

**QUOTE
FORM**

MISSOURI DEPARTMENT OF TRANSPORTATION
GENERAL SERVICES
830 MoDOT DRIVE – P.O. BOX 270
JEFFERSON CITY, MO 65102

REQUEST NO.	4-081229SR
DATE	December 22, 2008
PAGE NO.	1 NO. OF PAGES 3

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

2:00 PM, LOCAL TIME, DECEMBER 29, 2009

AND THEN PUBLICLY READ FOR FURNISHING THE FOLLOWING SUPPLIES OR SERVICES.

QUOTATIONS TO BE BASED F.O.B. MISSOURI DEPARTMENT OF TRANSPORTATION
Submit net bid as cash discount stipulations will not be considered
JEFFERSON CITY, MISSOURI

DEFINITE DELIVERY DATE MUST BE SHOWN. SIGN AND RETURN BEFORE TIME SET FOR OPENING. **ALL QUOTES SHOULD BE EXTENDED AND TOTALED.**

BUYER: Sheldon L. Redel

BUYER TELEPHONE: 573-751-2044

ITEM NO.	SUPPLIES OR SERVICES					
	<p>Contract for furnishing "<i>Preformed Short Term Pavement Marking Tape</i>" for a contract period beginning February 1, 2009 through January 31, 2010</p> <p>PLEASE SEE ATTACHED PRICING PAGE</p> <p><i>QUOTES MAY BE FAXED TO 573-526-1218</i></p> <p>VENDOR NOTE: Prior to any contract issuance, the Bidder must be in compliance with the laws regarding conducting business in the State of Missouri.</p>					

(SEE ATTACHED FOR CONDITIONS AND INSTRUCTIONS)

In compliance with the above invitation to quote, and subject to all conditions thereof, the undersigned bidder agrees to furnish and deliver any or all the items on which prices were quoted within FIFTEEN (15) days after receipt of formal purchase order.

Date: _____
Telephone No.: _____
Fax No.: _____
Federal I.D. No. _____
E-mail Address: _____

Firm Name: _____
Address: _____
By (Signature): _____
Type/Print Name _____
Title: _____

Is your firm MBE certified? Yes No

Is your firm WBE certified? Yes No

List all agencies your firm is currently certified with. _____

PRICING PAGE

Page 1 of 1

Contract for furnishing “Preformed Short Term Pavement Marking Tape” for a contract period beginning February 1, 2009 through January 31, 2010. **SIGN WHERE INDICATED BELOW AND SUBMIT THIS PRICING PAGE ALONG WITH THE SIGNED QUOTE FORM PAGE.**

Item	Description	Mfg. No. or Brand	Quantity	Unit of Issue	Unit Price	Extended Total
#1	8324854840 Preformed short term pavement marking tape, 4” x 100 yard roll, WHITE , as per the attached “ <i>Section 1048.30</i> ” and “ <i>Field Section 1048 Table 4</i> ”.		70	ROLL		
#2	8324854880 Preformed short term pavement marking tape, 4” x 100 yard roll, YELLOW , as per the attached “ <i>Section 1048.30</i> ” and “ <i>Field Section 1048 Table 4</i> ”.		100	ROLL		
					TOTAL	\$

NOTE ON QUANTITIES: The quantities shown are estimated requirements for the period specified. The Missouri Department of Transportation (MoDOT) reserves the right to increase or decrease quantities as needed.

NOTE ON FAILURE TO COMPLY: *Failure to comply* with the above requirements may result in quote being subject to rejection.

DELIVERY: Quotes shall be submitted with delivery to FOB destination to the Missouri Department of Transportation in Jefferson City, Missouri.

Name of the Bidders Firm

Signature of Authorized Representative

Date Signed

QUOTE SUBMITTAL:

Your written quote must be mailed in envelope or box, or else delivered by hand or courier service (UPS, Federal Express, DHL, etc.), or faxed to the below fax number, to be *received on or before the date and time specified on the front page of this quote document*, at the office of:

Ms. Sheldon Redel
Missouri Department of Transportation
General Services - Procurement
830 MoDOT Drive; P.O. Box 270
Jefferson City, MO 65102
FAX: 573-526-1218

All mailed documents must be sealed and should be clearly marked "Preformed Short Term Pavement Marking Tape"

SAMPLES:

MoDOT reserves the right to request a sample of the product from the bidders if deemed necessary before award. Bidder will have five (5) working days, from date of request, to provide sample. Samples shall be furnished to MoDOT at no charge, will become the property of MoDOT, and will not be returned.

SPECIFICATIONS:

Please see the attached "Pavement Marking Material Section 1048" for additional information on approved preformed short-term pavement marking tape. Refer to "Field Section 1048 Table 4" for a list of qualified preformed short-term pavement marking tape products.

AWARD:

For the purpose of this quote, items will be awarded on an "ALL OR NOTHING" basis.

COMPLIANCE WITH QUOTE REQUIREMENTS:

Failure to comply with the requirements published in this quote may result in the quote being subject to rejection. Product that does not meet specifications will cause all of the shipments to be returned at the bidders expense.

NON-EXCLUSIVITY:

The Missouri Department of Transportation reserves the right to obtain like or similar products of this or other manufacturers, exclusive of this contract, when use of such products is deemed in the best interest of MoDOT.

DOCUMENT SUBMITTAL REQUIREMENTS:

For the quote to be considered the bidder must submit both the first page (signature page) of the quote document and the Pricing Page within the time frame specified on the signature page of this quote.



SECTION 1048

PAVEMENT MARKING MATERIAL

1048.1 Scope. This specification covers Type 1 and Type 2 preformed pavement marking tape, preformed removable pavement marking tape, preformed short-term pavement marking tape, drop-on glass beads, temporary raised pavement markers, epoxy pavement marking paint, acrylic copolymer fast dry pavement marking paint and acrylic waterborne pavement marking paint.

1048.1.1 Certification and Acceptance. All material contained in [Sec 1048](#) shall be in accordance with the following requirements.

1048.1.1.1 To obtain approval of the material, the manufacturer shall submit material and application specifications, samples of the material, and a history of satisfactory use to Construction and Materials for testing and evaluation. The sample quantity submitted shall be at the discretion of Construction and Materials. The approval process shall not be initiated prior to obtaining the concurrence of Construction and Materials. Following testing and evaluation, satisfactory material will be placed on a qualified list.

