Specifications for Adin Fire District

One (1)

== 2004 MODEL YEAR 1871 SFO - ==

One (1)
75-CS-0100

WIRING INTERFACE

Item (1) - The chassis shall be supplied with five (5) additional wires to the main switch panel. The wires shall be coiled behind the main row of switches for use by the body builder.

Item (2) - The chassis shall be supplied with a two (2) gauge wire from the battery disconnect switch to a J-Block located in the left hand frame rail near the battery box.

One (1)
75-CS-0200

CAB WIRING INTERFACE

HME shall provide a cab wiring interface and connector for the body builder. This connector shall be located in the left hand frame rail behind the cab.

One (1)
75-CS-0300

LIGHTBAR WIRING INTERFACE

A prewired connector shall be supplied in the cab roof for use in light bar mounting. The light bar interface wires shall be run from the roof mounted connector to the body builder's bridge and coiled for use at your discretion.

One (1)
90-00-0000

FIRE SERVICE MULTIPLE-RESPONSE VEHICLE

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.

One (1)
90-01-C900

CHASSIS DIMENSIONS

The chassis shall have the following dimensions:

Wheelbase - 160.0 inches

One (1)
90-01-L000

FRAME

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.

Specifications for Adin Fire District

One (1)
90-01-V000

BUMPER EXTENSION

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

BUMPER

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

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.

One (1)
90-07-A200

40,540 LB. GROSS VEHICLE RATING

The chassis shall be provided with a certified GVWR of 40,540 lbs. minimum.

FRONT AXLE

The front axle to be a front drive steer type. MARMON HERRINGTON Model MT-17, with a rated capacity of 16,540 pounds. The steering joints shall be a "Double Cardan" type connection. The turning angle is to be 35 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.

STEERING

The steering shall be equipped with a single SHEPARD M110 integral power steering gear. The steering gear is to be mounted directly to the chassis frame rails to provide correct steering geometry.

REAR AXLE

The rear axle is to be an EATON 231S4 single reduction power divider differential with a capacity of 24,000 pounds.

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

Specifications for Adin Fire District

DRIVELINES

Dynamically balanced SPICER drivelines with Glidecoated splines shall be used. The driveline from the transmission to the rear axle shall be 1710 Series, and from the rear axle to the front axle 1610 Series.

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.

BRAKES

The front brakes shall be 16-1/2" x 7", S-Cam, air operated with 20 sq. in. chambers and 6-1/2" automatic slack adjusters.

The rear brakes shall be 16-1/2" x 7", S-Cam, air operated. The brake chambers shall be type 30/30 with 5-1/2" automatic slack adjusters.

TIRES AND WHEELS

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

The rear axle GAWR using these tires shall be 24,000 lbs. @ 105 psi.

One (1)
90-07-X400

BRAKE DUST SHIELD

Dust shields shall be installed on the front axle brakes.

Specifications for Adin Fire District

One (1)
90-07-Y400

CRAMP ANGLE

The chassis shall have a turning cramp angle of 40 degrees. Both left and right turns have a full 40 degree cramp angle with tires and wheels mounted on the axle and installed in the chassis.

One (1)
90-07-Z600

WARRANTY STANDARD AXLE WARRANTY

The Marmon Herrington axle shall be warranted against defects in material and workmanship under normal use and service. Marmon Herrington shall be obligated under this warranty to the replacement of any part or parts thereof which shall, within one 1 year after delivery of such vehicle to the final user or prior to the time when such vehicle has been operated twelve thousand (12,000) miles, which ever occurs first.

One (1)
90-08-X800

NO REAR AXLE BRAKE DUST SHIELDS

One (1)
90-08-Z500

VEHICLE TOP SPEED

The rear axle shall be geared for a top speed of 68 to 70 mph at governed engine RPM.

One (1)
90-08-ZA00

WARRANTY STANDARD AXLE WARRANTY

The Eaton axle shall have a standard 5 year/750,000 mile parts and labor warranty.

One (1)
90-08-ZZ00

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 center line 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.

Specifications for Adin Fire District

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.

One (1)
90-09-A000

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 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.

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 air flow.

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 contaminates without any loss of turbo boost or engine horsepower.

Specifications for Adin Fire District

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.

One (1)
90-09-L000

MERITOR/ROCKWELL/WABCO ABS BRAKE SYSTEM

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

A frame mounted electronic control unit (ECU) shall monitor and control wheel speed during braking. Wheel sensors, constantly monitoring wheel speed, send information to the ECU. If a wheel begins to lock the ECU transmits an electrical impulse to modulator valves that can apply, release or hold the air pressure in the brake chambers. The rapid modulation of air pressure prevents wheel lock-up and increases driver control.

This ABS system shall be a 4S/4M system with four (4) wheel speed sensors and four (4) modulator valves.

If a fault occurs in one wheel, that wheel shall have normal (non-ABS) brake function. The other wheels 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.

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

One (1)
90-10-WA00

FRONT STEEL RIMS

ACCURIDE steel disc wheels shall be supplied on the front axle.

One (1)
90-10-WB00

REAR STEEL RIMS

ACCURIDE steel disc wheels shall be supplied on the rear axle.

One (1)
90-13-A100

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.

Specifications for Adin Fire District

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 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.

One (1)
90-13-A500

<u>ENGINE COOLANT RADIATOR</u>

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 a contain (184) tubes. These tubes shall have a smooth bore to allow for radiator cleaning.

Specifications for Adin Fire District

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.

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 air flow 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.

One (1)
90-13-E700

DIESEL ENGINE

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

MODEL: ISC
NUMBER OF CYLINDERS: Six
BORE AND STROKE: 4.49" x 5.31"
DISPLACEMENT: 506 cu. in. (8.3L)
RATED BHP: 330 @ 2200 RPM
TORQUE: 950 @ 1300 RPM
COMPRESSION RATIO: 17.0:1
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.

Specifications for Adin Fire District

INJECTORS: Electronically controlled injector system

AIR CLEANER: Farr or equal with fresh air intake.

OIL FILTER: A full flow and bypass

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

FUEL/WATER SEPARATOR: The Cummins engine shall be equipped with a 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 free standing water.

WATER FILTER: A precharged spin-on corrosion inhibitor/water filter. Shutoff valves shall be supplied on both sides of the filter to facilitate element changing without loss of cooling system fluid.

STARTER: A DELCO, 12 volt, 38 MT-HD starter motor.

AIR COMPRESSOR: A Wabco rated at 18.7 cfm.

ENGINE WARRANTY

The engine shall have the standard 5 year Cummins Warranty.

One (1)
90-13-N900

EXHAUST BRAKE

The chassis shall have a "JACOBS" Extarder exhaust engine brake installed on the Cummins ISC engine.

The driver's dash shall include an ON / OFF control switch.

Activation of the engine exhaust 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 Extarder Brake is in operation.

The exhaust brake shall become inoperative when the chassis is in pump mode.

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

One (1)
90-13-P500

ENGINE FAST IDLE

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

Specifications for Adin Fire District

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.

One (1)
90-13-R100

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.

One (1)
90-13-V400

SILICONE COOLANT HOSES

The entire chassis cooling system shall have silicone hoses. This shall include all hoses that come in contact with engine coolant. (Engine, Heater, Cooling Loop - when optioned, Radiator) Hose clamps approved for use on silicone hose are required.

One (1)
90-13-V500

COOLANT SYSTEM CLAMPS

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

One (1)
90-13-V800

AUXILIARY ENGINE COOLER

The cooling system shall have one (1) "tube in bundle" auxiliary engine cooler mounted in the upper radiator water pipe to facilitate pump water circulation for engine supplemental cooling.

One (1)
90-13-X100

SPARK ARRESTOR

A spark arrestor shall be installed in the chassis air intake system. This arrestor shall be mounted in the behind the intake grille to filter out airborne embers.

One (1)
90-13-Y000

EXHAUST SYSTEM

A single exhaust pipe shall be provided for the engine. The exhaust pipe shall be supplied with a 1500 degree, fiberglass tape with vermiculite. The wrap shall extend from the engine turbo charger to just below the frame rail. The 90 degree tail pipe shall terminate on the right side directly ahead of the rear wheels. The exhaust pipe tube shall be cut on the end with a 45 degree cut.

One (1)
90-13-Y200

EXHAUST SYSTEM

The aluminized muffler shall be located under the frame on the right side of the apparatus.

Specifications for Adin Fire District

One (1)
90-14-C300

TRANSMISSION

The transmission shall be an Allison 3000EVS five (5) speed automatic transmission with electronic controls.

The chassis shall be geared for the top speed in 5th gear.

The transmission shall be equipped with a lockup control circuit that shall automatically shift the transmission into 4th gear lockup when the pump is shifted into gear.

The transmission shall be equipped with a PTO provision.

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.

TRANSMISSION COOLER

An automatic transmission cooler shall be provided as an integral part located in the bottom tank of the radiator. It shall be designed to withstand 165 psi working pressure and an intermittent pressure of 250 psi. The cooler shall be of sufficient size to maintain the operating temperature within the recommended limits of the transmission manufacturer.

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).

One (1)
90-14-E500

FIVE SPEED TRANSMISSION

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

First - 3.49
Second - 1.86
Third - 1.41
Fourth - 1.00
Fifth - 0.75
Reverse - 5.03

The chassis shall be geared for the top speed in 5th gear.

Specifications for Adin Fire District

One (1)
90-14-WV00

STANDARD TRANSMISSION WARRANTY

The chassis shall have a five (5) year unlimited mileage/Parts & Labor warranty for the Allison transmission.

One (1)
90-25-B100

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.

One (1)
90-25-V200

FUEL SHUT-OFF VALVE

A, ball type, fuel line shut off valve shall be installed in the suction side fuel lines. The shut off valve shall be located near the fuel filter(s).

One (1)
90-40-D200

FIRETRUCK CREW CAB

The cab shall be capable of seating up to five (5) firefighters and be of a one-piece tilting, contoured front, fully enclosed design.

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.

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.

Specifications for Adin Fire District

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.

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 air flow 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 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

Specifications for Adin Fire District

Crew area first step 15"

Crew area second step 8"

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.

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.

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 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.

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.

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.

Specifications for Adin Fire District

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.

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.

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.

HEATER / DEFROSTER

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

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

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.

Specifications for Adin Fire District

STEERING WHEEL AND COLUMN

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

The cab shall have a bright anodized extruded aluminum 24" grab handle 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

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

CAB CORROSION TREATMENT

The cab shall have a corrosion preventative material conforming with Mil Spec C-16173-C, Grade 1, applied during and after construction. A 5 year warranty against perforation due to rust or corrosion shall be furnished for the cab.

One (1)
90-40-DX00

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 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.

