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Intent of Specifications

It is the intent of these specifications to clearly describe the furnishing and delivery to the Purchaser, a complete apparatus equipped as specified. The primary objective of these specifications is to obtain the most acceptable apparatus for service in the Fire Department. These specifications cover specific requirements as to the tests the apparatus must conform, together with certain details as to finish, material preferences, equipment and appliances with which the bidder should conform.

PLEASE NOTE:

These specifications are not meant to be specific to any one manufacturer, but are meant to establish a minimum quality level against which the purchaser shall compare all proposals for accuracy, warranty, service and the estimated apparatus life cycle. Alternate body materials such as aluminum, built using an extruded aluminum method of construction, may be considered. Steel bodies, aluminum bodies built on a steel sub-frame, or bent and formed body construction shall not meet the intent of these specifications.

The design of the apparatus must embody the latest approved automotive design practices. The workmanship must be of the highest quality in its respective field. Special consideration shall be given to service access to areas needing periodic maintenance, ease of operation, and symmetrical proportions. Construction must be heavy-duty and ample safety factors must be provided to carry loads as specified. The construction method employed will be in such a manner as to allow ready removal of any component for service or repair.

The apparatus shall conform to the National Fire Protection Association Standard for Automotive Fire Apparatus, number 1901, in its most recent edition, unless otherwise specified in this document. Only the specified firefighting support equipment listed in these specifications shall be provided.

The apparatus shall further conform to all Federal Motor Vehicle Safety Standards. No exception.

Each bidder shall furnish satisfactory evidence of their ability to design, engineer, and construct the apparatus specified and shall state the location of the factory producing the apparatus. They shall also substantiate they are in a position to render prompt and proper service and to furnish replacement parts for the apparatus.

Each bid must be accompanied by a set of detailed contractor's specifications consisting of a detailed description of the apparatus and equipment proposed. All bid proposal specifications must be in the same sequence as the advertised specification for ease of comparison. These specifications shall include size, location, type, and model of all component parts being furnished. Detailed information shall be provided on the materials used to construct all facets of the apparatus body. Any bidder who fails to submit detailed construction specifications, or who photo copies and submits these specifications as their own construction details will be considered non-responsive and shall render their proposal ineligible for award. No exception.

Proposals will be addressed and submitted in accordance with the instructions provided on the cover sheet. The words "Fire Apparatus Proposal", the due date, and opening time if any shall be stated on the front of the envelope.

It shall be the responsibility of the bidder to assure that their proposal arrives at the location and time indicated. Late proposals, telegrams, facsimile, or telephone bids will not be considered. No exception.

All bidders are required to propose payment terms as invoiced and due at time of delivery. No required prepayments or progress payments are to be required.

Bid Bond

A bid security in the form of a Bid Bond, cashier's check, or certified check made payable to the Purchaser in the amount of ten percent (10%) of the total bid shall be required. This shall serve as a guarantee which may be forfeited and retained by the Purchaser in lieu of its other legal remedies if a successful bidder's proposal is accepted by the Purchaser and the bidder shall fail to execute and return to the Purchaser the required contract and bonds within ten (10) days after delivery. If a Bid Bond is provided, it shall be issued by a bonding company licensed to bond in this State.

Certificate of Insurance

Each bidder shall furnish, with their proposal, a Certificate of Product Liability Insurance for a minimum of ten (10) million dollars. Failure to provide this documentation shall render the proposal non-responsive and the bid shall be rejected. This certificate shall be from the prime builder only. Certificates submitted from various sub-contractors in order to total the ten million dollar minimum will not be acceptable as meeting the requirements of this section.

If one of the major portions of the apparatus (i.e. chassis, aerial, or body) is not designed, fabricated, and assembled by the prime builder, a separate Certificate of Liability Insurance for a minimum of ten (10) million dollars must be provided by each additional contractor.

The Certificate must be made out to the Purchaser and must be original. Submission of a non-original Certificate, or a Certificate provided that is not made out to the Purchaser, will not meet the requirements of this section.

Delivery

The bidder shall state the time required for delivery of the completed unit on the proposal page. The completed unit shall be delivered to the purchaser with familiarization instructions provided to Fire Department personnel on operation, care and maintenance of apparatus at the purchaser's location.

Exceptions

The following apparatus specifications are considered minimum design and construction standards against which the apparatus will be inspected. It is the intent to receive proposals on equipment/apparatus meeting the attached detailed specifications in their entirety. Any proposals being submitted, without "Full Compliance" with these specifications, shall so state on the bid proposal page, followed by a detailed "Letter of Exceptions" listing the areas of non-

compliance. The reference must include page number, paragraph, and the exact nature of the exception.

Failure to follow this format, provided for the convenience of the Purchaser, will render the vendor's proposal non-responsive and ineligible for award of contract.

The Purchaser may add the statement "No Exception" to a component or design feature in these specifications. In the interest of fleet conformity or specific performance requirements, the Purchaser will not permit exceptions taken to these item(s).

The Purchaser reserves the right to reject any or all bid proposals and purchase the equipment it deems most suitable to its needs. The Purchaser does not, in any way, obligate itself to accept the lowest or any bid. Any bidder taking total exception to the complete specification or a major element will result in immediate rejection of the proposal.

ISO Compliance

The manufacturer shall operate a Quality Management System meeting the requirements of ISO 9001:2000.

The International Organization for Standardization (ISO) is a recognized world leader in establishing and maintaining stringent manufacturing standards and values. The manufacturer's certificate of compliance affirms that these principles form the basis for a quality system that unswervingly controls design, manufacture, installation, and service.

The manufacturer's quality systems shall consist of, but not be limited to, all written quality procedures (aka QOP) and other procedures referenced within the pages of the manufacturer's Quality Manual, as well as all Work Instructions, Workmanship Standards, and Calibration Administration that directly or indirectly impacts products or processes. In addition, all apparatus assembly processes shall be documented for traceability and reference. The manufacturer shall also engage the services of a certified third party for testing purposes where required.

If the manufacturer operates more than one manufacturing facility each facility must be ISO certified.

By virtue of its ISO compliance the manufacturer shall provide an apparatus that is built to exacting standards, meets the customer's expectations, and satisfies the customer's requirements.

A copy of the manufacturer's certificate of ISO compliance for each manufacturing facility shall be provided with the bid.

Proposal Price

Each bidder's proposal must include all items required in the specifications unless a specific exception is taken. Any bidder who option prices an item included in these specifications that

does not specifically require option pricing will have their proposal rejected without further cause.

Reference List

Each bid shall be accompanied by a list of at least twenty-five (25) similarly constructed apparatus presently in service. Each reference must be apparatus built of the same construction style as these specifications call for. This list shall include customers' names, addresses and date apparatus was placed in service.

Service Requirements

Each bidder shall supply, with their proposal, detailed information on the bidder's ability to perform routine and emergency service on the apparatus after delivery. Detailed information shall be provided on service facilities, personnel, service vehicles, and the type and nature of repair work the bidder is able to provide. Bidder shall state the number of miles from the Purchaser's facility to the nearest fully staffed repair facility operated by the bidder. It is the intent of the Purchaser to assure that parts and service are readily available for the equipment specified. Service capabilities will be one of the criteria for award of this contract.

Overall Height Restriction

The apparatus shall have overall height restrictions (unloaded condition) of 10 ft 9 inches.

Overall Length Restriction

The completed unit shall have an overall length restriction 31 feet.

NFPA Compliance

The supplied components of the apparatus shall be compliant with NFPA 1901, 2016 edition.

Equipment Capacity

Equipment allowance on the apparatus shall be 4000 lbs. This allowance is in addition to the weight of the cascade system and ladders listed in this document.

CHASSIS SPECS and PREP

Kenworth Chassis

The commercial chassis specifications are as follows:

Vehicle Summary

Unit		Chassis	
Model:	T300 Series Conventional.	Fr Axle Load (lbs):	14000
Type:	FULL TRUCK	Rr Axle Load (lbs)	26000
Description:	85411 Robert	G.C.W. (lbs):	40000
Application		Road Conditions:	
Intended Serv.:	Fire truck service. Vehicles used in fighting	Class A (Highway)	00
Commodity:	Fire apparatus	Class B (Hwy/Mtn)	100
		Class C (Off-Hwy)	00
		Class D (Off-Road)	00
Body		Maximum Grade:	6
Type:	Fire truck-pumper	Wheelbase (in):	189
Length (ft):	18.0	Overhang (in):	68
Height (ft):	12.0	Fr Axle to BOC (in):	68
Max Laden Weight (lbs):	4000	Cab to Axle (in):	121
		Cab to EOF (in):	189
Trailer		Overall Comb. Length (in):	298
No. of Trailer Axles:	0		
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.

C	<p>Ask your dealer for a quote today, or visit our website @ www.paccarfinancial.com.</p> <p>PACCAR Financial offers innovative finance, lease and insurance programs customized to meet your needs.</p>
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Unpublished options may require review/approval.
Dimensional and performance data for unpublished options may vary from that displayed in PROSPECTOR.

Printed: 6/30/2017 10:32:37 AM **Complete** Model Number: T300 Series Conventional
 Effective Date: Jan 1, 2017 Quote/DTPO/CO: G33266203
 Prepared by: Administrator Version Number: 39.20

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Model	Description	Weight
	T300 Series Conventional. 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.	9,642
	T370 Class 7: medium-duty Conventional.	0
	Chassis operation will include stationary application used in lower 48 states [US only]. Stationary operation is defined as running the engine under load while stationary at a substantial fraction of engine gross horsepower (60% or greater) for an extended period of time (longer than 5 - 10 minutes).	0
	Dealer/Customer declines engine w/CARB Idle Emissions Reduction Feature.	0
	Medium-duty 4x2 automatic.	0
	Fire apparatus	0
	Fire truck service. Vehicles used in fighting fires. Typically have pumps, etc., mounted in the body. Road usage: minimum 5% Class B and maximum 5% Class D.	0
	Fire truck-pumper	0
	U.S. Domestic Registry, 50-State	0
Engine & Equipment	PACCAR PX-9 330EV 2017 330@2000 320@2200 660@1400 Emergency Vehicle includes turbo exhaust brake, no code is used. Diagnostic Plug for data link, Oil Cooler, Aluminum Flywheel Housing. N09200 N205 155..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 P18 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 P08 NO...Gear Down Protection N09480 P28 1400.Max PTO Speed N09500 P02 NO...Cruise Control Auto Resume N09520 P04 NO...Auto Engine Brake in Cruise	555

