

Contract No. 2014-4106-0196

THIS Agreement is entered into as of this 10 day of June, 2014 by and between the Town of Gilbert, Arizona, a municipal corporation, hereinafter referred to as the "Town" and Pavement Marking, Inc., hereinafter referred to as the "Contractor."

FOR THE PURPOSE of providing Removal and/or Application of Pavement Marking services for the Town of Gilbert, Gilbert and Contractor do hereby mutually agree to the following:

1. SERVICES AND RESPONSIBILITIES

1.1 Retention of the Contractor. In consideration of the mutual promises contained in this Agreement, Gilbert engages the Contractor to render services set forth herein, in accordance with all the terms and conditions contained in this Agreement.

1.2 Scope of Services. The Contractor shall do, perform and carry out in a satisfactory and proper manner, as determined by Gilbert, the services set forth in this Agreement, including all exhibits ("Services"). The specific scope of work is set forth in Exhibit A.

1.3 Responsibility of the Contractor.

1.3.1 Contractor hereby agrees that the documents and reports prepared by Contractor will fulfill the purposes of the Contract, shall meet all applicable code requirements and shall comply with applicable laws and regulations. In addition, and not as a limitation on the foregoing, such documents and reports prepared by Contractor shall be prepared in accordance with professional Consulting standards, as applicable. Any review or approval of said documents and reports does not diminish these requirements.

1.3.2 Contractor shall tour the Services site and become familiar with existing conditions, including utilities, prior to commencing the Services and notify Town of any constraints associated with the Services site.

1.3.3 Contractor shall procure and maintain during the course of this Agreement insurance coverage required by Paragraph 4 of this Agreement.

1.3.4 Contractor shall designate Juan Arvizu as Contractor Representative and all communications shall be directed to him. Key Contractor Personnel are set forth in Exhibit B. "Key Personnel" includes the Contractor employee who will place his license number and signature on key documents and those employees who have significant responsibilities regarding the Services and Contract. Prior to changing such designation Contractor shall first obtain the approval of Gilbert.

1.3.5 Contractor's subcontracts are set forth in Exhibit B attached hereto and made a part hereof. Any modification to the list of Subcontractors on Exhibit B, either by adding, deleting or changing subcontractors, shall require the written consent of Gilbert.

1.3.6 Contractor shall obtain its own legal, insurance and financial advice regarding Contractor's legal, insurance and financial obligations under this Agreement.

1.3.7 Contractor shall coordinate its activities with Gilbert's representative and submit its reports to Gilbert's representative.

1.3.8 Contractor shall provide, pay for and insure under the requisite laws and regulations all labor, materials, equipment, and transportation, and other facilities and services necessary for the proper execution and completion of the Services. Contractor shall provide and pay for and insure for all equipment necessary for the Services.

1.3.9 Contractor shall obtain and pay for all business registrations, licenses, permits, governmental inspections and governmental fees necessary and customarily required for the proper execution and completion of Services. Contractor shall pay all applicable taxes. Contractor shall give all notices and comply with all laws, ordinances, rules, regulations and lawful orders of any public authority bearing on the performance of the Services.

1.4 Responsibility of Gilbert.

1.4.1 Gilbert shall cooperate with the Contractor by placing at his disposal all available information concerning the Services.

1.4.2 Gilbert designates Curtis Yardley, Streets Supervisor as its Gilbert Representative. All communications to Gilbert shall be through its Gilbert Representative.

1.5 Contract Term; Renewal.

Contract Term; Renewal. If funds for this Contract are not appropriated or budgeted by July 1, 2015, Gilbert may terminate this contract by giving written notice to Contractor. Otherwise, the Contract commences upon execution of the Contract and continues through June 30, 2016. The Contract may be renewed for up to three (3) additional one-year terms upon mutual agreement of the parties. The Contract may be renewed upon written approval of Gilbert's Purchasing Officer if: (1) the renewal Contract amount does not exceed \$100,000; or (2) the original prices remain in effect during the renewal term. If at least 60 days prior to the end of the original term the Contractor requests a price adjustment, Contractor shall submit evidence of increased costs to the Contractor. Any price adjustment shall be in the sole discretion of Gilbert and shall not exceed the amount of increased cost to the Contractor. Price adjustment requests shall be a factor in the Contract extension review process. A price adjustment less than 10% of the original contract price may be approved by the Purchasing Officer. The Gilbert Council must approve renewal in all other cases. Any renewal shall be in writing and shall expressly state the prices for the services during the renewal term. Any renewal shall be contingent on funds being appropriated or budgeted for the renewal term.

1.6 Schedule of Services. The Schedule of Services is set forth in Exhibit C.

2. COMPENSATION AND METHOD OF PAYMENT

2.1 Compensation. All compensation for complete and satisfactory completion of services rendered by Contractor, including its subcontractor(s), shall be set forth in Exhibit D and shall not exceed \$558,000.00.

2.2 Method of Payment. Method of payment shall be set forth in Exhibit D. If payment is to be made monthly, Contractor shall prepare monthly invoices and progress reports which clearly indicate the progress to date and the amount of compensation due by virtue of that progress. All invoices shall be for services completed.

2.3 Invoices. Gilbert reserves the right to deduct up to ten percent (10%) from the invoiced amount for any invoice submitted more than sixty (60) days after the Services are completed. Invoices for the month of July shall be submitted on or before August 1st. Invoices submitted after the close out of the fiscal year (August 1st) shall not be paid by Gilbert.

2.4 The Contractor shall provide to Gilbert its completed W-9 Form prior to receipt of any Compensation.

2.4 Taxes. Contractor will be responsible for and shall pay all sales, consumer, use, and other taxes. When equipment, materials or services generally taxable to the Contractor are eligible for a tax exemption, credit or deduction due to the nature of the item, at Contractor's request, Gilbert will assist Contractor in applying for and obtaining the same.

3. CHANGES TO THE SCOPE OF SERVICES

3.1 Change Orders. Gilbert may, at any time, and by written change order, make changes in the services to be performed under this Agreement. A form of change order is attached hereto as Exhibit E. If such changes cause an increase or decrease in the Contractor's cost or time required for performance of any services under this Agreement, an equitable adjustment shall be made and the Agreement shall be modified in writing accordingly. Any claim of the Contractor for adjustment under this clause must be submitted in writing within thirty (30) days from the date of receipt by the Contractor of the notification of change. It is distinctly understood and agreed by the parties that no claim for extra services provided or materials furnished by Contractor will be allowed by Gilbert except as provided herein nor shall Contractor provide any services or furnish any materials not covered by this Agreement unless Gilbert first approves in writing.

3.2 Emergency Response.

3.2.1 Response. Gilbert is an emergency response organization. Contractor services or supplies may be required in case of an emergency involving a sudden, immediate threat of

danger to the public health, welfare or property in Gilbert (“local emergency”) or in the case where the Mayor of Gilbert, the mayor or governing body of another municipality in Maricopa County, the Maricopa County Board of Supervisors, the State, or the President of the U.S. has declared an emergency (“State of Emergency”). In the event of a local emergency or State of Emergency, Gilbert may require Contractor to provide services or supplies as rapidly as possible and to such locations as directed by Gilbert when necessary to protect the public health and welfare and/or property. Contractor shall not be required to respond to the extent response is not feasible due to Acts of God or other factors beyond its control.

3.2.2 Emergency Contact. Contractor shall provide the designated Gilbert Emergency Management Coordinator at (480) 503-6333 and the designated Gilbert representative with a contact point (name, cell phone number, e-mail and facsimile number) who can be reached on a 24 hour/7 days a week basis so that effective response can be initiated. Contractor’s contact person(s) must be able to communicate with Gilbert within one (1) hour from the time the contact person is telephoned by Gilbert.

3.2.3 Payment. Contractor shall be paid a premium not to exceed 10% above the standard contract prices for any services or supplies provided in the case of an emergency, at Gilbert’s direction, and shall be entitled to reimbursement of expenses not covered by the standard contract prices at a premium not to exceed 10% above actual expenses. In considering the premium to be paid, Gilbert shall consider the good-faith efforts of Contractor to respond, the timeliness of response, and any other factors deemed relevant by either of the parties. If Gilbert believes Contractor’s response was adequate, the full 10% premium will be paid; if not, Gilbert, in its reasonable discretion, will pay a lesser premium.

4. INSURANCE REPRESENTATIONS AND REQUIREMENTS

4.1 General. Contractor agrees to comply with all Gilbert ordinances and state and federal laws and regulations. Without limiting any obligations or liabilities of Contractor, Contractor shall purchase and maintain, at its own expense, hereinafter stipulated minimum insurance with insurance companies duly licensed by the State of Arizona (admitted insurer) with an AM Best, Inc. rating of A-7 or above or an equivalent qualified unlicensed insurer by the State of Arizona (non-admitted insurer) with policies and forms satisfactory to Gilbert. Failure to maintain insurance as specified may result in termination of this Agreement at Gilbert’s option.

4.2 No Representation of Coverage Adequacy. By requiring insurance herein, Gilbert does not represent that coverage and limits will be adequate to protect Contractor. Gilbert reserves the right to review any and all of the insurance policies and/or endorsements cited in this Agreement but has no obligation to do so. Failure to demand such evidence of full compliance with the insurance requirements set forth in this Agreement or failure to identify any insurance deficiency shall not relieve Contractor from, nor be construed or deemed a waiver of, its obligation to maintain the required insurance at all times during the performance of this Agreement.

4.3 Additional Insured. All insurance coverage and self-insured retention or deductible portions, except Workers Compensation insurance and Professional Liability insurance if applicable, shall name, to the fullest extent permitted by law for claims arising out of the performance of this Agreement, Gilbert, its agents, representative, officers, directors, officials and employees as Additional Insured as specified under the respective coverage sections of this Agreement.

4.4 Coverage Term. All insurance required herein shall be maintained in full force and effect until all Services required to be performed under the terms of this Agreement is satisfactorily performed, completed and formally accepted by Gilbert, unless specified otherwise in this Agreement.

4.5 Primary Insurance. Contractor's insurance shall be primary insurance as respects performance of subject contract and in the protection of Gilbert as an Additional Insured.

4.6 Claims Made. In the event any insurance policies required by this Agreement are written on a "claims made" basis, coverage shall extend, either by keeping coverage in force or purchasing an extended reporting option, for three (3) years past completion and acceptance of the Services evidenced by submission of annual Certificates of Insurance citing applicable coverage is in force and contains the provisions as required herein for the three year period.

4.7 Waiver. All policies, including Workers' Compensation Insurance, shall contain a waiver of rights of recovery (subrogation) against Gilbert, its agents, representative, officials, directors, officers, and employees for any claims arising out of the Services of Contractor. Contractor shall arrange to have such subrogation waivers incorporated into each policy via formal written endorsement thereto.

4.8 Policy Deductibles and or Self Insured Retentions. The policies set forth in these requirements may provide coverage, which contain deductibles or self-insured retention amounts. Such deductibles or self-insured retention shall not be applicable with respect to the policy limits provided to Gilbert. Contractor shall be solely responsible for any such deductible or self-insured retention amount. Gilbert, at its option, may require Contractor to secure payment of such deductible or self-insured retention by a surety bond or irrevocable and unconditional Letter of Credit.

4.9 Use of Subcontractors. **All work shall be performed by direct employees. Use of subcontractors will not be allowed.**

4.10 Evidence of Insurance. Prior to commencing any Services under this Agreement, Contractor shall furnish Gilbert with Certificate(s) of Insurance, or formal endorsements as required by this Agreement, issued by Contractor's Insurer(s) as evidence that policies are placed with acceptable insurers as specified herein and provide the required coverage's, conditions, and limits of coverage specified in this Agreement and that such coverage and provisions are in full force and effect. Acceptance and reliance by Gilbert on a Certificate of Insurance shall not waive or alter in any way the insurance requirements or obligations of this Agreement. Such Certificate(s) shall identify the Agreement and be sent to Gilbert Risk Manager. If any of the

above cited policies expire during the life of this Agreement, it shall be Contractor's responsibility to forward renewal Certificates within ten (10) days after the renewal date containing all the aforementioned insurance provisions. Certificates shall specifically cite the following provisions:

4.10.1 Gilbert, its agents, representatives, officers, directors, officials and employees is an Additional Insured as follows:

- a. Commercial General Liability-Under ISO Form CG 20 10 11 85 or equivalent.
- b. Auto Liability-Under ISO Form CA 20 48 or equivalent.
- c. Excess Liability-Follow Form to underlying insurance.

4.10.2 Contractor's insurance shall be primary insurance as respects performance of this Agreement.

4.10.3 All policies, including Workers' Compensation, waive rights of recovery (subrogation) against Gilbert, its agents, representatives, officers, directors, officials and employees for any claims arising out of Services performed by Contractor under this Agreement.

4.10.4 Certificate shall cite a thirty (30) day advance notice cancellation provision. If ACORD Certificate of Insurance form is used, the phrases in the cancellation provision "endeavor to" and "but failure to mail such notice shall impose no obligation or liability of any kind upon the company, its agents or representatives" shall be deleted. Certificate forms other than ACORD form shall have similar restrictive language deleted.

4.11 Required Coverage:

4.11.1 Commercial General Liability: Contractor shall maintain "occurrence" from Commercial Liability Insurance with an unimpaired limit of not less than \$1,000,000 for each occurrence, \$2,000,000 Products and Completed Operations Annual Aggregate, and a \$2,000,000 General Aggregate Limit. The policy shall cover liability arising from premises, operations, independent contractors, products-completed operations, personal injury and advertising injury. Coverage under the policy will be at least as broad as Insurance Services Office, Inc. policy form CG 00 010 93 or equivalent thereof, including but not limited to, separation of insured clause. To the fullest extent allowed by law, for claims arising out of the performance of this Agreement, Gilbert, its agents, representative, officers, directors, officials and employees shall be cited as an Additional Insured Endorsement form CG 20 10 11 85 or equivalent, which shall read "Who is an Insured (Section II) is amended to include as an insured the person or organization shown in the Schedule, but only with respect to liability arising out of "your work" for that insured by or for you". If any Excess insurance is utilized to fulfill the

requirements of this paragraph, such Excess insurance shall be “follow form” equal or broader in coverage scope than underlying insurance.

4.11.2 Vehicle Liability: Contractor shall maintain Business Automobile Liability Insurance with a limit of \$1,000,000 each occurrence on Contractor’s owned, hired, and non-owned vehicles assigned to or used in the performance of the Contractor’s Services under this Agreement. Coverage will be at least as broad as Insurance Services Office, Inc., coverage code “1” any auto policy form CA 00 01 12 93 or equivalent thereof. To the fullest extent allowed by law, for claims arising out of performance of this Agreement, Gilbert, its agents, representative, officers, directors, officials and employees shall be cited as an Additional Insured under the Insurance Service Offices, Inc. Business Auto Policy Designated Insured Endorsement form CA 20 48 or equivalent. If any Excess insurance is utilized to fulfill the requirements of this paragraph, such Excess insurance shall be “follow form” equal or broader in coverage scope than underlying insurance.

4.11.3 Workers’ Compensation Insurance: Contractor shall maintain Workers’ Compensation insurance to cover obligations imposed by federal and state statutes having jurisdiction of Contractor’s employees engaged in the performance Services under this Agreement and shall also maintain Employer Liability Insurance of not less than \$500,000 for each accident, \$500,000 disease for each employee and \$1,000,000 disease policy limit.

5. INDEMNIFICATION

5.1 To the fullest extent permitted by law, the Contractor, its successors, assigns and guarantors, shall pay, defend, indemnify and hold harmless Gilbert, its agents, officers, officials and employees from and against all demands, claims, proceedings, suits, damages, losses and expenses (including but not limited to attorney fees, court costs, and the cost of appellate proceedings), and all claim adjustment and handling expenses, relating to, arising out of, or alleged to have resulted from acts, errors, mistakes, omissions, Services caused by the Contractor, its agents, employees or any tier of Contractor’s subcontractors related to the Services in the performance of this Agreement. Contractor’s duty to defend, hold harmless and indemnify Gilbert, its agents, officers, officials and employees shall arise in connection with any claim, damage, loss or expense that is attributable to bodily injury, sickness, disease, death, or injury to, impairment, or destruction of property including loss of use of resulting therefrom, caused by Contractor’s acts, errors, mistakes, omissions, Services in the performance of this Agreement including any employee of the Contractor, any tier of Contractor’s subcontractor or any other person for whose acts, errors, mistakes, omissions, Services the Contractor may be legally liable including Gilbert. Such indemnity does not extend to Gilbert’s negligence.

5.2 Insurance provisions set forth in this Agreement are separate and independent from the indemnity provisions of this paragraph and shall not be construed in any way to limit the scope and magnitude of the indemnity provisions. The indemnity provisions of this paragraph shall not be construed in any way to limit the scope and magnitude and applicability of the insurance provisions.

6. TERMINATION OF THIS AGREEMENT

6.1 Termination. Gilbert may, by written notice to the Contractor, terminate this Agreement in whole or in part with seven (7) days' notice, either for Gilbert's convenience or because of the failure of the Contractor to fulfill his contract obligations. Upon receipt of such notice, the Contractor shall: (1) immediately discontinue all services affected (unless the notice directs otherwise), and (2) deliver to Gilbert copies of all data, drawings, reports, estimates, summaries, and such other information and materials as may have been accumulated by the Contractor in performing this Agreement, whether completed or in process. This Agreement may be terminated in whole or in part by the Contractor in the event of substantial failure by Gilbert to fulfill its obligations.

6.2 Payment to Contractor Upon Termination. If the Agreement is terminated, Gilbert shall pay the Contractor for the services rendered prior thereto in accordance with percent completion at the time work is suspended minus previous payments.

7. ASSURANCES

7.1 Solicitations for Subcontractors, Including Procurements of Materials and Equipment. In all solicitations either by competitive bidding or negotiation made by the Contractor for Services to be performed under a subcontract, including procurements of materials or leases of equipment, each potential subcontractor or supplier shall be notified by the Contractor of the Contractor's obligations under this Agreement and any Regulations relative to nondiscrimination on the grounds of race, color or national origin.

7.2 Examination of Records. The Contractor agrees that duly authorized representatives of Gilbert shall, until the expiration of three (3) years after final payment under this Agreement, have access to and the right to examine any directly pertinent books, documents, papers, and records of the Contractor involving transactions related to this Agreement.

7.3 Ownership of Document and Other Data. Original documents and other data prepared or obtained under the terms of this Agreement or any change order are and will remain the property of Gilbert unless otherwise agreed to by both parties. Gilbert may use such documents for other purposes without further compensation to the Contractor; however, any reuse without written verification or adaptation by Contractor for the specific purpose intended will be at Gilbert's sole risk and without liability or legal exposure to Contractor. Any verification or adaptation of the documents by Contractor for other purposes than contemplated herein will entitle Contractor to further compensation as agreed upon between the parties.

7.4 Litigation. Should litigation be necessary to enforce any term or provision of this Agreement, or to collect any damages claimed or portion of the amount payable under this Agreement, that all litigation and collection expenses, witness fees, court costs, and reasonable attorneys' fees incurred shall be paid to the prevailing party.

