

Show Apparatus Proposal for City of Hemet

SIDE HILL PERFORMANCE

Upon completion of the apparatus, the department requires that the apparatus be "Tilt Table" tested in a fully loaded condition with the engine not running. Fully loaded condition shall be defined as stated in NFPA 1901, Section 4.12, Vehicle Stability. The apparatus must meet the minimum required side hill performance requirement of 30 degrees tilt in a fully loaded condition before lifting a front or rear tire. The tilt table test must be conducted and certified by a third party.

If the completed apparatus fails to meet the minimum side hill performance requirements, the contractor shall have no more than a total of 30 business days to correct all deficiencies and re-submit a compliant apparatus. If the contractor cannot deliver a compliant apparatus within the 30 business day time frame, the State shall initiate termination for default.

APPARATUS VOCATION AND BASIC ATTRIBUTES

When completed this HME Ahrens-Fox fire apparatus shall have the following attributes:

Order Information:

Apparatus Builder: **HME, Incorporated**
Sales Representative: HME Fire Truck Sales & Service

User Information:

End User: City of Hemet
Mailing Address: 445 E. Florida Ave.
City: Hemet
State: CA
Zip Code: 92543
F.D. Contact:
Phone Number: 951-765-2348
Fax Number: 951-765-2337
Contact's email: egrace@cityofhemet.org

Hose well options:

Indicate the hose that shall be installed in the well.

Hosewell Location: N/A

___ - Officer's

___ - Center

___ - Driver's

Hose Brand:

Hose Model:

Hose Size: _____ inch

Number of feet required:

If more than one hosewell is ordered indicate on a separate piece of paper the information for the other well.

Is there an overall height restriction?

DO NOT MAKE AN ASSUMPTION ON A HEIGHT ISSUE

PLEASE ENTER THE INFORMATION

___N/A___ - Inches ground to the top of the highest part of apparatus when fully loaded

Are there minimum angle of approach or departure angle requirements?

If so fill in the blank.

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Minimum angle of approach - _____ N/A _____ degrees
Minimum angle of departure - _____ N/A _____ degrees

PAINT CODES AND BASIC ATTRIBUTES

Paint Information

Paint Manufacturer: **Dupont Imron is HME Standard Paint**

CAB EXTERIOR

Single Color:

Primary color:

Primary paint code:

Two Tone Color:

Upper paint color: White

Upper paint code: Same as previous Cal-Fire

Lower paint color: Red

Lower paint code: Same as previous Cal-Fire

Paint Break Line (Scheme # 2 tone

Note: If option for a Custom Two-Tone Paint is selected a drawing, with dimensions, must be attached for order entry. The HME 3A paint scheme will be used if no paint scheme is specified.

BODY PAINT

Color Body Panels Color:* Red

Color Body Panels Code:* Red

If the hosebed sides are painted are they the same color as the body panels?: YES

If not complete the following:

Hosebed Wall Color:* Red

Hosebed Wall Code:*

RIMS

Color Painted Rims Color: * Red

Color Painted Rims Code: *

*Unless noted otherwise the cab lower color will be used when painted rims are selected.

FRAME RAILS

Color Painted Frame Color: *

Color Painted Frame Code:*

*Unless noted otherwise the cab lower color will be used when painted rails are selected.

CONSTRUCTION DETAILS

Details of construction such as, but not limited to mounting positions for siren heads, grab handles, switches, labeling and materials where not otherwise specifically detailed in the written specifications at time of order, shall be left to the discretion of the manufacturer who shall be solely responsible for the design, construction and placement of the components.

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COMMERCIAL CHASSIS DESCRIPTION

The following International/Navistar chassis shall be provided:

Code	Description
SR52500	Base Chassis, Model 7400 SFA 4X4 with 183.00 Wheelbase, 64.10 CA, and 63.00 Axle to Frame.
1CBU	FRAME RAILS Heat Treated Alloy Steel (120,000 PSI Yield); 10.125" x 3.580" x 0.312" (257.2mm x 90.9mm x 8.0mm); 480.0" (12192) Maximum OAL
1GBP	FRAME REINFORCEMENT Outer "C" Channel, Heat Treated Alloy Steel (120,000 PSI Yield); 10.813" x 3.892" x 0.312"; (274.6mm x 98.9mm x 8.0mm); 480.0" (12192mm) Maximum OAL
1LNY	BUMPER, FRONT Steel, Swept Back, with Headlight Provision and Wiring Includes : BUMPER, FRONT Powder Coated Gray (Argent) Color Note: Bumper painted red by apparatus manufacturer
1WDS	FRAME EXTENSION, FRONT Integral; 20" In Front of Grille 139/34 105
1WGG	WHEELBASE RANGE 181" (460cm) Through and Including 205" (520cm) 0/0 0
2ESB	AXLE, FRONT DRIVING {Meritor MX-12-120} Single Reduction, 12,000-lb Capacity Includes : DRAIN PLUG, DRIVING FRONT AXLE Magnetic
2WLA	AXLE, FRONT DRIVING, LUBE {EmGard 75W-90} Synthetic Oil; 1 thru 29.99 Pints
3ADC	SUSPENSION, FRONT, SPRING Parabolic, Taper Leaf; 12,000-lb Capacity; With Shock Absorbers Includes : SPRING PINS Rubber Bushings, Maintenance-Free
4091	BRAKE SYSTEM, AIR Dual System for Straight Truck Applications Includes : BRAKE LINES Color and Size Coded Nylon : DRAIN VALVE Twist-Type : DUST SHIELDS, FRONT BRAKE : DUST SHIELDS, REAR BRAKE : GAUGE, AIR PRESSURE (2) Air 1 and Air 2 Gauges; Located in Instrument Cluster : PARKING BRAKE CONTROL Yellow Knob, Located on Instrument Panel : PARKING BRAKE VALVE For Truck : QUICK RELEASE VALVE Bendix On Rear Axle for Spring Brake Release: 1 for 4x2, 2 for 6x4 : SLACK ADJUSTERS, FRONT Automatic : SLACK ADJUSTERS, REAR Automatic : SPRING BRAKE MODULATOR VALVE R-7 for 4x2, SR-7 with relay valve for 6x4
4732	DRAIN VALVE {Berg} Manual; With Pull Chain, for Air Tank Includes : DRAIN VALVE Mounted in Wet Tank
4AZA	AIR BRAKE ABS {Bendix AntiLock Brake System} Full Vehicle Wheel Control System (4-Channel)
4EBT	AIR DRYER {Bendix AD-IP} With Heater
4ERD	BRAKE CHAMBERS, SPRING Rotated Forward and Up For Maximum Ground Clearance with 4x4
4ESX	BRAKE CHAMBERS, FRONT AXLE {Haldex} 20 SqIn
4EVL	BRAKE CHAMBERS, REAR AXLE {Haldex GC3030LHDHO} 30/30 Spring Brake Includes : BRAKE CHAMBERS, SPRING (2) Rear Parking; WITH TRUCK BRAKES: All 4x2, 4x4; WITH TRACTOR BRAKES: All 4x2, 4x4; 6x4 & 6x6 with Rear Tandem Axles Less Than 46,000-lb. or GVWR Up To 54,000-lb.

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- 4JCJ BRAKES, FRONT, AIR CAM S-Cam; 16.5" x 5.0"; Includes 20 Sq. In. Long Stroke Brake Chambers
- 4NDB BRAKES, REAR, AIR CAM S-Cam; 16.5" x 7.0"; Includes 30/30 Sq.In. Long Stroke Brake Chamber and Spring Actuated Parking Brake
- 4SBC AIR COMPRESSOR {Bendix Tu-Flo 550} 13.2 CFM Capacity
- 5708 STEERING COLUMN Tilting 10/0 10
- 5CAL STEERING WHEEL 2-Spoke, 18" Diam., Black 0/0 0
- 5PSA STEERING GEAR {Sheppard M-100} Power 0/0 0
- 6DBY DRIVESHAFT {Dana Spicer} SPL170XL Series in lieu of SPL140 4/19 23
- 7BEJ EXHAUST SYSTEM Single, Horizontal, Aftertreatment Device Frame Mounted Outside Right Rail Under Cab; Includes Vertical Tail Pipe and Guard
Includes
NOTE: Option modified for horizontal exhaust tailpipe by apparatus builder
- 7SCY ENGINE COMPRESSION BRAKE for MaxxFoRce I6 Engines; Electronically Activated
- 8000 ELECTRICAL SYSTEM 12-Volt, Standard Equipment
Includes
: BATTERY BOX Steel with Fiberglass Cover, Mounted Right Side, Back of Cab
NOTE: Option modified for batteries on RH rail in lower cab enclosure by apparatus builder
: DATA LINK CONNECTOR For Vehicle Programming and Diagnostics In Cab
: FUSES, ELECTRICAL SAE Blade-Type
: HAZARD SWITCH Push On/Push Off, Located on Top of Steering Column Cover
: HEADLIGHT DIMMER SWITCH Integral with Turn Signal Lever
: HEADLIGHTS (2) Sealed Beam Halogen, 5" X 7" Rectangular, with Chrome Plated Bezels
: HORN, ELECTRIC Single
: JUMP START STUD Located on Positive Terminal of Outermost Battery
: PARKING LIGHT Integral with Front Turn Signal and Rear Tail Light
: RUNNING LIGHT (2) Daytime, Included With Headlights
: STARTER SWITCH Electric, Key Operated
: STOP, TURN, TAIL & B/U LIGHTS Dual, Rear, Combination with Reflector
NOTE: Removed by apparatus builder
: TURN SIGNAL SWITCH Self-Cancelling for Trucks, Manual Cancelling for Tractors, with Lane Change Feature
: TURN SIGNALS, FRONT Includes Reflectors and Auxiliary Side Turn Signals, Solid State Flashers; Flush Mounted
: WINDSHIELD WIPER SWITCH 2-Speed with Wash and Intermittent Feature (5 Pre-Set Delays), Integral with Turn Signal Lever
: WINDSHIELD WIPERS Single Motor, Electric, Cowl Mounted
: WIRING; CHASSIS Color Coded and Continuously Numbered
- 8518 CIGAR LIGHTER Includes Ash Cup
- 8540 HORN, ELECTRIC (2)
- 8585 TOGGLE SWITCH, AUXILIARY and Wiring to Front Bumper, For Driving Lights or Fog Lights Mounted by Customer
- 8718 POWER SOURCE Cigar Type Receptacle without Plug and Cord
- 8GWY ALTERNATOR {Leece-Neville 14931PAH} Brush Type, 12 Volt 320 Amp. Capacity, Pad Mounted
- 8HAB BODY BUILDER WIRING Back of Standard Cab at Left Frame or Under Extended or Crew Cab at Left Frame; Includes Sealed Connectors for Tail/Amber Turn/Marker/ Backup/Accessory Power/Ground and Sealed Connector for Stop/Turn
- 8MKX BATTERY SYSTEM {International} Maintenance-Free (3) 12-Volt 2775CCA Total
- 8REA 2-WAY RADIO Wiring Effects; Wiring With 20 Amp Fuse Protection, Includes Ignition Wire With 5 Amp Fuse, Wire Ends Heat Shrink and 10' Coil Taped to Base Harness
- 8RJU RADIO {International} AM/FM Stereo With CD Player, Weatherband, Clock, Auxiliary Input, Includes Multiple Coaxial Speakers
Includes

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- : SPEAKERS IN CAB (2) Coaxial with Deluxe Interior
- : SPEAKERS IN CAB (4) Coaxial with Premium Interior
- 8THB BACK-UP ALARM Electric, 102 dBA
- 8WCS BATTERY DISCONNECT SWITCH {Joseph Pollak 51-315} Positive Type, Lever Operated, Cab Mounted
- 8WHE HORN, AIR ACCOMMODATION PACKAGE; less Horn.
- 8WML HEADLIGHTS Long Life Halogen; for Two Light System
- 8WTK STARTING MOTOR {Delco Remy 38MT Type 300} 12 Volt; less Thermal Over-Crank Protection
- 8WTR COURTESY LIGHT (4) Mounted In Front & Rear Map Pocket Left and Right Side
Notes
: Feature included with CAB INTERIOR TRIM, Premium
- 8WWJ INDICATOR, LOW COOLANT LEVEL With Audible Alarm
- 8XAH CIRCUIT BREAKERS Manual-Reset (Main Panel) SAE Type III With Trip Indicators, Replaces All Fuses Except For 5-Amp Fuses
- 9593 FENDER EXTENSIONS Omit
- 9HAN INSULATION, UNDER HOOD for Sound Abatement
- 9HBM GRILLE Stationary, Chrome
- 9HBN INSULATION, SPLASH PANELS for Sound Abatement
- 9LAC INTERNATIONAL LOGOS Ship Loose International Door Badges in Cab for Installation after Customer Graphics
- 9WAC BUG SCREEN Front End; Mounted Behind Grille
- 9WBB GRILLE EMBER SCREEN Mounted to Grille to Keep Hot Embers out of Engine Air Intake System
- 9WBC FRONT END Tilting, Fiberglass, With Three Piece Construction; for 2007 Emissions
- 10210 LABEL Emissions, Fuel Economy and Noise
- 10506 TOOL KIT Rim Wrench and Handle Only
- 10646 PAINT IDENTITY, PT-2 Two Tone, Instruction No. 946. Frame/Running Gear and Wheels, Less Fuel Tank
Includes
: NOTE: Battery Box, Air Tanks, Fuel Tanks, Steps and Straps NOT Painted
- 10761 PAINT TYPE Base Coat/Clear Coat, 1-2 Tone
- 11001 CLUTCH Omit Item (Clutch & Control)
- 12712 OIL FILTER, ENGINE {Hudgins Model 960 Spinner}
- 12959 BLOCK HEATER, ENGINE {Phillips} 120 Volt/1250 Watt
Includes
: BLOCK HEATER SOCKET Receptacle Type; Mounted below Drivers Door
- 12NUW ENGINE, DIESEL {MaxxForce 9} EPA 10, 330 HP @ 2000 RPM, 950 lb-ft Torque @ 1200 RPM, 2200 RPM Governed Speed
Includes
: AIR COMPRESSOR AIR SUPPLY LINE Naturally-Aspirated
: COLD STARTING EQUIPMENT Intake Manifold Electric Grid Heater with Engine ECM Control
: CRUISE CONTROL Electronic; Controls Integral to Steering Wheel
: ENGINE OIL DRAIN PLUG Magnetic
: ENGINE SHUTDOWN Electric, Key Operated
: FUEL FILTER Included with Fuel/Water Separator
: FUEL/WATER SEPARATOR Fuel/Water Separator and Fuel Filter in a Single Assembly; With Water-in-Fuel Sensor; Engine Mounted
: GOVERNOR Electronic
: OIL FILTER, ENGINE Spin-On Type
: WET TYPE CYLINDER SLEEVES
- 12THZ FAN DRIVE {Horton Drivemaster Polar Extreme} Direct Drive Type, Two Speed, With Residual Torque Device for Disengaged Fan Speed
Includes
: FAN Nylon

