



**PURCHASING ITEM
FOR
COUNCIL AGENDA**

1. Agenda Item Number:

22

Memo No.

2. Council Meeting Date:

May 12, 2016

TO: MAYOR AND COUNCIL

3. Date Prepared: April 25, 2016

THROUGH: CITY MANAGER

4. Requesting Department:
City Manager – Building & Facilities

5. SUBJECT: Agreement with Regional Pavement Maintenance of Arizona, Inc., for Asphalt & Concrete Maintenance and Repair.

6. RECOMMENDATION: Staff recommends City Council approve Agreement No. BF6-745-3662, with Regional Pavement Maintenance of Arizona, Inc., for asphalt & concrete maintenance and repair, in an amount not to exceed \$582,614.00 annually, for one year, June 1, 2016, through May 31, 2017, with options to renew for up to four additional one-year periods.

7. BACKGROUND/DISCUSSION: Asphalt parking lots and driveways at City facilities and parks require periodic maintenance due to adverse weather conditions and wear. This contract will provide the asphalt maintenance service of cracking sealing, asphalt patching, seal coat, mill and overlay, concrete replacement and repair, tire rubber modified asphalt emulsion sealer (TRMSS) application, and striping. Facilities scheduled to receive maintenance during this contract period are: Fire Station #10, Snedigar Recreation Center, Parks and Facilities and Aquatics Service Center, Main Police and Courts, Chandler Boys and Girls Club, Tumbleweed Park, and the Pecos Surface Water Treatment Plant.

This contract will also provide for miscellaneous repairs of concrete sidewalks and curbing in facilities that require replacement due to failure from cracking or vertical lifting or do not meet current ADA guidelines.

The Building and Facilities, Parks Divisions and Municipal Utilities Department will be utilizing this contract for all their asphalt and concrete maintenance and repair.

8. EVALUATION PROCESS: On February 25, 2016, City staff issued an Invitation for Bid (IFB) for asphalt and concrete maintenance and repair. Notification was sent to all registered vendors. Seven responses were received as listed below.

Regional Pavement:	\$582,614.00	VSS International:	\$1,008,000.00
Viasun Corporation:	\$664,816.00	Standard Construction:	\$2,193,432.50
Cactus Asphalt:	\$711,100.50	W.L. Emshoff:	\$117,700 (partial bid)
RK Sanders:	\$985,982.00		

The term of this agreement will be from June 1, 2016, through May 31, 2017, with option to renew for four additional one-year terms.

9. FINANCIAL IMPLICATIONS:

<u>Account No.:</u>	<u>Fund:</u>	<u>Program Name:</u>	<u>Amount:</u>
401.3310.6517.6ST303	General Fund	Asphaltic Pavement	\$150,000
401.3210.6210	General Fund	Existing City Bldg R&M	\$100,000
401.4580.6611	General Fund	Park Improvements	\$25,000
605.3860.5419	Water Operating	Other Repair & Maint	\$110,000
401.3310.6512	General Fund	ADA Improvements	\$197,614

10. PROPOSED MOTION: Move to approve Agreement No. BF6-745-3662, with Regional Pavement Maintenance of Arizona, Inc., for asphalt & concrete maintenance & repair, in an amount not to exceed \$582,614.00 annually, for one year, June 1, 2016, through May 31, 2017, with options to renew for up to four additional one-year periods.

ATTACHMENT: Agreement

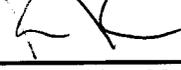
APPROVALS

11. Requesting Department



Kris Kircher, Facilities Maintenance Manager

12. Department Head



Kris Kircher, Facilities Maintenance Manager

13. Procurement Officer.



Raquel McMahon, CPPB

14. City Manager



Marsha Reed

**CITY OF CHANDLER SERVICES AGREEMENT
ASPHALT & CONCRETE MAINTENANCE AND REPAIR
AGREEMENT NO.: BF6-745-3662**

THIS AGREEMENT is made and entered into this ____ day of _____, 2016, by and between the City of Chandler, a Municipal Corporation of the State of Arizona, hereinafter referred to as "City", and **Regional Pavement Maintenance of Arizona, Inc.**, hereinafter referred to as "Contractor".

WHEREAS, Contractor represents that Contractor has the expertise and is qualified to perform the services described in the Agreement.

NOW THEREFORE, in consideration of the mutual promises and obligations set forth herein, the parties hereto agree as follows:

1. AGREEMENT ADMINISTRATOR:

1.1. Agreement Administrator. Contractor shall act under the authority and approval of the Facilities Maintenance Manager or designee (Agreement Administrator), to provide the services required by this Agreement.

1.2. Key Staff. This Agreement has been awarded to Contractor based partially on the key personnel proposed to perform the services required herein. Contractor shall not change nor substitute any of these key staff for work on this Agreement without prior written approval by City.

1.3. Subcontractors. During the performance of the Agreement, Contractor may engage such additional Subcontractor as may be required for the timely completion of this Agreement. In the event of subcontracting, the sole responsibility for fulfillment of all terms and conditions of this Agreement rests with Contractor.

1.4. Subcontracts. Contractor shall not enter into any Subcontract under this Agreement for the performance of this Agreement without the advance written approval of City. The subcontract shall incorporate by reference the terms and conditions of this Agreement.

2. SCOPE OF WORK: Contractor shall provide asphalt & concrete maintenance and repair services all as more specifically set forth in Exhibit A, Scope of Work; Exhibit B, Pricing; Exhibit C1-C3, Bonds and Exhibit D, Ramp Detail, attached hereto and made a part hereof by reference.

2.1 Non-Discrimination. The Contractor shall comply with all applicable City, State and Federal laws, rules and regulations, including the Americans with Disabilities Act.

2.2 Licenses. Contractor shall maintain in current status all Federal, State and local licenses and permits required for the operation of the business conducted by the Contractor as applicable to this agreement.

2.3 Advertising, Publishing and Promotion of Agreement. The Contractor shall not use, advertise or promote information for commercial benefit concerning this Agreement without the prior written approval of the City.

2.4 Compliance with Applicable Laws. Contractor shall comply with all applicable Federal, state and local laws, and with all applicable licenses and permit requirements.

2.4.1 The Contractor hereby warrants to the City that the Contractor and each of its subcontractors ("subcontractors") will comply with all Federal Immigration laws and regulations that relate to the immigration status of their employees and the requirement to use E-Verify, hereinafter "Contractor Immigration Warranty".

- 2.4.2 A breach of the Contractor Immigration Warranty shall constitute a material breach of this Agreement that is subject to penalties up to and including termination of the agreement.
- 2.4.3 The City retains the legal right to inspect the papers of any Contractor or Subcontractor employee who works on this Agreement to ensure that the Contractor or Subcontractor is complying with the Contractor Immigration Warranty. The Contractor agrees to assist the City in the conduct of any such inspections.
- 2.4.4 The City may, at its sole discretion, conduct random verifications of the employment records of the Contractor and any Subcontractors to ensure compliance with Contractors Immigration Warranty. The Contractor agrees to assist the City in performing any such random verification.
- 2.4.5 The provisions of this Article must be included in any agreement the Contractor enters into with any and all of its subcontractors who provide services under this Agreement or any subcontract. "Services" are defined as furnishing labor, time or effort in the State of Arizona by a contractor or subcontractor. Services include construction or maintenance of any structure, building or transportation facility or improvement to real property.
- 2.5 **Warranties. One-Year Warranty.** Contractor must provide a one-year warranty on all work performed pursuant to this Agreement.
3. **ACCEPTANCE AND DOCUMENTATION:** Each task shall be reviewed and approved by the Agreement Administrator to determine acceptable completion.
- 3.1. **Records.** The Contractor shall retain and shall contractually require each Subcontractor to retain all data and other "records" relating to the acquisition and performance of the Agreement for a period of five years after the completion of the Agreement.
- 3.2. **Audit.** At any time during the term of this Agreement and five (5) years thereafter, the Contractor's or any subcontractor's books and records shall be subject to audit by the City to the extent that the books and records relate to the performance of the Agreement or Subcontract. Upon request, the Contractor shall produce a legible copy of any or all such records.
- 3.3. **New/Current Products.** All equipment, materials, parts and other components incorporated in the work or services performed pursuant to this Agreement shall be new, or the latest model and of the most suitable grade for the purpose intended. All work shall be performed in a skilled and workmanlike manner.
- 3.4. **Property of City.** Any materials, including reports, computer programs and other deliverables, created under this Agreement are the sole property of City. Contractor is not entitled to a patent or copyright on those materials and may not transfer the patent or copyright to anyone else. Contractor shall not use or release these materials without the prior written consent of City.
4. **PRICE:**
- 4.1. CITY shall pay to CONTRACTOR an amount not to exceed **THREE HUNDRED THOUSAND DOLLARS (\$300,000)**, including all companion agreements, for the completion of all the work and services described herein, which sum shall include all costs or expenses incurred by CONTRACTOR, payable as set forth in Exhibit B, attached hereto and made a part hereof by reference.

- 4.2. Taxes.** Contractor shall be solely legally responsible for any and all tax obligations, which may result out of Contractor's performance of this Agreement. City shall have no legal obligation to pay any amounts for taxes, of any type, incurred by Contractor. City agrees that Contractor may bill the City for applicable privilege license taxes which are paid for by Contractor and that the City will reimburse Contractor for privilege license taxes actually paid by Contractor. If Contractor obtains any refund of privilege license taxes paid, City will be entitled to a refund of such amounts.
- 4.3. Payment.** A separate invoice shall be issued for each shipment of material or service performed, and no payment will be issued prior to receipt of material and/or completion of specified services and receipt of a correct invoice. Any quantities shown are estimates only, based upon available information. Payment shall be based on actual quantities and there is no guarantee that any certain quantity shall be required by City. City reserves the right to increase or decrease the quantities actually required.
- 4.4. IRS W9 Form.** In order to receive payment Contractor shall have a current I.R.S. W9 Form on file with City, unless not required by law.
- 4.5. Price Adjustment in Extension Terms.** All prices offered herein shall be firm against any increase for the initial term of the Agreement. Prior to commencement of subsequent renewal terms, City may approve a fully documented request for a price adjustment. The City shall determine whether any requested price increases for extension terms is acceptable to the City. If City approves the price increase, the price shall remain firm for the renewal term for which it was requested. If a price increase is agreed upon by the Parties a written Agreement Amendment shall be approved and executed by the Parties.
- 4.6. Price Reduction.** Contractor shall offer City a price reduction for its services concurrent with a published price reduction made to other customers.
- 5. TERM:** The term of the Agreement is **ONE (1) year**, commencing on **JUNE 1, 2016** and terminating on **May 31, 2017** unless sooner terminated in accordance with the provisions herein. City reserves the right, at its sole discretion, to extend the Agreement for up to **FOUR (4)** additional terms of **ONE (1)** year each.
- 6. USE OF THIS AGREEMENT:** The Agreement is for the sole convenience of the City of Chandler. City reserves the rights to obtain like services from another source to secure significant cost savings or when timely completion cannot be met by Contractor.
- 6.1. Cooperative Use of Agreement.** In addition to the City of Chandler and with approval of the Contractor, this Agreement may be extended for use by other municipalities, school districts and government agencies of the State. A current listing of eligible entities may be found at www.maricopa.gov/materials and then click on 'Contracts', 'S.A.V.E.' listing and 'ICPA'. Any such usage by other entities must be in accordance with the ordinance, charter and/or procurement rules and regulations of the respective political entity.

If required to provide services on a school district property at least five (5) times during a month, Contractor shall submit a full set of fingerprints to the school of each person or employee who may provide such service. The District shall conduct a fingerprint check in accordance with A.R.S. 41-1750 and Public Law 92-544 of all Contractors, subcontractors or vendors and their employees for which fingerprints are submitted to the District. Additionally, the Contractor shall comply with the governing body fingerprinting policies of each individual school district/public entity. Contractor, sub-contractors, vendors and their employees shall not provide services on school district properties until authorized by the District.

Orders placed by other agencies and payment thereof will be the sole responsibility of that agency. The City shall not be responsible for any disputes arising out of transactions made by other agencies who utilize this Agreement.

- 6.2 **Emergency Purchases:** City reserves the rights to purchase from other sources those items, which are required on an emergency basis and cannot be supplied immediately by the Contractor.
- 6.3 **Non-Exclusive Agreement:** This agreement is for the sole convenience of the City of Chandler. The City reserves the right to obtain like goods or services from another source when necessary.
- 6.4 **Exclusive Possession:** All services, information, computer program elements, reports and other deliverables created under this Agreement are the sole property of the City of Chandler and shall not be used or released by the Contractor or any other person except with prior written permission by the City.

7. CITY'S CONTRACTUAL REMEDIES:

- 7.1. **Right to Assurance.** If the City in good faith has reason to believe that the Contractor does not intend to, or is unable to perform or continue performing under this Agreement, the Agreement Administrator may demand in writing that the Contractor give a written assurance of intent to perform. Failure by the Contractor to provide written assurance within the number of Days specified in the demand may, at the City's option, be the basis for terminating the Agreement in addition to any other rights and remedies provided by law or this Agreement.
- 7.2. **Stop Work Order.** The City may, at any time, by written order to the Contractor, require the Contractor to stop all or any part, of the work called for by this Agreement for period(s) of days indicated by the City after the order is delivered to the Contractor. The order shall be specifically identified as a stop work order issued under this clause. Upon receipt of the order, the Contractor shall immediately comply with its terms and take all reasonable steps to minimize the incurrence of costs allocable to the work covered by the order during the period of work stoppage.
- 7.3. If a stop work order issued under this clause is canceled or the period of the order or any extension expires, the Contractor shall resume work. The Agreement Administrator shall make an equitable adjustment in the delivery schedule or Agreement price, or both, and the Agreement shall be amended in writing accordingly.
- 7.4. **Non-exclusive Remedies.** The rights and the remedies of the City under this Agreement are not exclusive.
- 7.5. **Nonconforming Tender.** Services and materials supplied under this Agreement shall fully comply with Agreement requirements and specifications. Services or materials that do not fully comply constitute a breach of agreement.
- 7.6. **Right of Offset.** The City shall be entitled to offset against any sums due Contractor, any expenses or costs incurred by the City, or damages assessed by the City concerning the Contractor's non-conforming performance or failure to perform the Agreement, including expenses to complete the work and other costs and damages incurred by City.

8. TERMINATION:

- 8.1.1 **Termination for Convenience:** City reserves the right to terminate this Agreement or any part thereof for its sole convenience with thirty (30) days written notice. In the event of such termination, Contractor shall immediately stop all work hereunder, and shall immediately cause any of its suppliers and subcontractors to cease such work. As compensation in full for services performed to the date of such termination, the Contractor shall receive a fee for the percentage of services actually performed. This fee shall be in the amount to be mutually agreed upon by the Contractor and City, based on the agreed Scope of Work. If there is no mutual agreement, the Management Services Director or designee shall determine the percentage of work performed under each task detailed in the Scope of Work and the Contractor's compensation shall be based upon such determination and Contractor's fee schedule included herein.

