



SPECIFICATIONS

Diamond Springs/El Dorado F.P.D.

FOR

One (1) Heavy Duty Custom Rescue Vehicle

Diamond Springs/El Dorado FPD

Bidder Complies

FIRE SERVICE MULTIPLE-RESPONSE VEHICLE

Y__N__

The chassis shall be designed and manufactured by a custom fire truck chassis manufacturer with 50 years experience in design and manufacturing custom truck chassis.

This chassis shall be specifically designed and manufactured for heavy duty fire service with adequate strength and capacity for all components as detailed within these specifications.

CHASSIS DIMENSIONS

Y__N__

The chassis shall have the following dimensions:

Wheelbase - 160.0 inches

FRAME

Y__N__

The frame shall be of bolted construction designed to industry standards. The side rails are to be of heat treated steel measuring 10.50" x 3.50" x .38". Each rail is to have a section modulus of 18.34, a yield strength of 110,000 PSI and a resisting bending moment of 2,017,400 pounds.

BUMPER EXTENSION

Y__N__

The front frame extension shall be bolted directly to the main rail.

BUMPER

Y__N__

A 10" high heavy duty 10 gauge, polished stainless steel, wrap around, 2-rib front bumper shall be provided the full width of the cab.

The front bumper face shall extend 16 inches ahead of the front face of the cab skin.

TOW HOOKS

Y__N__

Two (2) chromed tow hooks shall be provided and shall be attached directly to the front frame extension under the bumper. Each tow hook shall be attached with two Grade 8 bolts with hardened washers and Grade "C" distorted thread locknuts.

38,540 LB. GROSS VEHICLE RATING

Y__N__

The chassis shall be provided with a certified GVWR of 38,540 lbs. minimum.

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Y__N__

FRONT AXLE

The front axle to be a Reverse Elliot "I" beam type with inclined king pins. MERITOR/ROCKWELL Model FL-941c, with a rated capacity of 16,540 pounds. The turning angle is to be 45 degrees or greater.

Heavy duty telescoping shock absorbers are to be provided on the front axle. These shocks shall have a minimum effective piston diameter of 1.48".

The front axle shall be equipped with oil bath type oil seals. The hubcaps shall have transparent covers for oil level inspection.

Y__N__

STEERING

The steering shall be equipped with a single SHEPPARD M100 integral power steering gear. The steering gear is to be mounted directly to the chassis frame rails to provide correct steering geometry.

Y__N__

REAR AXLE

The rear axle is to be a MERITOR/ROCKWELL RC22-145 single reduction differential with a capacity of 22,000 pounds.

The rear axle shall be equipped with oil bath type wheel seals.

Y__N__

SUSPENSION

The front spring suspension shall have a ground rating of 18,000 pounds. It is to be a multiple leaf semi-elliptical, forged steel type. The front springs shall have a military wrapper for safe operation.

The front spring pins are to be heat treated and carburized, with a final ground finish for a long life. All front spring pins shall have grease fittings for lubrication.

The rear springs shall be semi-elliptical, 3.00" x 55.00", 17 leaf with a ground rating of 24,000 pounds. Spring hangers are to be castings with provisions for lubrication. The grease fitting shall be a 90 degree type and shall be accessible without removing the wheels or cutting any sheet metal.

One (1) inch diameter rear suspension U-bolts are required.

Y__N__

BRAKES

The front brakes shall be 16-1/2" x 6", S-Cam, air operated with 24 sq. in. chambers and 5-1/2" automatic slack adjusters.

The rear brakes shall be 16-1/2" x 7", S-Cam, air operated. The brake chambers shall be type

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30/30 with 6" automatic slack adjusters.

Y__N__

TIRES AND WHEELS

The front tires shall be 315/80R22.5-18 (J) GOODYEAR G291 highway tread, tubeless radial tires. These tires shall be mounted on 22.5" x 9.00" rims.

The front axle GAWR using these tires shall be 16,540 lbs. @ 120 psi.

The rear tires shall be 11R22.5-14 (G) GOODYEAR G124 traction tread, tubeless radial tires. These tires shall be mounted on 22.5" x 8.25" rims.

The rear axle GAWR using these tires shall be 22,000 lbs. @ 105 psi.

Y__N__

CRAMP ANGLE

The chassis shall have a turning cramp angle of 45 degrees. Both left and right turns have a full 45 degree cramp angle with tires and wheels mounted on the axle and installed in the chassis.

Y__N__

DRIVER CONTROLLED DIFFERENTIAL

The rear axle shall be supplied with a MERITOR/ROCKWELL driver controlled locking differential.

An air control valve shall be provided on the driver's dash panel complete with a light to indicate when the differential is locked.

Y__N__

VEHICLE TOP SPEED

The rear axle shall be geared for a top speed of 70 to 75 mph at governed engine RPM.

Y__N__

MERITOR/ROCKWELL STANDARD AXLE WARRANTY

The Meritor/Rockwell axle shall have a standard three (3) year unlimited mileage parts and labor warranty. The axle shall also have an additional two (2) year parts only coverage. Meritor shall provide a one (1) year parts and labor warranty for wheel seals. The seal warranty shall apply to standard Meritor wheel seals and not to other specified seals. Customer specified seals shall have a parts only warranty.

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Y__N__

LASER ALIGNMENT

The chassis shall have a laser alignment performed at the factory before delivery.

HME utilizes the newest generation of laser-assisted products. This system provides an accurate measuring system for wheels, axles and frames. The system is based on a laser technique using the vehicle's centerline as a reference point. A play detector is used to ensure that all bushings and bearings are free from excess play. This system allows for exact and reliable system to measure and adjust wheel toe-in and camber, as well as measuring distorted and deformed axles.

Tow In Front Axle - The tow in on a vehicle is set to reduce tire wear and to insure that the vehicle shall steer in a straight line. Tow in measurements are set to a positive 2.5 millimeters total, giving the vehicle 1.25 millimeters from side to side.

Tow In Rear Axle - The tow in on the rear wheels is set up slightly different in that the axle and wheels are set to ride the "crown" of the road. This is achieved by adjusting the tow to a measurement of no less than 1 millimeter, but no more that 2 millimeters. The ideal measurement is 1.5 millimeters total for both sides.

Cramp Angle - Cramp angle is set to achieve the greatest turning radius possible with the selected components of the vehicle. Each front wheel is set to zero degrees. The wheel is then turned until it reaches the steering stops. This measurement is the cramp angle.

Y__N__

AIR SYSTEM

An air brake system shall meet or exceed the current requirements of FMVSS-121. The system shall consist of three (3) reservoirs with a 4,362 cu. in. volume. The air system shall consist of the following components:

Dual air system with a dual needle gauge, warning light and buzzer. A spring actuated parking brake built into the rear axle brakes with a manual control and warning light the in cab. These shall automatically apply in case of air system failure. A mechanical means of releasing the spring brake shall be provided in the event of total loss of air pressure.

A quick build up system shall be provided, capable of building enough air pressure to release the spring brake in less than thirty (30) seconds, when starting with the entire air system at zero pounds pressure.

The brake system shall be a split system. One (1) system serving the rear brakes and one (1) system serving the front brakes. The two (2) systems shall be connected with a double check valve that shall automatically shuttle air from the front system to the rear system should loss of air pressure occur. This system shall also modulate the amount of air so the spring brakes shall apply in direct relationship to the amount of pressure applied to the treadle valve.

The spring brakes shall be piped in such a manner that if the treadle valve is depressed while the spring brakes are applied, the spring brakes shall release and remain released as long as the treadle valve is depressed. They shall reapply immediately when the treadle valve is released.

The piping in the air system shall be 2-ply nylon reinforced color coded tubing for all stationary

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lines.

All reservoirs shall have manual drain valves with rubber seats to reduce air valve leaks.

NON-COLOR CODED SYSTEMS WILL NOT BE ACCEPTED

THE ENTIRE AIR SYSTEM SHALL HAVE BRASS FITTINGS TO PREVENT CORROSION IN THE AIR SYSTEM.

Y__N__

AIR DRYER

The air system shall include a MERITOR/ROCKWELL/WABCO System Saver 1200 air dryer. The dryer shall have a capacity of 30 CFM of airflow.

The air dryer shall have a spin on desiccant cartridge for ease in servicing the air dryer desiccant.

The air dryer shall incorporate an integral turbo cutoff valve. The turbo cutoff valve shall close the path between the air compressor and the air dryer purge valve during the compressor "unload" cycle. This shall allow the air dryer to purge the water and contaminants without any loss of turbo boost or engine horsepower.

A 12 volt, 100 watt heated moisture ejector shall be an integral part of the air dryer. This heater shall be thermostatically controlled. The electrical connection for the heater shall use a sealed electrical connector to protect against moisture and corrosion.

This air dryer shall be warranted by ROCKWELL for a period of 3 years/300,000 miles/Parts & Labor.

Y__N__

ACCESSORY AIR RESERVOIR

One (1) 2181 cu. in. additional reservoir shall be connected to the chassis air system to provide an air supply for accessories such as air powered tools. This reservoir shall include a pressure protection valve on the inlet side to allow full use of this tank without draining air from the chassis air system.

Y__N__

MERITOR/ROCKWELL/WABCO ABS BRAKE SYSTEM

A four channel, single rear axle model, MERITOR/ROCKWELL/WABCO ABS Braking System shall be supplied.

This electronic system shall monitor and control wheel speed during braking. This ABS system shall be divided in two circuits or **diagonals** to control specific areas of the vehicle. **Diagonal 1** shall control the right front and the left rear wheels. **Diagonal 2** shall control the left front and the right rear wheels.

If a fault occurs in one diagonal, the other diagonal shall continue to provide the ABS function. If the ABS system should fail completely, the brake control shall be returned to normal (non-ABS) braking.

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An ABS warning light shall be installed on the driver's dash. This warning light shall cycle through a test stage at the point of ignition turn on and remain illuminated until the vehicle reached approximately four (4) MPH. The light shall illuminate in other conditions to warn of an ABS system failure.

An ABS system blink code light shall be installed on the ABS power panel. This light shall illuminate when the diagnostic function is activated. This feature shall indicate what ABS failure is occurring.

Y__N__

ALUMINUM RIMS

There shall be four (4) 22.5 x 8.25 aluminum rims supplied for the rear axle. The outside rims shall be polished on the outside only.

Y__N__

ALUMINUM RIMS

Two polished aluminum wheels shall be supplied. The 22.5" x 9.00" wheels shall be polished on the outside only.

Y__N__

FRONT WHEEL TRIM

The front axle shall be trimmed with stainless steel "baby moon" hub caps (w/hole for oil seals), and stainless lug nut covers.

Y__N__

REAR WHEEL TRIM

The rear axle shall be trimmed with stainless steel "Lincoln hat" hub cover and stainless steel nut covers.

Y__N__

CHARGE AIR COOLER RADIATOR

The engine charge-air cooler shall have sufficient capacity to perform under engine manufacturers installation requirements. The chassis manufacturer shall demonstrate the ability to meet this requirement with the submittal of an approved EPQ to the fire department for the apparatus.

The charge air cooler shall have a minimum core area of 720 square inches.

This radiator shall have cast aluminum side tanks. These tanks shall have a material thickness of .200. These tanks shall be attached to the charge-air core with the ALBRAZE construction technique.

The external air fins shall be louvered serpentine and constructed of .006 inch thick aluminum.

The internal air fins shall be of the lance-and-offset design for greater air turbulence and higher efficiency. The internal fins are to be constructed of .010 inch thick aluminum.

The charge-air cooler shall be mounted directly in front of the engine coolant radiator. To reduce

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vibration rubber "iso" mounts shall be used for mounting of the charge-air cooler to the engine radiator.

The charge air cooler shall contain (12) rows of internal fins within a .313 x 2.632 aluminum tube assembly. This tube assembly shall be constructed of .025 thick aluminum.

The charge-air cooler shall contain thermal expansion slots to allow the expansion and contraction of the charge-air core over the wide range of temperatures that are expected in operation.

The charge air piping between the engine and charge-air cooler shall contain aluminum tubing with a wall thickness of .065 inch. The system shall contain four (4) ply silicone rubber woven on Nomex hoses with stainless steel pressure bands. These bands are designed to maintain the hose shape under the pressure of the turbocharger boost air.

All clamps used on the charge air piping are to be stainless steel constant torque and installed in pairs at each joint.

Y__N__

ENGINE COOLANT RADIATOR

The engine coolant radiator shall have sufficient capacity to perform under the engine manufacturer installation requirements. The chassis manufacturer shall demonstrate the ability to meet this requirement with the submittal of an approved EPQ to the fire department for the apparatus.

The engine coolant radiator shall have a minimum core area of 989 square inches.

This radiator shall have drawn steel top and bottom tanks. These tanks shall have a material thick-ness of 16 gauge.

The tanks shall be bolted to the radiator header assemblies.

The header plates shall be made of 16 gauge brass.

The radiator tubes shall be constructed of .0068 inch thick brass and have a dimensional size of .076 inch x .625 inch. These radiator tubes shall have welded tube seams.