7.5 Independent Contractor. This Contract does not create an employee/employer relationship between the parties. It is the parties' intention that the Contractor will be an

independent contractor and not Gilbert's employee for all purposes, including, but not limited to, the application of the Fair Labor Standards Act, Federal Insurance Contribution Act, the Social Security Act, the Federal Unemployment Tax Act, the Internal Revenue Code, the Immigration and Naturalization Act, Arizona revenue and taxation laws, Arizona Workers' Compensation Law, and Arizona Unemployment Insurance Law. The Contractor agrees that it is a separate and independent enterprise from Gilbert, that it has a full opportunity to find other business, that it has made its own investment in its business, and that it will utilize a high level of skill necessary to perform the work. This Contract shall not be construed as creating any joint employment relationship between the Contractor and Gilbert, and Gilbert will not be liable for any obligation incurred by the Contractor, including but not limited to unpaid minimum wages and/or overtime premiums.

7.6 Immigration Law Compliance Warranty. As required by A.R.S. § 41-4401, Contractor hereby warrants its compliance with all federal immigration laws and regulations that relate to its employees and A.R.S. § 23-214(A). Contractor further warrants that after hiring an employee, Contractor verifies the employment eligibility of the employee through the E-Verify program. If Contractor uses any subcontractors in performance of the Contract, subcontractors shall warrant their compliance with all federal immigration laws and regulations that relate to its employees and A.R.S. § 23-214(A), and subcontractors shall further warrant that after hiring an employee, such subcontractor verifies the employment eligibility of the employee through the E-Verify program. A breach of this warranty shall be deemed a material breach of the Contract that is subject to penalties up to and including termination of the Contract. Contractor is subject to a penalty of \$100 per day for the first violation, \$500 per day for the second violation, and \$1,000 per day for the third violation. Gilbert at its option may terminate the Contract after the third violation. Contractor shall not be deemed in material breach of this Contract if the Contractor and/or subcontractors establish compliance with the employment verification provisions of Sections 274A and 274B of the federal Immigration and Nationality Act and the E-Verify requirements contained in A.R.S. § 23-214(A). Gilbert retains the legal right to inspect the papers of any Contractor or subcontractor employee who works on the Contract to ensure that the Contractor or subcontractor is complying with the warranty. Any inspection will be conducted after reasonable notice and at reasonable times. If state law is amended, the parties may modify this paragraph consistent with state law.

7.7 Equal Treatment of Workers. Contractor shall keep fully informed of all federal and state laws, county and local ordinances, regulations, codes and all orders and decrees of bodies or tribunals having any jurisdiction or authority, which in any way affect the conduct of the work. Contractor shall at all times observe and comply with all such laws, ordinances, regulations, codes, orders and decrees; this includes, but is not limited to laws and regulations ensuring equal treatment for all employees and against unfair employment practices, including the Occupational Safety and Health Administration ("OSHA") and the Fair Labor Standards Act ("FLSA"). Contractor shall protect and indemnify Gilbert and its representatives against any claim or liability arising from or based on the violation of such, whether by Contractor or its employees.

7.8 Exclusive Use of Services - Confidentiality. The services agreed to be provided by Contractor within this Agreement are for the exclusive use of Gilbert and Contractor shall not

engage in conflict of interest nor appropriate Gilbert work product or information for the benefit of any third parties without Gilbert consent.

7.10 Sole Agreement. There are no understandings or agreements except as herein expressly stated.

7.11 Notices. Any notice to be given under this Agreement shall be in writing, shall be deemed to have been given when personally served or when mailed by certified or registered mail, addressed as follows:

GILBERT:

Curtis Yardley, Street Superintendent
Town of Gilbert Public Works
525 N. Lindsay Road
Gilbert, Arizona 85234

CONTRACTOR:

Juan Arvizu
Pavement Marking, Inc.
8949 S. Beck Ave.
Tempe, AZ 85284

The address may be changed from time to time by either party by serving notices as provided above.

7.12 Controlling Law. This Agreement is to be governed by the laws of the State of Arizona.

8. SUSPENSION OF WORK

8.1 Order to Suspend. Gilbert may order the Contractor, in writing, to suspend all or any part of the Services for such period of time as he may determine to be appropriate for the convenience of Gilbert.

8.2 Adjustment to Contract Fee. If the performance of all or any part of the Services is, for any unreasonable period of time, suspended or delayed by an act of Gilbert in the administration of this Agreement, or by its failure to act within the time specified in this Agreement (or if no time is specified, within a reasonable time), an adjustment shall be made for any increase in cost of performance of this Agreement necessarily caused by such unreasonable suspension or modified in writing accordingly. However, no adjustment shall be made under this clause for any suspension or delay to the extent (1) that performance was suspended or delayed for any other cause, including the fault or negligence of the Contractor, or (2) for which an equitable adjustment is provided for or excluded under any other provision of this Agreement.

9. INTERESTS AND BENEFITS

9.1 Interest of Contractor. The Contractor covenants that he presently has no interest and shall not acquire any interest, direct or indirect, which would conflict in any manner or degree with the performance of services required to be performed under this Agreement. The Contractor further covenants that in the performance of this Agreement, no person having any such interest shall be employed.

9.2 Interest of Town Members and Others. No officer, member or employee of Gilbert and no member of its governing body, who exercises any functions or responsibilities in the review or approval of the undertaking or carrying out of the services to be performed under this Agreement, shall participate in any decision relating to this Agreement which affects his personal interest or have any personal or pecuniary interest, direct or indirect, in this Agreement or the process thereof.

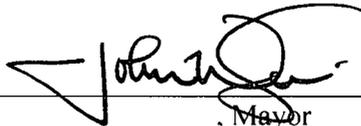
9.3 Notice Regarding A.R.S. § 38-511. This Contract is subject to cancellation under Section 38-511, Arizona Revised Statutes.

10. ASSIGNABILITY

The Contractor shall not assign any interest in this Agreement, and shall not transfer any interest in the same without the prior written consent of Gilbert thereto.

IN WITNESS WHEREOF, Gilbert and the Contractor have executed this Agreement as of the date first written.

TOWN OF GILBERT

By:  _____, Mayor

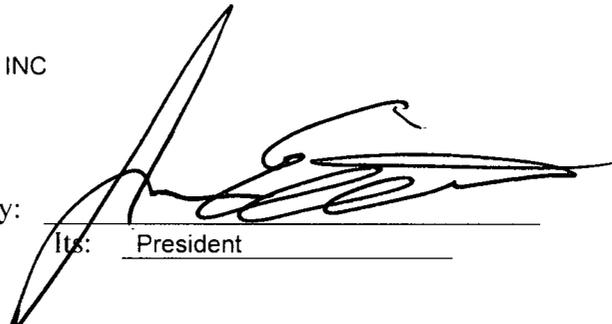
ATTEST:

By:  _____
Catherine A. Templeton, Town Clerk

APPROVED AS TO FORM:

By:  _____
Michael Hamblin Jack A. Vincent
Assistant Town Attorney

CONTRACTOR PAVEMENT MARKING INC

By:  _____
Its: _____ President

**EXHIBIT A
SCOPE OF WORK**

3. SCOPE of WORK

3.1 The purpose of this Request for Proposal is to enter into a contract to perform removal and/or application of pavement marking. The Town of Gilbert Street Maintenance Division desires to retain qualified contractor(s) for the supply, application and/or removal of paint, thermoplastic, profile thermoplastic and preformed tape pavement markings, as required, at various locations town wide as ordered by Gilbert in accordance with these specifications and the provisions contained in this Request For Proposal (RFP).

3.2 Definitions

The following definitions apply to the Specifications portion of the contract

Department	Town of Gilbert, Public Works
Contract Administrator	Curtis Yardley, Street Manager
Contract Administrator's Representative	Demetrius Fernandez, Supervisor/Inspector
Supervisor/Inspector	Gilbert's authorized representative assigned to make detailed inspections of contract performance.
Contractor	Firm and/or individual that will perform the work requested in this solicitation.
<u>On-Site Supervisor</u>	Contractor's " <u>On Site Supervisor</u> " with experience to direct and oversee work operations and having authority to make day-to-day decisions concerning the work operations.
Standard Specifications	The ADOT Standard Specifications for Road and Bridge Construction, 2000 Edition including errata and addenda.
MUTCD	Manual on Uniform Traffic Control Devices, Current Edition – 1 st Revision as adopted by the Town.
ASTM	American Society For Testing Materials
Town of Gilbert Specifications	Town of Gilbert Engineering Design Standards and Policies Manual to include striping notes (Current Edition)
MCDOT	Maricopa County Department of Transportation, Pavement Marking Manual (Current Edition)

Manual on Uniform Traffic Control Devices (MUTCD), Current Edition as adopted by Gilbert and Gilbert's supplement to this document; Town of Gilbert Engineering Design Standards and Policies Manual current editions; MCDOT Pavement Marking Manual current editions; ADOT

Standard Specifications for Road and Bridge Construction current editions plus all applicable Stored Specifications; ADOT Standard Drawings for Signing and Marking current editions and any documents referenced directly in the specifications and this.

3.2.1 On-Site Supervisor

An approved On-Site Supervisor shall be present during all installation and removal activities. The installation or removal of paint markings without proper and/or ineffective supervision can be grounds for rejection of work and, if not corrected, suspension or cancellation of the contract. The On-Site Supervisor shall not be part of the crew doing work but shall oversee quality and quantity of all work being performed in the Town of Gilbert.

3.3 Work Locations

The work to be performed under this contract will be defined on a project by project basis via a **Contract Work Order, Exhibit 1**, process herein defined. Gilbert has divided the areas of work into four different areas as follows:

- **All striping to include Arterial, Rural Arterial, Collector and Residential streets within Town of Gilbert boundaries.**

The proposer shall commit to having sufficient local resources (materials, personnel and equipment) necessary to do projects on a short notice. The unavailability of resources within the Town's time frame for funding and/or a specific road closure can be the basis for the Town using the next lowest priced contractor for that project. Re-occurring unavailability of contractor resources that result in project delays shall be the basis for cancellation of a portion of, or all of, a contract.

The applicable Town of Gilbert representative or appointed representative(s) has the authority to coordinate, schedule, conduct, inspect, accept, monitor performance, and invoke warranty provisions within the stated provisions of this contract.

The Town of Gilbert representatives:

Street Supervisor
Demetrius Fernandez
900 East Juniper Ave.
Gilbert, AZ 85234
Phone: 480-503-6419
Fax: 480-503-6405

Street Manager
Curtis Yardley
900 East Juniper Ave.
Gilbert, AZ 85234
Phone: 480-503-6428
Fax: 480-503-6405

The contractor shall be responsible for coordinating all pavements marking work with the Street Supervisor. A written **Contract Work Order, Exhibit 1** and Contract Purchase Order for the pavement maintenance project from the Street Supervisor is necessary **before** any work can proceed on any project. Any work that is done by the contractor without proper authorization may not be eligible for payment.

Gilbert makes no guarantee regarding the use or nonuse of this contract.

The materials furnished and installed along with all other work performed under this contract shall conform to all applicable State, Federal and local requirements. This includes the following:

3.4 Work Details

This contract will involve a number of different categories of pavement marking work. The necessary traffic control work and mobilization, if applicable, is regarded as in support of all the pavement marking work items and will be managed accordingly.

Contractor must use the traffic control services of Gilbert's traffic control services Contractor, and Gilbert will pay all costs of those services.

Special Conditions

On all maintenance work (not limited to- Micro seal, Slurry seal, Asphalt and Fog seal) all Markings (long line and short line) are to be completed within 72 hrs. Utilization of the asphalt maintenance Contractor's barricades performing the above mentioned maintenance's is allowed, however after 72 hrs. the striping contractor will be responsible to pay for cost of traffic control. After 30 days the striping contractor will re-stripe (thermo or paint) all long line and bike lane symbols.

The categories of pavement marking work are:

- **All major arterials, collectors and residential streets.**
- **Waterborne Paint Markings (WPM)**
- **Thermoplastic Markings (THM)**
- **Profile Thermoplastic Markings (PFTM)**
- **Preformed 270 IES Tape Markings (PTM)**
- **Existing Pavement Marking Removal and/or Surface Preparation (PMR or SP) with vacuum capabilities.**
- **Raised Pavement Markings (RPM)**

All the labor, equipment and other items necessary for the proper execution of this work will be included in the pricing.

The work is further classified into the following groups:

Short Line Work: Short line work is defined as those markings that are typically installed or removed using a walk behind hand cart unit. The types of markings installed or removed under payment items on the short line price sheets will include (but not limited to)

cross hatching, intersection guide lines, stop bars, crosswalks, legends, arrows, raised curb painting and railroad markings. The short line work unit can also be used, at the approval of the Town, to reinstall short segments (200 feet +/- or less) of long lines if necessary.

Long Line Work: Long line work is defined as those markings which are typically installed or removed at a fairly rapid speed using a long line truck that has a driver and an operator with at least (3) years' experience and a shadow vehicle with attenuator and a driver. The types of markings to be installed or removed under payment items on the long line price sheets will include (but not limited to) lane lines, center lines, edge lines, gore lines and storage lines.

A pavement marking maintenance project shall be conducted by the contractor whose contracted prices appear to afford Gilbert the lowest overall costs to do that project.

Gilbert may use another qualified company per the provisions stated herein during the interval of time in which Gilbert investigates questionable performance of Contractor and/or Contractor's non ability to perform. This includes reservation of the right to award Contract Work Order(s) to other than the lowest overall cost proposer.

Additionally, even after a pavement marking project has commenced Gilbert can, based on these same reasons, suspend a contractor from the project and use another company to finish the project. The suspended contractor shall be responsible for the costs of all damages incurred to Gilbert if this situation arises. This includes, but is not limited to, the removal of defective markings and the reinstallation of new markings by the replacement contractor.

If two or more Gilbert contractors are working adjacent to each other on separate projects, the involved contractors shall conduct themselves in a professional manner and fully cooperate with each other as necessary to ensure that all work is done in a safe, efficient and timely manner and in full compliance with these specifications. Non-cooperation and/or poor coordination which causes harm and/or extra work or costs for Gilbert and/or the other contractors can be the basis for the immediate suspension of work or cancellation of a portion of or all of a contract.

The Street Superintendent will be Gilbert's authority on all work accomplished on the Town wide Pavement Marking Contract.

3.4.1 Contract Work Order and Field Reporting Procedures:

The **Contract Work Order, Exhibit 1** and field work reporting procedures for pavement marking maintenance project may include the following:

Steps 1 - Gilbert identifies the need for a project and determines the preliminary scope and quantities of that project. The contractor shall conduct the work as scheduled and planned and shall coordinate directly with Gilbert's authorized Contract Administrator and inspector. All work shall be performed in accordance with these specifications, the Contract Work Order and as directed by Gilbert. If during the pavement marking project there is any change of condition

and/or delay the contractor shall document the change accordingly and comply with the requirements stated herein. No work beyond the scope of the original Contract Work Order, or the contract shall be performed without prior written authorization from Gilbert. No work that is beyond the scope of the contract shall be authorized unless justified and approved within the contract guidelines and authorized by the Contract Administrator.

The On-Site Supervisor shall keep a daily work item log for all items of payment and quantities used. All entries shall be in a permanently bound logbook in non-erasable pen. Each entry shall include detailed information about the work performed and the materials used (as applicable). All daily entries shall include: date, the time work started, weather conditions at start time including ambient and surface temperatures, location of work, initials of On- Site Supervisor, crew members present, equipment used, work accomplished, details and quantities, materials used, quitting time and temperatures at quitting time. A separate similar logbook shall be kept for traffic control.

The contractor and Gilbert shall coordinate on all the information that is recorded in the log books. The information from the log books shall be reviewed and reconciled by Gilbert prior to the finalization of Gilbert's daily summary reports for pavement marking work and traffic control activities (refer to **Daily Work and Quantities Report, Exhibit 2**). Both the contractor and Gilbert shall sign off on this form. A copy of the final form will be given to the contractor. The official record for the basis of all payment shall be Gilbert's reports.

Step 2 - Gilbert will conduct a final installation inspection based on all the requirements contained herein. Gilbert will develop a list of any corrections the contractor needs to do before the project can be accepted. The contractor shall take the necessary action to correct all problems.

Note: Gilbert's initial acceptance and payment of any work performed on this contract does not relieve the contractor of any responsibilities of the performance of the pavement markings in the field per the requirements stated in General Conditions, paragraph 2.4, **WARRANTY**.

Step 3 - Once all field activities have been completed, the contractor and Gilbert shall meet, if necessary, to review and finalize the quantities eligible for payment. Additionally, any problems or discrepancies will be discussed, resolved and/or assessed at this time. Once this is done the contractor shall prepare a summary of all the project quantities and payment items for Gilbert's approval.

Step 4 - All invoices shall be submitted with the project summaries attached.

Step 5 - Gilbert will monitor all pavement marking maintenance project installations for the warranty time periods stated in General Conditions, paragraph 2.4, **WARRANTY**.

3.4.2 General

The Contractor shall provide all necessary pavement marking materials and incidentals to install the pavement markings as indicated on the **Contract Work Order, Exhibit 1, Specifications and Pricing Sheet, Attachment 9**.

3.4.3 Method of Measurement

The installation, removal of pavement marking lines, and surface preparation will be measured by the linear foot along the center line of the pavement marking line (or stripe) and will be based on the specific payment item as herein described and specified on the appropriate **Pricing Sheet, Attachment 9**.

Any measurement of a line that is not specifically addressed per the **Pricing Sheet, Attachment 9** with a plan width and length that is greater or less than the basic four inches, will be converted to the appropriate four inch wide item by the following method:

$$\frac{\text{Plan Width of Striping (inches)} \times \text{Linear Feet}}{4 \text{ (inches)}}$$

This measurement method is defined as the equivalent four inch linear foot.

No measurement will be made of gaps (e.g. area of no marking) between the dashed lines. The installation and the removal of crosswalk lines, stop bars, stop lines, gore lines, cross hatch lines, chevron lines, the "X" in a railroad marking and railroad marking transverse lines will be measured per the linear foot per the width specified or the averaged width as measured in the field as equated by the equivalent four inch wide linear foot formula contained herein. This includes the installation of primer/sealer for thermoplastic lines, the removal of PCCP curing compound and the removal or surface preparation of existing pavement markings.

The installation, removal, and surface preparation of pavement marking symbols and legends shall be measured by each unit. Each pavement symbol and each legend that exists in the field and/or is a part of the contract work order and as defined on the Signing and Marking Standard Drawings, will be considered a unit.

A symbol unit is defined as a complete turn arrow, combination arrow, through (or straight) arrow, bike lane symbol. A four letter legend unit is defined as a complete "ONLY," "TURN", "XING", "RIGHT", "LEFT", or "STOP." All other pavement legends will be paid for based on the single letter.

All curb painting and curb legends shall be paid for by the actual lineal feet as measured in the field by the contractor and approved by Gilbert's representative.

Removal of curing compound from Portland Cement Concrete Pavement (PCCP) and the application of any primer sealer, which may be applied to both old and new PCCP, prior to the application of thermoplastic marking, shall be measured by the linear foot for lines (or stripes) or unit each for symbols and legends, respectively, depending on the nature of the work to be done, in accordance with the items of work established in the **Pricing Sheet, Attachment 9**.

The removal of lines for the arterials, collectors and residential streets will include all materials and widths.