8.1.2 Termination for Cause: City may terminate this Agreement for Cause upon the occurrence of any one or more of the following events:

- 1) If Contractor fails to perform pursuant to the terms of this Agreement
- 2) If Contractor is adjudged a bankrupt or insolvent;
- 3) If Contractor makes a general assignment for the benefit of creditors;
- 4) If a trustee or receiver is appointed for Contractor or for any of Contractor's property;
- 5) If Contractor files a petition to take advantage of any debtor's act, or to reorganize under the bankruptcy or similar laws;
- 6) If Contractor disregards laws, ordinances, rules, regulations or orders of any public body having jurisdiction;

Where Agreement has been so terminated by City, the termination shall not affect any rights of City against Contractor then existing or which may thereafter accrue.

- 8.3. Cancellation for Conflict of Interest.** Pursuant to A.R.S. § 38-511, City may cancel this Agreement after Agreement execution without penalty or further obligation if any person significantly involved in initiating, negotiating, securing, drafting or creating the Agreement on behalf of the City is or becomes at any time while this Agreement or an extension of this Agreement is in effect, an employee of or a consultant to any other party to this Agreement. The cancellation shall be effective when the Contractor receives written notice of the cancellation unless the notice specifies a later time.
- 8.4. Gratuities.** City may, by written notice, terminate this Agreement, in whole or in part, if City determines that employment or a Gratuity was offered or made by Contractor or a representative of Contractor to any officer or employee of City for the purpose of influencing the outcome of the procurement or securing this Agreement, an amendment to this Agreement, or favorable treatment concerning this Agreement, including the making of any determination or decision about agreement performance. The City, in addition to any other rights or remedies, shall be entitled to recover exemplary damages in the amount of three times the value of the Gratuity offered by Contractor.
- 8.5. Suspension or Debarment.** City may, by written notice to the Contractor, immediately terminate this Agreement if City determines that Contractor has been debarred, suspended or otherwise lawfully prohibited from participating in any public procurement activity, including but not limited to, being disapproved as a subcontractor of any public procurement unit or other governmental body. Submittal of an offer or execution of an agreement shall attest that the Contractor is not currently suspended or debarred. If Contractor becomes suspended or debarred, Contractor shall immediately notify City.
- 8.6. Continuation of Performance Through Termination.** The Contractor shall continue to perform, in accordance with the requirements of the Agreement, up to the date of termination, as directed in the termination notice.
- 8.7. No Waiver.** Either party's failure to insist on strict performance of any term or condition of the Agreement shall not be deemed a waiver of that term or condition even if the party accepting or acquiescing in the nonconforming performance knows of the nature of the performance and fails to object to it.
- 8.8. Availability of Funds for the next Fiscal Year.** Funds may not presently be available under this Agreement beyond the current fiscal year. No legal liability on the part of the City for services may arise under this Agreement beyond the current fiscal year until funds are made available for performance of this Agreement. The City may reduce services or terminate this Agreement without further recourse, obligation, or penalty in the event that insufficient funds are appropriated. The City Manager shall have the sole and unfettered discretion in determining the availability of funds.

9. **FORCE MAJEURE:** Neither party shall be responsible for delays or failures in performance resulting from acts beyond their control. Such acts shall include, but not be limited to, acts of God, riots, acts of war, epidemics, governmental regulations imposed after the fact, fire, communication line failures, power failures, or earthquakes.
10. **DISPUTE RESOLUTION:**
- 10.1. **Arizona Law.** This Agreement shall be governed and interpreted according to the laws of the State of Arizona.
- 10.2. **Jurisdiction and Venue.** The parties agree that this Agreement is made in and shall be performed in Maricopa County. Any lawsuits between the Parties arising out of this Agreement shall be brought and concluded in the courts of Maricopa County in the State of Arizona, which shall have exclusive jurisdiction over such lawsuits.
- 10.3. **Fees and Costs.** Except as otherwise agreed by the parties, the prevailing party in any adjudicated dispute relating to this Agreement is entitled to an award of reasonable attorney's fees, expert witness fees and costs including, as applicable, arbitrator fees.
11. **INDEMNIFICATION:** To the fullest extent permitted by law, Contractor, its successors, assigns and guarantors, shall defend, indemnify and hold harmless City and any of its elected or appointed officials, officers, directors, commissioners, board members, agents or employees from and against any and all allegations, demands, claims, proceedings, suits, actions, damages, including, without limitation, property damage, environmental damages, personal injury and wrongful death claims, losses, expenses (including claim adjusting and handling expenses), penalties and fines (including, but not limited to, attorney fees, court costs, and the cost of appellate proceedings), judgments or obligations, which may be imposed upon or incurred by or asserted against the City by reason of this Agreement or the services performed or permissions granted under it, or related to, arising from or out of, or resulting from any negligent or intentional actions, acts, errors, mistakes or omissions caused in whole or part by Contractor, or any of its subcontractors, or anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, relating to the discharge of any duties or the exercise of any rights or privileges arising from or incidental to this Agreement, including but not limited to, any injury or damages claimed by any of Contractor's and subcontractor's employees.

The amount and type of insurance coverage requirements set forth in the Agreement will in no way be construed as limiting the scope of indemnity in this paragraph.

12. **INSURANCE:**

1. General.

- A. At the same time as execution of this Agreement, the Contractor shall furnish the City of Chandler a certificate of insurance on a standard insurance industry ACORD form. The ACORD form must be issued by an insurance company authorized to transact business in the State of Arizona possessing a current A.M. Best, Inc. rating of A-7, or better and legally authorized to do business in the State of Arizona with policies and forms satisfactory to City. Provided, however, the A.M. Best rating requirement shall not be deemed to apply to required Workers' Compensation coverage.
- B. The Contractor and any of its subcontractors shall procure and maintain, until all of their obligations have been discharged, including any warranty periods under this Agreement are satisfied, the insurances set forth below.
- C. The insurance requirements set forth below are minimum requirements for this Agreement and in no way limit the indemnity covenants contained in this Agreement.

- D. The City in no way warrants that the minimum insurance limits contained in this Agreement are sufficient to protect Contractor from liabilities that might arise out of the performance of the Agreement services under this Agreement by Contractor, its agents, representatives, employees, subcontractors, and the Contractor is free to purchase any additional insurance as may be determined necessary.
- E. Failure to demand evidence of full compliance with the insurance requirements in this Agreement or failure to identify any insurance deficiency will not relieve the Contractor from, nor will it be considered a waiver of its obligation to maintain the required insurance at all times during the performance of this Agreement.
- F. Use of Subcontractors: If any work is subcontracted in any way, the Contractor shall execute a written contract with Subcontractor containing the same Indemnification Clause and Insurance Requirements as the City requires of the Contractor in this Agreement. The Contractor is responsible for executing the Agreement with the Subcontractor and obtaining Certificates of Insurance and verifying the insurance requirements.
2. Minimum Scope And Limits Of Insurance. The Contractor shall provide coverage with limits of liability not less than those stated below.
- A. *Commercial General Liability-Occurrence Form.* Contractor must maintain "occurrence" form Commercial General Liability insurance with a limit of not less than \$2,000,000 for each occurrence, \$4,000,000 aggregate. Said insurance must also include coverage for products and completed operations, independent contractors, personal injury and advertising injury. If any Excess insurance is utilized to fulfill the requirements of this paragraph, the Excess insurance must be "follow form" equal or broader in coverage scope than underlying insurance.
- B. *Automobile Liability-Any Auto or Owned, Hired and Non-Owned Vehicles Vehicle Liability:* Contractor must maintain Business/Automobile Liability insurance with a limit of \$1,000,000 each accident on Contractor owned, hired, and non-owned vehicles assigned to or used in the performance of the Contractor's work or services under this Agreement. If any Excess or Umbrella insurance is utilized to fulfill the requirements of this paragraph, the Excess or Umbrella insurance must be "follow form" equal or broader in coverage scope than underlying insurance.
- C. *Workers Compensation and Employers Liability Insurance:* Contractor must maintain Workers Compensation insurance to cover obligations imposed by federal and state statutes having jurisdiction of Contractor employees engaged in the performance of work or services under this Agreement and must also maintain Employers' Liability insurance of not less than \$1,000,000 for each accident and \$1,000,000 disease for each employee.
- D. **Builders' Risk/Installation Floater Insurance: Regional Pavement Maintenance of Arizona, Inc.** bears all responsibility for loss to all equipment or Work under construction. Unless waived in writing by the City, **Regional Pavement Maintenance of Arizona, Inc.** will purchase and maintain in force Builders' Risk/Installation Floater insurance on the entire Work until completed and accepted by the City. This insurance will be Special Causes of Loss policy form, (minimally including perils of fire, flood, lightning, explosion, windstorm and hail, smoke, aircraft and vehicles, riot and civil commotion, theft, vandalism, malicious mischief, and collapse), completed value, replacement cost policy form equal to the contract price and all subsequent modifications. **Regional Pavement Maintenance of Arizona, Inc.'s** Builders' Risk/Installation Floater insurance must be primary and not contributory.

1. Builders' Risk/Installation Floater insurance must cover the entire Work including reasonable compensation for architects and engineers' services and expenses and other "soft costs" made necessary by an insured loss. Builders' Risk/Installation Floater insurance must provide coverage from the time any covered property comes under **Regional Pavement Maintenance of Arizona, Inc.**'s control and or responsibility, and continue without interruption during course of construction, renovation and or installation, including any time during which any project property or equipment is in transit, off site, or while on site for future use or installation. Insured property must include, but not be limited to, scaffolding, false work, and temporary buildings at the site. This insurance must also cover the cost of removing debris, including demolition as may be legally required by operation of any law, ordinance, regulation or code.
2. **Regional Pavement Maintenance of Arizona, Inc.** must also purchase and maintain Boiler and Machinery insurance with the same requirements as Builders' Risk/Installation Floater insurance cited above if the Work to be performed involves any exposures or insurable property normally covered under a Boiler and Machinery insurance policy or made necessary as required by law or testing requirements in the performance of this Contract/Agreement. **Regional Pavement Maintenance of Arizona, Inc.** will be responsible for any and all deductibles under these policies and **Regional Pavement Maintenance of Arizona, Inc.** waives all rights of recovery and subrogation against the City under **Regional Pavement Maintenance of Arizona, Inc.**- Builders' Risk/Installation Floater insurance described herein.
3. Builders' Risk/Installation Floater Insurance must be maintained until whichever of the following first occurs: (i) final payment has been made; or, (ii) until no person or entity, other than the City, has an insurable interest in the property required to be covered.
 - a. The Builders' Risk/Installation Floater insurance must be endorsed so that the insurance will not be canceled or lapse because of any partial use or occupancy by the City.
 - b. The Builders Risk/Installation Floater insurance must include as named insureds, the City, **Regional Pavement Maintenance of Arizona, Inc.**, and all tiers of subcontractors and others with an insurable interest in the Work who will be named as additional insureds unless they are able to provide the same level of coverage with the City and **Regional Pavement Maintenance of Arizona, Inc.** named as additional insureds. Certificates must contain a provision that the insurance will not be canceled or materially altered without at least 30 days advance notice to the City. The City must also be named as a Loss Payee under the Builders' Risk/Installation Floater coverage.
 - c. The Builders Risk/Installation Floater insurance must be written using the Special Causes of Loss policy form, replacement cost basis.
 - d. All rights of subrogation under the Builders Risk/Installation Floater insurance are, by this Contract/Agreement, waived against the City, its officers, officials, agents and employees.
 - e. **Regional Pavement Maintenance of Arizona, Inc.** is responsible for payment of all deductibles under the Builders' Risk/Installation Floater insurance policy.
3. Additional Policy Provisions Required.
 - A. *Self-Insured Retentions Or Deductibles.* Any self-insured retentions and deductibles must be declared and approved by the City. If not approved, the City may require that the insurer reduce or eliminate any deductible or self-insured retentions with respect to the City, its officers, officials, agents, employees, and volunteers.
 - B. *City as Additional Insured.* The policies are to contain, or be endorsed to contain, the following provisions:
 1. The Commercial General Liability and Automobile Liability policies are to contain, or be endorsed to contain, the following provisions: The City, its officers, officials, agents, and employees are additional insureds with respect to liability arising out of activities performed by, or on behalf of, the Contractor including the City's general supervision of the Contractor; Products and Completed operations of the Contractor; and automobiles owned, leased, hired, or borrowed by the Contractor.

2. The Contractor's insurance must contain broad form contractual liability coverage and must not exclude liability arising out of explosion, collapse, or underground property damage hazards ("XCU") coverage.
3. The City, its officers, officials, agents, and employees must be additional insureds to the full limits of liability purchased by the Contractor even if those limits of liability are in excess of those required by this Agreement.
4. The Contractor's insurance coverage must be primary insurance with respect to the City, its officers, officials, agents, and employees. Any insurance or self-insurance maintained by the City, its officers, officials, agents, and employees shall be in excess of the coverage provided by the Contractor and must not contribute to it.
5. The Contractor's insurance must apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.
6. Coverage provided by the Contractor must not be limited to the liability assumed under the indemnification provisions of this Agreement.
7. The policies must contain a severability of interest clause and waiver of subrogation against the City, its officers, officials, agents, and employees, for losses arising from Work performed by the Contractor for the City.
8. The Contractor, its successors and or assigns, are required to maintain Commercial General Liability insurance as specified in this Agreement for a minimum period of 3 years following completion and acceptance of the Work. The Contractor must submit a Certificate of Insurance evidencing Commercial General Liability insurance during this 3 year period containing all the Agreement insurance requirements, including naming the City of Chandler, its agents, representatives, officers, directors, officials and employees as Additional Insured as required.
9. If a Certificate of Insurance is submitted as verification of coverage, the City will reasonably rely upon the Certificate of Insurance as evidence of coverage but this acceptance and reliance will not waive or alter in any way the insurance requirements or obligations of this Agreement. If any of the required policies expire during the life of this Agreement, the Contractor must forward renewal or replacement Certificates to the City within 10 days after the renewal date containing all the necessary insurance provisions.
10. By signing this Agreement, the Contractor certifies it is fully aware of Insurance Requirements contained in the Agreement and assures the City of Chandler that it is able to produce the Insurance coverage required.
11. Should the Contractor become unable to produce the Insurance coverage specified within ten working days, the Contractor is fully aware and understands that it may not be considered for further projects by City of Chandler.

INSURANCE CANCELLATION

I. Insurance Cancellation During Term of Contract/Agreement.

1. If any of the required policies expire during the life of this Contract/Agreement, **Regional Pavement Maintenance of Arizona, Inc.** must forward renewal or replacement Certificates to the City within 10 days after the renewal date containing all the required insurance provisions.