1048.1.1.2 For acceptance on a project, the contractor shall furnish to the engineer a manufacturer's certification stating the manufacturer and trade name, lot or batch number and that all material furnished is similar to the material originally qualified. For extruded or hot-spray thermoplastic, the certification shall state the specific gravity of the lot or batch. Acceptance of the material will be based on the manufacturer's certification, the results of such tests that may be performed by the engineer and satisfactory performance in the field.

1048.1.1.3 The material may be inspected and sampled at the point of manufacture, at an intermediate shipping terminal or at destination. The engineer shall be allowed access to all facilities and records as required to conduct inspection and sampling. The contractor shall adequately mix the contents of all shipping containers prior to obtaining samples or transferring partial containers of material to tanks on the striping equipment.

SECTION 1048.10 PREFORMED PAVEMENT MARKING TAPE

1048.10.1 Type 1 Preformed Pavement Marking Tape.

1048.10.1.1 Application. On bituminous surfaces, Type 1 preformed pavement marking tape shall be capable of being installed onto wearing surfaces during the final roller operation. Application on concrete surfaces shall be in accordance with the manufacturer's application recommendations. After application, the tape shall be immediately ready to receive traffic.

1048.10.1.2 Composition. The tape shall consist of a mixture of polymeric material, pigments and glass beads distributed throughout the cross-sectional area, with a reflective layer of glass beads embedded in the top surface. The tape shall be sufficiently flexible to conform to the roadway without cracking or breaking.

1048.10.1.3 Dimensions. The tape, without adhesive, shall have a minimum thickness of 60 mils (1.5 mm). A patterned surface will be allowable but the tape shall have a minimum thickness of 60 mils (1.5 mm) over at least 50 percent of the tape's surface. The edges of the tape shall not be tapered.

1048.10.1.4 Adhesive. The tape shall be supplied with a precoated factory-applied adhesive for immediate application to bituminous pavement without the use of heat, solvent or other adhesive operations. The tape and adhesive shall be of a type that water used on the compaction roller will not be detrimental to successful application. On concrete surfaces, application shall be in accordance with the manufacturer's recommendations.

1048.10.1.5 Reflectance. The tape shall have a minimum specific luminance as shown in the table below, expressed as millicandelas per footcandle per square foot (millicandelas/lux/m²). The tape shall be applied to an 8 x 36-inch (200 x 900 mm) panel in a longitudinal orientation and measured in accordance with MoDOT Test Method TM 8 at an 86-degree entrance angle.

Type I Preformed Pavement Marking Tape Reflectance Requirements		
Observation Angle	White	Yellow
0.2 degree	550	410
0.5 degree	380	250

1048.10.2 Type 2 Preformed Pavement Marking Tape.

1048.10.2.1 Application. After application, the tape shall be immediately ready to receive traffic.

1048.10.2.2 Composition. Type 2 preformed pavement marking tape shall consist of a mixture of polymeric material and pigments with beads distributed throughout the cross-sectional area and with a reflective layer of ceramic beads embedded in the embossed, patterned surface. The patterned surface shall have 50 percent ± 15 percent of the surface area raised and presenting a near vertical face (angle of 0 degrees to 60 degrees from vertical) to traffic from any direction. The channels between the raised areas shall be substantially free of exposed beads or particles. The marking shall be capable of adhering to bituminous or concrete surfaces by a flexible conforming backing. A primer may be required to precondition the pavement surface.

1048.10.2.3 Dimensions. The tape, without adhesive, shall have a patterned surface with a minimum thickness of 65 mils (1.65 mm) in the raised (thickest) area of the cross section and a minimum thickness of 20 mils (0.5mm) in the depressed (thinnest) areas of the cross section.

1048.10.2.4 Adhesive. The tape shall be supplied with a precoated factory-applied pressure sensitive adhesive.

1048.10.2.5 Reflectance. The tape shall have a minimum specific luminance as shown in the table below, expressed as millicandelas per footcandle per square foot (millicandelas/lux/m²). The tape shall be applied to an 8 x 36-inch (200 x 900 mm) panel in a longitudinal orientation and measured in accordance with MoDOT Test Method TM 8.

Type II Preformed Pavement Marking Tape Reflectance Requirements			
Entrance Angle	Observation Angle	White	Yellow
86.0	0.2 degree	1100	800
86.5	1.0 degree	700	475

1048.10.2.6 Index of Refraction. The ceramic beads on the raised, patterned surface of the material shall have a minimum index of refraction of 1.70 when tested using the liquid oil immersion method. Ceramic beads with an index of refraction greater than 1.80 shall not be used. The beads mixed into the pliant polymer shall have a minimum index of refraction of 1.50 when tested by the oil immersion method.

SECTION 1048.20 PREFORMED REMOVABLE PAVEMENT MARKING TAPE

1048.20.1 General. Preformed removable pavement marking tape shall be capable of being removed and shall leave no objectionable or misleading image or damage to the pavement after removal.

1048.20.2 Reflectance. Tape shall have a minimum specific luminance as shown in the table below, expressed as millicandelas per footcandle per square foot (millicandelas/lux/m²). The tape shall be applied to an 8 x 36-inch (200 x 900 mm) panel in a longitudinal orientation and measured in accordance with MoDOT Test Method TM 8 at an 86-degree entrance angle.

Preformed Removable Pavement Marking Tape Reflectance Requirements		
Observation Angle	White	Yellow
0.2 degree	1750	1300
0.5 degree	1250	800

1048.20.3 Adhesive. Tape shall have a pre-coated pressure sensitive adhesive requiring no activation procedures. The adhesive shall be resistant to normal roadway chemicals or materials.

1048.20.4 Durability. The tape shall be weather-resistant and show no appreciable fading, lifting or shrinkage during the tape's useful life. Samples of the tape applied to standard specimen plates and tested in accordance with Federal Test Method No. 141, Method 6192, for 1000 cycles, using a CS-17 wheel and 1000-gram load shall not expose the backing material over more than five percent of the abraded area.

