

**MAILING ADDRESS:**  
**MISSOURI DEPARTMENT OF TRANSPORTATION**  
**GENERAL SERVICES, P.O. BOX 270**  
**JEFFERSON CITY, MO 65102**

REQUEST NO.	3-150520TV
DATE	April 6, 2015

SEALED BIDS, SUBJECT TO THE ATTACHED CONDITIONS WILL BE RECEIVED AT THIS OFFICE UNTIL

**2:00 pm., Central Time, May 20, 2015**

AND THEN PUBLICLY OPENED AND READ FOR FURNISHING THE FOLLOWING EQUIPMENT.

**BIDS TO BE BASED F.O.B. MISSOURI DEPARTMENT OF TRANSPORTATION**

Submit net bid as cash discount stipulations will not be considered  
Various End User Delivery Locations

DEFINITE DELIVERY DATE SHOULD BE SHOWN. THE BIDDER MUST SIGN AND RETURN BEFORE DATE AND TIME SET FOR OPENING.

**BUYER:** Tom Veasman

**BUYER TELEPHONE:** 573-522-4404

**BUYER EMAIL:**

tom.veasman@modot.mo.gov

**STRIPERS**

This Request For Bid seeks bids from qualified organizations to provide stripers in accordance with the following pages. MoDOT will receive bids at the following **mailing address: P.O. Box 270, Jefferson City, MO 65102-0270**, or hand-delivered in a sealed envelope to the following **physical address: General Services Procurement at 830 MoDOT Drive, Jefferson City, MO 65109** until 2:00 p.m. Central Time, May 20, 2015. Bid forms and information may be obtained by contacting Tom Veasman at 573-522-4404, [tom.veasman@modot.mo.gov](mailto:tom.veasman@modot.mo.gov), or electronically download them at: <http://www.modot.org/business/surplus/Fleet%20Buyers%20Web%20Page/Stripers2009.htm>

**Components of Agreement:** The Agreement between MHTC and the successful Bidder(s) shall consist of: the RFB and any written amendments thereto, the "Standard Bid Provisions, General Terms and Conditions and Special Terms and Conditions" that are attached to this RFB and the bid submitted by the Bidder in response to the RFB. However, MHTC reserves the right to clarify any relationship in writing and such written clarification shall govern in case of conflict with the applicable requirements stated in the RFB or the Bidder's bid. The Bidder is cautioned that its bid shall be subject to acceptance by MHTC without further clarification.

Note that submission of bids to the above mailing address must go through MoDOT's mail room and will require additional time to arrive at the 830 MoDOT Drive location.

(SEE ATTACHED FOR TERMS, CONDITIONS, AND INSTRUCTIONS)

*In compliance with the above Request For Bid, and subject to all conditions thereof, the undersigned bidder agrees to furnish and deliver any or all the items on which prices were bid within the timeframe specified herein, after receipt of formal purchase order.*

**Date:** \_\_\_\_\_

**Firm Name:** \_\_\_\_\_

**Telephone No.:** \_\_\_\_\_

**Address:** \_\_\_\_\_

**Fax No.:** \_\_\_\_\_

**Federal I.D. No.** \_\_\_\_\_

**By (Signature):** \_\_\_\_\_

**Email Address:** \_\_\_\_\_

**Type/Print Name** \_\_\_\_\_

**Is your firm MBE certified?**  Yes  No

**Title:**  
**Is your firm WBE certified?**  Yes  No

## 1. INTRODUCTION AND GENERAL INFORMATION

### 1.1 Introduction:

- 1.1.1 This Request for Bid (RFB) seeks bids from qualified organizations to provide **stripers** to the Missouri Highways and Transportation Commission (MHTC) and Missouri Department of Transportation (MoDOT). Each bid must be in a sealed envelope, be mailed or delivered by courier to the RFB Coordinator at the below listed address, on or before the date and time listed herein for receipt of bids. All questions regarding the RFB shall be submitted to the RFB Coordinator. **Bids must be returned to the office of the RFB Coordinator no later than 2:00 p.m., CDT, May 20, 2015.**

#### **RFB COORDINATOR:**

**Tom Veasman, Senior General Services Specialist**

#### **MAILING ADDRESS:**

**Missouri Department of Transportation  
P. O. Box 270  
Jefferson City, MO 65102  
Attn: Tom Veasman**

#### **PHYSICAL ADDRESS:**

**Missouri Department of Transportation  
General Services Division  
830 MoDOT Drive  
Jefferson City, MO 65109**

Note that submission of bids to the above **mailing address** must go through MoDOT's mail room and will require additional time to arrive at 830 MoDOT Drive.

**PHONE: 573-522-4404**

**FAX: 573-526-6948**

### 1.2 General Information:

- 1.2.1 This document constitutes an invitation for competitive, sealed bids for the procurement of stripers as set forth herein.
- 1.2.2 Organization: This RFB is divided into the following parts:
- 1) Introduction and General Information
  - 2) Scope of Work
  - 3) Bid Submission
  - 4) Specifications
  - 5) Pricing Pages
  - 6) Manuals, Technical Service & Training
  - 7) Vendor Information and Preference Certification Form
  - 8) Cooperative Purchasing Form
  - 9) Anti-Collusion Statement
  - 10) Terms and Conditions

## 2. SCOPE OF WORK

### 2.1 General Requirements:

- 2.1.1 The vendor shall provide **stripers**, to the MHTC and MoDOT, in accordance with the provisions and requirements stated herein.
- 2.1.2 The vendor shall provide all deliverables to the sole satisfaction of MoDOT.
- 2.1.3 MoDOT does not guarantee that any unit(s) will be ordered.
- 2.1.4 Unless otherwise specified herein, the vendor shall furnish all material, labor, facilities, equipment, and supplies necessary to provide the deliverables required herein.
- 2.1.5 MoDOT reserves the right to reject any or all bids, and to accept or reject any items thereon, and to waive technicalities.

**2.2 Required Specifications:** All equipment bids must comply with the attached MoDOT Specifications, and any other provisions outlined in the solicitation documents. Any deviation from these specifications must be indicated for review, or else bid may be considered non-responsive.

### 2.3 Delivery Requirements:

2.3.1 The following delivery requirements shall apply:

- a. Unless otherwise specified on the solicitation documents or purchase order, vendors shall give at least 24 hours advance notice of each delivery. Delivery will only be received between the hours of 8:00 a.m. to 3:00 p.m., Monday through Friday. No vehicles will be received on Saturday, Sunday or state holidays.
- b. If the prices bid herein include the delivery cost of the unit, the vendor agrees to pay all transportation charges on the unit as FOB - Destination. Freight costs must be included in the unit price bid and not listed as a separate line item.
- c. Any demurrage is to be paid by the vendor direct to the railroad or carrier.

2.3.2 The vendor shall deliver the products specified herein to the following MoDOT locations:

- a. St. Joseph, Missouri 64502
- b. Macon, Missouri 63552
- c. Hannibal, Missouri 63401
- d. Lee's Summit, Missouri 64064-8002
- e. Jefferson City, Missouri 65102
- f. Chesterfield, Missouri 63017-5712
- g. Joplin, Missouri 64802
- h. Springfield, Missouri 65801
- i. Willow Springs, Missouri 65793
- j. Sikeston, Missouri 63801
- k. Other locations as may be required
- l. Hereinafter, each location shall be also referred to as "individual delivery destination".

## **2.4 Invoicing and Payment Requirements:**

- 2.4.1 The vendor shall submit an itemized invoice to the applicable requesting address for the completion of deliverables, as specified herein.
- 2.4.2 Each invoice should be itemized in accordance with items listed on the purchase order. The statewide financial management system has been designed to capture certain receipt and payment information. Therefore, each invoice submitted must reference the purchase order number and must be itemized in accordance with items listed on the purchase order. Failure to comply with this requirement may delay processing of invoices for payment.
- 2.4.3 The vendor shall be paid in accordance with the firm, fixed prices stated on the pricing pages of this document after completion of deliverables specified herein and acceptance by MoDOT.
- 2.4.4 Other than the payment specified above, no other payments or reimbursements shall be made to the vendor for any reason whatsoever.
- 2.4.5 Unless otherwise provided for in the solicitation documents, payment for all equipment, supplies, and/or services required herein shall be made in arrears. MoDOT shall not make any advance deposits.
- 2.4.6 MoDOT assumes no obligation for equipment, supplies, and/or services shipped or provided in excess of the quantity ordered. Any authorized quantity is subject to MoDOT's rejection and shall be returned at the vendor's expense.
- 2.4.7 MoDOT reserves the right to purchase goods and services using the state-purchasing card.

## **2.5 Other Award Requirements:**

- 2.5.1 Award Period - The award period shall commence from the date of award until May 31, 2016, with up to three (3) one-year renewal option periods, or any portion therein.
- 2.5.2 Renewal Periods - If the option for renewal is exercised by MoDOT, the vendor shall agree to all terms and conditions of the RFB and all subsequent amendments. Renewal options are at the sole discretion of MoDOT.
- 2.5.3 Escalation Clause - In the event the vendor requests a price increase during either the original award period or any award renewal period, the vendor must provide a written request and documentation justifying the need for a price increase, and the amount of such price increase. MoDOT will review the vendor's written request and documentation, and decide if a price increase is to be granted at that particular time. The vendor shall understand and agree that MoDOT's decision shall be final and without recourse.
  - a. No price increase shall be granted during the first 3 months of the original award period, or if applicable, the first 3 months of an award renewal period.
  - b. In the event a price increase is granted due to an approved escalation, the renewal percentage shall be based upon the current award value (original value plus past approved escalations).
- 2.5.4 Inspection and Acceptance: MoDOT reserves the right to inspect the equipment at the point of manufacture, intermediate storage point, or at a destination which shall be at the discretion of MoDOT.
  - a. No equipment, supplies, and/or services received by MoDOT pursuant to an award shall be deemed accepted until MoDOT has had reasonable opportunity to inspect said equipment, supplies, and/or services.

- b. All equipment, supplies, and/or services which do not comply with the specifications and/or requirements or which are otherwise unacceptable or defective may be rejected. In addition, all equipment, supplies, and/or services which are discovered to be defective or which do not conform to any warranty of the vendor upon inspection (or at any later time if the defects contained were not reasonably ascertainable upon the initial inspection) may be rejected.
- c. MoDOT reserves the right to return any such rejected shipment at the vendor's expense for full credit or replacement and to specify a reasonable date by which replacements must be received.
- d. MoDOT's right to reject any unacceptable equipment, supplies, and/or services shall not exclude any other legal or equitable remedies that MoDOT may have.

2.5.5 NET DELIVERED FIRM PRICE - the unit(s) shall be delivered complete and ready for use to the delivery destinations.

**2.6 Equipment Trade-In Allowance:**

- a. If equipment trade-ins are offered as an option, the trade-in(s) must be negotiated between the District, Division and vendor.
- b. The vendor must be currently under contract with MoDOT.
- c. It will be the responsibility of the vendor to examine the condition of the equipment offered for trade. The vendor must not impose any mandatory requirements or restrictions on equipment disposal.
- d. If the value offered is less than the Division's pre-established minimum price, the Division and District must both approve the trade in value.
- e. Allowance for trade-in(s) will be deducted from the full purchase price in computing the net purchase price. Trade-in(s) will not be available until the receipt and acceptance of the new equipment unless agreed upon by the District.