2. Each insurance policy required by the insurance provisions of this Contract/Agreement shall provide the required coverage and shall not be suspended, voided or canceled except after thirty (30) days prior written notice has been given to the City, except when cancellation is for non-payment of premium, then ten (10) days prior notice may be given. Such notice shall be sent directly to Chandler Law-Risk Management Department, Post Office Box 4008, Mailstop 628, Chandler, Arizona 85225. If any insurance company refuses to provide the require notice, **Regional Pavement Maintenance of Arizona, Inc.** or its insurance broker shall notify the City of any cancellation, suspension, non-renewal of any insurance within seven (7) days of receipt of insurers' notification to that effect.

13. NOTICES: All notices or demands required to be given pursuant to the terms of this Agreement shall be given to the other party in writing, delivered by hand or registered or certified mail, at the addresses set forth below, or to such other address as the parties may substitute by written notice given in the manner prescribed in this paragraph.

In the case of the CITY
Agreement Administrator: Facilities Maint Mgr.

Contact: Kris Kircher
Mailing Address: _____
Physical Address: 650 E. Ryan Rd.
City, State, Zip Chandler, AZ 85225
Phone: 480-782-2759
E-Mail: Kris.kircher@chandleraz.gov

In the case of the CONTRACTOR
Firm Name: Regional Pavement Maintenance of Arizona
Contact: Jerre Mills
Address: 2435 S. 6th Ave.
City, State, Zip Phoenix, AZ 85003
Phone: 480-963-3416
FAX: 480-963-3417
Email: jmills@regionalaz.com

Notices shall be deemed received on date delivered, if delivered by hand, and on the delivery date indicated on receipt if delivered by certified or registered mail.

14. CONFLICT OF INTEREST:

14.1. No Kickback. Contractor warrants that no person has been employed or retained to solicit or secure this Agreement upon an agreement or understanding for a commission, percentage, brokerage or contingent fee; and that no member of the City Council or any employee of the City has any interest, financially or otherwise, in the firm unless this interest has been declared pursuant to the provisions of A.R.S. Section 38-501. Any such interests were disclosed in Contractor's proposal to the City.

14.2. Kickback Termination. City may cancel any agreement, without penalty or obligation, if any person significantly involved in initiating, negotiating, securing, drafting or creating the Agreement on behalf of the City is, at any time while the Agreement or any extension of the Agreement is in effect, an employee of any other party to the Agreement in any capacity or a Contractor to any other party to the Agreement with respect to the subject matter of the Agreement. The cancellation shall be effective when written notice from City is received by all other parties, unless the notice specifies a later time (A.R.S. §38-511).

14.3. No Conflict: Contractor stipulates that its officers and employees do not now have a conflict of interest and it further agrees for itself, its officers and its employees that it will not contract for or accept employment for the performance of any work or services with any individual business, corporation or government unit that would create a conflict of interest in the performance of its obligations pursuant to this project.

15. GENERAL TERMS:

- 15.1. Ownership.** All deliverables and/or other products of the Agreement (including but not limited to all software documentation, reports, records, summaries and other matter and materials prepared or developed by Contractor in performance of the Agreement) shall be the sole, absolute and exclusive property of City, free from any claim or retention of right on the part of Contractor, its agents, sub-contractors, officers or employees.
- 15.2. Entire Agreement.** This Agreement, including all Exhibits attached hereto, constitutes the entire understanding of the parties and supersedes all previous representations, written or oral, with respect to the services specified herein. This Agreement may not be modified or amended except by a written document, signed by authorized representatives or each party.
- 15.3. Assignment:** Services covered by this Agreement shall not be assigned in whole or in part without the prior written consent of the City.
- 15.4. Amendments.** The Agreement may be modified only through a written Agreement Amendment executed by authorized persons for both parties. Changes to the Agreement, including the addition of work or materials, the revision of payment terms, or the substitution of work or materials, directed by a person who is not specifically authorized by the City in writing or made unilaterally by the Contractor are violations of the Agreement. Any such changes, including unauthorized written Agreement Amendments shall be void and without effect, and the Contractor shall not be entitled to any claim under this Agreement based on such changes.
- 15.5. Independent Contractor.** The Contractor under this Agreement is an independent Contractor. Neither party to this Agreement shall be deemed to be the employee or agent of the other party to the Agreement.
- 15.6. No Parole Evidence.** This Agreement is intended by the parties as a final and complete expression of their agreement. No course of prior dealings between the parties and no usage of the trade shall supplement or explain any terms used in this document and no other understanding either oral or in writing shall be binding.
- 15.7. Performance and Payment Bonds.**

Within fifteen (15) days from the time a Contract is awarded, CONTRACTOR shall furnish fully executed Performance and Payment Bond (Labor and Materials) in such form and context as determined by CITY from a surety approved by CITY. Said bonds shall be in a sum no less than one hundred (100%) of the Contract price. CITY has the option to forfeit said bonds if the Contract is terminated by the default of CONTRACTOR or if CITY determines that CONTRACTOR is unable or unwilling to complete the work as specified in the Contract Documents.

If the Contract schedule is not adhered to, and CITY determines that the work is unlikely to be completed within a reasonable time after the original target date, then CITY may terminate the Contract and collect the Performance Bond. The Performance Bond will be reviewed annually and any increases in the contract amount will require bond to be increased and reissued.

15.8. Authority: Each party hereby warrants and represents that it has full power and authority to enter into and perform this Agreement, and that the person signing on behalf of each has been properly authorized and empowered to enter this Agreement. Each party further acknowledges that it has read this Agreement, understands it, and agrees to be bound by it.

IN WITNESS WHEREOF, the parties have hereunto subscribed their names to this ____ day of _____, 2016.

FOR THE CITY OF CHANDLER

Mayor

ATTEST:

City Clerk

Approved as to form:

City Attorney

FOR THE CONTRACTOR

By: 
Signature

ATTEST If Corporation

SEAL

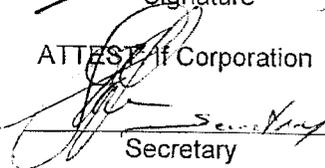

Secretary

EXHIBIT A SCOPE OF WORK

Section A – Asphalt Patchwork & Concrete Repairs.

CONTRACTOR shall remove and replace asphalt materials, as well as dispose of old asphalt at CONTRACTOR'S expense. CONTRACTOR shall be responsible for all incidental work necessary to complete the required task. CONTRACTOR shall include all labor, material, equipment needed to perform the work to the highest industry standards. The CITY reserves the right to adjust the amount of work required and number of locations involved for patching.

1. CONTRACTOR shall provide asphalt patchwork and concrete repairs/maintenance to CITY. Patches will vary in sizes ranging from 6'x6' to as large as, but not limited to, 20'x200' at various locations throughout the CITY and shall be replaced "in kind" or as directed by Contract Administrator/designee. All patches larger than 7'Wx40'L shall require the use of a paving machine to insure the smoothest surface possible. The patchwork shall be of the highest industry standard and must meet the grades or edges of the existing asphalt surface. CONTRACTOR will not be required to perform the work unless the CITY has a total of approximately 50 square yards to be repaired. Ideally, CONTRACTOR should make every attempt to complete, on the same day, any and all asphalt removal and replacement. Sub-grade preparation after asphalt removal shall be in accordance with M.A.G. standards for this task.
2. CONTRACTOR shall ensure that concrete conforms to the requirements of Maricopa Association of Governments (M.A.G.) specification section 725 and M.A.G. or CITY standard detail. Concrete repair and maintenance shall comply with MAG specification section 340 as applicable. CONTRACTOR shall conduct a flow test on aprons, valley gutters and curb & gutters by supplying water from a tank truck or other source. Any ponding greater than ½" one hour after the water is shut off shall be corrected at CONTRACTOR'S expense. Asphalt cut-and-patch for concrete forms shall be replaced flush with existing pavement edges. Asphalt concrete shall be placed in accordance with the requirements in MAG standard specifications section 321 and 336.
3. CONTRACTOR shall be responsible for obtaining all permits, if required.
4. CONTRACTOR shall be responsible for identifying and locating (Blue Stake) all existing utilities affected by the work. CONTRACTOR shall be responsible for the repair of all damaged utilities resulting from this work and will coordinate with utility companies and affected residents and businesses for required outages.
5. CONTRACTOR shall use the most current version of CITY and/or M.A.G. standard details and specifications for *inspection* and *quality assurance* for all work being done under this Agreement. CONTRACTOR shall be responsible for ensuring that workmanship, materials, equipment, and site preparation meet or exceed the required specifications. The Contract Administrator/designee will inspect all phases of work and any unsatisfactory work or preparation shall be redone at no additional cost to the CITY.
6. CITY is mandated to provide accessibility improvements to curb ramps and driveways whenever a pavement resurfacing is done. To accomplish this requirement, CONTRACTOR shall repair and/or retrofit existing curb ramps and driveways to the best extent possible to meet current Americans with Disabilities Act (ADA) standards contained in 28 Code of Federal Regulations (CFR) Par 35.151 and "Designing Sidewalks and Trails for Access, Part 2" (Chapters 5 and 7), or as directed by Contract Administrator/designee.
7. CONTRACTOR shall submit to Contract Administrator/designee a written proposed schedule of work for approval prior to commencing any work under this Agreement. Any changes to that schedule must be approved in writing by the Contract Administrator/designee.
8. CONTRACTOR shall submit invoices for payment to Contract Administrator/designee for approval upon completion of work. All work by CONTRACTOR will be inspected and approved by Contract Administrator/designee prior to processing of any payments.

9. Placement and compaction of patch material shall be accomplished in two (2) equal lifts to ensure proper density. The finished surface of the patch shall be flush with the adjoining pavement on all edges. Any newly installed patch that is not acceptable to the Contract Administrator/designee shall be removed and replaced to meet acceptable standards. Any additional cost incurred for re-work will be the responsibility of the Contractor. Compaction shall be accomplished using a self-propelled double drum vibratory asphalt roller, with a minimum operating weight of three (3) tons. Use of any other compaction equipment will not be allowed unless approved by the Contract Administrator/designee.
10. Work site cleaning shall be required daily to remove any debris caused by asphalt removal/replacement operation. This task shall be done to the satisfaction of the Contract Administrator/designee. All clean up shall be included within removal/replacement pricing listed on attached Exhibit C and shall be at no additional cost to the CITY.
11. CONTRACTOR shall supply asphalt material for this contract. The CITY shall approve the asphalt supplier prior to CONTRACTOR commencing work. The asphalt mix design shall meet the East Valley Asphalt Committee (EVAC) mix design criteria. On arterial streets, rubberized asphalt mix shall be used or as directed by Contract Administrator/designee.
12. The CITY reserves the right to conduct in-place density testing on newly placed asphalt patches. CONTRACTOR shall be required to re-compact any patch that does not meet a minimum of 95% maximum density compaction for Marshall mix and 93% maximum density compaction for RICE mix design being used. If required compaction is no longer attainable due to material cooling below a workable temperature, CONTRACTOR shall remove and replace the material. The CITY shall be responsible only for the cost of the initial testing. CONTRACTOR shall be responsible for any cost associated with re-testing areas requiring re-work. CONTRACTOR shall not be allowed to re-heat asphalt patches with an open flame heater. Any asphalt patch reheated with open flames shall be removed and replaced by the CONTRACTOR at no additional cost to CITY.
13. Work quantities and locations listed under this Agreement are subject to change and may be done solely at the discretion of the CITY. The CITY will provide CONTRACTOR with a list of the locations and approximate square yards of each location when required.
14. The CITY reserves the right to stop work under this Agreement at any time if, in their opinion:
 - a) weather conditions become adverse for doing patchwork;
 - b) quality of work is deemed unacceptable;
 - c) conflicts in CONTRACTOR equipment or personnel cause delays in getting work completed;
 - d) work schedules/locations conflict with other CITY activities;
 - e) material is deemed unacceptable by Contract Administrator/designee.
15. Asphalt milling will be of depths from 0-2" and 2.1"-4" as called out by Contract Administrator/designee. Areas milled must have vertical edges on all sides of the patch.
16. Asphalt patching done on arterial roads shall be a minimum of 5 inches thick or equal to the existing thickness of asphalt whichever is greater. On collector streets, the patches must be a minimum of 3" or equal to the existing thickness of the asphalt surface, whichever is greater.
17. The CITY shall mark all locations for patching or milling. Prior to commencing work, the Contract Administrator/designee and CONTRACTOR shall measure the areas and agree upon the square yards required.
18. If working at signals, CONTRACTOR shall notify the CITY Traffic Division and Contract Administrator/designee 48-hours prior to commencing work to ensure that the loops can be re-installed by CONTRACTOR.
19. All pavement cut and patch shall be crack sealed at the joints with Crafcro Polyflex Type 3 sealant, or approved equal, two (2) days after asphalt placement.

20. Pavement repairs shall be water tested at the discretion of Contract Administrator or Designee before final acceptance. Any area not draining properly shall be corrected at CONTRACTOR'S expense.
21. Survey monuments shall be adjusted according to MAG Standard Detail 12-1 and 120-2 as applicable. Survey monuments will be re-established by reference by a Registered Land Surveyor (RLS). The RLS shall reset the survey monuments.
22. **Debris Shield.** All manholes shall be protected from debris falling into them. If any material enters the manhole from this work, it shall be the responsibility of the CONTRACTOR to clean out the manhole to the satisfaction of the utility company. CONTRACTOR shall be required to use (Manhole Debris Shields) in the process of working in manholes. Debris Shields shall be fabricated of plastic or wood and made of two half circles hinged in the middle to form one unit. The hinge shall allow the unit to fold in half to fit thru an open manhole. The unit is then unfolded and placed on the bottom of the manhole about the invert preventing debris from falling into the invert and sewer line. The actual diameter of the unit shall depend on the width of the manhole shaft.
23. **Dust Control.** CONTRACTOR shall keep suitable equipment on hand at the job site for maintaining dust control and shall employ appropriate equipment for that purpose in accordance with the requirements of the "Maricopa County Health Department Air Pollution Control Regulations" CONTRACTOR shall be responsible for obtaining an Air Quality Permit from Maricopa County prior to starting the require work, especially if earth-moving operations are involved. CONTRACTOR shall pay all permit fees.

Section B – Slurry Seal & Micro Seal.

1. **DESCRIPTIONS.** CONTRACTOR shall provide CITY with the application of a Bituminous Slurry Seal and Micro Surface, Type II for the sites listed. specified remove and replace asphalt materials, as well as dispose of old asphalt at CONTRACTOR'S expense. CONTRACTOR shall be responsible for all incidental work necessary to complete the required task. CONTRACTOR shall include all labor, material, equipment needed to perform the work to the highest industry standards. The CITY reserves the right to adjust the amount of work required and number of locations involved for patching.