Extruded 90 mil thermoplastic turn lane guidelines that go through signalized and non-signalized intersections shall be paid for by each four-inch wide by two-foot long stripe or line installed.

The application of primer or contact cement for the installation of preformed tape markings shall be considered incidental to the applicable items. The type used (primer or contact cement) and the number of coats applied shall be in accordance with the preformed marking manufacturer's recommendations.

The marking layout item and/or barrier marker installation shall be paid per the hour. Under this item the contractor shall provide a crew of three or more to layout the required locations and/or install Town furnished barrier markers for pavement marking on a project as required per the contract work order and as directed by Gilbert. The number of hours to do the work shall be agreed upon prior to starting. The actual hours spent will be recorded by Gilbert. This item may also be used to as-built existing pavement markings to help Gilbert in developing new plans or retaining layouts which will be covered or destroyed by pavement maintenance activities.

3.4.4 Applied Quantities

In addition to measuring linear feet, symbols and legend by each, the contractor shall also provide detailed information on the amount of pavement marking materials (as applicable) applied via a detailed accounting of the materials loaded and applied by the application equipment. Prior to the start of marking operations the contractor shall submit a detailed materials quantities take off of the pavement marking materials needed to achieve the specified thickness, widths and application rates. The contractor shall then track the materials applied each day and supply this information to Gilbert per the daily reporting form. If there is more than a 10% deviation from the estimated material needs, the contractor shall provide a written explanation to Gilbert prior to the submission of any invoice.

3.4.5 Application Requirements

The work under all pavement marking installation items shall consist of cleaning and preparing pavement surfaces and furnishing and applying reflectorized markings to the prepared pavement as required by the **Contract Work Order, Exhibit 1** and in accordance with the

manufacturers' specifications, and the requirements of these specifications. A wide variety of work is required under this contract. The materials, method and equipment used shall conform to the necessary requirements to ensure proper and successful application. All work performed on this contract shall be subject to inspection by Gilbert. The contractor shall give Gilbert full access and cooperation in the discharge of these duties. The inspection of work is an integral part of any work item being eligible for payment.

The requirements stated under this subsection, as applicable, are intended to apply to the installation of all pavement marking materials. Specific requirements that apply only to that material are contained under that specific subsection.

3.4.6 Pavement Marking Location

To prevent marker bond failure the application of pavement markings shall follow these installation location rules:

The edge line shall not be placed on the joint between the traveled lane and the shoulder.

The placement of symbols and legends on construction joints or uneven pavement surfaces shall be avoided. Relocations of symbols and legends in conflict shall be approved by Gilbert.

Markings shall be laid out as defined on the **Contract Work Order, Exhibit 1**, project special instructions/plans, Signing and Marking Standard Drawings and as directed by Gilbert.

If needed, Gilbert will provide the necessary control lines for all pavement marking layouts. If Gilbert is unable to perform this work, the contractor shall provide the service per a pre-established hourly payment item.

When markings are placed over existing pavement markings, unless otherwise directed by the Contract Work Order or Gilbert, the new pavement marking shall overlay the existing pavement markings. The starting and stopping points on long line applications shall not vary more than two (2) inches length wise and not more than 1/2 inch on the width. Overlaying of existing legend and symbols shall match the existing markings within one (1) inch or less. Any pavement markings outside of the variances will not be paid/invoiced.

3.4.7 Materials

All pavement marking materials including the drop-on glass beads (as applicable), primer sealer (if necessary for the thermoplastic markings), primer or contact cement (as applicable for preformed tape) shall be inspected and approved by Gilbert prior to their application. The contractor shall allow Gilbert sufficient time and adequate access to all stored or stockpiled materials to perform this inspection. Labor to move materials around to facilitate this inspection shall be supplied by the contractor. All materials used shall conform to the **Certificate of Compliance, Attachment 7** on record and this specification. No changes are allowed without prior written approval by Gilbert.

Gilbert reserves the right to sample and test any materials used on the project. All materials that do not meet specifications will be rejected.

All materials shall be properly packaged and stored and shall have accurate package markings that define the manufacturer, batch number and date of manufacture. Additionally, the material type and formulation shall be distinctively shown on each container. Material Safety Data Sheets (MSDS) and manufacture application requirements shall be attached to pallets or groups of materials as appropriate. All formulations shall be as required by the manufacturer for the application equipment to be used by the contractor and per the requirements of these specifications.

The contractor shall provide a full accounting of all marking materials applied. Thus, it is important that the contractor carefully monitor material inventories on every project.

It shall be the responsibility of the contractor to provide for adequate disposal in approved landfills of any removed marking material, cleaning fluids, excess material and all empty containers. Venting of pavement marking materials on state property is allowed if approved by Gilbert. The contractor shall clean up all vented material.

3.4.8 Pavement Surface

The contractor shall remove all dirt, dust, grease, oil or other detrimental material from the road surface prior to application of any pavement marking material. This includes using a blower and or hand push broom to remove surface dust and dirt for all hand application work. This also includes poorly adhered existing pavement and pavement markings not defined as marker obliteration on the Contract Work Order. The surface of all existing markings to be overlaid shall be cleaned.

The application of any marking material over a surface in poor condition shall not be allowed unless the surface is prepared (as stated in Paragraph 3.11, Pavement Marking Removal and Surface Preparation Section) or if it is specifically requested on the Contract Work Order and approved by Gilbert. If a material is to be overlaid on the poor surface without preparation, the type of application shall be limited to waterborne paint (15 mil), 90 mil thickness of applied thermoplastic. It is the responsibility of the contractor to verify the condition of all surfaces prior to the finalization of a Contract Work Order.

The method of cleaning the surface is subject to approval by Gilbert and shall include PM 10 approved machine sweeping (wet or dry), hand sweeping and the use of high-pressure air spray. All loose material including grindings and obliterated marking material shall be collected and removed from the pavement surface and properly disposed of. The method of surface preparation shall be per the recommendations of the pavement marking material manufacturer. The cost for cleaning and preparing the surface, including abrasive sweeping and high-pressure air spray, shall be considered part of the cost for applying pavement marking material. No separate measurement or payment will be made for this work, unless otherwise noted on the Contract Work Order per the applicable surface preparation and/or marking obliteration items.

The road surface shall be absolutely dry with no surface dampness, dew or subsurface wetness. The day material is to be applied there shall be no forecast of rain for the day. If it begins to rain all marking operations shall be stopped.

Pavement subsurface moisture can be present in amounts sufficient to affect proper bonding, even if the pavement surface appears dry. If the presence of subsurface moisture is suspected the following test procedure shall be performed prior to the start of pavement marking operations. A two foot by two foot section (or sheet) of clear plastic shall be taped to the roadway. The sheet shall remain on the roadway for at least a half hour. If at any time during this half hour significant moisture accumulates on the inside (or pavement side) of the plastic then pavement marking operations shall be delayed or postponed until such time the pavement has dried.

3.4.9 Air and Pavement Temperature

Each material has its specific application temperature requirements. The material manufacturer's recommendation regarding these temperatures shall be followed at all times. If at any time during marking operations the temperature falls below these requirements all marking operations shall stop.

Air and pavement surface temperatures shall be measured one half hour prior to, and one to two hours after striping installation activities begin and continue through the end of the day (if temperature specification is near critical). If needed, Gilbert may require temperature readings be taken at shorter time intervals. The measured temperatures shall be recorded in a log book by the contractor. The pavement surface temperature shall be measured with an approved standard surface temperature thermometer or a non-contact infrared thermometer.

3.4.10 Calibration Process

Each day prior to the start of any pavement marking operations that involve paint or thermoplastic, the contractor shall calibrate the wet film thickness and glass bead application to those specified rates. Any work performed without the benefit of calibration may be rejected. Gilbert may require calibration to be done in the presence of a Gilbert inspector. If at any time conditions change or it appears the required application rates are not being achieved then the calibration process shall be repeated if directed to do so by Gilbert.

3.4.11 Long Line Truck Film Thickness and Width Calibration

The required waterborne, spray thermoplastic or marking paint application speed of the striping vehicle shall be determined prior to the start of daily striping (or marking) operations. The equipment needed to calibrate paint film thickness and width are; a stopwatch, metal sample plates, film thickness gauge, measuring tape and a roll of tar paper. The contractor shall supply all materials, equipment, and labor necessary to calibrate.

The paint film application thickness, width and speed shall be calibrated using the following procedure or as approved by Gilbert:

Step 1 - A distance of 30 feet (+/-) shall be measured out and marked on a length of rolled out tar paper in a flat paved area where the striping vehicle can achieve and maintain a speed of up to ten miles per hour without impact to traffic. The tarpaper shall be secured to the pavement surface with duct tape so it is lying flat and is secure from being blown over. Three metal sample plates shall be placed three to four feet apart and duct taped down near the end of the 30 foot test distance.

Step 2 - The striping vehicle is to install a stripe with no glass beads on the tar paper for the marked 30 foot distance and over the sample plates. The time that it takes the striping vehicle to apply the 30 feet of test stripe shall be measured and then equated to a mile per hour application speed. Additionally, the velocity (via the speedometer) of the striping vehicle shall be noted by the driver.

Step 3 - Immediately after the test stripe has been installed, the film thickness shall be measured using a wet film thickness gauge or similar measuring device or instrument from all three plates. The device shall be inserted into the wet paint to the depth of the metal. The thickness is then visually noted. If a wet thickness gauge is used the manufacturer's directions for its use shall be followed. The stripe distribution on the sample plates shall be inspected to check width, edge, and overall visual appearance of the stripe.

Step 4 - Steps 2 through 3 shall be repeated until the required paint application speed and material flow settings and gun heights are determined and the pressures are set that result in an even crisp stripe that is the required width and mil thickness.

Additionally, spot checks of the applied wet thickness shall be made by the contractor throughout the day. Random spot checks of the paint thickness may also be made by Gilbert to ensure conformance with the required criteria. The contractor shall inspect the wet thickness immediately after the marking paint is applied by inserting a thin, graduated machinist rule or similar instrument into the wet paint to the depth of the pavement surface. The thickness is then determined visually by noting the depth of penetration. The thickness determined by this spot check method shall be consistently more (at least 1 mil more) than the required wet mil thickness due to the influence of the drop-on glass beads.

If the applied thickness is ± 2 mils of what is required or the width of the line is less than what is required, all striping operations shall stop and adjustments shall be made until the required thickness is achieved. If after three consecutive adjustments the required width or thickness is not achieved, then Gilbert can order all striping operations be halted until the problem is corrected. If this occurs the calibration procedures herein specified shall be repeated prior to the startup of striping operations.

3.4.12 Long Line Truck Glass Bead Flow Calibration

The glass bead application rates shall be calibrated at the beginning of each daily striping operation after the paint application speed has been determined. The equipment needed to calibrate the bead flow is; a stopwatch, 1000 milliliter graduated beaker (at 50 milliliter intervals), a bead

calibration chart (available from glass bead manufacturers such as Potters Industries, Inc.) and a couple of buckets. The contractor shall supply all materials, equipment, and labor necessary to calibrate.

The bead calibration charts shall be specifically designed to equate the volume of beads measured through this calibration method to an applied wet paint mil thickness, the required glass bead application rate in pounds per gallon of marking paint applied and the required application speed in miles per hour to achieve the specified glass bead application rate.

The glass bead application rate shall be calibrated using the following procedure unless otherwise approved by Gilbert:

- Step 1 - While the striping vehicle is stopped and the paint gun is off, place the bucket under the bead gun.
- Step 2 - Turn on the bead gun for five seconds.
- Step 3 - Pour the beads into the beaker and measure the volume.
- Step 4 - Using the bead calibration chart for the required mil thickness of paint, find the required bead application rate, the measured volume of beads just achieved and the resulting application speed.
- Step 5 - If the beaker volume is less than the chart value, increase the bead flow. If the beaker volume is more than the chart value, decrease the bead flow.
- Step 6 - Repeat Steps 2 through 5 until the required speed for the specified bead application rate matches the required paint application speed.

Once all application speed and settings have been calibrated, the contractor shall run a length of test stripe to ensure the paint stripe is at the desired width and the glass beads have been evenly distributed on the stripe. **Two sample plates shall be taken from this run and given to Gilbert. The date, Contract Work Order number, project name, mil thickness, bead application rate and contractor shall be noted on the back of the sample plates.**

3.4.13 Thickness and Bead Application Calibration for Short Lines, Legends and Symbols

The wet thickness of marking material applied via a hand liner shall be determined and/or checked as it is applied. A thin graduated machinist rule or similar device shall be inserted into the applied material at sufficient intervals and locations to verify that the required thickness is being achieved. The thickness (depth of penetration) is to be visually noted on the scale on the side of the rule. Additional material shall be applied as necessary to achieve the required thickness. This

requirement also applies to extruded thermoplastic. However, in this case, the measurement of wet thickness is only required for every line segment and every other symbol or legend.

Glass bead application rate calibration shall be performed on hand liners. The rates shall be set and determined using the following procedure unless otherwise approved by Gilbert:

- Step 1 - The thermoplastic extruder cart bead tank shall be empty. The bead dispenser shall be set for a six inch wide line.
- Step 2 - The bead tank is to be filled with 14 pounds of glass beads (desired rate is 12 pounds per every 300 foot section of six inch wide line or 12 pounds per 100 square feet).
- Step 3 - A 300 foot section is measured out on a paved surface. The extruder cart is placed at one end of this segment.
- Step 4 - The bead dispenser is opened and the glass beads applied to the 300 foot pre-measured segment.
- Step 5 - There shall be at least two pounds of glass beads remaining in the bead tank (the tank is emptied and the remaining beads weighed). If not, steps 1 through 5 are to be repeated until the required application rate is achieved.

If the bead type changes then the bead calibration procedure shall be repeated. In this case (calibration check) the length of the test section can be reduced to 105 feet and the amount of beads used to calibrate can be seven pounds.

Once the bead flow has been calibrated no adjustments shall be made to the bead dispenser unless approved by Gilbert. If necessary the calibration procedure shall be repeated.

The bead application rates for markings placed with a hand sprayer (e.g. epoxy short lines, legends, symbols and curb painting) shall be achieved by pre-weighing the proper amounts of glass beads to be placed on a symbol, legend segment of line or curb based on the square footage of that markings and the specified bead application rate. For example: a 25 mil thick 12 inch wide by 24 foot long stop line segment of epoxy requires a bead application rate of 24 pounds of beads for every gallon of material applied. This segment would require a total of nine pounds of beads (at 25 mil one gallon of epoxy covers 64 square feet). Thus, nine pounds of beads shall be pre measured out in a container and then evenly applied to that entire segment of that line.

The contractor is responsible for calculating the required amounts of beads to be applied. The pre measured bead containers shall be clearly marked as to its application and pounds of beads.

3.4.14 Glass Beads

Drop-on glass beads shall be immediately mechanically deposited after the paint, thermoplastic, profile thermoplastic or epoxy markings are applied. If the glass beads are not

adhering to these markings as intended, all operations shall be stopped until the problem can be corrected. All markings that are determined by Gilbert not to have sufficient drop-on glass beads, as herein specified, shall be either removed and replaced or overlaid with new markings at no additional cost to Gilbert. Drop-on glass beads anchor and retro-reflect best at 55% to 60% embedment of their diameter.

All glass bead application equipment shall be calibrated prior to the start of striping operations so the application rate of the glass beads coincides with the required thickness of the pavement marking material and, if sprayed, the application speed. The bead flow calibration method shall be per the requirements specified herein.

3.4.15 Thickness

Pavement marking materials shall be applied to the required thickness. Contract remedies may be sought if markings are found by Gilbert that is below the required thickness. The remedies will be directly proportional to the items installation cost plus a one cent per foot mark-up for traffic control. Thus, if a line is 10% less than the required thickness (the actual field thickness divided by the specified thickness x 100) then a 10% pay reduction will be applied to those quantities of markings that are found to be too thin plus one cent mark-up for traffic control.

The procedure for inspecting the applied thickness of pavement markings after they have fully dried or cured is as follows. A flat six inch by one foot steel plate is placed over the pavement marking to be measured. A triangular machined graduated thickness gauge is inserted into the gap between the underside of the plate and above the pavement surface. The thickness can then be determined based on where the underside edge of the steel plate touches the gauge. Care needs to be taken to ensure that the plate is balanced at a level horizontal with the top pavement marking surface. This can be achieved by placing a level on the steel plate. The influence of the thickness of any existing markings shall also be taken in to account. Another method that will be used to determine the actual thickness of the applied markings will be based on how the thickness of the marking compares to the thickness of a coin. The following are guidelines for this method:

- One dime is approximately 45 mils
- One quarter is approximately 55 mils
- Two dimes is approximately 90 mils
- Two quarters is approximately 110 mils

The contractor shall make a consistent effort not to allow thickness problems to arise so the thickness penalty procedure can be avoided. The contractor shall make periodic spot checks of the required thickness to the applied markings for paint, thermoplastic and epoxy thickness. These checks shall consist of two or three per mile for long line applications and on every separate marking for short line applications.

Random spot checks of the markings thickness may also be made by Gilbert to ensure conformance with the requirements of these specifications. The contractor shall inspect the wet thickness immediately after the marking is applied by inserting a thin, graduated machinist rule or similar instrument into the wet material to the depth of the underlying surface. The thickness is then

determined visually by noting the depth of penetration. Gilbert's inspector may use this method or an alternative spot check procedure which is to place a small flat sheet of black painted metal or tape with a known thickness immediately ahead of the striping apparatus. After striping, the sample shall be measured with a suitable measuring device, e.g. caliper, micrometer, to determine the thickness of the marking.

If the thickness of the applied markings is not conforming to the requirements of the specifications within acceptable parameters all marking operations shall stop. Waterborne paint markings shall not be applied any thicker than 16 to 17 mils. Corrective action shall immediately be taken (e.g. adjusting application speed and/or pressure or gun flow settings) to ensure that the proper thickness is being applied. Corrective measures may include the reapplication of additional thickness to already applied markings that are known to be thin. If three or more stops are made to correct thickness problems, Gilbert may order the contractor to recalibrate per the procedures stated herein.

3.4.16 No Track and Drying Time

Each pavement marking material has its own specific no track and drying time that vary greatly with ambient weather conditions. The contractor shall coordinate with the material manufacturer on the times that apply to their materials. The no track and drying times shall be accounted for in all traffic control plans. Traffic shall not be allowed on any paint or thermoplastic marking until it has reached no track.

No track is the lapsed time that is required for the markings, as applied in the field with glass beads, not to splash or track any applied marking material when run over with a vehicle tire. The Contractor shall be responsible for all claims made for markings splashed on vehicles arising from the contractors operations. Coning of applied markings shall be performed as necessary.

The drying time shall be defined as the minimum elapsed time, after application, when the pavement markings shall have and shall retain the characteristics required herein and after which normal traffic will leave no impression or imprint on the newly applied markings. Gilbert may conduct a field test in accordance with ASTM D-711 to verify actual drying.

3.4.17 Appearance and Width of Placed Markings

The finished pavement marking line shall have well defined edges and be free from waviness. Lateral deviation of the line shall not exceed one inch in 100 feet. The longitudinal deviation of a line segment and gap shall not vary more than six inches in a 40 foot cycle. According to the width of line called for on the plans the actual width of line shall be within the limits specified in the following table:

Plan Width	Actual Width
4 inches	4 to 4.25
6 inches	6 to 6.25
8 inches	8 to 8.25
Over 8 inches	

After application and sufficient drying time, the marking shall show no appreciable deformation or discoloration under local traffic conditions in an air and/or road temperature ranging from -10 degrees to +180 degrees F.