**Trade-In Worksheet Example:**

<b>Make/Model of New Equipment:</b>
<b>Full Purchase Price: \$</b>
<b>Make/Model of Trade-In:</b>
<b>Less Trade-In (Deduct): \$</b>
<b>Net Purchase Price: \$</b>

**2.7 Equipment Refurbishments:** If equipment refurbishments are available, the refurbishment(s) must be negotiated between the district and vendor. The vendor must be currently under contract with MoDOT. It will be the responsibility of the vendor to examine the condition of the equipment offered for refurbishment. The districts must keep accurate records verifying the process.

### 3. BID SUBMISSION

#### 3.1 Bid Submission Information:

- 3.1.1 All bids must be received in a sealed envelope/packaging clearly marked “**3-150520TV Stripers**”.
- 3.1.2 All bids must be received at the office of the RFB Coordinator as outlined in Section 1. “INTRODUCTION AND GENERAL INFORMATION”.
- 3.1.3 The bidder may withdraw, modify or correct his/her bid after it has been deposited with MoDOT provided such request is submitted in writing and received at the location designated for the bid opening prior to the date and time specified for opening bids. Such a request received as specified will be attached to the bid and the bid will be considered to have been withdrawn, modified or corrected accordingly. No bid may be withdrawn, modified or corrected after the date and time specified for the opening of bids.
- 3.1.4 Open Competition / Request For Bid Document:
- a. It shall be the bidder's responsibility to ask questions, request changes or clarification, or otherwise advise MoDOT if any language, specifications or requirements of an RFB appear to be ambiguous, contradictory, and/or arbitrary, or appear to inadvertently restrict or limit the requirements stated in the RFB to a single source. Any and all communication from bidders regarding specifications, requirements, competitive bid process, etc., must be directed to the buyer from MoDOT, unless the RFB specifically refers the bidder to another contact. Such communication should be received at least three (3) working days prior to the official bid opening date.
  - b. Every attempt shall be made to ensure that the bidder receives an adequate and prompt response. However, in order to maintain a fair and equitable bid process, all bidders will be advised, via the issuance of an amendment to the RFB, of any relevant or pertinent information related to the procurement. Therefore, bidders are advised that unless specified elsewhere in the RFB, any questions received less than three (3) working days prior to the RFB opening date may not be answered.
  - c. Bidders are cautioned that the only official position of the MoDOT is that which is issued by MoDOT in the RFB or an amendment thereto. No other means of communication, whether oral or written, shall be construed as a formal or official response or statement.
  - d. MoDOT monitors all procurement activities to detect any possibility of deliberate restraint of competition, collusion among bidders, price-fixing by bidders, or any other anticompetitive conduct by bidders which appears to violate state and federal antitrust laws. Any suspected violation shall be referred to the Missouri Attorney General's Office for appropriate action.
- 3.1.5 Award:
- a. This is a Multiple Award bid and there will be no ‘one’ bidder awarded each item within this bid. Each individual delivery destination will have sole responsibility for the discretion of all purchasing decisions. After determination of award, individual delivery destination’s shall use the following criteria to determine the “lowest and best” bid based on model features, price, warranty, service, delivery timeline, location of servicing dealers, past performance of servicing dealers, and information, facts, and recommendations gained from the bidder. Selection of a vehicle will not be made solely based on low price.
  - b. The bidder must be in compliance with the laws regarding conducting business with MoDOT and as indicated in the Terms and Conditions.
  - c. Notification of award shall be at the time the tabulation is posted to the Internet. It is the sole responsibility for all bidders to check the website for bid results.

#### **4. MISSOURI DEPARTMENT OF TRANSPORTATION SPECIFICATIONS FOR FURNISHING ONE (1) TRUCK MOUNTED TRAFFIC STRIPING MACHINE**

##### **THREE COLOR, VARIOUS PAINT TYPES, TANDEM AXLE TRUCK MOUNTED CENTER-LANE AND EDGE TRAFFIC-LINE PAINT STRIPER SPECIFICATIONS**

#### **GENERAL**

It is the intent and purpose of this specification to describe a truck mounted self-contained traffic line striping machine, capable of applying reflectorized lines having a wet film thickness of at least 0.030 inch of conventional traffic paint with individual paint guns applying a line up to 8 inches wide. The machine shall be capable of applying three (3) lines of three (3) colors (white, yellow and black) of this material. It shall also be capable of applying either a solid or skip pattern or a combination of these patterns, and of simultaneously or separately applying center and edge line markings. The truck mounted machine shall be capable of applying the above thickness lines at speeds of up to 15 miles per hour with one gun and up to 10 miles per hour for two guns. Black paint application requirement is 0.010 inch of conventional traffic paint. It will be airless in method of spray, have paint plumbing and all components which come in contact with the paint to be of stainless steel, current production, latest design model, complete with all components ready for operation and described as follows:

The completed unit, when fully loaded with material and operators must comply with legal weight limits for the State of Missouri and meet the chassis axle weight ratings, and weight must be evenly distributed. The maximum width cannot exceed eight (8) feet with a maximum height of twelve (12) feet and the overall length not to exceed thirty-seven (37) feet.

Bidders shall supply two (2) complete detailed drawings of their proposed truck mounted traffic- striping machine. One drawing will be of the platform body under structure and one will be a complete placement layout of material tanks, compressor, control station, etc.

#### **PLATFORM**

A platform of adequate size and strength to accommodate all relevant equipment shall be installed on truck chassis. There shall be easy access to all routine maintenance items without requiring unbolting plates, or removing equipment. All grease zerk fittings shall be easily accessed. Overall dimensions shall not to exceed 96 inches wide. The platform length shall be adequate to locate all necessary equipment, pumps and storage tanks and still provide sufficient walk space for easy, free movement of workmen from end to end and side to side around the items on the deck without having to descend to the ground and then ascend to the platform for normal maintenance and operation. Walk spaces shall be a minimum of 20" wide.

Platform shall be structural or equal strength steel spaced on minimum 12" and maximum 24" centers for maximum strength and gusseted throughout to the 6" structural channel long sills and integrally formed rub rail. Deck to be 3/16" no skid safety tread steel welded to cross sills and flush with and to rub rails. Cross members shall be 4" structural steel minimum. 7" - 8" risers shall allow for easy access to the plumbing underneath the deck. Deck shall be fully supported by cross members below all tanks.

Three (3) safety-tread fold up ladders shall be conveniently installed. Two ladders shall be mounted curbside, one near the front of the platform and one near the rear of the platform. One ladder shall be mounted street side. The lowest rung of each ladder shall not be more than 18 inches from the ground. Additional rungs shall have no more than 12 inches between rungs. The top rung shall be no more than 18 inches from the top of the bed. Ladders shall be a fold down design and remain flush with the railing when folded up in the stored position. Ladders to be held in place with finger-pull type latches or standard safety chain.

Access stairs shall be provided on the rear of the striper to access the rear cab. The stairs shall be installed near the center at rear of operator cab. The stairs shall have a non-slip surface on each of the steps. The first step shall be no more than 18" from the ground; each additional step shall be no more than 12 inches between steps. A handrail 36" tall above the steps shall be provided.

Steel railing 42 inches in height shall be provided along both sides of the platform with openings only for the three access ladders. This railing shall be bolted to the platform.

A rear bumper of at least 4-inch channel to be installed bolted to the chassis frame, and must meet FMVSS standards.

Two (2) tool boxes with weather tight (automotive type seals) lockable doors and slam type locks to be installed under the rear cab and rear of the carriages, each approximately 3' x 2' x 2'. One shall be mounted on the curb side with side access and one on the street side with rear access. Doors must have a lip above the door with a drip rail to prevent water from entering the toolbox. Tool boxes should be constructed of 0.100 gauge aluminum with stainless steel latches and hinges.

One (1) approximately 8" x 8" x 18", two (2) compartment (one (1) approximately 8" x 8" x 6" and one (1) approximately 8" x 8" x 12" aluminum wash basin with drain valves, weather tight seal and latch to be mounted at the rear for cleaning guns, tips, tools and miscellaneous parts.

The front of platform shall have a sign mounting bracket and tilting mechanism designed to accommodate a MoDOT-supplied 36" x 72" 'Wet Paint' sign of .125 inches aluminum. This mounting bracket shall provide upright sign height that does not interfere with the rotating lights and will not exceed maximum height of truck when lowered. The controls for sign tilting shall be located in the truck cab. Exhaust from engine shall be vertical, and shall not interfere with the operation and visibility of the sign. The sign shall fold rearward when lowered from the upright position.

### **AUXILIARY POWER UNIT**

Power for the air compressor and hydraulic systems to be an independent water-cooled, diesel fueled utility engine of adequate horsepower to operate these systems under full load. Engine shall be B20 capable. Acceptable model is the John Deere 4045D with 78HP engine or pre-approved equivalent. The engine shall be fueled from the truck fuel tank, the low fuel safety switches on the auxiliary power unit shall be disabled. An auxiliary electric lift pump shall be provided if the air compressor motor has a mechanical lift pump or no lift pump at all. Engine shall include extra cooling capacity and have hour-meter, tachometer, volt meter, oil pressure gauge and coolant temperature gauge mounted in rear control panel. Engine warning/shut down system: Audible buzzer and lamp warning for high engine temperature, low coolant level, and/or low engine oil pressure with automatic engine shut down feature. System must have an emergency override. Routinely checked fluids should be capable of being easily checked from the ground, preferably curb side. All fluid check points shall be clearly identified.

The engine, air compressor, and hydraulic pump shall be mounted immediately behind the truck cab. The engine shall be enclosed and sound insulated. Enclosure shall have removable doors for engine servicing. All externally mounted cooling radiators shall have protective grills or covers.

Additional controls for the engine to be on the street side to include a return valve and a shutoff valve. The hydraulic system shall include shut-off valves at the reservoir inlet and outlet.

The hydraulic pump shall have the capacity to provide a flow of hydraulic oil of at least 15% over the net HP demand. The hydraulic pump shall be piston type variable displacement pump, 2.75 CIR or greater. The hydraulic system should have a priority flow divider, which will supply hydraulic fluid to the carriage controls first. The hydraulic system must be able to compensate with demand at low speed. A minimum 50 GPM capacity hydraulic oil cooler must be provided and mounted above the platform to provide adequate cool airflow through the cooler and shall be located such that it is clear for any other heat generating source which may decrease its effectiveness. A minimum 15-gallon reservoir with baffles, breather cap, sight level gauge, and drain plug shall be provided, when the truck is equipped with hydraulic high pressure paint pumps a 50 gallon reservoir shall be provided. A 100-mesh suction screen on the suction side and a 6 micron absolute spin-on filter on the return line shall be provided. Air compressor shall have a capacity of at least 250 CFM at 125 P.S.I. running at 100% duty cycle, screw type, with automatic unloader and cooler. A rigidly mounted air receiver tank equipped with safety valve, drain plug and automatic moisture ejector to be provided.

Air supply lines to include oiling capabilities of all downstream pneumatic equipment, regulators, and gauges. The LaMan 140F dual stage dryer which combines a particulate filter and coalescing filter to dry the air, is acceptable. Air valves shall be ball type and shall be color-coded for identification. Air leading into bead tank shall be filtered but not oiled.

The alternator on the auxiliary power unit shall be equipped with a 180 amp alternator to help power the electrical systems on the truck.