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 maybe limited.

Specifications for Adin Fire District

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.

One (1)
90-40-G000

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.

One (1)
90-40-G100

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.

One (1)
90-40-GS00

REFLECTIVE MATERIAL - INTERIOR CAB DOOR

The cab and crew compartment doors shall have a minimum of 96 square inches of reflective material affixed to the inside of each door.

One (1)
90-40-H400

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.

One (1)
90-40-J100

MIRRORS

Heated 16-1/2"x 7.0" Stainless steel West Coast Mirrors with 5.5" x 8.5" rectangular convex mirrors heads shall be provided, mounted on retractable spring loaded arms.

One (1)
90-40-L000

COMPARTMENT OPEN LIGHT

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.

Specifications for Adin Fire District

One (1)
90-40-L400

ICC MARKER LIGHTS

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

One (1)
90-40-L401

CAB MOUNTED SCENE LIGHTS

Two (2) cab mounted scene lights shall be provided on each side of the cab, one each side. Individual switches shall be provided in the cab.

One (1)
90-40-LD00

HEAD LAMPS "ON" IGNITION CONTROL

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

One (1)
90-40-M200

ICC MARKER LIGHTS

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

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.

TURN SIGNALS

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

FRONT WARNING LIGHTS

Two (2) RED Code 3 Oscilaser warning lights shall be supplied mounted above the headlights in a chrome plated bezel inboard of the turn signals.

CAB FRONT WARNING LIGHT CONTROLS

Control of the Oscilaser warning lights shall be by the Emergency Warning Light Switch for both "Calling of Right of Way" and "Blocking Right of Way" modes.

One (1)
90-40-N200

REAR WALL DIAMOND PLATE - EXTERIOR

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

Specifications for Adin Fire District

One (1)
90-40-P100

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 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.

One (1)
90-40-Q100

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.

One (1)
90-40-Q200

INTERIOR FINISH

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

Specifications for Adin Fire District

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 is 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.

One (1)
90-40-Q500

CAB EXTERIOR FINISH

The exterior doors and all fixed cab glass is 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.

PREPARATION

The removal of all contaminates and oxidation is essential to the final effect of a finish system, the cab shall be pre-cleaned 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.

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.

PRECLEAN

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

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

Specifications for Adin Fire District

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 pre-coated 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 pre-coat 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 with a 320 grit (minimum) sanding abrasive.

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.

One (1)
90-40-QH00

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.

Specifications for Adin Fire District

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.

One (1)
90-40-S000

DRIVER'S SEAT

A SEATS, INC., 911 fore and aft adjustable position driver's seat shall be supplied. This seat is to be of the low-back style. The seat covering shall be heavy duty vinyl upholstery.

One (1)
90-40-S400

OFFICER'S SEAT

A SEATS, INC. SCBA Officer's Fixed Seat shall be supplied. The seat shall contain a S.C.B.A. filler pad for when the bottle is not in use.

One (1)
90-40-S600

OUTBOARD REAR FACING CANOPY SEATS

The two (2) outboard rear facing canopy seats shall be SEATS, INC. 911 Series Self-Contained Breathing Apparatus (SCBA) type seats. The seat covering shall be heavy duty vinyl upholstery.

Three (3)
90-40-S900

SCBA FILLER PADS

The 911 SCBA seat is to have a filler pad installed to provide a smooth back for the firefighter when the air breathing apparatus is not in use.

One (1)
90-40-SK00

NO FORWARD FACING SEATS

Specifications for Adin Fire District

One (1)
90-40-SX00

SEAT BELTS

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

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

All forward facing crew area seats shall be provided with shoulder harness type seatbelts.

All seat belts shall be black in color.

One (1)
90-40-SX20

SEAT BELTS

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

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

All forward facing crew area seats shall be provided with shoulder harness type seatbelts.

All seat belts shall be red in color.

One (1)
90-40-U200

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 contaminates, moisture, and high pressure. It is to have a sight glass for visual inspection and ease of service.

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 air flow. 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 air flow through the cab.

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

Specifications for Adin Fire District

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.

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.

One (1)
90-40-V000

DRIVER INSTRUMENTION 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 on 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

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

Specifications for Adin Fire District

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. The apparatus control panel can be utilized for the pump shift controls.

One (1)
90-40-V500

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.

One (1)
90-40-V600

AIR RESTRICTION POP-UP INDICATOR

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

One (1)
90-40-X000

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 pre-selection of the other switches.

Thirteen (13) lighted individual lighting control and chassis option switches.

Each switch shall have back-lit legends with a 100,000 hour lamp for illumination. The legends supplied with the chassis shall be Master, Side Warning, Fast Idle, Front Warning, Rear Warning, Horn/Siren, Beacon, Scene Lights, Horn/Air Horn, Intersect Lights, Mars 888, Siren Brake, Alternate Headlights, Rear Strobe, Heated Mirror, Wig-Wag, Roof Intersection, White Blank, Headlight Flasher, Outside Rotators, Black Blank - 2, Front Strobes, Roof Flasher, Roof Strobes, Body Flasher.

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.

Specifications for Adin Fire District

One (1)
90-40-X200

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.

One (1)
90-40-X400

INTERMITTENT WIPER CONTROL

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

One (1)
90-40-Z100

PUBLIC BROADCAST RADIO

The cab shall be equipped with an AM/FM Cassette Stereo Radio with four (4) speakers.

One (1)
90-45-B000

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.

One (1)
90-45-C700

ALTERNATOR

A LEECE-NEVILLE model LN4867J 270 Amp alternator shall be installed on the engine. This alternator is internally rectified and regulated.

Specifications for Adin Fire District

One (1)
90-45-N500

BATTERY BANK

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

BATTERY CABLES

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

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.

One (1)
90-61-C200

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.

Specifications for Adin Fire District

- 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 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.

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.

Specifications for Adin Fire District

One (1)
1B-00-0500

WARRANTY

We warrant each new motorized fire apparatus manufactured by CENTRAL STATES FIRE APPARATUS for a period of ONE YEAR from the date of delivery, except for chassis and other components noted herein.

Under this warranty we agree to furnish any parts to replace those that have failed due to defective material or workmanship where there is no indication of abuse, neglect, unusual or other than normal service providing that such parts are, at the option of CENTRAL STATES FIRE APPARATUS, made available for our inspection at our request, returned to our factory or other location designated by us with transportation prepaid within thirty days after the date of failure or within one year from the date of delivery of the apparatus to the original purchaser, whichever occurs first, and inspection indicates the failure was attributed to defective material or workmanship.

The warranty on the chassis and chassis supplied components, storage batteries, generators, electrical lamps and other devices subject to deterioration is limited to the warranty of the manufacturer thereof and adjustments for the same are to be made directly with the manufacturer by the customer.

This warranty will not apply to any fire apparatus that has been repaired or altered outside our factory in any way, which in our opinion might affect its stability or reliability.

This warranty shall not apply to those items that are usually considered normal maintenance and upkeep services: including, but not limited to, normal lubrication or proper adjustment of minor auxiliary pumps or reels.

This warranty is in lieu of all other warranties, expressed or implied, and all other obligations or liabilities on our part. We neither assume nor authorize any person to assume for us any liability in connection with the sales of our apparatus unless made in writing by CENTRAL STATES FIRE APPARATUS.

One (1)
1B-00-2000

5 YEAR GALVANNEAL BODY WARRANTY

CENTRAL STATES FIRE APPARATUS (CSFA) warrants to the original purchaser only, that the all Galvanneal body, fabricated by CENTRAL STATES FIRE APPARATUS, under normal use and with reasonable maintenance, will be structurally sound and will remain free from corrosion perforation for a period of FIVE (5) years.

This warranty does not apply to the following items that are covered by a separate warranty: paint finish, hardware, moldings, and other accessories attached to this body. In addition, this warranty does not apply to any part or accessory manufactured by others and attached to this body.

CENTRAL STATES FIRE APPARATUS MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED, WITH RESPECT TO THE GALVANNEAL BODY AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED.

Specifications for Adin Fire District

CENTRAL STATES FIRE APPARATUS will replace without charge, repair or make a fair allowance for any defect in material or workmanship demonstrated to its satisfaction to have existed at the time of delivery or not due to misuse, negligence, or accident. If CENTRAL STATES FIRE APPARATUS elects to repair this body, the extent of such repair shall be determined solely by CENTRAL STATES FIRE APPARATUS, and shall be performed solely at the factory, or at an approved facility. The expense of any transportation to or from such repair facility shall be borne by the purchaser and is not an item covered under this warranty.

CENTRAL STATES FIRE APPARATUS will not be liable for consequential damages and under no circumstances will its liability exceed the price for a defective body. The remedies set forth herein are exclusive and in substitution for all other remedies to which the purchaser would otherwise be entitled.

CENTRAL STATES FIRE APPARATUS will be given a reasonable opportunity to investigate all claims. The purchaser must commence any action arising out of, based upon or relating to agreement or the breach hereof, within twelve months from the date the cause of the action occurred.

One (1)
1B-00-3500

PAINT WARRANTY

The PPG paint performance guarantee will cover the areas of the vehicle finished with the specified product for a period of FIVE (5) years beginning the day the vehicle is delivered to the purchaser.

The areas as outlined on the Guarantee Certificate, will be covered for the following paint failures:

GUARANTEE INCLUSIONS:

FULL APPARATUS BODY MANUFACTURED AND PAINTED BY CENTRAL STATES FIRE APPARATUS:

* Peeling or delamination of the topcoat and/or other layers of paint.

* Cracking or checking.

* Loss of gloss caused by cracking, checking, or hazing.

* Any paint failure caused by defective PPG Fleet Finishes which are covered by this guarantee.

All guarantee exclusions, limitations, and methods of claims are covered in the full certificate provided to the original purchaser.

Specifications for Adin Fire District

One (1)
BS-10-3200

CUSTOM CHASSIS.

A HME custom fire truck chassis shall be furnished with the following apparatus body and equipment.

One (1)
CC-39-1500

FRONT BUMPER GRAVELSHIELD

There shall be a horizontal gravel shield fabricated from bright 1/8" aluminum treadplate installed at the front bumper to cover the area between the bumper and the cab.

One (1)
CC-39-1900

BUMPER EXTENSION

The chassis front bumper extension shall be supplied with the chassis.

Bumper extension shall be approximately 16".

One (1)
CC-39-3100

CENTER HOSEWELL

A recessed style hose well for storage is to be provided in the center of the front bumper extension. Hose well shall be constructed of .125 #5052 aluminum treadplate material and have a smooth interior surface.

Hose well shall have a drain hole in each corner.

Hose well shall hold 100' of 1-1/2" DJ fire hose.