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- 12UBG RADIATOR Aluminum, Front to Back Cross Flow, Series System; 1588 SqIn Core and 885 SqIn Charge Air Cooler and 470 SqIn Low Temperature Radiator Down Flow, Includes Transmission Oil Cooler
Includes
: ANTI-FREEZE Red Shell Rotella Extended Life Coolant; -40 Degrees F/ -40 Degrees C; for MaxxForce Engines
: DEAERATION SYSTEM with Surge Tank
: HOSE CLAMPS, RADIATOR HOSES Gates Shrink Band Type; Thermoplastic Coolant Hose Clamps
: RADIATOR HOSES Premium, Rubber
- 12UXE FEDERAL EMISSIONS for 2010; MaxxForce 9 & 10 Engines
- 12VBB AIR CLEANER Dual Element
Includes
: GAUGE, AIR CLEANER RESTRICTION Air Cleaner Mounted
- 12VVY OVER-TEMPERATURE PROTECTION (For Engine Coolant) Omit Item
- 12VXU THROTTLE, HAND CONTROL Engine Speed Control for PTO; Electronic, stationary Pre-Set, Two Speed Settings; Mounted on Steering Wheel
- 12VZA ENGINE CONTROL, REMOTE MOUNTED Provision for; Includes Wiring for Body Builder Installation of PTO Controls; With Ignition Switch Control for MaxxForce post 2007 Emissions Electronic Engines
- 12WBR FAN OVERRIDE Manual; With Electric Switch on Instrument Panel, (Fan On With Switch On)
- 12WYK ENGINE WATER COOLER {Sen-Dure} Auxiliary, For Use With Fire Trucks
- 12WZD EMISSION COMPLIANCE Engine Shutdown System Exempt Vehicles, Complies With California Clean Air Regulations
- ✓ 13AJV TRANSMISSION, AUTOMATIC {Allison 3000EVS_P} 4th Generation Controls; Close Ratio, 5-Speed; With Overdrive, Includes Oil Level Sensor, With Provision for PTO, Less Retarder, Max. GVW N/A
Includes
: OIL FILTER, TRANSMISSION Mounted on Transmission
: TRANSMISSION OIL PAN Magnet in Oil Pan
- 13TKK TRANSFER CASE {Meritor T-4210 2} 2 Spd, 10000 lb-ft Total Capacity, Without Provision for PTO, With Electric Over Air Control, With Lube Pump
Includes
: LIGHT, INDIC, ALL-WHEEL DRIVE Illuminates With All Wheel Drive Engaged, Located on Instrument Panel
- 13WBN TRANSMISSION SHIFT CONTROL {Allison} T-Bar Type; for Allison 3000 & 4000 Transmission
- 13WDB TRANSFER CASE LUBE {EmGard 50W} Synthetic; 1 thru 14.99 Pints
- 13WDV OIL COOLER, TRANSFER CASE Remote Mounted Back of Cab
- 13WLP TRANSMISSION OIL Synthetic; 29 thru 42 Pints
- 13WUE ALLISON SPARE INPUT/OUTPUT for Emergency Vehicle Series (EVS); Fire/ Pumper, Tank, Aerial/Ladder
- 13WYL SHIFT CONTROL PARAMETERS Allison Performance Programming in Primary and Allison Economy Programming in Secondary
- 14051 AXLE, REAR, SINGLE {Meritor RS-23-160} Single Reduction, 23,000-lb Capacity, With 200 Wheel Ends . Gear Ratio: 4.89
Includes
: REAR AXLE DRAIN PLUG (1) Magnetic, For Single Rear Axle
- 14SAN SUSPENSION, RR, SPRING, SINGLE Vari-Rate; 23,500-lb Capacity
- 14SZB SPRINGS, REAR AUXILIARY Multileaf; 4,500-lb Capacity
- 14WAP SHOCK ABSORBERS, REAR (2)
- 14WLB AXLE, REAR, LUBE {EmGard 75W-90} Synthetic Oil; 30 thru 39.99 Pints
- 15LKH FUEL/WATER SEPARATOR With Filter Restriction/Change Indicator, Includes Standard Equipment Water-in-Fuel Sensor
- 15SEM FUEL TANK Top Draw; D Style, Steel, 19" Deep, 70 U.S. Gal., 265 L Capacity, With Quick Connect Outlet, Mounted Left Side, Under Cab

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- 16000 FLOOR COVERING Transmission Cover, Floor Mats and Seal
- 16196 CAB Conventional 6-Man Crew Cab
Includes
: ARM REST (2) Molded Plastic; One Each Door
: CLEARANCE/MARKER LIGHTS (5) Flush Mounted
: COAT HOOK, CAB Located on Rear Wall, Centered Above Rear Window
: CUP HOLDERS Two Cup Holders, Located in Lower Center of Instrument Panel
: DOME LIGHT, CAB Rectangular, Door Activated and Push On-Off at Light Lens, Integral to Console, Center Mounted
: GLASS, ALL WINDOWS Tinted
: GRAB HANDLE, CAB INTERIOR (1) "A" Pillar Mounted, Passenger Side
: GRAB HANDLE, CAB INTERIOR (2) Front of "B" Pillar Mounted, One Each Side
: GRAB HANDLE, CAB INTERIOR (4) Two Each Side, Rear Door Mounted at Hinge Side and "C" Pillar Mounted
: INTERIOR SHEET METAL Upper Door (Above Window Ledge) Painted Exterior Color
: STEP (8) Two Steps Per Door
Notes
: 43.9" CA Loss
- 16HBA GAUGE CLUSTER English With English Electronic Speedometer
Includes
: GAUGE CLUSTER (6) Engine Oil Pressure (Electronic), Water Temperature (Electronic), Fuel (Electronic), Tachometer (Electronic), Voltmeter, Washer Fluid Level
: ODOMETER DISPLAY, Miles, Trip Miles, Engine Hours, Trip Hours, Fault Code Readout
: WARNING SYSTEM Low Fuel, Low Oil Pressure, High Engine Coolant Temp, and Low Battery Voltage (Visual and Audible)
- 16HGH GAUGE, OIL TEMP, ALLISON TRAN
- 16HHE GAUGE, AIR CLEANER RESTRICTION {Filter-Minder} With Black Bezel Mounted in Instrument Panel
- 16HKT IP CLUSTER DISPLAY On Board Diagnostics Display of Fault Codes in Gauge Cluster
- 16JDY SEAT, DRIVER {Gra-Mag} Non-Suspension, High Back With Integral Headrest, Vinyl, With Fixed Back
Includes
: SEAT BELT 3-Point, Lap and Shoulder Belt Type
- 16PJH SEAT, PASSENGER {Gra-Mag} Non Suspension, High Back, Fixed Back, Integral Headrest, Vinyl
Includes
: SEAT BELT 3-Point, Lap and Shoulder Belt Type
- 16RZD SEAT, REAR {International} BENCH; Full Width; Vinyl, With Fixed Back and Two Integral Outboard Headrests
Includes
: SEAT BELT (3) Two 3-Point Shoulder Belts for Driver and Outer Passenger and One 2-Point Lap Belt for Center Passenger
- 16SDC GRAB HANDLE (2) Chrome Towel Bar Type With Anti-Slip Rubber Inserts; for Cab Entry, Mounted Left and Right, Each Side at "B" Pillar
- 16SDU MIRRORS (2) {Lang Mekra} Styled; Rectangular, 7.09" x 15.75" & Integral Convex Both Sides, 102" Inside Spacing, Breakaway Type, Heated Heads Thermostatically Controlled, Power Both Sides, Clearance Lights LED, Bright Finish Heads & Brackets
- 16VCA SEAT BELT All Red; 4 to 6
- 16VHX CAB MOUNTING HEIGHT EFFECTS High Cab in Lieu of Mid High Cab Mounting (Approx. 4.5")
- 16WCT AIR CONDITIONER {Blend-Air} With Integral Heater & Defroster
Includes

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- : CLAMPS, HEATER HOSE Mubea Constant Tension Clamps
- : HEATER HOSES Premium
- : REFRIGERANT Hydrofluorocarbon HFC-134A
- 16WEE CAB SOUND INSULATION Includes Dash Insulator and Engine Cover Insulator
Notes
 - : Feature included with CAB INTERIOR TRIM, Premium
- 16WJS INSTRUMENT PANEL Center Section, Flat Panel
- 16WKY FRESH AIR FILTER for HVAC
- 16WLE STORAGE POCKET, DOOR Molded Plastic, Full Width; Mounted on Passenger Door
- 16WLM HOURMETER, PTO for Customer Provided PTO; With Indicator Light and Hourmeter in Gauge Cluster Includes Return Wire for PTO Feedback Switch
- 16WŞG CAB INTERIOR TRIM Deluxe; for Crew Cab
Includes
 - : "A" PILLAR COVER Molded Plastic
 - : CAB INTERIOR TRIM PANELS Cloth Covered Molded Plastic, Full Height; All Exposed Interior Sheet Metal is Covered Except for the Following: with a Two-Man Passenger Seat or with a Full Bench Seat the Back Panel is Completely Void of Covering
 - : CONSOLE, OVERHEAD Molded Plastic; With Dual Storage Pockets with Retainer Nets and CB Radio Pocket
 - : DOOR TRIM PANELS Molded Plastic; Driver and Passenger Doors
 - : FLOOR COVERING Rubber, Black
 - : HEADLINER Soft Padded Cloth
 - : INSTRUMENT PANEL TRIM Molded Plastic with Black Center Section
 - : STORAGE POCKET, DOOR (1) Molded Plastic, Full-Length; Driver Door
 - : SUN VISOR (2) Padded Vinyl with Driver Side Toll Ticket Strap, Integral to Console
- 16WSK CAB REAR SUSPENSION Air Bag Type
- 26DRA WHEEL, SPARE, DISC 22.5" Painted Steel, 10 Stud (285.75MM BC Hub Piloted) 8.25 DC Rim
- 27DMA WHEELS, FRONT DISC; 22.5" Painted Steel, 2 Hand Hole, 10 Stud (285.75MM BC) Hub Piloted, Flanged Nut, Metric Mount, 8.25 DC Rims; With Steel Hubs
Includes
 - : PAINT IDENTITY, FRONT WHEELS White
 - : WHEEL SEALS, FRONT Oil Lubricated, Includes Wheel Bearings
- 28DMA WHEELS, REAR DUAL DISC; 22.5" Painted Steel, 2 Hand Hole, 10-Stub (285.75MM BC) Hub Piloted, Flanged Nut, Metric Mount, 8.25 DC Rims; With Steel Hubs
Includes
 - : PAINT IDENTITY, REAR WHEELS Job Color
 - : WHEEL SEALS, REAR Oil Lubricated, Includes Wheel Bearings
- 29WLA WHEEL BEARING, FRONT, LUBE {EmGard 50W} Synthetic Oil
- 35107 PAINT HOOD CONVENTIONAL CAB Solid Color for 2, 3, or 4-Tone Special Schematics
- 35200 PAINT, CAB Two-Tone, With 1-2 Breaks on Cab.
- 40010 WARRANTY Medium Duty Standard 12 Months
- 7382138105 (2) TIRE, FRONT 11R22.5 G282 MSD (GOODYEAR) 498 rev/mile, load range H, 16 ply
- 7382138105 (4) TIRE, REAR 11R22.5 G282 MSD (GOODYEAR) 498 rev/mile, load range H, 16 ply
Cab schematic 23DGM
Chassis schematic 946GM

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HOOD MUDFLAPS

Mud flaps shall be installed on the bottom of the hood in front of the front tires. These mud flaps shall be provided to protect the front extension from excessive road debris.

FUEL TANK VENT EXTENSION

The OEM fuel tank vent line shall be extended from the fuel tank check valve and vented to the atmosphere. The vent line shall extend vertically from the tank to the bottom of the cab rear window and then bend 180 degrees towards the ground. A vent plug orifice (#60 drill size) shall be installed into the upper end of each line. No fuel tank roll over protection check valves shall be removed from the fuel system.

Any chassis fuel system modifications shall be fully compliant with the California Air Resources Board (CARB) standards.

FUEL TANK SKID PLATE

A heavy duty removable skid plate that is painted body or frame color shall be fastened to the bottom side of the fuel tank hangers. This removable skid plate shall be turned up on the front and rear sides to prevent the tank mounting system from digging into the ground when the apparatus is high centered in off road conditions.

UNDER CAB COMPARTMENT DESIGN AND CONSTRUCTION

All compartments shall be manufactured from 12-gauge stainless steel shall be of sweep out design and shall be bolted together. Stainless recessed round head bolts and stainless aircraft style "ESNA" nuts shall be applied with proper torque rating for each fastener. This type of construction shall greatly enhance the strength and ease of parts replacement in the event of damage and future modifications.

HINGED DOOR CONSTRUCTION

The lower cab compartments shall be provided with hinged doors. The hinged compartment doors shall be flush style so that the entire door fits flush against the apparatus body sides. All doors shall be provided with a high quality, continuous double seal type weather stripping to prevent moisture and dust from entering the exterior compartments.

Each door shall be double pan design with the outer door material being 12-gauge stainless steel with a 1/8" aluminum removable inner liner that shall have a natural finish to provide reflective qualities during night operations.

The vertically hinged doors shall have gas shocks. A polished stainless steel 1/4" piano hinge shall be provided for each door. The door latches shall be Hansen locking slam latches, with a chrome "D" ring with a 5-degree bend for easier grasping of each door handle with gloved hands. The latch shall be provided with a keyed lock.

The exterior of the doors shall be painted to match the main job color.

LEFT (DRIVER'S SIDE) COMPARTMENT UNDER REAR CAB DOOR

There shall be a brushed stainless steel compartment mounted beneath the crew door on the left (driver's) side of the cab. The compartment shall have dimensions of 40-1/2" wide x 16-1/2" high x 22" deep. The clear door compartment dimensions shall be 34" wide x 14" high.

The compartment shall be provided with a laser cut louvers to provide ventilation. There shall be a protective louver covering the filter shall be removable to allow for filter changing. The filter shall be 100% virgin nylon fiber in an open web design that is USDA approved.