## **PAINT HEATING SYSTEM**

The paint heating system shall be a scavenger type paint heating system, utilizing the heat generated by the auxiliary/compressor engine's cooling system to transfer heat to the paint heat exchangers. The paint heating system shall be an independent glycol system from that of the auxiliary/compressor engine cooling system utilizing a heat exchanger to transfer heat from the compressors cooling system to the paint heating system. A paint heating system shall be provided for both the white paint and yellow paint supply systems. Each system shall include a temperature sensor at the paint heat exchanger.

## **PAINT SUPPLY**

The paint storage tanks will be one of two designs; the design choice will be the decision of the commission when each individual truck is ordered.

### **A) UNPRESSURIZED RECTANGULAR PAINT TANKS – WHITE AND YELLOW PAINT**

The striping machine shall be equipped with a minimum 60" long x 72" wide x 48" high 800 gallon 2 compartment un-pressurized paint tank, designed for 2 color paint application. Each compartment shall extend across the width of the truck platform so as to equalize the load as the compartments are emptied. The compartments shall be baffled to prevent the splashing of paint. One compartment shall have a minimum capacity of 400 gallons for yellow paint with a minimum 4" of air space. The second compartment shall have a minimum capacity for 300 gallons of white paint with a minimum 4" of air space. The tank shall be designed for easy cleaning. The exact size of the yellow and white tanks may vary to allow proper deck design and layout. The tank sizes may be adjusted after the truck design and layout is complete to utilize the chassis weight capacity. At the time of the pre-build meeting, the size will be determined. The total capacity will remain a minimum of 800 gallons.

The tank shall be constructed of no less than 10 gauge 304 stainless steel and shall have bracing and gussets to strengthen and prevent flexing. All bracing shall be external. The bottom of each compartment shall be constructed of no less than 3/16" stainless steel plate sloped to the discharge pipe, so that the compartments may be pumped completely empty. A ball valve must be included at the discharge pipe to shut off each paint tank. The valves shall be in-cab controlled and provide easy shut off without climbing under the truck. Valve should be electronic solenoid controlled from cab and control panel. Tank shall be discharged from bottom of each compartment.

Each compartment shall be equipped with a hydraulic driven, adjustable, stainless steel paint agitator. Agitators shall be top supported with Teflon bottom bushings. Valve and plumbing shall be provided so that either compartment may be used for white or yellow paint or both compartments may be used for either white or yellow paint.

The top of each paint tank shall have a fixed brace across the front to back width of the tank wide enough to mount agitators and vents. Each tank shall have two (2) removable lids on both sides of the agitator support. Lids are to be minimum 1/4" stainless steel with one (1) lifting loop at center and one (1) environmental vent with a 6 in. to 8 in. riser. The tanks shall have 1/2" stainless steel studs, which will secure the lids utilizing stainless steel nuts and washers. The lids shall have 9/16" holes to accept the 1/2" studs and a tight gasket seal to prevent leakage. Each tank shall have one (1) minimum 10" quick release hose type connection inspection port on the curb side. A minimum 1/2" vent tube or breather with shut off valve shall be provided for each color. Inspection port shall be centered over the discharge pipe. The cover of the inspection port shall be secured by wing nuts or cam-type lids.

Each tank shall be bolted to the platform.

## **B) UNPRESSURIZED ROUND PAINT TANKS – WHITE AND YELLOW PAINT**

The machine shall have a minimum paint storage capacity of 800 gallons in two non-pressurized, round tanks. One tank shall have a minimum capacity for 400 gallons of yellow paint with a minimum 4" of air space. The second tank shall have a minimum capacity for 300 gallons of white paint with a 4" minimum of air space. The tank sizes may be adjusted after the truck design and layout is complete to utilize the chassis weight capacity. At the time of the pre-build meeting, the size will be determined.

The containers shall be constructed of stainless steel with a flat reinforced top plate and a dished stainless steel bottom.

The tank top plate shall be gasketed and bolted to the tank, for agitator assembly removal. The top plate shall have a 10" diameter inspection port, and tank vent assembly.

Each paint tank shall have a 2" NPT drain at the bottom and a ¾" NPT coupling in the top for paint re-circulation and one 2" NPT coupling for the vent system.

Each tank shall have a hydraulic driven agitator with stainless steel paddles.

Each tank shall be bolted to the platform.

## **C) BLACK PAINT SUPPLY:**

The machine shall have paint storage for black paint in one non-pressurized, round tank. This tank shall have a capacity of 50 gallons of paint with a 4" minimum of air space.

The container shall be constructed of stainless steel with a flat reinforced top plate and a dished stainless steel bottom.

The tank top plate shall have a 1" NPT drain at the bottom and a ¾" NPT coupling in the top for paint recirculation and one 2" NPT coupling for the vent system.

Each tank shall be bolted to the platform.

### **ALL PAINT TANKS:**

The tank plumbing shall have a two-inch plumbing assembly for each color. All rigid plumbing shall be stainless steel. Paint will be transferred from the lower right side only. A compatible, quick connect valve hose connection that will facilitate the transfer of the paint in a minimum amount of time will be furnished. Any line reductions should be done in increments in order to reduce backpressure and problems with lines clogging. All valves must be full flow design.

All valves should have the same on-off positions. They shall be Teflon seated stainless steel ball type valves and shall be color-coded for identification.

All pipe connections must be threaded, NO WELDED JOINTS.

All paint transfer lines will be hard plumbed except for those required for shock isolation or carriage movement.

### **PAINT SYSTEM PLUMBING:**

The paint system shall be sealed and of such design that no shutdown or start up flushing is required.

At the high-pressure outlet port of each high-pressure paint pump, there shall be a high capacity, high-pressure canister type paint filter. These filters shall have pressure ratings of not less than 5,000 psi. Each stainless steel high-pressure filter shall have a minimum filtration surface of 18 square inches and reusable stainless steel screen with 40 mesh perforations. Inlet and outlet ports shall be a minimum of ½". The paint filter shall be positioned as close to the paint pump as possible to facilitate quick and easy cleaning.

A stainless steel 100 square inch strainer shall be inserted in each system. The strainer shall be cylindrical in design and made from a #16 gauge perforated stainless steel material. The perforation shall be 1/8 inch in diameter and on approximately 3/16 inch centers (33 holes per square inch). No wire strainers are acceptable. The strainer shall be readily accessible and where necessary, valving shall be provided to isolate the strainer from the feed line for cleaning.

Each paint tank (white and yellow) shall be equipped with a 14" tall by 12" diameter screen made of stainless steel expanded metal centered over the discharge pipe at the bottom of the tank. This screen is intended to keep the discharge pipe flowing when paint buildup becomes dislodged from the sides or top of the tank. The screen will be securely held in place with a stainless steel rod welded to the bottom of the tank, extending up through the top of the screen and secured with a cotter pin.

Crossover plumbing between the white and yellow tanks shall be included. This plumbing will allow these tanks to hold all colors if necessary.

### **PAINT TRANSFER PUMPS**

Two ARO 2" model PD20A-FSP-STT, or pre-approved equal, diaphragm pumps that provide 135 GPM for loading white and yellow paint onto the striper and to supply paint to the high pressure paint pump. One pump shall be for white paint and one pump shall be for yellow paint. The pump shall be on the right side of the truck. Pumps shall have bolted housings, stainless steel wetted parts, and a non-stalling air design. (Unions instead of flanges shall be used to attach the plumbing to the pump).

One ARO 1" model 650683-C43, or pre-approved equal, diaphragm pump that provides 135 GPM for loading black paint onto the striper and to supply paint to the high pressure paint pump. The pump shall be on the right side of the truck. Pumps shall have bolted housings, stainless steel wetted parts, and a non-stalling air design. (unions instead of flanges shall be used to attach the plumbing to the pump)

Each loading pump will both load paint into the paint tanks and prime the airless paint pumps. The pumps will have stainless steel bodies with Teflon diaphragms. All hardware necessary for the loading of paint from bulk tanks which includes two 15' x 2" paint transfer hoses with both ends having tanker type female quick connectors shall be provided. Valves and male quick couplers shall be provided for bypassing paint transfer pumps when transferring paint, using bulk storage pumps.

Valve will be provided to allow each pump to be isolated from the paint system for the purpose of cycling solvent through the pump for cleaning.

All pumps will be capable of pumping water-based paint.

### **HIGH PRESSURE PUMPS**

Three (3) airless high pressure paint pumps shall be supplied on each truck, one for white, yellow and black traffic paint.

Each pump shall be capable of pumping water-based paint. All parts that come in contact with paint shall be stainless steel, including piston, check balls, seats, housing, and packing retaining rings. Packings shall be Teflon.

All high pressure paint hoses to be enclosed in a pressure sock or covered to prevent injury in case of hose failure.

All high pressure hoses connected to the high pressure paint pumps shall be flexible in design to compensate for vibration associated with the pump operations. Paint hoses shall be braided stainless steel in design.

High pressure paint hoses to be non-conductive and rated in excess of 2,000 PSI. Hoses from pump to manifold and manifold to gun shall be continuous.

Pressure control valves and gauges shall be provided in the rear console.

All components and fittings susceptible to shock loads from high pressure pump stroking shall be isolated utilizing high-pressure lines.

## **SPRAY GUN CARRIAGE**

Two (2) spray gun carriages shall be provided. The carriages shall be of a heavy duty design to support all required guns without bending or sagging. They shall be retractable to within the overall vehicle width and lifted off the roadway for high speed transport. A pneumatic lift system shall be provided to secure the carriage when in the raised position with an Auto-Lock up system. Safety chains shall be provided for an available back-up locking method.

Two road wheels shall be provided to maintain the carriages at a given height from the road. The entire carriage units are to be mounted with parallel linkage to allow vertical motion while maintaining the spray guns at a constant height above the road surface. Threaded bolts shall be used to mount the bead guns to the carriage.

**Left Street Carriage:** This unit shall be located to the rear of the left rear tires. It shall support seven (7) spray guns (including two black paint guns for contrast striping) and five (5) bead guns. This carriage must be capable of being operated in any position from inside the outer edges of the platform to a point of five (5) ft. outboard of this location.

**Right Street Carriage:** This unit shall be located to the rear of the right rear tires. It shall support up to five (5) spray guns (including two black paint guns for contrast striping) and three (3) bead guns. This carriage shall be capable of being operated in any position to give spacing from 8 to 15 feet between the outside gun on the left and right carriage.

The road wheels on all carriages shall be fitted with pneumatic tires. Tires shall be a minimum 5.00 X 13" aircraft style assembly with grease-able bearings. They shall in all cases be mounted in caster mounts to allow them to pivot freely as the striping unit is turned on the road. Spacing on centers between carriage tires shall be a minimum of 18" with outside tires on each carriage being adjustable out to 24" for from the inside tire to accommodate rumble strip avoidance.

All bearings or pivot points on the carriage linkage or slide shall be fitted with industrial heavy duty roller bearings and pressure lubrication fittings.

Each carriage shall have 2 slides and shall be equipped with a double acting hydraulic cylinder for moving the carriage to any point within its operating range. The cylinders to be controlled by a power steering control unit, selected by MoDOT from the option list, conveniently located for the operator. The steering wheel shall tilt, telescope and rotate inward to accommodate various operators. The carriage controls shall be mounted to allow for leg room and can be mounted off the console.

Hydraulic power for operation of the carriages to be supplied by a hydraulic pump driven by the auxiliary engine.

The carriage steering mechanism must provide a smooth operation without over-steering, creeping or jerky movement. System must be designed to prevent the opposite side from creeping out during operation.

