STATE OF LOUISIANA
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
TECHNICAL SPECIFICATIONS FOR

# TRUCK, CAB & CHASSIS, 66,000 GVWR, TANDEM, TILT CAB WITH STRIPER, (TRUCK MOUNTED), SELF-CONTAINED, PUMPER APPLICATION

**SERIES NO. 255-000** **REV. 11/4/2024**
**EQUIPMENT SPECIFICATION 255-000A**

## GENERAL

This specification sets forth the minimum requirements for a truck, cab & chassis, 66,000 GVWR, tandem, tilt cab with truck mounted, self-contained, pumper application striping machine.

Equipment shall be new, a production model of current manufacture, and must meet all state and Federal safety and emission standards in effect at time of order.

## REPRESENTATIVE SPECIFICATIONS

A Peterbilt, Model 520 and MB Striping Unit Model Maxi-990, with appropriate options and standard features, was used to develop these specifications and establish equivalency evaluation criteria.

Equipment of similar style, type, character, quality, features, and purpose conforming to the following detailed requirements/specifications will be considered. For evaluation purposes, bidders proposing an exception/equivalent option/feature to those specified herein, may be required to provide manufacturer/product information (catalogue sheets, detailed specifications, pictures, etc.). This information will be evaluated against the minimum requirements of this specification. Proposed submittals that are determined not to be equivalent to the established criteria will be rejected.

## LOUISIANA AUTHORIZED DEALER(S)

Proposed item(s) must be from a manufacturer who has at least one (1) authorized dealer **within the State of Louisiana** where parts and service can be obtained. Authorized dealer(s) must have properly trained technicians plus all other resources necessary to perform warranty and repair services in complete accordance with the manufacturer's requirements. A letter certifying the ability to meet this requirement, inclusive of the company name(s) and address(es) of the Louisiana authorized dealer(s), should be supplied with the bid submittal and may be required prior to award.

## DELIVERY & ACCEPTANCE

Vendor shall perform a test run of each unit to verify that all features and capabilities are operating properly at time of delivery. Documentation of testing may be required prior to acceptance by the Department.

Unit(s) must be delivered completely assembled (including all components, accessories, etc.) and ready for operation without any additional preparation including, but not limited to, ensuring all fluid levels are at their full mark, fuel tank(s) is full, all necessary lubrication has been performed, etc. A Louisiana safety inspection shall be performed on each vehicle prior to delivery and a Louisiana safety inspection sticker properly affixed.

Any unit delivered under this specification is subject to rejection if there is evidence of poor workmanship, by either the vendor or the original manufacturer. Noted defects and/or nonconformance findings may be corrected by the vendor. Corrections must be completed and approved by the Equipment Engineer or his representative prior to final acceptance.

Unit(s) shall be delivered "**on the ground**;" DOTD will not unload nor provide any unloading equipment to the vendor/delivery driver in order to offload the unit(s).

**NOTE:** The Department will have space available for equipment to be unloaded.

**EACH UNIT MUST BE SUPPLIED WITH THE FOLLOWING DOCUMENTATION AT TIME OF DELIVERY:**

1. Notarized Bill of Sale
2. Original Certificate of Origin (MSO), (no photocopy)
3. Dealer's Service Policy

**NOTE:** Invoices will not be processed for payment until the unit(s) have been inspected by the Equipment Engineer or their representative and deemed in compliance with the specifications.

**BID SUBMITTALS**

Any additions, deletions, or variations from the specifications should be noted in the "Bidder's Exceptions" page of this specification. Exceptions that are noted to be less than a minimum requirement will not be accepted.

Any additions, deletions or variations from the manufacturer's standard published specifications should be noted on the "Bidder's Exceptions" page of this specification. Unless otherwise noted, any items appearing in the manufacturer's standard published specifications furnished by the Bidder are assumed to be included in the Bidder's submittal.

Bidder should note on their submittal any installation(s) to the equipment that will be performed by the vendor instead of the manufacturer.

Failure to note any specification exceptions, manufacturer specification alterations, and/or vendor installations prior to award may result in rejection of the equipment at the time of delivery.

**THE NUMBER OF DELIVERY DAYS AFTER RECEIPT OF ORDER (ARO) MAY BE USED AS A FACTOR IN THE AWARD.**

# EQUIPMENT SPECIFICATIONS

**NOTICE TO BIDDERS**

**Bidder should review the detailed "Equipment Specification" completely and respond to the compliance question at the end of each section by marking "X", in the space provided, for "Yes" or "No". Mark "Yes" to indicate that the equipment bid meets the section exactly as specified. Mark "No" if there are exceptions to any part of that section. Exceptions/deviations to any part of the specification are to be detailed on the "Bidder's Exceptions" page of this specification.**

**IN ORDER TO BE CONSIDERED FOR AWARD, BIDDER SHOULD RETURN THIS SPECIFICATION, COMPLETED IN FULL, WITH THEIR BID SUBMITTAL.**

**Note: All values listed below are minimums unless noted otherwise.**

## 1. Cab & Chassis

**1.1.** GVWR: 66,000 lbs.

NOTE: WHEN FULLY LADEN WITH STRIPING MATERIAL, THE CHASSIS MANUFACTURER'S GVW RATING SHALL NOT BE EXCEEDED OR THE UNIT WILL BE REJECTED

**Comply: ____Yes ____No**

**1.2.** Frame

**1.2.1.** 2,000,000 RBM (Resisting Bending Moment) – Bidder should list section modulus and yield strength below

**Section Modulus: _____ Yield Strength: _____**

**Comply: ____Yes ____No**

**1.3.** Cab & Axle Positions

**1.3.1.** Wheelbase: Approximately 200"

**Comply: ____Yes ____No**

**1.4.** Cab

**1.4.1.** Tilt, cab over engine
**1.4.2.** Left hand steer
**1.4.3.** Tinted safety glass
**1.4.4.** Full width exterior cab mounted sun shade with integral clearance lights
**1.4.5.** Cab entry handles, driver & passenger side
**1.4.6.** Outside mirrors, driver & passenger side
**1.4.6.1.** Power adjustable
**1.4.6.2.** 90 sq. in. minimum
**1.4.6.3.** Heated with integrated turn signals