CONTRACTOR shall schedule and furnish all labor and equipment necessary to apply micro surface or slurry seal Type II at sites specified by Contract Administrator/designee. The micro surface shall be a mixture of cationic polymer modified asphalt emulsion, mineral aggregates, mineral filler, water, and other additives all properly proportions, mixed and spread on the pavement surface in accordance with the guidelines herein and as directed by the Contract Administrator/designee. CONTRACTOR shall roll with pneumatic roller all slurry/micro sealed sites to establish a secure bond between aggregates and emulsions and reduce traffic tire scaring.

2. **PERMITS / LICENSES.** Unless otherwise specified, CONTRACTOR shall obtain all permits and licenses required, to include but not limited to Maricopa Dust Control permits. CONTRACTOR shall pay all governmental charges and inspection fees necessary for the completion of the work. CONTRACTOR shall also pay all charges of utility service companies for connections to the work and CITY shall pay all charges of such companies for capital costs related thereto, such as plant investment fees and system development fees.
3. **COMPOSITION OF SLURRY SEAL MIXTURES.** A job mixture shall conform to the specification limits, and that is suitable for the traffic, climatic conditions, curing conditions, and final use. All materials shall be pre-tested for their suitability in the slurry seal mixture. The mixture shall attain initial set in not less than 5 minutes nor more than one hour. The setting time may be regulated by the addition of mineral fillers or chemical agents. The mixture shall be one of three types whose combined aggregates conform to the gradation requirements listed in Table 3. The mixture shall be sufficiently free flowing to fill cracks in the pavement. The mixture shall not segregate during or after lay-down. The mixture shall produce a skid-resistant surface.

- 3.1 **Determination of job mix.** All materials shall be pre-tested in a qualified laboratory to determine their suitability for use in the slurry seal and to insure they meet the specifications set forth in Exhibit A. Tests will be used for design purposes to establish the percent of residual asphalt, water and accelerator to be used in the specified slurry seal.
4. **ASPHALT EMULSION.** The polymerized catatonic emulsion is herein classified as CSS-IH, quick setting, cationic type emulsion for mixing applications and seal coat. A minimum of 4% of solid polymer shall be high sheared into the asphalt prior to the emulsification process. Contract Administrator/designee may choose to sample the polymerized asphalt for testing. The amount of polymer shall be based on weight of polymer and asphalt (total weight) and be certified by the supplier. No latex will be allowed. The polymerized emulsion shall meet the following specifications listed in Table 1.

TABLE 1

TESTING DESCRIPTION	AASHTO TEST METHOD	RESULTS	SPECIFICATION LIMITS
PRODUCT NAME: PMQS-1H PRODUCT CODE: 13619			
Test on Emulsion			
Viscosity, @ 77 degrees F. SFS	T-59	20.1	18 - 50
24 Hr. Storage Stability %	T-59	0.23	1.0 Max
Particle Charge	D-244	Neg.	Negative
Sieve Test, WT %	T-59	0	0.10 Max
Residue by Distillation	D-244	61.7	57 Min.
Test on Residue form D-244			
Penetration, 25 degree C. 100g. 5 sec	T-49	47	35 - 75mm.
Penetration, 5 degree C. 200g. 60 sec	T-49	17	15 min
Softening Point degrees F.	T-53	136	125 Min
Abs. Viscosity 140 degree F. Poise	T-202	2100	4000 Max
Toughness N-m	D5801	209	150 min
Tenacity, N-m	D5801	121	110 min
Ductility, 25 degree C, 5cm	T-51	100+	100 Min
Solubility in TCE %	T-44	98	97.5
Test on Residue from RTFOT			
RTFO Viscosity 140140 degrees F. Poise	T240	6522	1000 Max

TABLE 2

TESTING DESCRIPTION PRODUCT NAME: PMCQS-1H PRODUCT CODE: 13622	AASHTO TEST METHOD	RESULTS	SPECIFICATION LIMITS
Test on Emulsion			
Viscosity, @ 77 degrees F. SFS.	T-59	22.2	18 - 50
24 Hr. Storage Stability %	T-59	0.23	1.0 Max
Particle Charge	D-244	Pos.	Positive
Sieve Test, WT %	T-59	0	0.10 Max
Residue by Distillation	D-244	62.4	57 Min.
Test on Residue form D-244			
Penetration, 25 degree C. 100g. 5s	T-49	56	35 – 75mm.
Penetration, 5 degree C. 200g. 60s	T-49	19	15 min
Softening Point degrees F.	T-53	136	125 Min
Abs. Viscosity 140 degree F. Poise	T-202	2100	4000 Max
Toughness N-m	D5801	209	150 min
Tenacity, N-m	D5801	121	110 min
Ductility, 25 degree C. 5cm	T-51	100+	100 Min
Solubility in TCE %	T-44	98	97.5
Test on Residue from RTFOT			
RTFO Viscosity 140/140 degrees F. Poise	T-202	6522	1000 Max

*The emulsion upon standing undisturbed for a period of twenty-four (24) hours, shall show no white, milky colored substance on its surface, but shall be a homogeneous brown color throughout.

5. **MODIFIER TYPE AND CONTENT.** The modifier shall be solid. The asphalt cement shall contain a minimum of 4% solid polymer by weight of asphalt residue, sheared into the asphalt prior to emulsification. Plant verification (by City forces) and certification of polymer type and content (by supplier) will be required throughout the duration of the contract. Each tank of emulsion produced shall be certified to meet these specifications. Each load of emulsion delivered to the project will be accompanied with a certificate of analysis. These certificates of compliance and analysis will be given to CITY as the material is made and/or delivered.

6. **AGGREGATE.** The min-aggregate shall consist of sound, durable crushed stone or crushed gravel and approved mineral filler. The material shall be free from vegetable matter and other deleterious substances. Aggregates shall be 100% crushed with no rounded particles. No natural sand will be allowed.

The percentage composition by weight of the aggregate shall conform to the nominated gradation selected from the following:

**TABLE 3
PERCENT PASSING**

SIEVE SIZE	RUT FILLING	TYPE III	TYPE II
½	100	100	100
3/8	85-95	100	100
No. 4	55-75	70-90	85-100
No. 8	45-55	45-70	65-90
No. 16	25-40	28-50	45-70
No. 30	19-34	19-34	30-50
No. 50	10-20	12-25	18-30
No. 100	7-18	7-18	10-21
No. 200	5-15	5-15	5-15
Lbs. Per square yard	As required	30-35	18-25

The mineral aggregate and mineral filler shall have equivalency value not less than 50 (ASTM D 2419) and be non-plastic.

If more than one kind of aggregate is used, the correct amount of each kind of aggregate to produce the required grading shall be proportioned separately in a manner that will result in a uniform and homogeneous blend. The final blended aggregate shall meet requirements for grading, sand equivalency and plasticity per above.

7. **MINERAL FILLER.** Mineral filler, required by the mix design, shall be any recognized brand of non-air entrained Type I normal Portland cement that is free of lumps and clods, with a minimum of 85% passing the #200 sieve added by weight of aggregate as specified by the mix design.
8. **WATER.** CONTRACTOR shall state the source of water at time of tendering. Water shall be potable and be compatible with the slurry ingredients used. CONTRACTOR shall be required to obtain a fire hydrant meter from the CITY if he intends on using CITY water. A deposit is required to obtain the meter and all water used will be charged to CONTRACTOR.
9. **ADDITIVES.** Additives may be used to accelerate or retard the breaking point and set times of the micro surface mix, or improve the resulting finished surface. The use of additives in the micro surface mix shall be supplied in quantities by the laboratory mix design.
10. **PROPORTIONING.** The micro surface mixture shall be proportioned in accordance with the mix design. Calibrated sign flow meters shall be provided to measure both the addition of water and additives shall be provided to measure both the additions of water and additives to the pug mill. Emulsion and cement flow shall be tied directly to aggregate flow. All additive flows shall be calibrated.

10.1 The micro surface mixture shall be proportioned per the mix design to ensure:

- a. Traffic-ability - with a relative humidity at not more than 50% and ambient air temperature of at least 77 degrees F, the material will permit uncontrolled traffic without damage to the surface within one (1) hour.
- b. Prevent development of bleeding, raveling, separation or other distress for seven (7) days after placing the micro surface.

11. MIX DESIGN:

11.1 Formula. CONTRACTOR shall provide a job mix formula from an approved laboratory and present certified test results for the Contract Administrator/designee's approval. Compatibility of the aggregate and polymer modified asphalt emulsion shall be certified by the emulsion manufacturer. All the materials used in the job mix formula shall be representative of the material proposed by CONTRACTOR for use in the project.

11.2 SPECIFICATIONS. CONTRACTOR shall obtain written approval from the Contract Administrator/designee of the mix design prior to use. The specification limits are as follows:

Residual Asphalt	6% - 11.5% by dry weight of aggregate.
Mineral Filler	.1% - 1% by dry weight of aggregate.
Polymer Content/Type	4% min. (see section 5.)
Additive	As required for mix properties
Water	As required for mix properties
Aggregate Grading	Type as specified meeting sec. 6
Consistency	2.5 to 3.0 cm
Traffic Time	See section 10.1
Abrasion Loss	50 g/S.F. max.
Adhesion	90% minimum
Loaded Wheel Sand Adhesion	See section 11.4

11.3 MODIFIED COHESION TEST. CONTRACTOR shall furnish laboratory test data showing design to be trafficable one (1) hour after application at 77°F conforming to the following criteria in accordance with test methods described in Appendix III & IV (ADOT Standards).

Set Time Test	30 minutes 12 kg - cm minimum
Early Rolling Traffic Time	60 minutes 20 kg - cm minimum

11.4 LOADED WHEEL SAND ADHESION TEST. CONTRACTOR shall furnish laboratory test data showing the mix design conforming to the following criteria in accordance with test methods described in Appendix III. (ADOT Standards)

Vehicles/day	Maximum Sand Adhesion
0-30	70 g/ft.
250-1500	60 g/ft.
1500-3000	55 g/ft.
greater than 3000	50 g/ft.

CONTRACTOR shall report the laboratory report the quantitative effects of moisture content in the unit weight of the aggregate (bulking affect). The report must clearly show the theoretical recommended proportion of aggregate, mineral filler (min & max.), water (min & max.), additive(s), and asphalt and how the proportion are based (dry aggregate weight, total mix. etc.).

12. **MIXING EQUIPMENT.** The mixing machine shall be a self-propelled or truck mounted mixing machine which shall be able to accurately deliver and proportion the aggregate, material filler, water, additive, and polymer modified asphalt emulsion to a revolving multi-blade mixer capable of minimum speeds of 200 RPM and discharge the product on a continual flow basis. The machine shall have sufficient storage capacity for aggregate, polymer modified asphalt emulsion, mineral filler, water, and additive to maintain an adequate supply to the proportioning controls.
13. **MATERIAL CONTROL:**
 - 13.1 **CALIBRATION.** CONTRACTOR shall calibrate each mixing unit to be used in the performance of the work prior to construction. Calibration data, if done within the calendar year, using the same material, may be used, providing a verification of the aggregate feed agrees.
 - 13.2 **WEIGHT CONTROL.** CONTRACTOR shall provide Individual volume or weight control for proportioning each material to be added to the mix, and shall make these accessible to the Contract Administrator/designee. CONTRACTOR shall calibrate and document each material control device prior to work, for inspection by the Contract Administrator/designee.
 - 13.3 **AGGREGATE FEED.** The aggregate feed to the mixer shall be equipped with a revolution counter or similar device so the amount of aggregate used may be determined at any time.
 - 13.4 **EMULSION PUMP.** The emulsion pump shall be the positive displacement type with a jacketed housing for uniform heating. A revolution counter or similar device shall be fitted so that the amount of emulsion used may be determined at any time.
 - 13.5 **FINES FEEDER.** CONTRACTOR shall supply an approved fines feeder that will provide a uniform, positive, accurately metered range of 0-1 percent by dry aggregate weight. The fines feeder has to have a counter so the amount of mineral filler can be determined at any time.
 - 13.6 **LIQUID ADDITIVE.** The mixing machine shall be equipped with a liquid additive system that provides a pre-determined amount of additive to the mixing chamber. This additive system must be equipped with a counter that can determine the amount used at any time.
 - 13.7 **WATER SYSTEM.** The mixing machine shall be equipped with water system that provides a pre-determined amount of water to the mixing chamber. This water system must be equipped with a counter that can determine the amount used at any time.
14. **OPERATOR CONTROLS.** CONTRACTOR shall provide controls that will allow the operator to sequence and proportion the material per mix design.
 - 14.1 **SPRAY BARS.** The mixing machine shall be equipped with a water pressure system that provides a water spray immediately ahead of and outside the spreader box.
 - 14.2 **SPREAD EQUIPMENT.** The paving mixture shall be spread uniformly by means of mechanical type lay-down box attached to the mixer, equipped with agitation, to spread the materials throughout the box without any dead zones. These paddles shall be designed and operated so all the fresh mix will be agitated. Flexible seals, front and rear, shall be in contact with the road surface to prevent loss of mixture from the box. The spreader box shall be equipped with hydraulic cylinders for controlling the thickness of the spread mixture.

The rut filling spreader box shall have 6 to 8 foot skids to provide for leveling and filling uneven depressed areas. The rut filling spreader box will require two adjustable steel strike-off plates. The rear flexible seal shall act as a final strike-off and shall be adjustable. The steel strike-offs shall be controlled by hydraulic cylinders placed at the rear of the spreader box.

The spreading equipment shall be maintained free from buildup of the mixture on the paddles of sidewalls. Any skips, lumps, or tears in the finished product will not be allowed.

15 APPLICATION:

15.1 GENERAL. The micro surface shall be of the desired consistency when deposited in the spreading box and nothing more shall be added to it. The mixing time shall be sufficient to produce a complete and uniform coating of the aggregate and the mixture shall be chuted into the moving spreader box at a sufficient rate to maintain an ample supply across the full width of the strike-off squeegee at all times.

15.2 WEATHER. The micro surfacing shall be placed when the temperature is at least 45 °F and rising, and is not raining. The surface temperature shall be 50°F or higher when the mixture is applied.

The micro surface shall not be applied unless the pavement temperature is at least 45°F and rising. The mixture shall not be applied during unsuitable weather.

15.3 PROTECTION OF EXISTING SERVICES. CONTRACTOR shall take all necessary precautions to prevent micro surface or other material used on the work from entering or adhering to grating, hydrants or valve boxes, manhole covers, bridge or culvert decks and other road fixtures. Immediately after surfacing the contractor shall clean off any such material and leave any such grating, manholes, etc., in a satisfactory condition.

