

Vehicle Build Specification

City of Spring Hill Fire Department Chevrolet Silverado

2500HD

FastLane Emergency Vehicles | 37241 E Richardson Lane | Purcellville, VA 20132 | (877) 327-8526



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Job/Quote ID: **Q00745.1**

Client/Department Name: **City of Spring Hill Fire Department**

Rep: **Drew Crisp**

Conversion Up-fit of a(n) Chevrolet Silverado 2500HD

FastLane to supply vehicle? **YES**

Chassis Specifications

If indicated above and vehicle is supplied by FastLane, the following specifications shall be considered "included in contract" Only specifications listed herein shall be considered inclusive. FastLane shall not be responsible for chassis specifications outside this document.

The vehicle, a(n) **Chevrolet Silverado 2500HD** shall be supplied by FastLane.

Please see the chassis specification document attached to the quote.

GENERAL BUILD SPECIFICATIONS

This section describes the minimum standards for how your new FastLane vehicle shall be converted/upfitted; specifically for the wiring, connections & terminations, mounting of equipment and power distribution.

WIRING

Wiring to be automotive type meeting or exceeding SAE J1128-GXL rated for minimum of +125 degrees centigrade. All wiring to be stamped with permanent, indelible marking describing both circuit identification and plain word function not less than 6 inches apart for the entire length of the wire. Each run to be rated for 125% the specified ampacity of the connected load. All wires to be run in split corrugated, nylon loom with minimum temperature rating of +115 degrees Centigrade. Loomed harnesses to be wire tied to frame and chassis not greater than 16 inches apart. All communication and data lines to be shielded and in independent harness from all other wires. All pass-through holes cut in body of vehicle where wire harnesses travel to have standard Heyco style bushings to protect from chaffing. All holes that pass to exterior of body to have approved, expanding sealing compound to seal wires from weather.

CONNECTIONS & TERMINATIONS

All connections made within the body, away from possible weather to be standard crimp style terminals with nylon insulation. Terminals must be crimped with approved tool specific to connector being used. All exterior or engine compartment connections (made on outside vehicle cabin) to be either heat shrink crimp style or Deutsch style, sealed connector and must protect against moisture, dirt and dust, minimum rating of -40 to 120 degrees Centigrade. All ground connections made on chassis frame or body on remote appliances to utilize star (toothed) ring terminal and be coated from weather and corrosion with silicon or approved sealant. Interface to OEM wiring shall be done in accordance with body builder and up-fitter specifications. Where possible any connection to OEM wiring shall use a tee style no-cut harness or shall be soldered into place using standard no-clean flux solder. This soldered connection shall then be covered in a dual wall, polyolefin, sealant lined heat-shrink tubing and heated into place with heat gun or portable torch. Under no circumstances shall fuse taps or crimp tee-taps be used to interface with OEM wiring.

MOUNTING OF EQUIPMENT

All FastLane added equipment to be mounted in accordance with manufacturers specifications. All interior cab items to be mounted with airbag safety standards followed. Modifications to the OEM frame assembly or suspension systems are prohibited. Any modification to bumper systems must be done such that not more than 10% of the entire surface area of the bumper assembly is breeched or modified. All cuts made to any chassis or body panel must be sealed with self-galvanizing, anti-rust sealer prior to equipment being mounted. All exterior hardware including screws and fasteners to be minimum of 18-8 stainless steel. All exterior lighting and thru-body equipment shall be fastened to the sheet metal of the vehicle using approved rivet nut fasteners, allowing the use of machine thread screws. The use of sheet metal screws directly into the body skin is prohibited.

POWER DISTRIBUTION (noise free power)

The main FastLane power feed is rated for 200% of total expected ampacity of the carried load. One large gauge cable run from vehicle's battery bank must be circuit protected within a minimum distance of 16 inches from power source (battery) and can be disconnected by user quickly in the event of emergency or maintenance. This protected power feed will power all FastLane added appliances and warning systems. Specified, lug style power studs will be in vehicle console and rear cabinet (if specified)

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to provided clean, capable power. Additionally main ground studs shall be placed in the front console and rear cabinet (if specified) for clean, noise free central grounding of all equipment. These ground cables shall be of matching size to main power feed and be bolted to frame rails using stainless steel fasteners and coated with approved sealing compound.

