

KENWORTH

Kenworth Mid-Iowa K220	Toyne, Inc
4111 Delaware Ave.	104 Granite Ave
Des Moines, Iowa United States	Breda, Iowa United States 51436
Phone: (515) 265-8111	Phone: (712) 673-2328
Fax: (515) 265-8836	Fax: (712) 673-2340
Email:	Contact Email:
	Prepared for:

Vehicle Summary

Unit		Chassis	
Model:	T300 Series Conventional.	Fr Axle Load (lbs):	12000
Type:	FULL TRUCK	Rr Axle Load (lbs)	23000
Description:	Florida single 330	G.C.W. (lbs):	35000
Application		Road Conditions:	
Intended Serv.:	Fire truck service. Vehicles used in fighting	Class A (Highway)	77
Commodity:	Fire apparatus	Class B (Hwy/Mtn)	20
		Class C (Off-Hwy)	03
Body		Class D (Off-Road)	00
Type:	Fire truck-pumper	Maximum Grade:	6
Length (ft):	18.0	Wheelbase (in):	185
Height (ft):	12.0	Overhang (in):	88
Max Laden Weight (lbs):	4000	Fr Axle to BOC (in):	68
		Cab to Axle (in):	117
Trailer		Cab to EOF (in):	205
No. of Trailer Axles:	0	Overall Comb. Length (in):	314
Type:		Special Req.	
Length (ft):	0.0	U.S. Domestic Registry, 50-State	
Height (ft):	0.0		
Kingpin Inset (in):	0		
Corner Radius (in):	0		

Restrictions

Length (ft):	120
Width (in):	102
Height (ft):	13.5

Approved by: _____ Date: _____

Note: All sales are F.O.B. designated plant of manufacture.
Ask your dealer for a quote today, or visit our website @ www.paccarfinancial.com.

PACCAR Financial offers innovative finance, lease and insurance programs customized to meet your needs.

**Unpublished options may require review/approval.
Dimensional and performance data for unpublished options may vary from that displayed in PROSPECTOR.**

Printed: 1/7/2015 1:42:32 PM Incomplete Model Number: T300 Series Conventional.
Effective Date: Aug 1, 2014 Quote/DTPO/CO: Q84122524
Prepared by: ID: preston Version Number: 34.20

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DataCodeDescription\$ ListWeight

Model

00003100T300 Series Conventional. 78,3539,830

Electric Door locks LH/RH; Ignition & doors keyed alike; Single electric horn; Single-piece windshield; Electric windshield wipers, 2-speed plus intermittent; Electric windshield washers; Steering wheel 18in. 4-spoke; Glovebox door with locking latch; Dash-mounted cruise control with switches; Turn signal switch with column-mounted dimmer; Standard dash panels include gray w/ burl wood accents; Slate Gray interior primary color; Dark Slate Gray seat color; Floormat; Inside sunvisor, LH/RH; Door courtesy lights; Under-dash center console with 1 cup holder, 1 ashtray & 1 lighter.

00700060T370 Class 7: medium-duty Conventional.00

00800500CARB Idle Emissions Reduction Feature for PX-71000
and PX-9

00800700CARB Exempt Application Emergency Vehicle Only.00

00900150Medium-duty 4x2 automatic.00

00912700Fire apparatus00

00931210Fire truck service. Vehicles used in fighting 00
fires. Typically have pumps, etc., mounted in the body. Road usage: minimum 5% Class B
and maximum 5% Class D.

00951550Fire truck-pumper00

00980250U.S. Domestic Registry, 50-State00

Engine & Equipment

01295310PACCAR PX-9 330 2013 330@2000 320@2200 1000@1400 9,202555
Emergency Vehicle includes turbo exhaust brake, no code is used. Diagnostic Plug
for data link, Oil Cooler, Aluminum Flywheel Housing.

N09200 N205 120...Standard Maximum Speed Limit [LSL]

N09220 N207 0...Expiration Distance

N09240 P09 120...Hard Maximum Speed Limit

N09260 P14 68...Maximum Accelerator Pedal Vehicle Speed

N09280 P16 0...Accelerator Lower Droop

N09300 P19 68...Maximum Cruise Speed

N09320 C143 0...Cruise Control Lower Droop

N09360 N203 252...Reserve Speed Function Reset Distance

N09380 N202 0...Maximum Cycle Distance

N09400 N206 10...Maximum Active Distance

N09420 N201 0...Reserve Speed Limit Offset

N09440 P11 No...Engine Protection Shutdown

N09460 P06 No...Gear Down Protection

N09480 P26 1400.Max PTO Speed

N09500 P02 No...Cruise Control Auto Resume

N09520 P04 No...Auto Engine Brake in Cruise

N09540 N209 0...Expiration Distance

N09560 P520 Yes..Enable Idle Shutdown Park Brake Set

N09580 P32 5...Timer Setting

N09600 P233 Yes..Enable Impending Shutdown Warning

N09620 P234 60...Timer For Impending Shutdown Warning

N09640 P516 35...Engine Load Threshold

N09680 P33 No...Idle Shutdown Manual Ovrerule

N09720 P230 Yes..Enable Hot Ambient Automatic Ovrerule

N09740 P46 40...Low Ambient Temperature Threshold

N09760 P56 60...Intermediate Ambient Temperature Threshold

N09780 P47 80...High Ambient Temperature Threshold

10001550Prospector version 35.0 Supersedes 34.000

10006840Effective VSL Setting NA00

10008580Engine Idle Shutdown Timer Disabled00

10008910Eff EIST NA Expiration Miles 00
Use only with MX and Cummins engines

1002060SAir compressor: Cummins 18.7 CFM, Cummins, PACCAR00
PX engines.

1031130SAir Cleaner: Dry-type firewall mounted w/filter00
restriction indicator.

10993000Air inlet ember separator NFPA compliant for1778
fire applications.

1121200SCooling module: 1000 square inches 00
T170/T270/T370/T470. Includes metal surge tank on T170/T270/T370.

1247145ORH under cab SCR for PX-8, PX-9 w/ single1,3500
horizontal tailpipe.

13231090Fleetguard filter/Water separator FS1003 w/WIF 00
(water in fuel) sensor. For PACCAR PX-8/PX-9 or Cummins ISL engines.

17001490Retarder Jacobs for PX-8/9 ISL w/ 2,09557
3-way switch.. Replaces the standard turbo brake for PX-8 engines.

18124510Alternator: Delco 40SI 320 amp Brushless88914
with battery voltage sense

18256230Batteries: 3 Optima 31A Threaded post (900)86766
2700 CCA.

12-VOLT LIGHT SYSTEM W/CIRCUIT PROTECTION

1836100SStarter: PACCAR 12 volt electrical system. W/ 00
centralized power distribution incorporating plug-in style relays. Circuit protection for
serviceability, 12-volt light system w/circuit protection circuits number & color coded.

19000820Multi-function engine connector for body builder 410
interface for Cummins. T680/T880: This feature is standard, no code required.

19009760Body builder harness to EOF for customer 622
installed remote throttle control. This does not include J1939 harness for communicating
with 2010 engines. Requires either code 1900082 or 1900084.

Transmission & Clutch

2012193OTransmission: Allison 3000EVS 5-speed 11,942291
w/PTO drive gear. 5th Gen controls. Includes heat exchanger & oil level sensor.
Emergency Vehicle Series for vocational applications. Transynd transmission fluid
is standard on all Allison 1000, 2000, 3000 & 4000 series transmissions.

2401405ODriveline: 2 standard-duty; 1 centerbearing.54877

2410018OTorque converter included w/Allison00
Transmission.

2410061OAuto neutral for Allison - single input.70

2429358ORear transmission support springs for 620
transmission PTO applications are required to ensure that engine flywheel housings are
not overloaded when transmission PTO's are installed.

Front Axle & Equipment

2502203ODana Spicer E-1202I Front Axle rated 12K1460
3-1/2in. drop.

2603006SFront brakes included w/ front hub package.00

2701000SAir Brake: 14,600 lb. package includes 00
Bendix 16-1/2 x5 brakes, cast drums, aluminum 10-bolt hub pilot LMS hubs, hubcaps, oil
seals & automatic slack adjusters. For use w/ 22-1/2in. wheels.

2863015OFront Springs: Taperleaf 12K w/ shock absorber 6812
for use on 2010+ chassis w/ 22.5in. wheels only.

2893071SSingle power steering gear: 13.2K TRW THP60 for00
air brakes. Use only w/ 2010+ chassis.

Rear Axle & Equipment

3041170OSingle Dana Spicer S23-170 single reduction axle,920182
single rear axle rated at 23K.

3200478ORear Axle Ratio - 4.78.00

3300000SSingle rear brakes included w/rear hub package.00

3401001S23K air brake package includes 16-1/2x7 in. 00
brakes, cast drums, aluminum 10-bolt hub pilot LMS hubs, automatic slack adjusters and oil
seals for use w/ 22.5 in. wheels.

3485009SSpring Brake: 3030 high output single.00

3495233OBendix 4S/4M anti-lock brake system w/ air traction control (ATC) and electronic stability program (ESP) for full truck. Must code for additional body information. 2,3640

3646417ORear suspension: single Reyco 79KB multileaf 26K with helper spring. Medium duty. Unladen Height: 10.8 in. Laden Height: 8.1 in. Not rear air disc brake compatible. 568119

Tires & Wheels

4077509OFront tires: Bridgestone R283ECOPIA 11R22.5 14PR. 41.2 in. diameter, all position. 19.2 in. SLR. Smartway certified. 7310

4277487ORear tires: Bridgestone M799 11R22.5 16PR. 42 in. diameter, drive. 19.5 in. SLR. Code is priced per pair of tires. 59624

4900004ORear Tire Quantity: 400

5042285OFront wheel: Accuride 50344 22.5x8.25 steel Steel Armor[TM] powder coat, hub pilot mount.heavy-duty 5 hand-hole hub pilot mount. 6626

5242285ORear wheel: Accuride 50344 22.5x8.25 steel Steel Armor[TM] powder coat, hub pilot mount. Heavy-duty 5 hand-hole hub pilot mount. Code is priced per pair of wheels. 13252

5853909OPowder coat red steel wheel. Use in conjunction with front, dual front, rear, spare or lift axle wheel code(s). All wheels on chassis must have same finish color. 00

5900004ORear Wheel/Rim Quantity: 400

Frame & Equipment

6054410OFrame Rails: 10-5/8 x 3-1/2 x 5/16 in. Steel to 309 in. to 380 in. Truck frame weight is 2.91 lb.-in. per pair of rails. Section modulus is 14.80 cu.in., RBM is 1,776,000 in.-lbs per rail. 120,000 PSI yield. Heat treated. Frame rail availability may be restricted based upon application, axle/suspension capacity, fifth wheel setting, or component/dimensional specifications. The results of the engineering review may result in a change to the requested frame rail. If a change is required Kenworth Application Engineering will advise the dealer of the appropriate material specification for a substitute rail. 349213

6308715OBumper: Aerodynamic Chrome Requires a bumper setting code. 2770

6319409S40.9 in. Bumper setting. Requires a bumper code.00

6321005ORemovable Front Tow Hooks: 2.24815

6390103SFront mudflaps.00

6405000OIn-cab steel battery box: under rider seat or in stand alone box. Requires appropriate AGM battery code, which varies by model, and appropriate rider seat code be selected prior to entering the workscreen. Includes 1 battery disconnect switch. 1,473⁻₄₁

6409906OIn-Cab battery box location: Under rider seat.00

6451059OT270/370 Non-polished 2010 DPF/SCR cover: w/cab00 access step assembly, RH under.

6742009SSquare end-of-frame w/ o crossmember;non-towing.00

Fuel Tanks & Equip

7210056OFuel Tank: 56 US gallon 24.5in. aluminum under240-45 replace.

7722011OSmall round DEF tank. 11 gallons of useable volume. The DEF tank will be located on the side you specified, but will not be displayed in the Prospector graphic. If you have specific configuration or body builder concerns, please utilize the Custom Frame Layout option. Required capacity is calculated by fuel capacity of the vehicle and will accommodate two diesel re-fillings for every DEF re-filling. 2410

7831008O6in. wide lower fuel tank step, for one 22in. or232 24.5in. tank LH.

7889604ODEF tank location is on the LH.00

7920056OLocation: 56 gal fuel tank LH under cab00

Cab & Equipment

8024310SCab: Curved Glass Conventional. 00
Cab Includes aluminum & fiberglass fully hucked cab w/ all aluminum bulkhead doors & continuous stainless steel piano-style door hinges. Single electric horn standard. Incandescent exterior lights include diagnosable bulb detection and warning. Trailer cable on tractors includes integrity detection. Standard features include multiplex wiring for interior lights, automated pre-trip inspection, short and open check diagnostics. Warning alarm will sound when lights are left on.

8090310SHood: Sloped aerodynamic hood includes00 grill & separate bumper.

8108010SCab heater: W/integral defrosters & A/C 45,000 00

btu cab heater. No sleeper heater/AC. Includes 5 mode rotary control. T660 include filter media.