3.4.18 Retro reflectance

The white and yellow pavement markings shall have the following minimum retro reflectance values as measured by a 30 meter MiroLux 30 or equivalent portable retro reflect meter initially, and/or forty-five (45) days after application to the roadway surface:

Product	Retro reflectance (Mill candelas)
White	175
Yellow	125

The sample rate to determine if the applied markings meet this requirement will be based on a minimum of four randomly selected points taken approximately at quarter points throughout the entire length of the project. Readings taken at each point shall be for each type of marking that is represented at that location. Such as edge lines, lane lines, legends, symbols, stop bars and cross walks. Three readings will be taken and then averaged with the compliance determination based on the average of those three readings. Additional sample points may be taken by Gilbert.

Gilbert considers the LTL-2000 and MX-30 to be equivalent portable retro reflect meters for determining the requirements stated herein.

If approved by Gilbert, the Contractor may elect to increase bead application rates to ensure conformance within these requirements.

3.5 Other Requirements

All work items shall conform to the applicable requirements specified in the following documents:

- **Arizona Department of Transportation, Standard Specifications for Road and Bridge Construction, 2000 Edition including errata, and addenda and all related Stored Specifications.**

- **Arizona Department of Transportation, Materials Testing Manual (THE DEPARTMENT M-XII-TWO-D), Materials Section, Current Edition (Materials Testing Manual).**
- **American Society for Testing Materials (ASTM), Standard Specifications.**
- **American Association of State Highway and Transportation Officials (AASHTO), Standard Specifications for Transportation Materials and Methods of Sampling and Testing.**
- **Manual on Uniform Traffic Control Devices (MUTCD), 2003 Edition- 1st Revision, as adopted by the Town.**
- **Town of Gilbert Engineering Standards and Policies Manual (Viewed online at www.ci.gilbert.az.us; click on Departments, under the Development Services tab click on Engineering tab, click on Public Works/Engineering Standards & Details, scroll down to Standard Details Packet items 8, 9, 10)**
- **Maricopa County Department of Transportation Pavement Marking Manual**

The MUTCD may be purchased from:

U.S. Government Bookstore
Wells Fargo Bank
201 West 8th Street, Pueblo, Colorado 81003
(719) 544-3142

The ADOT Traffic Control Supplement, the ADOT Materials Testing Manual and the Standard Specifications for Road and Bridge Construction, 2000 Edition may be purchased from:

ADOT Records Administration Section – Engineering Records
1655 W. Jackson Street, Room 175
Phoenix, Arizona 85007
(602) 712-7498

Copies of other materials can be obtained directly from the listed organizations.

3.5.1 Brand Name

The brand name products that are known to be in conformance with these specifications are listed in General Conditions, paragraph 2.6. Alternative brands will be considered if proven to be of equal or better quality than those listed.

3.5.2 Technical Discrepancies

If, at any time, the Proposer is aware of any discrepancies between this specification and any other standard or criteria referenced they shall notify Gilbert in writing. This notification shall provide detailed information regarding the potential problem and present possible solutions, if applicable.

3.5.3 Satisfactory Performance Life

All materials shall be applied per the manufacturer's recommendations and per the applicable requirements of the specifications. Satisfactory performance life shall be considered to be achieved if the actual life of the applied markings do not deteriorate due to natural causes and normal road wear within the specified expected pavement marking life times. The minimum expected pavement marking lifetimes are detailed in General Conditions, paragraph 2.4, **WARRANTY**. The contractor shall correct any unsatisfactory performance conditions within that time frame without cost to Gilbert. Consistent unsatisfactory performance may be grounds for parcel or total cancellation of a contract.

Unsatisfactory performance conditions include, but are not limited to, the display of the following:

Any cracks and/or breaks in any portion of the applied materials that may cause a loss of adhesion or unsightliness that is clearly visible to passing motorists.

Any shrinkage that is more than 1/4 inch.

Any de-lamination of any layer.

Significant discoloration to the point that the marking fails to conform to specified color.

Significant cracking, crazing, blistering, flaking or chipping that causes the markings to look unsightly and worn out.

Loss of nighttime reflectivity. All markings shall have a retro-reflective appearance.

Initial retro-reflectance that is below the required minimums (see paragraph 3.4.18, Retro reflectance).

The markings were not placed properly per the requirements of the specifications.

Loss of adhesion due to underlying dirt that should have been cleaned off before the markings were placed.

Subjective and/or objective measures as based on this specification and other nationally accepted standards and practices will be used by Gilbert to judge unsatisfactory performance. The contractor shall warranty all applied materials specified expected pavement marking life times.

3.6 WATERBORNE PAINT MARKINGS (WPM)

Description

The work under this subsection shall consist of cleaning and preparing pavement surfaces and furnishing (if not supplied by Gilbert) and applying reflectorized waterborne paint pavement markings using a hand cart (or short line) spray device and long line airless spray truck. The paint shall be applied to the locations, shapes, widths and thickness as required by the Contract Work Order, details shown on any attached plans (if applicable) and in accordance with the manufacturers' specifications, these specifications and as directed by Gilbert. The marking configuration and glass bead types and application rates shall be specified per the Contract Work Order.

3.6.1 Materials

General

The waterborne pavement marking paint material shall be a ready-mixed, one component lead-free paint that is specifically compounded for pavement marking. Two types of paints shall be supplied, one specifically designed for roadway surface applications and the other for curb painting. The characteristics of the material shall be such that complete and even coverage of a line at a specified thickness, 15 wet mils for roadway striping and 10 wet mils for curb painting, width and configuration can be achieved at application speeds faster than 5 miles per hour. With glass beads applied, this material, upon drying shall produce an adherent reflectorized marking capable of resisting deformation and wear presented by a roadway environment.

3.6.2 Composition

The composition of the paint shall be determined by the manufacturer and shall be per their written requirements and specifications on file with Gilbert as a Class I paint. It will be the manufacturer's responsibility to produce a pigment waterborne paint containing all the necessary solvents, dispersants, wetting agents, preservatives and all other additives, so that the paint shall retain its viscosity, stability and all of the properties as specified herein.

The manufacturer shall certify that the product does not contain mercury, lead, hexavalent chromium, toluene, chlorinated solvents, hydrolysable chlorine derivatives, ethylene-based glycol ethers and their acetates, nor any carcinogen, as defined in 29 CFR 1910 \ 1200. The lead content shall not exceed 0.06 percent by weight of the dry film and the test for chromium content shall be negative.

3.6.3 Quantitative Requirements of Mixed Class I Paint

Component	White	Yellow
Pigment, percent by weight, ASTM D3727, allowable variation from qualifying sample. The minimum shall be 56%.	+/-2.0%	+/-2.0%

Component	White	Yellow
Non-volatile content, percent by weight vehicle, ASTM D2369, allowable variation from qualifying sample. The minimum shall be 72%.	+/-2.0%	+/-2.0%
Viscosity, Kreb units at 77 ± 1 °F, ASTM D562.	80-95	80-95
Weight per gallon, pounds at 77 ± 1 °F, ASTM D1475. The minimum shall be 13 pounds per gallon. The allowable variation in pounds.	+/-2	+/-2
Vehicle composition, vehicle Infrared Spectra, ASTM D2621, allowable variation from qualifying sample.	None	None
pH, ASTM E70, allowable variation from qualifying sample. (minimum of 10.0)	+/-1.0	+/-1.0
Fineness of dispersion, HEGMAN, minimum, ASTM D1210.	3.0	3.0
Maximum allowable Volatile organic compounds, grams per liter, per ASTM D3960 according to 7.1.2.	150	150
Flash point, degrees F, minimum, ASTM D93, method A.	100	100
Dry time to no pick up with no beads, minutes, maximum, ASTM D711.	9	9
Dry through time, minutes, ASTM D1640 except no thumb pressure is used when thumb is rotated 90 degrees on paint film.	20	20
Flexibility, TT-P-1952D	Pass	Pass

If requested, the contractor via the manufacturer shall furnish factory samples of paints. Additionally, the contractor may also be requested to furnish samples taken from existing stocks at the contractor's yard or at a project site. Gilbert will test these samples. These samples will be used for comparison purposes for those paints actually used on the project and those furnished from the factory.

3.6.4 Dry Opacity

The Dry opacity for the paint will be determined using a black-white Leneta Chart, Form 2C Opacity and a Photovolt 577 Reflectance meter or equal. Using a gap doctor blade a 5 mil film of paint shall be drawn that will cover both black and white portions of the chart. The film shall be allowed to dry 24 hours. After calibrating the reflectance meter according to the manufacturer's instructions, the reflectance will be measured over the white and black portions with the green Tristimulus filter. The dry opacity is calculated as follows:

- Reflectance over black/reflectance over white = dry opacity.
- Dry opacity for both white and yellow paint shall be a minimum of 0.93

3.6.5 Yellowness Index

The yellowness index for the white paint will be determined as described for dry opacity, only a 15 mil gap doctor blade will be used to draw down the paint. After drying 24 hours, the paint film's reflectance will be measured using the green and amber Tristimulus filters. The yellow index is then calculated as follows:

- Yellowness index = (amber- blue)/green x 100
- Yellowness index for the white paints shall be a maximum of 10.

3.6.6 Static Heat Stability

The static heat stability for the paint will be determined as follows: A one pint sample of the paint in a sealed can is to be placed in a heated air circulation oven at 120 degrees F +/- 1 degrees F for a period of one week. The sample is then to be removed from the oven and the viscosity checked in Krieb units at 77 degrees F +/- 1 degree F according to ASTM D562. The measured viscosity shall be in the range from 68 to 90. The tested sample shall not show any signs of instability (e.g. jelling).

3.6.7 Heat-Shear Stability

The heat shear stability for the paint shall be determined as follows: A one pint sample of the paint shall be sheared at a high speed in a Waring blender that is heated to a temperature of 150 degrees F. The blender's lid shall be sealed to minimize the loss of volatiles. When the sample of paint reaches 150 degrees F the blender shall be stopped and the paint poured immediately into a sample can and covered. The sample is to be cooled overnight and then examined for jelling or other signs of instability. The viscosity of the sheared sample is to be measured according to ASTM D562 in Krieb Units at 77 degrees F +/- 1 degree F. The measured viscosity shall be in the range of 68 to 95. If not at the upper limit, run total solids on the sheared paint and adjust solids, if necessary, by adding water to reach the original solids content. If the solids content requires adjustment, again check the viscosity of the paint. The viscosity must be in the range of 68 to 95.

3.6.8 Scrub Resistance

The scrub resistance will be determined according to ASTM D2486. An appropriate doctor blade is to be used to obtain a dry film thickness of 3 to 4 mils. The sample shall be cured for 24 hours. The scrub test shall be performed at 77 degrees F +/- 1 degrees F at 50% +/- 5% humidity. The sample shall withstand a minimum of 800 cycles.

3.6.9 Reflectance

The reflectance for both the white and yellow paint (per a lab test without beads) will be determined using a 15 mil draw down film sample. The same white sample used to determine the yellowness index as herein specified may also be used for this test. The reflectance of the paint films will then be measured using the green Tritimulus filter. The reflectance for the white paint shall be a minimum of 85. The reflectance for the yellow paint can range from 45 to 58.

3.6.10 Freeze-Thaw Properties

The paint viscosity or consistency shall not change significantly when the paint is tested for resistance to three cycles of freeze-thaw according to ASTM D2243.

3.6.11 Spray Properties

The paint shall be applied at a 15 mil wet film thickness in the field. The paint shall show the following properties:

- Dry to a no track time with 90 seconds or less when the line is crossed by a standard size automobile. (77° F, less than 50% humidity, clear/partly cloudy and normal air flow)
- Produce a clean, smooth line with no overspray or puddling.
- The applied paint shall accept the glass beads with the specified coating so that the beads shall embed into the paint depth to the recommendations of the bead manufacturer.
- The paint when heated to the temperature necessary to obtain the specified dry time, shall show no evidence of instability such as viscosity increase, jelling or poor spray application.

3.6.12 Toxicity

At no time shall these waterborne paint marking materials exude fumes which are toxic or injurious to persons or property.

3.6.13 Physical Properties

The paint pigment shall be well ground and evenly and uniformly dispersed in the paint solution. The pigment shall not cake or thicken in the container, and shall not become granular or curdled. Any settlement of pigment in the paint shall result in a thoroughly wetted soft mass that can be easily and successfully re-mixed into proper solution with a standard mixing paddle. Upon mixing the paint shall regain a smooth uniform product of the proper consistency. If the paint cannot be mixed back to a uniform, totally spray able liquid state, then it shall be considered unfit for use and shall not be used. The contractor shall secure replacement material that shall conform to the requirements as specified herein.

3.6.14 Color

The paint marking material shall meet the following color requirements:

- The yellow color shall closely match Federal Test Standard Number 595b, color chip no. 33538. The color will be checked visually, and will be checked against Tristimulus Balues for the color according to Federal Test Method Standard No. 141.
- The white color shall closely match Federal Test Standard Number 595, color chip no. 17925.

3.6.15 Required Thickness and Glass Beads

The glass bead and application rate will vary based on the type specified. The paint application wet thickness shall be 15 mils and the dry thickness shall be between 8 and 9 mils.

The glass beads shall conform to the applicable requirements of Subsection 708-2.02 of the Standard Specifications, the pavement marking material and glass bead manufacturer's recommendations and as specified herein.

The glass bead type, coating and application rate per specified bead application designation (as stated on **Pricing Sheet, Attachment 9**, item description), type, bead coating and rate are:

Application Designation	Type of Bead (Gradation)	Coating *	Application Rate (Pounds per Gallon)
Std Beads	ADOT STD.	MP/AC	8 lbs/gal of paint
*NOTE: The coatings shall be per the bead manufacturer's specifications and recommendations for the type of paints specified. MP - Moisture proof bead coating. AC - Adhesion bead coating. MP/AC indicates the requirement for dual coating.			

The bead application for curb paint shall be 10 pounds of ADOT standard glass beads per 100 square feet of curb painted.

3.6.16 Installation Requirements

General

Typically all long line paint operations will involve a moving application operation unless otherwise directed by the Street Superintendent. The moving striping operation traffic control shall be as approved by the Street Superintendent. The minimum traffic control usually consists of a shadow vehicle (which follows the striping truck) which has an attenuator and a flashing arrow panel. Signs shall be placed to restrict motorist (e.g. regulatory signs that state "Keep Off The Stripe") from driving on the applied material. For two-way roadways it may be necessary to have a vehicle out in front of the operations with a flashing arrow panel facing opposing traffic.

3.6.17 Equipment

In order for Gilbert's maintenance work to proceed with minimal delay, the Contractor shall have a variety of equipment available. The contractor shall utilize over-the-road, truck-mounted high-pressure, **airless spray** mainline striping machine. The unit shall operate at speeds of up to 12 miles per hour (mph), applying lines in two colors (white or yellow) at 15 wet millimeters (mils) and shall be capable of applying clear cut lines of the width specified by Gilbert. The machine shall be equipped with a mechanical device capable of placing a broken reflectorized line with a 10-foot painted segment and a 30-foot gap with a glass bead drop in dispenser controlled by the spray gun mechanism. A glass bead dispenser which is capable of placing the glass beads into the paint line as

the paint is applied to the pavement shall be utilized. Truck drawn or walk behind equipment is not acceptable.

All guns must be in full view of the operator at all times. All parts of the equipment which come in contact with the material shall be constructed for easy accessibility for cleaning and maintenance. The equipment shall operate so that all mixing and conveying parts, including the line dispensing devices, will maintain the material at the application temperature recommended by the pavement marking material manufacturer. The equipment shall have functioning and calibrated temperature sensing devices to verify these temperature requirements.

The front and back operators of the paint truck shall be fully trained and experienced (a minimum of 3 years) in the application of long line paint markings. The equipment shall have working pressure gauges that are constantly visible to the operator at all times during the marking operations so that any fluctuations can be detected immediately.

The Contractor shall provide proof that the pressure sensing, temperature sensing devices and corresponding gauges have been calibrated and are fully functional.

3.6.18 Weather Conditions

The air and roadway surface temperature at the time of application shall not be less than 55° F and shall be rising. The wind chill factor shall not be below 55° F. The road surface shall be absolutely dry with no surface dampness, dew or subsurface wetness.

3.6.19 Dry Time

When applied at a temperature range recommended by the Manufacturer and applied at the specified thickness, the material shall set to bear traffic 1 ½ to 3 minutes when the air and road surface temperature is approximately 75° F +/- 5° F.

3.7 THERMOPLASTIC MARKINGS (THM)

Description

The work under this subsection shall consist of cleaning and preparing pavement surfaces and furnishing and applying either white or yellow thermoplastic reflectorized pavement markings. This shall be accomplished using hand cart extrusion, long line ribbon extrusion or long line spray dispensing devices of the required shape and thickness to the prepared pavement surface at the locations specified on the Contract Work Order. This work shall be performed in accordance with the details shown on any attached plans, if applicable, the manufacturers' specifications, the requirements of these specifications and as directed by Gilbert. The marking configuration and thickness shall be as specified on the Contract Work Order.

3.7.1 Materials

Compositional Requirements

The thermoplastic reflectorized material shall consist of a 100% solid mixture of heat stable resins, white or yellow pigment, inter-mixed glass beads, filler, and other materials in granular or block form specifically compounded for reflectorized pavement markings to be applied to the pavement in a molten state. The characteristics of the liquefied material shall be such that complete and even coverage of specified width and thickness as a line, legend or symbol is provided by the required application method and rate. Upon cooling to normal pavement temperature, this material shall produce an adherent reflectorized marking capable of resisting deformation and wear in the roadway.

A current listing of approved thermoplastic material manufacturers is listed herein under Special Terms and Conditions, Paragraph 33, Brand Name or Equal.

3.7.2 Composition Makeup

The thermoplastic composition shall conform to the following requirements:

Component	Percent by Weight	
	White	Yellow
Binder (Hydrocarbon or Alkyd *)	18-28	18-28
White Pigment	10-15	---
Yellow Pigment	---	2-8
Reflective Glass Inter-Mix Beads	30-40	30-40
Calcium Carbonate or Equivalent Filler	20-42	24-45
*NOTE: hydrocarbon shall only be used for long line applications. Alkyd can be used for short or long line applications.		

The ingredients of the thermoplastic composition shall be thoroughly mixed and in a solid block or free flowing granular form. The material shall readily liquefy when heated in a melting apparatus into a uniform solution. This solution shall be free from all skins, dirt, foreign objects or any other ingredient which would cause bleeding, blotting, staining or discoloration when applied to the bituminous or concrete pavement surfaces.

The thermoplastic shall consist of one of the following binder types depending on the requirements of the pavement marking application:

- Hydrocarbon - shall consist mainly of synthetic petroleum hydrocarbon resins with appropriate fillers and pigments.
- Alkyd - shall consist of a mixture of synthetic resins, at least one of which is solid at room temperature and high boiling point plasticizers. At least one-third of the binder composition and no less than eight percent by weight of the entire material

formulation shall be solid maleic-modified glycerol ester resin. The alkyd binder shall not contain any petroleum based hydrocarbon resins.