SECTION 1048.30 PREFORMED SHORT TERM PAVEMENT MARKING TAPE

1048.30.1 Reflectance. The tape shall have a minimum specific luminance as shown in the table below, expressed as millicandelas per footcandle per square foot (millicandelas/lux/m²). The tape shall be applied to an 8 x 36-inch (200 x 900 mm) panel in a longitudinal orientation and measured in accordance with MoDOT Test Method TM 8 at an 86-degree entrance angle.

Preformed Short Term Pavement Marking Tape Reflectance Requirements		
Observation Angle	White	Yellow
0.2 degree	1350	800
0.5 degree	750	500

1048.30.2 Adhesive. Tape shall have a pre-coated pressure sensitive adhesive requiring no activation procedures. Adhesive shall be resistant to normal roadway chemicals or materials.

1048.30.3 Durability. The tape shall be weather-resistant and show no appreciable fading, lifting or shrinkage during the tape's useful life. Samples of the tape applied to standard specimen plates and tested in accordance with Federal Test Method No. 141, Method 6192, for 1000 cycles, using a CS-17 wheel and 1000-gram load shall not expose the backing material over more than five percent of the abraded area.

SECTION 1048.40 DROP-ON GLASS BEADS

1048.40.1 General. When tested in accordance with MoDOT Test Method TM 70 for water resistance, the beads shall show no readily discernible dulling and the amount of 0.1 normal

hydrochloric acid needed to titrate the filtrate shall not exceed 4.5 mL. When tested in accordance with MoDOT Test Method TM 70 for calcium chloride and sodium sulfide resistance, the beads shall show no readily discernible darkening or dulling.

1048.40.2 Type 1 Drop-On Glass Beads. Type 1 beads shall be moisture-resistant and manufactured from glass of a composition that is highly resistant to traffic wear and to the effects of weathering. Glass beads shall be in accordance with AASHTO M 247, Type 1.

1048.40.3 Type L Drop-On Glass Beads. Type L beads shall be embedment coated and manufactured from glass of a composition that is highly resistant to traffic wear and to the effects of weathering. The beads shall be in accordance with AASHTO M 247, Type 1, except as follows.

1048.40.3.1 Coating. The beads shall be coated to ensure satisfactory embedment and adhesion when applied to uncured traffic marking material. The coating shall be tested in accordance with MoDOT Test Method TM 70.

1048.40.3.2 Roundness. Type L beads shall have a minimum of 80 percent rounds per screen for the two highest sieve quantities, and no more than 3 percent angular particles per screen, as determined by visual inspection. The remaining sieve fractions shall be determined visually per aspect ratio using microfiche reader to be no less than 75 percent rounds. The tests shall be in accordance with Federal Lands Highway - Test Method T520-93.

1048.40.3.3 Gradation. Type L beads shall meet the following gradation requirements when tested in accordance with ASTM D 1214:

Type L Bead Gradation Requirements	
Sieve Size	Percent Passing
No. 12 (1.7 mm)	100
No. 14 (1.4 mm)	95 - 100
No. 16 (1.18 mm)	80 - 98
No. 18 (1.00 mm)	10 - 42
No. 20 (850 µm)	0 - 7
No. 25 (710 µm)	0 - 2

1048.40.4 Intermix Beads. Intermix beads shall be uncoated, and in accordance with AASHTO M 247, Type 1. Intermix beads shall be uniformly mixed throughout the thermoplastic material at the rate of no less than 30 percent, by weight (mass) of the thermoplastic material.

1048.40.5 Type P Drop-On Glass Beads. Type P beads shall be manufactured from glass of a composition that is highly resistant to traffic wear and to the effects of weathering. If coating is required to meet the performance requirements for the specific marking material used, the beads shall be coated to ensure satisfactory embedment and adhesion. Glass beads shall have a minimum of 95 mass percent passing a No. 18 (1 mm) sieve and a maximum of 5 mass percent passing a No. 100 (150 µm) sieve.

SECTION 1048.50 TEMPORARY RAISED PAVEMENT MARKERS

1048.50.1 General. The brand name and manufacturer shall be stamped or indelibly printed on each container.

1048.50.2 Type 1 Temporary Raised Pavement Markers. Markers shall consist of an L-shaped or T-shaped flexible polymer body with prismatic reflective tape on both faces of the vertical section. The prismatic reflective faces shall be a minimum of 0.38 square inches

(0.0002 m²) for each face. The marker base shall have affixed a pressure-sensitive adhesive, protected by a release paper, for application to the pavement surface. A protective sleeve that prevents contamination of the reflective faces during pavement surface treatment operations shall be affixed to each marker. The protective sleeve shall be easily removable after the work is complete.

1048.50.3 Type 2 Temporary Raised Pavement Markers. Markers shall consist of a plastic shell with prismatic reflective faces with a minimum of 0.38 square inches (0.0002 m²) of reflective surface for each face. If reflective faces are specified on both sides, the faces shall be 180 degrees opposed. The marker shall be fitted with a pressure-sensitive adhesive for application to a primed surface or may be applied to the pavement surface with a bituminous adhesive material.

SECTION 1048.60 EPOXY PAVEMENT MARKING MATERIAL

1048.60.1 General. Epoxy pavement marking material shall not contain toxic heavy metals. The material shall be two-component, 100 percent solids and formulated and tested to perform as a pavement marking material with glass beads applied to the surface. The two components shall be epoxy resin and an amine curing agent.

1048.60.2 Toxicity. Upon heating to application temperature, the material shall not release fumes that are toxic to persons or property. Upon curing, the material shall be completely inert, with all components fully reacted and environmentally benign.

1048.60.3 No Track Time. The material shall have a no-track time of 10 minutes or less, when mixed in the proper proportions and applied at a 25-mil (0.635 mm) wet film thickness at 75 ± 2 F (24 ± 1 C) with the proper application of glass beads and when tested in accordance with ASTM D 711. The material shall fully cure under a constant surface temperature of 32 F (0 C) or above.

1048.60.4 Adhesion to Concrete. The pavement marking material shall have a high degree of adhesion to the concrete surface such that there is a 100 percent concrete failure when tested in accordance with ACI 503, Appendix A.1. The prepared specimens shall have a film thickness of 15 ± 1 mil (0.381 ± 0.025 mm) and shall be applied to concrete with a minimum compressive strength of 4000 psi (28 MPa). The concrete surface shall be 90 ± 2 F (32 ± 1 C) when the material is applied. The applied material shall be cured for 72 hours at 75 ± 2 F (24 ± 1 C) before performing the test.

