SECTION 905 -- PROPOSAL (CONTINUED)

I (We) further propose to execute the attached contract agreement (Section 902) as soon as the work is awarded to me (us), and to begin and complete the work within the time limit(s) provided for in the Specifications and Advertisement. I (We) also propose to execute the attached contract bond (Section 903) in an amount not less than one hundred (100) percent of the total of my (our) part, but also to guarantee the excellence of both workmanship and materials until the work is finally accepted.

I (We) enclose a certified check, cashier's check or bid bond for **five percent (5%) of total bid** and hereby agree that in case of my (our) failure to execute the contract and furnish bond within Ten (10) days after notice of award, the amount of this check (bid bond) will be forfeited to the State of Mississippi as liquidated damages arising out of my (our) failure to execute the contract as proposed. It is understood that in case I am (we are) not awarded the work, the check will be returned as provided in the Specifications.

Bidder acknowledges receipt of and has added to and made a part of the proposal and contract documents the following addendum (addenda):

ADDENDUM NO.	1	DATED	1/19/2011	ADDENDUM NO.		DATED	
ADDENDUM NO		DATED		ADDENDUM NO.		DATED	

Number	Description
1	Revise Table of Contents & Contract Time; Replace 907-626-15 with 907-626-16; Amendment EBS Download Required.

TOTAL ADDENDA: 1
(Must agree with total addenda issued prior to opening of bids)

Respectfully Submitted,

DATE _____

_____
Contractor

BY _____
Signature

TITLE _____

ADDRESS _____

CITY, STATE, ZIP _____

PHONE _____

FAX _____

E-MAIL _____

(To be filled in if a corporation)

Our corporation is chartered under the Laws of the State of _____ and the names, titles and business addresses of the executives are as follows:

President	Address
Secretary	Address
Treasurer	Address

The following is my (our) itemized proposal.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

TABLE OF CONTENTS

PROJECT: MP-2000-00(061) / 303884301 – District 2

(REVISIONS TO THE ABOVE WILL BE INDICATED ON THE SECOND SHEET OF SECTION 905 AS ADDENDA)

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 3335 **CODE: (SP)**

DATE: 1/12/2011

SUBJECT: Contract Time

PROJECT: MP-2000-00(061) / 303884301 – District 2

The calendar date for completion of work to be performed by the Contractor for this project shall be **September 30, 2011** which date or extended date as provided in Subsection 108.06 shall be the end of contract time. It is anticipated that the Notice of Award will be issued no later than **February 8, 2011** and the effective date of the Notice to Proceed / Beginning of Contract Time will be **July 7, 2011** .

An early Notice to Proceed will not be issued.

A progress schedule as referenced to in Subsection 108.03 will not be required for this contract.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-626-16 **CODE: (SP)**

DATE: 06/02/2008

SUBJECT: 40-mil Thermoplastic Markings

Section 626, Thermoplastic Traffic Markings, of the 2004 Edition of the Mississippi Standard Specifications for Road and Bridge Construction as amended by this special provision is applicable for 40-mil thermoplastic markings only:

907-626.01--Description. This work shall consist of furnishing materials and applying 40-mil thick hot thermoplastic pavement marking as shown on the plans or directed by the Engineer.

907-626.02--Materials.

907-626.02.1--Binder. The binder shall consist of a mixture of synthetic resins, at least one of which is solid at room temperature. The total binder content of the compound shall be well distributed throughout the compound. The binder shall be free from all foreign objects or ingredients that would cause bleeding, staining or discoloration. The binder shall be 26 percent minimum by weight of the compound. The binder shall be characterized by an IR Spectra.

907-626.02.2--Pigment. The pigment used for the white compound shall be a high-grade pure (minimum 93% titanium dioxide, TiO_2). The white pigment content shall not be less than 10 percent by weight and shall be uniformly distributed throughout the compound.

The pigments used for the yellow paint compound shall be heat resistant and shall produce a compound meeting the requirements of FED 595 Color No. 33538. The yellow marking material shall contain a minimum of 4 percent by weight of the yellow pigment. Yellow pigment shall be lead free.

907-626.02.3--Filler. The filler to be incorporated with the resins as a binder shall be a white calcium carbonate, silica, or an approved substitute. Any filler which is insoluble in 6N hydrochloric acid shall be of such particle size as to pass a No.100 sieve.

907-626.02.4--Glass Beads. Intermix glass beads shall be uniformly mixed throughout the material at the rate of not less than 27 percent by weight (retained on the No.100 sieve) of compound. Drop on beads shall be used with pavement marking material and shall be applied uniformly at a minimum rate of 12 pounds per 100 square feet.

907-626.02.4.1--Properties. The drop on glass beads furnished under this specification shall consist essentially of transparent, water-white glass particles of a spherical shape. They shall be manufactured from a glass of a composition designed to be highly resistant to traffic wear and to the effects of weathering. The glass beads shall conform to the following requirements:

(a) **Sieve Analysis**. The glass beads shall meet the following sieve requirements:

Sieve No.	% Retained	% Passing
12	0	100
14	0-5	95-100
16	5-20	75-95
18	40-80	10-47
20	10-40	0-7
25	0-5	0-2
Pan	0-2	--

(b) **Imperfections**. The surface of the glass beads shall be free of pits and scratches. The sizes beads shall have a roundness of 70% minimum average per ASTM Designation: D1155 with the exception of the +20 portion, which shall have a 65% minimum true spheres, tested visually.