Each carriage shall have a four (4) inch white flashing strobe mounted near the end. Each strobe shall not distract the operator. It shall flash horizontally at traffic approaching from all directions. It should flash at a rate of approximately 60 flashes per minute and beat at least 150- candle power.

A complete set of 12-volt night working lights shall be provided on each carriage (one forward and one rear including protective lens covers when not in use. Controls for lights shall be on the master control center.

The striping carriages shall be capable of placing a solid double yellow centerline and edge line simultaneously from eight to fifteen feet apart.

## SPRAY GUN CARRIAGE DIAGRAM

Centerline side:

A			High pressure air nozzle to blow debris from rumble	STANDARD
Y	Y		Two yellow paint guns set up to apply 6" lines, spaced 4" apart	
B	B		Two bead guns placed behind yellow paint guns	
W	W		Two white paint guns set up to apply two 6" lines to form one 12" line	
B	B		Two bead guns placed behind the two white paint guns	
BL	W	BL	One black, one white and one black paint gun for contrast striping, black guns set up for 1" stripe and the white gun for a 6" stripe	
	B		One bead gun placed behind the one white paint gun	

Edge line side:

		A	High pressure air nozzle to blow debris from rumble	STANDARD
	W	W	Two white paint guns set up to apply two 6" lines to form one 12" line	
	B	B	Two bead guns placed behind the two white paint guns	
BL	W	BL	One black, one white and one black paint gun for contrast striping, black guns set up for 1" stripe and the white gun for a 6" stripe	OPTIONAL
	B		One bead gun placed behind the one white paint gun	

Each paint gun and bead gun shall be capable of being adjusted side to side to allow the guns to be aligned to one another.

### PAINT SPRAY EQUIPMENT

The paint spray guns, Graco 238-377 or pre-approved equivalent, with 163-465 tips, shall be of the air actuated, airless atomizing type, capable of processing material in quantities which will yield a eight (8) inch width line of 0.0030 wet film thickness, to be put down at speeds of up to 15 MPH. They should be designed for use in highway striping. All wetted parts, except tips, shall be stainless steel.

### BEAD GUNS:

There shall be installed pneumatically actuated bead guns with the capacity to dispense 35 lbs. per minute at 40-60 psi tank pressure.

All gun inlets must be threaded (not soldered) to allow replacement of such parts due to wear or other damage.

### AIR NOZZLES:

Each carriage shall have a multi-channel flat spray nozzle mounted in front of the outer gun to remove dirt and debris from the road surface prior to the application of material and glass beads. The nozzle shall be a machined metal (even and smooth) air flow design for increased blowing power, reduced air consumption, and improved blowing force performance over a considerable distance. The nozzle shall be manufactured of aluminum making it resistant to fuel oil, mineral oil, lubricants and common solvents. The "on/off" air supply to these nozzles shall be controlled by means of a valve actuated on the operator console. Each air nozzle shall have a manual adjustment air flow control

## **BEAD SUPPLY TANK**

Bead supply tank to be A.S.M.E. certified pressure vessel, of all steel construction, and have a minimum total capacity of 5000# pounds of glass beads. Tank will have a sight glass viewable from rear operator's position to show three different levels at the intervals of 1/4, 1/2 and 3/4 mounted on the side of the tank.

A hinged top opening of at least 14 inches in diameter will be provided for loading. Opening may be located off to the side with no other plumbing connected to the hinged top.

The pressure vessel shall be equipped with an air release valve, a 100-pound pressure gauge, and a 110-pound pressure relief valve. Air pressure gauge shall be mounted in console.

The beads shall be conveyed under pressure to the automatic guns through a minimum of 2" steel pipe to the rear of striper then through a minimum of 2" abrasion resistant steel reinforced rubber hose to the bead manifolds, then through clear kink resistant hoses to each bead gun. The system shall be able to supply at least 150 pounds per minute for three simultaneous operating bead guns and be designed to provide equal bead flow and not create a restriction in flow delivering 12 lb/gal of ASTM type III glass beads to two simultaneously operating bead guns on each carriage

The bead tank air supply shall be equipped with a finned tube type air cooler, moisture separator with an automatic moisture ejector and coalescing filter.

Valves (1/4 turn ball type) to shut off bead flow from the tank shall be provided at the bottom of tank and conveniently located in the steel pipe prior to the bead manifolds.

Plumbing for bead tank to the bead guns shall be fabricated to maximize bead flow. No ninety (90) degree fittings shall be used, if a ninety degree turn is required it shall be accomplished using two forty five (45) degree fittings, a smooth radius elbow or a flexible hose shall be used. All flexible hoses shall be clear in order to see bead flow, shall be rigid enough to retain their cross section in order to not crimp and reduce bead flow and shall be adequately supported no to sag to create unnecessary low points between the bead tank and the bead guns.

## **BEAD DELIVERY MANIFOLDS**

**Bead manifolds shall be provided for each spray gun carriage to distribute beads to the bead guns. The manifold's exact location shall be determined at the prebuild meeting.** The restricted use of ninety (90) degree fittings and the use of see through clear kink resistant hoses to each bead gun apply to bead manifolds. The manifolds shall be designed to provide equal bead flow to all departing bead lines and not create a restriction in flow delivering 12 lb/gal of ASTM type III glass beads to two simultaneously operating bead guns on each carriage.

## **BEAD LOADING SYSTEM**

A vacuum bead loading system with a minimum capacity of 300 pounds of glass beads per minute shall be included in the glass bead supply system.

The vacuum system shall be operated with no moving parts.

A muffler shall be installed on the jet pump to assure quiet operation. The exhaust shall be routed through the platform on the driver's side of the truck to reduce exhaust exposure to operators loading materials on the curb side of the vehicle

The glass bead loading system shall include a 12 foot long, 2 inch I.D. fill hose with female quick coupler fittings on both ends and a 36 inch long, 2 inch O.D. x 1 7/8 inch I.D. steel tube attached to the suction end. All hoses shall be non-conductive or rubber material.

The loading system shall be capable of loading from bulk bead containers.

Bead loading shall be from curbside of the truck with the exhaust being directed below the truck on the street side.

## **CONTROL CENTER**

A master control center shall be provided. This center shall consist of a sheet metal cover with internal framework, providing space for a control panel, electrical controls, spray equipment connections, heater thermostat control, and any and all other auxiliary parts required by the spray equipment. A master control switch with the ability to disconnect and shut down all systems shall be located in the master control center. All controls shall be color coded for quick identification. All controls shall be clearly labeled and contain large toggle switches. An AM/FM radio shall be provided in the master control center, the speakers shall be mounted in the upper left and right corners of the cab.

Separate remote control panels will be provided for the left and right side operators. These control panels shall have adequate length wiring to allow for adjustment to accommodate various operators. An adjustable mounting shall be provided at each station for quick and easy adjustment. The control panel must have height and side adjustment for mounting in any position for operator comfort. The mounting shall lock securely in place after adjustment. The wiring shall be attached at each end by pin connectors, to an electrical junction plug.

Left Side Operator: The left side operator shall have a control panel for the operation of the paint guns, bead guns, and control of left side carriage. Bead guns shall automatically turn on when paint guns are on, and delay shut off to completely cover paint lines. Through the operation of toggle switches, it shall be possible to apply a skip, solid, double solid, or skip-solid painted line. A provision for automatic center gun cut-off shall be provided when two outside guns are painting double solid stripes for dual no passing zones on a 3-Line system. A 2-Line system will operate from the left and center guns and provide continuous intermittent timing.

Right Side Operator: The right side operator shall have available controls for the right side carriage, vertical and horizontal. Through the operation of toggle switches, it shall be possible to apply a skip, solid, double solid or skip-solid traffic painted line.

When both the left and right carriages are being utilized to apply a skip pattern, the application of paint guns and bead dispensing guns shall be able to operate synchronized or independently.

The master control center shall be mounted in an inclined position so that it can be observed from either operator's position. It shall be painted flat black to decrease glare. The master control center shall be hinged for easy access and bolted to the floor with fixed mounting plates for easy removal from inside the rear cab.

The master control center shall have all necessary regulators, gauges, valves, switches and indicators for operation of the striping equipment mounted on it. They should be within reasonable reach for either operator to control all functions. Yellow will be located on the left, white on the right side.

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

A removable back plate shall allow access to the interior of the master control center for servicing. There should be adequate space behind the panel for easy access by the servicing technician. The spray equipment shall be electrically controlled by means of toggle switches and solenoid valves.

The control boxes shall be equipped with one (1), three (3) position toggle switch for each paint gun. Switch positions to be up for solid line, center for neutral and down for automatic. The control boxes shall also be equipped with (1), three (3) position toggle switch for each gun. Switch positions to be center for automatic, down for off and spring loaded up for test.

A lock toggle switch will be supplied in each box to raise or lower the respective carriage by solenoid valve operation. It should be distinct from the paint gun switches to prevent operator confusion while striping. Paint guns shall not function unless carriage is in the down position.

## **ELECTRONIC TIMER**

Two solid-state electronic microprocessor timers shall be supplied, one each for left and right side skip operation. The timers shall have a digital display with simple controls and inputs.

The timer shall be adjustable by the operator while the machine is in motion or standing still. They should be able to time skip patterns for left and right synchronized or independent operation if striping from both sides.

The timers shall be adjustable so that any combination of skip and paint may be obtained up to 99.9 feet of skip in increments of 0.10 of a foot.

The timers shall be equipped with an "advance" and "retard" switch which will advance or retard the cycle in increments of 0.20 of a foot per actuation of the respective switch. This switch shall be located in the remote control operator panels.

A provision to start the cycle with the paint portion of the cycle or with the skip portion shall be selectable.

On command, the timers shall immediately reset to "ready" or "start cycle" position. The reset switch shall be located in the remote control operator panels. There shall also be an off position.

All adjustments must be so that these functional changes can be made readily by the operator while the machine is in motion or standing still.

Timing system shall operate at speeds up to 15 MPH, at ambient temperatures ranging from thirty (30) to one-hundred-seventy-five (175) degrees F.

All components must be solid state and there shall be no moving parts, except the encoder, and this shall be electrically connected with no mechanical connections.

The unit shall provide for bead gun delay to fully cover the paint line.

The unit may be pulsed from the transmission of the vehicle or an electromagnetic pulse generator which generates or modulates electric pulses with the unit being mounted to the vehicle drive line. The pulse generator sensor assembly must require no lubricants.

Timer shall keep a constant cycle for 2 line and 3 line striping when a skip line switches from one paint gun to the other as the gun switch goes through neutral.

## **FOOTAGE COUNTERS**

A six (6) digit, digital reset, footage meter capable of measuring actual feet of line applied shall be supplied for each spray gun position.

These footage meters to be mounted in the master control center, or incorporated into the skip line microprocessor.

## **ENCLOSED CAB**

The paint striper operator's cab to be all 14-gauge steel or 10-gauge aluminum welded construction, fully enclosed, insulated for temperature control and sound suppressed. The cab shall be weather sealed where it meets the platform and have an industrial grade rubber mat on the floor. The cab shall be approximately 96" wide and 60" deep with a minimum inside ceiling height of 72". The paint striper operator's cab shall be equipped with a heavy-duty steel rollover protective frame, which must be fabricated to meet SAE J1040. Bracing shall not interfere with operator when observing spray guns. Cross bracing should be no higher than armrest height and shall not cross side windows.