15.4 PREPARATION OF THE SURFACE. Immediately before applying the bituminous material, CONTRACTOR shall clean the area to be surfaced of dirt, loose material, and other objectionable material. In urban areas, the surface shall be cleaned with a self-propelled pick-up sweeper. In rural areas power brooms may be used. When necessary, cleaning shall be supplemented by hand brooms. This also includes the removal of grass or weeds, which are growing in the joint between the street and concrete gutter.

CONTRACTOR shall not apply the bituminous material until an inspection of the surface has been made by the Contract Administrator/designee and he/she has determined that it is suitable.

15.5 FOGGING PAVEMENT. The surface will be pre-wetted by fogging ahead of the spreader box. The rate should be adjusted as dictated by the pavement temperatures, surface texture, humidity and dryness of existing pavement.

15.6 MIX STABILITY. The modified mix shall possess sufficient stability so that premature breaking of material in the spreader box should not occur. The mixture shall be homogeneous during the following mixing and spreading, it shall be free of excess water or emulsion and free of segregation of the emulsion and aggregate fines from the courser aggregate.

15.7 APPLICATION RATE. The application rate, square yards per cubic yard of mix specified are average rates, the surface texture variation throughout the work will dictate the actual spreading rates. The strike-off squeegee shall be adjusted to provide micro surface thickness, which will completely fill the surface voids and provide an additional thickness not exceeding one and one half times the largest top-size stone. This requirement of 1 1/2 stone depth does not apply to rut filling operations as these depths vary greatly according to the surface irregularities.

15.8 JOINTS. No excessive buildup or unsightly appearance shall be permitted on longitudinal or transverse joints. A maximum of 4.0" overlay will be permitted on longitudinal joints. The contractor shall provide suitable width spreading equipment to produce a minimum number of longitudinal joints

throughout the work. Half passes and an odd width passes will be used only in minimum amounts. If half passes are used, they cannot be the last pass of any paved area. Care shall be taken to ensure straight lines along curb and shoulders. No runoff on these areas will be permitted.

Construction joints shall be neat in appearance and shall be tapered or feathered to conform to the existing surfacing. All excess material shall be removed from the surface upon completion of each run.

15.9 HAND WORK. Approved squeegees and lutes shall be used to spread the mixture in areas inaccessible to the spreader box and other areas where hand spreading may be required. Adequate methods such as barricades, flagmen, pilot cars, etc., shall be used to protect the uncured slurry surface from all types of traffic. CITY barricade manual shall be the approved method of providing traffic control.

15.10 PROTECTION OF MICRO SURFACE. CONTRACTOR shall provide adequate means to protect the uncured product. Any damage done to the product shall be repaired at CONTRACTOR's expense.

Adequate methods such as barricades, flagmen, pilot cars, etc., shall be used to protect the uncured slurry surface from all types of traffic. CITY barricade manual shall be the approved method of providing traffic control.

15.11 DAMAGE TO MICRO SURFACE. CONTRACTOR's responsibility to replace micro surface damage by unexpected rain after spreading shall be limited to the period within four (4) hours of placement of the micro surface.

16 QUICK SET SOLID POLYMER MODIFIED SLURRY SEAL - (TYPE II AND TYPE III).

16.1 DESCRIPTION. This specification covers the materials, equipment and construction procedures for resurfacing of existing paved surfaces. The slurry seal shall be a mixture of polymer modified asphalt emulsion, mineral filler, water and other additives, properly proportioned, mixed and spread on the pavement surface in accordance with this guideline and as directed by the Contract Administrator/designee.

16.2 EMULSIFIED ASPHALT - PMQS-h. PMQS-h is designed for slurry seal applications where increased resistance to abrasion loss is required because of severe climate and traffic conditions associated with connectors, arterials or highway applications.

PMQS-h shall consist of refined asphalt cement modified with Styrene/Butadine/Styrene (SBS) or Ethylene/Vinylacetate (EVA) synthetic rubber (no latex will be allowed.) The EVA or SBS shall be high sheared into the refined asphalt cement prior to the emulsification process. Once emulsified, the PMQS-h shall meet the following specifications.

a. MATERIAL SPECIFICATIONS

Test on Emulsion:	Method:	Min:	Max:
Viscosity, 77F, SayboltFurial, Sec	AASHTO T-59	15	90
Settlements, 5 day, %	AASHTO T-59		5
Storage Stability, 1 day, %	AASHTO T-59		1
Sieve, %	AASHTO T-59		0.1
Residue, %	AASHTO T-59	57	
Particle Charge, Electroplate	ASTM D-977	Negative	
Test on Residue:	Arizona 504		
Viscosity, @140F, Ps	AASHTO T-202		3000
Viscosity, @275F, Cst	AASHTO T-201	400	
Penetration, @39.2F, 200g/60s, dmm	AASHTO T-49	15	
Penetration, @77F, 100g/5s, dmm	AASHTO T-49	35	75

Ductility, @77F, 5cm/min, cm	AASHTO T-51	100
Toughness, @77F, in-lbs.	(1)	150
Tenacity, @77F, in -lbs.	(1)	110
Softening Point, F	AASHTO T-53	125
Polymer Content (by weight of residue), %	CAL-401	3.0
Test on RTFO Residue:		
Viscosity, @140F, Ps	AASHTO T-202	8000
Ductility, @77F, 5 cm/min, cm	AASHTO T-51	100

1. The base asphalt shall be modified prior to emulsification. The Contract Administrator/designee may sample the modified base for testing. The base shall meet the above residue properties.
2. Upon standing undisturbed for a period of 24 hours, the emulsion shall show no white milky film upon the surface.
3. The emulsion shall be pre-certified prior to use. A one quart sample, each of base asphalt and polymer, shall be supplied to the agency ten days in advance of the project start.
4. The required testing shall be done by a state certified laboratory.

b. Test Reports and Certifications. At the time of delivery of each shipment of asphalt, the vendor supplying the material will deliver to the purchaser certified copies of the test report. The test report shall indicate the name of the vendor, type and grade of asphalt delivered, date and point of delivery, quantity delivered, delivery ticket number, purchase order number, and results of the specified tests. The test report, signed by an authorized representative of the vendor, shall certify that the product delivered conforms to the specifications for the type and grade indicated. The certified test reports and the testing required in connection with the reports shall be at no cost to the agency.

Until the certified test reports and samples of the material have been checked by the Contract Administrator/designee to determine their conformity with the prescribed requirements, the material to which such report relates and any work in which it may have been incorporated as an integral component, will be only tentatively accepted by the agency. Final acceptance will be dependent upon the determination by the Contract Administrator/designee that the material involved fulfills the prescribed requirements.

16.3 AGGREGATE. All aggregates and sand must be free flowing and free of lumps with no drag marks in final product. The mineral aggregate shall consist of sound, durable crushed stone or crushed gravel and approved mineral filler. The material shall be free from vegetable matter and other deleterious substances. Aggregates shall be 100% crushed with no rounded particles. No natural sand will be allowed. The percentage composition by weight of the aggregate shall conform to the nominated gradation from the following:

<u>SIEVE SIZE</u>	<u>TYPE III</u>	<u>TYPE II</u>
1/2	100	100
3/8	100	100
No. 4	70-90	85-100
No. 8	45-70	65-90
No. 16	28-50	45-70
No. 30	19-34	30-50
No. 50	12-25	18-30
No. 100	7-18	10-21
No. 200	5-15	5-15
Application Rate LBS/S.Y	23-32	18-24

The mineral aggregate and mineral filler shall have sand equivalency value not less than 50 (ASTM

D 2419) and be non-plastic.

If more than one kind of aggregate is used, the correct amount of each kind of aggregate to produce the required grading shall be proportioned separately in a manner that will result in a uniform and homogeneous blend. The final blended aggregate shall **meet requirements for grading, sand equivalency and plasticity per above.**

16.4 MINERAL FILLER. Mineral filler, required by the mix design, shall be Portland cement that is free of lumps.

16.5 WATER. The water is to be potable water free from any injurious impurities. Water shall be potable and be compatible with the slurry ingredients used. CONTRACTOR shall be required to obtain a fire hydrant meter from CITY if he intends on using CITY water. A deposit is required to obtain the meter and all water used will be charged to CONTRACTOR.

16.6 ADDITIVES. No additives will be added.

16.7 PROPORTIONING. The polymer modified slurry seal shall be proportioned in accordance with the mix design. The slurry seal machine shall be equipped with revolution counters and flow meters to accurately measure the percentage of emulsion, water and cement to the pounds of aggregate delivered to the machine mixer.

17 MIX DESIGN:

17.1 REQUIREMENTS. CONTRACTOR shall submit for approval a complete mix design prepared and certified by an independent certified laboratory. Compatibility of the aggregate, polymer modified emulsion, mineral filler and other additives shall be verified by the mix design. The mix design shall be made with the same aggregate and gradation that the contractor will use on the project. The mix design shall clearly show the recommended percentages of each material required. Minor adjustments may be required during the construction, based on field conditions.

17.2 MATERIALS. All component materials used in the mix design shall be representative of the materials proposed by the contractor to be used on the projects.

17.3 TESTS REQUIRED FOR THE MIX DESIGN:

<u>TEST</u>	<u>QUALITY</u>	<u>SPECIFICATION</u>
AASHTO T176 ASTM D2419	Sand Equivalent	50 Min
AASHTO T96 ASTM C88	Soundness	15% Max using Na ₂ SO ₄ or 25% Max using MgSO ₄
AASHTO T96 ASTM C131	Abrasion Resistance	35% Max
ISSA TB115	Compatibility	Compatibility
ISSA TB100	Wet Track Abrasion	50g/SF Max

17.4 LABORATORY REPORT. The laboratory shall further report their quantitative effects of moisture content in the unit weight of the aggregate (bulking effect.) The report must clearly show the theoretical recommended proportion of aggregate, mineral filler (min & max), water (min & max), additive(s), and asphalt and how the proportions are based (dry aggregate weight, total mix, etc.) The Contract

Administrator/designee shall approve the mix design prior to use. The component materials shall be within the following limits.

Residual Asphalt	6% to 11.5% by dry weight of aggregate
Mineral Filler	.1% to 1.5% by dry weight of aggregate
Polymer Content/Type	3% min. (see Section 5.)
Water	As required for mix properties
Aggregate Grading	Type as specified
Slurry Seal Type II	Use approximately 15% emulsion by dry weight of aggregate
Slurry Seal Type III	Use approximately 13% emulsion by dry weight of aggregate

- 18 TESTING THE POLYMER MODIFIED SLURRY SEAL.** Samples will be taken throughout the project for testing by the approved laboratory. Testing shall be at the expense of the agency, for the following:
- Asphalt Content
 - Aggregate Gradation

- 18.1 MIXING EQUIPMENT.** The mixing machine shall be a self-propelled or truck mounted mixing machine which shall be able to accurately deliver and proportion the aggregate, mineral filler, water, additive, and polymer modified asphalt emulsion to a revolving multi-blade mixer capable of minimum speeds of 200 RPM and discharge the product on a continual flow basis. The machine shall have sufficient storage capacity for aggregate, polymer modified asphalt emulsion, mineral filler, water, and additive to maintain an adequate supply to the proportioning controls.

The machine shall be equipped with mechanical and electronic counters to accurately measure and calibrate the revolutions of the conveyor delivering slurry aggregate to the pug mill. Each machine shall also be equipped with a positive displacement pump and digital read-out counter, to accurately measure and display in gallons, the quantity of emulsified asphalt delivered to the pug mill. Counters and meters shall be repaired or replaced immediately upon discovery of inaccuracy. The machine will not be used until measuring devices are repaired.

19 MATERIAL CONTROL.

- 19.1 CALIBRATION.** Each mixing unit to be used in the performance of the work shall be calibrated prior to construction.

Individual volume or weight controls for proportioning each material to be added to the mix shall be provided, and shall be accessible by the Contract Administrator/designee. Each material control device shall be calibrated prior to work and documented for inspection by the Contract Administrator/designee.

- 19.2 AGGREGATE FEED.** The aggregate feed to the mixer shall be equipped with a revolution counter or similar device so the amount of aggregate used may be determined at any time.

- 19.3 EMULSION PUMP.** The emulsion pump shall be the positive displacement type with a jacketed housing for uniform heating. A revolution counter or similar device shall be fitted so that the amount of emulsion used may be determined at any time. The readout of this device shall be in gallons.

- 19.4 FINES FEEDER.** The fines feeder will provide a uniform, positive, accurately metered range of 0-1 percent by dry aggregate weight. The fines feeder must have a counter so that the amount of mineral filler can be determined at any time.

- 19.5 **WATER SYSTEM.** The mixing machine shall be equipped with a water system that provides a pre-determined amount of water to the mixing chamber. The water system must be equipped with a counter that can determine the amount used at any time.
- 19.6 **OPERATOR CONTROLS.** Controls will allow the operator to sequence and proportion the material per the mix design.
- 19.7 **SPRAY BARS.** The mixing machine shall be equipped with a water pressure system that provides a water spray immediately ahead of and outside the spreader box.
- 19.8 **SPREAD EQUIPMENT.** The paving mixture shall be spread uniformly by means of mechanical type laydown box attached to the mixer, equipped with agitation, to spread the materials throughout the box without any dead zones. These paddles shall be designed and operated so all the fresh mix will be agitated. Flexible seals, front and rear, shall be in contact with the road surface to prevent loss of mixture from the box. The spreader box shall be equipped with an adjustable strike-off for controlling the thickness of the spread mixture and hydraulic cylinders to adjust the width of the laydown box. Any surface drag marks will be immediately corrected.

The spreading equipment shall be maintained free from buildup of the mixture on the paddles or sidewalls. Any skips, lumps or tears in the finished product will not be allowed.

20 **APPLICATION.**

- 20.1 **GENERAL.** The polymer modified slurry seal shall be of the desired consistency when deposited in the spreading box and nothing more shall be added to it. The mixing time shall be sufficient to produce a complete and uniform coating of the aggregate and the mixture shall be chuted into the moving spreader box at a sufficient rate to maintain an ample supply across the full width of the strike-off squeegee at all times.
- 20.2 **WEATHER.** The mixture shall be placed when the temperature is at least 45°F and rising, and is not raining. The surface temperature shall be 50°F or higher when the mixture is applied. The slurry seal shall not be applied unless the pavement temperature is at least 45°F and rising. The mixture shall not be applied during unsuitable weather.
- 20.3 **PROTECTION OF EXISTING SERVICES.**
CONTRACTOR shall take all necessary precautions to prevent slurry seal or other material used on the work from entering or adhering to gratings, hydrants or valve boxes, manhole covers, bridge or culvert decks and other road fixtures. Immediately after surfacing, CONTRACTOR shall clean off any such material and leave any such grating, manholes, etc. in a satisfactory condition.

Immediately before applying the bituminous material, the area to be surfaced shall be cleaned of dirt, loose material, and other objectionable material. In urban areas, the surface shall be cleaned with a self-propelled pick-up sweeper. In rural areas, power brooms may be used. When necessary, cleaning shall be supplemented by hand brooms. This also includes the removal of grass or weeds, which are growing in the joint between the street and concrete gutter. No overlap of slurry/micro seal will be permitted in the curb and gutter. Any overlap will be cleaned to remove excess material.

