RFP 1920-06 Ford F 550 Cab-Chassis

Scope of solicitation:

Successful bidder will purchase a 2020 model year Ford F 550 cab-chassis as outlined in the following specifications.

- Mount the Lando Fire Department aluminum flatbed on the cab chassis.
- Mount the Lando Fire Department Skid Unit on the flatbed.
- Paint the lower portion of the cab to match the Lando Fire Department fleet color.
- Install all compartments and other items in these specifications on the cab chassis and or the aluminum flatbed.
- Deliver a complete truck to Lando Fire Department ready to be put into service.
1. RIGHT TO REJECT
This government agency reserves the right to reject any or all proposals and alternatives and to waive any informality or technicality in any proposal that we may deem to be in the best interest of this agency, and to request new proposals when required. In addition, we reserve the right to accept the proposal deemed most advantageous and in the best interest of this agency. We will not be bound to accept low bid if in our best interest. We reserve the right to determine which (if any) substitutions are acceptable and to negotiate changes. We will not be held liable for reimbursement of expenses incurred by the Bidder related to the preparation of a Qualification in response to this bid. Previous unsatisfactory experiences by this agency, with a bidder or manufacturer will be grounds for rejection.

2. MINIMUM STANDARDS  Comply □ Exception □
The highest degree of quality materials and building processes is required for the emergency vehicle being proposed. At a minimum, each manufacturer must be a member of FAMA (Fire Apparatus Manufacturing Association) at the date of the proposal submission. All current Federal motor Vehicle Safety standards (FMVSS) must be met. In addition, all current NFPA 1906 must be met except where noted. These specifications shall in no way restrict the bids to any specific brand name. This agency reserved the right and shall determine the “or equal” brand name is truly equal. However, bids will only be considered from manufacturers that produce, assemble and complete apparatus within the continental United States.

3. QUALIFICATION OF BIDDER  Comply □ Exception □
Successful bidder must be an authorized distributor for the products he/she offers on their apparatus build. Satisfactory evidence of the Bidder’s ability to construct the apparatus specified shall be provided as follows:
All bidder shall state the location of the factory where the apparatus is to be manufactured:

All bidder shall state the number of years the manufacturer has been building this specific type of apparatus:

All bidder shall state the number of years served as a Manufacturer:

All bidders must have all current licenses required by law to do business in the State of South Carolina. All bidders statement indicating that the complete apparatus, with the exception of the cab and chassis, shall be assembled by one manufacturer:

Preference may be given to a company that meets these qualifications and location is within 100 miles of Edgemoor, SC.

4. WARRANTIES  Comply □ Exception □
The award will also take into consideration warranty and warranty provisions of the proposed vehicle. The bid shall state the type of warranty that the manufacturer will provide, with copies of warranty coverage and omissions enclosed with these specifications. Warranties will at minimum provide a twelve (12) month warranty on the entire vehicle which covers defective parts and or components of its manufacture. Warranty shall include any and all costs for labor and parts or materials that are required to correct any and all deficiencies. It is not the intent of this requirement that routine preventative maintenance items such as light bulbs, filters, tires, brake linings, windshield wiper blades, etc. be covered.
a. THREE YEAR CHASSIS WARRANTY  
Comply □ Exception □
The manufacturer of the chassis shall warranty the chassis for a period Three Year/36,000 Bumper/Bumper (standard Ford Motor Company warranty). As an apparatus may be integrally married to the chassis and this is an emergency vehicle, the Lando Fire Department reserves the right at its discretion to call upon apparatus warranty first to determine whether the issue is a chassis or an apparatus problem at no charge.

b. TWELVE MONTH APPARATUS WARRANTY  
Comply □ Exception □
All materials and workmanship herein specified, including all equipment furnished, shall have a warranty for a period of twelve (12) months after the acceptance date of the apparatus, unless otherwise noted, with the exception of any normal maintenance services or adjustments which shall be required. A copy of the warranty shall be submitted with the Bidder’s proposal.

d. ALUMINUM COMPARTMENT PRODUCTS  
Comply □ Exception □
The aluminum compartments that are specified to be supplied with this apparatus shall have a minimum of a ten (10) year warranty by the manufacturer beginning at the date that the apparatus is put into service. The manufacturer shall repair, at no cost to the purchaser, any problems caused by defective materials and/or workmanship. The warranty shall cover the reasonable costs of removing any body component from the apparatus and reinstalling it after the completion of the covered warranty repairs, but shall not cover any liability for the loss of service or downtime costs of the apparatus. A sample of warranty shall be submitted with the Bidder’s proposal.

e. EMERGENCY LIGHTING PRODUCTS  
Comply □ Exception □
The emergency lighting products that is specified to be supplied with this apparatus shall have a warranty by the manufacturer for a period of at least five (5) years from the date that the apparatus is put into service. The manufacturer shall repair, at no cost to the purchaser, any problems caused by defective materials and/or workmanship. The warranty shall cover the reasonable costs of removing any emergency lighting component from the apparatus and reinstalling it after the completion of the covered warranty repairs, but shall not cover any liability for the loss of service or downtime costs of the apparatus. A sample of warranty shall be submitted with the Bidder’s proposal.