1048.60.5 Hardness. The material shall have a minimum Shore D Hardness of 75 when tested in accordance with ASTM D 2240.

1048.60.6 Tensile Strength. The material shall have a minimum tensile strength of 5000 psi (34 MPa) after 72 hours of cure at 75 ± 2 F (24 ± 1 C) when tested in accordance with ASTM D 638.

1048.60.7 Compressive Strength. The material shall have a minimum compressive strength of 10,000 psi (69 MPa) after 72 hours of cure at 75 ± 2 F (24 ± 1 C) when tested in accordance with ASTM D 695.

1048.60.8 Abrasion Resistance. The material shall have a maximum abrasion resistance of 150 mg at 15 ± 1 mil (0.375 ± 0.025 mm) thickness after 72 hours of cure and with a CS-17 wheel under a load of 1000 grams for 1000 cycles, when tested in accordance with ASTM C 501.

1048.60.9 Yellowness Index. The material shall have a maximum yellowness index of 6 before the QUV test and a maximum of yellowness index of 23 after the 72-hour QUV test, when tested in accordance with ASTM D 1925.

104860.10 Color. The finished white color shall be free from tint, furnishing good opacity and visibility under both daylight and artificial light. The finished yellow color shall closely match Federal Test Standard 595 - Color Chip Number 13538.

1048.60.11 Drop-on Glass Beads. Type P glass beads shall be in accordance with [Sec 1048.40.5](#).

1048.60.12 Qualification. In addition to the requirements of [Sec 1048.1.1](#), the material shall have been field tested at NTPEP test decks in a northern, wet climate region for a minimum of six months. The maintained retroreflectivity and durability shall be in accordance with the following requirements after being installed on at least one NTPEP test deck for a minimum of six months, including December, January and February.

1048.60.12.1 Maintained Retroreflectivity. Photometric quantity to be measured will be the coefficient of retroreflective luminance (R_L) in accordance with ASTM E 1743 for 15-meter geometry or ASTM E 1710 for 30-meter geometry. The average R_L for concrete and asphalt surfaces shall be expressed in millicandelas per footcandle per square foot (millicandelas/lux/m²) and shall be at least 125 for 15-meter geometry or 100 for 30-meter geometry, when measured in the wheel path area.

1048.60.12.2.2 Durability. Paint shall have a durability rating of at least 5 for both concrete and asphalt surfaces when tested in the wheel path area of the NTPEP test deck.

1048.60.13 Packaging. The manufacturer's name and address, product name, color, manufacturing date, date of expiration and if the material is Part A or B shall be visible on the containers. In addition to the requirements of [Sec 1048.1.1](#), the certification supplied by the manufacturer shall include reference to the specific NTPEP test deck to which the paint formulation was applied, including NTPEP identification numbers and report numbers.

Section 1048.70 Polyurea Pavement Marking Material

1048.70.1 Polyurea Pavement Marking Material. Polyurea pavement marking material shall not contain toxic heavy metals. It shall be two component, 100 percent solids, and formulated and tested to perform as a pavement marking material with glass beads applied to the surface.

1048.70.2 Toxicity. Upon heating to application temperature, the material shall not release fumes that are toxic to persons or property. Upon curing, the material should be completely inert, with all components fully reacted and environmentally benign.

1048.70.3 No Track Time. The material shall have a no-track time of 10 minutes or less when mixed in the proper proportions and applied at 20 mils (0.508 mm) wet film thickness at 75 ± 2 F (24 ± 1 C) with the proper application of glass beads and when tested in accordance with ASTM D 711. The material shall fully cure under a constant surface temperature of 32 F (0 C) or above.

1048.70.4 Adhesion to Concrete. The pavement marking material shall have a high degree of adhesion to the concrete surface such that there is a 100 percent concrete failure when tested in accordance with ACI 503, Appendix A.1. The prepared specimens shall have a film thickness of 15 ± 1 mils (0.375 ± 0.025 mm) and be applied to concrete with a minimum compressive strength of 4000 psi (28 MPa). The concrete surface shall be 90 ± 2 F (32 ± 1 C)

when the material is applied. The applied material shall be cured for 72 hours at 75 ± 2 F (24 ± 1 C) before performing the test.

1048.70.5 Hardness. The material shall have a minimum Shore D Hardness of between 70 and 100 when tested in accordance with ASTM D 2240.

1048.70.6 Abrasion Resistance. The material shall have a maximum abrasion resistance of 150 mg at 15 ± 1 mils (0.375 ± 0.025 mm) thickness after 72 hour curing time and with a CS-17 wheel under a load of 1000 grams for 1000 cycles, when tested in accordance with ASTM C 501.

1048.70.7 Yellowness Index. The material shall have a maximum yellowness index of 6 before the QUV test and a maximum of 23 after the 72 hour QUV test, when tested in accordance with ASTM D 1925.

1048.70.8 Color. The finished white color shall be free from tint, furnishing good opacity and visibility under both daylight and artificial light. The finished yellow color shall be defined by Federal Test Standard 595 - Color Chip Number 13538, using Federal Tests Standard 141 (Method 4252).

1048.70.9 Accelerated Weathering. The material shall have been field tested at NTPEP test decks for a minimum of six months. The material shall have satisfactory results from the NTPEP test deck.

1048.70.10 Drop-on Glass Beads. Type P moisture-resistant glass beads shall be in accordance with [Sec 1048.40.5](#) Type P Drop-On Glass Beads.

1048.70.11 Qualification. In addition to the requirements of [Sec 1048.1.1](#), the material shall have been field tested at NTPEP test decks in a northern, wet climate region for a minimum of six months. The maintained retroreflectivity and durability shall be in accordance with the following requirements after being installed on at least one NTPEP test deck for a minimum of six months, including December, January and February.