One (1)
CC-50-0520

REAR MOUNT FUEL TANK

There shall be a rear mounted fuel tank furnished with the chassis.

One (1)
CC-50-0530

CAST ALUMINUM FUEL FILL ASSEMBLY

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.

One (1)
CC-50-5500

FRONT MUD FLAPS

Heavy-duty, black 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.

Specifications for Adin Fire District

One (1)
CC-50-6000

REAR MUD FLAPS

Heavy-duty, black 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.

One (1)
CC-51-1100

HORIZONTAL CHASSIS EXHAUST

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

One (1)
CC-51-1200

CHROME EXHAUST TIP

A chrome exhaust elbow shall be furnished and installed at the terminating point of the exhaust system.

Three (3)
CC-60-2000

SCBA BRACKETS IN CAB

There shall be an SCBA bracket with collision restraint strap mounted in each chassis seating position as specified by the Fire Department.

One (1)
CC-65-0400

ALTERNATOR

The alternator shall be of adequate size to meet the NFPA requirements and to accommodate the specific apparatus electrical load.

Specifications for Adin Fire District

PUMP AND PLUMBING

One (1)
DD-00-0740

WATEROUS CXPA-1250 GPM SINGLE STAGE FIRE PUMP

The centrifugal type fire pump shall be a Waterous model CXPA midship mounted with a rated capacity of 1250 GPM. The pump shall meet NFPA 1901 requirements. The pump shall have a PTO drive gearbox.

One (1)
DD-01-4500

SINGLE STAGE MIDSHIP MOUNTED FIRE PUMP

A Waterous Model CXPA fire pump shall be midship mounted, single stage centrifugal type. In addition to meeting NFPA 1901 requirements, it shall be constructed and mounted in accordance with the following specifications.

Fire pump shall incorporate high strength involute toothform Morse HV chain drive transmission. Benefits of the chain drive include quiet, noiseless operation at high shaft speeds, and improved power-transmitting capabilities due to the fact that the chain wraps itself halfway around the gear distributing a very uniform pattern of tooth engagement. Pump transmissions utilizing spur or helical drive gears that create high noise levels at elevated speeds and only permit minimal tooth to tooth engagement are not acceptable.

Fire pump shall be driven by a heavy-duty 10 bolt PTO capable of enough torque to operate the fire pump at rated capacity for continuous duty. The PTO shall be approved by Allison for this type of service. The PTO shall be of a "Hot Shift" style capable of either full capacity stationary pumping or pump and roll. Stationary pumping shall be done with chassis transmission in neutral.
At time of delivery the pump shall be tested and rated as follows:

100% of rated capacity at 150 pounds net pressure
70% of rated capacity at 200 pounds net pressure
50% of rated capacity at 250 pounds net pressure
100% of rated capacity at 165 pounds net pressure

The pump casing shall be a three-piece, vertically split design, high strength gray iron.

The impeller shaft shall be stainless steel, heat treated, and precisely machined and ground to size. All bearings are to be oil or grease lubricated, ball-type, located outside the pump casing in the pump transmission, to accurately align and support the impeller shaft assembly and input shaft. Ball bearings are to be deep groove type, designed to carry both radial and axial loads. A face-type, self-adjusting, corrosion and wear resistant mechanical seal is to be provided.

The pump must be tested by the pump manufacturer for 10 minutes hydrostatically at a pressure of 500 psig. Certification by the pump manufacturer must be provided.

The pump shall be provided with a plate giving the rated flow at "capacity" and "pressure" test pressures, together with the R.P.M. of the engine at those pressures and deliveries and mounted in clear view of the pump operator's panel. Data plate shall include model and serial numbers of the pump body and chain transmission, hydro and discharge test pressures, and the date of pump and transmission manufacture.

Specifications for Adin Fire District

All pump components including relief valve, pump shift and priming system shall be manufactured by the Waterous Company to insure sole source responsibility and engineered compatibility.

PRIMING SYSTEM

The pump shall be capable of taking suction and discharging water with a lift of 10 feet in not more than 30 seconds with the pump dry, through 20 feet of suction hose of appropriate size. It shall be capable of developing a vacuum of 22" at an altitude of up to 1000 feet.

A vacuum test with a capped suction of at least 20' long shall develop 22" of vacuum and hold a vacuum with a drop not in excess of 10" in 5 minutes.

One (1)
DD-04-0080

VPO/VPOS OILLESS PRIMING SYSTEM

A Waterous VPO/VPOS oil less priming system shall be supplied with the pump.

One (1)
DD-04-0100

MANUAL CONTROL PRIMING PUMP

Priming pump shall be activated by a mechanical/electric valve with a single pull control located at the pump operator’s panel area. Valve actuation may be accomplished while the main pump is operational, if necessary to assure a complete prime.

One (1)
DD-04-5000

MECHANICAL SHAFT SEAL

The pump shall be equipped with self-adjusting, maintenance free, "Mechanical Shaft Seal" which is designed to be functional in the unlikely event of a seal failure. Pumps with packing which requires periodic adjustment and/or replacement will not be acceptable.

One (1)
DD-04-7000

DISCHARGE PRESSURE RELIEF VALVE

Pump pressure shall be controlled by a Waterous Fire Pump Company automatic relief valve that is capable of operation over a range of 75 to 300 psi net pump pressure. The Relief Valve shall be controlled at the pump operator's position. Relief valve shall have two controls, one for pressure adjustment and the other an on/off control. Pilot valve shall maintain set pressure until manually reset by the pump operator. Relief valves requiring pressure reset after each use of the pump are not acceptable.

Relief pilot valve orifice shall be protected from malfunction due to sand or other sediment in the water by a strainer that can be removed, cleaned, and replaced at the operator's panel while the pump is operating. A relief valves that requires orifice cleaning within or below the pump enclosure is not acceptable.

Operators panel mounted relief valve indicator lights shall be provided. Lights shall include two color-indicating lights to show position of relief valve. A green light shall indicate a fully closed relief valve and an amber light shall display when the valve begins to open.

Relief valves requiring pressure reset after each use of the pump does not meet the technical fire ground operational requirement of these specifications.

Specifications for Adin Fire District

One (1)
DD-04-7500

MANIFOLD DRAIN

A manifold drain valve shall be furnished with all pump drains connected to it so that the entire pump system may be drained by one control.

Drain valve assembly shall consist of a stainless steel plunger and a bronze body rigidly attached to the fire pump transmission.

A push-pull control with chrome plated "T" handle is to be provided and located at the driver's side of the pump house, properly identified as MASTER DRAIN.

One (1)
DD-99-0500

FIRE PUMP WARRANTY

The Waterous fire pump shall carry the pump manufacturer's two (2) year warranty covering defective parts and workmanship. A copy of the pump manufacturer's warranty policy shall be provided with the completed apparatus.

One (1)
DH-20-1000

UL TEST

The pump shall undergo an Underwriters Laboratories Incorporated test per Class A requirements of NFPA #1901 prior to delivery of the completed apparatus. The UL acceptance certificate shall be furnished with the apparatus on delivery.

One (1)
DH-20-2000

PUMP COOLING LINE

A 3/8" cooling line shall be installed to recirculate water from the pump back to the water tank, to cool the pump during pro-longed pumping operations. The cooling line shall be controlled at the operator's position with a quarter turn valve.

One (1)
DH-20-5000

HEAT EXCHANGER

A heat exchanger shall be provided on the pump driving engine cooling system. The heat exchanger shall not allow mixing of the pump driving engine coolant and water from the fire pump.

A gated line shall be installed to provide water from the fire pump to the pump driving engine heat exchanger to assist in engine cooling during pumping operations. The heat exchanger line shall be controlled at the pump operator's panel.

One (1)
EE-01-1000

PUMP SHIFT INDICATOR LIGHTS

Fire pump shall be driven by a heavy duty 10 bolt PTO capable of enough torque to operate the fire pump at rated capacity for continuous duty. The PTO shall be approved by Allison for this type of service. The PTO shall be of a "Hot Shift" style capable of full capacity stationary

Specifications for Adin Fire District

pumping. Stationary pumping shall be done with chassis transmission in neutral. Pump engagement lights and safety interlock system for PTO driven pumps that are to be used for Stationary Pumping Only with the transmission in neutral shall be as follows:

· A "Pump Engaged" indicator light shall be provided both in the driving compartment and on the pump operator's panel to indicate that the pump shift has been successfully completed.
· An "OK to Pump" indicator light shall be provided in the driving compartment to indicate that the pump is engaged, the chassis transmission is in neutral, and the parking brake is engaged.
· A "Throttle Ready" indicator shall be provided at the pump operator's panel that is energized when the "OK to Pump" indicator is energized or when the chassis transmission is in neutral and the parking brake is engaged.
· An interlock system shall be provided to prevent advancement of the engine speed at the pump operators panel unless the chassis transmission is in neutral and the parking brake is engaged, or the apparatus is in "OK to Pump" mode.
· Controls to engage the PTO are to be in the cab, and easily accessible.

One (1)
EE-01-2010

WATEROUS PTO PUMP INSTALLATION

The Waterous PTO fire pump shall be installed in conjunction with the body manufacturing process. Fire pump installation shall include installation of the fire pump, modification and/or fabrication of new drivelines and all pump-mounting brackets. PTO drive shaft(s) shall be spin balanced prior to final installation.

One (1)
EE-01-3010

AUXILIARY PUMP AND ROLL

The power to drive the system shall be provided by a Lombardini PLD-560-2, 2 cylinder, four cycle, air-cooled diesel engine, oil filter, dry type air cleaner, muffler, manual compression releases, 12 volt starter, alternator and fuel pump.

The water pump shall be a Darley model 1-1/2 AGE 21LD single-stage, centrifugal pump with a vertically split aluminum case and bronze impeller on a stainless steel shaft. Performance shall be as follows:

180 GPM (681 l/m) @ 120 PSI (8.3 bar)
120 GPM (454 l/m) @ 195 PSI (14.6 bar)
60 GPM (227 l/m) @ 235 PSI (16.2 bar)

The pump seal shall be of a mechanical design. Helical cut gears shall be utilized in the pump transmission.

Pump plumbing shall have check valves to prevent the backflow of water between the two water pumps. The auxiliary pump shall be located above the main fire pump.

An additional priming control valve shall be provided for priming the auxiliary pump with the specified priming pump.

Dual controls including ignition, engine start/stop, and throttle for the auxiliary pump shall be provided both on the pump panel and in the cab. Cab controls are in addition to the 2-1/2" pressure gauge and tank level gauge located in the cab and which are specified separately within these specifications.

Specifications for Adin Fire District

The auxiliary pump shall be plumbed in common with the midship water pump to both crosslays and both booster reels.