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A heavy duty pullout tray shall be installed in the left compartment equipped with Grant slides and a gas shock to hold the tray in both the in and out positions and shall be made from .190" aluminum with a maximum capacity of 250 pounds. There shall be an eggcrate insert in the pull out tray to provide storage flexibility and appliance retention in the drawer.

RIGHT (OFFICER'S SIDE) COMPARTMENT UNDER REAR CAB DOOR

There shall be a brushed stainless steel compartment mounted beneath the crew door on the right (officer's) side of the cab. The compartment shall have dimensions of 37" wide x 13" high x 22" deep. The clear door compartment dimensions shall be 31" wide x 11" high.

A heavy duty pullout tray shall be installed in the right compartment equipped with Grant slides and a positive mechanical lock to hold the tray in the in position and shall be made from stainless steel. The useable compartment after the battery tray installation shall be 15" wide x 11" high x 22" deep. A compartment divider shall be installed to seal the battery compartment from the storage compartment space.

The battery and storage compartment shall both be provided with a laser cut louvers to provide ventilation. There shall be a protective louver covering the filter shall be removable to allow for filter changing. The filter shall be 100% virgin nylon fiber in an open web design that is USDA approved.

COMPARTMENT LIGHTING

A minimum of two (2) compartment lights shall be provided for each under cab compartment. No exceptions to this requirement. Each under compartment shall have an automatic compartment light switch. The lights shall be double side transparent type bulb to provide lighting around the exterior of the compartment when the doors are open.

COMPARTMENT STEPS

The top of the compartment shall be equipped with the original equipment steps from the chassis. The lower steps on the compartment shall be laser grip stainless steel steps to match the design used on the pump panel and rear body lower stepping surface.

The lower original equipment steps in the driver and officer door areas shall be replaced with laser grip stainless steel steps to match the design used on the pump panel and rear body lower stepping surface.

CAB LOWER STAINLESS TRIM

The right side lower edge of the cab shall have a brushed stainless steel trim edge. The trim shall be broken to form an angle for stiffness.

REAR DOOR EXTERIOR GRAB HANDLES

The rear doors of the cab shall be fitted with exterior door grab handles to match the grab handles supplied behind the front doors.

EMBER SCREENS

Stainless steel wire cloth screens shall be installed on the apparatus fresh air intake system, air filter housing and outside cab vent. The air intake and outside cab vent shall be protected so to prevent particulate matter greater than .039 inches in diameter from entering the intake system. Particular attention is required on screening of the remote through the hood style intake systems.

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The wire cloth specification shall be as follows: .014 inch, 304 stainless steel, 20 meshes per lineal inch.

EXHAUST TAILPIPE MODIFICATION

The exhaust system on the chassis shall be removed from the DOC back. A four (4) inch horizontal tailpipe shall be installed terminating ahead of the rear tires on the right side of the vehicle.

The area over the right side under cab compartment shall have the tailpipe wrapped to prevent excessive heat in the compartment and from beneath the cab. The tailpipe shall terminate with an exhaust gas diffuser that is five (5) inches in diameter with a 20 degree angle cut.

The apparatus body on the right side ahead of the rear tires shall be modified to allow the exhaust system to be no lower than the running board on the pump.

CAB GROUND LIGHTING

One (1) light shall be mounted beneath the step on the driver and officer's side. These lights shall be designed to provide illumination on areas under the cab for entry/egress. Light activation shall occur when any cab door is open while the ignition switch is in the on position.

ELECTRICAL INTERFACE

The apparatus shall be equipped with a state of the art electrical interface utilizing the chassis multiplexing system as the foundation for the design. Integration of analog devices and hard wiring with logic devices shall be kept to a minimum. All wiring shall be color coded and labeled to correspond to the electrical manual provided with the completed apparatus.

LOW VOLTAGE HIGH IDLE

The Hi Idle shall be activated if the system voltage drops to 12.4 volts or less for 30 seconds and the following interlocks are engaged:

- Transmission in neutral
- Parking Brake Set
- Service Brake Released
- No other feature has control of the engine speed (ex. pressure governor operation)

Hi Idle shall be maintained until system voltage has reached 13.3 volts or greater for 120 seconds or if any of the interlocks change state.

AUXILIARY ENGINE COOLER

The cooling system shall have one (1) auxiliary engine cooler mounted in the radiator water piping. The apparatus shall have the fire pump water circulated to the cooler from a valve located on the apparatus pump panel.

FRONT UNDER SEAT STORAGE COMPARTMENTS

The driver and front passenger seats shall be provided with under seat storage compartments. There shall be a door on the compartment facing the outside of the cab. The door shall be equipped with a horizontal piano hinge on the bottom of the door and a push button lever type latch on the top of the door. The seat compartments shall be powder coated black to match the interior cab coloring.

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REAR UNDER SEAT STORAGE COMPARTMENT

The rear bench seats shall be provided with an under seat storage compartment. There shall be two door on the compartment sides facing the outside of the cab. There shall be two compartment doors facing the front of the cab. Each compartment door shall be equipped with a horizontal piano hinge on the bottom of the door and a push button lever type latch on the top of the door. The seat compartments shall be powder coated black to match the interior cab coloring.

CAB CONSOLE

A center console fabricated from minimum 14 gauge steel, with a black powder coat finish shall be mounted to the cab floor between the front bucket seats mounted to the cab floor with bolts and nylon lock nuts. The console shall have a removable top and front panel. The console shall be the maximum size that will fit between the front bucket seats, while ensuring allowances for seat belt access, engine doghouse removal and rear seat leg room. The overall height shall not exceed the height of the front seat cushions.

The console shall have a form/map box with the following dimensions - 13-1/2" deep x 20-3/4" wide x 14" front to back. This box is sized to utilize the maximum space available and that is deep enough to house 8 1/2" X 11" binders. The mapbox shall include a black powder coated 14-gauge steel lid hinged at the rear with a push button lever type latch.

The console shall be vented to allow heat dissipation from the electrical components mounted within. The electrical fuse/breaker panel shall be mounted to the front side of the console and be provided with a protective lid that contains a legend for the breaker functions.

A four (4) position "handi-talki" holder shall be mounted on the rear side of the center console. This holder shall be powder coated black to match the console. The holder shall be mounted low enough so the "handi-talki" body does not protrude above the topsurface of the center console.

The following components shall be recessed mounted in the cab console top panel:

- PTO Pump Shift Control, indicator light and identification tag
- Water Tank Level Gauge
- PA-640 Siren
- Whelen Rear Lightstick Controller
- Foam System Remote Control
- Diesel Pump Remote Control Panel

Mounted to the center of the console on the front side shall be the Intercom Control

There shall be six (6) 20 amp fused spare circuits connected to a terminal strip inside the console for use by the end user.

ELECTRONIC SIREN

A Federal Signal 100w electronic siren control with microphone, model PA-640, shall be provided. The siren shall be wired and programmed to provide the following:

The left two vertically stacked buttons:

<u>Label</u>	<u>Function</u>
A/H	The left upper button shall operate the siren's air horn tone
MAN	The left lower button shall provide manual siren control

The six buttons horizontal on the control head reading left to right shall provide the following functions:

<u>Label</u>	<u>Function</u>
LEFT	Pump house left side flood light

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RIGHT	Pump house right side flood light
REAR	Rear ground lights under the tailboard
WORK	Flood lights beneath the rear body upper steps
FLOOD	Spot/Flood Lights on the rear upper outside of the body
TCL	Traffic Clearing Lights (wig-wag and lightbar clear) cut-out

The slide switch shall operate in the following manner:

Position 1 - Rear Amber lightstick control

Position 2 - Adds lightbar steady red, front Lower, side and rear warning lights

Position 3 - Adds remainder lightbar and headlight wig-wag

HANDHELD SPOTLIGHT

A NovaTech hand held 100,000 candle power (50w halogen) spotlight shall be hard wired into cab console and mounted convenient for the officer's use. This spotlight shall include a momentary switch, with a two to twelve foot long 18 gauge SVO coiled cord.

A heavy duty steel wire j-hook for mounting the light shall be provided on the front of the console.

12VDC POWER POINTS

Two (2) 12 volt, socket (cigarette lighter) type, receptacles shall be provided each with a protective rubber plug with strap. The sockets shall be mounted one (1) each side of the rear of the cab console beside the handi-talkie holder.

BUMPER EXTENSION

The front frame extension shall be integral to the truck frame. Add-on frame extensions are not acceptable.

The front bumper face shall extend 16 inches ahead of the front face of the engine hood.

FRONT TOW PLATE

A 3/4" plate tow eye shall be provided mounted directly to the truck chassis frame rails. The plate is to have a center tow eye opening with dimensions of 3" x 4". The tow plate shall be attached to the truck chassis with Grade 8 bolts with hardened washers and Grade "C" distorted thread locknuts.

HOSE ROLLER FIXTURE

A 2 inch by 2 inch receiver is to be bolted in place, offset to the right (officer's) side for use as a hose roller fixture.

GRAVELSHIELD

A gravelshield shall be installed filling the area above the extension rails. This gravelshield shall be constructed of .125" thick NFPA non-skid, bright, non skid, aluminum treadplate. The gravelshield shall be supported at the front by the top flange of the bumper. At the rear, the gravelshield shall be supported by a steel substructure.

BUMPER HOSEWELLS

There shall be three (3) hosewells in the front extended bumper. Each hosewell shall be constructed of .125" smooth aluminum and contain drain holes

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On the right (officer's) side of the bumper extension the hosewell shall be approximately 27.25" wide x 11.5" deep x 7" front to back with a tapered side to the right side of the hosewell (1.38 cubic foot). This hosewell shall be equipped with a 2" red web strap with quick release to retain the hose when in the stowed position.

The center hosewell (mounted between the frame rails) shall be 26" wide x 11.5" deep x 9.5" front to back (1.65 cubic foot). The center hosewell shall include a diamond plate hinged cover. The cover shall be manufactured with bevel style ends. A "D-Ring" handle shall be used to open the lid with a gas shock to hold the lid in the open position. The left and right forward corners of the lid shall have a cutout to allow a preconnected hose to be stored with the hosewell cover closed.

On the left (driver's) side of the bumper extension the hosewell shall be approximately 27.25" wide x 11.5" deep x 7" front to back with a tapered side to the right side of the hosewell (1.38 cubic foot). This hosewell shall be equipped with a 2" red web strap with quick release to retain the hose when in the stowed position.

SIREN SPEAKER

There shall be one (1) Federal Signal black 100 watt speaker provided. The speaker shall be centered, mounted behind the front bumper.

TIRE PRESSURE MONITORING DEVICE

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

TRANSMISSION PTO

A clutched drive Chelsea, model 278SMFJP-B3XD, 10-bolt heavy duty engine driven power take off shall be installed by the apparatus manufacturer. The pump transmission shall be engaged by a guarded toggle switch. The pump shift controls shall be located in the cab within easy reach of the operator and shall include indicator lights as mandated by NFPA # 1901 latest editions.

PUMP DRIVESHAFTS

Spicer 1410 Series driveshafts shall be provided for the power from the PTO to the water pump. The fire pump and gear case shall be mounted in such a manner that the PTO driveline angles do not exceed the manufacturer's recommended angles for the u-joints and shall be of the proper series and type specified by the pump and PTO manufacturer's.

AIR HORN

A 21" Hadley stutter tone air horn shall be mounted on the right frame rail along side the engine. The air horn shall be controlled by the commercial chassis air horn accomodation package.

COMPARTMENT OPEN LIGHT

A Red Open Compartment Flashing Light, Whelen OS Series LED shall be mounted on the face of the dash to the right of the instrument cluster. A chrome flange is to be supplied with the light. A label shall be applied adjacent to the light 'OPEN COMPARTMENT'.

An audible buzzer shall be provided and activate when the Open Compartment Light circuit is activated.

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The compartment open light circuit shall be wired to all compartment doors including the hose bed covers. The open compartment circuit is deactivated when the parking brakes of the apparatus are applied.

ENGINE MAINTENANCE LIGHT

One (1) engine maintenance lights shall be supplied beneath the hood. The light shall illuminate automatically when the hood is tilted.

OFFICER MAPLIGHT

A Federal Signal LF18ERB maplight with an 18" long gooseneck and base mounted rheostat shall be mounted on the center of the dash to the right of the heater controls and above the parking brake release valve.

SIGTRONICS INTERCOM SYSTEM

There shall be a Sigtronics intercom system installed in the chassis cab. The intercom system shall be installed and have all wiring and components to render the system operational as follows:

One (1) US-67D Master Station. The US-67D will accommodate two radio interfaces, up to six headsets and one pump panel station.

Voice Activated - Turns on instantly when you start speaking and turns off when you stop. Eliminates noise pick-up through mic.

Fail Safe: The mobile radio, hand microphone and speaker will function normally with the intercom installed. The transmit keying circuit is fully isolated to provide for all radio keying configurations.

As an added safety feature, the intercom function is automatically disabled while transmitting so that only the voice of the person transmitting goes over the air, however his voice is heard by all crew members.

Other installed components include:

- one (1) headset jack mounted on the ceiling of the cab for the driver
- one (1) PTT switch mounted above the headset jack for the driver
- one (1) headset jack mounted on the ceiling of the cab for the officer
- one (1) PTT switch mounted above the headset jack for the officer
- two (2) headset jacks mounted above the rear window for the crew
- one (1) headset jack mounted above the rear window for the crew
- one (1) headset jack with splash cover mounted on the pump operator's panel
- five (5) SE-8 headsets shall be provided - shipped loose
- one (1) belt-PTT module w/15' extension cable for pump operator use - shipped loose
- two (2) radio interface cables

RADIO POWER CIRCUIT

A battery switched 15 amp power circuit shall be provided looped inside the cab console. Additionally, an OEM chassis ignition and battery circuits shall be run from the chassis power panel to the console for use by the end customer.

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RADIO SPEAKER PREP

The mounting holes and speaker wire hole shall be provided in the panel to the right of the gooseneck maplight for a Kenwood two way radio speaker.

RADIO PREP

The AM/FM radio installed by the chassis OEM shall be relocated from the original installation position down to just above the OEM switch panel.