The enclosure shall be equipped with two tight fitting weather and wind sealed doors (minimum 21" opening each). One door shall be located at the right hand front corner and one at the center rear. Each door shall be equipped with a key lock (both doors keyed alike). Center rear door should be swing out type.

Doors shall have windows top and bottom for operator visibility.

There shall be at least one sliding safety glass window in the front of the cab, and two sliding safety glass windows in the rear, one behind each operator's station. Windows on lower sides are not required. Corner windows are not desired. The slide window at the bubble will be safety glass and shall be as large as physically possible within the limits of the cab.

Side windows to be vertical slide open floor to ceiling, open down. Windows shall be safety glass with provisions to lock the windows in the open or closed position plus bubble windows large enough to be slid over the existing windows for viewing of the spray guns. Windows should be a minimum of 30 inches front to rear to provide the operator full view of carriage. Bubble windows shall slide upward to allow for an open window. Bubble windows made of Plexiglas are acceptable. Padded armrests shall be included on each bubble windowsill to provide support and cushion when striping.

All windows shall be dark tinted privacy glass, or manufacturer's standard tinting.

There shall be a steel safety bar that protrudes out from the side of the rear cab behind the operator's window during striping operations to protect the operator in the event of a side swipe condition. The steel safety bar shall be of a folding or sliding design with a manual locking mechanism to lock it into position during striping operations. It shall be easily folded or slid out of position when the striper is not actively striping.

Two (2) operator seats shall be securely mounted close to the walls (with no floor flexing) on the platform body rear conveniently located for all operations. The seats shall have forward, backward, vertical and swivel adjustments in addition to air ride vertical adjustments, with all steel frames, full depth foam seat cushions, foam padded backrests, and be covered with heavy-duty vinyl all-weather material. The seats shall be air ride high back suspension type with folding armrests to eliminate practically all vibrations, jolts, jars, road shock and back slap. Each shall be fitted with a seat belt in accordance with S.A.E. and Federal Standards.

The operators cab shall be equipped with two (2) separate and complete heater/air conditioner units shall preferably installed on the roof of the rear cab. The heater portion of each unit shall have a minimum output rating of 45,000 BTU. The air conditioning portion of each unit shall have a minimum output rating of 25,000 BTU. Each unit shall be independent and self-contained with each have its own cooling compressor. These units shall function with vehicle speeds of 8 to 15 mph.

Switch controlled dome lights shall be installed over each operator's station. The lights shall be white for daytime and red for nighttime striping operations. The control center shall be lit in addition to an overhead dome light.

## **VEHICLE GUIDANCE SYSTEM**

A vehicle guidance system shall be provided to assist the striper driver in properly positioning the truck on the roadway during striping operations. The type of guidance system will be determined by MoDOT for each individual truck. The type of system will be selected from the option list in this document.

## **INTERCOM SYSTEM:**

A David Clark U3800 or pre-approved equivalent, intercom system and four (4) David Clark, or pre-approved equivalent, headsets shall be included in each truck. The intercom system shall be provided to allow vocal communications between the driver of the vehicle and the operator(s) of the striping equipment. The intercom master shall be located in the front cab behind driver and be of solid-state design with transistorized hardware. The system shall be shielded metal conduit and be interference free and vibration proof.

Each striping equipment operator's position and the vehicle driver's position shall have overhead jacks for remote headsets. Four headsets with cords shall be included, with front headsets single ear and rear headset double ear. Each operator's position and each driver position shall have a foot pedal to activate the 2-way radio.

Intercom system shall be capable of being interfaced with the MoDOT installed 2-way radio system utilizing a Kenwood TK-760 or Kenwood TK-790 or pre-approved equivalent.

## **ELECTRICAL AND WIRING**

All electrical systems and controls shall operate from the machine's 12-volt system. All wiring shall be contained in loom, welded or securely fastened to vehicle.

All systems shall terminate at weatherproof covered barrier strips.

All lugs or connections will be insulated crimp-on type, or soldered with rosin core solder and protected with heat shrink insulation. Wiring to be color-coded or clearly numbered and permanently marked.

Wiring subject to exposure shall be sealed with R.T.V. silicone sealant.

All electronic circuits shall have appropriate transient voltage spike protection.

Electronic circuitry should consist of standard off-the-shelf components and devices. Electronic circuitry should contain no proprietary custom integrated circuits.

Devices should be of industrial or military specifications or grade. Schematics of all electrical systems shall be furnished.

All LCD digital readouts shall be backlighted for proper viewing under low light conditions.

## **PROTECTION FROM CHEMICALS**

Cables, wiring, insulation and hoses shall be of such materials as not to be affected by paints, chemical solvents or pressure steam cleaning systems.

## **REAR AXLE FENDERS**

Full length fenders, which cover the rear wheels, shall be provided. The fenders may be of poly construction, (minimum 11 gauge) or aluminum (minimum 0.090 in / 15 gauge thick). Anti sail mud flaps shall be provide at the front and rear of the fenders. The fenders shall be easily removable to facilitate servicing under bed components.

## **CHASSIS - CAB FORWARD**

Acceptable makes are Peterbilt, Mac and Kenworth.

MoDOT reserves the right to drop ship their cab/chassis at the vendor's location for installation of the striper unit.

GVW shall be a minimum of 60,000 pounds.

Striper must be highly maneuverable for urban striping. Minimum curb-to-curb turning radius is desired.

Wheelbase and cab-to-axle dimensions shall be specified by the striper manufacturer to provide proper length and weight distribution and accommodate painting equipment.

Front GAWR to be at least 20,000 pounds with shock absorbers.

Rear axle shall have a GAWR of at least 40,000 pounds with a gear ratio to provide a top road speed of 65 MPH.

Rear suspension capacity to be at least 40,000 pounds  
Hendrickson PAX-460 or pre-approved equivalent

Factory cruise control.

Low speed constant speed electronic RPM control designed to work between 5 MPH and 20 MPH. Unit shall hold speed to  $\pm 1$  MPH on grades of 3% or less.

Automatic Transmission shall be an Allison transmission appropriately sized for the engine selected. The striper will frequently operate between 5 and 20 mph.

Engine to be diesel fueled, B20 certified and developing not less than 300 horsepower at rated RPM.

Engine equipment to include: Fuel water separator, fuel filter, 1000 watt minimum block heater, low oil pressure/high engine temperature warning light, anti-freeze protections to -35 degrees F., vertical exhaust system up right side.

Cooling system: Since the major portion of the operation of this unit will be at speed of approximately 5-20 MPH, the cooling system should include the extra capacity to adequately cool the engine and transmission, during this slow speed operation.

Frame to have minimum RBM of 2,000,000 in/lb. with minimum 110,000 PSI steel. Front tow hooks.

Wheels and tires shall be sized appropriately to match the GVRW of the completed truck. Tires shall not be rated below 65 mph.

Fuel tanks: One or two aluminum fuel tanks totaling 150 gallons, frame mounted.

Driver window may be manual and passenger window shall be power. Unit must have power locks on both doors.

Floor covering shall be heavy – duty rubber and/or vinyl with sound deadening backing covering entire floor, dark in color.

Steering shall be factory installed tilt column with the smallest diameter steering wheel available for the specified front axle.

Front wheel mud flaps.

Power steering.

## **CAB**

Cab shall be a low entry, cab forward, tilt cab. Cab shall be equipped with a cab-lifting jack.

Seats: Driver and passenger seat to be air suspension type. Both seats to have arm rests, heavy-duty vinyl trim and seat belts.

Two (2) speed windshield wipers and washers with intermittent feature.

West coast type right and left outside mirrors approximately 16 x 6 inches with auxiliary convex mirrors bracket mounted. The outside mirrors are to be remotely controlled operator position(s).

The cab shall include the highest level of factory sound and temperature insulation available. The cab shall also be supplied with the highest capacity heater/defroster/AC dash unit the chassis manufacturer offers.

Dual sun visors.

Cab entry assist grab handles.

Tinted safety glass shall be provided in all windows.

Instruments to include: Fuel gauge, oil pressure gauge, temperature gauge, ammeter or voltmeter, air cleaning restriction indicator, tachometer, low oil pressure warning lamp, and high temperature warning lamp. Transmission gear indication must be visible from each operator position.

Dual air horns, which can be activated from operators' position(s)

Minimum of two (2) 12 volt power points and a minimum of two (2) USB receptacles

Door arm rests.

AM/FM Stereo radio with dual speakers.

Exterior Cab marker lights and tail lights shall be LED

Wig-Wag on front headlight controls shall be mounted and accessible from each operator's position.

Digital speedometers shall be provided for operator position(s).

Color to be Federal Standard #595B (Colors Used in Government Procurement) "Highway Yellow" #13432 or equal and matching the truck chassis-cab exterior color. A minimum of one primer coat and two finish coats shall be applied to all metal parts. (IF YOU HAVE ANY QUESTIONS REGARDING COLOR PLEASE CONTACT THIS OFFICE.)

A 5# fire extinguisher shall be installed in both the front and rear cab, fuses and triangles as outlined in the Federal Motor Carrier Safety Regulation section 393.95.

## **BRAKES**

Brakes to be full air cam type or pre-approved equivalent. Brakes shall be sized to meet or exceed completed truck GVRW.

14 cubic foot minimum air compressor. Automatic moisture ejectors and air dryers. Low air pressure warning device.

Parking/emergency brakes to be spring set, air released.

## **ELECTRICAL**

200 AMP Heavy Duty alternator.

Three (3) 12-volt maintenance free batteries of at least 535 cold cranking amps each. Back up alarm OSHA approved. Back up alarm shall exceed 105 decibels or 15 decibels above idle engine ambient and shall be installed at the rear of the frame in a protected area.

Power supply for 2-way radio shall be provided. A ten gauge wire with a single 5 amp circuit protection shall be provided terminating in the center of the overhead console for the remote radio head. A second ten gauge wire with a 40 amp circuit protection shall be provided to a location behind the driver's seat where the base unit of the radio will be installed. Radios will be installed by MoDOT after delivery of the truck. Power wires for the radios shall be keyed to the ignition switch, being energized when ignition is on. All terminal connections shall heat shrunk and sealed.

The rear turn signals shall be minimum seven inches in diameter or equal area each.

## **LED WARNING LIGHTS**

The Lighting system shall meet the standards found in the MoDOT Fleet Lighting standards found in the MoDOT Engineering Policy Guide (EPG) Section 616.27 ([http://epg.modot.org/index.php?title=616.27 Fleet Lighting](http://epg.modot.org/index.php?title=616.27_Fleet_Lighting)). The striper shall meet the requirements for “High” exposure as listed in the “Recommended Minimum Lighting Levels Table in 616.27.1.5. Four light assemblies shall be provided on the truck to meet the 360 degree visibility, two (2) units on the front driver’s cab and two (2) on the rear operator’s cab (one on each rear corner of the cab). These lights shall be located in such a manner as to assure forward and side visibility (on the front cab) and rearward and side visibility (on the rear cab) are not obscured by other features of the truck.

## **PRE-DELIVERY CONFERENCES:**

The successful bidder shall include in his bid, travel and living expenses to/from his manufacturing facility for MoDOT personnel for an inspection of each truck during its fabrication. A maximum of 4 MoDOT personnel shall be included to inspect each truck ordered. This trip is intended to provide MoDOT and the manufacturer the opportunity to discuss fabrication details and options within the limits of the bid prior to the final fabrication taking place. This inspection should take place at 75% to 80% completion, prior to the phase of fabrication where the installation of operator controls in the rear cab. The operator controls in the rear cab include the steering wheel, linear actuator switches, timer boxes and carriage controls. Travel for distances in excess of 300 miles shall be by air transportation.