The bituminous material shall not be applied until an inspection of the surface has been made by the Street Superintendent and he has determined that it is suitable.

- 20.4 **FOGGING PAVEMENT.** The surface should be pre-wetted by fogging ahead of the spreader box. The rate should be adjusted as dictated by the pavement temperatures, surface temperatures, humidity and dryness of existing pavement.
- 20.5 **MIX STABILITY.** The modified mix shall possess sufficient stability so that premature breaking of material in the spreader box should not occur. The mixture shall be homogeneous during the following

mixing and spreading, it shall be free of excess water or emulsion and free of segregation of the emulsion and aggregate fines from the coarser aggregate.

- 20.6 APPLICATION RATE.** The application rates are average rates. The surface texture variation throughout the work will dictate the actual spreading rates. The strike-off squeegee shall be adjusted to provide a thickness, which will completely fill the surface, voids and provide an additional thickness not exceeding one and one half times the largest top-size stone. This requirement of 1 1/2 stone depth does not apply to rut filling operations as these depths vary greatly according to the surface irregularities.
- 20.7 JOINTS.** No excessive buildup or unsightly appearance shall be permitted on longitudinal joints. CONTRACTOR shall provide suitable width spreading equipment to produce a minimum number of longitudinal joints throughout the work. Half passes and odd width passes will be used only in minimum amounts. If half passes are used, they cannot be the last pass of any paved area. Care shall be taken to ensure straight lines along curb and shoulders. No runoff on these areas will be permitted. Transverse joints shall be squared off so that a uniform transition is obtained at all transverse joints. Excess material as a result of squaring the joint will be removed by CONTRACTOR.
- 20.8 HAND WORK.** Approved hand squeegees and lutes shall be used to spread the mixture in areas inaccessible to the spreader box and other areas where hand spreading may be required.
- 20.9 SURFACE PREPARATION AND TRAFFIC CONTROL.** Adequate methods such as barricades, flagmen, pilot cars, etc., shall be used to protect the uncured slurry surface from all types of traffic. CITY barricade manual shall be the approved method of providing traffic control.
- 21 PAYMENT.** The polymer modified slurry seal shall be paid by the weight of the aggregate and weight of emulsified asphalt, as shown on certified weight tickets from the supplies delivered to the project, less weigh backs. The price shall be full compensation for furnishing, mixing, and applying all materials; and for all labor, equipment, tools, design tests, and incidentals necessary to complete the job as specified herein.
- 22 MACHINE CALIBRATION AND VERIFICATION.** Each mixing unit is to be used during the contract shall be calibrated prior to construction and proven to the Contract Administrator/designee during the test strips. All mixing units to be used on the job shall be approved prior to start of construction. Any costs associated with calibration shall be incidental to the project. Documentation shall include an individual calibration of each material at various settings, which can be related to the machines' metering devices. No machine will be allowed to work on the project unless the calibration has been completed and accepted. The method used to calibrate the machines shall be submitted to the Contract Administrator/designee for approval prior to calibration. Verification is to be performed with test strips. This shall include pre and post weighing of the slurry seal trucks. Re-calibration shall be required whenever counters or measuring devices are discovered to be in error. Any costs associated with recalibration shall be incidental to the project and no additional time will be granted.
- Test strips will be made by each machine prior to construction. Samples of the slurry seal will be taken and tested as to mix consistency, proportioning and application rate. Upon failure of any tests, re-tests shall be made at CONTRACTOR's expense. Any unit failing to pass the tests will not be permitted to work on the project.
- 23 JOINTS, LINES AND HAND WORK.** No excessive buildup, uncovered areas or unsightly appearance shall be permitted on longitudinal or transverse joints. An excessive overlap will not be permitted on longitudinal joints. CONTRACTOR shall provide suitable width spreading equipment to produce the minimum number of longitudinal joints to comply with the traffic regulations necessary throughout the project. Half passes and odd width passes will be used only when required.
- 24 EQUIPMENT REPLACEMENT.** Any equipment or piece of equipment that fails to produce the desired surface shall be repaired and/or replaced by CONTRACTOR as no cost to the City. The

Contract Administrator/designee shall determine if the equipment and/or finished product is in compliance.

- 25 **PROTECTION OF COVERS.** All utility appurtenances and survey monuments, i.e. manholes, valves, etc., shall be protected from slurry seal. A squeegee method will not be permitted. CONTRACTOR shall submit the method to be used to the Contract Administrator/designee for approval prior to work commencement. All utility appurtenances and survey monuments shall be marked outside the slurry portion of the pavement with the offset and location prior to seal coating. All above mentioned will be cleaned, uncovered, and returned back to original condition before work is considered complete.

Section C – Mill & Inlay.

STANDARD SPECIFICATION AND STANDARD DETAILS. City of Chandler is now operating under the latest revision of the 1998 edition of the Uniform Standard Specification for Public Works Construction, published by the Maricopa Association of Governments as amended by the City of Chandler, which is herewith incorporated by reference and made apart hereof.

1. **ASPHALT CONCRETE MILLING – VARIOUS LOCATIONS.**
MILL ASPHALTIC CONCRETE PAVEMENT (1 ½"-2")
CONTRACTOR shall remove of existing asphalt pavement to lines and depths indicated in the specifications in accordance with the requirements of MAG Standard Specifications, Section 350. Asphalt shall be milled using a high flow milling drum. All milled materials will be hauled off site and will be disposed at CONTRACTOR'S expense. After milling and prior to the crack sealing, the entire street will be swept with a vacuum or regenerative air sweeper to remove loose material. Measurement and payment shall be made by the square yard, complete in place.
 - 1.1 **Measurement and payment:** Measurement and payment for AC milling shall be for each square yard of milled asphalt complete in place.
2. **ASPHALTIC CONCRETE CRACK SEALING.** General Requirement - Work shall consist of inspecting the asphaltic concrete pavement for cracks after milling, cleaning cracks in the existing bituminous pavements and applying a pre-mixed asphalt rubber sealant. The work does not include patching of potholes or alligator cracks. CONTRACTOR shall provide all traffic control necessary to accomplish the required work.
 - 2.1 **Cleaning of Cracks - Applying sealant.** CONTRACTOR shall seal all cracks with an average clear opening of ¼" or greater. All cracks with an average clear opening of ¼" or greater shall be sealed. All cracks with an average clear opening or less than ¼" shall not be sealed. Immediately prior to applying the sealant, the cracks shall be thoroughly cleaned of loose particles, dust, and other deleterious substances by means of using forced air (65 psi and greater) with a downward blast into the crack and a vacuum attachment to vacuum the debris released. The material shall be vacuumed and contained to prevent it from getting into the atmosphere. All cracks shall be cleaned to a depth of from ½" to 1". Contract Administrator/designee shall make the determination as to what work will be done under this contract.
 - 2.2 Sealant shall be CRAFCO Polyflex Type 3 or approved equal. CONTRACTOR shall place sealant so as to completely fill the crack and form a lap of approximately 1" on each side. Thickness of the lap shall not exceed 1/16 inch. Immediately after the application, CONTRACTOR shall use a rubber squeegee or other acceptable means to force the material into the crack and for the lap. Blotter material (sand) may be required to prevent asphalt-rubber bleed and/or pickup of sealant by vehicular traffic. CONTRACTOR shall install blotter material of a type acceptable to and at the direction of the Contract Administrator/designee (no cement powder shall be acceptable).
 - 2.3 Within two (2) days after the work has been completed on residential streets, CONTRACTOR shall take caution to make sure the site is left clean and free of excess material, debris, etc. The streets, gutters, sidewalks and driveways shall be cleaned before the job is considered complete. Cleaning of the

streets shall be by vacuum or regenerative sweeper. CONTRACTOR shall be required to clean the streets to the satisfaction of the Contract Administrator/designee. CONTRACTOR shall be responsible for the disposal of all debris swept from the streets.

- 2.4 Equipment.** The equipment used by CONTRACTOR in the application of the asphalt rubber material shall have a mixing system in the material vat in order to maintain a consistent, uniform, homogeneous mixture throughout the crack sealing operation. The unit shall heat the asphalt rubber material by means of an indirect heat transfer median for adequate material temperature control. The equipment shall provide a continuous supply so that operations may proceed without delays. CONTRACTOR shall apply the material under pressure with a hose and wand assembly. The Contract Administrator/designee prior to use shall approve any equipment designated for use by CONTRACTOR.
- 2.5 Measurement and Payment.** Measurement and payment shall be by the lineal foot of cracks sealed complete in place in accordance with the project.
- 3. ASPHALTIC CONCRETE BASE REPAIR.** Consists of furnishing all materials, equipment, tools and labor as necessary to visually inspect and repair the asphaltic concrete pavement after the pavement has been milled if necessary as determined by the Contract Administrator/designee.
- 3.1** CONTRACTOR and Contract Administrator/designee will inspect the AC pavement after milling for deteriorated areas having excessive cracks and inadequate AC pavement depths of less than 1/2". In the event there are deteriorated areas or inadequate AC pavement depths, as determined by CONTRACTOR and Contract Administrator/designee, the pavement should be saw cut, removed and replaced with a 1" lift of new AC pavement or repaired as directed by Contract Administrator/designee.
- 3.2** New AC pavement shall meet the requirements of ASPHALTIC CONCRETE OVERLAY (PVMT STR SCT NO 1). If the existing AC pavement is saw cut and removed, CONTRACTOR shall inspect and remove the existing aggregate base course, and shall replace and re-compact as follows. CONTRACTOR shall remove and replace 6" of aggregate base course to replace surface aggregate base course that has been disturbed or contaminated in the process of AC base pavement removal.
- 3.3 Measurement and Payment.** Measurement and payment shall be by the square yard of AC pavement removed, replaced and/or repaired complete in place in accordance with these specifications, MAG Standard Specifications and as directed by the Contract Administrator/designee, including inspection, saw cutting, AC and aggregate base course removal, replacement and re- compaction. The quantity shown in Exhibit C is an estimate only and may or may not be used depending on the condition of the AC pavement after milling.
- 4. ASPHALTIC CONCRETE OVERLAY (2" - 12.5mm EVAC A/C).** This work shall consist of constructing a 12.5mm, 2-inch bituminous pavement overlay in conformance with the dimensions and sections shown on the plans. CONTRACTOR shall construct in accordance with the requirements of MAG Standard Specifications, Sections 321, and 336 except that the mix design and material testing shall conform to the latest East Valley Hot Asphalt Mix Criteria by the East Valley Asphalt Committee (EVAC). CONTRACTOR shall submit all mix designs to the Contract Administrator/designee for review and approval a minimum of ten (10) working days prior to the start of production. All finished pavement overlay shall be water tested for drainage in the presence of the Contract Administrator/designee before final acceptance. Any areas not draining properly shall be corrected to the Contract Administrator/designee's satisfaction at the expense of the CONTRACTOR. Water for this testing shall be provided and paid for by the CONTRACTOR.
- 4.1 Measurement and Payment.** Measurement and payment for asphaltic concrete overlay shall be by the square yard, complete in place, including tack coat.

5. **MANHOLE AND VALVE ADJUST.** Manhole and valves will be adjusted to be flush with the new asphalt. Adjustments will follow MAG Detail 422, 270, and City of Chandler Detail C401. Debris Shields shall be installed in all manholes prior to adjustments and remain in place until the work is completed, shields removed, enclosures cleaned and inspected by Contract Administrator/designee. CONTRACTOR shall provide the City of Chandler with a final detailed count (gas, SRP, Qwest, Water, etc...), map and location of any and all utility and/or manhole adjustments prior to actual project commencement.
- 5.1 **Measurement and Payment.** Measurement and payment for manhole and valve adjustments will be paid for on the "each" basis.
6. **TRAFFIC CONTROL.** CONTRACTOR shall adhere to all CITY, State and Federal Traffic and Safety guidance, City of Chandler Traffic Barricades Design Manual #7, City of Chandler Municipal code 46-2.7.E construction sign requirements and the Manual on Uniform Traffic Control Devices (MUTCD). CONTRACTOR shall submit all traffic control plans for approval to the City of Chandler Transportation and Development Department before any work may progress. Traffic control shall include uniformed Chandler Police Officer and squad car as required.
7. **STRIPING.** CONTRACTOR shall provide CITY with striping as-builds before start of project. All striping shall follow the latest version of the CITY Standard Details and Specifications Manual. No striping shall begin until approved by Contract Administrator/designee.
8. **SURVEY MONUMENTS.** This work will consist of adjusting survey monuments. Brass caps shall be adjusted according to MAG Standard Detail 120-2D. Frames and covers shall be adjusted according to MAG Standard Detail 422 or 270. Survey monuments shall be re-established and referenced by a Registered Land Surveyor (RLS). The RLS shall reset and punch the survey monuments. Any and all new survey coordinates shall be recorded and described in detail to the City of Chandler and governing authorities by the RLS.
9. **MEASUREMENT AND PAYMENT.** Measurement and Payment will be made on the "each" basis.
10. **PERMITS.** Unless otherwise specified, CITY will, upon appropriate cooperation from CONTRACTOR, obtain and provide to CONTRACTOR those permits issued by CITY. CONTRACTOR shall obtain all other permits and licenses. CONTRACTOR shall pay all other governmental charges and inspection fees necessary for the completion of the work, which are applicable at the time of bid opening. CONTRACTOR shall also pay all charges of utility service companies for connections to the work, and CITY shall pay all charges of such companies for capital costs related thereto, such as plant investment fees and system development fees.
- 10.1 Work in any public easement or right-of-way shall be done in accordance with the requirements of a permit issued by the public agency in whose easement or right-of-way the work is located, in addition to conforming to the drawings and specifications. If a permit is not required, the work shall conform to the standards of the public agency involved in addition to conforming to the drawings and specifications.
- 10.2 CITY permits and permits from all applicable governing jurisdictions (i.e. Maricopa County and Arizona Department of Transportation) are required while performing work on CITY contracts. CONTRACTOR shall pay all permit fees as required by the other governing jurisdictions.
- 10.3 Construction water and landfill fees will not be waived and shall be paid for by CONTRACTOR. The system development fees for water and sewer will be paid for by CITY unless shown in the itemized pricing (Exhibit C).
11. **DUST CONTROL.** CONTRACTOR shall keep suitable equipment on hand at the job site for maintaining dust control and shall employ appropriate equipment for that purpose, in accordance with the requirements of the "Maricopa County Environmental Services Department of Air Pollution Control Regulations". CONTRACTOR shall be responsible for obtaining an Air Quality Permit for Maricopa County prior to starting the work. County permit fees shall be paid for by the CONTRACTOR.