The auxiliary pump shall be plumbed to the two (2) crosslays and front bumper discharge.

Pump shall be located in the pump compartment above the main pump.

One (1)
EE-01-3990

COOLING FAN

There shall be a 12-volt cooling fan installed in the compartment with the auxiliary pump. The fan shall be mounted to a compartment wall with an open area the same side as the cooling fan. There shall be a thermostat installed to switch the fan on and off as required.

One (1)
EE-01-4070

FUEL SYSTEM

The fuel system for the auxiliary pump shall be plumbed to the chassis fuel system. There shall be a separate fuel pickup tube mounted in the chassis fuel tank specifically for a separate engine driven pump assembly. There shall be an electric fuel pump with regulator and fuel hose furnished between the chassis fuel tank and the carburetor assembly for the auxiliary pump.

One (1)
EE-01-4200

ENGINE THROTTLE

A vernier engine control throttle for manually operated engines shall be furnished on the pump operator's control panel. There shall be an engraved identification label provided to read **THROTTLE**.

One (1)
EE-02-1000

INTAKE RELIEF VALVE

A 2-1/2" intake relief valve preset at 125 psi shall be permanently installed on the suction side of the fire pump. The valve shall have an adjustment range of 75 psi to 250 psi, and shall be designed to automatically self-restore to a non-relieving position when excessive pressure is no longer present.

Discharge side of the intake relief valve shall be plumbed to the right side below the running boards, away from the pump operator, and shall terminate with a 2-1/2" NST male chrome threaded adapter, marked with an engraved tag "Intake pressure relief outlet - Do Not Cap".

One (1)
EE-02-5100

HOT DIP GALVANIZED INTAKE MANIFOLD

The suction manifold shall be fabricated from heavy-duty tubular steel. The suction manifold shall have radiused sweep elbows to minimize water turbulence into the suction volute. The suction manifold shall be welded and pressure tested prior to the galvanizing process. After testing the entire suction manifold shall be hot dip galvanized to minimize corrosion. The hot dip galvanized suction manifold shall be attached to the pump intake volute with a heavy-duty, flexible victaulic coupling.

The hot dip galvanized manifold assembly shall have a ten (10) year warranty.

Specifications for Adin Fire District

One (1)
EE-02-5600

DRIVER SIDE STEAMER INLET

There shall be one (1) steamer inlet furnished on the driver side of pump panel. The suction inlet shall have 6" NST thread. The suction inlet shall have a removable strainer provided inside the external inlet.

Steamer inlet to be as short as possible to allow suction fittings to be attached without extending past the side running boards.

One (1)
EE-02-5700

PASSENGER SIDE STEAMER INLET

There shall be one (1) steamer inlet furnished on the passenger side of pump panel. The suction inlet shall have 6" NST thread. The suction inlet shall have a removable strainer provided inside the external inlet.

Steamer inlet to be as short as possible to allow suction fittings to be attached without extending past the side running boards.

One (1)
EE-20-0500

SUCTION CAP DRIVER'S SIDE

The driver's side suction inlet shall be equipped with a chrome-plated, long handled, cap capable of withstanding 500 PSI.

One (1)
ES-02-1500

2-1/2" GATED SUCTION INTAKE DRIVER SIDE

A 2-1/2" independent gated suction intake shall be provided on the driver's side pump panel. Intake shall be provided with a quarter-turn valve and control. The intake shall have a 3/4" drain valve with handle. Each intake shall have chrome-plated female swivel adapter with removable internal screen and a chrome-plated plug type cap with end chain.

One (1)
ES-02-1510

SUCTION VALVE CONTROL

Suction valve shall have swing type control handle located adjacent to valve.

One (1)
ES-02-2000

2-1/2" GATED SUCTION INTAKE PASSENGER SIDE

A 2-1/2" independent gated suction intake shall be provided on the passenger's side pump panel. Intake shall be provided with a quarter turn-valve and control. The intake shall have a 3/4" drain valve with handle. Each intake shall have chrome-plated female swivel adapter with removable internal screen and a chrome-plated plug type cap with end chain.

One (1)
ES-02-2010

Specifications for Adin Fire District

SUCTION VALVE CONTROL

Suction valve shall have swing type control handle located adjacent to valve.

One (1)
FA-00-1000

HOT DIP GALVANIZED DISCHARGE MANIFOLD

The discharge manifold shall be fabricated from heavy-duty tubular steel. The discharge manifold shall be fabricated, welded, all fittings attached and pressure tested prior to the galvanizing process. After testing the entire suction manifold shall be hot dip galvanized to minimize corrosion. The hot dip galvanized discharge manifold assembly shall be bolted to the pump and have stabilizer arms attached to reinforce the discharge manifold.

The hot dip galvanized manifold assembly shall have a ten (10) year warranty.

One (1)
FA-01-0000

PUMP DISCHARGES

Each gated discharge outlet shall include an Akron heavy-duty brass, quarter-turn, swing-out ball valve. All lines to have victaulic couplings or hose with stainless steel fittings installed where flex may occur to prevent cracking of the plumbing system. Each discharge shall have 3/4" cast bronze 1/4 turn drain valve complete with reinforced teflon seals, and blowout proof stem rated to 600 psi. A chrome-plated zinc handle shall be provided on each drain valve, complete with a 1" X 1 1/2" recessed identification label. Drains shall be aligned in a straight horizontal row at the lower edge of the corresponding pump panel so as to allow for ease of identification and operation. Each drain shall be labeled and numbered to correspond to the respective discharge outlet and coloring.

Individual discharge controls are to be aligned in a straight horizontal row across the pump operator's control panel, directly in-line with the corresponding discharge outlet line pressure gauges.

One (1)
FA-01-0010

GALVANIZED PLUMBING

All rigid piping five-inch diameter or less shall be galvanized type with tapered thread or victaulic type couplings.

Two (2)
FA-01-0500

DRIVER SIDE DISCHARGE OUTLET

Each 2-1/2" discharge outlet on the driver's side pump panel shall have a 2-1/2" quarter turn valve with control on pump operator's panel. There shall be a chrome plated 2-1/2" NST adapter that extends through the pump panel. Each discharge shall be provided with chrome-plated 30-degree discharge elbow.

Two (2) 2-1/2" discharges shall be provided on the driver's side pump panel.

Two (2)
FA-01-0501

MANUAL VALVE

Specifications for Adin Fire District

Discharge valve shall be swing-out type with manual control handle located on pump operator's panel.

Two (2)
FA-01-1000

PASSENGER SIDE DISCHARGE OUTLET

Each 2-1/2" discharge outlet on the passenger's side pump panel shall have a 2-1/2" quarter turn, swing-out valve with control on pump operator's panel. There shall be a chrome-plated 2-1/2" NST adapter that extends through the pump panel. Each discharge shall be provided with chrome-plated 30-degree discharge elbow.

Two (2) 2-1/2" discharges shall be provided on the passenger's side pump panel.

Two (2)
FA-01-1001

MANUAL VALVE

Discharge valve shall be swing-out type with manual control handle located on pump operator's panel.

One (1)
FA-01-1500

DRIVER SIDE REAR DISCHARGE OUTLET

There shall be one (1) 2-1/2" discharge outlet located on the driver's side rear of the body below the hose bed. The discharge outlet shall have a 2-1/2" quarter turn, swing-out valve with control on pump operator's panel. There shall be a chrome-plated 2-1/2" NST adapter that extends through the rear of the body. The discharge shall be provided with a chrome-plated 30-degree discharge elbow.

One (1)
FA-01-1501

MANUAL VALVE

Discharge valve shall be swing-out type with manual control handle located on pump operator's panel.

Five (5)
FA-01-3220

2-1/2" CAPS AND CHAINS

The following discharge outlets shall be equipped with a 2-1/2" chrome-plated cap and chain.

All 2-1/2" discharges shall have chrome plated caps and chains.

One (1)
FB-02-1000

1-1/2" FRONT DISCHARGE

One and one half (1-1/2") discharge located at front bumper. Front discharge shall be plumbed using two-inch (2") pipe and wire reinforced high-pressure hose coupled with stainless steel fittings. Front discharge outlet shall have two-inch quarter turn swing out valve with control on pump operator's panel. The front discharge shall be provided with a 1-1/2" brass 90-degree swivel adapter with 1-1/2" NST male outlet.

Specifications for Adin Fire District

One (1)
FB-02-1001

MANUAL VALVE

Discharge valve shall be swing out type with manual control handle located on pump operator's panel.

One (1)
FB-02-1010

MANUAL DRAIN VALVE

Front discharge outlet shall have a 3/4" drain with individual control on side pump panel. There shall be additional automatic drains furnished as required to drain the plumbing system between the pump and the front discharge connection.

One (1)
FB-02-1215

FRONT DISCHARGE HOSE CONNECTION

The hose connection for the front discharge outlet shall be located on top of the front bumper extension. The hose connection shall have a continuous swivel adapter located on top of the front bumper extension.

One (1)
FB-02-2500

MONITOR PROVISION

There shall be a three-inch (3") deluge discharge above fire pump. Deluge outlet shall be plumbed with 3" quarter turn, swing out valve and 3" I.D. schedule 40 galvanized pipe with 3" NPT male thread. The three-inch valve shall have a slow close device. Deluge outlet shall have control on pump operator's panel.

One (1)
FB-02-2502

MANUAL VALVE WITH SLOW CLOSE

Discharge valve shall be swing out type, with slow close and manual control handle located on pump operator's panel.

One (1)
FB-02-2505

MANUAL DRAIN VALVE

Monitor shall have a 3/4" drain with individual control on side pump panel.

One (1)
FB-02-2599

MONITOR

There shall be a 3" Fire Pro 1200 GPM fixed monitor supplied and installed on the apparatus.

One (1)
FB-31-7600

NOZZLE

A Task Force Tips, model M-R, 150-1250 GPM automatic master stream nozzle designed for flow up to 1250 GPM shall be provided. Nozzle to have 2-1/2" NSTF threaded connection.

Two (2)
FC-31-0100

Specifications for Adin Fire District

1-3/4" CROSSLAY(S) ASSEMBLY ABOVE PUMP

Crosslay hose bed(s) shall be designed to carry 200 feet of 1-3/4" double jacket fire hose. Crosslay hose bed(s) shall be located above the fire pump. The floor of the crosslay hose bed(s) shall be perforated to allow for drainage. Polished stainless steel hose roller assemblies shall be provided at the sides and lower edges of the crosslay opening on each side of the apparatus body.

Crosslay discharge(s) shall be plumbed using rigid pipe or flexible high-pressure hose coupled with stainless steel fittings. The crosslay shall be provided with 2" brass valve, and a 2" 90 degree swivel adapter with 1-1/2" NST male outlet thread.