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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 Override	
N09720 P230 YES...Enable Hot Ambient Automatic Override	
N09740 P46 40...Low Ambient Temperature Threshold	
N09760 P56 60...Intermediate Ambient Temperature Threshold	
N09780 P47 80...High Ambient Temperature Threshold	
Prospector Version 39.2	0
Replaces 39.1	
Effective VSL Setting NA	0
Engine Idle Shutdown Timer Disabled	0
Enable EIST Ambient Temp Override	0
Eff EIST NA Expiration Miles	0
Use only with MX and Cummins engines	
Air compressor: Cummins 18.7 CFM FOR Cummins AND PACCAR PX engines.	0
Air Cleaner: Dry-type firewall mounted w/filter restriction indicator.	0
Fan Hub: Horton 2-Speed for ISL9, ISL-G, PX-8 or PX-9	0
Cooling module: 1000 square inches	0
T170/T270/T370/T470. Includes metal surge tank on T170/T270/T370.	
EXH:2017 EPA HORIZONTAL SERIES DPF/SCR FOR PX-9 WITH HORIZONTAL TAILPIPE BELOW RH RAIL	2
Fuel Filter:Fleetguard FS1003	0
Fuel/Water Separator for PX-9	
Run Aid:None	0
*For Fuel Filter	
Start Aid:None	0
*For Fuel Filter	
Retarder Jacobs for PX-8/9 ISL w/ 3-way switch.. Replaces the standard turbo brake for PX-8 engines.	57
Alternator: Delco 40Si 320 amp Brushless with battery voltage sense	14
Batteries: 3 PACCAR GP31 threaded post (700-730) 2100-2190 CCA dual purpose. 12-VOLT LIGHT SYSTEM w/CIRCUIT PROTECTION	57
Starter: PACCAR 12 volt electrical system. W/ centralized power distribution incorporating plug-in style relays. Circuit protection for serviceability, 12-volt light system w/circuit protection circuits number & color coded.	0
Cab Power Cutoff SW on Cab Floor	2
NFPA Compliant - Engine Shut off	
Multi-function engine connector for body builder interface for Cummins.	0
Body Builder Control Harness coiled EOF for customer installed remote throttle and remote PTO controls. Harness includes Remote PTO control and Remote Throttle controls. T680/T880 models do not require 12-way engine connector sales codes. All other models require (1900082 or 1900084).	2
Transmission & Clutch	
Transmission: Allison 3000EVS 6-speed	291
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.	

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Driveline: 2 SPL170XL 1 centerbearing requires 3500057 interaxle driveline.	70
One bolted centerbearing crossmember. This option upgrades an existing crossmember. The cost does not include the centerbearing and bracket. Crossmember location will be in accordance with Kenworth engineering standards, using the major components specified on the DTPO.	11
Torque converter included w/Allison Transmission.	0
J1939 Park Brake Auto Neutral	0
Rear transmission support springs for transmission PTO applications are required to ensure that engine flywheel housings are not overloaded when transmission PTO's are installed.	0
Front Axle & Equipment	
Meritor MFS14 14.6K 3.5in. drop standard track.	39
Front brakes included w/ front hub package.	0
Air Brake: 14,600 lb. package includes 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.	0
Front Springs: Taperleaf 14.6K w/ shock absorbers for use on 2010+ chassis only.	80
Single power steering gear: 14.6K.	9
Rear Axle & Equipment	
Single Meritor RS26-185 rear axle rated at 26K.	256
Rear Axle Ratio - 4.30.	0
Single rear brakes included w/rear hub package.	0
26K air brake package includes 16-1/2x7 in. brakes, cast drums, iron 10-bolt hub pilot hubs, slack adjusters and oil seals for use w/ 22.5 in. wheels.	0
Spring Brake: 3030 high output single.	0
Bendix 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.	0
Rear 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.	119
Bolted rear suspension crossmembers for Reyco 79KB. Replaces T3 standard.	41
Tires & Wheels	
Front tires: Goodyear G661 HSA 12R22.5 16PR. 42.9 in. diameter, all position. 20.1 in. SLR.	52
Rear tires: Goodyear G182 RSD 12R22.5 16PR. 43.4 in. diameter, all position. 20.4 in. SLR. Code is priced per pair of tires.	128
Rear Tire Quantity: 4	0
Front wheel: Alcoa 88367 22.5x8.25 aluminum with Lvl One [TM] finish, hub pilot mount. 7,400 lb. maximum rating. Air disc brake compatible.	-44
RR WHEEL: ALCOA 89U64 22.5X9 AL Ultra ONE Wheel.	-48
Single front axle: 2 Polished wheels. Polished outboard surface of aluminum wheels.	0
Single rear axle: 2 Polished wheels. Polished outboard surface of outer dual or single aluminum wheels.	0
Rear Wheel/Rim Quantity: 4	0
Frame & Equipment	

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Frame Rails: 10-5/8 x 3-1/2 x 5/16 in. Steel to	166
308 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.	
Delete bumper: Requires a bumper setting code.	-24
40.9 in. Bumper setting. Requires a bumper code.	0
Removable Front Tow Hooks: 2.	15
Front mudflaps.	0
Battery box: Temporary across the rails.	-99
Battery box location: BOC across the rails.	0
Steel toolbox: Under cab, aluminum diamond plate cover w/step, w/o lock.	138
Toolbox location: RH side.	0
Bolted crossmembers with 12mm frame fasteners. For center and rear frame.	-22
Bolted Rear Cab Support Crossmember. Replaces T3 standard.	17
Component Restriction: Do Not Drive- Unit may be decked.	0
Square end-of-frame w/ o crossmember;non-towing.	0
Fuel Tanks & Equip	
Fuel Tank: 56 US gallon 24.5in. aluminum under replace.	-45
Small round DEF tank. 11 gallons of useable volume. The DEF tank will be located on the side you specified. If you have specific configuration or body builder concerns, please utilize the Custom Frame Layout option. Standard capacity is calculated by fuel capacity of the vehicle and will accommodate two diesel fill-ups for every DEF fill-up. For 1:1 DEF fuel fill ratio, add 7889204.	0
Fuel Tank Steps: 6in.wide upper & lower 1RH/1LH under round tank 24.5in. NFPA Compliant. Includes fuel tank crossbrace.	16
Standard DEF to fuel fill ratio: 2:1 or greater.	0
DEF tank location is on the LH.	0
Location: 56 gal fuel tank LH under cab	0
Cab & Equipment	
Cab: Curved Glass Conventional. 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.	0
Hood: Sloped aerodynamic hood includes grill & separate bumper.	0
Cab heater: W/integral defrosters & A/C 45,000 btu cab heater. No sleeper heater/AC. Includes 5 mode rotary control. T860 include filter media.	0
Adjustable telescoping tilt steering column.	10
5 sets of keys. Replaces standard 2 sets of keys.	0
Two spare switches: Wired to power.	0
Gauge: Dash mounted air filter restriction gauge.	0
Instrument package: Includes speedometer,	0

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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.	
Full burl wood dash panels, replacing standard.	0
Cab interior: Pinnacle. Includes vinyl headliner	0
& cab back panel, slate gray interior, dark slate gray seats, floor mats, LH/RH inside sunvisor & door courtesy lights.	
Driver seat: Kenworth Air cushion Plus HB vinyl.	2
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. Grey seat belts.	
Rider seat: Kenworth Toolbox Plus HB vinyl.	2
Standard features include fixed base and backrest, tool box seat base w/ door, 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. Grey seat belts.	
Driver air seat height limited: NFPA compliant.	0
NFPA Compliance Kit: Includes seat occupancy	60
sensors. Seat belt switches, VDR & seat sensor harness, reflective labels, and a second copy of operators manual.	
Driver/Rider Seat Belts: Red, Replace Standard.	0
Extended Length. Not NFPA Compliant.	
Under-dash center console: W/2 cup holders, 1	0
ashtray, 1 lighter, 1 12V outlet & a storage compartment.	
Self cancelling turn signal: W/head light dimmer	0
switch.	
Cab access contoured grabhandles, LH/RH.	0
LH & RH NFPA Compliant Grabhandles	4
Grabhandle LH inside door frame above dash.	0
Grabhandle RH inside door frame above dash.	2
DAYLITE DOOR: LH/RH INCL RH PEEPER WINDOW	0
Solenoid, switch & wiring for customer-installed	0
air horn on T300 chassis. If the chassis has hydraulic brakes, it will require code 1000307 for Accessory air system for hydraulic brakes.	
Dual convex mirrors 7-1/2 in. w/ offset mounting,	0
and non-heated.	
Look-Down, Pass. Door, Stainless 8.5x4.4	0
Mirror: Dual Moto heated mirrors 7 in. x 16 in.	4
LH & RH remote controlled. Switch located on door pad.	
Mirror brackets 8-1/2 ft load width.	0
Rear Cab Stationary Window 17 in. x 36 in.	0
Manual LH & electric-powered RH door window.	0
Switch located on door.	
Exterior stainless steel sunvisor.	11
Lights & Instruments	
Headlamps: Halogen Projector Low Beam, Halogen	0
Complex Reflector High Beam	
Marker Lights: Five, rectangular, LED	0
Turn Signal Lights: Mounted on fender	0
Combination Stop, Tail, Turn & Backup Lights RH	0
& LH.	

Email Report

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Air Equipment	Air Dryer Bendix AD-IS heated Puraguard	0
Extended Warranty	Medium-duty Warranty: 1-year/unlimited mi.	0
Miscellaneous	GHG Secondary Manufacturer: Does Not Apply	0
	Additional lead time required for off highway & /or specialty component truck.	0
Paint	Paint color number.	0
	N97020 A - Z9990 UNPUBLISHED P	
	N97200 FRAME N0001 BLACK	
	Day Cab Standard Paint	0
	1 - Color Paint - Day Cab	0
	Color will be White if no other color is specified.	
	Non-standard paint color.	0
	Base coat/clear coat.	0
	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		11592 lb

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:	6/30/2017 10:32:37 AM	Complete	Model Number:	T300 Series Conventional
Effective Date:	Jan 1, 2017		Quote/DTPO/CO:	Q33268203
Prepared by:	Administrator		Version Number:	39.20

Kenworth Chassis Prep

The commercial chassis shall be made ready for installation of components required by the fire apparatus specifications such as warning lights and sirens, cab wire harness, etc. Preparation shall also include relocating of components as necessary to meet the fire apparatus requirements such as exhaust tail pipe, air system components, batteries, etc.

BUMPERS

Bumper

A heavy duty 10" high steel channel type front bumper shall be provided. The front corners of the bumper shall be angled to reduce swing clearance. The bumper shall be painted job color.

Bumper Extension

The front bumper extension shall be approximately 12" from the face of the cab as required.

Bumper Gravel Shield

The extended front bumper gravel shield shall be made of 3/16" (.375") aluminum tread plate material.