5. WARRANTY SERVICE RESPONSE  
Comply □ Exception □
The successful Bidder must have a factory authorized service center staffed with certified emergency vehicle technicians available during normal business hours five days a week to respond to verbal or written notification that warranty service work is required. Vendor shall be willing to provide follow-up service including replacement parts for repairs, etc. as may be needed by this service to maintain the vehicle after it is put into operation. Bidders shall provide the location and service capabilities and contact information for the apparatus manufacturer’s authorized service facility and parts depot nearest to Edgemoor, SC. Facility must be within 100 miles for emergency response.

WARRANTY SERVICE CENTER
Name_______________________________________ Phone ____________________
Address______________________________________ 24-7 Phone ____________________
City__________________________________________ Fax _________________________
Contact_______________________________________ Email ____________________
Service Capabilities ___________________________________________
I. STATEMENT OF WORK

1. GENERAL

The utility body described in this specification shall be mounted on the cab and chassis, purchased through SC State Purchasing. The cab and chassis shall be picked up by the apparatus manufacturer at the location of the SC dealer holding the SC state contract. The apparatus manufacturer shall be liable for all loss and damage to the cab and chassis until completion and final acceptance of work and returned to the Lando Fire Department. The completed apparatus described in this specification shall be compliant with the requirements of NFPA 1906, latest edition, except where noted.

2. SCOPE OF WORK

The Contractor shall install apparatus platform fire body on the chassis per LFD specifications for Brush Truck Fire Apparatus. The Lando Fire Department shall deliver the new aluminum flatbed and the Department’s skid unit to the Contractor’s place of business and pick up the completed units upon final acceptance inspection. The Lando Fire Department shall provide graphics for door shield. The Contractor shall provide all other material for painting, striping, markings and designators. The Lando Fire Department will perform in-progress inspections at the Contractor’s facility to verify timely progress of equipment installation. The extent of the in-progress inspections will be at the discretion of the Lando Fire Department and will not constitute acceptance. Best value will also be a consideration with placement of order; selection of firm(s) and award will be based on best value, price, past performance, and other factors considered. The contractor shall warrant and guarantee all work performed (labor and materials provided by the contractor) for a minimum of twelve months.

II. CHASSIS

1. CHASIS

Government specified – Specifications listed are for apparatus configuration. The specifications may change without notice.

Ford F-550 XLT Crew Cab & Chassis, 6.7L Diesel Engine, 4x4 with shift on-the-fly,
Automatic Transmission,
179” Wheelbase 60” CA (Cab to Rear Axle).

Chassis will be factory painted Ford Ingot Silver and the lower portion of the cab body will be painted by the contractor to match LFD’s fleet color. Color line break will be determined at pre build conference. In addition to the standard features offered by Ford for this model the following options shall be provided:
4.88 limited slip axle,
Dual rear wheels,
Trailer Tow Package – High Capacity,
XLT value package,
Power equipment group,
Payload Plus Upgrade Package,
19.5 Inch Forged polished Aluminum with Bright Hub Covers/Center Ornaments Wheels (DWR),
Front Wheel well liners
Rear window Privacy glass,
Live Drive PTO provision with mobile and stationary PTO modes,
Skid plates,
26.5 Gallon Fuel tank,
Exterior back up alarm,
Dual heavy-duty Alternators, Review camera and prep kit, PowerScope Trailer tow mirrors, power heated glass, Power telecepting/Power fold away/ LED spotlights, Platform running boards, 225/70Rx19.5G BSW Max Traction 4X4 tires, Medium earth gray 40/20/40 split bench seat front with under seat storage, Delete Carpet, Integrated Trailer Brake Controller, 110V/400watt outlet, Up fitter interface Module, AM/FM Stereo MP3 player, Dual 750 CC Amp batteries

III. CHASSIS ADDITIONAL EQUIPMENT AND MODIFICATIONS

1. CHASSIS ADDITIONS AND MODIFICATIONS  Comply □ Exception □
The following additional equipment shall be installed on, and modifications performed to, the specified cab and chassis by the apparatus manufacturer:

2. CHASSIS ELECTRICAL  Comply □ Exception □
The apparatus chassis shall be equipped with a heavy-duty 12-volt direct current (VDC) negative ground electrical system. The electrical system shall include all parts, components, switches, relays, wiring, and other devices required to assure complete, consistent and proper operation of the completed apparatus. Wiring shall be routed and/or protected to eliminate exposure to moving parts or debris. All lights required are to comply with DOT and NFPA Codes for vehicles of this size and design shall be provided and installed. If required, these lights shall include headlamps and front turn signals with hazard switch, cab marker and clearance/license lights, back up lights and stop-turn-tail lights.