LIGHTBARS

As it is necessary to make an opening in the vehicle roof for lightbar cable(s) to be routed, proper and effective sealing of these hole(s) is of paramount importance. All wire holes through the vehicle roof will be protected with self-sealing, waterproof, hole-grommets when clearance is available (otherwise FastLane shall seal the hole using standard pliable "duct" seal agent).

FASTLANE SHALL SUPPLY/INSTALL THE FOLLOWING ITEMS:

The following lightbar shall be installed on the vehicle:

Manufacturer: **SIGNAL**

Model: **ENNLB011ED-26F**

Description: **54" nFORCE NXT Lightbar with R/G/W Corners, R/W Front, Outermost Rear Module R/A**

Special Instructions:

TRAFFIC STICKS

The following rear traffic stick shall be installed on the roof of the vehicle:

Manufacturer: **Soundoff Signal**

Model: **EMPTC012H6**

Description: **mPower 8 Module Traffic System Tri-Color RAW**

Special Instructions:

BODY & WARNING LIGHTS

All exterior lighting shall be installed using approved rivnut fasteners and stainless-steel machine screws. Any holes or cuts in the vehicle's body shall be back primed with a self-etching primer to prevent corrosion. All connections between fixtures and cabling will be made with either heat shrink sealed or Delphi Deutsch style weatherproof connectors, wherever the likelihood of extensive exposure to the elements exists.

FASTLANE SHALL SUPPLY/INSTALL THE FOLLOWING ITEMS:

Item	Mounting Location	Quantity	Special Instructions
EMPS2STS4D: 4" mPower Stud Mount, Black Housing, RED/WHITE	Grill - Built-In	4	
EMPS2QMS4D: 4" mPower Quick Mount Black Housing, 12 LED, Dual Color Red/White	Fenders (Both) - Front	2	Front intersection lighting.
EMPS2QMS4D: 4" mPower Quick Mount Black Housing,	Fenders (Both) - Rear Center Over	2	Rear intersection lighting.

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12 LED, Dual Color Red/White	Wheel		
EMPS2QMS4D: 4" mPower Quick Mount Black Housing, 12 LED, Dual Color Red/White	Bumper, Rear - Built-In	2	White scene to toggle automatically in reverse.
EMPS2QMS4D: 4" mPower Quick Mount Black Housing, 12 LED, Dual Color Red/White	Body, Rear	2	Mount rear of cap, vertically.
EMPS2001P-4: 4 Inch mPower Fascia with Stud Mount, Black Housing, RED/AMB/GRN (Specify Color and Function)	Liftgate, Rear - Interior Surface	2	Toggleable green command mode.
PROG - NOTE: Programming Note		1	Standard FastPlex lighting functionality: white lighting to be introduced automatically when in drive
to drop out automatically in park. All lightheads to have toggleable solid scene function. Toggleable green command mode.			
ESLRL6115D: SL Running Light, 61" - 5 Module, Dual Color Red/White	Running Boards, Kick Space Area	2	
PSLVBK05: Universal Mounting Kit for SL Running Light includes: Bracket & Hardware Kit	Running Boards, Kick Space Area	2	

SIRENS & AUDIBLE DEVICES

The following represents any audible warning devices being provided and/or installed as part of this upfit/conversion.

FASTLANE SHALL SUPPLY/INSTALL THE FOLLOWING ITEMS:

Primary Siren: **295HFSC9: 200W Dual Function Siren w/ Detach Mic**

Speaker (**Qty: 2**): **ETSS100U, 100U Series Composite Speaker w/ Universal Bail Bracket - 100 watt**

Additional items for this section:

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Item	Quantity	Special Instructions
HOWLER: Howler Low Frequency Siren, w/ Amplifier and 2-Speakers (need to specify bracket needed for speaker)	1	

WORK LIGHTING

FastLane shall supply and/or install the following work lighting in your vehicle:

Install **2** red/white dome lights from **Techniq Lighting**, part **E13-LS0R-1: Silho-X 2.75 Round Neutral White/Red LED Map Light** in front headliner (or overhead console if so specified).

Additional items for this section:

Item	Mounting Location	Quantity	Special Instructions
E45-WBP12-1: 72 LED Premium 56.5" Aluminum Extrusion Lamp White		3	Cap interior lamps
1 per toolbox, 1 in center.			
E45-WBP10-1: 60 LED Premium 47.5" Aluminum Extrusion Lamp White		1	Liftgate interior lamp.
E45-OB03-1: Black Parallel Mount Screw Clip Qty 2		12	Interior lamp mounts.

