SECTION 620

PAVEMENT MARKING

620.1 Description. This work shall consist of furnishing, installing, maintaining and removing temporary and permanent pavement marking as shown on the plans, as specified herein or as directed by the engineer.

620.2 Construction Requirements.

620.2.1 General.

620.2.1.1 All pavement marking shall be in accordance with the latest edition of the MUTCD and the FHWA *Standard Highway Signs* at the time of the bid opening.

620.2.1.2 All pavement marking shall be uniform in appearance with crisp, well-defined edges and shall be uniform in width and thickness. Surface distribution of the beads shall be uniform.

620.2.1.3 Longitudinal pavement marking shall not be placed on longitudinal joints.

620.2.1.4 The contractor will be responsible for the protection of all liquid pavement marking until the pavement marking has reached a no-track state as determined by the engineer.

620.2.1.5 Damage to pavement marking as a result of the contractor's operations, including resurfacing of shoulders, shall be repaired or replaced at the contractor's expense.

620.2.1.6 All pavement marking shall be installed in accordance with this specification and all manufacturer's recommendations. Manufacturer's written application or installation instructions shall be provided by the contractor to the engineer.

620.2.1.7 The engineer will check application rates occasionally during the course of the work.

620.2.1.8 When surface preparation is required, the area prepared shall be 1 inch wider than the final pavement marking and shall meet the requirements of Sec 620.2.4.2. The method of surface preparation shall not cause structural damage to the pavement and shall meet the approval of the engineer.

620.2.2 Permanent Pavement Marking.

620.2.2.1 On roadways open to traffic, permanent pavement marking shall be in place no later than five days after final paving operations, except when the permanent striping will be placed within the rumble strip, then the permanent striping shall be placed no later than five days after the completion of the rumble strip. Permanent pavement marking applications for surface treatments requiring more than five days of cure shall be placed in accordance with manufacturer's recommendations and as directed by the engineer.

620.2.2.2 When installing permanent pavement marking, the contractor shall begin intermittent pavement marking, starting with the gap, immediately after the last existing

intermittent pavement marking to maintain the specified cycle length along the entire length of the intermittent pavement marking line.

620.2.2.3 If the permanent pavement marking cannot be placed according to these specifications and the road is to be opened to traffic with no permanent pavement marking in place, the contractor shall, at the direction of the engineer, place and maintain temporary pavement marking at the contractor's expense. The contractor shall remove temporary pavement marking and place the permanent pavement marking according to these specifications and as directed by the engineer.

620.2.3 Inspection.

620.2.3.1 Permanent pavement marking will be inspected following installation. The engineer will measure the initial retroreflectivity with a retroreflectometer. Measurements will be taken no sooner than seven days after application. . Contractor may clean any pavement markings at the contractor's expense prior to measurements being taken. Uncleaned pavement markings shall not be grounds for dispute of retroreflectivity readings.

620.2.3.2 If the performance inspection discloses any permanent pavement marking that does not meet the acceptance requirements, the contractor shall repair or replace such work to the satisfaction of the engineer within 30 days of notification, at the contractor's expense.

620.2.3.3 Upon completion of the initial performance inspection and after satisfactory completion of any necessary corrections, the engineer will notify the contractor, in writing, of the date of acceptance and release the contractor from further performance responsibility.

620.2.4 Acceptance.

620.2.4.1 Retroreflectivity inspection will be performed by the engineer using a 30-meter geometry retroreflectometer at 0.1 mile (0.16 km) intervals for a mobile retroreflectometer. If a hand held retroreflectometer is used, the intervals and acceptance shall be in accordance with MoDOT Test Method TM 80. Retroreflectivity acceptance requirements will be as follows:

Retroreflectivity Acceptance Requirements		
Type of Material	**Color**	**Millicandelas/m^2/lux Minimum Initial**
Epoxy	White	300
	Yellow	225
Preformed Marking Tape	White	Per Manufacturer's Specifications
	Yellow	Per Manufacturer's Specifications
Paint	White	300
	Yellow	225
Polyurea	White	300
	Yellow	225

620.2.4.2 Visual inspection requirements shall be as follows:

(a) Lateral deviation shall not exceed one inch in 100 feet (25 mm in 30 m).