WHEEL OPTIONS

Front and Rear Wheel Trim Package

The front and Rear aluminum wheels shall have stainless steel lug nut covers. The front axle shall be covered with American made Real Wheels brand mirror finish, 304L grade, non-corrosive stainless steel universal baby moons. The rear axle shall be covered with American made Real Wheels brand mirror finish, 304L grade, non-corrosive stainless steel high hats. All stainless steel components shall carry a lifetime warranty plus a 2 year re-buffing policy. There shall be two (2) baby moons, (2) high hats and forty (40) lug nut covers.

TIRE OPTIONS

Tire Pressure Indicators

The apparatus shall be provided with Real Wheels AirGuard LED tire pressure indicating valve stem caps. When the tire is under inflated by 5-10 PSI, the LED indicator on the cap shall flash red. The indicator housings shall be shock resistant and constructed from polished stainless steel. The indicators shall be calibrated by attaching to valve stem of a tire at proper air pressure per load ratings and easily re-calibrated by simply removing and re-installing them during service.

AIR SYSTEM OPTIONS

Air Inlet

A 1/4" male plug air hose inlet shall be connected to the air reservoir tank. A 1/4" inline check valve will be installed in the line. Air hose connection will provide the capability of filling the air brake system with air from an outside source. Location: driver's door step area.

Air Horns

Dual Grover hood mounted air horns shall be installed.

EXHAUST OPTIONS

Exhaust End Modification

The end of the exhaust tail pipe shall be modified to accommodate a Plymovent in-house exhaust extraction system. The tail pipe will be at 90 degrees and straight out below the officer side of body in front of the rear wheels. A stop ring shall be provided on the tail pipe to properly position the Plymovent nozzle.

BATTERIES

Battery Jumper Stud Location

Auxiliary battery jumper studs shall be located near the cab to allow external battery charging.

Commercial Chassis Battery Relocation

Batteries shall be placed on non-corrosive rubber matting and shall be located on the forward driver side top of the body, above the cascade bottles. The batteries shall be secured with hold-down brackets to prevent movement, vibration, and road shock. The hold-down bracket J-hooks shall be cut to fit and shall have all sharp edges removed. The batteries shall be placed in plastic trays to provide preliminary containment should there be leakage of hazardous battery fluids. There shall be two (2) plastic trays, each containing (2) batteries (if applicable). Each battery tray shall be equipped with a rubber vent hose to facilitate drainage. The rubber vent hose shall be routed to drain beneath the battery box.

Battery Box

There shall be a diamond plate battery box enclosing the batteries for protection. Cover shall include ventilation louvers.

CHASSIS OPTIONS

Front Tow Hooks

Two (2) heavy duty painted front tow hooks shall be securely bolted to the front chassis frame rail extensions to allow towing (not lifting) of the apparatus without damage. They shall be mounted in the downward position.

Three (3) Underbody Receivers

An underbody three (3) way receiver assembly with (3) winch connections shall be provided.

There shall be three (3) receivers provided below the rear of the body; one (1) rear facing winch/Class IV hitch receiver and two (2) Class III side facing winch receivers. The receivers shall be of an integral construction to the underbody support assembly.

The rearward facing Class IV hitch/winch receiver shall include two (2) tow eye connections and an electrical connection for a portable winch application. The two (2) side facing winch receivers shall be located one (1) each side below the rearward most body compartment. Each side facing hitch receiver shall include an electrical connection for a portable winch application.

Rear receiver shall be rated as a Class IV trailer hitch with a 10,000 lb. gross trailer weight with a 1000 lb. max trailer tongue weight.

Each side facing portable winch connection shall be rated for a maximum of 9,000 lb. straight line pull.

Front Bumper Receiver

A front bumper winch receiver shall be provided. The receiver shall be constructed of steel tubing and attached to the chassis framing. An electrical connection shall be provided for use with a portable winch.

The portable winch connection shall be rated for a 9,000 pound straight line pull.

CAB DOOR OPTIONS

Cab Door Interior Striping

Reflective striping shall be installed on commercial cab doors, visible when the door is open, meeting NFPA requirement of 96 sq. in. coverage for each door.

MISC EXTERIOR CAB OPTIONS

Grover Air Horns

Dual Grover air horns shall be provided and connected to the chassis air system. The horns shall be mounted on the hood of the chassis. A pressure protection valve shall be installed to prevent the air brake system from being depleted of air pressure

Label ``Diesel Fuel Only``

Located above each fuel filler housing shall be a metallic label that designates "Diesel Fuel Only" requirements. It shall be black with white or equivalent contrasting letters a minimum of 1/2" high.

SEATS

Seating Capacity Tag

A tag that is in view of the driver stating seating capacity of two (2) personnel shall be provided.

MISC INTERIOR CAB OPTIONS

Air Horn Lanyard(s)

There shall be a "Y" style lanyard mounted in the center of the cab to a single switch that allows the driver and officer to operate the air horns on units thus equipped. The lanyard shall activate a single center mounted electrical air switch.

Cab Console

The console shall be centrally located and shall allow the driver and/or officer access to all components while seated with seat belts secured.

The console shall be constructed of aluminum smooth plate with a black Zolatone finish. The top surface shall have a non-reflective material for increased visibility of labels and controls. Any switches located on the console shall be clearly labeled and shall be back-lit for easy operation and visibility.

CAB ELECTRICAL OPTIONS

Cab Dome Lights

A dome light assembly with two incandescent bulbs with one white lens and one red lens and plastic housing shall be installed. The white lights activate with appropriate cab door and light assembly mounted push button switch, the red light activates with light assembly mounted push button switch only.

The lights shall be mounted in the front of the cab, one in the driver and one in the officer ceiling.

Battery Charger Receptacle

A 20 amp battery charger receptacle shall be installed below the driver door in the step area. The cover color shall be Yellow.

Antenna Base (Qty 2)

There shall be a Tessco P/N 90942 universal antenna base mounted on the each side (qty 2) of the cab roof using weatherproof connectors. The antenna base shall be NMO Motorola Style (equivalent to a MATM style) with RG58U coax cable. The coaxial cable shall terminate in the center console.

Battery Charger

An LPC 20 battery charger with remote mounted LED display shall be installed.

A fully automatic charging system shall be installed on the apparatus. The system shall have a 120 volt, 60 hertz, 7 amp AC input with an output of 20 amps 12 volts DC. The battery charging system shall be connected directly to the shoreline to ensure the batteries remain fully charged while the vehicle is in the fire station or firehouse.

The system shall include a remote charging status indicator panel. The panel shall consist of two (2) LED lights to provide a visual signal if battery voltage is good or drops below 11.5 volts. The microprocessor shall be continuously powered from the battery to provide the charge status.

BODY SPEC

Stainless Steel Rescue Body Design And Construction

The compartment floors, ceilings, front panels, vertical side sheets, rear walls, door openings, wheel wells, compartment panels, dividing walls, and reinforcements shall be constructed of 12 gauge 304L stainless steel material.

To eliminate unnecessary seams and overlapping areas, the construction of all component panels shall feature break-formed fabrication. Angle iron framing is not acceptable. Component panels shall be in single metal sections wherever possible.

The assembly of body component panels shall be with inert gas, continuous feed welders. Stick welding is not acceptable. The use of sheet metal fasteners in assembly of body components is unacceptable.

Structural supports shall be incorporated into the overall design to provide the necessary support for component panels and body modules.

The body shall be a free standing module supported only by the top of the chassis frame rails using a transverse 7 gauge 304L stainless steel structure assembly consisting of 2" x 3" tubes and 3/16" mounting plates. This structure shall be secured in a minimum of eight (8) locations, using a double flex mount system with angle brackets bolted to both the body structural assembly and the sides of the chassis frame rails using Grade 8 fasteners. Mylar shall be used to isolate the structural assembly from the frame rails. A body substructure using carbon steel, outrigger arms or any other mounting method is not acceptable. This design is required to eliminate shift and stress on the body module and component panels.

Each compartment door opening shall have at least a double break-formed door jamb for recessed door seal inboard of the exterior of the body. The break-formed door jamb is required for superior strength and body construction integrity. Doors that utilize only a single break-formed door jamb are not acceptable.

The compartment floor construction shall permit easy cleaning with a true sweep-out design. The outer floor area, making up the compartment door jamb, shall incorporate triple break-formed construction for recessed door seal inboard of the exterior of the body. This shall be required to eliminate road splash and debris from entering the compartments at floor level. Angles, lips, or door moldings are not acceptable in the base of the door opening. There shall be a minimum of two (2) 3/8" drain holes in each of the compartment floors.

The interior of all compartments shall have a machine sanded DA finish that shall not be painted. Each interior compartment seam shall be sealed with a silver silicone caulk. The rear walls of each compartment shall be provided with a bright stainless steel louvered vent.

RESCUE BODY LOWER

Body Dimensions

Left Side Body Compartments

Compartment L1, directly behind the cab, shall be 52.0" wide x 80.0" high x 27.0" deep in the lower section and transverse over the frame rails to R1 with one (1) rollup door.

Compartment L2, directly ahead of the rear wheels, shall be 52.0" wide x 80.0" high x 27.0" deep in the lower section and transverse over the frame rails to R2 with one (1) rollup door.

Compartment L3, above the rear wheels, shall be 60.0" wide x 48.7" high x 27.0" deep with a solid rear wall and one (1) rollup door.

Compartment L4, behind the rear wheels, shall be 52.0" wide x 80.0" high x 27.0" deep, full height, with a solid rear wall and one (1) rollup door.

Right Side Body Compartments

Compartment R1, directly behind the cab, shall be 52.0" wide x 80.0" high x 27.0" deep in the lower section and transverse over the frame rails to L1 with one (1) rollup door.

Compartment R2, directly ahead of the rear wheels, shall be 52.0" wide x 80.0" high x 27.0" deep in the lower section and transverse over the frame rails to L2 with one (1) rollup door.

Compartment R3, above the rear wheels, shall be 60.0" wide x 48.7" high x 27.0" deep with a solid rear wall and one (1) rollup door.

Compartment R4, behind the rear wheels, shall be 52.0" wide x 80.0" high x 27.0" deep, full height, with a solid rear wall and one (1) rollup door.

Transverse Compartment Floor Extension

The floor at the frame height in L1, L2, R1 and R2 shall be extended to the door opening. The floors are made from 12 gauge 304L stainless steel. Floor extensions shall be welded in place.

RESCUE BODY UPPER

Perimeter Roof Center Rear, Entrance From Rear Ladder

A perimeter roof at the top of body is designed to allow for storage and a walking area on top of the truck. Entrance is at the rear on the curb side of the truck. There is a 30 inch wide aisle way that runs between two (2) sets of roof compartments. The aisle shall have LED lights along the walk way. The walkway ends at a top open transverse storage area at the front of the body.