# EQUIPMENT SPECIFICATIONS

**1.4.6.4.** Two (2) adjustable spot mirrors, one (1) per outside mirror
**1.4.7.** Two (2) roof mounted air horns & one (1) standard electric horn
**1.4.8.** Air ride: driver seat, cab suspension
**1.4.9.** Manufacturer's highest level sound insulation package
**1.4.10.** Gauge package including the following gauges:
**1.4.10.1.** Air cleaner restriction
**1.4.10.2.** Coolant temperature
**1.4.10.3.** DEF
**1.4.10.4.** Fuel
**1.4.10.5.** Oil pressure
**1.4.10.6.** Primary and secondary air pressure
**1.4.10.7.** Speedometer
**1.4.10.8.** Tachometer
**1.4.10.9.** Voltmeter
**1.4.10.10.** Gear indicator
**1.4.10.11.** Odometer
**1.4.10.12.** Total engine hours
**1.4.10.13.** Trip hours
**1.4.10.14.** Trip odometer
**1.4.10.15.** Rear axle oil temperature
**1.4.10.16.** Auto transmission oil temperature
**1.4.10.17.** Engine oil temperature
**1.4.11.** Dual sun visors
**1.4.12.** Two (2) cup holders, integral to dash
**1.4.13.** 3-point seat belt for each seat. If available, all seat belt webbing should be manufacturer's high visibility color (Orange, Red, Green, or Yellow)
**1.4.14.** Climate control, including: air conditioning, heater, & defroster
**1.4.15.** Power windows & power door locks
**1.4.16.** Tilting and telescoping steering wheel

**Comply: ____Yes ____No**

**1.5.** Engine
**1.5.1.** 11.9L, electronic diesel, turbocharged, liquid cooled, 6-cyliner inline configuration
**1.5.2.** 430 HP, 1650 lbs.-ft. torque
**1.5.3.** Engine must include turbo/engine compression exhaust brake
**1.5.4.** To include heavy duty air cleaner
**1.5.5.** To include heavy duty radiator
**1.5.6.** To include on/off fan
**1.5.7.** To include power down/shut down for high engine oil or coolant temperature
**1.5.8.** Truck must meet emission standards in place at the time of production
**1.5.8.1.** If DEF is required, the DEF tank is to be located on drivers side next to fuel tank
**1.5.8.2.** If required, DEF tank capacity: 7 gallon (minimum)
**1.5.9.** Engine must be biodiesel compatible

# EQUIPMENT SPECIFICATIONS

**1.5.10.** Vertical exhaust with rain cap

**Comply: ____Yes ____No**

**1.6.** Fuel System
- **1.6.1.** Two (2) Aluminum fuel tanks with drain, 80 gallon minimum each; One (1) tank on each side
- **1.6.2.** 160 gallon fuel capacity minimum
- **1.6.3.** Visual element change indication that is integral to and non-removable from unit
- **1.6.4.** Water-in-fuel sensor and with indicator in cab
- **1.6.5.** Entire fuel system to be biodiesel compatible

**Comply: ____Yes ____No**

**1.7.** Transmission
- **1.7.1.** Allison 4500 RDS series 6th generation controls: wide ratio, 6 Speed with
- **1.7.2.** Must include PTO aperture
- **1.7.3.** To be filled with manufacture approved synthetic lubricants

**Comply: ____Yes ____No**

**1.8.** Cruise Control
- **1.8.1.** Electronic Low and High-Speed control
- **1.8.2.** Automatically maintain a constant speed within the normal striping range of 6-15 MPH and normal highway speeds

**Comply: ____Yes ____No**

**1.9.** Front Axle/Suspension
- **1.9.1.** Minimum 20,000 lbs. GAWR at tire/ground interfaces
- **1.9.2.** Stemco wet-type visible cap axle seals or approved equal
- **1.9.3.** To be filled with manufacture approved synthetic lubricants

**Comply: ____Yes ____No**

**1.10.** Rear Axle/Suspension
- **1.10.1.** Heavy duty tandem
- **1.10.2.** In-cab controlled air ride
- **1.10.3.** 46,000 lbs. GAWR at tire/ground interfaces
- **1.10.4.** 52" axle spacing
- **1.10.5.** Tracking rods
- **1.10.6.** To be filled with manufacture approved synthetic lubricants
- **1.10.7.** Final drive axle ratio shall be selected by manufacturer for performance to be optimized at 65 while permitting truck to operate up to 75 MPH Maximum on highway without excessive engine speed

**Comply: ____Yes ____No**

# EQUIPMENT SPECIFICATIONS

**1.11.** Brakes
- **1.11.1.** Dual air disc brake system with automatic traction control
- **1.11.2.** ABS brake system with two axle parking brakes
- **1.11.3.** System to include an 18 CFM air compressor
- **1.11.4.** Bendix AD-HF air dryer or equal
- **1.11.5.** Independent emergency brakes
- **1.11.6.** Color coded air lines
- **1.11.7.** Hand control air valve mounted in instrument panel
- **1.11.8.** Parking brake control, yellow and red knobs mounted on instrument panel

**Comply: ____Yes ____No**

**1.12.** Wheels
- **1.12.1.** Polished aluminum, hub piloted wheels
- **1.12.2.** Front size – 22.5 x 12.25
- **1.12.3.** Rear size – 22.5 x 8.25
- **1.12.4.** 10-Stud

**Comply: ____Yes ____No**

**1.13.** Tires
- **1.13.1.** First line, first quality
- **1.13.2.** Front - Single highway tread: 425/65R x 22.5, 20 ply
- **1.13.3.** Rear - Dual highway tread: 11R22.5, 14 ply
- **1.13.4.** Load ratings must meet or exceed GVWR of vehicle

**Comply: ____Yes ____No**

**1.14.** Electrical System & Lights
- **1.14.1.** 12-volt system
- **1.14.2.** 200-amp alternator
- **1.14.3.** Batteries with a minimum 1980 CCA combined
- **1.14.4.** Battery box
- **1.14.5.** Remote jump-start studs, with tethered protective caps, located outside of the battery box
- **1.14.6.** Battery disconnect switch, located inside cab, near driver's seat, similar to the below picture.
- **1.14.7.** 

# EQUIPMENT SPECIFICATIONS

**1.14.8.** All exterior lighting should be LED
**1.14.9.** Headlights:
**1.14.9.1.** Automatic daytime running lights
**1.14.9.2.** Automatic on if windshield wipers are turned on
**1.14.9.3.** Automatic on with low ambient light levels
**1.14.9.4.** Warning buzzer/alarm when headlight switch is on and ignition switch is in off position
**1.14.10.** Cruise control shall be governed to 72 MPH maximum
**1.14.11.** Intermittent windshield wipers with washers
**1.14.12.** Self-cancelling directional signals
**1.14.13.** Backup alarm, 97 dba
**1.14.14.** AM/FM/WB radio with auxiliary front input, Bluetooth/hands free function and steering wheel controls
**1.14.15.** Two (2) 12V accessory power outlets with covers, mounted in dash (for cell phone chargers, GPS devices, etc.)