All switches for the warning lights and other electrical equipment shall be mounted on a separate switch panel located in the cab on a master electrical console mounted between the two front seats. The switches shall be functionally laid out, properly identified, and shall be located within easy reach of both the driver and the officer. The warning light system shall have a “master” switch, which shall allow for the pre-selection of all warning lights. All switches shall be of a heavy-duty design.

The following additional electrical equipment shall be installed on, and modifications performed to, the specified cab and chassis by the apparatus builder:

a. BATTERY MASTER SWITCH  Comply □ Exception □
One (1) battery cutoff switch shall be provided in the cab. The switch shall be a Cole Hersee brand, Model #M-2484-16, with Model #82065 switch plate “Off/On” label, or equivalent. The switch shall be rated for 125 amps continuous duty and 80 amps intermittent duty. The switch shall be located on the floorboard to the left side of the driver’s seat and placed as far aft as possible to prevent accidental actuation.

b. BATTERY ON INDICATOR LIGHT  Comply □ Exception □
One (1) “Battery On” indicator light, with a green lens, shall be provided on the center console, located forward on the left side. This light shall illuminate when the battery switch is turned to the “ON” position.
c. JUNCTION BOXES
Twin electrical fuse boxes, (Battery and Ignition) for all apparatus modules, connections, relays, circuit breakers, etc. shall be located in the console between the driver and passenger seats. All connection points shall be labeled according to function. A full electrical wiring diagram shall be supplied at time of bid.

d. KUSSMAUL 1000
An Auto Charge 1000 or equal is a compact, completely automatic, single channel battery charger designed for vehicles with a single battery system. The charger is ruggedized to withstand the shock and vibration encountered by vehicle mounted equipment. The unit location and the auto-eject plug location will be determined at the prebuild conference.

3. EMERGENCY EQUIPMENT

a. ANTENNA
One antenna base shall be supplied by the department and mounted by the contractor on the headache rack as specified. The antenna cable shall be routed to the cab interior, terminating at location of radio mounting bracket.

b. PRE-WIRE AND INSTALL EMERGENCY RADIOS
The chassis cab interior shall be wired with battery power; battery ground, switched power, and radio rebroadcast wires to the siren or PA, and labeled to simplify LFD radio installation. The radios shall occupy the second and third forward, angled position in the cab center console.

c. TRAFFIC WARNING SYSTEMS
The following traffic warning systems shall be provided and installed on the completed apparatus by the apparatus builder:

c1. SIREN AMPLIFIER
One (1) PF200 Federal Signal brand, 100 Watt, or equivalent, full function, programmable siren amplifier with microphone shall be provided. The control head shall be mounted in the center console.

c2. SIREN SPEAKER
One (1) Federal Signal brand, Model ES100C, or equivalent, 100-watt siren speaker shall be provided and installed in a protected forward-facing location. The wiring for the speaker shall be routed to the amplifier.

c3. FORWARD UPPER ZONE A/B/D LIGHT BAR
One (1) Federal Signal brand, Integrity LED light bar, or equivalent, shall be provided and installed on the forward leading edge of the rear cab protection rack, facing forward. The light bar shall be 51” wide, and shall contain the following modules:
Ten (10) front position, forward facing, red and white flashing modules with clear lens.
Three (3) end position, sideways facing, red and white “alley” LED modules with clear lens.
Two (2) outside rear position, red and white flashing modules with clear lens.
Eight (8) rear position, rear facing, red and amber flashing modules with clear lens.
The light bar shall be wired to a switch located on the cab center console.
c4. FORWARD LOWER ZONE A WARNING LIGHTS  
Comply □ Exception □
Four (4) Federal Signal brand, Micro Pulse Wide Angle Light heads, or equivalent, red/white LED flashers, with mounting flanges, shall be provided on the front of the apparatus, forward facing, two (2) per side, on the grille. The lights shall be wired to a switch located on the cab center console.