Upper Roof Top Compartment Arrangement

Front Upper Body Transverse Storage Pocket

The front of the upper body header area shall be designed to provide a 66" long transverse storage pocket for protected and concealed installation of a light tower and cascade bottles.

To prevent accumulation of water, the non-slip aluminum tread plate floor of this area shall be provided with large drain holes and drainage tubing properly installed to discharge water down and out of the body. The overall height and design of this transverse storage pocket shall seamlessly blend with the remainder of the upper body header area.

Upper Body Compartments

Above the left and right side full depth rescue body compartments, rearward of the storage pocket, shall be additional full length horizontal top loading storage compartments separated by the 30 inch wide center aisle way. These compartments shall be constructed of 12 gauge 304L stainless steel, formed and welded integral with the main body compartments, and shall not

appear as add-on compartments. There shall be divider panels between the drivers side upper compartments only (No Divider in Officers side). The finished overall body height shall closely blend with the cab roof height for best appearance. The compartments shall be 23” high x 33” wide and have the following lengths;

Driver side front compartment 104"

Driver side rear compartment 58"

Officer side front compartment 69"

Officer side rear compartment 69"

All dimensions are approximate.

The outer full length panel of these compartments shall provide room for installation of side and rear Upper Zone warning lights, floodlighting, and body lettering.

Aisleway

Between the upper compartments shall be a 30" wide center aisle way. The floor of the aisle way shall be stainless steel located above the tops of the lower center body area compartments. For safe footing in all weather conditions, maintenance free Duradek T3500 slatted fiberglass non-skid yellow decking shall be installed on top of the flooring, full length and width of the aisle way. Included shall be two (2) 4-1/2" diameter Truck-Lite LED recessed clear lens lights for proper illumination of the aisle way, wired to come on with the cab controlled step light or ground light switch.

Hatch Doors

The left and right side upper compartments shall each be equipped with top opening 3/16" polished aluminum treadplate reinforced hatch style doors, hinged outboard, latching at the center aisle way. A full perimeter formed raised lip door jamb shall be provided on the top of the compartments for each door, and shall include a hollow core neoprene gasket on the doors for a complete water tight seal.

To assist opening and closing the doors, each door shall include a chrome plated handle, centered on the doors latching end for easy single hand operation. Each door shall have rubber hood latch hold downs and two heavy duty gas tube hold open arms.

Two (2) recessed clear lens Whelen Model 5GC0CCCR LED (or equivalent) lights shall be installed in each compartment. Lights will be bracket mounted under lid. Each lid shall be wired to the door ajar indicator in the cab.

RESCUE BODY REAR

Rear Panel Compartments

The upper rear compartment B1, above chassis frame rails, shall be 45" wide x 57" high x 116" deep with two box style (2) hinged doors.

Lower compartment B2, between the full length chassis frame rails, shall be 24" wide x 15" high x 26" deep, with a smooth aluminum bottom hinged drop-down door and stainless steel bent D-ring latch. The smooth aluminum material shall be an ideal surface for Chevron graphics or as required. Rubber bumpers shall be installed on the face of the door where the open door contacts the rear tailboard.

Rear Tail Board

A 3/16" non-skid aluminum treadplate rear step assembly shall be installed. Rear step outside flanges shall be formed down a minimum of 2-1/2" and formed inward 1" for rigidity. The rear tailboard shall be full width of the body supported by 12 gauge stainless steel channels, spaced away for drainage and 12" deep. The step shall have Bustin Tread non-skid aluminum inserts welded flush with the pattern of the treadplate for safe footing.

Rear Body Trim

The rear body panel shall be trimmed with 1/8" FRP panels that are painted job color.

Recessed Step Area

The rear right side above the Zico access ladder is recessed in 24" for access to the top of the roof top compartments. The recessed area is approximately 20.5" wide and the stepping area shall be embossed diamond plate.

RESCUE BODY OPTIONS

Awning Side Body (Qty 2)

A side body awning, approximately 19` long x 10` wide, shall be installed on each side of the vehicle. The arms shall be attached to the vertical body extrusions allowing an unobstructed walking area underneath the awning.

The canopy is woven of a tough acrylic fabric to resist rotting, cracking, and mildew, available in a variety of colors.

A wrap around slatted metal enclosure secures the awning to the vehicle while traveling and will minimize dirt and grime on the canopy.

Awning color will be Gray.

Awning will be connected to the door system to indicate when it is deployed.

DOORS

Painted Roll Up Compartment Door

A ROM brand roll up door painted job color shall be provided on all side body compartments.

The Robinson door slats shall be double wall box frame and manufactured from anodized aluminum. The slats shall have interlocking end shoes on each slat. The slats shall have interlocking joints with a PVC/vinyl inner seal to prevent any metal to metal contact and inhibit moisture and dust penetration.

The track shall be painted aluminum with a finishing flange incorporated to provide a finished look around the perimeter of the door without additional trim or caulking. The track shall have a replaceable side seal to prevent water and dust from entering the compartment.

The doors shall be counterbalanced for ease in operation. A full width latch bar shall be operable with one hand, even with heavy gloves. Securing method shall be a positive latch device.

A magnetic type switch integral to the door shall be supplied for door ajar indication and compartment light activation.

Single Drop-Down Compartment Door B2

A single compartment door shall be constructed using a box pan configuration with sanded exterior finish shall be installed on compartment B2. The outer door pan shall beveled and shall be constructed from 3/16" (0.188") aluminum smooth plate. Inner door pan shall be constructed from 3/32" (0.090") smooth aluminum plate and shall have nutsert fittings to attach hold-open hardware. The inner pan shall have a 95-degree bend to form an integral drip rail.

The compartment door shall have a 1" x 9/16" (1" x 0.43") closed-cell "P" EPDM sponge gasket meeting ASTM D-1066 2A4 standards installed around the perimeter of the door to provide a seal that is resistant to oil, sunlight, and ozone.

A drain hole shall be installed in the lower corner of the inside door pan to assist with drainage.

A polished stainless steel Hansen D-ring style twist-lock door handle with a #459 latch shall be provided on the door. The 4-1/2" (4.5") D-ring handle shall be mounted directly to the door latching mechanism with screws that do not penetrate the door material for improved corrosion resistance.

The compartment door shall be securely attached to the apparatus body with a full-length stainless steel 1/4" (0.25") rod piano-type hinge isolated from the body and compartment door

with a dielectric barrier. The door shall be attached with machine screws threaded into the door frame. The door shall have chain style hold-open devices.

An anodized aluminum drip rail shall be mounted over the compartment opening to assist in directing water run-off away from the compartment.

Stainless Steel Double Compartment Doors B1

Double vertically hinged compartment doors shall be installed on compartment B1. They shall be lap style and feature a 12 gauge 304L stainless steel outer skin with a 1-1/2" deep 16 gauge 304L stainless steel full inner box pan. The compartment door box pans shall be spot welded to the exterior sheet to reduce warping. Visible exterior side compartment door hinge mounting hardware is not acceptable. Attachment of the panel to angle iron or tubular framework with screws or pop rivets shall not be acceptable.

Each compartment door shall have a full length 14 gauge polished stainless steel continuous hinge with a 1/4" stainless steel center pin. Hinge pins shall be tack welded at the end to eliminate hinge pin drift, and to prevent the entry of moisture. The hinges shall be bolted to the body and to the door for easy replacement and adjustment. A minimum of three (3) 5/16" diameter holes shall be provided in the bottom of each inner door panel for drainage and ventilation.

Each door shall be provided with extruded closed cell automotive type rubber moldings. This molding shall protect the compartment door framing, yet provide a weather resistant seal around the door. Each door shall be double sealed with seals installed around the perimeter of the inside face of the outer door skin and full perimeter of the body door jamb.

The door latching mechanisms shall be slam type Eberhard 206 bent D-ring with cast post strikers. The latch mechanisms shall not extend beyond the inner box pan of the compartment doors. Cleveland style double spring overhead door checks shall be installed on all vertically hinged compartment doors.

The first door closed shall be equipped with an Eberhard 206 latch with cast post striker mounted directly to the upper door jamb. A vinyl covered braided stainless steel cable shall be provided from this upper door jamb striker downward to the lower middle of the inner door pan for easy access to release the latch and open the door.

The second door closed shall have an upper and lower Eberhard 206 latching mechanism with cast post strikers mounted directly to the upper and lower door jambs and actuated by a single exterior bent D-ring latch. Second closed doors that latch on the first closed door are not acceptable.

Rubber bumpers shall be provided where open doors may strike each other.

The door jamb mounted automatic compartment light switch bracket shall be stainless steel and located at the hinged side of the first open compartment door.

Highly polished extruded aluminum "J" channel drip moldings shall be permanently installed above the side body doors.

SHELVES

Adjustable Shelf [Qty: 2]

There shall be (2) two aluminum adjustable shelves provided for compartment B1 curb side.

The shelf shall be constructed of 3/16" (.187") smooth aluminum plate. The shelf shall have a minimum 2" front and rear lips to accommodate optional plastic interlocking compartment tile systems. For additional strength and reinforcement of the shelf a return break shall be provided on the outward lip. The adjustable shelf shall be capable of holding 250 lbs.

The shelves shall be located to the curb side of the B1 compartment..

Unistrut Tracking

Unistrut shall be provided in the L1, L2, L3, R1, R2, R3 and B1 compartment to accommodate future use by customer. Each compartment will have 4 adjustment tracks.

COMPARTMENT DIVIDERS

Partition Vertical Bolt-In B1

A vertical bolt in partition wall shall be located approximately 20 inches from the right side of the B1 compartment to divide the compartment into two storage areas. The left or road side shall be used for trench panel storage and the right or curb side shall be used for adjustable shelving described previously. The partition shall be constructed of 3/16" 3003 smooth plate.

Compartment Instructions B1

Compartment instructions for B1;

- One (1) vertical partition 20" off the officer's side wall.
- Two (2) vertically adjustable shelves right side of partition.
- Trench panel storage module on left side of partition.

TRAYS / TOOLBOARDS

Floor Mounted Roll Out Trays (Qty 4)

There shall be a floor mounted SlideMaster with roll-out tray provided at the frame level and extending to the door opening in compartments L1, R1, L2, and R2.

The roll-out tray shall be constructed of 3/16" (.187) smooth aluminum with welded corners for strength and rigidity. The tray shall be sized in width and depth as applicable.

An Innovative Industries SlideMaster shall be provided for the tray for the ease of operation and long service life. A positive twist lock shall be provided to lock the tray in the stored position. The tray shall roll-out approximately 100% from its stored position.

The capacity rating shall be 1000 pounds distributed load and 500 pounds end load at full extension.