- 8201200O Adjustable telescoping tilt steering column. 40110
- 8203044O Four position ignition switch, keyless. 150
Available for fire truck service & EMT/emergency service only.
- 8208495O Two spare switches: Wired to power. 460
- 8282004O KW Driver Information Center: Includes fuel economy, RPM display, trip information, truck information, diagnostics, gear display, alarm clock. 2080
- 8282009S Instrument package: Includes speedometer, tachometer, fuel gauge, engine coolant temperature gauge, engine oil pressure, voltmeter. Class 8 also includes primary & secondary air reservoir gauges & an air application gauge. DEF level gauge and warning lamp are included with 2010+ engines. Engine hour meter and outside air temperature readouts are standard. Primary read out will be MPH. Add 8240620 to switch primary scale to KPH in Canada. 00
- 8330003S Cab interior: Pinnacle. Includes vinyl headliner & cab back panel, slate gray interior, dark slate gray seats, floormats, LH/RH inside sunvisor & door courtesy lights. 00
- 8410191O Driver seat: Kenworth Air cushion Plus HB vinyl. 1282
Standard features includes 7 in. fore and aft slide adjustment w/isolator, 6-23 degree recline, air suspension with cover, dual armrests, and single chamber air lumbar support. Seat cushion is 20 inches wide w/ 2-position tilt and 2-position front cushion extension. Seat material has a horizontal stitch pattern and is 2-tone in color. Seat back is carpeted and includes a map pocket. Seat is manufactured by National. Includes inside visor and retractable 3-point matching seat belts. Black seat belts for T700, gray on all other models.
- 8450190O Rider seat: Kenworth Plus battery box HB vinyl. 29⁷/₃₅
Standard features include fixed base and backrest, fixed seat base and backrest, and dual armrests. Seat cushion is 19.5 inches. Seat material has a horizontal stitch pattern and is 2-tone in color. Seat back is carpeted with a map pocket. Seat is manufactured by National. Includes inside visor and retractable 3-point matching seat belts. Black seat belts for T700, gray on all other models.
- 8489910O NFPA Compliance Kit: Includes seat occupancy sensors. Seat belt switches, VDR & seat sensor harness, reflective labels, and a second copy of operators manual. 81360

84965750	Driver/Rider seat belts: Red, replace standard. Driver & Rider NFPA compliant. Includes rider bench seat.	150
87001540	Self cancelling turn signal: W/head light dimmer switch .	210
8800200S	Cab access contoured grabhandles, LH/RH.	00
88003770	LH & RH NFPA compliant grabhandles.	1824
88321150	DAYLITE DOOR: LH/RH INCL RH PEEPER WINDOW	00
88451050	Solenoid, switch & wiring for customer-installed air horn on T300 chassis. If the chassis has hydraulic brakes, it will require code 1000307 for Accessory air system for hydraulic brakes.	250
8850300S	Single convex mirror 8-1/2 in. x 4-7/16 in. located on rider side, and non-heated.	00
88650000	Mirror: Dual Kenworth aerodynamic heated motorized 7 in. x 13 in. mirrors. Mirror shell painted cab color, mirror arms black. LH/RH convex mirrors 5 in. x 7 in. heated. Mirror brackets set for 8-1/2 ft load width. Switch located on door pad.	38926
8871438S	Rear Cab Stationary Window 17 in. x 36 in.	00
8879200S	Manual LH & electric-powered RH door window. Switch located on door.	00
Lights & Instruments		
9010801S	Headlamps: Halogen Projector Low Beam, Halogen Complex Reflector High Beam	00
90221370	Marker Lights: Five, rectangular, LED	860
9030010S	Turn Signal Lights: Mounted on fender	00
90300520	LED Stop,Turn,Tail:Flange Mounted With Two backup lights and with an LED license plate.	823
90903120	Body Builder Harness: Provides harness to extend tail, turn, stop & marker light circuits from standard body builder connector BOC to the end-of-frame. There is a plug on the chassis end & the opposite end is just wires.	650
90908450	Circuit Breakers: Replacing fuses. Does not	330

apply to any 5-amp fuse box position. Breakers include stop/brake/turn, tail lamp, high & low beams, marker/clearance lamps, horn, fuel heat, gauges, wipers, air dryer, HVAC controls, panel lamps. Some circuits will remain fuses.

Air Equipment

9101210SAir Dryer: Bendix AD-IS heated.00

Extended Warranty

9200022SMedium-duty Warranty: 1-year/unlimited mi.00

92102110Medium-duty Emissions Surcharge \$7000.7,0000

Miscellaneous

94900030Additional lead time required for off highway &00
/or specialty component truck.

Paint

97000000Paint color number.00

N97020 A - L0235EB CANDY APPLE R

N97200 FRAME N0001EA BLACK

99430040Bumper Unpainted00

9943119SImron solid 1 color non-sleeper Spec A. 00

Will be White L0006EB if no other color specified.

9965510SBase coat/clear coat. 00

The Kenworth Color Selector contains additional instructions, as well as information on Kenworth paint guidelines and surface finish applications. Kenworth is standard with Dupont Imron Elite paint.

Total Weight 11539

Prices and Specifications Subject to Change Without Notice.

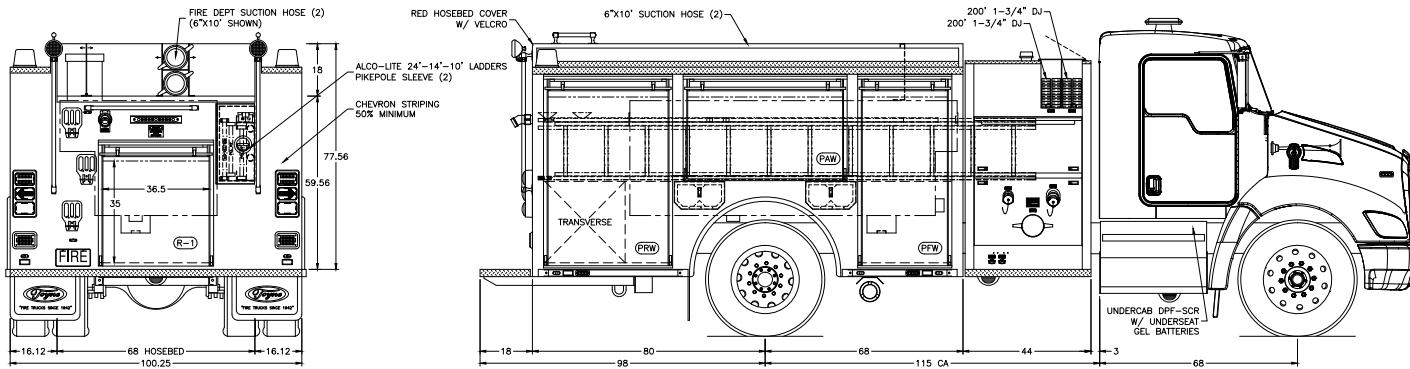
Unpublished options may require review/approval.

Dimensional and performance data for unpublished options may vary from that displayed in PROSPECTOR.

Printed: 1/7/2015 1:42:32 PM Incomplete Model Number: T300 Series Conventional.

Effective Date: Aug 1, 2014
Prepared by: ID: preston

Quote/DTPO/CO: Q84122524
Version Number: 34.20

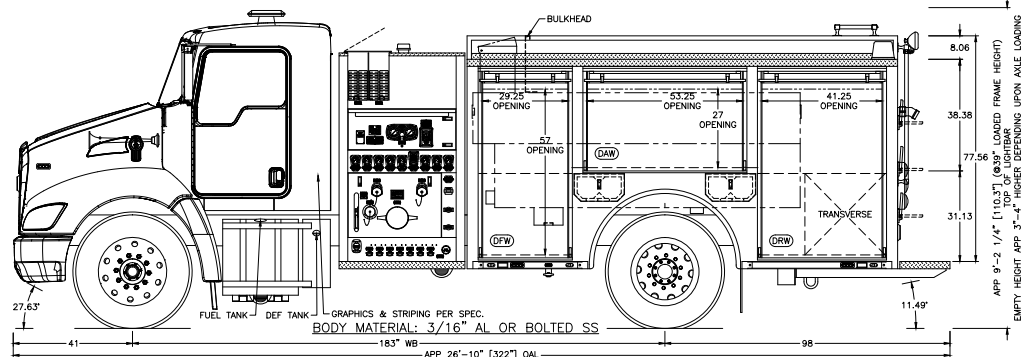
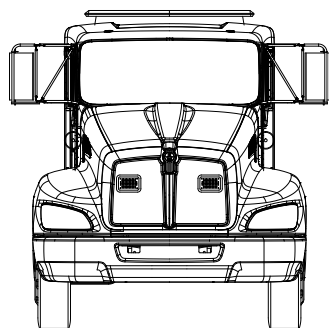
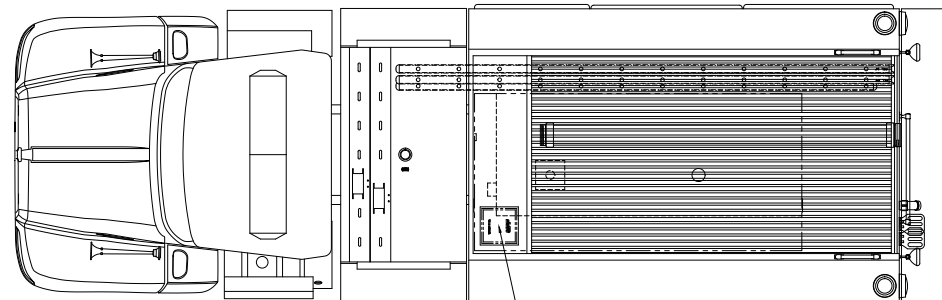


TREADBRITE TEXTURE NOT SHOWN IN TOP VIEW

REFERENCE SCALE IN INCHES

COMP.	HEIGHT	WIDTH	USABLE DEPTH UPPER	LOWER	DIVIDE HEIGHT	FT
DFW	67.12	35.88	14	26	28	26.50
DAW	37.12	63.75	14	-	-	19.18
DRW	67.12	44.00	14	26	28	32.49
PFW	67.12	35.88	14	26	28	26.50
PAW	37.12	63.75	14	-	-	19.18
PRW	67.12	44.00	14	26	28	32.49
R-1	44.00	44.00	-	30	-	33.62
HOSEBED	18	68	-	128	-	90.66
FRONT X-LAY	16	7	-	73.75	-	4.78
REAR X-LAY	16	7	-	73.75	-	4.78

LOCATION TO BE DETERMINED:
SINGLE SHELF TRACK (4 COMPARTMENTS)
12" DEEP ADJUSTABLE SHELF (4)



NOTE:
DIMENSIONS SHOWN ARE APPROXIMATE AND ARE SUBJECT TO MINOR CHANGE AS MAY BE FOUND NECESSARY DURING CONSTRUCTION. MINOR DETAILS MAY NOT BE SHOWN. IF DISCREPANCIES EXIST BETWEEN THIS DRAWING AND THE WRITTEN SPECIFICATIONS PROVIDED BY TOYNE, THE WRITTEN SPECIFICATIONS SHALL PREVAIL.

ORIGINAL DRAWING	22DEC14	CHASSIS:	KENWORTH T370	SCALE:	1/66	SHEET:	A
		WB-CA-AF:	183"-115"-47"	CITY:	?		
		BODY MATL:	3/16" AL OR BOLTED SS	STATE:	?		
		PUMP:	HALE QFLOPLUS 1250	DLR:	?		
		TANK:	750 UPF POLY-TANK III	CAD:	SCHUMACHER		
		FOAM SYSTEM:	N/A	DATE:	22 DEC 2014		
		GENERATOR:	N/A	FILE:	FSA-KW1-A		

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FSA
KENWORTH T370 PUMPER

Florida Sheriff's Association

#17 Commercial Pumper (Kenworth) Stainless Steel Body

CERTIFICATION OF NFPA 1901 COMPLIANCE

As per NFPA 1901, the Purchaser shall assume the responsibility of determining, prior to the purchase of the apparatus, who will be responsible for ensuring that all aspects of NFPA 1901-2009 are met. The manufacturer shall be responsible for providing or performing only the items requested by the purchaser in the documents provided to the manufacturer by the purchaser.

Written certification shall be provided by the manufacturer stating that the delivered apparatus complies with the NFPA 1901-2009 Standard. If the purchaser has elected to provide, perform, outsource and/or contract with a third party, any item required by NFPA 1901-2009 (per the previous paragraph), the manufacturer shall provide, upon delivery, a "Statement of Exceptions" per Chapter 4 of NFPA 1901-2009.

This "Statement of Exceptions" shall include:

1. A separate specification of the section of the NFPA Standard for which the apparatus is lacking compliance.
2. A description of the particular aspect of the apparatus that is not compliant.
3. A description of the further changes or modifications to the delivered apparatus which must be completed to achieve full compliance.
4. An identification of the entity who will be responsible for making the necessary post-delivery changes or modifications to the apparatus to achieve full compliance with the applicable standard.

Prior to, or at the time of, delivery of the apparatus, the Statement of Exceptions shall be signed by an authorized agent of the entity responsible for the final assembly of the apparatus and by an authorized agent of the purchasing entity, indicating a mutual understanding and agreement between the parties regarding the substance thereof.

The purchaser shall not place the apparatus into active emergency service until fully compliant with NFPA 1901-2009.

NFPA REQUIRED EQUIPMENT

The end user of this apparatus shall provide all other equipment and accessories that are required by NFPA 1901 but not specifically listed in these specifications.

MAXIMUM TOP SPEED

The maximum top speed of this apparatus shall be determined using the following NFPA 1901 Chapter 4 criteria:

- Apparatus with 1250 gallon combined water tank capacity shall not exceed 60 MPH.
- Apparatus with GVWR of over 50,000 lbs. shall not exceed 60 MPH.
- Apparatus weighing over 26,000 lbs. shall not exceed 68 MPH.

HALE MODEL Q-FLO 1,250 GPM SINGLE STAGE PUMP

The fire pump shall be a Hale Fire Pump Company model Q-FLO that complies with all applicable requirements of the latest edition of NFPA 1901, "Standard for Automotive Fire Apparatus" published by the National Fire Protection Association.

Florida Sheriff's Association

#17 Commercial Pumper (Kenworth) Stainless Steel Body

PUMP WARRANTY

The pump shall be covered by the Hale Pro-Tech 5 year pump warranty against workmanship and materials. Both parts and labor shall be covered for the first 2 years and years 3-5 shall have parts only coverage.