(b) Width of markings shall not deviate more than shown in the following table:

Marking Width Tolerance	
Marking Width	**Requirement**
4 inch (100 mm)	+ 1/4 inch (6 mm)
6 and 8 inches (150 mm to 200 mm)	± 1/4 inch (6 mm)
10 inches (250 mm) and above	± 1/2 inch (12 mm)

(c) Length of markings shall not deviate more than 3 inches (75 mm) in 10 feet (3 m).

620.2.4.3 Deductions for pavement marking, based upon average readings obtained using hand-held retroreflectometers or 0.1 mile (0.16 km) interval readings using a 30-meter geometry retroreflectometer, shall be as shown below. These deductions will not be applied if 98 percent of the readings meet the retroreflectivity acceptance requirements of Sec 620.2.4 and no readings are at or below the removal criteria as shown below.

White [a]	Yellow [a]	Percent of Contract Price
>=300	>=225	100
290-299	215-224	80 [b]
280-289	205-214	60 [b]
270-279	195-204	50 [b]
<270	<195	Remove
[a] Millicandelas/m^2/lux		
[b] Contractor has the option to accept this reduction in pay for this work or to remove and replace at the contractor's expense.		

620.2.5 Temporary Pavement Marking for Milling, Grinding and Resurfacing Operations. The contractor shall place and maintain preformed short term marking tape or temporary raised pavement markers on pavement undergoing milling, grinding or resurfacing operations. At the completion of each day's operation, the contractor shall install and maintain temporary pavement marking until permanent pavement marking material has been placed as specified in the contract, at the contractor's expense. At no time shall more than one mile (1.6 km) of roadway behind the operation be unmarked. The contractor shall ensure all pavement marking, temporary or permanent, has been placed prior to leaving the work zone unattended. Pavement marking shall be replaced in the same configuration as the previously existing pavement marking unless otherwise shown on the plans or directed by the engineer.

620.2.5.1 On two-lane, two-way roadways with "no passing zone" marking, all yellow centerline marking shall be replaced with temporary raised pavement markers with yellow on both sides. White lane line marking on climbing or turn lanes shall be replaced with white/red raised pavement markers with white facing traffic. Temporary raised pavement markers shall be in accordance with Sec 620.60.

620.2.5.2 On resurfacing projects, when the adjacent layer of resurfacing has not been placed and the existing centerline or lane line marking has been obliterated, the temporary marking shall be placed on the higher layer at the centerline of the roadway or lane. Any temporary pavement marking damaged, displaced or missing before the final pavement marking is installed shall be replaced at the contractor's expense within two hours' upon notification from the engineer.

620.2.5.3 If temporary pavement marking is to be in place more than fifteen days, the engineer may require that temporary paint be placed and maintained at the contractor's expense. Temporary paint shall have a minimum initial retroreflectivity of 150 mcd/m2/lux. Temporary paint shall be maintained at a minimum retroreflectivity of 100 mcd/m2/lux with a

least 95 percent of the stripe present. When temporary paint is used on the final pavement surface and permanent pavement marking will be done by others, any paint outside of the final pavement marking footprint shall be removed by and at the contractor's expense.

620.2.6 Temporary Pavement Marking for Traffic Pattern Changes. The contractor shall place pavement marking paint, preformed removable pavement marking tape or preformed short-term pavement marking tape for bypasses, lane shifts, narrow lanes and other traffic pattern changes as shown on the plans and all other conditions not described in Sec 620.2.5. The contractor shall install and maintain temporary pavement marking until the permanent marking material has been placed as specified in the contract.

620.2.6.1 For temporary marking durations of less than two weeks, and when removal of the temporary marking is not required, preformed short term pavement marking tape may be used as specified in Sec 620.30.