1048.70.11.1 Maintained Retroreflectivity. Photometric quantity to be measured will be the coefficient of retroreflective luminance (R_L) in accordance with ASTM E 1743 for 15-meter geometry or ASTM E 1710 for 30-meter geometry. The average R_L for concrete and asphalt surfaces shall be expressed in millicandelas per footcandle per square foot (millicandelas/lux/m²) and shall be at least 125 for 15-meter geometry or 100 for 30-meter geometry, when measured in the wheel path area.

1048.70.11.2 Durability. Paint shall have a durability rating of at least 5 for both concrete and asphalt surfaces when tested in the wheel path area of the NTPEP test deck.

1048.70.12 Packing. The pavement marking material shall be shipped to the job site in strong, substantial containers. The manufacturer shall include the MSDS with each shipment. The manufacturer's name and address, name of the product, lot number and/or batch number, color, tare weight, manufacturing date, date of expiration, mixing proportions and if it is Part A or B shall be contained on a label and/or painted on the containers.

SECTION 1048.80 ACRYLIC COPOLYMER FAST DRY PAVEMENT MARKING PAINT

1048.80.1 Description. Acrylic copolymer fast dry pavement marking paint shall be capable of receiving and holding glass beads for producing retroreflective pavement marking.

1048.80.2 Material. The paint shall contain no more than 3200 ppm lead or more than 800 ppm chromium based on dry weight, and shall have limited VOC content as noted herein.

1048.80.2.1 General. The finished paint shall be formulated and manufactured from first-grade material and shall be a fast drying, solvent-based, acrylic copolymer resin type paint capable of withstanding air and roadway temperatures without bleeding, staining, discoloring or deforming. The dried paint film shall be capable of maintaining original dimensions and placement without chipping, spalling or cracking. The dry paint film shall not deteriorate because of contact with normal roadway chemicals or materials.

1048.80.2.2 Durability Testing. Determination of conformance to this specification will include, but will not be limited to, the evaluation of test data from NTPEP or other MoDOT approved facilities. The maintained retroreflectivity and durability shall be in accordance with the following requirements after being installed on at least one NTPEP test deck in a northern, wet climate region for at minimum of six months, including December, January and February.

1048.80.2.2.1 Maintained Retroreflectivity. Photometric quantity to be measured will be the coefficient of retroreflective luminance (R_L) in accordance with the requirements of ASTM E 1743 for 15-meter geometry or ASTM E 1710 for 30-meter geometry. The average R_L for concrete and bituminous surfaces shall be expressed in millicandelas per footcandle per square foot (millicandelas/lux/m²) and shall be at least 100 for 15-meter geometry or 75 for 30-meter geometry, when measured in the wheel path area.

1048.80.2.2.2 Durability. Paint shall have a durability rating of at least 4 for both concrete and bituminous surfaces when tested in the wheel path area of the NTPEP test deck.

1048.80.2.3 Mixed Paint.

1048.80.2.3.1 The mixed paint shall be strained before filling, using a screen or a sieving device no coarser than 40 mesh.

1048.80.2.3.2 The VOC content of the finished paint shall be less than 1.25 pounds of volatile organic matter per gallon (150 g/L) of total non-volatile paint material when tested in accordance with ASTM D 3960.

1048.80.2.3.3 The paint shall have the following physical properties.

Property	Requirement
Viscosity, KU	80 - 95
Laboratory Dry Time, ASTM D 711, minutes, max.	10

1048.80.2.3.3.1 Color. For white, the color shall closely match Color Chip 37925 of Federal Standard 595b. For yellow, the color shall closely match Color Chip 33538 of Federal Standard 595b. Color determination will be made for markings and the diffuse daytime color of the markings shall be in accordance with the below CIE Chromaticity coordinate limits. Color determination for liquid marking materials will be made over the black portion of a 2A or 5C Leneta Chart or equal, at least 24 hours after application of a 15-mil (380 μm) wet film. Color readings will be determined in accordance with the requirements of ASTM E 1349 using CIE 1931 2-degree standard observer and CIE standard illuminant D65.

CIE Chromaticity Coordinate Limits (Initial)								
Color	1		2		3		4	
	x	y	x	y	x	y	x	y
White	0.334	0.357	0.334	0.317	0.297	0.357	0.297	0.317

Yellow	0.531	0.483	0.531	0.429	0.471	0.483	0.471	0.429
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1048.80.2.3.3.2 Contrast Ratio. The contrast ratio shall be a minimum of 0.98 when drawn down as a 15-mil (380 µm) wet film on a 2A or 5C Leneta Chart or equal, and air-dried for 24 hours. The contrast ratio shall be calculated as follows: Contrast ratio = Black/White.

1048.80.2.3.3.4 Reflectance. The daylight directional reflectance of a 15-mil (380 µm) wet film applied to a 2A or 5C Leneta Chart or equal and dried for a minimum of 24 hours shall be 84% minimum for the white paint and 50% minimum for the yellow paint.

1048.80.3. Acceptance.

1048.80.3.1 Except as noted, each batch or lot of paint shall be sampled and approved by the engineer prior to use.

1048.80.3.2 No paint shall be used that is more than 15 months old.

1048.80.3.3 In addition to the requirements of [Sec 1048.1.1](#), the certification supplied by the manufacturer shall include reference to the specific NTPEP test deck to which the paint formulation was applied, including NTPEP identification numbers and report numbers.

SECTION 1048.90 HIGH BUILD ACRYLIC WATERBORNE PAVEMENT MARKING PAINT

1048.90.1 Description. Acrylic waterborne pavement marking paint shall be capable of receiving and holding glass beads for producing retroreflective pavement marking.

1048.90.2 Material. The paint shall contain no more than 3200 ppm lead or more than 800 ppm chromium, based on dry weight.

1048.90.2.1 General. The finished paint shall be formulated and manufactured from quality material and shall be a fast-drying, water-based, acrylic resin-type paint capable of withstanding air and roadway temperatures without bleeding, staining, discoloring or deforming. The dried paint film shall be capable of maintaining original dimensions and placement without chipping, spalling or cracking. The dry paint film shall not deteriorate from contact with normal roadway chemicals or materials.

1048.90.2.2 Acrylic Emulsion Polymer. The acrylic emulsion polymer used in the manufacture of the paint shall be Rohm & Haas HD-21, Dow DT400 or equal.