An alkyd thermoplastic formulation shall be used for all short line work such as symbols, legends and transverse lines, including stop bars (or lines) and crosswalks. The formulation for these short line applications shall be configured primarily for the hand cart extrusion application method.

Either alkyd or hydrocarbon thermoplastic formulation may be used for longitudinal lines, including lane lines and edge lines, unless otherwise required by the Town. The formulation for these long line applications shall be either for spray or the ribbon extrusion application method. Additionally, the formulation used shall be in accordance with the requirements of the application equipment used to install the markings. Hydrocarbon binder based thermoplastic shall not be used for transverse lines, legends or symbols.

3.7.3 Reflective Glass Beads

The drop-on reflective glass beads shall conform to the requirements of Subsection 708-2.02 of the ADOT Standard Specifications except the bead coating shall be as recommended by the bead manufacturer as suitable for thermoplastic.

In addition to incorporating glass beads in the thermoplastic mix, glass beads shall be evenly applied (dropped on) to the surface of the molten material immediately after its application at a uniform minimum rate of 10 pounds of glass beads per 100 square feet of line or marking area (e.g. 300 linear feet of six inch line).

3.7.4 Filler

The filler shall be a white calcium carbonate or equivalent filler with a compressive strength of at least 5,000 pound per square inch.

3.7.5 White Pigment

The white pigment shall be Titanium dioxide and shall conform to the requirements of ASTM D-476 for Type II (92%). The white thermoplastic shall have a minimum of 10% by weight of Titanium dioxide.

3.7.6 Yellow Pigment

The yellow pigment shall be as recommended by the manufacturer.

3.7.7 Physical Characteristics of the Composition

3.7.8 General

The thermoplastic material shall not give off fumes which are toxic, injurious or require specialized breathing apparatus when heated to the temperature range specified by the manufacturer

for application. The material shall remain stable when held for four hours at this temperature, or when subjected to four reheating's, not exceeding a total of four hours, after cooling to ambient temperature. The temperature viscosity characteristics of the plastic material shall remain constant throughout the reheating's and shall show like characteristics from batch to batch. There shall be no obvious change in color of the thermoplastic material as a result of reheating, and the color of the material shall not vary from batch to batch.

3.7.9 Color

The thermoplastic material, after heating four (4) hours (+/- five (5) minutes) at 425° F (+/- 3°) and cooled to 77° F (+/- 3°) shall meet the following:

- White - daylight reflectance at 45° - 0° shall be 70% minimum.
- The color shall match Federal Test Standard Number 595, color chip no. 17925.
- Yellow - daylight reflectance at 45° - 0 shall be 43% minimum.
- The color shall match Federal Test Standard Number 595, color chip no. 13538.

3.7.10 Softening Point

After heating the thermoplastic material for four (4) hours (+/- five (5) minutes) at 425° F (+/- 3°) and testing in accordance with ASTM D36, the thermoplastic materials shall have a softening point of 215° F (+/- 15° F).

3.7.11 Water Absorption and Specific Gravity

The thermoplastic material shall not exceed 0.5% by weight of retained water when tested in accordance with the requirements of ASTM D 570.

The specific gravity of the material, as determined by Section 11 of AASHTO T 250, shall be between 1.85 and 2.3 maximum.

3.7.12 Impact Resistance

After heating the thermoplastic material for four (4) hours (+/- five minutes) at 425° F (+/- 3°) and forming test specimens, the impact resistance shall be not less than 10 inch pounds when tested in accordance with Section 9 of AASHTO T 250.

3.7.13 Bond Strength

After heating the thermoplastic material for four (4) hours (+/- five minutes) at 425° F (+/- 3°), the bond strength to Portland cement concrete shall be not less than 180 pounds per square inch.

The bond strength shall be determined in accordance with the procedures specified in Section 7 of AASHTO T 250.

3.7.14 Abrasion Resistance

The maximum loss of thermoplastic material during the abrasion resistance test herein specified shall be 0.5 grams.

The abrasion resistance of the thermoplastic material shall be determined by forming a representative lot of the material at a thickness of 0.125 inch on a four inch square monel panel (thickness 0.050 = +/- 0.001 inch), on which a suitable primer has been previously applied, and subjecting it to 200 revolutions on a Taber Abraser at 25° C, using H-22 calibrated wheels weighted to 250 grams. The wearing surface shall be kept wet with distilled water throughout the test.

3.7.15 Cracking Resistance at Low Temperature

After heating the thermoplastic material for four (4) hours (+/- five minutes) at 425° F (+/- 3°), applying to concrete blocks, and cooling to 15° F (+/- 3°) the material shall show no cracks when observed from a distance exceeding 12 inches. Testing for low temperature crack resistance shall be in accordance with the procedures specified in Section 8 of AASHTO T 250.

3.7.16 Flow ability

After heating the thermoplastic material for four (4) hours (+/- five minutes) at 425° F (+/- 3°) and testing for flow ability in accordance with Section 6 of AASHTO T 250, the white thermoplastic shall have a maximum percent residue of 18 and the yellow thermoplastic shall have maximum percent residue of 21.

3.7.17 Yellowness Index

The white thermoplastic material shall not exceed a yellowness index 0.12 when tested in accordance with Section 4 of AASHTO T 250.

3.7.18 Flow ability (Extended Heating)

After heating the thermoplastic material for eight (8) hours (+/- 1/2 hour) at 425° F (+/- 3°) with stirring the last six hours, and testing for flow ability in accordance with Section 12 of AASHTO T 250, the thermoplastic shall have a maximum percent residue of 28.

3.7.19 Flash Point

The thermoplastic material shall have a flash point not less than 475° F when tested in accordance with the requirements of ASTM D92 "Flash and Fire Points by Cleveland Open Cup."

3.7.20 Storage Life

The materials shall meet the requirements of this specification for a period of one year from the date of manufacture. The month and year of manufacture shall be clearly marked on all packages of thermoplastic material. The thermoplastic must also melt uniformly with no evidence of skins or unmelted particles for this one year period. Any material which does not meet the above requirements, or which is no longer within this one year period at the time of application, shall not be used. The Contractor shall replace the outdated material with new at no additional cost to Gilbert.

3.7.21 Primer Sealers

The application of primer sealer on Portland cement concrete (PCC), hot mix asphaltic concrete (AC), asphaltic concrete friction course (ACFC) or chip seal coat surfaces prior to application of the thermoplastic material shall be as recommended by the thermoplastic material manufacturer. The primer sealer shall be especially compounded for use with the specified thermoplastic material. The contractor shall ensure that the primer sealer used has been approved for use by the thermoplastic manufacturer for use with their material.

The thermoplastic material supplied normally should not require the application of separate primer sealer on newly placed AC surfaces prior to application of the thermoplastic material. The application of primer sealer shall be required on all PCC surfaces after the removal of all curing compounds.

The use of waterborne pavement marking paint as a replacement to the application of primer sealer is not acceptable.

3.7.22 Inter-Mix Glass Beads

The inter-mix beads shall be coated or uncoated and conform to AASHTO M247-81 (1986) type I. The use or non-use of coatings shall be left to the discretion of the manufacturer. If non-coated beads are used the thermoplastic formulation shall be configured to minimize settling of the intermixed beads when the material is heated and applied.

3.7.23 Installation Requirements

3.7.24 Thermoplastic Application Equipment

The equipment used to melt hot applied thermoplastic material shall be constructed to provide continuous uniform heating to temperatures exceeding 400° F while mixing and agitating the material. The heating mechanism of the kettle shall be equipped with a heat transfer medium consisting of oil or air. The burner flame must not directly contact the material vessel surface. The mixing and agitating mechanism shall be capable of thoroughly mixing the material at a rate which ensures constant uniform temperature distribution. The kettle shall have two temperature gauges, one to indicate the temperature of the heat transfer medium (oil or air) and the other for the thermoplastic material. Additionally, the kettle shall be equipped with an automatic thermostat

control device that allows for positive temperature control to prevent overheating or under-heating of the material. The equipment shall have double drop capabilities.

The conveying portion, between the kettle(s) and the dispensing device (extruder, ribbon gun or spray gun), and the dispensing device shall be configured to prevent accumulation, clogging and shall be capable of maintaining the material at the specified application temperature. The dispensing device shall be capable of applying the required marker shapes and thickness with no puddling or dripping.

All melting and application equipment shall have functioning and calibrated temperature sensing devices to verify that temperature requirements are being met. The contractor shall provide proof that the temperature sensing devices and corresponding thermometers have been calibrated and are fully functional.

The use of pans, aprons or similar appliances which the dispenser overruns will not be permitted.

The hand applicator equipment shall be either a self-contained melter applicator unit or a reservoir application unit that is filled from a separate melter unit. Both types of units shall be equipped to maintain and measure the required application temperatures.

The heating kettle and application equipment shall meet the requirements of the National Fire Underwriters and the National Fire Protection Association and other applicable federal, state and local authorities.

In addition to the normal "ABC" dry chemical fire extinguishers, all thermoplastic melting units, trailer or trucks, shall be equipped with foam type fire extinguishers that are suitable to be applied to molten thermoplastic that is at the flash point. All work crews shall be provided with heat/flame resistant clothing, gloves, face and eye protection that shall be used when loading thermoplastic into heated melting kettles and is also available for emergencies. All crews shall be equipped with burn first aid kits.

3.7.25 Application of Thermoplastic

Alkyd and hydrocarbon materials will fuse to one another on a pavement surface, however, these two thermoplastic formulations are incompatible in a melting kettle. Failure to completely clean out kettles during material change can cause severe equipment and marking application problems. The contractor shall completely clean out kettles and application equipment when materials are changed.

An alkyd thermoplastic formulation shall be used for all transverse lines (e.g. stop bars, crosswalks) symbols and legends. Either an alkyd or hydrocarbon thermoplastic formulation can be used for longitudinal lines (e.g. lane lines, edge lines, gore lines) unless otherwise specified on the Contract Work Order. Extrude or spray formulations shall be used per the application equipment used to install the markings.

The ribbon gun application method will only be used if specifically called for and approved by the Street Supervisor.

When thermoplastic markings are to be applied to new PCC pavement, any curing compound present shall be removed by means of a high pressure water jet or sandblasting, followed up by sweeping and high pressure air spray. The curing compound shall be removed at least one to two inches more than the width of the marking to be installed to ensure proper adhesion and to allow for location deviations. Removal of curing compound shall be paid for separately.

The adhesion of thermoplastic to any surface is sensitive to the presence of any surface or subsurface moisture. If excessive moisture exists, the thermoplastic will usually blister up on application. If this condition occurs, marking operations shall be stopped until the pavement dries. The Contractor shall be responsible to test the pavement for surface or subsurface moisture.

The thermoplastic pavement marking material shall be hand cart extruded, ribbon extruded or sprayed on to the pavement surface at a material temperature range between 400° F to 460° F depending on ambient air and pavement temperatures and the pavement surface to which the material is being applied. The controlling thermoplastic material temperature shall be measured at the point the material is applied to the pavement surface. The contractor shall verify temperature requirements with a non-contact infrared thermometer as directed by Gilbert.

The contractor shall maintain a log of kettle, line and applicator and point of application temperatures every thirty minutes while material is being applied. Temperature readings shall be witnessed by the Gilbert inspector if possible. Gilbert may require temperature readings to be taken at shorter time intervals. Specified temperature requirements shall be maintained at all times.

The proper application temperature for applying thermoplastic (400° F plus) shall be maintained at all times. Improper application temperatures will result in bond failure. Exact application temperatures, within the allowed limits of 400° F and 460° F, shall be per the manufacturer's recommendations. Normally, those recommendations require thermoplastic material to be applied at 440° F +/- if the air and/or pavement surface temperature is at 50° F. If the pavement surface is at 77° For higher the thermoplastic material may be applied at a lower temperature. Application on PCC pavement surfaces or over well adhered existing pavement markings shall exceed 425° F in order to maximize penetration and bond strength.

The resin binders used in alkyd and hydrocarbon thermoplastic materials increasingly degrade at temperatures of 450° F and above. It is allowable for the temperatures to exceed 460° F for short periods of time however in no case shall the material be held for more than four hours at the maximum application temperature. Total heating time for any batch of material shall not exceed six hours. The contractor shall note the time in the application log when the thermoplastic material is first heated. The start of heat time shall also be marked on the side of the kettle to which it applies or in some equivalent fashion. The logged heating time shall be updated each time the kettle is reloaded.

The contractor shall minimize the thermoplastic material remaining in the kettle at the end of the work day and shall blend a minimum of 80% fresh material for the next day. It is allowable

to inventory thermoplastic material in approved containers to draw down molten material due to bad weather or other problems.

3.7.26 Primer Sealer Application

On both old and new PCC pavement a primer sealer may have to be used. The primer sealer shall be applied prior to placing the thermoplastic material to assure a satisfactory bond is achieved. The primer sealer shall be applied per the manufacturer's recommended application rates. The primer shall set for the specified cure or evaporation time and shall be free of solvent and water prior to thermoplastic being applied.

The primed pavement surface shall be marked within the specified set time or within the same working day. If the primed surfaces are not marked within these time limits, the Contractor at no additional cost to Gilbert shall re-prime the surfaces as required by the manufacturer. If an epoxy primer is used, the thermoplastic application must occur before the epoxy has cured.

Improper primer sealer application will cause bond failure between the thermoplastic and the pavement surface. Improper application may also result in causing the thermoplastic surface to pinhole or blister. If this condition occurs, all application operations shall stop. All defective markings shall be removed and replaced at no additional cost to Gilbert.

3.7.27 Air and Pavement Temperature

The air and roadway surface temperature at the time of application of any thermoplastic marking shall not be less than 50° F and shall be rising. The wind chill factor shall not be below 45° F. Ribbon gun applications shall not be used if wind chill factors are below 65° F.

3.7.28 Drying Time

When applied at a temperature range of 412.5° F (+/- 12.5°) and thickness of 0.060 inches to .185 inches, the material shall set to bear traffic in not more than two minutes when the air and pavement surface temperature is approximately 90° F (+/- 3 degrees).

3.7.29 Thermoplastic Application Guidelines/Requirements

The applications of thermoplastic markings are to be as follows:

No.	Type of Thermoplastic Binder System and Marking Application	Thickness	Application Type	Surface Types	Bead Application (Glass Beads are per Subsection 708-2.02 of Std. Spec.)
1	Hydrocarbon or Alkyd, Long Lines	0.040 ± 0.002"	Spray	All surfaces	10 lbs. of glass beads per 100 square feet of markings

No.	Type of Thermoplastic Binder System and Marking Application	Thickness	Application Type	Surface Types	Bead Application (Glass Beads are per Subsection 708-2.02 of Std. Spec.)
2	Hydrocarbon or Alkyd, Long Lines	0.080 ± 0.002"	Ribbon Extruded	All clean pavement surfaces or well adhered existing markings surfaces	10 lbs. of glass beads per 100 square feet of markings
3	Hydrocarbon or Alkyd, Long Lines	0.080 ± 0.002"	Ribbon Extruded	All surfaces	12 lbs. of glass beads (with premium small/large glass bead blend) per 100 square feet of markings
4	Alkyd, Short Lines	0.090 ± 0.002"	Hand Cart Extruded	All clean pavement surfaces or existing marking surfaces where 85% or more of existing markings have been removed	10 lbs. of glass beads per 100 square feet of markings
<p>NOTES: (1) "Long lines" - lane lines, edge lines, centerlines, gore lines, and ramp skip lines (2) "Short lines" - are crossbars, crosswalks, intersection turn lines, cross hatch, or any other transverse line which crosses a traffic lane</p>					

3.8 PROFILE THERMOPLASTIC MARKINGS (PFTM)

Description

The work under the profile thermoplastic pavement marking installation items shall consist of cleaning, furnishing and applying the markings to the prepared pavement as required herein and in accordance with the manufacturer's specifications.

3.8.1 Material Requirements

All materials shall be properly packaged and stored and shall have accurate package markings that define the manufacturer, batch number and date of manufacture. Additionally, the material type and formulation shall be distinctively shown on each container. Material Safety Data Sheets (MSDS) and manufacture application requirements shall be attached to pallets or groups of materials as appropriate. All formulations shall be as required by the manufacturer for the application equipment to be used by the contractor and per the specified requirements of these specifications. Only those thermoplastic formulations that are specifically designed for use as a profile marking system that can be applied on an asphaltic roadway in the Arizona desert in the summer time are to be used. A current listing of approved profile thermoplastic material manufacturers is listed herein under Special Terms and Conditions.

The profile pavement markings will typically be placed over existing pavement markings. The starting and stopping points for the new lines over the existing lines shall not vary more than two (2) inches lengthwise and not more than 1/2 inch on the width.

Each material has its specific application temperature requirements. The material's manufacturer's recommendation regarding these temperatures shall be followed at all times.

The profile thermoplastic markings, after application to the roadway surface, shall be to the specified thickness within the following tolerances:

90 mil base line +/- 8 mils

500 mil bump (includes base line) +/- 80 mils

If the thickness and/or shape of the applied markings are not conforming to the requirements of the specifications within acceptable parameters, all marking operations shall stop. Corrective action shall immediately be taken (e.g. adjusting application speed and/or flow settings) to ensure that the proper thickness and shapes are being achieved.

The exact configuration of the thermoplastic bump shall be per the manufacturer's recommendations. However, as a minimum, the bump shall be at least 5-1/2 inches wide (on a six inch wide stripe) and not less than one inch long, parallel with the direction of vehicle travel. The nominal height of the bump shall always be one half inch. The bumps shall be placed at 16 inch (+/- 1) inch intervals as measured between the centers of the bumps, along the six inch wide profile edge or centerlines.

Applying thermoplastic at the proper application temperature (350 degrees F. plus) shall be maintained at all times. Improper application temperatures will result in bond failure. Exact application temperatures, within the allowed limits of 350 degrees F. and 460 degrees F., shall be per the manufacturer's recommendations. Total heating time for any batch of material shall not exceed six hours.

The no track and drying times shall be accounted for in all traffic control plans. Traffic shall not be allowed on any profile thermoplastic marking until it has reached no track and is fully dry (or cooled). No track and dry time is that lapsed time that is required for the markings, as applied in the field with glass beads, not to splash, track or deform when run over with a vehicle tire. The contractor will be responsible for all claims for markings splashed on vehicles arising from the contractors operations. Cones shall be utilized to protect the applied markings until they sufficiently dry to receive traffic.

The profile of thermoplastic reflectorized pavement marking material shall consist of a 100% solid mixture of heat stable resins, white or yellow pigment, inter-mixed glass beads, filler, and other materials in granular or block form specifically compounded for as a profile type of pavement markings system. The characteristics of the molten liquefied material shall be such that complete and even coverage of specified width and thickness as a line with a raised-rib pattern (profile or bump) at the specified thickness, width and configuration can be consistently achieved within the given tolerances. Upon cooling to normal pavement temperature, this material shall

produce an adherent reflectorized marking of the specified pattern that is capable of resisting deformation and wear by a roadway environment.

The profile pattern shall be such that it produces easily recognizable vibration and sound in vehicles as they drive over the applied markings at highway speeds. Only those profile thermoplastic products which have been specifically designed to operate as a longitudinal rumble strip system and have also been subjected to numerous road tests and have a proven history of successful performance shall be offered.