**Comply: ____Yes ____No**

**1.15.** Paint
**1.15.1.** Cab: Manufacturer's standard white
**1.15.2.** Chassis: Manufacturer's standard black

**Comply: ____Yes ____No**

**1.16.** Auxiliary Equipment
**1.16.1.** FMCSA/DOT Mandated Safety Items
**1.16.1.1.** One (1) UL listed, 5lb B:C rated, or higher, fire extinguisher securely mounted in cab
**1.16.1.2.** Two (2) 20 Lb. dry powder fire extinguishers securely mounted on equipment deck
**1.16.1.3.** Two (2) 20 Lb. dry powder fire extinguisher securely mounted in operators cab
**1.16.1.4.** One (1) set of three (3) bidirectional reflective triangles conforming to FMVSS No. 125
**1.16.1.5.** At least one (1) spare fuse for each type/size used in the truck
**1.16.2.** Piped ¼" air supply for hand take-off mounted at the right-hand corner of the platform
**1.16.3.** Digital Speed Meter System
**1.16.3.1.** Capable of reading speed in three (3) digits
**1.16.3.2.** Powered and protected by the skip timer via network cable
**1.16.4.** Rear Fenders
**1.16.4.1.** Aluminum, removable
**1.16.4.2.** Mounted above the rear tires
**1.16.4.3.** Mudguards installed on rear edge
**1.16.5.** Rear DVR Backup Camera
**1.16.5.1.** Rear Mounted
**1.16.5.2.** 7" (minimum) color monitor mounted in truck cab
**1.16.5.3.** Removable storage device (SD card, thumb drive) for recorded video storage
**1.16.5.4.** Pre-wired for 12-volt operation

**Comply: ____Yes ____No**

# EQUIPMENT SPECIFICATIONS

## 2. Platform

**2.1.** 96” (Maximum) total width
**2.2.** Approximately 262” long (Long enough to accommodate all equipment)
**2.3.** Deck:
  **2.3.1.** Non-skid, 3/16” medium pattern steel safety tread
**2.4.** Framing:
  **2.4.1.** 4” structural channel cross members
  **2.4.2.** 6” structural longitudinal members
  **2.4.3.** Cross member spacing shall not exceed 18”
  **2.4.4.** 2”x5” Perimeter tubing
**2.5.** Risers:
  **2.5.1.** Minimum of ten (10) equally spaced risers
  **2.5.2.** Manufactured into built-in structural channel and shall allow an 8-inch opening from the top of the chassis rail to the bottom of the platform.
  **2.5.3.** Welded to the bottom of the platform
  **2.5.4.** Fastened to the chassis rails vertical flange by at least two (2) 5/8” diameter, grade #8 bolts
  **2.5.5.** Soft aluminum spacing shall be placed between the risers and the chassis rails top flange
  **2.5.6.** Aluminum spacer to be permanently secured in their locations
**2.6.** Ladder:
  **2.6.1.** Ladders with skid resistant steps shall be furnished on sides, two (2) left and two (2) right
  **2.6.2.** Safety chains shall be provided to secure the ladders in the stored position

**Comply: ____Yes ____No**

## 3. Railing

**3.1.** Installed around the platform where necessary and bolted in place
**3.2.** Constructed of 1¼ inch square tubing
**3.3.** Height: 42 inches with a 21-inch-high cross member.
**3.4.** Corners shall be rounded

**Comply: ____Yes ____No**

## 4. Rear Bumper

**4.1.** Minimum 12-inch width and extended across the rear of the truck platform
**4.2.** Minimum 15 inches above the road surface
**4.3.** 4"x 5.4 channel steel bumper support on both sides

**Comply: ____Yes ____No**

## 5. Rear Steps

**5.1.** Rear steps constructed with safety tread surface shall be provided at the rear of the platform with handrails or both sides and a grab bar on the platform
**5.2.** A safety chain shall be provided across the open rear access, behind the operators’ stations

# EQUIPMENT SPECIFICATIONS

**Comply: ____Yes ____No**

## 6. Toolboxes

**6.1.** Two (2) weatherproof toolboxes of adequate size mounted on rear bumper The box shall have a
**6.2.** Full face, bottom hinged door with a latch with integral lock
**6.3.** Any special tools needed for adjustments or disassembly of the various machine components shall be furnished in these boxes

**Comply: ____Yes ____No**

## 7. Operator Enclosure

**7.1.** Approximately 96” wide, 60” deep and with a height of 75”
**7.2.** Windows and doors shall be provided for easy viewing of the gun carriages and access to the remainder of the platform
**7.3.** Interior enclosure lighting for nighttime striping operations
**7.4.** Two (2) LED dome lights shall be mounted in the canopy ceiling, lights shall be capable of changing from white to red for night striping
**7.5.** The construction shall be as follows:
- **7.5.1.** 1-1/2” x1-1/2” x 1/8” wall tube for top & bottom perimeter, vertical posts, and ceiling cross members.
- **7.5.2.** 1-1/2” x 1” x 1/8” wall horizontal tubes around window locations
- **7.5.3.** 1/8” aluminum outer skin
- **7.5.4.** 1” thick grey vinyl covered acoustical insulation adhered to the inside panels
- **7.5.5.** All four (4) corners shall be caulked and covered with a 16-gauge aluminum diamond plate
- **7.5.6.** Two (2) doors, right front to platform, and center rear
  - **7.5.6.1.** Each door shall have a keyed lock and be keyed the same
  - **7.5.6.2.** Full-length continuous hinge, and a bulbous seal on the jamb for waterproofing
  - **7.5.6.3.** Fixed window; sized 29” high, and 15” wide
- **7.5.7.** The enclosure shall have eight (8) horizontal sliding windows; two (2) on each side 21-1/2” tall, 51-1/4” wide, one (1) behind each operator 21-1/2” tall, 26-3/4” wide, two (2) in front wall 21-1/2” high, 26-3/4” tall
- **7.5.8.** All the glass on the enclosure shall be tinted
- **7.5.9.** A removable "bubble" type window shall be installed on each side of the enclosure
  - **7.5.9.1.** The "bubble" window shall project out approximately 6" allowing the operator to view the spray guns