UNDERWRITER'S LABORATORY CERTIFICATION

The completed apparatus shall be tested and approved by the independent testing company Underwriter's Laboratories, Inc. The manufacturer of the apparatus shall be responsible for all costs involved in this test. The certification of inspection and approval shall be presented to the Fire Chief of the Department upon delivery of the completed apparatus.

PUMP PERFORMANCE - 1,250 U.S. GPM.

The pump shall be a single stage centrifugal with a class "A" rated capacity of 1,250 United States gallons per minute. The pump shall deliver the percentage of rated discharge pressures as indicated below:

- 100 percent of rated capacity at 150 pounds net pressure.
- 70 percent of rated capacity at 200 pounds net pressure.
- 50 percent of rated capacity at 250 pounds net pressure.
- 100 percent of rated capacity at 165 pounds net pressure.

PUMP CONSTRUCTION

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

The pump shall be driven by a drive line from the truck transmission. The pump shall be free from objectionable pulsation and vibration under all normal operating conditions. The engine shall provide sufficient horsepower and revolutions per minute to allow the pump to meet or exceed its rated performance.

The entire pump, both suction and discharge passages, shall be hydrostatically tested to a pressure of 500-PSI. The pump shall be fully tested at the pump manufacturer's factory to the performance spots as outlined by NFPA 1901.

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

The pump body shall be horizontally split, on a single plane, in two (2) sections, for easy removal of entire impeller assembly including wear rings and bearings from beneath the pump without disturbing piping or the mounting of the pump on the chassis.

The pump shaft to be rigidly supported by three (3) bearings for minimum deflection. The bearings shall be heavy-duty, deep groove style bearings in the gearbox and they shall be splash lubricated.

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

The pump shaft shall be fabricated of heat-treated, electric furnace, corrosion resistant stainless steel, and shall be super finished under the shaft seal. The pump shaft must be sealed with double lip oil seal to keep road dirt and

Florida Sheriff's Association

#17 Commercial Pumper (Kenworth) Stainless Steel Body

water out of gearbox.

GEAR BOX

The gear box shall be completely manufactured and tested at the pump manufacturer's factory.

The pump gearbox shall be of sufficient size to withstand up to 16,000 lbs. ft. of torque of the engine in both road and pump operating conditions. The gearbox shall be designed of ample capacity for lubrication reserve and to maintain the proper operating temperature.

The gearbox drive shafts shall be of heat-treated chrome nickel steel and shall be a minimum of 2.75 inches in diameter, on both the input and the output drives shafts. The gearbox shall withstand the full torque of the engine in both road and pump operating conditions.

All gears, both drive and pump, shall be of highest quality electric furnace chrome nickel steel. Bores shall be ground to size and the gear teeth shall be crown shaven, and hardened for smooth, quiet running, and a higher load carrying capability. An accurately cut spur design shall be provided to eliminate all possible end thrust.

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

GEARCASE COOLING LINE

A cooling line shall be provided in the pump gear case. A line shall be routed from the discharge side of the pump to the gear case, through the gear case then back into the intake side of the pump.

MECHANICAL SEAL

The pump shaft shall be equipped with a single mechanical type seal on the suction (inboard) side of the pump. The mechanical seal shall be a minimum of two-inches in diameter and shall be spring loaded, maintenance free and self adjusting. The mechanical seal shall be constructed of a carbon sealing ring, stainless steel coil spring, Viton rubber cup, and a tungsten carbide seat with Teflon backup seal.

SACRIFICIAL PUMP ANODES

To aid in protecting the pump from internal corrosion, three sacrificial anodes shall be provided and located one in the lower section of each side inlet and one on the discharge side of the pump.

FRC PUMP BOSS PRESSURE GOVERNOR SYSTEM

Fire Research Pump Boss pressure governor and monitoring display kit shall be installed. The kit shall include a control module, pressure sensor, and cables.

The following continuous displays shall be provided:

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

Florida Sheriff's Association

#17 Commercial Pumper (Kenworth) Stainless Steel Body

PSI / RPM setting; shown on a dot matrix message display
 PSI and RPM mode LEDs
 THROTTLE READY LED.

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

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

- High Engine RPM
- Pump Overheat
- High Transmission Temperature
- Low Battery Voltage (Engine Off)
- Low Battery Voltage (Engine Running)
- High Battery Voltage
- Low Engine Oil Pressure
- High Engine Coolant Temperature

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

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

The pressure governor and monitoring display shall be programmed to interface with a specific engine.

HALE/CLASS 1 INTAKE RELIEF VALVE

A Hale/Class 1 intake relief/dump valve shall be provided on the intake side of the pump to relieve excess incoming pressure. The system shall be designed to self restore to a non-relieving position when excessive pressure is no longer present. The pressure adjustment range shall be from 75 psi to 250 psi. The relief system shall be adjustable with a common type box end wrench.

The surplus water shall discharge to the atmosphere at a location away from the pump operator's position.

125 PSI INTAKE RELIEF VALVE PRE-SET PRESSURE

The intake relief valve shall be pre-set to 125 psi.

PUMP SHIFT MECHANISM -AIR/ELECTRIC

The pump shall be shifted from road to pump by means of a cab mounted air over electric pump shift switch. The switch shall have a built in positive locking mechanism to prevent accidental movement of the switch. The locking

Florida Sheriff's Association

#17 Commercial Pumper (Kenworth) Stainless Steel Body

mechanism shall require the operator to manually lift up on the switch lever to disengage the lock.

The switch shall have three positions:

- Position 1 = road position
- Position 2 = neutral position
- Position 3 = pump position

A green indicator light shall be provided in the driving compartment and shall be energized when the pump shift has been completed. This light shall be labeled "PUMP ENGAGED".

When the apparatus is equipped with an automatic transmission, a green indicator light shall be provided in the driver's compartment. It shall be energized when both the pump shift has been completed and the chassis transmission is in pump gear. This light shall be labeled "OK TO PUMP".

MANUAL PUMP SHIFT OVERRIDE- REMOTE CABLE ACTUATION

A manual pump shift override shall be provided on the apparatus. The shift shall be remote cable actuated. The remote cable shall have a "T" handle control which shall be positioned just inside the pump compartment on the driver's side. The control shall be easily accessed through the side panel hinged access door. The control shall be clearly labeled "MANUAL PUMP SHIFT".

HALE MODEL ESP-PVG OIL LESS PRIMING SYSTEM

A Hale model ESP oil less priming system shall be provided with PVG panel mounted control valve. The priming pump shall be an electrically driven, positive displacement vane type conforming to requirements outlined in NFPA 1901. One priming control shall both open the priming valve and start the priming motor.

The primer 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 and using 20 feet of appropriately sized hard suction hose with strainer. The system shall develop a vacuum of 22 inches at an altitude of up to 2,000 feet above sea level. The vacuum test shall be performed with a capped 20-foot length of hard suction hose, developing a vacuum of at least 20 inches with a drop not exceeding 10 inches in 5 minutes.

The environmentally friendly priming system shall not require any priming lubricant.

PRIMER FUSE

The primer shall be protected with a 250 amp fused link that is designed to protect the apparatus 12 volt electrical system if the primer motor malfunctions.

MANIFOLD DRAIN VALVE

The pump shall have a manifold type drain valve assembly consisting of a stainless steel plunger in a bronze body with multiple ports. The control for the valve shall be on the left side along the bottom of the panel and above the side running board. The valve shall be a rotary type with a large easy to grip handle. The valve shall be labeled "PUMP DRAIN".

Florida Sheriff's Association

#17 Commercial Pumper (Kenworth) Stainless Steel Body

ICI "LEVER LIFT" BLEEDER/DRAIN VALVES

ICI 3/4" quarter turn ball type bleeder/drain valve shall be provided for each discharge and auxiliary intake. A hose shall be connected to the valve that will direct water below the apparatus and away from the immediate pump operator's location.

The control handle shall be "lever lift" style for easy actuation. The handle for the control shall have a recessed area for the color coded identification label.

6" LEFT (DRIVER) SIDE MASTER INTAKE

A 6" master intake shall be provided on the left (driver) side of the apparatus. The intake shall have a 6" male NST connection. The intake shall have a removable screen to prevent the entry of large objects into the pump. The screen shall be constructed of a material that will provide cathodic protection to the pump. A label shall be provided above the intake that states "DRIVER SIDE MASTER INTAKE". The label shall be color coded burgundy.

SHORTEN SUCTION TUBE - LEFT SIDE

The left side master suction tube shall be shortened for use with externally installed hose appliances keeping the overall apparatus width to a minimum.

LEFT SIDE MASTER INTAKE CAP

A 6" female NST long handle chrome cap shall be provided on the left side master intake.

6" RIGHT (PASSENGER) SIDE MASTER INTAKE

A 6" master intake shall be provided on the right (passenger) side of the apparatus. The intake shall have a 6" male NST connection. The intake shall have a removable screen to prevent the entry of large objects into the pump. The screen shall be constructed of a material that will provide cathodic protection to the pump. A label shall be provided above the intake that states "PASSENGER SIDE MASTER INTAKE". The label shall be color coded burgundy.

SHORTEN SUCTION TUBE - RIGHT SIDE

The right side master suction tube shall be shortened for use with externally installed hose appliances keeping the overall apparatus width to a minimum.

RIGHT SIDE MASTER INTAKE CAP

A 6" female NST long handle chrome cap shall be provided on the right side master intake.

3/8" PUMP COOLING/BYPASS LINE

A 3/8" pump cooling/bypass line shall be provided from the pump discharge manifold directly into the tank.

This discharge shall implement a Class 1 model 38BV all brass ball type 1/4 turn valve with chrome plated handle control located on the pump panel.

The valve control handle shall indicate the open/closed position of the valve. The handle shall have a recessed area for mounting of the identification label which shall clearly state "PUMP COOLER".

Florida Sheriff's Association

#17 Commercial Pumper (Kenworth) Stainless Steel Body

TANK REFILL/RECIRCULATION DISCHARGE

A discharge shall be provided from the pump discharge manifold to allow pump cooling when necessary as well as to refill the booster tank.

The water tank fill gauge shall be directly in line with this discharge control.

The valve and piping shall be 2".

The refill/recirculation discharge shall be manually controlled on the pump panel.

STAINLESS STEEL PIPING

All piping for discharges shall be stainless steel using stainless steel fittings. Victaulic couplings shall be used in all front, rear and side discharges, deck pipes and crosslays for quick, simple removal of any pipe section or valve for maintenance.

High pressure flexible helix wire reinforced piping with a minimum burst pressure of 1200 psi may be used in some areas to minimize friction losses. All flexible piping couplings shall be high tensile strength stainless steel.

All piping shall be properly supported and braced to prevent movement of piping other than what is allowed by the Victaulic couplings to compensate for apparatus flexing.

Any discharge manifolds provided on the apparatus must be fabricated of a minimum of schedule 10 304 marine grade piping. Use of any welded light gauge (less than Schedule 10) manifolding or plumbing will not be acceptable.

STAINLESS STEEL PIPING WARRANTY

The stainless steel piping shall be warranted to be free from corrosion perforation for a period of 10 years following the delivery of the apparatus.

VENTED LUG CAPS AND PLUGS

All intake and discharge plugs and caps and plugs shall be vented lug type designed to relieve trapped pressure and help reduce possible operator injuries.

AKRON 8000 SERIES VALVES

All discharge and small diameter auxiliary intakes shall have heavy duty Akron 8000 series brass ball valves with stainless steel ball. This shall include the tank to pump and tank fill valve.

LEFT SIDE FORWARD AUXILIARY INTAKE

An auxiliary intake shall be provided on the left side of the pump compartment in the forward position.

The intake valve and piping shall be 2 1/2".

The valve shall be manually controlled from the pump operator's position.

The intake shall have a 2 1/2" chrome plated female NST swivel connection with screen and a male NST chrome

Florida Sheriff's Association

#17 Commercial Pumper (Kenworth) Stainless Steel Body

plated intake plug and chain.

A 3/4" bleeder/drain valve shall be provided.

RIGHT 2 1/2" REARWARD DISCHARGE

One 2 1/2" discharge shall be provided on the right side of the apparatus in the rearward area of the pump panel.

The right side 2 1/2" discharge shall be manually controlled on the pump panel.

The discharge shall be equipped with a chrome plated brass or bright finish stainless steel discharge elbow.

A 2 1/2" chrome plated NST cap and chain shall be provided.

RIGHT FORWARD 3" DISCHARGE

One 3" discharge shall be provided on the right side of the apparatus in the forward area of the pump panel.

The valve shall be manually controlled on the pump panel. The control shall have an integrated slow closing mechanism to comply with NFPA 1901.

The discharge shall extend straight out of the apparatus with no type of elbow.

A 3" FNST x 2 1/2" MNST chrome plated reducer with a 2 1/2" chrome plated cap and chain shall be provided.

LEFT SIDE FORWARD 2 1/2" DISCHARGE

One 2 1/2" discharge shall be provided on the left side of the apparatus in the forward area of the pump panel.

The valve shall be manually controlled on the pump panel.

The discharge shall be equipped with a chrome plated brass or bright finish stainless steel discharge elbow.

A 2 1/2" chrome plated NST cap and chain shall be provided.

LEFT SIDE REARWARD 2 1/2" DISCHARGE

One 2 1/2" discharge shall be provided on the left side of the apparatus in the rearward area of the pump panel.

The valve shall be manually controlled on the pump panel.

The discharge shall be equipped with a chrome plated brass or bright finish stainless steel discharge elbow.

A 2 1/2" chrome plated NST cap and chain shall be provided.

LEFT REAR 2 1/2" DISCHARGE

One (1) 2 1/2" discharge shall be provided on the left rear of the apparatus.

The valve shall be manually controlled on the pump panel.

Florida Sheriff's Association

#17 Commercial Pumper (Kenworth) Stainless Steel Body

A chrome discharge elbow shall be provided.