620.2.6.2 For temporary marking requiring removal of the marking, preformed removable pavement marking tape shall be used as specified in Sec 620.30, unless otherwise shown on the plans. Other pavement marking may be used in lieu of preformed removable pavement marking tape with approval from the engineer.

SECTION 620.10 PREFORMED PAVEMENT MARKING TAPE

620.10.1 Description. This work shall consist of furnishing and placing preformed pavement marking tape, as specified, at locations shown on the plans or as directed by the engineer.

620.10.2 Material. All material shall be in accordance with Division 1000, Material Details, and specifically as follows:

Item	Section
Preformed Pavement Marking Tape	1048.10

620.10.3 Construction Requirements.

620.10.3.1 Preformed pavement marking tape shall be installed according to the manufacturer's recommendations. A copy of the manufacturer's installation specifications shall be provided to the engineer.

620.10.3.1.1 Type 1 preformed pavement marking tape shall be installed in accordance with the manufacturer's recommendations.

620.10.3.1.2 Type 2 preformed pavement marking tape shall be installed in a groove in accordance with the manufacturer's recommendations.

620.10.3.1.3 Arrows, words and symbols shall be white and may be formed from one piece or multiple pieces of Type 2 preformed pavement marking tape material specifically designed for intersection marking.

620.10.4 Acceptance. Acceptance for pavement markings, except for intersection markings, shall be in accordance with Sec 620.2.4. Acceptance for intersection markings will be based on visual inspection.

620.10.5 Method of Measurement.

620.10.5.1 Final measurement will not be made except for authorized changes during construction or where appreciable errors are found in the contract quantity. The revision or correction will be computed and added to or deducted from the contract quantity.

620.10.5.2 Where required, measurement of 4-inch (100 mm), 6-inch (150 mm), 8-inch (200 mm), 12 inch (300 mm) and 24-inch (600 mm) pavement marking will be made to the nearest linear foot (0.5 m). Where intermittent lines are specified, deductions will be made for the gaps in pavement marking.

620.10.5.3 Where required, measurement of arrows, words and symbols will be made per each.

620.10.6 Basis of Payment. The accepted quantity of preformed pavement marking tape will be paid for at the contract unit price for each of the pay items included in the contract.

SECTION 620.20 PREFORMED REMOVABLE PAVEMENT MARKING TAPE

620.20.1 Description. This work shall consist of furnishing and placing preformed removable marking tape at locations shown on the plans or as directed by the engineer.

620.20.2 Material. All material shall be in accordance with Division 1000, Material Details, and specifically as follows:

Item	Section
Preformed Removable Pavement Marking Tape	1048.20

620.20.3 Construction Requirements. All preformed removable pavement marking tape within the project limits shall be maintained by the contractor at the contractor's expense in a manner approved by the engineer. All preformed removable marking tape shall be installed according to the manufacturer's recommendations.

620.20.4 Method of Measurement. Measurement of 4-inch (100 mm), 6-inch (150 mm), 8-inch (200 mm), 12 inch (300 mm) and 24-inch (600 mm) preformed removable pavement marking tape will be made in accordance with Sec 620.10.5.

620.20.5 Basis of Payment.

620.20.5.1 The accepted quantity of preformed removable pavement marking tape will be paid for at the contract unit price for each of the pay items included in the contract, except when used for temporary pavement marking, payment will be made in accordance with Sec 620.20.5.2.

620.20.5.2 The accepted quantity of temporary pavement marking will be paid for at the contract unit price for each of the pay items included in the contract. Payment will be made for the initial installation only. Repair or replacement of the temporary pavement markings will be at the contractor's expense.

SECTION 620.30 PREFORMED SHORT TERM PAVEMENT MARKING TAPE

620.30.1 Description. This work shall consist of furnishing and placing preformed short-term pavement marking tape at locations shown on the plans or as directed by the engineer.

With approval from the engineer, pavement marking paint may be used in lieu of preformed short term pavement marking tape at the contractor's expense.