**7.6.** Air Conditioning/Heater Unit
- **7.6.1.** Roof mounted combination air conditioner and hot water heater with circulating fan
- **7.6.2.** Cooling BTUs of air conditioner shall not be less than 25,000 (no exceptions).

**7.7.** A 3/8” rubber floor mat
**7.8.** Operator Seats:
- **7.8.1.** Two (2) air suspension, high back operator seats with dual armrests shall be mounted on the vehicle platform
- **7.8.2.** Foam rubber cushions and back
- **7.8.3.** Weather resistant plastic seat covering
- **7.8.4.** Fitted with safety color (orange, red, green or yellow) seat belts in accordance with SAE and Federal Standards.

# EQUIPMENT SPECIFICATIONS

**Comply: ____Yes ____No**

## 8. Paint & Glass Supply

**8.1.** Paint storage container

**8.1.1.** 990 gallons, non-pressure compartmentalized container with one (1) 495-gallon section for yellow paint, one (1) 495-gallon section for white paint

**8.1.2.** Construction: 10-gauge (minimum) stainless-steel sheet, with bracing as necessary

**8.1.2.1.** Two (2) Stainless lids shall be provided, one (1) lid for each compartment

**8.1.2.2.** Lid(s) shall be hinged to a 10-inch I.D. (minimum) neck ring.

**8.1.2.3.** Lids shall be latched. Adjustments shall be provided to insure a proper seal due to wear on the Teflon gasket.

**8.1.2.4.** Bolting of inspection lid will not be acceptable.

**8.1.2.5.** Venting using stainless steel construction shall provide for normal operation of the paint supply.

**8.1.2.6.** With specified capacity of paint in each compartment, there shall be four inches remaining at the top of each compartment

**8.1.2.7.** Sloped bottom

**8.1.2.8.** Stainless splash baffles, beginning a minimum of 2 inches from the top of the tanks

**8.1.2.9.** Two (2) hydraulic driven stainless-steel agitators shall be provided

**8.1.3.** One (1) cylindrical #16 gauge perforated Stainless-steel strainer in each compartment

**8.1.3.1.** The perforation shall be 1/8-inch diameter perforations on approximately 3/16-inch centers (33 holes per square inch)

**8.1.3.2.** Wire strainers not acceptable

**8.1.3.3.** Readily accessible and where necessary, valving shall be provided to isolate the strainer from the feed line for cleaning

**8.2.** Paint loading pumps

**8.2.1.** Four (4) air-operated diaphragm type, MB 2” transfer pumps

**8.2.1.1.** Shall transfer paint at a rate of 25 GPM from the storage containers to the paint tanks

**8.2.2.** Equipped with Teflon balls and Teflon diaphragms

**8.2.3.** Stainless steel wetted parts

**8.2.4.** Two (2) 12-foot sections of 2-inch diameter suction hose and strainer assembly (one for each paint color)

**8.2.5.** Two (2) air-operated diaphragm type, MB 2” pumps, one for white and one for yellow shall be plumbed in such a manner that material can be pumped from the shipping containers to the storage containers on the striping unit

**8.2.5.1.** 25 GPM transfer rate

**8.2.6.** Provisions shall be provided to clean the pumps by re-circulating cleaner from a solvent bucket

**8.3.** Glass Supply

**8.3.1.** Pressurized tank having a capacity of 7,000 lbs. of glass spheres

**8.3.1.1.** Carbon steel ASME certified construction

**8.3.1.2.** Top opening of not less than 14 inches in diameter

**8.3.1.3.** 0-160 PSI pressure gauge and pressure regulator

**8.3.1.4.** 110 PSI pressure relief valve

**8.3.1.5.** Auto evacuating moisture trap

**8.3.1.6.** Minimum of 2-inch sight glass for viewing the bead levels

# EQUIPMENT SPECIFICATIONS

**8.3.1.6.1.** Shall meet all ASME and maximum pressure requirements
**8.3.1.6.2.** Shall allow the operator to determine bead levels at ¾ full stage, ½ full stage and ¼ full stage
**8.3.2.** A vacuum glass fill unit to be supplied
**8.3.2.1.** Glass is to be drawn into the tank via vacuum without contaminating the vacuum unit
**8.3.2.2.** Shall have a controllable fill speed and the unit is to be muffled
**8.3.3.** The glass filling system on this unit shall include a 12-foot-long, 2-inch I.D. fill hose with all the necessary fittings, including quick disconnect fittings and a new, unused 55-gallon drum with a combination bag splitter and strainer top
**8.3.4.** The glass spheres are to be conveyed under pressure to glass sphere dispensing guns through rubber pressure hoses
**8.3.5.** An air cooler of adequate size and moisture separator are to be supplied to remove moisture from air used to operate the glass system
**8.4.** Air-Operated Solvent Gun Cleaner System
**8.4.1.** 40-gallon ASME certified stainless-steel pressure tank with safety valve
**8.4.1.1.** 4-inch threaded top opening and a full steel skirt support
**8.4.2.** Shall include valves and piping necessary to introduce solvent into each air and paint line
**8.4.3.** All piping shall be solvent resistant type
**8.4.4.** Gun Flush on the Fly
**8.4.4.1.** Flushing the paint guns shall be accomplished by utilizing 3-way valves mounted on the control center