The discharge shall be used as a pre-connected line and shall not require any cap or chain.

1 3/4" CROSSLAY PRECONNECTS

Two 1 3/4" pre-connected cross lays shall be provided and located above the side mount pump panel.

The crosslay compartment shall be constructed of 5052 smooth aluminum sheet material with a random brushed finish applied after fabrication. Each cross lay shall be piped using 2" piping or high pressure hose incorporating a 2" ball valve with the control on the pump operator's panel.

The # 1 - 1 3/4" cross lay shall have the capacity to hold 200 feet of 1 3/4" fire hose and nozzle.

The # 2 - 1 3/4" cross lay shall have the capacity to hold 200 feet of 1 3/4" fire hose and nozzle.

The valve(s) shall be manually controlled on the pump panel.

There shall be two (2) 2" swivel elbows with 1 1/2" Male NST hose thread connections provided on the 1 3/4" cross lay hose beds. The swivels shall be mounted in a position to prevent hose "pinching" at the hose thread connection.

1 3/4" CROSSLAY DRAIN VALVES - AUTOMATIC

3/4" automatic drain valves shall be provided for all 1 3/4" crosslays. The valves shall have an all brass body with heavy duty neoprene seal. The valves shall be normally open and shall close at 6 psi using an all brass check assembly with stainless steel spring.

CROSSLAY COMPARTMENT ENDS - BLACK WEBBING

The cross lay compartment shall be enclosed on each end using a heavy duty webbing to prevent hose from accidentally unloading. The webbing shall be black.

A yellow nozzle strap shall be provided for each crosslay. The strap shall be designed to loop through the nozzle handle and secured to the apparatus to keep nozzle from coming out of the crosslay compartment without manually disconnecting the nozzle strap.

HINGED ALUMINUM TREADBRITE CROSSLAY COVER

An aluminum treadbrite hinged cover shall be provided to cover the cross lay compartment. The cover shall have a full length polished stainless steel hinge. A chrome plated lift handle shall be provided on each end of the cover. Rubber protection blocks shall be provided in any area where the cover may come into contact with a painted surface.

3" MONITOR DISCHARGE

A 3" monitor discharge shall be provided above the pump compartment. The discharge piping shall extend above the pump compartment a sufficient distance to allow use of the deck gun.

The valve shall be manually controlled on the pump panel. The control shall have an integrated slow closing mechanism to comply with NFPA 1901.

Florida Sheriff's Association

#17 Commercial Pumper (Kenworth) Stainless Steel Body

STAINLESS STEEL PUMP COMPARTMENT CONSTRUCTION

The entire pump compartment shall be constructed using only 304 marine grade stainless steel fabricated sheeting with a #4 annealed and polished finish on all exterior surfaces. The pump compartment shall not require any finish painting. Due to the extreme twisting and flexing that all fire apparatus are subjected to, aluminum shall not be used in any portion of the pump compartment structural support. The use of any type of enclosed tubing that requires the use of self tapping or any other type of machine screw shall not be acceptable.

PUMP COMPARTMENT RUNNINGBOARDS

The pump compartment side running boards shall be constructed of NFPA compliant slip resistant aluminum treadbrite.

PUMP COMPARTMENT RIGHT SIDE ACCESS DOOR - SIDE MOUNT

A brushed stainless steel hinged access door shall be provided on the right side of the pump compartment. The doors shall have pneumatic hold open devices and push button type flush latches. The door shall be a minimum of 35" wide x 20" high.

SIDE MOUNT BRUSHED STAINLESS STEEL PUMP PANEL

All controls and instruments shall be located on the left side of the apparatus. All discharge and intake valve controls shall be located on the left side pump panel.

BRUSHED STAINLESS STEEL PUMP PANELS

The left and right side pump panels shall be constructed of 304 2B marine grade brushed stainless steel with a #4 brushed and polished finish. The panels shall be held into place with two latches on the top to allow for easy removal of the panels.

The upper section of the left side pump panel shall be constructed of the same 304 2B marine grade stainless steel. The upper section shall be vertically hinged and have a chrome plated latch to secure the panel when closed.

SIDE MOUNT PUMP PANEL LIGHTS - L.E.D.

The side mount pump panel shall be illuminated using an I.L.I. track type L.E.D. light assembly.

The light shall be constructed of an unbreakable type clear poly flexible material housed in an aluminum extrusion mounted behind a brushed stainless steel light shield provided across the top of the gauge panel.

RIGHT SIDE DISCHARGE/INTAKE PANEL LIGHTS - L.E.D.

The right side discharge and intake panels shall be illuminated using an I.L.I. track type L.E.D. light assembly.

The light shall be constructed of an unbreakable type clear poly type flexible material housed in an aluminum extrusion mounted behind a brushed stainless steel light shield provided across the top of the hinged access door.

INNOVATIVE CONTROLS PUSH/PULL VALVE CONTROL HANDLES

For valve actuation, the apparatus pump panel shall be equipped with Innovative Controls side mount valve controls.

Florida Sheriff's Association

#17 Commercial Pumper (Kenworth) Stainless Steel Body

The ergonomically designed ¼ turn push-pull T-handle shall be chrome plated zinc with recessed labels for color coding and verbiage. The geared control rod, double laminated locking clips and rod housing shall be stainless steel and provide a true positive lock that will eliminate valve drift. Bronze and Teflon impregnated stainless steel bushings in both ends of rod housing shall minimize rod deflection, never need lubrication, and ensure consistent long term operation.

The control assembly shall include a decorative chrome plated zinc panel mounting bezel and 4 mounting bolts.

DISCHARGE VALVE CONTROL HANDLE LAYOUT

All discharge valve control handles shall be located in one or two horizontal lines across the mid section of the pump panel. All discharge valve control handles shall be located immediately below their corresponding pressure gauge for ease of pump operation.

STAINLESS STEEL VALVE CONTROL LINKAGES

All manual valve controls shall have control rod linkages constructed of 1/2" stainless steel rod or pipe and shall implement heavy ball swivel joints and clevises for smooth valve operation.

Plain, painted or coated control rods are not acceptable. (No Exception).

ICI MASTER PUMP DISCHARGE PRESSURE GAUGE

An ICI 4" diameter master pressure gauge shall be provided to indicate the main pump discharge pressure. The gauge shall read from 30" hg vacuum to 400 psi and shall be accurate within +/- 1%. The gauge shall be glycerin filled (-40F to +150F), read up to 400 psi, be accurate within +/- 1% and have a high impact resistant clear acrylic lens.

ICI MASTER PUMP INTAKE PRESSURE GAUGE

An ICI 4" diameter master pressure gauge shall be provided to indicate the pump intake pressure. The gauge shall read from 30" hg vacuum to 400 psi and shall be accurate within +/- 1%. The gauge shall be glycerin filled (-40F to +150F), read up to 400 psi, be accurate within +/- 1% and have a high impact resistant clear acrylic lens.

The master intake and discharge gauges shall have bright finish stainless steel bezels.

The discharge pressure gauge dials shall be white with black markings. The needle shall match the color of the markings.

The master intake gauge shall be clearly labeled "PUMP INTAKE" and shall be located to the left of the master discharge pressure gauge. (Burgundy label).

The master discharge gauge shall be clearly labeled "PUMP DISCHARGE" and shall be located to the right of the intake pressure gauge. (Black with silver lettering).

The master intake/discharge pressure gauges shall have a lifetime non-yellowing and freeze warranty. The gauges shall also be warranted for 4 years for defects in materials and workmanship, including fluid leakage. The warranty will not cover labor costs and/or transportation costs.

Florida Sheriff's Association

#17 Commercial Pumper (Kenworth) Stainless Steel Body

PRESSURE/VACUUM TEST PLUGS

Underwriter's test plug adapters shall be provided for connection of pump test gauges.

INNOVATIVE CONTROLS SL PLUS TANK GAUGE - PUMP PANEL

An Innovative Controls model SL Plus tank gauge shall be provided on the pump panel. The gauge shall feature a 180 degree highly visible wide view ultra-bright LED display showing the level of the booster tank.

ICI DISCHARGE PRESSURE GAUGES

Unless otherwise specified, each 1 1/2" or larger discharge shall have an ICI pressure gauge. The gauge shall be glycerin filled (-40F to +150F), read from 0 - 400 psi, be accurate within +/- 1% and have a high impact resistant clear acrylic lens.

The individual discharge pressure gauges shall have a 2 3/4" diameter.

The discharge pressure gauges shall have chrome finish color coded trim bezels. The bezels shall have recessed surfaces to allow for the color code and identification labels.

The discharge pressure gauge dials shall be white with black markings. The needle shall match the color of the markings.

The pressure gauge shall be directly in line with the discharge control handle for the discharge that they provide pressure readout for. **For ease of operation, this requirement must be strictly adhered to. There shall be no exception to this requirement.**

The gauges shall be clearly labeled with permanent color coded labels.

The discharge pressure gauges shall have a lifetime non-yellowing and freeze warranty. The gauge shall also be warranted for 4 years for defects in materials and workmanship including fluid leakage. Warranty will not cover labor costs and/or transportation costs.

IDENTIFICATION LABELS FOR PUMP PANEL

Innovative Controls verbiage label bezels shall be installed. The bezel assemblies will be used to identify apparatus components. These labels shall be designed and manufactured to withstand the specified apparatus service environment.

Where required, the verbiage label bezel assemblies shall include a chrome plated panel mount bezel with durable easy to read UV resistant polycarbonate inserts featuring the specified verbiage and color coding. The UV resistant polycarbonate verbiage and color inserts shall be sub-surface screen printed to eliminate the possibility of wear and protect the inks from fading. Both the insert labels and bezel shall be backed with 3M permanent adhesive (200MP), which meets UL969 and NFPA standards.

BOOSTER TANK- UNITED PLASTIC FABRICATING, INC.

The tank shall have a LIFETIME warranty provided by United Plastic Fabricating, Inc.

The tank exterior shell shall be constructed of minimum 1/2" thick PT3 polypropylene sheet stock. This material shall be non-corrosive stress relieved thermoplastic which is U.V. stabilized for maximum protection. The booster tank

Florida Sheriff's Association

#17 Commercial Pumper (Kenworth) Stainless Steel Body

shall be of a specific configuration and is 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 tank construction shall include Poly Pro Seal technology. A sealant shall be installed between the plastic components prior to being fusion welded. This sealing method will provide a liquid barrier offering leak protection in the event of a weld compromise.

The transverse swash partitions shall be manufactured of 3/8" PT3 polypropylene material. The longitudinal swash partitions shall be constructed of 3/8" PT3 polypropylene and extend 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 shall interlock with one another and are welded to each other as well as to the walls of the tank. All partition spacing shall be compliant with NFPA 1091 recommendations.

The top of the booster tank shall be fitted with removable lifting eyes.

The tank cradle assembly shall be designed to provide support to the tank. The assembly shall be approved by the manufacturer of the tank.

BOOSTER TANK CAPACITY 750 GALLONS

The poly booster tank shall have a capacity of 750 U.S. gallons.

BOOSTER TANK FILL TOWER - LEFT SIDE FRONT

The tank shall have a combination vent and manual fill tower. The fill tower shall be constructed of 1/2" polypropylene and shall be a minimum of **12" x 12"** outer dimension. The tower shall be located in the left front corner of the hosebed. The tower shall have a 1/4" thick removable polypropylene screen and polypropylene hinged type cover.

4" TANK OVERFLOW

A 4" diameter tank vent/overflow shall be provided and integrated into the tank. The piping shall be a minimum of schedule 40 polypropylene designed to run through the tank and discharge behind the rear wheels.

1" TANK SUMP DRAIN

A 1" drain shall be provided in the bottom of the tank sump to fully drain the tank. The drain shall use 1" stainless steel piping with a 1" valve. The control for the valve shall be remoted to the driver's side of the apparatus just under and behind the side rub rail. The drain control handle shall be labeled "TANK DRAIN".

3" TANK SUMP CLEAN OUT PLUG

A 3" tank sump clean out plug drain shall be provided in the bottom of the tank sump.

3" TANK TO PUMP

A 3" tank to pump line and valve shall be provided between the tank and the pump.

The tank to pump valve shall be manually controlled on the pump panel.

TANK TO PUMP CHECK VALVE

A check valve assembly shall be provided on the pump. The valve shall prevent unintentional back filling of the tank

Florida Sheriff's Association

#17 Commercial Pumper (Kenworth) Stainless Steel Body

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

TANK CRADLE SUB-STRUCTURE - HOT DIPPED GALVANIZED

The tank cradle substructure shall be constructed of high strength structural steel. The tank cradle substructure shall be designed to provide support to the booster tank. The design of the cradle shall be approved by the tank manufacturer.

The entire tank cradle substructure shall be framed and jig welded together to insure a truly square assembly. The substructure shall be fastened to the chassis rails so that it may be easily removed from the chassis for repair, replacement or mounting to a new chassis.

After complete assembly of the tank cradle substructure, the entire assembly shall be hot dipped galvanized for superior corrosion protection.

Due to the extreme duty that this apparatus will experience during its intended service life and to prevent rusting and corrosion from shortening the service life of this apparatus, sub-frames fabricated of painted/undercoated steel or aluminum tubing shall not be acceptable.

REAR SUPPORT STRUCTURE - HOT DIPPED GALVANIZED

The apparatus body substructure shall be constructed of high strength structural steel.

The substructure shall be designed to provide integral support of the apparatus body, rear step, and the tank mounting cradle system. The entire sub-frame shall be framed and jig welded together to insure a truly square assembly. The substructure shall be fastened to the chassis rails so that the apparatus body may be easily removed from the chassis for repair, replacement or mounting to a new chassis.