Two (2) 1-3/4" crosslays shall be provided.

Two (2)
FC-31-0101

MANUAL VALVE

Each discharge valve shall be swing out type with manual control handle located on pump operator's panel.

Two (2)
FC-31-0108

MANUAL DRAIN VALVE

Each crosslay/speedlay shall have a 3/4" drain with individual control on side pump panel.

One (1)
FC-31-4200

CROSSLAY HOSEBED COVER

A .125 polished aluminum treadplate hinged cover shall be provided over the crosslay hose bed(s) complete with full length stainless steel piano hinge and with chrome plated lift handles provided on each side of the cover. Stops shall be provided to hold the cover in the open position or to protect cab or other adjacent body components. The hinge shall be located on the forward section of the cover, closest to the chassis cab.

One (1)
FF-26-2000

FOAM SYSTEM

The apparatus shall be equipped with a FoamPro 2001, electronic, fully automatic, direct injection, discharge side foam proportioning system. The system shall be capable of handling Class A foam concentrates and most Class B foam concentrates. The foam proportioning operation shall be based on direct measurement of water flows with no water flow restriction. The proportioning system shall meet NFPA Standards for foam proportioning systems and the design shall have passed testing against SAE automotive reliability standards appropriate for the application. The foam system shall be installed in accordance with the manufacturer's recommendations.

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

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

1. Activate the foam system.

Specifications for Adin Fire District

2. Provide foam concentrate proportioning rates from 0.1% to 3.0% in 0.1% increments.

3. From discharges plumbed after the paddlewheel type flow meter: show current flow in gpm, show total volume of water pumped, show total amounts of foam concentrate used.

4. Provide simulated flow for manual operation.

5. Perform setup and diagnostic functions.

6. Flash a "low concentrate" warning for two minutes when the foam concentrate tank(s) run low of concentrate.

6. Flash "no concentrate" warning if foam concentrate tank was not changed or foam concentrate was not added to the low tank and shut down foam concentrate pump.

The display shall have the capabilities when using a Hypro/FoamPro manual or electronic dual tank switching system of the following additional functions;

1. Display which foam concentrate tank is selected (tank A: PA or tank B: PB)

2. Separate default setting for foam concentrate injection rate.

3. Total amount of foam concentrate used from selected tank.

4. Dual foam concentrate foam pump calibration.

The foam system shall have a 12-volt 1/2-h.p. "TENV" electric motor designed for wet and high humidity environments, direct coupled to a positive displacement piston type foam concentrate pump with a rated capacity of .01 to 2.6 gpm with operating pressures up to 400 psi.

The foam injection system shall be plumbed to the onboard foam concentrate tank or tanks and to the discharge or discharges as specified.

The FoamPro system must be installed by a FoamPro Certified Dealer.

The foam system shall be plumbed to both crosslays and the front bumper discharge.

One (1)
FF-27-0100

SINGLE FOAM TANK PLUMBING SYSTEM

The foam tank shall be plumbed with three-quarter inch (3/4") valve and corrosion resistant hose from the foam tank to the foam inlet. There shall be a three-quarter inch (3/4") drain line furnished on the foam tank. Drain valve to be located on foam tank with corrosion resistant hose piped to below the frame level of the chassis.

One (1)
FF-27-2000

FOAM TANK

A 20-gallon foam concentrate tank shall be furnished as an integral component of the booster tank. The foam tank shall have a separate fill tower provided in a location to allow easy access

Specifications for Adin Fire District

for filling. Fill tower shall be equipped with a pressure/vacuum vent and have a sealed airtight cover. Tank shall be plumbed to the on board "Class A" foam system. A valved drain shall be provided at the lowest point of the foam tank. The drain shall be plumbed to drain directly to the surface below the apparatus without contacting other body or chassis components.

The following labels shall be attached to the foam tank:

"CLASS A FOAM TANK FILL"
"WARNING: DO NOT MIX BRANDS AND TYPES OF FOAM"

One (1)
FH-03-0100

TANK TO PUMP PLUMBING

A 3" *Akron* ball type gated suction valve shall be furnished from the tank to the pump, complete with a flexible connection and enclosed in the pump compartment.

A check valve shall be provided and installed in the line between the tank and the pump to prevent the possibility of backfilling the booster tank through the tank to pump suction line.

Tank suction shall be located in a sump assembly located below the bottom of the tank, properly baffled to prevent surging of water. A 3" cleanout plug shall be provided in the bottom of the tank sump.

One (1)
FH-03-2000

BALL VALVE TANK TO PUMP

A 2-1/2" gated suction shall be provided between the booster tank and the portable pump.

One (1)
FH-03-6000

TANK FILL/COOLING LINE

A gated discharge line from the pressure side of the pump to the tank shall be furnished so the tank can be filled from draft or hydrant. Valve shall have control on the operator's panel. The valve is to be one and one-half inch, (1-1/2") swing out type ball valve and be plumbed to tank with flexible type hose.

Specifications for Adin Fire District

One (1)
FJ-00-0200

POLY BOOSTER TANK

The booster tank shall be of a specific configuration and is so designed to be completely independent of the body and compartments. All joints and seams shall be nitrogen welded and tested for maximum strength and integrity.

The transverse swash partitions shall be manufactured of polypropylene and extend from approximately 4" off the floor to just under the cover. The longitudinal swash partitions shall be constructed of polypropylene and extend from the floor of the tank through the cover to allow for positive welding and maximum integrity. All partitions shall be equipped with vent and air holes to permit movement of air and water between compartments. The partitions shall be designed to provide maximum water flow. All swash partitions interlock with one another and are welded to each other as well as to the walls of the tank.

A forward mounted sump shall be provided in the tank. The sump shall be constructed of polypropylene and be located in the left front quarter of the tank. A polypropylene pipe shall be installed that will sweep from the front of the tank to the sump location. The sump shall have a 3" N.P.T. threaded coupling on the bottom for a plug. This shall be used as a combination clean out and tank drain. An anti-swirl plate shall be located above the sump.

There shall be two standard tank outlets; one for tank-to-pump suction lines, and one for a tank fill line. All tank couplings shall be backed with flow deflectors to break up the stream of water entering the tank.

The tank shall carry a lifetime warranty from its manufacturer.

One (1)
FJ-01-0208

FILL TOWER

The tank shall have a combination vent and manual fill tower. The fill tower shall be constructed of polypropylene and with a minimum dimension of 8" x 14" outer perimeter. The fill tower shall be located in the left front corner of the tank. The fill tower shall have a polypropylene screen and a polypropylene hinged cover. Inside the fill tower, shall be fastened a combination vent overflow pipe. The vent overflow shall be polypropylene pipe that is designed to run through the tank and shall be piped behind the rear wheels.

One (1)
FJ-01-2000

BOOSTER TANK

A 750-gallon capacity polypropylene booster tank shall be provided.

One (1)
FJ-02-7610

BOOSTER TANK SUBFRAME

The booster tank shall be mounted on a steel sub frame. Steel sub frame shall consist of two (2) longitudinal 3" x 4 pound channels and two (2) 3" x 4 pound channels welded together to form a tank retention cradle. The tank retention cradle shall prevent fore and aft, and side to side movement of the tank. Additional 3" x 4 pound transverse cross member channels shall be installed to support the floor of the booster tank. The cross members shall have a maximum spacing of 20" for the polypropylene tanks. There shall be an additional full-length longitudinal

Specifications for Adin Fire District

member installed in the center of the tank support area. The booster tank shall rest on heavy rubber channels that isolate the polypropylene tank from the sub frame.

One (1)
FK-01-1000

DRIVER SIDE MOUNTED OPERATOR'S CONTROL PANEL

All pump suction and discharge controls are to be mounted on the driver side pump operator's panel so as to permit operation of the pump from a central location.

All of the pump controls shall be clearly identified with permanently engraved plate type labels.

A full panel width polished light hood with a minimum of three Weldon model 2025 light assemblies shall be provided to illuminate the entire pump operator's control panel.

An additional polished light hood with a minimum of two Weldon model 2025 light assemblies shall be provided to illuminate the right side pump panel. Lights shall be controlled by the operator's panel light switch.

GAUGE PANEL

All gauges shall be suitably enclosed and mounted on a full pump compartment width "hinged" gauge panel constructed of the same material as the pump operators control panel, allowing access to the backside of all gauges and gauge lines. Panel is to include a stainless steel piano hinge, Hartwell HTL81 flush mounted chrome plated trigger latch, and stainless steel cable end stops. Electrical wiring and all gauge lines shall be properly tie wrapped to prevent kinking or cutting of the lines when the panel is opened.

One (1)
FK-01-1600

EXTRUDED ALUMINUM PUMP HOUSE STRUCTURE

The pump house structure shall be fabricated of extruded aluminum. The structure shall be welded together and have gusset plates on each corner. The pump house shall be mounted separate from the body and chassis and be bolted to the chassis frame rails.

The exposed areas of the pump house structure shall be overlaid with polished aluminum treadplate.

One (1)
FK-01-2100

PUMP PANEL PUMP ENGAGEMENT LIGHT

There shall be one light on the operator's panel that will come on with a successful pump engagement.

One (1)
FK-01-2200

PUMP PANELS

The right and left side pump panels shall be constructed entirely of 14-gauge type 304 brushed stainless steel material. The panels are to be completely "bolted" in place for ease of removal.

One (1)
FK-01-3000

PUMP COMPARTMENT ACCESS DOOR

Specifications for Adin Fire District

The passenger's side pump panel shall be provided with a full panel width vertically hinged access door located in the upper portion of the side panel. This door shall be approximately 18" high and as wide as possible, and shall be constructed of polished aluminum treadplate. Two (2) flush mounted, push type latches shall be furnished to hold the door closed. The inspection door shall be attached with a stainless steel hinged and have a retainer cable attached to prevent the door from opening too far.

One (1)
FK-01-3500

PUMP COMPARTMENT ACCESS PANEL

A removable access panel constructed of .125 aluminum treadplate material is to be provided at the front of the pump compartment, accessible when tilting the chassis cab. The access panel is to be flush mounted in the forward wall of the pump compartment. Door shall be a minimum of 60" wide by 25" high, and shall have easily accessible trigger type latches for quick removal.

One (1)
FK-10-0000

PUMP OPERATORS PANEL

The following equipment shall be installed on the pump operator's panel.

One (1)
FK-10-1100

MASTER GAUGES

Class One #LFP410, 4-1/2" diameter liquid filled pressure gauge registering up to 600-lbs per square inch with 1/4" pipe thread connection. The gauge shall be of the type that will not be injured when subjected to a vacuum. The gauge is to have a white face with black lettering. The gauge is to be located at the right of the gauge panel and labeled "DISCHARGE" with an engraved label.

