FAMA12, which warns of the special requirements for fire service–rated tires, shall be visible to the driver entering the cab of any apparatus so equipped.

SAFETY SIGN, CAB SEATING

A safety sign FAMA14 shall be located in the cab visible to the operator.

The sign shall read:
This vehicle has a seating capacity of 3 personnel.

Carrying additional personnel may result in death of serious injury.

SAFETY SIGNS, HELMET WORN IN CAB

A safety sign FAMA15, which warns not to wear helmets while the vehicle is in motion, shall be visible from each seat that is intended to be occupied while the vehicle is in motion.

SAFETY SIGN, VEHICLE BACKING

A safety sign FAMA17, shall be provided inside of the cab in view of the driver advising of proper procedures to following when the apparatus is in reverse motion. The label shall also warn of potential injury or death that be caused by failing to follow proper procedures.

SAFETY SIGNS, INTAKE/DISCHARGE CAP PRESSURES

If the apparatus is equipped with a pump system, safety signs FAMA18, shall be provided in all areas that intakes and discharges are capped. The label shall give instruction on how to properly remove the cap. The label shall also warn of potential dangers, injury or death that be caused by failing to follow proper cap removal procedures.

SAFETY SIGNS, HOSE RESTRAINT REQUIRED

A safety sign FAMA22, which warns of the need to secure hose, shall be visible to personnel at each hose storage area.

SAFETY SIGNS, CLIMBING METHOD INSTRUCTION

Safety signs FAMA23, which warns of the proper climbing method, shall be visible to personnel entering the cab and at each designated climbing location on the body.

SAFETY SIGNS, RIDING ON EXTERIOR

Safety signs FAMA24, which warns personnel not to ride on the vehicle, shall be located at the rear step areas and at any cross walkways.

SAFETY SIGN, PUMP TRAINING

A safety sign FAMA25, which warns of the need for training prior to operating the apparatus, shall be located on the pump operator's panel.

SAFETY SIGNS, NO-STEP

Safety signs FAMA26, shall be provided in any horizontal location that a firefighter may feel tempted to use as a step but is not designed, constructed or intended to be a stepping, standing or walking surface. The label shall state that the surface is not intended for this purpose and indicate potential injury or death in doing so.

SAFETY SIGN, SIREN NOISE

A safety sign FAMA42, shall be provided inside the driver's door warning of potential injury that could be received from the noise of the siren. The label shall also state safety precautions that should be taken when the siren is in use.

SAFETY SIGN, APPARATUS MOVEMENT

A permanently affixed movement warning plate shall be installed near the door ajar light that reads:

"DO NOT MOVE APPARATUS WHEN LIGHT IS ON".

PLATE, FLUID CAPACITY

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

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

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

Chassis Manufacturer
Production Number
Paint Number
Year Built
Date Shipped
Vehicle Identification Number

PLATE, OVERALL HEIGHT/LENGTH/WEIGHT

An Overall Height/Length/Weight information plate shall be installed that can be clearly identified and visible to the driver while in the seated position showing the apparatus completed overall height, length, (in feet and inches) and gross vehicle weight (in tons) current to the apparatus manufactured date.

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

PUMP ENCLOSURE, SIDE CONTROL

The pump enclosure superstructure shall be constructed of aluminum tubing, channel, angle, and break-formed components. The framework shall be formed by beveled aluminum alloy extrusions and electrically seam welded both internally and externally at each joint using 5356 aluminum alloy welding wire. The main, framework shall be constructed of 3.00 x 3.50, 6063-T6 aluminum extrusions. The break-formed components shall be constructed from 3/16" (1.875) aluminum.

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

The front of the pump module shall be covered with aluminum tread plate to keep road debris from the front of the pump.

The pump enclosure provides an area above the pump for the installation of crosslays or dunnage area.

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

SEPARATE PUMP MODULE

The pump module will be a self-supported structure mounted independently from the body and chassis cab. The pump module will be constructed entirely of extrusions and aluminum plate and shall be bolted to the chassis frame rails. The framework will be formed from beveled aluminum alloy extrusions and electrically seam welded both internally and externally at each joint using 5356 aluminum alloy welding wire. The main framework shall be 3.00 x 3.50, 6063-T6 aluminum extrusion. Aluminum angle will be welded such that a recessed pump panel can be mounted inside the extrusion perimeter. The module shall

be mounted to the chassis frame rails utilizing a "U" bolt spring mounting system. The pump module design must allow normal frame deflection without imposing stress on the pump module structure or side running boards.

DUNNAGE AREA W/TREADPLATE WALLS

The open area above the pump enclosure shall be provided for additional equipment storage shall be trimmed with 1/8" (.125) aluminum tread plate on all vertical interior walls and shall have slotted aluminum floors.

PUMP PANELS

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

The operator's master gauge panel shall be vertically hinged with push style latch for access to gauges and auxiliary controls.

The operator's control panel shall be located below the master gauge panel and constructed of 1/8" (.125) black anodized, non-glare aluminum.

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

The right side upper panel shall be vertically hinged with double doors and push style latches for pump compartment access. The doors shall be constructed of .125" aluminum tread plate.

The right side lower panel shall be removable for serviceability. The panel shall be constructed of 1/8" (.125) black anodized, non-glare aluminum.

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

A safety sign FAMA25, which warns of the need for training prior to operating the apparatus, shall be located on the pump operator's panel.

PUMP PANEL LIGHT, LEFT SIDE

One-(1) individual OnScene Access LED pump panel light with on/off switch shall be mounted under the light shield left side. For optimum visibility during nighttime operations, the light shall be mounted as high as possible.

PUMP PANEL LIGHT, RIGHT SIDE

One-(1) individual OnScene Access LED pump panel light with on/off switch shall be mounted under the light shield right side. For optimum visibility during nighttime operations, the light shall be mounted as high as possible.

LIGHT, PUMP COMPARTMENT

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

RUNNING BOARDS, LEFT & RIGHT SIDE

Running board shall be provided on the left and right side of pump module constructed of anodized slotted aluminum extrusion. The extrusions shall be punched and raised to provide superior traction during inclement weather operations. The running boards shall be bolted to the pump module substructure and shall be spaced out 1/4" from the module for additional run off.

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

HANDRAILS, ABOVE DUNNAGE AREA

One-(1) pair of 12" handrails shall be installed at the top of the pump enclosure. The handrails shall be mounted centered one-(1) each side of the dunnage area. The handrails shall be constructed from 1-1/4" knurled aluminum. The handrails shall be mounted with chrome plated end stanchions.

The handrails shall meet or exceed NFPA 1901 requirements.

MASTER GAUGES, 4-1/2"

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

The pressure gauges shall maintain performance of all features and be free from defects in material and workmanship which includes fluid fill leakage and discoloration for seven years.

PRESSURE GAUGES, 2-1/2"

The discharges shall be provided with 2-1/2" pressure gauges. The discharge gauges shall be liquid filled with a solution to assure visual readings and reduce inner lens condensation. The body of the gauges shall be constructed of Zytel nylon with chrome-plated bezels. The face of the gauges shall be Spun Metal with black background and white markings reading from zero to 400 PSI.