No holes shall be drilled into the top or bottom flange of the chassis frame rails. The substructure shall be designed to allow for a 22"- 24" side running board/rear step height when the apparatus is on level ground. All fasteners used to secure the substructure to the chassis frame rails shall be hardened steel with locking type nuts.

After complete assembly of the tank cradle substructure, the entire assembly shall be hot dipped galvanized for superior corrosion protection.

Due to the extreme duty that this apparatus will experience during its intended service life and to prevent rusting and corrosion from shortening the service life of this apparatus, sub frames fabricated of painted/undercoated steel or aluminum tubing shall not be acceptable.

20 YEAR TANK CRADLE STRUCTURAL WARRANTY

The tank cradle shall have a 20 year structural warranty. **NO EXCEPTION.**

20 YEAR TANK CRADLE CORROSION WARRANTY

The tank cradle shall have a warranty covering structural failure due to corrosion perforation. This warranty shall be in effect for 20 years after delivery of the apparatus to the customer. **NO EXCEPTION.**

Florida Sheriff's Association

#17 Commercial Pumper (Kenworth) Stainless Steel Body

20 YEAR REAR STRUCTURAL SUPPORT WARRANTY

The tank cradle shall have a warranty covering structural failure due to corrosion perforation. This warranty shall be in effect for 20 years after delivery of the apparatus to the customer. **NO EXCEPTION.**

20 YEAR REAR STRUCTURAL SUPPORT CORROSION WARRANTY

The rear structural support shall have a warranty covering structural failure due to corrosion perforation. This warranty shall be in effect for 20 years after delivery of the apparatus to the customer. **NO EXCEPTION.**

HYPER-FLEX BODY MOUNTING

The body module assembly shall be mounted to the chassis frame rails with "Hyper-Flex" vibration and shock isolators using a forward mounting system. Flexible neoprene pads, or U-springs especially developed for the expected weight and torsional flexing of the apparatus body, shall be incorporated into the system to eliminate chassis frame rail flex from transmitting harmful loads and twisting onto the body.

100" BODY WIDTH

The apparatus body shall be 100" wide from side to side measuring from the rub rail mounting surface.

APPARATUS BODY MATERIAL

The entire apparatus body shall be constructed of 304 marine grade stainless steel with a #4 annealed and polished finish. The interior of the apparatus body shall not require any finish painting. The compartment interiors must be a #4 finish. Mill finish or DA sanded finish will not be acceptable.

APPARATUS BODY CONSTRUCTION

The entire apparatus body shall be formed by sheering and bending the sheet metal. Metal tubular structures or extrusions shall not be used in the construction of the apparatus body. All edges of the sheared metal shall be sanded to remove any sharp shearing edges prior to bending the metal. After sheering and bending, the body shall be assembled on a jig table that is designed to hold all parts securely in place to insure an accurately built apparatus body.

APPARATUS BODY ASSEMBLY METHOD

The entire apparatus body shall be assembled using only bolted type construction. All apparatus body parts shall be able to be unbolted without the need to cut welds, etc. No exceptions to this requirement as all apparatus manufacturers have the capability to manufacture apparatus bodies in this manner.

COMPARTMENT FLOORS

All compartment floors shall be constructed of 304 marine grade stainless steel with a # 4 annealed and polished finish on the interior surface. A drain port shall be provided in each rear corner of the compartment to allow any water that may collect on the floor to drain out. The drain ports shall be designed to prevent road spray from entering the compartment. The front edge shall consist of a minimum of two bends to provide additional strength in the compartment floor and shall then form the lower door jamb.

All compartment floors shall be sweep out design. This shall include the lower side compartments, any compartments above the wheel well, any transverse compartments, and the rear face compartment(s). Any exception to this

Florida Sheriff's Association

#17 Commercial Pumper (Kenworth) Stainless Steel Body

requirement will cause immediate rejection of bid.

COMPARTMENT WEIGHT RATING

Each compartment shall be designed to carry 1,000 lbs. of equipment distributed throughout the compartment.

INTERIOR COMPARTMENT SURFACES

All visible interior compartment surfaces shall be 304 marine grade stainless steel with a # 4 annealed and polished finish. Surfaces that are painted or coated in any manner, raw material or any surface with any type sanded finish are not acceptable.

FRONT COMPARTMENT CORNERS

The apparatus body front compartment corners and vertical faces on both sides shall be constructed of 304 marine grade stainless steel with a # 4 annealed and polished finish. The corners shall be one piece construction from top to bottom and from the inner body panel to the outer face of the compartment to provide maximum strength. Corners using structural support channels or extrusions that require two or more pieces shall not be implemented.

The # 4 finish corner shall wrap around the side of the apparatus body and form the front compartment door jamb providing front corner protection.

REAR COMPARTMENT CORNERS - BRUSHED

The apparatus body rear compartment corners and vertical faces on both sides shall be constructed of 304 marine grade stainless steel with a # 4 annealed and polished finish. The corners shall be one piece construction from top to bottom and from the inner body panel to the outer face of the compartment to provide maximum strength. Corners using structural support channels or extrusions that require two or more pieces shall not be implemented.

The # 4 finish corner shall wrap around the side of the apparatus body and form the rear compartment door jamb providing front corner protection.

COMPARTMENT TOPS/CEILINGS

The apparatus body compartment tops shall be constructed of 304 marine grade stainless steel with a # 4 annealed and polished finish on the interior surface.

COMPARTMENT TOP OVERLAY

The compartment top shall be overlaid with .125" NFPA aluminum treadbrite. The aluminum treadbrite shall be an overlay only and shall not form any structural part of the apparatus body or shall the bottom side of the treadbrite be visible when looking into the compartment.

PAINTED FENDERWELLS

The left and right side rear fender wells shall be constructed of ultra-smooth 304 marine grade stainless sheet steel with a minimum tensile strength of 90,000 psi. The fender wells shall be radius cut and shall have a full circular inner liner to prevent rust pockets and for ease of cleaning. A 1" gap shall be provided on the bottom of each side of the circular liner to allow drainage of water and for easy cleanout. Sufficient clearance shall be provided for tire chains. Before the booster tank is installed, the fender wells shall be thoroughly cleaned and all seams sealed to prevent

Florida Sheriff's Association

#17 Commercial Pumper (Kenworth) Stainless Steel Body

corrosion in the fender well area.

The outer surface of the fender well shall be finished painted. This surface shall not be overlaid with aluminum treadbrite or overlaid with a painted panel that is bolted on after the painting of the apparatus body.

PAINTED FENDERWELLS

The fender wells shall be finish painted the primary exterior color of the apparatus.

Two prevent potential corrosion points, aluminum treadbrite or bolted on overlapping panels shall not be implemented in the construction of the apparatus body.

UPPER DOOR POSTS - PAINTED

The upper door post to the front and rear of the compartment door above the rear wheels shall be constructed of ultra-smooth 304 marine grade stainless sheet steel with a minimum tensile strength of 90,000 psi.

The outer surface of these door posts shall be finished painted.

REMOVABLE INNER FENDER LINER

The fender wells shall be radius cut and shall have a circular inner liner to prevent rust pockets and for ease of cleaning. The inner liner shall be constructed of high impact polypropylene material and shall be fully removable for chassis suspension access.

REMOVABLE INNER FENDER LINER - NO EXCEPTION

To prevent the buildup of potential corrosive materials in the fender well area, there shall be no exception to inner fender liner.

STAINLESS STEEL FENDERETTE

The fender wells shall be trimmed with a polished stainless steel fenderette. The stainless steel fenderette shall be secured into place with stainless steel fasteners and shall be easily removable for replacement. A black rubber fender welting shall be provided between the fenderette and the inner liner surface. The fenderettes shall protrude from the apparatus body a maximum of 1".

REPLACEABLE FENDERETTE

The stainless steel fenderette shall be secured to the apparatus body with stainless steel fasteners and shall be easily removable for replacement.

Fenderettes that are welded to the apparatus body are not acceptable.

OUTER BODY SIDES

The outer left and right side body panels above the compartment tops shall be constructed of 304 2B marine grade stainless steel with a # 4 brushed finish and shall not require any finish paint.

Florida Sheriff's Association

#17 Commercial Pumper (Kenworth) Stainless Steel Body

COMPARTMENT VENTILATION

Each compartment shall have a removable metal ventilation plate to allow for air movement in the compartment. A cleanable filter material shall be provided behind the plate.

Plastic cover plates will not be acceptable.

ROM ROLL UP COMPARTMENT DOORS

For all compartments requiring roll up doors, Robinson (ROM) roll up doors shall be installed.

The doors shall be constructed of aluminum extrusion slats and shall be fitted with a flexible, watertight seal between the slats at pivoting joints. Each slat shall be individually removable for replacement if damaged. The end caps and rollers shall be manufactured of type-6 nylon. The doors shall have a pre-tension operator in a sealed alloy drum that shall be positioned in the upper portion of the compartment providing maximum clearance and head room in the upper portion of the compartment.

Each door shall have a full door width lift bar latching handle which shall be spring loaded with two (2) surface mounted latch points, mounted one (1) on each end. The door shall be reinforced and the latch point with a "ledge" surface above the lift bar designed to provide a "push" surface when closing.

A drip rail shall be provided above all doors.

No roll up door exterior trim paint.

STAINLESS STEEL COATED FASTENERS

All fasteners used in the finish construction of the apparatus body shall be marine grade stainless steel. Fasteners that pass through a dissimilar metal panel shall be Magna-Gard, or equal, coated to help prevent metal reaction and corrosion.

As the Magna-Gard, or equal, coating is a "baked on" type coating providing for excellent adhesion to the fastener, spray on type coatings may be used in conjunction with the Magna-Gard, or equal, but not in place of it.

Because dissimilar metal corrosion is a common occurrence on all apparatus and the Magna-Gard (or similar "baked on" coatings) fasteners are commercially available to all manufacturer's and is not a proprietary product, there shall be no exception to this requirement.

DRIVER'S SIDE COMPARTMENT IN FRONT OF THE REAR WHEELS

A compartment shall be provided in front of the rear wheels. The compartment interior dimensions shall be 67" high x 35.75" wide with the lower 28" of the compartment being 26" usable depth and the remaining upper section being 14" usable depth.

The compartment shall have a roll up door with a satin finish.

DRIVER'S SIDE ABOVE WHEEL COMPARTMENT

A compartment shall be provided above the rear wheels. The compartment interior dimensions shall be 37" high x 63.75" wide x 14" usable depth.

Florida Sheriff's Association

#17 Commercial Pumper (Kenworth) Stainless Steel Body

The compartment shall have roll up door with a satin finish.

DRIVER'S SIDE COMPARTMENT BEHIND REAR WHEELS

A compartment shall be provided behind the rear wheels. The compartment interior dimensions shall be 67" high x 44" wide x 26" useable depth in a portion of the lower section and the remaining upper section being 14" usable depth.

The compartment shall have a roll up door with a satin finish.

PASSENGER'S SIDE COMPARTMENT IN FRONT OF THE REAR WHEELS

A compartment shall be provided in front of the rear wheels. The compartment interior dimensions shall be 67" high x 35.75" wide with the lower 28" of the compartment being 26" usable depth and the remaining upper section being 14" usable depth.

The compartment shall have a roll up door with a satin finish.

PASSENGER'S SIDE ABOVE WHEEL COMPARTMENT

A compartment shall be provided above the rear wheels. The compartment interior dimensions shall be 37" high x 63.75" wide x 14" usable depth.

The compartment shall have a roll up door with a satin finish.

PASSENGER'S SIDE COMPARTMENT BEHIND REAR WHEELS

A compartment shall be provided behind the rear wheels. The compartment interior dimensions shall be 67" high x 44" wide x 26" useable depth in a portion of the lower section and the remaining upper section being 14" usable depth.

The compartment shall have a roll up door with a satin finish.

REAR FACE COMPARTMENT

A rear compartment shall be provided on the apparatus just ahead of the rear step. The compartment shall be a minimum of 30" useable depth. The compartment shall have maximum height with selected apparatus options.

REAR FACE COMPARTMENT DOOR - ROLL UP

The rear compartment shall have a roll up door. The door shall have a satin finish.

DRIVER'S SIDE REAR COMPARTMENT - TRANSVERSE

The driver's side compartment behind the rear wheels shall be open into the rear facing compartment (transverse).

PASSENGER'S SIDE REAR COMPARTMENT - TRANSVERSE

The passenger's side compartment behind the rear wheels shall open into the rear facing compartment (transverse).

18" REAR TAILBOARD STEP

Florida Sheriff's Association

#17 Commercial Pumper (Kenworth) Stainless Steel Body

An 18" depth rear tailboard step shall be provided on the apparatus. The step shall be spaced from the rear face of the apparatus body a minimum of 3/4" for easy wash out.

REAR STEP MATERIAL - NFPA ALUMINUM TREADBRITE

The rear step shall be constructed of NFPA complaint bright finish aluminum treadbrite.

RUBRAILS - BRIGHT ANODIZED ALUMINUM

Extruded aluminum rub rails shall be provided on the apparatus body sides. The rub rails shall have a bright finish with anodized coating to protect the finish. The rub rails shall provide an integrated mounting location for the L.E.D. side marker lights as well as the reflectors. The rub rails shall be spaced from the apparatus body a minimum of 1/4" with poly spacers.

The rub rails must be bolted on to the apparatus body to allow easy replacement if damaged. Rub rails that are permanently fastened to the apparatus body by welding or any other permanent method will not be acceptable. **NO EXCEPTION WILL BE ALLOWED TO THIS REQUIREMENT.**

RUB RAIL ENDS

The rub rail ends shall be 'capped' with a high impact resistant black EPDM contoured block.

HOSE BED FLOORING

The floor of the hose bed shall be constructed of fiber reinforced Dura-Dek, or equal, material.