620.30.2 Material. All material shall be in accordance with Division 1000, Material Details, and specifically as follows:

Item	Section
Preformed Short Term Pavement Marking Tape	1048.30

620.30.3 Construction Requirements. Preformed short term marking tape shall be installed according to the manufacturer's recommendations.

620.30.4 Method of Measurement. Measurement of preformed short term pavement marking tape will be made in accordance with Sec 620.10.5.

620.30.5 Basis of Payment. The accepted quantity of preformed short-term pavement marking tape will be paid for at the contract unit price for each of the pay items included in the contract, except as follows. When preformed short term marking tape is used in accordance with Sec 620.2.5, then no direct payment will be made. When preformed short term marking tape is used in accordance with Sec 620.2.6, payment will be made in accordance with Sec 620.20.5.2.

SECTION 620.40 PAINT FOR PAVEMENT MARKING

620.40.1 Description. This work shall consist of furnishing and placing pavement marking paint and drop-on glass beads at locations shown on the plans or as directed by the engineer. When paint is specified, the contractor may use either waterborne or acrylic copolymer pavement marking paint at the contract unit price in accordance with this specification and with approval from the engineer.

620.40.2 Material. Traffic paint shall be used as specified on the plans or as approved by the engineer. Material for application of traffic marking paint shall be in accordance with Division 1000, Material Details, and specifically as follows:

Item	Section
Drop-On Glass Beads	1048.40.5
Acrylic Copolymer Fast Dry Pavement Marking Paint	1048.80
High Build Acrylic Waterborne Pavement Marking Paint	1048.90
Acrylic Waterborne Pavement Marking Paint	1048.100

620.40.3 Construction Requirements.

620.40.3.1 Equipment. All equipment for application of pavement marking paint shall be of such design and maintained in such a condition to properly and evenly apply marking paint and drop-on glass beads.

620.40.3.2 Surface Preparation. The surface on which paint is to be placed shall be clean and dry. Paint shall not be applied in damp conditions or if there is any evidence of surface moisture on the pavement. On new Portland cement concrete surfaces, the curing compound shall be removed in accordance with Sec 620.70.3.3.

620.40.3.3 Weather Limitations. The pavement surface temperature and air temperature shall be determined before the start of each day of marking operation and at any other time deemed necessary by the engineer. Temperatures shall be obtained in accordance with MoDOT Test Method TM 20.

620.40.3.3.1 For waterborne applications, the pavement surface temperature and ambient air temperatures shall be above 50 F (10 C). Waterborne paint shall not be applied if the forecast conditions for the eight hours immediately following final application include precipitation or temperatures below 50 F (10 C).

620.40.3.3.2 For acrylic copolymer applications, the pavement surface temperature and ambient air temperature shall be above 35 F (2 C).

620.40.3.4 Paint Application.

620.40.3.4.1 Paint shall be machine applied using spray guns designed and adjusted to apply paint at the required thickness and width. If there is any evidence of gun clogging, splattering or uneven paint distribution, painting operations shall cease until equipment is restored to proper operation.

620.40.3.4.2 Painting of stop lines, arrows, words and symbols may be applied by hand using paint spray equipment. Equipment shall be capable of applying paint evenly to the required thickness. Dimensions shown on the plans shall be used for arrows, words and symbols.

620.40.3.4.3 High build paint shall be applied to a minimum wet thickness of 20 mils (0.500 mm). The wet film thickness of the applied paint shall be tested with a paint thickness gauge as directed by the engineer.

620.40.3.4.4 Acrylic waterborne paint and acrylic copolymer paint shall be applied to a minimum wet thickness of 15 mils (0.380 mm). The wet film thickness of the applied paint shall be tested with a paint thickness gauge as directed by the engineer.

620.40.3.4.5 Paint may be heated to a maximum temperature of 150 F (66 C) for waterborne and 125 F (52 C) for acrylic copolymer before application.

620.40.3.4.6 Finished markings shall have well-defined edges, and lateral deviation shall not exceed one inch in 100 feet (25 mm in 30 m).