The radiator shall contain four (4) rows of tubes arranged in an inline profile across the radiator core. The entire radiator shall contain (184) tubes. These tubes shall have a smooth bore to allow for radiator cleaning.

In the critically stressed area, where the radiator tubes are attached to the header plates, this joint shall be accomplished with a welding process on the coolant side. In addition to the welded joint a solder fillet joint shall occur on the air side of the core creating a continuous dual bond.

The radiator shall have a louvered serpentine type core that contains fins constructed of .003 inch thick copper. These fins shall be spaced to a maximum density of 14 fins per inch of radiator tube. Each fin shall have a louvered surface for high cooling efficiency.

The radiator shall contain an integral coolant de-aeration tank. This tank shall be designed to remove entrapped air or gas from the coolant side of the radiator.

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The bottom tank of the radiator shall have a drain valve for coolant removal.

The coolant system shall contain an ethylene glycol and water mixture to keep the coolant from freezing to a temperature of -34 degrees F.

The bottom tank of the radiator shall have a transmission cooler with a plate-type design. The plates shall have internal turbulators to break up laminar oil flow across the surface. The cooler shall have 1175 square inches of surface area for water surface contact and heat transfer.

All radiator hoses shall be attached to the cooling system with stainless steel worm drive clamps.

The radiator system shall be a pressurized with a cap rated per the cooling system requirements of the specific engine manufacturer.

The high efficiency engine fan shall be encompassed with a radiator shroud to provide the proper airflow from the fan blade to the radiator.

The radiator shall have recirculation baffles to eliminate the possibility of recirculation of "hot" air to the face of the radiator core. The bottom of the radiator shall have a recirculation baffle from the radiator to the frame rails.

Y__N__

DIESEL ENGINE

The chassis shall be powered by a Cummins diesel engine as described below:

MODEL: ISL
NUMBER OF CYLINDERS: Six
BORE AND STROKE: 4.49" x 5.69"
DISPLACEMENT: 540 cu. in. (8.9)
RATED BHP: 350 @ 2200 RPM
TORQUE: 1200 @ 1300 RPM
COMPRESSION RATIO: 16.6:1
GOVERNED RPM: 2200

Standard Equipment on the engine to include the following:

GOVERNOR: Limiting speed type

TURBOCHARGER: Wastegate design for increased boost at lower engine speed.

INJECTORS: Electronically controlled.

FUEL PRIMING PUMP: High capacity fuel lift pump for C Series engines.

AIR CLEANER: Farr or equal with fresh air intake.

OIL FILTER: A full flow and by-pass

LUBE OIL COOLER: Non-drainback, thermostatically controlled with full flow cooling.

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FUEL/WATER SEPARATOR: The Cummins engine shall be equipped with an integrated fuel / water separator and a water in fuel sensor. The filter shall have a self venting drain valve in the bottom of the filter. This filter shall be able to remove up to 95% of dissolved water and up to 99% of freestanding water.

STARTER: A DELCO, 12 volt, 41 MT type 300 starter motor.

AIR COMPRESSOR: A Wabco 30 cfm compressor shall be provided.

ENGINE WARRANTY

The engine shall have the standard 5 year Cummins Warranty.

Y__N__

ENGINE BRAKE

A "JACOBS" Engine Brake shall be supplied.

The Driver's dash shall include an OFF / LOW / HIGH engine brake control switch.

Activation of the engine brake shall occur at zero throttle position. The transmission ECU shall be programmed to operate in the pre-select downshift mode to maximize the retarding power of the engine brake.

The brake lights shall illuminate when the Jacobs Brake is in operation.

The "JACOBS" engine brake shall be covered under the standard five year Cummins engine warranty.

Y__N__

ENGINE FAST IDLE

The chassis shall be equipped with an Electronic Idle Control preset to operate at 1400 rpm.

The fast idle provision shall only function when the parking brake is set and the transmission in neutral.

Control of the fast idle shall be by an on/off switch in the overhead console.

Y__N__

ENGINE BLOCK HEATER

An immersion type block heater shall be installed on the engine. It shall have a rating of 1000 watts with power of 120 VAC. The 120 VAC cord shall be coiled on the engine for routing by the Fire Department or body builder.

Engine block heater shall receive power from the Kussmaul Auto Eject shoreline connection.

Y__N__

SILICONE COOLANT HOSES

The entire chassis cooling system shall have silicone hoses. This shall include all hoses that

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come in contact with engine coolant. (Engine, Heater, Cooling Loop - when optioned, Radiator)
Hose clamps approved for use on silicone hose are required.

Y__N__

COOLANT SYSTEM CLAMPS

Constant torque hose clamps shall be used for all cooling system hoses on the chassis.

Y__N__

EXHAUST SYSTEM

A single horizontal exhaust system shall be provided.

The aluminized tail pipe shall terminate on the right side directly ahead of the rear wheels. The tube shall be cut on the end with a straight cut.

Y__N__

TRANSMISSION

The transmission shall be an Allison MD3066(P) six (6) speed automatic transmission with electronic controls.

The chassis shall be geared for the top speed in 6th gear.

The transmission shall be equipped with a PTO provision.

Y__N__

TRANSMISSION SHIFTER

The transmission shall be controlled by a push button type shift control. It shall be internally illuminated for night operation and have an internal lock to securely hold it in the position selected.

A two year warranty shall be provided by ALLISON for the transmission.

Y__N__

TRANSMISSION COOLER

An automatic transmission cooler shall be provided. It shall be externally mounted and a Stewart Warner brand. The cooler shall be of sufficient size to maintain the operating temperature within the recommended limits of the transmission manufacturer. It is recommended the cooler be mounted between the front axle and transmission.

Y__N__

TRANSMISSION FILTERS

Cartridge type main pressure and cooler return filters are both internally mounted with external access. Remote filters are not available (Ref Allison Service Information Letter 10-WT-92, Rev. A).

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Y__N__

SIX SPEED TRANSMISSION

The transmission shall be programmed for six speeds. The transmission shall have the following gear ratios.

- First - 3.49
- Second - 1.86
- Third - 1.41
- Fourth - 1.00
- Fifth - 0.74
- Sixth - 0.65
- Reverse - 5.03

The chassis shall be geared for the top speed in 6th gear.

Y__N__

DRIVELINES

Universal joints and drive shafts shall be SPICER 1710 series. The drive shaft tube shall be a minimum of 4.0" diameter with a .134" tube wall thickness. The drive shaft slip joints shall have Spicer "Glidecoat" to reduce sliding friction and thrust under high torque loads. All drivelines shall be balanced to prevent vibration. The drivelines shall be balanced and permanently installed per Spicer driveline recommendations.

Y__N__

STANDARD TRANSMISSION WARRANTY

The chassis shall have a two (2) year unlimited mileage/Parts & Labor warranty for the Allison transmission.

Y__N__

FUEL TANK

The fuel tank shall have a minimum usable draw capacity of 50 gallons (US) and be D.O.T. certified. It shall be mounted with straps bolted to the bottom frame flange to allow for easy removal. The tank construction shall be of 12 gauge steel with single fuel pickup and return tubes. The baffled tank shall be vented to prevent low vacuum and facilitate rapid filling.

A drain plug shall be provided in the bottom of the tank.

The tank shall have a 2" NPT fill to the driver's side of the chassis.

The fuel tank sending unit is to be mounted to the driver's side of the fuel tank for easy replacement.

Y__N__

FIRETRUCK CREW CAB

The cab shall be capable of seating up to four (4) firefighters and be of a one-piece tilting, contoured front, fully enclosed design.

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The crew cab shall have four (4) side doors and be cab over engine forward style. The cab shall have an "Open Space" design, free of interior walls or obstructions.

Y__N__

CAB CONSTRUCTION

Cab Material - The cab shall be constructed of aluminum.

Roof Panel Rails - The roof panel assembly shall have hat section supports welded to the roof skin. These roof hat sections shall be joined to the Cab Roof Rail Section to complete the upper cab skeletal structure. These completed Roof Panel Rails shall provide a grid for maximum roof strength. The roof shall support a minimum weight of 250 lb. / sq. ft. without permanent roof deformation.

Rear Wall Rails - The rear wall assembly shall have hat section supports welded to the wall skin. These sections shall be joined to provide a rear wall grid structure for maximum strength.

Cab Front Wall - The front wall of the cab shall be designed with a double wall construction to reduce the effects of exterior noise in the crew and operator compartment.

Engine Enclosure - The engine doghouse shall be welded into the cab as an integral part of the cab.

Y__N__

CAB DIMENSIONS

The cab shall have the following overall dimensional requirements:

Overall Width 88" minimum

Center of front axle to back of cab 45" maximum

Center of front axle to front of cab 55.5" maximum

Windshield area 3100 sq. inches minimum

Front Grille Opening 478 sq. inches minimum
(Full airflow open area through the grille NOT RAW OPENING)

Cab full tilt angle: 45 degrees minimum

Cab full tilt height: 152 inches maximum

Cab interior dimensions shall be provided as a minimum in the following list:

Front Lower Step Size: 8" deep minimum

19" front to back

Rear Lower Step Size: 13" front to back

In order to insure compliance with D.O.T. and NFPA-1901 step dimension limits of 24" maximum

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to the first step and 18" maximum on intermediate steps heights the following dimensions are required:

Ground to first step:

Driver's step 24" maximum

Officer's step 24" maximum

Crew doors step 24" maximum

Intermediate Step Dimension:

Driver's step 18" maximum

Officer's step 18" maximum

Crew area first step 15"

Crew area second step 8"

Y__N__

FRONT CAB DOORS

The forward cab doors constructed of aluminum shall be 74" high x 36" wide and shall have roll down windows. The front door windows shall have a minimum of 680 square inch area of viewing glass per door. Each window shall have an exterior glass weather seal to prevent the influx of exterior air. The doors shall have exterior and interior paddle latches for ease of opening with a gloved hand. The paddle latches are to have a rubber gasket, on the outside, separating the handle from the finished painted surface. Each door shall be of the flush mounted design having exposed, polished, one-piece, 12 gauge stainless steel piano hinges with 3/8" hinge pins.

Y__N__

REAR CAB DOORS

The rear cab doors shall be constructed of aluminum similar to the forward doors and shall be located directly behind the front wheel well area. These doors shall be 74" high x 30" wide and shall be a flush type door with exposed, polished, full length 12 gauge stainless steel piano hinges with 3/8" hinge pins. Each door shall have roll down rear windows. The rear doors shall have a minimum of 580 square inches of viewing area per door. Each window shall have an exterior glass weather seal to prevent the influx of exterior air. The doors shall have interior and exterior paddle latches, and shall be mounted in an easy to reach location. Interior latch shall not be blocked by the seat occupant. The paddle latches are to have a rubber gasket, on the outside, separating the handle from the finished painted surface.

Y__N__

INTERIOR DOOR LOCKS

All doors shall have interior door locks and exterior keyed door lock controls. The door locks and the finished door assemblies shall be in conformance with FMVSS 206, with specific adherence to 49 CFR 571.206 Section 4.1.3 requiring that "Each door shall be equipped with a locking

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mechanism with an operating means in the interior of the vehicle". All doors shall be keyed alike. The doors shall be equipped with appropriate safety interlocks to prevent accidental locking of the doors when closed.

Y__N__

WHEEL WELL LINERS / FENDERETTES

To reduce road splash underneath the cab and allow for easy cleaning, aluminum front wheel well liners are to be installed in the wheel wells. The wheel well liners are to be a minimum of 10 inches in width.

To reduce road splash on the cab sides, bright polished fenderettes shall be installed across the top of the wheel openings. An extruded rubber gasket is to be installed between the fenderette and the cab.

Y__N__

INTERIOR CAB STEP TRIM

The cab steps shall be completely enclosed behind each door and the horizontal step area shall be covered with aluminum treadplate trim.

Y__N__

INTERIOR CAB TRIM

The cab front interior shall have a one-piece, removable, sound absorbing headliner to cover all wiring and tubing used for lights and antenna leads. The rear headliner shall be a two-piece design similar to the front.

The rear interior wall of the cab shall have a one-piece, removable, wall covering to finish the interior trim and cover all wiring and tubing used for lights and antenna leads.

The cab dash shall be an automotive styled housing with vinyl covering.

Y__N__

CAB GLASS

AS-1 safety laminate glass shall be used in a two piece, wrap around design with a minimum 3000 square inches of windshield area for maximum visibility.

The windshield shall be a type which is readily available from a nationally recognized automotive glass manufacturer that maintains local distribution outlets.

All glass shall be tinted.

All fixed glass shall be installed with a one-piece triple locked rubber lacing material. Due to long term appearance two-piece chrome trim lock lacing is not desired.

Y__N__

SUNVISORS

Two (2) 17-1/2" by 9" black padded sun visors shall be supplied, one on each side of the windshield. Vertical adjustment shall be a minimum of 15" to allow maximum coverage.

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HEATER / DEFROSTER

Y__N__

A 57,600 BTU heater with a three speed fan shall be mounted in the front of the cab, centered over the windshield. This heater shall have six (6) adjustable vents to assure windshield defogging.