The top portion of each "T" cross section shall measure 1 5/8" wide x 3/16" thick with beaded ends. The vertical portion shall be 3/16" thick tapering out at the bottom to a thickness of 1/2" and have an overall height of 1". The "T" sections shall be spaced 3/4" apart to allow for drainage and ventilation.

The flooring shall then be protected with a polyurethane coating to screen out ultraviolet rays. The gray colored coating shall be baked on and include a slip resistant material.

68" WIDE HOSE BED

The hose bed shall be 68" wide from side to side.

HOSE BED CAPACITY

The hose bed shall have the capacity to carry the following hose load:

70 cubic feet.

HOSE BED DIVIDER(S)

There shall be one (1) hose bed divider(s) to partition off hose. The divider(s) shall be constructed of 3/16" thick aluminum plate material. The lower edge of the divider(s) shall have a two inch 90 degree bend toward one side and a 2" x 2" x 3/16" aluminum angle welded to the other side.

The divider(s) shall be adjustable by sliding in tracks which are recessed flush into the hose bed flooring, one on front and one on rear. The divider shall be held in place by two bolts on each end.

Florida Sheriff's Association

#17 Commercial Pumper (Kenworth) Stainless Steel Body

The upper rear corner of the divider(s) shall have a minimum of a 3" radius cut.

HOSE BED COVER WITH VELCRO FASTENERS

A heavy duty vinyl coated nylon hose bed cover shall be provided to protect the hose load from the weather. The cover shall extend from the front of the hose bed to the rear and then extend downward to cover the exposed rear of the bed.

The cover shall have a double reinforced area where the cover comes into contact with the upper rear corners of the hose bed dividers. The cover shall be secured to the apparatus using velcro on the sides and lift dots on front.

The rear of the cover shall be secured to the apparatus using positive mechanical latches.

HOSE BED BULKHEAD

A bulkhead divider shall be provided in the front area of the hose bed separating the hose bed from the tank fill tower(s). The balance of this area that is not occupied by fill tower or other mounted equipment shall be used as a dunnage compartment.

HOSE BED COVER - RED

The hose bed cover shall be red.

LOW MOUNT ENCLOSED LADDER COMPARTMENT

A ladder storage compartment shall be provided on the right side of the apparatus with an access door on the rear. The compartment shall be located below the hose bed level and shall not be located above or through the booster tank. The compartment shall be located between the booster tank and the right side compartments.

For ease of removal and replacement with limited staffing, the compartment shall be designed to carry all portable ladders vertically on their beams. Ladder racks that carry the ladders horizontally shall not be acceptable.

The compartment shall be constructed of 5052 1/8" aluminum with a brushed finish. Individual slides fabricated of 5052 H32 alloy aluminum shall be provided in the compartment on both sides to allow individual storage for all ladders. The slides shall be provided with permanently attached Rodex poly slip blocks with tapered front and rear edges allow easier loading/unloading of the ladders.

An aluminum tread plate vertically hinged door with a slam-type latch shall be provided on the compartment. The latch shall be activated by a large "D" ring control. The use of lift-and-turn or small snap type latches on this door shall not be acceptable.

All ladders shall be capable of being removed individually without disturbing the remaining ladders.

PIKE POLE STORAGE

Storage for two straight handle pike poles shall be provided in the ladder storage compartment.

LADDER COMPARTMENT LIGHT

An LED light shall be provided in the ladder storage compartment. The light shall be mounted just inside the ladder

Florida Sheriff's Association

#17 Commercial Pumper (Kenworth) Stainless Steel Body

compartment access door and activated with an automatic door switch.

The light switch shall be incorporated into the door ajar warning system in the cab.

Alco-Lite 24,14,10 ladder pkg.

ALCO LITE 24' 2 SECTION ALUMINUM LADDER

One (1) Alco Lite model PEL-24, 24' NFPA compliant 2 section aluminum extension ladder shall be provided and mounted.

ALCO LITE 14' ALUMINUM ROOF LADDER

One (1) Alco Lite PRL-14, 14' NFPA compliant aluminum roof ladder with folding hooks shall be provided and mounted.

ALCO LITE 10' ALUMINUM FOLDING ATTIC LADDER

One (1) Alco Lite model FL-10, 10' NFPA compliant aluminum folding attic ladder shall be provided and mounted.

HARD SUCTION COMPARTMENT IN HOSEBED

A movable compartment shall be provided in the hose bed for two (2) 10' lengths of hard suction hose stacked one above the other. The hose bed height shall be a minimum of 18" from the hose bed floor to the top of the hose bed to accommodate the suction hose mounts. The rack shall be mounted to the hose bed divider brackets and shall be fully adjustable.

The hard suction mounts shall be constructed of minimum 1/8" smooth aluminum with brushed finish. The upper and lower compartments shall be 9" x 9" x the depth of the hose bed. The upper compartment shall be open on top. Both compartments shall be open to the rear with no door.

HARD SUCTION HOSE - FIRE DEPARTMENT PROVIDED

The hard suction hose shall be provided by the Fire Department. The Department shall provide the following hose:

COMPARTMENT SHELF TRACKS - ALUMINUM

Four (4) sets consisting of two heavy duty aluminum Uni Strut tracks shall be provided in specified compartments, one for each end of shelf.

The tracks shall not be welded to the apparatus body.

SHALLOW DEPTH COMPARTMENT SHELVING

There shall be four (4) shallow depth shelves provided. The shelves shall be constructed of 1/8" smooth aluminum with a 2" upward bend on the front and rear edges.

DRIVER'S SIDE FRONT OF WHEELWELL SPARE CYLINDER COMPARTMENT

A compartment shall be provided in the wheel cowl area in front of the rear axle on the driver's side to hold a total of

Florida Sheriff's Association

#17 Commercial Pumper (Kenworth) Stainless Steel Body

two (2) spare SCBA cylinders.

The compartment shall be one piece injection molded high strength polyethylene designed specifically for the SCBA cylinder storage. The compartment shall be slanted towards the rear and have a drain port at the low point of the compartment.

DRIVER'S SIDE REAR OF WHEELWELL SPARE CYLINDER COMPARTMENT

A compartment shall be provided in the wheel cowl area behind the rear axle on the driver's side to hold a total of two (2) spare SCBA cylinders.

The compartment shall be one piece injection molded high strength polyethylene designed specifically for the SCBA cylinder storage. The compartment shall be slanted towards the rear and have a drain port at the low point of the compartment.

PASSENGER'S SIDE FRONT OF WHEELWELL SPARE CYLINDER COMPARTMENT

A compartment shall be provided in the wheel cowl area in front of the rear axle on the passenger's side to hold a total of two (2) spare SCBA cylinders.

The compartment shall be one piece injection molded high strength polyethylene designed specifically for the SCBA cylinder storage. The compartment shall be slanted towards the rear and have a drain port at the low point of the compartment.

PASSENGER'S SIDE REAR OF WHEELWELL SPARE CYLINDER COMPARTMENT

A compartment shall be provided in the wheel cowl area behind the rear axle on the passenger's side to hold a total of two (2) spare SCBA cylinders.

The compartment shall be one piece injection molded high strength polyethylene designed specifically for the SCBA cylinder storage. The compartment shall be slanted towards the rear and have a drain port at the low point of the compartment.

WHEELWELL STORAGE COMPARTMENT DOORS – BRUSHED FINISH STAINLESS

Brushed finish stainless steel access doors shall be provided on each wheel well storage compartment in the wheel well.

WHEELWELL SCBA CYLINDER COMPARTMENT RETENTION STRAPS

One 1" wide loop of high visibility yellow webbing shall be installed in each wheel well spare cylinder compartment for each cylinder to be stored in the compartment. The loop(s) shall be designed to loop around the cylinder valve and help prevent the cylinder from sliding out of the compartment if the door is not latched or fails.

FOLDING ACCESS STEPS

Cast Products model SP4401-1CH-BL-A folding access steps shall be provided in areas listed in these specifications. All access steps provided on the apparatus shall support a minimum static load of 500 lbs. and be mounted in accordance to recommended mounting procedures as outlined by NFPA 1901. The steps shall be attached to the

Florida Sheriff's Association

#17 Commercial Pumper (Kenworth) Stainless Steel Body

apparatus using stainless steel bolts with locking type nuts.

The steps shall each have an LED light above and below the step area. The lights shall be activated by the park brake.

LEFT REAR ACCESS STEPS

Three NFPA compliant folding steps shall be provided on the rear of the apparatus on the left side.

NFPA KNURLED FINSH HANDRAILS

All handrails shall be 1 1/4" diameter extruded aluminum "knurled finish" with chrome plated stanchions. Rubber gaskets shall be provided between the stanchions and any painted surfaces. The rails shall comply with NFPA 1901.

LEFT REAR VERTICAL HAND RAILS

One NFPA compliant handrail shall be provided on the left rear of the apparatus for boarding the rear step and using the left rear hose bed access steps.

RIGHT REAR VERTICAL HAND RAILS

One NFPA compliant handrail shall be provided on the right rear of the apparatus for boarding the rear step and using the right rear hose bed access steps.

LEFT REAR GRAB RAIL

A 12" NFPA compliant horizontal handrail shall be provided on the left rear of the apparatus towards the rear of the hose bed.

48" INTERMEDIATE REAR HORIZONTAL HAND RAIL

A 48" intermediate horizontal handrail shall be provided on the rear of the apparatus.

NFPA 1901 CERTIFIED 12 VOLT ELECTRICAL SYSTEM

The 12-volt apparatus body electrical system shall be provided and shall be in compliance with NFPA 1901 testing and certification procedures as follows:

NFPA MINIMUM ELECTRICAL LOAD DEFINITION

The NFPA 1901 defined minimum electrical load shall consist of the total amperage required to simultaneously operate the following in a stationary mode:

1. Propulsion engine and transmission.
2. The clearance and marker lights.
3. Communication equipment. 5 amp default.

Florida Sheriff's Association

#17 Commercial Pumper (Kenworth) Stainless Steel Body

4. Illumination of all walking surfaces, the ground at all egress points, control and instrumentation panels and 50% of total compartment lighting.
5. Minimum warning lights required for "blocking right of way" mode.
6. The current to simultaneously operate and fire pump and all specified electrical devices.
7. Anything defined by the purchaser, in the advertised specifications, to be critical to the mission of the apparatus.

RESERVE CAPACITY TEST

The first electrical test to be performed will be the **Reserve Capacity Test**. All items listed in NFPA Minimum Load Definition shall be activated with the engine shut off. After 10 minutes of operation, the items 1-7 shall be deactivated. After deactivation, the battery system shall have ample reserve to start the engine.

ALTERNATOR PERFORMANCE TEST AT IDLE

The second electrical test to be performed shall be **Alternator Performance Test at Full Load**. All electrical loads shall be activated with the engine running up to the governed rpm for two hours. During the test, the system voltage shall not drop below 11.7 volts or have excessive battery discharge for more than 120 seconds. Any loads not defined in the NFPA Minimum Electrical Load may be load managed to pass test.

TEST CONDITIONS

All electrical testing shall be performed with the engine compartment at approximately 200 degrees.

12-VOLT WIRING SYSTEM

All 12-volt electrical wiring shall be SXL cross link rated to carry 125% of the maximum current for which the circuit is protected. The wire shall be of sufficient size so that voltage drop in any electrical device shall not exceed 10%. All wiring shall be color, number, and function coded with the number and function being printed every three inches along the entire length of all apparatus body wires (as required by NFPA 1901). All wiring shall be routed through heavy-duty PVC split loom, securely attached and protected against heat, oil, and physical damage. All locations where the wire passes through a body panel shall be protected with electrical grommets

All connections shall be made using mechanical connectors and be screwed to terminal or junction box with machine screws. Wire nut, insulation displacement, or piercing connections shall not be used.

All circuits shall be provided with properly rated low voltage over current protective devices of the automatic reset type.

A removable bulkhead shall that extends from the floor to the ceiling of both side rear compartments shall be provided to protect rear wiring.

MULTI-PLEXED ELECTRICAL SYSTEM

The apparatus body electrical system shall incorporate a Multiplexed Electrical System. The multiplex system shall consist of all solid-state components contained inside aluminum extrusions referred to as nodes. Each node shall consist of (24) output channels and (24) input channels. All inputs and outputs will be configured into a scalable

Florida Sheriff's Association

#17 Commercial Pumper (Kenworth) Stainless Steel Body

electrical harness utilizing Duetsche connectors. The nodes must be waterproof and not require special mounting requirements.

The system, at a minimum, shall be capable of performing the following functions: load management sequencing, switch loads, receive digital and analog signals, perform and report diagnostics, continuously report vehicle status and the system is expandable.

Placement of nodes throughout the apparatus enables a reduction in wire harness bundles, elimination of redundant harnesses and separate circuit boards, relay and circuit breakers, electrical hardware, separate electrical or interlock subsystems and associated electronics for controlling various electrical loads and inputs. The multiplex system shall be field-re-programmable and re-configurable by any authorized dealer or service center. This complete system shall eliminate the need for the following separate components or devices: load manager, load sequencer, warning lamp flasher, door open notification system, interlock modules, separate volt meter and ammeter.

The Base System Shall Include:

- Total Load Management
- Load Shedding Capabilities
- Load Sequencing Capabilities
- "On-Board" Diagnostics Readout
- Very Reliable, Solid-State Hardware
- Error Reporting
- Continuous system monitoring and reporting
- Emergency warning lamp flasher
- Door Ajar System
- Field Configurable
- Expandability Capabilities
- Advanced PC Diagnostics

As-built wiring harness drawings and a master circuit list of electrical circuits that the apparatus builder installs shall be furnished in the delivery manuals. These schematics must show the electrical system broken down into separate functions, or small groups of related functions. Schematics shall depict circuit numbers, electrical components, harnesses, and connectors from beginning to end. **A single drawing for all electrical circuits installed by the apparatus builder shall not be accepted.**

V-MUX VFD DISPLAY PANEL

An interface display shall be provided on the cab control console to report and display "Real Time" data.