RADIO ANTENNA MOUNT WIRING

Four (4) NMO mounts shall be roof mounted, on the cab in the following locations:

one (1) left side of the roof in line with the post between the driver's and rear doors
a weather cap shall be installed on this mount - the unterminated coax from this mount is to be run to the center of the dash behind the AM/FM radio.

one (1) right side of the roof in line with the post between the officer's and rear doors
a weather cap shall be installed on this mount - the unterminated coax from this mount is to be run to the center of the dash behind the AM/FM radio.

one (1) left side of the roof ahead of the rear of the cab a 132-512 MHz unity gain 1/4 wave antenna (MaxRad #MWB 1320) shall be installed on this mount - the unterminated coax from this mount is to be run to the left side of the in cab console for use with the department installed two way radio.

one (1) right side of the roof ahead of the rear of the cab
a weather cap shall be installed on this mount - the unterminated coax from this mount is to be run to the officer's seat box.

ALTERNATING HEADLIGHT WARNING

The headlights shall be provided with an alternating headlight feature.

When the High Beam is selected the headlights shall become a standard high beam.

== Pump & Body - Model 34C (4x4 Chassis) - 2.010 ==

HYDRA TECHNOLOGY

The pump module must employ Hydra Technology. Due to the design a pump module manufactured with Hydra Technology is compact in size; massive in performance.

Each component in the module must undergo a selection and placement analysis staff engineers. Utilizing advanced 3D software the engineers goals must provide component placements for ergonomics with a completed module that produces maximum water flow with optimum versatility. Only after the complete analysis and build of the module in the computer can the build of the hardware in the shop begin.

Pump module design beginning with a foundation; cage framework assemblies that are precision manufactured from strong corrosion free heavy wall stainless steel tubing. This framework mounts to the truck frame through a mounting design complimented with iso-mount elastomer cushions.

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The result shall be a mounting system that allows for the twisting movement of the truck frame without undue stress loading of the pump module.

Next assembled shall be the stainless side panels. Brushed, mirror polished or power coated the stainless steel side panels provide strength and durability. Precise engineering allows each panel to be laser machined before assembly; instead of drilling holes technicians shall spend their time on assembly techniques that provide installations that breeze through strict quality assurance.

A thorough review of the valve control placements on a control module shall result in a neat and orderly layout. Open the access door on a side control module and peer inside. The horizontal control rods appear neat and orderly. The appearance is only a portion of the requirement. The same neat and orderly appearance after countless hours of engineering design and ergonomic study provide a smooth trouble free linkage for valve operation.

The gauge panel door shall be an expansive double wall stainless door supported by a 3/8 inch diameter hinge pin. The double wall door provides unsurpassed strength and gauge protection while thwarting the casual attempt of tinkering. Authorized servicing of the components within the door is simplified with a bolt on access panel.

Inside the access door; there shall be a clean well build appearance. Stainless steel piping, stainless steel panels, and a stainless steel framework all to provide years of trouble free service. Pipe threads are not allowed on plumbing larger than 1-1/2 inch in diameter. The pump module design shall employ Victaulic coupling connections in the pump module to save time when servicing a component. Installation of components without the use of pipe threads allows for "drop-out" maintenance of critical components without disassembly of entire piping systems. Drop in valves and manifolds with Victaulic couplings are only the start of the serviceability designed into this pump module.

Apparatus taking exception to any portion of this requirement will not be acceptable.

PUMP COMPARTMENT

The pump compartment shall be separate from the hose body and compartments so that each may flex independently of the other. It shall be a fabricated assembly of stainless steel tubing and angles, which does not support the fire pump. The pump compartment shall be mounted onto the chassis through rubber biscuits in a four point pattern to allow for chassis frame twist.

The pump compartment shall be a modular design allowing removal from the chassis in an assembly complete with pump, plumbing and gauges with an approximate width of 27".

RUNNING BOARDS

The running boards shall be an integral component of the pump compartment spaced down from the bottom of the pump module side panels to allow water to flow freely away from the running board area. Separation of the running boards from the pumphouse body, compartments and pump compartment is desired to provide field service of the running board without major repairs to the pump compartment in the event of an accident.

The steel running board supports shall be welded directly to the pump frame structure to provide proper support. The running board step surface shall be covered in Laser Grip stainless steel meeting the current revision of NFPA 1901 for step requirements.

DUNNAGE COMPARTMENT OVER PUMP

There shall be a dunnage compartment furnished on top of the pump module. This compartment shall be utilized for the installation of a hose reel and diesel pump.

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The right side and rear panels shall have laser cut grills to provide adequate air flow for cooling the diesel pump.

DUNNAGE COMPARTMENT COVER

A .125" polished aluminum treadplate cover shall be provided over the right side of the dunnage compartment where the diesel pump is installed. The cover shall be hinged on the far right side of the dunnage opening to provide service access to the diesel pump and cooling system from the top side. The cover shall have a cable to prevent opening over 90° and a push button latch to secure the cover in the closed position. The cover shall have a laser cut grill to assist in cooling of the diesel pump.

PUMP HOUSE GRABRAILS

Two (2) bright anodized extruded aluminum grab rails shall be provided, one (1) each side of the pump house on the rear (body) side of the module just below the light hood. Molded rubber gaskets shall be installed under the grab handles to protect the surface of the pump house.

AIR OUTLET

A truck air system outlet connection shall be provided and mounted in the left side pump panel. This connection shall be clearly labeled as to its function. A pipe thread frame coupling shall be provided with 1/4" NPT threads, terminating with a pipe plug.

PUMP COMPARTMENT WORK LIGHT

The pump compartment shall have one (1) Truck Lite, model 40 clear work light to provide illumination of the pump compartment. The light shall have a weather resistant, toggle style on/off switch located inside the pump compartment adjacent to the left service door area. The power for the pump module light shall be switched thru the battery master switch.

PUMP SERVICE ACCESS REQUIREMENTS

It is the opinion that service access to the pump, valves, gauges and controls are of the utmost importance. Special consideration shall be taken when evaluating the pump module design of the offerer. Pump panels that offer little to no access without the use of tools shall not be considered compliant with this requirement.

PUMP CONTROL PANELS

All pump controls and gauges shall be located at the left (street) side of the apparatus and properly identified. The layout of the pump control panel shall be ergonomically efficient and systematically organized. The pump operator's panel shall be removable in two (2) main sections for ease of maintenance. The pump and gauge panels shall be constructed of 12-gauge stainless steel. The gauge panel shall contain a panel for mounting of all instruments, engine monitoring system and pressure control system.

The gauge panel shall be a double panel door design to protect in the enclosed door all gauge tubing, switch, and control wiring. The gauge panel exterior shall be made of 12-gauge stainless steel. The inner panel shall bolt onto the stainless exterior panel. There shall be an access panel in the inner panel easily removable for control or gauge service or replacement.

The gauge panel door shall be designed as an opening pump house service door on the street (left) side of the pump house. This gauge panel door shall provide an opening minimum size of 21 inches wide by 14 inches in height.

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The lower section of the panel shall contain all inlets, outlets and drains. All push-pull valve controls shall have quarter-turn locking control rods with chrome plated zinc tee handles. Guides for the push-pull control rods shall be chrome plated zinc castings securely mounted to the pump panel. Push-pull valve controls shall be capable of locking in any position. The control rods shall pull straight out of the panel and shall be equipped with universal joints to eliminate binding.

NOMENCLATURE PLATES

5/8" X 3" metal, Vision Mark (or equal) individual nomenclature plates shall readily identify all switches, valves, and controls. The lettering shall be deeply etched, enamel paint filled or anodized aluminum-etched color-coded tags and shall describe the function of all the pump panel controls, switches, discharge and suction valves. The plates shall be attached with stainless steel nylock nuts and machine screws. (Plastic I.D. plates, rivets, adhesivebacked plates, and/or self-tapping screws are unacceptable).

PUMP PANEL FINISH

The side gauge access door, side middle horizontal support panel, inlet/discharge panel, and side drain panel on the left side of the pump module shall have a black powder coat finish. The right side of the pump panel intake valve area shall be brushed stainless.

The dunnage compartment side walls, module vertical uprights and light bar shall have a brushed stainless steel finish.

CONTROLS AND GAUGES

The following shall be provided on the pump and gauge panels in a neat and orderly fashion. The gauge panel shall include the following:

PRESSURE GOVERNOR AND MONITORING DISPLAY

Fire Research PumpBoss pressure governor and monitoring display kit shall be installed. The kit shall include a control module, 600 psi pressure sensor, and cables. The control module case shall be waterproof and have dimensions not to exceed 6 3/4" high by 4 5/8" wide by 1 3/4" deep. Inputs for monitored information shall be from a J1939 data bus or independent sensors. Outputs for engine control shall be on the J1939 data bus or engine specific wiring.

The following continuous displays shall be provided:

- CHECK ENGINE and STOP ENGINE warning LEDs
- Engine RPM; shown with four daylight bright LED digits more than 1/2" high
- Engine OIL PRESSURE; shown on an LED bar graph display in 10 psi increments
- Engine TEMPERATURE; shown on an LED bar graph display in 10 degree increments
- BATTERY VOLTAGE; shown on an LED bar graph display in 0.5 volt increments
- PSI / RPM setting; shown on a dot matrix message display
- PSI and RPM mode LEDs
- THROTTLE READY LED.

A dot-matrix message display shall show diagnostic and warning messages as they occur. It shall show monitored apparatus information, stored data, and program options when selected by the operator.

The program shall store the accumulated operating hours for the pump and engine, previous incident hours, and current incident hours in a non-volatile memory. Stored elapsed hours shall be displayed at the push of a button. It shall monitor inputs and support audible and visual warning alarms for the following conditions:

- High Engine RPM
- High Transmission Temperature
- Low Battery Voltage (Engine Off)

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- Low Battery Voltage (Engine Running)
- High Battery Voltage
- Low Engine Oil Pressure
- High Engine Coolant Temperature

The governor shall operate in two control modes, pressure and RPM. No discharge pressure or engine RPM variation shall occur when switching between modes. A control knob that uses optical technology shall adjust pressure or RPM settings. It shall be 2" in diameter with no mechanical stops, a serrated grip, and have a red idle push button in the center.

A throttle ready LED shall light when the interlock signal is recognized. The governor shall start in pressure mode and set the engine RPM to idle. In pressure mode the governor shall automatically regulate the discharge pressure at the level set by the operator. In RPM mode the governor shall maintain the engine RPM at the level set by the operator except in the event of a discharge pressure increase. The governor shall limit a discharge pressure increase in RPM mode to a maximum of 30 psi. Other safety features shall include recognition of no water conditions with an automatic programmed response and a push button to return the engine to idle.

PRESSURE GOVERNOR and MONITORING DISPLAY BUZZER

Fire Research PumpBoss Z1 option for an audible alarm buzzer shall be installed. The buzzer shall sound when a signal from the PumpBoss activates it.

MASTER GAUGES

The pump master vacuum and pressure gauges shall be 4-1/2" in diameter with white dial face gauges with black lettering and markings.

The master vacuum gauge shall be a compound style gauge with a vacuum/pressure range of -30" - 0 - 600 psig with the dial face of the gauge labeled in black INTAKE.

The master pressure gauge shall be provided with a range of 0-600 psig and the dial face of the gauge labeled in black DISCHARGE.

The gauges shall be liquidless with dash-pot shock and vibration resistant movement. The cases shall be temperature compensated with an internal breathing diaphragm. The gauge accuracy for the gauge shall be plus or minus 1% of full scale per ANSI B40.1, Grade 1A.

To prevent internal freezing and to keep contaminants from entering the gauge, the stem and bourdon tube shall be filled with low temperature oil and be sealed from the water system using an isolating diaphragm located in the stem. A bright metal bezel shall be supplied for resistance to corrosion and to protect the lens and case from damage.

MASTER GAUGE TEST PORTS

Adjacent to each gauge there shall be a pressure tap to provide simultaneous reading of the vacuum and pressure exerted on the individual gauge.

PUMP PANEL LIGHTING

The pump operator's panel shall be supplied with a LED light system. LED strip lights with a stainless steel hood shall be mounted across the top of the pump panel gauges and controls.

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LED strip lights with a stainless steel hood shall be provided on each side of the pump module above the side panels.

The pump module lighting shall illuminate by a switch on the pump panel.

DRAIN DISCHARGES

The 3/4 inch drain valves shall be equipped with 90-degree fittings to direct the discharge water beneath the pump module away from the pump operator's panel.

AIR HORN ACTIVATION SWITCH

A switch shall be located on the pump panel to activate the chassis air horn. The switch shall be a momentary pushbutton type switch with a red cover. The switch shall be supplied with the proper identification label.

WATER TANK LEVEL GAUGES

The apparatus shall be equipped with a Class 1 "Inteli-Tank" Tank Level Gauge for indicating water level. The tank level gauge shall indicate the liquid level on an easy to read LED display and show increments of 1/8 tank capacities. The tank level gauge system shall include a pressure transducer that shall be mounted on the outside of the tank in an easily accessible area, a super bright LED four-light display with a visual indication at nine (9) accurate levels, and a set of weather resistant connectors to connect to the digital display, to the pressure transducer and to the apparatus power.

There shall be an "Inteli-Tank" Tank Level Gauge mounted on the in cab console. Activation of the tank level gauge system shall be with parking brake engagement or with engagement of either pumping system.

MAIN FIRE PUMP

The contractor shall provide and install Darley JMP-500 a PTO operated 500 G.P.M. fire service rated 2-stage centrifugal pump that provides water pressure to all discharges.

The pump unit shall be fully capable of meeting the National Fire Protection Association (NFPA) # 1901, latest editions, standards for initial attack fire apparatus. The fire pump that the bidder is proposing must be prior to bid PREQUALIFIED submission by virtue of a CAL FIRE approved 100 hour Certification Test. Currently, the Waterous CPK3-500 and Darley JMP 500 are PREQUALIFIED.

The fire pump must be provided with the OEM pump manufacturer's transfer valve air cylinder assembly or electric transfer valve actuator assembly, bracketing and wiring harness. **NO EXCEPTIONS**

The main pump shall be a two stage, centrifugal type, designed for use in the fire service and supply water pressure to all discharge valves. It shall be designed so repairs can be made by replacement of normal repair parts, i.e., seals, bearings, impeller and wear rings. The impeller and wear rings shall be made of bronze material. The pump pressure shall be tested to a minimum of 600 psi.

The impeller shaft seal shall be a mechanical, self-adjusting type.

The pump shall be painted to match the color of the chassis.

PUMP RATING AND TEST REQUIREMENTS

The pump shall have the capacity of 500 gallons per minute (U.S. GPM), NFPA 1901 rated performance. The entire pump shall be assembled, and tested at the pump manufacturer's factory.

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ALTITUDE REQUIREMENTS

The apparatus shall be designed to meet the specified rating at 0 to 2000' altitude.

PUMP MOUNTING

The PTO pump shall be mounted in a manner that the pump and gear case can be completely removed from beneath the truck for repair or replacement in a minimal amount of time. All pump mounting brackets shall be powdercoated to match the color of the chassis.

PRIMING PUMP SYSTEM

The priming pump shall be a Hale ESP-12 positive displacement vane type, oil-less, electrically driven, and conform to standards outlined in NFPA 1901. Activation of the priming system shall be accomplished by a push button switch. A priming button shall be located one on the pump panel and one on the cab console. The priming system shall prime both the PTO driven and the diesel driven pumps simultaneously. A Hale SPV remote valve shall be used to isolate the intake system from the atmosphere when the primer is not in operation.

PUMP SHIFT

The pump shift shall be air operated and shall incorporate an air double action piston to shift from road to pump and back. A manual or electric operated pump shift mechanism is not acceptable. The pump shift switch shall be mounted in the cab and identified as "PTO PUMP SHIFT" and include instructions permanently inscribed on the pump shift switch plate. The in-cab operating switch shall have a protective cover to prevent it from accidentally being moved.

The pump shift control assembly shall incorporate an indicating light system, which will notify the operator when the pump has been engaged and is ready to pump. PTO pump operation shall be interlocked to provide pumping only in stationary mode when the parking brakes are set and the transmission is in neutral.

ANODE SYSTEM

To reduce the effect of galvanic action the pump shall be equipped with two (2) easily replaceable sacrificial catalytic action 3/4" magnesium anodes. One anode is to be installed on the inlet (suction) side of the system and one anode is to be installed on the pressure (outlet) side of the PTO pump.

THERMAL PROTECTION

The pump shall be equipped with a Hale TRV-L, thermal protection device, which monitors the water temperature of the pump and relieves water when the temperature inside the pump exceeds the preset value of the relief valve (120 degrees F / 49 degrees C).

The TRV shall automatically dump a controlled amount of water to the atmosphere or back to the tank when the pump water temperature exceeds the preset value. The valve shall automatically close when the water temperature cools to below the preset value.

A chrome panel placard with a visual warning lamp and test button shall be provided on the operator's panel. The warning light shall illuminate when the Thermal Relief Valve is open and discharging water.

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SUCTION PRESSURE RELIEF VALVE

A Class 1, 2-1/2" NPT, relief valve shall be installed on the suction side of the pump and be preset at 125 psig. The relief valve shall have a working range of 50 psig to 200 psig. The valve shall be of stainless steel construction and include a stainless steel spring and rubber seat. The valve shall be normally closed and shall limit pressure in the pumping system. When excessive intake pressures are received, the water shall be directed below the apparatus. The discharge side of the intake relief valve shall terminate in NPT threads facing the ground.

MASTER DRAIN

The apparatus shall be equipped with a Class 1 Manual Master Pump Drain for draining of the lower pump cavities, volute and selected water-carrying lines and accessories. The all brass and stainless steel construction allows for operation up to 600 psi.

PUMP CERTIFICATION TEST

The apparatus shall be certified to the requirements of NFPA 1901 prior to delivery of the completed apparatus. The certificate shall be furnished with the apparatus on delivery.

LEFT SIDE STEAMER INLET

There shall be one (1) steamer inlet furnished on the left side pump panel. The suction inlet shall have an NPT thread. At the intake connection there shall be a chrome plated adapter 4" female NPT to 4" male NH with a removable strainer provided.

LARGE DIAMETER CAP

A four (4) inch chrome plated cap with long handles shall be supplied. The cap shall be capable of withstanding 500 PSI.

LEFT SIDE INTAKE

There shall be an intake located on the left (street) side of the pump and shall contain:

A 2-1/2" intake with a 2-1/2" quarter-turn swing-out valve. The inlet valve shall have a swing type control handle located adjacent to the valve.

The inlet shall be provided with a 2-1/2" NST female swivel that extends through the pump panel. A chrome plated intake plug with plug retention chain shall be installed on the inlet to the valve.

The valve shall be able to be removed from the operator's side of the pump panel by removing a brushed stainless steel trim panel.

The valve shall also include a push pull type valve piped to the inlet to bleed off pressure from the connection on the outlet side of the valve.

RIGHT SIDE INTAKE

There shall be an intake located on the right (curb) side of the pump and shall contain:

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A 2-1/2" intake with a 2-1/2" quarter-turn swing-out valve. The inlet valve shall have a swing type control handle located adjacent to the valve.

The inlet shall be provided with a 2-1/2" NST female swivel that extends through right side lower compartment. A chrome plated intake plug with plug retention chain shall be installed on the inlet to the valve.

The valve shall also include a push pull type valve piped to the inlet to bleed off pressure from the connection on the outlet side of the valve.

LEFT

SIDE

DISCHARGE

There shall be a discharge located on the left (street) side of the pump and shall contain:

A 2-1/2" discharge shall be provided with a swing type control handle adjacent to the valve. The discharge outlet shall have a 2-1/2" quarter-turn swing-out valve. The discharge shall be provided with painted brass straight discharge with 2-1/2" NH male threads that extends through the pump panel. A pressure cap is not to be provided.

The valve shall be able to be removed from the operator's side of the pump panel by removing a brushed stainless steel trim panel.

REAR DISCHARGES

Piping to the rear discharges shall be accomplished through a sleeve in the water tank. for each discharge.

REAR DISCHARGE - LEFT SIDE

There shall be one (1) 2-1/2" discharge outlet located on the left side rear of the body below the hose bed. The discharge outlet shall be plumbed with 2-1/2" high pressure hose and have a 2-1/2" quarter-turn, swing out valve with direct control on outside rear of the apparatus body. There shall be a 30° brass painted 2-1/2" NST male thread on the end of the valve for hose connections.

REAR DISCHARGE - RIGHT SIDE

There shall be one (1) 1-1/2" discharge outlet located on the right side rear of the body below the hose bed. The discharge outlet shall be plumbed with 2" high pressure hose and have a 2" quarter-turn, swing out valve with direct control on outside rear of the apparatus body. There shall be a chrome plated 2" to 1-1/2" NST male thread adapter on the end of the valve for hose connections.

FRONT DISCHARGES

Two (2) 1-1/2" discharges shall be located at the front bumper. The front discharges shall be plumbed using a single feed of 2" stainless steel pipe and wire reinforced high pressure hose coupled with stainless steel fittings. The front discharge outlet shall have two (2) 2" quarter-turn swing out valves. Each front discharge shall be provided with a 1-1/2" painted brass, 90-degree swivel adapter with 1-1/2" NH male threads. No discharge caps are required.

The valve for the center and left front bumper hose wells shall be located on the left side of the front bumper outboard of the frame rail, be vertically mounted behind the bumper and controlled at the valve.

The valve for the right side hose well shall be located outboard of the frame rail, be vertically mounted behind the bumper and controlled at the valve.

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The discharge swivel locations shall provide adequate clearance for the use of 1½" gated wye's and be designed so as not to interfere with the opening and closing of the hood. The swivels shall feature stops to prevent them from rotating 360 degrees and impacting the hood.

An inline 1/4 turn valve shall be mounted easily accessible beneath the cab on the left side to turn off the water supply to the front discharges. Drains shall be provided in the low points in the plumbing to drain water.

PUMP HOSE LAY BEDS

The hose storage areas shall be mounted on top of the pump module. They shall be arranged in a single stack design with a divider in the center of the storage area. Each storage area shall extend from the side of the pump module to the center of the storage with dimensions of 4-1/2" wide x 36" deep x 32" tall. The floor of the hose storage area shall contain drain holes to allow drainage.

CROSSLAY HOSE GUIDES

Brushed stainless steel hose guides shall be provided on the left and right side of each hose bed.

DISCHARGE

VALVES

One (1) discharge outlet on each side shall be located adjacent to the pump house hose lay, set back from the panel edge, on the left and right side.

The discharge outlet shall have a 2" quarter-turn swing-out valve with a swing type control handle adjacent to the valve. The discharge shall be provided with painted brass straight discharge with 1-1/2" NH male threads that extends through the pump panel. A pressure cap is not to be provided.

The valves shall be able to be removed from the outside of the pump panel.

CROSSLAY HOSEBED COVER

A .125" polished aluminum treadplate hinged cover shall be provided over the crosslay hosebeds, complete with full-length stainless steel piano hinge. Stops shall be provided to protect cab or other adjacent body components. The hinge shall be located on the forward section of the cover, closest to the chassis cab.

VINYL FLAPS

The aluminum treadplate crosslay cover shall be supplied with weighted vinyl end flaps. Each flap shall have a means of securing the flap to prevent hose from falling off the truck.

The vinyl crosslay end flaps shall be Brilliant Red in color. Each flap shall have a means of securing the flap to prevent hose from falling off the truck.

BOOSTER HOSE REEL

A Hannay model SBSEPF17-28-29 RT booster hose reel with leak proof ball bearing swing joint, adjustable friction brake, and electric rewind shall be furnished. The reel shall have an all aluminum frame and drum, polished aluminum discs, and plated drive chain, sprocket, hub assembly, swivel joints and fasteners. The reel capacity shall be at least 150' of 3/4" hardline hose. The reel shall be plumbed with wire reinforced, high pressure hose coupled with reusable stainless steel fittings, and shall have a 1" valve in the plumbing preceding the reel.

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The booster hose reel shall be mounted in the left side of the dunnage compartment over the pump. The friction brake control shall protrude through the dunnage wall with the hand knob on the outside of the wall for operation.

The hose reel shall include one lower horizontal and two vertical chrome fairlead rollers. The rollers shall be backed up with the left side dunnage wall to prevent the roller mounts from spreading. Two (2) additional sets of fair lead rollers shall be located on the auxiliary pump cover for guiding the hose across the top of the apparatus.

There shall be two (2) reel rewind buttons one (1) located on each side of the pump house.

BOOSTER HOSE

Three (3) fifty foot sections of 3/4" rubber covered booster hose shall be provided on the booster reel. The hose shall be high pressure type, 800 pounds test, coupled with chrome plated Bar-Way couplings with 1" NPSH threads.

BACK PUMP FILLER SYSTEM

A Class 1 brass, 3/4", quarter turn ball valve with chrome handle shall be supplied and labeled "Back Pump Fill". The valve shall be installed on the left lower area of the pump panel with the discharge hose terminating at the outside of the pump panel. The valve plumbing shall be 3/4" I.D. hose properly routed and clamped from the tank sump to the filler valve.

AKRON BALL VALVES

All ball valves shall be manual control 1/4 turn Akron heavy duty valves with stainless steel ball unless specified otherwise.

The valves shall have an all cast brass body with flow optimizing stainless steel ball, and dual polymer seats. The valve shall be capable of dual directional flow while incorporating a self-locking ball feature using an automatic friction lock design and specially designed flow optimizing brass ball. The valve shall not require the lubrication of seats or any other internal waterway parts, and be capable of swinging out of the waterway for maintenance by the removal of eight bolts.

All exposed brass valves shall be painted body color, the front bumper discharge valves shall be painted silver.

TANK TO PUMP

The tank to pump piping shall be capable of delivering water to the pump at a rate of five hundred (500) gallons per minute. This flow shall be sustained while pumping to a minimum of 80% of the certified tank capacity with the apparatus on level ground.

The tank to pump line shall run from the pump to the front face of the water tank and down into the tank sump. A rubber coupling shall be included in this line to prevent damage from vibration or chassis flexing. The tank to pump line shall be 3" I.D. piping with a 3" ball valve. A built in check valve shall be provided in the tank to pump supply line to prevent the unintentional back filling of the water tank through the line.

A guarded air toggle switch and indicator lights shall be located on the pump operator's panel for tank to pump operation. A red indicator light shall be provided when the valve is closed and a green indicator light when the valve is opened.

TANK REFILL

A 2" tank refill line shall be provided using a 2" quarter-turn full flow ball valve controlled from the pump operator's panel with a push pull manual locking handle. The tank refill shall be plumbed with high pressure flexible piping and high pressure flexible piping stainless steel couplings.

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LEFT REAR DIRECT TANK FILL

There shall be a direct tank fill located on the left (street) side of the rear compartment and shall contain:

A 2-1/2" intake with a 2-1/2" quarter-turn swing-out valve mounted direct on the rear of the apparatus body. The inlet valve shall be painted body color and have a swing type control handle located adjacent to the valve.

The inlet shall be provided with a 2-1/2" NST female swivel. A chrome plated intake plug with plug retention chain shall be installed on the inlet to the valve.

EQUIPMENT STORAGE COMPARTMENT

There shall be one (1) equipment compartment located on the upper right (curb) side of the pump house. It shall have dimensions of 22" wide x 26" high. The clear door compartment dimensions shall be 20-1/2" wide x 23" high x 12" deep with the door closed. A four (4) inch diameter light mounted in rubber grommets shall illuminate the interior of the compartment when the door is open.

The equipment compartment shall be provided with a flush style hinged door. The door shall be provided with a high quality, continuous double seal type weather stripping to prevent moisture and dust from entering the exterior compartment. The door shall be double pan design with the outer door material being 12 gauge stainless steel with a 1/8" aluminum removable inner liner that shall have a natural finish to provide reflective qualities during night operations. The vertically hinged door shall have a gas shock and polished stainless steel 1/4" piano hinge.

The door latch shall be a Hansen locking slam latch, with a chrome "D" ring with a 5-degree bend for easier grasping of each door handle with gloved hands. The latch shall be provided with a keyed lock.

The exterior of the door shall be painted to match the main job color.

There shall be two large removeable panels provided on the inside of the compartment. These panels shall provide an opening for service access to the right side of the interior of the pump module and to the bottom side of the diesel pump.

WHEEL CHOCK COMPARTMENT

Beneath the equipment storage compartment there shall be a wheel chock compartment. This compartment shall be equipped with a plate lap style stainless steel door mounted on a piano hinge with a push latch. The compartment shall have clear door dimensions of 8-1/4" wide x 13-1/2" high x 13-1/2" deep with the door closed.

FOAM SYSTEM

A Foam Pro model 1600/2.0 built in foam injection system shall be provided with the controls at the operator's panel. The foam system shall be a fully automatic, electronic, direct injection foam proportioning system. The system shall be capable of handling Class A foam concentrate. The foam proportioning operation shall be based on an accurate direct measurement of water flows with no water flow restriction. The foam system shall be installed in accordance with the manufacturer's recommendations.

The foam system shall have a 12 volt, 1/3 hp electric motor driven positive displacement piston type foam concentrate pump with a rated capacity of .01 to 1.7 GPM at 200 psi with a maximum operating pressure of 400 psi.

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FOAM SYSTEM PRESSURE RELIEF ON SHUTDOWN

For firefighter safety a time delayed solenoid valve shall be installed in the 2" discharge manifold after the foam system check valve to discharge trapped manifold water pressure upon pump shut down. **NO EXCEPTIONS TO THIS REQUIREMENT**

FOAM SYSTEM

The foam system will operate as a Class A system.

SINGLE TANK FOAM TANK REFILL SYSTEM

A truck mounted 12-volt foam tank refill system shall be provided and installed on the apparatus. The refill system shall provide the ability to automatically refill the foam tank from the ground without carrying foam solution up to the foam cell in the hosebed.

The refill system shall be activated by an on/off rocker switch provided on a control panel installed on the pump panel. The foam refill system will automatically shut off when the foam tank is full. The refill system quick connection shall be located to the left of the the pump panel running board to prevent foam from spilling onto the running board during connection operations.

System features:

- Weather proof on/of rocker switch with integral green power on indicator light
- Red refill PUMP ON indicator light
- Automatic tank fill shutoff, vertical or side mount float switches
- Thermally protected 12-volt motor
- Relay operated motor power circuit
- 5 gpm capacity @ 8 foot lift
- Self priming pump, can run dry and re-prime itself automatically
- Composite pump head with Buna-N diaphragm
- All corrosion resistant components
- Compatible with Class A or Class B foam concentrates
- Quick connect inlet hose with wand
- Suction inlet strainer

FOAM SYSTEM OUTLETS

The foam system shall be distributed into the following discharge outlets:

Front bumper discharges
Pump house hose beds
Pump house mounted booster hose reel
Rear 1-1/2" discharge

FOAM SYSTEM CONTROLS

The Foam Pro system shall be equipped with an electronic control unit, suitable for installation on the pump operator's panel. The control module shall provide the following functions:

- Activate the foam proportioning system.

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- Provide selectable control of foam proportioning rates from 0.1% to 1.0%, in 0.1% increments
- Flash a "low concentrate" warning when the foam concentrate tank(s) runs low

There shall be a remote start - stop button located on the in cab console and on the pump panel to allow operation from inside the cab.

AUXILIARY PUMP

A Darley 1-1/2AGE 26BSD auxiliary pump shall be provided on the apparatus. The unit shall have a liquid cooled, 26 HP, Briggs & Stratton diesel engine equipped with an electric start.

Pump Performance

- 180 gpm @ 100 psi
- 150 gpm @ 130 psi
- 80 gpm @ 210 psi

Diesel Engine

Briggs & Stratton, model DM 950D, Vanquard in-line 3 cylinder, water-cooled, overhead valve (OHV) delivering a maximum output of 26.5 hp @ 3600 RPM, 58.1 cu. in. displacement, 4-cycle, diesel fueled.

Fuel Supply

The engine shall be piped to the chassis fuel system with provisions to prevent fuel drainback to the tank when the engine is shutdown.

Fuel Prime

A fuel reprime pump is to be provided to assist in fuel delivery to the diesel engine from the chassis tank.

Lubrication

Pressure feed with spin-on filter.

Starter

12-volt electric wired into the chassis battery system

Exhaust

A spark arrestor is to be provided on the engine exhaust system.

Air Intake

An air cleaner is to be provided with easy access to remove the element.
An ember screen shall be provided on the inlet to the air cleaner.

PUMP PANEL CONTROL

The auxiliary pump shall have a control panel located on the midship pump module operator's position. This panel shall contain the following:

- Auxiliary pump water pressure gauge
- Vernier throttle cable
- Pump ignition on / off / start switch
- Low Oil Pressure indicator light
- Engine Overheat indicator light
- Glow Plug operational light
- Primer

Button

CAB PANEL CONTROL

The auxiliary pump shall have a control panel located on the in cab console. This panel shall contain the following:

- Auxiliary pump water pressure gauge
- Hourmeter to log auxiliary pump operation
- Vernier throttle cable

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Pump ignition on / off / start switch
Low Oil Pressure indicator light
Engine Overheat indicator light
Glow Plug operational light
Primer Button

AUXILIARY PUMP PIPING

The inlet to the diesel pump shall be connected to the 4" intake manifold for the PTO pump with 2" stainless steel pipe and wire reinforced high pressure hose coupled with stainless steel fittings. There shall be a 2" check valve at the connection to the 4" intake manifold to prevent back flow from the 2" line with the 4" line under vacuum.

The discharge of the diesel pump shall be piped with 2" stainless steel pipe and wire reinforced high pressure hose coupled with stainless steel fittings to a double check valve. The other inlet to the double check valve shall be connected to the PTO pump pressure side. The double check valve shall prevent water from the PTO pump and the diesel pump from backfeeding under pressure. The check valve outlet shall feed the foam manifold upstream of the foam system check valve.

HEAT EXCHANGER

A heat exchanger shall be provided on the chassis cooling system. The heat exchanger shall not allow mixing of the chassis coolant and water from the fire pump. A discharge line shall be installed to provide water from the fire pump to the chassis heat exchanger to assist in engine cooling during pumping operations. The cooler return line shall pass through a check valve into the water tank.

WATER TANK CONSTRUCTION

The tank shall have a rated capacity in U.S. gallons, complete with lifetime warranty. The tank manufacturer shall mark the tank and furnish notice that indicates proof of warranty. The purpose of the notice is to inform department personnel who store or use the tank that the unit is under warranty.

The tank shall be constructed of 1/2" thick Polypropylene & Mac226 sheet stock. This material shall be non-corrosive stress relieved thermoplastic, white in color and UV stabilized for maximum protection. The tank shall be of a special configuration and is so designed to be completely independent of the body and compartments. All exterior tank joints and seams shall be extrusion welded and/or contain the Bent Edge™ and tested for maximum strength and integrity. The top of the tank is fitted with removable lifting eyes designed with a 3-to-1 safety factor to facilitate easy removal.

The transverse and longitudinal swash partitions shall be manufactured of Polypropylene & Mac226 material. All partitions shall be equipped with vent and air holes to permit movement of air and water between compartments. The partitions shall be designed to provide maximum water flow and meet NFPA rules. All swash partitions interlock with one another and are welded to each other as well as to the walls and floor of the tank.

TANK SUMP AND CONNECTIONS

There shall be one (1) sump standard per tank. The sump shall be constructed of white Polypropylene & Mac226 and be located as close as possible to the longitudinal center of the tank. The sump shall have a 3" FNPT threaded outlet on the bottom for a drain plug. This shall be used as a combination clean out and drain. All tanks shall have an anti-swirl plate located above the tank to pump connection.

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There will be two (2) standard tank outlets: one for tank to sump suction line, and one for a tank fill line. All tank fill couplings shall be backed with flow deflectors to break up the stream of water entering the tank, and be capable of withstanding sustained fill rates of up to 1,000 GPM. The addition of rear suction fittings, nurse valve fittings, dump valve fittings, and through tank sleeves to accommodate rear discharge piping must be specified. All auxiliary outlets and inlets must meet NFPA guidelines in effect at the time of manufacture.

EXTERNAL FOAM TANK

A twenty (20) gallon polypropylene foam concentrate tank shall be furnished as an external component of the booster tank. The foam tank shall have an anti-foaming fill stack and removable screen located in an accessible area. The foam tank fill tower shall be equipped with a latch, pressure/vacuum vent and have a sealed airtight cover. The tank shall be designed as a bolt-on component to the water tank with a flange on the bottom of the tank.

The foam tank shall be plumbed to the on board "Class A" foam system. A drain valve connection shall be provided at the lowest point of the foam tank. The foam tank shall drain shall have a 1/4 turn 3/4" valve mounted on the pump panel. The following labels shall be attached to the foam tank:

"CLASS A FOAM TANK FILL"

"WARNING: DO NOT MIX BRANDS AND TYPES OF FOAM"

HOSEBED BULKHEAD

A stainless steel bulkhead shall be installed between the water/foam towers and the hose storage area of the hosebed. The bulkhead shall be the same height and design as the hosebed side walls.

No hosebed flooring shall be provided in the space between the bulkhead and the front wall of the hosebed.

TANK MOUNTING

A tank mounting cradle shall be supplied. The tank mounting cradle shall consist of a minimum of five (5) crossmembers and four (4) full tank length longitudinal members. The tank shall rest on the tank mounting sub frame, and shall be insulated from the sub-frame with a 2-1/2" wide rubber insulator. The tank shall sit cradle-mounted using four (4) corner angles of 8" x 8" x 4" x .250" welded directly to the tank sub-frame. The angles shall keep the tank from shifting left to right or front to rear. The tank is designed on the free-floating suspension principal and shall not require the use of hold downs. The tank shall be completely removable without disturbing or dismantling the apparatus body structure. The hosebed cross-braces shall act as water tank retainers. The water tank cradle shall be designed to be completely independent of the apparatus body to eliminate torsional stress loading in the body. The tank cradle shall be mounted with captivated die springs on the four corners to allow the cradle to move independent of the twist of the truck chassis. No exception will be permitted to the tank mounting requirements.

TANK DRAIN

A 2" tank drain shall be provided for the booster tank below the tank sump. The drain shall be provided with a 2" 1/4 turn PVC valve with a manual control on the valve.

HOSEBED DUNNAGE HINGED ALUMINUM COVER

A one-piece polished aluminum treadplate cover shall be supplied and shall extend the length and width of the hosebed dunnage area. The hosebed covers shall be constructed of .125" polished aluminum treadplate with cross bracing to provide maximum strength and rigidity to support the weight of a firefighter standing on the covers when closed. The aluminum treadplate shall meet the current revision of NFPA 1901 for step requirements.

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The cover shall be equipped with a full length stainless steel piano hinge and diamond plate handle integral to the rear of the cover. There shall be a gas shock installed on each side the cover to assist in opening.

PURCHASE INTENT

The apparatus being purchased is expected to have an 18 to 20 year service life. Based on this requirement, the department is extremely concerned that the apparatus remains structurally sound and the outward appearance remains in a "like new" condition, with minimal maintenance and upkeep, throughout the intended service life.

Aluminum apparatus bodies and differing construction designs will be reviewed and considered ONLY if the builder / manufacture provides in the respondent specifications adequate proof that procedures and materials employed in the design prevent corrosion over the intended service life. Burden of proof is on the bidder and final determination of acceptability will be solely determined by the department.

The entire body design shall be of a laser machined, bolted design to allow for ease of removal for repair or replacement, without cutting welds.

APPARATUS BODY DESIGN AND CONSTRUCTION

The apparatus body shall be built of stainless steel and shall be designed exclusively for Fire Service use. The overall body width shall be 98 inches wide and shall be constructed in accordance with current NFPA requirements. All metal work shall be free of sharp edges, objects or corners. No exceptions are allowed to this requirement.

The body design shall be fully tested with proven engineering and test techniques such as finite element analysis, stress coating, and strain gauging. Engineering and test techniques shall have been performed with special attention given to fatigue life and structural integrity of compartments and body support system.

The apparatus body shall be designed with the use of parametric modeling engineering software to ensure proper design of panel cuts and alignment of holes in mating parts. The entire apparatus body shall be a precision laser machined, bolted construction, properly reinforced with integral flanges eliminating the need for additional structural shapes. Hose body fabrications shall be free of all internal projections which might injure personnel or fire hose.

The pump module is to be completely separate from the main body to prevent damage due to flexing.

MODULAR BODY REQUIREMENTS

The body shall be completely modular in design allowing transfer of body components to a new chassis in the event of an accident or wear. Body components shall be removable from chassis without cutting or bending. The modular design shall also facilitate ease of repair or replacement of major or minor body parts. The mounting of the apparatus body shall be separate and distinct from the water tank mounting and the pump module mounting.

All body panels are to be laser machined on a CAM controlled laser to ensure accuracy (+/- .010"). This shall greatly enhance assembly and matching of repair parts. The body compartment floors, rear walls and roof areas shall be constructed of 12-gauge austenitic stainless steel. The vertical front and rear walls are designed with 14-gauge stainless steel. These front and rear walls are designed as a structural beam with the inclusion of the design encompassing a front and rear design that allows for installation of telescoping lights.

Interior and unexposed stainless steel panels shall be #4B finish to eliminate the need for high maintenance painted surfaces in the compartments. All exterior non-painted stainless steel panels shall have #4B finish.

The entire body shall be fabricated using precision holding fixtures to ensure accurate dimensions.

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Body front and rear vertical flanges shall be triple broken, providing a mounting area for rear hand rails. Major body components shall consist of right and left body sides, and rear facing compartments.

The front and rear vertical corners of the apparatus body shall be recessed to provide a mounting area for vertical hand rails and/or telescoping light poles.

COMPARTMENT ROOF CONSTRUCTION

Each compartment top shall have a bolt in 12-gauge stainless roof section for supporting roof loads of up to 500 pounds per square foot without permanent roof deformation. The stainless roof sections shall attach the compartment rear wall and compartment vertical sides through a fastened joint creating a full perimeter compartment attachment of the stainless roof section.

BODY MOUNTING SYSTEM

The front body support system shall be an integral design with .250" thick steel deep section cross member across the top of the chassis frame. The deep section cross member shall be attached to the right side and the left side lower front compartment weldments with grade 8; 3/8 inch diameter bolts on each side of the apparatus. The front cross member shall be attached to the chassis by means of an elastomer spring with extended travel captivated die spring mounting system with limited travel.

The lower portion of this spring mounting system shall be an integral part of the pump module frame mounting system. This design allows for maximum chassis flexing without undue stress transfer to the apparatus body.

The right and left side rear compartments shall be attached to a stainless steel rear body support. The stainless steel support shall be attached to the chassis frame extensions by means of an elastomer spring mounting system with extended travel captivated die spring to form a modular integral body support system.

The apparatus body shall not rest upon the chassis truck rails and must be separated entirely from the steel frame of the chassis to prevent galvanic action.

Loose fitting u-bolt body mounting systems are not acceptable due to the likeliness of the apparatus body shifting or becoming detached from the chassis upon rear end impact.

COMPARTMENT INTERIOR FINISH

For better interior visibility, to reflect light better, ease of maintenance and prevent the masking of poor welds and questionable workmanship the interior of the body compartments shall remain uncoated.

COMPARTMENT ROOF - TRIM CAP

A bright finished aluminum diamond plate cap shall be provided on the upper body. The diamond plate cap shall wrap the outer edges of the body, with a vertical lip with a "lazy bend" drip edge over the compartment door area.