**Comply: ____Yes ____No**

## 9. PAINT HEATING SYSTEM - SCAVENGED

**9.1.** The paint heating system shall be capable of maintaining a paint temperature of 110° Fahrenheit at the paint spray guns, at an ambient temperature of 70° Fahrenheit
**9.2.** Three (3) heat exchangers, one for each color and one for a buffer
**9.3.** Constructed of stainless-steel tubes which extracts heat from the auxiliary engine cooling water
**9.4.** One (1) heat exchanger shall be located between the engine and the paint heat exchangers to act as a buffer in case of leaks
**9.5.** Paint heat exchangers
**9.5.1.** Two (2) shell and tube type
**9.5.2.** 4-pass type units each having a minimum heat transfer area of 64 square feet
**9.5.3.** Structural steel brackets and covers shall be provided for mounting the exchangers in a vertical position with the inlet and outlet extending below the vehicle platform
**9.5.4.** Each heat exchanger shall be provided with a fiberglass insulation blanket and an aluminum cover
**9.6.** Three (3) 12-volt DC electric motor driven circulating pumps with a minimum rating of 25 GPM when pumping the heated water/ethylene glycol solution
**9.6.1.** The pumps shall control:
**9.6.1.1.** PUMP A: Circulation to the white paint heat exchanger
**9.6.1.2.** PUMP B: Circulation to the yellow paint heat exchanger
**9.6.1.3.** PUMP C: Recirculation system
**9.7.** Each heat exchanger shall include a digital thermostatic heat control to monitor the paint temperature

# EQUIPMENT SPECIFICATIONS

**9.7.1.** Controls shall turn off or on the pump feed to the heat exchangers on the temperature setting required by the paint manufacturer

**9.8.** Incorporated water/glycol system expansion tank, located in a convenient location to both fill and check the fluid level of the system.

**9.8.1.** A 14-pound automotive type pressure cap shall be used to regulate the system

**9.8.2.** Overflow tube from the cap neck down through the platform shall safely vent any overflow to the ground

**9.9.** Three (3) automatic air vents shall be installed in the heating system to vent any excess air that gets trapped into the heating system

**9.9.1.** One (1) air vent shall be in the expansion tank line at the top of the intermediate exchanger and one on each paint heat exchanger. (MANUAL AIR VENTS WILL NOT BE ACCEPTED)

**Comply: ____Yes ____No**

## 10. PAINT APPLICATION SYSTEM

**10.1.** Designed for two-color application

**10.2.** Stainless-steel strainer shall be inserted in each system

**10.2.1.** Removable, cylindrical in design and made from a #16 gauge perforated stainless steel material

**10.2.2.** Perforations shall be an 1/8 inch in diameter and on approximately 3/16-inch centers (33 holes per square inch). No wire strainers are acceptable

**10.2.3.** Readily accessible and where necessary

**10.2.4.** Valving shall be provided to isolate the strainer from the feed line for cleaning

**10.2.5.** Single clamp sealed lid

**10.3.** Process Plumbing

**10.3.1.** Air piping, tubing or hose used on the vehicle shall be firmly attached to the frame or bed, except where flexible conductors are required for proper operation or services

**10.3.2.** All plumbing on the low-pressure side shall be constructed of industrial style, stainless steel, 2” tube process-clamp type piping, fittings, and ball valves, with at least one-bolt clamp on the low-pressure side

**10.3.3.** All elbows shall be smooth 90° long radius style

**10.3.4.** Use of pipe thread fittings shall be minimized

**10.3.5.** High-pressure hoses shall be rated to adequately provide a proper safety margin for high-pressure spraying operations

**10.3.6.** All hoses, pumps, fittings, and valves that are in contact with the traffic paints shall be impervious to any petroleum based or water based solvent capable of constant pressures to 600 psi.

**10.3.7.** Stainless steel Paint plumbing

**10.3.7.1.** Valves will be ball type with Teflon seals

**10.3.7.2.** Valve construction on the low-pressure side shall be stainless steel with 4-bolt construction

**10.4.** Air Nozzles

**10.4.1.** Each carriage shall have a multi-channel flat jet nozzle, mounted directly in front of each paint spray gun row, to remove dirt and debris from the road surface prior to the application of paint and glass beads

**10.4.2.** The "on/off/AUTO” air supply shall be in the control boxes.

**10.4.3.** Each air nozzle shall have a manual needle valve adjustment air flow control

**10.5.** Paint Spray Guns

**10.5.1.** The guns shall be Kamber Model 38-15 N.B. (no exceptions), Quantity seven (7), capable of applying a 9" wide line at 15 mils at 12 MPH maximum striping speed

# EQUIPMENT SPECIFICATIONS

**10.5.2.** Shall be a high quality pneumatically actuated and internally atomizing spray gun
**10.5.3.** It must be capable of spraying all standard cold and hot applied fast dry paints; oil base, chlorinated rubber, waterbase latex paint, and premix
**10.5.4.** The main gun body shall be machined from a solid block, not exhibiting any seams or connections
**10.5.5.** All guns wetted components must be manufactured from stainless steel
**10.5.6.** In order to adapt the gun to waterbase paint applications it shall be easily convertible, from a bleeder to a non-bleeder configuration and reverse the process by either removing or replacing a ball check in the atomizing gun port
**10.5.7.** The guns shall be in the non-bleeder mode
**10.5.8.** The gun needle packing nut must be adjustable thus enabling the operation to compress the packings to ensure continuous sealing of the needle through the wear period
**10.5.9.** The lower gun assembly shall contain a spring-loaded Teflon packing and be of the double-barrel design comprising of a separate fluid nozzle, air nozzle, and exterior nozzle to produce a well-defined 4" to 9" wide painted line with an even paint distribution
**10.5.10.** Each spray gun shall have as an integral part a gun shroud which shall produce sharp line definition
**10.5.10.1.** The shroud shall consist of a round collar that will fit on the gun's air nozzle retainer ring and be an open channel type shroud to facilitate cleaning without removal
**10.5.11.** For better durability and life, the exterior nozzle and fluid nozzle shall have a minimum surface hardness of 50 as measured on a Rockwell "B" scale
**10.5.12.** The needle shall be constructed entirely of stainless steel to prevent rusting
**10.5.13.** Gun material inlet shall be constructed at a 25° angle to allow maximum material flow
**10.6.** Glass sphere guns
**10.6.1.** Five (5) Potters Speedbeader installed and pneumatically actuated
**10.6.2.** Injection air system
**10.6.3.** One adjustment knob to calibrates bead flow
**10.7.** Handheld Trigger for Skipline
**10.7.1.** Two (2) handheld triggers control for automatic, semi-automatic, or manual restriping