(c) **Index of Refraction**. The index of refraction of the glass beads shall be not less than 1.50 when tested by the immersion method at 77°F.

(d) **Silica Content**. The glass beads shall contain not less than 65 percent silica (SiO2).

(e) **Chemical Stability**. Glass beads which show tendency toward decomposition, including surface etching, when exposed to material or material constituents will be rejected. The glass beads shall be tested by Federal Specification T-T-B-1325A, Section 4.3.11, water resistant soxhlet extraction method, with the following exceptions:

Under "Procedure", the size of sample to be tested shall be 25 grams.

Under testing, Paragraph (1), the reflux-time shall be five hours and upon examination after testing the glass beads shall show no dulling effect.

Under Paragraph (2), if more than 4.5 mls of 0.1 N hydrochloric acid are used to reach the end point, it shall constitute failure of the test.

(f) **Flowing Properties**. The glass beads shall flow uniformly through dispensing equipment in atmospheric humidity up to 94%. The drop-on beads shall pass the following test:

One hundred grams of glass beads, spread evenly and thinly in a suitable container, shall be conditioned at 77°F for 4 hours over a solution of sulfuric acid with Sp. Gr. 1.10, in a closed desiccator. After four hours, the glass beads shall flow readily through a clean glass analytical funnel, 60°, 5-mm. diameter and 105-mm. stem. Inside diameter of the stem shall be a nominal 1/4 inch.

(g) **Coating**: The glass beads used for intermix shall be uncoated. The glass beads used for the

drop on application shall be coated with an adhesion promoting coating. Silicone coated drop on beads shall not be allowed.

(h) **Packaging**. The drop on glass beads shall be delivered in moisture proof bags consisting of at least five-ply paper construction unless otherwise approved. Each bag shall contain 50 or 55 pounds net, and shall be legibly marked with the manufacturer, specifications and type, lot number, and the month and year the glass beads were packaged.

907-626.02.5--Thermoplastic Material. In the plastic state, the material shall not give off fumes that are toxic or otherwise injurious to persons or property. The manufacturer shall provide material safety sheets for the product.

The temperature versus viscosity characteristic of the plastic material shall remain constant and the material shall not deteriorate in any manner during reheating processes.

There shall be no obvious change in color of the material as a result of repeated heatings or from batch to batch. The maximum elapsed time after application after which normal traffic will leave no impression or imprint on the new stripe shall be 30 seconds when the air and road surface temperature is approximately 68° ±6°F. After appreciable deformation or discoloration, shall remain free from tack, and shall not lift from the pavement under normal traffic conditions within a road temperature range of -20° to 150°F. The stripe shall maintain its original dimensions and placement. Cold ductility of the material shall be such as to permit normal dimensional distortion as a result of traffic impact within the temperature range specified.

The material shall provide a stripe that has a uniform thickness throughout its cross section and has the density and character to provide a sharp edge of the line.

The compound after heating for four hours ±5 minutes at 375° ±3°F and cooled at 77°F shall meet the following requirements for daylight reflectance and color, when tested, using a color spectrophotomer with 45° circumferential/0° geometry, illuminant C, and 2° observer angle. The color instrument shall measure the visible spectrum from 380 to 720 nm with a wavelength measurement interval and spectral band pass of 10 nm.

White: Daylight Reflectance (Y) 75 percent minimum
*Yellow: Daylight Reflectance (Y) 42-59 percent

* Shall match Federal 595 Color No. 33538 .and chromaticity limits as follows:

x	.470	.510	.485	.530
y	.455	.485	.425	.456

907-626.02.5.1--Specific Gravity. The specific gravity of the material shall not exceed 1.87.

907-626.02.5.2--Softening Point. After heating the material for four hours ±5 minutes at 375° ±3°F and testing in accordance with ASTM E28, the material shall have a minimum softening point of 180°F as measured by the ring and ball method.

907-626.02.5.3--Tensile Bond Strength. After heating the material for four hours ±5 minutes at 375°F, the tensile bond strength to unprimed, sandblasted, portland cement concrete block, 0.0625-inch thick film drawdown at 375°F, tested at 75° ±2°F shall exceed 180 psi when tested in accordance with ASTM D4796.

907-626.02.5.4--Impact Resistance. After heating the material for four hours ±5 minutes at 375° ±3°F, the impact resistance shall be a minimum of 50 inch-pounds with no cracks or bond loss when 0.0625-inch thick film drawdown is made at 375°F on an unprimed, sandblasted, portland cement concrete block, male indenter 5/8-inch, no female Die tested at 75° ±2°F when tested in accordance with ASTM D2794 minimum.