3.8.2 Composition Requirements

The profile thermoplastic composition shall generally conform to the following requirements:

	Percent by Weight	
	White	Yellow
Binder (hydrocarbon or alkyd)	15 min.	15 min.
	Percent by Weight	
	White	Yellow
White Pigment	8 min.	-----
	Percent by Weight	
	White	Yellow
Yellow Pigment	-----	2 min.
Reflective glass inter-mix beads	20 min.	20 min.

The ingredients of the thermoplastic composition shall be thoroughly mixed and in a solid block or free flowing granular form. The material shall readily liquefy when heated in a melting apparatus into a uniform solution. This solution shall be free from all skins, dirt, foreign objects or any other ingredient which would cause bleeding, staining, blotting, staining or discoloration when applied to the bituminous or concrete pavement surfaces.

3.8.3 Filler

The filler shall be a white calcium carbonate or equivalent filler with a compressive strength of at least 5,000 pound per square inch.

3.8.4 White Pigment

The white pigment shall be Titanium dioxide and shall conform to the requirements of ASTM D-476 for Type II (92 percent). The formulation shall have a minimum of 8% by weight of Titanium dioxide.

3.8.5 Yellow Pigment

The yellow pigment shall be as specified by the manufacturer.

3.8.6 Physical Characteristics of the Composition

The profile thermoplastic material shall not give off fumes which are toxic, injurious or require specialized breathing apparatus when heated to the temperature range specified by the manufacturer for application. The material shall remain stable when held for four hours at this temperature, or when subjected to four reheating's, not exceeding a total of four hours, after cooling to ambient temperature. The temperature viscosity characteristics of the plastic material shall remain constant throughout the reheating's and shall show like characteristics from batch to batch. There shall be no obvious change in color of the thermoplastic material as a result of reheating, and the color of the material shall not vary from batch to batch.

3.8.7 Color

The thermoplastic material, after heating for four hours +/- five minutes at 425 +/- 3 degrees F. and cooled to 77 +/- 3 degrees F., shall meet the following:

White - daylight reflectance at 45 degrees - 0 degrees shall be 70 percent minimum.

The color shall match Federal Test Standard Number 595, color chip no. 17925.

Yellow - daylight reflectance at 45 degrees - 0 degrees shall be 43 percent minimum.

The color shall match Federal Test Standard Number 595, color chip no. 13538.

3.8.8 Abrasion Resistance

The maximum loss of thermoplastic material during the abrasion resistance test herein specified shall be 0.5 grams.

The abrasion resistance of the thermoplastic material shall be determined by forming a representative lot of the material at a thickness of 0.125 inch on a four inch square monel panel (thickness 0.050 = +/- 0.001 inch), on which a suitable primer has been previously applied, and subjecting it to 200 revolutions on a Taber Abraser at 25 degrees C., using H-22 calibrated wheels weighted to 250 grams. The wearing surface shall be kept wet with distilled water throughout the test.

3.8.9 Flash Point

The thermoplastic material shall have a flash point not less than 475 degrees F. when tested in accordance with the requirements of ASTM D92 "Flash and Fire Points by Cleveland Open Cup."

3.8.10 Inter-Mix Glass Beads

The inter-mix beads shall be coated or uncoated and conform to AASHTO M247-81 (1986) type I or other suitable specified glass bead. The use or non-use of coatings shall be left to the discretion of the manufacturer. If non-coated beads are used, the thermoplastic formulation shall be configured to minimize settling of the intermixed beads when the material is heated and applied.

3.8.11 Demonstration

The contractor shall verify to Gilbert's satisfaction (e.g., test application), at a location off the project site the ability to place the profile thermoplastic material as specified before being allowed to place the markings on any mainline highway. The contractor shall be responsible for all preparatory and cleanup work in conjunction with the off-site verification as well as for the applications of the markings on the highway. The demonstration shall be repeated until Gilbert is satisfied that the work can be done as specified. Only one color needs to be demonstrated.

3.8.12 Drop-On Reflective Glass Beads

In addition to incorporating glass beads in the thermoplastic mix, glass beads shall be evenly applied to the surface of the molten material immediately after its application at a uniform minimum rate of 10 pounds of glass beads per 100 square feet of line or marking area (e.g. 150 linear feet of four inch line). The glass bead shall conform to the applicable requirements of ADOT Standard Specification Subsection 708-2.02 unless a different type and gradation is recommended by the profile thermoplastic manufacturer.

3.9 PREFORMED TAPE MARKINGS (PTM)

3.9.1 Description

The work under this subsection shall consist of cleaning and preparing pavement surfaces and furnishing and applying either white or yellow cold applied or hot applied (short line work only) preformed tape pavement markings of the required shape to the prepared pavement surface at the locations specified on the Contract Work Order, details shown on any attached plans (if applicable), the manufacturers' specifications, the requirements of these specifications and as directed by Gilbert. The marking configurations shall be as specified on the Contract Work Order.

3.9.2 Materials

All preformed tape materials shall conform to the applicable requirements and intent of Section 705 - Preformed Plastic Pavement Markings of the Standard Specifications. Deviations from these requirements are allowable within the scope of the brand name preformed tape products

(e.g. 90 mil ATM-400 and 90 mil Stimsonite Hot Tape) listed in Special Terms and Conditions, Paragraph 27, Brand Names.

The long line high durability tape shall feature a pattern or extra thickness that insures it will last longer than four (4) years.

3.9.3 Installation Requirements

The Contractor shall remove all dirt, dust, grease, oil or other detrimental material from the road surface prior to application of the preformed tape lines, symbols and legends. This includes temporary pavement markings and/or poorly adhered existing pavement markings not defined to be removed on the Contract Work Order. It is always preferable for tape markings to be placed on clean bare pavement if at all possible. The type of surface that the tape is placed on and the method of surface preparation shall also be per the recommendations of the tape manufacturer.

When the preformed markings are to be applied to new PCC pavement, all curing compound present shall be removed by means of a high pressure water jet or sandblasting, followed up by sweeping and high pressure air spray. The curing compound shall be removed at least one to two inches more than the width of the marking to be installed to ensure proper adhesion and to allow for location deviations. Removal of curing compound shall be paid for under separate items.

Once the pavement surface has been cleaned one liberal coat (5 mils minimum thickness) of either primer or contact cement (per the recommendation of the tape manufacturer and as required for the surface conditions) shall be applied on the pavement surface prior to the application of the tape marking (if applicable). Once the primer or contact cement coat has achieved its proper state (as specified by the manufacturer) the tape shall be applied and tamped per the manufacturer's recommendations.

If Stimsonite Hot Tape is used the installation procedures shall conform to the applicable requirement herein, plus those required by Stimsonite. Care shall be taken not to overheat and burn the pavement.

3.10 PAVEMENT MARKING REMOVAL AND SURFACE PREPARATION (PMR) OR (SP)

Description

The work under this subsection shall consist of all the necessary work to remove (or obliterate) existing permanent white and yellow pavement markings (lines, legends, symbols and raised pavement markers) or prepare these types of surfaces for restriping in accordance with the applicable requirements of the Contract Work Order, these specifications and as directed by Gilbert. The work shall also include the cleaning of surrounding pavement surfaces, removal and disposal of removed material and pavement repair as necessary. The markings to be removed shall be as detailed on the project Contract Work Order.

3.10.1 Work Requirements

Painting or slurry sealing over existing pavement markings does not constitute obliteration. This includes the application of new permanent markings over existing markings designated to be removed. If the Contract Work Order specifies removal, then all markings are to be removed and the surface cleaned prior to the application of new markings. If the Contract Work Order specifies surface preparation, then all existing marked surfaces scheduled to be remarked are to be prepared and surface cleaned prior to the application of new markings.

The use of high pressure water blaster and integral vacuum which is specially designed for high production pavement marking removal shall be used as the primary method of removal.

Pavement surfaces that are unduly damaged as a result of obliteration or surface preparation work shall be repaired in a manner acceptable to Gilbert at no additional cost to Gilbert. This requirement only applies to those pavement surfaces that are judged by Gilbert to be in good shape prior to any removal or surface preparation activities.

It shall be the responsibility of the contractor to provide for adequate disposal of removed material in approved landfills. Dumping of removed materials on Town property is prohibited unless approved by Gilbert.

After removing the existing pavement markings or preparing marked surfaces identified, the contractor shall immediately clean-up and contain all loose material from the road surface and re-stripe all pavement markings when necessary prior to reopening the roadway to traffic. The method of cleaning the surface is subject to approval by Gilbert and shall include sweeping and/or vacuuming. All loose material and obliterated marking material shall be collected and removed from the pavement surface and properly disposed of.

If the area in which markings have been removed or surface prepared is going to have new markings applied to it, then the method of surface preparation shall also be per the recommendations of the pavement marking material manufacturer. The cost for drying (if water method is used) or cleaning and preparing the surface, including abrasive sweeping and high-pressure air spray, shall be considered part of the cost for applying the new pavement markings and no separate measurement or payment will be made for this work, unless otherwise noted on the Contract Work Order or herein included and described.

The application of primer sealer for thermoplastic and the removal of PCCP curing compound will be paid for under a separate items. The application of primer and contact cement for preformed tape markings is incidental to those specific items.

Markings that are obliterated (or removed) shall be 98% to 100% removed.

If existing pavement markings are to be overlaid with new markings, then the existing markings surface shall be prepared so that the new markings are placed on existing material

(existing markings or pavement) that is well adhered to the pavement. To accomplish this, the contractor shall remove a minimum of 20% of the existing markings.

The obliteration (or removal) of pavement marking lines will be measured by the linear foot along the center line of the existing pavement marking line (or stripe) and will be based on a six inch wide line based on type material it appears to be (thermo/tape/epoxy or paint) and the pavement surface that it is on (PCCP or AC) regardless of thickness or the number of layers. The most difficult marking material to remove will govern which payment item is to be used for that work.

3.11 PAVEMENT MARKING REMOVAL AND SURFACE APPEARANCE BLENDING

Description:

The work under these two items shall consist of all the necessary work to accomplish the removal of existing pavement markings and to blend the appearance of the existing pavement surface as required to attain a uniform appearance. A more detailed description of the intent of these work items is as follows:

The Pavement Marking Removal item shall involve the removal and disposal of at least 95% of the pavement markings at the locations indicated by the Town. This total removal effort may involve at least two separate processes. First, all of the existing pavement markings (thermoplastic, epoxy, tape, paint, etc.) shall be completely taken off the pavement surface with a high pressure water blaster and integral vacuum which is specially designed for high production pavement marking removal shall be used as the primary method of removal.

The Pavement Surface Appearance Blending item shall involve an effort by the contractor to blend the appearance of a pavement surface to eliminate the false image of pavement marking lines which were removed to allow for the repositioning of the traffic lanes. All of the traffic lanes which are in the areas where lane lines have been removed shall be subjected to this treatment. The total square foot of the pavement surface to be treated shall be as directed by Gilbert. Initially it is anticipated that between two to three feet of pavement surface width on either side of a former lane line and all of the lateral gap distance between the lane lines will need to be treated. However, the final determination of the limits of treatment and the amount of "appearance blending" effort (how much high power water or sand blasting) that is needed to taper the "look of the pavement surface" back to what is acceptable from a traffic operations stand point cannot be finalized until it is actually done in the field and is inspected visually.

All removal and pavement surface performance blending methods shall be in compliance with the applicable federal state and local regulations. It is the contractor's responsibility to apply for any required permits.

After the markings have been removed and if authorized by Gilbert the contractor shall begin an effort to blend the appearance of the pavement surface where the markings were removed to the appearance of the pavement surface in the traffic lane area. This pavement surface appearance blending shall be done to help ensure that the pavement surface of where the removed

markings where does not leave enough of a ghost image to appear as lane line markings under certain seeing conditions.

Often during sun rising or setting driving conditions on east/west roadways it is possible for the former locations of removed pavement markers and markings to appear as active lane or edge lines which are in fact in conflict with the actual pavement markings. To account for this possibility this "pavement appearance blending" item has been established. The intent of this item is to subject enough of the pavement surface on either side of the existing lane line which have just been removed with a surface abrasion treatment that sufficiently obscures the area where those markings where so they will no longer have the appearance that they are markings under all road user seeing conditions. This item is also intended to prepare and clean the pavement surface for the application of the new pavement markings.

If a high pressure water blaster pavement marking removal truck is used the following general criteria is anticipated: for pavement marking a narrow removal head with a vehicle velocity of two miles per hour or less applies; and for pavement surface appearance blending a narrow removal head at a slightly higher vehicle velocity than that used for removal or a wider removal head with a vehicle velocity of between two to three miles per hour applies. Additionally, for surface appearance blending, as the offset from where the existing markings where removed is increased, the velocity of the vehicle can increase, beyond the limits indicated, if such of a velocity is successful in tapering the surface appearance in a manner that is acceptable to Gilbert.

It is anticipated the desired result can be achieved in one pass, however if this is not possible then additional passes can be effected at or above the velocities used for the first pass. Prior to starting the project the contractor shall, in the presence of the engineer, test this general criteria for effectiveness in achieving the desired end product. The end product being a pavement surface that is thoroughly clean and has an un-pavement marked appearance under all anticipated driver seeing conditions. Based on the results of this test the criteria shall be adjusted as approved by Gilbert. Additionally, these criteria can be adjusted again if during the project it is determine that it is necessary to change it achieve the desired end product as judged by Gilbert.

It shall be the responsibility of the contractor to gather and provide for the disposal of all removed materials in approved landfills.

The techniques and equipment used pavement marking removal and pavement surface appearance blending, and the end result shall be subjected to review and approval by Gilbert.

Method of Measurement

The removal of the pavement markings will be measured by the linear foot along the center line of the existing pavement stripe made of either thermoplastic, tape, ceramic buttons, raised pavement markers or other pavement marking material based on the equivalent four inch width. The removal of the existing adhesive pad(s) in the gap between the existing ten foot lane lines shall be considered incidental to this item and will not be measured.

The pavement surface appearance blending will be measured by the square foot based on the area so treated and approved by Gilbert.

4. WORK SCHEDULE

Gilbert will attempt to give as much notice as possible to contractor of upcoming mobilizations. However, in some cases (such as emergency repair work, engineering changes, or traffic signal start-ups) Gilbert may require and contractor must mobilize within 24 hours.

The Contractor shall provide Gilbert with a Work Schedule. The work schedule shall account for known Gilbert priorities and also seasonal weather conditions. Work schedule and planning meetings shall be held as necessary and as requested by the Street Supervisor

All work shall be performed during times requested by the Street Supervisor. No work will be performed on weekends or Town of Gilbert holidays without prior approval by the Street Supervisor. All work hours and days will be subjected to restrictions that are established by the Street Supervisor. The work is to be primarily done at night between the hours of 8:30 p.m. and 5:30 a.m. and between May 1st and September 30th. Other mobilizations may occur throughout the year. The contractor may be required to work at any hours of the day or night, week or weekend. This provision is necessary to minimize the negative impacts on the motoring public.

The Town of Gilbert Holidays: The following is a list of holidays on which contract services will not be performed:

1. New Year's Eve from 12:00 Noon – December 31
2. New Year's Day – January 1
3. Martin Luther King, Jr. Day – Third Monday in January
4. President's Day - Third Monday in February
5. Memorial Day - Last Monday in May
6. Independence Day - July 4
7. Labor Day - First Monday in September
8. Thanksgiving Holiday - Fourth Thursday and the following Friday in November
9. Christmas Eve from 12:00 Noon - December 24
10. Christmas Day - December 25

Schedule Adjustments: When a The Town of Gilbert Holiday named herein falls on Sunday, it shall be observed on the following Monday; when a holiday named herein falls on a Saturday it shall be observed the preceding Friday. During the week of a The Town of Gilbert

Holiday, the Contractor shall adjust his weekly schedule so as to return to the normal weekly schedule the following week.

The scheduling of all work shall account for the ambient and surface temperature requirements of the materials to be applied (as applicable). Additionally, the schedule shall have adequate time for the logical completion of all work activities, including drying time of applied markings, and the setting and removal of the necessary traffic control.

Contractor shall adhere to the approved work schedule and shall complete all work during the calendar week in which it is scheduled unless circumstances occur which are beyond the control of the Contractor. **If the Contractor falls behind schedule at any time, additional workers shall be assigned at no additional cost to Gilbert until the work is back on schedule.**

Gilbert reserves the right to make adjustments in the schedule at any time to avoid conflict with highway construction or maintenance operations or to better serve Gilbert's needs.

All work crews and work crew supervisors (marking and traffic control) shall be equipped with mobile phones. The contractor shall provide Gilbert a detailed listing of their crews and their phone numbers.

All contractor generated plans and schedules are subject to Gilbert approval. Any significant change to the schedule and/or plan must be submitted to the Street Supervisor for review and approval.

The contractor shall be responsible for verifying quantities prior to the start of any project. All changes must be approved by Gilbert prior to the start of work. Any changes to the quantities and/or scope encountered once the project begins shall be immediately brought to the attention of the Gilbert inspector. The changes must be reviewed and approved before any additional and/or new work is done. Any significant amount of extra or new work that is done beyond the approved Contract Work Order/Contract Purchase Order will not be eligible for payment, to include any associated traffic control.

All work schedules and plans shall conform to the applicable requirements of the Contract Work Order procedures contained herein.

The contractor shall adhere to the approved work schedule and plan. If work is not completed per the schedule and/or plan, a written report to the Street Superintendent shall be made explaining why the work was not completed. This report shall be made within the first working day of the following week. A plan for getting back on schedule shall be contained within this report. If contractor action or non-action is judged to be the reason for the problem, Gilbert may require the contractor to assign additional personnel and equipment to get the project back on schedule. Any additional costs association with this assignment of additional resources (e.g. overtime, equipment rental, traffic control, subcontractors) to the project that are beyond the scope of this contract will be bore by the contractor.

5. MAINTENANCE & PROTECTION OF TRAFFIC

5.1 All traffic affected by this construction shall be regulated in accordance with the MUTCD and these Special Provisions. The following traffic restrictions are minimum requirements throughout the construction period:

5.1.1 All traffic restrictions listed herein are to supplement the MUTCD and are not intended to delete any part of the manual. All reference in the MUTCD to "arterial" and/or "collector" streets shall mean "arterial and/or major arterial" streets and are referred to as "major" streets in the following sections.

5.1.2 A minimum of two travel lanes (one for each direction) shall be maintained open to traffic at all times on all major streets. All work that enters or crosses a major street must be done at times other than 6:00 a.m. to 8:30 a.m., and 3:30 p.m. to 8:30 p.m.

5.1.3 A travel lane shall be defined as ten (10) feet of roadway with a safe motor vehicle operating speed of twenty-five (25) miles per hour.

5.1.4 Reserved

5.1.5 The Contractor shall provide and maintain all necessary traffic controls, and must provide flashing arrow boards to protect and guide traffic for all work in the construction area. Gilbert will pay for the cost of traffic control services provided by the Gilbert traffic control contractor.

5.1.6 Intersection area shall be defined as all of the area within the right-of-way of intersecting streets, plus two-hundred fifty (250) feet beyond the center of the intersected streets on all legs of the intersection.