FRONT CONSOLE

FastLane shall provide and install a custom **Full Floor Console** with the following details:

The custom front console to house all necessary switching, signaling and communications controls, as well as cup holders, map books and 12-volt power-points, as specified below. The primary console construction, if fabricated by FastLane (sides, front, rear), shall be of cabinet grade " lumber core or veneer core ply material, covered a durable polyurea coating, black. Where map book or other slots are provided, these spaces shall also feature the same coating. Whenever functions of the OEM installation are interrupted by the console such as rear radio, HVAC controls and ducting, these features shall be reintegrated into the new console (where possible). Installation of console includes mounting of all equipment listed herein for control and use by driver and passenger. FastLane reserves the right for production changes that require adjusting console appliance locations to fit according to size and use. Any mic clips will be shipped loose for installation at time of delivery. Consoles are fastened to vehicle chassis using threaded fasteners to floor. Dashboard support may be added for stability if needed. The face surface (top) of all front consoles shall be constructed of .090 aluminum sheet. These faceplates will be cut to size using CNC machining (not hand cut). All holes necessary in the faceplate (radios, switching, etc.) will be die-cut to a maximum allowable tolerance of +/- 0.05" through the aluminum. Gaps around mounted appliances will not be tolerated and shall be deemed unacceptable. The

finished product will feature rounded edges and corners to prevent injury to people or equipment. These faceplates shall be finished with a black polyester powder-coat finish, producing a textured/wrinkle, scratch resistant coating.

Additional Standard Options

Install **1** standard **12V Power Points** in front console (see drawing for exact placement).

Install **1 QC 3.0 USB A/USBC Power Point(s)** in front console (see drawing for exact placement).

Install **2** marine style oversize **cup holders** in front console (see drawing for exact placement).

Install **2** fully height adjustable, padded **arm rests** on front console.

FastLane shall provide and install a custom **overhead control console** to include the following features:

Custom overhead console to house primary control panel (FastPlex screen if specified), as well as three (3) 30W audio speakers for two-way radios terminated to the floor console. In addition, FastLane will integrate back any OEM overhead console functions that exist on the vehicle (courtesy lights, air bag indicators, etc.)

RADIOS

All listed radio equipment to be tested and operate within manufacturer's specifications prior to delivery of the vehicle described herein. The radios must be noise free (less than 10dB of spurious noise per unit) and be functional upon delivery (please note that it may not be possible to test all aspects of transmission and reception on Client's system. FastLane shall not be responsible for defects or damage to customer supplied radio equipment prior to possession by FastLane. All equipment shall be provided to FastLane, free from defects, programmed and in good working order. FastLane does not have the capability to program all makes and models of radios, therefore it shall not be the responsibility of FastLane to ensure proper function of the radio systems if any radios are supplied in an un-programmed state. Further, some systems require a home signal to function and therefore cannot be 100% tested at the FastLane facility.

Fastlane shall install **2 customer supplied two-way radio(s)** in the **front console** area (final location to be determined by console design).

Special Instructions, Models or Details:

Note: Customer supplied radios must be provided prior to your scheduled start date. In addition, all radio equipment must be new or in working order when provided to FastLane for installation. FastLane is not responsible for any equipment that is damaged, not working or missing vital accessories to function.

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Fastlane shall install **2 customer supplied two-way radio(s)** in the **rear cabinet RCC area** (final location to be determined by console design).

Special Instructions, Models or Details:

Note: Customer supplied radios must be provided prior to your scheduled start date. In addition, all radio equipment must be new or in working order when provided to FastLane for installation. FastLane is not responsible for any equipment that is damaged, not working or missing vital accessories to function.

FastLane shall provide and install **3, MB8U25 antenna coax run assemblies** that can operate from 0-1000 Mhz. Runs shall terminate to the vehicle roof using the standard Motorola NMO mount and include a rain cap upon delivery (if no antenna is provided by customer for installation).

Special Instructions, Models or Details:

COMPUTERS

FastLane shall incorporate the following mobile computers in the vehicle:

Install a **Gamber Pole Assembly** on the front console, final location to be determined by design drawings provided.

Install a **Customer Supplied** on the vehicle to provide hotspot connectivity.