**Comply: ____Yes ____No**

## 11. SPRAY GUN CARRIAGE ASSEMBLY

**11.1.** Two-gun carriage assemblies shall be supplied, mounted behind the vehicle's rear wheels, to support and align the spray guns
**11.1.1.** Stacked body, quick acting solenoid valves with a manual override feature shall be mounted on each carriage
**11.1.1.1.** Valves shall be equipped with balanced spool designed to minimize back pressure or restriction in exhaust
**11.1.1.2.** Shall be of a one-piece aluminum design body
**11.1.2.** Main carriage mounted on the left-side of the vehicle
**11.1.2.1.** Provisions for attaching five (5) paint spray guns (2 white, 3-yellow), three (3) glass sphere guns and 3 air nozzles
**11.1.3.** The second spray gun carriage (design identical to the main carriage) shall be provided and mounted along the right side of the striping unit, on the same lateral axis as the main carriage

# EQUIPMENT SPECIFICATIONS

**11.1.3.1.** Provisions for attaching two (2) paint spray guns (white), two (2) glass sphere guns and two (2) air nozzles

**11.1.4.**

| LEFT CARRIAGE | | | BERM CARRIAGE | | |
|---|---|---|---|---|---|
| A | A | A | A | A | AIR NOZZLES |
| W – 8” | W | | W | W | PAINT GUNS |
| Y | Y | Y | | | PAINT GUNS |
| G | G | G | G | G | GLASS GUNS |

**11.1.5.** Two (2) wheels mounted on a caster axle, and mounted on the front of each carriage, shall support the carriage, and maintain it at a fixed height from the road surface

**11.1.6.** A parallel system shall connect the carriage to a cross slide and always maintain the spray guns normal to the road surface

**11.1.7.** Cross slide carriage supports shall allow the carriages to be positioned for transport within the width of the vehicle’s platform and permit its use anywhere from this location outward for a distance of 4 feet

**11.1.7.1.** Carriage slide mechanism shall consist of a rectangular tube within a rectangular tube telescoping design with UHMW, self-lubricating material bearing areas

**11.1.7.2.** Each shall be equipped with a hydraulic cylinder for moving the carriage to any point within its operating range

**11.1.7.2.1.** The cylinder shall be double action, controlled by a power steering control, and the steering wheel shall be conveniently located for the operator

**11.2.** A tilting and telescopic steering column shall be conveniently located for each operator

**11.2.1.** Each column shall include a steering wheel with knob

**11.2.2.** The power steering control unit and hydraulic hoses shall be located under the equipment platform, out of the way of the operators

**11.3.** Hydraulic power for the operation shall be supplied by a high-pressure hydraulic pump driven by the auxiliary engine

**11.4.** Rumble Stop Avoidance

**11.4.1.** The centerline carriage wheel shall be auto adjustable with a linear actuator for rumble strip avoidance which will allow the outside wheel to extend outward

**11.5.** Remote Elevators

**11.5.1.** All paint guns shall be mounted on electric elevators which will permit remote vertical adjustment for each individual gun to change line width anywhere from 4 inches to 9 inches.

**11.5.2.** The controls shall be mounted at the operator’s stations.

**Comply: ____Yes ____No**

## 12. TIER 4 FINAL AIR COMPRESSOR

**12.1.** Boss DUS tier 4 final unit capable of supplying at least 250 cubic feet of free air per minute at 110 PSI

**12.2.** All containers shall be ASME approved for 110 PSI working pressure

# EQUIPMENT SPECIFICATIONS

**12.3.** All necessary safety valves, piping and fittings shall be included
**12.4.** Compressor engine shall be diesel powered, liquid-cooled, four-cycle, four-cylinder, overhead valve construction, heavy duty industrial type
**12.5.** Included as standard equipment:
- **12.5.1.** Fin-tube type radiator
- **12.5.2.** Lubricating oil filter
- **12.5.3.** 12-volt electrical system
- **12.5.4.** Pushbutton starting
- **12.5.5.** Air filter to be shared with the compressor air intake

**12.6.** The air compressor engine and chassis engine shall have a common fuel tank.
**12.7.** A Schmidt or approved equal, model number 1200-080-03 coalescing moisture extractor shall be installed in the main air supply line
- **12.7.1.** 800 CFM Rating

**12.8.** A common skid base shall be provided under the engine and compressor so they may be handled and mounted as a package unit
**12.9.** Compressor shall be mounted to the platform cross members.
**12.10.** A complete cover with hinged or sliding access panels shall be supplied for weather protection
**12.11.** The operating control panel shall be located at the end of the compressor unit and the unit mounted so that it is at the curb side of the vehicle
- **12.11.1.** Includes gauges showing oil and air pressures, water temperature, voltmeter and an electric hour meter

**12.12.** An electric cooling fan shall be installed into the main airline to remove heat from the compressed air
**12.13.** The unit shall be furnished with the following accessory items as a standard part of the package:
- **12.13.1.** Hour meter
- **12.13.2.** Oil level gauge
- **12.13.3.** Automatic moisture trap for controls
- **12.13.4.** Automatic blowdown valve
- **12.13.5.** Minimum pressure valve
- **12.13.6.** Hydraulic pump

**Comply: ____Yes ____No**

## 13. HYDRAULIC POINTER SYSTEM

**13.1.** A front mount adjustable pointer guide shall be provided
**13.2.** The guide shall be constructed using a trailer ball and coupling type system
**13.3.** The pointer shall have a "main" pivot point located near the center of the bumper
- **13.3.1.** To this pivot shall be fixed the "main guide arm"

**13.4.** The "main guide arm" will be able to swing out for either edgeline or centerline control
**13.5.** A second pivot point will be located at both outer bumper point locations
**13.6.** This pivot point will offer support for the "bracing arm"
**13.7.** The "bracing arm" shall swing out and support the "main guide arm" at approximately its mid-point
**13.8.** This process shall be reversible to permit the "main guide arm" to be used for either edgeline or centerline operation