5.1.7 Reserved

5.1.8 Local access to all properties on the subject project shall be maintained at all possible times in the form of a safe and reasonable direct route to at least one of the above defined major streets. Whenever local access cannot be maintained, the Contractor shall notify the affected property owner or user at least twenty-four (24) hours in advance.

5.1.9 General Process

The striping vehicle, traffic control vehicle with truck mounted attenuators and the traffic control vehicle shall have self-contained flashing arrow panels. The traffic control vehicle with truck mounted attenuator is to follow behind the striping vehicle. The traffic control vehicle with a truck mounted attenuator shall immediately follow the striping vehicle and place cones (one every \pm 50 feet) on the freshly placed centerline markings. The other shall follow farther behind to pick up some of the cones (two out of every three) once the installed stripe has dried to no-track. Coning can be eliminated for surface preparation. The traffic control vehicle shall be used to set and reset signs and pick up any remaining cones.

All moving striping operations shall stop at regular intervals to allow for the clearing of queued vehicles.

5.1.10 Other Provisions

If any condition exists which, in the judgment of the Street Manager or the Supervisor, requires special traffic control methods or signing, such traffic control shall be supplied by the contractor.

All traffic control is subject to Gilbert's approval.

If, at any time, Gilbert determines that sufficient traffic control is not being provided or maintained, the Town of Gilbert may suspend work until the proper level of traffic control is established. In cases of serious or willful disregard for public safety or the safety of the contractor's employees, the inspector may proceed to place the traffic control measures in proper condition and deduct the cost thereof from payment due the contractor.

All traffic control devices shall conform to the requirements of the MUTCD and shall be maintained in a clean and serviceable condition at all times. Any unsuitable or unserviceable devices shall be replaced immediately. Gilbert shall be the sole judge of serviceability of traffic control devices.

Traffic control set-ups shall be continually observed and maintained by the contractor's personnel who are trained and competent in the use of traffic control devices.

The contractor shall not store any traffic control devices within thirty (30) feet of the roadway.

A truck mounted attenuator shall be utilized in all operations which restricts or eliminates usage of a traffic lane. Attenuator position shall be shown on the Traffic Control Plan. The truck mounted attenuator shall conform to Standard Specification 701-3.07.

When work of a progressive nature is involved, the necessary devices shall be moved concurrently with the advancing operation, based on the no-track time of the pavement marking material (if applicable). The use of temporary devices shall not extend beyond the anticipated length of work of one shift production.

All vehicles involved in the moving pavement marking operation shall have appropriate traffic warning signs attached. Sign legends and location of placement on each vehicle shall be included in the Moving Pavement Marking Operation Traffic Control Plan. No additional payment will be made for vehicle mounted signs.

6. EQUIPMENT

The contractor shall provide and maintain during the entire period of this contract, equipment sufficient in number, operational condition and capacity to efficiently perform the work and render the services required by this contract. This includes sufficient "backup" equipment to provide uninterrupted service when equipment breakdown occurs.

All long line trucks shall be equipped with a flashing arrow board on the back and a front mounted locator wheel or equivalent camera targeting system. The use of a pointer bar or "T" bar on long line equipment is prohibited.

A separate payment for flashing arrow panels on any vehicle shall not be considered for payment. The costs of all warning lights and panels on any vehicle shall be considered incidental to the appropriate item. All vehicles involved in a moving operation shall have flashing arrow panels unless approved otherwise by Gilbert.

All vehicles involved in moving pavement marking work under traffic shall be equipped with self-contained flashing arrow panels.

Vehicles used on this project shall be equipped with amber rotating beacons or strobe lights. Rotating amber beacon lights shall be equal to code three, 6105 rectangular and/or 550 round for uniformity. All equipment shall be equipped with a backup alarm.

The Contractor's vehicles and mobile equipment shall be clearly marked with company name and/or logo and an identification number.

The application equipment to be used on roadway long line installations (except for gore lines and short skip strips) shall consist of truck mounted units. The truck mounted unit for center lines, lane lines, gore lines, and edge lines shall consist of a mobile self-contained unit carrying its own material. It shall be capable of operating a minimum speed of four to five miles per hour while applying striping and shall be sufficiently maneuverable to install curved and straight lines, both longitudinally and transversely.

The hand applicator equipment shall be sufficiently maneuverable to install curved and straight lines, both longitudinally and transversely, symbols and legends. All handcarts shall have a pointer bar that is properly positioned to ensure straight lines. Reflective tape shall be placed on all sides of the hand application equipment.

The application equipment shall be so constructed as to assure continuous uniformity in the dimensions of the pavement marking. The applicator shall provide a means for cleanly cutting off square pavement marking edges and ends. It shall also provide a method of applying lane lines (or "skip lines). The equipment shall be constructed so as to provide varying widths and thickness of pavement markings. The application equipment shall be mobile and maneuverable to the extent that straight lines can be followed and normal curves can be made in a true arc. The equipment operator shall be located in such a position as to enable full visibility of the striping apparatus.

All vehicles shall have two-way radio (or suitable intercom) capabilities. In addition, all managers, supervisors, crew chiefs or other key personnel shall have mobile phones. A listing of persons and phone numbers shall be submitted to the Street Manager. Communication devices shall be fully operational and available for immediate use during all work operations.

A glass bead top dressing shall be applied to the completed pavement marking by an automatic glass bead dispenser attached to the striping machine in such a manner that the beads are applied to the undried material immediately after it has been applied. The bead dispenser shall either utilize pressure type spray guns or a gravity drop-on bead dispenser. The type used shall be per the recommendations of the glass bead manufacturer. The bead dispenser shall be capable of evenly distributing glass beads to the required application rate immediately after the application of the pavement marking material. Additionally, the bead dispenser shall dispense the beads in such a manner that they shall embed in the surface of the marking materials to an anchoring depth of from 55% to 60% of the bead diameter. The long line truck bead dispenser shall be equipped with an automatic cut-off synchronized with the cut-off of the dispensing device for the pavement marking material.

NOTE: ALL BEAD GUNS SHALL HAVE WIND SHROUDS THAT DIRECT THE DROP ON GLASS BEADS DIRECTLY TO THE APPLIED LANE.

The contractor shall make daily inspections of all equipment to ensure it is operable and within the requirements of these specifications. Continuous, uniform and proper operations of all equipment are critical to ensure quality marking application. The contractor shall inform the Gilbert inspector of any breakdowns or intermittent malfunctions of equipment that may impact the application of the markings and compliance with this specification.

Gilbert reserves the right to inspect equipment at any time and require the replacement of any that does not meet minimum serviceability standards. Equipment, machinery, component or system failures that affect the safe operation of any equipment shall be corrected prior to using the equipment. Only equipment listed on the **Certificate of Compliance, Attachment 7**, shall be used. The contractor shall update the equipment listings when changes are made.

A listing of ALL equipment meeting these requirements and which will be available when performing these services under this contract SHALL be provided on the **Equipment List, Attachment 6**, attached hereto, and submitted with the offer.

All long line equipment shall be provided with a metering device to register the accumulated installed or removed footage for each material dispensing or removal device. The meter shall be operated in a fashion so it only accounts for that material that is installed or removed from the roadway. The contractor shall coordinate with Gilbert on the operations and readings derived from the automatic meter.

Gilbert shall periodically check the degree of accuracy of the counter readings and establish an adjustment factor, if necessary, to accurately determine the pay item quantities. Failure of the

contractor to operate and/or maintain the counter system can be cause for immediate suspension of work.

All bead dispenser outlets will have enclosed wind shrouds or equivalent devices to direct the glass beads to the markings as they are dropped. The shroud may include an opening which faces the operator so that the flow rate of the glass beads can be monitored. The bottom of the shroud shall be mounted within two to three inches of the pavement surface and shall be configured to allow for even distribution of glass beads on the applied markings.

7. REPORTS

The Contractor shall prepare all reports required by the Town and deliver them to the Town within the time specified. These reports shall include, but are not limited to, **Contract Work Order, Exhibit 1 and Daily Work and Quantities Report, Exhibit 2**. Contractor shall e-mail the completed Daily Work and Quantities Report to Curtis Yardley at Curtis.Yardley@gilbertaz.gov and Demetrius Fernandez at Demetrius.Fernandez@gilbertaz.gov on a daily basis. Failure to do so shall result in a daily fee of \$100 per missing report. The Contractor shall keep logbooks as referenced in this section, Paragraph 3.4.1, Contract Work Order & Field Reporting Procedures.

In addition, it will be the responsibility of the Contractor to provide a hard copy, CD and an electronic copy of the inventory of all Long and Short Line Markings. At the end of each contracted year, Contractor will provide a quantity report of existing arterial road markings broken down into 1 mile increments, also a quantity report of all existing road markings of completed zone that contract year.

This includes but not limited to all 4" equivalent, Hash Marks, Bike Lane Symbols, Crosswalks, Stop Bars, Arrows Left, Right, Straight and Combination, Legends, Curb Painting Yellow, Curb Painting Red, Speed Humps, R/R Crossings, Yellow School Crosswalks and Sign Location Dots.

These reports may be modified at any time to meet the needs of Gilbert.

8. SAFETY, SANITARY & HEALTH CONDITIONS

Contract specifications require all Contractor employees to wear OSHA approved hard hats, high-visibility, OSHA approved safety vests and steel-toed footwear and full-length pants at all times while working within the right-of-way.

The Contractor shall provide and maintain in a neat and sanitary condition such accommodations for the use of the contractor's employees as may be necessary to comply with the requirements and regulations of the Arizona State Department of Health Services or other authorities having jurisdiction therein.

Attention is directed to Federal, State and local laws, rules and regulations concerning construction safety and health standards. The contractor shall not require any workers to work in surroundings or under conditions that are unsanitary, hazardous or dangerous to their health or safety.

9. SUSPENSION OF WORK:

The Contractor shall suspend operations if weather or road and traffic conditions are such that work operations cannot be carried out in a safe and effective manner, or will pose an environmental hazard. If such suspension occurs, the Contractor shall immediately notify the Contract Administrator or their designated representative.

The Contract Administrator or their representative may suspend work operations at any time, when in their judgment, present or impending weather conditions are such that the work cannot be carried out in a safe and effective manner.

The Contract Administrator or Contract Administrator's Representative shall immediately suspend operations when work performance is observed in violation of safety rules, regulations or practices. Violation of safety rules, regulations or practices may be considered grounds for termination of the contract.

10. MOBILIZATION

Contractor will be paid a flat fee for each mobilization regardless of the call out time or size of project. Mobilization is defined as follows: Any work outside of scheduled maintenance of zones 1,2 or 3 and annual striping of arterials. Microseal, Slurryseal, Thin overlays and Fogseal work will each be considered a separate mobilization.

11. CERTIFICATE OF COMPLIANCE

The Contractor, as a part of their bid submittal, shall submit a **Certificate of Compliance, Attachment 7** per the requirements stated herein. The certificate shall also conform to the applicable requirements of Subsection 106.05 of the ADOT Standard Specifications with the following additions:

- a. Listing of manufacturers intended to be used. The drop on glass bead manufacturer shall also be identified. The listing of the manufacturer shall include a written certification from the manufacturer that their material will conform to these specifications. Preformed Tape Marking manufacturer's certification shall include their specifications, application requirement and a small three (3) foot sample of each tape being offered. It is acceptable to list primary and secondary sources of materials.
- b. Equipment listing and description. All large pieces of equipment (trucks, hand sprayers, kettles, and hand carts) shall have clearly visible identification numbers permanently marked on them. The equipment listing shall include these ID numbers. Any listed equipment shall be made available for Gilbert's inspection if requested. The capacities and estimated product rates of all equipment shall be detailed. All extrusion dies shall have their thickness setting clearly marked on them

(80 mil, 90 mil, etc.) in one inch black letters or equivalent. The capacities and estimated product rates of all equipment shall be detailed. It is allowable for a Contractor to utilize rental or loaned equipment for the application of profile thermoplastic markings.

c. The certificate shall include proof that all temperature sensing devices on the thermoplastic melting and application equipment are functioning properly and will continue to do so throughout the life of the contract. All installation crews shall be equipped with hand held verification thermometers that are used to conduct periodic checks to ensure proper temperature requirements are being met in the kettles and at the dispensing device.

d. Statement that all materials and equipment used shall conform to these specifications and generally accepted national practices. The use of non-conforming materials, application methods and/or equipment can be grounds for rejection of work and, if not corrected, suspension or cancellation of the contract.

e. Statement that the contractor will maintain, calibrate and operate all the application devices so that the required thickness and the drop on glass bead application rates are achieved at all times. Additionally, the contractor shall commit to keeping an accurate timely accounting of the type and quantity of materials applied per day per project and the removal quantities per day per project. The contractor shall coordinate and fully cooperate with Gilbert to this regard. Gilbert's **Daily Work and Quantities Report, Exhibit 2** will become the official record of work done on all projects.

f. **Resumes of all On-Site Supervisors and key personnel who will be managing and supervising the installation or removal of pavement markings. The resumes shall present clear and convincing evidence that key personnel have sufficient experience and training to properly manage and supervise the subject paint installation or removal activities. Only those persons submitted and approved per this certificate shall be used to supervise installations and/or removals per this contract. An approved On-Site Supervisor shall be present during all installation and removal activities. The installation or removal of paint markings without proper and/or ineffective supervision can be grounds for rejection of work and, if not corrected, suspension or cancellation of the contract.**

Certificates of Compliance changes are allowable. If a change is necessary the contractor shall submit a revised certificate within 25 days of that change; or before a pavement marking maintenance project that the change will become effective on is done. Revised certificates shall be submitted to Gilbert's Contract Administrator and the Gilbert Street Supervisor for review and approval. This certificate of compliance shall be reaffirmed, updated and resubmitted if the contract is renewed or extended.

12. POST AWARD CONFERENCE

A POST AWARD CONFERENCE shall be scheduled by Gilbert Street Superintendent, once award has been made, to introduce the Contractor to the Gilbert members who will be overseeing this contract to discuss the plan for the execution of the contract per the requirements stated herein. If there is a multiple award, Gilbert reserves the right to hold the Post Award Conferences either separately or as a group. Additionally, prior to this meeting the contractor shall request from the applicable Gilbert representative as much information that is available on the pavement marking projects planned for the next year. The contractor will then use this information to develop a preliminary work schedule for projects that are within the scope of their contract award.

Meetings similar to this post award meeting are to be held at least annually after any granted contract extensions. However, the contractor shall be ready to attend any meetings as requested by Gilbert's inspector or the Street Supervisor.

At the Post Award Conference, the contractor shall be ready to discuss and present the following items:

Specifications and Procedure Issues - Any comments or questions regarding the intent of the specifications and the procedures contained or required. If there are any significant issues, a written explanation of these issues should be submitted to the Contract Administrator and Street Superintendent at least one week prior to the post award meeting. This will enable Gilbert the chance to research the issue and perhaps resolve it at this meeting.

Summary of Contract Award - The contractor shall present the scope of their contract award at this meeting. A summary of the award is to be handed out. The summary shall also contain the contractor's projection on the types and sizes of projects they will be able to do within the scope of their contract award.

Work Schedule and Plan - The contractor shall present and submit a possible preliminary work schedule and plan as described in Paragraph 4, Work Schedule.

Certificates of Compliance - The information on the contract Certificates of Compliance will be reviewed and discussed. The contractor shall clarify and verify all information presented on these documents. Only personnel, equipment and materials that have been properly identified, are in conformance with the specifications and approved by Gilbert shall be used on this contract. Any changes to these documents shall be reviewed and approved by Gilbert prior to their use.

Traffic Control

All traffic control plans are subject to review and approval by Gilbert. Project by project traffic control plans will be submitted, reviewed and approved per the Contract Work Order procedures.

Inspection

Gilbert will perform periodic inspections to ascertain contractor's compliance with contract requirements.

Work Acceptance

The Contract Administrator or representative shall decide all questions which may arise as to the quality and acceptability of any work performed under the contract. Work shall be completed in a responsible and professional manner and in accordance with the specifications, schedules, test plans or performance and operating standards, which are incorporated in the work assignment.

The Gilbert Contract Administrator or Gilbert Street Supervisor shall notify the contractor, verbally and in writing of any deficiencies found within the contract limits.

13. BRAND NAME OR EQUAL SPECIFICATION

There are currently a number of products that have been determined, through evaluation and/or testing, to be equivalent to the requirements of these specifications. The listing of these brands is not intended to limit or restrict competition. Rather, it is to set the standard quality, design, performance and characteristics of the products herein specified. Any offer which proposes products that are of equal quality, type of material, design and performance, will be considered if sufficient evidence and information is provided to establish it as an equal, and the City determines the product to be an equal in all respects to the named brand and these specifications.

The brand name manufacturers for the pavement marking materials desired are specified as follows:

Long and Short Line Paints for Road Applications

- Ennis Paint – AZW 25-mil & AZY 25-M-1
- Pervostripe 5000 & 6000

Curb Paint

- TMT Pathways Duraline 1000 Fast Dry
- Or equivalent waterborne curb paint

Thermoplastic Markings Manufacturers

- Ennis Paint Company
- Pervo Thermoplastic
- Or equivalent Gilbert evaluated maker of thermoplastic

Profile Thermoplastic

- Aqualite, Ennis Paint Company
- Vibraline, Brite-Line Technologies, Inc.
- Rainline with a Bump (profile thermoplastic with bumps & inverted profiles)
- Or equivalent Gilbert evaluated profile thermoplastic

Premium Glass Bead Blends

- Cataphate modified AASHTO high performance all weather bead blend
- Swarco Industries Megalux high performance bead blend
- Flex-O-Lite Brite Blend
- Potters Industries 50/50 high performance bead blend
- Or equivalent Gilbert evaluated high performance bead blend (Note: Application rate and exact gradation shall be determined by the manufacturer. **A complete technical package on the bead blend shall be submitted with the offer per Certificate of Compliance Form, Attachment 7.**)

Preformed Tape Markings

Long Line Tapes (4 year warranty high durability)

- 3M StaMark High Performance Series 270 IES
- Or equivalent long line tape

Long Line PCCP High Contrast Tapes (4 year warranty high durability)

- 3M Stamark High Performance Series 270 IES
- Or equivalent pccp high contrast tape

Short Line Tapes (2 year warranty high durability)

- 3M Stamark Intersection Grade Tape – 270 IES
- Advance Traffic Markings (ATM) 300 and 400
- BriteLine Series 1000 Durable
- Swarco Traffic Systems Director 35 Intersection Grade
- Stimsonite Hot Tape (90 mil only)

Proposers who are named herein are still required to meet every aspect of this specification (including submitting all required samples) and all the terms and conditions herein.

14. PAYMENT REDUCTION FOR NON-COMPLIANT WORK

Gilbert may perform any test or analysis on materials for compliance with the specifications of the contract. If the results of any test or analysis find a material in non-compliance with the specifications, the actual expense of testing shall be borne by the contractor.

Up to a 100% penalty against the monies due on the applied or removed pavement markings can be assessed by the Gilbert inspector if the requirements of these specifications are not met. The degree of the reduction will depend on the assessment to be conducted by Gilbert. Additionally, the inspector can require the contractor to remove all of the specified markings and reapply them without consideration given for additional payment.