REAR TAILBOARD

The tailboard shall be constructed of stainless steel in a three-piece design to allow severe twist of the apparatus without damage to the apparatus body or tailboard. The surfaces material of the tailboard shall be "Laser Grip" to provide optimum gripping in the environment found in wildland fire operations. The tailboard shall be 10 inches measured from the body to the rear edge.

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The center section of the tailboard shall have a pivot design to allow access to the apparatus rear toe eye for vehicle recovery.

In the center section of the tailboard there shall be a secondary flip-down step provided to reduce the stepping height from the ground to the rear tailboard. The flip-down step shall have a break-away stop in the lowered position in the event the apparatus is backed into an object with the step in the down position.

The tailboard shall provide recessed mounting for the rear ICC marker lights.

CHASSIS FRAME EXTENSION

There shall be a rear five (5) inch x three (3) inch x 1/4 inch wall ASTM A-500 grade B rectangular tubing frame extension to provide frame support for the rear of the apparatus body.

Two 5/8 inch ASTM 572 Grade 50 vertical mounting plates are to be welded to the tubing to provide a drop frame connection to the truck chassis. This extension assembly is to be bolted to the truck chassis with eight (8) 1/2 grade 8 bolts with hardened flat washers to form an integral part of the truck frame assembly.

Two 1/2 inch thick by 43 inch long cross support stabilizer bars are to be bolted horizontally in place from the rear tow eye plate to beneath the vertical mounting plate chassis attachment point.

REAR TOW EYE

A 3/4 inch thick rail width by nine (9) inch deep rear horizontal tow eye plate with a four (4) inch diameter rear tow eye in the plate.

HOSE ROLLER FIXTURE

A 2 inch by 2 inch receiver is to be bolted in place, offset to the left (driver's) side for use as a hose roller fixture.

EXTENSION PAINT FINISH

The rear frame extension assembly and tow eye plate is to be painted the color of the truck chassis frame rails.

COMPARTMENT DESIGN AND CONSTRUCTION

All compartments shall be manufactured from 12-gauge stainless steel with the vertical front and rear corner walls from 14-gauge, shall be of sweep out design and shall be bolted together. Stainless recessed round head bolts and stainless aircraft style "ESNA" nuts shall be applied with proper torque rating for each fastener. This type of construction shall greatly enhance the strength and ease of parts replacement in the event of damage and future modifications.

COMPARTMENT VENTILATION

The body shall be provided with a laser cut louvers to provide ventilation.

VENT FILTRATION

There shall be filters provided for compartments. The protective louver covering the filter shall be removable to allow for filter changing.

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The filter shall be 100% virgin nylon fiber in an open web design that is USDA approved. The filter shall be chemically treated with Dimethyl Benzyl Ammonium Saccharinate to aid in the reduction of bacteria and fungi.

WATER TANK CAPACITY

The water tank shall be rectangular shaped and shall have a minimum capacity of 500 US gallons.

TANK LID & FILL TOWER

The tank shall have a combination vent and fill tower. The fill tower shall be constructed of 1/2" thick Polyprene & Mac226 and shall be a minimum dimension of 10"x 14" outer perimeter. The tower shall be located in the left front of the tank. The tower shall have a 1/4" thick removable Polyprene & Mac226; screen and a Polyprene & Mac226 hinged-type cover. Inside the fill tower, there shall be a combination vent overflow pipe. The vent overflow shall be a minimum of schedule 40 pipe with a minimum ID of 4" that is designed to run through the tank, and shall be piped behind the rear axle beneath the tank.

The tank cover shall be constructed of recessed 1/2" thick white Polyprene & Mac226, stress relieved, UV stabilized material. A minimum of two lifting dowels shall be drilled and tapped to accommodate the lifting eyes.

OVERFLOW AND VENT PIPE

The fill tower shall be fitted with an integral 4" ID, Schedule 40 PVC 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 beneath the chassis.

BODY MODULE AND HOSEBED CAPACITIES

The total capacity of the body module exterior compartments shall be 103-1/2 cubic feet excluding the pump body compartment.

The length from the rear of the hosebed to the headboard shall be 80".

The total capacity of the body hosebed shall be approximately 48 cubic feet.

The hosebed height shall be approximately 51-3/4" from the top of the rear tailboard.

The body shall have an overall length of 101.5".

APPARATUS BODY HOSEBED

The hosebed shall be constructed in such a manner that will prevent damage to fire hose. The hosebed shall comply with the current NFPA requirements. The interior of the hosebed shall be free of projections such as nuts, sharp edges or brackets that may damage hose. The hosebed and walls shall be manufactured from stainless steel.

An aluminum extrusion shall be installed over the rear opening of the hosebed to protect the body from wear. The hosebed floor shall be fitted with removable slatted, ribbed heavy-duty extruded aluminum floorboards.

HOSEBED TOP LOADING EQUIPMENT COMPARTMENT

In the center of the hosebed a top loading equipment compartment that runs the length of the hosebed shall be installed. The compartment shall be constructed of stainless steel with a total volume of 12.6 cubic feet. Inside dimensions shall be 78" long x 17-3/4" deep and 15-3/4" wide.

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The top of the coffin compartment is to be provided with a single lift up door. The lift up door shall be a 'double wall' design overlapping the top of the compartment to reduce the possibility of rain entering the compartment.

The door shall be constructed of aluminum with smooth finished inside panels and NFPA compliant treadplate on the exterior. The door is to be attached to the compartment top with a continuous stainless steel hinge along the outer edge. The compartment door opened shall provide two clear space areas of 29-1/2" x 12" for access into the compartment.

The compartment floor shall be formed with a recess ribbed design for strength and to create a depressed area that will allow any accumulated debris or moisture to collect without the equipment resting in the contaminant. The depressed area is to be covered with open grating material. There shall be large diameter drain holes with removable plugs placed in the depressed area of the compartment floor for cleaning out the compartment.

The compartment door shall be wired into the door open warning circuit. Inside the compartment there shall be lights activated when the door is open for low ambient light operating conditions.

The compartment shall be bolted in place and removable for water tank service.

HOSEBED CAPACITY

The hosebed design shall provide two separate hosebeds, one on the left and one on the right side of the top loading compartment. Each hosebed shall have internal dimensions of 28" wide x 18-1/2" tall x 80" from the front of the truck to the rear providing a total hosebed capacity of 48 cubic foot for hose storage.

ADJUSTABLE HOSE BED DIVIDERS

Two (2) adjustable hosebed dividers shall be provided. Each divider shall be fabricated from .250" thick smooth aluminum plate, 5052-H32 alloy. The rear end of each divider shall have a 3" radius corner and shall be sanded and deburred to prevent damage to hose.

There shall be two hand hold openings provided. One (1) at the rear in a vertical position and one (1) approximately 24 inches in from the rear in a horizontal position.

HINGED ALUMINUM HOSEBED COVERS

Two (2) two-piece polished aluminum treadplate hosebed covers shall be supplied and shall extend the full length and width of the main hosebed. The hosebed covers shall be constructed of .125" polished aluminum treadplate with cross bracing to provide maximum strength and rigidity to support the weight of a firefighter standing on the covers when closed. The aluminum treadplate shall meet the current revision of NFPA 1901 for step requirements.

The covers shall be equipped with a full length stainless steel piano hinge and a grab handle installed at the rear of each cover. There shall be a gas shock installed on each cover to assist in opening. The hosebed covers shall include a heavy duty positive mechanical stop at the rear of the hosebed to support them when placed in the open position.

REAR VINYL FLAPS FOR ALUMINUM COVER

There shall be one (1) red vinyl flap attached to each aluminum hosebed cover. The vinyl flaps shall cover the area at the rear of the hosebed from top to bottom. The flaps shall be independent of each other. The bottom edge of each flap shall be weighted with a powder coated steel bar.

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Each hosebed flap shall have two (2) red webbed straps with quick release adjustable clips to meet the requirements of NFPA.

HOSEBED COMPARTMENT LIGHTING

Four (4) weather proof lights shall be provided on the underneath side of the aluminum hosebed covers. Two (2) lights shall be provided for each side cover. Each side of the hosebed cover shall have an automatic compartment light switch.

LEFT SIDE COMPARTMENT DIMENSIONS

ABOVE WHEEL WELL

There shall be one (1) high side reduced depth compartment centered over the rear wheels. It shall have dimensions of 51-1/2" wide x 42-1/2" high. The clear door compartment dimensions shall be 49-1/2" wide x 37" high x 11-1/4" deep with the door closed.

REAR OF WHEEL WELL - RAISED FLOOR

There shall be one (1) rescue style, full height, and reduced depth compartment behind the rear wheels. It shall have approximate dimensions of 38-1/2" wide x 60" high. The clear door compartment dimensions shall be 34" wide x 54-1/2" high x 11-1/4" deep in the upper section and 23-1/4" deep in the lower section with the door closed.

The rear compartment is raised to meet the 20° angle of departure critical to the mission of this equipment.

HINGED DOOR CONSTRUCTION - LEFT SIDE

All left side compartments shall be provided with hinged doors. The hinged compartment doors shall be flush style so that the entire door fits flush against the apparatus body sides. All doors shall be provided with a high quality, continuous double seal type weather stripping to prevent moisture and dust from entering the exterior compartments. No exceptions are allowed to this requirement.

Each door shall be double pan design with the outer door material being 12 gauge stainless steel with a 1/8" aluminum removable inner liner that shall have a natural finish to provide reflective qualities during night operations.

Vertically hinged and horizontally hinged doors shall have gas shocks. A polished stainless steel 1/4" piano hinge shall be provided for each door.

The exterior of the doors shall be painted to match the main job color.

The left side door latches shall be Hansen locking slam latches, with a chrome "D" ring with a 5-degree bend for easier grasping of each door handle with gloved hands. The latch shall be provided with a keyed lock.

FENDER SIDE SKIRTS

There shall be stainless steel fender side skirts located in the area of the rear wheels. The design of the fender sides shall be a minimal length to provide maximum compartment space in the apparatus.

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BODY FENDERS - POLISHED

The apparatus body fenders shall be made from 16 gauge polished stainless steel and shall be rolled, die stamped and fully removable. The stainless steel fenders and stainless fender liners shall be fastened with stainless bolts and ESNA nuts to the outer fender panel.

REAR AXLE MUD FLAPS

Two (2) black, anti-sail, mud flaps shall be mounted behind the rear wheels.

SCBA BOTTLE COMPARTMENTS

Four (4) SCBA bottle tube compartments shall be provided, two (2) in each side rear wheel well area. These tubes shall be located rear of the single axle tire. Each compartment shall be constructed of gray roto molded storage compartment to provide SCBA scuff protection. A door seal shall be provided at the perimeter of the SCBA compartment. The doors shall be brushed stainless steel with a push button trigger latch.

SCBA BOTTLE RETENTION STRAP

One (1) one-inch (1") wide loop of red webbing shall be installed in each SCBA compartment to prevent the bottle from sliding out of the compartment in the event the door is not latched for travel. The loop shall be mounted, centered in the compartment and shall hang within one-inch (1") of the compartment floor to allow the bottle to pass by the strap when the bottle is placed in the compartment. The strap shall loop over the valve.

RIGHT SIDE COMPARTMENT DIMENSIONS

ABOVE WHEEL WELL

There shall be one (1) high side reduced depth compartment centered over the rear wheels. It shall have dimensions of 51-1/2" wide x 42-1/2" high. The clear door compartment dimensions shall be 49-1/2" wide x 37" high x 11-1/4" deep with the door closed.

REAR OF WHEEL WELL - RAISED FLOOR

There shall be one (1) rescue style, full height, and reduced depth compartment behind the rear wheels. It shall have approximate dimensions of 38-1/2" wide x 60" high. The clear door compartment dimensions shall be 34" wide x 54-1/2" high x 11-1/4" deep in the upper section and 23-1/4" deep in the lower section with the door closed.

The rear compartment is raised to meet the 20° angle of departure critical to the mission of this equipment.

HINGED DOOR CONSTRUCTION - RIGHT SIDE

All right side compartments shall be provided with hinged doors. The hinged compartment doors shall be flush style so that the entire door fits flush against the apparatus body sides. All doors shall be provided with a high quality, continuous double seal type weather stripping to prevent moisture and dust from entering the exterior compartments. No exceptions are allowed to this requirement.

Each door shall be double pan design with the outer door material being 12 gauge stainless steel with a 1/8" aluminum removable inner liner that shall have a natural finish to provide reflective qualities during night operations.

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Both vertically hinged and horizontally hinged doors shall have gas shocks. A polished stainless steel 1/4" piano hinge shall be provided for each door.

The exterior of the doors shall be painted to match the main job color.

The door latch(es) shall be Hansen locking slam latch(es), with a chrome "D" ring with a 5-degree bend for easier grasping of each door handle with gloved hands. The latch shall be provided with a keyed lock.

REAR COMPARTMENT DIMENSIONS

There shall be one (1) storage compartment at the rear of the body. It shall have approximate dimensions of 48" wide x 48-1/2" high. The clear door compartment dimensions shall be 30" wide x 34" high x 26-1/2" deep with the door closed.

The rear compartment floor is raised to meet the 20° angle of departure critical to the mission of this equipment.

HINGED DOOR CONSTRUCTION - REAR COMPARTMENT

The rear compartment shall be provided with hinged doors. The hinged compartment doors shall be flush style so that the entire door fits flush against the apparatus body sides. All doors shall be provided with a high quality, continuous double seal type weather stripping to prevent moisture and dust from entering the exterior compartments. No exceptions are allowed to this requirement.

Each door shall be double pan design with the outer door material being 12 gauge stainless steel with a 1/8" aluminum removable inner liner that shall have a natural finish to provide reflective qualities during night operations.

Both vertically hinged and horizontally hinged doors shall have gas shocks. A polished stainless steel 1/4" piano hinge shall be provided for each door.

The exterior of the doors shall be painted to match the main job color.

The door latch shall be Hansen locking slam latch, with a chrome "D" ring with a 5-degree bend for easier grasping of each door handle with gloved hands. The latch shall be provided with a keyed lock.

LADDER STORAGE - ON BEAM

The ladder shall be mounted on the right side of the body to the right of the water tank. The ladders shall be placed into the body from the rear of the apparatus sliding into the compartment on beam. A single plate vertically hinged door shall be provided.

The compartment shall be capable of storing one (1) 20' three-section ladder and a backboard.

The door latch shall be provided with a rotary locking chrome "D" ring with a 5-degree bend for easier grasping of each door handle with gloved hands. The latch shall be provided with a keyed lock.