Adjustable Roll-Out Tray

There shall be a adjustable mounted SlideMaster with roll-out tray provided in compartment L1.

The roll-out tray shall be constructed of 3/16" (.187) smooth aluminum with welded corners for strength and rigidity. The tray shall be sized in width and depth as applicable.

An Innovative Industries SlideMaster shall be provided for the tray for the ease of operation and long service life. A positive twist lock shall be provided to lock the tray in the stored position. The tray shall roll-out approximately 100% from its stored position.

The capacity rating shall be 1000 pounds distributed load and 500 pounds end load at full extension.

Roll-Out/Tilt Down Tray (Qty 2)

A roll-out/tilt-down tray(s) shall be floor mounted in compartment L3 and in compartment R3.

The tray(s) shall be constructed of 3/16" (.187") smooth aluminum plate with welded corners for increased strength and rigidity. The tray shall be sized in width and depth as applicable.

An Innovative Industries SlideMaster Tip Down frame and channel assembly shall be provided for the tray(s) for the ease of operation and long service life. A positive twist lock shall be provided to secure the tray(s) in the stored position. The tray(s) shall roll-out approximately 90% from the stored position and shall tip 30 degrees downward from horizontal.

The capacity rating of the tray, in the extended position, shall be 250 lb. distributed.

Toolboard [Qty: 2]

(2) Two adjustable roll-out aluminum toolboards shall be provided for compartment R4.

The toolboard shall be constructed of 3/16" (.187") smooth aluminum plate with a sanded finish and be sized in height and depth as applicable.

The toolboard shall be mounted on drawer slides, at the top and bottom, that will permit the board to roll out of the compartment for easier access to tools and/or equipment. The slide mechanisms shall have ball bearings for ease of extension and retraction operation and dependable service. The toolboard shall be mounted at top and bottom on adjustable tracking for ease of placement.

The capacity rating shall be 250 lbs. maximum at full extension. A pneumatic shock shall be utilized to secure the toolboard in the open or closed position.

LADDER STORAGE / RACKS

Adjustable Ladder Brackets

There shall be two (2) adjustable ladder brackets provided with spring-loaded hold-down handles mounted in the adjustable ladder tracks.

The tracks shall be located to the in upper aisle way on driver's side wall of the roof top compartments.

The ladder hold down brackets shall be able to secure a 24 ft Duo Safety extension ladder and a Duo Safety 14 ft roof ladder.

HANDRAILS / STEPS

Rescue Body Access Ladder

A Zico Quic-Ladder shall be provided for access to top of body walkway and storage areas.

The ladder shall include a pull-out and swing down lower section. This shall allow for easier access from ground level and shall allow the ladder to be stowed parallel to the body.

The ladder shall have 10.75" wide cast aluminum rungs with flat non-skid surface to provide better traction during normal or wet conditions. (The use of round rungs shall not be acceptable.)

The outer hand rails shall be heavy walled aluminum tubing and shall have a grit type black powder coating for increased gripping by personnel access or egress from the upper body area. (The use of smooth or rubber coated hand rails shall not be acceptable.)

The ladder shall be positioned at the rear of body officer side. This position shall not block and/or obstruct rearward facing DOT and/or NFPA lighting

MISC BODY OPTIONS

Mud Flaps

Black mud flaps with logo shall be provided for the body wheel wells.

Body Fender Panels

The construction of the wheel well assemblies shall be an integral part of the overall body design. Rear fender panels shall be formed of 12 gauge 304L stainless steel and shall be finish painted job color.

Mirror polished stainless steel fenderettes shall be installed at the outer panels and protrude a maximum of 3/4". Black closed cell foam rubber shall be installed between the flare and outer wheel well panel. Mounting hardware shall not be visible on the exterior of the body.

Bolt-on 16 gauge 304L stainless steel wheel well liners shall be installed, unpainted. A minimum of 1/4" spacing shall be provided at the lower leading and trailing mounting areas for proper drainage and ventilation.

Black rubber mud flaps shall be installed behind the rear wheels and securely fastened to the wheel well liners with stainless steel hardware.

Stainless Steel Rubrails, Sides of Body

The rubrails shall be of 16 gauge brushed stainless steel construction, reversed hat channel style. Rubrails shall be a minimum of 2-1/4" high x 1" deep with bottom drain holes and fastened to the body below the lower side compartment doors. The rubrail ends shall be enclosed using machined gray structural impact resistant non-corrosive copolymer material with 3/16" stand-off and mounting structure. This design is required for superior energy absorption and ease of replacement.

Trench Panel Storage Module

A bolt-in trench panel storage module constructed of smooth plate aluminum shall be installed on floor of compartment B1 offset to the driver side. The module shall hold (4) 2' x 12" x 10' pieces of lumber, and minimum of (6) trench panels. The Trench Panels are 4 x 8 x 3/4 inch plywood with 2 x 12 x 10 foot strong backs.

The trench panels shall extend into the transverse L2/R2 compartment within a bolt-in enclosure.

Riser, Light Tower

A riser for use with the light tower shall be provided in the forward body transverse storage area. The riser shall elevate the installed light tower in the stowed configuration so to not exceed over all height of body components.

Floor Pass-Thru

(1) One square 6" X 6" pass-thru hole, located at rearward edge of L4 ceiling mid depth and extending into the roof top compartment shall be provided. This pass-thru is to accommodate future installation of an air pressure booster pump.

Louvers Wall

The walls of the rooftop compartment above L4 shall have additional louvers. The louvers shall be vented to the walkway. The additional louvers shall provide ventilation for any future air pressure booster pump installed in compartment area.

CASCADE SYSTEM/FILL STATIONS

4 Bottle Breathing Air Cascade System, DOT 6000 PSI

A 4-Bottle DOT 6000 PSI breathing air cascade system with air panel and all associated air lines, valves and gauges shall be installed. NOTE: DOT storage bottles are to be customer installed and are not included. System shall be installed with hoses routed to bottle racks and ready for customer bottle install.

Codes and Standards

Air purity shall meet or exceed the standards of the Compressed Gas Association Specification G-7.1 for Grade "E" Breathing Air.

All tubing shall meet NFPA, SAE, JIC and ANSI Standards. All valves shall meet the applicable National Codes such as those of the Bureau of Explosives, DOT and CGA. The entire air system shall meet all requirements established by the Occupational Safety and Health Act, otherwise known as OSHA. Air receivers shall have a four to one safety factor and shall be constructed in accordance with Section VIII of the ASME Code for Unfired Pressure Vessels or Department of Transportation (DOT) Code. All equipment supplied shall be new.

Identification

All major components and accessories are to be clearly identified with permanently affixed nameplates stating the make, model and serial number. Other pertinent information such as capacities, pressures, voltages, currents, etc., are to be indicated in the proper manner.

Instructions

Appropriate tags and warning labels shall be affixed where necessary for safety and ease in the operation and adjustment of the valves, switches and controls. A manual shall be delivered with the system containing information on operation, maintenance, troubleshooting and replacement parts.

Testing and Warranty

All equipment shall be factory assembled, thoroughly tested and backed by a one-year limited warranty covering parts and labor.

All panel-mounted gauges shall have a working pressure that does not exceed 2/3 of the gauge pressure, with a 4:1 safety factor. All gauges seeing 6000 psi shall read at least 10,000 psi with a 4:1 safety factor.

All high pressure hoses shall be rated at 6000 PSI working pressure with a 4:1 safety factor.

All high pressure valves with exception of 3-way valve, shall be soft seat for safety and easy operation. They shall have replaceable seats and be rated at 6000 PSI working pressure with a 4:1 safety factor.

All high pressure tubing shall be as follows:

3/8" O.D. x .065 wall stainless steel, 1/4" O.D. x .049 wall stainless steel, 1/8" O.D. x .035 wall stainless steel (NOTE: may be used on gauges only). All tubing shall be fully annealed and suitable for bending.

DOT Storage System

The storage system shall accommodate four (4) DOT/ISO/UN storage receivers designed and constructed to conform to Department of Transportation codes and standards and in accordance with current OSHA requirements.

Each receiver shall contain a minimum of 509 CF of air at 6000 psig with a safety factor of not less than 2.25:1 at 6000 psig working pressure.

Receivers shall be mounted securely in a vertical or horizontal position in a rack designed for that purpose. Each receiver to have its own isolation valve with safety burst disc.

Racks are to be located in the roof top forward area, 2 bottles each side, below bolt-in floors.

Control Panel

Each bank shall have an individual pressure gauge and multi-turn control valve located on the control panel.

Panel shall have a back-fill connection with quick-connect fitting for refilling storage vessels.

Panel shall have a 0-10,000 PSI master gauge displaying the master pressure of the system.

Panel shall have an Aqua Environment 0-6000 PSI regulator for controlling pressure into the fill station.

Panel shall have a pressure gauge and shut-off valve controlling the pressure going into the fill station. Pressure gauge shall have indication points for 2216 PSI and 4500 PSI bottles.

SpaceSaver 2-Bottle Fill Station

A SpaceSaver M2792M two (2) bottle vertical fill station shall be installed in the rearward area of L4.

The mobile 2-position vertical fill station shall meet NFPA 1901 guidelines for mobile fill stations.

An automatic, air operated, safety interlock system shall be provided to prevent the accidental filling of a cylinder until the door is completely closed and latched.

The fill station shall be designed so if a cylinder should rupture, rapidly expanding air is vented through an opening in the bottom of the enclosure and out through the compartment floor. A break-away rubber seal will be provided to seal the compartment floor.

An air storage system must be specified with this fill station.

Dimensions:

- 13.5” W x 23.5” D x 53” H with door open
- Weight approximately 425 lbs.

SCBA BOTTLE STORAGE

Zico SCBA Storage Rack Large [Qty: 18]

A QUIC-STORAGE rack system to hold 18 SCBA cylinders shall be installed forward in the L4 compartment. Each storage unit measures 7-3/4" square by 23" long, holds one cylinder, and has rubber cushions at the forward edge. The units shall be PVC coated and Black in color. The rack will be located rearward in the L4 compartment.

SCBA Strap

Straps shall be provided in each SCBA cylinder storage area to provide a secondary means to hold each SCBA bottle in the compartment. The straps shall be constructed from 1" nylon webbing formed in a loop. The strap(s) shall be mounted to the storage compartment ceiling directly inside the door opening at each bottle location.

SCBA Storage

The body wheel well area shall store up to twelve (12) SCBA bottles- six (6) on the officer side (3 forward, 3 rearward) and six (6) on the driver side (3 forward, 3 rearward). The bottles shall be secured in each storage area by a vertically hinged brushed stainless steel door which shall be secured in the closed position by a push button latch.

ELECTRICAL SYSTEMS

Multiplex Electrical System

Electrical System

The apparatus shall incorporate a Weldon V-MUX multiplex 12 volt electrical system. The system shall have the capability of delivering multiple signals via a CAN bus. The electrical system installed by the apparatus manufacturer shall conform to current SAE standards, the latest FMVSS standards, and the requirements of the applicable NFPA 1901 standards.

The electrical system shall be pre-wired for optional computer modem accessibility to allow service personnel to easily plug in a modem to allow remote diagnostics.

The electrical circuits shall be provided with low voltage over-current protective devices. Such devices shall be accessible and located in required terminal connection locations or weather-resistant enclosures. The over-current protection shall be suitable for electrical equipment and shall be automatic reset type and meet SAE standards. All electrical equipment, switches, relays, terminals, and connectors shall have a direct current rating of 125 percent of maximum current for which the circuit is protected. The system shall have electro-magnetic interference suppression provided as required in applicable SAE standards.

Any electrical junction or terminal boxes shall be weather-resistant and located away from water spray conditions.

Multiplex System

For superior system integrity, the networked multiplex system shall meet the following minimum component requirements:

- The network system must be Peer to Peer technology based on RS485 protocol. No one module shall hold the programming for other modules. One or two modules on a network referred to as Peer to Peer, while the rest of the network consists of a one master and several slaves is not considered Peer to Peer for this application.
- Modules shall be IP67 rated to handle the extreme operating environment found in the fire service industry.
- All modules shall be solid state circuitry utilizing MOS-FET technology and utilize Deutsch series input/output connectors.
- Each module that controls a device shall hold its own configuration program.

- Each module should be able to function as a standalone module. No “add-on” module will be acceptable to achieve this form of operation.
- Load shedding power management (8 levels).
- Switch input capability for chassis functions.
- Responsible for lighting device activation.
- Self-contained diagnostic indicators.
- Wire harness needed to interface electrical devices with multiplex modules.
- The grounds from each device should return to main ground trunk in each sub harness by the use of ultrasonic splices.

Wiring

All harnessing, wiring and connectors shall be manufactured to the following standards/guidelines. No exceptions.

- NFPA 1901-Standard for Automotive Fire Apparatus
- SAE J1127 and J1127
- IPC/WHMA-A-620 – Requirements and Acceptance for Cable and Wire Harness Assemblies. (Class 3 – High Performance Electronic Products)

All wiring shall be copper or copper alloys of a gauge rated to carry 125 of the maximum current for which the circuit is protected. Insulated wire and cable 8 gauge and smaller shall be SXL, GXL, or TXL per SAE J1128. Conductors 6 gauge and larger shall be SXL or SGT per SAE J1127.

All wiring shall be colored coded and imprinted with the circuits function. Minimum height of imprinted characters shall not be less than .082” plus or minus .01”. The imprinted characters shall repeat at a distance not greater than 3”.

A coil of wire shall be provided behind electrical appliances to allow them to be pulled away from mounting area for inspection and service work.

Wiring Protection

The overall covering of the conductors shall be loom or braid.

Braid style wiring covers shall be constructed using a woven PVC-coated nylon multifilament braiding yarn. The yarn shall have a diameter of no less than .04” and a tensile strength of 22 lbs. The yarn shall have a service temperature rating of -65 F to 194 F. The braid shall consist of 24 strands of yarn with 21 black and 3 yellow. The yellow shall be oriented the same and be next to each other.

Wiring loom shall be flame retardant black nylon. The loom shall have a service temperature of -40 F to 300 F and be secured to the wire bundle with adhesive-backed vinyl tape.

Wiring Connectors

All connectors shall be Deutsch series unless a different series of connector is needed to mate to a supplier's component. The connectors and terminals shall be assembled per the connector/terminal manufacturer's specification. Crimble/Solderless heat shrink terminals shall be acceptable.

NFPA Required Testing of Electrical System

The apparatus shall be electrical tested upon completion of the vehicle and prior to delivery. The electrical testing, certifications, and test results shall be submitted with delivery documentation per requirements of NFPA 1901. The following minimum testing shall be completed by the apparatus manufacturer:

1. Reserve capacity test:

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

2. Alternator performance test at idle:

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

3. Alternator performance test at full load:

The total continuous electrical load shall be activated with the engine running up to the engine manufacturer's governed speed. The test duration shall be a minimum of two (2) hours. Activation of the load management system shall be permitted during this test. However, an alarm sounded by excessive battery discharge, as detected by the system required in NFPA 1901 Standard, or a system voltage of less than 11.7 volts DC for a 12 volt nominal system, for more than 120 seconds, shall be considered a test failure.

4. Low voltage alarm test:

Following the completion of the above tests, the engine shall be shut off. The total continuous electrical load shall be activated and shall continue to be applied until the excessive battery discharge alarm activates. The battery voltage shall be measured at the battery terminals. With the load still applied, a reading of less than 11.7 volts DC for a 12 volt nominal system shall be considered a test failure. The battery system shall then be able to restart the engine. Failure to restart the engine shall be considered a test failure.

NFPA Required Documentation

The following documentation shall be provided on delivery of the apparatus:

- A. Documentation of the electrical system performance tests required above.
- B. A written load analysis, including:
 - a. The nameplate rating of the alternator.
 - b. The alternator rating under the conditions.
 - c. Each specified component load.
 - d. Individual intermittent loads.

Vehicle Data Recorder

A vehicle data recorder system shall be provided to comply with NFPA 1901, 2009 edition. The following data shall be monitored:

- Vehicle speed MPH
- Acceleration (from speedometer) MPH/Sec.
- Deceleration (from speedometer) MPH/Sec.
- Engine speed RPM
- Engine throttle position % of full 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 time
- Date: Year/Month/Day

Occupant Detection System

There shall be a visual and audible warning system installed in the cab that indicates the occupant buckle status of all cab seating positions that are designed to be occupied during vehicle movement.

The audible warning shall activate when the vehicle’s park brake is released and a seat position is not in a valid state. A valid state is defined as a seat that is unoccupied and the seat belt is unbuckled, or one that has the seat belt buckled after the seat has been occupied.

The visual warning shall consist of a graphical representation of each cab seat in the multiplex display screen that will continuously indicate the validity of each seat position.

The system shall include a seat sensor and safety belt latch switch for each cab seating position, audible alarm and wiring harness.

Multiplex Display

The V-MUX multiplex electrical system shall include a Vista IV color display.

The display shall have the following features:

- Aspect ratio of 16:9 (Wide Screen)
- Diagonal measurement of no less than 7"
- Master warning switch
- Engine high idle switch
- Five (5) tactile switches to access secondary menus
- Eight (8) multi-function programmable tactile switches
- Specific door ajar indication
- Real time clock
- Provides access to the multiplex system diagnostics
- Video capability for optional back-up camera(s) and GPS display

The display shall be located center dash on an adjustable Weldon slim-line mount.

Electrical Connection Protection

The vehicle electrical system shall be made more robust by the application of a corrosion inhibiting spray coating on all exposed electrical connections on the chassis and body. If equipped with an aerial device, the exposed connections on the aerial components shall also be protected.

The coating shall use nanotechnology to penetrate at the molecular level into uneven surfaces to create a protective water repellant film. The coating shall protect electrical connections against the environmental conditions apparatus are commonly exposed to.

LIGHT BARS

Light Bar

A Whelen Freedom IV Series 55" LED light bar model F4X0 with eight (8) LED modules shall be provided; two (2) front corner mounted LED modules, four (4) forward facing LED modules and two (2) side facing LED modules and two (2) rear corner LED modules.

The light bars shall have clear lenses.

The white LEDs (if equipped) shall be switched off in blocking right of way mode.

The light bar shall be installed centered on the front cab roof.

Light Bar Mount

One (1) pair of Whelen 1.5" tall (model MKEZ7) mounts shall be provided on the front light bar.

WARNING LIGHT PACKAGES

Lower Level Warning Light Package

Eight (8) Whelen M6R Super LED red light heads and two (2) Whelen TIR3 Super LED red light heads shall be provided.

The lights shall include chrome flanges where applicable. The lights shall be wired with weatherproof connectors and shall be mounted as close to the corner points of the apparatus as is practical as follows:

- Two (2) Whelen M6R Super LED red lights on the front of the apparatus facing forward.
- Two (2) Whelen M6R Super LED red lights on the rear of the apparatus facing rearward.
- Two (2) lights each side of the apparatus, one (1) Whelen M6R Super LED red each side at the forward most point (as practical), and one (1) Whelen TIR3 Super LED red each side at the rearward most point (as practical).
- One (1) Whelen M6R Super LED red light each side of the apparatus centrally located to provide midship warning light.

The side facing lights shall be located at forward most position, centered in rear wheel well, and side facing at rear of body in rubrail if equipped.

All warning devices shall be surface mounted in compliance with NFPA standards.

ADDITIONAL WARNING LIGHTS

Warning Lights (Qty 4)

Four (4) Whelen 900 series Super LED model 90RR5FRR light heads with red lens shall be provided. The rectangular lights shall include chrome flanges.

Two (2) shall be located on either side at the rear of the body up high facing rearward. Two (2) shall be located one either side, towards the rear of the body up high, to provide additional side warning lights.

Hazard (Door Ajar) Light

There shall be a 2.5” red incandescent hazard light installed in the cab.

The light shall be located center overhead.

SIRENS

Electronic Siren

A Federal PA300 siren model 690010 solid state electronic siren with attached noise-canceling microphone shall be installed. The unit shall be capable of driving a single high power speaker up to 200 watts to achieve a sound output level that meets Class "A" requirements.

Operating modes shall include Hi-Lo, yelp, wail, P.A., air horn and radio re-broadcast.

The siren shall be recessed mounted in the cab console.

SPEAKERS

Siren Speaker

One (1) Federal Signal model ES100 Dynamax 100 watt speaker shall be flush mounted as far forward and as low as possible on the front of the vehicle. A polished model MSFMT with grille shall be provided on the outside of the speaker to prevent road debris from entering the speaker.

Speaker dimensions shall be: 5.5 in. high x 5.9 in. wide x 2.5 in. deep. Weight = 5.5 lbs.

The speaker shall produce a minimum sound output of 120 dB at 10 feet to meet current NFPA 1901 requirements.

The speaker shall be located center front bumper.

DOT LIGHTING

License Plate Light

One (1) Truck-Lite model 15905 white LED license plate light mounted in a Truck-Lite model 15732 chrome plated plastic license plate housing shall be mounted at the rear of the body.

Tail Lights

One (1) 7" red LED, one (1) 7" amber LED turn and one (1) 7" clear incandescent Weldon model 1010 round light shall be installed on each side at the rear of the vehicle. Light functions shall include running lights, brake lights, turn signal lights, and back-up lights.