1048.90.2.3 Durability Testing. Determination of conformance to this specification will include, but will not be limited to, the evaluation of test data from NTPEP or other MoDOT approved facilities. The maintained retroreflectivity and durability shall be in accordance with the following requirements after being installed on at least one NTPEP test deck in a northern climate region for at minimum of six months, including December, January and February.

1048.90.2.3.1 Maintained Retroreflectivity. Photometric quantity to be measured will be the coefficient of retroreflective luminance (R_L) in accordance with the requirements of ASTM E 1743 for 15-meter geometry or ASTM E 1710 for 30-meter geometry. The average R_L for concrete and bituminous surfaces shall be expressed in millicandelas per footcandle per square foot (millicandelas/lux/m²) and shall be at least 100 for 15-meter geometry or 75 for 30-meter geometry, when measured in the wheel path area.

1048.90.2.3.2 Durability. Paint shall have a durability rating of at least 4 for both concrete and bituminous surfaces when tested in the wheel path area of the NTPEP test deck.

1048.90.3 Mixed Paint.

1048.90.3.1 The paint shall be strained before filling using a screen or a sieving device no coarser than 40 mesh or equivalent.

1048.90.3.2 The volatile content of the finished paint shall contain less than 150 grams of volatile organic matter per liter in accordance with ASTM D 3960.

1048.90.3.3 The paint shall have the following physical properties:

Acrylic Waterborne Pavement Marking Paint Physical Properties	
Property	Requirement
Viscosity, 77 F (25 C), KU	83-98
Grind (Hegman Gage), minimum	3
Laboratory Dry Time, ASTM D 711, @ 15 mil, minutes, max.	10
Laboratory Dry Time, ASTM D 711, @ 25 mil, minutes, max.	25
Dry Through Time, minutes, max.	150

1048.90.3.3.1 Color. For white, the color shall closely match Color Chip 37925 of Federal Standard 595b. For yellow, the color shall closely match Color Chip 33538 of Federal Standard 595b. Color determination will be made for markings and the diffuse daytime color of the markings shall be in accordance with the below CIE Chromaticity coordinate limits. Color determination for liquid marking material will be made over the black portion of a 2A or 5C Leneta Chart or equal, at least 24 hours after application of a 15-mil wet film. Color readings will be determined in accordance with the requirements of ASTM E 1349 using CIE 1931 2-degree standard observer and CIE standard illuminant D65.

CIE Chromaticity Coordinate Limits (Initial)								
Color	1		2		3		4	
	x	y	x	y	x	y	x	y
White	0.334	0.357	0.334	0.317	0.297	0.357	0.297	0.317
Yellow	0.531	0.483	0.531	0.429	0.471	0.483	0.471	0.429

1048.90.3.3.2 Flexibility. The paint shall show no cracking or flaking when tested in accordance with Federal Specification TT-P-1952B.

1048.90.3.3.3 Water Resistance. The paint shall conform to Federal Specification TT-P-1952B. There shall be no blistering or appreciable loss of adhesion, softening or other deterioration after examination.

1048.90.3.3.4 Freeze-Thaw Stability. The paint shall show no coagulation or change in consistency greater than 10 Kreb Units when tested in accordance with Federal Specification TT-P-1952B.

1048.90.3.3.5 Heat Stability. The paint shall show no coagulation, discoloration or change in consistency greater than 10 Kreb Units when tested in accordance with Federal Specification TT-P-1952B.

1048.90.3.3.6 Dilution Test. The paint shall be capable of dilution with water at all levels without curdling or precipitation such that the wet paint can be readily cleaned up with water only.

1048.90.3.3.7 Storage Stability. After 30 days of storage in a 3/4 filled, closed container, the paint shall show no caking that cannot be readily remixed to a smooth, homogeneous state, and shall show no skinning, livering, curdling or hard settling. The viscosity shall change no more than 5 Kreb Units from the viscosity of the original sample.

1048.90.3.3.8 Contrast Ratio. The minimum contrast ratio (hiding power) shall be 0.96 when drawn down with a 0.005 mil applicator on a 2A or 5C Leneta Chart or equal and air-dried for 24 hours. The contrast ratio shall be calculated as follows: Contrast Ratio = Black/White.

1048.90.3.3.9 Reflectance. The daylight directional reflectance of a 15-mil (380 µm) wet film, applied to a 2A or 5C Leneta Chart or equal and dried for a minimum of 24 hours, shall be no less than 84 percent for the white paint and no less than 50 percent for the yellow paint.

1048.90.3.3.10 Bleeding. The paint shall have a minimum bleeding ratio of 0.97 when tested in accordance with Federal Specification TT-P-1952B. The asphalt saturated felt shall be in accordance with ASTM D 226 for Type I.

1048.90.3.3.11 Dry Through Time. The paint shall be applied to a non-absorbent substrate at a wet film thickness of 15 ± 1 mil and placed in a humidity chamber controlled at 90 ± 5 percent relative humidity and 72.5 ± 2.5 F (22.5 ± 1.4 C). The dry through time shall be determined in accordance with ASTM D 1640, except that the pressure exerted shall be the minimum needed to maintain contact with the thumb and film.

1048.90.4 Acceptance.

1048.90.4.1 Except as noted, each batch or lot of paint shall be sampled and approved by the engineer prior to use.

1048.90.4.2 No paint shall be used that is more than 15 months old.

1048.90.4.3 In addition to the requirements of [Sec 1048.1.1](#), the certification supplied by the manufacturer shall include reference to the specific NTPEP test deck to which the paint formulation was applied, including NTPEP identification numbers and report numbers.

1048.100 STANDARD ACRYLIC WATERBORNE PAVEMENT MARKING PAINT.

1048.100.1 Description. Standard acrylic waterborne pavement marking paint shall be capable of receiving and holding glass beads for producing retroreflective pavement marking.

1048.100.2 Material. The paint shall contain no more than 3200 ppm lead or more than 800 ppm chromium, based on dry weight.

1048.100.2.1 General. The finished paint shall be formulated and manufactured from quality material and shall be a fast-drying, water-based, acrylic resin-type paint capable of withstanding air and roadway temperatures without bleeding, staining, discoloring or deforming. The dried paint film shall be capable of maintaining original dimensions and placement without chipping, spalling or cracking. The dry paint film shall not deteriorate from contact with normal roadway chemicals or materials.