Class One #LFP410, 4-1/2" diameter liquid filled compound gauge shall be provided on the suction side of the pump registering at least 600-lbs pressure and 30-inches of vacuum. The gauge shall have a white face with black lettering. The gauge is to be located to the left of the master discharge gauge and labeled "INTAKE" with an engraved label.

One (1)
FK-10-2700

PRESSURE GAUGES

Class One #LFP220, 2-1/2" diameter liquid filled pressure gauges shall be provided. The gauges are to have white faces with black lettering. The gauges shall read -30 to 600 lbs. Line pressure gauges shall be individually identified with engraved labels.

Individual line pressure gauges are to be mounted adjacent to the corresponding discharge valve control.

Three (3)
FK-10-2900

There shall be one (1) pressure gauge for each 1-1/2" discharge outlet.

Five (5)
FK-10-3000

There shall be one (1) pressure gauge for each 2-1/2" discharge outlet.

One (1)
FK-10-3100

There shall be one (1) pressure gauge for each deck gun outlet.

Specifications for Adin Fire District

One (1)
FK-11-3700

ENGINE THROTTLE

An electronic vernier engine control throttle shall be provided on the pump operator's control panel for the Cummins electronic engine. The electronic throttle shall be positive locking, crank operated and have a quick release center button. There shall be an engraved identification label provided that reads **THROTTLE.**

One (1)
FK-12-1100

INFORMATION CENTER

A Class 1 Enfo III master engine gauge and warning device shall be furnished and installed on the pump operator's panel. The device will monitor the following engine systems;

-Engine RPM display
-System voltage display and alarm
-Engine oil pressure display and alarm
-Engine water temperature display and alarm.

One (1)
FK-12-5200

PUMP PANEL IDENTIFICATION LABELS

All discharges shall be provided with color-coded labels. Identification labels shall be provided at the discharge control, the discharge outlet, and at the discharge drain valve control, color-coded according to NFPA recommended standards.

One (1)
FK-12-7100

PUMP PANEL WATER TANK LEVEL GAUGE

A Class One ITF Intelli-tank water tank level gauge shall be provided on the pump operator's panel. The Intelli-tank display features wide angle viewing and four (4) ultra-bright LED's for high visibility, even in direct sunlight. The Intelli-tank utilizes a pressure transducer, ILO of probes, to provide nine (9) accurate levels of indication.

One (1)
FK-12-9200

PUMP PANEL FOAM TANK LEVEL GAUGE

A Class One ITF Intelli-tank foam tank level gauge shall be provided on the pump operator's panel. The Intelli-tank display features wide angle viewing and ultra-bright LED's for high visibility, even in direct sunlight. The Intelli-tank utilizes a pressure transducer, ILO of probes, to provide nine (9) accurate levels of indication.

One (1)
FK-13-1500

UL TEST CONNECTIONS

A pump pressure and vacuum test block assembly shall be provided and mounted at the pump operator's control panel. The test block assembly shall include plug type caps.

Specifications for Adin Fire District

APPARATUS BODY SPECIFICATIONS

One (1)
HA-00-0200

HOSE BODY

The apparatus hose body is to be properly reinforced without the use of angles or structural shapes, and free from all projections that might injure the fire hose.

The main apparatus hose body shall run the full length of the apparatus body from behind the pump panel area to the rear face of the body.

The upper rear interior of the beavertail extrusions on the right and left side shall be overlaid with brushed stainless steel to protect the painted surface from damage by hose couplings

One (1)
HA-00-0320

HOSE BED CAPACITY

The hose bed will be configured to be a minimum of 55 cubic feet.

Exact hose bed requirements shall be determined prior to construction.

One (1)
HA-00-0400

HOSE BED FLOORING

Floors of the hose beds are to be provided with removable slat style extruded aluminum hose bed gratings, spaced 1/2" apart for proper hose ventilation. Hose bed gratings are easily lifted out of the main hose bed for access to the top of the specified booster water tank.

Two (2)
HA-00-1600

MAIN HOSE BED DIVIDER

Adjustable hose bed dividers shall be provided in the main hose bed.

The hose bed divider(s) shall be fabricated of 1/4" smooth aluminum sheet stock, pressed into a "T" shaped aluminum extrusion for added strength along the bottom edge of the divider.

The divider shall be fully adjustable, mounted using aluminum "C" channel tracks at the front and rear of the divider for full side to side adjustment.

Two (2) hose bed dividers shall be provided.

One (1)
HA-01-0800

HINGED ALUMINUM HOSE BED COVERS

Polished aluminum treadplate hose bed covers shall be furnished, extending the full-length and width of the main hose bed.

Covers shall be fabricated of 3/16" polished aluminum treadplate with cross bracing for maximum strength, and to support the weight of a firefighter standing on the covers when closed. The covers shall be of the sloped design for proper water runoff. Each cover to be equipped with a full length stainless steel piano hinge with chrome plated grab handles at front and rear of each

Specifications for Adin Fire District

cover. Hose bed covers shall include heavy-duty stops to support them when in the opened position.

One (1)
HA-01-0900

REAR VINYL FLAPS FOR ALUMINUM COVER

There shall be a vinyl flap attached to each aluminum hose bed cover. The vinyl flaps shall cover the area on the rear of the hose bed from top to bottom. The flaps shall be independent of each other but attachable with velcro in the center. The bottom edge of the flap shall be weighted and also have an eyelet on each outer corner.

Flaps to be black in color.

Two (2)
HA-01-1200

BACKBOARD STORAGE FOR ALUMINUM COVER

There shall be storage for a backboard underneath the aluminum hose bed cover.

Storage shall be for two backboards and shall be 4"H x 19"W x 80"D.

One (1)
HD-00-1300

LADDER MOUNTINGS

The ladders shall be mounted in a compartment, beside the water tank and below the hose bed, on individual poly scratch resistant slides. There shall be an aluminum treadplate door on the rear with push button latch for access to the interior of the compartment.

Ladder storage compartment shall be located on the passenger's side of the body.

One (1)
HD-00-2510

GROUND LADDERS FURNISHED BY BODY BUILDER

The body builder shall furnish the ground ladders. See equipment section of this document for make and model of ladders.

One (1)
HD-00-5100

HARD SUCTION HOSE TRAYS

Hard suction hoses shall be mounted in extruded aluminum, self-draining carrier trays with hold down device. The carrier trays shall be mounted one on each side of body.

One (1)
HD-00-7015

HARD SUCTION HOSE FURNISHED BY BODY BUILDER

The hard suction hose shall be furnished by the body builder. See equipment section of this document for make and model of hard suction hose.

One (1)
HD-01-0500

PIKE POLE(S) MOUNTED IN LADDER COMPARTMENT

There shall be room for the pike pole(s) to be mounted in the compartment, along with the specified ladders.

Specifications for Adin Fire District

One (1)
HD-01-7015

PIKE POLES FURNISHED BY BODY BUILDER

The pike poles shall be furnished by the body builder. See equipment section of this document for make and model of pike poles.

One (1)
KB-02-1000

APPARATUS BODY

The apparatus body compartments shall be fabricated of twelve gauge A-60 Galvanneal steel.

The side compartments shall be an integral assembly with the rear fenders.

Circular fender liners shall be provided for prevention of rust pockets and ease of maintenance.

Compartment floors shall be of the sweep out design with the floor higher than the compartment door lip.

Drip protection shall be provided above the doors by means of bright aluminum extrusion or formed bright aluminum treadplate.

The top of the compartment shall be covered with bright aluminum treadplate formed over the edges on the front, rear and outward side. The corners of the aluminum covers shall be "TIG" welded.

All screws and bolts that protrude into a compartment shall have acorn nuts installed to prevent injury and snagging.

FASTENERS

All aluminum and stainless steel components shall be attached using stainless steel fasteners.

Compartment door hinges, handrails and running boards shall be attached using minimum 1/4" diameter machine bolt fasteners.

3/16" diameter fasteners shall only be used in nonstructural areas such as; door handles, trim moldings, gauge mounting, etc.

One (1)
KB-10-3000

BODY DIMENSIONS

Apparatus body shall be up to 144" long and 96" wide, reference drawing for actual body length. Body compartments shall be divided into upper and lower areas with the upper area approximately thirteen-inches in depth, and the lower area approximately twenty-three inches in depth. The hose bed shall be 68" wide.

One (1)
KK-01-1100

APPARATUS BODY SUB-FRAME

The apparatus body sub frame shall be constructed entirely of heavy steel structural channel material.

Specifications for Adin Fire District

Two full frame lengths, three-inch (3") 4 pound per foot longitudinal steel channels shall form the sides of the body sub frame and sides of the water tank cradle. Sub frame cross members shall be fabricated with three inch (3") 4 pound per foot heavy steel channel cross members welded to the longitudinal body sub frame sides and the full length frame pads.

Two full frame length 1/2" x 3" flat steel frame pads shall be attached to the body sub frame and rest on top of the chassis frame rails for proper frame weight distribution.

The steel frame pads, longitudinal steel channels and sub frame cross members shall be attached to the chassis frame rails using heavy "U" bolt fasteners to allow removal of the sub frame and body assembly from the chassis. There shall be a barrier provided between the sub frame and body to prevent electrolysis.

A minimum of two rear platform support channels shall be provided and constructed of 4.3 lb. per foot heavy steel material. Each support channel shall have welded in gusset where the support meets the rear sub frame rails.

One (1)
KK-02-0400

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.

One (1)
KK-02-0500

BODY AND PUMP HOUSE FLEX JOINT

When equipped with a fire pump, the body and pump house shall be a separate freestanding component forming a true flex joint between the body and pump house. The intent is to allow either to be easily removed as a single unit without disturbing the other and to provide a flex joint between the two modules. Designs where the pump house and body are interjoined as a common unit do not meet the technical requirement of providing a flex joint or the repairability requirement of these specifications.

One (1)
KK-02-0654

WHEEL WELL LINER AND FENDERETTES

For ease of accessibility and maintenance, wheel well panels shall be double break formed painted smooth plate that is welded in place.

To fully protect the wheel well area from road debris and to aid in cleaning, a full depth (minimum of 25") radius wheel well liner shall be provided. Wheel well liner shall be smooth galvanneal steel to prevent corrosion.

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 concealed stainless steel fasteners.

One (1)
KK-02-3600

REAR TOW EYES

Specifications for Adin Fire District

There shall be two (2) tow eyes furnished at the rear of the body and attached directly to each chassis frame rail. The tow eyes shall be accessible by opening the rear compartment doors. The tow eyes shall be constructed of 5/8" plate steel with a 4" I.D. hole, large enough for passing through a tow chain end hook.