The gauges shall be installed at each discharge control on the pump operator's panel. On side mount pump applications with push pull handles each gauge shall incorporate a Thuemling Instrument Group 1-piece module assembly consisting of the gauge, push-pull and trim bezel.

The pressure gauges shall maintain performance of all features and be free from defects in material and workmanship which includes fluid fill leakage and discoloration for seven years.

GAUGE BEZELS, COLOR CODED

The pump panel master and pressure gauge bezels shall be color coded.

ENGINE THROTTLE

There shall be a Vernier engine throttle with quick release at the center of the controller. The throttle shall be mounted on the pump panel.

PUMP PANEL TAGS

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

NFPA INDIVIDUAL GAUGE PACKAGE

The following monitoring devices shall be installed on the pump operator's panel in compliance with the latest version of NFPA.

- 2" weatherproof oil pressure gauge
- 2" weatherproof engine coolant temperature gauge
- 3" tachometer indicating engine revolutions per minute
- 2" voltmeter that reads from 8 to 16 volts

There shall be an audible alarm, with warning indicator lights, mounted behind the pump operator's panel, connected to the oil pressure and water temperature gauges alerting the pump operator if low oil pressure or high water temperature condition exists.

PUMP SYSTEM, HALE QMAX SINGLE STAGE

PUMP ASSEMBLY

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

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.

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

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

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

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

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

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

The impeller clearance rings shall be bronze, easily renewable without replacing impeller or pump volute body, and of wraparound double labyrinth design for maximum efficiency.

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

DRIVE UNIT

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

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

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

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

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

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

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

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

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

PACKING GLANDS

The pump shaft shall have only one packing gland located on the inlet side of the pump. It shall be of split design for ease of repacking. The packing gland must be a full circle threaded design to exert uniform pressure on packing and to prevent "cocking" and uneven packing load when it is tightened. It shall be easily adjusted by hand with rod or screwdriver, with no special tools or wrenches required. The packing rings shall be of a unique, permanently lubricated, long life graphite composition and have sacrificial zinc foil separators to protect the pump shaft from galvanic corrosion.

PUMP SHIFT

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

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

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

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

PRIMING SYSTEM, PUMP

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

VALVE, MASTER DRAIN

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

VALVE, INDIVIDUAL DRAIN

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

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

The drain/bleeder valves shall be located at the bottom of the side pump module panels.

All drains and bleeders shall discharge below the running boards.

PUMP TEST POINTS

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

PUMP CERTIFICATION, 1500 GPM

The pump when dry, shall be capable of taking suction and discharging water in accordance with current NFPA 1901. The pump shall be tested at the manufacturer's facility by an independent, third party testing service. The conditions of the pump test shall be as outlined in current NFPA 1901. The tests shall include, at minimum, the pump test, the pumping engine overload test, the pressure control system test, the priming device tests, the vacuum test, and the water tank to pump flow test as outlined in current NFPA 1901.

A Piping hydrostatic test shall be performed as outlined in current NFPA 1901.

The pump shall meet and perform the following test to receive certification:
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

PUMP TEST CERTIFICATION PLATE

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

A label shall be provided on the pump operator's panel that states the following:
"Warning: Death or serious injury might occur if proper operating procedures are not followed". The pump operator as well as individuals connecting supply or discharge hoses to the apparatus must be familiar with water hydraulics hazards and component limitations.

STEAMER INLETS, 6"

A 6" NST steamer inlet with removable screen and long handle cap shall be provided on the left and right side pump panels.

INTAKE RELIEF VALVE

There shall be an Akron model 53 suction side relief valve provided in the pump system. The relief valve is adjustable from 50-250 psi and set at the factory at 125 psi.

PRESSURE RELIEF VALVE

There shall be a Hale QG pressure relief valve provided. This automatic pressure control device shall be a single bronze variable pressure setting relief valve of ample capacity to prevent an undue pressure rise as per NFPA Pamphlet No. 1901. An increase in pump pressure shall open the normally closed valve. A control light on the pump panel shall be installed to signal when open. In event of relief valve control failure, the pump is to remain operable for the complete range of the pump's rated capacity, without requiring the closing of any emergency or "in case of failure" (off/on) valves.

The pressure relief shall discharge to atmosphere, and the discharge shall direct away from the operator’s position.

TANK TO PUMP

The booster tank shall be connected to the intake side of the pump with a check valve. The 3" tank to pump line shall run from a bottom sump into the 3" valve. To prevent damage due to chassis flexing or vibration, a short 3" flexible rubber hose coupling shall be used to connect the tank to the intake valve.

The tank to pump valve shall be a quarter turn fixed pivot design. The valve shall be controlled by a chrome push/pull locking "T" handle installed at the pump operator's panel.

TANK FILL

A 2" tank fill line shall be provided, using a quarter turn full flow ball valve and high-pressure flexible hose. The valve shall be push pull controlled from the pump operator's panel.

ENGINE COOLER

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

PUMP COOLER

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

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

PLUMBING SYSTEM

All inlet and outlet lines shall be plumbed with either, stainless steel pipe, flexible polypropylene tubing or synthetic rubber hose reinforced with hi-tensile polyester braid. All hoses shall be equipped with stainless steel couplings. All stainless steel hard plumbing shall be a minimum of a schedule 10 wall thickness. Where vibration or chassis flexing may damage or loosen piping or where a coupling is required for servicing, the piping shall be equipped with Victaulic or rubber couplings. Plumbing manifold bodies shall be ductile cast iron or stainless steel. All piping lines are to be drained through a master drain valve or shall be equipped with individual drain valves. All drain lines shall be extended with a hose to drain below the chassis frame. All water carrying gauge lines shall be of flexible polypropylene tubing. All piping, hose and fittings shall have a minimum of a 500 PSI hydrodynamic pressure rating.

PLUMBING FINISH

The plumbing shall be natural finish and shall not be painted.

APPARATUS VALVES, AKRON

The apparatus valves (unless otherwise specified) shall be Akron heavy-duty swing out 8000 series 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. The valve shall not require the lubrication of seats or any other internal waterway parts and be capable of swinging out of the waterway for maintenance by the removal of six bolts. The valve shall a 10- year warranty covered by Akron Brass.

SUCTION(S), 2-1/2" LEFT PANEL

One (1) 2-1/2" swing operated ball valve(s) shall be installed on the left side pump panel plumbed to the suction side of the pump with 2-1/2" piping. The suction(s) shall equipped with a 2-1/2" FNST chrome inlet swivel, brass inlet strainer, chrome plug with chain and 3/4" drain valve. The control handle shall be located at the valve.

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

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

DISCHARGE ELBOWS

All 2-1/2" side discharge outlets shall terminate with chrome-plated 30-Degree elbows with 2-1/2" MNST threads and chrome vented caps/chains.

The caps shall automatically release pressure in the discharge outlet before the threads are completely disengaged unless the outlet and the cap are equipped with drains or bleeder valves.

CROSSLAYS, 1-3/4" DOUBLE LAY

Two-(2) pre-connected crosslay compartments shall be provided above the pump module. Each crosslay bed shall accommodate 200' of 1-3/4" double jacket hose. Stainless steel nylon guide rollers shall be installed at each end with stainless steel scuff plates around the perimeter to protect the painted surface.