# EQUIPMENT SPECIFICATIONS

**13.9.** An additional "telescoping section" shall be inserted into the "main guide arm" to allow a pointer extension from 10 feet to approximately 13 feet
**13.10.** The unit shall be mounted directly on the front truck frame, and so designed that it can easily be swung and secured to brackets attached to the bumper face for easy transport
**13.11.** The guide shall be constructed of solid tubular steel and have a pneumatic rubber-tired caster wheel, and adjustable pointer guide and flag socket located at its forward end
**13.12.** The pointer shall be equipped with a 1" cylinder hydraulic lift capable of lifting the pointer off the ground approximately 45° for transporting or maneuvering the striper
**13.13.** Hydraulic power take-off from chassis power steering shall not be acceptable
**13.14.** A remote electric switch shall be mounted in the chassis cab to activate a control valve for the pointer and shall be easily accessible to the driver
**13.15.** The pointer shall require manual assist to locate in the transport position

**Comply: ____Yes ____No**

## 14. LASER GUIDANCE SYSTEM (cab mounted)

**14.1.** GL-3000-P Laser System using an ultrahigh visibility green laser
**14.1.1.** Specifications
**14.1.1.1.** Laser - 532mm Class IIIA
**14.1.1.2.** Power - 12V DC 4.0 amps/hour (Max Operating)
**14.1.1.3.** Operating Temperature - +36° - +120° F
**14.1.1.4.** Power/Control Cable Length - Approximately 20 Feet (from laser box) to DB15 Connector for Control Box
**14.1.1.5.** Laser Box – Approximately, 6-1/8 H x 6-1/2 W x 12 L Inches
**14.1.1.6.** Shipping Weight - 25 Lbs. - Approximate
**14.1.2.** Remote-control panel located in the cab of the truck to adjusts the laser spot to the desired reference point on the road
**14.1.2.1.** The control shall have a three-function switch for
**14.1.2.1.1.** Laser on Steady mode
**14.1.2.1.2.** Laser on Blinking mode
**14.1.2.1.3.** Laser Off
**14.1.2.2.** There shall be a corresponding green light located on the laser status panel indicating the laser status
**14.1.2.2.1.** Light on Steady mode
**14.1.2.2.2.** Light Blinking mode
**14.1.2.2.3.** No Light (Off)
**14.1.2.3.** Laser spot position control; left, right, forward, back
**14.1.3.** The laser, all optics, mechanical mechanisms, and electronics shall be in a rugged, weatherproof housing that is typically permanently mounted to the roof of the truck
**14.1.4.** Two (2) cables shall run from the laser housing, one for 12V DC power, the other for system control in the cab

**Comply: ____Yes ____No**

# EQUIPMENT SPECIFICATIONS

## 15. TRAFFIC CONTROL & SAFETY LIGHTING

**15.1.** CARRIAGE MARKER LIGHTS

**15.1.1.** Flashing LED amber/green marking lights shall be mounted at each extreme extension of the outrigger carriage

**15.2.** LIGHTING, PLATFORM LED

**15.2.1.** Marker and clearance lighting shall be LED, and recessed flush mounted in grommets

**15.3.** SAFETY LIGHTING

**15.3.1.** Sixty-inch bar (60”), amber and green, shall be mounted on the roof of the truck cab and controlled by programmable in-cab controller

**15.3.2.** Two (2) mini strobe lights (17”-24”), amber and green, shall be mounted to the rear of the signboard mount, just below raised sign, to be controlled by an in-cab programmable controller

**15.3.3.** Four (4) front-facing mini strobe, amber and green perimeter lights at grill corners

**15.3.4.** Two (2) rear-facing mini strobe amber, green perimeter lights mounted on rear bumper

**15.3.5.** Four (4) Whelen, clear linear, strobe heads shall be mounted on the truck – Two (2) at the rear, near the heat exchanger area and two (2) at the front of the vehicle near the grille of the cab

**15.3.6.** Flash pattern must be capable of alternating between and asymmetric, low-frequency, “wig-wag” pattern and a low-frequency double or quad flash

**15.3.7.** Light bars shall meet all applicable Federal and State laws and regulations

**15.3.8.** All safety lights shall be SAE J845 360-degree Class 1 certified

**15.3.9.** Capable of dimming automatically vis photo-sensor

**15.3.10.** Programmable via Windows PC software

**15.4.** ARROWBOARD

**15.4.1.** The striping unit shall have an arrow board, capable of flashing a directional arrow to either the left or right side, mounted on the rear area of the equipment platform

**15.4.2.** Shall have a minimum of 25 hooded, LED amber lamps, with a dimension of approximately 48 inches by 96 inches

**15.4.3.** Shall be pivoted from a horizontal storage position to a vertical position for operation

**15.4.4.** A 12-volt electric linear actuator shall be provided to raise and lower the arrow board from the vertical to the horizontal position

**15.4.5.** Toggle type control switch shall be mounted on the operators control console

**Comply: ____Yes ____No**

## 16. CONTROL & ELECTRICAL SYSTEM

**16.1.** CONTROL CENTER

**16.1.1.** Shall consist of an integral sheet metal covered framework providing space for electrical controls, spray equipment connections, heater thermostat control, and any other auxiliary parts required by the spray equipment

**16.1.2.** Shall be mounted in an inclined position so that it can be observed from either operator's position

**16.1.3.** Shall have mounted on it all the necessary regulators, gauges, valves, switches, and indicators required for operation of the striping equipment