620.40.3.5 Drop-On Glass Bead Application. Drop-on glass beads shall be mechanically applied to the wet paint directly behind the paint spray guns. Glass beads shall be applied at a rate required to meet the provisions of Sec. 620.2.4.1. For stop lines, arrows, words and symbols, glass beads may be applied by hand. Glass beads shall be applied evenly and shall completely cover the painted area. If beads do not embed properly in the paint, all marking operations shall cease until corrections are made.

620.40.3.6 Quality of Work. The applied marking paint shall be inspected continually for overall quality. The glass beads shall appear uniform on the entire marking surface. The cured paint shall properly adhere to the pavement surface. If the marking paint does not provide initial nighttime retroreflectivity or if the marking does not have the required minimum thickness or required color, the contractor shall re-apply the marking paint to the required thickness, at the contractor's expense, and shall meet all requirements as described above.

620.40.4 Method of Measurement. Measurement of 4-inch (100 mm), 6-inch (150 mm), 8-inch (200 mm), 12-inch (300 mm) and 24-inch (600 mm) pavement marking paint will be made in accordance with Sec 620.10.5.

620.40.5 Basis of Payment. The accepted quantity of pavement marking paint will be paid for at the contract unit price for each of the pay items included in the contract, except when

used for temporary pavement marking, payment will be made in accordance with Sec 620.20.5.2.

SECTION 620.50 PAVEMENT MARKING REMOVAL

620.50.1 Description. This work shall consist of all necessary operations for removal of existing pavement marking when no longer required.

620.50.2 Construction Requirements. Removal of all pavement marking within the project limits shall be as shown on the plans or as directed by the engineer. Pavement marking shall be completely removed to the satisfaction of the engineer with minimal damage to the pavement. No more than five percent of the existing marking shall remain. The pavement surface shall not be left scarred with an image that might mislead traffic. Any excess damage or scarring of the pavement shall be repaired at the contractor's expense. It shall be the contractor's responsibility to determine what type of material needs to be removed.

620.50.3 Method of Measurement.

620.50.3.1 Final measurement will not be made, except for authorized changes, during construction or where significant errors are found in the contract quantity. The revision or correction will be computed and added to or deducted from the contract quantity.

620.50.3.2 Where required, measurement for the removal of pavement markings will be made to the nearest linear foot (0.5 m). Where intermittent lines are specified or existing, deductions will be made for gaps in the removal. Measurement will not be made for removal of pavement marking within the limits of a bypass roadway or other roadway to be obliterated at the completion of the project.

620.50.4 Basis of Payment. The accepted quantity of pavement marking removal will be paid for at the contract unit price for each of the pay items included in the contract.

SECTION 620.60 TEMPORARY RAISED PAVEMENT MARKERS

620.60.1 Description. This work shall consist of installing, maintaining and removing reflectorized temporary raised pavement markers (RPM's) on roadway lane lines, centerlines or edge lines as shown on the plans or as directed by the engineer.

620.60.2 Material. All material shall be in accordance with Division 1000, Material Details, and specifically as follows:

Item	Section
Temporary Raised Pavement Markers	1048.50

620.60.3 Construction Requirements.

620.60.3.1 Temporary RPM's shall be of the colors shown on the plans unless otherwise directed by the engineer. Reflective faces shall be oriented to face traffic. Temporary RPM's shall be installed according to the manufacturer's recommendations and placed at approximately 40-foot (12 m) intervals.

620.60.3.1.1 Type 1 Temporary RPM's, with covers, shall be used for surface treatment projects as defined in Sec 413 when temporary RPM's are specified. When used for other than surface treatment projects no covers are required.

620.60.3.1.2 Type 2 Temporary RPM's shall be used as shown on the plans.

620.60.3.2 On resurfacing projects, temporary RPM's shall be removed on intermediate lifts of asphalt before additional lifts are laid above them. Temporary RPM's on final wearing surfaces shall be removed if specified on the plans or as directed by the engineer.