- 11.1 RECORDKEEPING.** Any person who conducts dust-generating operations that require a Dust Control Plan shall keep a written record of self-inspection on each day dust-generating operations are conducted. Self-inspection records shall include daily inspections for crusted or damp soil, track-out conditions and clean-up measures, daily water usage, and dust suppressant application. Such written record shall also include the following information:
- Method, frequency, and intensity of application or implementation of the control measures;
 - Method, frequency, and amount of water application to the site;
 - Street sweeping frequency;
 - Types of surface treatments applied to and maintenance of track-out control devices, gravel pads, fences, wind barriers, and tarps;
 - Types and results of test methods conducted;
 - If contingency control measures are implemented, actual application or implementation of contingency control measures and why contingency control measures were implemented;
 - List of sub-Contractors' names and registration numbers updated when changes are made; and
 - Names of employee(s) who successfully completed dust control training class(es) required by Section 309, date of the class(es) that such employee(s) successfully completed, and name of the agency/representative who conducted such class(es).
- 11.2** Any person who conducts dust-generating operations that do not require a Dust Control Plan shall compile and retain records (including records on any street sweeping, water applications, and maintenance of track-out control devices, gravel pads, fences, wind barriers, and tarps) that provide evidence of control measure application, by indicating the type of treatment or control measure, extent of coverage, and date applied.
- 11.3** Upon verbal or written request by the Contract Administrator/designee, the log or the records and supporting documentation shall be provided as soon as possible but no later than 48-hours, excluding weekends. If the Contract Administrator/designee is at the site where requested records are kept, records shall be provided without delay.
- 11.4 RECORDS RETENTION.** Any person who conducts dust-generating operations that require a Dust Control Plan shall retain copies of approved Dust Control Plans, control measurers implementation records, and all supporting documentation for at least six (6) months following the termination of the dust-generating operation and for at least two (2) years from the date of such records were initiated. If a person has obtained a Title V Permit and is subject to the requirements of this rule, then such person shall retain records required by this rule for at least five (5) years from the date such records are established.
- 12. CLEAN UP.** CONTRACTOR shall be responsible for keeping the sidewalks, streets, alleys, and adjacent areas around the site free from debris, obstacles, mud, dirt, etc. CONTRACTOR shall immediately and continuously clean up any and all mud or dirt tracked onto streets or sidewalks by construction traffic.
- 12.1** During progress of work, CONTRACTOR shall keep the premises free from accumulations of waste materials, rubbish, and other debris resulting from work. Failure of CONTRACTOR to comply with Contract Administrator/designee clean-up orders may result in an order to suspend work until the condition is corrected. No additional compensation or time will be allowed as a result of such suspension.
- 12.2** Excess or unsuitable material, broken asphaltic concrete, and broken Portland cement concrete resulting from the work shall be removed from the site and disposed of by CONTRACTOR. Disposal of material within CITY limits or planning area shall be approved by Contract Administrator/designee prior to disposal.
- 12.3** CONTRACTOR shall prevent silt, mud, and/or debris resulting from work from being discharged into CITY storm drains, retention basins or street right-of-ways. Earthwork stockpiles shall not exceed 6' in

height. Any earthwork stockpile, regardless of height, shall be removed within seven (7) days of CITY notification if dust suppression efforts fail to maintain satisfactory airborne containment control.

- 12.4 At completion of work, CONTRACTOR shall remove all waste materials, rubbish and debris from and about the premises, as well as all tools, appliances, equipment and machinery, temporary construction facilities and surplus materials. CONTRACTOR shall leave the site clean and ready for occupancy by CITY. CONTRACTOR shall restore conditions to their original condition, those portions of the site not designated for alteration by Contract Administrator/designee. CONTRACTOR shall also leave the public right-of-way, all streets, sidewalks, utility easements, and any affected private property in a neat and clean condition with all damages, including landscaping, repaired and restored.
- 12.5 If CONTRACTOR is instructed by Contract Administrator/designee to perform clean up or street sweeping operations and fails to do so to Contract Administrator/designee's satisfaction within two (2) working days, CITY may procure clean up services and/or commercial street sweeping services and charge such costs, including CITY administrative time, to CONTRACTOR.

Section D – TRMSS.

STANDARD SPECIFICATIONS AND STANDARD DETAIL: Attention is called to the fact that CITY is now operating under the latest revision of the 1998 edition of the Uniform Standard Specification for Public Works Construction, published by the Maricopa Association of Governments as amended by CITY, which is herewith incorporated by reference and made a part hereof.

CITY is also operating under the latest revision of the 1998 edition of Standard Details as published by the Maricopa Association of Governments as amended by CITY.

1. **TIME OF APPLICATION AND WEATHER CONDITION:** TRMSS shall not be applied when the surface is wet or when there is a threat of rain. The ambient air temperature shall be at least 60°F and rising and the application shall cease when the air temperature is 65°F and falling.
2. **MATERIAL:** The TRMSS shall meet the requirements of Table #1 attached. CONTRACTOR shall submit a certification from the manufacturer stating that the base emulsion being supplied meets the requirements of Table #1.
- 2.1 **PREPARATION OF PAVEMENT:** Pavement surface to be coated shall be sound, surface cured and clean in order for the TRMSS emulsion to perform properly.

Cleaned surface – CONTRACTOR shall clean the pavement to be free from clay, salt, sand, grease, dirt, and other foreign matter. It is imperative that the pavement be thoroughly cleaned. Cleaning shall be accomplished by means of power blowers, stiff bristle brooms, vacuum unit, or by pressure flushing. Only pick up type sweepers will be allowed, no sidekick brooms shall be used.

Deleterious matter - Accumulation of grease or oil shall be removed by scraping, burning or scrubbing with detergent (detergent shall be thoroughly rinsed from surface). Any areas where pavement is physically sound, yet oil has still soaked in shall be coated with a TRMSS oil spot primer to promote better adhesion and to prevent bleed through.

- 2.2 **APPLICATION OF MATERIALS:** CONTRACTOR shall use the manufacturer's recommended dilution be formulated at the manufacturer's plant using hot soft water and proper blending techniques.

Application rate – CONTRACTOR shall apply sealer in one uniform coat utilizing a computer rate controlled asphalt spreader. Hand spray wands and squeegees may be used for small areas and trim. Application rate shall be 0.12 to 0.18 gallon per square yard or as directed by Contract Administrator/designee. Test sections prior to commencement of job shall determine actual coverage rate. CITY Contract Administrator/designee will determine the application rate on individual sections.

Outside temperature – CONTRACTOR shall apply the sealer when the ambient temperature is 60°F and rising with no threat of rain for an 8-hour period.

Drying time - Drying time for sealer shall normally be 2-hours before opening to traffic. Actual weather conditions will determine drying time and, in any case, avoid traffic until the surface is no longer tacky.

- 2.3 **POST APPLICATION:** After application of sealer, CONTRACTOR shall squeeze off depressions in the pavement that collect residual sealer and puddles to avoid a tacky, slow curing surface.
- 2.4 **PROTECTION TO ADJACENT PROPERTY:** CONTRACTOR shall take care to prevent the spraying of the TRMSS Seal Coat on adjacent pavement and that portion of the pavement being used for traffic, on structures, guard rails, guide posts, markers (all types), manhole and valve covers, trees, shrubs, and adjacent property, improvements and facilities of all kinds. The CONTRACTOR shall cover or protect Raised Pavement Markers (RPM), Manhole Covers, Survey Monuments, Water Valve Covers, Valley Gutters and Aprons from TRMSS spray and shall remove the protection or cover before opening the streets to traffic. CONTRACTOR shall be responsible for removing TRMSS sprayed on to the items mentioned above.
- 2.5 **PROTECTION OF TREATED SURFACE:** CONTRACTOR shall be responsible for providing adequate barricading and signing to protect both the motorized public and the treated surface. In the event of loss of striping, CONTRACTOR shall be responsible for temporary traffic control using vertical panels, reflective raised pavement markers or chip seal markers. The treated surface shall be protected by barricades and/or signs until the TRMSS Seal Coat will not be picked up by traffic. CONTRACTOR shall follow the CITY Barricade Manual in providing the required traffic control. In addition to the barricade manual, CONTRACTOR shall be required to set out some informational signs and/or electronic message boards. CITY Contract Administrator/designee will work with CONTRACTOR's crew leader in detailing the location for said signs. CONTRACTOR shall be required to furnish and place temporary "No Parking" signs along streets that allow residential or commercial parking. These signs shall be placed 24-hours in advance of the application of the TRMSS Seal. Only one half (1/2) of the street surface shall be sealed and closed at a time.

Section E- PMM Polymer Modified Masterseal

1. **TIME OF APPLICATION AND WEATHER CONDITION:** PMM shall not be applied when there is a threat of rain within 24 hours. The ambient air temperature shall be at least 55°F and rising. Payment surface should be misted with water in extremely hot temperatures (90 degrees and above) New asphalt should not be sealed until after exposed to a full summer heat cycle.
2. **MATERIAL:** The PMM shall meet the requirements of Table #1 attached. CONTRACTOR shall submit a certification from the manufacturer stating that the base emulsion being supplied meets the requirements of Table #4.
- 2.1. **PREPARATION OF PAVEMENT:** Pavement surface to be coated shall be sound, surface cured and clean in order for the TRMSS emulsion to perform properly.

Cleaned surface – CONTRACTOR shall clean the pavement to be free from clay, salt, sand, grease, dirt, and other foreign matter. It is imperative that the pavement be thoroughly cleaned. Cleaning shall be accomplished by means of power blowers, stiff bristle brooms, vacuum unit, or by pressure flushing. Only pick up type sweepers will be allowed, no sidekick brooms shall be used.

Deleterious matter - Accumulation of grease or oil shall be removed by scraping, burning or scrubbing with detergent (detergent shall be thoroughly rinsed from surface). Any areas where pavement is physically sound, yet oil has still soaked in shall be coated with a PMM oil spot primer to promote better adhesion and to prevent bleed through.

- 2.2. **APPLICATION OF MATERIALS:** CONTRACTOR shall apply two coats. . The first coat must be completely dry before applying the second coat.

Application rate – CONTRACTOR shall apply sealer in one uniform coat utilizing a hand, spray or squeegee, mechanical spray units or squeegee machines. Application rate shall be 0.20 to 0.15 gallon per square yard or as directed by Contract Administrator/designee. Test sections prior to commencement of job shall determine actual coverage rate. CITY Contract Administrator/designee will determine the application rate on individual sections.

Outside temperature – CONTRACTOR shall apply the sealer when the ambient temperature is 55°F and rising with no threat of rain for an 24-hour period.

Drying time - Drying time for sealer shall normally be 4-hours before opening to traffic. Actual weather conditions will determine drying time and, in any case, avoid traffic until the surface is no longer tacky.

- 2.3. **POST APPLICATION:** After application of sealer, CONTRACTOR shall squeeze off depressions in the pavement that collect residual sealer and puddles to avoid a tacky, slow curing surface.
- 2.4. **PROTECTION TO ADJACENT PROPERTY:** CONTRACTOR shall take care to prevent the spraying of the PMM on adjacent pavement and that portion of the pavement being used for traffic, on structures, guard rails, guide posts, markers (all types), manhole and valve covers, trees, shrubs, and adjacent property, improvements and facilities of all kinds. The CONTRACTOR shall cover or protect Raised Pavement Markers (RPM), Manhole Covers, Survey Monuments, Water Valve Covers, Valley Gutters and Aprons from PMM spray and shall remove the protection or cover before opening the streets to traffic. CONTRACTOR shall be responsible for removing PMM sprayed on to the items mentioned above.
- 2.5. **PROTECTION OF TREATED SURFACE:** CONTRACTOR shall be responsible for providing adequate barricading and signing to protect both the motorized public and the treated surface. In the event of loss of striping, CONTRACTOR shall be responsible for temporary traffic control using vertical panels, reflective raised pavement markers or chip seal markers. The treated surface shall be protected by barricades and/or signs until the PMM will not be picked up by traffic. CONTRACTOR shall follow the CITY Barricade Manual in providing the required traffic control. In addition to the barricade manual, CONTRACTOR shall be required to set out some informational signs and/or electronic message boards. CITY Contract Administrator/designee will work with CONTRACTOR's crew leader in detailing the location for said signs. CONTRACTOR shall be required to furnish and place temporary "No Parking" signs along streets that allow residential or commercial parking. These signs shall be placed 24-hours in advance of the application of the PMM Seal. Only one half (1/2) of the street surface shall be sealed and closed at a time.

Additional Requirements:

Any locations with thermal arrows in place shall be protected by CONTRACTOR while performing work in these areas. Glass beads are not required in the road striping.

Table 4

TEST	METHOD	RESULTS
TIRE RUBBER MODIFIED BASE ASPHALT (prior to emulsification):		
• Tire Rubber Content, %	Terminal Certification	10% Min.
• Solubility, %	ASTM D 2042	98.5 Min.
• Flash Point, °F	ASTM D 93	550 Min.
EMULSION:		
• Uniformity - <i>Product shall be homogeneous and show no separation or coagulation that cannot be overcome by moderate stirring.</i>	ASTM D 2939.05	PASS
• Weight/gallon @ 77°F (Ready to Use)	ASTM D 2939.07	10 lbs/gal. Min.
• VOC Content by Volume % - <i>Maricopa County Air Pollution Control Regulations- Rule 340 section 301.3</i>	ASTM D 244-89	<2%
• Fine Aggregate Content by Weight		32-34%
• Polymer Latex Content by Volume		1.5-2%
RESIDUE:		
• Tire Rubber Content	Terminal Certification	10%
• Residue by Evaporation,(As Manufactured)	ASTM D 2939.08	53% Min.
• Flash Point, °F	ASTM D 93	>500+
PERFORMANCE BASED TESTING:		
• RESISTANCE TO HEAT - <i>No sagging or slipping beyond the initial reference line after 212°F exposure for 2 hours.</i>	ASTM D 2939.14	PASS
• RESISTANCE TO WATER - <i>No blistering or re-emulsification after 24 hour submersion in water.</i>	ASTM D 2939.15	PASS
• WET FLOW - <i>No flow beyond initial reference line.</i>	ASTM D 2939.19	PASS
• DIRECT FLAME TEST - <i>No continued combustion or slippage and run-down.</i>	ASTM D 2939.20	PASS
• WET FILM CONTINUITY - <i>A uniformly homogeneous consistency.</i>	ASTM D 2939.22	PASS
• RESISTANCE TO KEROSENE - <i>No evidence of leakage of kerosene, loss of adhesion and discoloration of tile.</i>	ASTM D 2939.25	PASS
• WET TRACK ABRASION TEST - <i>Calculated weight loss, percentage of original volume.</i>	ASTM D 3910	PASS
• ACCELERATED WEATHERING TEST - <i>UVA-Weatherometer no cracking, chipping, surface distortion or loss of adhesion. No color fading or lightening.</i>	ASTM G 154	PASS (1000 hrs.)