**16.1.4.** All parts shall be of the panel type and located behind the panel if possible

**16.1.5.** An easily removable back plate with four (4) recessed latches shall allow access to the interior for service

**16.1.6.** One (1) 110 PSI safety valve and one (1) condensate drain shall be located on the panel air manifold

# EQUIPMENT SPECIFICATIONS

**16.1.7.** All the gauges shall be of the liquid-filled type
**16.1.8.** All control center switches shall be lighted rocker or push-button type
**16.1.9.** The spray equipment shall be electrically controlled by means of toggle switches and solenoid valves
**16.1.10.** The switches shall be in two (2) separate control boxes within easy reach of the rear equipment operators
**16.1.10.1.** The switch sections shall house additional switches and indicator lights for the skipline mechanism control
**16.1.10.2.** All line pattern combinations, skipline mechanism actuation, and skipline mechanism reset shall be controlled by toggle switches
**16.1.10.3.** Pre-selected combinations shall be obtained by activating only one switch that also simultaneously actuates or resets the skipline mechanism
**16.1.10.4.** One (1) toggle switch shall be a "START/STOP" switch connected in such a way that when activated, it will turn off and cancel any of the selected patterns, as well as automatically reset the skipline mechanism to a ready position
**16.1.11.** All electrical wiring shall be enclosed in conduit type protective case
**16.1.12.** Any wires passing through the deck shall have grommets around them
**16.1.13.** All electrical controls shall be 12-volt power only
**16.1.14.** All electrical wiring shall terminate in the operator control center
**16.2.** SKIPTIMER SYSTEM
**16.2.1.** SC-12
**16.2.1.1.** Control boxes shall use mid-sized IP67 rated toggle switches and shall use sealed pushbuttons for menu navigation
**16.2.1.2.** Control box shall have a full color screen.
**16.2.1.2.1.** The color menu system shall provide an animated preview of skip timer patterns, reflecting current settings and switch positions and shall provide guided calibration processes for distance and pump calibrations
**16.2.1.2.2.** The color menu system shall have a descriptive information system to provide the operator with information about errors, warnings, and skip timer operation
**16.2.1.2.3.** There shall be a switch test menu, for in-field diagnosis of switch failure, incorporated into the color menu system
**16.2.1.3.** Shall communicate using CAN bus serial communications protocol
**16.2.1.4.** Shall have an operating temperature range from 33° Fahrenheit to 140° Fahrenheit and a storage temperature range of 10° Fahrenheit to 160° Fahrenheit
**16.2.1.5.** Output boxes shall directly drive all loads (air dusters, material guns, bead guns, double drop bead guns, etc. where applicable)
**16.2.1.5.1.** All outputs shall be solid state
**16.2.1.5.2.** Shall have driver indicator LEDs for all driver outputs
**16.2.1.6.** Shall accept motion signals from a magnet wrapped driveline collar
**16.2.1.6.1.** All motion signal sources will maintain a 0.1’ resolution during normal road marking operations
**16.2.1.7.** System software shall be field upgradeable via USB drive, and the hardware shall be field upgradeable using hub expansions ports for adding more driver output boxes, sensor input boxes, or data logging equipment

# EQUIPMENT SPECIFICATIONS

**16.2.1.8.** Shall separately track skip and solid distance painted per gun, and paint consumption from pump strokes, into internal, non-volatile counters

**16.3.** INTERCOM SYSTEM

**16.3.1.** MASTER STATION David Clark U3800 or approved equal

**16.3.2.** 12 VDC power source in-truck electrical system

**16.3.3.** Shall contain controls, power input and remote outputs, plus two (2) headset jacks

**16.3.4.** Shall be of rugged heavy gauge polycarbonate (-80 °to 212° F) housing with all controls, connectors and covers weather tight

**16.3.5.** Shall have less than 300 milliamps current draw

**16.3.6.** Shall be a three (3)-station intercom system

**16.3.7.** The remote headset station shall be a David Clark U3802 and U3801 via C38 Jumper Cord or approved equal and have a headset jack with listen volume control

**16.3.7.1.** Shall have the same housing and weather tight design as MASTER STATION

**16.3.8.** Three (3) single ear headsets for the rear operators shall be behind-the-head style to accommodate safety hats or helmets

**16.3.8.1.** Shall provide maximum noise attenuation for hearing protection and clear, isolated reception M-7A noise canceling microphone that provides clear transmission at normal voice levels

**16.3.8.2.** Shall have a five-foot (extended) coil cord with weather protected PJ051 plug

**16.3.9.** Shall have two conductor shielded power cord, twenty feet

**16.3.9.1.** Connects David Clark U3800 or approved equal to power source

**16.3.9.2.** One end of the power cord shall be stripped and tinned for connection to truck battery or fuse rack

**Comply: ____Yes ____No**

## 17. TECHNICAL INFORMATION

**17.1.** The bidder will provide parts manuals, wiring diagrams, and detailed specifications on the following components:

**17.1.1.**

| | |
|---|---|
| A. Chassis | H. Paint Guns |
| B. Paint Handling Equipment | I. Glass Guns |
| C. Glass System | J. Gun Carriage System |
| D. Cleaner System | K. Compressor Package |
| E. Paint Fill / Supply Pumps | L. Guidance System (s) |
| F. Intercom System | |
| G. Skip Timer System | |

# EQUIPMENT SPECIFICATIONS

**17.2.** A computer-generated engineer's detailed layout with weight distribution shall be provided with the bid submittal showing the location of paint equipment, air and glass supply equipment, and other equipment necessary for the successful construction of the traffic paint striping machine.

**17.3.** Failure to supply information as requested for the previous items with the bid will cause the bid to be irregular and it will not be considered.

**17.4.** The successful bidder shall supply two (2) sets of electronic version operator's manuals, service manuals, parts books, wiring diagrams and applicable technical information for each machine purchased.

**Comply: ____Yes ____No**

## 18. TECHNICAL SERVICES

**18.1.** The services of at least one (1) competent technician, trained in the use and operation of the striping machine, shall be furnished for a period of three (3) consecutive days to be scheduled at the discretion of the Authority for each machine purchased. This service shall be provided to instruct the purchaser's personnel in the use, operation, and maintenance of the machine on acceptance.

**Comply: ____Yes ____No**

## 19. PRE-DELIVERY CONFERENCE (virtual)

**19.1.** A pre-delivery conference shall be held virtually, via Microsoft Teams or another platform. This meeting shall take place at or around 80-85% completion of the unit.

**Comply: ____Yes ____No**

# BIDDER'S EXCEPTIONS

**Instructions:** Bidder should note all exceptions in space provided below. List the detail number from the aforementioned specification in the column to the left and the exception in the column to the right. Responses may be typed or hand-written. Handwritten responses must be legible. If additional space is needed, please print a duplicate copy of this sheet. "Bidder's Exceptions" page(s) should be returned with the bid submittal.

Examples:

| | |
|---|---|
| 1.6 | Engine has 325 horsepower |
| 1.18.3 | Batteries have 2000 CCA combined. |
| 2.2.8 | Crossmembers are 4" channel on 12" centers. |

| **Spec./Detail Reference** | **Exception** |
|---|---|
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |