KME FIRE APPARATUS

Chelan County Fire District #3

Pumper Final

Contents

PROPOSED BY - CASCADE FIRE AND SAFETY

QTY: 1

Cascade Fire and Safety is pleased to offer the proposed vehicle to meet the intent of the fire department specifications.

KME Fire Apparatus is a leading manufacturer in custom and commercial fire fighting vehicles.

Questions or concerns pertaining to this proposal can be answered by contacting the following KME representative:

Mark Merritt
Cascade Fire & Safety
123 South Front Street
Yakima, WA 98901

Phone: (800) 572 3939 / (509) 453 6527
Cell: (509) 930 1786
Fax: (509) 457 2890

Email: markm@cfireinc.com
Web: www.cfireinc.com

FMVSS REQUIREMENT

QTY: 1

The chassis shall be certified by the apparatus manufacturer as conforming to all applicable Federal Motor Vehicle Safety Standards in effect at the date of contract.

This shall be attested to by the attachment of a FMVSS certification label on the vehicle by the contractor who shall be recognized as the responsible final manufacturer.

GENERAL CONSTRUCTION

QTY: 1

The complete apparatus, assemblies, subassemblies, component parts, etc., shall be designed and constructed with the due consideration to the nature and distribution of the load to be sustained and to the general character of the service to which the apparatus is to be subject.

All parts of the apparatus shall be designed with a factor of safety, which is equal to or greater than that which is considered standard and acceptable for this class of equipment in firefighting service.

All parts of the apparatus shall be strong enough to withstand general service under full load.

The apparatus shall be so designed that the various parts and readily accessible for lubrication, inspection, adjustment and repair.

Bidder's specifications must meet minimum requirements of N.F.P.A. Pamphlet #1901; Underwriters Laboratories, Inc.; and all State and Federal Department of Transportation vehicle regulations at time of sale of unit.

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

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SERVICE CENTER CAPABILITIES

Cascade Fire & Safety is a full service EVT Certified facility for all makes and models of emergency vehicles and fire apparatus.

Fleet Preventative Maintenance
Safety Inspections
Custom Installation Services
Plumbing and Foam Systems
Full Service Chassis and Drive Line Repair
Steel, Stainless Steel and Aluminum Welding repair and Fabrication
24 Hour 7 days a week Emergency Repairs
NFPA Pump Testing
NFPA Lighting upgrades
Wildland / Brush Truck construction
Washington and Oregon Fire Apparatus and Equipment Mechanics Association member
Same day service provided for any “Truck Down” situation

INSTRUCTION MANUALS - TWO (2) SETS - USB/CD

QTY: 1

In accordance with standard commercial practices, applicable to each vehicle (including body and special equipment) furnished under the contract, the following listed manuals and schematics, in the quantity specified, shall be provided at time of delivery of each vehicle.

The contractor shall supply at time of delivery, two (2) USB/CD copies of a complete operation and service manual covering the complete apparatus as delivered and accepted.

The manual shall contain the following:

- Descriptions, specifications, and ratings of chassis, pump (if applicable), and aerial device.
- Wiring diagrams.
- Lubrication charts.
- Operating instructions for the chassis, any major components such as a pump and any auxiliary systems.
- Instructions regarding the frequency and procedures recommended for maintenance.
- Parts replacement information.

AS-BUILT WIRING SCHEMATICS

QTY: 1

In accordance with standard commercial practices, the manufacturer shall supply two (2) copies of "AS BUILT" wiring schematics/diagrams for the entire vehicle at the time of delivery.

VEHICLE FLUID PLATE

QTY: 1

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

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

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

AMP DRAW REPORT

QTY: 1

The bidder shall provide with their bid proposal and at the time of delivery, an itemized print out of the expected amp draw of the entire vehicle's electrical system.

A written load analysis, which shall include the following:

- The rating of the alternator.
- The minimum continuous load of each component that is specified per: Applicable NFPA-1901.
- Additional loads that, when added to the minimum continuous load, determine the total connected load.
- Each individual intermittent load.

All of the above listed items shall be provided by the bidder per the applicable NFPA-1901.

KME WARRANTY, STARTING ON DELIVERY DATE

QTY: 1

Warranty coverage by KME will begin on the date of delivery to the customer.

GENERAL INFORMATION - NFPA 1901

QTY: 1

The proposed apparatus will be constructed to withstand the severe and continuous use encountered during emergency firefighting services. The apparatus will be of the latest type, carefully designed and constructed with due consideration to the nature and distribution of the load to be sustained.

This proposal details the general design criteria of cab and chassis components, aerial device (if applicable), fire pump and related components (if applicable), water tank (if applicable), fire body, electrical components, painting, and equipment.

All items of these proposal specifications will conform to the fullest extent possible with the National Fire Protection Association Pamphlet No. 1901, latest edition, except as noted in the Statement-of-Exceptions.

KME will furnish satisfactory evidence of our ability to construct, supply service parts and technical assistance for the apparatus specified.

NFPA TREADPLATE CERTIFICATION

QTY: 1

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

Aluminum tread plate utilized for stepping, standing, and walking surfaces shall be Alcoa No-Slip type.

This material shall be a minimum 3/16 (0.1875”) in thickness.

Upon request by the purchaser, the manufacturer shall supply proof of compliance with this requirement.

All vertical surfaces on the body, which incorporate aluminum tread plate material, will utilize the same material pattern to provide a consistent overall appearance.

"PUMPER FIRE APPARATUS" NFPA 2016 CHAPTERS OF COMPLIANCE

QTY: 1

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

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

SAFETY SIGNS (NFPA REQUIRED)

QTY: 1

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

UL TESTING

QTY: 1

If required by the specific chapters of NFPA-1901, the proposed unit shall be tested and certified by Underwriters Laboratories Inc.

(UL) Underwriters Laboratories Inc. (UL) is recognized worldwide as a leading third-party product safety certification organization for over 100 years.

UL has served on National Fire Protection Association (NFPA) technical committees for over thirty years.

UL is a nationally recognized testing laboratory recognized by OSHA.

UL complies with the American Society for Testing and Materials (ASTM) Standard ASTM E543 "Determining the Qualifications for Nondestructive Testing Agencies."

UL has more than 40 years of automotive fire apparatus safety testing experience and 16 years of factory aerial device testing and Certification experience.

UL has more than 100 years of experience developing and implementing product safety standards.

UL does not represent, is not associated with, nor is in the manufacture or repair of automotive fire apparatus.

All test work for fire pumps outlined in NFPA 1901, Edition shall be conducted.

UL has included a list of all factory aerial device manufacturers for whom testing is currently being conducted on a regular basis.

UL carries ten million dollars in excess liability insurance for bodily injury and properly damage combined.

UL provides the manufacturer a complete written examination and test report for each inspection performed at the manufacturer's facility.

This report specifies the points of inspection and results of such examinations and tests.

The UL inspectors performing the test work on the units are certified to Level II in the required NDT methods, under the requirements outlined in ASNT document CP-189.

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

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

Prior to submittal to the automotive fire apparatus manufacturer, the final Report shall be reviewed by the Supervisor of Fire Equipment Services and a Registered Professional Engineer, both of whom are directly involved with the aerial device certification program at UL.

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

GRAB RAILS EXTERIOR, REAR OF CAB

QTY: 1

Two (2) knurled bright anodized aluminum horizontal grab rails will be provided one each side on the rear of the cab, on the outer corners. The grab rail will be approximately 18" long between the stanchions. The grab rails will be mounted to protect the rear cab corners from damage from the crosslay hose deployment.

GRIP-STRUT INSERTS IN CAB STEPS 4 DOORS

QTY: 1

Grip-Strut, anti-slip material shall be inserted in each cab step treadplate overlay below each cab door.

WHEEL TRIM KITS, CHROME BABY MOONS/LUG NUT COVERS - SINGLE AXLE

QTY: 1

Wheel trim kits consisting of chrome baby moon hubcaps and chrome lug nut covers shall be installed on the front and rear axles of the single rear axle chassis.

FRONT MUD FLAPS NO LOGO

QTY: 1

Black rubber mud flaps shall be provided on the front fenders. NO KME LOGOS TO BE PROVIDED ON FLAPS.

CORNERING LIGHTS - WHELEN # 5VC03ZCR LED

QTY: 1

A pair of Whelen #5VC03ZCR LED lights shall be provided and shall be mounted vertically, (1) one each side of the commercial chassis front bumper, in a Whelen #5TSMAC chrome plated flange.

The lights shall be wired to activate with the turn signals.

FREIGHTLINER M2 106 - FOUR DOOR - 4X4 - 14F/26R

QTY: 1

2020 FREIGHTLINER M2 106 CONVENTIONAL CHASSIS
SET BACK AXLE - TRUCK
STRAIGHT TRUCK PROVISION
LH PRIMARY STEERING LOCATION

General Service
TRUCK CONFIGURATION
DOMICILED, USA 50 STATES (INCLUDING CALIFORNIA AND CARB OPT-IN STATES)
FIRE SERVICE
EMERGENCY VEHICLES BUSINESS SEGMENT
LIQUID BULK COMMODITY
TERRAIN/DUTY: 100% (ALL) OF THE TIME, IN TRANSIT, IS SPENT ON PAVED ROADS
MAXIMUM 8% EXPECTED GRADE
SMOOTH CONCRETE OR ASPHALT PAVEMENT - MOST SEVERE IN-TRANSIT (BETWEEN SITES) ROAD SURFACE
MEDIUM TRUCK WARRANTY
EXPECTED FRONT AXLE(S) LOAD: 14000.0 lbs.
EXPECTED REAR DRIVE AXLE(S) LOAD: 26000.0 lbs.
EXPECTED GROSS VEHICLE WEIGHT CAPACITY: 40000.0 lbs.

Truck Service
FIRE TANK/PUMPER - MAIN DRIVELINE DRIVEN SPLIT-SHAFT PTO/PUMP
EXPECTED BODY/PAYLOAD CG HEIGHT ABOVE FRAME "XX" INCHES: 32.0 in

Engine
CUM L9 350EV HP @ 2000 RPM, 2200 GOV RPM, 1000 LB/FT @ 1400 RPM

Electronic Parameters
68 MPH ROAD SPEED LIMIT
CRUISE CONTROL SPEED LIMIT SAME AS ROAD SPEED LIMIT
PTO MODE ENGINE RPM LIMIT - 1100 RPM
PTO RPM WITH CRUISE SET SWITCH - 700 RPM
PTO RPM WITH CRUISE RESUME SWITCH - 800 RPM
PTO MODE CANCEL VEHICLE SPEED - 5 MPH

PTO GOVERNOR RAMP RATE - 250 RPM PER SECOND
PTO MINIMUM RPM - 700
CUMMINS EMERGENCY VEHICLE THROTTLE CONTROL OPTION
REGEN INHIBIT SPEED THRESHOLD - 0 MPH

Engine Equipment
2016 ONBOARD DIAGNOSTICS/2010 EPA/CARB/FINAL GHG17 CONFIGURATION
2008 CARB EMISSION CERTIFICATION - EXEMPTED VEHICLE; NO CLEAN IDLE LABEL REQUIRED
STANDARD OIL PAN
ENGINE MOUNTED OIL CHECK AND FILL
OIL SAMPLE TEST FITTING ON OIL FILTER MODULE
ONE PIECE VALVE COVER
SIDE OF HOOD AIR INTAKE WITH NFPA COMPLIANT EMBER SCREEN AND FIRE RETARDANT DONALDSON AIR CLEANER
LN 12V 320 AMP 4962PA PAD MOUNT ALTERNATOR
(2) DTNA GENUINE, FLOODED STARTING, MIN 2250CCA, 390RC, THREADED STUD BATTERIES
BATTERY BOX FRAME MOUNTED
STANDARD BATTERY JUMPERS
SINGLE BATTERY BOX FRAME MOUNTED LH SIDE UNDER CAB
WIRE GROUND RETURN FOR BATTERY CABLES WITH ADDITIONAL FRAME GROUND RETURN
NON-POLISHED BATTERY BOX COVER
CAB AUXILIARY POWER CABLE
AUXILIARY POWER NET DISTRIBUTION BLOCK FOR BODY BUILDER USE
POSITIVE LOAD DISCONNECT WITH CAB MOUNTED CONTROL SWITCH MOUNTED OUTBOARD DRIVER SEAT
POSITIVE AND NEGATIVE POSTS FOR JUMPSTART LOCATED ON FRAME NEXT TO STARTER
CUMMINS TURBOCHARGED 18.7 CFM AIR COMPRESSOR WITH INTERNAL SAFETY VALVE
STANDARD MECHANICAL AIR COMPRESSOR GOVERNOR
AIR COMPRESSOR DISCHARGE LINE
GVG, FIRE AND EMERGENCY SERVICE VEHICLES ENGINE WARNING
C-BRAKE BY JACOBS WITH LOW/OFF/HIGH BRAKING DASH SWITCH, ACTIVATES STOP LAMPS
RH OUTBOARD UNDER STEP MOUNTED HORIZONTAL AFTERTREATMENT SYSTEM ASSEMBLY WITH RH HORIZONTAL TAILPIPE EXITING FORWARD OF REAR TIRES
ENGINE AFTERTREATMENT DEVICE, AUTOMATIC OVER THE ROAD ACTIVE REGENERATION AND DASH MOUNTED SINGLE REGENERATION REQUEST/INHIBIT SWITCH
STANDARD EXHAUST SYSTEM LENGTH
RH HORIZONTAL TAILPIPE, EXIT FORWARD OF REAR TIRES AT 90 DEGREES
6 GALLON DIESEL EXHAUST FLUID TANK
100 PERCENT DIESEL EXHAUST FLUID FILL
LH MEDIUM DUTY STANDARD DIESEL EXHAUST FLUID TANK LOCATION
STANDARD DIESEL EXHAUST FLUID PUMP MOUNTING
STANDARD DIESEL EXHAUST FLUID TANK CAP
HORTON DRIVEMASTER ADVANTAGE ON/OFF FAN DRIVE
AUTOMATIC FAN CONTROL WITHOUT DASH SWITCH, NON-ENGINE MOUNTED
CUMMINS SPIN ON FUEL FILTER
COMBINATION FULL FLOW/BYPASS OIL FILTER
1100 SQUARE INCH ALUMINUM RADIATOR

ANTIFREEZE TO -34F, OAT (NITRITE AND SILICATE FREE) EXTENDED LIFE COOLANT
GATES BLUE STRIPE COOLANT HOSES OR EQUIVALENT
CONSTANT TENSION HOSE CLAMPS FOR COOLANT HOSES
RADIATOR DRAIN VALVE
LOWER RADIATOR GUARD
ALUMINUM FLYWHEEL HOUSING
ELECTRIC GRID AIR INTAKE WARMER
DELCO 12V 39MT HD/OCP STARTER WITH THERMAL PROTECTION AND INTEGRATED MAGNETIC SWITCH

Transmission
ALLISON 3000 EVS AUTOMATIC TRANSMISSION WITH PTO PROVISION

Transmission Equipment
PDI INSTALLED TRANSMISSION OIL SAMPLE VALVE FITTING
ALLISON VOCATIONAL PACKAGE 198 - AVAILABLE ON 3000/4000 PRODUCT FAMILIES WITH VOCATIONAL MODEL EVS
ALLISON VOCATIONAL RATING FOR FIRE TRUCK/EMERGENCY VEHICLE APPLICATIONS AVAILABLE WITH ALL PRODUCT FAMILIES
PRIMARY MODE GEARS, LOWEST GEAR 1, START GEAR 1, HIGHEST GEAR 6, AVAILABLE FOR 3000/4000 PRODUCT FAMILIES ONLY
SECONDARY MODE GEARS, LOWEST GEAR 1, START GEAR 1, HIGHEST GEAR 6, AVAILABLE FOR 3000/4000 PRODUCT FAMILIES ONLY
PRIMARY SHIFT SCHEDULE RECOMMENDED BY DTNA AND ALLISON, THIS DEFINED BY ENGINE AND VOCATIONAL USAGE
SECONDARY SHIFT SCHEDULE RECOMMENDED BY DTNA AND ALLISON, THIS DEFINED BY ENGINE AND VOCATIONAL USAGE
PRIMARY SHIFT SPEED RECOMMENDED BY DTNA AND ALLISON, THIS DEFINED BY ENGINE AND VOCATIONAL USAGE
SECONDARY SHIFT SPEED RECOMMENDED BY DTNA AND ALLISON, THIS DEFINED BY ENGINE AND VOCATIONAL USAGE
ENGINE BRAKE RANGE PRESELECT RECOMMENDED BY DTNA AND ALLISON, THIS DEFINED BY ENGINE AND VOCATIONAL USAGE
ENGINE BRAKE RANGE ALTERNATE PRESELECT RECOMMENDED BY DTNA AND ALLISON, THIS DEFINED BY ENGINE AND VOCATIONAL USAGE
FUEL SENSE 2.0 DISABLED - MAXIMUM PERFORMANCE - TABLE BASED
DRIVER SWITCH INPUT - DEFAULT - NO SWITCHES
PUMP MODE INPUT ENABLED 3RD/4TH LOCKUP WIRED ON TCM INPUT AJ/BQ - ALLISON 5TH GEN TRANSMISSIONS
4TH RANGE INDICATION ON TCM OUTPUT C - ALLISON 5TH GEN TRANSMISSIONS
VEHICLE INTERFACE WIRING CONNECTOR WITH PDM AND NO BLUNT CUTS, AT BACK OF CAB
ELECTRONIC TRANSMISSION CUSTOMER ACCESS CONNECTOR FIREWALL MOUNTED
(2) CUSTOMER INSTALLED CHELSEA 277 SERIES PTO'S
PTO MOUNTING, LH AND RH SIDES OF MAIN TRANSMISSION
MAGNETIC PLUGS, ENGINE DRAIN, TRANSMISSION DRAIN, AXLE(S) FILL AND DRAIN
PUSH BUTTON ELECTRONIC SHIFT CONTROL, DASH MOUNTED
TRANSMISSION PROGNOSTICS - ENABLED 2013
WATER TO OIL TRANSMISSION COOLER, IN RADIATOR END TANK
MERITOR MTC-4210 AND MTC-4213 TRANSFER CASE OIL COOLER
TRANSMISSION OIL CHECK AND FILL WITH ELECTRONIC OIL LEVEL CHECK
MERITOR MTC 4210XP 2-SPEED TRANSFER CASE
TRANSFER CASE SHIFT CONTROLS WITH TRANSFER CASE PTO ON/OFF SWITCH WHEN APPLICABLE

SYNTHETIC TRANSMISSION FLUID (TES-295 COMPLIANT)

Front Axle and Equipment
MX-14-120HR-EVO 14,000# 1790MM KPI SINGLE FRONT DRIVE AXLE WITH HR CARRIER
5.57 FRONT AXLE RATIO
MXL 16T MERITOR EXTENDED LUBE FRONT STEERING AXLE DRIVELINE WITH HALF ROUND YOKES
MERITOR 16.5X5 Q+ MX DRIVE AXLE CAST SPIDER HEAVY DUTY CAM FRONT BRAKES
FIRE AND EMERGENCY SEVERE SERVICE, NON-ASBESTOS FRONT LINING
MERITOR CAST IRON FRONT BRAKE DRUMS
FRONT BRAKE DUST SHIELDS
FRONT OIL SEALS
STANDARD SPINDLE NUTS FOR ALL AXLES
MERITOR AUTOMATIC FRONT SLACK ADJUSTERS
TRW TAS-85 POWER STEERING
POWER STEERING PUMP
2 QUART SEE THROUGH POWER STEERING RESERVOIR
OIL/AIR POWER STEERING COOLER
SYNTHETIC 75W-90 FRONT AXLE LUBE

Front Suspension
14,600# TAPERLEAF FRONT SUSPENSION
MAINTENANCE FREE RUBBER BUSHINGS - FRONT SUSPENSION
FRONT SHOCK ABSORBERS

Rear Axle and Equipment
RS-26-185 26,000# T-SERIES SINGLE REAR AXLE
5.63 REAR AXLE RATIO
IRON REAR AXLE CARRIER WITH STANDARD AXLE HOUSING
MXL 17T MERITOR EXTENDED LUBE MAIN DRIVELINE WITH HALF ROUND YOKES
MXL 17T MERITOR EXTENDED LUBE INTERTRANSMISSION DRIVELINE WITH HALF ROUND YOKES
DRIVER CONTROLLED TRACTION DIFFERENTIAL - SINGLE REAR AXLE
(1) DRIVER CONTROLLED DIFFERENTIAL LOCK REAR VALVE FOR SINGLE DRIVE AXLE
BUZZER AND BLINKING LAMP WITH EACH MODE SWITCH, DIFFERENTIAL UNLOCK WITH IGNITION OFF, ACTIVE <5 MPH
MERITOR 16.5X7 P CAST SPIDER CAM REAR BRAKES, DOUBLE ANCHOR, CAST SHOES
FIRE AND EMERGENCY SEVERE SERVICE NON-ASBESTOS REAR BRAKE LINING
BRAKE CAMS AND CHAMBERS ON FORWARD SIDE OF DRIVE AXLE(S)
WEBB HEAVY WEIGHT CAST IRON REAR BRAKE DRUMS
REAR BRAKE DUST SHIELDS
REAR OIL SEALS
WABCO TRISTOP D LONGSTROKE 1-DRIVE AXLE SPRING PARKING CHAMBERS
HALDEX AUTOMATIC REAR SLACK ADJUSTERS
ORGANIC SAE 80/90 REAR AXLE LUBE

Rear Suspension
27,000# FLAT LEAF SPRING REAR SUSPENSION WITH HELPER AND RADIUS ROD FOR FIRE/EMERGENCY SERVICE
SPRING SUSPENSION - NO AXLE SPACERS
STANDARD AXLE SEATS IN AXLE CLAMP GROUP
FORE/AFT CONTROL RODS

Brake System

AIR BRAKE PACKAGE
WABCO 4S/4M ABS WITH TRACTION CONTROL
REINFORCED NYLON, FABRIC BRAID AND WIRE BRAID CHASSIS AIR LINES
FIBER BRAID PARKING BRAKE HOSE
STANDARD BRAKE SYSTEM VALVES
STANDARD AIR SYSTEM PRESSURE PROTECTION SYSTEM
STD U.S. FRONT BRAKE VALVE
RELAY VALVE WITH 5-8 PSI CRACK PRESSURE, NO REAR PROPORTIONING VALVE
BW AD-9SI BRAKE LINE AIR DRYER WITH HEATER
AIR DRYER MOUNTED INBOARD ON RH RAIL
STEEL AIR TANKS MOUNTED AFT INSIDE AND/OR BELOW FRAME JUST FORWARD OF REAR SUSPENSION
CLEAR FRAME RAILS FROM BACK OF CAB TO FRONT REAR SUSPENSION BRACKET, BOTH RAILS OUTBOARD
BW DV-2 AUTO DRAIN VALVE WITHOUT HEATER - WET TANK

Trailer Connections
UPGRADED CHASSIS MULTIPLEXING UNIT
UPGRADED BULKHEAD MULTIPLEXING UNIT

Wheelbase & Frame
5550MM (219 INCH) WHEELBASE
11/32X3-1/2X10-15/16 INCH STEEL FRAME (8.73MMX277.8MM/0.344X10.94 INCH) 120KSI
1/4 INCH (6.35MM) C-CHANNEL INNER FRAME REINFORCEMENT
2550MM (100 INCH) REAR FRAME OVERHANG
FRAME OVERHANG RANGE: 91 INCH TO 100 INCH
SQUARE END OF FRAME
FRONT CLOSING CROSSMEMBER
STANDARD WEIGHT ENGINE CROSSMEMBER
STANDARD CROSSMEMBER BACK OF TRANSMISSION
STANDARD MIDSHIP #1 CROSSMEMBER(S)
STANDARD REARMOST CROSSMEMBER
STANDARD SUSPENSION CROSSMEMBER

Chassis Equipment
THREE-PIECE 14 INCH CHROMED STEEL BUMPER WITH COLLAPSIBLE ENDS
FRONT TOW HOOKS - FRAME MOUNTED
BUMPER MOUNTING FOR SINGLE LICENSE PLATE
FENDER AND FRONT OF HOOD MOUNTED FRONT MUDFLAPS
GRADE 8 THREADED HEX HEADED FRAME FASTENERS
TANK BODY 0 TO 1500 GALLONS

Fuel Tanks
50 GALLON/189 LITER SHORT RECTANGULAR ALUMINUM FUEL TANK - LH
RECTANGULAR FUEL TANK(S)
PLAIN ALUMINUM/PAINTED STEEL FUEL/HYDRAULIC TANK(S) WITH PAINTED BANDS
FUEL TANK(S) FORWARD
POLISHED STAINLESS-STEEL STEP FINISH
FUEL TANK CAP(S)
DETROIT FUEL/WATER SEPARATOR WITH WATER IN FUEL SENSOR
EQUIFLO INBOARD FUEL SYSTEM
NO NATURAL GAS VEHICLE FUEL TANK VENT LINE/STACK
HIGH TEMPERATURE REINFORCED NYLON FUEL LINE
FUEL COOLER MOUNTED LEFT HAND IN RAIL

Tires
MICHELIN XDS 12R22.5 16 PLY RADIAL FRONT TIRES
MICHELIN XDS 12R22.5 16 PLY RADIAL REAR TIRES

Hubs
MERITOR IRON FRONT HUBS
CONMET PRESET PLUS PREMIUM IRON REAR HUBS

Wheels
ALCOA LVL ONE 88367X 22.5X8.25 10-HUB PILOT 5.79 INSET ALUMINUM DISC FRONT WHEELS
ALCOA LVL ONE 88367X 22.5X8.25 10-HUB PILOT ALUMINUM DISC REAR WHEELS
POLISHED FRONT WHEELS; OUTSIDE ONLY
POLISHED REAR WHEELS; OUTSIDE OF OUTER WHEELS ONLY
FRONT WHEEL MOUNTING NUTS
REAR WHEEL MOUNTING NUTS

Cab Exterior
154 INCH BBC HIGH-ROOF ALUMINUM CONVENTIONAL CREW CAB
AIR CAB MOUNTING
CAB ROOF REINFORCEMENTS FOR ROOF MOUNTED COMPONENTS
NONREMOVABLE BUGSCREEN MOUNTED BEHIND GRILLE
SAFETY YELLOW LH AND RH INTERIOR GRAB HANDLES AND LH AND RH EXTERIOR NON-SLIP GRAB HANDLES
HOOD MOUNTED CHROMED PLASTIC GRILLE
CHROME HOOD MOUNTED AIR INTAKE GRILLE
FIBERGLASS HOOD
HOOD LINER, ADDED FIREWALL AND FLOOR HEAT INSULATION
DUAL 25 INCH ROUND STUTTER TONE HOOD MOUNTED AIR HORNS WITH DUAL LANYARDS
DUAL ELECTRIC HORNS
DUAL HORN SHIELDS
DOOR LOCKS AND IGNITION SWITCH KEYED THE SAME
REAR LICENSE PLATE MOUNT END OF FRAME
INTEGRAL HEADLIGHT/MARKER ASSEMBLY WITH CHROME BEZEL
LED AERODYNAMIC MARKER LIGHTS
DAYTIME RUNNING LIGHTS
TRUCK-LITE 3 CHAMBER MODULES WITH 45 SERIES SEALED BEAM LAMPS
STANDARD FRONT TURN SIGNAL LAMPS
DUAL WEST COAST BRIGHT FINISH HEATED MIRRORS WITH LH AND RH REMOTE DOOR MOUNTED MIRRORS
102 INCH EQUIPMENT WIDTH
LH AND RH 8 INCH BRIGHT FINISH CONVEX MIRRORS MOUNTED UNDER PRIMARY MIRRORS
RH DOWN VIEW MIRROR
STANDARD SIDE/REAR REFLECTORS
ELECTRIC HORN WARNING SYSTEM FOR PARK BRAKE NOT SET WITH DOOR OPEN AND ALL IGNITION KEY POSITIONS
63X14 INCH TINTED REAR WINDOW
TINTED DOOR GLASS LH AND RH WITH TINTED NON-OPERATING WING WINDOWS
RH AND LH ELECTRIC POWERED WINDOWS, PASSENGER SWITCHES ON DOOR(S)
TINTED WINDSHIELD

2 GALLON WINDSHIELD WASHER RESERVOIR WITHOUT FLUID LEVEL INDICATOR, FRAME MOUNTED

Cab Interior
OPAL GRAY VINYL INTERIOR
MOLDED PLASTIC DOOR PANEL WITHOUT VINYL INSERT WITH ALUMINUM KICKPLATE LOWER DOOR
MOLDED PLASTIC DOOR PANEL WITHOUT VINYL INSERT WITH ALUMINUM KICKPLATE LOWER DOOR
BLACK MATS WITH SINGLE INSULATION
FORWARD ROOF MOUNTED CONSOLE WITH UPPER STORAGE COMPARTMENTS AND ADDITIONAL CENTER COMPARTMENT WITHOUT NETTING
IN DASH STORAGE BIN
LH DOOR MAP POCKET
(2) CUP HOLDERS LH AND RH DASH
GRAY/CHARCOAL FLAT DASH
SMART SWITCH EXPANSION MODULE
HEATER, DEFROSTER AND AIR CONDITIONER
STANDARD HVAC DUCTING
MAIN HVAC CONTROLS WITH RECIRCULATION SWITCH
STANDARD HEATER PLUMBING
VALEO HEAVY DUTY A/C REFRIGERANT COMPRESSOR
BINARY CONTROL, R-134A
PREMIUM INSULATION
SOLID-STATE CIRCUIT PROTECTION AND FUSES
12V NEGATIVE GROUND ELECTRICAL SYSTEM
DOOR ACTIVATED DOME/RED MAP LIGHTS, FORWARD LH AND RH AND REAR LH, RH AND CENTER
LH AND RH ELECTRIC DOOR LOCKS
(1) 12V POWER SUPPLY (1) DUAL 2.1 AMP USB CHARGER IN DASH
H.O. BOSTROM SIERRA AIR-50 HIGH BACK AIR SUSPENSION DRIVER SEAT WITH ADJUSTABLE RECLINE, FIXED LUMBAR AND NFPA 1901-2009/2016 COMPLIANT SEAT SENSOR
H.O.BOSTROM TANKER 450 SCBA NON-SUSPENSION PASSENGER SEAT WITH UNDERSEAT STORAGE, SECUREALL READY CUSHION AND NFPA 1901-2009/2016 COMPLIANT SEAT SENSOR
H.O. BOSTROM TANKER 450 SCBA NON-SUSPENSION LH AND RH REAR PASS SEATS W/ UNDER SEAT STORAGE, SECUREALL READY CUSHION & NF
LH AND RH INTEGRAL DOOR PANEL ARMRESTS
GRAY AND BLACK DURAWEAR FABRIC DRIVER SEAT COVER, SEAT BOLSTER AND INSERT
GRAY AND BLACK DURAWEAR FABRIC PASSENGER SEAT COVER, SEAT BOLSTER AND INSERT
GRAY AND BLACK DURAWEAR FABRIC REAR PASSENGER SEAT COVER, SEAT BOLSTER AND INSERT
NFPA 1901-2009 HIGH VISIBILITY ORANGE SEAT BELTS
ADJUSTABLE TILT AND TELESCOPING STEERING COLUMN
4-SPOKE 18 INCH (450MM) STEERING WHEEL
DRIVER AND PASSENGER INTERIOR SUN VISORS

Instruments & Controls
GRAY DRIVER INSTRUMENT PANEL
GRAY CENTER INSTRUMENT PANEL
ENGINE REMOTE INTERFACE WITH PARK BRAKE INTERLOCK

BLACK GAUGE BEZELS
LOW AIR PRESSURE INDICATOR LIGHT AND AUDIBLE ALARM
2 INCH PRIMARY AND SECONDARY AIR PRESSURE GAUGES
DASH MOUNTED AIR RESTRICTION INDICATOR WITH GRADUATIONS
ELECTRONIC CRUISE CONTROL WITH SWITCHES IN LH SWITCH PANEL
IGNITION SWITCH WITH NON-REMOVABLE KEY
ICU3S, 132X48 DISPLAY WITH DIAGNOSTICS, 28 LED WARNING LAMPS AND DATA LINKED
HEAVY DUTY ONBOARD DIAGNOSTICS INTERFACE CONNECTOR LOCATED BELOW LH DASH
2 INCH ELECTRIC FUEL GAUGE
ENGINE REMOTE INTERFACE WITH PRESET FAST IDLE
ENGINE REMOTE INTERFACE CONNECTOR IN ENGINE COMPARTMENT
ELECTRICAL ENGINE COOLANT TEMPERATURE GAUGE
2 INCH TRANSMISSION OIL TEMPERATURE GAUGE
ENGINE AND TRIP HOUR METERS INTEGRAL WITHIN DRIVER DISPLAY
(1) DASH MOUNTED PTO SWITCH WITH INDICATOR LAMP
ELECTRONIC STABILITY CONTROL
ELECTRIC ENGINE OIL PRESSURE GAUGE
NO OVERHEAD INSTRUMENT PANEL
NFPA VEHICLE DATA RECORDER AND SEATBELT DISPLAY
ELECTRONIC MPH SPEEDOMETER WITH SECONDARY KPH SCALE, WITHOUT ODOMETER
STANDARD VEHICLE SPEED SENSOR
ELECTRONIC 3000 RPM TACHOMETER
IGNITION SWITCH CONTROLLED ENGINE STOP
(2) OVERHEAD MOUNTED LANYARD CONTROLS: (1) OFFICER AIR HORN AND (1) DRIVER AIR HORN
DIGITAL VOLTAGE DISPLAY INTEGRAL WITH DRIVER DISPLAY
SINGLE ELECTRIC WINDSHIELD WIPER MOTOR WITH DELAY PROGRAMMED TO SLOWEST SPEED WITH PARK BRAKE SET
MARKER LIGHT SWITCH INTEGRAL WITH HEADLIGHT SWITCH
ALTERNATING FLASHING HEADLAMP SYSTEM WITH BODY BUILDER CONTROLLED ENGAGEMENT
ONE VALVE PARKING BRAKE SYSTEM WITH DASH VALVE CONTROL AUTONEUTRAL AND WARNING INDICATOR
SELF CANCELING TURN SIGNAL SWITCH WITH DIMMER, WASHER/WIPER AND HAZARD IN HANDLE
INTEGRAL ELECTRONIC TURN SIGNAL FLASHER WITH HAZARD LAMPS OVERRIDING STOP LAMPS

FREIGHTLINER - EMBER SEPARATOR FOR COMMERCIAL CHASSIS

QTY: 1

An air inlet shall be equipped with a stainless mesh screen for separating water and burning embers from the air intake system such that particulate matter larger than 0.039" (1.0 mm) in diameter cannot reach the air filter element.

FREIGHTLINER - SEAT BELT CLARIFICATION FOR NFPA 1901, REV 2003

QTY: 1

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

FREIGHTLINER - OEM 20" BUMPER EXTENSION WITH OEM BUMPER AND KME GRAVEL SHIELD

QTY: 1

The OEM front bumper shall be extended by the chassis manufacturer approximately 20 inches. The body installer will provide an aluminum tread plate gravel shield.

FREIGHTLINER - ONE (1) AUX. AIR INLET SYSTEM NEAR LEFT DOOR

QTY: 1

A quick disconnect male auxiliary air inlet shall be provided at the driver's side door area at a location to be determined at a pre-construction conference.

A mating quick disconnect female connector shall be shipped loose with the apparatus.

This shall allow a Purchaser furnished external air supply to be connected to the chassis air system.

COVER LEFT CAB STEP WITH TREAD PLATE OVERLAY

QTY: 1

The driver side cab step area shall be overlaid with polished aluminum tread plate.

Step areas shall be fabricated from Alcoa "No-Slip" tread plate.

CENTER CONSOLE FOR 4 DOOR - BRUSHED

QTY: 1

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

The forward area of the console shall have a mounting surface for emergency lighting switch panels and/or electronic siren control boxes within reach of the driver or officer.

In addition, the console shall be equipped with two (2) map/notebook storage pockets at the rear of the console.

The console shall be finished with a brushed aluminum finish with hinged cover.

Console dimensions are based on current cab models. Other specified commercial cabs (or changes to the cab) may result in varied dimensions.

COVER FUEL TANK WITH TREAD PLATE OVERLAY

QTY: 1

The step type fuel tank shall be overlaid with polished aluminum tread plate.

This shall include the top, front and both ends. Step areas shall be provided for access to the cab.

Step areas shall be fabricated from Alcoa "No-Slip" tread plate.

COVER BATTERY BOX WITH TREAD PLATE OVERLAY

QTY: 1

The battery box shall be overlaid with polished aluminum tread plate.

The cover of this box shall be easily removable for inspection of the batteries.

COVER OFFICER CAB STEP WITH TREAD PLATE OVERLAY

QTY: 1

The officer side cab step area shall be overlaid with polished aluminum tread plate.

Step areas shall be fabricated from Alcoa "No-Slip" tread plate.

STORAGE UNDER REAR CAB DOOR - OFFICER SIDE W/ SLIDE OUT TRAY

QTY: 1

A weatherproof, tool storage compartment shall be mounted under the officer side rear cab door. The compartment shall be constructed of 3/16" aluminum diamond tread and 3/16" aluminum plate. This compartment shall utilize the maximum amount of space available. A 250# slide out tray shall be mounted in the compartment with a treadplate door with a D-ring handle attached to the tray. The door shall be provided with a door switch to activate a Weldon #2630 light and the do not move apparatus circuit.

FREIGHTLINER - AUXILIARY AIR MANIFOLD - COMMERCIAL CHASSIS

QTY: 1

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

COMMERCIAL CHASSIS ELECTRICAL SYSTEM DESCRIPTION

QTY: 1

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

BOSTROM "SECUREALL "SCBA BOTTLE BRACKET - OFFICER'S SEAT

QTY: 1

The officer's seat shall include a H.O. BOSTROM Secure All SCBA Locking System.

The bracket system shall be free of straps and clamps that may interfere with auxiliary equipment on SCBA units.

The center guide fork shall keep the tank in-place for a safe and comfortable fit in seat cavity.

Fire fighters shall simply push the SCBA unit against the pivot arm to engage the patented, auto-locking system.

Once the lock is engaged, the top clamp shall surround the top of the SCBA tank for a secure fit in all directions.

The standard release handle shall be integrated into the seat cushion for quick and easy release and shall eliminate the need for straps or pull cords to interfere with other SCBA equipment.

BOSTROM "SECUREALL"SCBA BOTTLE BRACKET – DRIVER SIDE

QTY: 1

The driver's side forward facing, outboard seat shall include a H.O. BOSTROM Secure All SCBA Locking System.

The bracket system shall be free of straps and clamps that may interfere with auxiliary equipment on SCBA units.

The center guide fork shall keep the tank in-place for a safe and comfortable fit in seat cavity.

Fire fighters shall simply push the SCBA unit against the pivot arm to engage the patented auto-locking system.

Once the lock is engaged, the top clamp shall surround the top of the SCBA tank for a secure fit in all directions.

The standard release handle shall be integrated into the seat cushion for quick and easy release and shall eliminate the need for straps or pull cords to interfere with other SCBA equipment.

BOSTROM "SECUREALL"SCBA BOTTLE BRACKET - OFFICER SIDE

QTY: 1

The officer's side forward facing, outboard seat shall include a H.O. BOSTROM Secure All SCBA Locking System.

The bracket system shall be free of straps and clamps that may interfere with auxiliary equipment on SCBA units.

The center guide fork shall keep the tank in-place for a safe and comfortable fit in seat cavity.

Fire fighters shall simply push the SCBA unit against the pivot arm to engage the patented auto-locking system.

Once the lock is engaged, the top clamp shall surround the top of the SCBA tank for a secure fit in all directions.

The standard release handle shall be integrated into the seat cushion for quick and easy release and shall eliminate the need for straps or pull cords to interfere with other SCBA equipment.

AKRON/WELDON VEHICLE DATA RECORDER DOWNLOAD HARNESS

QTY: 1

A Weldon model #0L40-2597-00, VDR download harness shall be supplied with the system to allow the data to be downloaded to a computer.

CAB EMS CENTER COMPT LIGHTING, AMDOR LUMA BAR

QTY: 1

The EMS compartment shall be equipped with (2) two Amdor LED interior lights.

The lighting shall be wired to activate when either switch is activated.

PAINTED CAB EMS COMPT CENTER REAR WALL

QTY: 1

A storage compartment shall be mounted against the center rear wall of the cab crew area between the seats.

The compartment shall be made as wide, as high and as deep as possible within the available space.

The door openings shall be on the sides, facing the seats and shall be as wide and as high as possible. The front and rear of the compartment shall be solid walls.

The compartment shall be constructed of smooth aluminum and shall be equipped with cargo netting with footman loops across both door openings to retain items within the compartment.

There shall be a push button switch located on each side of the compartment to activate the interior compartment lighting.

The compartment shall be painted with textured paint, matching the interior color of the cab.

Compartment openings to have cargo netting attached at the top of the opening with quick release buckles

ADJUSTABLE SHELVE(S) FOR EMS STORAGE COMPARTMENT

QTY: 2

An adjustable shelf shall be provided in the EMS compartment. The shelf shall be constructed from 3/16" brush aluminum mounted to uni-strut tracking material.

HOSE WELL DRIVER SIDE OF BUMPER EXTENSION

QTY: 1

One (1) storage well-constructed of 1/8" aluminum (will/shall) be installed in the gravel shield. This storage well (will/shall) be located on the driver side of the bumper extension. The bottom of the storage well (will/shall) have a minimum of four (4) drain holes.

CUSTOM - ONE (1) HINGED, LATCHED TREAD PLATE COVER

QTY: 1

One (1) hinged, latched, aluminum tread plate cover shall be installed on the storage well located in the driver side of the bumper extension.

CUSTOM - TREAD PLATE COVER NOTCHED FOR PRE-CONNECT

QTY: 1

The tread plate, hose well cover shall have a notch cut out to allow pre-connection of suction/ discharge hose.

DRIVER WELL- HOSE CAPACITY

QTY: 1

The driver storage well (will/shall) have the desired capacity of:

100 FEET OF 1-3/4" DRIVER SIDE WELL

QTY: 1

100' of 1 3/4" hose

TWO (2) PAINTED TOW HOOKS BELOW FRONT BUMPER

QTY: 1

Two (2) front painted, tow hooks shall be fastened directly to the frame below the front bumper.

The tow hooks shall be fastened with grade 8 bolts and nuts.

KUSSMAUL AUTO AIR EJECT INLET WITH WATERPROOF KIT

QTY: 1

A Kussmaul Auto Air Eject #091-28 inlet shall be provided on the driver side of the cab. The Air Eject shall be mounted using a Kussmaul Weatherproof Adapter Kit #091-28AK.

AIR EJECT LOCATION - DRIVER'S STEP WELL

QTY: 1

The air eject shall be located in the driver's cab step well in a pre-determined location by KME.

TRANSMISSION LOCK-UP

QTY: 1

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

A positive braking system shall be provided to prevent vehicle movement during pumping operations.

The air brakes furnished must satisfy this requirement.

FAST IDLE RETROFIT, ELECTRONIC ENGINES

QTY: 1

A fast for the electronic controlled engine shall be provided. An ON/OFF switch on the dash shall control the fast idle.

An electronic interlock system shall prevent the fast idle from operating unless the transmission is in "Neutral" (or "Park" if so equipped) and the parking brake is fully engaged.

If the fast-idle control is used in conjunction with a specified engine/transmission driven component or accessory, the fast-idle control shall be properly interlocked with the engagement of the specified component or accessory.

MULTIPLEX CONTROL PUMP SHIFT SWITCH - MULTIPLEX

QTY: 1

The pump shift control shall be a Mil Spec toggle switch with mechanical detents mounted in a fully backlit panel that shall have indicators for “Pump Engage” and “Ok To Pump”.

The mode of the transfer case shall be controlled by remotely mounted air solenoids which shall be activated and monitored through the chassis control logic of the multiplex system.

12 VOLT ELECTRICAL SYSTEM TESTING - ALL UNITS

QTY: 1

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

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

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

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

The total continuous electrical load shall be activated with the engine running up to the engine manufacturers governed speed. The test duration shall be a minimum of 2 hours. Activation of

the load management system shall be permitted during this test. However, an alarm sounded due to excessive battery discharge, as detected by the system, or a system voltage of fewer than 11.7 volts DC for a 12-volt system, for more than 120 seconds, shall be considered a test failure.

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

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

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

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

CLASS-1 ES-KEY MULTI-PLEXED ELECTRICAL SYSTEM - COMMERCIAL

QTY: 1

A Class 1 ES-Key Electrical Management System shall be utilized on the chassis for all functions applicable. The system shall consist of the following components:

The High Density I/O Node (Super Node) shall have the ability to perform the following functions:

A modem with an RS232 computer interface and standard telephone jack used to not only program the multiplex system but also serve as a factory direct gateway into the vehicle from any Class 1 multiplex authorized service facility.

A Universal System Manager (USM), which acts as the main controlling component of the multiplexing system shall be provided and factory programmed to DOT, NFPA, SAE, the manufacturer and {Company} specifications. The programming shall be done by the manufacturer's engineering department. The ES-Key system installation shall comply with SAE J 551 requirements regarding Electromagnetic and Radio Frequency Interference (EMI, RFI), as well as utilize components and wiring practices that ensure the system is protected against corrosion, excessive temperatures, water, excessive physical, and vibration damage by any equipment installed on the vehicle at the time of delivery.

A series of Multiplexing Input/Output jacks shall be provided. The Input/Output jacks shall permit the multiplexing system to reduce the amount of wiring and components used as compared to non-multiplexed apparatus. These jacks shall vary in I/O configuration and shall possess individual output internal circuit protection.

The System shall also consist of programmable switches that shall be installed and allow the operator to control the programmed functions of each individual switch.

Diagnostic software shall be provided to download data from the onboard ES-KEY system. This software shall have the ability to view system input/output (I/O) information and include a connection from a computer to the vehicle.

120 VOLT 20 AMP SUPER AUTO EJECT FOR BATT CHARGER - CUSTOM

QTY: 1

One (1) Kussmaul "Super" Auto Eject model 091-55-20-120, automatic, 120-volt, 20-amp shoreline disconnect shall be provided for the on board, 110-volt battery charging systems.

The disconnect shall be equipped with a NEMA 5-20 P male receptacle, which shall automatically eject the shoreline when the vehicle starter is energized.

The mating connector shall be included with the auto eject and shall be provided as loose equipment.

A label shall be provided indicating voltage and amperage ratings.

SHORELINE RECEPTACLE LABEL - NFPA

QTY: 1

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

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

YELLOW COVER FOR KUSSMAUL AUTO-EJECT RECEPTACLE

QTY: 1

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

SHORELINE LOCATION - DRIVER'S STEP WELL

QTY: 1

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

VISTER HIC-1000 - 40 AMP CHARGER/ 1,000-WATT INVERTER

QTY: 1

The chassis shall be equipped with a Vister, HIC-1000, fully automatic battery inverter/charger.

The unit shall contain a 40 amp, fully automatic battery charger to re-charge and maintain the chassis batteries when the shoreline connection has been made.

The battery charger features patented pulse charging technology that extends battery life and reduces battery charging time.

The unit shall also contain a built-in inverter capable of providing 1,000 watts of continuous AC power and a 2,000-watt surge capacity.

The unit shall have a built in 30-amp transfer switch capable of diverting AC power to AC loads during shoreline connection.

The inverter/charge shall also have a cab dash mounted Remote capable of indicating the shoreline connection, inverter status and faults as well as an ON/OFF switch for the inverter.

The inverter/charger shall be the same size as a group 31 battery and shall be mounted by KME in a predetermined area.

BATTERY DISCONNECT SWITCH, ALL UNITS

QTY: 1

The chassis batteries shall be wired in parallel to a single 12-volt electrical system, controlled through a heavy-duty master disconnect switch.

The master disconnect switch shall be located within easy access of the driver upon entering or exiting the cab.

STANDARD #MATM RADIO ANTENNA INSTALLED ROUTED TO CENTER CONSOLE

QTY: 2

An antenna mounting base(s) model #MATM with 17' of coaxial cable shall be provided and installed on the lower cab roof, behind the light bar.

The attached antenna wire(s) shall be run to the center console.

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

CONTROL SWITCHING - EATON MULTIPLEX SWITCHES - 6 N

QTY: 1

The commercial cab shall be equipped with an area for component switching within easy reach of the driver and or officer. This switch package shall separate the emergency / auxiliary electrical functions from the regular chassis functions. A minimum of six (6) programmable CAN Bus Eaton model #E33 switches with integral indicator lights shall be provided.

The six (6) switches shall be located in the cab near the driver for warning lights and auxiliary controls. A master warning switch shall be provided, which shall allow pre-setting of emergency light switches and shall have a red integral indicator light.

CONTROL SWITCHING LABELING

QTY: 1

All switches, (other than the master switch), shall have switch function labeling and an integral indicator light.

HOSEBED WORKLIGHT SWITCH - RECESSED

QTY: 1

The hose bed work light switch shall be installed in a recessed pocket.

HOSE BED WORK LIGHT - SWITCH

QTY: 1

The hose bed work light shall have a protected 12-volt switch at the rear body panel.

The switch will be labeled "HOSE BED WORK LIGHTS."

CONTROL SWITCH IN CAB FOR REAR OF BODY LIGHTS

QTY: 1

A switch shall be provided in the cab warning, light switch console to turn the rear of body lights on and off.

CONTROL SWITCH ON PUMP PANEL FOR REAR OF BODY LIGHTS

QTY: 1

A switch shall be provided on the pump panel to turn the rear of body lights on and off.

CONTROL SWITCH IN CAB FOR DRIVER SIDE OF BODY LIGHTS

QTY: 1

A switch shall be provided in the cab warning, light switch console to turn the driver side of body lights on and off.

CONTROL SWITCH ON PUMP PANEL FOR DRIVER SIDE OF BODY LIGHTS

QTY: 1

A switch shall be provided on the pump panel to turn the driver side of body lights on and off.

CONTROL SWITCH IN CAB FOR OFFICER SIDE OF BODY LIGHTS

QTY: 1

A switch shall be provided in the cab warning, light switch console to turn the officer side of body lights on and off.

CONTROL SWITCH ON PUMP PANEL FOR OFFICER SIDE OF BODY LIGHTS

QTY: 1

A switch shall be provided on the pump panel to turn the officer side of body lights on and off.

ENGINE COMPARTMENT WORK LIGHTS - TECNIQ LED

QTY: 1

Two (2) Tecniq model #E18 LED lights shall be provided inside the engine enclosure that will provide 800 lumens each.

Each light shall have their own independent switch incorporated into the light head.

AUTOMATIC FAST IDLE OPTION FOR CLASS-1 ES-KEY ELECT MANAGER

QTY: 1

This feature automatically increases engine rpm and the available alternator output current.

Chassis voltage is monitored at all times by the ES-Key system and when it drops to or below 12.8VDC for more than 10 seconds, the hi-idle output of the ES-Key system is activated.

As long as the proper interlocks are present; transmission in NEUTRAL, park brake SET, and additional drive line assessors (Pump & PTO's) are NOT engaged; the engine rpms shall increase to a specified set point.

At any time, the ES-Key system's hi-idle command can be canceled by a loss of any of the specified required interlocks.

Also, at any time, the ES-Key system's hi-idle command can be paused for 30 seconds by a foot brake depression or momentary start switch activation (in the situation where the engine has been off for some time).

The ES-Key system's automatic hi-idle command shall remain active until the chassis voltage rises above 12.8VDC and remains there for 3 minutes.

When the hi-idle command is requested by the ES-Key system due to the lower chassis voltage described, the ES-Key dashboard display shall read "Auto Hi-Idle" to clearly indicate to the apparatus operator that the engine is at a, or shall go to, a hi-idle state.

When all interlocks are preset and the engine is at a hi-idle state, the red "FAST IDLE" indicator in the dashboard shall illuminate.

120 VOLT 5-15R RECEPT REAR EMS COMPART WIRED TO SHORELINE

QTY: 1

SHORELINE RECEPTACLE
A 120-volt 5-15 R household type receptacle(s) shall be located in the rear EMS compartment as directed. The receptacle(s) shall be wired into the shoreline receptacle to provide a 120-volt power source for fire department equipment.

ONE (1) 13 INCH OUTLET STRIP - BEHIND DRIVER SEAT

QTY: 1

OUTLET STRIP
One (1) 13-inch-long, 110V outlet strip shall be installed behind the driver seat. The outlet strip shall have four (4) single household receptacles.

12 VOLT POWER PORT LOCATED NEAR DRIVER

QTY: 1

A 12-volt power port accessory outlet(s) shall be installed in the cab of the truck for the fire departments accessory devices.

The port(s) shall be located as directed near the driver's seating position for devices such as cellular phones.

12 VOLT POWER PORT LOCATED NEAR OFFICER

QTY: 1

A 12-volt power port accessory outlet(s) shall be installed in the cab of the truck for the fire departments accessory devices.

The port(s) shall be located as directed near the officer's seating position for devices such as cellular phones.

12 VOLT POWER PORT IN REAR CREW AREA - REAR OF DOGHOUSE

QTY: 1

A 12-volt power port accessory outlet(s) shall be installed in the cab of the truck for fire department accessory devices.

The port(s) shall be located in the rear crew area, on the rear of the doghouse.

12 VOLT POWER PORT LOCATED IN REAR EMS COMPARTMENT

QTY: 2

A 12-volt power port accessory outlet(s) shall be installed in the cab of the truck for the fire departments accessory devices.

The port(s) shall be located in the rear EMS compartment, as directed, for devices such as cellular phones.

KUSSMAUL USB CHARGING PORT LOCATED NEAR DRIVER

QTY: 1

A Kussmaul USB charging port(s) shall be installed in the cab of the truck for the fire departments accessory devices.

Each port shall have two (2) USB connections and shall have a 5-volt, 4.2-amp max output.

The port(s) shall be located as directed near the driver's seating position for devices such as cellular phones.

12 VOLT POWER AND GROUND CIRCUIT, IN CAB CONSOLE

QTY: 1

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One (1) dedicated bus bar style switched circuit 12-volt, 75 Amp, power and ground fused at battery shall be provided in the cab console. The circuit shall be for future installation of radios or accessories.

KUSSMAUL USB CHARGING PORT LOCATED NEAR OFFICER

QTY: 1

A Kussmaul USB charging port(s) shall be installed in the cab of the truck for the fire departments accessory devices.

Each port shall have two (2) USB connections and shall have a 5-volt, 4.2-amp max output.

The port(s) shall be located as directed near the officer's seating position for devices such as cellular phones.

KUSSMAUL USB CHARGING PORT IN REAR CREW AREA - REAR OF DOG HOUSE

QTY: 1

Quantity} Kussmaul USB charging port(s) shall be installed in the cab of the truck for fire department accessory devices.

Each port shall have two (2) USB connections and shall have a 5-volt, 4.2-amp max output.

The port(s) shall be located in the rear crew area, on the rear of the doghouse.

12 VOLT POWER AND GROUND CIRCUIT, BEHIND OFFICERS SEAT

QTY: 2

One (1) dedicated circuit; 12-volt, 40 Amp, power and ground on 3/8 stud and fused at battery shall be behind the officer seat.

The circuit shall be for future installation of radios or accessories.

BLUE SEA FUSE BLOCK - 12 CIRCUIT IN CREW AREA

QTY: 1

A Blue Sea 5026B, 12 circuit fuse block, shall be installed behind the officer's seat.

This block has a maximum amperage of 60 Amps per block and 30 Amps per circuit.

MULTI - USE POWER POINT IN REAR OF CAB

QTY: 1

A Mobile Vision (Magnadyne DVU-3G2) multi-use power point with built in two (2) USB ports, and two (2) 12-volt sockets shall be installed in the rear of the cab on the back of the engine enclosure.

This will be capable of supplying the USB ports with up to three (3) amps and have a 15-amp fuse for overall protection.

IGNITION STUD - REAR CREW AREA

QTY: 1

An ignition stud shall be installed in the rear crew area for items needing an ignition circuit (i.e. mobile radio).

This stud has a maximum amperage of 20 Amps.

FEDERAL SIGNAL CAMERA SYSTEM, 7.0" COLOR LCD - REAR CAMERA

QTY: 1

A Federal Signal model # CAMSET70-NTSC-4B rear vision camera system shall be provided to allow the driver to visually see the rear of the apparatus while in the cab.

The system shall include a Federal 7.0" flat panel LCD color monitor mounted adjacent to the driver and a Federal rear vision color camera that shall be mounted at the rear of the vehicle.

The system shall also feature a microphone on the camera and speaker built into the monitor.

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

REAR CAMERA RECESSED IN INTERMEDIATE STEP

QTY: 1

The reverse camera shall be recessed mounted in the intermediate rear step.

REAR VISION MONITOR MOUNTED ON CAB CEILING

QTY: 1

The monitor for the rear vision system shall be mounted ceiling of the cab in easy view of the driver.

Note: This will be a separate screen, this will not be part of the ES-Key screen.

COMMERCIAL CHASSIS MARKER LIGHTS AND REFLECTORS

QTY: 1

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

CAB STEP LIGHTS, TECNIQ EON 3 LED, ALL DEVICES

QTY: 4

Polished, stainless steel, TecNiq Eon, 3-LED, horizontal surface mounted chassis step lights shall be provided and controlled with marker light actuation.

Step lights shall be located to properly illuminate all chassis access steps and walkway areas and shall include a mounting gasket to provide a watertight seal.

GOLIGHT #20214 REMOTE LED SPOT LIGHT, OS SIDE CAB - BLACK

QTY: 1

A Go light model # 20214 LED remote controlled spotlight shall be provided and mounted on the officer side of the cab roof. The Go light spotlight shall be equipped with a LED light and shall be controlled from the cab. The remote control shall be mounted within easy reach of the driver and officers or as directed by the fire department.
The Go light shall have a BLACK housing.

GOLIGHT CAB RISER FOR OS SIDE LIGHT - BLACK

QTY: 1

The officer side Go light shall be mounted on an aluminum riser that shall be painted BLACK and mounted on the cab roof.

INNOVATIVE LIGHTING #580-0200 HULL LIGHTS IN REAR WHEEL WELL PANELS

QTY: 1

Two (2) Innovative Lighting #580-0200 "Hull" lights shall be provided in the rear wheel well panels, one (1) each side.

The lights shall be recessed into the wheel well panel and shall be equipped with a mirror polished housing.

The lights shall be activated by the reverse light circuit when the apparatus is operating as an emergency vehicle (Primary Warning Switch On).

SEPERATE SWITCH IN CAB FOR HULL REVERSE LIGHTS

QTY: 1

The hull lights shall also be switched with a separate switch located in the cab.

NFPA COMPLIANT WARNING LIGHT PACKAGE

QTY: 1

The following warning light package shall include all of the minimum warning light and actuation requirements for the current revision of the NFPA 1901 Fire Apparatus Standard.

The lighting as specified shall meet the requirements for both "Clearing Right of Way" and "Blocking Right of Way" which includes disabling all white warning lights when the apparatus is in "Blocking Right of Way" mode.

WARNING LIGHT FLASH PATTERN - NFPA FLASH PATTERN

QTY: 1

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

LIGHT PACKAGE ACTUATION/CONTROLS

QTY: 1

The entire warning light package shall be actuated with a single warning light switch located on the cab switch panel.

The wiring for the warning light package shall engage all of the lights required for "Clearing Right of Way" mode when the vehicle parking brake is not engaged.

An automatic control system shall be provided to switch the warning lights to the "Blocking Right of Way" mode when the vehicle parking brake is engaged.

LIGHT PACKAGE NFPA CERTIFICATION

QTY: 1

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

The warning light system(s) shall be certified by the light system manufacturer(s), to meet all of the requirements in the current revision of the NFPA 1901 Fire Apparatus Standard as noted in the General Requirements section of these specifications.

The NFPA required "Certificate of Compliance" shall be provided with the completed apparatus.

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

A-UPPER, CODE 3 LED DF58ANFPA1, LIGHT BAR

QTY: 1

A Code 3, DF58ANFPA1, "Defender Tri-Core Series", 58" LED, cab roof warning light bar shall be furnished and rigidly mounted on top of the cab roof.

The light bar shall be equipped with the following:

- Clear Lenses with a Black Top
- Eight Forward Facing Red - TriCore 6 LED Red Modules
- Four Corners TriCore 6 LED Red Modules

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

C-UPPER, CODE 3 PRIZM II 4X6 SERIES LED - 4 LIGHTS

QTY: 1

Four (4) Code 3 4612*BZ-75, Prizm II LED lights, shall be furnished and mounted with two (2) on each side at the rear, upper portion of the apparatus.

Each light head shall be equipped with red LEDs and a colored lens.

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

UPPER ZONE C WARNING LIGHT LENS - RED

QTY: 1

The upper zone C warning lights shall include red LEDs and a red lens.

UPPER ZONE C WARNING LIGHT BEZEL - CHROME

QTY: 1

The upper zone C warning lights shall include a chrome bezel.

B/D-UPPER FRONT, CODE 3 PRIZM II SERIES 4X6 LED

QTY: 1

Two (2) surface mounted, Code 3, 468*BZ-75 Prizm II LED light heads shall be furnished and mounted with one (1) on each side on the upper side face, towards the front of the body, facing to each side of the unit.

Each light head shall be equipped with red LEDs and a colored lens.

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

UPPER ZONE B/D FRONT WARNING LIGHT LENS - RED

QTY: 1

The upper zone B/D front warning lights shall include red LEDs and a red lens.

UPPER ZONE B/D FRT WARNING LIGHT BEZEL - CHROME

QTY: 1

The upper zone B/D front warning lights shall include a chrome bezel.

B/D-UPPER REAR, CODE 3 PRIZM II SERIES 4X6 LED

QTY: 1

Two (2) surface mounted, Code 3, 4612*BZ-75 Prizm II LED light heads shall be furnished and shall be mounted with one (1) on each side on the upper side face, towards the rear of the body, facing to each side of the unit.

Each light head shall be equipped with red LEDs and a colored lens.

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

UPPER ZONE B/D REAR WARNING LIGHT LENS - RED

QTY: 1

The upper zone B/D rear warning lights shall include red LEDs and a red lens.

UPPER ZONE B/D REAR WARNING LIGHT BEZEL - CHROME

QTY: 1

The upper zone B/D rear warning lights shall include a chrome bezel.

A-LOWER FRONT MOUNTING, COMMERCIAL CHASSIS

QTY: 1

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

A-LOWER FRONT, CODE 3 PRIZM II SERIES 4X6 LED

QTY: 1

Two (2) Code 3, 4612*BZ-75 Prizm II, LED light heads shall be provided and installed with one (1) on each side.

LOWER ZONE A WARNING LIGHT LENS - RED

QTY: 1

The lower zone A warning lights shall include red LEDs and a red lens.

LOWER ZONE A WARNING LIGHT BEZEL - CHROME

QTY: 1

The lower zone A warning lights shall include red leds and a chrome bezel.

C-LOWER REAR, CODE 3 PRIZM II SERIES 4X6 LED

QTY: 1

Two (2) Code 3, 4612*BZ-75 Prizm II LED light heads shall be provided and installed with one (1) on each side directly below the DOT stop, tail, turn and backup lights.

LOWER ZONE C WARNING LIGHT LENS - RED

QTY: 1

The lower zone C warning lights shall include red LEDs and a red lens.