Note: Customer is responsible for any SIM activation or monthly subscriptions plans, not included with this build specification.

Additional items for this section:

Item	Quantity	Special Instructions
CSMC: Install Customer Supplied Mobile Computer	1	
17TS7M: Beetratics 17 Inch HD Touchscreen, Full HD 1920 x 1080	1	Embedded in command board, tethered to console MDT.
F2RTSEXT-SET: Front to Rear Touchscreen Extension Cable Set (includes HDMI & USB for TS)	1	

REAR CABINET

A **CUSTOM** rear cabinet system, specifically built for the third (3rd) row of a(n) **Silverado 2500HD** shall be provided and installed per the following specifications:

Installation of cabinet includes sizing and fitting to vehicle interior. FastLane shall utilize a minimum of four 3/8" diameter grade 5 carriage bolts to fasten the cabinet system to vehicle substructure or frame. Where possible cabinets shall be mounted through structural floor members such as frames or reinforcing plates; however, where mounting to body floor skin only FastLane shall utilize a minimum 4" diameter reinforced 3/16" thick steel plate for connection strength. All hardware utilized shall be rated at 150% of anticipated use and shall be coated to avoid rust and corrosion. All wood used in construction shall be lumber or veneer core ply. The cabinet shall be constructed using " LC/VC ply and be nailed, glued and screwed together at all fixed joints. All exposed edges shall be covered in a coordinating laminate or rubber edging. FastLane reserves the right for minor (cosmetic) modifications to the cabinet's design during final mounting.

Please refer to any FastLane supplied construction drawings for better illustration. However, the specifications within this document shall always supersede any illustrations, depictions or references made by any drawing, design or sketch. Equipment or installation of equipment not listed herein shall be considered for illustrative purposes only and not part of contract.

The cabinet shall include the following (add-on) options:

Item	Quantity	Special Instructions
RCCROLLOUT: Command Module Roll-Out to Include Rolling RCC	1	
SD24: Sundry Drawer, 24" Deep	1	
SM3-HD-EFM-SL-74-41: Electric Slide 1500lbs Capacity, 90% Travel, 4 3/4" H 74" L x 41" W* painted silver* 2nd Safety Lock	1	
CBLATSO: Lateral Slide Out Command Board Extensions (each)	2	
DEV: Dry Erase Vinyl (Per Square Foot)	10	
ASHELF: Adjustable Shelf (each)	2	
USB/USBC-PP: 12V USB and USB Type C Faceplate Mounted Outlet	1	
RCL: 12V Accessory Plug Adapter Socket	1	

EXTERIOR ACCESSORIES

All exterior accessories shall be matched to vehicle make and model and installed following manufacturer recommendations and instructions. By no means shall the original vehicle be modified (structurally) to install the equipment listed on this page.

FastLane shall provide/install the following exterior accessories:

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Item	Mounting Location	Quantity	Special Instructions
AREDCU: DCU Series Commercial Truck Cap, Standard "Cab Height"		1	
ARE100-P2: Paint Match, P2 Series Color (Must Provide Color Code)		1	
ARE100-HB: Full Rear Hatchback Door for ARE Commercial Cap (in lieu of hatch)		1	
ARE100-RC: Reverse Camera with Truck Harness for ARE DCU Cap		1	
ARE100-TB: Full Toolbox in Side Compartment for Commercial Cap		2	
ARE100-TBB: Tool Board Backer and Poly Liner for Side Toolbox Compartment (each)		2	
PAINTCCPUPPER: Aftermarket Paint of Upper Half, Hood (includes roof) of Crew Cab Pick-up		1	Grey.

GRAPHICS

FastLane shall utilize only premium cast vinyl with a minimum life rating of 3 years outdoor durability on printed and gradient materials and a minimum of 5-years outdoor durability on all other lettering and striping materials. All efforts shall be made to avoid any bubbles or contaminants in the vinyl field, however small visual imperfections in vinyl are common. While a blemish free application is desired, any blemishes that cannot be seen with the naked eye by a reasonable witness from not less than three (3) feet shall be deemed acceptable and deliverable. To conform stiff materials such as reflective vinyl around complex curves, it may be necessary to perform "slack folds" inside door jambs and behind lighting fixtures, this practice shall be performed as little as possible, however some wrinkling in the vinyl may exist in these areas.