## **PRE-DELIVERY TESTING**

Prior to delivery the following systems shall be operationally tested:

- A. Paint delivery system leak and operationally tested with water.
- B. Bead supply and delivery system pressure and leak tested.
- C. All hydraulics pressure and leak tested.
- D. All electrical systems functioning properly.
- E. Truck shall be certified to meet weight distribution and balance requirements through all operational conditions.

## **SPARE PARTS KIT:**

The bid shall include a spare parts kit to be shipped with the unit. This kit shall include: one (1) low pressure pump, one (1) high pressure pump and drive motor, (2) spare tips for each paint gun, (10) ten solenoids, two (2) complete paint guns, two (2) complete bead guns, one (1) extra screen for all paint filters. All parts shall be identical to the in-place installed parts used in the construction of the striper unit. Spare parts herein furnished shall not be viewed as exempt from warranty of any component installed items. In addition, spare parts herein furnished shall be warranted identical to installed items.

## **PROVISIONS FOR TRANSPORT:**

A new truck may be driven under its own power from the manufacturer to the MoDOT delivery location as the standard means of making delivery. The manufacturer may choose to make the original delivery by transporting the truck at the manufacturer’s request at no additional cost to the Department. If for any reason the truck must be returned to the manufacturer to correct build issues, address warranty issues or for any other reason which cannot be adequately addressed at the MoDOT facility, the truck shall be transported in both directions to and from the manufacturer at no additional cost to MoDOT. Supplier shall give three (3) days’ notice of the date when actual delivery will be made.

## MISCELLANEOUS

The successful bidder will be required to furnish the following and the cost should be considered and included with your bid:

Parts will be supplied within 48 hours when in stock by the vendor for a minimum of ten (10) years.

Detailed blue prints, longitudinal and lateral weight distribution charts, along with recommended deck layout must be included in the bid.

The entire unit shall be manufactured in accordance with the latest and best manufacturing practices and all components shall be new and of best quality.

The new unit is to be delivered to the location designated on the order form, complete, assembled, and ready for use.

The total system shall be flushed and cleaned before delivery.

The white and yellow paint tank sizes may be adjusted after the truck design and layout is complete to utilize the chassis weight capacity.

**Any deviations or exceptions to this specification must be detailed when bids are submitted. MoDOT reserves the right to waive technicalities and to reject any or all bids and no bid is final until formally accepted by the Commission.**

## WARRANTY

The entire striping unit shall be warranted for at least 12 months after unit is put into regular service, full parts and labor. The warranty start date shall correspond with the final payment in full date. The striper shall not count against 12,000-mile chassis warranty. Attach copy of original warranty to bid. Include manufacturer's descriptive literature and specifications on unit being bid, and a list of any exceptions to the MoDOT specifications.

## PAYMENT CRITERIA

Payment for the truck will be based on a tiered schedule to assure functionality before full payment is made. 75% payment shall be made after truck has been delivered and initially received by MoDOT upon completion of the preliminary inspection, including receipt of all detailed schematics, detailed parts list, detailed service manuals, and detailed technical manuals. The remaining 25% payment will be retained until the truck has been placed in service, proven to be fully functional and capable of performing per the specifications. Any deficiencies in function and operations shall be corrected and proven effective before final payment is made. The truck shall be in service a minimum of two (2) weeks and apply a minimum of 400 line miles without issues before considered functional and before the final 25% payment will be made. The manufacturer is still liable to correct any deficiencies after the test period per the warranty agreement.

## 5. Pricing Pages

### Striper with Separate Cab/Chassis Pricing

**Item # 1 Striper equipment**, meeting the attached MoDOT specification, **NET DELIVERED PRICE**

STRIPER MAKE/MODEL: \_\_\_\_\_

STRIPER PRICE \$ \_\_\_\_\_

TWO YEAR ADDITIONAL WARRANTY:      PRICE \$ \_\_\_\_\_

WARRANTY COVERAGE: \_\_\_\_\_

\_\_\_\_\_

PETERBILT CAB/CHASSIS MODEL: \_\_\_\_\_

PETERBILT PRICE \$ \_\_\_\_\_

MAC CAB/CHASSIS MODEL: \_\_\_\_\_

MAC PRICE \$ \_\_\_\_\_

KENWORTH CAB/CHASSIS MODEL: \_\_\_\_\_

KENWORTH PRICE \$ \_\_\_\_\_

Please submit a complete list of any additional parts and/or options (not listed in the following pages of Striper Options/Additional Vendor Options) with detailed pricing information for the striper unit priced above. Indicate below the percent (%) discount off Manufacturers' Suggested Retail Prices (MSRP) for all striper equipment options available in your data book or pricing guides (that are not included in Striper Options/Additional Vendor Options).

% discount off MSRP for Data Book or Pricing Guide Options: - % Discount \_\_\_\_\_

Delivery will be made \_\_\_\_\_ days after receipt of order.

**STRIPER OPTIONS:**

OPTION	DESCRIPTION	PRICE
<b>Option 1</b>	<b>Paint Transfer Pump</b> – Diaphragm pump that provides 135 GPM for loading black paint. The pump shall be on the right side of the truck. The pump shall have bolted housing, stainless steel wetted parts and a non-stalling air design. (Unions instead of flanges shall be used to attach the plumbing to the pump). The pump shall be ARO Model PD20A-FSP-STT or pre-approved equivalent.	
<b>Option 2</b>	<b>Hydraulic High Pressure Paint Pumps</b> – Hydraulically driven operated high pressure paint pumps, one for each of the three colors (white, yellow and black), used to supply paint to the paint guns. Pumps shall be ARO 650940-C6D-B or pre-approved equivalent.	
<b>Option 3</b>	<b>Air High Pressure Paint Pumps</b> – Air driven high pressure paint pumps, one for each of the three colors (white, yellow and black), used to supply paint to the paint guns. Pumps shall be ARO 66941-C63, or pre-approved equivalent.	
<b>Option 4</b>	<b>Bead Guns, Graco</b> – Dispenser Guns for applying glass beads to the applied painted line. The bead guns shall be Graco Model 238338	
<b>Option 5</b>	<b>Bead Guns, Potters</b> – Dispenser Guns for applying glass beads to the applied painted line. The bead guns shall be Potters Model VisiGun	
<b>Option 6</b>	<b>Spray Gun Carriage</b> – Linear Bearing Option. Two road wheels shall be provided to maintain the carriages at a given height from the road. The entire carriage units are to be mounted with linear bearings to allow vertical motion while maintaining the spray guns at a constant height above the road surface.	
<b>Option 7</b>	<b>Carriage Wheel Spreader</b> – Actuated spreader for carriage wheels controlled from the rear cab. The inside wheel is fixed.	
<b>Option 8</b>	<b>Aluminum Platform</b> – Alternate material for the standard platform construction to reduce the weight of the vehicle, lower the center of gravity and allow an increased payload. Minimum construction requirements of 4” structural channel for the long sills and 3” structural channel cross members, Cross sills spacing and deck plating shall be adequately designed to support the load placed on the platform, including but not limited to, paint tanks, bead tanks, and high pressure paint pumps as well as any other necessary items. The structure shall properly reinforced and gusted to prevent fatigue and cracking over the life of the truck.	
<b>Option 9</b>	<b>High Pressure Paint Pump Stroke Counters</b> – Stroke counters on all high pressure paint pumps to measure paint volume used	
<b>Option 10</b>	<b>Load Cells</b> – Load cells on the bead tank to measure the change in weight to calculate glass bead usage	
<b>Option 11</b>	<b>Steering Wheel Carriage Control</b> – A steering wheel interface for the operators of the rear cab to control the horizontal movement of the carriages, one for each carriage	
<b>Option 12</b>	<b>Joystick Carriage Control</b> – A joy stick interface for the operators of the rear cab to control the horizontal movement of the carriages, one for each carriage	

<p><b>Option 13</b></p>	<p><b>Option for Alternative Carriage Control</b> – Any alternate carriage control available from the vendor. Provide description:</p> <hr/> <hr/>	
<p><b>Option 14</b></p>	<p><b>Paint Gun Elevators</b> – An electromechanical system to move individual paint guns up and down vertically on the carriage, operated from the rear cab operator's position. The elevators shall have a 4-6" travel capacity</p>	
<p><b>Option 15</b></p>	<p><b>Paint Drying Agent Application System</b> – An A.S.M.E. certified pressure vessel shall be supplied, having a total capacity of 500 pounds of drying agent. This vessel shall be tested for 110 psi working pressure, hydrostatically tested at 165 psi, be all steel construction and shall have a top opening of not less than 14 inches in diameter. The bottom of the tank shall be supported by a welded steel skirt to distribute the weight evenly; no point supports (legs) will be acceptable. It shall be equipped with an air release valve, a zero to 160 pound pressure gauge, and a 100 pound pressure release valve. The drying agent shall be conveyed under pressure to bead guns through rubber pressure hoses; a finned-type air cooler and moisture separator shall be supplied to remove moisture from the air to operate the system. Tank will have a sight glass viewable from rear operator's position to show three different levels at the intervals of 1/4, 1/2 and 3/4 mounted on the side of the tank. The drying agent supply tank shall be located in the same general vicinity on the deck as the bead tank. Plumping from the drying agent tank to the bead guns shall be fabricated to maximize bead flow. No ninety (90) degree fittings shall be used, if a ninety degree turn is required it shall be accomplished using two forty five (45) degree fittings, a smooth radius elbow or a flexible hose shall be used. All flexible hoses shall be clear in order to see bead flow, shall be rigid enough to retain their cross section in order to not crimp and reduce bead flow and shall be adequately supported no to sag to create unnecessary low points between the bead tank and the bead guns. Wet element plumbing shall be installed to match the spray gun carriage diagram.</p>	
<p><b>Option 16</b></p>	<p><b>Double Drop Wet Reflectivity Element System</b> – An A.S.M.E. certified pressure vessel shall be supplied, having a total capacity of 1000 pounds of wet reflective element. This vessel shall be tested for 110 psi working pressure, hydrostatically tested at 165 psi, be all steel construction and shall have a top opening of not less than 14 inches in diameter. The bottom of the tank shall be supported by a welded steel skirt to distribute the weight evenly; no point supports (legs) will be acceptable. It shall be equipped with an air release valve, a zero to 160 pound pressure gauge, and a 100 pound pressure release valve. The wet elements shall be conveyed under pressure to the bead guns through rubber pressure hoses; a finned-type air cooler and moisture separator shall be supplied to remove moisture from the air to operate the glass system. Tank will have a sight glass viewable from rear operator's</p>	