c5. FORWARD LOWER ZONE B/D WARNING LIGHTS  
Comply □ Exception □
Two (2) Federal Signal brand, micro Pulse Ultra light heads, or equivalent, red/red LED flashers, with mounting flanges, shall be provided over the front wheel well of the apparatus chassis, side facing, one (1) per side, for use as “forward intersection” lights. The lights shall be wired to a switch located on the cab center console.

c6. AFT LOWER ZONE B/D WARNING LIGHTS  
Comply □ Exception □
Two (2) Federal Signal brand, micro Pulse Ultra light heads, or equivalent, red/red LED flashers, with mounting flanges, shall be provided on the rear sides of the apparatus chassis, over the rear wheel, side facing, one (1) per side, for use as “rear intersection” lights. The lights shall be wired to a switch located on the cab center console.

c7. AFT LOWER ZONE C WARNING LIGHTS  
Comply □ Exception □
Two (2) Federal Signal brand, micro Pulse Ultra light heads, or equivalent, red/amber LED flashers, with mounting flanges, shall be provided on the lower rear of the apparatus, rear facing, one (1) each side. The lights shall be wired to a switch located on the cab center console.

4. LABELS

a. APPARATUS FLUID TYPES AND QUANTITIES  
Comply □ Exception □
A permanently-mounted label, showing the recommended fluid types and quantities for the apparatus chassis.

b. SEATING CAPACITY  
Comply □ Exception □
This apparatus shall have a seating capacity of two (2) personnel in front, and three (3) personnel in the rear for a total seating capacity of five (5). A warning label, listing the seating capacity of the completed apparatus, shall be provided in the apparatus cab interior. This label shall be located so that it is visible from all seating positions

c. SEAT BELT WARNING  
Comply □ Exception □
A warning label, stating: “DANGER- Personnel Must Be Seated and Seat Belts Must Be Fastened While Vehicle Is in Motion or DEATH OR SERIOUS INJURY MAY RESULT,” shall be provided in the apparatus cab interior. This label shall be located so that it is visible from all seating positions.

d. VEHICLE HEIGHT WARNING  
Comply □ Exception □
A warning label, listing the overall height, length and GVWR of the completed apparatus, shall be provided in the apparatus cab interior. This label shall be located so that it is visible from the driver’s seating position.
e. FSVMC Label  
Comply □ Exception □
A Final Stage Manufacturer vehicle certification label shall be provided and installed in the apparatus cab driver’s door jamb.

f. NOISE HAZARD WARNING  
Comply □ Exception □
A warning label, stating: “WARNING: Noise Hazards Occur During Siren Operation,” shall be provided and installed in the apparatus cab interior. This label shall be located so that it is visible from all seating positions.

g. AIR FILTER EMBER PROTECTION SCREEN WARNING  
Comply □ Exception □
A warning label, stating: “This apparatus is equipped with an air filter ember protection screen; routine inspection is required,” shall be provided and installed in the apparatus cab interior. This label shall be located so that it is visible from the driver’s seating position.

5. CONSOLE SECTION

a. SEATING  
Comply □ Exception □
The center portion of the 40/20/40 split bench seat shall be removed to accommodate the installation of the console.

b. CAB CONSOLE  
Comply □ Exception □
The cab shall be equipped with an angled, form-fitted control console located under the dash. This console shall be sized to accommodate 16” of space for siren/light controller, and customer-supplied radio and a slot to hold LFD fire report clipboard and log book. The console shall contain the following controls and switches:
One (1) PF200 Federal Signal brand, or equivalent, 100-watt electronic siren and emergency light controller with built-in traffic advisor control
One bracket and pre-wiring for customer-mounted radio.
One (1) labeled and lighted switch to control compartment LED lights

6. MISCELLANEOUS

a. HOSE AND HARNESS PROTECTION  
Comply □ Exception □
If applicable, any fuel lines or electrical harnesses below the chassis frame rails shall be protected with a fire proof sleeve designed specifically for such purpose.

b. UNDER CHASSIS SHIELDING  
Comply □ Exception □
The chassis shall be equipped with expanded aluminum lower radiator shielding (if applicable) and a solid plate guard mounted on the aft of the front bumper. This shield and guard shall be designed to prevent entry of sticks and other small debris which may pose a hazard to the cooling system.

c. CHASSIS AIR INTAKE EMBER GUARD  
Comply □ Exception □
The chassis air intake shall be protected by an ember guard of 18 Mesh, 0.017” wire diameter, and a maximum mesh opening of 0.039”. The ember guard shall be sized to fit and located at the intake opening. The screen shall be readily accessible for inspection and maintenance.
d. CABIN AIR EMBER GUARD  Comply □ Exception □
The cabin air filter shall be protected by an ember guard with a maximum mesh opening of 0.039". The screen shall be located at the point of intake and easily accessible for inspection and maintenance.