The measurement of noncompliance penalties shall be determined by an assessment to be conducted by the Gilbert inspector if a significant problem is identified with the markings installed. If a payment reduction is determined to be necessary, then the reduction will be assessed on those marking payment items determined to be in noncompliance with these specifications.

The percentage of reduction assessed will be based on the seriousness of the infraction. For example: a thinner than required application thickness infraction will cost 2.6% of the bid unit price for every mil thinner the line is below 38 mils. If the line is not straight, then a 10% penalty will be assessed for every inch that 100 foot section of continuous line is off, or ten feet section of line on skip lines. If the deviation is more than ten inches then the line shall be removed and reapplied at no additional cost to Gilbert.

Short Line Tapes (2 year warranty high durability)

- 3M Stamark Intersection Grade Tape – Series 270 IES
- Advance Traffic Markings (ATM) 300 and 400
- BriteLine Series 1000 Durable
- Swarco Traffic Systems Director 35 Intersection Grade
- Stimsonite Hot Tape (90 mil only)

Proposers who are named herein are still required to meet every aspect of this specification (including submitting all required samples) and all the terms and conditions herein.

15. WARRANTY FOR THE PAVEMENT MARKING PORTION OF THIS CONTRACT

The Contractor warrants:

That all services performed hereunder shall conform to the requirements of this contract and shall be performed by qualified personnel in accordance with the highest professional standards.

That all items furnished hereunder shall conform to the requirements of this contract and shall be free from defects in design materials and workmanship.

The warranty period on pavement marking materials and workmanship from the date that they were installed shall be as follows:

- All Waterborne Paint Markings – Six (6) Months
- Thermoplastic, Profile Thermoplastic Two (2) Years
- Thermoplastic and Symbol Markings – a minimum of one year or the manufacturer’s warranty period, whichever is longer.
- Profile Pavement Markings – Two (2) Years
- Preformed Short Line Tape – Two (2) Years
- Preformed Tape Long Line Markings – A minimum of four (4) years or the manufacturer’s warranty period, whichever is longer.

These time periods will be termed, for the purpose of this contract, as the **expected pavement marking life times**.

If there is any failure that can be attributable to failure of the materials and/or application as herein defined, the contractor, at no additional cost to Gilbert, shall correct the problems through the removal and/or replacement of the faulty pavement markings.

The warranty shall cover that the pavement marking materials as applied in the field by the contractor shall perform, as intended for this period of time, without degradation that is directly related to unsatisfactory performance of those materials and/or the installation of those materials. The specifications sections of this document contain additional definitions regarding unsatisfactory performance.

The Contractor agrees that they will, at their own expense, provide all materials, equipment, labor and traffic control required to repair and/or replace any such defective workmanship and/or materials which become or are found to be defective during the terms of their warranty. The contractor shall guarantee the services to be supplied, comply with the requirements of the specifications.

16. WORK FORMS

- a) Exhibit 1: Contract Work Order (1 page)
- b) Exhibit 2: Daily Work and Quantities Report (3 pages)

CONTRACT WORK ORDER

EXHIBIT 1

Contract Work
 Order No. _____ Revision No. _____
 Date _____
 Location of Work _____

NOTE: See attached map or plans if applicable.

Desired Start Date _____ Desired Work Completion Date _____
 Desired Time work is to be done (weekends, weekday, AM/PM)
 Type of Work _____
 Will Contractor Provided Marking Layout Work Necessary? Yes / No
 How Many Hours _____

Estimated Quantities (see below for specific details)

Estimated Total Value (\$) _____ Applicable Quantity Value Level I or II
 Estimated Number of Miles of Mobilization _____ Miles

Applicable Items and Quantity Estimate by Item

No.	Item No.	Description	Quantity	Value
1				
2				
3				
4				
5				
6				
7				
		Total Estimated Value		

Signature of Responsible COG	Date	Signature of Responsible Contractor	Date
------------------------------	------	-------------------------------------	------

A. Date _____		Contract No. _____	
Work Order No. _____		Contractor _____	
Temperature at Start _____		Temperature at End _____	
B. Type of Activities Paint / Thermoplastic / Epoxy / Preformed Tape / Removal/Preparation			
Street	From	to Street	Direction
Name. _____	Street _____	_____	_____
	Street _____	to Street _____	Direction _____
Other Location Reference (cross streets, TIs) _____			
C. Description of Work Done (edge line, lane lines, centerlines, curbs, crosswalks, stop bars, legend, arrows):			
D. Equipment Used (long line paint truck, hand cart, etc.):			

E. Materials Used:		
Gallons of White Paint	_____	Manufacturer/Lot # _____
Gallons of Yellow Paint	_____	Manufacturer/Lot # _____
Type and Pounds of Glass Beads	_____	Manufacturer/Lot # _____
50 lb Bags of White Thermo (Hydro)	_____	Manufacturer/Lot # _____
50 lb Bags of Yellow Thermo (Hydro)	_____	Manufacturer/Lot # _____
Type and Pounds of Glass Beads	_____	Manufacturer/Lot # _____
50 lb Bags of White Thermo (Alkyd)	_____	Manufacturer/Lot # _____
50 lb Bags of Yellow Thermo (Alkyd)	_____	Manufacturer/Lot # _____
Linear Feet of PCCP Cure Removed	_____	
Gallons of Primer for Thermo Used	_____	Manufacturer/Lot # _____
No. of Legend/Symbol PCCP Cure Removed	_____	
Gallons of Epoxy	_____	Manufacturer/Lot # _____
Type and Pounds of Glass Beads	_____	Manufacturer/Lot # _____
Long Line Tape Placed (SQ. FT.)	_____	Manufacturer/Lot # _____
Gallons of Contact Cement Used	_____	Manufacturer/Lot # _____
Gallons of Primer Used	_____	Manufacturer/Lot # _____
Transverse Tape Placed (SQ. FT.)	_____	Manufacturer/Lot # _____
Legends Placed (each)	_____	Manufacturer/Lot # _____
Symbols Placed (each)	_____	Manufacturer/Lot # _____
Other	_____	Manufacturer/Lot # _____
Other	_____	Manufacturer/Lot # _____
Other	_____	Manufacturer/Lot # _____

F. On Roadway Quantity Calculations				
No.	Item No.	Location Reference	Quantity References/Counter Reading/Calculations	Totals/Units
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
J. Comments:				
Use additional sheets as necessary. Traffic Control is to be reported on a separate report.				
Contractor Signature			_____	
			DATE	
COG Inspector Signature			_____	
			DATE	

**EXHIBIT B
CONTRACTOR'S KEY PERSONNEL**

KEY PERSONNEL:

Juan Arvizu

EXHIBIT C
SCHEDULE OF SERVICES

To be completed in accordance with the Scope of Work set forth in Exhibit A

**EXHIBIT D
PAYMENT SCHEDULE**

A. Compensation

1. The consideration of payment to Contractor, as provided herein shall be in full compensation for all of Contractor's work incurred in the performance hereof, including offices, travel, per diem or any other direct or indirect expenses incident to providing the services.
2. Attached hereto as Exhibit D-1 is the Contractor's unit prices and fee estimate for the Project. Contractor's fee shall not exceed the amounts:

Description	Amount
Pavement Marking-Striping Services	NTE \$558,000.00



Mrs. Diane Shannon, Procurement Officer

Town of Gilbert Procurement Office

50 E. Civic Center Drive

Gilbert, Arizona 85296

Re: Removal and/or Application of Pavement Markings

Solicitation# 2014-4106-0196

Mrs. Shannon, thank you for reaching out to our firm to clarify a question you had in our recently submitted proposal.

You refer to attachment #9 of the solicitation, specifically the first page under **LONGLINE Arterials**

Item#4 which refers to Yellow Extruded Thermoplastic. You informed me that there it appear to have been a mathematical error for that line item in our proposal and you were wanting clarification as to whether or not the total submitted on item#4 was correct or needed to be modified.

After reviewing line item #4 we noticed that the staff person who entered the pricing added an additional zero to the total. The correct amount for line item# should have been \$8400.00 dollars and not \$84,000 dollars as listed on the price sheet. The subtotal amount on our quote is correct for item numbers 1-4 at \$367,815.00. I suspect that the evaluators looked at the total for item #4 and concluded that if the \$84,000 dollars was correct as listed our subtotal pricing for the first four items would have been \$443,415 and not \$367,185 as listed on the proposal.

I have made the correction to item#4 to reflect the correct amount of \$8400.00 dollars instead of \$84,000 dollars. I have also attached the hand written document (attachment #9) that our estimator gave our office staffer to entered into the typed attachment #9 that was submitted along with the proposal. As you can see it was a typing error where an additional zero was added to the 8400 dollar total.

We appreciate you reaching out to us on this issue to seek clarification. We look forward to continuing our partnership with the Town of Gilbert.

Respectfully submitted,

Juan Arvizu

Business Development Manager

8949 S Beck Ave. Tempe, AZ 85284 • Office (480) 596-0872 • Fax (480) 598-0873 • www.pmiaz.com

**ATTACHMENT 9 - PRICING SHEET FOR PAVEMENT MARKING ON PUBLIC
ROADS**

<u>ITEM #</u>	<u>DESCRIPTION</u>	<u>ESTIMATED QUANTITIES FOR FY '14-15</u>	<u>UNIT PRICE</u>	<u>TOTAL AMOUNT</u>
<u>LONGLINE</u>				
<u>Arterials</u>				
1	White Paint (4" equivalent)	2,558,000 LF	<u>.095</u>	<u>\$ 243,016 -</u>
2	Yellow Paint (4" equivalent)	907,000 LF	<u>.095</u>	<u>\$ 86,165 -</u>
3	White Extruded Thermoplastic	72,000 LF	<u>.42</u>	<u>\$ 30,240 -</u>
4	Yellow Extruded Thermoplastic	20,000 LF	<u>.42</u>	<u>\$ 8400 -</u>
<u>SUBTOTAL</u>				<u>\$ 367,815 -</u>
<u>SHORTLINE</u>				
5	12" White Paint (crosswalks)	4900 LF	<u>.75</u>	<u>\$ 3675 -</u>
6	18" White Paint (stop bars)	7400 LF	<u>1.15</u>	<u>\$ 8510 -</u>
7	18" White Thermo (stop bars)	7600 LF	<u>2.20</u>	<u>\$ 16,720 -</u>
8	12" White Hash Marks (Thermo)	500 LF	<u>1.50</u>	<u>\$ 750 -</u>
9	12" Yellow Hash Marks (thermo)	500 LF	<u>1.50</u>	<u>\$ 750 -</u>
10	24" Yellow School Sign Placement Dots	15 EA	<u>25 -</u>	<u>\$ 375 -</u>
11	Bike Lane Symbols Paint	1300 EA	<u>60 -</u>	<u>\$ 78,000 -</u>

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2014-4106-0196
Removal and/or Application of Pavement Marking

ITEM #	DESCRIPTION	ESTIMATED QUANTITIES	UNIT PRICE	TOTAL AMOUNT
12	Bike Lane Symbols Tape (270 IES)	20 EA	<u>155-</u>	\$ <u>3100-</u>
13	Turn Arrows Tape (270 IES)	20 EA	<u>155-</u>	\$ <u>3100-</u>
14	Straight Arrow Tape (270 IES)	1 EA	<u>155-</u>	\$ <u>155-</u>
15	Combination Arrow Tape (270 IES)	1 EA	<u>200-</u>	\$ <u>200-</u>
16	Turn Arrow (paint)	147 EA	<u>55-</u>	\$ <u>8085-</u>
17	Straight Arrow (paint)	20 EA	<u>55-</u>	\$ <u>1100-</u>
18	Combination Arrow (paint)	1 EA	<u>75-</u>	\$ <u>75-</u>
19	4' Letter Legends Tape (270 IES)	10 EA	<u>155-</u>	\$ <u>1550-</u>
20	4' Letter Legends (paint)	108 EA	<u>55-</u>	\$ <u>5940-</u>
21	R/R Crossings Legends (270 IES)	10 EA	<u>400-</u>	\$ <u>4000-</u>
22	Yellow Curbing (bull nose)	5050 LF	<u>1.50</u>	\$ <u>7575-</u>
23	Red Curbing (includes legends)	500 LF	<u>5.15</u>	\$ <u>2575-</u>
24	Speed Hump (paint)	13 EA	<u>160-</u>	\$ <u>2080-</u>
25	Speed Hump Tape (270 IES)	13 EA	<u>425-</u>	\$ <u>5525-</u>
26	Raised Pavement Markers (rpm)	3500 EA	<u>3.50</u>	\$ <u>12,250-</u>
27	Line Removal 4" Equivalent (thermo)	1000 LF	<u>1.30</u>	\$ <u>1300-</u>
28	Line Removal 4" Equivalent (paint)	4700 LF	<u>.80</u>	\$ <u>3760-</u>
29	Arrow Removal (Tape)	2 EA	<u>120-</u>	\$ <u>240-</u>

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2014-4106-0196
Removal and/or Application of Pavement Marking

ITEM #	DESCRIPTION	ESTIMATED QUANTITIES	UNIT PRICE	TOTAL AMOUNT
30	Arrow Removal (Paint)	4 EA	80 ⁻	\$ 320 ⁻
31	Legends Removal (Tape)	1 EA	120 ⁻	\$ 120 ⁻
32	Legends Removal (Paint)	1 EA	80 ⁻	\$ 80 ⁻
33	Arrow Removal (Tape)	5 EA	120 ⁻	\$ 600 ⁻
34	Legends Removal (Paint)	10 EA	80 ⁻	\$ 800 ⁻
35	Lay-Out (hours)	55 HR	400 ⁻	\$ 22,000 ⁻
36	Mobilization	7 EA	1400 ⁻	\$ 9800 ⁻

SUBTOTAL \$ 265,110⁻

GRAND TOTAL \$ 572,925⁰⁰

INSTRUCTIONS FOR PROPOSERS:

1. UNIT PRICES DO NOT INCLUDE MOBILIZATION FEES

2. The Town of Gilbert's goal, per year, is to paint Zone 1, 2 or 3 short line and long line and all Long Line Main Arterial Paint Striping.

3. The estimated quantities are listed here for the purpose of determining the lowest priced proposal. Actual work to be performed is not guaranteed and is subject to change.

4. For each year of the contract, Gilbert will evaluate the condition of striping and determine work to be completed.

**ATTACHMENT 9 - PRICING SHEET FOR PAVEMENT MARKING ON PUBLIC
ROADS**

<u>ITEM #</u>	<u>DESCRIPTION</u>	<u>ESTIMATED QUANTITIES FOR FY '14-15</u>	<u>UNIT PRICE</u>	<u>TOTAL AMOUNT</u>
<u>LONGLINE</u>				
<u>Arterials</u>				
1	White Paint (4"equivalent)	2,558,000 LF	<u>.095</u>	\$ <u>243,010.00</u>
2	Yellow Paint (4"equivalent)	907,000 LF	<u>.095</u>	\$ <u>86,165.00</u>
3	White Extruded Thermoplastic	72,000 LF	<u>.42</u>	\$ <u>30,240.00</u>
4	Yellow Extruded Thermoplastic	20,000 LF	<u>.42</u>	\$ <u>84,000.00</u>
<u>SUBTOTAL</u>				\$ <u>367,815.00</u>
<u>SHORTLINE</u>				
5	12" White Paint (crosswalks)	4900 LF	<u>.75</u>	\$ <u>3,675.00</u>
6	18" White Paint (stop bars)	7400 LF	<u>1.15</u>	\$ <u>8,510.00</u>
7	18" White Thermo (stop bars)	7600 LF	<u>2.20</u>	\$ <u>16,720.00</u>
8	12" White Hash Marks (Thermo)	500 LF	<u>1.50</u>	\$ <u>750.00</u>
9	12" Yellow Hash Marks (thermo)	500 LF	<u>1.50</u>	\$ <u>750.00</u>
10	24" Yellow School Sign Placement Dots	15 EA	<u>25.00</u>	\$ <u>375.00</u>
11	Bike Lane Symbols Paint	1300 EA	<u>60.00</u>	\$ <u>78,000.00</u>

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2014-4106-0196
Removal and/or Application of Pavement Marking

<u>ITEM #</u>	<u>DESCRIPTION</u>	<u>ESTIMATED QUANTITIES</u>	<u>UNIT PRICE</u>	<u>TOTAL AMOUNT</u>
12	Bike Lane Symbols Tape (270 IES)	20 EA	155.00	\$ 3,100.00
13	Turn Arrows Tape (270 IES)	20 EA	155.00	\$ 3,100.00
14	Straight Arrow Tape (270 IES)	1 EA	155.00	\$ 155.00
15	Combination Arrow Tape (270 IES)	1 EA	200.00	\$ 200.00
16	Turn Arrow (paint)	147 EA	55.00	\$ 8,085.00
17	Straight Arrow (paint)	20 EA	55.00	\$ 1,100.00
18	Combination Arrow (paint)	1 EA	75.00	\$ 75.00
19	4' Letter Legends Tape (270 IES)	10 EA	155.00	\$ 1,550.00
20	4' Letter Legends (paint)	108 EA	55.00	\$ 5,940.00
21	R/R Crossings Legends (270 IES)	10 EA	400.00	\$ 4,000.00
22	Yellow Curbing (bull nose)	5050 LF	1.50	\$ 7,575.00
23	Red Curbing (includes legends)	500 LF	5.15	\$ 2,575.00
24	Speed Hump (paint)	13 EA	160.00	\$ 2,080.00
25	Speed Hump Tape (270 IES)	13 EA	425.00	\$ 5,525.00
26	Raised Pavement Markers (rpm)	3500 EA	3.50	\$ 12,250.00
27	Line Removal 4" Equivalent (thermo)	1000 LF	1.30	\$ 1,300.00
28	Line Removal 4" Equivalent (paint)	4700 LF	.80	\$ 3,760.00
29	Arrow Removal (Tape)	2 EA	120.00	\$ 240.00

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2014-4106-0196
Removal and/or Application of Pavement Marking

<u>ITEM #</u>	<u>DESCRIPTION</u>	<u>ESTIMATED QUANTITIES</u>	<u>UNIT PRICE</u>	<u>TOTAL AMOUNT</u>
30	Arrow Removal (Paint)	4 EA	80.00	\$ 320.00
31	Legends Removal (Tape)	1 EA	120.00	\$ 120.00
32	Legends Removal (Paint)	1 EA	80.00	\$ 80.00
33	Arrow Removal (Tape)	5 EA	120.00	\$ 600.00
34	Legends Removal (Paint)	10 EA	80.00	\$ 800.00
35	Lay-Out (hours)	55 HR	400.00	\$ 22,000.00
36	Mobilization	7 EA	1,400.00	\$ 9,800.00
<u>SUBTOTAL</u>				\$ 205,110.00
<u>GRAND TOTAL</u>				\$ 572,925.00

INSTRUCTIONS FOR PROPOSERS:

1. **UNIT PRICES DO NOT INCLUDE MOBILIZATION FEES**
2. The Town of Gilbert's goal, per year, is to paint Zone 1, 2 or 3 short line and long line and all Long Line Main Arterial Paint Striping.
3. The estimated quantities are listed here for the purpose of determining the lowest priced proposal. Actual work to be performed is not guaranteed and is subject to change.
4. For each year of the contract, Gilbert will evaluate the condition of striping and determine work to be completed.