	position to show three different levels at the intervals of 1/4, 1/2 and 3/4 mounted on the side of the tank. The wet reflective element supply tank shall be located in the same general vicinity on the deck as the bead tank. Plumbing from the wet element tank to the bead guns shall be fabricated to maximize bead flow. No ninety (90) degree fittings shall be used, if a ninety degree turn is required it shall be accomplished using two forty five (45) degree fittings, a smooth radius elbow or a flexible hose shall be used. All flexible hoses shall be clear in order to see bead flow, shall be rigid enough to retain their cross section in order to not crimp and reduce bead flow and shall be adequately supported no to sag to create unnecessary low points between the bead tank and the bead guns. Wet element plumbing shall be installed to match the spray gun carriage diagram.	
<b>Option 17</b>	<b>100 Gallon Black Paint Tank</b> – Optional 100 gallon capacity black paint tank to replace the required 50 gallon tank if primary specification.	
<b>Option 18</b>	<b>Independent Bead Loading System</b> for the Wet Reflectivity Element Tank – A venturi loading system matching the specifications of the standard bead loading system in this specification.	
<b>Option 19</b>	<b>Solvent System</b> – The system shall comprise of a 60 gallon pressurized tank for solvent (water), one spring operated retractable hose reel and the plumbing associated with the installation. The solvent shall be delivered to the hose via air pressure from the on board air compressor.	
<b>Option 20</b>	<b>Oil System</b> – The system shall comprise of a pressurized tank for oil, between 25 and 35 gallons, one spring operated retractable hose reel and the plumbing associated with the installation. The oil shall be delivered to the hose via air pressure from the on board air compressor.	
<b>Option 21</b>	<b>Vehicle Guidance System</b> – Mechanical “Stinger” Style – Mechanical "stinger" style guide mounted to the front of the truck to aid the driver of the truck to properly locate the striper in the lane. The stinger shall have a guide wheel to support the deployed stinger and have an adjustable pointer at the end of the stinger. The stinger shall have the capability of being folded and stored along the front bumper and within the width of the truck during times the striper is not applying paint.	
<b>Option 22</b>	<b>Vehicle Guidance System – Laser</b> Provide description: _____ _____	
<b>Option 23</b>	<b>Vehicle Guidance System – Camera</b> - Provide description: _____ _____	
<b>Option 24</b>	<b>Open Loop Communications System</b> – An in vehicle communications system, replacing the specified head set intercom system, which permits the driver of the truck and the operators in the rear cab to communicate openly without wearing headsets or microphones	

<b>Option 25</b>	<b>Engine Brake</b> – An engine supplemental braking system installed on the engine by the engine or chassis manufacturer to assist in controlling the speed of the striper on downhill grades	
<b>Option 26</b>	<b>Spare Tire and Wheel, Front Axle</b> – A spare tire and wheel for the tire / wheel combination found on the front axle	
<b>Option 27</b>	<b>Spare Tire and Wheel, Rear Axle</b> – A spare tire and wheel for the tire / wheel combination found on the rear axle	
<b>Option 28</b>	<b>Rear Backup Camera</b> – A rear backup camera system which permits the driver of the truck to clearly see the environment directly behind the striper to supplement the trucks side mirrors while backing up the striper.	
<b>Option 29</b>	<b>Dual Truck Chassis Steering Wheels</b> – Steering wheels provided for both the typical driver's position as well as the far right passenger's position in the truck chassis cab. Both positions shall have full vehicle controls, including steering, gas, brake, turn signal control, vehicle speed readout and access to the slow speed cruise control operating controls.	
<b>Option 30</b>	<b>High Horsepower option for Truck Chassis</b> – MSRP – Additional engine options with higher horsepower/torque above that specified in this bid	
<b>Option 31</b>	<b>Gear Reduction System for Truck Chassis</b> – A form of providing a low range to the drive train of the truck, allowing the vehicle to travel at the specified highway speeds while deadheading and then permitting a low range during striping operations to permit the engine to operate in/or more closely to its peak horsepower/torque curves while traveling at 8-15mph.	
<b>Option 32</b>	<b>Auxiliary Chassis Cab Air-Conditioning</b> - Auxiliary, roof mounted, air-condition unit with a minimum cooling output of 25,000 BTU. The unit shall be self-contained with its own cooling compressor not driven by the vehicle engine.	
<b>Option 33</b>	<b>Original Delivery – Transport.</b> MoDOT may request original delivery be by transporting the truck if they opt to not have it driven under its own power from the manufacturer.	
<b>Option 34</b>	<b>Technical Training</b> – 8 hours of annual technical training including but not limited to major unit components such as engine, transmission, electrical, drive line, emissions, hydraulics and other areas of emphasis as defined by the MoDOT Representative. Bidder is responsible for all costs to include their travel, meals, room, and expenses associated with the training and educational materials for a maximum number of 30 trainees per location.	
<b>Option 35</b>	<b>Additional Technical Training - Cost per hour</b> for additional training. This option will be used when it is determined that 8 hours (Option 34) is not adequate training. These additional training hours will occur at the same location as the 8 hour training on a preceding or following day to the 8 hour training course. Travel expenses are covered in Option 34.	

	<b><u>ADDITIONAL VENDOR OPTIONS:</u></b> Please list any vendor-recommended options relevant to this operation. Use additional sheets if necessary.	
<b>Option A</b>		
<b>Option B</b>		
<b>Option C</b>		
<b>Option D</b>		
<b>Option E</b>		
<b>Option F</b>		
<b>Option G</b>		
<b>Option H</b>		
<b>Option I</b>		

## **6. MANUALS, TECHNICAL SERVICE AND TRAINING REQUIREMENTS**

### **Service & Operator Manuals**

- a. Two (2) hard copy operator manuals must be provided with each individual unit.
- b. Two sets of service and parts manuals (CD or hard copy) shall be supplied with each individual unit. To include wiring diagrams for truck chassis cab and factory line setting sheet which includes part numbers. A manual on all functions and operations of the microprocessor shall be included in the shop manuals. A diagram of all grease zerks should be located in the shop manuals.

### **Technical Service**

All vendors shall provide a telephone number for technical assistance on all components of the items bid. Number shall be manned during normal working hours (8 AM to 4 PM).

### **Training - Operator Training**

*A listing of available videotapes and/or literature for training should be made available with the bid.*

The successful bidder shall provide a qualified factory technician for at least five (5) days of initial setup instruction while the unit is in actual striping operation. Within the initial five (5) day training, a minimum of four (4) hours shall be dedicated to training MoDOT mechanics. If problems are encountered, a minimum of three (3) additional days may be needed to correct problems and to ensure customer satisfaction.

An additional five (5) days of instruction approximately 30 days after initial setup shall include Operator/Mechanics training for the location receiving the delivered unit. A qualified factory technician or mechanic shall conduct the training. Training shall include but not be limited to identification of all cab, chassis, body and optional unit features as well as standard preventative maintenance procedures for all unit components. Training shall meet the following requirements:

- a. Content shall be tailored to the components of the delivered unit(s). Course shall include hands-on training to reinforce course content.
- b. Training will be supplied to operators and mechanics of equipment and will cover safe operation and routine/preventative maintenance.
- c. Trainer must have experience in the area of servicing proposed truck components.
- d. Cab and Chassis system training shall include but not be limited to operational training of the engine, electronic controls, fuel system, emissions, electrical system controllers and automatic transmission.
- e. Body Builder installed component trainings shall include but not be limited to operational training of the hydraulic, electrical accessories, spreader control and warning light systems.
- f. Training must be coordinated with the MoDOT Representative. Bidder is responsible for all costs associated with training and materials for a maximum number of 20 trainees per unit.

**Should the training not meet the requirements (needs of the employees being trained) indicated above, the vendor shall come back to the location the training first took place and hold the training again.**

## 7. VENDOR INFORMATION & PREFERENCE CERTIFICATION FORM

All bidders must furnish **ALL** applicable information requested below

<b>Vendor Name/Mailing Address:</b>  Email Address:	<b>Vendor Contact Information (including area codes):</b> Phone #: Cellular #: Fax #:									
<b>Printed Name of Responsible Officer or Employee:</b>	<b>Signature:</b>									
<b>For Corporations</b> - State in which incorporated:	<b>For Others</b> - State of domicile:									
If the address listed in the Vendor Name/Mailing Address block above is not located in the State of Missouri, list the address of Missouri offices or places of business:  If additional space is required, please attach an additional sheet and identify it as <b><u>Addresses of Missouri Offices or Places of Business.</u></b>										
<b>M/WBE INFORMATION:</b> List all certified Minority or Women Business Enterprises ( <b>M/WBE</b> ) utilized in the fulfillment of this bid. Include <u>percentages</u> for subcontractors and identify the M/WBE certifying agency:  <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center; width: 33%;"><u>M/WBE Name</u></th> <th style="text-align: center; width: 33%;"><u>Percentage of Contract</u></th> <th style="text-align: center; width: 33%;"><u>M/WBE Certifying Agency</u></th> </tr> </thead> <tbody> <tr> <td style="border-top: 1px solid black; border-bottom: 1px solid black;"> </td> <td style="border-top: 1px solid black; border-bottom: 1px solid black;"> </td> <td style="border-top: 1px solid black; border-bottom: 1px solid black;"> </td> </tr> <tr> <td style="border-top: 1px solid black; border-bottom: 1px solid black;"> </td> <td style="border-top: 1px solid black; border-bottom: 1px solid black;"> </td> <td style="border-top: 1px solid black; border-bottom: 1px solid black;"> </td> </tr> </tbody> </table> If additional space is required, please attach an additional sheet and identify it as <b><u>M/WBE Information</u></b>		<u>M/WBE Name</u>	<u>Percentage of Contract</u>	<u>M/WBE Certifying Agency</u>						
<u>M/WBE Name</u>	<u>Percentage of Contract</u>	<u>M/WBE Certifying Agency</u>								

### Preference Certification

All bidders must furnish **ALL** applicable information requested below

<b><u>GOODS/PRODUCTS MANUFACTURED OR PRODUCED IN USA:</u></b> If any or all of the goods or products offered in the attached bid which the bidder proposes to supply to the MHTC are <b>not</b> manufactured or produced in the "United States", or imported in accordance with a qualifying treaty, law, agreement, or regulation, list below, by item or item number, the country other than the United States where each good or product is manufactured or produced.	
Item (or item number)	Location Where Item is Manufactured or Produced
If additional space is required, please attach an additional sheet and identify it as <b><u>Location Products are Manufactured or Produced.</u></b>	
<b><u>MISSOURI SERVICE-DISABLED VETERAN BUSINESS:</u></b> Please complete the following if applicable. Additional information may be requested if preference is applicable. See below definitions for qualification criteria: <b>Service-Disabled Veteran</b> is defined as any individual who is disabled as certified by the appropriate federal agency responsible for the administration of veterans' affairs. <b>Service-Disabled Veteran Business</b> is defined as a business concern: <ol style="list-style-type: none"> <li>a. Not less than fifty-one (51) percent of which is owned by one or more service-disabled veterans or, in the case of any publicly owned business, not less than fifty-one (51) percent of the stock of which is owned by one or more service-disabled veterans; and</li> <li>b. The management and daily business operations of which are controlled by one or more service-disabled veterans.</li> </ol>	
<u>Veteran Information</u>	<u>Business Information</u>
Service-Disabled Veteran's Name (Please Print)	Service-Disabled Veteran Business Name
Service-Disabled Veteran's Signature	Missouri Address of Service Disabled Veteran Business

**8. NOTICE OF COOPERATIVE PURCHASING**

**MODOT IS INTERESTED IN ASSISTING MISSOURI GOVERNMENTAL ENTITIES, ETC. IN PURCHASING EQUIPMENT, VARIOUS MATERIALS, AND SUPPLIES THAT MEET THE MISSOURI DEPARTMENT OF TRANSPORTATION SPECIFICATIONS.**

Each bidder is asked to indicate below whether they would be willing to offer **Stripers** listed in the attached "Request for Bid" for sale to these local political entities at the same bid price offered to MoDOT.