LOWER ZONE C WARNING LIGHT BEZEL - CHROME

QTY: 1

The lower zone C warning lights shall include a chrome bezel.

B/D-LOWER FRONT MOUNTING, COMMERCIAL CHASSIS

QTY: 1

The lower zone B & D warning lights shall be mounted on the sides of the commercial chassis hood at or forward of the centerline of the front axle. The light shall be mounted no higher than 62" from ground level.

B/D-LOWER FRONT, CODE 3 PRIZM II SERIES 4X6 LED

QTY: 1

Two (2) Code 3, 4612*BZ-75 Prizm II LED light heads shall be provided and installed with one (1) on each side.

LOWER ZONE B/D FRONT WARNING LIGHT LENS - RED

QTY: 1

The lower zone B/D front warning lights shall include red LEDs and a red lens.

LOWER ZONE B/D FRONT WARNING LIGHT BEZEL - CHROME

QTY: 1

The lower zone B/D front warning lights shall include a chrome bezel.

LOWER ZONE B/D REAR WARNING LIGHT LENS - RED

QTY: 1

The lower zone B/D rear warning lights shall include red LEDs and a red lens.

LOWER ZONE B/D REAR WARNING LIGHT BEZEL - CHROME

QTY: 1

The lower zone B/D rear warning lights shall include a chrome bezel.

B/D-LOWER REAR, CODE 3 PRIZM II SERIES 4X6 LED

QTY: 1

Two (2) Code 3, 4612*BZ-75 Prizm II LED light heads shall be provided and installed with one (1) on each side.

NFPA (4) AMDOR H2O LED GROUND LIGHTS, BELOW CAB DOORS

QTY: 1

One (1) Amdor Luma Bar, H2O, LED 20" ground light shall be provided under each side cab door entrance step, four (4) total.

The ground lights shall turn on automatically with each respective door jamb switch and also by a master ground light switch in the warning light switch console.

Each light shall illuminate an area at a minimum 30" outward from the edge of the vehicle.

GROUND LIGHTS, 2 LED UNDER FRONT BUMPER FACING FORWARD - H2O

QTY: 1

One (1) Amdor Luma Bar, H2O, LED 12" ground light shall be provided under each side of the front bumper facing forward, two (2) total.

The ground lights shall be activated by a master ground light switch in the cab and shall be wired through the load management system.

GROUND LIGHTS, 2 LED BELOW PUMP PANEL RUNNING BOARD - H2O

QTY: 1

One (1) Amdor Luma Bar, H2O, LED 20" ground light shall be provided under each side pump panel running board, two (2).

The ground lights shall be activated by a master ground light switch in the cab and shall be wired through the load management system.

GROUND LIGHTS, 2 LED BELOW FRONT BODY CORNERS - H2O

QTY: 1

One (1) Amdor Luma Bar, H2O, LED 20" ground light shall be provided under each front body corner, two (2) total.

The ground lights shall be activated by a master ground light switch in the cab and shall be wired through the load management system.

GROUND LIGHTS, 2 LED AT REAR BODY CORNERS - H2O

QTY: 1

One (1) Amdor Luma Bar, H2O, LED 20" ground light shall be provided under each rear body corner, two (2) total.

The ground lights shall be activated by a master ground light switch in the cab and shall be wired through the load management system.

CAB AND BODY GROUND LIGHTS ACTIVATE WITH PARKING BRAKE

QTY: 1

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

CHASSIS DIAGNOSTICS SYSTEM

QTY: 1

Diagnostic ports shall be accessible while standing on the ground and located inside the driver's side door left of the steering column. The diagnostic panel shall allow diagnostic tools such as computers to connect to various vehicle systems for improved troubleshooting providing a lower cost of ownership. Diagnostic switches shall allow engine and ABS systems to provide blink codes should a problem exist.

The diagnostic system shall include the following:

- A single port to monitor the engine, transmission and ABS system and diagnostics of the roll sensor (if applicable)
- Engine diagnostic switch (blink codes)
- ABS diagnostic switch (blink codes)
- Allison Transmission Codes (through touch pad shifter)

PUMPER BODY ELECTRICAL SYSTEM

QTY: 1

All electrical lines in the body shall be protected by automatic circuit breakers, conveniently located to permit ease of service.

Flashers, heavy solenoids and other major electrical controls shall be located in a central area near the circuit breakers.

All lines shall be color and function coded every 3", easy to identify, oversized for the intended loads and installed in accordance with a detailed diagram.

A complete wiring diagram shall be supplied with the apparatus.

Wiring shall be carefully protected from weather elements and snagging. Heavy duty loom shall be used for the entire length.

Grommets shall be utilized where wiring passes through panels.

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

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

BODY ELECTRICAL HARNESS - ES-KEY

QTY: 1

DOOR OPEN INDICATOR- CODE 3 #CB7265 RED BEACON CEILING MOUNTED

QTY: 1

A Code 3 model # CB7265, red LED rotating beacon shall be furnished on the cab ceiling to signal when an unsafe condition is present such as an open cab door or body compartment door, an extended ladder rack, a deployed stabilizer, an extended light tower or any other device which is opened, extended or deployed which may cause damage to the apparatus if it is moved.

This light shall be activated through the parking brake switch to signal when the parking brake is released.

This light shall be labeled "DO NOT MOVE TRUCK".

DUNNAGE AREA LIGHTING, TECNIQ EON 3 LED

QTY: 1

Two (2) stainless steel, TecNiq Eon 3-LED horizontal surface mounted lights shall be provided in the dunnage area to provide adequate illumination of this area.

These lights shall be switched in the same manner as the step lights.

COMPARTMENT LIGHT ACTIVATION

QTY: 1

Compartment lighting shall be switched either from an integral switch as provided by the roll up door manufacturer or a magnetic proximity switch if it is a KME manufactured door.

COMPARTMENT LIGHTS, AMDOR LUMA BAR LED LIGHTING - DUAL

QTY: 7

Each individual, equipment storage compartment shall be equipped with the AMDOR, Luma Bar, LED light fixture, mounted on each side of the forward (and rear) vertical door frame.

OPTRONICS MARKER/TURN LIGHTS @ EA SIDE OF BODY

QTY: 1

Optronics model MCL82RB, red, LED marker lights with integral reflectors shall be provided at the lower side rear, having one (1) on each side.

Optronics Model #STL71AMB, yellow, LED side marker and turn lights shall be provided on the apparatus lower side, forward of rear axle that puts one (1) on each side, if the apparatus is 30' long or longer.

OPTRONICS MARKER LIGHTS @ REAR OF BODY

QTY: 1

Optronics MCL65, red, LED clearance lights shall be provided on the apparatus rear upper having one (1) on each side at the outermost practical location.

Optronics MCL12, LED, 3-lamp identification bar will be provided on the apparatus rear center.

The lights shall be red in color.

TRUCK-LITE DOT AMBER REFLECTORS @ SIDE OF BODY

QTY: 1

Truck-Lite # 98034Y, yellow reflectors shall be provided on the apparatus body lower side, as far forward and low as practical with one (1) on each side if the apparatus is 30' long or longer.

TRUCK-LITE DOT RED REFLECTORS @ REAR OF BODY

QTY: 1

Truck-Lite # 98034R, red reflectors shall be provided on the apparatus rear with one (1) on each side at the outermost practical location.

BRITAX, 6" ANGLED RUBBER LED LIGHT @ REAR BODY CORNERS

QTY: 1

Two (2) rubber, angled LED marker lights shall be mounted on the rear most corner of the body, one (1) each side.

The lights shall be mounted in a molded flexible rubber shaft that extends away from the body approximately 6".

The lights shall be equipped with an amber lens facing forward and a red lens facing to the rear of the vehicle.

The lights shall be wired to the parking light circuit.

TECNIQ #L10 LED LICENSE PLATE LIGHT @ DS REAR OF BODY

QTY: 1

One (1) Tecniq model #L10 LED license plate light shall be provided above the mounting position of the license plate.

The light shall be clear in color and shall have a chrome finish.

CODE 3, 7X9 ALL IN ONE - LED BRAKE, REVERSE, & TURN

QTY: 1

Two (2) Code 3, 79STTRBZ 7" x 9" all-in-one LED combination stop/turn/tail/reverse lights, shall be mounted one each side at the rear of the body with a mounting flange.

The lights shall be mounted so the red, LED brake lights are at the top.

BODY STEP LIGHTS, TECNIQ EON 3 LED, ALL DEVICES

QTY: 2

Polished, stainless steel, TecNiq Eon 3-LED, horizontal surface, mounted body step lights shall be provided and controlled with marker light actuation.

Step lights shall be located to properly illuminate all body access steps and walkway areas and shall include a mounting gasket to provide a watertight seal.

PUMP ENCLOSURE WORK LIGHTS - TECNIQ LED

QTY: 1

Two (2) Tecniq, model #E18 lights shall be provided inside the pump enclosure, providing 800 lumens each.

Each light shall have their own independent switch incorporated into the light head.

AMDOR LED STRIP HOSE BED LIGHTS-INSIDE HOSEBED DOORS

QTY: 1

Two (2) Amdor, LED strip surface mounted lights shall be mounted on the hosebed doors one on each side to illuminate the hosebed floor.

FIRETECH HIVIZ GUARDIAN LED SCENE LIGHTS ON REAR OF BODY

QTY: 1

Two (2) FireTech Hi-Viz Guardian FT-GSM, LED scene lights shall be provided, (1) one on each side of the rear body panel in a chrome plated flange.

Each light shall be 11 wide by 9 high by 3 deep, draw 6.25 amps, and produce 6,468 lumens.

The scene lights shall be wired through the load management system.

FIRETECH HIVIZ GUARDIAN LED SCENE LIGHTS ON DRIVER SIDE OF BODY

QTY: 1

Two (2) FireTech Hi-Viz Guardian FT-GSM, LED scene lights shall be provided.

The scene lights shall be installed, one rearward and one forward, on the driver side of the body in a chrome plated flange.

Each light shall be 11 wide by 9 high by 3 deep, draw 6.25 amps, and produce 6,468 lumens.

The scene lights shall be wired through the load management system.

FIRETECH HIVIZ GUARDIAN LED SCENE LIGHTS ON OFFICER SIDE OF BODY

QTY: 1

Two (2) FireTech Hi-Viz Guardian FT-GSM, LED scene lights shall be provided.

The scene lights shall be installed, one rearward and one forward, on the officer side of the body in a chrome plated flange.

Each light shall be 11 wide by 9 high by 3 deep, draw 6.25 amps, and produce 6,468 lumens.

The scene lights shall be wired through the load management system.

REAR SCENE LIGHTS TO BE ACTIVATED BY REVERSE LIGHTS

QTY: 1

In addition to the cab mounted switch for the rear scene lights, the rear scene lights shall illuminate when the transmission is placed in reverse gear and the apparatus is operating as an emergency vehicle (Primary Warning switch on).

CODE 3, #CA278, BACK-UP ALARM - 87 DBA

QTY: 1

A Code 3, model # CA278, 87dBA back-up alarm, shall be provided and installed at the rear of the apparatus under the tailboard.

The back-up alarm shall activate automatically when the transmission is placed in reverse gear and the ignition is "on."

DUAL CHROME AIR HORNS - GROVER

QTY: 1

Two (2) chrome plated Grover air horns shall be at the front of the vehicle. The air horns shall be mounted in full compliance with NFPA-1901. The supply lines shall be dual 1/4" lines with equal distance from each horn.

DUAL AIR HORNS RECESSED IN FRONT BUMPER, 1-DS & 1-OS

QTY: 1

Each air horn shall be recessed in the front bumper; one (1) on the driver's side and one (1) on the officer's side.

AIR HORN CONTROL - DASH BUTTON FOR OFFICER & STEERING WHEEL

QTY: 1

The air horn(s) shall be controlled by a push button, located on the dash on the officer's side, as well as the steering horn button for the driver.

An air horn/electric DOT horn, selector switch shall be furnished on the dash for the drivers steering horn button.

SIREN, WHELEN #295SLSA1, 100W

QTY: 1

One (1) Whelen # 295SLSA1, 100-watt electronic siren shall be provided featuring: bottom mount control head in cab, "Si-Test" self-diagnostic feature, six (6) function siren, radio repeat, and public address.

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

ONE (1) WHELEN SA315P SPEAKER

QTY: 1

One (1) Whelen, model # SA315P composite black siren speaker, shall be provided, recessed in the front bumper and wired to the electronic siren.

HALE QMAX-150 1500 GPM SINGLE STAGE PUMP

QTY: 1

- HALE QMAX-150
- 1500 G.P.M.

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

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

The pump shall be of a size and design to mount on the chassis rails of commercial and custom truck chassis and have the capacity of 1500 gallons per minute (U.S. GPM), NFPA-1901 rated performance.

The entire pump shall be 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 the 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 performance specs as outlined by the latest NFPA-1901. Pump shall be free from objectionable pulsation and vibration. The pump body and related parts shall be of fine grain alloy cast iron 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. Pumps utilizing castings made of lower tensile strength cast iron are 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.

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 gearbox). The sleeve bearing is to be lubricated by a force fed, automatic oil lubricated design, pressure balanced to exclude foreign material. The pump shaft shall be heat-treated, electric furnace, corrosion resistant stainless steel to be super-finished under packing with galvanic corrosion (zinc foil separators in packing) protection for longer shaft life. Pump shaft must be sealed with double-lip oil seal to keep road dirt and water out of gearbox.

The pump shall have one double suction impeller. The pump body shall have two opposed discharge volute cutwaters to eliminate radial unbalance. Pump impeller shall be hard, fine grain bronze of the mixed flow design, accurately machined, and individually balanced. The vanes of the impeller intake eyes shall be of sufficient size and design to provide ample reserve capacity utilizing minimum horsepower. Impeller clearance rings shall be bronze, easily renewable without replacing impeller or pump volute body, and of wrap-around double labyrinth design for maximum efficiency.

HALE CBP-250, 250 GPM – PTO AUXILLIARY PUMP

QTY: 1

- HALE CBP 250
- 250 GPM
- SINGLE STAGE
- PTO DRIVEN

A Hale model CBP-250 PTO driven pump shall be provided and installed.

The pump shall be of a size and design to mount on the chassis rails of commercial and custom truck chassis and have a maximum capacity of 250 gallons per minute (U.S. GPM), NFPA rated performance. The entire pump shall be manufactured and tested at the pump manufacturer's factory. 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 performance specs as outlined by the latest NFPA Pamphlet No. 1901. Pump shall be free from objectionable pulsation and vibration. The pump body and related parts shall be of fine grain alloy cast iron, 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.

The pump shaft shall be rigidly supported by two deep groove ball bearings for minimum deflection. The pump shaft shall be heat-treated, electric furnace, corrosion resistant, stainless steel.

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 eye shall be hand ground. The impeller shall be of sufficient size and design to provide ample reserve capacity utilizing minimum horsepower. Impeller shall be keyed to pump shaft and locked in place with a stainless-steel lock nut.

HALE CBP-250, PUMP CONTROL

QTY: 1

The Hale model CBP-250 PTO driven pump shall be controlled from the chassis foot throttle while in stationary mode with the parking brake set and the Captain pressure governor at the pump panel.

PUMP RATIO

QTY: 1

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

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

PUMP MOUNTS - MID-SHIP PUMPS

QTY: 1

Extra heavy-duty pump mounting brackets shall be furnished.

These shall be bolted to the frame rails in such a position to perfectly align the pump so that the angular velocity of the drive line joints shall be the same on each end of the drive shaft.

This shall assure full capacity performance with a minimum of vibration. Mounting hardware shall utilize Grade 8 bolts.

PUMP MOUNTS - PTO PUMPS

QTY: 1

Extra heavy-duty pump mounting brackets shall be furnished.

These shall be bolted to the frame rails in such a position to perfectly align the pump with the PTO, so that the angular velocity of the drive line joints shall be the same on each end of the drive shaft.

This shall assure full capacity performance with a minimum of vibration. Mounting hardware shall utilize Grade 8 bolts.

HALE MECHANICAL PUMP SEAL

QTY: 1

The mid ship pump shall be equipped with a high quality, spring loaded, self-adjusting mechanical seal capable of providing a positive seal to atmosphere under all pumping conditions.

This positive seal to atmosphere must be achievable under vacuum conditions up to 26 Hg (draft) or positive suction pressures up to 250 PSI.

The mechanical seal assembly shall be 2 inches in diameter and consists of a carbon sealing ring, stainless steel coil spring,

Viton rubber boot, and a tungsten carbide seat with a Teflon backup seal provided.

Only one (1) mechanical seal shall be required, located on the first stage suction (inboard) side of the pump and be designed to be compatible with a one-piece pump shaft.

A continuous cooling flow of water from the pump shall be directed through the seal chamber when the pump is in operation.

HALE PUMP DRIVE UNIT, ALL HALE FULL CAST PUMPS

QTY: 1

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

Pump drive unit shall be of sufficient size to withstand up to 16,000 lbs. ft. of torque of the engine in both road and pump operating conditions.

The drive unit shall be designed of ample capacity for lubrication reserve and to maintain the proper operating temperature.

The gearbox drive shafts shall be of heat-treated chrome nickel steel and at least 2-3/4 inches in diameter on both the input and output drive shafts.

They shall withstand the full torque of the engine in both road and pump operating conditions.

All gears, both drive and pump, shall be of the highest quality electric furnace chrome nickel steel.

Bores shall be ground to size and teeth integrated, chrome-shaven and hardened, to give an extremely accurate gear for long life, smooth, quiet running and higher load carrying capability.

An accurately cut spur design shall be provided to eliminate all possible end thrust.

HALE CBP PUMP DRIVE UNIT - PTO

QTY: 1

The drive unit, as well as the entire pump, shall be completely manufactured at the pump manufacturer's factory.

The drive unit bearings shall be heavy duty and precision ground to size.

The drive unit shall be of sufficient size to withstand the full torque of the pumping operation.

The drive unit shall have ample capacity for lubrication reserve and maintaining the proper operating temperature.

All gears shall be of highest quality steel alloys.

They shall have case hardened teeth, to give long life, smooth, quiet running and higher load carrying capability.

An accurately cut spur design shall be provided to eliminate all possible end thrust.

PTO UNIT HALE INTERFACE PUMPING SYSTEM

QTY: 1

A hot shift Power Take Off shall be provided to drive the pump-and-roll impeller. The PTO shall be controlled by an electric "Hot-Shift" lighted rocker switch on the cab dash. This switch shall activate the low volume / pump-and-roll portion of the pumping system.

PUMP SHIFT MANUAL OVERRIDE

QTY: 1

An emergency manual pump shift control shall be furnished on the left side pump panel which may be utilized if the air shift control does not operate. A transmission, manual lock-up switch shall be furnished in the cab to ensure positive lock-up of the transmission.

HALE PUMP SHIFT INDICATOR LIGHTS

QTY: 1

For automatic transmissions, three (3) green warning lights shall be provided to indicate to the operator(s) when the pump has completed the shift for Road to Pump position.

Two (2) green lights to be located in the truck driving compartment and one (1) green light on pump operator's panel adjacent to the throttle control.

For manual transmissions, one (1) green warning light shall be provided for the driving compartment.

All lights to have appropriate identification/instruction plates.

PTO PUMP INDICATOR LIGHTS

QTY: 1

Three (3) green warning lights shall be provided to indicate to the operator when the PTO has completed the shift for Road to Pump position. The PTO switch shall illuminate, and a light located on the instrument panel. One (1) green light shall be provided on pump operator's panel adjacent to the throttle control. All lights to have appropriate identification/instruction plates.

PTO PUMP AND ROLL INDICATOR LIGHTS

QTY: 1

Three (3) indicator lights shall be provided in the cab interior. The “PUMP ENGAGED” light shall illuminate to indicate that the PTO is engaged.
The “OK TO PUMP” light shall be illuminated when;
1) the PTO is engaged.
2) the parking brake is set.
3) the transmission is in neutral.
The “OK TO PUMP AND ROLL” shall be illuminated when;
1) the PTO is engaged.
2) the parking brake is released.
3) the transmission is in any forward gear or reverse.

When the “OK TO PUMP AND ROLL” indicator is illuminated the “OK TO PUMP” indicator shall not be illuminated.

MANIFOLD - DISCHARGE & SUCTION FOR INTERFACE PUMPI

QTY: 1

A custom-made suction and discharge manifold shall be constructed from stainless steel and/or flexible tubing. The manifold shall be designed to provide maximum efficiency for the suction inlets and the discharges.

The high-volume impeller will supply all discharges. The low volume impeller will supply the Preconnects, hose reel(s), and the front discharge/turret as applicable. Check valves shall be provided between the sections of the manifold to prevent high-pressure backflow and damage to the pump. {No Exceptions}

HALE THERMAL RELIEF VALVE

QTY: 1

A Hale Model TRV120 Thermal Relief Valve shall be provided on the pump.

If water temperature in the pump exceeds 120 degrees Fahrenheit, the thermal relief valve shall automatically open and discharge pump water to the ground, through a 3/8" discharge line, routed below the pump module.

The thermal relief valve shall automatically close when the water temperature is lowered.

AUDIBLE ALARM FOR THERMAL RELIEF VALVE

QTY: 1

An audible alarm shall be provided on the operator's panel to alert the operator when the thermal relief valve is activated.

AUXILIARY ENGINE COOLER

QTY: 1

An auxiliary cooler or heat exchanger shall be installed in the engine compartment between the engine and the chassis radiator.

The cooler shall permit the use of water from the pump for cooling the engine.

The cooling shall be done without mixing engine and pump water.

CLASS ONE "CAPTAIN" GOVERNOR CONTROL

QTY: 1

A Class 1 "Captain" engine/pump governor/throttle system that is connected directly to the Electronic Control Module (ECM) mounted on the engine shall be provided on the pump operator's panel.

The "Captain" is to operate as a pressure sensor (regulating) governor (PSG) eliminating any need for a relief valve on the discharge side of the pump.

A special preset feature shall permit a predetermined pressure or RPM to be set.

The preset pressure or RPM shall be displayed on the message display of the "Captain".

The preset shall be easily adjustable by the operator.

When operating in "pressure" mode, the PSG system shall automatically maintain the discharge pressure set by the operator, regardless of flow.

The pressure shall remain with the engine's and pump's operating capabilities.

When operating in "rpm" mode, the PSG system shall automatically maintain the set engine speed, regardless of engine load.

The rpm shall remain with the engine's operating capabilities.

AKRON STYLE #59 INTAKE RELIEF VALVE

QTY: 1

A 300-psi adjustable Akron Model 591103 intake relief valve system shall be plumbed on the suction side of the pump to comply fully with NFPA-1901 requirements.

Excess pressures shall be plumbed to discharge water under the pump enclosure away from the pump operator.

HALE DEDICATED PRIMING VALVE - AUXILIARY PUMP

QTY: 1

A dedicated additional primer control valve shall be furnished for the auxiliary pump.

This priming valve shall activate the standard pump primer to minimize pump cavitation during remote suction operations and shall be located in the cab on the center console with a push button.

TRIDENT "MANUAL" AIR PRIMING SYSTEM

QTY: 1

The priming pump will be a Trident air primer system.

A push in primer handle will open the priming valve and prime the pump.

ROTARY MASTER DRAIN VALVE

QTY: 1

A rotary type, 12 port, master drain valve shall be provided and controlled at the lower portion of the side pump panel.

The valve shall be located in pump compartment lower than the main body and connected in such a manner as to allow complete water drainage of the pump body and all required accessories.

Water shall be drained below the apparatus body and away from the pump operator.

DRAINS/BLEEDER "INNOVATIVE CONTROLS" LIFT UP @ ALL 1-1/2" OR LARGER

QTY: 1

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

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

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.

SYNFLEX SUCTION, DISCHARGE, PRESSURE AND CONTROL LINES

QTY: 1

Small lines within the pump enclosure shall be constructed from Synflex hose.

Uses include but are not limited to such lines as priming control, gauge lines, drain lines, air control valves, pump shift, supplemental cooling, foam flush, and air bleeder valves.

SUCTION INLETS - 6” INLETS

QTY: 1

Two (2) 6" N.S.T. suction inlets shall be provided, one on the driver side and one on the officer side pump panel.

A removable strainer shall be installed on each inlet.

SHORT NECK MAIN PUMP SUCTION INLETS

QTY: 1

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

BEHIND PANEL MOUNT

QTY: 1

All side gated inlet valves shall be recess mounted behind the side pump panels or body panels. There will be no exceptions.

6" NST INTAKE CAP - DRIVER SIDE

QTY: 1

A 6" NST chrome plated long handle pressure vented cap shall be installed on driver side intake.

6" NST INTAKE CAP - OFFICER SIDE

QTY: 1

A 6" NST chrome plated long handle pressure vented cap shall be installed on officer side intake.

2-1/2" DRIVER SIDE AUX PRIMARY SUCTION INLET FORWARD OF MAIN

QTY: 1

One (1) 2-1/2" auxiliary suction shall be provided at the driver side pump panel, to the front of the main inlet.

The 2-1/2" auxiliary suction shall terminate with a removable strainer, chrome plated 2-1/2" NST female swivel with a chrome plated plug and retaining chain.

2-1/2" AKRON #8800 S.S. BALL VALVE, DRIVER SIDE FRONT AUX SUCTION

QTY: 1

An Akron Brass 2 1/2" Generation II Swing-Out Valve shall be provided for the driver's side front auxiliary suction.

The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats.

SWING CONTROL @ VALVE, DRIVER SIDE FRONT AUX SUCTION

QTY: 1

A 1/4 turn swing control handle shall be provided on the driver side, front auxiliary suction valve.

TANK TO PUMP

QTY: 1

One (1) 4" tank to pump line shall be piped through the front bulkhead of the tank with a 90-degree elbow down into the tank sump.

This line shall be plumbed directly into the rear of the pump suction manifold for maximum efficiency.

A check valve shall be provided to prevent accidental pressurization of the water tank through the pump connection.

Connection from the valve to the tank shall be made by using a non-collapsible flexible rubber hose.

3" AKRON #8800 SERIES - S.S. BALL, VALVE , TANK TO PUMP

QTY: 1

An Akron Brass 3" Generation II Swing-Out Valve shall be provided between the pump suction manifold and the water tank.

The valve shall have an all brass body with flow optimizing, stainless steel ball and dual polymer seats.

3" AIR CONTROL FOR TANK TO PUMP

QTY: 1

The tank to pump valve shall be air operated with a Class One air cylinder and control switch located on the operator's panel with function plate.

A second tank to pump control shall be provided in the cab on the center console for pump and roll with the auxiliary pump.

PUMP AND ROLL PLUMBED TO MAINT TANK

QTY: 1

The auxiliary pump-and-roll pump shall be plumbed into the main tank-to-pump line downstream of the tank-to-pump valve.

TANK FILL LINE 2" FROM PUMP - SIDE MOUNT

QTY: 1

One (1) 2" gated full flow pump to tank refill line controlled at the pump panel shall be provided. A deflector shield inside the tank shall be furnished. Tank fill plumbing shall utilize 2" high pressure hose for tank connection to accommodate flexing between components. There will be no exceptions.

2" AKRON #8800 SERIES - S.S. BALL TANK FILL, SIDE MOUN

QTY: 1

An Akron Brass 2" Generation II Swing-Out Valve shall be provided between the pump discharge manifold and the water tank.

The valve shall have an all brass body with flow optimizing, stainless steel ball, and dual polymer seats.

PUSH/PULL CONTROL FOR TANK FILL

QTY: 1

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

DRIVER SIDE MAIN DISCHARGE #1

QTY: 1

A discharge shall be provided and located at the driver's side pump panel.

The driver's side discharges # 1 shall terminate with NST threads, through the left panel above the main pump intake.

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

2-1/2" AKRON #8800 SERIES - S.S. BALL, DRIVER SIDE #1

QTY: 1

An Akron Brass 2 1/2" Generation II Swing-Out Valve shall be provided for the driver's side #1 discharge.

The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats.

DS #1 DISCHARGE - 2-1/2" STRAIGHT NST & 30-DEGREE NST ELBOW

QTY: 1

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

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

QTY: 1

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

SWING 1/4 TURN CONTROL FOR DRIVER SIDE DISCHARGE #1 -SIDE MOUNT

QTY: 1

The driver's side # 1 discharge valve shall be controlled by a 1/4 turn swing control handle located on the operator's panel.

INNOVATIVE CONTROLS LIQUID FILLED 2-1/2" PRESS GAUGE BRASS- DRIVER SIDE DISCHARGE #1

QTY: 1

The driver's side, # 1 discharge shall be equipped with an Innovative Controls 2.5" glycerin filled pressure gauge with pulse and vibration dampening.

The gauge accuracy shall comply with ANSI B40.1 Grade A requirements, temperature range shall be from -40 F to +160 F.

Gauges construction shall be a heavy-duty caste brass case.

Crystal shall be a molded plexiglass with captive O-ring and secured with a rolled 304 highly polished stainless-steel bezel.

Gauges shall have white faces with black lettering and shall include an orange tip pointer for easy readability.

DRIVER SIDE MAIN DISCHARGE #2

QTY: 1

A discharge shall be provided and located at the driver's side pump panel.

The driver's side discharges # 2 shall terminate with NST threads, through the left panel above the main pump intake.

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

2-1/2" AKRON #8800 SERIES - S.S. BALL, DRIVER SIDE #2

QTY: 1

An Akron Brass 2 1/2" Generation II Swing-Out Valve shall be provided for the driver's side #2 discharge.

The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats.

DS #2 DISCHARGE - 2-1/2" STRAIGHT NST & 30-DEGREE NST ELBOW

QTY: 1

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

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

QTY: 1

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

SWING 1/4 TURN CONTROL FOR DRIVER SIDE DISCHARGE #2 -SIDE MOUNT

QTY: 1

The driver's side # 2 discharge valve shall be controlled by a 1/4 turn swing control handle located on the operator's panel.

INNOVATIVE CONTROLS LIQUID FILLED 2-1/2" PRESS GAUGE BRASS- DRIVER SIDE DISCHARGE #2

QTY: 1

The driver's side # 2 discharge shall be equipped with an Innovative Controls, 2.5", glycerin filled pressure gauge with pulse and vibration dampening.

The gauge accuracy shall comply with ANSI B40.1 Grade A requirements, temperature range shall be from -40 F to +160 F.

Gauge construction shall be a heavy duty, caste brass case.

Crystal shall be a molded, plexiglass with captive, O-ring and secured with a rolled 304, highly polished, stainless steel bezel.

Gauges shall have white faces with black lettering and shall include an orange tip pointer for easy readability.

OFFICER SIDE MAIN DISCHARGE #1

QTY: 1

A discharge shall be provided and located at the officer's side pump panel.

The officer's side discharges #1 shall terminate with NST threads, through the officer's side panel above the main pump intake.

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

3" AKRON #8800 SERIES - S.S. BALL, VALVE OFFICER SIDE #1, SIDE MOUNT

QTY: 1

An Akron Brass, 3" Generation II, Swing-Out Valve shall be provided for the officer's side #1 discharge.

The valve shall have an all brass body with flow optimizing, stainless steel ball, and dual polymer seats.

OS #1 DISCHARGE - 3" STRAIGHT NST & 30-DEGREE NST ELBOW

QTY: 1

The discharge valve shall be equipped with a straight, 3" NST adapter that shall be equipped with a 3" NST, 30-degree, chrome plated elbow.

3" NSTF X 4" STORZ KOCHEK S37S STRAIGHT ADAPTER WITH CAP OFFICER SIDE DISCHARGE #1

QTY: 1

A 3" NSTF X 4" Storz Kochek, S37S straight adapter with cap shall be provided on the officer's side # 1 discharge.

SWING 1/4 TURN CONTROL FOR OFFICER SIDE DISCHARGE #1 -SIDE MOUNT

QTY: 1

The officer's side, # 1 discharge valve shall be controlled by a 1/4 turn, swing control handle located on the operator's panel.

INNOVATIVE CONTROLS LIQUID FILLED 2-1/2" PRESS GAUGE BRASS- OFFICER SIDE DISCHARGE #1

QTY: 1

The officer's side, # 1 discharge shall be equipped with an Innovative Controls, 2.5", glycerin filled, pressure gauge with pulse and vibration dampening.

The gauge accuracy shall comply with ANSI B40.1 Grade A requirements, temperature range shall be from -40 F to +160 F.

Gauges construction shall be a heavy duty, caste brass case.

Crystal shall be a molded, plexiglass with captive, O-ring and secured with a rolled 304, highly polished, stainless steel bezel.

Gauges shall have white faces with black lettering and shall include an orange, tip pointer for easy readability.

OFFICER SIDE MAIN DISCHARGE #2

QTY: 1

A discharge shall be provided and located at the officer's side pump panel.

The officer's side discharges #2 shall terminate with NST threads, through the officer's side panel above the main pump intake.

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

2-1/2" AKRON #8800 SERIES - S.S. BALL, OFFICER SIDE #2, SIDE MOUNT

QTY: 1

An Akron Brass, 2 1/2" Generation II, Swing-Out Valve shall be provided for the officer's side #2 discharge.

The valve shall have an all brass body with flow optimizing, stainless steel ball, and dual polymer seats.

OS #2 DISCHARGE - 2-1/2" STRAIGHT NST & 30-DEGREE NST ELBOW

QTY: 1

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

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

QTY: 1

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

SWING 1/4 TURN CONTROL FOR OFFICER SIDE DISCHARGE #2 -SIDE MOUNT

QTY: 1

The officer's side, #2 discharge valve shall be controlled by a 1/4 turn swing control handle located on the operator's panel.

INNOVATIVE CONTROLS LIQUID FILLED 2-1/2" PRESS GAUGE BRASS- OFFICER SIDE DISCHARGE #2

QTY: 1

The officer's side, #2 discharge shall be equipped with an Innovative Controls, 2.5", glycerin filled, pressure gauge with pulse and vibration dampening.

The gauge accuracy shall comply with ANSI B40.1 Grade A requirements, temperature range shall be from -40 F to +160 F.

Gauges construction shall be a heavy duty, caste brass case.

Crystal shall be a molded, plexiglass with captive, O-ring and secured with a rolled 304, highly polished, stainless steel bezel.

Gauges shall have white faces with black lettering and shall include an orange tip pointer for easy readability.

DRIVER SIDE REAR DISCHARGE 2-1/2"

QTY: 1

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

DS REAR DISCHARGE THROUGH TANK SLEEVE @ DRIVER SIDE REAR BODY PANEL

QTY: 1

The rear discharge shall be plumbed through a pipe sleeve integrated into the water tank that shall terminate on the rear body panel, on the driver side of the body.

2-1/2" NST MALE THREADS ON DRIVER SIDE REAR DISCHARGE

QTY: 1

The driver side rear discharge pipe shall be furnished with 2-1/2" NSTM threads.

The discharge shall be equipped with a 30-degree droop terminating in 2-1/2" NSTM threads.

DS REAR DISCHARGE, PLUMBING, 2-1/2" STAINLESS STEEL PIPING

QTY: 1

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

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

2-1/2" AKRON #8800 SERIES - S.S. BALL, VALVE DRIVER SIDE REAR

QTY: 1

An Akron Brass, 2 1/2" Generation II, Swing-Out Valve shall be provided for the driver's side rear discharge.

The valve shall have an all brass body with flow optimizing, stainless steel ball, and dual polymer seats.

PUSH/PULL CONTROL FOR DRIVER SIDE REAR DISCHARGE

QTY: 1

The driver side rear discharge valve shall be controlled by a push/pull handle located on the operator's panel

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

QTY: 1

A 2 1/2" NST chrome plated pressure vented cap(s) shall be installed at the driver side rear discharge.

INNOVATIVE CONTROLS LIQUID FILLED 2-1/2" PRESS GAUGE BRASS- DRIVER SIDE REAR DISCHARGE

QTY: 1

The driver side rear discharge shall be equipped with an Innovative Controls 2.5" glycerin filled pressure gauge with pulse and vibration dampening.

The gauge accuracy shall comply with ANSI B40.1 Grade A requirements, temperature range shall be from -40 F to +160 F.

Gauge construction shall be a heavy duty cast brass case.

Crystal shall be a molded plexiglass with captive O-ring and secured with a rolled 304 highly polished stainless-steel bezel.

Gauge shall have white face with black lettering and shall include an orange tip pointer for easy readability.

DECK GUN DISCHARGE

QTY: 1

A deck gun discharge shall be plumbed from the pump to an area on top of the vehicle.

The deck gun piping shall be firmly supported and braced.

DECK GUN DISCHARGE TERMINATE @ CENTER OF DUNNAGE

QTY: 1

The deck gun discharge shall be located in the center of the dunnage area above the pump module.

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

3" NPT MALE THREADS ON DECK GUN DISCHARGE

QTY: 1

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

3" TFT MANUAL EXTEND-A-GUN (18") PIPE - MODEL # XG18VL-PL

QTY: 1

To improve the operation range of the deck gun, the discharge pipe shall be outfitted with a TFT (18") Extend-A-Gun, part # XG18VL-PL. The Extend-A-Gun shall be wired to the hazard light on the cab dash.

DECK GUN DISCHARGE - OVA HEIGHT NOT EXCEED TALLEST POINT

QTY: 1

The deck gun piping shall be designed so the overall height of the deck gun in the mounted/ stowed position does not exceed the tallest point on the cab/body.

DECK GUN DISCHARGE, PLUMBING, 3" STAINLESS STEEL PIPING

QTY: 1

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

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

3" AKRON #8800 SERIES - S.S. BALL, VALVE DECK GUN DISCHARGE

QTY: 1

An Akron Brass 3" Generation II Swing-Out Valve shall be provided for the deck gun discharge.

The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats.

ADDITIONAL 3" AKRON #8800 SERIES - S.S. BALL, VALVE FOR DECK GUN DISCHARGE MOUNTED IN DUNNAGE AREA

QTY: 1

An additional Akron Brass 3" Generation II Swing-Out Valve shall be provided for the deck gun discharge.

The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats.

The valve shall be mounted in the plumbing inside the dunnage area just before the deck gun termination.

PUSH/PULL CONTROL FOR DECK GUN DISCHARGE

QTY: 1

The deck gun discharge valve shall be controlled by a push/pull handle located on the operator's panel.

INNOVATIVE CONTROLS LIQUID FILLED 2-1/2" PRESS GAUGE BRASS- DECK GUN DISCHARGE

QTY: 1

The deck gun discharge shall be equipped with an Innovative Controls 2.5" glycerin filled pressure gauge with pulse and vibration dampening.

The gauge accuracy shall comply with ANSI B40.1 Grade A requirements, temperature range shall be from -40 F to +160 F.

Gauge construction shall be a heavy-duty caste brass case.

Crystal shall be a molded plexiglass with captive O-ring and secured with a rolled 304 highly polished stainless-steel bezel.

Gauge shall have white face with black lettering and shall include an orange tip pointer for easy readability.

#1 FRONT DISCHARGE 1-1/2"

QTY: 1

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

1-1/2" NST CHICKSAN SWIVEL @ TOP DRIVER SIDE FRONT BUMPER #1 DISCHARGE

QTY: 1

The front #1 discharge shall terminate on the top driver's side of the front bumper extension gravel shield with a chrome 1 1/2" NST chicksan swivel adapter.

FRONT BUMPER CHICKSAN SWIVEL STOPS

QTY: 1

Two stainless steel pins shall be provided to limit the rotation of the front bumper chicksan swivel adapter.

#1 FRONT DISCHARGE, PLUMBING, 2" STAINLESS STEEL PIPING

QTY: 1

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

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

Automatic discharge drains shall be provided at all low points in the plumbing.

2" AKRON #8800 SERIES - S.S. BALL, VALVE FRONT#1 DISCHARGE

QTY: 1

An Akron Brass 2" Generation II Swing-Out Valve shall be provided for the front #1 discharge.

The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats.

PUSH/PULL CONTROL FOR FRONT #1 DISCHARGE

QTY: 1

The front #1 discharge valve shall be controlled by a push/pull handle located on the operator's panel.

INNOVATIVE CONTROLS NITE-GLO BLUE/BLUE - 2-1/2" PRESS GAUGE- FRONT #1 DISCHARGE

QTY: 1

The front #1 discharge shall be equipped with an Innovative Controls, Nite-Glo, 2 diameter glycerin filled pressure gauge with pulse and vibration dampening.

The gauge accuracy shall comply with ANSI B40.1 Grade A requirements, temperature range shall be from -40 F to +160 F.

Gauge construction shall be a heavy duty die cast brass case.

Clear, scratch resistant molded crystals with captive O-ring seals, shall be used to ensure distortion free viewing and to seal the gauge.

The gauge shall have a white face with black lettering and shall include blue LED backlighting with a blue high operating pressure range.

CROSSLAY #1, 1-1/2" - PUMPER

QTY: 1

A crosslay hose bed shall be provided and plumbed from the pump in a transverse design, located above the pump enclosure for quick attack deployment. The crosslay hose bed flooring shall be designed to be removable and constructed from brushed finish, perforated aluminum material.

CROSSLAY #1 CAPACITY - 200 FEET OF 1-3/4" HOSE

QTY: 1

Crosslay #1 shall be designed to have a minimum total capacity of 3.5 cubic feet as required by NFPA -1901 to accommodate a minimum of 200 feet of 1-3/4" fire hose.

CROSSLAY #1 - SINGLE STACK HOSE DESIGN

QTY: 1

Crosslay #1 hose bed shall be designed to accommodate the fire hose in a single stack configuration.

1-1/2" NST STRAIGHT ADAPTER THRU DRIVER'S SIDE PANEL @ CROSSLAY

QTY: 1

The crosslay discharge shall terminate through the side panel below the crosslay hosebed, on the driver's side, allowing the hose to be pre-connected.

The crosslay discharge pipe shall be equipped with a chrome 1 1/2" NSTM straight adapter.

CROSSLAY #1, PLUMBING, 2" STAINLESS STEEL PIPING

QTY: 1

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

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

2" AKRON #8800 SERIES - S.S. BALL, VALVE CROSSLAY #1, DISCHARGE

QTY: 1

An Akron Brass 2" Generation II Swing-Out Valve shall be provided for the crosslay #1 discharge.

The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats.

PUSH/PULL CONTROL CROSSLAY #1

QTY: 1

The crosslay #1 discharge valve shall be controlled by a push/pull handle located on the operator's panel.

INNOVATIVE CONTROLS NITE-GLO BLUE/BLUE - 2-1/2" PRESS GAUGE- CROSSLAY #1

QTY: 1

The crosslay #1 discharge shall be equipped with an Innovative Controls, Nite-Glo, 2 diameter glycerin filled pressure gauge with pulse and vibration dampening.

The gauge accuracy shall comply with ANSI B40.1 Grade A requirements, temperature range shall be from -40 F to +160 F.

Gauge construction shall be a heavy duty die cast brass case.

Clear, scratch resistant molded crystals with captive O-ring seals, shall be used to ensure distortion free viewing and to seal the gauge.

The gauge shall have a white face with black lettering and shall include blue LED backlighting with a blue high operating pressure range.

CROSSLAY #2 1-1/2"

QTY: 1

A crosslay hose bed shall be provided and plumbed from the pump in a transverse design, located above the pump enclosure for quick attack deployment.

The crosslay hose bed flooring shall be designed to be removable, constructed from brushed finish, perforated aluminum material.

CROSSLAY #2 CAPACITY - 200 FEET OF 1-3/4" HOSE

QTY: 1

Crosslay #2 shall be designed to have a minimum total capacity of 3.5 cubic feet as required by NFPA -1901 to accommodate a minimum of 200 feet of 1-3/4" fire hose.

CROSSLAY #2 - SINGLE STACK HOSE DESIGN

QTY: 1

Crosslay #2 hose bed shall be designed to accommodate the fire hose in a single stack configuration.

1-1/2" NST STRAIGHT ADAPTER THRU OFFICER'S SIDE PANEL @ CROSSLAY #2

QTY: 1

The crosslay discharge shall terminate through the side panel below the crosslay hosebed, on the officer's side, allowing the hose to be pre-connected.

The crosslay discharge pipe shall be equipped with a chrome 1 1/2" NSTM straight adapter.

CROSSLAY #2, PLUMBING, 2" STAINLESS STEEL PIPING

QTY: 1

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

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

2" AKRON #8800 SERIES - S.S. BALL, VALVE CROSSLAY #2,

QTY: 1

An Akron Brass 2" Generation II Swing-Out Valve shall be provided for the crosslay #2 discharge.

The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats.

PUSH/PULL CONTROL CROSSLAY #2

QTY: 1

The crosslay #2 discharge valve shall be controlled by a push/pull handle located on the operator's panel.

INNOVATIVE CONTROLS LIQUID FILLED 2-1/2" PRESS GAUGE SS - CROSSLAY #2

QTY: 1

The crosslay #2 discharge shall be equipped with a 2.5" Innovative Controls pressure gauge.

The gauge shall have a rugged corrosion free stainless-steel case and clear scratch resistant molded crystals with captive O-ring seals to ensure distortion free viewing and seal the gauge.

The gauge shall be filled with glycerin to dampen shock and vibration, lubricate the internal mechanisms, prevent lens condensation and ensure proper operation from -40F to +160F.

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

A polished chrome-plated stainless-steel bezel shall be provided to prevent corrosion and protect the lens and gauge case.

The gauge shall have black graphics on a white background.

DEADLAY HOSE STORAGE ABOVE PUMP-200' OF 2-1/2" HOSE

QTY: 1

A dead lay storage area shall be provided on the top of the pump enclosure to accommodate 200 feet of 2-1/2" hose.

The hose storage area shall have a floor of perforated aluminum material and the sides shall be lined with brushed aluminum material.

LOWERED CROSSLAYS

QTY: 1

The crosslay hose bed floor will be approximately 42" above the side running board and no more than 66" above ground level.

VINYL END FLAPS FOR ALUMINUM TREADPLATE CROSSLAY COVER W/ QUICK RELEASE BUCKLES

QTY: 1

Vinyl flaps shall be provided at each side of the transverse cross lay compartment secured to the tread plate cross lay cover by quick release buckle and equipped with a strap to each end.

END FLAP COVER BLACK IN COLOR

QTY: 1

The crosslay end flap shall be black in color.

FRONT HINGED CROSSLAY HOSE BED COVER, TREADPLATE

QTY: 1

A 3/16" polished aluminum tread plate cross lay cover shall be provided with a full-length stainless-steel hinge at the front of the cover.

FRONT BUMPER TURRET

QTY: 1

ELKHART SIDEWINDER # 8494-01 BUMPER TURRET, 125 GPM - 2"

QTY: 1

An Elkhart Brass model # 8494-01, Sidewinder Wildland Monitor shall be provided and installed on the specified front bumper extension.

The turret shall be controlled in the cab only, using a remotely operated valve, interfaced to a joy stick controller, model # 81172001, mounted in the cab.

The turret shall be equipped with a remote-controlled fog nozzle model # 6000-200E (set at 125 gpm.).

The completed installation shall allow full operation of the turret from the cab.

FRONT BUMPER TURRET @ TOP CENTER FRONT BUMPER EXTENSION

QTY: 1

The bumper turret shall be mounted on the top center of the front bumper extension gravel shield.

BUMPER TURRET, PLUMBING, 2" STAINLESS STEEL PIPING

QTY: 1

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

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

Automatic discharge drains shall be provided at all low points in the plumbing.

ELKHART 2" VALVE FOR BUMPER TURRET

QTY: 1

2” Elkhart valve shall be provided for the bumper turret discharge.

QUICK DISCONNECT FITTING - ELKHART BUMPER TURRET

QTY: 1

The bumper turret shall be equipped with an Elkhart model 81342001.

This feature shall allow the end user to quickly disconnect the turret from the piping.

INNOVATIVE CONTROLS LIQUID FILLED 2-1/2" PRESS GAUGE SS - BUMPER TURRET

QTY: 1

The bumper turret discharge shall be equipped with a 2.5" diameter Innovative Controls pressure gauge.

The gauge shall have a rugged corrosion free stainless-steel case and clear scratch resistant molded crystals with captive O-ring seals to ensure distortion free viewing and seal the gauge.

The gauge shall be filled with glycerin to dampen shock and vibration, lubricate the internal mechanisms, prevent lens condensation and ensure proper operation from –40°F to +160°F.

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

A polished chrome-plated stainless-steel bezel shall be provided to prevent corrosion and protect the lens and gauge case.

The gauge shall have black graphics on a white background.

GAUGE LOCATED IN CAB

QTY: 1

The front turret gauge shall be located in the cab and plumbed to the inlet of the turret valve to provide visual indication of the pump discharge pressure.

TURRET VALVE CONTROLLER

QTY: 1

The bumper turret discharge valve shall be controlled by the joystick in the cab.

FOAM SYSTEM STAINLESS PIPING - 1 INCH FROM FOAM SOURCE TO SYSTEM

QTY: 1

All foam concentrate plumbing from the tank or auxiliary foam inlet to the foam system components shall be stainless steel and nonferrous material.

The foam system piping shall incorporate a check valve to prevent water from entering the foam tank; the discharge piping shall also include a check valve to prevent foam solution from back feeding into the discharge side of the pump.

Individual discharge piping shall be as specified for each discharge.

The complete foam system shall be tested in accordance with NFPA-1901.

FOAMPRO 2001 CLASS "A AND/OR B" FOAM SYSTEM

QTY: 1

A FoamPro model 2001, electronic, fully automatic, variable speed, direct injection, discharge side foam proportioning system shall be installed in the pumping system.

The system shall be capable of handling Class "A" foam concentrates and most Class "B" foam concentrates.

The foam proportioning operation shall be based on direct measurement of water flows and remain consistent within the specified flows and pressures.

System must be capable of delivering accuracy to within 3% of calibrated settings over the advertised operation range when installed according to factory standards.

The system shall be equipped with a digital electronic control display suitable for installation on the pump panel.

Incorporated within the control display shall be a microprocessor that receives input from the system flow meter, while also monitoring foam concentrate pump output, comparing values to ensure that the operator preset proportional amount of foam concentrate is injected into the discharge side of the fire pump.

A paddlewheel-type flow meter shall be installed in the discharge or manifold system specified to be foam capable.

A Full flow check valve shall be provided to prevent foam contamination of fire pump and water tank or water contamination of foam tank.

A 12 or 24-volt electric motor drive positive displacement foam concentrate pump, rated up to 2.5 GPM (9.5 L/min) @ 150 psi with operating pressures up to 400 psi (27.6 BAR), shall be installed in a suitable, accessible location.

The system shall draw a maximum of 40 amps @ 12 VDC or 21 amps @ 24 VDC.

A pump motor electronic driver (mounted to the base of the pump) shall receive signals from the computer control display and power the 1/2 hp (0.40 Kw) electric motor directly coupled to the concentrate pump in a variable speed duty cycle to ensure that the correct proportion of concentrate preset by the pump operator is injected into the water stream.

The digital computer control display located on the pump operator's panel shall enable the pump operator to perform the following control and operation functions for the foam proportioning system:

- Provide push-button control of foam proportioning rates from 0.1% to 9.9%, in 0.1% increments
- Show current flow-per-minute of water
- Show total volume of water discharged during and after foam operations are completed
- Show total amount of foam concentrate consumed
- Simulate flow rates for manual operation
- Perform setup and diagnostic functions for the computer control microprocessor
- Flash a low concentrate warning when the foam concentrate tank(s) runs low
- Flash a no concentrate warning and shut the foam concentrate pump off, preventing damage to the pump, should the foam tank(s) empty

The digital computer control display shall interface with the options listed; provide dual foam calibration and display separate totals for each foam concentrate used.

If two foam tanks are required and piped to the foam concentrate pump, either an electric dual tank valve or the manual dual tank valve shall be provided.

Components of the complete proportioning system shall include:

- Operator control and display
- Paddlewheel flow meter
- Pump and electric motor/motor driver
- Wiring harnesses
- Low-level tank switch (Switches)

- Electronic dual tank valve or manual dual tank valve (if more than one tank)
- Foam injection check valve
- Main waterway check valve

Accurate concentration proportioning can be achieved, based on the following water flows:

- 85 GPM water 3.0% concentration
- 260 GPM water 1.0% concentration
- 520 GPM water 0.5% concentration
- 1300 GPM water 0.2% concentration

Note: Multiple discharges plumbed to this system may affect performance if the flow rates are exceeded by any one discharge or the totality of multiple discharges at one time!

FOAMPRO - REMOTE START / STOP

QTY: 1

A remote Start / Stop control shall be installed in the cab.

FOAM SYSTEM TO ACTIVATE WHEN AUXILIARY PUMP IS ENGAGED

QTY: 1

The foam system shall power on when the auxiliary pump is activated.

INJECTION SYSTEM DISCHARGE PLUMBING

QTY: 1

The discharge piping shall be equipped with a properly sized flow meter sensor, based on the systems capabilities.

The foam system shall be plumbed to the following discharge/s through the discharge piping or manifold system:

INJECTION FOAM SYSTEM INSTALLED ON CROSSLAY #1

QTY: 1

Crosslay #1 discharge.

INJECTION FOAM SYSTEM INSTALLED ON CROSSLAY #2

QTY: 1

Crosslay #2 discharge.

INJECTION FOAM SYSTEM INSTALLED ON CROSSLAY #3

QTY: 1

Crosslay #3 discharge.

INJECTION FOAM SYSTEM INSTALLED ON FRONT DISCHARGE

QTY: 1

Front discharge.

INJECTION FOAM SYSTEM INSTALLED ON BUMPER TURRET

QTY: 1

Bumper turret discharge.

SIDE MOUNT PUMP MODULE

QTY: 1

The pump module shall be a self-supported structure mounted independently from the body and chassis cab.

The design must allow normal frame deflection without imposing stress on the pump module structure or side running boards.

The pump module shall be securely mounted to the chassis frame rails.

PUMP MODULE - STEEL CONSTRUCTION

QTY: 1

The pump module shall be a welded frame work utilizing structural steel components properly braced to withstand the rigors of chassis frame flex.

SIDE MOUNT DUNNAGE AREA

QTY: 1

A dunnage area shall be provided above the pump enclosure for equipment mounting and storage. This area shall be furnished with a removable 3/16" aluminum tread plate floor and shall be enclosed on the sides.

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

RUNNING BOARD STEPS (NON-AERIALS)

QTY: 1

The driver and officer running board steps shall be fabricated of 3/16" polished aluminum tread plate.

The outside edge on each step shall be fabricated with a double break, return flange.

The steps shall be rigidly reinforced with a heavy-duty support structure.

The running boards shall not form any part of the compartment design and shall be bolted into place with a minimum 1/2" clearance gap between any panel to facilitate water runoff.

GRIP-STRUT INSERT IN OFFICER SIDE RUNNING BOARD STEP

QTY: 1

Grip-Strut anti-slip material insert shall be installed in the officer's side running board.

STORAGE WELL IN DRIVERS SIDE RUNNING BOARD (FLOATING)

QTY: 1

A floating storage well, constructed of 1/8" aluminum, shall be recessed into the driver’s side running board.

The storage well shall measure 9" deep x 9" wide x as long as possible between the running board support members.

Drain holes shall be located in the bottom corners to allow water to drain from the storage well.

The front and rear bottom corners of the well shall have an angled face to help the well slide up if it strikes an object.

The entire well shall be a "floating" style that can easily shift up if an object is struck.

TWO (2) VELCRO STRAPS ON DRIVER'S SIDE STORAGE WELL

QTY: 1

The driver's side running board hose well shall be furnished with Velcro straps to secure the hose stored in the well.

The straps shall be attached to each side of the hose well with stainless steel footman loops.

DRIVER'S SIDE WELL - HOSE CAPACITY

QTY: 1

The driver's side storage well shall have the desired capacity of:

DRIVER'S SIDE WELL - 25 FEET OF 5" LDH HOSE

QTY: 1

25' of 5" LDH hose

SIDE MOUNT PUMP PANEL

QTY: 1

The pump operator's control panel shall be located on the driver side of the apparatus.

The pump enclosure side panels shall be completely removable and designed for easy access and servicing.

SIDE MOUNT PANELS - 1/8" BLACK CLAD ALUMINUM

QTY: 1

The left side operator's panel, gauge panel, right side pump panel, and right-side access door shall be fabricated from 1/8" black vinyl clad aluminum with a grained finish.

VERTICALLY HINGED GAUGE PANEL - SIDE MOUNT

QTY: 1

A full width, vertically hinged gauge access panel shall be provided at the operator's position.

Chrome plated positive locks shall be provided along with chain holders to prevent the front of the gauge panel from coming in contact with other panels when open.

OFFICER SIDE VERTICALLY HINGED PUMP ACCESS DOOR - SIDE MOUNT

QTY: 1

The officer's side pump panel shall be split and vertically hinged to provide complete access to the pump and plumbing on the officer's side of the pump enclosure.

The panels shall be equipped with stainless steel hinges and secured with push type locks to hold the panels closed.

The drains located on the officer's side panel shall be fastened to the lower panel, which shall be stationary.

PANEL FASTENERS

QTY: 1

Stainless steel machine screws and lock washers shall be used to hold these panels in position.

The panels shall be easily removable to provide complete access to the pump for major service.

CAPS AND ADAPTERS SAFETY TETHER - CABLES

QTY: 1

All applicable discharge and suction caps plugs and adapters shall be equipped with tether cables and secured to the vehicle.

PUMP PANEL DISCHARGE/SUCTION TRIM PLATES, HIGH POLISHED

QTY: 1

A high polished trim plate shall be provided around each discharge port and suction inlet opening to allow accessibility to the respective valve for service and repairs.

DISCHARGE GAUGE TRIM BEZELS

QTY: 1

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

IDENTIFICATION PLATES

QTY: 1

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

PUMP OPERATOR'S PANEL, FULL WIDTH LIGHT SHIELD/STEP

QTY: 1

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

The light shield shall be fabricated from aluminum tread plate, which shall also serve as a step.

The step shall be a minimum of 8" deep X the width of the pump panel.

(Note: On apparatus with lowered style Crosslays, the light shield shall be from the back of the Crosslays to the rear of the pump house).

The light shield shall be equipped with the following lights:

AMDOR LUMA BAR H2O SUPER BRIGHT LED - LIGHT SHIELD/STEP

QTY: 1

Two (2) 20" Amdor Luma Bar H2O super bright led strip lights.

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

OFFICER SIDE PUMP PANEL, FULL WIDTH LIGHT SHIELD/STEP

QTY: 1

The officer side pump panel shall be equipped with a light shield/step that shall be full width of the panel and shall be positioned to cover the lights and prevent glare.

The light shield shall be fabricated from aluminum tread plate, which shall also serve as a step.

The step shall be a minimum of 8" deep X the width of the pump panel.

The light shield shall be equipped with the following lights:

AMDOR LUMA BAR H2O SUPER BRIGHT LED - LIGHT SHIELD/STEP

QTY: 1

Two (2) 20" Amdor Luma Bar H2O super bright led strip lights.

The lights shall be switched with the operator panel lights.

AIR HORN CONTROL BUTTON ON PUMP PANEL

QTY: 1

Pump panel air horn actuation button labeled "EVACUATION" in white letters with a red background.

5/8" PUMP BY-PASS COOLER ON PUMP PANEL

QTY: 1

5/8" Pump cooler (Bypass Line).

PUMP PRESSURE & VACUUM TEST PORTS @ PANEL

QTY: 1

The pump panel shall be equipped with Vacuum & Pressure test plugs to allow for test equipment to monitor pump pressure and vacuum levels.

Chrome plugs and labels shall be provided for the test ports.

4" INNOVATIVE CONTROLS MASTER PRESSURE AND COMPOUND GAUGES

QTY: 1

One (1) 4" diameter pressure gauge (labeled: "PRESSURE") and one (1) 4" diameter compound vacuum gauge (labeled: "INTAKE") shall be provided.

The master gauges shall be Innovative Controls glycerin filled.

The gauge faces shall be white with black numerals.

PRESSURE & COMPOUND GAUGE RANGES - SINGLE STAGE

QTY: 1

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

CLASS ONE "ENFO IV" FOR SAE J1939 ENGINES

QTY: 1

A Class 1 "ENFO IV" display head shall be provided for the SAE J1939 engine, to display the engine oil pressure, engine water temperature, engine RPM and chassis volt meter functions.

The display head shall include the required NFPA warning lights and alarms.

PUMP UL CERTIFICATION - 750 GPM & UP

QTY: 1

The pump shall be third party performance tested to meet the requirements of NFPA-1901.

To ensure top quality and integrity, the test company shall be Underwriters Laboratories (UL).

There will be no exceptions.

WATER TANK 1000-GAL POLY

QTY: 1

The water tank shall have a capacity of 1000 gallons, constructed from Poly material.

WATER TANK CONSTRUCTION POLY

QTY: 1

The Poly water tank 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 1/2 to 1" as required. Internal baffles are generally 3/8" in thickness.

The tank shall be of a specific configuration and is so designed to be completely independent of the body and compartments.

Joints and seams shall be fused using nitrogen gas as required and tested for maximum strength and integrity.

The tank construction shall include PolyProSeal technology wherein a sealant shall be installed between the plastic components prior to being fusion welded.

This sealing method will provide a liquid barrier offering leak protection in the event of a weld compromise.

The top of the booster tank is fitted with removable lifting assembly designed to facilitate tank removal.

The transverse and longitudinal swash partitions shall be manufactured of a minimum of 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.

All 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's III is delivered with a Certificate of Capacity delineating the weight empty and full and the resultant capacity based on weight.

A tag shall be installed on the apparatus in a convenient location and contain pertinent information including a QR code readable by commercially available smart phones.

The information contained on the tag shall include the capacity of the water and foam (s), the maximum fill and pressure rates, the serial number of the tank, the date of manufacture, the tank manufacturer, and contact information.

The QR code will allow the user to connect with the tank manufacturer for additional information and assistance.

The tank must be designed and fabricated by a tank manufacturer that is ISO 9001:2000 certified in each of its locations.

The ISO certification must be to the current standard in effect at the time of the design and fabrication of the tank.

WATER TANK LID - POLY

QTY: 1

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 will assist in keeping the covers rigid under fast filling conditions.

A minimum of two lifting dowers shall accommodate the necessary lifting hardware.

WATER TANK FILL TOWER POLY (TANK CAPACITY 1000-1250)

QTY: 1

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 12" x 12" 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 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.

WATER TANK 4" OVERFLOW & VENT PIPE

QTY: 1

The fill tower shall be fitted with an integral 4" I.D. schedule 40 P.V.C. combination overflow/vent pipe running from the fill tower through the tank to a 4" coupling flush mounted into the bottom of the tank to allow water to overflow behind the chassis rear axle.

WATER TANK SUMP

QTY: 1

The tank sump shall be a minimum of 10" wide x 10" long x 3" deep.

An anti-swirl plate shall be mounted inside the sump, approximately 1" above the bottom of the sump.

WATER TANK SUMP CONNECTION; ONE (1) FRONT

QTY: 1

The front bulkhead of the water tank shall be fitted with one (1) tank sump connection.

WATER TANK 3" SUMP DRAIN

QTY: 1

A 3" drain plug shall be provided.

WATER TANK FLANGES/OUTLETS

QTY: 1

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

All tank fill couplings shall be backed with flow deflectors to break up the stream of water entering the tank.

WATER TANK MOUNTING ALL "T" TANKS

QTY: 1

The tank shall rest on the body cross members spaced a maximum of 22" apart and shall be insulated from these cross members with a minimum of 3/8" nylon webbing or 1/2" rubber, 2-1/2" wide.

The tank shall sit cradle-mounted using four (4) corner angles of 6 x 6 x 4 x 0.250 welded directly to the body cross members.

The angles shall keep the tank from shifting left to right or front to rear.

The tank is designed on the free-floating suspension principle and shall not require the use of hold downs.

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

The body or hose bed cross braces shall act as water tank retainers.

INTEGRAL FOAM TANK, 20 GAL. TANK "A"

QTY: 1

Included in the total capacity of the water tank, a 20-gallon integral foam storage area shall be built into the water tank.

The foam tank shall have a latched fill tower, properly labeled as the foam fill point.

A valved drain shall be provided.

FIRE RES - TANK VISION #WLA300-A00 LED WATER TANK GAUGE - PRIMARY

QTY: 1

A Fire Research, model #WLA300-A00, "TANKVISION" gauge that shows the actual volume of water in the tank shall be provided on the pump operator's panel. The "TANKVISION" gauge is designed for both ease of operation and installation. The "TANKVISION" gauge utilizes ultra-bright multi-color LEDs for sunlight readability and also uses 2 specially designed wide-viewing lens for 180° of clear viewing. The "TANKVISION" gauge utilizes a pressure sender to measure the liquid volume. The gauge shall be equipped with a self-calibration feature that allows the LEDs TANKVISION gauge to be used on tanks of different shapes and sizes.

Features:

- Flashes warning when the volume is less than 25%. Rapid down scrolling LEDs alert the operator when the tank is almost empty. Remote audio warning available.
- One size fit all'. The self-calibration feature allows for easy calibration of any shape or size tank.
- Multiple displays are possible with a single sender through the FRC data bus.
- Rugged waterproof cast aluminum housing.
- No fitting needed for poly tank.
- Special fittings available for other tank materials.
- Connector disconnects at back of display.

FIRE RESEARCH LED MINI GAUGE IN CAB

QTY: 1

A Fire Research model, WLA205-A00 miniature "TANKVISION" gauge that shows the actual volume of water in the tank shall be provided in the cab. The "TANKVISION" gauge is designed for both ease of operation and installation. The "TANKVISION" gauge utilizes ultra-bright LEDs for sunlight readability and also uses 2 specially designed wide-viewing lens for 180° of clear viewing. The "TANKVISION" gauge utilizes a pressure sender to measure the liquid volume. The gauge shall be equipped with a self-calibration feature allows the TANKVISION gauge to be used on tanks of different shapes and sizes.

FIRE RES WATER LEVEL - 1/4" NPT PRESS TRANS @ BOTTOM TANK

QTY: 1

The gauge shall use a pressure transducer installed near the bottom of the water tank to determine the correct volume in the tank.

FIRE RES WATER LEVEL - WLA290 RELAY DRIVER FOR MONSTER LIGHT

QTY: 1

A Fire Research model #WLA290, remote relay module shall be provided to provide outputs for large indicator lights on the side of the vehicle.

FIRE RESEARCH LED MAX VISION MONSTER LIGHT OPTION

QTY: 1

FIRE RESEARCH LED MAX VISION - ALL LIGHTS BLUE

QTY: 1

All MaxVision lights to be programmed with blue lights only.

MONSTER WATER LEVEL GAUGE, EA. SIDE OF BODY - FRC MAXVISION TYPICAL

QTY: 1

A large light water level gauge system shall be provided on both sides of the body.

Each side shall have one (1) Fire Research MaxVision LED light mounted on the body as directed.

The light shall have a wide-angle diffusion lens in front of the LEDs.

The light shall be mounted as to indicate the following water levels and shall be programmed to the "Typical View" to include the following colors to indicate the water level in 1/4 tank increments:

- Top light with blue LEDs Full tank
- Second light with blue LEDs 3/4 tank
- Third light with blue LEDs 1/2 tank
- Fourth light with blue LEDs 1/4 tank

The bottom LEDs shall flash red to indicate under 1/4 tank and shall show a down chasing pattern when the water level drops under 1/8 tank.

To prevent distraction to drivers, this tank level gauge shall be wired to display only when the park brake is engaged.

MONSTER WATER LEVEL GAUGE, REAR OF BODY - FRC MAXVISION TYPICAL

QTY: 1

A large light water level gauge system shall be provided on the rear of the body.

One (1) Fire Research MaxVision LED light mounted on the rear of the body.

The light shall have a wide-angle diffusion lens in front of the LEDs.

The light shall be mounted as to indicate the following water levels and shall be programmed to the "Typical View" to include the following colors to indicate the water level in 1/4 tank increments:

- Top light with blue LEDs Full tank
- Second light with blue LEDs 3/4 tank
- Third light with blue LEDs 1/2 tank
- Fourth light with blue LEDs 1/4 tank

The bottom LEDs shall flash red to indicate under 1/4 tank and shall show a down chasing pattern when the water level drops under 1/8 tank.

To prevent distraction to drivers, this tank level gauge shall be wired to display only when the park brake is engaged.

FIRE RES - TANK VISION #WLA360-A00 LED FOAM GAUGE - TANK "A"

QTY: 1

A Fire Research, model #WLA360-A00, "TANKVISION" gauge that shows the actual volume of foam in the tank shall be provided on the pump operator's panel.

The "TANKVISION" gauge is designed for both ease of operation and installation.

The "TANKVISION" gauge utilizes ultra-bright multi-color LEDs for sunlight readability and also uses 2 specially designed wide-viewing lens for 180 of clear viewing.

The "TANKVISION" gauge utilizes a pressure sender to measure the liquid volume.

The gauge shall be equipped self-calibration feature allows the TANKVISION gauge to be used on tanks of different shapes and sizes.

FIRE RES FOAM LEVEL - 1/4" NPT PRESS TRANS @ BOTTOM TANK "A"

QTY: 1

The gauge shall use a pressure transducer installed near the bottom of the foam tank to determine the correct volume in the tank.

WATER TANK MODIFICATION FOR SINGLE DIRECT TANK FILL

QTY: 1

DIRECT TANK FILL, OS REAR, 2-1/2" FIREMENS FRIEND, 2-1/2" NST FTNG

QTY: 1

One (1) 2-1/2" NST direct tank fill shall be provided at the rear of the body, on the officer side, as low as possible.

The direct tank fill shall be gated with a 2-1/2" Fireman's Friend (TTMA 6-bolt attachment pattern) check-type fill valve.

The fill valve shall be capable of flowing at a rate in excess of 1,000 gallons per minute and will be of a self-deflecting design, requiring no additional diffusion device.

The fill valve shall be constructed of stainless steel, with a spring actuated piston-type sealing mechanism to minimize seal wear and provide positive sealing of the valve.

The fill shall be equipped with a 30-degree elbow terminating with a 2-1/2" NST female swivel connection.

FOAM TANK - 1901 REQUIREMENT

QTY: 1

The foam proportioning system shall be supplied from the foam concentrate storage tank/s. The tank/s shall be constructed of materials compatible with foam concentrates being used in the system. Tank capacity, venting, fill opening and foam outlet plumbing connections shall be in accordance with NFPA requirements. Foam tank lid shall be sealed and latched in accordance with NFPA standards. If required a provision shall be made for installation of low tank level sensors and routing of the wiring for the sensors.

1" FOAM TANK DRAIN BEHIND OFFICER SIDE PUMP PANEL

QTY: 1

A 1" line from the foam tank shall be provided in order to drain foam from the tank.

The line shall terminate behind the officer's side pump panel with a quarter turn drain valve.

APPARATUS BODY GENERAL DESCRIPTION (PUMPER)

QTY: 1

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

Special attention shall be taken to minimize corrosion on all fabricated parts and structural members of the body.

All bolt-on components shall be provided with a dissimilar metals isolation barrier to prevent electric corrosion.

The body design shall also incorporate removable panels to access spring hangers, rear body mounts and fuel tank sending units.

The body assembly shall be an all-welded configuration.

The body shall be completely isolated from the cab and pump module structure.

Dimensions used in this specification shall be the general outer dimension taken from a typical line diagram of the apparatus.

These dimensions shall not take into account items like material thickness, access panels, doors, and other installed options.

BODY SUB FRAME - ALUMINUM

QTY: 1

The body sub structure shall be an all welded configuration utilizing a combination of 3" x 1-1/2" 6061-T6 thick walled structural tubing and 6061 structural channel.

This structure shall be designed to totally support the full length and width of the body and shall be welded to the body side compartments by use of reinforcement plates to incorporate the compartments into an integral part of the body weldment.

The sub structure shall be bolted to the sides of the chassis frame at four (4) points.

The two (2) forward mounting points shall utilize a spring mount to help isolate the body from chassis deflection.

This design shall provide storage capacity in each side compartment for a minimum of 500 lbs. of equipment, and a minimum of 1000 lbs. of equipment in the rear step compartment.

100" WIDE BODY, 29"/14" DEEP SIDE COMPARTMENTS

QTY: 1

The fire body shall be 100" wide to provide the maximum amount of usable hose bed and compartment space. The side body compartments shall be 29" deep in any full depth areas and 14" deep in any split depth areas.

SWEEP-OUT COMPARTMENTS (NON-AERIALS)

QTY: 1

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

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

Compartments with roll-up style doors shall have the external floor flange stepped down, 1/2" high x 2" deep, to produce a sealing surface for the roll-up doors below the compartment floor.

The sweep out design shall also permit easy cleaning.

COATED FASTENERS

QTY: 1

All exterior fasteners shall be coated stainless steel screws.

Screw threads shall be coated with reusable, self-locking, sealing material to provide vibration resistance.

Screw heads shall be coated with a sealing element to prevent galvanic corrosion between dissimilar metals.

Non-coated screws shall only be provided as part of vendor supplied component installations.

There will be no exceptions.

COMPARTMENT LOUVERS

QTY: 1

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

ACCESS PANELS

QTY: 1

Removable access panels shall be provided (if applicable) to access fuel tank sender, electrical junction compartment and rear body mounts.

Protective panels shall be located in the rear compartments providing access to the lights and associated wiring.

The covers shall also serve as protective covers to prevent inadvertent damage to lights or wiring from tools or equipment located in the compartment.

BODY MATERIAL: 3/16" ALUMINUM

QTY: 1

All compartment panels and body side sheets shall be fabricated entirely of 3/16" aluminum (5052-H32). Each side compartment assembly shall be both plug welded and stitch welded to ensure proper weld penetration on all panels, while avoiding the possible warping caused by a full seam weld.

The side compartments shall be welded on a fixture to ensure true body dimensions of all door openings. The side compartments and body side panels are then set into a body squaring fixture where the super structure is installed, and the entire body is aligned to be completely symmetrical. The super structure is then welded to the compartment side panels and the reinforcement plates are inserted, allowing the compartment panels to become an integral component of the body support structure.

A full seam weld shall not be used due to the applied heat which shall distort sheet metal and remove the protective coating from the perimeter of the welded area. All seams shall be caulked prior to the paint being finished to ensure proper compartment sealing.

64" WIDE FENDER - CUSTOM

QTY: 1

The body fender shall be 64" long, this shall allow for the suspension and related components to be contained within the fender, preventing any intrusion into the body compartment storage area. Bodies with notches in the front and/or rear compartment for suspension components are not acceptable. There will be no exceptions.

DRIVER FORWARD FENDER - TRIPLE STORAGE SLOT

QTY: 1

A storage compartment shall be inserted into the fender to provide a storage area for three (3) customer supplied SCBA cylinders (or fire extinguishers of similar size).

The storage area shall be sized as tall and wide as possible in the fender (minimum of 14" wide x 15" tall with an angled floor by fender radius) and shall be 26" deep.

The compartment shall have a non-abrasive lined cradle storage area for each of the three (3) devices.

This storage compartment shall provide a minimum of 2.3 cubic feet of storage space.

DRIVER REARWARD FENDER - TRIPLE STORAGE SLOT

QTY: 1

A storage compartment shall be inserted into the fender to provide a storage area for three (3) customer supplied SCBA cylinders (or fire extinguishers of similar size).

The storage area shall be sized as tall and wide as possible in the fender (minimum of 14" wide x 15" tall with an angled floor by fender radius) and shall be 26" deep.

The compartment shall have a non-abrasive lined cradle storage area for each of the three (3) devices.

This storage compartment shall provide a minimum of 2.3 cubic feet of storage space.

OFFICER FORWARD FENDER - TRIPLE STORAGE SLOT

QTY: 1

A storage compartment shall be inserted into the fender to provide a storage area for three (3) customer supplied SCBA cylinders (or fire extinguishers of similar size).

The storage area shall be sized as tall and wide as possible in the fender (minimum of 14" wide x 15" tall with an angled floor by fender radius) and shall be 26" deep.

The compartment shall have a non-abrasive lined cradle storage area for each of the three (3) devices.

This storage compartment shall provide a minimum of 2.3 cubic feet of storage space.

OFFICER REARWARD FENDER - TRIPLE STORAGE SLOT

QTY: 1

A storage compartment shall be inserted into the fender to provide a storage area for three (3) customer supplied SCBA cylinders (or fire extinguishers of similar size).

The storage area shall be sized as tall and wide as possible in the fender (minimum of 14" wide x 15" tall with an angled floor by fender radius) and shall be 26" deep.

The compartment shall have a non-abrasive lined cradle storage area for each of the three (3) devices.

This storage compartment shall provide a minimum of 2.3 cubic feet of storage space.

FENDER STORAGE COMPARTMENTS - POLISHED DOORS

QTY: 1

The fender storage area(s) shall be enclosed by a hinged door fabricated from mirror finish stainless steel.

The back side of the door shall have a section of Nylatron installed to protect the door surface from the items stored in the compartment.

Each door shall be tied into the compartment door ajar/do not move apparatus warning system.

There will be no exceptions.

SHORT - DRIVER SIDE FULL HEIGHT/SPLIT DEPTH

QTY: 1

One full height/split depth compartment shall be provided forward of the rear wheels. The compartment dimensions shall be 27" wide x 68" tall and will be split depth. There will be full depth in the lower 30" tall area and split depth in the upper 38" tall area.

One high sided compartment shall be provided above the rear wheels. The compartment dimensions shall be 64" wide x 37" high and split depth.

One full height/split depth compartment shall be provided behind the rear wheels. The compartment dimensions shall be 46" wide x 68" tall and will be split depth. There will be full depth in the lower 30" tall area and split depth in the upper 38" tall area.

SHORT - OFFICER SIDE FULL HEIGHT/SPLIT DEPTH

QTY: 1

One full height/split depth compartment shall be provided forward of the rear wheels. The compartment dimensions shall be 27" wide x 68" tall and will be split depth. The compartment will be full depth in the lower 30" tall area and split depth in the upper 38" tall area.

One high sided compartment shall be provided above the rear wheels. The compartment dimensions shall be 64" wide x 37" high and split depth.

One full height/split depth compartment shall be provided behind the rear wheels. The compartment dimensions shall be 46" wide x 68" tall and will be split depth. The compartment will be full depth in the lower 30" tall area and split depth in the upper 38" tall area.

FRONT COMPARTMENT 3/4" DRAIN HOLES

QTY: 1

Each front compartment shall have a 3/4" drain hole plugged with a rubber stopper.

REAR STEP COMPARTMENT - FULL WIDTH, STANDARD HEIGHT

QTY: 1

An equipment storage compartment shall be provided on the rear of the body, located at the rear step area.

The rear step compartment shall be 42" wide x 40" high x 29" deep.

The rear step compartment shall provide approximately 28 cubic feet of storage space.

REAR STEP COMPARTMENT - OPEN THROUGH SIDE WALLS

QTY: 1

The rear step compartment shall be designed to have an open storage space leading to the side body compartments.

This open storage area shall be in the lower section of the side body compartments only.

REAR STEP COMPARTMENT - ROLLUP DOOR

QTY: 1

The rear step compartment shall be equipped with a roll up style door.

REAR COMPARTMENT DOOR MANUFACTURER - AMDOR

QTY: 1

The rear compartment door brand shall be Amdor.

ROLL-UP DOORS

QTY: 1

Roll-up doors shall be provided on all compartments.

The roll-up doors shall be constructed from aluminum extruded slats which shall have a flexible seal between each slat for proper sealing of the door.

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

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

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

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

AMDOR BRAND ROLL-UP DOORS, SATIN FINISH

QTY: 1

The roll-up doors shall be Amdor brand roll-up doors. They should be equipped with a satin finish and a dual durometer slat seal. The slats shall be made from a 1” double-wall aluminum and have a continuous ball and socket hinge joint. The interior of the door shall be made of a smooth interior door curtain, preventing equipment hang-ups. The bottom panel flange shall have a stainless-steel lift bar latching system. The lifting bar will have a cut out for easy access if using gloves.

PROTECTION PANELS FOR ROLL-UP DOORS, BRUSHED ALUMINUM

QTY: 1

A protection panels shall be provided at the top of the body exterior compartments fitted with roll-up doors.

The panels shall be installed below the roll-up area to prevent possible damage to the roll-up door by misplaced equipment.

Each protection panel shall be bolted in place and have a brushed plain aluminum finish.

ROLLUP PROTECTION PANELS ON 7 BODY DOORS

QTY: 1

Seven (7) rollup door protection panels shall be installed.

PULL DOWN STRAPS FOR ALL ROLL-UP DOORS - AMDOR FLEX HEAVY DUTY STRAPS

QTY: 1

Pull straps shall be provided for all body roll-up doors. The straps shall be the heavy duty pull straps as provided by the door manufacturer and shall attach to the door and the compartment interior to prevent the strap being caught in the bottom of the door when the door is in the closed position.

REAR BODY DOOR FINISH - SATIN

QTY: 1

The rear body door shall have a satin finish.

REAR BODY DOOR RAIL FINISH - SATIN

QTY: 1

The rear body door rails shall have a satin finish.

ALUMINUM WHEEL WELL LINERS

QTY: 1

Fully removable, bolt-in, 1/8" aluminum fender liners shall be provided.

The wheel well liners shall extend from the outer wheel well body panel, into the truck frame.

Removable vertical splash shields, inward of the wheels, shall be provided to give access to the hydraulic components.

The completely washable fender liners shall be designed to protect the front and rear compartments and main body supports from road salts, dirt accumulation and corrosion.

COMPARTMENT TOPS

QTY: 1

Compartment ceilings shall be a fully welded design as part of the body construction process.

Compartment designs that do not have a welded in ceiling and utilize the stepping surface overlay as the ceiling shall not be acceptable. {No Exceptions}

The top of the welded in compartment ceiling shall be overlaid with aluminum tread plate to provide an NFPA compliant stepping surface.

There will be no exceptions.

REAR MUD FLAPS - NO LOGO

QTY: 1

Heavy duty mud flaps with NO logo shall be provided behind the rear wheels.

MOLDED BLACK RUBBER FENDERETTES, SINGLE AXLE BODIES

QTY: 1

The single rear fenders shall be trimmed with replaceable, bolt-in, molded black rubber fenderettes.

The fenderettes shall be secured to the body with stainless steel threaded fasteners along the internal perimeter of the wheel well.

Rubber welting shall be installed between the fenderettes and the body fender.

REAR BODY PANEL

QTY: 1

The rear body panel shall extend the full width between the body side compartments.

This panel shall be full height from the rear step to the hose bed floor.

No part of the rear panel shall be attached to the booster tank.

The rear body panel material shall be aluminum tread plate as standard.

If Chevron striping is specified for the rear of the body, then smooth aluminum shall be utilized.

STAINLESS DOOR SILL PROTECTORS INSIDE ALL BODY

QTY: 1

A 90 deg angle door sill protector, fabricated from 18 gauge brushed finish stainless steel shall be installed on the bottom external edge of each body compartment door opening to help protect this area from paint chipping.

TREAD PLATE OVERLAY, FRONT OF SIDE COMPARTMENTS (WRAP AROUND)

QTY: 1

The front face of the side compartments, next to the driver and officer side pump panels shall be overlaid with aluminum tread plate full height protection.

The protection panel shall cover the entire front face of the compartment and shall wrap around the corner to the door opening.

REAR I-ZONE POSTS

QTY: 1

(2) Two extruded aluminum handrail sections shall be provided, with brackets assembled under the
upper level rear steps. Brackets shall consist of a receiver and a removable 1 1/2" pole with restraining pin.

BODY RUB RAILS, TREAD PLATE

QTY: 1

Sacrificial, aluminum tread plate, rub rails shall be mounted at the base of the body, extending outward a minimum of 3/4", downward 2", and flange inward 1". The rub rails shall extend the full length of the main body and out to the rear step or wrap around the corners. Rub rails shall be bolted to the body from the bottom side of the compartment area, so that it does not damage the body side panels on initial impact and providing for ease of replacement.

GRIP-STRUT INSERTS IN THE REAR STEP

QTY: 1

Three (3)grip-strut, open grate type inserts shall be securely installed in the rear step.

EXTENDED REAR STEP - 8 D X 100 W - TAPERED ENDS

QTY: 1

The extended rear step shall be 8" deep and extends beyond the body compartments. The step shall have tapered corners for improved clearance, measuring 100" wide. The step shall be fabricated from 3/16" polished aluminum tread plate and be rigidly reinforced. The rear edge of the step shall be designed to accommodate the rear clearance lights. The steps recessed for the step reinforcement channel will help aid in protection. The steps shall be bolted into place with a minimum 1/2" clearance gap between the step and rear body panel.

INTERMEDIATE REAR STEP, 10" X FULL WIDTH BOLT-ON

QTY: 1

A ten (10) inch bolt on intermediate rear step, fabricated from 3/16" aluminum tread plate, shall be installed.

The step shall be a minimum of 10" deep x full width of the rear tailboard.

TWO (2) VERTICAL RAILS ON REAR

QTY: 1

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

ONE (1) HANDRAIL, BELOW HOSE BED LEVEL

QTY: 1

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

HANDRAIL ABOVE PUMP PANEL, EACH SIDE

QTY: 1

Two (2) vertical handrails shall be mounted above each pump panel, (1) each side.

GRAB RAILS, KNURLED ALUMINUM EXTRUSION

QTY: 1

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

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

Grab rails shall be provided at the following specified locations.

Additional grab rails shall be provided adjacent to any additional steps specified to comply with NFPA 1901.

AUSTIN CHROME FOLDING STEP(S), BODY FRONT, DRIVER SIDE

QTY: 1

Austin Hardware model FS-200 CHR large folding step(s), made of high strength die cast aluminum, with a textured chrome plate finish, shall be provided on driver side body front to provide NFPA compliant access (maximum 18” height between steps) to an upper horizontal walking surface (compartment cap, dunnage area, fabricated step, or upper body compartments).

AUSTIN CHROME FOLDING STEP(S), BODY FRONT, OFFICER SIDE

QTY: 1

Austin Hardware model FS-200 CHR large folding step(s), made of high strength die cast aluminum, with a textured chrome plate finish, shall be provided on officer side body front to provide NFPA compliant access (maximum 18” height between steps) to an upper horizontal walking surface (compartment cap, dunnage area, fabricated step, or upper body compartments).

AUSTIN CHROME FOLDING STEP(S), BODY REAR, DRIVER SIDE

QTY: 1

Austin Hardware model FS-200 CHR large folding step(s), made of high strength die cast aluminum, with a textured chrome plate finish, shall be provided on driver side body rear to provide NFPA compliant access (maximum 18” height between steps) to an upper horizontal walking surface (compartment cap, dunnage area, fabricated step, or upper body compartments).

AUSTIN CHROME FOLDING STEP(S), BODY REAR, OFFICER SIDE

QTY: 1

Austin Hardware model FS-200 CHR large folding step(s), made of high strength die cast aluminum, with a textured chrome plate finish, shall be provided on officer side body rear to provide NFPA compliant access (maximum 18” height between steps) to an upper horizontal walking surface (compartment cap, dunnage area, fabricated step, or upper body compartments).

PAINTED REAR TOW EYES, BELOW BODY

QTY: 1

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

STANDARD BED - STANDARD COMPT CAPS (72")

QTY: 1

The hose bed shall be located directly above the booster tank and be free from all sharp objects such as bolts, nuts, and so on, in avoidance of damage to a fire hose. For added strength, the hose bed side walls shall be approximately 2" thick, providing a mounting surface for devices such as warning and scene lights. The inner hosebed side walls shall be brushed aluminum panels, which will help prevent damage to painted surfaces when the hose is deployed. The front wall shall be flanged inward 2" with a 1" downward return, providing additional rigidity to the front wall.

NFPA MINIMUM HOSEBED CAPACITY

QTY: 1

The hose bed shall provide a minimum of 30 cubic feet hose storage area for 2-1/2" or larger fire hose in order to meet NFPA-1901 minimum pumper hose storage requirement. The apparatus weight analysis shall be based on 800’ of 2-1/2" hose, unless otherwise specified. If the hose load carried exceeds this minimum, the purchaser should advise the manufacturer prior to contract so that adequate chassis carrying capacity can be provided.

HOSEBED FLOORING - ALUMINUM SLATS

QTY: 1

Flooring is to be constructed from extruded aluminum and have proper spaces for ventilation purposes. The flooring shall be smooth and free from sharp edges to avoid any hose damage. The hose bed floor shall be removable, providing access to the inner body framework.

THREE (3) - 3/16" ADJUSTABLE HOSEBED PARTITIONS

QTY: 1

Three (3) fully adjustable 3/16" aluminum hose bed partitions shall be provided.

The partition shall be easily adjustable by channels, located at the front and rear of the hose bed.

The partition shall be removable for access to the booster tank.

HOSEBED COVER - TREADPLATE COVER WITH FIXED CENTER DIVIDER -4 DOORS

QTY: 1

An aluminum tread plate hose bed cover consisting of four (4) separate doors shall be mounted on the side body flanges, utilizing stainless steel hinges on each side. The cover shall be constructed of 3/16” aluminum tread plate with an aluminum extrusion frame. The cover shall be supported by a fixed center partition which shall be 1-1/2" higher than the side body flanges allowing for water to run off. The handles shall be provided at the front and rear for lifting. Both gas springs and cables shall be provided at the front to hold open the doors. The switches shall be provided on each side cover, which shall be tied to the "Do Not Move Apparatus When Light Is On" warning light inside the cab. A hinged access door shall be provided over the water tank fill tower area allowing access to the fill tower when the hose bed cover is closed.
The access door shall be hinged to the front to prevent the door from opening when the apparatus is in motion.

VINYL FLAPS AT REAR EDGE OF TREADPLATE COVER W/ QUICK RELEASE BUCKLES

QTY: 1

Two (2) vinyl flaps at the rear of the tread plate hose bed cover. They shall be secured to the hose bed cover with quarter quick release buckles and to the rear body with bungee cords.

HYPALON MATERIAL COLOR - BLACK

QTY: 1

The Hypalon material shall be black in color.

SIDE OF WATER TANK LADDER STORAGE ON OFFICER SIDE

QTY: 1

The ground ladders shall be stored vertically next to the water tank, behind the side body compartments. They will be located on the officer side of the apparatus. A hinged access door with D handle shall be provided on the enclosure that ties into the "Do Not Move Apparatus" warning system.

LADDER ACCESS DOOR SCUFF PLATE

QTY: 1

The ladder access door shall have an aluminum diamond plate panel on the inner surface of the door.

BACK BOARD STORAGE SLOT WITHIN LADDER STORAGE AREA

QTY: 1

The ladder storage area shall be designed to accommodate storage for a backboard, the storage slot shall be sized 18" tall x 2" wide x 74" long to accommodate a standard size backboard.

The storage area shall have nylon material on the bottom surface to protect the backboard.

ALCO-LITE PEL-24 24' 2-SECTION EXTENSION LADDER (ALUMINUM)

QTY: 1

Alco-Lite model PEL-24; 24', aluminum, two (2) section extension ladder shall be provided.

ALCO-LITE PRL-14 14' ROOF LADDER W/FOLDING HOOKS (ALUMINUM)

QTY: 1

Alco-Lite model PRL-14; 14', aluminum, straight roof ladder with folding hooks shall be provided.

ALCO-LITE FL-10 10' FOLDING ATTIC LADDER (ALUMINUM)

QTY: 1

Alco-Lite model FL-10; 10', folding, aluminum, attic ladder shall be provided.

PIKE POLE TUBE(S) - PUMPERS

QTY: 2

A pike pole tube(s) shall be provided.

Each holder shall be accessible from the rear of the apparatus.

Each pike pole holder shall be labeled to indicate the pike pole length.

LOCATION PIKE POLE TUBE(S) - IN LADDER STORAGE COMPARTMENT

QTY: 2

The pike pole tube(s) shall be mounted in the ladder storage compartment.

SUCTION HOSE STORAGE SIDE OF BODY (1-OFFICER, 1-DRIVER)

QTY: 1

The suction hoses shall be located on the body side panels. There will be one (1) on the officer side and one (1) on the driver side of the apparatus.

SUCTION HOSE TROUGHS - TWO

QTY: 1

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

TWO (2) 10' SECTIONS OF 6" KOCHECK LIGHTWEIGHT SUCTION HOSE

QTY: 1

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

6" NST, KOCHEK LOW LEVEL STRAINER WITH MOUNTING BRACKET

QTY: 1

A 6" N.S.T. Kochek LL60 low level type strainer(s) with integral jet siphon shall be provided and attached to the suction hose. A Kochek LLMB compartment mounting bracket shall also be provided to store the strainer(s) when not in use.

ADJUSTABLE SHELF DESCRIPTION - RESCUE

QTY: 1

Compartment shelving shall be constructed of 3/16” brush finish aluminum with a 2” upward bend at front and rear, and side supports. Shelving shall be vertically adjustable with spring nuts in aluminum strut channel.
Adjustable shelves shall be located as indicated at each compartment description.

ADJUSTABLE SHELF(S) LOCATED L-1

QTY: 2

Located in the left side compartment #1

ADJUSTABLE SHELF(S) LOCATED L-3

QTY: 2

Located in the left side compartment #3

ADJUSTABLE SHELF(S) LOCATED R-1

QTY: 2

Located in the right-side compartment #1

ADJUSTABLE SHELF(S) LOCATED R-2

QTY: 1

Located in the right-side compartment #2

ADJUSTABLE SHELF(S) LOCATED R-3

QTY: 2

Located in the right-side compartment #3

ADJUSTABLE SHELF(S) LOCATED REAR COMPARTMENT

QTY: 1

Located in the rear compartment

250#, FLOOR MOUNTED, ROLLOUT TRAY - RESCUE

QTY: 1

Slide out floor mount compartment shelving shall be constructed of 3/16” brush finish aluminum with a 2" upward bend at front and rear, and side supports attached to #250 rated slides. Slide out floor mount shelving shall have gas shocks to hold the tray in and out.
Slide out floor mount shelving shall be as indicated at each compartment description.

ROLLOUT TRAY, LOCATED REAR COMPARTMENT

QTY: 1

Located in the rear compartment

ROLL-OUT/ DROP DOWN ADJUSTABLE TRAY - RESCUE

QTY: 1

The roll out/tilt tray shall consist of a 3/16” brushed aluminum finished aluminum tray with a minimum 2” lip on all four sides. Heavy duty aluminum Unistrut "C" channel tracking material shall be utilized to securely fasten the slide tracks to the compartment walls, while allowing height adjustment.

The slide mechanism shall consist of a low-weight high-strength plastic to create a robust front bracket to support the aluminum tray. The rear of the tip down tray shall be mounted on a slider with an integral pivot plate. This slider and pivot plate shall be mounted inside an aluminum rail for maximum strength. The tray shall be released from the stowed position with the use of a push button and shall be capable of auto latching to the stowed position. The front handle/latch shall be designed with a double hand hold to control the tray when deployed or stowed. The roll out/tilt tray shall be rated for 330# capacity.

Roll out/Tilt trays be as indicated at each compartment description.

ROLLOUT DROP DOWN TRAY, LOCATED L-3 (RESCUE ONLY)

QTY: 1

Located in the left side compartment #3

ROLLOUT DROP DOWN TRAY, LOCATED R-3 (RESCUE ONLY)

QTY: 1

Located in the right-side compartment #3

SWING OUT TOOL BOARD, PAC TRAC DOUBLE FACED EXTRUSION - RESCUE

QTY: 1

The tool boards be constructed of PAC TRAC Dual Faced 7040 series aluminum extrusion allowing mounting of equipment on the interior and exterior of the tool boards. The tool boards be installed with a Performance Advantage Company PM-1000 Swing-Out Module Kit. Aluminum angles attach the hinge to Unistrut tracking to allow depth adjustments. A heavy-duty thumb latch be provided to secure the tool boards in the closed position.
Swing out tool boards be as indicated at each compartment description.

SWING OUT TOOL BOARD(S) LOCATED L-2

QTY: 1

Located in the left side compartment #2

GENERAL PAINT DESCRIPTION

QTY: 1

The apparatus body shall be painted with Sikkens paint product. 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 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 Sikkens high solid LV products and be performed in the following steps:

- Corrosion Prevention - all aluminum surfaces shall be pre-treated with the Alodine 5700 conversion coating to provide superior corrosion resistance and excellent adhesion of the base coat.
- Sikkens Sealer/Primer LV - acrylic urethane sealer/primer shall be applied to guarantee excellent gloss hold-out, chip resistance and a uniform base color.
- Sikkens High Solid LVBT650 (Base coat) - a lead-free, chromate-free high solid acrylic urethane base coat shall be applied, providing excellent coverage and durability. A minimum of two (2) coats shall be applied.
- Sikkens High Solid LVBT650 (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 the material is penetrated after painting, for the purpose of mounting steps, hand rails, 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, hand rails, 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 20-degree gloss meter. Coating thickness shall be measured with a digital MIL gauge and the orange peel with a digital wave scan device.

GENERAL PRIMER & PREP DESCRIPTION - PUMPER

QTY: 1

All exposed welds shall be ground smooth for final finishing of areas to be painted.

The compartments and doors are totally degreased and phosphatized.

After final body work is completed, grinding (36 and 80 grit), and finish sanding shall be used in preparation for priming.

GENERAL FINISH PAINT DESCRIPTION

QTY: 1

The body shall be finish sanded and prepared for final paint.

Upon completion of final preparation, the body shall be painted utilizing the highest quality, state of the art, low V.O.C., polyurethane base paint.

Finish paint shall be applied in multiple coats to ensure proper paint coverage with a high gloss finish.

OTHER 4-DR SINGLE COLOR BY CHASSIS MANUFACTURER

QTY: 1

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

COMMERCIAL CAB PAINT FINISH - OTHER

QTY: 1

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

WHEEL AND HUB PAINT - AS PROVIDED

QTY: 1

The chassis wheels shall be painted as provided by the commercial chassis manufacturer.

BODY BUFFING & FINISH - PUMPER

QTY: 1

The entire body shall be buffed and detailed.

INSIDE/UNDERSIDE BODY PAINTED BLACK

QTY: 1

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

JOB COLOR COMPARTMENT INT W/SPATTER PAINT - PUMPER/TANKER

QTY: 1

The interior of the compartments shall be finish painted job color with a scuff resistant webbing type paint of a contrasting color applied over the painted surfaces.

FENDER COMPARTMENT INTERIOR - JOB COLOR

QTY: 1

The interior of the fender storage compartments (if fender compartments are specified) shall be finish painted job color.

PUMPHOUSE & PLUMBING PAINTED BLACK

QTY: 1

The pump enclosure and pump/plumbing within the pump enclosure shall be painted black.

SINGLE COLOR BODY PAINT SCHEME - PUMPER - CARDINAL RED #G7C

QTY: 1

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

"TUF-KOTE" UNDER SEAL - SINGLE AXLE UP TO 210" WHEEL BASE

QTY: 1

The underside of the apparatus shall have Tectyl # 518 film applied to retard rust and the corrosion process.

The product shall meet military Specification A-A-59295 Type 1.

The amber, semi-firm wax film shall be applied by air spray method.

The cure time is 24 hours.

The film shall be applied to the chassis major components such as: chassis frame rails and cross members, axles, springs, drive line components, lower radiator supports, fuel tank, air tanks, running boards, bumper apron and other related components.

The underside of the cab and body shall have the film applied to the following areas: cab steps, front gravel shield and underside of battery box, body substructure, underside of all body compartments, running board supports and rear step supports.

No film shall be applied to the exhaust system or cab wheel wells, or body rear wheel wells.

NOTE: The film shall remain semi-firm to promote self-sealing.

The film may leave a light amber cast to those areas treated.

PINT OF TOUCH-UP PAINT

QTY: 1

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

FINALIZATION & DETAILING - PUMPER

QTY: 1

Prior to delivery the vehicle, the interior and exterior be cleaned and detailed.

The finalization process detailing shall include installation of NFPA required labels, checking fluid levels, sealing and caulking required areas of the cab and body, rust proofing, paint touch-up, etc

SCOTCH-CAL W/ DROP SHADOW LETTERING ON FRONT CAB DOORS

QTY: 1

Scotch-Cal with drop shadow lettering shall be provided on the cab drivers and officer's doors per the fire department requirements.

The design of the lettering on the cab doors shall be designed to fit in the 496 sq. inches available.

3" LETTERING ON FRONT CAB DOORS

QTY: 1

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

SCOTCH-CAL W/ DROP SHADOW LETTERING ON BODY SIDE SHEET

QTY: 1

Scotch-Cal with drop shadow lettering shall be provided on the body side sheet per the fire department requirements.

The design of the lettering on the body side sheet shall be designed to fit in the 2500 sq. inches available.

6" LETTERING ON BODY SIDE SHEET

QTY: 1

Lettering provided on the body side sheet shall be 6" high.

FRONT CAB DOOR TEXT LINE 1 - INSTALL DOOR DECAL SEE PHOTO

QTY: 1

SIDE OF BODY TEXT LINE 1 - WWW.CHELANFD3.ORG

QTY: 1

SIDE OF BODY TEXT LINE 2 - FIRE

QTY: 1

SIDE OF BODY TEXT LINE 3 - LEAVENWORTH

QTY: 1

6" SCOTCH-LITE STRIPE ON CAB AND BODY - PUMPER

QTY: 1

A six (6) inch high "Scotch-Lite" stripe shall be provided.

The stripe shall be applied on a minimum of 60 percent of each side of the unit, 60 percent on the rear of the unit and 40 percent on the front of the unit.

The Scotch-Lite stripe layout shall be determined by the Fire Department.

WHITE/RED SCOTCH-LITE W/ CHECKERED DESIGN

QTY: 1

The Scotch-Lite shall be white/red in color and shall be in a checkered design.

REAR CHEVRON STRIPING

QTY: 1

REAR CHEVRON STRIPING

ENTIRE REAR

QTY: 1

The entire rear of the truck shall be covered with alternating strips of reflective striping.

6" FULL REAR ORALITE CHEVRON STRIPING

QTY: 1

The striping shall be 6" Oralite reflective striping.

RED & FLUORESCENT YELLOW ORALITE V98

QTY: 1

The Oralite V98 reflective tape shall be 012 red and L1 fluorescent yellow in color.

ROAD SAFETY KITS

QTY: 1

A road safety kit shall be furnished with the following equipment:

- 2 1/2 lb. B-C fire extinguisher
- Triangle safety reflectors.

TWO (2) ZICO #SAC-44 FOLDING WHEEL CHOCKS, (2) MTD DRIVER SIDE BEHIND REAR AXLE

QTY: 1

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

COMMERCIAL CHASSIS -1 YEAR NEW PRODUCT WARRANTY

QTY: 1

KME hereby warrants to the original purchaser (first end users) that any new products manufactured by KME will be free from defects in material and workmanship under normal use, maintenance and service for a period of one (1) year from date of delivery, subject to the conditions and exceptions stated herein.

Under this warranty, KME's obligation is limited to the repair or replacement at KME's option, at its factory, by its representative, or by its authorized service facility, of any part found to be defective by KME. If KME deems it necessary, all parts for which warranty claim is made will be returned to KME, transportation charges prepaid, for examination by KME who will be the sole judge as to whether such part was defective in material or workmanship under normal use, maintenance or service. The Commercial Chassis Warranty start date shall begin upon the departure of the completed apparatus from KME (unless chassis is customer provided, at which point the chassis warranty start period will be as agreed upon between the customer and the chassis dealership from whom it was purchased).

10 YEAR BODY STRUCTURAL WARRANTY

QTY: 1

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

10 YEAR BODY CORROSION WARRANTY, USE W/COMMERCIAL CHASSIS

QTY: 1

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

PAINT FINISH WARRANTY, TEN (10) YEAR

QTY: 1

The proposed paint finish will be warranted for a period of ten (10) years from the date of acceptance of the unit. Details of warranty coverage, limitations and exclusions are included in the specific warranty document.

5 YEAR LETTERING WARRANTY

QTY: 1

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

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

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

1 YEAR BRIGHTWORK WARRANTY

QTY: 1

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

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

10 YEAR STAINLESS STEEL PIPING WARRANTY

QTY: 1

The proposed stainless-steel plumbing will be warranted for a period of ten (10) years from the date of acceptance of the unit. Details of warranty coverage, limitations and exclusions are included in the specific warranty document.

LIFETIME POLY TANK WARRANTY - ALL TANKS

QTY: 1

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

HALE FIRE PUMP LIMITED STANDARD WARRANTY

QTY: 1

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

FOAM PRO 2000 SERIES- FOAM SYSTEM - STANDARD WARRANTY

QTY: 1

The liability of FoamPro under the foregoing warranty will be limited to the repair or replacement at FoamPro’s option without charge for labor or materials of any parts upon return of the entire pump, system or other product or of the particular part to the FoamPro factory within the warranty period, at the sole expense of the purchaser, which part will upon examination appear to FoamPro’s satisfaction to have been defective in material and workmanship.

CLASS 1 - PRODUCT WARRANTY

QTY: 1

Class 1 warrants that any equipment of our own manufacture (or manufactured for us pursuant to our specifications) found to have defects in material or workmanship during normal use and service, will be repaired or replaced (at our opinion) free of charge, provided that written notice of such defect is received by us within two (2) years, (three 3 years on liquid filled gauges) after initial shipment.

AKRON - 5 YEAR LIMITED WARRANTY

QTY: 1

The limited warranty set forth here against defective materials or workmanship for a period of five (5) years will be given by Akron Brass Co. with respect to Akron Brass Co. products purchased and used in the United States and Canada respectively. All Akron valves are warranted for 10 years.

AKRON - 5 YEAR LIMITED WARRANTY

QTY: 1

The limited warranty set forth here against defective materials or workmanship for a period of five (5) years will be given by Akron Brass Co. with respect to Akron Brass Co. products purchased and used in the United States and Canada respectively. All Akron valves are warranted for 10 years.