Turn Signals

A pair of Weldon model 9186-8580-29 bubble style LED amber auxiliary turn signals with stainless steel bezels shall be installed. They shall be located (1) each side in body wheel well offset forward.

Body Marker Lights

LED clearance/marker lights shall be installed as specified.

Upper Body:

- One (1) red Truck-Lite LED clearance light each side, rear of body to the side.
- One (1) red Truck-Lite LED clearance light each side, rear of body to the rear.
- One (1) amber Truck-Lite LED clearance light each side, front of body to the side.
- One (1) amber Truck-Lite LED clearance light each side, front of body to the front (if applicable).

Lower Body:

- Three (3) red Truck-Lite LED clearance lights centered at rear, recessed in the step.
- One (1) red Truck-Lite LED clearance light each side at the trailing edge of the body as far rearward as practical.

LIGHTS - COMPARTMENT, STEP & GROUND

Compartment Light Package

Two (2) Amdor Luma-Bar compartment light strip shall be mounted in compartments L1, L2, L4, R1, R2 and R4. A single compartment light shall be mounted in compartments L3 and R3.

The lights shall be of sufficient height to provide illumination over the entire compartment height. Compartment lights shall be wired to a master on/off compartment light switch.

Supplemental lighting

Whelen Micro Pioneer™ Model # MPPBCS shall be provided in the upper area of Compartment L4 to allow for increased illumination of the work area around this compartment. The 45 watt +12 DC Micro Pioneer lighthouse configuration shall incorporate 12 white Super-LED® with a TIR reflector installed in a black die-cast powder coated aluminum housing and a polycarbonate cover with a chrome finish. The MPPBCS shall have an On/Off switch covered by a rubber boot and a black fiberglass enforced polycarbonate handle. The MPPBCS shall have a standard 8° spot light lens and have the ability to change the optics with three different flood light pattern lenses provided with the Micro Pioneer. The additional lens patterns are 40°x 20° flood, 40°x 8° flood, and 90°x 20°flood. The low profile pedestal mount shall consist of a cast stainless steel pedestal base with cast stainless steel swivel mount stud, pivot, and hinge assembly. The MPPBCS light shall have 4,100 usable lumens.

A cast aluminum alloy lens retainer with a liquid injected silicone gasket shall protect against environmental conditions. The hard coated lenses shall provide extended life/luster protection against UV and chemical stresses. The MPPBCS shall be vibration resistant. The Pioneer PC boards shall be conformal coated for additional protection. The MPPBCS shall have extended LED operation with low current consumption and low operating temperature.

Two breathable membrane patches shall be installed to the bottom of the housing to maintain a consistent internal pressure. The MPPBCS shall be furnished with a 6' 2/C 18GA unterminated cable. The MPPBCS is covered by a five year factory warranty. Stainless steel mounting hardware is included with the MPPBCS.

Voltage: +12v DC

Size: H=8.69", W=5.0", D=3.25"

Amp Draw: Spot Light = 3.50 Amps

Ground Lights

The apparatus shall be equipped with a sufficient quantity of lights to properly illuminate the ground areas around the apparatus in accordance with current NFPA requirements. The lights shall be TecNiq model T440 4" circular LED (Light Emitting Diode) with clear lenses mounted in a resilient shock absorbent mount for improved bulb life. The wiring connections shall be made with a weather resistant plug in style connector.

Ground area lights shall be switched from the cab dash with the work light switch.

One (1) ground light shall be supplied under each side of the front bumper extension if equipped.

Lights in areas under the driver and crew area exits shall be activated automatically when the exit doors are opened.

Step Lights

The apparatus shall be equipped with a sufficient quantity of lights to properly illuminate the steps around the apparatus in accordance with current NFPA requirements. The lights shall be TecNiq model T440 4" circular LED (Light Emitting Diode) with clear lenses mounted in a resilient shock absorbent mount for improved bulb life (a smaller light may be used if space is limited). The wiring connections shall be made with a weather resistant plug in style connector.

The step lights shall be switched from the cab dash with the work light switch.

LIGHTS - DECK AND SCENE

Scenelights Qty (6)

Two (2) Whelen 900 series model 9SC0ENZR Super LED Opti-Scenelights shall be provided at the upper rear of the body rear facing. Two (2) shall be provided on the driver side of the body up high, one forward and one rearward. Two (2) shall be provided on the officer side of the body up high, one forward and one rearward.

Each light head shall contain twenty-four (24) diodes producing 6,500 lumens. The lights heads shall be equipped with lenses that have gradient optics to enhance light output.

The lights shall be switched in the cab as left side, right side and rear scene lights.

Deck/Scene Light Wired to Back-Up Lights

The rear scene lights shall be activated when the chassis is placed in reverse to provide additional lighting, in addition to the back-up lights, when backing the vehicle.

LIGHTS - NON-WARNING

Engine Compartment Light

There shall be lighting provided in compliance with NFPA to illuminate the engine compartment area. The light wiring circuit shall activate when the cab is tilted and master power is switched on.

CAMERAS / INTERCOM

Camera Back-Up

There shall be a Voyager camera model number VCCS150B provided and mounted on the rear of the apparatus. The camera shall feature a wide angle lens, IR LED assisted illumination for enhanced low-light performance, non-corrosive mounting bracket, and stainless steel hardware. The camera shall be interlocked with the chassis transmission. When the apparatus is placed in reverse the camera shall automatically be activated and when the transmission is placed in any other gear the screen shall return to the previously displayed screen.

The camera shall having the following specifications:

- NTSC/PAL Video output signal format
- 150° Viewing angle
- Housing: Aluminum
- Waterproof: IPX7
- Built-in microphone
- Dimensions: 2.7" W x 1.7" H x 2.5" D

The camera shall be located at the rear of the truck, up as high as possible.

MISC ELECTRICAL

Trailer Hitch Pre-Wire Harness

There shall be a pre-wire assembly provided under the rear of the apparatus for future installation of a trailer hitch pin connector. The coiled wire harness shall include wires from the

stop light circuit, marker light circuit, turn signal circuit and a ground. It shall be rated at 3 amps.

Back-Up Alarm

An electronic back-up alarm shall be supplied. The 97 dB alarm shall be wired into the chassis back-up lights to signal when the vehicle is in reverse gear.

12 Volt DC Power Distribution Modules (Qty2)

There shall be a 12 place 12 volt DC power distribution module installed in the cab center console and in the L1 compartment high on the forward wall.

The module will have six (6) circuits wired directly to the battery and have six (6) circuits wired through the master battery switch with 12 positions for grounds. Connection to the power module circuit will be through a .250 female spade connector. Each buss will be protected with a 50 amp circuit breaker for overload protection. The module will accept ATC blade type fuses or 22X series circuit breakers.

Refrigerator

A black Norcold NR751BB AC/DC refrigerator shall be provided and installed in the L2 compartment rearward.:

It shall feature:

- Danfoss BD35 compressor improves performance, especially at higher ambient temperatures
- LED interior light
- Improved styling - new hidden ventilation grill
- Base model is 12/24 DC - AC operation requires optional Power Cord
- Closing freezer door
- Self-venting

Model	Height	Width	Depth
NR751BB	20-1/2"	18-1/2"	21-1/16"
	Interior Volume		Net Weight
	2.7 cu.ft	49 lbs	

Power Source

Amps 120V/AC	Amps 12V/DC	Amps 24V/DC
0.7	3.0	1.5

GENERATOR

15KW Direct Drive Generator

The apparatus shall be equipped with an ONAN YD two (2) bearing direct drive power take off driven generator. The generator shall be mounted on a heavily reinforced steel frame in the chassis frame rail area providing adequate road clearance, and service accessibility. The generator shall be protected from direct road spray with underside 1/8" aluminum bolt-on protection guard.

Rating and Capacity

Rating: 15,000 watt continuous duty rating: 100% of nameplate rating
 Volts: 120/240(with voltage control of +3%)
 Amps: 208/104
 RPM: 1800
 Cycles: 60 (with frequency control of + 1%)
 Phase: Single

A Data Plate shall be installed on the generator instrument panel with the above electrical generator information, including engine speed and all information noted above on generator performance.

Driveline

The generator shall be driven from a 10 bolt power-take-off from the automatic transmission. A "PTO control" shall be located at driver's position. Generator shall be equipped with a means to prevent the unintended movement of the control device from its set position. An interlock shall prevent PTO engagement unless the parking brake is engaged. An interlock shall be installed to prevent engine speed control from any other source while the generator is operating. A nameplate indicating the chassis transmission shift selector position to be used for generator operation shall be provided in the driving compartment and located so that it can easily be read from the drivers position.

Generator Controls

A green indicator light shall be located in the driving compartment. The light shall be energized when the PTO drive has been engaged and shall be marked "GENERATOR PTO ENGAGED." A second green light shall be energized when generation is engaged, transmission is in neutral, and parking brake is set and marked "OK TO OPERATE GENERATOR". A green indicator light shall be located on the operators panel. The green light shall be energized when both the PTO drive has been engaged, chassis transmission is in neutral, and parking brake engaged. The green light shall be marked "GENERATOR PTO ENGAGED."

Gauge Panel

A generator gauge panel shall be provided in the L1 compartment forward wall that displays the following information:

- A) Amp meter for each leg
- B) Volt meter
- C) Frequency meter
- D) Generator hour meter

GENERATOR TEST

3rd Party Generator Testing

The generator shall be tested at the manufacturers facility by an independent, third-party testing service. The conditions and testing of the generator shall be as outlined in current NFPA 1901.

The test shall include operating the generator for two hours at 100% of the rated load. Power source voltage, amps, frequency shall be monitored. The prime movers oil pressure, water temperature, transmission temperature (if applicable) and power source hydraulic fluid temperature (if applicable) shall be monitored during testing.

The results of the test shall be recorded and provided with delivery documentation.

BREAKER BOXES

Circuit Breaker Panel

A twelve (12) place breaker box with up to twelve (12) appropriately sized ground-fault interrupter circuit breakers shall be installed in the L1 compartment on the forward wall. The breaker box will include a master breaker sized according to the generator output. The breaker box will be located in the specified compartment, not to exceed 12` run of wire.

Note: If generator is 5.5KW or less, the main breaker will occupy 2 places, leaving 10 available.

Dimensions: 17.92” high x 14.25” wide x 3.75” deep.

LIGHT TOWERS

Light Tower

A Command Light model KL475 light tower shall be provided. The light tower shall be a two-stage articulating device with a lighting bank on top of a second stage capable of 360 degrees continuous rotation. The light shall be elevated by electric linear actuators, one (1) actuator shall elevate the light bank, and one (1) actuator shall adjust the light bank angle from 0 to 110 degrees.