One (1)
KK-03-0050

APPARATUS COMPARTMENTATION

There shall be large enclosed compartments on both sides of the body, starting at the front of the hose body 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.

Lower or rear face compartments, if specified shall be provided with polished aluminum drip rails.

One (1)
KK-03-0065

HINGED COMPARTMENT DOOR CONSTRUCTION

All hinged compartment doors shall be of the flush style so that the entire door fits flush against the apparatus body sides. Doors shall be designed, in the closed position, to have the painted edges protected from damage on the tops by forming the treadplate compartment tops into a extended drip edge, on the bottoms by the rub rail.

Doors shall be a minimum 2" thick, fabricated of a minimum of .125 smooth aluminum. Full panel inner compartment door liners shall be provided and constructed of .125" polished aluminum treadplate. The compartment doors shall have a foam panel glued in place between the exterior and interior door skin. Exterior door panels shall be smooth with no welds visible on the exterior skin. Double door compartments shall be equipped with a secondary latch to hold the secondary door in position.

All compartment door hinges shall be full-length piano type constructed of a minimum 14-gauge type 304 polished stainless steel with 3/16" stainless steel hinge pin with dual directional bolt holes for ease of adjustment.

When horizontally hinged lift-up doors are specified, they shall be equipped with heavy-duty gas filled props to hold the doors in the open position. All other hinged doors shall be equipped with spring loaded hold open device specifically designed for use on vertically hinged doors. Door holders shall be bolted in position. The door ajar switches shall be fully enclosed within structural members and shall not extend into the clear door opening.

All compartment doors shall be provided with hollow core weather stripping to provide a weather tight seal at the door opening and to prevent road spray and debris from entering the compartment.

One (1)
KK-03-0076

EXTERIOR DOOR LATCHES

Side exterior compartment doors shall be furnished with a large stainless steel spring loaded D-handle with slam type latches. D-handles shall have the large "bent" D-ring for ease of grabbing the handle even when wearing mitts or gloves.

Specifications for Adin Fire District

A non-moisture absorbing gasket shall be installed between the door latch and the door skin panel.

Seven (7)
KK-03-0093

EXTERIOR DOOR LOCKS

The hinge door(s) shall be equipped with a keyed locking device.

One (1)
KK-03-0099

DRIVER SIDE

The driver side of the apparatus body shall consist of the following configuration.

One (1)
KK-03-2300

DRIVER SIDE COMPARTMENTS

Three body compartments shall be furnished as follows:

- One compartment ahead of the rear wheels with full height double hinged doors.
- One compartment above rear wheel with one lift-up door.
- One compartment behind the rear wheels with full height single hinged door.

One (1)
KK-04-0100

PASSENGER SIDE COMPARTMENTS

The passenger side of the apparatus body shall consist of the following compartment configuration.

One (1)
KK-04-2300

PASSENGER SIDE COMPARTMENTS

Three body compartments shall be furnished as follows:

- One compartment ahead of the rear wheels with full height double hinged doors.
- One compartment above rear wheel with one lift-up door.
- One compartment behind the rear wheels with full height single hinged door.

One (1)
KK-50-0600

REAR BODY CONFIGURATION

Rear apparatus body compartments shall be as follows:

- There shall be one compartment with full height double hinged doors.

One (1)
KK-50-4200

FLAT BACK BODY

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

Six (6)

Specifications for Adin Fire District

KM-49-1604

ADJUSTABLE SHELVES

Compartment shelves shall be constructed of .125" 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.

Six (6) adjustable shelves shall be provided. Locations of the shelving shall be determined prior to construction.

One (1)
KM-49-1615

SLIDE-OUT TRAY

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.

The roll out tray shall be provided for the generator and located on the floor of the rear side compartment on the passenger's side.

Two (2)
KM-50-0100

DRIVER SIDE AIR BOTTLE COMPARTMENTS IN WHEELWELL

SCBA storage compartment shall be provided and located in the driver side rear 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.

Two (2) SCBA storage compartments shall be located on the driver's side of the body.

Two (2)
KM-50-0250

PASSENGER SIDE AIR BOTTLE COMPARTMENTS IN WHEELWELL

SCBA storage compartment shall be provided and located in the passenger side rear 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.

Two (2) SCBA storage compartments shall be located on the passenger's side of the body.

One (1)
KR-01-0100

EXTRUDED ALUMINUM RUB RAILS

Full body length polished aluminum rub rails shall be bolted in place on the right and left body sides and in the pump panel area. 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.

One (1)
KR-04-0002

SIDE AND REAR OVERLAYS

Specifications for Adin Fire District

Overlay panels shall be constructed of 3003 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 and below hose bed.
- Driver's side and passenger compartment top extending down over side to the compartment doors then forming a drip rail above doors.
- Front face of hose bed above booster tank.

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

One (1)
KR-04-0010

POLISHED COMPARTMENT TOP WELDS

The compartment top welds to be polished.

One (1)
KR-04-3000

SLIP-RESISTANT WALKWAY SURFACE

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:

- Step areas of the side running boards.
- Rear step running board step.
- Walkway and standing platforms

One (1)
KR-04-4902

REAR STEP/RUNNING BOARDS

The apparatus body running boards and rear step shall be constructed with slip-resistant surface and shall have bright aluminum treadplate trim around the outside edges. Side running boards and rear step shall be removable for ease of service in case of damage.

One (1)
KR-04-4908

REAR STEP/TAILBOARD

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 rub rail. The tailboard shall be provided with a removable casting on each corner for a pleasing appearance.

One (1)
KR-10-0000

HANDRAILS

Access handrails shall be 1 1/4" in diameter extruded aluminum with rubber insert. Access rail escutcheons and brackets shall be chrome plated and attached with stainless steel bolts. Anchoring of posts and framing members for railings of all types shall be of such construction that

Specifications for Adin Fire District

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.

One (1)
KR-10-0100

REAR HANDRAILS

Two (2) vertical access handrails shall be provided and mounted on the rear of the apparatus body, one on each side. Each rear handrail to be approximately 48" long.

Six (6)
KS-01-0100

FOLDING ACCESS STEPS

Six (6) NFPA approved folding steps shall be provided and mounted as listed below. All access steps shall have a minimum surface area of 35-square inches, and have a slip-resistant standing surface. The step shall be capable of supporting a 500-lb. load.

- Three (3) folding steps shall be located at the rear of the body on the driver's side
- Three (3) folding steps shall be located on the front of the body next to the driver's side pump panel.

Specifications for Adin Fire District

One (1)
NA-00-0010

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.

Wiring data shall be provided with the completed apparatus.

The following electrical equipment and lights shall be provided and installed:

One (1)
NA-00-0080

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.

The following electrical equipment and lights shall be provided and installed:

One (1)
NA-00-1000

TAIL & STOP LIGHTS

Two (2) Weldon #2010 rectangular red stop/tail lights shall be provided and mounted at the rear of the body, one on each side.

One (1)
NA-00-2500

DIRECTIONAL LIGHTS WELDON 2010

Two (2) Weldon #2010, rectangular amber directional signal lights with black arrows shall be provided and mounted at the rear of the body, one on each side below the stop/tail lights.

One (1)
NA-00-4000

BACKUP LIGHTS WELDON 2010 (RECT)

Two (2) Weldon #2010, 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.

One (1)
NA-00-5300

CLEARANCE LIGHTS

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

Specifications for Adin Fire District

One (1)
NA-00-5400

LICENSE PLATE BRACKET

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.

One (1)
NA-00-5600

BACKUP ALARM

An automatic, electronic reverse alarm shall be provided and installed. An alarm shall activate whenever the reverse gear is selected in the transmission.

One (1)
NA-00-6100

LOAD MANAGER

The apparatus shall be equipped with a Class 1 Total System Manager (TSM) for performing electrical load management. The TSM shall be supplied with the custom chassis.

Seven (7)
NA-01-1000

COMPARTMENT LIGHTING

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

One (1)
NA-01-3700

OPEN COMPARTMENT/HAZARD WARNING LIGHT

A red flashing, warning light shall be supplied with the chassis.

One (1)
NB-02-5100

BATTERY DISCONNECT SWITCH

A master battery on/off switch shall be furnished by the chassis manufacturer and mounted in a convenient location to the driver. The master battery switch shall disconnect the batteries from all chassis and body accessories.

One (1)
NB-02-6800

AIR COMPRESSOR/BATTERY CONDITIONER

A 110-volt Kussmaul Auto-Charge 1000, single system, 15-amp, automatic battery charger and power supply shall be provided and installed within the chassis cab and wired to the battery system. Battery charger shall be 15-amp output type designed to automatically charge the battery system when shoreline power is connected. The charger shall be equipped with a bar graph type charge level indicator to indicate the charge rate. The charger shall have an electronic sensing circuit to sense the true battery voltage while eliminating the need for external sensor wires. Charging is completely automatic, when the battery is fully charged, all charging stops. There is no over charging and no water boil off.

Specifications for Adin Fire District

The charger shall have a built in 3-amp battery saver for rechargeable hand lights.

There shall be an air compressor furnished to maintain the air pressure in the vehicle brake system. The compressor shall be wired to the vehicle electrical system and plumbed to the vehicle air system.

One (1)
NB-02-7620

AUTO-EJECT

A Kussmaul "Super Auto-Eject" 20-amp 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.

One (1)
NB-02-9500

DASH MOUNTED EMERGENCY ELECTRICAL SWITCH PANEL

An electrical switch panel shall be designed and mounted in the cab dash area as furnished by the custom chassis manufacturer. All switches shall be provided with back lighted snap-in legend inserts.

SWITCHES

All emergency light switches shall be lighted, rocker style. Switches shall be internally lit when the switch circuit is in the on position. A plug-in identification label is to be provided and installed adjacent to each rocker switch with backlighting provided behind the label.

An internally lighted switch shall be provided and wired through a heavy-duty relay to activate power to the emergency lights. The emergency lights shall be activated by a single "MASTER SWITCH" on the electrical console.

One (1)
NB-10-5000

REAR STEP LIGHTS

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 the panel light switch at the pump operator's panel.

One (1)
NB-10-5400

ENGINE COMPARTMENT WORK LIGHT

An engine compartment work light shall be provided complete with a switch mounted on the light head.

Two (2)
NB-10-5600

PUMP COMPARTMENT WORK LIGHT

A pump compartment work light shall be provided and installed within the pump compartment area complete with a switch mounted on the light head.

Specifications for Adin Fire District

Two (2) lights shall be provided.

One (1)
NB-10-6200

UNDER CAB LIGHTING

The under cab lights shall be supplied with the chassis.

One (1)
NB-10-6800

UNDER BODY LIGHTING

There shall be two (2) lights furnished below the pump house running board, one on each side. The lights shall be wired to turn on and off with a switch located on the driver's side pump panel.