e. BRUSH GUARD  Comply □ Exception □
Trans4mer Gen III - Full Grille Guard for Ford SD - 103012 black powder coated brush guard assembly shall be provided on the front of the apparatus. A Warn Trans4mer Gen III - Large Frame Mounting Kit for Super Duty - 103010 winch carrier mounted in the brush guard shall be powder coated black and provide solid mounting area for warning lights, speakers, or other specified equipment (if applicable).

f. WINCH  Comply □ Exception □
The winch must be a WARN M12000 or equal, high capacity winch and have the technologically advanced features for Class 5 truck. It must be perfect for getting in and out of remote spots and being able to hold up to the weight of the truck. The winch shall feature compact size, light-weight, extreme low profile and spec’ed for 12,000-lb pulling make it the optimal winch to fit in the limited space. The unit comes with a hardened steel, 3-stage planetary gear train for efficient and reliable operation, water-proof remote control with thermometric LED indicator alerts when the motor is over-heated, and a patented mechanical cone brake holds the full load without slipping. It also will meet international standards such as SAE J706, CE Machinery Directive 2006/42/EC, and REMSA.

3. INSTALLATION  Comply □ Exception □
The body(s) shall be mounted in compliance with FMVSS 301-75 standards. Body(s) shall be mounted as low as possible without limiting tire clearance or restricting the ability to fuel the truck. The minimum distance from the top of the tire to the bottom of the floor shall be equal to the maximum suspension travel plus 2 “. Maximum suspension travel is the distance between the axle and the rubber bumper that limits suspension travel plus 1 “.

4. PLATFORM MOUNTING  Comply □ Exception □
a. RUBBER RAIL CUSION
Rail cushion shall 1” x 4” x 111” with a 65-durometer hardness rating or equivalent. Attached cushion to the frame with 12 counter sunk bolts 2.5”x3/8NC, washers and nylocks.

b. MOUNTING SYSTEM  Comply □ Exception □
The mounting kit will be provided by Lando Fire Department

5. PLATFORM will be provided by Lando Fire Department
• Length of platform is approx. 126”.
• Width of platform is approx. 96”.

6. SKID UNIT INSTALLATION
The LFD will deliver the skid unit to the contractor to mount on to the flatbed. The contractor shall connect the skid unit electric starter to the chassis electrical system.

f. TAILBOARD  Comply □ Exception □
The tailboard is provided at the rear of the Lando Fire Department provided flatbed body.
7. COMPARTMENTATION  

Comply ☐ Exception ☐

All storage compartment walls shall be constructed from .125 6061 T6 aluminum diamond plate. All internal frame work shall be constructed of .125” formed aluminum structural members. All compartments shall be ventilated. All hinges shall be, full length stainless steel, piano hinges, installed with stainless steel Torx screws, no rivets. All compartment interiors shall be free of exposed electrical harnesses or plumbing components. All compartments shall have LED lighting enough to illuminate all areas of each compartment. One switch controlling all compartment lights shall be located in the cab center console and labeled. All compartments shall be as large as possible, as determined by the design of the apparatus. All compartments shall carry Compartment configuration and approximate sizes required are listed below:

a. FRONT TRANSVERSE COMPARTMENT  

Comply ☐ Exception ☐

The forward most box on the apparatus body shall be a transverse box. It shall have the approximate dimensions of 24” L x 36” H x 96” D containing two (2) adjustable shelves. with vertically hinged doors one on the driver’s side and one on the passenger side. The compartment shall be able to be sectioned off to accommodate and secure LFD’s Stokes Basket and one back board.

b. DRIVER’S SIDE COMPARTMENTS  

Comply ☐ Exception ☐

The driver’s side box on the apparatus body, behind the transverse compartment shall have approximate dimensions of 64” L x 36” H x 23.5” D. The box shall be horizontally divided creating two (2) separate compartments with an adjustable shelf behind double, vertically hinged doors.

c. PASSENGER’S SIDE COMPARTMENT  

Comply ☐ Exception ☐

The passenger’s side box on the apparatus body, behind the transverse compartment shall have approximate dimensions of 64” L x 36” H x 23.5” D. The box shall be horizontally divided creating two (2) separate compartments with an adjustable shelf behind double, vertically hinged doors.

d. REAR BODY COMPARTMENTS  

Comply ☐ Exception ☐

There shall be two (2) rear compartments approximately 36” L x 10” H x 23.5” D on either side of the body. Each shall have a drop-down door. Final dimensions to be determined by the space available.