It is understood MoDOT will not issue purchase orders, accept delivery nor make payment for these items ordered by any of these agencies. It is further understood the price is based on the **Stripers** meeting MoDOT specifications. Any added options, deletions, or extra freight costs would be negotiated between the local agency and the successful vendor.

Indicate below whether your company is willing to offer such cooperative purchasing for Missouri counties, cities or other political entities.

YES \_\_\_\_\_ NO \_\_\_\_\_

If the price varies throughout the state on MoDOT bids because of different delivery destinations, please indicate the price F.O.B. your location that would be offered as described.

F.O.B. Location \_\_\_\_\_

Indicate the deadline date that orders will be accepted. \_\_\_\_\_

COMPANY NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

E-MAIL \_\_\_\_\_

PHONE NUMBER \_\_\_\_\_

SIGNATURE \_\_\_\_\_

TITLE \_\_\_\_\_

DATE \_\_\_\_\_

**9. ANTI-COLLUSION STATEMENT**

STATE OF \_\_\_\_\_ )

) **SS.**

COUNTY OF \_\_\_\_\_ )

\_\_\_\_\_ being first

duly sworn, deposes and says that he is \_\_\_\_\_  
Title of Person Signing

of \_\_\_\_\_  
Name of Bidder

that all statements made and facts set out in the bid for the above project are true and correct; and that the bidder (The person, firm, association, or corporation making said bid) has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with such bid or any contract which may result from its acceptance.

Affiant further certifies that bidder is not financially interested in, or financially affiliated with, any other bidder for the above project.

By \_\_\_\_\_

By \_\_\_\_\_

By \_\_\_\_\_

Sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

\_\_\_\_\_  
Notary Public

My Commission Expires \_\_\_\_\_

Missouri Highways and Transportation Commission  
Standard Bid Provisions, General Terms and Conditions and Special Terms and Conditions

**STANDARD SOLICITATION PROVISIONS**

- a. The solicitation for the procurement of the supplies referenced therein, to which these "Standard Bid Provisions, General Terms and Conditions and Special Terms and Conditions" are attached, is being issued under, and governed by, the provisions of Title 7 – Missouri Department of Transportation, Division 10 – Missouri Highways and Transportation Commission, Chapter 11 – Procurement of Supplies, of the Code of State Regulations. The Missouri Highways and Transportation Commission (**MHTC**), acting by and through its operating arm, the Missouri Department of Transportation (**MoDOT**), draws the Bidder's attention to said 7 CSR 10-11 for all the provisions governing solicitation and receipt of bids/quotes and the award of the contract pursuant to this solicitation.
- b. All bids/quotes must be signed with the firm name and by a responsible officer or employee. Obligations assumed by such signature must be fulfilled.

**GENERAL TERMS AND CONDITIONS**

**Definitions**

Capitalized terms as well as other terms used but not defined herein shall have the meaning assigned to them in section 7 CSR 10-11.010 Definition of Terms.

**Nondiscrimination**

- a. The Contractor shall comply with all state and federal statutes applicable to the Contractor relating to nondiscrimination, including, but not limited to, Chapter 213, RSMo; Title VI and Title VII of Civil Rights Act of 1964 as amended (42 U.S.C. Sections 2000d and 2000e, *et seq.*); and with any provision of the "Americans with Disabilities Act" (42 U.S.C. Section 12101, *et seq.*).
- b. **Sanctions for Noncompliance:** In the event of the Contractor's noncompliance with the nondiscrimination provisions of this contract, MHTC shall impose such contract sanctions as it or the Federal Highway Administration may determine to be appropriate, including, but not limited to:
  - i. withholding of payments to the Contractor under the contract until the Contractor complies, and/or,
  - ii. cancellation, termination or suspension of the contract, in whole or in part.

**Contract/Purchase Order**

- a. By submitting a bid/quote, the Bidder agrees to furnish any and all equipment, supplies and/or services specified in the solicitation documents, at the prices quoted, pursuant to all requirements and specifications contained therein.
- b. A binding contract shall consist of: (1) the solicitation documents, amendments thereto, and/or Best and Final Offer (BAFO) request(s) with any changes/additions, (2) the Contractor's bid response, and (3) the MHTC's acceptance of the bid by post-award contract or purchase order.
- c. A notice of award does not constitute an authorization for shipment of equipment or supplies or a directive to proceed with services. Before providing equipment, supplies and/or services, the Contractor must receive a properly authorized notice to proceed and/or purchase order.

**Applicable Laws and Regulations**

- a. The contract shall be construed according to the laws of the State of Missouri. The Contractor shall comply with all local, state, and federal laws and regulations related to the performance of the contract. The exclusive venue for any legal proceeding relating to or arising, out of the contract shall be in the Circuit Court of Cole County, Missouri.
- b. The Contractor must be registered and maintain good standing with the Secretary of State of the State of Missouri, Missouri Department of Revenue, and other regulatory agencies, as may be required by law or regulations. Prior to the issuance of a purchase order and/or notice to proceed, the Contractor may be required to submit to MHTC a copy of their current Authority Certificate from the Secretary of State of the State of Missouri and/or a copy of their Certificate of No Tax Due from the Missouri Department of Revenue.
- c. Prior to the issuance of a purchase order and/or notice to proceed, all **out-of-state** Contractors **providing services** within the state of Missouri must submit to MHTC a copy of their current Transient Employer Certificate from the Missouri Department of Revenue, in addition to a copy of their current Authority Certificate from the Secretary of State of the State of Missouri.

**Executive Order:**

The Contractor shall comply with all the provisions of Executive Order 07-13, issued by the Honorable Matt Blunt, Governor of Missouri, on the sixth (6<sup>th</sup>) day of March, 2007. This Executive Order, which promulgates the State of Missouri's position to not tolerate persons who contract with the state engaging in or supporting illegal activities of employing individuals who are not eligible to work in the United States, is incorporated herein by reference and made a part of this Agreement.

- 1) "By signing this Agreement, the Contractor hereby certifies that any employee of the Contractor assigned to perform services under the contract is eligible and authorized to work in the United States in compliance with federal law."
- 2) In the event the Contractor fails to comply with the provisions of the Executive Order 07-13, or in the event the Commission has reasonable cause to believe that the contractor has knowingly employed individuals who are not eligible to work in the United States in violation of federal law, the Commission reserves the right to impose such contract sanctions as it may determine to be appropriate, including but not limited to contract cancellation, termination or suspension in whole or in part or both.
- 3) The Contractor shall include the provisions of this paragraph in every subcontract. The Contractor shall take such action with respect to any subcontract as the Commission may direct as a means of enforcing such provisions, including sanctions for noncompliance.

**Preferences**

- a. In the evaluation of bids/quotes, preferences shall be applied in accordance with 7 CSR 10-11.020(7). Contractors should apply the same preferences in selecting subcontractors. The attached document entitled "**VENDOR INFORMATION AND PREFERENCE CERTIFICATION FORM**" must be completed and returned with the solicitation documents.
- b. Bidders are encouraged to obtain minority business enterprise (MBE) and women business enterprise (WBE) participation in this work through the use of subcontractors, suppliers, joint ventures, or other arrangements that afford meaningful participation for M/WBEs. Bidders are encouraged to obtain 10% MBE and 5% WBE participation.

Missouri Highways and Transportation Commission  
Standard Bid Provisions, General Terms and Conditions and Special Terms and Conditions

**Cancellation of Contract**

The MHTC may cancel the Contract at any time for a material breach of contractual obligations or for convenience by providing Contractor with written notice of cancellation. Should the MHTC exercise its right to cancel the contract for such reasons, cancellation will become effective upon the date specified in the notice of cancellation sent to the Contractor.

**Bankruptcy or Insolvency**

Upon filing for any bankruptcy or insolvency proceeding by or against the Contractor, whether voluntarily, or upon the appointment of a receiver, trustee, or assignee, for the benefit of creditors, the Commission reserves the right and sole discretion to either cancel the Agreement or affirm the Agreement and hold the Contractor responsible for damages.

**Warranty**

The Contractor expressly warrants that all equipment, supplies, and/or services provided shall: (1) conform to each and every specification, drawing, sample or other description which was furnished to or adopted by the MHTC, (2) be fit and sufficient for the purpose expressed in the solicitation documents, (3) be merchantable, (4) be of good materials and workmanship, and (5) be free from defect.

**Status of Independent Contractor**

The Contractor represents itself to be an independent Contractor offering such services to the general public and shall not represent itself or its employees to be an employee of the MHTC. Therefore, the Contractor shall assume all legal and financial responsibility for taxes, FICA, employee fringe benefits, workers' compensation, employee insurance, minimum wage requirements, overtime, etc., and agrees to indemnify, save and hold the MHTC, its officers, agents and employees harmless from and against any and all losses (including attorney fees) and damage of any kind related to such matters.

**Non-Waiver**

If one of the parties agrees to waive its right to enforce any term of this Contract, that party does not waive its right to enforce such term at any other time or to enforce any or all other terms of this Contract.

**Indemnification**

The Contractor shall defend, indemnify and hold harmless MHTC, including its members and department employees, from any claim or liability whether based on a claim for damages to real or personal property or to a person for any matter relating to or arising out of the Contractor's performance of its obligations under the contract awarded pursuant to this solicitation.

Missouri Highways and Transportation Commission  
Standard Bid/Proposal Provisions, General Terms and Conditions and Special Terms and Conditions

**SPECIAL TERMS AND CONDITIONS**

**Tax Exempt Status:**

MHTC is exempt from paying Missouri Sales Tax, Missouri Use Tax and Federal Excise Tax. However, the Contractor may themselves be responsible for the payment of taxes on materials they purchase to fulfill the contract. A Project Tax Exemption Certificate will be furnished to the successful Bidder upon request if applicable.

**Insurance**

The Contractor shall maintain or cause to be maintained at Contractor's own expense commercial general liability, automobile liability, worker's compensation insurance against negligent acts, errors or omissions of the Contractor, or its subcontractors and anyone directly or indirectly employed by any of them. Any insurance policy required as specified in this Section shall be written by a company that is licensed and authorized to issue such insurance in the state of Missouri and shall provide insurance coverage for not less than the following limits of liability:

- 1) General Liability: Not less than \$500,000 for any one person in a single accident or occurrence, and not less than \$3,000,000 for all claims arising out of a single occurrence;
- 2) Automobile Liability: Not less than \$500,000 for any one person in a single accident or occurrence, and not less than \$3,000,000 for all claims arising out of a single occurrence;
- 3) Missouri State Workmen's Compensation policy or equivalent in accordance with state law.

Upon request from the Commission, the Contractor shall provide the Commission with certificates of insurance evidencing the required coverage and that such insurance is in effect.

**Liquidated Damages**

- a. In the event the successful Contractor fails to deliver the material within the time specified, the Department and the public will sustain damages because of such delay in delivery, the exact extent of which would be difficult to ascertain, and in order to liquidate such damage in advance it is agreed that the **sum of \$100 per day, per item**, for each assessable calendar day on which the delivery has not been completed, is reasonable and the best estimate which the parties can arrive at as liquidated damages, and it is therefore agreed that said amount will be withheld from payments due the Contractor or otherwise collected from the Contractor as liquidated damages.
- b. **Saturdays, Sundays, holidays and days whereas the Department has suspended work** shall not be assessable days.