One-(1) 2" ball valve with 90-degree mechanical swivel shall be installed for each crosslay. The valve shall be plumbed to the crosslay with 2" high-pressure flexible hose and stainless steel couplings. The high pressure hose shall be tested to 1200 PSI. The crosslays shall be push pull controlled at the pump operator's panel.

The crosslays shall be equipped with a 3/4 quarter-turn drain valve.

A safety sign FAMA22, which warns of the need to secure hose, shall be visible to personnel at the hose storage area.

CROSSLAY COVER, HYPALON

There shall be a Hypalon crosslay cover provided with the apparatus secured by twist-lock connectors along the top protecting the crosslay hose. The cover prevents hose from inadvertently deploying during normal operations meeting the current NFPA requirements.

A safety sign FAMA22, which warns of the need to secure hose, shall be visible to personnel at the hose storage area.
The Hypalon end flaps shall be secured at the bottom using pushpins. The cover prevents hose from inadvertently deploying during normal operations meeting the current NFPA requirements.
The cover and/or end flaps shall be red in color.

DISCHARGES, 2-1/2" LEFT SIDE

There shall be two-(2) discharge outlets with a 2-1/2" valve on the left side pump panel. The outlets shall be push pull controlled from the operator's panel and terminate with 2-1/2" MNST threads.

DISCHARGES, 2-1/2" RIGHT SIDE

There shall be two-(2) discharge outlets with a 2-1/2" valve on the right side pump panel. The outlets shall be push pull controlled from the operator's panel and terminate with 2-1/2" MNST threads.

DECK GUN PLUMBING, 3"

A 3" deck pipe shall be installed above the pump in such a manner that a monitor can be mounted and used effectively. The piping shall be installed securely so no movement develops when the line is charged. The piping shall terminate with 3" NPT threads and a 4-bolt flange for mounting a monitor. The 3" valve shall be push pull controlled from the operator's panel.

DISCHARGE, 2-1/2" LEFT REAR

There shall be one-(1) discharge outlet with a 2-1/2" valve plumbed to the left rear of the apparatus. The outlet shall be push pull controlled from the operator's panel and terminate with 2-1/2" MNST adapter.

30 DEGREE ELBOW(S) - 2-1/2" FNST X 2-1/2" MNST

There shall be one (1) Trident model 01.010.0 2-1/2" FNST x 2-1/2" MNST chrome plated elbow(s) supplied with the apparatus. The elbow(s) shall have a 30 degree turn down.

FOAM TANK NO. 2

The foam tank shall have a capacity of 20 gallons designed as an integral part of the water tank and shall have a manual fill tower. The fill tower shall be constructed of 1/2" PT3™ polypropylene and shall be a minimum dimension of 8" x 8" outer perimeter. Each foam fill tower shall be constructed of a colored material (yellow, green and black) indicating which tower is to receive each type of foam utilized. The capacity of the tank shall be engraved on the top of the fill tower lid. The tower shall be located in the right front corner of the tank unless otherwise specified. The tower shall have a 1/4" thick removable polypropylene screen and a stainless steel hinged-type cover. Inside the fill tower, approximately 1.5" down from the top, there shall be an anti-foam fill tube that extends down to the bottom of the tank. A pressure vacuum vent shall be provided in the lid of the fill tower.

WATER TANK

The tank shall have a capacity of 1000 U.S. gallons and shall be constructed of PT3™ polypropylene material. This material shall be a non-corrosive stress relieved thermoplastic and UV stabilized for maximum protection. Tank shell thickness may vary depending on the application and may range from ½ to 1" as required. Internal baffles are generally 3/8" in thickness.

ISO CERTIFICATION

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

DESIGN

Each tank is designed to the customer's specification and/or drawing submittal. An approval drawing is sent to the customer prior to commencing manufacturing. Upon receipt of the signed approval drawing, the tank is scheduled for production.

CONSTRUCTION

The booster and/or foam tank shall be of a specific configuration and is so designed to be completely independent of the body and compartments. Joints and seams shall be fused using nitrogen gas as required and tested for maximum strength and integrity. The tank construction shall include PolyProSeal™ technology wherein a sealant shall be installed between the plastic components prior to being fusion welded. This sealing method shall provide a liquid barrier offering leak protection in the event of a weld compromise. The top of the booster tank is fitted with removable lifting assembly designed to facilitate tank removal. The transverse and longitudinal swash partitions shall be manufactured of a minimum of 3/8" PT3™ polypropylene. All partitions shall be equipped with vent and air holes to permit movement of air and water between compartments. The partitions shall be designed to provide maximum water flow.

All swash partitions interlock with one another and are completely fused to each other as well as to the walls of the tank. All partitions and spacing shall comply with NFPA 1901. The walls shall be welded to the floor of the tank providing maximum strength as part of the tank's unique Full Floor Design™. Tolerances in design allow for a maximum variation of 1/8" on all dimensions.

WATER FILL TOWER AND COVER

The tank shall have a combination vent and manual fill tower. The fill tower shall be constructed of 1/2" PT3™ polypropylene and shall be a minimum dimension of 8" x 8" outer perimeter. The fill tower shall be blue in color indicating that it is a water-only fill tower. The tower shall be located in the left front corner of the tank unless otherwise specified by the tank manufacturer to the purchaser. The tower shall have a 1/4" thick removable polypropylene screen and a PT3™ polypropylene hinged cover. The capacity of the tank shall be engraved on the top of the fill tower lid. Inside the fill tower there shall be a combination vent/overflow pipe. The vent overflow shall be a minimum of schedule 40 polypropylene pipe with a minimum I.D. of 4" that is designed to run through the tank and shall be piped to discharge water behind the rear wheels as required in NFPA 1901 so as to not interfere with rear tire traction.
The tank cover shall be constructed of 1/2" thick PT3™ polypropylene and UV stabilized, to incorporate a multi-piece locking design, which allows for individual removal and inspection if necessary. The tank cover(s) shall be flush or recessed 3/8" from the top of the tank and shall be fused to the tank walls and longitudinal partitions for maximum integrity. Each one of the covers shall have hold downs consisting of 2" minimum polypropylene dowels spaced a maximum of 40" apart. These dowels shall extend through the covers and shall assist in keeping the covers rigid under fast filling conditions. A minimum of two lifting dowels shall accommodate the necessary lifting hardware.

SUMP

There shall be one (1) sump standard per tank. The sump shall be constructed of a minimum of 1/2" PT3™ polypropylene and be located in the left front quarter of the tank, unless specified otherwise. On all tanks that require a front suction, a 3" schedule 40 polypropylene pipe shall be installed that shall incorporate a dip tube from the front of the tank to the sump location. The sump shall have a minimum 3" NPT threaded outlet on the bottom for a drain plug per NFPA. This shall be used as a combination clean-out and drain. All tanks shall have an anti-swirl plate located approximately 3" above the inside floor.

OUTLETS

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

MOUNTING

The UPF Poly-Tank® III shall rest on the body cross members in conjunction with such additional cross members, spaced at a distance that would not allow for more than 530 square inches of unsupported area under the tank floor. In cases where overall height of the tank exceeds 40 inches, cross member spacing must be decreased to allow for not more than 400 square inches of unsupported area. The tank must be isolated from the cross members through the use of hard rubber strips with a minimum thickness and width dimension of 1/4” x 1” and a Shore A Hardness of approximately 60 durometer. The rubber must be installed so it shall not become dislodged during normal operation of the vehicle. Additionally, the tank must be supported around the entire bottom outside perimeter and captured both in the front and rear as well as side to side to prevent tank from shifting during vehicle operation. A picture frame type cradle mount with a minimum of 2" x 2" x 1/4” mild steel, stainless steel, or aluminum angle shall be provided or the use of corner angles having a minimum dimension of 4" x 4" x 1/4” by 6” high are permitted for the purpose of capturing the tank. Although the tank is designed on a free floating suspension principle, it is required that the tank have adequate vertical hold down restraints to minimize movement during vehicle operation. If proper retention has not been incorporated into the apparatus hose floor structure, an optional mounting restraint system shall be located on top of the tank, halfway between the front and the rear on each side of the tank. These stops can be constructed of steel, stainless steel or aluminum angle having minimum dimensions of 3" x 3" x 1/4” and shall be approximately 6” to 12” long. These brackets must incorporate rubber isolating pads with a minimum thickness of 1/4” inch and a hardness of 60 durometer affixed on the underside of the angle. The angle should then be bolted to the body side walls of the vehicle while extending down to rest on the top outside edge of the upper side wall of the tank. Hose beds floors must be so designed that the floor slat supports extend full width from side wall to side wall and are not permitted to drop off the edge of the tank or in any way come in contact with the individual covers where a puncture could occur. Tank top must be capable of supporting loads up to 200 lbs. per sq. foot when evenly distributed. Other equipment such as generators, portable pumps, etc. must not be mounted directly to the tank top unless provisions have been designed into the Poly-Tank® III for that purpose. The tank shall be completely removable without disturbing or dismantling the apparatus structure.

CAPACITY CERTIFICATION

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

TANKNOLOGY™ TAG

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

Provision shall be made in the tank and compartment B1 for future installation of the rear dump valve.

WATER TANK SIZE CERTIFICATION

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

GAUGE, WATER LEVEL

A Fire Research TankVision Pro model WLA300-A00 tank indicator kit shall be installed on the pump operator's panel. The kit shall include an electronic indicator module, a pressure sensor, and a 10' sensor cable. The indicator shall show the volume of water in the tank on nine (9) easy to see super bright RGB LEDs. A wide view lens over the LEDs shall provide for a viewing angle of 180 degrees. The indicator case shall be waterproof, manufactured of Polycarbonate/Nylon material, and have a distinctive blue label.

The program features shall be accessed from the front of the indicator module. The program shall support self-diagnostics capabilities, self-calibration, six (6) programmable colored light patterns to display tank volume, adjustable brightness control levels and a datalink to connect remote indicators. Low water warnings shall include flashing LEDs at 1/4 tank, down chasing LEDs when the tank is almost empty, and an output for an audio alarm.

APPARATUS BODY, 96" WIDE

The 96" wide apparatus body and sub frame shall be constructed entirely of marine grade aluminum plate and extrusions.

BODY SUBFRAME

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

longitudinal double "I" beam supports shall have a "C" shaped rubber tank cushion installed on the top of each member. This rubber extrusion shall conform to the shape of the double "I" beam extrusion to keep the tank cushion in place. This method is used to prevent damage to the tank.

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

BODY CONSTRUCTION

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

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

The horizontal and vertical frame member extrusions shall be 2.0" x 4.0" with a .190" wall thickness. The extrusion shall be made from 6063T6 aluminum alloy. This extrusion shall have .190" outside radius corners. The longitudinal frame member, below the lower compartments shall be a 2.0" x 4.0" 6063T6 aluminum alloy extrusion with .190" radius corners. Each body corner shall be a 3.5" x 9-3/4" 6063T6 extruded aluminum section with .210" wall thickness and shall be welded as an integral part of the body. This extrusion shall have a 1" corner radius.

COMPARTMENT CONSTRUCTION

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

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

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

COMPARTMENT TOPS/CATWALK

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

WHEEL WELL PANELS, ALUMINUM TREADPLATE

The wheel well shall be constructed from 2" x 4" x .190" wall thickness. The extrusion shall be made from 6063T6 aluminum alloy and have .190" outside radius corners. The extrusion shall be slotted the full length to permit an internal fit of 3/16" (.187") aluminum tread plate panels. The wheel well liners shall be constructed of 3003 H-14 smooth aluminum plates. They shall be bolted in place for ease of maintenance. The wheel well fenderettes shall be constructed of a #304 Stainless steel with a #7 polished finish.

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

HOSEBED

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

The fire apparatus hose body shall be 67-1/2" wide and shall contain a minimum of 79 cubic feet of storage.

A safety sign FAMA22, which warns of the need to secure hose, shall be visible to personnel at the hose storage area.

COMPARTMENTS, LEFT SIDE

L1
There shall be one-(1) left front compartment installed ahead of the rear axle. The interior dimensions shall be approximately 44" wide x 70" high x 25" deep in the lower section and 12" deep in the upper section.

L2
There shall be one-(1) compartment installed above the wheel well. The interior dimensions shall be approximately 58" wide x 38" high x 12" deep.

L3
There shall be one-(1) left rear compartment installed behind the rear axle. The interior dimensions shall be approximately 44" wide x 70" high x transverse in the lower section and 12" deep in the upper section.

COMPARTMENT DOORS, LEFT SIDE ROLL UP

R•O•M Series IV roll-up shutter doors shall be installed on the left side compartments of the apparatus as specified.

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

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

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

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

The shutter door assembly shall be manufactured and assembled in the United States.

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

There shall be an anodized aluminum sill plate installed at the bottom of the compartment door.

The outside door shall have a natural finish.

COMPARTMENTS, RIGHT SIDE

R1
There shall be one-(1) right front compartment installed ahead of the rear axle. The interior dimensions shall be approximately 44" wide x 70" high x 25" deep in the lower section and 12" deep in the upper section.

R2
There shall be one-(1) compartment installed above the wheel well. The interior dimensions shall be approximately 58" wide x 38" high x 12" deep.

R3
There shall be one-(1) right rear compartment installed behind the rear axle. The interior dimensions shall be approximately 44" wide x 70" high x transverse in the lower section and 12" deep in the upper section.

COMPARTMENT DOORS, RIGHT SIDE ROLL UP

R•O•M Series IV roll-up shutter doors shall be installed on the right side compartments of the apparatus as specified.

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

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

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

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

The shutter door assembly shall be manufactured and assembled in the United States.

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

There shall be an anodized aluminum sill plate installed at the bottom of the compartment door.

The outside door shall have a natural finish.

COMPARTMENT, CENTER REAR

B1
There shall be one-(1) compartment installed at the center rear of the apparatus. The interior compartment dimension shall be 35" wide x 61" high x 28" deep.

Provision shall be made in the tank and compartment B1 for future installation of the rear dump valve.

COMPARTMENT DOOR, REAR ROLL UP

A R•O•M Series IV roll-up shutter doors shall be installed on the rear compartment of the apparatus.

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

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

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

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

The shutter door assembly shall be manufactured and assembled in the United States.

There shall be an anodized aluminum sill plate installed at the bottom of the compartment door.

The outside door shall have a natural finish.

REAR BODY CONSTRUCTION, BEAVERTAILS

The rear of the apparatus shall be equipped with beavertails. The beavertails shall be constructed of 2" x 2" x .190" thickness, 6063T6 aluminum alloy extrusions with .190" radius corners. There shall be a removable panel on either side of the extrusion that is constructed of 1/8" (.125") aluminum tread plate.

The rear beavertails shall be squared off.

VERTICAL LOAD TEST, APPARATUS BODY

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

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

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

COMPARTMENT, LADDER STORAGE

There shall be one-(1) equipment storage compartment installed beside the tank on the right side constructed of 1/8" (.125) smooth aluminum plate for the storing of NFPA required equipment. Individual internal compartments shall house one-(1) 24' extension ladder, one-(1) 14' roof ladder, one-(1) 10' folding ladder, and two-(2) pike poles with silencing pads made from Polypropylene installed on each compartment floor to assist in the loading and unloading of the required equipment.

The compartment shall have vertically hinged door constructed from 1/8" (.125) smooth aluminum plate with stainless steel piano hinge and paddle latch door open mechanism. The door shall be installed utilizing stainless steel nuts and bolts, other fastening device such as self-tapping screws or pop rivets shall not be acceptable.

STORAGE TUBES, PIKE POLE

Two-(2) aluminum tubes shall be installed on the apparatus for pike pole storage. One-(1) end shall be notched to allow the poles to be locked in place.

The tubes shall be located in the ladder compartment.

TRAYS, SUCTION HOSE

Two-(2) aluminum suction hose storage trays shall be installed, one-(1) each side above the body compartments. Each tray shall hold one-(1) 10' section of the specified suction hose and have spring latches to hold hose in position.

WHEEL WELL AIR BOTTLE COMPARTMENT, LEFT FRONT

There shall be an air bottle compartment located in the left front body wheel well to house one-(1) spare SCBA cylinder. The compartment shall be constructed of high-density polyethylene to provide scuff protection. The compartment shall be vented to facilitate moisture drainage. The compartment door shall be brushed stainless steel with a push button trigger latch.

WHEEL WELL AIR BOTTLE COMPARTMENT, LEFT REAR

There shall be an air bottle compartment located in the left rear body wheel well to house one-(1) spare SCBA cylinder. The compartment shall be constructed of high-density polyethylene to provide scuff protection. The compartment shall be vented to facilitate moisture drainage. The compartment door shall be brushed stainless steel with a push button trigger latch.

WHEEL WELL AIR BOTTLE COMPARTMENT, RIGHT FRONT

There shall be an air bottle compartment located in the right front body wheel well to house one-(1) spare SCBA cylinder. The compartment shall be constructed of high-density polyethylene to provide scuff protection. The compartment shall be vented to facilitate moisture drainage. The compartment door shall be brushed stainless steel with a push button trigger latch.

WHEEL WELL AIR BOTTLE COMPARTMENT, RIGHT REAR

There shall be an air bottle compartment located in the right rear body wheel well to house one-(1) spare SCBA cylinder. The compartment shall be constructed of high-density polyethylene to provide scuff protection. The compartment shall be vented to facilitate moisture drainage. The compartment door shall be brushed stainless steel with a push button trigger latch.

BODY TRIM

The standard body trim shall include the following:

There shall be drip rail installed over the compartment door openings.

A drip rail shall be located over each compartment door. This drip rail shall form a lip over the exterior door pans to prevent water from running into a compartment.

The vertical rear face of the body shall be covered with smooth aluminum plate.

Two-(2) handrails shall be located on the rear of the apparatus, one-(1) handrail per side. Each handrail shall be constructed of 1-1/4" knurled aluminum. The handrails shall be mounted with chrome plated end stanchions. Each handrail shall be sufficient in length to meet all standard requirements.
No rear stanchions shall be provided on this unit.

MUD FLAPS, REAR

The rear axle mud flaps shall be constructed from hard black rubber and installed at the rear of the body fenders.

RUBRAIL

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

REAR STEP

The 10" rear step shall be constructed with an anodized aluminum extrusion. This extrusion shall be slotted punched and raised to provide superior traction during wet and cold weather operations. The rear step shall be a two-piece design. The rear step shall bolt on with stainless steel nuts and bolts for replacement. The rear step shall have a space of approximately 1/4" from the rear of the body to allow water runoff.

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

CHROME FOLDING STEP(S), FRONT OF BODY

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

There shall be an LED light installed above and below each step.

The steps shall be located, two-(2) each side, on the front compartment face.

STEPS, REAR FIXED W/LED LIGHT

There shall be four (4) rear lighted steps installed on the apparatus. The steps shall be a Cast Products step and have a minimum of thirty-five (35) square inches of surface area to conform to the NFPA 1901 standards. The step(s) shall include a 12-volt LED light to illuminate the area below.

TOW EYES, REAR

Two-(2) 1" thick rear tow eyes constructed of A-36 steel shall be mounted below the frame at the rear of the vehicle. The tow eyes shall be attached to steel weldments that are mounted to the apparatus. The eyes shall have a minimum dimension of three-(3) inches. The tow eyes shall be used for towing, not lifting the vehicle.

HANDRAIL, BELOW HOSE BED

There shall be an intermediate handrail installed on the apparatus below the hose bed. The handrail shall be constructed of 1-1/4" knurled aluminum. The handrail shall be mounted with chrome plated end stanchions.

HANDRAIL(S), FRONT OF BODY

There shall be three (3) 1-1/4" knurled aluminum handrails installed on the front face of the compartments. They shall be approximately 12" in length. The handrail(s) shall have chrome plated end stanchions.

HOSE BED DIVIDER(S)

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

HOSE BED COVER

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

A safety sign FAMA22, which warns of the need to secure hose, shall be visible to personnel at the hose storage area.

The Hypalon end flap shall be secured at the bottom using pushpins. The cover prevents hose from inadvertently deploying during normal operations meeting the current NFPA requirements.

The cover shall meet the NFPA 1901 15.10.5 requirement.

The cover and/or end flaps shall be red in color.

HOSE BED CAPACITY

The hose bed shall have the capacity to hold the following:

No hose bed capacity was specified at the time of proposal completion. The overall height may increase due to the required hose load specified by the Fire Department.

A safety sign FAMA22, which warns of the need to secure hose, shall be visible to personnel at the hose storage area.

ELECTRICAL SYSTEM

BODY ELECTRICAL

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

All chassis wiring shall be type "GXL" in accordance with S.A.E. J1128 and NFPA-1901. Wiring shall be color coded and include function codes every three-(3) inches on both sides.

The electrical wiring harness shall be covered by a black split convoluted loom, rated at a minimum of 275º F.

DISTRIBUTION PANELS

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

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

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

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

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

Connections to the distribution panel shall utilize Deutsch style bulkhead connectors. Screw clamp type connections are not acceptable.

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

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

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

12-VOLT TESTING

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

Reserve Capacity Test
The unit shall be run until all engines, engine compartment temperatures are stabilized, and the battery system is fully charged. The engine shall be shut off and the minimum continuous electrical load be activated for ten-(10) minutes. All electrical loads shall be shutoff after ten-(10) minutes and the battery system shall then be capable of restarting the engine.

Alternator Performance Test at Idle
Minimum continuous electrical loads shall be activated while the unit is at idle speed.

Alternator Performance Test at Full Load
The total continuous electrical load shall be activated with the engine running up to the manufacturer's governed speed. The test duration shall be a minimum of two-(2) hours. Activation of the load management system shall be permitted during the test. If, however, an alarm is sounded by excessive battery discharge as detected by the system or a system voltage of less than 11.8 volts DC for a 12-volt nominal system for more than 120 seconds, shall be considered a test failure.

Low Voltage Alarm Test
The engine shall be shut off and the total continuous electrical load shall be activated and continue to be applied until the excessive battery discharge alarm activates. The test shall be considered a failure if the alarm has not sounded within 140 seconds after the voltage drops to 11.8 volts.

WIRING PROTECTION

All 12-volt wiring shall be run in high temperature, rated at a minimum of 275º F, split loom for easy access to wires when trouble shooting.

EMI/RFI PROTECTION

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

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

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

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

BACK-UP ALARM

There shall be one-(1) Whelen model WBUA107, 107 dB, electronic back-up alarm installed at the rear of the apparatus. The alarm shall be wired to the transmissions output signal and is automatically activated when the transmission is shifted into reverse.

LIGHTS, COMPARTMENT

Each compartment shall have one-(1) Truck Lite Model 80351, 5" diameter single bulb compartment light wired to the door ajar system activated when the door is in the open position.

DOOR AJAR SWITCHES

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

LIGHTBAR, 60" WHELEN FREEDOM IV

A Whelen Edge Ultra Freedom IV Linear Super-LED LC Series 60" light bar model F4N0QLED shall be provided on the cab roof as far forward as possible. The F4N0QLED light bar shall incorporate an anodized extruded heavy duty aluminum base and cover chassis with two front red corner modules with two red end cap modules, two interior white modules, and two interior red modules. The front of each corner module shall consist of 12 red Linear Super-LEDs installed on a conformal coated PCB board with a thermal pad/aluminum bracket heat sink assembly. The short red end cap Linear Super-LED lights shall incorporate six red Super-LED installed on a conformal coated PCB board with a thermal pad/aluminum bracket heat sink assembly. The long red interior Linear Super-LED lights shall incorporate 12 red Super-LED installed on a conformal coated PCB board with a thermal pad/aluminum bracket heat sink assembly. The long white interior Linear Super-LED lights shall incorporate 12 white Super-LEDs installed on a conformal coated PCB board with a thermal pad/aluminum bracket heat sink assembly. The all modules will utilize a Diamond Optix metalized reflector and two optic collimators. All electronic components shall be conformal coated to provide additional protection. The outer lens construction shall consist of two clear Uni-Dome top lenses with a clear center lens and utilize two liquid injection molded wiper seal dividers for maximum protection against environmental elements. Metal top shields installed on the Uni-Domes and center lens shall provide protection from climatic conditions and provides passive solar radiation to direct heat away from internal components.

The F4N0QLED shall have an electronic LC I/O board. The solid state I/O board shall be microprocessor controlled. The I/O board shall have built-in reverse polarity protection and output-short protection. The I/O board shall have the ability to flash twenty two Super-LED warning lights. There shall be a data bank of 12 Scan-Lock™ flash patterns including steady burn with low power and cruise light functions. The cruise light function shall allow the user the four corner modules as marker courtesy lights. The F4N0QLED will have the capability to install a traffic advisor in the rear of the light bar. The I/O board shall also have outputs to add takedown, alley lights, and auxiliary lights for each set of lights to be controlled in pairs.

All light heads shall be installed in the F4N0QLED with the aid of black polycarbonate snap-in mounting brackets. The solid state light bar shall be vibration resistant. The light bar will contain a 17’ 2/c 8GA unterminated power cable and 17’ 17/c 22GA unterminated control cable. All electronic components are covered by a five year factory warranty. The F4N0QLED shall include a permanent mount kit with hardware.

The light bar shall be controlled in the following manner:

Calling for Right of Way - All Positions
Blocking Right of Way - Clear shall not be Active

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

The light bar shall meet NFPA 1901 edition as configured.

LIGHTS, ZONE B/D UPPER REAR BODY

Two-(2) Whelen LINZ6 Series Super-LED model LINZ6R shall be installed, one-(1) each side of the upper rear corner of the body. The warning light shall incorporate six red Super-LEDs, a clear non-optic hard coated polycarbonate lens, clear optic collimator and utilize a metalized reflector for maximum output. The hard coated lens shall provide extended life/luster protection against UV and chemical stresses. The encapsulated lens/reflector assembly and conformal coated PC board shall provide additional protection against environmental elements. The solid state warning lights shall be vibration resistant. The self-contained flashing light shall have 69 Scan-Lock flash patterns including synchronize feature and steady burn. The warning light is covered by a five year factory warranty. The surface mount module includes a black flange and hardware for horizontal mounting.

LIGHTS, ZONE C UPPER OUTBOARD

Four-(4) Whelen LINZ6 Series Super-LED model LINZ6R shall be installed, two-(2) each side on the upper rear of the apparatus in the outboard position. The warning light shall incorporate six red Super-LEDs, a clear non-optic hard coated polycarbonate lens, clear optic collimator and utilize a metalized reflector for maximum output. The hard coated lens shall provide extended life/luster protection against UV and chemical stresses. The encapsulated lens/reflector assembly and conformal coated PC board shall provide additional protection against environmental elements. The solid state warning lights shall be vibration resistant. The self-contained flashing light shall have 69 Scan-Lock flash patterns including synchronize feature and steady burn. The warning light is covered by a five year factory warranty. The surface mount module includes a black flange and hardware for horizontal mounting.

LIGHTS, ZONE A LOWER

Two-(2) Whelen LINZ6 Series Super-LED model LINZ6R shall be installed, one-(1) each side front of the apparatus. The warning light shall incorporate six red Super-LEDs, a clear non-optic hard coated polycarbonate lens, clear optic collimator and utilize a metalized reflector for maximum output. The hard coated lens shall provide extended life/luster protection against UV and chemical stresses. The encapsulated lens/reflector assembly and conformal coated PC board shall provide additional protection against environmental elements. The solid state warning lights shall be vibration resistant. The self-contained flashing light shall have 69 Scan-Lock flash patterns including synchronize feature and steady burn. The warning light is covered by a five year factory warranty. The surface mount module includes a black flange and hardware for horizontal mounting.

LIGHTS, ZONE B/D FRONT LOWER

Two-(2) Whelen LINZ6 Series Super-LED model LINZ6R lights shall be installed, one-(1) each side forward portion of the apparatus. The warning light shall incorporate six red Super-LEDs, a clear non-optic hard coated polycarbonate lens, clear optic collimator and utilize a metalized reflector for maximum output. The hard coated lens shall provide extended life/luster protection against UV and chemical stresses. The encapsulated lens/reflector assembly and conformal coated PC board shall provide additional protection against environmental elements. The solid state warning lights shall be vibration

resistant. The self-contained flashing light shall have 69 Scan-Lock flash patterns including synchronize feature and steady burn. The warning light is covered by a five year factory warranty. The surface mount module includes a black flange and hardware for horizontal mounting.

The lights shall be located, one-(1) each side, of the cab hood.

LIGHTS, ZONE B/D MIDSHIP LOWER

Two-(2) Whelen LINZ6 Series Super-LED model LINZ6R lights shall be installed, one-(1) each side midship of the apparatus. The warning light shall incorporate six red Super-LEDs, a clear non-optic hard coated polycarbonate lens, clear optic collimator and utilize a metalized reflector for maximum output. The hard coated lens shall provide extended life/luster protection against UV and chemical stresses. The encapsulated lens/reflector assembly and conformal coated PC board shall provide additional protection against environmental elements. The solid state warning lights shall be vibration resistant. The self-contained flashing light shall have 69 Scan-Lock flash patterns including synchronize feature and steady burn. The warning light is covered by a five year factory warranty. The surface mount module includes a black flange and hardware for horizontal mounting.

The lights shall be located, one-(1) each side, in the body wheel well area.

LIGHTS, ZONE B/D REAR LOWER

Two-(2) Whelen LINZ6 Series Super-LED model LINZ6R lights shall be installed, one-(1) each side rearward portion of the apparatus. The warning light shall incorporate six red Super-LEDs, a clear non-optic hard coated polycarbonate lens, clear optic collimator and utilize a metalized reflector for maximum output. The hard coated lens shall provide extended life/luster protection against UV and chemical stresses. The encapsulated lens/reflector assembly and conformal coated PC board shall provide additional protection against environmental elements. The solid state warning lights shall be vibration resistant. The self-contained flashing light shall have 69 Scan-Lock flash patterns including synchronize feature and steady burn. The warning light is covered by a five year factory warranty. The surface mount module includes a black flange and hardware for horizontal mounting.

The lights shall be located, one-(1) each side, below compartment L3 and compartment R3.

LIGHTS, ZONE C LOWER

Two-(2) Whelen LINZ6 Series Super-LED model LINZ6R shall be installed, one-(1) each side on the lower rear of the apparatus. The warning light shall incorporate six red Super-LEDs, a clear non-optic hard coated polycarbonate lens, clear optic collimator and utilize a metalized reflector for maximum output. The hard coated lens shall provide extended life/luster protection against UV and chemical stresses. The encapsulated lens/reflector assembly and conformal coated PC board shall provide additional protection against environmental elements. The solid state warning lights shall be vibration resistant. The self-contained flashing light shall have 69 Scan-Lock flash patterns including synchronize feature and steady burn. The warning light is covered by a five year factory warranty. The surface mount module includes a black flange and hardware for horizontal mounting.

STOP, TURN AND BACK-UP LIGHTS

Stop, turn and backup lights shall be Whelen 600 Series, individual fixtures. The red stop (LED) light shall be model 60R00BRR, turn light shall be a model 60A00TAR amber (LED) type with directional arrow, and the backup light shall be model 60J000CU clear halogen light type.

HOUSING, REAR TAILLIGHT ASSEMBLY

The fixtures shall be mounted on each rear face of the body in a model CAST3, three-(3) light head cast aluminum housing.

LIGHTS, SWIVEL MOUNT DECK

Two-(2) 6" chrome plated deck lights with swivel mount shall be installed one-(1) each side at the rear of the apparatus. Each light shall be manually operated and switched on and off at the light. One-(1) halogen spotlight bulb with 160,000-candlepower shall be supplied. One-(1) halogen flood light bulb with a 6,000 candlepower shall be supplied.

The deck lights shall also serve as rear work lights to illuminate the rear of the apparatus to meet NFPA-1901 requirements.

The lights shall be located, one-(1) each side, on top of the rear beavertails.

CLEARANCE LIGHTS AND REFLECTORS

Clearance lights and reflectors shall be LED lights, which include two-(2) red marker lights, four-(4) red rectangular reflectors, two-(2) amber rectangular reflectors and one-(1) red three light cluster recessed in the rear step.

LIGHT, LICENSE PLATE

A Whelen OS Series LED model 0SC0EDCR shall be provided at the rear of the apparatus to illuminate the license plate. The steady burn illumination light shall incorporate three clear LED and a clear non-optic hard coated polycarbonate lens. The hard coated lens shall provide extended life/luster protection against UV and chemical stresses. The encapsulated assembly shall provide protection against environmental elements. The solid state illumination light shall be vibration resistant. An installation kit including mounting hardware, neoprene gasket and 45 degree angle chrome housing shall be provided for surface mounting. The 0AC0EDCR will contain a 12” non-terminated pigtail. The illumination light meets SAE J592 requirements and is covered by a five year factory warranty.

PAINT FINISH, BODY

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

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

Paint process shall feature AkzoNobel Sikkens high solid BTLV products and be performed in the following steps:
Corrosion Protection - all aluminum surfaces shall be treated with the AkzoNobel Sikkens LV 260 Epoxy coating to provide superior corrosion resistance and excellent adhesion of the base coat.

AkzoNobel Sikkens Sealer/Primer BTLV - acrylic urethane sealer/primer shall be applied to guarantee excellent gloss hold-out, chip resistance and a uniform base color.

AkzoNobel Sikkens High Solid BTLV650 (Base coat) - a lead-free, chromate-free high solid polyurethane base coat shall be applied, providing excellent coverage and durability. A minimum of two-(2) coats shall be applied.

AkzoNobel Sikkens High Solid BTLV650 (Clear coat) - high solid LV clear coat shall be applied as the final step in order to ensure full gloss and color retention and durability. A minimum of two-(2) coats shall be applied.

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

After the paint process is complete, the gloss rating of the unit shall be tested with a 60 degree gloss meter. Coating thickness shall be measured with a digital MIL gauge and the orange peel with a digital wave scan device.

PAINT COLOR/CODE

The paint color/code shall be red FLNA 31992.

INTERIOR COMPARTMENT FINISH

The interior of the body compartments shall be a natural finish.

SCOTCHLITE STRIPE

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

The striping shall be white in color.

The reflective stripe shall run straight from the headlights to the rear of the body on each side of the apparatus.

STRIPE, REAR CHEVRON

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

The Chevron striping shall be 3M red and lime green.

REFLECTIVE MATERIAL, DESIGNATED WALKING SURFACES

1" wide yellow perimeter marking consisting of individual Reflexite diamonds shall be applied to indicate the outside edge of designated standing and walking areas above 48" from the ground in compliance with 2016 NFPA 1901. Steps, ladders and areas with a railing or structure at least 12" high are excluded from this requirement.

LETTERING

There shall be a maximum of sixty-(60) 3" tall Spun Gold letters applied to the apparatus. The lettering shall also have a one color shade applied.

WARRANTY, BODY PARTS & LABOR

There shall be a two-(2) year body mechanical parts and labor warranty provided with the apparatus. The apparatus shall be free of defects in material and workmanship for a warranty period of two-(2) years after the date on which the apparatus is first delivered to the original purchaser.

WARRANTY, CAB/CHASSIS PARTS & LABOR

The manufacturer shall provide a limited parts and labor warranty to the purchaser of the cab and chassis for a period of two-(2) years or 24,000 miles, whichever occurs first. The warranty period shall commence on the date the vehicle is delivered to the end user.

WARRANTY, BODY STRUCTURAL

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

WARRANTY, BODY PAINT/PERFORATION

The manufacturer shall warrant each new fire and rescue apparatus body during the warranty period, when used in normal and reasonable manner. All apparatus shall be warranted against peeling, cracking, blistering and corrosion. This warranty shall provide for repair or replacement at the manufacturer’s option, any claim in accordance with the following terms and conditions.

WHAT IS COVERED

WARRANTY APPLIES - This warranty is for all new fire and rescue apparatus manufactured by the bidder and is extended only to the original user-purchaser. The warranty registration must be received by the manufacturer within 30 days of the in-service for the warranty to apply.

REPAIRS COVERED - The warranty covers repair or replacement at the manufacturer's option. Repairs shall be made at a factory owned service facility or another approved service facility.

OBTAINING REPAIRS - The original user-purchaser must notify the manufacturer in writing within 30 days after any claimed defect has appeared. Transportation costs to and from the servicing center shall be the responsibility of the user-purchaser.

WARRANTY PERIOD - The warranty period shall begin upon delivery of the apparatus to the original user-purchaser. The warranty period shall be for **TEN YEARS.** Corrosion perforation is defined as **complete penetration** through the exterior metal of the apparatus. The following percentages apply:

Topcoat & Appearance (Gloss, Color Retention and Cracking):
0 to 72 months: 100%
73 to 120 months: 50%

Coating System, Adhesion & Corrosion (Includes Dissimilar Metal Corrosion, Flaking, Blistering and Bubbling)
0 to 36 months: 100%
37 to 84 months: 50%
85 to 120 months: 25%

NOTES:
**Under carriage, cab and body interiors are covered under our standard two-(2) year warranty.*
**Demonstration vehicles sold to an end user will have the full warranty, if sold within two-(2) years of demonstration service and will be prorated if sold after the second year.*

WHAT IS NOT COVERED

*Any cab not manufactured by the bidder.
*Damage caused by fire, misuse, negligence or accident.
*Damage caused by theft, vandalism, riot or explosion.
*Damage caused by lightning, earthquake, windstorm, hail, flood or use in an acidic environment (such as de-icing compounds, road salts and acid rain).
*Any repairs, modifications, alterations or aftermarket parts added after manufacture without the authorization of the manufacturer.
*Damage from lack of, maintenance and cleaning (proper cleaning and maintenance procedures are detailed in the provided maintenance manual).
*Gold leaf or striping except that which is affected by repair (Gold Leaf or striping must have been installed during manufacturing to be covered under this limited warranty).
*Loss of time, loss of use of the product, inconvenience, lodging, food or other consequential or incidental loss that may result from a failure.

WARRANTY, DIESEL ENGINE

The Cummins engine shall be warranted for a period of five-(5) years or 100,000 miles, whichever occurs first.

WARRANTY, TRANSMISSION

The Allison EVS series transmission shall be warranted for a period of five-(5) years with unlimited mileage. Parts and labor shall be included in the warranty.

WARRANTY, ANTI LOCK BRAKE SYSTEM

The ABS brake system shall be warranted for a period of three-(3) years/300,000 miles.

WARRANTY, HALE FIRE PUMP

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

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

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

WARRANTY, PLUMBING SYSTEM

There shall be a ten-(10) year pump plumbing warranty provided. The warranty covers all plumbing components used in construction of the fire apparatus water/foam plumbing system against defects and workmanship, provided the apparatus is used in a normal and reasonable manner. The warranty is extended only to the original user-purchaser for a period of 10 years from the date of delivery.

WARRANTY, WATER TANK

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

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

MANUALS, APPARATUS BODY

The contractor shall supply, at time of delivery, at two-(2) sets of complete operation and service documentation covering the completed apparatus as delivered and accepted.

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

MANUALS, FIRE PUMP

There shall be two-(2) copies of pump manuals provided to the department.

SAFETY GUIDE

One-(1) copy of the latest edition of FAMA's Fire Apparatus Safety Guide shall be provided with the completed apparatus.

WIRING DIAGRAMS, CAB/CHASSIS

There will be a complete digital set of electrical schematics provided at the time of delivery. These schematics will have each circuit properly numbered and in color.

The schematic will show each connector in the circuitry and the position in which each circuit enters, exits, or terminates. The schematic will be drawn in such a manner as to allow individual circuitry to be followed throughout the apparatus.

These schematics will not have the circuitry condensed into a single line or sets of lines. Multiple sheets will be acceptable so long as each of the harnesses is properly identified to the connecting sheet and harness. There will be a border around the paper(s), which contain alpha and numeric characters for indexing coordinate reference. There will be an indexing or part reference document for quick location of items shown on the schematics.

WIRING DIAGRAMS, APPARATUS BODY

There will be a complete set of generic electrical schematics provided at the time of delivery. These schematics will have each circuit properly numbered and in color.

The schematic will show each connector in the circuitry and the position in which each circuit enters, exits, or terminates. The schematic will be drawn in such a manner as to allow individual circuitry to be followed throughout the apparatus.

These schematics will not have the circuitry condensed into a single line or sets of lines. Multiple sheets will be acceptable so long as each of the harnesses is properly identified to the connecting sheet and harness. There will be a border around the paper(s), which contain alpha and numeric characters for indexing coordinate reference. There will be an indexing or part reference document for quick location of items shown on the schematics.

This document will refer the user to the appropriate drawing and page number and to sections of the drawing(s) by the means of letter and number coordinates. The schematic will show all harnesses used in the apparatus cab, chassis and body that is supplied by the chassis and body manufacturer.

Modifications to the manufactured standard harnesses are to be documented and properly indexed for quick identification.

A complete wire number, color, and function listing will accompany the schematics.

NFPA REQUIRED EQUIPMENT, FD SUPPLIED

The loose equipment as outlined in NFPA 1901, 2016 edition, section 5.9 thru 5.9.4 shall be provided by the fire department unless it is listed in this proposal. All loose equipment shall be installed on the apparatus before placed in emergency service, unless the Fire Department authorized agent signs the State of Exception as listed in the NFPA 1901 Standard for Automotive Fire Apparatus sections 4.21 thru 4.21.2.

LADDER(S), 10' FOLDING

There shall be one (1) Alco-Lite Model FL-10, 10' folding ladder(s) provided with the apparatus. The ladder(s) shall be aluminum, single-section with rubber feet. The ladder(s) shall meet or exceed the latest NFPA standards.

LADDER(S), 14' ROOF

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

LADDER(S), 24' 2-SECTION EXTENSION

There shall be one (1) Alco-Lite model PEL-24, 24' two-section ladder(s) supplied with the apparatus. The extension ladder(s) shall be aluminum with steel spurs on one end. The ladder(s) shall meet or exceed the latest NFPA standards.

SUCTION HOSE, 6"

There shall be two-(2) 10' x 6" sections of Kochek PVC flexible suction hose supplied with the apparatus. Lightweight aluminum couplings shall be provided on the suction hose. A long handle female swivel shall be provided on one end and a rocker lug male shall be provided for the other end.

STRAINER, 6" BARREL

There shall be one-(1) Kochek BS60C, 6" chrome plated barrel strainer supplied with the apparatus. The strainer shall have a 6" NH female connection.

BRACKET, STRAINER

There shall be a Kochek model MM601C chrome plated bracket provided for the purpose of mounting a 6" strainer on the apparatus. The bracket shall have 6" male NH connection.