e. COMPARTMENT DOORS  

Comply ☐ Exception ☐

All doors shall be consistent in fit and finish with the compartment unit. All doors shall be weatherproof and maintain contact with all points of the weather stripping. Weather stripping shall be bulb type, attached to the opening flange of the compartment opening. The doors will have a smooth exterior appearance with enough bracing in each door for strength and prevent distortion. Doors shall be painted, or powder coated to match Lando Fire Department fleet colors.

f. DOOR LATCHES AND HARDWARE  

Comply ☐ Exception ☐

Unless where noted, all compartment door latch assemblies shall be installed with threaded fasteners, shall not be welded, and shall be easily removable for servicing or replacement. All door latch assemblies shall be of a flush-mount, “D-Handle” design, with all external components fabricated from polished stainless steel. All latches shall be of a two-position twist latch type design latching operation. All hardware shall be corrosion resistant and suitable for its intended use. All nuts and bolts shall be stainless steel. Stainless steel nuts shall be the self-locking type.
g. DOOR HOLD OPEN DEVICES

Comply □ Exception □

All vertically-hinged doors, shall be provided with one (1) extending, gas cylinder type hold open devices, mounted on the top of the compartment door opening. The pressure rating of the gas cylinders shall be carefully matched to the size and weight of the compartment door and shall hold the compartment door securely open to a greater than 90° angle without additional support. The gas cylinder hold openers shall dampen the movement of the compartment door while opening and will permit closing of the box door without need to release any type of manual locking devices. All compartment doors shall be capable of being closed with one hand, allowing a free hand to hold equipment or supplies.

h. ADJUSTABLE SHELF CHANNELS

Comply □ Exception □

Vertically-mounted aluminum c-channel, slim-line shelf system shall be provided and welded to the side wall of all enclosed top compartments. This is for the current or future installation of adjustable shelving, slide out trays or equipment brackets.

i. COMPARTMENT SHELVES

Comply □ Exception □

Four (4) adjustable shelves shall be provided and installed in the completed top body compartments. The shelving system shall be mounted on a c-channel slim-line track to allow the change of elevation. The shelf locations shall be as follows:
One (1) in the driver’s side compartment box.
One (1) in the passenger’s side compartment box.
Two (2) in the transverse compartment box.

8. BODY ELECTRICAL REQUIREMENTS

a. WIRING SPECIFICATIONS

Comply □ Exception □

All apparatus body electrical components shall be served by independent circuits which shall be separate and distinct from the apparatus cab and chassis electrical circuits. All wiring supplied and installed by the apparatus manufacturer shall be installed in flexible split convoluted loom and shall be color coded and function labeled at 6” intervals per NFPA standards. All wiring supplied and installed from the apparatus manufacturer by an EVT certified technician shall be grease, oil and moisture resistant; and shall be securely fastened with insulated metal clamps and nylon wire ties. Solderless insulated connectors shall be utilized at all splice joints and shall be enclosed with heat shrink tubing for extra corrosion protection. Automatic reset type circuit breakers shall be provided wherever possible. The following electrical components shall be provided and installed on the completed apparatus by the apparatus builder:

b. LIGHTING SPECIFICATIONS

Comply □ Exception □

All Lighting shall meet Federal Motor Vehicle Safety Standards. It is acceptable to utilize the existing light fixtures furnished with the cab and chassis. Clearance and identification lights shall be easily changed rubber-mounted, shock proof LED and meet FMVSS 108 requirements.

c. BACK UP LIGHTS

Comply □ Exception □

A pair of Truck-lite LED Oval Sealed 24 Diode Pattern, clear LED back up lights are provided at the rear of the Lando Fire Department provided body, one (1) each side, above the rear step. The backup lights shall be wired so that they illuminate when the chassis is placed in reverse gear and/or when the rear flood light switch is activated in the cab.
d. TAIL LIGHTS, BRAKE LIGHTS  Comply ☑ Exception ☐
A pair of Truck-lite LED Oval Sealed 24 Diode Pattern, red LED combination tail/brake lights are provided at the rear of the Lando Fire Department provided body, one (1) each side, above the rear step.

e. TURN SIGNAL LIGHTS  Comply ☑ Exception ☐
A pair of Truck-lite LED Oval Sealed 24 Diode Pattern, amber LED arrow style turn signal lights are provided at the rear of the Lando Fire Department provided body, one (1) each side, above the rear step.

f. LICENSE PLATE BRACKET AND LIGHT  Comply ☑ Exception ☐
Two (2) Truck-lite brand, 26 Series LED clear light fixture, with license plate mounting bracket, are provided at the rear of the Lando Fire Department provided body.