WINDSHIELD WIPERS

Y__N__

Two speed electric pantograph wipers shall be installed. These wipers shall have minimum 24" blades and have 28 1/2" wet arm electric pump washers. A 70 oz. minimum windshield washer reservoir shall be furnished.

INTERIOR LIGHTING

Y__N__

The interior of the cab shall be equipped with white lens dome lights positioned above each door. These lights shall illuminate when any door of the cab is open and the master battery switch is in the "on" position. Additionally, each light shall be equipped with a switch to provide individual operation of any one light when the battery master switch is on.

STEERING WHEEL AND COLUMN

Y__N__

The steering column shall be a tilt / telescopic type with an integral high beam / turn signal control switch. The column shall have self canceling design for the turn signal switch. A 4-way warning "Hazard" light switch shall be mounted on the column. For safety, a rubber boot shall be installed to cover the steering shaft from the dash to the floor.

The steering wheel shall be a minimum of 18 inch diameter, covered with a padded absorbite finish. The telescopic feature of the steering column shall be controlled by a lever on the left side of the steering column.

EXTERIOR GRAB HANDLES

Y__N__

The cab shall have a bright anodized extruded aluminum 24" grab handle with extruded rubber inserts at each door position. The aluminum shall be bright anodized for long service. Molded rubber gaskets shall be installed under the grab handles to protect the painted surface of the cab.

EXTERIOR FASTENERS

Y__N__

All cab exterior fasteners shall be stainless steel type fastened to the cab with nutserts.

CAB CORROSION TREATMENT

Y__N__

The cab shall have a corrosion preventative material conforming with Mil Spec C-16173-C, Grade

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1, applied during and after construction. A 5 year warranty against perforation due to rust or corrosion shall be furnished for the cab.

Y__N__

ENGINE DOGHOUSE

The engine enclosure shall have a hinged and latched panel to provide access to the engine oil dipstick, power steering fluid reservoir dipstick and engine coolant recovery reservoir. This access shall allow that these fluid levels can be checked and topped off, if required, without raising the cab. The access panel will have pneumatic cylinders, of sufficient size, to hold it's own weight, plus additional equipment that will be stored or mounted on top.

The engine doghouse shall be covered on the inside of the cab with "Wispermat Barrier" material. The under side of the engine enclosure shall be covered with a sandwiched material for interior cab noise and heat rejection. This sandwiched acoustical material shall have one layer of 1/8" foam, a 3/16" single barrier septum and a 7/8" layer of foam to provide on overall thickness of 1-3/16". The sandwich material shall be chemically bonded to prevent layer separation. A finished surface treatment of metalized film shall be provided on the engine side of the barrier. The acoustical barrier shall be held in place with mechanical fasteners in addition to adhesive.

Y__N__

TRANSMISSION OIL LEVEL SENSOR

The transmission shall be equipped with the oil level sensor (OLS). This sensor shall allow the operator to obtain an indication of the fluid level from the shift selector. The sensor display shall provide the following checks, correct fluid level, low fluid level and high fluid level. Access to the power steering fluid may be limited.

Y__N__

COOLANT RECOVERY SYSTEM

A coolant recovery system shall be installed on the chassis. This tank is designed to capture cool-ant overflow when the engine coolant warms and expands. As the engine cools the overflow is then pulled out of the tank and back into the radiator, thus maintaining proper coolant levels.

Y__N__

CAB GRILLE

The front cab grille shall be bright finished stainless steel. The front grille shall have a radiator rock guard to assist in preventing damage to the radiator core.

Y__N__

CAB GROUND LIGHTING

One light shall be mounted beneath each door. These lights shall be designed to provide illumination on areas under the driver and crew riding area exits. All cab ground lights shall automatically activate when any cab door is opened.

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Bidder Complies

Y__N__

AIR HORN

One (1) Grover 1501 (24") air horn shall be recessed into the front bumper. The air horn shall be mounted with the Grover supplied mounting brackets.

Actuation from the driver's position shall be accomplished by depressing the horn button on steering wheel.

Y__N__

BACK-UP ALARM

An electronic Backup Alarm shall be installed on the rear of the apparatus and wired to the back-up light circuit. Minimum decibel rating of 97 dba is required.

Y__N__

DOGHOUSE CONSOLE

There shall be a console installed between the windshield and the front of the engine doghouse. The console shall have a dimension of approximately 3"L x 4"H x 7 1/2" H. The console shall contain the following:

- Electronic Siren Control
- Traffic Advisory Control
- High Band Radio Control
- AM/FM Radio CD/Cassette Player
- Two (2) Cigarette lighter type female adapters

Y__N__

ELECTRONIC SIREN

A Federal signal electronic siren control, model #PA300-MS, shall be mounted in the center of the top of the "Widemouth" doghouse front door.

Y__N__

SIREN SPEAKER

One (1) FEDERAL SIGNAL DYNAMAX MS100 compact speaker (100 watts). Shall be mounted recessed in the front bumper as specified.

Y__N__

TRUCK HORN/AIR HORN SWITCH

A truck horn/air horn selector switch shall be provided in the electrical switch panel.

Y__N__

MIRRORS

Two (2) single piece bright finished West Coast Mirrors with 16-1/2" x 7" flat mirror heads shall be supplied an additional 5-1/2" x 8-1/2" rectangular lower convex mirror shall also be supplied. These mirror heads shall be mounted on spring loaded RETRAC arms.

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Bidder Complies

COMPARTMENT OPEN LIGHT

Y__N__

A Weldon Red Open Compartment Flashing Light shall be mounted on the face of the overhead panel.

This compartment open door light is wired with a flasher to the power panel for bodybuilder completion to the compartment door open circuit on the body.

The compartment open light circuit shall be wired so that the light circuit is deactivated when the parking brakes of the apparatus are applied. This system shall activate with a minimum of sixty (60) psi.

ADDITIONAL DOME LIGHTS

Y__N__

Two (2) seven inch clear dome lights shall be supplied. One (1) mounted in the center of the front of the cab and one (1) mounted centered in the canopy rear of the cab.

These lights shall be operated by opening any door, as well as, by individual switches mounted on the individual clear lens light.

ADDITIONAL DOME LIGHTS

Y__N__

Two (2) seven inch red dome lights shall be supplied. One (1) mounted centered in the front of the cab and one (1) mounted centered in the rear of the cab.

These lights shall be operated individual switch mounted on each light.

ICC MARKER LIGHTS

Y__N__

Five (5) cab face mounted clearance lights shall be supplied, mounted above the windshield, in conformance with FMVSS 108.

HIGH BEAM HEADLIGHT WIG-WAG FLASHER

Y__N__

A high beam headlight flasher shall be wired into the headlight system and shall include an override system if the high beam headlights are required. (WIG-WAG FLASHER)

OFFICER MAPLIGHT

Y__N__

A Federal Signal map light shall be mounted on the A pillar on the officer's side of the cab. It shall be a Littlelite model, 12", with dimmer control, or equal.

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Bidder Complies

HEAD LAMPS "ON" IGNITION CONTROL

When the ignition switch is in "on" the head lamps shall be illuminated to 80% brilliance.

Y__N__

HANDHELD SPOTLIGHT

An Optronics Blue-Eye KB-4003 hand held spot light, or equivalent, shall be mounted in the cab; specific location to be determined by the fire district.

Y__N__

REAR WALL DIAMOND PLATE - EXTERIOR

Aluminum treadplate shall be installed on the entire exterior of the rear wall of the cab.

Y__N__

ICC MARKER LIGHTS

Two (2) side combination LED clearance / turn signal lights shall be supplied, one (1) each side mounted ahead of the front door.

Y__N__

HEADLIGHTS

Four (4) rectangular halogen headlights shall be supplied mounted in a chrome plated bezel. These headlights shall be mounted in the lower position on the front of the cab.

Y__N__

TURN SIGNALS

Two (2) rectangular WHELEN 64 Series LED turn signal lamps shall be mounted above the headlights in a chrome plated bezel. These lights shall be supplied with an amber arrow cover.

Y__N__

FRONT WARNING LIGHTS

Two (2) rectangular WHELEN 64 Series LED red warning lights shall be supplied mounted above the headlights in chrome plated bezel inboard of the turn signals.

Y__N__

CAB FRONT WARNING LIGHT CONTROLS

Control of cab front strobes shall be the Emergency Warning Light Switch for both "Calling of Right of Way" and "Blocking Right of Way" modes.

Y__N__

CAB TILT SYSTEM

The cab shall tilt a minimum of 45 degrees for ease of serving. Tilting shall be accomplished by means of a tilt pump connected to two (2) heavy duty lift cylinders. It shall be equipped with a

Y__N__

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positive locking mechanism (service lock) to hold the cab in the full tilt position. Release of the service lock shall be by means of a pull type cable assembly. The cylinders shall have a velocity fuse at the base to prevent the cab from falling in the event of a hydraulic hose failure. The cab shall be capable of tilting 90 degrees for major engine service, if necessary. The 90 degree cab tilt shall be accomplished by removing the cab cylinder pins, removing one bolt in the steering shaft, and removing the front bumper and treadplate.

The cab shall have a three (3) point cab locking system. To prevent undue stresses in the cab, the cab mounting shall incorporate a five (5) point load mounting system.

The front cab pivot/lock assemblies shall utilize four (4) radially loaded, bonded rubber, axial mounts. These mounts shall have a maximum radial load rating of 925 pounds each and a torsional rating of 25 lbs-in/deg. Two one (1) inch diameter cab pivot pins shall be installed at the front of the cab. Each pivot pin shall have a grease fitting to allow for lubrication to the pivot area.

The rear cab lock shall be center point mounted to prevent normal twist of the chassis from affecting the cab mounting, cab structure and windshield areas of the cab. This rear cab lock shall be mounted on a chassis cross member to provide a stable platform for the locking system. This locking system shall automatically open prior to the cab tilting and automatically relatch when the cab is lowered completely into the travel position.

Two (2) outboard frame mounted urethane "V" blocks shall be provided at the rear of the cab. These dual purpose mounts shall align the cab upon lowering as well as provide non-latching support for the cab in the down position. With this system, extreme chassis twist shall allow the cab to move independently of the rear cab supports, reducing the structural stress damage often caused by outboard dual cab locking systems.

An electric-over-hydraulic cab tilt pump shall be supplied. This pump shall have a remote control for cab tilting operation. The control shall be "safety-yellow" in color.

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Bidder Complies

Y__N__

CHASSIS PAINT

The frame and running gear shall be painted gloss black enamel. The running gear shall consist of the axles, drivelines, air tanks, steering gear, frame mounted brackets, draglink, and fuel tank.

The air system piping and electrical harnesses shall not be installed in the frame at the time of the frame painting. This shall insure complete coverage of paint behind those areas, as well as to insure that the air piping and wiring harnesses do not have paint applied to them, hindering troubleshooting.

Y__N__

INTERIOR FINISH

The entire interior of the cab shall be painted textured black in color.

The cab metal finish shall be covered with one coat of base self-etching primer to fill the small surface imperfections.

Then the interior of the cab is to be blocked and a coat of sealer-primer is to be sprayed to the interior finish.

Next a sealer primer is applied and shall be sanded to a smooth finish ready for final color coat application.

Two (2) coats of finished paint are to be applied to a final thickness of 4 mils.

The following interior components shall be covered in black vinyl to match the interior paint color:

- All seating
- Doghouse covering
- Floor covering (mats)

The headliner and rear wall padding shall be covered in gray vinyl.

Y__N__

CAB EXTERIOR FINISH

The exterior doors and all fixed cab glass are to be removed from the cab prior to the paint and body process beginning.

The final finish of the cab shall be to fire apparatus standards; exhibiting excellent gloss durability and color retention properties.

Y__N__

PREPARATION

The removal of all contaminates and oxidation is essential to the final effect of a finish system, the cab shall be precleaned with a Wax and Grease Remover and prior to evaporation, towel dried.

To remove all oxidation and foreign materials, the cab shall be sanded with a 180 grit abrasive using an orbital type disc sander.

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All weld marks and other major surface imperfections shall be filled with a polyester type body filler, prior to body filler application special attention shall be given to the areas requiring filler again sanding and cleaning.

The body fillers shall be thoroughly mixed in accordance with the manufacturers directions.

After the final coat of filler is sanded, spray polyester shall be applied in sufficient amounts as to provide a final base and sanded with abrasive paper.

Y__N__

PRECLEAN

Within 45 minutes of pretreat the cab must be again washed with a Wax and Grease Remover using a "Scotchbrite pad". Towel dry prior to evaporation.

Special precaution shall be taken NOT to saturate any polyester body fillers with the cleaning solvents.

Y__N__

PRETREAT AND PRIMERS

The pretreat and primer applications shall be made in two independent steps. A combined pretreat/primer one product application shall not be allowed as a substitute.

The prepared substrate shall be pretreated with an acid curing 2-component Transparent Primer. This pretreat shall be designed to provide corrosion protection and to create an adhesive bond between the substrate and the surface applications.

It is critical that the body fillers not receive a saturation of solvents associated with the pretreat application. Only the pretreat over spray resulting from product application to the adjacent metal areas should be allowed to come in contact with the body fillers.