620.60.4 Method of Measurement. Final measurement will not be made, except for authorized changes, during construction or where appreciable errors are found in the contract quantity. Where required, measurement of temporary raised pavement markers will be made per each. The revision or correction will be computed and added to or deducted from the contract quantity.

620.60.5 Basis of Payment. The accepted quantity of temporary RPM's will be paid for at the contract unit price for each of the pay items included in the contract, except when temporary RPM's are used in accordance with Sec 620.2.5, then no direct payment will be made. No direct payment will be made for the removal of temporary RPM's.

SECTION 620.70 EPOXY PAVEMENT MARKING MATERIAL.

620.70.1 Description. This work shall consist of furnishing and placing epoxy pavement marking material and drop-on glass beads at locations shown on the plans or as directed by the engineer.

620.70.2 Material. All material shall be in accordance with Division 1000, Material Details, and specifically as follows:

Item	Section
Epoxy Pavement Marking Material	1048.60
Drop-On Glass Beads	1048.40.5

620.70.3 Construction Requirements.

620.70.3.1 Equipment. The application equipment shall have a system capable of spraying epoxy pavement marking material in the proportions recommended by the manufacturer. The application equipment shall include the following features.

620.70.3.1.1 Individual material reservoirs or space for storage of Part A and Part B of the epoxy material, equipped with the necessary stirring or blending equipment to ensure delivery of uniformly mixed components to the mixing unit.

620.70.3.1.2 Heating equipment of sufficient capacity to maintain the individual components at the manufacturer's recommended temperature and the capability to producing the required amount of heat at the mixing head and gun tip to maintain those temperatures within the tolerances recommended by the manufacturer for spray application.

620.70.3.1.3 Drop-on glass beads shall be mechanically applied to the wet epoxy paint directly behind the spray guns at a rate required to meet the provisions of Sec. 620.2.4.1. For stop lines, arrows, words and symbols, glass beads may be applied by hand. Glass beads shall be applied evenly and shall completely cover the painted area. If beads do not embed properly in the paint, all marking operations shall cease until corrections are made.

620.70.3.1.4 Each proportioning unit shall have individual metering devices or pressure gauges and stroke counters to monitor gallon (L) usage. All such devices shall be visible to the engineer.

620.70.3.1.5 The equipment shall be capable of thoroughly mixing the components to the manufacturer's recommendations prior to application.

620.70.3.2 Transfer of Material. The contractor shall provide all necessary equipment to adequately mix each shipping container. At any time that partial shipping containers are transferred to the reservoirs on the striping equipment, complete mixing of that container shall be performed prior to beginning transfer operations.

620.70.3.3 Surface Preparation. The pavement surface on which the pavement marking is to be placed shall be free of all debris, paint, laitance and any other contaminants that may hinder the adhesion of the system to the surface. Whenever grinding, scarifying, sandblasting, shot blasting or other operations are performed, the debris generated shall be contained through vacuum type equipment or equivalent. The pavement surface shall not be left scarred with an image that might mislead traffic. Any excess damage or scarring of the pavement shall be repaired by the contractor, at the contractor's expense.

620.70.3.3.1 Removal and cleaning work shall be conducted in such a manner as to control and minimize airborne dust and similar debris that may become a hazard to motor vehicle operation or a nuisance to property owners.

620.70.3.3.2 Care shall be taken on bituminous and Portland cement concrete surfaces when performing removal and cleaning work to prevent damage to transverse and longitudinal joints.

620.70.3.3.3 After all cleaning operations are completed, the pavement surface shall be power broomed and then blown with compressed air to remove residue and debris resulting from the cleaning work. All such debris shall be properly contained and disposed of as approved by the engineer.

620.70.3.3.4 Cleaning and surface preparation work shall be confined to the area specified for the application of the pavement marking material, to the surface area of existing pavement markings that are specified for removal on the plans, or to the area specified by the engineer.

620.70.3.3.5 Surface preparation work shall include cleaning for lines, letters and symbols.

620.70.3.3.6 The area of preparation shall be the width of the new pavement marking or existing line, plus one inch (25 mm) on each side of the line. For letters and symbols, the area of preparation shall be sufficiently large to accommodate the new marking or to remove existing markings.