907-626.02.5.5--Packaging and Storage. Each package of material shall be stenciled with the manufacturer's name, the type of material and specification number. the month and year the material was packaged and lot number. Lot numbers must begin with the last two digits of the year manufactured and be sequential. The letters and numbers used in the stencils shall be a minimum of 1/2 inch in height.

The material shall be packaged in suitable containers which will not adhere to the product during shipment and storage. The container of material shall weigh approximately 50 lbs. Each container shall designate the color, binder (alkyd or hydrocarbon), spray and user information. The label shall warn the user that the that material shall be heated in the range of 350° to 425°F.

The material shall meet the requirements of this specification for a period of one year. The material must also melt uniformly with no evidence of skins or unmelted particles for this one year period. Any material not meeting the above requirements shall be replaced by the manufacturer.

907-626.03--Construction Requirements.

907-626.03.1--Installation Requirements. Before applying the thermoplastic material, the Contractor shall remove any dirt, glaze, grease, or any other material that would reduce the adhesion of the material to the pavement.

The thermoplastic material shall be readily renewable by placing an overlay of new material directly over old markings of the same material. Such new material shall bond itself to the old markings in such a manner that no splitting or separation takes place. The Contractor shall remove all existing material that might cause premature failure of the new material.

The thermoplastic material shall be installed in a molten state at a minimum temperature of 350°F and a maximum temperature of 425°F. Scorching or discoloration of material shall be cause for rejection by the Engineer. The machinery shall be constructed so that all mixing and conveying parts, up to and including the application gun, maintain the material in the molten state.

Pavement marking materials shall not be applied when air or pavement surface temperatures are

below 40°F, or when the surface of the pavement contains any evidence of moisture.

The material shall be applied at a thickness of not less than 0.040" and in no case shall it exceed a thickness of 0.050".

The Contractor shall place the pavement markings with adequate drop-on glass beads in accordance with the above requirements, uniformly applied to assure adequate nighttime reflectivity. It shall be the Contractor's responsibility to use a compatible combination of material and beads to preclude the surface beads from sinking deeply into the paint.

907-626.03.2--Equipment Requirements. The equipment used to install hot applied thermoplastic material shall provide continuous uniform heating to temperatures exceeding 400°F, mixing and agitation of the material. Conveying parts of the equipment between the main material reservoir and the line dispensing device shall prevent accumulation and clogging. All parts of the equipment which come in contact with the material shall be constructed for easy accessibility and exposure for cleaning and maintenance. The equipment shall operate so that all mixing and conveying parts including the line dispensing device, maintains the material at the plastic temperature.

Glass beads applied to the surface of the completed marking shall be applied by an automatic bead dispenser attached to the marking machine so that the beads are dispensed closely behind the installed marking. The glass bead dispenser shall be equipped with an automatic cut-off control synchronized with the cut-off of the material.

907-626.03.3--Acceptance. The manufacturer of the thermoplastic material shall furnish the Engineer three (3) copies of certified test report(s) showing results of all required test and certification that the material meets the specifications.

The manufacturer of the glass beads shall furnish the MDOT Central Laboratory three (3) copies of certified test report(s) showing results of all required test and certification that the material meets the specifications. Acceptance sampling and testing of glass beads will be in accordance with S.O.P. No. TMD-40-20-00-000.

907-626.04--Method of Measurement. Thermoplastic stripe completed in accordance with the plans and specifications will be measured by the mile or by the linear foot, as indicated, from end-to-end of individual stripes. In the case of skip lines the measurement will include skips. The length used to measure centerline, lane lines and edge stripes will be the horizontal length computed along the stationed control line.

Detail traffic stripe will be measured by the linear foot from end-to-end of individual stripes. Measurements will be made along the surface of each stripe and will exclude skip intervals where skips are specified. Stripes more than the indicated width will be converted to equivalent lengths of stripe of the indicated width.

Legend, which is to include railroad markings, pedestrian crosswalks and stop lines, will be measured by the square foot or linear foot. Pay areas of individual letters and symbols will

usually be shown on the plans and measured by the square foot. Transverse railroad bands, pedestrian crosswalks and stop lines will generally be measured by the linear foot, in which case, stripes more than the indicated width will be converted to equivalent lengths of stripe of the indicated width.

907-626.05--Basis of Payment. Thermoplastic traffic markings will be paid for at the contract unit price per mile, linear foot, or square foot, as applicable, which shall be full compensation for completing the work.

Payment will be made under:

907-626-U:	Width" Thermoplastic Traffic Stripe, Skip White, 40-mil. min.	- per linear foot or mile
907-626-V:	Width" Thermoplastic Traffic Stripe, Continuous White, 40-mil. min.	- per linear foot or mile
907-626-W:	Width" Thermoplastic Traffic Stripe, Skip Yellow, 40-mil. min.	- per linear foot or mile
907-626-X:	Width" Thermoplastic Traffic Stripe, Continuous Yellow, 40-mil. min.	- per linear foot or mile
907-626-Y:	Thermoplastic Detail Traffic Stripe, Color, Width" Equivalent Length, 40-mil. min.	- per linear foot
907-626-Z:	Thermoplastic Legend, Color , Width" Equivalent Length, 40-mil. min.	- per linear foot or square foot