Lettering

FastLane shall produce and install the following lettering and markings on your vehicle:

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Lettering	Location	Size [in]	Quantity	Material	Outline / Shadow	Special Instructions
SPRING HILL FIRE DEPT.	Doors, Cab	4	2	Graphics Material, Reflective Vinyl, Custom Printed Color	Printed Outline	
XXX	Fenders (Both) - Front	3	2	Graphics Material, Reflective Vinyl, Custom Printed Color	Printed Outline	Unit designator
TBD.						
SPRING HILL TENNESSEE	*SEE NOTES THIS ITEM	6	2	Graphics Material, Reflective Vinyl, Custom Printed Color	Printed Outline	Cap side door.

Striping

FastLane shall produce and install the following striping and markings on your vehicle:

Size [in]	Material	Add to Rear?	Special Instructions
6	Graphics Material, Reflective Vinyl, Premium	No	5" main stripe, dual 1/2" pins.
0.25	Graphics Material, Reflective Vinyl, Premium	No	Paint-break pin.

Additional Emblems & Decals

FastLane shall produce and/or install the following decals/emblems on your vehicle:

Emblem	Size [in]	Quantity	Special Instructions
Custom Printed Decal/Seal, 8-12" (customer supplies artwork)	12	3	

Chevron

FastLane shall produce and install the following chevron marking on your vehicle:

Chevron Std Red/Lime NFPA, Perimeter Rear Hatch, Truck Cap or Body**ELECTRICAL ANALYSIS & UPGRADES****Analysis**

The system has analyzed the added electrical loads based on the specifications herein, below are the results:

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Vehicle OEM Alternator	390
Total Amperage Added	137.7
Reserve %	65

*Note: For any reserve percentage **below 25%** FastLane **HIGHLY** recommends to either reduce the overall added loads or upgrade the electrical generating capacity of the vehicle by either adding an alternator upgrade and/or high-idle system.*

FastPlex Control System

The FastPLEX Multiplexed Electrical System is an advanced CAN BUS based control system specifically engineered for FastLane to provide reliability, vehicle specific function and control for this type of conversion. FastPLEX features J-1939 CAN BUS communications, scalable control modules, solid-state switching of ALL loads, integrated flasher and specialized functions, primary touch screen message display center for operator interface, audible prompts. All functions are fully programmable via laptop computer. The actual distribution of power occurs using solid-state module(s) which are standard and interchangeable with other like conversions produced by FastLane. FastPLEX features built-in load management and control and provides system status feedback to the user via a full color 4.3-inch touch screen located in view of the driver. Real time switch feedback tells the user the status of each output during automatic operation. FastPLEX features quick start for all "eMaster" switched circuits allowing soft start turn-on prolonging charging systems and extended load life. All loads are protected using solid-state circuit protection. This system shall interface with the OEM circuitry via a no-load interface. This module shall sense all OEM functions via computer signal and relay that information on the CAN BUS network for use by any module via programmable function. The front touch screen panel is unitized, modular and communicates with all modules via CAN BUS communications on two wires running a redundant loop. This control panel is a common part found in all conversions produced by FastLane, such that it could be interchanged with a panel from a similar vehicle. This touch screen panel features full color display with vehicle icon feedback of system status, CAN BUS communications and is fully programmable for easy screen reconfiguration in the future. The touch screen is fully IP67 compliant and is fully weather resistant. Every FastPLEX system includes one **front touch screen display (FP3860)** and one **primary control module (FP2820)** yielding 28 inputs and 28 solid state outputs. Additional modules provided if specified below.

Add Shoreline Inlet Power: **091-55-20-120: Super Auto Eject 20-AMP, 120V, Cover Color: Red**

Add Vehicle Battery Charger: **PD9345: 45-AMP CHARGER, WITH BUILT-IN CHARGE WIZARD**

Add Inverter for 110V Power: **PD1610: INVERTER 1000 Watt PD1600 SERIES INVERTER**

Additional Electrical Upgrade Items:

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Item	Quantity	Special Instructions
FP3862: FastPlex 7-Inch, Wide Format TouchScreen for Multiplex Control System	1	Front screen upgrade, 4.3" to the rear.
110VGFI: 110V GFI 20A Receptacle	2	Toolboxes.
RCL: 12V Accessory Plug Adapter Socket	2	Toolboxes.

*****END OF BUILD SPECIFICATIONS*****