g. CLUSTER/CLEARANCE LIGHTS AND REFLECTORS  Comply ☑ Exception ☐
Three (3) round ICC LED clearance lights are provided at the rear of the Lando Fire Department provided body, above the bumper. Additional lighting clearance lights shall be provided to conform to DOT, Federal and NHTSA specifications for vehicles of 96” wide. All lighting shall be compatible with the 12V chassis electrical system. Lighting shall be located according to ICC regulations.

h. AFT LOWER ZONE B/D WARNING LIGHTS  Comply ☑ Exception ☐
Two (2) Federal Signal brand, MicroPulse Ultra light heads, or equivalent, red LED flashers, with mounting flanges, shall be provided on the rear sides of the apparatus chassis, over the rear wheel, side facing, one (1) per side, for use as “rear intersection” lights. The lights shall be wired to a switch located on the cab center console.

i. AFT LOWER ZONE C WARNING LIGHTS  Comply ☑ Exception ☐
Two (2) Federal Signal brand, MicroPulse Ultra light heads, or equivalent, amber LED flashers, with mounting flanges, shall be provided on the lower rear of the apparatus, rear facing, one (1) each side. The lights shall be wired to a switch located on the cab center console.

j. WORK LIGHTS  Comply ☑ Exception ☐
Three (3) Federal Signal brand, Commander series work lights, model COM-1220-SQ shall be provided on the unit. Location to be determined at the prebuild conference.

k. KUSSMAUL AUTO-EJECT 20 AMP  Comply ☑ Exception ☐
The Super Auto Eject or equal is a completely sealed automatic power line disconnect. This prevents contamination of the mechanism by road dirt and ensures long reliable life even when mounted in the most severe environment. A novel internal switch arrangement closes and opens the 120 Volt AC circuit after the mating connector is inserted, and before the connector is removed. This eliminates arcing at the connector contacts and assures long contact life. As with all Auto Ejects, the Super Auto Eject is connected to the starter circuit, so that ejection occurs when the engine is cranked. The unit is mounted in the rail of the cab protection.
9. OTHER APPARATUS BODY ITEMS

a. EXHAUST SYSTEM  Comply  Exception  
The exhaust system shall remain unmodified and as received from the chassis manufacturer. If the exhaust system proves to be in conflict with mounting items or departure angle, a conference between the chassis manufacturer, the apparatus builder and the department shall ensue about proper placement. Upon agreement, the apparatus builder shall move the exhaust system properly to its new placement at no extra charge.

b. MUD FLAPS  Comply  Exception  
One (1) pair of flexible rubber mud flaps shall be provided on both sides of the apparatus body behind the rear wheels. The mud flaps shall not bear company logos. The mud flaps shall extend down far enough to be effective but shall not allow the flaps to become entangled with the rear tires when the apparatus is backing up.

c. BUMPER – RECIVER HITCH  Comply  Exception  
The completed tailboard assembly looks as it serves as the vehicle bumper but does not meet all associated requirements. Nestled under the tailboard shall be a class 5 receiver hitch and attached underbars that will meet bumper specifications. Underbars is integral with the lower section of the rear springer mounting system which is attached to the frame.

VII. APPARATUS FINISH FOR TURN-KEY OPERATION
1. COMPLETED APPARATUS TESTING

a. ELECTRICAL, LOW-VOLTAGE TEST  Comply  Exception  
The fire apparatus low voltage electrical system shall be tested as required by this section and the test results shall be certified by the apparatus manufacturer. The certification shall be delivered to the purchaser with the documentation for the completed apparatus. The tests shall be performed when the air temperature is between 0°F and 110°F (18°C and 43°C).

b. TEST SEQUENCE  Comply  Exception  
The three (3) tests defined below shall be performed in the order in which they appear. Before each test, the chassis batteries shall be fully charged until the voltage stabilizes at the voltage regulator set point and the lowest charge current is maintained for 10 minutes. The failure of any of these tests shall require a repeat of the test sequence.

c. RESERVE CAPACITY TEST  Comply  Exception  
The chassis engine shall be started and kept running until the chassis engine and engine compartment temperatures are stabilized at normal operating temperatures and the chassis battery system is fully charged. The chassis engine shall be shut off and the minimum continuous electrical load shall be applied for 10 minutes. All electrical loads shall be turned off prior to attempting to restart the chassis engine. The chassis battery system shall then be capable of restarting the chassis engine. The failure to restart the chassis engine shall be considered a failure of this test.
d. ALTERNATOR PERFORMANCE TEST AT IDLE
Comply ☐ Exception ☐
The minimum continuous electrical load shall be applied with the chassis engine running at idle speed. The chassis engine temperature shall be stabilized at normal operating temperature. The chassis battery system shall be tested to detect the presence of a chassis battery current discharge. The detection of chassis battery current discharge shall be considered a failure of this test.