1048.100.2.2 Acrylic Emulsion Polymer. The acrylic emulsion polymer used in the manufacture of the paint shall be Rohm & Haas E-2706, Dow DT211 or equal. Later generation acrylic emulsions may be substituted as approved by the engineer.

1048.100.2.3. Durability Testing. The provisions of section 1048.90.2.3 will apply.

1048.100.2.3.1 Maintained Retroreflectivity. Photometric quantity to be measured will be the coefficient of retroreflective luminance (R_L) in accordance with the requirements of ASTM E 1743 for 15-meter geometry or ASTM E 1710 for 30-meter geometry. The average R_L for concrete and bituminous surfaces shall be expressed in millicandelas/lux/m² and shall be at least 100 for 15-meter geometry or 75 for 30-meter geometry, when measured in the wheel path area.

1048.100.2.3.2 Durability. Paint shall have a durability rating of at least 4 on both concrete and bituminous surfaces when tested in the wheel path area of the NTPEP test deck..

1048.100.3 Mixed Paint The provisions of [Sec 1048.90.3](#) shall apply.

1048.100.4 Acceptance.

1048.100.4.1 Except as noted, each batch or lot of paint shall be sampled and approved by the engineer prior to use.

1048.100.4.2 No paint shall be used that is more than 15 months old.

1048.100.4.3 In the addition to the requirements of [Sec 1048.1.1](#), the certification supplied by the manufacture shall include reference to specific NTPEP test deck to which the paint formulation was applied, including NTPEP identification numbers and report numbers.



**PAVEMENT MARKING MATERIALS
FIELD SECTION 1048 TABLE 4
QUALIFIED PREFORMED SHORT TERM PAVEMENT
MARKING TAPES**

<u>Brand Name</u>	<u>Manufacturer</u>
Aztec Engineer Grade (White & Yellow)	P B Laminations, Inc. 2940 Mary Avenue Brentwood, Missouri 63144
FOL 300	FOL Tape, LLC 2025 Hitzert Court Fenton Mo, 63026
RW-140 (White) (11-02)	Trelleborg Industri AB 184 Tambourine Ranch Rd. Gardnerville, NV 89410
RY-140 (Yellow) (11-02)	Trelleborg Industri AB 184 Tambourine Ranch Rd. Gardnerville, NV 89410
Scotch-Lane Series 750 (White) (7/03)	3M Company St. Paul, MN 55101
Scotch-Lane Series 751 (Yellow) (7/03)	3M Company St. Paul, MN 55101
Visa Line Engineering Grade (White and Yellow)	Swarco Industries, Inc. P. O. Box 89 Columbia, Tennessee 38402



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

STANDARD SOLICITATION PROVISIONS

- a. The Missouri Department of Transportation (MoDOT) reserves the right to reject any or all bids/quotes/proposals, and to accept or reject any items thereon, and to waive technicalities. In case of error in the extension of prices in the bid/quote/proposal, unit prices will govern.
- b. All bids/quotes/proposals must be signed with the firm name and by a responsible officer or employee. Obligations assumed by such signature must be fulfilled.
- c. By virtue of statutory authority, a preference will be given to materials, products, supplies, provisions and all other articles produced, manufactured, made or grown, within the State of Missouri.
- d. Time of delivery is a part of the consideration and, if not otherwise stated in the solicitation documents, must be stated in definite terms by the Bidder/Offeror and must be adhered to. If time varies on different items, the Bidder/Offeror shall so state.
- e. If providing bids/quotes/proposals for commodities, the Bidder/Offeror will state brand or make on each item. If bidding or proposing other than the make, model or brand specified, the manufacturer's name, model number or catalog number must be given.
- f. **For bids/proposals of \$25,000** or more, no bids/proposals by telephone, telegram or telefax will be accepted. If provided, these bids/proposals should be returned in the MoDOT solicitation return envelope.
- g. If a solicitation return envelope is provided by MoDOT, the bid/quote/proposal should be returned in the envelope provided with the Bid/RFQ/RFP Request Number plainly indicated thereon.
- h. The date specified for the returning of bids/quotes/proposals is a firm deadline and all bids/quotes/proposals must be received at the designated office by that time. The Department does not recognize the U.S. Mail, Railway Express Agency, Air Express, or any other organization, as its agent for purposes of accepting proposals. All proposals arriving at the designated office after the deadline specified will be rejected.

GENERAL TERMS AND CONDITIONS

General Performance

- a. This work is to be performed under the general supervision and direction of the Missouri Department of Transportation (MoDOT) and, if awarded any portion of the work, the Contractor agrees to furnish at his own expense all labor and equipment required to complete the work, it being expressly understood that this solicitation is for completed work based upon the price(s) specified and is not a solicitation for rental of equipment or employment of labor by MoDOT, and MoDOT is to have no direction or control over the employees used by the Contractor in performance of the work.

Deliveries

- a. Unless otherwise specified on the solicitation documents or purchase order, suppliers 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. Material arriving after 3:00 p.m. will not be unloaded until the following workday. No material will be received on Saturday, Sunday or state holidays.
- b. If the prices bid herein include the delivery cost of the material, the Contractor agrees to pay all transportation charges on the material 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 Contractor direct to the railroad or carrier.

Nondiscrimination

- a. The Contractor shall comply with the Regulations relative to nondiscrimination in federally-assisted programs of the Department of Transportation, Title 49, Code of Federal Regulations, Part 21, as they may be amended from time to time, (hereinafter referred to as the Regulations), which are herein incorporated by reference and made a part of this contract.
- b. All solicitations either by competitive bidding or negotiation made by the Contractor for work to be performed under a subcontract, including procurements of materials or leases of the Contractor's obligations under this contract and the Regulations, will be relative to nondiscrimination on the grounds of race, color, or national origin.
 - 1) **Sanctions for Noncompliance:** In the event of the Contractor's noncompliance with the nondiscrimination provisions of this contract, MoDOT 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/proposal, the Bidder/Offeror 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 proposal and/or submitted pricing, and (3) the MHTC's acceptance of the proposal and/or bid by purchase order or post-award contract.
- 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 purchase order and/or notice to proceed.
- d. The contract expresses the complete agreement of the parties and performance shall be governed solely by the specifications and requirements contained therein. Any change, whether by modification and/or supplementation, must be accomplished by a formal contract amendment signed and approved by and between the duly authorized representative of the Contractor and the duly authorized representative of the MHTC, by a modified purchase order prior to the effective date of such modification. The Contractor expressly and explicitly understands and agrees that no other method and/or no other document, including correspondence, acts, and oral communications by or from any person, shall be used or construed as an amendment or modification.