All polyester body fillers are porous, and shall absorb liquids. Solvents when absorbed not only soften but shall create swelling of the polyester filler. After sanding and later shrink the fillers shall create blemishes in the painted surfaces.

Prior to complete primer application, each area with applied body fillers be precoat with a 2-dry applications of primer (sander surfacer) of which shall be allowed to "Touch Dry" between coats. This procedure shall isolate the filled areas and protect them from subsequent product applications.

The primer (sander surfacer) shall be a poly-acrylic resin, zinc and chromate free surfacer that is designed to create a superb surface smoothness, increase the depth of color, and insure top coat gloss.

The cab after pretreat and precoat shall be primed with a 3 to 4 medium applications of a Hi-Build Tintable Surfacer.

To create a finish base that meets the rigid requirements of the fire and emergency service; the primed surface shall be dry sanded smooth thus removing all texture and surface imperfections

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Bidder Complies

with a 320 grit (minimum) sanding abrasive.

Y__N__

FINISH AND COLOR COATS

The color coat application shall consist of two to three applications of acrylic urethane color coat. After the color coat has been applied, the cabs shall be sprayed with 1.5 to 2.0 mills of clear coat finish. The clear coat finish is then sanded and buffed to remove any imperfections that can occur during the application of the color coat.

The final finish shall be free of dirt and sags and shall meet a minimum grade of 7 when compared to the "ACT" general orange peel standards by "ACT" Laboratories, Inc. Of Hillsdale, MI.

The final sanding and buffing of the clear coat shall result in a flat / glass like finish. The clear coat shall also provide a UV barrier to prevent fading and chalking.

Y__N__

ACRYLIC URETHANE FINISHES

The manufacturer shall warrant the Acrylic Urethane finishes on a fire and emergency vehicle for a period of five years from its date of delivery.

This warranty shall apply only to the finished areas for the following defects:

- A. Cracking or Checking.
- B. A total loss of gloss caused by chalking or fading.
- C. Peeling of the top coat or all layers included in the process from the substrate.
- D. Spot or, random discoloration in the overall finish.

This warranty does not apply to:

- A. Corrosion originating from within the apparatus.
- B. Hazing of the paint caused by improper abrasive detergents, or by incidental chemical exposure.
- C. Scratches, abrasions, or stone chips caused intentionally or accidentally.
- D. Homogenous darkening of the finished color.
- E. Blemishes or blistering caused by corrosion originating from within the apparatus.
- F. Blistering or peeling of lettering, and stripping.
- G. Multistage fluorescent finishes.
- H. Accidents.

In the case of warranty claim, repair of all non-warranty blemishes shall be negotiated prior to the warranty refinish or repair. Transportation of the vehicle to the factory authorized repair center shall be the responsibility of the owner.

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Bidder Complies

Y__N__

DRIVER'S SEAT

The driver's seat shall be a Seats, Inc. 911 air ride driver's seat. The seat shall be of the high-back style. The seat shall have adjustments for height and ride adjustment. The fore / aft adjustment of the seat shall be six (6) inches and contain a fore / aft shock absorber. The bottom seat cushion shall contain a contoured thigh support. The "scissor action" suspension is desired for a more natural ride for the driver, while absorbing shock and vibration. The seat covering shall be heavy duty vinyl upholstery.

Y__N__

OUTBOARD REAR FACING CANOPY SEATS

The two (2) outboard rear facing canopy seats shall be SEATS, INC. 911. The seat covering shall be heavy duty vinyl upholstery.

Y__N__

OFFICER'S SEAT

The officer's seat shall be a Seats, Inc. 911 air ride officer's seat. The seat shall be of the high-back style. The seat shall have adjustments for height and ride adjustment. The fore / aft adjustment of the seat shall be six (6) inches and contain a fore / aft shock absorber. The bottom seat cushion shall contain a contoured thigh support. The "scissor action" suspension is desired for a more natural ride for the officer, while absorbing shock and vibration. The seat covering shall be heavy duty vinyl upholstery.

Y__N__

SEAT BELTS

Shoulder harness type seatbelts for driver/officer positions shall be provided.

Long extensions shall be provided for the seat belts.

All rear facing seating positions shall be provided with lap type, metal to metal quick release seat belts, with automatic seat belt retractors.

All seat belts shall be black in color.

Y__N__

45,000 BTU AIR CONDITIONING

A climate control system shall be furnished in the cab. The system shall consist of a 45,000 BTU air conditioning evaporator with a 36,000 BTU auxiliary heater.

The system is to have a 9.82 cu. in. minimum compressor mounted on the engine to provide the compressed refrigerant to the system. The compressor is to be plumbed to a heavy duty truck, twin fan air conditioning condenser mounted on the cab roof. The condensing unit shall have an aerodynamic shroud that is painted to match the color of the cab roof. There shall be an extended life filter receiver/dryer with a pressure relief valve installed to protect the system from contaminants, moisture, and high pressure. It is to have a sight glass for visual inspection and ease of service.

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Bidder Complies

The air conditioning evaporator shall be centrally mounted on the rear of the engine enclosure in the cab. It is to be a low profile design, less than 11" high. The evaporator shall have an externally equalized expansion valve and be thermostatically protected to prevent freeze up. Dual high performance 3-speed blowers shall provide a minimum of 700 CFM airflow. Each blower is to be controlled separately. Four (4) forward facing and three (3) rear facing full adjustable diffusers with shutoff capability shall be utilized to direct the airflow through the cab.

The air conditioning on/off switch, thermostat control, and blower switches shall be located on the evaporator unit.

Y__N__

36,000 BTU AUXILIARY HEATER

A 36,000 BTU auxiliary heater is also to be furnished inside the conditioning evaporator unit to provide additional cab heating during cooler weather. The heater core is to be plumbed to the water lines of the engine cooling system.

Y__N__

CAB INSULATION

Foam rubber type insulation shall be installed in the rear wall and cab ceiling to provide a better sound and heat barrier. The insulation shall be a minimum of 1" thick. The material shall be compliant with FMVSS-302.

Y__N__

DRIVER INSTRUMENTATION AND CONTROLS

The cab dash panel shall have black textured anti-glare surface. This panel shall have a wrap around feature for easy viewing of the instrumentation. The dash panel shall be a three piece design. Each panel shall be removable for access to the gauges and wiring. These gauges shall have digitally driven analog displays for accuracy to 1 degree angular. The gauges shall have red LED back lighting for enhanced visibility. Upon initial ignition sequence a lamp check function shall illuminate the warning light telltales, the self diagnostic message center shall sequence the warning light telltales if data link communications are lost. The instrument panel shall include the following gauges and indicators.

Electronic tachometer with **LCD hour meter**

Electronic speedometer with **LCD trip odometer**

Engine coolant temperature gauge. With high temperature warning light and buzzer

Engine oil pressure gauge, with warning light and buzzer

Transmission fluid temperature gauge, with high temperature warning light and buzzer

Dual air pressure gauges, with low air pressure warning light and buzzer

Voltmeter, with low voltage warning light and buzzer

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Bidder Complies

Fuel level gauge

High beam indicator light

Parking brake set light

Turn signal indicator lights

The lighting control panel is to be located to the left side of the instrument panel. This panel shall have a black textured anti-glare surface. The lighting control panel shall include the following:

Headlight control switch

Dash rheostat for instrumentation lighting control

Wiper and washer control switches

The engine control panel is to be located beneath the instrument panel on the driver's right hand side. The panel shall have a black textured anti-glare surface. The engine control panel shall include the following:

Keyless ignition switch with a green pilot light

Parking brake control valve

The apparatus control panel is located beneath the instrument panel on the driver's left hand side. The panel shall have a black textured anti-glare surface.

Y__N__

LOW COOLANT ALARM

A low coolant light & alarm shall be furnished.

Y__N__

LOW VOLTAGE WARNING

A low voltage indicator light shall be installed on the dash. An alarm and the dash indicator light shall activate when the system voltage drops below 11.8 volts.

Y__N__

AIR RESTRICTION POP-UP INDICATOR

An air restriction gauge shall be the popup type mounted on the instrument panel.

Y__N__

DRIVERS SIDE OVERHEAD SWITCH PANEL

The apparatus warning light panel shall be mounted above the driver in the overhead console. The panel shall have a black anti-glare surface, and be angled for easy viewing of the driver. The panel shall include the following switches:

One (1) lighted master control switch to allow for preselection of the other switches.

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Bidder Complies

Sixteen (16) lighted individual lighting control and chassis option switches.

Each switch shall have backlit legends with a 100,000 hour lamp for illumination. The legends supplied with the chassis shall be Master, Light Bar, Front Warning, Rear Warning, Wig Wag, Opticom, Rear Scene, Left Scene, Right Scene, Fast Idle, Air Horn/Horn, Siren Brake, Q Siren, Generator PTO.

The light bar control switch(es) shall be wired to three (3) 30 amp circuit breakers and three (3) 40 amp relays. Three (3) 10 gauge wires are powered by this circuit and run to the body interface power panel. The remaining switches shall be wired to 20 amp circuit breakers and relays.

Y__N__

TOTAL SYSTEM MANAGER

The apparatus shall be equipped with a Class 1 Total System Manager (TSM) for performing electrical load management. The TSM shall have outputs to supply warning and load switching requirements.

Outputs 1-12 shall be independently programmable to activate during the scene mode, the response mode, or both. These outputs can also be programmed to activate with the ignition or warning master switch, or to sequence and shed along with the priority.

Output 15 is a user configurable output and shall be programmable for activating between 10.5 and 15 volts.

The TSM shall be protected against reverse polarity and shorted outputs, and be enclosed in a metal enclosure to enhance EMI/RFI protection.

Y__N__

INTERMITTENT WIPER CONTROL

A rotary combination intermittent electric wiper / washer switch shall be provided on the left hand side of the driver's dash.

Y__N__

EMI/RFI PROTECTION

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

The apparatus proposed shall have the ability to operate in the environment typically found in fire ground operations with no adverse effects from EMI/RFI.

EMI/RFI susceptibility is controlled by utilizing components that are fully protected and wiring that utilizes shielding and loop back grounds where required. The apparatus shall be bonded through wire braided ground straps. Relays and solenoids that are suspect to generating spurious electromagnetic radiation are diode protected to prevent transient voltage spikes.

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Bidder Complies

ALTERNATOR

Y__N__

A LESTEK BRUTE 300 Amp alternator shall be installed on the engine.

BATTERY BANK

Y__N__

A single battery system shall be provided, utilizing four (4) high cycle type Group 31 batteries.

This system shall be capable of engine start after sustaining a continuous 150 amp load for 10 minutes with the engine off (NFPA-1901, 1996 edition S9-4.2).

A Cole Hersee brand "Heavy Duty" battery disconnect switch shall be used to activate the system and provide power to the power panel.

BATTERY CABLES

Y__N__

All battery wiring shall be "GXL" battery cable capable of handling 125% of the actual load. It shall be run through a heat resistant flexible nylon "HTZL" loom rated at a minimum of 300 degrees Fahrenheit. All cable connections shall be machine crimped and soldered.

STARTING CIRCUIT

Y__N__

One (1) engine start button is to be located on the lower right dash panel. It shall be wired to heavy duty solenoid rated at not less than 1100 amps. The battery indicator light is to be located directly above the start button to indicate that the battery bank is on.

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Bidder Complies

Y__N__

VEHICLE SUPPORT DOCUMENTATION

For long term support of the vehicle and in order to provide proper maintenance the following information is required with the delivery of the vehicle. It may be required to have this information provided during the bid process to ensure that the proper information is available from a potential vendor. Failure to provide this information in the exact requested format as a minimum shall be cause for rejection of the bid. Three ring binders filled with vendor catalogs being supplied as a maintenance and operation manual are not acceptable under the conditions of this bid.

This vehicle shall be in operation for a minimum of twenty years. Fiscal responsibility of the vehicle extends beyond the initial cost of the apparatus. Reducing service and maintenance costs of the vehicle during its' useful life are a major consideration in the purchase of this apparatus. The requested documentation shall be utilized to properly train personnel for operation of the vehicle and to develop proper preventative maintenance programs to reduce operating cost of the vehicle.

With delivery of the vehicle the following information shall be provided in electronic format. The format shall be such as to provide hyperlinks to major categories and/or subjects from a content page. A word search engine shall provide quick transport of the user to any area within the document when a keyword or phrase is found. The entire manual shall be able to be printed from the electronic media to paper form. The manual must be compatible with both PC and Mac platforms.

An electronic Operator's and Maintenance Manual shall be provided.

- This manual shall encompass complete information for the vehicle and vehicle systems including all accessories and / or options.
- The Operator section of the manual shall describe each component, gauge and switch with proper operation and operational warnings.
- The Maintenance section of the manual shall provide proper maintenance of the vehicle for all systems and components supplied.
- A Lubrication section shall be provided in the manual. This section shall provide all lubricant types and capacities for the vehicle. Included in this section of the manual shall be lubrication diagrams to visually locate the lubrication points of the vehicle.

An electronic Electrical System Manual shall be provided.