DIGITAL 'DOOR OPEN' INDICATOR

The VFD display shall indicate which individual door or doors are open using alpha-numeric symbols (letters and numbers). For example, if the driver front compartment door is open, the display shall read "DRIVER FRONT COMPARTMENT DOOR".

Any system that does not indicate individual open doors and/or provides 'door open' indication using a single visual or audible alarm to represent all apparatus doors will not be acceptable.

AUTOMATIC HIGH IDLE FUNCTION

An automatic high idle system shall be installed and will automatically activate whenever the system voltage drops below determined voltage. The high idle will remain on until adequate voltage is achieved.

Florida Sheriff's Association

#17 Commercial Pumper (Kenworth) Stainless Steel Body

MASTER BATTERY DISCONNECT

A Cole Hersee model 2484-16 master battery disconnect switch shall be provided, mounted within easy reach of the driver when seated. The switch shall be wired between the starter solenoid and the remainder of the electrical loads on the apparatus. The batteries shall be connected directly to the starter solenoid. The alternator shall be wired directly to the batteries through the ammeter shunt if one is provided, and not through the master load disconnect switch.

A green 'battery on' indicator light shall be provided in clear view of the driver. The light shall be mounted in a manner that will not impair the drivers vision or reflect onto the windshield.

LICENSE PLATE LIGHT/BRACKET

A chrome plated LED license plate light shall be provided on the rear of the apparatus. The light shall function with the head light switch.

A license plate mounting bracket shall be provided that spaces the license plate away from the apparatus body.

CLEARANCE LIGHTS/REFLECTORS

All apparatus body clearance lights shall be LED style. All lower clearance lights and reflectors shall be mounted in a manner that provides protection from damage, and shall comply with FMVSS-108 regulations.

MID-MOUNTED SIDE TURN SIGNAL - L.E.D.

A mid-mounted amber LED side turn signal shall be provided in the mid section area of the apparatus on both sides. The low profile signal shall be recessed into the side rub rail for protection.

L.E.D. PUMP COMPARTMENT LIGHTS (2)

Two L.E.D. compartment lights shall be provided to illuminate the pump compartment. The lights shall function with the pump operators gauge panel lights.

L.E.D. ENGINE COMPARTMENT LIGHT

An L.E.D. engine compartment light shall be provided and mounted over the engine on the engine compartment wall. An on/off switch shall be provided on the light to activate it.

DUAL ILI - LED COMPARTMENT LIGHTING

Each apparatus body compartment shall have two ILI track type L.E.D. lights vertically mounted in the compartment. The lights shall be constructed of an unbreakable type clear poly type flexible material housed in an aluminum extrusion.

A compartment that is considered a 'full height' compartment shall each have two 48" long light sections and a 'low height' or above wheel compartment shall each have two 18" long sections.

The lights shall function automatically and independently of other compartments when the compartment door is opened. **Compartment lighting systems that are controlled by a single, dash mounted switch are not acceptable.**

Florida Sheriff's Association

#17 Commercial Pumper (Kenworth) Stainless Steel Body

COMPARTMENT LIGHT SWITCHES

Each hinged apparatus body door compartment shall have a magnetic style reed indicator switch. Each switch shall be hermetically sealed rated to 10,000,000 cycles. The reed shall be potted in the contact housing with polyurethane and the housings shall be molded fire retardant ABS plastic. The contact and magnetic housing shall snap-lock in the body material, one on the body and one in the door.

Each roll up door shall have an integral door open indicator magnet in the lift bar. If the bar is not properly closed, it shall activate the "Door Open" light in the cab.

The compartment lights shall function automatically when the door is opened. A master compartment light switch shall not be acceptable.

DOOR AJAR INDICATOR - L.E.D.

A 1" X 2" red LED flashing light shall be provided in the cab in clear view of the driver to warn of an open compartment or personnel door.

A label shall be provided adjacent to the light that states "Do Not Move Apparatus When Light Is On".

AUDIBLE DOOR AJAR INDICATOR

In addition to the flashing door ajar indicator, an audible alarm shall be provided in the cab to warn of an open compartment or personnel door.

LED PERIMETER GROUND LIGHTING -five (5)

There shall be five (5) LED underbody perimeter lights furnished and installed. The lights shall have an unbreakable polycarbonate lens and housing. The lights shall be sealed to help prevent moisture entry.

The ground lights shall be activated with the parking brake.

LED APPARATUS BODY STEP LIGHTING

All apparatus body and pump steps and running boards shall be illuminated using chrome plated or stainless steel LED lights. The lights shall function automatically with the park brake.

GROUND/STEP LIGHTING CUTOFF SWITCH

A ground/step light cut off switch shall be provided in the cab to allow the driver to disable the ground lights and other lights that activate when the parking brake is set. The switch shall automatically re-set itself when the parking brake is released.

KUSSMAUL 20/20 BATTERY CHARGER

A Kussmaul Auto-Charge 20/20 fully automatic battery charger with 20 amp output shall be installed on the apparatus. Remote voltage sensing shall be provided to compensate the charger output for the voltage drop in the charging wires. A 0-25 ampere meter shall be provided on the charging unit to indicate charge rate.

KUSSMAUL AUTO-PUMP AIR COMPRESSOR

Florida Sheriff's Association

#17 Commercial Pumper (Kenworth) Stainless Steel Body

A Kussmaul Auto-Pump 120 volt air compressor shall be provided on the apparatus. The compressor shall have a .76 cfm open flow with a maximum pressure of 100 psi. The pressure switch shall be pre-set at 70 psi cut in and 90 psi cut out.

AUTO-EJECT SHORELINE CONNECTION

A Kussmaul 20 amp 120 volt Super Auto-Eject shall be provided. The unit shall automatically eject the connecting plug when the engine is cranked.

AUTO-EJECT COVER - YELLOW

The Auto-Eject shall have a spring loaded cover yellow in color.

AUTO-EJECT MATING PLUG

A NEMA 5-15P mating female cord end shall be shipped loose with the apparatus to allow the Fire Department to connect the cord end to a Fire Department provided charging cord.

120 VOLT SHORELINE CONNECTION LOCATION

The 120 volt shoreline connection shall be located under the driver's door.

WHELEN TRI-CLUSTER TAILLIGHTS - L.E.D.

Whelen 60BTT 4" x 6" LED taillights and 60A00TAR 4" x 6" LED turn signals shall be provided. The backup lights shall be 4" x 6" clear LED's. A polished trim housing shall be provided, one each side for mounting the tail lights, turn signal lights, and backup lights.

BACKUP ALARM

A minimum 97db backup alarm shall be provided and shall automatically activate when the apparatus transmission is placed into reverse.

The backup alarm shall exceed all NFPA1901 and SAE J994 Type D requirements and testing.

CENTER CONSOLE MOUNTED SWITCH PANEL

A center control console shall be provided between the driver's and officer's seats for all warning light switching, scene lighting switches, step light switches, pump shift, and battery switch.

A single master optical warning device switch shall be provided that will activate all minimum optical warning lighting through a **single** switch. Individual switches shall not be provided for any minimum optical warning lighting to insure total compliance to the warning lighting requirements defined in NFPA 1901. All lighting controlled by this switch shall not be subject to load management.

Any warning lights that are installed on the apparatus that are not required to meet the minimum optical warning lighting requirements shall be subjected to load management and shall have individual switches to activate/de-activate the warning light.

All switches shall be clearly labeled as to their function.

Florida Sheriff's Association

#17 Commercial Pumper (Kenworth) Stainless Steel Body

ZONE A UPPER WARNING LIGHTING

A Code 3 model 21TR58NFPA1 LED light bar shall be mounted on the top of the cab roof. The lightbar shall be 58" in length and mounted with low profile stainless steel brackets.

The light bar shall be divided into four sections:

The center two sections shall each have a red LED wide angle lighthouse.
The outer sections shall each have five red LED light heads.

ZONE C UPPER WARNING LIGHTING

Zone C Rear Upper Lighting

Two Code 3 Arch model A36-R LED red beacons shall be provided, one each side.

FRONT GRILLE WARNING LIGHTS

Two Code 3 model 468 Prizm 4"x 6" red LED lights shall be provided in the grille area on the apparatus. A chrome bezel shall be provided around the lights.

INTERSECTION WARNING LIGHT - SIDES

One Code 3 model TSX3-R red LED light shall be provided on each side as low and far forward as possible on the apparatus. A chrome bezel shall be provided around the lights.

MID-SECTION WARNING LIGHTS - SIDES

One Code 3 model TSX3-R red LED light shall be provided on each side in the mid-section of the apparatus. A chrome bezel shall be provided around the lights.

SIDE FACING LOWER REAR WARNING LIGHTS - SIDES

One Code 3 model TSX3-R red LED light shall be provided on each side of the apparatus as low and as far rearward as possible on the apparatus. A chrome bezel shall be provided around the lights.

REAR FACING LOWER WARNING LIGHTS

Two Code 3 model 468 Prizm 4"x 6" red LED lights shall be provided on the lower rear of the apparatus. A chrome bezel shall be provided around the lights.

FEDERAL SIGNAL PA400 SIREN

A Federal Signal model PA400 siren shall be provided and mounted in the cab.

The siren shall have wail, yelp, Priority, and air horn tones as well as public address (PA). A hard wired microphone shall be provided.

Florida Sheriff's Association

#17 Commercial Pumper (Kenworth) Stainless Steel Body

100 WATT SPEAKER

A 100 watt speaker shall be provided and recessed into the front bumper. The model of speaker installed shall be designed to fit bumper type.

GROVER 24" STUTTERTONE AIR HORNS

Two Grover model 1510 24" chrome plated emergency air horns shall be provided and mounted one on each side of the commercial chassis engine hood.

AIR HORN CONTROL

The air horn system shall be controlled by the horn button in the center of the steering wheel and a floor mounted momentary foot switch on the Officer's side.

AIRHORN PRESSURE PROTECTION VALVE

The air horn system shall be equipped with a pressure protection valve that will prevent the use of the airhorns when the pressure in the air system drops below 80 psi.

UNITY AG-6 DECK/HOSEBED LIGHTS

Two (2) Unity model AG-6 chrome plated lights shall be provided and mounted on the rear of the apparatus, one (1) each side. The lights shall be controlled by light head mounted switches and shall be capable of 360-degree rotation and 90 degrees above and below horizontal tilt.

The lights shall be subjected to load management shedding to comply with NFPA 1901.

RED/CLEAR LED DOME LIGHT IN CAB

There shall be one (1) combination red/clear LED dome light(s) provided and mounted on the cab ceiling. The light(s) shall have a switches located on the light head.

FLUID CAPACITY LABEL

A permanent plate shall be mounted in the driver's compartment specifying the quantity and type of the following fluids used in the apparatus (if applicable) for normal maintenance:

1. Engine Oil.
2. Engine Coolant.
3. Transmission Fluid.
4. Pump Transmission Fluid.
5. Pump Primer Fluid (if applicable).
6. Drive Axle Fluid.
7. Air Conditioning Refrigerant.
8. Air Conditioning Lubrication Oil.
9. Power Steering Fluid.
10. Cab Tilt Mechanism Fluid (if applicable).
11. Transfer Case Fluid.
12. Equipment Rack Fluid (if applicable).

Florida Sheriff's Association

#17 Commercial Pumper (Kenworth) Stainless Steel Body

13. Air Compressor System Lubricant.
14. Generator System Lubricant.
15. Front tire cold pressure.
16. Rear tire cold pressure.
17. Maximum tire speed ratings.

OCCUPANCY LABEL

A permanent plate or label stating the maximum number of personnel allowed to ride on the apparatus at any one time shall be provided and installed in clear view of the driver.

SEATED AND BELTED LABEL

Permanent plate or label shall be provided stating "OCCUPANTS MUST BE SEATED AND BELTED WHEN APPARATUS IS IN MOTION". The label shall be visible from each seated position.

DO NOT RIDE LABEL

A permanent plate or label shall be attached to the appropriate areas of the apparatus stating that riding on the rear step or any exterior position on the apparatus is prohibited.

DO NOT WEAR HELMET LABEL

Permanent plate or label shall be provided stating "DO NOT WEAR HELMET WHILE SEATED". The label shall be visible from each seated position.

MAXIMUM TIRE SPEED LABEL

A permanent plate or label shall be provided in the cab stating the maximum tire speed rating.

LENGTH, HEIGHT, WEIGHT LABEL

A permanent plate or label shall be provided in the cab stating the overall length, height and the gross vehicle weight rating (GVWR), in tons, of the completed apparatus.

The wording on this label shall indicate that the information on the plate/label was current at the time of manufacture and if the overall height of the apparatus changes while the vehicle is in service, the purchaser shall revise the height dimension on the plate.

UNDERWRITER'S LABORATORIES TESTING

The apparatus shall undergo an Underwriters Laboratories Certification Test to insure that the completed apparatus meets the requirements of NFPA #1901. The certificate shall be provided to the purchaser upon completion. Underwriters Laboratories shall also perform the required testing on the entire installed electrical system. Self-certification by the apparatus manufacturer will not be acceptable.