e. ALTERNATOR PERFORMANCE TEST AT FULL LOAD
Comply ☐ Exception ☐
The total continuous electrical load shall be applied with the chassis engine running up to the engine manufacturer’s governed speed. The test duration shall be a minimum of two (2) hours. The activation of the electrical system load management system shall be permitted during this test. The activation of an alarm due to excessive chassis battery discharge, as detected by the system required by NFPA (current edition), or an electrical system voltage of less than 11.8 VDC for a 12 VDC nominal system, for more than 120 seconds, shall be considered a failure of this test.

f. LOW VOLTAGE ALARM TEST
Comply ☐ Exception ☐
Following the completion of the tests described above, the chassis engine shall be turned off. With the chassis engine turned off, the total continuous electrical load shall be applied and shall continue to be applied until the excessive battery discharge alarm activates. The chassis battery voltage shall be measured at the battery terminals. The test shall be considered to be a failure if the low voltage alarm has not yet sounded 140 seconds after the voltage drops to 11.50VDC for a 12 VDC nominal system. The chassis battery system shall then be able to restart the chassis engine. The failure of the chassis battery system to restart the chassis engine shall be considered a failure of this test.

g. DOCUMENTATION
Comply ☐ Exception ☐
The apparatus manufacturer shall provide the results of the low-voltage electrical system performance test, certified in writing, with the documentation provided to the purchaser at the time of delivery of the completed apparatus. The test results shall consist of the following documents:
A written electrical load analysis, including the following:
The nameplate rating of the alternator.
The alternator rating under the conditions specified in NFPA 1906 (current edition).
Each of the component loads specified that make up the minimum continuous electrical load.
Additional electrical loads that, when added to the minimum continuous electrical load, determine the total continuous electrical load.
Each individual intermittent electrical load.

2. APPARATUS FINISH

a. COMPLETE APPARATUS BODY COLOR
Comply ☐ Exception ☐
The completed Chassis shall be two-tone in color. The Top half shall be factory Ford Ingot Silver. The bottom half of the cab shall be painted to match the Lando Fire Departments Red fleet color, paint chips will be provided by LFD. Paint quality will be equal to or greater than the Ford Motor company factory paint and carry the same warranty. Actual lines will be determined at prebuild. Body doors shall be painted to match the two-toned paint on the finished Chassis. The apparatus body of diamond plate and channel aluminum shall not be painted.
b. STRIPING Comply □ Exception □
A 1-3-1 White-Blue-White-reflective stripe shall be provided and installed horizontally on both the chassis cab and body. The stripe shall be placed as low as possible on the vertical surfaces on the sides of the front door (front fender) allowing room above the stripe to install a department logo. The stripe shall continue on the apparatus platform in the bed rail and continue around the platform to the opposite side front.

c. CAB AND BODY LETTERING AND STRIPING Comply □ Exception □
Block style lettering, fabricated from retro-reflective material, shall be provided and installed on the apparatus as follows:
The unit designator, (example 444) in 4” tall letters, shall be provided on the front bumper if room exists. The Department Name, Lando Fire Dept. in 4” tall letters, shall be provided centered on the cab doors. The unit designator, (example 444) in 4” tall letters, shall be provided on the driver and passenger side of the hood. The Lando Fire Department Seal shall be provided centered on the rear doors above the red 1-3-1 stripe on both sides.

3. EQUIPMENT Comply □ Exception □
The following equipment shall be provided with the completed apparatus. The equipment shall be new and unused, and shall meet all current NFPA, OSHA and other applicable safety regulations.

a. MANUALS AND DRAWINGS Comply □ Exception □
The following specified materials shall be provided with the completed apparatus:
One (1) complete set of standard chassis operation, parts and service manuals.
One (1) apparatus manufacturer’s operation and service manual, to include:
Manufacturer’s Record of Construction
Warranty Registration and Information
Operator Safety Information
Vehicle Exterior Maintenance Instructions
Maintenance and Lubrication Information & Charts
Complete Electrical Diagrams
Component Literature (i.e.: siren, hose reel, etc.)
Weight Certificate

b WHEEL CHOCKS Comply □ Exception □
Two (2) Zico brand AC-32 or equal NFPA 1901-09 compliant wheel chocks shall be provided with the completed apparatus, one (1) each side. They will be mounted to the underside of the platform behind the mud flaps with Zico brand QCH-32-H or equal holders for convenient storage.