One (1)
NB-10-6900

UNDER BODY LIGHTING REAR STEP

There shall be two (2) lights furnished below the rear step, one on each side. The lights shall be wired to turn on and off with a switch located on the driver's side pump panel.

Two (2)
NB-30-1100

SCENE LIGHT

There shall be a Weldon Model 2010, 12-volt 50-watt Scenelight provided and mounted at the rear of the body. Light shall be mounted on an 18-degree downward angled, polished aluminum casting. The light shall be wired through a switch in the chassis cab and be labeled "Rear Scene Light".

Two (2) lights shall be provided and located on each side above the tail lights.

One (1)
NC-02-9010

AIR HORNS

Two (2) chrome-plated Grover "Stuttertone" air horns shall be provided and recess mounted in the front bumper extension. A pressure protection valve to prevent the use of air horns or other air operated accessories when the system air pressure drops below 80 psi shall be provided.

Air horns shall be controlled from the following switch positions.

One (1)
NC-02-9028

One (1) foot switch shall be provided on the passenger's side floor for activation of the air horn.

One (1)
NC-02-9040

HORN SELECTOR SWITCH

An air horn/horn selector switch shall be provided and mounted on the switch console to select activation of the chassis horn, or the air horns.

One (1)
NC-03-1500

ELECTRONIC SIREN

Specifications for Adin Fire District

A Federal Signal, Model PA300MSC, 100/200-watt electronic siren with microphone shall be provided and mounted in the cab.

One (1)
NC-03-5000

SPEAKER

Cast Products Model GS1004, 100-watt speaker shall be provided and recess mounted in the front bumper of the chassis. The speaker shall be connected to the electronic siren control unit.

One (1)
NC-04-2900

RED LIGHT

There shall be a steady burning red light furnished on the chassis cab.

Light shall be provided for California DMV requirements.

One (1)
NC-04-3200

HEADLIGHT FLASHER

The headlight circuit of the chassis shall be provided with a heavy-duty headlight flasher system designed for emergency vehicles. Flasher shall include override for high beam headlights and controlled by switch located on the electrical module in the chassis cab. Headlight flasher to be turned off when the park brake is set.

One (1)
NE-04-0950

EMERGENCY LIGHTING

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

One (1)
NE-04-3400

LIGHT BAR

One (1) Code 3 model 574A1 74" mounted on chassis cab roof to meet the NFPA upper zone A lighting requirement. Light bar to have the following equipment.

- (8) 50-watt standard rotators outboard
- (4) diamond mirrors centered between rotators

One (1)
NE-05-0100

REAR LIGHTS

Two (2) Code 3 model 550F rotating lights mounted on the rear of the apparatus body to meet the NFPA Zone B, C, D upper level lighting requirement. The lights shall be activated through the master emergency light switch located on the electrical console. Each light to have the following equipment.

- (1) 50-watt fast rotator
- 1 Red lens / 1 Amber lens

One (1)

Specifications for Adin Fire District

NE-05-1210

UPPER ZONE "B, C, D" LIGHT MOUNTING

The upper rear lights designated for Upper Zone "B" shall be mounted on the upper outside corners of the apparatus body, one on each side.

The lights shall be mounted to the rear of the body and lowered so the tops of the beacons are below the tops of the compartments.

One (1)
NE-05-2150

ZONE A FRONT LIGHTS

The lower front zone "A" lights shall be furnished with the chassis.

One (1)
NE-05-4600

ZONE B & D SIDE LIGHTS

There shall be three (3) Code 3 model 4135BZ halogen flashing lights with bezels furnished on each side of the apparatus to meet the NFPA Zone B & D lower level lighting requirement. One light mounted as far forward as possible, one light mounted as far to the rear as possible, and one light mounted between the front and rear lights. The halogen lights shall be connected to a flasher and be activated through the master emergency light switch located on the electrical console.

One (1)
NE-05-8600

ZONE C REAR LIGHTS

There shall be two (2) Code 3 model 4135BZ halogen flashing lights with bezels furnished on the rear of the apparatus body to meet the NFPA Zone C lower level lighting requirement. The halogen lights shall be activated through the master emergency light switch located on the electrical console.

NS-00-0100

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.

Specifications for Adin Fire District

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.

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

One (1)
OA-35-0003

GENERATOR

A Honda EM-5000SXK1, 5000-watt, 120/240-volt generator shall be provided. The unit shall have an air cooled 11HP gasoline engine equipped with low oil pressure shutdown. The unit shall be three wire, single phase 60-hz with full rated power available from a single 120-volt outlet. The oil drain, oil dip stick, fuel filter and oil filter for the generator must be easily accessible for maintenance.

An integral 4.5-gallon fuel tank, with electric and recoil starter shall be furnished with the generator.

Electric start provisions shall be furnished for the generator from the chassis battery system. Generator start/stop switches shall be provided at the generator.

One (1)
OA-35-0104

CIRCUIT BREAKER PANEL

A circuit breaker panel shall be provided and mounted with two (2) 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.

The circuit breaker panel shall be located in a compartment as close to the generator as practical, and mounted to not interfere with shelves or trays if specified. Circuit breaker panel shall be mounted toward the bottom of the compartment just above the compartment floor. Breaker panel cover shall be accessible with hand tools.

One (1)
OA-35-0120

All AC wiring to be installed in liquid tight conduit.

One (1)
OA-35-0130

GENERATOR MOUNTING

The generator shall be mounted in the right rear lower compartment

Specifications for Adin Fire District

One (1)
OA-35-0165

12 VOLT POWER CONNECTION

12-volt power from the chassis batteries shall be provided for the portable generator electric start. Power cable shall be heavy-duty battery cable with a quick disconnect receptacle provided in the area of the generator mounting location, complete with a matching male plug for connection to the generator.

Two (2)
OA-42-0010

TELESCOPING QUARTZ LIGHTING

A quartz light shall be provided and mounted on the apparatus, wired to the 110-volt power source. The light shall be UL listed as "Scenelights for Fire Service Use". Light shall be controlled by a switch located on the light head.

Light shall be a Fire Research 500W/110V Nightmaster.

The light shall be attached to a side mounted, bottom raise telescoping, anodized aluminum pole. The telescoping pole shall have a four (4) foot extension with friction lock mechanism. The telescoping pole shall be prewired with heavy-duty retractile cord with pigtail extending out the bottom of the lower tube.

The telescoping pole shall be Fire Research model 530.

Two (2) telescoping lights shall be provided and mounted on the back wall of the cab, one each side.

Specifications for Adin Fire District

One (1)
PA-01-0002

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 sandpaper 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.

The fire pump and all rigid discharge and suction plumbing shall be painted silver in color.

While constructing the truck body, all aluminum parts shall be properly fitted on the body. The backside 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.

One (1)
PA-01-0200

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

One (1)
PA-01-1515

INTERIOR COMPARTMENT PAINT

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

One (1)
PA-01-5000

CAB AND CHASSIS PAINT

The complete chassis cab shall be finish painted to match the apparatus body.

Color to be Lime Yellow. Exact paint code shall be provided prior to manufacturing.

Specifications for Adin Fire District

One (1)
PA-02-1910

LETTERING

Lettering shall be done in gold leaf mylar letters, shaded in black, and encapsulated in clear mylar. Lettering to be placed on each cab door as directed by fire department. Maximum of fifty (50) letters.

One (1)
PA-02-2600

Lettering requirements shall be determined prior to construction.

One (1)
PA-02-5300

REFLECTIVE SAFETY STRIPE

A 6" wide 3M brand Scotchlite #680-10 reflective stripe shall be affixed to the perimeter of the vehicle. Striping shall be placed up to 60" above ground level and shall conform to NFPA reflectivity requirements. At least 60% of the perimeter length of each side and width of the rear, and at least 40% of the perimeter width of the front of the vehicle shall have reflective stripe.

The side stripe shall be applied in a Large "Z" design.

The stripe shall be white in color.

One (1)
PC-00-0100

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. Pump Transmission Lubrication Fluid.
5. Pump Primer Fluid (If applicable).
6. Drive Axle Lubrication Fluid.
7. Air-conditioning refrigerant.
8. Air-conditioning lubrication oil.
9. Power steering fluid.
10. Transfer case fluid.
11. Equipment rack fluid.
12. Air compressor system lubricant.
13. Generator system lubricant.

When trucks have been UL certified, 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

Specifications for Adin Fire District

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

If an inlet located at the pump operator's 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".

One (1)
TA-01-0100

OPERATION/SERVICE MANUALS

The following applicable documentation shall be supplied upon delivery:

- Two (2) copies of Operation/Service manual of the apparatus operations and service manuals supplied by components manufacturers.
- Pump certification including manufactures record of apparatus construction details.
- Certificate of compliance to Electrical Warning System Low Voltage test.
- Water tank capacity certificate.
- Line Voltage Electrical System test certificate.
- (NFPA 19-14.4.1 - 19.14.4.2)
- Certificate of approval for stationary pumping.

Specifications for Adin Fire District

One (1)
VA-00-0000

ADDITIONAL EQUIPMENT

The following equipment shall be furnished by the apparatus body builder.

LADDERS

One (1)
VA-01-0500

A 24-foot, 2-section aluminum fire department extension ladder, DUO-SAFETY Model 900A, in which the side rails also act as guides for the fly ladder, shall be furnished.

One (1)
VA-01-0520

A 14-foot aluminum roof ladder with folding roof hooks, DUO-SAFETY Model #775A, shall be furnished.

One (1)
VA-01-0530

A 10-foot folding aluminum attic ladder, DUO-SAFETY model 585-A, shall be furnished.

PIKE POLES

One (1)
VA-02-6000

10-foot pike pole with fiberglass handle and steel hook shall be furnished.

One (1)
VA-02-7100

4-foot "D" handle fiberglass pike pole and steel hook shall be furnished.

Two (2)
VA-03-1000

HARD SUCTION HOSE

10-foot length of 2-1/2" lightweight PVC, flexible fire department suction hose, first quality non-collapsible type, of a design having a low friction loss and which will not collapse under a vacuum of 23".

Hard suction hose to be equipped with lightweight couplings. Long handles on female and rocker lugs on male couplings.

Two (2) lengths of 2-1/2" suction hose shall be provided and stored inside the 6" suction hose.

Two (2)
VA-03-6000

HARD SUCTION HOSE

A 10-foot length of 6" lightweight PVC, flexible fire department suction hose, first quality non-collapsible type, of a design having a low friction loss and which will not collapse under a vacuum of 23".

Hard suction hose to be equipped with lightweight couplings. Long handles on female and rocker lugs on male couplings.

Two (2) lengths of 6" suction hose shall be provided.