620.70.3.3.7 On new Portland cement concrete pavement, cleaning operations shall not begin until the concrete has attained the minimum design compressive strength, as determined by MoDOT Test Methods. The extent of the curing compound removal work shall be to clean and prepare the concrete surface such that there is no visible evidence of curing compound and the extent of the removal shall ensure that any laitance is removed from both old and new concrete.

620.70.3.3.8 On new asphaltic concrete pavement, cleaning operations shall not begin until after the new mat has reached ambient temperature. The extent of cleaning on new asphaltic concrete shall be such that 75 percent of the stone substrate is exposed.

620.70.3.3.9 All existing pavement marking shall be removed to the extent that 95 to 100 percent of the existing marking is removed. Existing epoxy pavement markings that are in good condition and that will not interfere with or otherwise conflict with newly applied markings, as determined by the engineer, may remain. Removal operations shall be conducted

in such a manner that no more than moderate color or surface texture change results on the surrounding pavement surface. The engineer will make the determination of acceptable removal.

620.70.3.4 Application. The pavement marking material shall be applied to the road surface at 25 mils (0.64 mm) on concrete or asphalt pavement through the use of equipment designed to precisely meter the two components in the ratio recommended by the material manufacturer.

620.70.3.4.1 The pavement marking shall only be applied during dry weather and on dry pavement surfaces. At the time of installation, the pavement surface temperature and ambient temperature shall be above 45 F (7 C).

620.70.3.4.2 Both components shall be brought to the temperature recommended by the manufacturer, prior to mixing and application and shall remain at that temperature throughout the operation.

620.70.3.5 Method of Measurement. Measurement of epoxy pavement marking will be made in accordance with Sec 620.10.5.

620.70.3.6 Basis of Payment. The accepted quantity of epoxy pavement marking will be paid for at the contract unit price for each of the pay items included in the contract.

SECTION 620.80 POLYUREA PAVEMENT MARKING MATERIAL.

620.80.1 Description. This work shall consist of furnishing and placing polyurea pavement marking material and drop-on glass beads on Portland cement concrete pavement at locations shown on the plans or as directed by the engineer.

620.80.2 Material. All material shall be in accordance with Division 1000, Material Details, and specifically as follows:

Item	Section
Polyurea Pavement Marking Material	1048.70
Drop-On Glass Beads	1048.40.5

620.80.3 Construction Requirements.

620.80.3.1 Equipment. Equipment shall be in accordance with Sec 620.70.3.1.

620.80.3.2 Transfer of Material. Transfer of material shall be in accordance with Sec 620.70.3.2.

620.80.3.3 Surface Preparation. Surface preparation shall be in accordance with Sec 620.70.3.3 except as follows. All existing pavement marking shall be removed to the extent that 95 to 100 percent of the existing marking is removed. Existing polyurea pavement markings that are in good condition and that will not interfere with or otherwise conflict with newly applied markings, as determined by the engineer, may remain. Removal operations shall be conducted in such a manner that no more than moderate color or surface texture change results on the surrounding pavement surface. The engineer will make the determination of acceptable removal.

620.80.3.4 Application. The pavement marking material shall be applied to the road surface at 20 mils (0.508 mm) on concrete pavement through the use of equipment designed to precisely meter the two components in the ratio recommended by the material manufacturer.

620.80.3.4.1 The pavement marking shall only be applied during dry weather and on dry pavement surfaces. At the time of installation, the pavement surface temperature and ambient temperature shall be above 40 F (4 C).

620.80.3.4.2 Both components shall be brought to the temperature recommended by the manufacturer, prior to mixing and application and shall remain at that temperature throughout the operation.

620.80.3.5 Method of Measurement. Measurement of polyurea pavement marking will be made in accordance with Sec 620.10.5.

620.80.3.6 Basis of Payment. The accepted quantity of polyurea pavement marking will be paid for at the contract unit price for each of the pay items included in the contract.