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Subcontracting

- a. It is specifically understood that no portion of the material or any interest in the contract, shall be subcontracted, transferred, assigned or otherwise disposed of, except with the written consent of MoDOT. Request for permission to subcontract or otherwise dispose of any part of the work shall be in writing to MoDOT and accompanied by documentation showing that the organization which will perform the work is particularly experienced and equipped for such work.
- b. Consent to subcontract or otherwise dispose of any portion of the work shall not be construed to relieve the Contractor of any responsibility for the production and delivery of the contracted work and the completion of the work within the specified time.
- c. All payments for work performed by a subcontractor shall be made to the Contractor to whom the contract was awarded and the purchase order issued.

Invoicing and Payment

- a. MoDOT 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 Federal Excise Tax Exemption Certificate will be furnished to the successful Bidder/Offeror upon request.
- b. Each invoice should be itemized in accordance with items listed on the purchase order and/or contract. 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.
- c. Unless otherwise provided for in the solicitation documents, payment for all equipment, supplies, and/or services required herein shall be made in arrears. The Missouri Highways and Transportation Commission (MHTC) shall not make any advance deposits.
- d. The MHTC assumes no obligation for equipment, supplies, and/or services shipped or provided in excess of the quantity ordered. Any authorized quantity is subject to the MHTC's rejection and shall be returned at the Contractor's expense.
- e. The MHTC reserves the right to purchase goods and services using the state-purchasing card.

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.
- b. The Contractor must be registered and maintain good standing with the Secretary of State of the State of Missouri 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 MoDOT a copy of their current Authority Certificate from the Secretary of State of the State of Missouri.
 - 1) 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 MoDOT a copy of their current Transient Employer Certificate from the Department of Revenue, in addition to a copy of their current Authority Certificate from the Secretary of State of the State of Missouri.
- c. The contractor shall only utilize personnel authorized to work in the United States in accordance with applicable federal and state laws and Executive Order 07-13 for work performed in the United States.
- d. 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.

Preferences

- a. In the evaluation of bids/quotes/proposals, preferences shall be applied in accordance with Chapter 34 RSMo. Contractors should apply the same preferences in selecting subcontractors.
- b. By virtue of statutory authority, RSMo. 34.076 and 34.350 to 34.359, a preference will be given to materials, products, supplies, provisions and all other articles produced, manufactured, made or grown within the State of Missouri. Such preference shall be given when quality is equal or better and delivered price is the same or less.
 - 1) If attached, the document entitled "**PREFERENCE IN PURCHASING PRODUCTS**" should be completed and returned with the solicitation documents.
 - 2) If attached, the document entitled "**MISSOURI DOMESTIC PRODUCTS PROCUREMENT ACT**" should be completed and returned with the solicitation documents. **Applies if bid is Twenty-Five Thousand Dollars (\$25,000.00) or more.**
- c. In the event of a tie of low bids, the MHTC reserves the right to establish the method to be used in determining the award

Remedies and Rights

- a. No provision in the contract shall be construed, expressly or implied, as a waiver by the MHTC of any existing or future right and/or remedy available by law in the event of any claim by the MHTC of the Contractor's default or breach of contract.
- b. The Contractor agrees and understands that the contract shall constitute an assignment by the Contractor to the MHTC of all rights, title and interest in and to all causes of action that the Contractor may have under the antitrust laws of the United States or State of Missouri for which causes of action have accrued or will accrue as the result of or in relation to the particular equipment, supplies, and/or services purchased or produced by the Contractor in the fulfillment of the contract with the MHTC.
- c. In the event a Contractor becomes involved in, or is threatened with, litigation with a subcontractor or supplier as a result of such direction, the Contractor may request MoDOT to enter into such litigation to protect the interests of the MHTC, and, in addition, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

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Cancellation of Contract

- a. The MHTC may cancel the contract at any time for a material breach of contractual obligations or for convenience by providing the 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.
- b. If the MHTC cancels the contract for breach, the MHTC reserves the right to obtain the equipment, supplies, and/or services to be provided pursuant to the contract from other sources and upon such terms and in such manner as the MHTC deems appropriate and charge the Contractor for any additional costs incurred thereby.

Bankruptcy or Insolvency

- a. Upon filing for any bankruptcy or insolvency proceeding by or against the Contractor, whether voluntary or involuntary, or upon the appointment of a receiver, trustee, or assigned the benefit or creditors, the Contractor must notify MoDOT immediately. Upon learning of any such actions, the MHTC reserves the right, at its sole discretion, to either cancel the contract or affirm the contract and hold the Contractor responsible for damages.

Inventions, Patents, and Copyrights

- a. The Contractor shall defend, protect, and hold harmless the MHTC, its officers, agents, and employees against all suits of law or in equity resulting from patent and copyright infringement concerning the Contractor's performance or products produced under the terms of the contract.

Inspection and Acceptance

- a. No equipment, supplies, and/or services received by MoDOT pursuant to a contract 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 Contractor upon inspection (or at any later time if the defects contained were not reasonably ascertainable upon the initial inspection) may be rejected.
- c. The MHTC reserves the right to return any such rejected shipment at the Contractor's expense for full credit or replacement and to specify a reasonable date by which replacements must be received.
- d. The MHTC's right to reject any unacceptable equipment, supplies, and/or services shall not exclude any other legal, equitable or contractual remedies the MHTC may have.

Warranty

- a. 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 MoDOT, (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.
- b. Such warranty shall survive delivery and shall not be deemed waived either by reason of the MHTC's acceptance of or payment for said equipment, supplies, and/or services.

Status of Independent Contractor

- a. 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.

Indemnification

- a. The Offeror shall defend, indemnify and hold harmless the Commission, 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 Offeror's performance of its obligations under this Agreement.