MANUFACTURER'S RECORD CERTIFICATION

The contractor shall supply, at the time of delivery, at least one copy of the following documents:

1. The manufacturers record of apparatus construction details, including the following information:

Florida Sheriff's Association

#17 Commercial Pumper (Kenworth) Stainless Steel Body

- a. Owners name and address
 - b. Apparatus manufacturer, model, and serial number
 - c. Chassis make, model, and serial number
 - d. GAWR of front and rear axles
 - e. Front tire size and total rated capacity in pounds (kg)
 - f. Rear tire size and total rated capacity in pounds (kg)
 - g. Chassis weight distribution in pounds with water and manufacturer mounted equipment (front and rear)
 - h. Engine make, model, serial number, rated horsepower and related speed, and governed speed
 - i. Type of fuel and fuel tank capacity
 - j. Electrical system voltage and alternator output in amps
 - k. Battery make, model, and capacity in cold cranking amps (CCA)
 - l. Chassis transmission make, model, and serial number; and if so equipped, chassis transmission PTO(s) make, model, and gear ratio
 - m. Ratios of all driving axles
 - n. Maximum governed road speed
 - o. Pump make, model, rated capacity in gallons per minute (liters per minute where applicable), and serial number
 - p. Pump transmission make, model, serial number, and gear ratio
 - q. Auxiliary pump make, model, rated capacity in gallons per minute (liters per minute where applicable), and serial number
 - r. Water tank certified capacity in gallons or liters (if applicable).
 - s. Aerial device type, rated in vertical height in feet, rated horizontal height in feet, and rated capacity in pounds.
 - t. Paint manufacturer and paint number(s)
 - u. Company name and signature of responsible company representative
2. Certification of slip resistance of all stepping, standing, and walking surfaces
 3. If the apparatus has a fire pump, a copy of the pump manufacturers certification of suction capability.
 4. If the apparatus has a pump, a copy of the apparatus manufacturers approval for stationary pumping applications.
 5. If the apparatus has a pump, a copy of the engine manufacturers certified brake horsepower curve showing the maximum governed speed.
 6. If the apparatus has a pump, a copy of the pump manufacturers certification of the hydrostatic test.
 7. If the apparatus has a pump, a copy of the certification of inspection and test for the fire pump.
 8. If the apparatus has an aerial device, the certification of inspection and test for the aerial device.
 9. If the apparatus has an aerial device, all technical information required for inspections to comply with NFPA 1914.
 10. If the apparatus has a fixed line voltage power source, the certification of the test for the fixed power source
 11. If the apparatus is equipped with an air system, test results of the air quality, the SCBA fill station, and the air system installation
 12. Weight documents from a certified scale showing actual loading on the front axle, rear axle(s), and overall fire apparatus (with the water tank full but without personnel, equipment, and hose)
 13. Written load analysis and results of the electrical system performance tests
 14. When the apparatus is equipped with a water tank, the certification of water tank capacity

VEHICLE ROLLOVER STABILITY

The apparatus chassis shall be equipped with a stability control system and shall be certified to NFPA 1901 Rollover Stability requirements.

VEHICLE DATA RECORDER (VDR)

The apparatus shall be equipped with an on-board Vehicle Data Recorder (VDR) . The recorder shall be capable of recording the following data, in this order, at a minimum of once per second:

Florida Sheriff's Association

#17 Commercial Pumper (Kenworth) Stainless Steel Body

- Vehicle speed (MPH).
- Acceleration (from speedometer) (MPH/Sec)
- Deceleration (from speedometer) (MPH/Sec)
- Engine speed (RPM)
- Engine throttle position (% of throttle)
- ABS event (on/off)
- Seat occupied status (occupied yes/no by position)
- Seat belt status (buckled yes/no by position)
- Master optical warning device switch (on/off)
- Time (24 hour)
- Date (year/month/day)

The data shall be stored at the sampling rate in a 48 hour loop. The system shall have sufficient memory to record 100 engine hours with of minute by minute summary data showing the data listed above. When the memory capacity is reached, the system shall erase the oldest data first..

All data stored in the VDR shall be password protected, upload able by the user to a computer and importable to into a data management software package. that shall be provided with the apparatus. The software shall be both "Windows" and "Apple" compatible. The software shall produce the following formatted reports from the uploaded data:

- Daily log for the time the engine is running for a given date (minute by minute output of all values).
- Weekly summary (maximum values each hour for each day of the week).
- Monthly summary (maximum values each day for each day of the month)

SEATBELT WARNING SYSTEM

The apparatus shall be equipped with a seatbelt warning system. The system shall consist of an audible warning device that can be heard at all seating positions that are designed to be occupied while the vehicle is in motion as well as a visual display visible to the driver showing each seating position. The warning system shall be activated anytime the parking brake is released or the automatic transmission is not in park

The system shall display seating position lights as follows:

- Green (buckled/senses occupant)
- Red (buckled/no occupant)
- Red (unbuckled/senses occupant)
- Dark (unbuckled/no occupant)

OCCUPIED SEATING POSITIONS -(2)

There shall be two seating positions designated for use while the vehicle is in motion.

FIRE HELMET MOUNTINGS

Fire helmets will be stored in an exterior compartment and will not be carried in the apparatus cab.

PAINT PROCEDURE - PPG DELFLEET BASE COAT/CLEAR COAT

After the apparatus body has been fully assembled and all mounting holes, etc. have been either punched, machined, or drilled, the removable parts shall be fully disassembled for the paint process.

Florida Sheriff's Association

#17 Commercial Pumper (Kenworth) Stainless Steel Body

All seams or flanges on the apparatus body shall be properly sealed to prevent moisture accumulation in flanged areas.

PAINT PROCESS:

The apparatus body paint procedure shall consist of an eight (8) step finishing process as follows:

1. Surface Preparation: All exposed metal surfaces on the apparatus exterior shall be thoroughly cleaned as per SSPC-SP1. All imperfections on the exterior metal surface shall be removed or filled prior to the priming process. All exposed metal shall be thoroughly abraded using a dual orbital air power sander as per SSPC-SP3.
2. Cleaning and Treatment: All surfaces shall be chemically cleaned using PPG DX436 was and grease remover cleaning agent to remove all dirt. Oil, grease and metal oxides to ensure proper adhesion as per SSPC-SP1.
3. Primer Application: PPG F3993 primer shall be applied to the bare metal as per bulletin DFT-041.
4. Primer/Surfacer Application: PPG F3975 primer/surfacer shall be applied to the primer.
5. Dual Orbital Sanding: The primer/surfacer shall be thoroughly sanded to a superior smooth surface.
6. Cleaning: After sanding in step #5, all surfaces shall be chemically cleaned again using PPG DX394 wash and grease remover to remove all oil and dirt. The surface to be painted shall be clean of all oil, grease, and dirt to ensure proper adhesion as per SSPC-SP1.
7. Primer Sealer Application: PPG Delfleet F3975 two component urethane primer/sealer shall be applied over the thoroughly sanded and cleaned primer/surfacer as per bulletin DFT-054.
8. Topcoat Application: Two coats of PPG Delfleet FBCH basecoat color two component polyurethane paint shall be applied to the primer sealer as per bulletin DFT-001. The base color shall be followed by two coats of PPG Delfleet F3906 two component polyurethane clear coat finish as per bulletin DFT-055.

DRY FILM PAINT TESTS

The apparatus manufacturer shall perform dry film readings on the painted apparatus to insure adequate paint thickness. The total dry film readings shall be a minimum of 6.4 mils average. These readings must be measured with an ETG ferrous/nonferrous digital dry film thickness measurement instrument. Readings must be taken from a minimum of 12 separate locations on the apparatus body. The apparatus manufacturer shall record these tests and make them available to the purchaser upon request.

PAINT PROCESS SYSTEM AUDIT

The apparatus manufacturer shall strictly follow the documented paint application procedure as provided by the paint manufacturer. The paint manufacturer shall also perform an annual audit of the paint process.

APPARATUS BODY PAINTED OFF CHASSIS

The apparatus body shall be painted prior to being mounted on the chassis. Painting of the body off the chassis will prevent primer and paint overspray on the cab, framer ails and other critical components of the apparatus and drive train.

There shall be no exception to this requirement.

Florida Sheriff's Association

#17 Commercial Pumper (Kenworth) Stainless Steel Body

PPG CERTIFIED 10 YEAR LIMITED PAINT WARRANTY

The apparatus body exterior finish paint shall have a 10 year limited warranty. The warranty shall be certified by the manufacturer of the paint. Documentation of this shall be provided to the end user. Any warranty that is extended by the apparatus manufacturer and not backed by the paint manufacturer will not be acceptable.

PPG Commercial OEM Product Warranty Coverage:

Warranty Inclusions:

- De-lamination of the topcoat and/or other layers of paint.
- Cracking or checking due to failure of the product.
- Excessive loss of gloss caused by cracking, checking and hazing.

Warranty Exclusions:

- Paint deterioration caused by blisters, bubbles, flaking or other degradation due to rust or corrosion originating from the substrate.
- Hazing, chalking or loss of gloss caused by improper care, abrasive polishes, cleaning agents, heavy-duty pressure washing, or aggressive mechanical wash systems
- Paint deterioration caused by abuse, scratches, chips, gloss reduction, accidents, acid rain, chemical fallout, road treatment materials/chemicals or acts of nature
- Any paint that was not applied by Toyne, Inc.
- Claims presented without proper Warranty documentation
- Failure on finishes performed by Non-PPG Commercial Certified Technicians
- Failures on finishes due to inadequate film builds
- Failures due to improper cleaning or surface preparation or failure to follow the product use instructions.

THESE ARE THE ONLY WARRANTIES THAT PPG MAKES, AND ALL OTHER EXPRESSED OR IMPLIED WARRANTIES, INCLUDING WITHOUT LIMITATIONS, ANY WARRANTY OF FITNESS FOR PARTICULAR PURPOSE OR USE, ARE DISCLAIMED BY PPG.

ELECTROLYSIS CORROSION CONTROL

The apparatus shall be assembled using ECK or electrolysis corrosion control, on all high corrosion potential areas, such as door latches, door hinges, trim plates, fenderettes, etc. This coating is a high zinc compound that shall act as a sacrificial barrier to prevent electrolysis and corrosion between dissimilar metals. This shall be in addition to any other barrier material that may be used.

Florida Sheriff's Association

#17 Commercial Pumper (Kenworth) Stainless Steel Body

APPARATUS BODY UNDERCOATING

The apparatus body shall be undercoated after assembly is completed. A bituminous based automotive type undercoat shall be used. Care shall be taken to avoid undercoat application to items that would hinder normal maintenance.

APPARATUS BODY COMPARTMENT INTERIOR FINISH

The interior of all apparatus body compartments shall be finished with a gray textured coating.

TIRE PRESSURE VISUAL INDICATOR

Real Wheels model RWTG1234 valve stem mounted visual indicators shall be provided on each tire. The LED indicators shall flash when the tire pressure drops 8 psi.

REFLECTIVE LETTERING

A maximum of sixty (60) 4" maximum height reflective self-adhesive letters with black outline and drop shadow shall be applied to both sides of the chassis cab.

The exact type style, wording and placement of the lettering will be provided to the successful bidder at the pre-construction conference.

No special lettering/numbering/etc (upgrade if you do)

8" NFPA REFLECTIVE STRIPE

An 8" reflective stripe shall be applied to the apparatus. The stripe shall be applied to a minimum of 50% of the length of the apparatus on each side, 50% across the rear and 25% across the front of the apparatus. The stripe shall comply with NFPA 1901 requirements.

PRIMARY REFLECTIVE STRIPE COLOR - WHITE

The primary reflective stripe shall be 680-10 white.

REFLECTIVE STRIPE - HORIZONTAL

The reflective stripe shall be applied in a straight horizontal line from front to rear. The height of the stripe on the chassis cab and the body shall be as close as possible.

INNER CAB DOOR REFLECTIVE STRIPING - 2 DOOR

A minimum of 100 square inches of reflective material shall be provided on the inner door liner of each cab door.

REAR CHEVRON STRIPING - DIAMOND GRADE

A minimum of 50 percent of the rear vertical surface of the apparatus shall be covered with 6 inch alternating 983-71 red and 983-23 fluorescent yellow green "Diamond Grade" retro-reflective striping. The striping shall slope downward away from the centerline of the apparatus at a 45 degree angle.

The retro-reflective material shall conform to the requirements of ASTM D 4956 "Standard Specification for Retro-

Florida Sheriff's Association

#17 Commercial Pumper (Kenworth) Stainless Steel Body

Reflective Sheeting for Traffic Control", Type I or better.

ENGINE EXHAUST

The exhaust pipe from the engine shall not be modified from the design configuration that was provided from the chassis manufacturer.

Shielding shall be provided between the apparatus body and the exhaust pipe if necessary to deflect heat away from the body. The exhaust system shall be designed and installed by the chassis manufacturer to comply with EPA equipment requirements.

FRONT/REAR MUDFLAPS

Heavy duty black rubber mud flaps shall be provided on the front and rear wheels. The mud flaps shall be attached to the apparatus in the front and the rear wheel well area using heavy duty stainless steel retention straps that are secured into place using stainless steel fasteners.

FRONT/REAR AXLE NUT COVERS AND BABY MOONS

The front and rear axle shall have stainless steel nut covers and baby moons.

REAR PULLING EYES

Two rear 3/4" CRS pulling eyes shall be provided under the rear tailboard. The eyes shall have a minimum of a 3" clear opening for passing chains through the eye.

"AS BUILT" APPARATUS BODY OWNERS MANUAL CD (2)

Two "as built" apparatus body owner's manual CD's shall be provided with the apparatus. All apparatus body electrical schematics shall be provided as well as all instructional and maintenance manuals on components provided and permanently mounted on the apparatus. A copy of the final apparatus body build specifications shall also be included on the CD. The CD's shall be "read only" and shall not allow modification.

To eliminate component confusion, generic CD's with equipment that is not provided on the apparatus body shall not be acceptable.

2 LB. BAG OF FASTENERS

A 2 lb. bag of fasteners used in the final assembly of the apparatus shall be provided. The bag shall contain a variety of fasteners and shall not be one single size.

DOT DRIVE AWAY KIT

Three triangular warning reflectors with carrying case and one 5 lb. ABC fire extinguisher with bracket shall be provided.

SOFT SUCTION HOSE

15' of 5" double jacket soft suction hose shall be provided. The hose shall be coupled 5" Storz fittings.