**EXHIBIT B
PRICING**

The following areas have specific "known" work that needs to be completed. Contractor is responsible for verifying all measurements.

ITEM 1. BUILDING & FACILITIES PARKING LOTS:			
Snedigar Recreation Center Parking Lot 4500 S. Alma School Rd			
Description	UOM	Qty	Price
Work to include two (2) mobilizations, parking lot cleaning, crack sealing, micro-seal, striping, and any handicap stencils; 8050 SY	LS	1	\$ 16,245

ITEM 2. Chandler Boys and Girls Club 300 E. Chandler Blvd			
Description	UOM	Qty	Price
Work to include one (1) mobilization, parking lot cleaning, crack sealing, PMM, striping, and any handicap stencils; 4520 SY	LS	1	\$ 4,120

ITEM 3. Fire Station 2810 5211 S.McQueen Rd			
Description	UOM	Qty	Price
Work to include one (1) mobilization, parking lot cleaning, crack sealing, micro seal, striping, and any handicap stencils; 2770 SY	LS	1	\$ 5,138

ITEM 4. Park and Facilities Service Center 650 E. Ryan Rd			
Description	UOM	Qty	Price
Work to include two (2) mobilizations, parking lot cleaning, crack sealing, micro sealing, striping, and any handicap stencils; 12,110 SY	LS	1	\$ 22,555

ITEM 5. Police /Courts Parking Lot 200 E. Chicago St			
Description	UOM	Qty	Price
Work to include two (2) mobilizations, parking lot cleaning, crack sealing, micro sealing, striping, and any handicap stencils; 12,085 SY	LS	1	\$ 20,790

ITEM 6. PARKS OPERATIONS PARKING LOTS AND INTERIOR ROAD (see attached map): Tumbleweed Park 2250 S. McQueen Rd.			
Description	UOM	Qty	Price
Work to include five (5) mobilizations, parking lot cleaning, crack sealing, TRMSS seal, striping and any handicap stencils. Approximately 717,600 SF.	LS	1	\$ 60,548

ITEM 7. Water Treatment Plant 1475 E. Pecos Rd.			
Description	UOM	Qty	Price
Work to include mobilization, parking lot cleaning, crack sealing, TRMSS seal, striping and any handicap stencils. Approximately 4000 SY.	LS	1	\$ 3,793

Section A – Asphalt & Concrete Pricing.

Description		U.O.M.	QTY	Unit Price
A.1.	Asphalt Patching – 2”	SF	2,000	\$ 1.75
A.2.	Concrete sidewalk / flatwork, 4” installed	SF	10,000	\$ 4.02
A.3.	Concrete sidewalk / flatwork, 4” with turndown	SF	7,000	\$ 4.88
A.4.	Concrete sidewalk / flatwork, 6”	SF	3,000	\$ 5.34
A.5.	Concrete Curbing/Landscape 6” x 6” with ½” rebar	LF	2,000	\$ 9.20
A.6.	Concrete Curbing/Landscape 8” x 8” with ½” rebar	LF	2,000	\$ 10.92
A.7.	Curb & Gutter (per MAG 220, Type A)	LF	1,000	\$ 17.25
A.8.	ADA Playground Ramps (per attached detail)	EA	7	\$ 1,125
A.9.	Concrete Grinding	Hrly	500	\$ 36.80

REVISED Section B – Slurry Seal & Micro Seal Pricing.

Description		U.O.M.	QTY	Unit Price
B.1.	Slurry Seal / Micro Seal	SY	51,000	\$ 1.75
B.2.	Crack Sealing	LF	250,000	\$.22

Section C – Mill & Inlay Pricing.

Description		U.O.M.	QTY	Unit Price
C.1.	Mill & Inlay	SY	5,000	\$ 24.75

Section D – PMM Pricing - Parking Lot Resurfacing.

Description		U.O.M.	QTY	Unit Price
D.1.	Complete in place	SY	5,000	\$.72
	Material Sources:			<u>Sealmaster</u>
	A. Source of emulsified asphalt			
	B. Source of oil			<u>Wright Asphalt</u>
	C. Refining source of asphalt			<u>Alon</u>

Other Services / Fees

Description		U.O.M.	QTY	Unit Price
E.1.	Mobilization	EA	1	\$ 750
E.2.	Parking Lot Cleaning	EA	1	\$ 225
E.3.	Equipment (list):	HRLY	1	\$ 60
	Equipment (list):	HRLY	1	\$ 55
	Equipment (list):	HRLY	1	\$ 55
E.4.	Labor – Operator	HRLY	1	\$ 28
	Labor – Foreman	HRLY	1	\$ 23
	Labor (list):	HRLY	1	\$ 17
	Labor (list):	HRLY	1	\$ 15

* Quantities are estimates ONLY and are not guaranteed. Payment shall be based on actual quantities and there is no guarantee that any certain quantity shall be required by City. City reserves the right to increase or decrease the quantities actually required.

It is understood that CONTRACTOR shall use the most current City of Chandler and/or M.A.G. standard details and specifications.

**EXHIBIT C1
BID BOND**

KNOW ALL MEN BY THESE PRESENTS:

That we, _____, as Principal, (hereinafter called the Principal), and the _____ a corporation duly organized under the laws of the State of _____,

as Surety, (hereinafter called the Surety) are held and firmly bound unto the City of Chandler as Obligee, in the sum of 10 percent (10%) of the total bid, submitted by him to the City of Chandler for the work described below, for the payment of which sum, well and truly to be made, the said Principal and the said Surety, bind ourselves, our heirs, executors, and administrators, successors and assigns, jointly and severally, firmly by these presents, and in conformance with Arizona Revised Statutes.

WHEREAS, the said Principal is herewith submitting its bid for:

Asphalt / Concrete Maintenance, Bid No. BF6-745-3662

NOW, THEREFORE, if the City of Chandler shall accept the proposal of the Principal and the principal shall enter into a Contract with the City of Chandler in accordance with the terms of such proposal and give such Bonds and Certificates of Insurance as specified in the Contract Documents with good and sufficient Surety for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof, or in the event of the failure of the Principal to enter into such Contract and give such Bonds and Certificates of Insurance, if the Principal shall pay to the City of Chandler the sum of money set forth above as liquidated damages for failure of the Principal to enter into the Contract, then this obligation shall be null and void, otherwise to remain in full force and effect.

Signed and sealed this _____ day of _____, A.D., 2016.

Principal

Title

Witness: _____

Surety

Title

Witness: _____

**EXHIBIT C2
PERFORMANCE BOND**

STATUTORY PERFORMANCE BOND PURSUANT TO
TITLE 34, CHAPTER 2, ARTICLE 2,
OF THE ARIZONA REVISED STATUTES
(Penalty of this bond must be 100% of the Bond amount)

KNOW ALL MEN BY THESE PRESENTS: That, _____ (hereinafter called the Principal), as Principal, and _____ a corporation organized and existing under the law of the State of _____ with its principal office in the City of _____, (hereinafter called the Surety), as Surety, are held and firmly bound unto the City of Chandler, County of Maricopa, State of Arizona, in the amount of _____ Dollars (\$ _____), for the payment whereof, the said Principal and Surety bind themselves, and their heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered into a certain written Contract with the City of Chandler, Dated the _____ day of _____, _____, **Asphalt / Concrete Maintenance, Bid No. BF6-745-3662** which Contract is hereby referred to and made a part hereof as fully and to the same extent as if copies at length herein.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the said Principal shall faithfully perform and fulfill all the undertakings, covenants terms, conditions, and agreements of said contract during the original term of said Contract and any extensions thereof, with or without notice to the Surety, and during the life of any warranty required under the contract, and shall also perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of any and all duly authorized modifications of conditions of said Contract that may hereafter be made, notice of which modifications to the Surety being hereby waived; then the above obligations shall be void, otherwise to remain in full force and effect.

PROVIDED, HOWEVER that this bond is executed pursuant to the provisions of Title 34, Chapter 2, Article 2 of the Arizona Revised Statutes, and all liabilities on this bond shall be determined in accordance with the provisions of said Title, Chapter and Article, to the extent as if it were copied at length herein.

The prevailing party in a suit on this bond shall be entitled to such reasonable attorney's fees as may be fixed by a judge of the Court.

Witness our hands this ____ day of _____, 2016.

PRINCIPAL SEAL

AGENT OF RECORD

BY _____

SURETY SEAL

AGENT ADDRESS

**EXHIBIT C3
PAYMENT BOND**

ARIZONA STATUTORY PAYMENT BOND
PURSUANT TO TITLES 28, 34, AND 41, OF THE ARIZONA REVISED STATUTES
(Penalty of this Bond must be 100% of the Contract amount)

KNOW ALL MEN BY THESE PRESENTS:

THAT: _____ (hereinafter "Principal"), as Principal, and _____ (hereinafter "Surety"), a corporation organized and existing under the laws of the State of _____ with its principal office in the City of _____, holding a certificate of authority to transact surety business in Arizona issued by the Director of the Department of Insurance pursuant to Title 20, Chapter 2, Article 1, as Surety, are held and firmly bound unto the City of Chandler, (hereinafter "Obligee") County of Maricopa, State of Arizona, in the amount of _____ Dollars (\$ _____), for the payment whereof, the said Principal and Surety bind themselves, and their heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered into a certain written Contract with the City of Chandler, dated the _____ day of _____, 2012, for **Asphalt / Concrete Maintenance, Bid No. BF6-745-3662**, which Contract is hereby referred to and made a part hereof as fully and to the same extent as if copies at length herein.

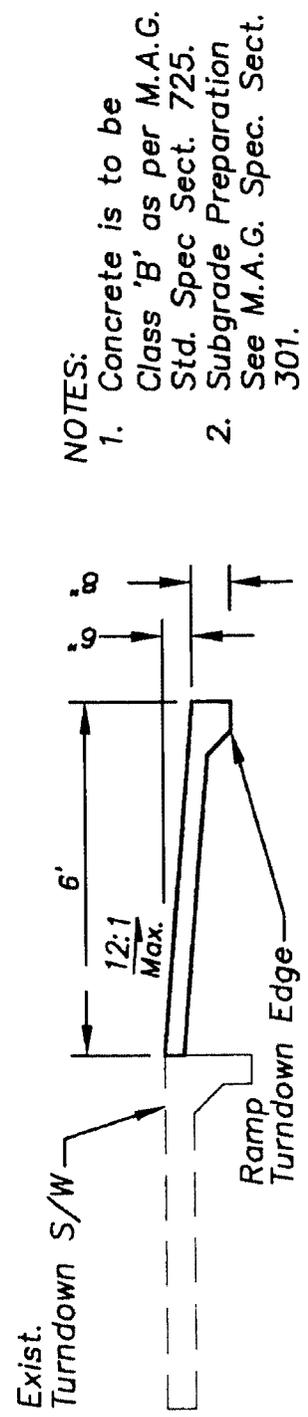
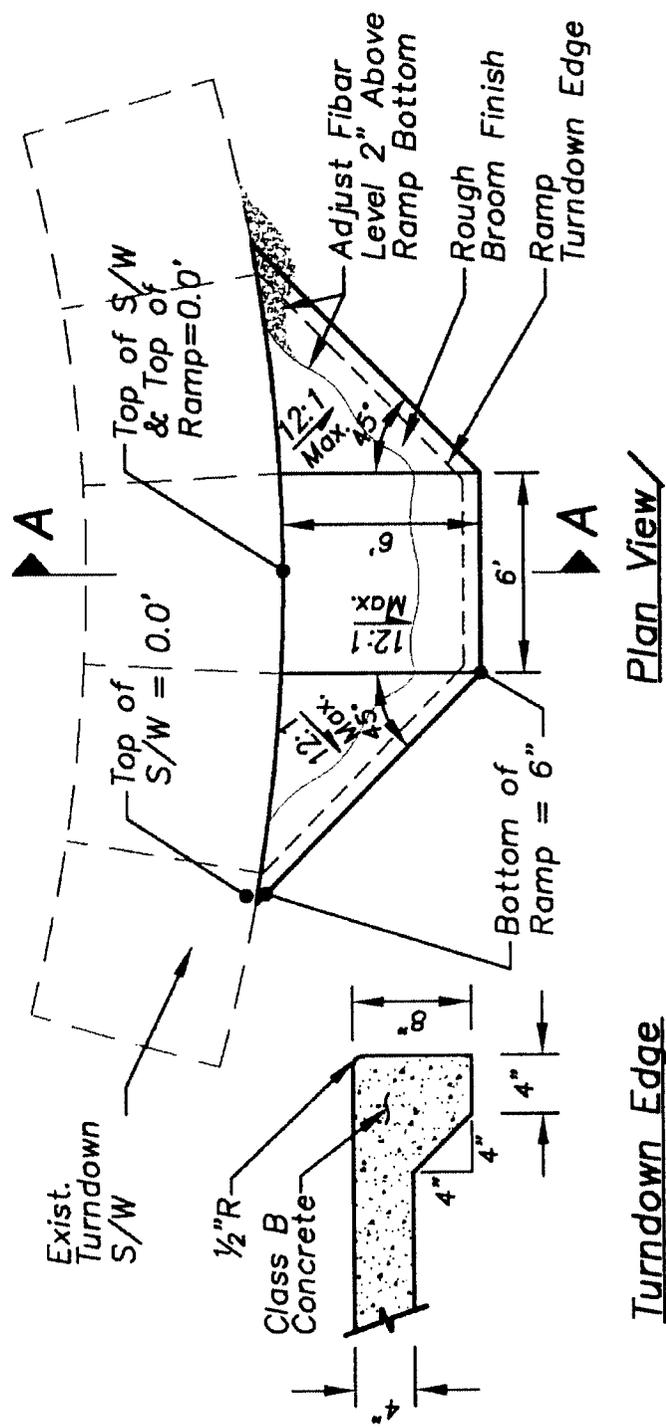
NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the Principal promptly pays all moneys due to all persons supplying labor or materials to the Principal or the Principal's subcontractors in the prosecution of the work provided for in said contract, this obligation is void. Otherwise it remains in full force and effect.

PROVIDED, HOWEVER that this bond is executed pursuant to the provisions of Title 34, Chapter 2, Article 2 Arizona Revised Statutes, and all liabilities on this bond shall be determined in accordance with the provisions, conditions and limitations of Title 34, Chapter 2, Article 2, Arizona Revised Statutes, to the same extent as if it were copied at length in this agreement.

The prevailing party in a suit on this bond shall recover as part of the judgment reasonable attorney fees that may be fixed by a judge of the court.

Witness our hands this _____ day of _____, 2016.

AGENT OF RECORD	PRINCIPAL
	SEAL
	BY _____
AGENT ADDRESS	SURETY
	SEAL



10 **PLAYGROUND SIDEWALK RAMP**