The light bank shall have six (6) weatherproof 750 watt output, FRC Optimum quartz halogen lights. Light heads shall be mounted in three (3) pairs, giving two (2) vertical lines of three (3) when the lights are in the upright position. Power for light bank shall be transmitted through power collecting rings thus allowing 360+ degrees rotation in either direction, NO EXCEPTIONS.

Light tower shall be controlled with a hand-held umbilical line remote control. The storage station for the remote control unit shall be equipped with a button to activate the "Auto-Park" automatic nesting feature. The controls on the remote box shall be:

1. Three (3) switches, one (1) for each light bank.
2. One (1) light bank rotation switch.
3. One (1) switch for elevating lower stage.
4. One (1) switch for elevating upper stage.
5. One (1) indicator light to indicate when light bank is out of roof nest position.
6. One (1) indicator light to indicate when light bank is rotated to proper nest position.
7. One (1) on/off switch for the top mounted strobe.

The controls shall be located next to the breaker box.

The tower base shall have a light that illuminates the envelope of motion during any movements of the light tower mast.

The Command Light assembly shall be all aluminum construction, with stainless steel shafts and bronze bushings for long life and low maintenance.

The overall size of nested light tower shall be approximately 25" wide x 47" long x 13" high.

The light tower shall be located centered as far forward as possible in the upper aisle way transverse compartment on a riser. .

Back Light Option

A back light option shall be provided on the Command Light brand light tower. The option shall allow the lower two (2) lights to rotate for down lighting or additional lighting to the rear of the light tower.

RECEPTACLES

Receptacles 20 amp (Qty 2)

(2) Two 20 amp, 110 volt 3-prong straight blade NEMA 5-20 duplex household receptacles with stainless steel cover plate shall be installed in a non-weather exposed area. The receptacle shall be wired to the inlet receptacle where it will have over current protection from an external source.

Location: L1 high on forward wall, R1 high on forward wall.

Receptacles 20 amp (Qty 2)

A 20 amp, 110 volt 3 prong straight blade NEMA #5-20 duplex receptacle with a weatherproof cover plate shall be installed.

Location: L2 high on rearward wall, R2 high on rearward wall

Receptacles 15 amp (Qty 2)

(2) Two 15 amp, 110 volt NEMA L5-15 twist lock receptacle with a weatherproof cover plate shall be installed as specified by the department.

Location: L3 aft wall 10" above floor close to door opening, R3 aft wall 10" above floor close to door opening.

Receptacle

A 30 amp, 220 volt NEMA L6-30 twist lock receptacle with a weatherproof cover plate shall be installed as specified by the department.

Location: driver side rearward roof top compartment, centered on rearward wall, close to aisle way side corner.

MISC LOOSE EQUIPMENT

DOT Required Drive Away Kit

Three (3) triangular warning reflectors with carrying case shall be supplied to satisfy the DOT requirement.

EXTERIOR PAINT

Commercial Cab Paint

The cab shall be painted by the chassis supplier. The cab paint color shall match FLNA3047 Red.

Paint shall be warranted by the cab/chassis manufacturer.

Paint Stainless Steel Rescue Body

Exterior Body Surfaces

FRP (fiber reinforced) panels shall be provided to overlay the stainless steel outer side of body panels that are not covered with aluminum treadplate. The FRP panels shall be painted as detailed under "Painting Information" and then installed on the body exterior.

Polished Surfaces

Polished stainless steel full height vertical corner trim scuff guards shall be installed on the outer front and rear body corners.

Painting Information

The final finishing of the vehicle shall be performed to the highest standards of the fire apparatus industry.

All removable components and accessories shall be fitted to the body and then removed prior to final preparation, ensuring paint has been applied under all components and accessories.

Care shall be taken during paint preparation to properly fill all surface imperfections. Welded seam areas shall be ground flush and metal finished. Bare metal surfaces shall be etched chemically to ensure proper adhesion. The primer shall be sanded to assure a smooth surface for painting.

The interior of all compartments shall have a machine sanded DA finish that shall not be painted. Compartment seams shall be sealed with a silver silicone caulk.

The body exterior shall be finish painted using Sikkens paint, color FLNA3047 Red. One pint of touch-up paint, including hardener to match each of the exterior colors, shall be furnished.

Undercoating

Undercoating shall consist of a heavy coating of soft seal film sprayed on the entire underside of the vehicle to repel water and road elements. The undercoating shall be applied after customer final inspection.

LETTERING

Sign Gold Letter [Qty: 100]

Sign Gold letters upto 6" tall shall be applied.

The exact size and location of the letters shall be as specified by the customer.

Sign Gold Letters [Qty: 20]

Sign Gold letters upto 12" tall shall be applied.

The exact size, color and location of the letters shall be as specified by the customer.

Lettering Shade and/or Outline [Qty: 120]

Existing letters shall be shaded and/or outlined as specified by the customer to provide a contrast.

STRIPING

Cab and Body Stripe

A single Scotchlite stripe, up to 6 inches in width shall be installed on the cab and body . The stripe shall have a hockey style, Z or S style or any other customer specific design style.

The stripe shall be NFPA compliant and the size, color and location shall be as specified by the customer.

Cab and Body Stripe [Qty: 2]

Two additional Scotchlite stripes, up to 3 inches in width shall be installed on the cab and body.

The stripe shall be NFPA compliant and the design, size, color and location shall be as specified by the customer.

Rear Body Scotchlite Striping

Printed chevron style Scotchlite striping shall be provided on the rear of the apparatus. The stripes shall consist of 6” Yellow/Red alternating stripes in an ”A” pattern. The striping shall be located on the rear facing extrusions, panels, doors and inboard/outboard of the beavertails if applicable.

Front Bumper Scotchlite Striping

Chevron style printed Scotchlite striping shall be provided on the front bumper of the apparatus. The stripes shall consist of 6" Yellow/Red alternating stripes in an "A" pattern.

Designated Standing / Walking Area Indication

A 1" wide yellow line shall be applied to indicate the outside perimeter of designated standing and walking areas above 48" from the ground in compliance with 2016 NFPA 1901. Steps, ladders and areas with a railing or structure at least 12" high are excluded from requiring the line.

GRAPHICS

Customer Supplied Logo [Qty: 2]

(2) logos shall be supplied by the customer and installed as specified.

WARRANTY / STANDARD & EXTENDED

Standard 1 Year Warranty

The apparatus manufacturer shall provide a full 1-year standard warranty. All components manufactured by the apparatus manufacturer shall be covered against defects in materials or workmanship for a 1-year period. All components covered by separate suppliers such as engines, transmissions, tires, and batteries shall maintain the warranty as provided by the component supplier. A copy of the warranty document shall be provided with the proposal.

12 Year Paint and Corrosion Warranty

The apparatus manufacturer shall provide a 12-year non prorated paint and corrosion perforation warranty for the body. This warranty shall cover paint peeling, cracking, blistering, and corrosion provided the vehicle is used in a normal and reasonable manner.

The warranty period shall begin upon delivery of the apparatus to the original user-purchaser. A copy of the warranty document shall be provided with the proposal.

Painted roll-up door paint warranty shall be provided by the door manufacturer.

Warranty 20 Year Structural

The apparatus manufacturer shall provide a comprehensive 20 year/100,000 mile structural warranty. This warranty shall cover all structural components of the stainless steel body manufactured by the apparatus manufacturer against defects in materials or workmanship for 20 years or 100,000 miles, whichever occurs first. Excluded from this warranty are all hardware, mechanical items, electrical items, or paint finishes. A copy of the warranty document shall be provided with the proposal.

SUPPORT, DELIVERY, INSPECTIONS AND MANUALS

Electronic Manuals

Two (2) copies of all operator, service, and parts manuals MUST be supplied at the time of delivery in electronic format (USB Flash drive) -NO EXCEPTIONS! The electronic manuals shall include the following information:

- Operating Instructions, descriptions, specifications, and ratings of the cab, chassis, body, aerial (if applicable), installed components, and auxiliary systems.
- Warnings and cautions pertaining to the operation and maintenance of the fire apparatus and fire fighting systems.
- Charts, tables, checklists, and illustrations relating to lubrication, cleaning, troubleshooting, diagnostics, and inspections.
- Instructions regarding the frequency and procedure for recommended maintenance.
- Maintenance instructions for the repair and replacement of installed components.
- Parts listing with descriptions and illustrations for identification.
- Warranty descriptions and coverage.

The Flash Drive shall incorporate a navigation page with electronic links to the operator`s manual, service manual, parts manual, and warranty information, as well as instructions on how to use the manual. Each copy shall include a table of contents with links to the specified documents or illustrations.

The Flash Drive must be formatted in such a manner as to allow not only the printing of the entire manual, but to also the cutting, pasting, or copying of individual documents to other electronic media, such as electronic mail, memos, and the like.

A find feature shall be included to allow for searches by text or by part number.

These electronic manuals shall be accessible from any computer operating system capable of supporting portable document format (PDF). Permanent copies of all pertinent data shall be kept file at both the local dealership and at the manufacturers location.

NOTE: Engine overhaul, engine parts, transmission overhaul, and transmission parts manuals are not included.

Fire Apparatus Safety Guide

Fire Apparatus Safety Guide published by FAMA, latest edition. This safety manual is intended to point out some of the basic safety situations that may be encountered during the normal operation and maintenance of a fire apparatus and to suggest possible ways of dealing with these situations. This manual is NOT a substitute for the fire apparatus manufacturer operator and maintenance manuals or commercial chassis manufacturers operator and maintenance manuals.

DEALER ADDED EQUIPMENT

Dealer

[1] A set of On-Spot Automatic Tire Chains shall be installed.

[1] A \$35,000 voucher for supplying battery operated hydraulic rescue tools shall be included.

Specification for: CITY OF BURLINGTON FIRE DEPARTMENT

BIDDER
COMPLIES

YES NO

[1] A voucher in the amount of \$15,000 shall be included to purchase and install the customer radio equipment.

[1] A voucher in the amount of \$27,000 for a Paratech Model 22-796855 Vehicle Stabilization kit, including two Paratech Hydrافusion Strut Kits, and a griphoist winch shall be included.

[1] A voucher in amount of \$5000 shall be included. The voucher is for use by the purchaser in obtaining and if necessary installing loose equipment.

[1] This Vehicle shall include Station Delivery and Orientation.

[2] Roll Out tray vertical dividers shall be supplied to facilitate installation of SCBA air packs. The dividers shall be installed to the purchaser's specification at delivery.

[1] Travel and Meeting Time will be supplied for two Fire Department Members at the factory for Pre Build Factory Conference.

[1] Travel for 2 Members of the Fire Department to the Factory for Final Inspection and Acceptance shall be supplied.

END OF SPECIFICATIONS