- This manual shall provide complete wiring schematics for the vehicle.
- The manual shall be provided with diagrams of the vehicle showing the wiring harness routing within the vehicle. Each of these diagrams shall include the connectors between the harnesses that provide a hyperlink to a drawing of the actual connector where pin functions can be examined.
- Schematics for each system of the vehicle shall be provided with hyperlinks to the connectors

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for pin designations and to the vehicle drawings for harness location within the vehicle.

An electronic Air System Manual shall be provided.

- This manual shall provide complete air system schematics for the vehicle.
- The manual shall be provided with diagrams of the vehicle showing the air tubing routing within the vehicle.
- Schematics for each system of the vehicle shall be provided with hyperlinks to the tanks and valves and to the vehicle drawings for exact location within the vehicle.

Y__N__

ADDITIONAL DOCUMENTATION TO BE PROVIDED

- A vehicle build sheet shall be provided. This build sheet shall include the major assemblies used in construction of the vehicle.
- Final inspection data including the serial numbers of the engine, transmission, axles, and tires equipped on the vehicle.

Y__N__

IDENTIFICATION & SAFETY LABELS

A permanent plate shall be installed in the driver's compartment to specify the quantity and type of the following fluids in the vehicle:

1. Engine oil.
2. Engine coolant.
3. Transmission fluid.
4. Drive Axle Lubrication Fluid.
5. Air-conditioning refrigerant.
6. Air-conditioning lubrication oil.
7. Power steering fluid.
8. Air compressor system lubricant.
9. Generator system lubricant.

A permanent plate with pump performance data and serial numbers shall be installed on the pump panel.

A permanent plate shall be installed in the driver's compartment specifying the maximum number of personnel the vehicle is designed to carry per NFPA standards. It shall be located in an area visible to the driver.

An accident prevention sign stating "DANGER PERSONNEL MUST BE SEATED AND SEAT BELTS MUST BE FASTENED WHILE VEHICLE IS IN MOTION OR DEATH OR SERIOUS INJURY MAY RESULT". The warning sign shall be placed so it is visible from all seating positions.

An accident prevention sign stating "DANGER DO NOT RIDE ON REAR STEP WHILE VEHICLE IS IN MOTION, DEATH OR SERIOUS INJURY MAY RESULT". The warning sign shall be

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Bidder Complies

placed so it is visible from the rear step of the vehicle.

If an inlet located at the pump operators position is valved, it shall be provided with a permanent label that states "WARNING SERIOUS INJURY Or DEATH COULD OCCUR IF INLET IS SUPPLIED BY A PRESSURIZED SOURCE WHEN THE VALVE IS CLOSED".

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Bidder Complies

FRONT BUMPER GRAVELSHIELD

Y__N__

There shall be a horizontal gravel shield fabricated from bright 3/16" aluminum treadplate installed at the front bumper to cover the area between the bumper and the cab.

REAR MOUNT FUEL TANK

Y__N__

There shall be a rear mounted fuel tank furnished with the chassis. This tank shall be mounted in a way not to interfere with the On Spot chains.

CAST ALUMINUM FUEL FILL ASSEMBLY

Y__N__

There shall be a cast aluminum fuel fill assembly furnished in the driver's side behind rear axle for the rear mount fuel tank. The fuel fill assembly shall consist of a polished cast aluminum housing with fuel fill neck and cap.

HORIZONTAL CHASSIS EXHAUST

Y__N__

The chassis exhaust system shall be extended to the rear of the right rear wheel.

CHASSIS EXHAUST

Y__N__

A "Silent Partner" system shall be supplied on the exhaust system to reduce the noise of the engine brake.

ELECTRIC WINCH

Y__N__

One (1) Warn 12,000 pound electric winch with 150' of 3/8" (.375") galvanized plated steel cable (aircraft type) and forged steel hook shall be mounted on the apparatus. The winch shall be controlled with a 25' remote control switch. The winch shall be located in the front bumper. Captive rollers shall be provided.

WINCH COVER

Y__N__

A tread plate winch cover shall be installed to protect the winch installed on the front of the apparatus.

AUTOMATIC TIRE CHAINS

Y__N__

On-Spot automatic chains shall be provided and mounted at the rear wheels and have a control switch mounted in the chassis cab accessible to the driver.

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Bidder Complies

FRONT MUD FLAPS

Heavy duty, white colored, rubber mud flaps shall be furnished and installed behind the front wheels of the vehicle. Mud flaps shall extend the full width of the front tires and are to be attached with stainless steel fasteners.

Y__N__

REAR WHEEL CHOCKS

Two wheel chocks, with underbody mounting brackets, shall be provided and mounted in a readily accessible location behind the rear wheels, under the front of the rear compartment.

Y__N__

REAR MUD FLAPS

Heavy duty, white colored, rubber mud flaps shall be furnished and installed behind the rear wheels of the vehicle. Mud flaps shall extend the full width of the rear duals and are to be attached with stainless steel fasteners.

Y__N__

REAR TOW EYES

There shall be two tow eyes furnished under the rear of the body and attached directly to each chassis frame rail. There shall be a reinforcement spreader bar connecting the two tow eyes. Tow eyes are to be constructed of 3/8" plate steel with a 4" I.D. hole, large enough for passing through a tow chain end hook.

Y__N__

CHASSIS AIR INLET

An air inlet, with a pressure protection valve, shall be plumbed into the chassis air system. It shall be a Milton Type D, located in the driver's step area.

Y__N__

AUTO-EJECT

A Kussmaul "Super Auto-Eject" automatic disconnect device shall be provided and installed on the 110 volt shoreline connection complete with weatherproof cover and matching plug. The Auto-Eject shall be activated by the chassis starter switch to disconnect the plug. The Super Auto-Eject shall be completely sealed to prevent contamination of the mechanism by inclement weather and road conditions. The Super Auto-Eject shall have an internal switch to open and close the A.C. circuit after the mating connector is inserted and before the connector is removed. Location shall be determined by the fire district at the pre-construction conference.

Y__N__

BATTERY CONDITIONER

A 110 volt Kussmaul Auto-Charge 12, single system, automatic battery charger shall be provided and installed within the chassis cab and wired to the battery system. Battery charger shall be designed to automatically charge the battery system when shoreline power is

Y__N__

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connected. The charger shall be equipped with an amp meter on the face of the charger to indicate the charge rate, and a remote voltage sensing device to compensate the charger output for the voltage drop in the charging wires.

Y__N__

PORTABLE HAND LIGHTS

Two (2) Streamlight SL-45 shall be installed in the crew area and wired to the 110 volt shoreline connection. Locations shall be determined by the fire department.

Y__N__

AM/FM RADIO

An AM/FM radio CD/Cassette player of superior quality (Kenwood or equal) with antenna and four (4) speakers shall be installed in the apparatus cab. The radio shall be wired into the vehicle intercom system.

Y__N__

HIGH BAND RADIO

A Kenwood High Band Radio with antenna shall be installed in the apparatus cab. Radio and antenna will be provided by the Fire Department. The radio shall be wired to into the vehicle intercom system.

Y__N__

CELL PHONE ANTENNA

There shall be a universal base for a cell phone antenna installed on the chassis cab roof. The power and ground wires for the cell phone shall also be installed. The antenna shall be supplied by the Fire Department.

Y__N__

VEHICLE INTERCOM SYSTEM

There shall be a "DAVID CLARK" intercom system furnished in the chassis cab with four (4) stations. The intercom system shall be installed and have all wiring and components to render the system operational. All four (4) headsets shall be capable of both radio and intercom transmissions as well as AM/FM reception.

Y__N__

FLIP DOWN TABLE

A flip down table shall be provided and located in the cab. Table shall be mounted to the back wall of the cab. Work lights shall be provided in the area over the table. Exact size and design to be approved by the fire department.

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Y__N__

RESCUE BODY

The body shall be fabricated of aluminum extrusions, smooth aluminum sheet and aluminum treadplate.

The aluminum extrusion alloy shall be 6061 with a temper rating of T6, and have a tensile strength of 45,000 PSI and yield strength of 40,000 pounds. The aluminum extrusions shall 3" x 3" aluminum tubing and specially designed extrusions where applicable.

The smooth aluminum sheet material alloy shall be 5052 with a temper rating of H32, and have a tensile strength of 33,000 PSI and yield strength of 28,000 pounds.

The aluminum treadplate alloy shall be 3003 with a temper rating of H22, and have a tensile strength of 30,000 PSI and yield strength of 28,000 pounds.

The extrusions shall be designed as structural framing members with the smooth aluminum and treadplate fabricated to form compartments and floors. All aluminum material shall be welded together using the latest mig spray pulse arc welding system.

Compartments to be sweep out design and to be water and dust proof. All compartments shall be made to the maximum practical dimensions to provide maximum storage capacity.

All exterior compartments shall have polished aluminum drip moldings installed above the doors where necessary to prevent water from entering the compartments.

Wheel well panels shall be double break formed smooth aluminum that is welded in place. There shall be no visible bolt heads, retention nuts or fasteners on the exterior surface of the panel. To fully protect the wheel well area from road debris and to aid in cleaning, a full depth radius wheel well liner shall be provided. The frame side of the wheel well area on each side of the opening shall be attached to the frame side of the front and rear compartments. All seams on the frame side of the body shall be welded and caulked to prevent moisture from entering the compartments.

The rear wheel wells shall be radius cut for a streamlined appearance. A polished aluminum fenderette shall be furnished at each rear wheel well opening, held in place with stainless steel fasteners.

The aluminum sheet material used in fabricating the body shall be a minimum of .125 (1/8") in thickness.

EXTRUDED ALUMINUM SUB-FRAME

The main body sub-frame shall be extruded aluminum and be fully welded to the longitudinal frame rail extrusions that are mounted parallel to the chassis frame rails.

The main body sub-frame shall be constructed of no less than four (4) extruded aluminum tubes running full width of the apparatus body. A minimum of two (2) full body width tubes shall be provided ahead of and behind the rear axle forming the main body support crossmembers. The

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main crosstubes shall be routed through and fully welded to the vertical and horizontal extrusions forming the body super-structure, described elsewhere herein.

For added strength and rigidity, no less than six (6) intermediate body crossmembers shall be provided constructed extruded aluminum tubes.

The intermediate structural crossmembers shall be interconnected and welded to the main body tubular crossmembers forming a fully welded support grid for the body super-structure compartments.

Y__N__

BODY DIMENSIONS

Apparatus body shall be up to 192" long and 96" wide. Body compartments shall be full depth from top to bottom. Each compartment shall be the approximate size listed below.

The intermediate structural cross members shall be interconnected and welded to the main body tubular cross members forming a fully welded support grid for the body super-structure compartments.

Y__N__

COMPARTMENT VENTS

All body compartments shall have a minimum of one (1) louvered panel bolted into a wall to provide the proper airflow inside the compartment. There shall be a filter installed behind the louvered panel. The filter shall be accessible for cleaning by removing the louvered panel on the interior of the compartment.

Y__N__

APPARATUS COMPARTMENTATION

There shall be large enclosed compartments on both sides of the body, starting at the front and continuing to the rear of the apparatus. These compartments shall be as large as possible, using all available space.

The aluminum treadplate compartmentation tops on each side of the body shall be extended out and downwards a minimum of .50" over the compartment doors forming a drip rail. Corners shall be TIG welded.

Y__N__

COMPARTMENT SIZES

The following compartments shall be provided. The compartment sizes listed below shall be considered a minimum.

Driver's side:

Y__N__

There shall be a compartment located at the front of the body. Compartment shall be 41.50"W x 76"H x 26"D in the lower portion and transverse above the frame of the chassis.

Y__N__

There shall be a 2nd compartment located at the front of the body and in front of the rear

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wheels. Compartment shall be 38.50"W x 61"H x 26"D in the lower portion and transverse above the frame of the chassis. The height of the compartment under the top dunnage compartment will be shorter.

Y__N__

There shall be a compartment located over the rear wheels. Compartment shall be 60.50"W x 34"H x 26"D.

Y__N__

There shall be a compartment located behind the rear wheels. Compartment shall be 40.00"W x 72"H x 26"D. **The rear portion of the body shall be raised approximately 4" for a greater angle of departure.**

Passenger's side:

Y__N__

There shall be a compartment located at the front of the body. Compartment shall be 41.50"W x 76"H x 26"D in the lower portion and transverse above the frame of the chassis.

Y__N__

There shall be a 2nd compartment located at the front of the body and in front of the rear wheels. Compartment shall be 38.50"W x 61"H x 26"D in the lower portion and transverse above the frame of the chassis. The height of the compartment under the top dunnage compartment will be shorter.

Y__N__

There shall be a compartment located over the rear wheels. Compartment shall be 60.50"W x 34"H x 26"D.

Y__N__

There shall be a compartment located behind the rear wheels. Compartment shall be 40.00"W x 72"H x 26"D. **The rear portion of the body shall be raised approximately 4" for a greater angle of departure.**

Rear:

Y__N__

There shall be a compartment located at the rear of the apparatus. Compartment shall be approximately 40"W x 56"H x 34"D.

Y__N__

CASCADE BOTTLE COMPARTMENT

There shall be an area in the center portion of the body that will contain the bottles for the specified cascade system. Access into this area shall be through a hinged access lid made strong enough to be walked on. The access lid shall have gas strut hold open devices. Access area shall be large enough to facilitate the removal of the cascade system bottles should that become necessary for maintenance. Lights shall be provided on the under side of the lid. The lights shall operate when the lid is raised and shall be wired to the door ajar light circuit.

Compartment area shall be fully enclosed with front, rear, and side walls and full bottom panel.

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There shall be a removable panel above the bottles so the area above the bottles can be used for additional storage. Bottles shall be "bundled" so that they can be removed as a single unit utilizing an over head crane. Access to each bottle shutoff valve shall be through a removable panel on the back wall of the rear compartment that is accessed at the tailboard.

Y__N__

DUNNAGE COMPARTMENTS

Two (2) dunnage compartments shall be located on the roof of the apparatus body, one on each side. Each compartment shall extend from the rear the Wilbur Light Tower to the side compartment behind the rear wheels. Compartments shall be approximately 15" deep. Access into these compartments shall be through hinged diamond plate lids. Lids shall have gas strut hold open devices and shall be designed to prevent water from entering the compartments. Compartments shall be used for storage of cribbing and other bulky items. Lights shall be provided on the under side of each lid. The lights shall operate when the lids are raised and shall be wired to the door ajar light circuit.

Y__N__

ROLL-UP DOORS

All exterior side and rear equipment compartments so specified shall be equipped with Robinson brand roll-up style doors with lift bar latch mechanisms and associated hardware. **No Exceptions. All rollup doors shall be lockable and keyed alike.**

The drum assembly shall be fully enclosed and protected from the elements. Pendant plates supporting the door roll assembly shall be bolted in place, adjustable and capable of being removed with common hand tools. Pendant plates and supports that are welded in place do not meet the maintenance and service criteria of these specifications. All roll up doors on each side of the apparatus body and at the rear shall be natural finish aluminum.

Y__N__

FLAT BACK BODY

The rear vertical surface of the body shall be flat from side to side.

Y__N__

EXTERIOR COMPARTMENT FLOOR COVERING

All enclosed compartment floors with exterior opening doors on the apparatus body shall be covered with black colored rigid Turtle Tile for improved ventilation and added scuff protection for the compartment floor.

Y__N__

SHELF/TRAY FLOOR COVERING

All shelving in compartments with exterior opening doors on the apparatus body shall be covered with black colored rigid Turtle Tile for improved ventilation and added scuff protection for the compartment floor.

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STAINLESS STEEL DOOR SILL PLATES

Y__N__

There shall be stainless steel door sill plates installed at all compartment door openings.

AWING

Y__N__

One (1) heavy duty RV camper type awning shall be provided on the driver's side of the apparatus body. It shall cover the entire length of the apparatus body, approximately sixteen (16) feet in length.

S.C.B.A. COMPARTMENTS IN WHEELWELL

Y__N__

Three (3) SCBA storage compartments shall be provided and located, two in the passenger's side wheel well and one in the driver's side wheel well of the apparatus body. Compartment door and frame shall be constructed entirely of cast aluminum and have hinged style door. The compartment bottom and rear wall shall be lined with rubber material to protect paint finish of the air cylinder. The bottom of these compartments shall be smooth, flush and without a lip of any kind.

All SCBA compartments mounted in the wheel well area shall have an o-ring gasket with push button latch assembly.

S.C.B.A. STORAGE IN COMPARTMENTS

Y__N__

The compartment over the rear wheels on the driver's side of the body shall be divided into two areas. A storage area shall be provided behind two (2) hinged locking aluminum panels. Brackets shall be provided for four (4) complete S.C.B.A.s mounted on outer side of these panels, two (2) on each side. Hinges on these panels shall be inset to allow for maximal access to the storage area behind these panels. Fire Department will remove the S.C.B.A.s when accessing equipment located behind the hinged locking panels. Further details can be discussed at the pre-construction conference.

BODY TRIM

Y__N__

The aluminum treadplate compartmentation tops on each side of the body shall be extended out and downwards a minimum of .50" over the compartment doors forming a drip rail. Corners shall be TIG welded.

HAND RAILS

Y__N__

Access hand rails shall be 1 1/4" in diameter extruded aluminum with rubber insert. Access rail escutcheons and brackets shall be chrome plated brass and attached with stainless steel bolts and locking nuts. Anchoring of posts and framing members for railings of all types shall be of such construction that the completed railing structure shall be capable of withstanding a load of at least 225 pounds applied in any direction at any point along the rail.

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REAR HAND RAILS

Y__N__

Two vertical access hand rails shall be provided and mounted on the rear of the apparatus body, one on each side. Each rear hand rail to be approximately 48" long.

EXTRUDED ALUMINUM RUB RAILS

Y__N__

Full body length polished aluminum rub rails shall be bolted in place on the right and left body sides. The rub rails shall extend outward beyond the body sides for protection of the compartments and doors. There shall be a bolt on aluminum corner casting on each rear corner to blend the rear tailboard assembly with the side rub rails.

The side rub rails shall be a heavy extruded aluminum "C" channel.

SIDE AND REAR OVERLAYS

Y__N__

Overlay panels shall be constructed of 6061-T6 polished aluminum treadplate. Polished aluminum overlay shall be provided and installed in the following areas:

- The front face of each side compartment.
- The rear body face and vertical area above tailboard.
- Drivers side and passenger compartment top extending down over side to the compartment doors then forming a drip rail above doors.

Overlay shall be installed with "Aluminized" stainless steel bolts to prevent corrosion.

SLIP-RESISTANT WALKWAY SURFACE

Y__N__

All exterior surfaces designated as stepping, standing, and walking areas shall have an aluminum slip-resistant overlay material installed. The slip-resistant overlay material shall have a raised serrated surface that will allow moisture to drain out either side. The recessed surface shall be one piece solid material to prevent road spray and debris from entering the top surface from below. The slip-resistant overlay material shall meet the requirements of NFPA 13-7.3. The slip-resistant surface shall be installed in the following areas of the apparatus body:

- Rear step running board area.
- Walkway and standing platforms

REAR STEP/TAILBOARD

Y__N__

A single piece .188 rear step/tailboard shall be furnished that is a minimum of 12.00" deep and full width of the apparatus body, from rub rail to rubrail. The tailboard shall be provided with a removable casting on each corner for a pleasing appearance.

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ADJUSTABLE SHELVES

Y__N__

Compartment shelves shall be constructed of .188" smooth Aluminum. Shelves shall have formed edges on three sides for added strength. Shelves shall be fully adjustable, with extruded aluminum unistrut channels provided on the front and rear compartment walls.

Two (2) shelves shall be located as follows:

Two (2) in the compartment behind the rear wheels, passenger's side.

Y__N__

REAR MOUNTED LADDER

A rear mounted access ladder shall be provided on the rear of the body to facilitate access to the top of the apparatus. The ladder shall be constructed from aluminum tubing and mounted on the passenger's side. All step surfaces shall comply with NFPA 1901, 1999 Edition 12-7.3.

Y__N__

SLIDE-OUT TRAYS

Slide-out trays shall be constructed of 3/16" aluminum material. Trays shall have with heavy duty roller bearing slides with a latch to hold the tray in the "open" and "closed" positions. Tray shall have capacity of 500 pounds.

Five (5) trays shall be located as follows:

One (1) in the front transverse compartment, full width of body. Tray shall slide out in both directions. Tray height shall be full adjustable utilizing unistrut type extrusions.

Two (2) in the rear transverse compartment in front of the rear wheels, one each side. Trays shall be half the width of the body. Tray heights shall be fully adjustable utilizing unistrut type extrusions.

One (1) floor mounted in the compartment behind the rear wheels on the passenger's side.

One (1) floor mounted in the rear compartment above the rear step.

Y__N__

ROLL-OUT AND TILT DOWN EQUIPMENT TRAY

Roll-out and tilt down type equipment tray shall be provided. Each roll-out and down tray shall be constructed of formed .188" aluminum and have extruded aluminum guide tracks on each side. The extrusion shall include a specially sized channel at both sides of the drawer for the installation of two (2) high quality stainless steel ball bearing rollers. These bearings shall provide support of the outside front of the tray. A second set of stainless steel ball bearing rollers shall be provided for the inside rear of the tray. These rollers shall be bolted to the rear of the drawer and shall slide on two (2) extruded aluminum tracks that are angled to provide an

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out and down action of the tray. Mounting of the drawer slide mechanisms shall be in Unistrut type "C" channels to allow for future adjustment and removal.

Five (5) roll-out/tilt down trays shall be provided as follows:

Two (2) in the rear transverse compartment in front of the rear wheels, one each side half depth. Trays shall be fully adjustable using unistrut type extrusions.

One (1) in the compartment over the rear wheels on the passenger's side of the apparatus. Tray shall be fully adjustable using unistrut type extrusions.

One (1) in the compartment behind the rear wheels on the passenger's side. Tray shall be fully adjustable using unistrut type extrusions.

One (1) in the rear compartment above the rear step. Tray shall be fully adjustable using unistrut type extrusions.

Y__N__

PULLOUT VERTICAL TOOL BOARDS

There shall be two (2) pullout tool boards furnished in the front transverse compartment behind the specified storage grid/rack, half depth, one each side. Tool boards shall be 3/16" smooth aluminum and have adjustable rollers top and bottom. There shall be a mechanism to latch the board in place.

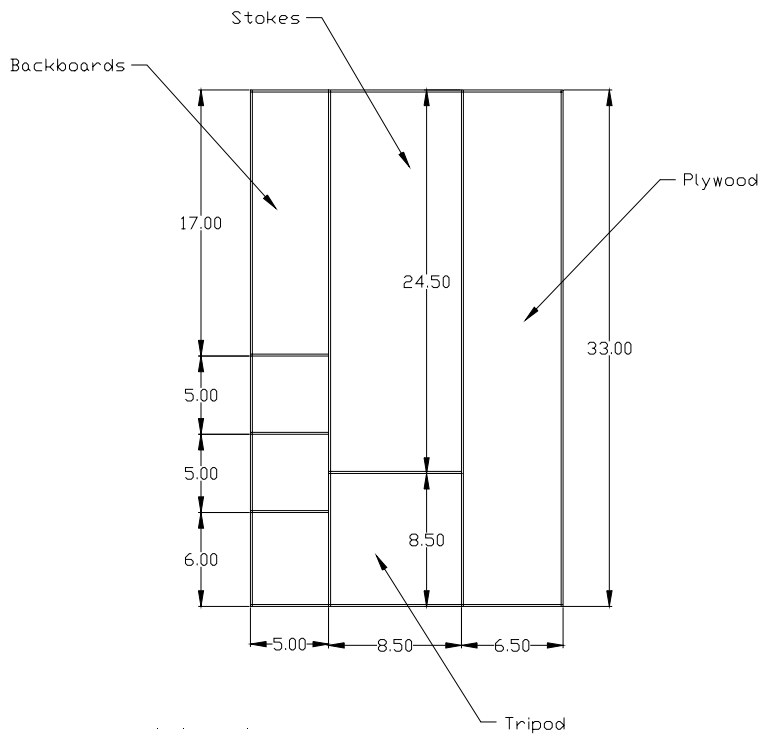
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Y__N__

STORAGE GRID/RACK

A storage grid/rack shall be located at the front portion of the front transverse compartment as listed below. The grid shall have a hinged door and latch covering the entire storage space located on the passenger's side of the compartment. Grids shall include spaces for stokes basket storage, backboard storage, plywood storage, tripod storage. Grid/rack shall be designed as follows, specifics to be discussed at the pre-conference.



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Y__N__

ELECTRICAL

Electrical wiring, hydraulic lines, air system tubing, and control cables shall be fastened to the frame or body structure of the apparatus and shall be furnished with protective looms, grommets, or other devices, so that any such connector and/or wiring will be protected from shear or tear.

The body 12-Volt electrical system shall be designed specifically for the apparatus body. Automatic reset circuit breakers shall be provided and installed in all circuits.

Y__N__

WIRING SYSTEM

All electrical wiring shall be 14 gauge heavy strand copper with type GXL crosslink high temperature insulation, being circuit function printed every three inches along its entire length.

Wiring data shall be provided with the completed apparatus.

Y__N__

12 VOLT ELECTRICAL CERTIFICATION

The low voltage electrical system shall be tested and certified per NFPA 1901 requirements.

A certificate of compliance shall be provided with the completed vehicle upon delivery.

Minimum electrical load consists of the total amperage required to simultaneously operate the following in a stationary mode at the incident scene.

- The propulsion engine and transmission.
- All Clearance and marker lights.
- The communication radio. (Default of 5.0 amps used for testing).
- Illumination of all walking surfaces, the ground at all egress points, controls and instrument panels and 50% of the total compartment lighting load.
- Minimum warning lights required for "Blocking Right of Way" mode.
- The current to simultaneously operate any fire pump, aerial device & hydraulic pumps.
- Anything defined by the purchaser to be critical to the mission of the apparatus.

The first test for the electrical system is the **Reserve Capacity Test**. All the above listed components operate with the engine shut off. After 10 minutes all electrical loads are shut off and the battery system must have adequate reserve power to start the engine.

The second test is the **Alternator Performance Test at Idle**. All the above listed components operate with the engine at an idle. There can be no current draw from the batteries of the apparatus.

The third test is the **Alternator Performance Test at Full Load**. All electrical components shall be activated with the engine operating at governed RPM for two hours. During the test the system voltage can not drop below 11.7 volts or have excessive battery discharge for more than 120 seconds. Any loads not listed in the minimum electrical load may be load managed in order to pass the test.

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All of the above tests must be conducted with the engine compartment at approximately 200 degrees.

Y__N__

AC WIRING CONDUIT

All AC wiring to be installed in liquid tight conduit.

Y__N__

EMI/RFI PROTECTION

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

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

The apparatus shall utilize components that are fully protected and wiring that utilizes shielding and loop back ground straps. Relays and solenoids that are subject to generating spurious electromagnetic radiation are diode and/or resistor protected to prevent transient voltage spikes.

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

EMERGENCY LIGHTING

The upper and lower zones "A", "B", "C", "D" of the apparatus shall have the following emergency lighting equipment:

Y__N__

LIGHT BAR

One (1) Whelen model 9310 NFPA Edge 9000, 72" light bar mounted on chassis cab roof to meet the NFPA upper zone A lighting requirement. The lights shall be activated through the master emergency light switch located on the electrical console. Light bar to have the following equipment:

- (4) Corner Strobe Lights
- (4) Forward Facing Strobe Lights
- (2) Side Facing Strobe Lights
- (2) Solid Burning red halogens
- (3) Power Supplies
- Red Outer Lens, except the rear outer side corners which are to be amber

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OPTICOM

Y__N__

A 3M "Opticom" signaling device shall be provided and installed in the light bar that is mounted on the cab roof. Control switch shall be provided on the chassis electrical module. The "Opticom" shall be turned off when the parking brake is set.

ZONE A FRONT LIGHTS

Y__N__

The lower front zone "A" lights shall be Whelen 64 red LED furnished with the chassis.

UPPER REAR WARNING

Y__N__

Two (2) Whelen 97 series LED lights mounted in 9E flanges shall be mounted on the rear of the apparatus body, one each side to meet the NFPA upper level lighting requirements. The lights shall be activated through the master emergency light switch located on the electrical console.

UPPER SIDE WARNING

Y__N__

Four (4) Whelen 97 series LED lights mounted in 9E flanges shall be on the side of the apparatus body, two each side, to meet the NFPA upper level lighting requirements. The lights shall be activated through the master emergency light switch located on the electrical console.

ZONE B & D SIDE LIGHTS

Y__N__

There shall be three (3) Whelen 64 LED flashing lights furnished on each side of the apparatus to meet the NFPA Zone B & D lower level lighting requirement. One LED light mounted as far forward as possible, one LED light mounted as far to the rear as possible, and one LED light mounted between the front and rear lights. The LED lights shall be connected to a flasher and be activated through the master emergency light switch located on the electrical console. Each light shall have a red lens.

ZONE C REAR LIGHTS

Y__N__

There shall be two (2) Whelen 64 LED flashing lights furnished on the rear of the apparatus to meet the NFPA Zone C lower level lighting requirement. These lights shall be mounted in a cast type mount. The lens color shall be clear.

SCENE LIGHTING

Y__N__

There shall be three (3) pair of Whelen 810 Scene lights provided. Each scene light shall have a wide angle, directional halogen light head with a twist-lock field re-lampable assembly and chrome plated trim ring flange. The lights shall be controlled by switches located in the cab. The lens color shall be clear.

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TRAFFIC DIRECTION BAR

Y__N__

A Whelen Model TA852L directional indicator shall be provided. The unit shall include eight (8) LED modules mounted in the extruded housing. There shall be dual parabolic reflectors with Lexan spreader lens to insure optimum wide-angle warning signal projection from each light head assembly. Each LED module shall be individually replaceable. The lights shall be controlled from a control module located in the cab. The module shall be all solid state electronics and microprocessor controlled. The control unit shall have four (4) selectable operating modes: Left arrow, Right arrow, Center out, Flash (In/Out, 2-step alternate pattern). The control module shall have an on/off switch, fused power lead, four function rotary switch and an LED display to "echo" the flash pattern of the lights. The lights shall have a one second repetition rate for faster recognition time.

RECESSED MOUNTED TRAFFIC ADVISOR

Y__N__

The traffic advisor shall be recessed mounted on the rear of the apparatus body.

CLEARANCE LIGHTS

Y__N__

There shall be LED clearance marker lights installed meeting all DOT requirements. The vehicle clearance lights shall be recess mounted within the rear center tailboard step.

TAIL LIGHTS WHELEN LED 64 (RECT)

Y__N__

Two (2) Whelen #64 LED rectangular red stop/tail lights shall be provided and mounted at the rear of the body, one on each side.

DIRECTIONAL LIGHTS WHELEN LED 64 (RECT)

Y__N__

Two (2) Whelen Model 64 amber arrow directional signal LED lights shall be provided and mounted at the rear of the body, one on each side below the stop/tail lights.

BACKUP LIGHTS WHELEN LED 64 (RECT)

Y__N__

Two (2) Whelen Model 64 rectangular clear backup lights shall be provided and mounted, one on each side at the rear of the body. The backup lights shall be mounted below the rear stop/tail and directional lights.

TAIL LIGHT TRIM

Y__N__

A polished cast aluminum four (4) hole taillight and warning light bezel/housing shall be provided. The specified rear lighting units shall be installed in the bezel/housing and secured. The completed assembly is to be bolted to the apparatus body, one each side.

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LICENSE PLATE BRACKET

Y__N__

A license plate mounting bracket shall be provided complete with a chrome plated shielded indirect type light. Bracket shall be mounted at the rear of the apparatus body.

UNDER BODY LIGHTING

Y__N__

There shall be four (4) lights furnished below the body. Two (2) shall be provided below the rear step, one on each side. Two (2) shall be provided under the mid portion of the body in front of the rear wheels, one each side. The lights shall be wired to turn on and off switch in the cab.

UNDER CAB LIGHTING

Y__N__

The under cab lights shall be supplied with the chassis

REAR STEP LIGHTS

Y__N__

Two (2) chrome plated lights shall be furnished and installed on the rear face of the body to illuminate the rear step area. Lights shall be wired to a switch in the cab.

MECHANICAL SIREN

Y__N__

A Federal model Q2B-012NN electro-mechanical siren shall be furnished with mounting rigidly reinforced. Siren controls and siren brake shall be accessible from the switch control location.

One (1) foot switch shall be provided on the driver side floor for activation of the Q2B siren.

Q2B MOUNTING LOCATION

Y__N__

The Q2B shall be recessed mounted in the front bumper.

ELECTRONIC SIREN

Y__N__

A Federal signal electronic siren control, model #PA300-MSC, shall be mounted in the center of the top of the "Widemouth" doghouse front door and furnished with the custom chassis.

ELECTRONIC SPEAKER

Y__N__

There shall be a Federal Signal Dynamax MS100 compact speaker (100 watts) furnished with the Custom Chassis. The speaker shall be mounted recessed in the front bumper.

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BACK UP ALARM

Y__N__

Back up alarm to be furnished with chassis.

COMPARTMENT LIGHTING

Y__N__

All side and rear exterior equipment compartments shall be provided with one (1) clear compartment light mounted to the side walls of the compartment. Compartment lights shall switch on automatically when the compartment door is opened and switch off when the door is closed.

ADDITIONAL COMPARTMENT LIGHTS

Y__N__

Additional sealed lights shall be provided and installed for compartments with shelves and trays, as directed by the Fire Department. Additional lights shall be mounted to a bracket attached to the unistrut shelf standard. Lights mounted to the shelf brackets shall have additional wire to allow the light to be adjusted with the shelf. Lights shall be wired to switch on and off with the automatic door jamb switch.

OPEN COMPARTMENT/HAZARD WARNING LIGHT

Y__N__

A red flashing, warning light shall be provided and installed in the driver's compartment to indicate an open passenger or apparatus compartment door. The hazard light shall also be attached to folding equipment racks and light towers as specified. Light shall be properly marked and identified.

HYDRAULIC DRIVEN AC ELECTRIC SYSTEM

Y__N__

There shall be a Harrison MPC-15KW generator installed on the apparatus. The alternator is a 4-pole, 1800 rpm, capacitor controlled generator with class H insulation. The generator shall be a commercial type with heavy-duty bearing and of brushless design to ensure low maintenance. No brushes or slip rings will be allowed. The reservoir shall include an oil level gauge, oil temperature gauge, fill cap, fill strainer, and a boost unit to provide a positive pressure to the pump suction port. MPC Series provides clean waveform that can power computers.

Specifications:

Height – 19”

Width – 29”

Weight – 43 lbs

Max kW – 15.0

AMPS @ 120 volts – 125

AMPS @ 240 volts – 63

Torque Required – 131.3

Max. System Pressure – 3600 psi

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GENERATOR METER PANEL

Y__N__

There shall be one (1) generator quad meter panel provided and installed. This meter shall provide frequency, line voltage and ampere for each line.

GENERATOR PTO.

Y__N__

The system shall be driven by a "HOT SHIFT" PTO, and be capable of producing the rated full-load power when driven from the vehicle PTO from high idle to maximum engine speed. A green light to indicate that the PTO is in gear shall be mounted on the cab dash.

CIRCUIT BREAKER PANEL

Y__N__

A circuit breaker panel shall be provided and mounted with twenty (20) manual reset circuit breakers properly labeled.

A portable generator shall be connected to the circuit breaker panel with S/O cord and quick disconnect plug. A permanent mount generator shall be hard wired to the circuit panel.

All AC wiring to be installed in liquid tight conduit.

110 VOLT RECEPTACLES

Y__N__

There shall be four (4) 15 amp twist-lock receptacles with weatherproof spring loaded covers installed on the apparatus. The receptacles shall be wired to the circuit breaker panel. Exact locations of the receptacles shall be determined by the fire department.

200 VOLT RECEPTACLES

Y__N__

There shall be two (2) 220 volt twist-lock receptacles with weatherproof spring loaded covers installed on the apparatus. The receptacles shall be wired to the circuit breaker panel. Exact locations of the receptacles shall be determined by the fire department. Receptacles to be provided by the fire district.

ROOF MOUNTED LIGHT TOWER

Y__N__

There shall be a remote operated light tower furnished and installed on the apparatus. The light shall be a Will-Burt model NS11-3000 with the following features:

- Four (4) 750 Watt, 110 volt Halogen Light Fixtures.
- Extension height of 11 feet.
- Capability of full extension in approximately 55 seconds.
- Capability to be used in vertical or horizontal street light position.
- Automatic park procedure.
- Pistol Grip remote control with 25' of cable.

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- All electric 12 VDC actuator assembly.
-

Y__N__

ROOF MOUNTED LIGHT TOWER

The light tower shall be mounted on the roof of the rescue body.

Y__N__

TELESCOPING QUARTZ LIGHTING

There shall be two (2) 750 watt, 120 volt, Fire Research Focus, Model S75, telescoping lights mounted on the apparatus. Each light shall have an high intensity lamp using a T# style quartz halogen bulb. Hi-temp vinyl coated metal handle and adjustable thumb screw standard. Light dim: 10"W x 3.3"H x 4.9"D.

Y__N__

TELESCOPING POLES

There shall be two (2) Fire Research Model FC530, telescoping poles attached to the apparatus. Poles shall be side mount, bottom raising type. The poles shall mount to a vertical wall of the vehicle with two "L-bracket" type castings. This style is usually used to deploy the lights from street level by pushing the light assembly up with the pushup handle. Standard pole measures 60" (not including the lamp head).

Y__N__

TELESCOPING TRIIPOD LIGHTING

There shall be two (2) 750 watt, 120 volt, Fire Research Focus, Model FC600-S75, tripod lights mounted on the apparatus. Each light shall have an high intensity lamp using a T# style quartz halogen bulb. Hi-temp vinyl coated metal handle and adjustable thumb screw standard. Light dim: 10"W x 3.3"H x 4.9"D.

Y__N__

ELECTRIC CORD REELS

One (1) Hannay Model ECR1616-17-18 electric rewind cord reel shall be supplied and installed on the ceiling of the compartment behind the rear wheels on the passenger's side of the apparatus body. The cable reel shall be a 12 volt electric rewind type complete with a four way roller assembly and a push button rewind switch, properly labeled. A permanently affixed plate shall be install in a readily visible location adjacent to any permanently connected reel that indicates the following"

- A. Current Rating
- B. Current Type
- C. Phase
- D. Voltage
- E. Total Cable Length

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ELECTRICAL CABLE

Y__N__

200' of 10-3 electrical cable shall be supplied with the reel.

CAPTIVE ROLLERS FOR CORD REEL

Y__N__

There shall be a captive roller system furnished for each cord reel. The roller mounting brackets shall be attached to guide the cord on and off the reel assembly.

ELECTRICAL SYSTEM TESTING – 110 VOLT

Y__N__

The following tests shall be performed in regards to wiring and associated 110 volt equipment:

DIELECTRIC VOLTAGE

A dielectric voltage withstand test of 900 volts for one (1) minute.

ELECTRICAL POLARITY VERIFICATION

There shall be an electrical polarity verification to determine that connections have been properly made.

OPERATIONAL TEST

There shall be the following operational test:

- A. **CRANKING TIME**
The time required until the prime mover (generator) starts and runs.
- B. **VOLTAGE, FREQUENCY, AMPERES**
The voltage, frequency, and amperes at continuous full rated load.
- C. **OPERATIONAL INDICATORS**
The prime mover (generator) oil pressure, water temperature, transmission temperature, hydraulic temperature, battery charge rate as applicable, the ambient temperature and altitude.
- D. **OPERATIONS TEST**
The power source shall be operated at 100% of its nameplate voltage for a minimum of two (2) hours.

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Y__N__

PAINTING

All bright metal fittings if unavailable in stainless steel shall be heavily chrome plated. Iron fittings shall be copper plated prior to chrome plating.

All seams shall be caulked both inside and along the exterior edges with an automotive sealant to prevent moisture from entering between any body panels.

The body and all parts shall be thoroughly washed with grease cutting solvents prior to any sanding. After the body has been sanded and the minor imperfections filled and sanded, the body shall be washed again with a solution to remove any contaminants on the surface. The first coating to be applied is a self etching primer for maximum adhesion to the body metal. The next three coats shall be an acrylic, urethane, primer surfacer. The primer surfacer coat is to be hand sanded with 600 grit sand paper to insure maximum gloss of the paint. The last step is the application of at least three coats of Concept Acrylic Urethane two component color.

While constructing the truck body, all aluminum parts shall be properly fitted on the body. The back side of all aluminum parts shall be sanded smooth of any burrs and sharp edges.

All aluminum parts shall be bolted to the body using stainless steel fasteners. Cadmium plated fasteners are not acceptable.

During reassembly of the apparatus, care shall be exercised in fitting and fastening the parts back in their respective position on the vehicle.

Y__N__

NATURAL FINISH ROLL UP DOORS

The roll up doors on each side of the apparatus body shall be natural finish aluminum.

Y__N__

UNDERCOATING

The body sub frame shall be undercoated with a heavy duty automotive type undercoating before the rubber backing and the compartments are attached. After the body has been attached to the sub frame and all final items have been installed the entire body assembly shall be undercoated

Y__N__

INTERIOR COMPARTMENT PAINT

The interior vertical compartment walls are to be painted with a white and black colored spatter finish material.

Y__N__

PAINT COLOR

The apparatus body to be painted red. Red to match PPG Concept Fire Engine Red #73841DU.

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The cab paint color shall be white over red. White to match PPG Concept Soft White #8000DU. The cab white is to extend four (4") inches below the windshield and eight and three quarters (8 ¾") inches below the side windows.

Y__N__

REFLECTIVE SAFETY STRIPE

A 6" wide 3M brand Scotchlite #680-10 reflective white stripe shall be installed on the right and left sides of the apparatus body and chassis cab. Style will be as directed, with final specifics to be determined by Fire District at pre-construction conference.

Y__N__

LETTERING

There shall be Mylar letters applied to the apparatus. The lettering shall also have a one color Mylar shade applied.

Letter Color: Smart Gold
Shade Color: Black

Cab Front Doors:

DIAMOND SPRINGS	(Arched, 2" Letters)
Fire Department Decal Supplied	(Centered)
EL DORADO	(Straight, 2" Letters)
FIRE PROTECTION DISTRICT	(Straight, 1" Black Letters)

Y__N__

TOUCH UP PAINT

A container of touch up paint for each color shall be provided.

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ADDITIONAL EQUIPMENT

The following additional equipment shall be provided and installed on the apparatus by the successful bidder:

Y__N__

CASCADE SYSTEM

A breathing air cascade system will be supplied for filling S.C.B.A. cylinders. The system shall include the following components:

- Storage cylinders
- Cascading Air Control Panel
- All necessary fittings and hose to operate cascade system
- The system shall meet NFPA 1901, 1999 Edition

Y__N__

CASCADE AIR CONTROL PANEL

A control panel shall be supplied for low pressure breathing air and the filling of SCBA/SCUBA cylinders. The control panel is designed for use with a nine (9) bottle storage system. The control panel shall be constructed of 1/8" swirled stainless steel and consist of the following equipment:

- Nine (9) soft seat, 6000 psi metering type valves, (one for each cylinder)
- Two (2) pressure reducing regulators, 6000 psi inlet, 0-5000 psi outlet
- Four (4) pressure reducing regulators, two (2) @ 6000 psi inlet, 0-400 psi outlet and two (2) @ 400 psi inlet, 0-250 psi outlet self bleeding style.
- One (1) 2 1/2", 6000 psi liquid filled gauge (manifold pressure).
- Two (2) 2 1/2", 6000 psi liquid filled gauges (regulated high pressure). One gauge shall have a red "pie" at 2216 psi and one gauge shall have a red "pie" at 4500 psi.
- Two (2) 2 1/2", 250 psi liquid filled gauges (regulated low pressure).
- Four (4) female Snap-Tite plug in connectors. (Two each, low pressure regulators.)
- One (1) refill port with a 6000 psi soft seat metering type valve with check valve.

Y__N__

GAUGES

All gauges will be 2 1/2" panel mounted gauges with chrome plated brass bezels and will be constructed of heavy brass cases with a brass bourdon tube and shall be glycerin filled. All gauges shall have a "Grade A" rating with an accuracy of 1 1/2% full range.

Y__N__

CONTROL VALVE

All control valves shall be rated at 6000 PSI working pressure with a 4:1 safety factor. The valves shall be constructed of chrome plated brass and shall be of the soft seat type with the

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seats being easily replaced without removing the valve from the panel or having to disturb any of the plumbing. The valves shall be the metering type valve for ease of flow control. The valves shall have a non rising stem and will be easily turned at the rated working pressure.

Y__N__

PRESSURE REGULATOR

The two (2) 0-5000 psi regulators and the 0-400 psi regulator will be installed within an area where a tool is required to remove an access panel. The two (2) 0-250 psi regulators shall be installed within the control panel in a manner in which the outlet regulator can be adjusted by means of a control knob. These knobs shall be marked with an arrow indicating the direction for increasing or decreasing the pressure. The outlet pressure gauges for these regulators should be placed in conjunction with the control knobs.

Y__N__

SNAP-TITE CONNECTIONS

The four (4) Snap-Tite female connections shall be mounted on the control panel in conjunction with the low pressure regulators and gauges.

Y__N__

SYSTEM COMPONENTS & PERFORMANCE CRITERIA

The system refill connection on the control panel shall have a quick disconnect connection rated for 6000 psi.

The inlet connections from the storage banks to the control panel shall be #4 JIC (37' flare) male connections.

All tube fittings used on the panel shall be rated at 6000 psi minimum static pressure with a 4:1 safety factor.

All pipe fittings shall be rated at 6200 psi minimum with a 4:1 safety factor.

All tubing connections on the control panel shall be constructed of 304 seamless stainless steel and shall be ¼" I.D. x .049" wall thickness. The tubing shall have a working pressure of 7200 psi with a 4:1 safety factor.

Y__N__

INTERCONNECTING HOSE/FITTINGS

All interconnecting hoses and fittings shall be included with the system. This shall include all hoses and fittings needed to connect the cylinder banks to the control panel. All flexible hose will be thermoplastic with 3/16" I.D., and rated at 6000 psi maximum working pressure. The hose shall have a 4:1 safety factor.

Y__N__

IDENTIFICATION TAGS AND WARNING LABELS

Appropriate tags and warning labels shall be affixed where necessary for safety and proper operation of the control panel. Gauges, valves and other components that are relied upon for

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normal operation and monitoring of the control panel shall be identified with permanently affixed chrome bezel with color coded labels.

Y__N__

STORAGE CYLINDERS

There shall be nine (9) 4500 psi cylinders in the system. Each cylinder shall meet the following specifications:

- DOT Classification: DOT-9421-4500
- Internal Diameter: 8 3/4"
- Outside Diameter: 9 5/16"
- Height: 55"
- Weight (empty): 144 lbs
- Service Pressure: 4500 psi
- Air Capacity at Service Pressure @ 70 degrees F: 444 cu. ft.
- Retest Period: Five (5) years
- CGA Outlet: 347

Y__N__

SINGLE CYLINDER FILL ENCLOSURE

The fill enclosure shall be designed for filling one (1) SCBA/SCUBA cylinder. The enclosure shall be designed to contain the impact of suddenly expanded air and all displaced fragments in the unlikely event of a cylinder rupture. The loading door shall be designed to completely trap fragments inside the fill enclosure cabinet frame when closed. This design must include an automatic safety interlock to prevent filling unless the loading door is completely latched in the closed position.

The fill enclosure shall allow the fill process to be accomplished from the front. The front loading door shall be designed so that when opened, the SCBA/SCUBA cylinder holder sleeves tilt forward to ease loading and minimize operator fatigue.

The external construction of the high pressure breathing air system shall be appliance like using formed fabricated steel structures and panels without visible welds, burrs and grinding marks.

The SCBA/SCUBA cylinder control system shall include all necessary components, devices and piping arrangement necessary to direct the compressed high pressure breathing air to the SCBA/SCUBA cylinder being refilled. There shall be two (2) fill hoses enclosed within the fill enclosure cabinet. Each fill hose shall have a separate control valve and bleeder valve. One filler hose shall be connected to the outlet of the 2216 psi regulator and the second hose shall be connected to the outlet of the 4500 psi regulator.

The manufacturer of the enclosed air refill station shall test a standard production model. The test shall include pressurizing a one hour SCBA cylinder rated at a gauge pressure of 4500 psi to failure. The complete system shall meet NFPA 1901, 1999 Edition.

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OPTION BID

Y__N__

The fire department may elect to provide the above cascade system (not including the nine storage bottles) including a complete Air Control Panel with Gauges, Control Valves, Pressure Regulators, Interconnecting Hose and Fittings, and Single Cylinder Fill Enclosure to the successful bidder for installation. Please state cost savings if provided by the fire department.

Cost savings if above equipment is supplied to the successful bidder _____.

AIR LINE REELS

Y__N__

Two (2) Hannay Model EFH1520-17-18, electric rewind air hose reels shall be supplied and installed in the compartment behind the rear wheels on the driver's side of the apparatus body. The reels shall be 12 volt electric rewind with a bush button rewind switch and be properly labeled. The reels shall contain a minimum of 3/8" 300' of air line. Air hose reels shall be plumbed to the on board cascade system. Reels to be stacked if necessary.

One (1) Hannay Model EFH1514-17-18, electric rewind air hose reel shall be supplied and installed in the compartment behind the rear wheels on the passenger's side of the apparatus body next to the electric cord reel. The reels shall be 12 volt electric rewind with a bush button rewind switch and be properly labeled. The reels shall contain 100' of 3/8" air line. Air hose reels shall be plumbed to the chassis air system.

CAPTIVE ROLLERS FOR AIR REEL

Y__N__

There shall be a captive roller system furnished for each electric air reel. The roller mounting brackets shall be attached to guide the air hose on and off the reel assembly.

HYDRAULIC REELS

Y__N__

Two (2) Hannay Model EF2014-17-18, electric rewind hydraulic hose reels with 100 feet of dual hydraulic hose shall be supplied and installed in a compartment on the apparatus body, location to be determined at preconstruction conference. The reels shall be 12 volt electric rewind with a bush button rewind switch and be properly labeled.

One (1) Hurst pigtail hose connection for dual hydraulic hose shall be supplied.

CAPTIVE ROLLERS FOR HYDRAULIC REELS

Y__N__

There shall be a captive roller system furnished for each hydraulic reel. The roller mounting brackets shall be attached to guide the hose on and off the reel assembly.

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Y__N__

HURST POWER UNIT

One (1) Hurst JL-AC-SI 220 AC Simultaneous Power Unit shall be provided and installed in the rear compartment. The power unit shall be connected to the two (2) hydraulic hose reels specified in this compartment. The power unit shall be wired to the onboard Generator Electrical Panel.

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Bidder Complies

OPERATION/SERVICE MANUALS

Y__N__

Two copies of all operation and service manuals shall be provided.

ONE-YEAR PARTS & LABOR WARRANTY

Y__N__

There shall be a one (1) year mechanical parts and labor warranty provided with the apparatus. The apparatus shall be free of defects in material and workmanship for a warranty period of one (1) year after the date on which the apparatus is first delivered to the original purchaser.

TEN YEAR BODY WARRANTY

Y__N__

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

FIVE YEAR PAINT WARRANTY

Y__N__

There shall be a five (5) year paint/corrosion warranty provided. This warranty shall cover perforation, blistering, peeling, or any other adhesion defects caused by defective manufacturing methods, or material selections, for a warranty period of five (5) years or 100,000 miles which occurs first after the date on which the vehicle is first delivered to the original purchaser.