Type III Ladder Group, 20-3 Section

SUCTION HOSE STORAGE

The suction shall be mounted on the left side of the body to the left of the water tank. The suction hose shall be placed into the body from the rear of the apparatus sliding into the compartment. A vertically hinged plate door shall be provided.

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The compartment shall be capable of storing three (3) eight (8) foot sections of four (4) inch suction hose, one (1) eight (8) foot long pike pole and one five (5) foot digging bar.

The door latch shall be provided with a rotary locking chrome "D" ring with a 5-degree bend for easier grasping of each door handle with gloved hands. The latch shall be provided with a keyed lock.

BODY RUBRAIL - POLISHED STAINLESS STEEL

The apparatus body shall have a bolt on extruded, polished stainless steel rub rail affixed to the side beneath each door area. The rub rail shall provide additional strength and protection and shall be constructed of 3/8" x 1-1/2" stainless steel fastened with stainless steel fasteners. Each rub rail shall be attached to the apparatus body with stand off spacers made from 1" diameter UHMW Polyethylene bar stock.

APPARATUS BODY PAINT

The following apparatus body components shall be painted job color.

- The rear wheel fender panels.
- The compartment side doors.
- The hosebed side walls.
- The rear panel of the top loading hosebed equipment compartment.
- The area between the side doors.
- The rear of the apparatus body on each side of the RR1 compartment.
- The rear ladder and suction hose compartment doors. Exterior surface and door edges only.

Note: No paint required on the rear corners of the hosebed or coffin compartment.

No paint required on the inside of the ladder compartment door or the suction hose compartment door.

CAB PAINT WARRANTY WARRANTY

The chassis manufacturer shall provide a limited parts and labor warranty to the original purchaser of the custom built cab & chassis for a period of sixty (60) months. The warranty period shall commence on the date the vehicle is delivered to the end user. The warranty shall include conditional items listed in the detailed warranty document which shall be provided upon request.

EXTERIOR COMPARTMENT LIGHTING

A minimum of two (2) compartment lights shall be provided for each body compartment. The lights shall be dual sided to provide illumination in adjacent compartments. Each door set shall have an automatic compartment light switch.

UNDERBODY LIGHTING

Underbody ground lights shall be provided under the apparatus body. Four (4) Truck-Lite model #60 ground lights shall be provided at the rear of the apparatus body, two (2) each side, to illuminate under the rear compartments.

There shall also be two (2) model #40 ground lights provided under the pump panel running boards, one (1) each side, to illuminate the area under the pump panel areas. These lights are activated by a switch on the pump panel.

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REAR BODY STEPS

There shall be six (6) Cast Products fixed steps with integral hand hold installed on the rear of the apparatus body. The step shall have an open grate design for self cleaning. The lower steps shall be mounted one (1) each side beneath the thru storage compartment doors. There shall be two (2) steps mounted each side inboard between the thru compartment and rear compartment doors.

A stainless steel scuff plate shall be provided behind each step and extend upward in the toe kick area to protect the rear body finish.

INTERFACE (I-ZONE/WUI) BRACKETS

Two (2) extruded aluminum handrail sections shall be provided, with brackets assembled under the top level rear steps. Brackets shall be designed to hold the handrails in position with a quick pin to hold in place for operation. Inside the right rear door of the RR1 compartment there shall be a storage bracket to hold the handrails when not in use. The I-Zone brackets are provided to lace hose between when moving from house to house during structure fire protection operations.

REAR HANDRAILS

Four (4) ribbed, solid stock 1-1/4" diameter, aluminum handrails with chrome plated stanchions shall be supplied and installed at rear of the apparatus body. There shall be two vertical handrails installed, one (1) each side on the rear area of the body in line with the rear of the hosebed side walls. These handrails shall begin at the top of the hosebed side walls and extend down to the bottom of the ladder and suction hose storage compartments. One (1) handrail shall be installed horizontally along the lower edge of the hosebed. One (1) handrail shall be installed at the top of the rear panel of the top loading equipment compartment.

APPARATUS ICC MARKER LIGHTING

Five (5) red LED clearance lights shall be supplied, mounted in the rear of the apparatus.

Two (2) red LED clearance lights shall be supplied, mounted facing the side of the apparatus.

ICC lighting utilized and lighting positions shall be in conformance with FMVSS 108.

BUMPER MOUNTED FOG LIGHTS

Two (2) rectangular PERLUX 500 Series fog lights with clear lens shall be mounted recessed in the front bumper.

REAR STOP / TAIL / TURN / BACKUP LIGHTS

The rear of the apparatus shall be equipped with 4" diameter frommet mounted rear lights. The top light in the assembly shall be a LED amber lamp wired as the rear directional signal. The middle light set shall be a red LED stop/tail lights and the lower lights shall be clear incandescent backup lights.

One (1) rear license plate mounting system and incandescent light shall be provided. The license plate shall be located on the rear of the apparatus to the right of the RR1 compartment door.

One (1) front license plate mounting system shall be provided on the right of the front bumper.

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ROOF MOUNTED LIGHTBAR

A Whelen Justice model JE2NFPA, 56" light bar system shall be supplied and permanently mounted on the cab roof, as far forward as possible. This light bar system shall be supplied with:

- two (2) JDCR red CON3 Super-LED lightheads
- two (2) JDCA amber CON3 Super-LED lightheads
- one (1) ULF22 Two channel LED flasher to run steady burn lightheads

This light bar fulfills the requirements for Upper Zone A and in combination with the upper rear warning devices fulfills the requirements for Upper Zones B, C, and D. Any clear warning light(s) in the light bar shall be disabled automatically for the "Blocking Right of Way" mode.

LOW LEVEL WARNING LIGHTS

Two (2) Whelen, 600 series red super LED light heads with red lenses shall be surface mounted on the grille. The lights shall be 18 inches from the bumper deck.

Two (2) Whelen, model LINZ6R, LED surface mounted warning lights shall be mounted on the front bumper facing forward on the swept area of the bumper.

These four (4) lights fulfill the requirements for Lower Zone A lower level warning devices.

FRONT INTERSECTION LIGHTS

Two (2) Whelen, model LINZ6R, LED flush mounted warning lights shall be mounted in each side of the front bumper.

These two (2) lights fulfill the requirements for Lower Zone B & D lower level warning devices.

BODY SIDE WARNING LIGHTS

Two (2) Whelen, model 70R02FCR 3 x 7, red LED warning lights with clear lens and aluminum bezels shall be mounted one (1) on each side of the body over the rear wheel.

These two (2) lights fulfill the requirements for Lower Zone B & D lower level warning devices.

REAR UPPER LEVEL WARNING LIGHTS

Two (2) Whelen, model 70R02FCR 3 x 7, red LED warning lights with clear lens and chrome bezels shall be mounted on the upper rear of the apparatus.

Two (2) Whelen, model 70R02FCR 3 x 7, red LED warning lights with clear lens and chrome bezels shall be mounted on the upper rear sides of the hosebed on the apparatus.

These lights fulfill the requirements for Upper Zone B, C & D upper level warning devices.

REAR LOWER LEVEL WARNING LIGHTS

Two (2) Whelen, model 70R02FCR 3 x 7, red LED warning lights with clear lens and polished bezels shall be mounted on the rear of the apparatus below the taillights at the lower outermost corners in vertical position.

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These two (2) lights fulfill the requirements for Upper Zone C lower level warning devices.

LED TRAFFIC ADVISOR

One (1) amber LED Whelen traffic advisor, TAM83, with cable, shall be mounted on the upper rear of the apparatus. The 30" long device shall consist of eight independent TIR3 LED heads.

The switch control box is to be mounted in the cab allowing for easy operation by the driver.

BODY SIDE WORK LIGHTING

The side of the apparatus shall be provided with two (2) Hella Picador flood lights. The flood lights shall be mounted one (1) each side of the pumphouse to the rear of the crosslay preconnect valve. The light shall have a stainless steel trim handle at allo easy position adjustment of the light.

REAR SPOT/WORK LIGHTING

The rear of the apparatus shall be provided with two (2) Collins FX-12 spotlights mounted on stainless steel stancions. These lights are to be mounted one (1) on each side of the rear of the apparatus body beneath the upper level warning lights.

There shall also be two (2) Hella Picador flood lights provided. The flood lights shall be mounted one (1) each side beneath the mid level rear fixed step.

ALUMINUM SHELVES - ADJUSTABLE

Five (5) shallow adjustable aluminum shelves shall be installed and have flanges that are 2" deep with a material thickness of .188". A channel strong back shall be provided along the center, bottom of each shelf. Each shelf shall be fully adjustable in height and held in place by extruded uprights.

The shallow shelves are to be located as follows:

In the compartment on the left side over the wheels (L1) there shall be a location provided for one (1) SCBA bracket mounted to the rear wall on the left side of the compartment. A fixed vertical divider wall is to be located to the right of the SCBA bracket location. Two (2) shallow shelves shall be mounted one (1) full width in the upper portion and one (1) three-quarter width in the portion of the compartment next to the SCBA mounting.

In the compartment on the right side over the wheels (R1) there shall be one (1) shelf mounted high to allow SCBA brakets to be mounted beneath the shelf.

Two (2) shallow shelves shall be mounted in the compartment on the right side (R2), one (1) in the upper portion and one (1) in the lower portion of the compartment mounted at the compartment split depth position.

A deep shelf is to be mounted in the rear compartment (RR1). This shelf shall have flanges that are 2" deep with a material thickness of .188". Two channel strong backs shall be provided along the bottom of each deep shelf. Each shelf shall be fully adjustable in height and held in place by extruded uprights.

Conspicuity tape with a red/white reflective stripe shall be applied along the length of the front face of all adjustable shelves.

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FLOOR MATTING

The floor of exterior compartments shall be covered with black Turtle Tile mat for improved ventilation that shall also provide a non-slip surface. The following locations shall be furnished with flooring:

- Left side under cab compartment in pull out tray
- Right side under cab compartment

- Pumphouse wheel chock compartment floor
- Pumphouse equipment compartment floor
 - the edge of the floor shall be provided with a yellow wedge ramp

- L1 compartment floor to the right of the SCBA mounting area
- L1 middle (short) shelf
- L1 upper (long) shelf

- R1 shelf above SCBA mounting area
- R2 both shelves
- R2 floor - the edge of the floor shall be provided with a yellow wedge ramp

- RR1 shelf
- RR1 floor - the edge of the floor shall be provided with a yellow wedge ramp

- Coffin Compartment Floor

WHEEL CHOCKS

One pair of heavy duty, extruded aluminum wheel chocks measuring 8" high x 7" wide x 11.8" long shall be provided with the apparatus. Worder 7HY HD Yellow Handled Extrusions are the requested chocks. The wheel chocks shall have a bright yellow powder coat finish for high visibility, safety and corrosion resistance. No exception shall be allowed to these requirements.

Wheel chocks are to be stored in the wheel chock compartment in the right side of the pump module.

SCBA BRACKETS

Four (4) Zico SCBA mounting brackets shall be provided in apparatus body exterior compartments.

One (1) SCBA bracket is to be located in the lower left corner of the L1 compartment.

Three (3) SCBA brackets are to be located in the R1 compartment.

REFLECTIVE SAFETY STRIPE

A 6" wide 3M brand Scotchlite reflective stripe shall be affixed to the vehicle. The side striping shall begin at the rear of the front fender on the hood and proceed to the rear of the cab. There is no striping on the pump panel left or right side. The strip shall continue on the body in line with the cab strip and terminate at the rear sides of the body. The front of the hood shall have a 2" wide stripe applied to the bottom of the grill area.

REFLECTIVE STRIPE COLOR

The apparatus body striping shall be white reflective.

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REAR DOOR REFLECTIVE CHEVRON STRIPING

Red and yellow reflective chevron striping shall be provided and applied to the rear door(s). The stripes shall be 4" wide and shall alternate red and yellow. The chevron pattern shall angle up from the outer edges toward the center of the rear body.

CAL FIRE EQUIPMENT PACKAGE

The following equipment shall be supplied with each apparatus.

- 1 ea - 7' length of 4" Kocheck Maxi- Flex Suction Hose (small lug) w/NH threads.
- 2 ea - 8' length of 4" Kocheck Maxi- Flex Suction Hose (small lug) w/NH threads.
- 1 ea - 4" Kocheck Suction Hose Strainer w/NH threaded couplings.
- 2 ea - Gated Wyes, 2-1/2" NH Female to 1-1/2" NH Males with chrome caps.
- 1 ea - Pike Pole 8' Fiberglass
- 1 ea - Digging Bar, Porter 5 foot #17700 (or equal)
- 1 ea - Three section, 20 foot aluminum extension ladder with halyards
- 1 ea - 5# dry chemical ABC commercial grade portable fire extinguisher with permanent mounting brackets. (Kidde #5TCM-4 or equal)
- 1 ea - FMVSS #125 approved bi-directional triangle warning reflector. (set of 3)
- 1 ea - 12-ton hydraulic jack, with screw extension ram.

WATER TANK WARRANTY

The water tank is to be free from defects in material and workmanship for the normal service life of the apparatus in which the water tank is installed.

If a tank has a defect in material or workmanship covered by the warranty, the tank manufacturer shall repair at their cost, by authorized personnel or authorized third parties. The tank manufacturer shall make an effort to effectuate repair within 48 hours following initial notification of a covered defect. The tank manufacturer shall make a reasonable effort to repair tank at most convenient location to end user.

The tank manufacturer shall reimburse all reasonable costs associated with rendering the tank accessible for repair, including, but not limited to, removal and reassembly of the hose bed floor.

10 YEAR BODY STRUCTURAL WARRANTY

The manufacturer shall provide a limited parts and labor warranty to the original purchaser of the custom built apparatus body for a period of one hundred twenty (120) months. The warranty period shall commence on the date the vehicle is delivered to the end user. The warranty shall include conditional items listed in the detailed warranty document which shall be provided upon request.

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10 YEAR BODY CORROSION LIMITED WARRANTY

The bidder, shall warrant only to the original purchaser and the first purchaser who places the motor vehicle in service that the apparatus body manufactured by the bidder (the "body"), under normal use and with normal maintenance, will remain free from corrosion for a period of ten (10) years from the date that the motor vehicle was first placed in service. A body shall be considered to have "corrosion defects" if it is found by the bidder to have perforation caused by corrosion under normal use and with normal maintenance.

STAINLESS PIPING WARRANTY

The bidder shall warrant that all stainless steel piping used in the construction of the fire apparatus water/foam plumbing systems 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 ten (10) years from the date of delivery to the original user-purchaser, whichever occurs first.